

*Synops nitida*, Sollas (Pl. XXII.).

*Synops nitida*, Sollas, Prelim. Account, Sci. Proc. Roy. Dubl. Soc., vol. v. p. 198, 1886.

*Sponge* (Pl. XXII. figs. 1, 2).—Plate-like, thicker in the middle, thinner towards the margin. Oscules numerous, restricted to the upper surface, over which they are dispersed; each oscule is the simple mouth of an excurrent chone. Pores numerous, in sieve-like areas, forming the roofs of incurrent chones, restricted to the lower surface, over which they are closely scattered. Each sieve-like area contains but few pores, usually from two to four, sometimes more, sometimes only one. Upper surface smooth and shining, alabaster-like, partly even, partly irregularly depressed and elevated; lower surface smooth, dimpled, rising into irregular rounded swellings, rounded at the margin when it passes into the upper surface. On both upper and lower surfaces are openings which lead into cavities extending into the middle of the sponge; these cavities are lined by a thin layer of sterrasters, continued from the sterrastral layer of the cortex. Beneath the outer epithelium is a layer of small spherasters; these are immediately succeeded by the sterrastral layer, which constitutes almost the whole of the cortex. It maintains the same thickness on the oscular as on the porous face of the sponge.

*Spicules*.—I. Megascleres. 1. *Oxea* (Pl. XXII. fig. 3), fusiform, rapidly curved near the middle, variously pointed, seldom sharply; 1.25 by 0.026 mm.

2. *Orthotriæne* (Pl. XXII. fig. 4), rhabdome somewhat short, conical, not sharply pointed; cladi conical, frequently recurved close to the obtuse points, projecting outwards, and only slightly forwards. Rhabdome 1.07 by 0.0387 mm., cladi 0.183 mm. long, chord 0.358 mm. sagitta 0.05 mm.

II. Microscleres. 3. *Sterraster* (Pl. XXII. figs. 5, 8), spherical, small, 0.0516 mm. in diameter.

4. *Somal spheraster* (Pl. XXII. figs. 7, 12), a comparatively large centrum; short, thick actines, with rounded ends; 0.0135 mm. in diameter.

5. *Choanosomal oxyaster* (Pl. XXII. figs. 6, 9–11), a small centrum, and long, conical, erectly spined actines, usually few, about seven, sometimes numerous; length of a single actine 0.0197; total diameter 0.0434 mm.

*Colour*.—A faint brownish-white.

*Habitat*.—Port Jackson, Sydney, January 3, 1874; depth, 30 to 35 fathoms.

*Remarks*.—The single specimen obtained of this sponge is not quite complete, one edge being broken; it measures 130 mm. in length, in which direction it appears to be complete, 41 mm. in breadth (it was broader when perfect), and 26 mm. in maximum thickness. The smooth and shining appearance of its almost white oscular surface strikes the eye at once, and is more obvious in the specimen than the illustration. The oscules are small, none much over 0.5 mm. in diameter, and many much less; the open mouth