

municates on the one hand with the funnel-shaped gastral cavity, and on the other hand opens laterally to the exterior by numerous radially disposed and occasionally connected tubes. Between the latter there is a tolerably wide intercanalicular system, which does not open, however, into the gastral space. The polyhedral dictyonal framework, which penetrates and supports the much-folded plate or tube-wall, consists of firm beams, which are beset with numerous transverse rows of small conical tubercles, and united in slightly thickened nodes of intersection, beset with broad tubercled warts. On the dermal and gastral surface of the dictyonal framework there are specially thick nodes of intersection, which never exhibit freely projecting spherical bosses, as in most of the other Dictyonina. The loose spicules of the parenchyma are small lank oxyhexacts, further, oxyhexasters with short principal rays and long S-shaped terminals, disposed in perianth-like fashion, and, lastly, discohexasters with short principals, each with a varying number of long S-shaped externally thickened terminals, forming a tuft and bearing marginally toothed terminal discs. The dermal and gastral skeletons contain pentacts or sword-shaped hexacts with rounded ends, and with a floricomelike discohexaster of the above type, usually attached to the freely projecting radial ray. West Indies; Little Ki Island, 140 fathoms; Timor, 200 fathoms; St. Thomas, West Indies.

Genus 5. *Aulocystis*, n. gen.

The body consists of an anastomosing system of tubes. The dictyonal framework encloses square meshes, *i.e.*, cubical spaces, and consists of tubercled beams, in which the nodes of intersection exhibit twelve oblique rod-like buttresses, extending between the six intersecting beams, so that the sides of a regular octahedron are represented. The parenchyma contains loose oxyhexasters and discohexasters. Oxyptentacts occur in the dermal and gastral skeleton. Graphiohexasters are found beneath the skin.

Species 1. *Aulocystis grayi*, Bowerbank.

The octahedral edges of the ("perforate") nodes of intersection in the dictyonal framework are properly not formed of simple, cylindrical, obliquely disposed buttresses, but the external margins of plates which stretch between the intersecting beams, and are transversely perforated by several round pores of various size. Over the free bounding surface of the whole dictyonal framework these plates are so much developed, especially in the tangential direction, that they form here and there, by fusion, a perforate siliceous membrane. The parenchyma contains numerous discohexasters with short principal rays of different sizes, and with a variable number of terminals; also small isolated oxyhexasters, with graphiohexasters here and there under the skin. Discohexasters, with medium-