is the way in which two out of the three microsclera attach themselves to the skeleton fibre. It is a rather remarkable fact that we can find no spicules which we can put down as young forms of the large sigmata, except a very few, which somewhat resemble them in shape and size but are much more slender, and appear as if they might form links connecting the large with the ordinary, small sigmata.

Locality.—Simon's Bay; depth, 10 to 20 fathoms. Three fragments.

Esperella biserialis, Ridley and Dendy (Pl. XIV. figs. 2, 3; Pl. XV. figs. 8, 8*a*, 8*b*).

1886. *Esperella biserialis*, Ridley and Dendy, Ann. and Mag. Nat. Hist., ser. 5, vol. xviii. p. 340.

Sponge (Pl. XIV. figs. 2, 3) consisting of a long, slender axis, perfectly straight and somewhat flattened in one plane, from which arise very short, slender, straight spicular processes. These processes are arranged in two opposite series, at either end of the longer transverse diameter of the sponge, forming on each side a single long row of closely placed, hair-like projections. The axis of the sponge is somewhat twisted, so that the two rows are not quite straight. It is covered with a thin crust of brown, transparent tissue, containing many spicules, and terminates abruptly at the lower end, having apparently been broken off short, while at the upper extremity it ends in a slightly rounded apex. Length of sponge 92 mm.; longer diameter 1 mm. *Surface* hispid. *Dermal membrane* fairly distinct.

Skeleton.—(*a*) *Dermal;* from an imaginary line, drawn longitudinally down the middle of each flattened side of the sponge, a large number of tylostylote spicules diverge more or less at right angles towards either side. These spicules have their bases placed along the middle line, while their apices are directed towards the bases of the hair-like processes, which they are just about able to reach. This arrangement is easily recognisable, though not very regular, for many of the spicules are placed so as to project from the surface of the sponge, giving to it the hispid appearance described. (*b*) *Main;* a central, dense spicular axis composed of very long styli firmly united together, from two sides of which come off short, hair-like fibres as already described (the spicular processes). Outside the axis there are also longitudinal bands of spiculo-fibre, apparently not arranged in any very definite manner.

Spicules.—(*a*) *Megasclera;* of two kinds. (1) Very long, slender styli (Pl. XV. figs. 8*a*, 8*b*), of extremely elegant shape, becoming gradually inflated in the centre, but very thin at both ends. Apex not very sharply pointed; no head. These spicules may reach over 2 mm. in length, with a diameter in the middle of 0·038 mm.; they occur only in the main axis. (2) Rather short tylostyli (Pl. XV. fig. 8), broadest near the apex, each hastately pointed and with a distinct, elongated head narrowing towards the top; size about 0·44 by 0·01 mm.; these occur in the dermal skeleton, in the longitudinal fibres outside the axis, and in the hair-like projections. (*b*) *Microsclera;*