

tudinal canals, which run either within the ectosome, or immediately below it; from these longitudinal canals, or sometimes without their intervention, but in direct continuation of the poral canals, others descend perpendicularly into the sponge, crossing the wall transversely, and traceable nearly as far as the oscular surface. The canals are crossed by vela, especially well marked near their origin.

The ectosome (Pl. XXXIV. fig. 16) is about 0·24 mm. thick over the oscular and poral faces, but at the margin of the sponge it increases to 0·48 mm. in thickness. It consists of ordinary collenchyma; in places, however, especially adjacent to the canal walls, containing numerous oval vesicles, from 0·02 to 0·028 mm. in diameter, empty of contents, except for the presence of a small spherical nucleus, 0·004 mm. in diameter, inclosing a minute spherical nucleolus. By the coalescence of several such vesicles a cavernous collenchyma is produced here and there. Besides the branching collencytes, the collenchyma contains small fusiform cells with long tails like those described in *Thrombus challengeri*.

The mesoderm of the choanosome is a sarcenchyma; it contains numerous amoeboid cells irregularly dispersed through it, but most abundant near the ectosome. They stain more deeply with reagents than the surrounding tissue; their average diameter is about 0·03 to 0·04 mm., and they present, embedded in their granular protoplasm, an oval nucleus, 0·0158 by 0·0118 mm. in diameter, within which is a very evident deeply stained spherical nucleolus, 0·005 mm. in diameter.

The flagellated chambers are small, 0·0178 mm. long, by 0·0237 mm. broad; they are produced into a narrow aphodus which varies in diameter, measuring on an average about 0·0118 mm.

The development of the desmas follows the usual course, the young forms occur most numerously near the inner surface of the ectosome and about the walls of the canals; no clear evidence of a spicule cell was obtainable, though in two instances a flattened vesicle, containing a spherical granule and looking very like a nucleus with its nucleolus, was observed lying on the side of a young desma, the general surface of which was covered with a thin film of granular protoplasm. The nucleus, if it be such, measured 0·0158 mm. in diameter, the nucleolus 0·004 mm.

*Corallistes masoni* (Bowerbank) (Pl. XXXIV. figs. 1-13).

*Dactylocalyx masoni*, Bowerbank, Proc. Zool. Soc. Lond., p. 91, pl. vi. figs. 1-4, 1869.

„ „ Carter, Ann. and Mag. Nat. Hist., ser. 4, vol. xii. p. 437, 1873.

*Corallistes* „ Zittel, Abhandl. d. k. baier. Akad. d. Wiss., Bd. i. p. 103, 1878.

*Sponge* (Pl. XXXIV. fig. 1).—An irregular flabelliform or folded, sometimes proliferating plate, with a rounded sinuous margin; erect, attached by an incrusting base. Surface smooth, even or dimpled. Oscules scattered on the inner face, situated on the