

it is probably not much over 0.06 mm. Protocladus 0.052 by 0.021 mm.; deutero-cladus 0.036 mm. long; tritocladus 0.0276 mm. long; tetracladus 0.0276 mm. long. The dichotomy of the cladus is not confined to a single plane.

II. Microscleres. 3. *Microxea*, smooth, more or less fusiform; 0.118 by 0.004 mm.

4. *Microxea*, trichose, covered with minute, erect spines; 0.0276 mm. long.

5. *Spiraster*, minute; spines of hair-like fineness; 0.0118 mm. long.

*Habitat*.—Station 192, September 26, 1874; lat. 5° 49' 15" S., long. 132° 14' 15" E.; depth, 140 fathoms; bottom, blue mud.

*Remarks*.—The mesotriænes of this sponge occur isolated in the insoluble residue left after treating with hydrochloric acid a fragment of limestone on which a species of Lithistid is seated. For further information regarding this sponge I am indebted to the kindness of Mr. Carter, who presented me with two slides, labelled *Samus quadripartita*, and bearing mounted fragments of sponge tissue containing the characteristic mesotriænes of *Triptolemus* and the associated microscleres. The spined microxeas form a loose felt similar to that of *Pacillastra*, the mesotriænes lie with the cladi on the whole parallel to the surface of the sponge, and the actines directed at right angles to it. Other spicules occur with those of *Triptolemus*, notably a curious rhabdus or style, bent at the blunt end at right angles like a trenail; this belongs to a sponge named by Carter *Microciona intexta*, var. This is interesting, because a precisely similar spicule occurs along with the mesotriænes of my slides, and it would hence appear probable that Carter's specimens, the habitat of which is unknown, were obtained from near the same locality as those brought home by the Challenger. The dimensions given for the mesotriæne are taken from the largest spicule I could find; in other instances different measurements were obtained, the deutero-cladus being sometimes longer than the protocladus—in one instance it measured 0.055 mm., and the latter only 0.035 mm. The dichotomy is not always repeated four times; in many instances the spicule is only tricladosed, and it frequently happens that two cladi may be tricladosed and the third tetracladose only on one side, *i.e.*, tetracladi only appear at the ends of two of the tritocladi arising from the same deutero-cladus, the tritocladi of the other deutero-cladus not branching further.