

more, certain important forms of Stephoidea (*Cortina*, *Cortiniscus*, *Stephanium*, *Stephaniscus*, &c.), which have a characteristic combination of the sagittal ring and basal tripod, may be immediately derived from such forms of Plectoidea as *Plagoniscus cortinarius*, *Plagiocarpa procortina*, *Plectaniscus cortiniscus*, &c. On the contrary, those Stephoidea and Cyrtoida in which the basal tripod is wanting can only be derived from the Plectoidea by the assumption that this structure has disappeared in consequence of phylogenetic degeneration. The monophyletic derivation of the NASSELLARIA from the Plectoidea has more internal probability than that from the Stephoidea, since it is easier to suppose that the Cortinida (*Cortina*, *Stephanium*, &c.) have been derived from the Plectoidea (*Plagoniscus*, *Plagiocarpa*) than the converse. This view is the basis of the hypothetical tree shown in § 180.

184. *Ascent of the Nassellaria from the Stephoidea.*—The monophyletic hypothesis (No. 1, p. 893) which regards the primary sagittal ring as the common starting point of the skeleton in all NASSELLARIA, starts from the simplest forms of Stephoidea (*Archicircus*, *Lithocircus*, &c., Pl. 81). All Stephoidea and Spyroidea may be immediately derived from these, as also the majority of the Cyrtoida and probably of the Botryodea. Those numerous forms of the last two groups, however, which possess no trace of a sagittal ring, can only be derived from the former by the supposition that the latter has completely disappeared in consequence of gradual phylogenetic degeneration. The same holds true also of the Plectoidea, although certain forms (e.g., *Plagiocarpa procortina*, Pl. 91, fig. 5; *Plectaniscus cortiniscus*, Pl. 91, fig. 9) appear to indicate the commencing formation of the sagittal ring by the concrescence of two branches, which approach each other from the upper part of the apical rod and the ventral part of the basal rod. In any case, it is a fact of great phylogenetic significance, that the primary sagittal ring in the cephalis of the Cyrtoida shows all conceivable stages of degeneration (compare Bütschli, L. N. 40, 41, as well as the general account of and critical comparison of the NASSELLARIA, pp. 889–895, &c.).

185. *Ascent of the Nassellaria from the Cyrtoida.*—The monophyletic hypothesis (No. 3, p. 894) which regards the latticed cephalis as the common point of origin of all the skeletons of the NASSELLARIA, starts from the simplest forms of the Cyrtoida, that is, from the Cyrtocalpida or eradial Monocyrtida (*Archicorida*, *Archicapsida*, Pls. 51, 52, 98). All Cyrtoida and Botryodea may be regarded as divergent forms of these monothalamous Cyrtoida; the polythalamous simply by the addition of fresh joints at the basal pole, the triradiate and multiradiate by the development of three or more apophyses. The origin of the sagittal ring (which presents every stage of development and degeneration in the Cyrtoida) may be regarded as a mechanical thickening of the latticed plate in the sagittal circumference of the cephalis. By stronger develop-