Suborder II. ACANTHONIDA, Haeckel (Pls. 130-132).

Acanthonida, Haeckel, 1881, Prodromus, p. 465.

Definition.—Acanthometra with twenty radial spines, disposed according to the Müllerian or Icosacanthan law in five zones each of four spines.

Family XXXVI. ASTROLONCHIDA, Haeckel (Pl. 130).

Astrolonchida, Haeckel, 1881, Prodromus, p. 465.

Definition.—Acanthometra with twenty radial spines of nearly equal size and similar form, disposed according to the law of the Icosacantha. No lattice-shell.

The family Astrolonchida, the first and oldest of the Acanthonida, is no doubt the ancestral stock not only of this suborder but also of all Acanthophracta, *i.e.*, of all Icosacantha, or all ACANTHARIA in which twenty radial spines are regularly disposed according to the Müllerian law, forming five zones each of four alternating spines (compare above, p. 717). The Astrolonchida differ from the Acanthophracta in the absence of a complete lattice-shell, from the other two families of Acanthonida (the Quadrilonchida and Amphilonchida) in the equal size and similar form of all the spines. Probably this equality is nowhere quite perfect, since in all Icosacantha the central bases of the twenty spines exhibit originally certain slight differences of form and junction, effected by the regular disposition itself. But setting aside this slight difference, only recognisable by means of a very accurate investigation of the central junction (and in thinner spines often not at all recognisable), the twenty spines of the Astrolonchida appear perfectly equal. Therefore the four equatorial spines are not distinguished from the sixteen other spines, as is constantly the case in the two following families.

The number of genera (eleven) and of species (seventy-six) in the Astrolonchida is far larger than in the five other families of Acanthometra, and requires a distinction into three different subfamilies. (A) In the Zygacanthida the form of the radial spines is quite simple, without apophyses or transverse processes; (B) in the Phractacanthida each spine bears two opposite apophyses (rarely two longitudinal rows of these opposite apophyses); (C) in the Stauracanthida each spine bears a cross of four apophyses, opposite in pairs (rarely four longitudinal crossed rows of apophyses, opposite in pairs). The Phractacanthida and Stauracanthida appear as two divergent branches of the pedigree, derived independently from the common ancestral stock of Zygacanthida.

In the Zygacanthida, constantly devoid of apophyses, we can distinguish only three genera, characterised by the different fundamental form of the radial spines; these are:—(1) *Acanthometron*, with cylindrical or conical spines (without edges); (2) *Zygacantha*, with compressed and two-edged spines; (3) *Acanthonia*, with four-edged, prismatic or pyramidal spines. The transverse section of the spines is in the first case