

*Esperella fusca*, Ridley and Dendy (Pl. XIV. fig. 4; Pl. XV. figs. 3, 3a, 15, 15a).

1886. *Esperella fusca*, Ridley and Dendy, Ann. and Mag. Nat. Hist., ser. 5, vol. xviii. p. 339.

Sponge (Pl. XIV. fig. 4) small, incipiently lobose, rounded, penetrated through and through by the branches of some Alga. Greatest diameter rather under 25 mm. *Colour* in spirit dark greyish-brown. *Texture* soft, resilient. *Surface* very slightly roughened by the presence of the dermal skeleton reticulation, but not hispid; uneven, with rounded elevations and depressions. *Dermal membrane* distinct, transparent. *Oscula* few, small, with their margins produced into small elongated tubes. *Pores* few, small, scattered; diameter about 0.025 mm.

*Skeleton*.—(a) *Dermal*; composed of two layers:—(1) an upper layer, consisting of a rather close, irregular spicular reticulation, in which several spicules often lie side by side forming rudimentary fibres; and (2) a lower layer, consisting of a reticulation of fairly stout, compact, spiculo-fibre, with rounded or polygonal meshes. (b) *Main*; composed of loose, branching spiculo-fibre. The main fibres do not, as in so many *Esperellæ*, break up into distinct divergent brushes of spicules on approaching the surface, hence the surface is not hispid.

*Spicules*.—(a) *Megasclera*; of one kind only, viz., tylostyli (Pl. XV. figs. 3, 3a), often curved, with distinct oval heads and usually much blunted at the apex; size about 0.455 by 0.0126 mm. (b) *Microsclera*; (1) a few palmate anisochelæ (Pl. XV. figs. 15, 15a), of the usual *Esperella* type (sometimes in rosettes?); length about 0.063 mm.; numerous smaller ones also occur, probably young forms of the larger. (2) Small, slender sigmata, usually contort, length about 0.044 mm. (3) Trichodragmata, forming small, compact, oblong bundles, measuring about 0.03 by 0.063 mm.; especially abundant in the dermal layer.

This sponge is remarkable for the ease with which the flagellated chambers can be made out. If a fragment, without any staining, be teased up in a drop of Canada balsam, the flagellated chambers are separated out in enormous numbers from the surrounding matrix, and appear under a low power of the microscope as spherical or oval bodies, composed of aggregations of large granules. Further details concerning them will be found in the Introduction. They are about 0.03 mm. in diameter.

*Locality*.—Off Bahia; depth, 17 fathoms. Four specimens.

*Esperella arenicola*, Ridley and Dendy (Pl. XV. figs. 4, 4a; Pl. XVI. fig. 8).

1886. *Esperella arenicola*, Ridley and Dendy, Ann. and Mag. Nat. Hist., ser. 5, vol. xviii. p. 339.

Sponge (Pl. XVI. fig. 8) massive, flat, cake-like. Length of largest piece 175 mm.; breadth 81 mm.; thickness 16 mm. *Colour* in spirit light brown. *Texture* fragile,