

bears two short, thick, dumpy, secondary or superficial spines. One near the adoral extremity, and the other, of similar size and character, standing behind it, about midway on the surface of the plate. There are four small, short, conical mouth-spines on the lateral margin of the plate, ranged serially above and behind the anterior pair of spines just mentioned, and interlocking with the corresponding spines of the neighbouring mouth-angle.

The actino-lateral spines are numerous and very closely placed, the longest spine being far out upon the ray,—a much greater number being included within the interbrachial arc than usual. About forty spines stand on each side of the ray, the twentieth or twenty-first from the mouth being the longest. The spines within the disk are comparatively short and uniform in length, and do not quite meet in the median interrarial line; muscular fibre, however, may frequently be seen underlying the outer tissue, passing from the tips of the actino-lateral spines to the corresponding ones of the neighbouring ray. In the immediate arm-angle, however, the spines are longer than the space between the angle and the furrow; so that a considerable overlap takes place, and a consequent puckering and deformity of the tissue ensues, which appears to develop frequently into an unsightly excrescence. The spinelets succeeding to the long ones decrease very rapidly in size towards the extremity of the ray.

Colour in alcohol, brownish white or grey.

Locality.—Station 158. South of Australia, 1099 miles south-west of Cape Otway. March 7, 1874. Lat. $50^{\circ} 1' 0''$ S., long. $123^{\circ} 4' 0''$ E. Depth 1800 fathoms. Globigerina ooze. Bottom temperature $33^{\circ} 5$ Fahr.; surface temperature $45^{\circ} 0$ Fahr.

Remarks.—This species may be distinguished from *Hymenaster cælatus*, which it resembles in some respects, by the two large sacculated spines in the adambulacral armature; and by the fact that the spiracula are confined to the interspaces between the raised areas of the paxillæ-crowns, and are not distributed over the area of the crown as well, as in *Hymenaster cælatus*. The colouration, the form of the aperture-papillæ, and the form of the mouth-plates are also different.

5. *Hymenaster echinulatus*, Sladen (Pl. LXXXII. figs. 1 and 2; Pl. LXXXIII. figs. 7-9).

Hymenaster echinulatus, Sladen, 1882, Journ. Linn. Soc. Lond. (Zool.), vol. xvi. p. 218.

Marginal contour pentagonoid. Interbrachial arcs moderately indented, the minor radius being in the proportion of 72.7 per cent. $R = 22$ mm.; $r = 16$ mm. The rays are sharply tapered at the extremity, although when seen from above the angles of the pentagon have the appearance of being well rounded, in consequence of the outspreading and graceful curve of the marginal fringe; this is nipped together laterally at the extreme tip, and a slight upward continuation of the furrow is produced thereby. Form depressed, abactinal area slightly conoid, interrarial spaces considerably sunken.

The supradorsal membrane is thick and opaque, with very robust broad muscular