

to make a genus for the other group of species, viz., those with smooth surface, but experience has shown that it will be advisable to leave this question to some naturalist who has more opportunity for studying a large series of forms. Hence we include both groups under the name *Pachychalina*.

Pachychalina fragilis, Ridley and Dendy (Pl. IV. figs. 2, 2a).

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

Sponge (Pl. IV. figs. 2, 2a) irregularly ramose, subcylindrical, aculeated; branches averaging about 18 mm. in diameter. *Colour* in spirit light greyish- or brownish-yellow. *Texture* hard and brittle. *Surface* very uneven, covered with sharp aculeations; delicately striate, with the striæ radiating from the summits of the aculeations.¹ *Oscula* large and scattered, but almost entirely confined to one side of each branch; about 4 mm. in diameter.

Skeleton.—(a) *Dermal*; an irregular reticulation of individual spicules and spiculo-fibre, backed up behind by a much coarser reticulation of much stouter spiculo-fibre, the nodes of which form the apices of the surface aculeations. (b) *Main*; an irregular reticulation of very stout, compact spiculo-fibre and abundantly scattered spicules; the fibres are about 0.35 mm. thick, and the main fibres terminate on the surface at the summits of the aculeations. There is no doubt a good deal of spongin present uniting the spicules, but it is difficult to make out, and does not form a distinct sheath around the fibres as in typical Chalininæ. The fibre resembles that of *Petrosia*.

Spicules.—Oxea, very large for a Chalinine sponge; rather stout, slightly curved, suddenly and more or less bluntly pointed; size about 0.42 by 0.02 mm.

Taken by itself this species might have been described as a *Petrosia*, characterised by the aculeations on the surface, but it forms the first of a series of allied forms which seem to lead up from the Renierinæ to more typical species of *Pachychalina* and *Spinoseella*.

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

Pachychalina melior, Ridley and Dendy (Pl. IV. fig. 1).

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

Sponge (Pl. IV. fig. 1) irregularly branched; branches subcylindrical or angular, coarsely aculeated; aculeations less abundant and well marked than in *Pachychalina fragilis*. Average diameter of branches about 12 mm. *Colour* in spirit greyish- or brownish-yellow. *Texture* compressible, fibrous, but rather hard. *Surface* uneven,

¹ In one small specimen only this striation of the surface is not visible.