

cladi 0.1 by 0.0237, chord 0.1 mm.; cladal end of rhabdome 0.021 mm. long, the axial fibre of the rhabdome extending into it 0.079 mm.

II. Microsclere. 6. *Sigmaspire* of the usual form; 0.0118 mm. long.

In young specimens the spicules are smaller, in correspondence with their size; thus, in an individual measuring 18 and 13 mm. along two diameters, the oxea is only 3.5 mm. long; in another, 32 and 26 mm. in diameter, it is 4.65 mm. long.

*Colour*.—White to yellowish-grey.

*Habitat*.—Kerguelen, 10 to 100 fathoms.

Station 149B, off Royal Sound, Kerguelen, January 17, 1874; lat. 49° 28' S., long. 70° 30' E.; depth, 25 fathoms; bottom, volcanic mud.

*Remarks*.—About fifty specimens of this fine sponge were brought from Kerguelen, where they grow in company with *Cinachyra barbata*. The largest is 130 mm. high, and 75 mm. in diameter, but is without roots. One specimen, 92 mm. high and 70 mm. in diameter, stands on a basal mass 32 mm. high and of about the same diameter as the sponge.

In its youngest state, as represented by a specimen 8 mm. in diameter, the sponge is nearly spherical (Pl. V. fig. 4); it soon becomes egg-shaped, and the narrow end is produced into anchoring tufts, which as it increases in size very soon agglomerate into wool-like clots; and by the time the sponge has reached a height of 25 mm. it is provided with the characteristic basal mass.

The ectosome is about 0.3 to 0.8 mm. thick; it consists of fibro-vesicular collenchyma, the vesicles being more numerous in the outer, and the fibres in the inner part of the layer. Just below the epidermis the vesicles are comparatively small and filled with faintly stained protoplasm, enclosing an oval nucleus with its nucleolus. Deeper towards the interior the vesicles are much larger, 0.0276 by 0.0395 mm., and the included nucleus, surrounded by a thin film of protoplasm, lies at some distance from the walls, with which it is connected by thin protoplasmic strands. In the larger cavities the remains of several cells usually occur (Pl. V. fig. 5), but they disappear subsequently, so that in the largest cavities no trace of cells may occur.

The ectosome is not sharply marked off from the choanosome; the appearance of flagellated chambers in the latter is the only certain sign by which it can be distinguished.

The flagellated chambers differ considerably in size amongst themselves, the larger ranging from 0.032 to 0.044 mm. in diameter. They are eurypylous, the prosopyle measures about 0.0125 mm. in diameter, the apopyle from 0.02 to 0.03 mm. in diameter. Around the margin of the apopyle two or three sigmaspires are frequently embedded; and a nucleus with granular protoplasm sometimes lies on one side, the protoplasm apparently extending around the margin, the whole suggestively like a single bounding myocyte.