

Skeleton.—(a) *Dermal*; a reticulation of spiculo-fibre (Pl. XVII. fig. 12) varying from one to nine or ten spicules in breadth, and composed of stylote spicules. Over the osculum-bearing papillæ this reticulation is replaced by a single dense layer of closely packed stylote spicules, mainly placed longitudinally and more or less parallel with one another. (b) *Main*; composed of a coarse reticulation of thick, stout spiculo-fibre, composed of stylote spicules like those of the dermal skeleton, but usually a little shorter.

Spicules.—(a) *Megasclera*; smooth styli (Pl. XVII. fig. 4) tapering to a not very sharp point at the apex and also slightly towards the base, measuring about 0·7 by 0·019 mm. (b) *Microsclera*; two kinds are present—(1) numerous large, contort diancistra, measuring 0·177 mm. long by 0·019 mm. in breadth of shaft. The exact shape of these spicules will be best understood from the figure (Pl. XVII. fig. 2, a, b). They occur both in the deeper tissues and in the dermal layer. (2) Very numerous, small, contort spicules, many of which appear to be young forms of the large diancistra (Pl. XVII. fig. 2, d), while others (Pl. XVII. fig. 2, c), different in form, are certainly not so; length of the latter 0·038 mm., and of the former about the same. The latter are simply sigmata. Both forms occur abundantly in the dermal membrane as well as in the deeper tissues. In the dermal membrane they are so arranged as to leave frequent spaces in which the pores are situated.

In its very distinct and lace-like dermal membrane, strong, fibrous skeleton and general external appearance, this sponge closely resembles many *Esperellæ*, whence the specific name. For a *Vomerula* it is very large. The large diancistra are like those of *Hamacantha* (*Hymedesmia*) *johnsoni*, Bowerbank.¹ *Hamacantha papillata*, Vosmaer,² from the Arctic Seas, differs from *Vomerula esperioides* chiefly in the presence of cylindrical spicules (*tr.*²), but has the papillæ.

The sponge seems to grow in a very luxuriant manner on the Agulhas Bank, many fine specimens having been obtained by the Challenger from that locality.

Localities.—Station 142, December 18, 1873; lat. 35° 4' S., long. 18° 37' W.; Agulhas Bank; depth, 150 fathoms; bottom, green sand; bottom temperature, 47°·0. Two large bottles full.

Station 320, February 14, 1876; lat. 37° 17' S., long. 53° 52' W.; off the mouth of the Rio de la Plata; depth, 600 fathoms; bottom, green sand; bottom temperature, 37°·2. A small fragment of a dark greenish colour, which, in accordance with its spiculation, we identify with this species.

¹ Mon. Brit. Spong., vol. i. pl. v. fig. 112.

² Sponges of the "Willem Barents" Expedition, 1880-81, p. 28 (*sep.*).