

*Skeleton*.—There is no special dermal skeleton, but spicules project in irregular, sparse tufts from the uppermost portion of the main skeleton, and serve to support the dermal membrane, commonly projecting slightly beyond it; these tufts are nothing but the projecting ends of the primary skeleton fibres. The main skeleton (in the lobate specimen) is a very well-developed reticulation of very stout, compact spiculo-fibre, in which there is a well-marked distinction between primary and secondary fibres crossing one another at right angles and running vertically to, and parallel with, the surface of the sponge. The rectangular meshes between the fibres vary much in size, usually they are large. In the repent specimens, the skeleton is not so well developed, being laxer and more confused.

*Spicules*.—Slightly curved oxea (Pl. II. fig. 10), fairly sharply and fairly gradually pointed, size about 0·225 by 0·016 mm.

The above description is taken from a series of specimens, all from Station 142, which must be considered as the types. There is also in the collection a single small piece from Station 150, without oscula and probably young, which we identify with the species; it differs from the types in having a very compact skeleton with very indistinct fibre, and in having the spicules rather larger, measuring about 0·3 by 0·016 mm.

The specimen obtained from Kerguelen by the Transit of Venus Expedition, and described by Mr. Carter (*loc. cit. supra*), must also, having regard to the locality and measurements of the spicules, be referred to this species rather than to *Thalysias subtriangularis*. Here again the skeleton reticulation is closer, but the fibre not so well developed as in the types of *Petrosia similis*; the spicules average about 0·19 by 0·0126 mm. in size.

The synonymy of the different species of *Petrosia* is very difficult to unravel. Undoubtedly this species comes near to *Thalysias subtriangularis*, Duchassaing<sup>1</sup>; the difficulty is to find out exactly what that species is. Even supposing that Schmidt had not examined Duchassaing's type specimens, yet, having regard to the localities, it is probable that his identification of his *Schmidtia aulopora*<sup>2</sup> with Duchassaing's *Thalysias subtriangularis* is correct. *Thalysias repens*, Carter,<sup>3</sup> also from the West Indies, which Mr. Carter calls "a repent form of the white species *subtriangularis*, viz., *Thalysias repens*, mihi," appears from the measurement of his figure of the spicule (which is thus shown to be about 0·18 mm. long.) to be the same species as Schmidt's *aulopora*. In *Schmidtia aulopora*, Schmidt, the spicules measure about 0·175 by 0·0078 mm., being thus shorter and not half so thick as in the types of *Petrosia similis*.<sup>4</sup>

<sup>1</sup> Animaux radiaires des Antilles, p. 26. See also Duchassaing and Michelotti, Spongiaires de la mer Caraïbe, Haarlem, 1864, p. 85, pl. xvii. fig. 1, pl. xviii. fig. 1.

<sup>2</sup> Spong. Atlant. Gebiet., 1870, p. 44, Taf. v. fig. 8.

<sup>3</sup> Ann. and Mag. Nat. Hist., April 1882, p. 282, pl. xi. fig. 10.

<sup>4</sup> The measurements of the spicules in *Schmidtia aulopora* are taken from a preparation in the British Museum, labelled in Schmidt's handwriting, from St. Thomas.