

195. *Phæocystina and Phæoscina*.—Whilst the malacoma of all PHÆODARIA possesses the characteristics of the legion, and hence justifies the assumption of a monophyletic origin, the skeleton, on the other hand, shows in the different groups such manifold and fundamental variations that a polyphyletic origin of the latter is indubitable. Different Phæodinida have commenced the formation of the skeleton independently, and it has progressed in different directions. In the *Phæocystina* it remained incomplete and led to the formation of various Beloid skeletons, whilst the *Phæoscina* developed complete lattice-shells. Both of these divisions too are to be regarded as polyphyletic, since the skeletal forms of the different groups cannot be derived without violence from a common primitive form.

196. *Phæocystina with a Beloid Skeleton*.—The order *Phæocystina* includes all PHÆODARIA which have no complete lattice-shell; it contains, firstly, the skeletonless Phæodinida (the common stem-group of the legion), and secondly, the Phæacanthida, or PHÆODARIA with a Beloid skeleton (§ 115). The latter are divisible into several very different groups (at least two or three) which are probably different in origin. The Aulacanthida (Pls. 102–105) form radial tubes which perforate the calymma, their proximal end resting upon the surface of the central capsule, whilst the distal extremity projects freely outwards. The skeleton of the Cannorrhaphida, on the other hand, is composed of many separate portions which are never radially arranged but are either placed tangentially to the surface of the calymma or scattered irregularly in its gelatinous mass. Furthermore, in the three subfamilies of which this family is composed, the individual skeletal portions are so different that they have probably arisen independently of each other; in the Cannobelida they form cylindrical tangential tubes (Pl. 101, figs. 3–5), in the Catinulida flat basin or cap-like structures (Pl. 117, fig. 8), in the Dictyochida hollow rings, from which small pyramids are developed by unilateral formation of lattice-work (Pl. 101, figs. 9–14; Pl. 114, figs. 7–12).

197. *Phæosphæria with a Sphæroid Skeleton*.—The order *Phæosphæria* includes those PHÆODARIA which possess a spherical (sometimes slightly modified) lattice-shell without the characteristic aperture of the *Phæogromia*. They have probably arisen independently of these, though they may have been derived from the Castanellida by loss of the shell-aperture, which was present originally. The four families which we have distinguished among the *Phæosphæria*, are so different in the structure of their lattice-shell that their phylogenetic connection is doubtful. In the Orosphærida (Pls. 106, 107) and the Sagosphærida (Pl. 108) the whole lattice-shell consists of a single piece and is unjointed (without astral septa); in the former it is very firm and massive, with thick laminated trabeculæ and polygonal meshes; in the latter it is very delicate and brittle, with filiform trabeculæ and large