

are covered with a thick fleshy tissue, which is slightly turned over the tips of those spinelets that fall beyond the summit of the interbrachial arc, and extends up to within a short distance of the extremity of the ray, gradually diminishing in breadth as it proceeds outwards. The margin of this supplementary fringe is thickened, and furnished with a powerful muscular band.

Colour in alcohol, a rather livid pink, the ambulacral furrows and tube-feet being a yellowish white.

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 $33^{\circ} \cdot 5$ Fahr.; surface temperature $45^{\circ} \cdot 0$ Fahr.

Remarks.—This exceedingly handsome species is characterised by the definitely raised areas of the paxillæ-crowns. A similar structure occurs in *Hymenaster sacculatus*, but is not so strikingly developed. The two species may be readily distinguished by the structure of the supradorsal membrane, by the disposition of the spiracula, by the armature of the adambulacral plates, and by the general form. The colour also is different.

12. *Hymenaster crucifer*, Sladen (Pl. LXXXIX. figs. 1 and 2; Pl. XCI. figs. 1-3).

Hymenaster crucifer, Sladen, 1882, Journ. Linn. Soc. Lond. (Zool.), vol. xvi. p. 227.

Marginal contour subpentagonal. Interbrachial arcs very slightly indented, the minor radius being in the proportion of 66·6 per cent. $R = 51$ mm.; $r = 34$ mm. Rays tapering to a fine extremity, which is somewhat attenuated and produced. Marginal fringe comparatively insignificant as seen from above, and narrowing rapidly towards the extremity of the rays. Form depressed, more convex on the actinal than on the abactinal surface.

The supradorsal membrane is rather thin; the muscular fibres are numerous, thick, and radiate regularly from the tips of the spinelets. The paxillæ are numerous, though somewhat widely spaced, and bear a crown of four or sometimes five spinelets, which usually elevate the membrane into slightly raised Maltese cross-shaped areas. The spinelets are sharply prominent, and the fibres for a short distance round the tip are merged together and form a homogeneous "cap;" the caps of each of the spinelets of a crown coalesce, and thus produce the subcruciform or rhomboid elevation above mentioned. The paxillæ are well spaced, and are arranged in longitudinal lines along the rays. No spiracula occur on the raised areas, but in the intermediate spaces they are very numerous and closely placed, the intervals between the thick radiating bands being very narrow, and occupied by a great number of small spiracula placed close together in lines, four to eight or even more in each, and separated from one another by only the finest dissepiment. The numerous spiracula and the isolated unpunctured cruciform areas give a striking character to the abactinal surface. The oscular orifice is large, the valves all webbed together, and the spinelets quite hidden in membrane, the whole of which is uniformly punctured with a