lead into the six connected tangential tubes. In *Aulosphæra* and *Auloscena*, where a radial spine arises at each nodal point, its axial filament arises from the centre of the star, and is usually prolonged on the inside into a free centripetal beam (Pl. 109, figs. 6, 7; Pl. 110, figs. 4, 6). This centripetal beam is a slender, very thin, conical tube (often with a six-sided pyramidal base) and perhaps of great morphological interest as a rudiment, being homologous to the hollow radial beams which connect the two concentric spheres of the Cannosphærida. Possibly the Aulosphærida have been derived from the latter by loss of the inner shell and reduction of the radial beams; the centripetal beams which are found in many (but not in all) Aulosphærida, may be the last remnant of those radial beams. They contain also an axial filament, as a direct internal prolongation of that of the external radial spine. The axial filaments of the radial spines are usually connected with their thin wall by a variable number of scattered transverse threads, or sometimes even by thin transverse septa (Pl. 110, figs. 4–7, &c.). This structure corresponds to the similar axial filaments and their thin filiform transverse branches which we have found in other PHÆODARIA, *e.g.*, in the Tuscarorida and Circoporida.

The Aulonida (with polygonal meshes) exhibit in general the same structure as the Aularida (with triangular meshes). But whilst in the latter usually six tangential tubes are united at each nodal point, in the former only three or four tubes become united. Therefore also the number of the small sutural partitions or astral septa, which radiate from the central openings of the nodal cavity, is six in the latter, three or four in the former. Correspondingly three or four small pores lead from the nodal cavity into the surrounding tangential tubes.

The true nature of the nodal points, and the intimate structure of the different parts here united, is a matter which it is very difficult to explain. It is a certain fact, well established by hundreds of observations, that in the complete and well-preserved skeletons which are perfectly purified by fire, or by hot mineral acids, and afterwards dried, all the tubes of the skeleton, the tangential as well as the radial cylinders, become filled up by air. Each tube contains usually one large cylindrical air-bubble, with two hemispherical ends. But the air-bubbles of the neighbouring tubes are completely separated one from another by the thin astral or sutural septa, and the air-bubble of the radial tubes is also separated from the former. The central cavity of each nodal point is therefore surrounded in the Aularida by six, in the Aulonida by three or four separate cylinders of air. This fact seems to be explained only on the supposition that each single tube has two terminal pores or fissures, which open into the two nodal cavities on its two ends. The radial tubes must also possess at least one small opening, probably on their base, and probably they have another on their distal apex. In no other way can it be explained, that in all complete, well-preserved and purified skeletons, each single tube constantly becomes easily filled by an air-bubble after drying.

In the living Aulosphærida the cavities of all tubes are filled up by a jelly-substance,