

*Spicules*.—I. Megascleres. 1. *Oxea*, 25 mm. in length, possibly as long as the cloacal tube, viz., 55 mm.

2. *Orthotriænes*, rhabdome long, lying longitudinally in the wall of the central canal; cladi, two paired and shorter lying horizontally in the wall of the central canal, the third unpaired and longer extending radially through walls of adjacent peripheral canals up to the dermal membrane.

3. *Modified diænes*, rhabdome long, disposed as in the case of the orthotriænes; cladi unequal in length, one directed like the unpaired cladius of the orthotriæne, the other bent upwards, continuing the direction of the rhabdome.

4. *Triods*, these represent the cladome of an orthotriæne, in which the rhabdome has entirely disappeared; the cladi or actines are arranged like the cladi of the orthotriæne.

II. Microsclere. 5. *Spheraster*, with numerous short conical actines, 0.007 to 0.01 mm. in diameter. These form an almost continuous layer beneath the outer epithelium.

*Colour*.—Chalky-white when dry.

*Habitat*.—North New Zealand; 45 fathoms (expedition of the "Gazelle").

*Remarks*.—This species is founded on specimens of the cloacal tube of a *Tethyopsis*, which evidently very closely resembles, if indeed it is not identical with, *Tethyopsis columnifera*, Stewart. The tube differs from that of the latter in being traversed by nine instead of four canals; but this may merely represent a difference in age, for in *Disyringa dissimilis*, Ridley, stages of four, eight, and sixteen canals are known to exist.

This explanation is consistent with the greater diameter of Marshall's specimens, which measure 55 mm. in length by 15 mm. in width, just twice the width of that in Stewart's specimen. The nine canals of Marshall are possibly reducible to eight, since the axial canal may be merely a cleavage fissure.

In comparing the cloacal tube with that of *Disyringa dissimilis* in the stage of eight, one will observe that the eight canals of the latter are of unequal value, four are primary and four secondary, and the latter are nearer the periphery than the former. This is not the case in Marshall's specimens, in which all the eight tubes are of equal value, and all radiate from the centre to the circumference.

There appears to be greater variety in the cloacal megascleres of *Tethyopsis radiata* than in *Tethyopsis columnifera*; but this may be explained by the fact that, owing to the existence of only a single specimen of the latter, it has not been so completely examined.

Another explanation is also possible. Marshall alludes to the difficulty of obtaining preparations of the spicules of the sponge; and though I think it unlikely, yet I cannot avoid making the suggestion that some of the forms figured by Marshall may be fragments of orthotriænes.