Johannes Müller.[1] The most common representative of it, the cosmopolitan *Thalassicolla nucleata*, was first described by Huxley in 1851. But as early as 1834 another large Radiolarian, appertaining either to this or to a nearly allied family, had been described by Meyen as *Physematium atlanticum*. A third genus was detected by me in 1859 at Messina and figured under the name *Thalassolampe margarodes*.[2] A very accurate histological description of these forms was given in 1876 by Richard Hertwig.[3] The same author figured in his Organismus in 1879 a very interesting simpler form under the name *Thalassolampe primordialis* (Taf. iii. fig. 5). Some similar forms had already been observed by me, and are here united with it to form the first genus *Actissa*.[4]

Actissa is of the highest general interest as the most simple and typical form of all Radiolaria, and as the common ancestral form, from which all other forms of this large class may be derived. Its unicellular body exhibits neither the extracapsular alveoli of *Thalassicolla*, nor the intracapsular alveoli of *Thalassolampe*, and shows all essential characters of the Radiolarian type in its most simple form (Pl. **1**, figs. 1 to 1*c*). The simple cell-body is composed of a spherical central capsule and a concentric, spherical, enveloping calymma, both separated by a thin membrane which is perforated by innumerable pores. The capsule includes the endoplasm and in the centre a simple spherical nucleus with nucleolus; at the time of propagation this latter becomes cleft into numerous small nuclei, each of which, together with a small piece of the surrounding endoplasm, forms a flagellated zoospore (fig. 1*c*). The extracapsulum is formed by the large, structureless, spherical calymma or concentric jelly-veil enveloping the capsule, and by the thin granular matrix or the layer of exoplasm which separates the calymma from the membrane. From this matrix or maternal tissue arise innumerable very long and thin pseudopodia, as simple radiating filaments, the proximal part of which is included in the calymma, whilst the distal part floats freely in the sea-water (Pl. **1**, fig. 1).

The other Thalassicollida differ from their common ancestral form, *Actissa*, mainly by the higher histological differentiation of the unicellular body. Whilst in *Thalassicolla* and *Thalassolampe* the nucleus remains a single sphere as in *Actissa*, it becomes branched or covered with radial blind saccules in *Thalassopila* and *Thalassophysa*; also the intracapsular protoplasm develops here a great variety of peculiar different corpuscles, as oil-globules, pigment-granules, concentric concretions, crystals, &c. But the most striking peculiarity by which the other Thalassicollida differ from *Actissa* is the development of large vesicular alveoli, either within or without the capsule; the unicellular body reaches by this inflation the extraordinary size of 5 to 10 mm. or more.

[1] *Abhandl. d. k. Akad. d. Wiss. Berlin*, 1858, p. 28.
[2] Monogr. d. Radiol., 1862, Taf. ii. p. 253.
[3] Histologie der Radiolarien, pp. 43–73, Taf. iii.–v.
[4] *Sitzungsb. med.-nat. Gesellsch. Jena*, February 16, 1883.