triangular meshes. On the other hand, the voluminous shell of the Aulosphærida (Pls. **109–111**), and of the Cannosphærida (Pl. **112**), is characterised by a very peculiar system of joints; it is composed of numerous separate cylindrical tubes, which are placed tangentially and united at the nodes by stellate partitions or astral septa. The Cannosphærida possess further a simple central Cyrtoid shell, connected with the outer jointed shell by hollow radial trabeculæ. Since many Aulosphærida possess rudiments of such centripetal trabeculæ it is possible that these latter have been derived from the former by the loss of the central Cyrtoid shell; the formation of this monaxon shell perhaps indicates descent from the Phæogromia (Castanellida).

198. *Phæogromia with a Cyrtoid Skeleton.*—That order of the PHÆODARIA which we designate Phæogromia, contains many very different forms, all agreeing in the possession of a Cyrtoid skeleton, or a monaxon lattice-shell, which has a large aperture at one pole of its vertical main axis (§ 123). This Cyrtoid skeleton is sometimes ovoid or conical, sometimes lentiform or helmet-shaped, sometimes polyhedral or almost spherical. Although the principle of its structure is simple and often very like that of the Monocyrtida among the NASSELLARIA, yet the structure of the wall and of the apophyses is so different in the various groups of the Phæogromia, that the order is probably polyphyletic, and its Cyrtoid shells have arisen independently of each other. Only in the Castanellida (Pl. **113**) does the shell-wall usually consist of simple lattice-work; in the Challengerida, on the other hand (Pl. **99**), it has an extremely fine Diatom-like structure; in the Medusettida (Pls. **118–128**) a peculiar alveolar structure, and in the Circoporida (Pls. **114–117**) and Tuscarorida (Pl. **100**) it possesses a characteristic porcellanous constitution (with tangential spicules in a porous cement-mass); in the latter of these groups the surface is smooth, in the former peculiarly tabulate; the two families have also different stem-forms.

199. *Phæoconchia with a Conchoid Shell.*—The order Phæoconchia (Pls. **121–128**) is separated not only from all other PHÆODARIA, but also from all other Radiolaria, by the possession of a bivalved shell resembling that of a Lamellibranch; the two valves of this Conchoid skeleton are to be interpreted as dorsal and ventral (§ 128). Probably these bivalved shells are independent products, but possibly they may have been formed by the bisection of a simple spherical lattice-shell; in the former case the Phæoconchia would be directly descended from the Phæodinida, in the latter from the Castanellida. The three families which we have distinguished among the Phæoconchia, probably constitute a connected stem, the most primitive group of which are the Concharida (Pls. **123–125**). From these the Cœlodendrida (Pls. **121, 122**) have next arisen by the formation of a "galea" upon the apex of each valve, and the growth of hollow tubes from this helmet-like structure. Finally, the Cœlographida