

2. *Orthotriæne*; rhabdome conical, attenuated towards the end, which is either sharply pointed or rounded off near the point; cladi simple, conical, projecting first outwards and forwards, and in the middle of their course bending into horizontality. Rhabdome 2·856 by 0·05526 mm.

3. *Anatriæne*; rhabdome conical, much attenuated proximally, usually rounded off near the point, otherwise sharply pointed; cladi proceeding horizontally for only a very short distance before becoming recurved; thus the front of the cladome is semicircular in outline. Rhabdome 1·75 by 0·0237 mm., cladi 0·1 mm. long; sagitta 0·095 mm., chord 0·127 mm.

II. Microsclere. 4. *Chiaster*, varying from a minute form, with an evident centrum and short numerous actines, to a somewhat larger variety without a perceptible centrum, and longer, sometimes roughened actines; actines in both forms tylote. Diameter of the smaller form 0·007, of the larger 0·0118 mm.

*Colour*.—A dark umber-brown externally, internally yellowish-grey.

*Habitat*.—Station 162, off East Moncœur Island, Bass Strait, April 2, 1874; lat. 39° 10' 30" S., long. 146° 37' 0" E.; depth, 38 fathoms; bottom, sand and shells. Dredged.

*Remarks*.—The single specimen of this sponge measures 17 mm. in width; its total height is 20 mm., made up of 15 mm. for the somewhat spherical body, and 5 mm. for the stalk, which is 5 mm. in width. The surface of attachment is oblique to the axis of the stalk.

The systematic position of this sponge is more doubtful than that of *Pilochrota moseleyi*; it differs from all other species of the genus in the absence of an evident oscule, and the cortex differs considerably from the type. The canals or chones descending from the pores open into a system of tangential canals from which the incurrent canals of the choanosome proceed. The tangential canals, about 0·24 mm. in diameter, separate an outer from an inner cortical layer. The outer, 0·32 mm. in thickness, consists of collenchyma containing abundant, fusiform cells, which wander in all directions, and render it fibrous. This is faced externally by a layer of fibrous tissue 0·02 mm. thick, invested with epithelium. In this layer also occur oval or round balls of granule-cells, and numerous isolated granule-cells. The inner layer, also about 0·32 mm. in thickness, consists of large, densely stained fusiform cells running in various directions in tangential planes. They form more or less separate layers, and, between the deeper lying of these, islands of choanosome are included. There is thus an inter-laminar passage between the cortex and the choanosome.

The flagellated chambers are large compared with those of other species of the genus; the following are measurements—0·0276 by 0·02, 0·032 by 0·025, and 0·0355 by 0·0276 mm. in breadth and length.