

up by air, when purified by hot mineral acids and afterwards dried, cannot be explained. I suppose that the jelly contained in the cavity of the tubes remains in constant connection by those openings with the jelly of the surrounding calymma.

The distal ends of the radial tubes exhibit in the Aulacanthida the greatest variety in the production of different branches and capturing apparatus, and this serves for the distinction of the genera and subgenera here described. In two genera only (in *Aulactinium* Pl. 101, figs. 6–8; and in *Aulacantha*, Pl. 105, fig. 16), the distal ends are simple, not branched. In the four other genera they are armed with terminal branches, which are usually arranged in elegant verticils. The greatest variety in the formation of these verticils is developed in *Aulographis* (Pl. 103). The single branches of the terminal verticils are here simple, whilst in the closely allied *Auloceras* they are forked or elegantly ramified (Pl. 102). *Aulospathis*, the biggest of all Aulacanthida, is distinguished by the possession of a verticil of lateral branches, placed beyond the terminal verticil, immediately above the veil of tangential needles (Pl. 104). *Aulodendron*, finally, possesses lateral and terminal branches, which are irregularly scattered.

The branches of the radial tubes are rarely straight, usually more or less curved, either simple or again ramified. Their surface is either smooth or armed with small spines or recurved teeth, often elegantly dentated or serrated (Pl. 103, figs. 20–27; Pl. 105, figs. 7–13). Their distal ends are either simply pointed or armed with a spathilla, or a small crown of verticillate, usually recurved teeth (Pl. 104, figs. 4–17). The variety and elegance of these minute armatures are very interesting, the more so as they occur in very similar and analogous forms among the Aulosphærida, the Cœlographida, and other PHÆODARIA.

The *central capsule* of the Aulasphærida and its large nucleus (“*Binnenbläschen*”), as well as the surrounding alveolate calymma (“*Alveolen-Hülle*”), and the enclosed dark phæodium (“*dunkles Pigment*”) were first described in my Monograph (1862, *loc. cit.*, p. 362). Their minute structure has been examined afterwards very accurately by R. Hertwig (1879, *loc. cit.*, p. 95). The numerous well-preserved preparations of the Challenger (stained with carmine and preserved in glycerine) which I could examine, confirmed in all respects the detailed description of Hertwig (compare Pl. 102, fig. 1; Pl. 103, fig. 1; Pl. 104, fig. 1).

The spherical or subspherical central capsule is usually slightly depressed in the shortened main axis. Its diameter is usually between 0·1 and 0·3, rarely less than 0·08 or more than 0·4 mm. Its outer membrane (*e*) is thick and double-contoured, separated by a clear interval from the very thin but firm inner membrane (*i*). The large astropyle, or the main-opening on the oral pole of the main axis, is closed by a large, convex, radiate operculum (*o*), from which arises a short tubular proboscis. On both sides of the opposite aboral pole (to the right and left) are two conical parapylæ or secondary openings (*u, u*). The space between the inner membrane of the capsule and