

*Spicules*.—I. Megascleres. 1. *Oxea* (Pl. XI. fig. 2), slender, cylindrical, sharply pointed, curved or undulating, 2.54 by 0.016 mm.

2. *Calthrops* (Pl. XI. figs. 3, 4); actines conical, sharply pointed, usually simple, occasionally dichotomous, sometimes irregularly branched, bent and tubercular (Pl. XI. figs. 15–19); a single actine, 0.796 by 0.0636 mm.

II. Microscleres. 3. *Centrotylote microxea*, slender, sharply pointed, surface roughened, 0.083 mm. long. These spicules are precisely similar to the corresponding ones of *Pacillastra*; they occur sparingly and locally, and may possibly have been derived from a species of *Pacillastra* (*Pacillastra incrustans*) which incrusts the poriferous surface.

4. *Microstrongyle* (Pl. XI. figs. 11–13), of variable form, sometimes prolately ellipsoidal, sometimes cylindrical, with rounded ends, and sometimes centrotylote, then navicula-like in outline, surface usually smooth, sometimes roughened; from 0.014 by 0.0046 mm. to 0.01 by 0.0052 mm. This spicule has probably been derived from a diactinose oxyaster.

5. *Spiraster* (Pl. XI. figs. 9, 10), of variable character, sometimes a true spiraster, more often a metastar or amphiarster; axis or spire slender, spines numerous, very slender; 0.0118 to 0.0158 mm. long; a single spine may attain a length of 0.006 mm.

*Colour*.—Cream-yellow.

*Habitat*.—Station 135c, Tristan da Cunha, October 17, 1873; lat. 37° 25' 30" S., long. 12° 28' 30" W.; depth, 110 fathoms; bottom, hard ground, shells and gravel.

Florida, 228 fathoms (O. Schmidt, *loc. cit.*, p. 64), and various places in the Gulf of Mexico (O. Schmidt, *loc. cit.*, p. 68). Near Cape St. Vincent, 292 fathoms, "Porcupine" Expedition, Station 24 (Carter, *loc. cit.*, p. 407).

*Remarks*.—Two specimens of this sponge were obtained; one is entire, the other subdivided into six pieces and not quite complete. The perfect specimen is that represented in the plate. It is 78 mm. wide, 150 mm. long, and 25 mm. in average thickness. The pieces of the other specimen when put together form a mass 200 by 150 mm. in length and breadth, and 90 mm. in maximum thickness.

The oscular surface in both specimens is incrustated by blue sand and various attached foreign bodies and organisms. The oscules are about 1 to 1.5 mm. in diameter. The poriferous surface, otherwise bare, is overgrown over a considerable area by a species of *Pacillastra* (*Pacillastra incrustans*), the canals of which, passing vertically through its plate-like growth, terminate immediately over the poriferous ends of the incurrent canals of the *Pachastrella* (Pl. X. fig. 15). The ectosome consists of collenchyma which is crowded with oval, not very deeply stained, cells, from 0.016 to 0.02 mm. in diameter; they consist of spherical granules, about 0.004 mm. in diameter, which lie close together, concealing the nucleus if it be present. Each granule-cell lies in a distinct cavity in the collenchyme, which consists of a clear, colourless matrix and not very easily discerned