

branch comes into contact with the horny joint of the stem, and then appears to arise from the latter. The longitudinal furrows on the calcareous joints are deep and bounded by sharp ribs, which have serrated edges. On the smaller branches the distance between the individual teeth reaches 0·12 mm., and they project 0·04 mm. above the edge.

The spicules of the cœnenchyma consist of a deep layer of spiny spindles, which follow the longitudinal canals in the furrows, 0·2 to 0·21 mm. in length, and 0·02 to 0·03 mm. in diameter; and a superficial layer of flat, often slightly curved, spiny bodies, whose edges interlock, and which cover the cœnenchyma thickly. They are prolonged up the wall of the polyp in which they are placed peripherally from its base upwards. Their form closely resembles that of the spicules of *Mopsea*. The upper edge is convex, strongly toothed, the lower edge somewhat concave, with projecting, finely toothed lobes, the surface spiny.

Spicules of the cœnenchyma, length to breadth in mm.—0·16–0·05; 0·15–0·05; 0·15–0·06. The spicules of the polyps measure 0·06–0·16; 0·05–0·18; 0·07–0·22; 0·07–0·25 mm. The spicules of the cœnenchyma and of the polyp-wall are coral red. The spicules of the tentacles are shaped like those of the polyp-wall, only somewhat more slender and a little more spiny on the surface; their colour is white. Height to breadth, 0·05–0·12; 0·05–0·13 mm. The colour of the whole colony is a brick-red, the polyp mouths white.

Habitat.—Port Jackson; depth, 30 to 35 fathoms.

Family III. PRIMNOIDÆ, Valenciennes (*s. str.*).

Primnoaceæ (pars) Valenciennes, Comptes rendus, 1855, t. xli. p. 7.

Primnoaceæ (pars), H. Milne-Edwards, Hist. Nat. des Coralliaires, t. i. p. 138, 1857.

Primnoadæ, Gray, Proc. Zool. Soc. Lond., 1857, p. 285; *op. cit.*, 1859, p. 483.

Primnoaceæ (pars) (as a division of Subfamily Gorgoninæ), Kölliker, Icones Histiol., Abth. 2, 1865, p. 135.

Primnoidæ (pars), Verrill, Rev. Polyyps East Coast N. Amer., Mem. Bost. Soc. Nat. Hist., vol. i., 1884, p. 8; Trans. Conn. Acad., vol. i., 1869, p. 418.

Primnoadæ (pars) + *Calligorgiadæ (pars)* + *Calyptrorphoridæ*, Gray, Cat. Lithophytes Brit. Mus., 1870, pp. 43, 34, 41.

Primnoadæ (Subfamily), Studer, Monatsber. k. d. preuss. Akad. d. Wiss. Berlin, 1878, p. 641.

Primnoidæ (emend.), Verrill, Bull. Mus. Comp. Zool., vol. xi. p. 28, 1883.

When Milne-Edwards, following in the steps of Valenciennes, established the family Primnoaceæ, for that group of Gorgonids in which the sclerenchyma was much more developed on the bodies of the polyps than on the axis, and in which the polyps were prominent, he adds—“ Mais cette disposition n'appartient pas seulement aux Primnoacées et se retrouve chez plusieurs Gorgoniacées, notamment chez les Eunicées; et ce qui distingue essentiellement ces deux agèles entre eux, c'est la structure du sclérenchyme