

out into broad tufts, and their ends penetrate into the dermal layer and project very slightly beyond the surface; it is generally the pointed ends of the styli which thus project. The peculiar arrangement of the spicular tufts along the edges of the pore-bearing cracks has already been described.

Spicules.—(a) *Megasclera*; of one kind only, viz., styli (Pl. XIII. fig. 18), very nearly straight, tapering from near the middle towards both ends, and measuring about 0·7 by 0·019 mm. (b) *Microsclera*; these are enormously abundant, both in the dermal membrane, including the pore-bearing areas, and in the deeper tissues. Three kinds occur, all plentiful:—(1) Large palmate anisochelæ (Pl. XIII. fig. 17); especially abundant in the dermal membrane, up to 0·072 mm. long, with the large end 0·019 mm. broad. These chelate spicules are often found in very beautiful rosettes, which seem to occur chiefly, if not solely, just beneath the dermal membrane. Numerous small anisochelæ are also present, perhaps young forms of the large ones. (2) Numerous sigmata (Pl. XIII. fig. 11) of the usual shape, frequently much contorted, measuring about 0·053 by 0·0024 mm. (3) Trichodragmata (Pl. XIII. fig. 14), occurring in great profusion in the deeper tissues, measuring about 0·076 by 0·013 mm.

For further details as to the minute anatomy and histology the reader is referred to the Introduction (Anatomy and Histology).

This is one of the finest and most interesting sponges in the collection, and forms a splendid example of the manner in which the pores may be collected into certain definite "pore-areas," a phenomenon which has already been noted by Sollas¹ for other species of the genus *Esperella*. But we have here a still further development, for not only are the pores, for the most part, definitely localised, but the grooves in which they occur may be opened or closed by appropriate muscles, and thus the supply of water regulated with great precision. The transverse muscle-fibres of the pore-bearing cracks may be compared with the fibres which sometimes form sphincters around the individual pores² in other sponges.

In the mæandering pore-areas and the almost stony spicular and non-reticulate dermis this species stands markedly apart from all other described species, so far as they are known to us; the spiculation, on the other hand, as often happens in such cases, is of an ordinary type.

Locality.—Off Port Jackson, 30 to 35 fathoms. One specimen.

Esperella porosa, Ridley and Dendy (Pl. XV. figs. 6, 9, 17; Pl. XVI. fig. 5).

1886. *Esperella porosa*, Ridley and Dendy, Ann. and Mag. Nat. Hist., ser. 5, vol. xviii. p. 338.

Sponge (Pl. XVI. fig. 5) cylindrical; length of largest specimen about 50 mm. Diameter about 6 mm. *Colour* in spirit nearly white. *Texture* fibrous, but open and

¹ *Vide Ann. and Mag. Nat. Hist.*, ser. 5, vol. ix. p. 437.

² *Vide Vosmaer, Bronn's Klass. u. Ordn. des Thierreichs, Porifera*, p. 125.