

Skeleton.—Composed of a very coarse, widely open reticulation of stout, tough spiculo-fibre, branching and anastomosing, and evidently containing a considerable quantity of horny cementing substance. This fibre is composed of longitudinally placed, very densely packed, slender oxeote spicules, firmly adherent to one another; and is echinated from the surface by spined stylote spicules which project at right angles to the fibre. The fibre itself is commonly about 0·5 mm. in thickness.

Spicules.—*Megasclera*; (1) smooth, slender, slightly curved, gradually and sharply pointed oxea, measuring about 0·35 by 0·0063 mm., forming by far the greater portion of the skeleton. (2) Straight, slender, tapering, bluntly pointed, entirely spined styli; spines small, abundant near the rounded apex, directed towards the base; size of spicule about 0·17 by 0·0075 mm.; echinating the skeleton fibre.

In its external form and in its wiry, bristle-like fibre this species differs very widely indeed from the foregoing, though in spiculation the two come very near to one another.

Locality.—Papieté Harbour, Tahiti; depth, 20 fathoms. Seven or eight specimens.

Family IV. AXINELLIDÆ.

Skeleton typically non-reticulate; consisting of ascending axes of fibres from which arise subsidiary fibres radiating to the surface. Fibres typically plumose. *Megasclera* chiefly styli to which oxea and (or) strongyla may be added. *Microsclera* rarely present, never chelæ.

Genus *Hymeniacidon*, Bowerbank (Pls. XXXIII., XXXIX., XL., XLV.).

1864. *Hymeniacidon*, Bowerbank, Mon. Brit. Spong., vol. i. p. 191.

Form massive. Skeleton reticulate, composed of ill-defined spiculo-fibre, not plumose. *Megasclera* all monactinal, styli or subtylostyli. No *microsclera*.

Bowerbank's original diagnosis (*loc. cit.*) runs—"Skeleton without fibre, spicula without order, imbedded in irregularly disposed membranous structure." The genus certainly is a difficult one to diagnose but we must have something more definite than this to go by. Bowerbank's diagnosis includes far too much for any natural genus and its author makes no less than forty-two species of *Hymeniacidon* out of a total of one hundred and ninety-three species of British sponges.¹

The original type of the genus is *Hymeniacidon caruncula*,² and, taking this as our starting point, we have endeavoured to construct a more compact genus with the diagnosis as given above.

The systematic position of the genus must still be regarded as very doubtful. Having

¹ Mon. Brit. Spong., vol. ii. p. xx.

² *Vide* Mon. Brit. Spong., vol. i. p. 191.