Genus *Dorypleres*, n. gen.

As this is the only genus I refrain from giving a diagnosis.

Doripleres dendyi, n. sp. (Pl. XLII. figs. 12–19).

Sponge (Pl. XLII. fig. 12).—An irregular hollow cylinder, with walls of unequal thickness, open at both ends. Surface hispid in places, especially near the base, elsewhere covered by a smooth shining membrane, marked by deep branching grooves, arranged in stellate groups. Oscules small, situated in the floor of the superficial grooves. Pores small, singly distributed.

Spicules.—I. Megascleres. 1. *Somal oxea* (Pl. XLII. fig. 13), fusiform, thick, straight or curved, oxeate or tornote, 2·06 by 0·097 mm.

2. *Ectosomal* (hispidating) *strongyloxea*, cylindrical, 1·12 by 0·013 mm.

II. Microscleres. 3. *Somal spheraster* (Pl. XLII. figs. 14–17), centrum somewhat small, about 0·015 mm. in diameter; actines conical, oxeate, about ten in number, sometimes more numerous, sometimes reduced to two, total diameter 0·1 mm.

4. *Ectosomal spheraster*, centrum, though absolutely smaller, relatively larger than in the preceding spicule, 0·0118 mm. in diameter; actines conical, oxeate, about eighteen to twenty in number, total diameter 0·04 mm.

Colour.—Greyish-white.

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

Remarks.—The single specimen of this sponge, which is complete, measures 45 mm. in diameter, and 37 mm. in height, the central cavity is 18 mm. wide, the wall on one side 20 mm. in thickness, on the other 7 mm.

The somal oxeas are thickly scattered through the sponge, apparently without any trace of arrangement; where they cross each other they are usually bound together by spongin. It is impossible to cut thin slices of this sponge, the spicules tearing the tissue to rags. From such observations as I was able to make, the choanosomal mesoderm appeared to be collenchymatous, and I conclude that the flagellated chambers are probably eurypylous. The somal spherasters occur throughout the sponge, but immediately beneath the skin they are supplemented by the smaller ectosomal spherasters. The pores vary from about 0·02 to 0·04 mm. in diameter. The stellate systems of grooves on the surface are remarkably similar to those which occur in the case of several Lithistid sponges.

Amongst the spicules obtained from the sponge by boiling out with nitric acid are a few small tylotoxeas (Pl. XLII. figs. 18, 19), which may possibly belong to it, but may quite as probably be foreign inclusions.