

square and 18 mm. thick, from the upper surface of which arises abruptly a single, stout, thick-walled oscular tube with a large circular osculum at the summit. Height of oscular tube about 25 mm., diameter 14 mm., thickness of wall 4 mm. *Colour* in spirit greyish-yellow. *Texture* hard and stony, but rather brittle; internally rather cavernous. *Surface* smooth but uneven, and harsh to the touch. *Dermal membrane* distinct, but firmly adherent to the underlying tissues, translucent, very granular, frequently reduced to a mere network by the enormous number of pores. *Oscula*, one only present, a little over 4 mm. in diameter, at the summit of a large tubular projection. *Pores*, very numerous rounded openings about 0.07 mm. in diameter.

*Skeleton*.—There is nothing that can be properly termed a distinct dermal skeleton, but the dermal membrane is supported by a reticulation of stout spiculo-fibre, which is not to be distinguished from the main skeleton. The main skeleton consists of a reticulation of very well developed, stout spiculo-fibre in which one distinguishes primary fibres running vertically to the surface and secondary ones crossing them more or less at right angles. This distinction into primary and secondary fibres is not so evident in the deeper parts of the sponge as near the surface, the skeleton arrangement becoming here a more or less confused reticulation of stout spiculo-fibre. The fibre is compact, and averages about 0.1 mm thick.

*Spicules*.—Short, stout, smooth, slightly curved strongyla (Pl. II. fig. 14), evenly rounded off at each end, size about 0.17 by 0.0094 mm.

This species comes near to *Schmidtia aulopora*, but is distinguished from that species by the strongylote instead of oxeote spicules, by the stouter skeleton fibre, and possibly also by the arrangement of the oscula. If it should prove that the oscula in our species are always situated on the ends of prominent oscular tubes, this would be a very important character. This *Petrosia* approaches the most closely of all the Challenger species to that named *Reniera crateriformis* by Mr. Carter, characterised by a cup- or bowl-shaped form and sausage-shaped spicules.

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

*Petrosia variabilis*, Ridley, sp., var. (Pl. II. fig. 12).

1884. *Schmidtia variabilis*, Ridley, Zool. Coll. H.M.S. "Alert," Brit. Mus., p. 415, pl. xxxix. fig. n, pl. xli. fig. t.

With this species we identify as a variety a single specimen from the Philippine Islands. It is irregularly lobate in form, and, though hard in texture, is very brittle and cavernous; the surface is uneven and harsh to the touch, and has also a minutely reticulate appearance. This variety differs from the types of the species in its pale greyish-