

Polyps arrayed in two or three rows on the dorsal margin of the pinnules, with well-separated cells or calyces 3 mm. in length, the apertures of which are surrounded by eight strong spines. Total number of polyps on a leaf 30 to 34.

Rachis of a medium thickness, with two kinds of rudimentary polyps or zooids. One set, the ventral zooids, consists of a row of larger spiny zooids, which begins at the ventral margin of the pinnules, at 3 to 4 mm. from their attachment, runs obliquely towards the ventral side of the rachis, and there changes its direction so as to become longitudinal. Each row has the aspect of a curved spiny ridge, and shows the openings of the zooids as whitish points arranged in one single series.

The lateral zooids begin with a large crowded mass at the dorsal side of the ventral zooids, but as soon as they reach the interspace of the pinnules their number greatly diminishes, and they end with a double or single row near the dorsal attachment of the pinnules. These zooids have only small spines or none at all, and look more like small rounded or conical papillæ.

The rachis has between the zooids on its ventral side a free space of 2·5 to 4·0 mm. in breadth, and looks here as if it were beset with little papillæ or wart-like bodies. In one part of the pen some two or three zooids seem to occupy a portion of the groove. The dorsal side of the rachis is destitute of a free middle line, as the leaves somewhat overlap each other.

The colour of the whole fragment, which is deep red, is occasioned by red spicules lying in the integument. The greatest number of these is found in the polyp-cells, and on both margins of the leaves, while the surfaces of the latter are pale red and whitish. A whitish colour is also found on the ventral side of the rachis, but this is only produced by the thick epithelium of this part, which contains many thread-cells, while the subjacent cutis is red. The polyps themselves are not coloured, and the same holds good of the whole interior of the pinnules and the rachis. The spicules are of the typical form of those of the Pennatulidæ, with a maximum length of 1·14 to 1·2 mm., and a maximum breadth of 0·058 mm. The minute and microscopic structure of this *Pennatula* corresponds, as far as I can judge, with that of the *Pennatula rubra* described in my monograph; but I have to remark that in the Challenger example the calcareous axis is wanting, having evidently been torn out of the fragment by accident.

The fragment belongs to a female polypidom, and the eggs are found in the pinnules.

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| Length of the pinnules measured in the curved state, | | 12-14 mm. |
| Breadth at base, | | 10-12 |
| Breadth at their free end without the polyp-cells, | | 3-4 |
| Breadth of the rachis, | | 5-6 |

Habitat.—Station 164, off Sydney, Australia, lat. 34° 8' S., long. 152° 0' E. Depth, 950 fathoms. Temperature, 2°·2 C. Grey ooze. 12th June 1874.