

fusiform cells are associated with them, similarly arranged. The branching processes of the collencytes also take other directions, both concentric and oblique. The processes of the collencytes can be traced into connection with the epithelial cells on the one hand, and the choanocytes and the cells of the sarcenchyma on the other. Collenchyma also forms the spicular tracts, the collencytes lying around the spicules. Near the cortex large stellate-cells, lying in vesicular cavities bounded by a definite wall, are frequent.

The flagellated chambers vary from 0.02 by 0.0237 to 0.0237 mm. by 0.035 mm.; the choanocytes are from 0.002 to 0.003 mm. in diameter at their base.

*Craniella pulchra*, n. sp.

*Sponge* subspherical, surface with numerous conules, bearing projecting spicules. Oscules, one or more in number, surrounded by longer conules than occur over the rest of the surface.

*Spicules*.—I. Megascleres. 1. *Somal oxea*, fusiform, anisoactinate, obtusely pointed at the distal end, sharply pointed and almost filiform at the proximal end, 4.6 by 0.0513 mm. in one specimen, 3.93 by 0.0513 mm. in another.

2. *Cortical oxea* fusiform, 1.2 by 0.0395 mm.

3. *Protriæne*. Rhabdome cylindrical, tapering to a filiform extremity, cladi conical; rhabdome 7.1 by 0.0225 mm. in one specimen, and 6.07 by 0.0225 mm. in another; cladi 0.125 mm. long.

4. *Anatriæne*. Rhabdome cylindrical, tapering to a filiform extremity; cladome almost conical, somewhat pointed in front; the axial fibre of the rhabdome continued into it up to its termination, *i.e.*, for a distance of 0.0158 to 0.0197 mm. past the origin of the cladi. Rhabdome 8.57 by 0.0165 mm. in one specimen, 7.678 by 0.0165 mm. in another; cladi 0.0434 by 0.0118 mm.

II. Microscleres absent.

*Colour*.—One specimen almost snow-white, the other cream-coloured with a tendency to brown.

*Habitat*.—Station 163A, off Twofold Bay, Australia, April 4, 1874; lat. 36° 59' S., long. 150° 20' E.; depth, 150 fathoms; bottom, green mud.

*Remarks*.—This sponge is very similar in most characters to *Craniella simillima*, Bwk., but is distinguished by the considerably greater size, both in length and breadth, of the oxeate spicules, and by the greater number and smaller size of the conules. There are two specimens of the species, both dredged together, but differing somewhat in general appearance. The larger, which measures 31 mm. in average diameter, has three oscules, and its conules are coarser and more rigid than those of the smaller form, which measures