

cloacal depression is also somewhat circular in outline and measures 13 mm. in diameter. The lining membrane is fenestrated by large oval openings along the edge of the oscule, and minutely perforated over the remaining central portion. The third specimen is rendered somewhat abnormal in form by the flatness of its upper surface, which is an almost mathematical plane bordered by a sharp circular edge. Since the upper surface does not as usual curve downwards over the equatorial poriferous area, the latter rises steeply up to meet it. The diameter of the upper surface is 21 mm., of the cloaca 6 mm. The cloacal membrane of this specimen, and of some of the remaining fragments, is fenestrated all over, one or more excurrent canals opening within each fenestra.

In transverse section the numerous small excurrent canals are seen terminating beneath the cloacal membrane, with which their walls become continuous; along the line of union the walls are somewhat thickened, so that the end of the canal is dome-shaped. In the centre of the dome, in the fenestrated specimens, is a sphinctrate aperture. The skeleton has a regular radiate arrangement; and, on dissecting away the equatorial poriferous membrane, the underlying thin spicular fibres are seen crossing the underlying zone in close regular series at right angles to the equatorial edge, which they enter, and slightly deploying out as they reach their insertion along its margin, form a disc of contiguous spicules, on which the support of the thin sharp equatorial edge depends.

The membrane of the cloacal depression appears imperforate to the unaided eye. It may be dissected and examined under the microscope, when it is found to be riddled with small pore-like apertures varying from 0.016 to 0.318 mm. in diameter. Beneath this poriferous membrane is a second thicker layer of tissue, raised over its upper surface into a polygonal network of low ridges, the summits of which unite with the overlying poriferous membrane, while within the depressed areas of the meshes are the openings of the excurrent canals.

*Ectosome* (Pl. VI. fig. 9).—This has the usual structure, consisting of a layer of collenchyme containing in addition to the usual collencytes fusiform myocytes; where it forms the poriferous roof of the incurrent canals, it has a maximum thickness of 0.04 mm., and consists of an upper and lower layer of epithelium, succeeded by collenchyme containing a single row of spirasters above and below; in the middle is a layer of myocytes, 0.012 mm. thick. Where it forms the pillars about a subdermal cavity it may attain a thickness of 0.14 to 0.2 mm.

*Choanosome* (Pl. VI. fig. 9).—The mesoderm is a typical collenchyme; it forms thick walls about the incurrent and excurrent canals; in one instance a canal with a lumen 0.24 mm. wide is surrounded by a wall of collenchyme 0.37 mm. thick. By transverse extensions of the walls, the canals are constricted at intervals so as to form a succession of vesicles, and, as usual in such cases, the velar diaphragms are provided with concentrically arranged myocytes and act as sphincters.