Suborder I. ACTINELIDA, Haeckel, 1882.

Definition.—Acanthometra with a variable number of radial spines, which are commonly irregularly disposed, not according to the Icosacantha.

Family XXXIII. Astrolophida, Haeckel.

Astrolophida, Haeckel, 1881, Prodromus, p. 469.

Definition.—Acantharia with a variable number of simple radial spines, radiating within a spherical space from one common central point, which is the centre of the spherical central capsule. No lattice-shell.

The family Astrolophida comprises the simplest and the most primitive forms among all Acantharia, and may therefore be regarded as the common ancestral stock of this whole legion or subclass of Radiolaria. The acanthinic skeleton is composed of a variable number of quite simple radial spines, which are united in the centre of the spherical central capsule and radiate, piercing its walls and the surrounding jelly-veil, within a spherical space.

The first observed form of this family is the ancestral genus *Actinelius*, two different species of which I detected in 1864 in the northern Mediterranean, at Villafranca, near Nice (compare Zeitschr. f. wiss. Zool., 1865, Bd. xv. p. 364, Taf. xxvi. fig. 4). Three other species of the same genus were afterwards found by me in the Challenger collections. Whilst in this *Actinelius* all radial spines are of the same size, a new nearly allied genus, *Astrolophus* (with two species), differs from it by the different size of the radial spines, a small number of very large spines being intermingled with a very large number of small spines. In these two genera, *Actinelius* and *Astrolophus* (the true "Astrolophida" *sensu strictiori*), the number of the radial spines is quite indeterminable and their arrangement quite irregular and variable.

A third remarkable genus, *Actinastrum*, differs from these two genera in the definite number and regular order of thirty-two radial spines, and may therefore perhaps better represent a peculiar family, Actinastrida. In this genus (of which two species were observed) the thirty-two radial spines are disposed in such a regular manner that they lie in four meridian planes, and that their distal ends fall into five parallel zones. These five zones and these four planes are the same as we find in all Icosacantha (compare above, p. 717). Also the constant twenty spines of these latter are present in *Actinastrum;* but their number is here enlarged by twelve other spines missing in the Icosacantha; four of these are secondary or interradial equatorial spines, lying opposite in pairs between the four primary or perradial equatorial spines; and eight are perradial tropical spines, lying between the eight interradial tropical spines. Therefore the