

sponge, which when entire may very possibly have been vasiform. The base is broken, but doubtless it was attached. The fragment is 77 mm. in height measured along the side, 110 mm. in diameter, 380 mm. in circumference measured along the folds of the margin, and 220 mm. disregarding the folds. The thickness of the plate varies from 3·2 to 4·0 mm.

The large tubercles on the outer surface are sometimes perforated by an axial canal, which opens freely to the exterior, but more frequently they are imperforate; they appear to be produced in connection with attached foreign bodies, for when cut open such have invariably been found enclosed.

The oscules are shallow cup-shaped depressions, surrounded by desmas and hispidating oxeas; the bottom of the cup is centrally perforated by a longer or shorter canal, which is surrounded by concentric and radiating fusiform cells, probably myocytes. In its present condition the canal is closed. It leads into a vesicular enlargement, the commencement of the excurrent canal, which continues as a series of such vesicles, more or less elongated, in a somewhat curved course transversely through the sponge-wall. In a section of the wall where it is 3·2 mm. thick, the canals were traced for 1·6 mm. inwards, or exactly halfway across.

The skeleton of the sponge does not extend up to the cavity of the canal, but forms a tubular framework or tunnel, the hollow of which is chiefly occupied by the tissue in which the canal is excavated. The breadth of the skeletal tube varies from about 0·16 to 0·23 mm., of the lumen of the canal from 0·026 to 0·071 mm. The constrictions between the vesicular enlargements of the excurrent canal are frequently continued as vella; from the sides of the main vesicles lateral vesicles proceed, and from these canals which terminate in flagellated chambers. The incurrent canals are similar to the excurrent; the pores, none of which remain open in the present state of the sponge, lead into a poral dome which opens freely below into a subdermal cavity (Pl. XXXVI. fig. 28), which is subdivided into vesicles like the canals; from this the incurrent canals extend into the interior and communicate with the flagellated chambers by prosodal canals. The chamber-system is therefore diplodal (Pl. XXXVI. figs. 25, 26). The flagellated chambers are about 0·0237 mm. wide by 0·0197 mm. long.

*Ectosome.*—The ectosome is about 0·16 to 0·32 mm. thick. It differs from the choanosome simply by the absence of flagellated chambers.

The mesoderm (Pl. XXXVI. figs. 21–29) consists of a gelatinous matrix, which in some places takes a faint stain and in others not, enclosing various cellular constituents, of which the most conspicuous are oval or round cells, about 0·016 mm. in diameter, sharply outlined against the matrix, consisting of a granular protoplasm which takes a fairly deep stain, and a spherical vesicular nucleus 0·006 mm. in diameter, with a spherical nucleolus 0·002 mm. in diameter. In the granular protoplasm of the cells, and apparently developed at its expense, are certain little spherical bodies, each with a sharply