

attain a diameter of 0·25 mm., and are chiefly composed of cells in a non-granular state, consisting of deeply stained protoplasm somewhat vacuolated; some of the constituent cells, however, consist of unstained finely granular material, and similar colourless granular cells occur separately scattered amidst the fibrous tissue of the cluster-bearing zone.

*Choanosome*.—Amidst the deeply stained sarcenchyma of the mesoderm are numerous scattered cells, each lying in a small cavity, caused probably by *post-mortem* shrinkage. These cells are of various sizes, the largest about 0·02 mm. in diameter, and they consist of deeply stained, finely granular protoplasm, enclosing a well-marked oval nucleus about 0·01 mm. in length, and in this again is a small spherical nucleolus about 0·002 mm. in diameter. Besides these cells are others similar, but consisting of a network of unstained material bearing minute stained granules on the nodes; these appear to result from exhaustion of the stained cells.

The flagellated chambers vary from about 0·016 by 0·02 to 0·02 by 0·024 mm. in length and breadth.

*Chones*.—The chones have the irregular canal-like form common in the genus. The cortex immediately adjacent to them is somewhat modified, forming a thin layer next the lining epithelium less fibrous than elsewhere; in the homogeneous matrix of this layer minute fusiform cells about 0·04 to 0·07 mm. long appear, they lie with the long axis at about right angles to the lining epithelium, against which the outwardly directed fibril terminates; the fibril of the opposite extremity is lost amidst the fibrous tissue of the cortex.

The chasters, which are rare, are best observed in superficial tangential sections of the cortex, where they will be found in comparative abundance immediately below the epithelium around the margin of the pores.

*Pilochrota crassispicula*, Sollas (Pl. XIV. figs. 9–15).

*Pilochrota crassispicula*, Sollas, Prelim. Account, Sci. Proc. Roy. Dubl. Soc., vol. v. p. 190, 1886.

*Sponge* (Pl. XIV. fig. 9), irregularly spherical, about 3·5 cm. in diameter, free, numerous foreign bodies attached to the surface by strong fibrous bands, a single large oscule at the summit, with a membranous margin, leading into a long tubular cloaca, which descends obliquely into the sponge; excurrent canals opening in the walls of the cloaca by numerous mouths, spun over by a coarse reticulation, each mesh of which is occupied by a sphinctrate velum. Pores in sieves, overlying chones; situated chiefly at the bottom of narrow grooves, which form a network of depressions over the surface, giving it a kind of embossed appearance.

*Spicules*.—I. Megascleres. 1. *Oxea* (Pl. XIV. fig. 10), a massive, straight or curved, fusiform variety, sharply pointed, or pencil pointed, or rounded off near the point, 2·3