four separate tubes or four pairs of tubes arise from each galea, viz., two from the two anterior corners of the basal triangle, one from the posterior corner, and one from the apex of the galea. It is possible that this difference in the origin, furcation, and number of the hollow radial tubes may be employed for the distinction of genera of Cœlodendrida, in the same manner as it is employed in the next following family, the Cœlographida. But I have not been able, in spite of numerous and accurate examinations, to demonstrate in the former the same regularity in number and arrangement of the tubes as in the latter. It seems that these relations here are very variable, even in one and the same species, and not yet fixed.

It is, however, probable, on the other hand, that the primary tubes (all or partly) are identical in the Cœlodendrida and Cœlographida. This is most probably the case with the posterior odd or caudal tube, which seems to be never wanting, and in both families is developed in the form of a dichotomous brush (never in the form of a verticillate style). Possibly also the two paired pectoral tubes are homologous in both families.

The hollow tubes are perfectly simple and unbranched only in one genus, *Cælodoras*, which is probably the common ancestral form of both families, and which may have been derived from *Concharium* by development of a galea and tubes on the sagittal apex of the valves. All the other Cœlodendrida have branched spines, and the ramification is constantly dichotomous, or repeatedly forked. There never occur in this family those characteristic "styles," or verticillate prolonged tubes, which we find in all Cœlographida. Usually the cylindrical tubes are slightly curved and forked even near their base. The furcation is repeated a variable number of times in the different species. In the largest species each tube becomes a brush with more than one hundred terminal bristles.

We divide the Cœlodendrida into two subfamilies, according to the different development of the distal branches of the hollow tubes. In the Cœlodorida all the branches of the tubes remain free and are never connected by anastomoses, so that the surface of the bivalved skeleton is protected by the free radial distal branches of the tubes. In the larger species of *Cælodendrum* (*e.g.*, *Cælodendrum furcatissimum*, Pl. **121**, fig. 1), the numerous branches of the dichotomous tubes form a dense thicket, similar to that in the Cœlotholida.

In the second subfamily, Cœlodrymida, the distal branches of the tubes are connected by numerous anastomoses, and compose either a simple lattice-plate on the surface of the skeleton (*Cælodrymus*), or a thicker envelope of spongy framework (*Cælodasea*). The lattice-mantle so produced is always bivalved, and its two outer hemispherical valves (dorsal and ventral) correspond exactly to the two inner valves, from which arise the hollow tubes. The free margins of the two external mantle-valves come externally into contact in the equatorial plane of the body, in which the girdle-fissure lies internally between the two central shell-valves. The free edges