Zoology Part LXIII: Report on the TETRACTINELLIDA. By Professor W. J. Sollas. Bound in Volume 25,1888.

diameter, and leads into a tubular cloaca about 3 mm. in depth. Its systematic position is a matter of much perplexity. The choanosomal chiaster may be regarded as foreshadowing the anthaster of other Stellettids, and it may be preferable to assign the sponge to the genus *Anthastra*. The cortex is thin compared with most species of *Pilochrota*, from 0·32 to 0·48 mm. in thickness, but since the outer layer to the thickness of 0·24 to 0·32 mm. consists of fibrous tissue, its place would seem to be with this genus. The inner layer of the cortex, from 0·10 to 0·24 mm. thick, but not always present, consists of collenchyma in which, however, fusiform cells are usually present in more or less abundance. In the outer fibrous layer oval or round balls of granule-cells are present in considerable numbers; they are about 0·1 mm. in diameter. The pores lead either immediately or by communicating canals into the chones, which are about 0·08 to 0·16 mm. in diameter, and usually open by wide unconstricted apertures into large incurrent canals, the roots of which frequently extend tangentially beneath the cortex. In one of these tangential extensions an Annelid, 0·24 mm. in diameter and over 2·0 mm. in length, was observed; it was evidently living when the sponge was placed in spirits, and from the neatness with which it fills the canals, looks very much like an inhabitant. The chones are frequently crossed by velar diaphragms, at the level of the inner surface of the fibrous layer and sometimes at other levels. Concentric myocytes surround the lumen of the diaphragm, and small fusiform cells, about 0·04 mm. in length, may sometimes be seen radiating from it; similar cells extend inwards from the sides of the chones; in both cases the outwardly directed end of the cell stands in contact with the free epithelial surface. In one case a conical cell, with a base about 0·004 mm. wide applied against the epithelium, was observed; the conical body of this cell measures 0·008 mm. in length, is produced inwards into a delicate fibril 0·012 mm. long, and presents at the middle a well-marked oval nucleus, 0·004 mm. in length, containing a small spherical nucleolus.

The flagellated chambers measure 0·024 by 0·02 mm. in breadth and length. The canals, both excurrent and incurrent, contain large quantities of finely granular material, pointing to the fact that the animal was actively feeding at the time it was captured. The choanocytes, 0·004 mm. in diameter at the base, are deeply stained, and the protoplasm of the base appears more than usually granular.

Pilochrota lendenfeldi, n. sp. (Pl. VII. fig. 5).

Sponge (Pl. VII. fig. 5) more or less spherical, supported on a short stalk; no visible oscules; pores in sieves generally distributed. Cortex comparatively thin.

Spicules.—I. Megascleres. 1. *Oxea*, stout, fusiform, usually curved, sharply pointed, 2·5 by 0·0434 mm.

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