

latter. It seems to be merely a consequence of this difference that the cleavage of the nucleus commonly takes place very late in the former, very early in the latter.

Commonly, therefore, the full-grown *Thalassosphærida* (until immediately before their propagation) exhibit one single nucleus in the centre of the capsule, whilst in the *Sphærozoida* the capsule is distended with numerous small nuclei. In these latter the centre of the capsule usually contains one large oil-globule, whilst in the former oil-globules are either wanting or scattered in large numbers in the endoplasm, or disposed in one layer on the inside of the capsule membrane.

In the solitary *Thalassosphærida* each capsule is enclosed in its own peculiar spherical calymma, whilst in the associated *Sphærozoida* all the capsules of the colony are united into one common, very voluminous, alveolated calymma.

Family III. THALASSOSPHERIDA, Haeckel, 1862, (Pl. 2).

Thalassosphærida, Monogr. d. Radiol., p 255.

Definition.—*Beloidæa solitaria*.

The family *Thalassosphærida* comprises all solitary SPUMELLARIA with an imperfect skeleton, composed of numerous solid needles or spicula, scattered around the central capsule in the calymma. The structure of the unicellular soft body is quite the same as in the *Thalassicollida*; it differs from these only in the possession of the extra-capsular skeleton. All needles of this skeleton are solid siliceous spicula, never hollow, as in the similar *Cannorhaphida* among the PHÆODARIA. In the special structure and form of the skeleton the *Thalassosphærida* agree perfectly with the well-known, colony-building *Sphærozoida*; they differ from these only by their hermit-like life and by some peculiarities derived from this solitary development.

The oldest known form of this family is probably the first Radiolarian, observed in the living state, described in 1834 by Meyen as *Physematium atlanticum* (see p. 35). A second form was figured in my Monograph (1862) as *Thalassosphæra bifurca* (p. 260, Taf. xii. fig. 1). A third form was there described under the name *Thalassosphæra morum*; this remarkable form was first observed by Johannes Müller, and figured under the name *Thalassicolla morum* (1858, Abhandl., p. 28, Taf. vii. figs. 1, 2). The same form was afterwards observed living by myself in the Mediterranean, as well as in the Atlantic, and in great numbers by the late Sir Wyville Thomson in the Pacific. The latter gave a good figure of it with some valuable remarks in his excellent work, *The Atlantic* (1877, vol. i. p. 233, fig. 51). He called this peculiar Rhizopod *Calcaromma calcarea*, on account of the very peculiar *calcareous* bodies "looking in outline like the rowels of spurs," which are accumulated in great quantity around the central capsule, in the calymma. Further investigations have convinced me that these peculiar stellate