

subglabrous, with a faintly reticulate appearance, due to the subdermal cavities showing through the dermal membrane. *Dermal membrane* distinct, thin, transparent, perforated by numerous scattered pores. *Oscula* rather small and shallow; chiefly on one side of each branch; diameter little over 2 mm.

*Skeleton*.—(a) *Dermal*; a close, small-meshed reticulation of rather loose spiculo-fibre, echinated at the nodes by small bundles of outwardly projecting spicules, which are, at any rate in part, the projecting ends of the primary fibres. (b) *Main*; a rather irregular reticulation of spiculo-fibre and scattered spicules, in which primary and secondary fibres are distinguishable but not very well marked. Fibre much slenderer than in *Pachychalina fragilis*, but still without a very evident external sheath of spongin as in typical *Chalininæ*.

*Spicules*.—Rather slender, slightly curved, gradually and usually sharply pointed oxea; size about 0.175 by 0.0126 mm.

This species, though very distinct from both, forms a connecting link between *Pachychalina fragilis* and *Pachychalina fibrosa*, which is next described, and which has much slenderer spicules, and a greater amount of spongin in the fibre.

*Locality*.—Station 208, January 17, 1875; lat. 11° 37' N., long. 123° 31' E.; Philippine Islands; depth, 18 fathoms; bottom, blue mud. Two specimens.

*Pachychalina fibrosa*, Ridley and Dendy (Pl. IV. figs. 3, 4).

1886. *Dasychalina fibrosa*, Ridley and Dendy, Ann. and Mag. Nat. Hist, ser. 5, vol. xviii. p. 330.

Sponge (Pl. IV. fig. 3) erect or repent; branched. Branches stout, irregular, coarsely aculeated; bearing large circular oscula, usually on one side only. Diameter of branches ranging from about 6 to 25 mm. Length of spines varying greatly in different specimens, up to about 4 mm. *Colour* in spirit greyish-yellow. *Texture* coarsely fibrous, compressible and elastic. *Surface* coarsely aculeated, reticulate. *Dermal membrane* distinct, thin, translucent. *Oscula* large, circular, shallow (*i.e.*, the exhalent canals terminate at the bottoms of shallow depressions, *vide* figs. 3, 4).

*Skeleton*.—(a) *Dermal*; a very coarse reticulation of stout spiculo-fibre with usually triangular meshes, broken up by a much finer and rather irregular reticulation of very slender spiculo-fibre. The coarse fibre contains a very great number of spicules, and comparatively little spongin; measuring about 0.1 mm. in total thickness. The finer fibre is very slender, contains a larger proportion of spongin, and usually only a single row of spicules; thickness about 0.015 mm. (b) *Main*; a reticulation of very stout, branching and anastomosing spiculo-fibre; measuring up to about 0.14 mm. thick, and almost or quite filled with densely packed spicules. Spicules occur also very abundantly outside the fibre; irregularly scattered through the choanosome.