

being 0.08 mm. thick. Large excurrent canals proceed from them, and approaching the poral surface their branches run radially towards it, interdigitating with the incurrent canals. The flagellated chambers are usually nearly spherical, the largest measuring 0.0276 mm. in diameter, the prosopyle from 0.008 to 0.01 mm., and the apopyle from 0.008 to 0.012 mm. in diameter. The aphodal canals are frequently constricted into a series of vesicles by extension inwards of their walls, after the manner of velar diaphragms.

The secondary canals formed by an extension inwards of the oscular and poral surfaces do not appear to bear chones in their walls, at least not in the case of those produced from the latter surface. The others cannot be examined without injury to the specimen. Fragments removed from the invaginated poral surface show first a chitinous layer produced by some species of *Hydrozoon* which infests them, and beneath this a thin layer representing a modified cortex; it consists of sterrasters, two or three deep, coated by a single layer of the ectochrotal spherasters; but neither in tangential fragments torn away, nor in transverse sections, was a vestige of a chone or any other poral aperture to be found. These canals cannot, therefore, be regarded as vestibular. The chitinous layer which loosely lines the canals contains numerous deciduous spicules, which have been extruded from the sponge; the modified cortex is also hispidated, though no trace of hispidation can be distinguished on the outer surface, not even in thin slices when subject to microscopic examination.

The cortex (Pl. XXII. fig. 13) is about 0.478 mm. in thickness, almost entirely constituted by the sterrastral layer, the ectochrote being represented merely by the thin layer of tissue in which the single layer of somal spherasters occurs. The innermost fibrous layer of the cortex is also excessively thin; the cladomes of the orthotriænes lie in this, apposed to the overlying sterrasters. They seldom extend into the sterrastral layer.

The choanosome is sarcenchymatous, except where it forms the collenchymatous walls of the canals. It is infested, especially when it becomes collenchymatous, by a species of *Oscillaria*, of much smaller dimensions than that described from some of the Australian Stelletids. The thickness of the filaments is 0.00395 mm., or very slightly less; in length I have measured them up to 0.138 mm.; the length of each joint would appear to be about 0.0022 mm.

The megascleres are arranged partly in bundles or spicular tracts accompanied by fusiform cells, partly scattered singly through the choanosome; they show very little constancy in direction; some of the fibres run parallel to the walls of the larger excurrent canals, others, and these are more numerous, quite irregularly; but on approaching the cortex the spicular fibres are always directed at right angles to it, and the orthotriænes first appear in its immediate neighbourhood.

The sterrasters present an appearance of coarseness, owing to the fact that, notwithstanding their small size, their component actines have nearly the same diameter as