

the branches terminate in a thick, fleshy lamella, of which there appear to be usually six or seven in a full-grown example, increasing gradually in size from below upwards. Each lamella has the form of a deeply concave, transversely elongated cup. The concave surface is directed towards the stem (posterior) while the convex surface is anterior, and the supporting branch, or peduncle, is inserted into the centre of the lower margin of each lamella; sometimes the weight of the large upper lamellæ causes the stem to droop considerably, and the lamellæ to hang down with their concave surfaces uppermost.

There are in the collection thirteen specimens, the stem of the smallest (Pl. XVIII. fig. 3) being only 38 mm. high, and bearing two rounded, cup-shaped lamellæ about 13 mm. in diameter. The following are the measurements of a very fine and apparently full-grown specimen, with six cup-shaped lamellæ. Diameter of expanded base 19 mm., thickness of same 8 mm. Height of stem, from the point where it rises out of the expanded base to its insertion into the margin of the uppermost cup-shaped lamella, 200 mm.; longer diameter of stem, at a point half way between the origins of the third and fourth branches, about 8 mm.; diameter at right angles to the above about 3 mm. Longest diameter of the uppermost lamella, 63 mm.; diameter at right angles to the above, 35 mm.; thickness of same, about 4 mm. *Colour* in spirit light yellow. *Texture*, of the stem, very dense and tough; of the lamellæ, rather soft and fragile, but firm. *Surface* of the stem markedly hispid. Concave surface of lamellæ slightly glabrous in appearance, but really very minutely hispid; convex surface, minutely hispid; both, as a rule, evenly rounded. *Dermal membrane* obvious only on the concave surface, where it is distinct, thin and very transparent. *Oscula* confined to the convex surfaces of the lamellæ, over which they are thickly and evenly scattered, small (averaging little over 0.5 mm. in diameter), round, and having their margins flush with the general surface of the sponge. *Pores* confined to the concave surfaces of the lamellæ, where they are enormously abundant, reducing the dermal membrane to a mere network (Pl. XVIII. fig. 4); they are almost circular openings and of very uniform size, averaging about 0.11 mm. in diameter. Indications are not wanting that these "pores" were, in the living condition, broken up into still smaller openings by bands of delicate membrane, but on this point we are not certain.

*Skeleton*.—(1) The skeleton of the stem; this consists simply of a dense core of closely packed stylote spicules, for the most part placed longitudinally, but with numerous spicules projecting at right angles, and thus giving to the stem its hispid character. (2) The skeleton of the lamellæ. (a) *Dermal*; supporting the dermal membrane on the concave surface is a fairly regular reticulation of rather stout spiculo-fibre, from which numerous spicules project outwards and thus give to the surface its hispid character; this reticulation is absent from the convex surface. (b) *Main*; each branch breaks up, at the point where it enters the lamella, into a number of radiating fibres, arranged in a fan-like manner, and in addition to the skeleton thus constituted there is a Halichon-