

1.07 by 0.006 mm.; cladi curving from the rhabdome at a wide angle and then bending nearly into parallelism with it, 0.048 mm. long; chord 0.09 mm.

5. *Radical anatriæne*, a long, slender rhabdome, with a stout cladal end, and three stout conical cladi projecting from it. Rhabdome 10.33 by 0.0175 mm.; cladi 0.09 by 0.012 mm.; chord 0.123 mm.

II. Microscleres. 6. *Plesiaster*, small, with slender actines; a single actine 0.143 by 0.0118 mm; this spicule is present in considerable numbers.

7. *Metaster*; of the usual characters; the axis is about 0.004 to 0.008 mm. long, the spines 0.032 by 0.004 mm.

8. *Spiraster*, spire stout, 0.0118 mm. long, with spirally arranged spines, 0.0158 mm. long, smooth or roughened, sharply pointed or slightly tylote; total length 0.039 mm.

*Colour*.—Greyish-white.

*Habitat*.—Station 164c, off Sydney, June 13, 1874; lat. 34° 19' S., long. 151° 31' E.; depth, 400 fathoms; bottom, green mud; bottom temperature, 40°.

*Remarks*.—Three specimens of the sponge were dredged, one larger and two smaller; all possess the same characteristic form, which is also met with in specimens, probably referable to *Thenea muricata*, Bwk., from the North Atlantic. The largest specimen is 35 mm. wide by 19 mm. high, and 19 mm. broad, or including the spicular fringe to the oscule and special poriferous recess 33 mm. broad. The two smaller specimens are about 17 by 14 mm. wide and 16 mm. high.

The ectosome is an extremely thin dermal layer except where it forms the pillars to the subdermal cavities, where it attains a thickness of from 0.06 to 0.12 mm., and over the summit of the sponge, where it forms an irregular layer from 0.05 to 0.13 mm. thick. A local thickening also takes place about the margins of the poriferous recess; the poriferous membrane presents the usual structure.

The choanosome consists chiefly of the flagellated chambers; collenchyma is scanty, though not so deficient as in *Thenea delicata*; it forms a wall to some of the canals, as much as 0.08 mm. thick. The canals are also provided with vela. The flagellated chambers are mostly spherical, but frequently they lie so close together as to become polygonal by appression. The plesiasters which lie among them are so disposed that their rays lie tangentially between adjacent chambers. The chambers are not large, from 0.05 by 0.055 mm. to 0.063 by 0.063 mm.: the apopyle is about 0.017 mm. in diameter. A quantity of granular stained material occurs in many of the chambers and is abundant in the canals. I take this to be ingested food material.

The spirasters are most abundant beneath the outer epithelium, the metasters in the choanosome; both are highly variable in form and dimensions.

*Parasite*.—A curious instance of commensalism occurs in this sponge; situated in