

threads are simply united or confluent at the nodal points, and are not connected by a radial or stellate septal junction, as in the Aulosphærida. There are, therefore, neither astral septa nor a nodal cavity in each nodal point. The delicate shape of the thin and fragile threads separates the Sagosphærida from the closely allied Orosphærida, the thick bars of which contain a central axial canal and exhibit a concentric structure. Another difference between these two similar families is indicated by the form of the meshes of the network, which are constantly triangular in the Sagosphærida, but irregularly polygonal or quadrangular in the Orosphærida. The general habit of these two families, however, is very different, since the big and stout spheres of the Orosphærida are the coarsest and rudest spherical shells of all Radiolaria, whilst the fragile and delicate spheres of the Sagosphærida represent the finest and most tender in the whole class.

The spherical lattice-shell of the Sagosphærida has a considerable size, its diameter being usually between one and three millimetres, rarely less or more. Some species are very common and widely distributed, usually accompanying the common Aulosphærida; very frequently the similar shells of the two are found interwoven. But in spite of this frequency and visible size, the Sagosphærida have hitherto almost completely escaped the attention of observers. The main cause of this strange fact may be their extreme delicacy and fragility, so that complete and intact shells occur very rarely, the majority being more or less broken and incomplete. It seems that only two species of Sagosphærida have been hitherto observed.

The first form described is *Sagmarium trigonizon*, observed by me in 1859 living at Messina, and figured in 1862 in my Monograph as *Dictyosoma trigonizon* (Taf. xxvi. figs. 4-6), but afterwards called *Spongodictyum trigonizon* (*loc. cit.*, p. 459). I supposed at that time (now twenty-five years ago), that this remarkable and in many respects distinct form might belong to the Spongosphærida, and that an internal, triple, spherical lattice-shell, found entangled in its spongy framework, might be its central "medullary shell." But at present, having found many shells of different Radiolaria accidentally entangled in the arachnoidal framework of various Sagosphærida, I think it much more probable, that that "triple medullary shell," composed of three simple concentric lattice-spheres, was really a species of *Plegmosphæra* or *Actinomma*, accidentally entangled in the arachnoidal spongy framework of *Sagmarium*. This is the more probable, as I had observed very frequently at Messina, in 1859, fragments of that framework, but only once the triple lattice-shell which I supposed to be the "triple medullary shell" of the former. The peculiar structure of the loose framework, its very large triangular meshes and thin arachnoidal bars, partly provided with cruciate verticils (*loc. cit.*, Taf. xxvi. figs. 4, 5) have been very frequently observed by me during the last ten years in various Sagosphærida (PHÆODARIA), but never in any true Sphæroidea (SPUMELLARIA).

The second species of Sagosphærida hitherto observed, is *Sagoscena gracilis*, described and figured in 1879 by Richard Hertwig as *Aulosphæra gracilis* (Organism.