

*Remarks.*—Two specimens were obtained of this sponge, each measuring about 20 mm. in diameter.

The cortex (Pl. I. fig. 34) is that of a typical *Craniella*, it varies in thickness from about 1.27 to 1.75 mm.; the outer layer varies from 0.16 to 0.8 mm., the inner or fibrous layer from 0.8 to 0.9 mm. As a rule the subdermal cavities separate the outer from the inner layer, but when these are absent, as happens in some places, the two layers pass gradually into each other. The inner layer does not differ in any essential characters from that of *Craniella cranium*, the outer, however, is distinguished by the presence of a number of conspicuous, round or oval bodies, ranging from 0.09 by 0.05 to 0.48 by 0.32 mm., in section they are dotted through with coloured granules, and, as they do not stain with reagents, they stand in strong contrast to the surrounding tissue from which, at the same time, they are sharply delimited. Seen under a higher magnification (Pl. I. fig. 35) they present themselves as parenchyma-like masses of polygonal cells, each 0.015 to 0.035 mm. in diameter, with a distinct, well-marked cell-wall, like that of a vegetable cell; the most conspicuous contents are spherical, yellowish, or ochreous granules, about 0.002 mm. in diameter, several lying in each cell. The remaining contents are only with difficulty discernible; they consist of an unstained or only faintly stained finely granular substance, in which, besides the coloured granules, a spherical body 0.004 mm. in diameter, containing a spherical granule, occurs, and probably represents a nucleus with its nucleolus. The constancy and abundance of coloured granules within the cells would lead one to regard the bodies they compose as pigment-glands.

The surrounding tissue, often relatively very small in quantity, is a collenchyma, the matrix of which, however, stains evidently with hæmatoxylin. It sometimes becomes fibrous, sometimes vesicular, and occasionally contains isolated oval cells precisely similar in structure to those which compose the pigment-glands.

The larger pigment-glands are sometimes invaded by strands of the collenchyma, which penetrate into their midst.

Briefly summarising the structure of the cortex; most externally is the investing epithelium, beneath this a layer of dense collenchyma, traversed by tangential fusiform cells, and about 0.005 to 0.008 mm. in thickness; then follow the pigment-glands, with a variable quantity of associated collenchyma; and finally a thinner or thicker layer of collenchyma, covered on its lower face with epithelium, which completes the outer layer. Then follow the subdermal or intercortical cavities, and beneath these the inner layer of the cortex, consisting of a felt of tangentially arranged fusiform cells, traversed by the cortical oxeate spicules.

The choanosome does not contain any pigment-cells; its mesoderm is a sarcenchyma, except where it surrounds the larger water canals, where it becomes a collenchyma, the collencytes of which are elongated in directions radiating from the canal; numerous