

5 and 20 mm. The branches are slightly curved, and gradually taper from 3 or 2 mm. to 0.5 mm. or less in thickness; the conical end also tapers gradually.

*Internal Structure.*—Transverse and longitudinal sections through the branches of the arborescent sponge (Pl. III. figs. 2, 3) exhibit a loose framework of the symbiotic Hydroid (Spongoxenia), and between its meshes are the branches of the canal-system of the sponge and its skeleton, which is composed of Radiolarian ooze and of spongin-fibrillæ, connected by the scanty clear maltha. The structure of the canal-system, and especially the disposition of the flagello-chambers, unfortunately, could not be made out, owing to the bad state of preservation of the tissues. The woolly surface of the branches is porous, but they have no distinct dermal membrane.

*Fibrillæ.*—The fine spongin-fibres are scantily developed, and form an irregular very loose framework throughout the whole maltha of the mesoderm. They are for the most part not arranged in bundles, but isolated and very loosely interwoven in all directions, in the medullary as well as in the cortical substance. Ramifications of the fibrillæ were not observed; their usual diameter is between 0.001 and 0.003 mm., often less, rarely more (figs. 2, 3, *f*). The fibrillæ are imbedded in the scanty clear maltha which connects the foreign bodies (*r*).

*Xenophya.*—The foreign bodies compose the main mass of the sponge (probably 90 to 95 per cent. of the solid substance); they are almost exclusively siliceous shells of Radiolaria; rarely small fragments of Hyalospongiæ or Hexactinellidæ are found among the Radiolaria (fig. 4).

*Symbiontes.*—The tubular hydrorhiza of the symbiotic Hydroid, which supports the sponge and all its branches, forms an irregular network with large and loose meshes, usually five to ten times as long as broad; in transverse sections of the branches usually twenty to thirty or more tubes are visible, usually 0.06 to 0.08 mm. in diameter. They appear to belong to two different genera, viz., *Stylactis* (Pl. II. figs. 5–7) and *Halisiphonia* (Pl. IV. fig. 9).

*Stannoma coralloides*, n. sp. (Pl. III. fig. 5).

*Habitat.*—Tropical Pacific, Station 271; depth, 2425 fathoms; bottom, Globigerina ooze. Station 272; depth, 2600 fathoms; bottom, Radiolarian ooze.

Sponge arborescent or coral-shaped, irregularly branched (usually dichotomous), with short cylindrical branches of equal thickness, truncated or club-shaped at the distal end. Branches anastomosing and forming a network.

The reticular body of the coralliform sponge is of subglobular outline, 30 to 40 mm. high, and in the distal part about the same in breadth. The short stout stem, 3 or 4 mm. high, divides into numerous short and stout cylindrical branches, which are again