

ending in a third, small, globular head. Total height of specimen 56 mm.; diameter of largest head 15 mm.; diameter of largest peduncle 6 mm. *Colour* in spirit light, greyish-yellow. *Texture* solid throughout, hard, incompressible and woody. *Surface* even, but covered with a velvet-like pile.

*Skeleton*.—Radiately arranged, very dense, consisting of closely packed fascicles of spicules radiating towards the surface. There is a dermal crust of thickly packed, projecting, tylostylote spicules, and below this come the main skeleton fascicles, composed mainly of stylote spicules; (we have been unable to determine with certainty whether any of these large styli project beyond the surface of the sponge and take part in the formation of the velvet-like pile, or whether the latter is formed entirely of tylostylote spicules). The dermal crust of spicules is continuous all over the surface, but every alternate fascicle of the main skeleton stops short a little way below the surface and before it reaches the bottom of the dermal crust, and thus arise a number of fairly definite spaces, devoid of spicules, which seem to be comparable to the subdermal cavities of other *Monaxonida*.

*Spicules*.—*Megasclera*; (1) tylostyli (Pl. XLV. figs. 2*a*, 2*b*, 2*c*), straight or nearly so, with well-developed, almost globular heads, fusiform shafts, and sharply and gradually pointed at the apices. These occur mainly in the dermal crust, with their points directed outwards; a common size for them is about 0.24 by 0.0063 mm., but in this respect they vary extremely, and they pass by a series of transitional stages (both as regards form, size, and position) into (2) the deeper spicules found in the main skeleton fascicles. These spicules are very long, straight, slender, smooth, fusiform styli and subtylostyli (Pl. XLV. figs. 2, 2*d*, 2*e*), very gradually and sharply pointed at the apices; size about 1.5 by 0.0157 mm.; having their apices generally (? always) directed outwards.

This is one of those species which appear to mark a transition in external form from *Suberites* to *Stylocordyla*.

*Locality*.—Off the south-east coast of Australia. One specimen.

*Suberites mollis*, Ridley and Dendy (Pl. XLI. fig. 4; Pl. XLV. figs. 4, 4*a*, 4*b*, 4*c*).

1886. *Suberites mollis*, Ridley and Dendy, Ann. and Mag. Nat. Hist., ser. 5, vol. xviii. p. 486.

Sponge (Pl. XLI. fig. 4) stipitate, with expanded, lobose head. The short stem is attached by a slightly expanded base to a fragment of stone, and is surmounted by the broad, lobose, slightly compressed, suboval head, bifurcating slightly at the top. Total height of sponge 31 mm., length of stem 13 mm.; diameter of same about 2.5 mm.; greatest breadth of head about 13 mm. *Colour* in spirit pale yellow. *Texture* (of head) very soft and spongy; of stem, firm, but brittle, scarcely fibrous. *Surface* even, but minutely hispid. *Dermal membrane* distinct. *Pores* apparently scattered. *Oscula* (?).

*Skeleton*.—(a) The skeleton of the stem; this consists of a dense, well-defined, central