

The choanosome is a sarcenchyma, the flagellated chambers measure about 0·028 by 0·036 mm. on the average, but are sometimes longer, 0·028 by 0·0434 mm. The choanocytes are 0·0039 mm. in diameter at the base, and about 0·007 mm. long.

*Development* (Pl. II. figs. 18, 19).—The type specimen is crowded with embryos in an advanced stage of development, they are somewhat lenticular bodies, with a flattened base and convex summit, about 1·75 mm. in horizontal diameter, and 0·8 mm. high. So numerous are they that, from the upper half of a single cut face of the sponge, I extracted no fewer than thirteen entire examples. In colour they are dark grey; the surface is raised into conules.

*Ectosome*.—The ectosome is already highly differentiated, and recognisable at once as that of a corticate sponge. It consists of a thick inner layer, underlying the extensive subdermal cavities, and a thin outer or dermal layer, which roofs these cavities over. The dermal membrane consists of an extremely thin layer of collenchyma, invested on both sides by pavement epithelium. The thick lower layer of the cortex is differentiated into two zones which pass into each other, an innermost consisting of fibrous collenchyma, *i.e.*, collenchyma containing fusiform cells, the matrix surrounding them being finely fibrillated; and an outer consisting of cavernous collenchyma, in which branching collencytes are predominant, but which also contains fusiform cells; these, however, run more or less radially in the outer zone, converging towards the spicular columns when in their neighbourhood, while the fusiform cells and the fibrillation parallel to them in the inner zone have a tangential direction, as in the inner fibrous layer of the adult cortex. The thickness of the entire ectosome varies from 0·16 to 0·24 mm., but over the base, where the subdermal cavities are less developed, it is only about 0·06 mm. or even less. Certain very conspicuous elements, most obvious in the ectosome, but also present in the choanosome, remain to be mentioned. These are small, dark coloured, almost black, approximately spherical, granular aggregates, which in the ectosome lie separately in small vesicular cavities of the collenchyma. They are about 0·008 mm. in diameter, consist of spherical granules about 0·001 mm. in diameter, and arise from the transformation of small nucleated cells, about 0·006 mm. in diameter. They form a layer beneath the epithelium of the subdermal cavities, surrounding these on all sides; in the dermal membrane the layer is only a single cell in thickness, but beneath the floor of the subdermal cavities it may be either one or several cells thick. The layer of pigment-cells is continued beneath the epithelium of the canals which extend from the floor of the subdermal cavities through the inner layer of the cortex into the choanosome. These pigment-cells appear to represent the oval depressed cells, which were mentioned as occurring in the cortex of the adult sponge, and which are probably to be regarded as exhausted pigment-cells.

*The Choanosome*.—This has very much the same structure as that of the adult