

The false incurrent canals formed by invaginations of the cortical layer are some of them lined by a chitinous layer produced by a species of Hydroid; one contains an Ophiurid, its disc lying about 15 mm. from the exterior, with one arm extending from it along the false canal, protruded at the exterior.

The false canals are apparently of the same nature as the cavities described by von Lendenfeld as vestibules, and they may therefore be appropriately named vestibular canals.

The large excurrent canals run chiefly longitudinally, and are traceable from the base to the oscular chones.

The cortex (Pl. XXIII. fig. 15) of the oscular surface is about 0.637 mm. thick, and composed as follows:—An outer epithelium covering the ectochrote, which is crowded with minute spherasters (5); this, which is very thin (0.01 to 0.04 mm.), is succeeded by the sterrastral layer, 0.143 mm. thick, including the ectochrote; then follows a dense felt of deeply staining fibres 0.334 mm. thick, and finally a fibrous collenchymatous layer 0.16 mm. thick. Immediately about the oscules the total thickness of the cortex is increased to about 0.828 mm. On the poriferous surface (Pl. XXIII. fig. 16) the cortex is thicker, about 1.33 mm. on an average; it is made up as follows:—First, the ectochrote 0.0318 mm. thick, then the sterrastral layer 0.191 mm. thick, and, finally, the fibrous layer 1.114 mm. thick.

About the margins of the oscules and the roofs of the poral chones the small oxas (No. 2) appear within the outer half of the cortex; and, projecting slightly from the surface, give it a slightly pilose appearance.

The spicules of the body do not run radiately to the cortex; only those immediately next the cortex are directed at right angles to it; the majority run in spicular fibres, (accompanied by numerous fusiform cells and collenchyma) in various and apparently irregular directions through the choanosome. Near the oscular surface many of these fibres run transversely to the excurrent canals, and subdivide the choanosome, containing flagellated chambers, into curiously restricted areas. The sterrastral spicules are the smallest I have yet seen, possibly the smallest known. By this character the sponge may be at once distinguished from *Synops pyriformis*, Vosmaer. The spines of the actines are few and small, but they still serve for the attachment of the connecting fibres. On the oscular surface the sterrasters form a layer only two or three thick. The orthotriænes lie with their cladomes immediately below the fibrous layer of the cortex, occasionally extending into it.

The roofs of the poriferous chones lie in depressions below the general surface of the poriferous area, and the sterrastral layer curves downwards towards the chones as it approaches them. The chone traverses the greater part of the fibrous layer before it becomes constricted by the sphincter.

The flagellated chambers vary from about 0.0237 by 0.0276 to 0.0276 by 0.0315 mm. in diameter.