

to be contrasted with the corresponding nodes of most other Dictyonina in possessing, as a rule, *no* freely projecting radial ray, but simple slightly arched extremities (Pl. CIII. fig. 3).

The dermal skeleton contains hypodermal hexacts sometimes mixed with pentacts, and provided with smooth rays which are occasionally roughened at the extremities. Of these the distal ray, which is absent in the pentacts, is shortest, often simply rounded or even terminating in a small swelling, while the four tangentials which run out to a point, and the much longer proximal ray always taper to a point. On the outer extremities the hexact hypodermalia support a floriform-like discohexaster in which each of the short principal rays bears seven (more rarely fewer) S-shaped terminals, which run out externally into a thickened hemispherical transverse disc with a notched margin (Pl. CIII. figs. 7, 8, 9). The spicules which constitute the gastral skeleton have an exactly similar form and disposition (Pl. CIII. fig. 3).

Scattered throughout the dictyonal framework of beams I have also to note small simple hexacts with somewhat rough uniformly tapering rays (Pl. CIII. fig. 4), and oxyhexasters with short principals and long S-shaped pointed terminal rays (Pl. CIII. figs. 5, 6). Since there are two or three terminals on each principal ray, and since each of the six principals may either remain simple and undivided, or may be divided into terminals, all transitions occur between a hexact with five undivided somewhat rough rays and only the sixth ray forked, and an oxyhexaster in which each of the principal rays is divided into three terminals, giving a total of eighteen (Pl. CIII. fig. 5).

Genus 5. *Aulocystis*, n. gen. (Pl. CIV.).

History.—In his sponge-system Gray¹ added to the description of *Myliusia callocyathus*, the following brief notice:—"There are two smaller specimens in the British Museum which probably belong to the same species. The smaller one was collected by the Rev. L. Guilding at St. Vincent in 1840, and the other was received from the West Indies by Mr. Scrivener in 1842."

These specimens, which were not further studied by Gray, were subsequently examined by Bowerbank, who, in 1869,² gave the following account of them. While he maintained that the specimen procured by Mr. Scrivener in 1842 agreed in structure with *Myliusia* (*Iphiteon*, Bowerbank) *callocyathus*, Gray, "he found that the specimen collected by the Rev. L. Guilding at St. Vincent differed widely in the structure of its skeleton from either *Iphiteon*, Bowerbank, or *Dactylocalyx*. He proposed, therefore, to apply Dr. Gray's generic title *Myliusia* to this species, instead of to *Myliusia* (*Iphiteon*, Bowerbank) *callocyathus*, Gray. He accordingly named the form *Myliusia grayi*, and briefly diagnosed it as follows:—"Sponge sessile, massive. Dermal surface unknown. Surface

¹ *Proc. Zool. Soc. Lond.*, 1867, p. 506.

² *Proc. Zool. Soc. Lond.*, 1869, p. 335.