

show a peculiar alveolar structure, numerous small compartments being enclosed between two parallel plates. In the Circoporida (Pls. 114–117) and Tuscarorida (Pl. 100) the opaque porcellanous shell has a peculiar cement structure (§ 104), and the lattice-structure is confined for the most part to characteristic rings of pores at the base of the hollow tubes, which arise from the shell. The most peculiar lattice-work, however, appears in the segmented shell of the Aulosphærida (Pls. 109–111) and Cannosphærida (Pl. 112). In the former the large meshes of the lattice-work are usually subregular and triangular, in the latter polygonal; the trabeculæ are hollow cylinders, filled with jelly, and containing usually a central axial thread. In each nodal point of the lattice, in which three or more tangential tubes meet, these are separated by stellate or astral septa.

135. *Radial Spines of the Skeleton.*—The skeleton in the great majority of Radiolaria is armed with radial spines, which are of great importance in the development of their general form and of their vital functions. From a morphological point of view the number, arrangement, and disposition of the spines is usually the determining factor as regards the general form of the skeleton. Physiologically they discharge distinct functions, as organs of protection and support; they act also, like the tentacles of the lower animals, as prehensile organs, since their points, lateral branches, barbed hooks, &c. serve to hold fast nutritive materials. In general main-spines and accessory spines may be distinguished in most Radiolaria; the former are of pre-eminent importance in determining the figure of the skeleton; the latter are merely appendicular organs. The main-spines present such characteristic and important differences in the various legions of Radiolaria that they must be considered separately.

136. *Radial Spines of the Spumellaria.*—The radial spines, which exhibit most manifold variations in the large order Sphærellaria, present characteristic differences in its four suborders. In the Sphæroidea their number and disposition serve for the separation into families (p. 59); the Cubosphærida (Pls. 21–25) always possess six radial main-spines, which stand opposite to each other in pairs and lie in three diameters of the shell, which are at right angles to each other and correspond to the axes of the regular crystallographic system. The Staurosphærida (Pl. 15) have four spines, which form a regular cross and stand opposite to each other in pairs, in two axes at right angles. The Stylosphærida (Pls. 13–17) show only two main-spines, which are opposed to each other in the vertical main axis of the body. Finally, the Astrosphærida (Pls. 18–20, 26–30) are characterised by a larger and variable number of radial spines (eight, twelve, twenty or more), sometimes regularly, sometimes irregularly arranged. Among the other Sphærellaria the Prunoidea (Pls. 13–17, 39, 40) are most allied to the Stylosphærida with two opposite main-spines; the Discoidea (Pls. 31–47), on the other hand, to the Staurosphærida with four crossed spines; there exist, however, Discoidea with two opposite, three marginal, or numerous radial main-spines; it is