

brittle, extremely sandy. *Surface* rough and uneven, owing to the numerous foreign bodies, Mollusc shells, Polyzoa, &c., with which the sponge is thickly encrusted. *Dermal membrane* thin and transparent. *Oscula* scattered, small and round, with their margins level with the general surface of the sponge, about 2.5 mm. in diameter.

*Skeleton*.—There is no dermal reticulation at all. The main skeleton is very loose. The primary fibres are thin, and give off branches at very sharp angles, recalling the ramification of the Broom. As they approach the surface of the sponge the primary fibres break up into branches, each of which terminates in a slightly divergent tuft of long, slender spicules which project little, if at all, beyond the dermal membrane.

*Spicules*.—(a) *Megasclera*; of one kind only, viz., tylostyli (Pl. XV. figs. 4, 4a), long and very slender, each with a distinct head, and tapering gradually to a fine point at the apex; size about 0.4 by 0.0072 mm. (b) *Microsclera*; (1) small, slender, palmate anisochelæ, about 0.028 mm. long; (2) rather large, simple and contort sigmata, measuring about 0.077 by 0.0048 mm.; (3) trichodragmata, size about 0.35 by 0.07 mm.

As already noticed, this sponge is very full of foreign bodies, and this renders it difficult to obtain a satisfactory section. Indeed it seems as if the poor development of the skeleton might be due to its partial replacement by foreign bodies. If we imagine the process of degeneration proceeding a few steps further, we arrive at the condition of Marshall's *Phoriospongia*, the real nature of which has been discussed elsewhere.

The small size of the chelæ and the absence of a dermal skeleton are good characters of this species. There can be little doubt that the modifications in the skeleton are due to the sponge having lived on a shelly bottom.

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

*Esperella simonis*, Ridley and Dendy (Pl. XV. figs. 7, 7a, 12, 12a, 13, 16, 16a, 16b, 16c).

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

Sponge branching, cylindrical (but rather angular), or more or less massive. Diameter of branches about 8 mm.; length of largest fragment 45 mm. *Texture* fibrous, elastic. *Surface* somewhat uneven and minutely hispid. *Dermal membrane* thin, transparent, distinct. *Oscula* (?) small, scattered. *Pores* distinct, numerous, round openings in the dermal membrane, about 0.063 mm. in diameter; irregularly scattered, but very close to one another.

*Skeleton*.—(a) *Dermal*; a rather irregular reticulation of spiculo-fibre, in some places very much closer than in others, the extra closeness being due to numerous loose spicules irregularly scattered between and across the fibres. In the looser parts, the