

at its edge, radiately arranged with respect to the spire; the length of the spicule does not exceed 0.02 mm., of a single spine 0.004 mm.

*Colour*.—White, with a faintly yellowish tint.

*Habitat*.—Station 150, Heard Island, February 2, 1874; lat. 52° 4' S., long. 71° 22' E.; depth, 150 fathoms; bottom, coarse gravel; bottom temperature, 35°.2.

*Remarks*.—This species is readily distinguished from *Pæcillastra (Normania) crassa*, Bwk., by the dimensions of its spicules and the characters of its canal system. The fusiform oxea (1) and the triæne (3) have twice the length and breadth of the corresponding spicules in *Pæcillastra crassa*; and the oscules are small, numerous, evenly dispersed, while in *Pæcillastra crassa* there are several somewhat large oscules congregated together. Two complete specimens and fragments of a very large one occur in the collection. Of the complete specimens, the larger is represented on Pl. IX. fig. 1. It measures 100 mm. in height, 85 mm. in breadth, and is 9 mm. thick. The other and smaller one is more irregular in form; a somewhat fan-shaped plate, irregularly undulating, raised in places into irregular ridges, and with sinuous margins. It measures 42 mm. in height, 53 mm. in width, and 4 to 5 mm. in thickness. The fragments consist of several plate-like pieces, and one in which a plate-like wall has grown from a linear attached base into a wide tube of an oval section, 72 by 43 mm. in diameter. It appears to form the basal part of a cup, of which the remaining pieces helped to form the wall; part of the sponge, however, has been lost, as I could not build the pieces together into a complete form. From the reconstruction I effected, the whole sponge would appear to have been a vase at least 160 mm. high, and 160 mm. broad. The wall is about 8 mm. in thickness. The pores, 0.09 to 0.1 mm. wide, occur several together in oval groups, each group forming a fenestrated membrane, which roofs over a circumscribed subdermal cavity—in other words, the origin of an incurrent canal; this is broken up below by numerous partitions of collenchyme, coated by epithelium, into several smaller incurrent canals. The oscules occur as single apertures, 0.16 to 0.318 mm. in diameter, in the centre of a membrane which roofs over the ends of cavities in the ectosome in which the excurrent canals terminate. This and the poriferous membrane are supported by oxeate spicules lying tangentially, and by the extended arms of the triænes, the rhabdomes of which descend through the ectosomal pillars. Beneath the epithelium of these membranes is a layer of thickly evenly dispersed spirasters, which extend up to the margin of the pores and oscules, their spines projecting beyond. Beneath these, again, microxeas occur, which tangentially surround the margins of the oscules and the poriferous areas, but do not extend to the extreme edge. The subdermal cavities of the incurrent face are irregular, winding, branching canals, from which the incurrent canals take their origin, extending transversely through the sponge-plate in the opposite direction to that of the excurrent canals, which extend inwards from the oscules. The course of both sets of canals, though