

plates, the remarkable structure of the aperture-papillæ, and the widely expanded and simply armed mouth-plates in *Hymenaster coccinatus*, apart from its rich colouration, readily distinguish the species from all other forms.

21. *Hymenaster præcoquis*, Sladen (Pl. XC. figs. 5 and 6 ; Pl. XCI. figs. 13-15).

Hymenaster præcoquis, Sladen, 1882, Journ. Linn. Soc. Lond. (Zool.), vol. xvi. p. 240.

Marginal contour subpentagonal. Interbrachial arcs very feebly incurved, the rays slightly attenuated at their extremities. Minor radial proportion 65 per cent. $R = 10$ mm. ; $r = 6.5$ mm. The abactinal surface forms a uniform convex curve of low elevation, the membrane arching over from margin to margin, and the radial areas being in no way specially defined externally. No lateral fringe present. Actinal surface flat.

The supradorsal membrane is very fine and semitransparent. The muscular tissue is very feebly developed, no definite series of fibrous bands being present, although under considerable magnification the existence of aggregated fibres may be discerned. The spiracula are comparatively large, numerous, and equally distributed, surrounded by a conspicuous white ring. The paxillæ are large, robust, closely placed, and usually surmounted with five (sometimes six or seven) spinelets, which are thick and widely expanded from the pedicle. The spinelets do not taper at their extremities, but expand somewhat, and are flaring, elevating the membrane very slightly. The paxillæ are clearly visible through the transparent membrane, and about nine longitudinal rows may be counted across the base of the ray. The oscular orifice is small, with the spines of the valves long and slightly tapering.

The ambulacral furrows are narrow and lanceolate, maintaining a nearly uniform breadth till near the extremity. The armature of the adambulacral plates consists of three to five rather long, delicate, and acicular spines, arranged on the plate in a semicircular curve when the larger number are present—three usually being on the margin of the furrow, and the two adoral ones standing successively more outward (away from the furrow) on the plate. These two obliquely placed spinelets maintain their position throughout the rays, and any diminution which takes place in the number towards the extremity is manifest in the marginal or aborally placed members of the series. The most aboral spine is rather shorter than the others, which are nearly uniform in length, and each of them is invested with a very thin membrane, and no sacculus is produced. The first adambulacral plates (nearest the mouth) bear only two spines, and these sometimes are webbed together.

The aperture-papillæ are small and dumpy, the calcareous portion being little more than twice (or at most three times) as long as broad, and very frequently this is bulged out somewhat at the side. The papilla is not free as usual in this genus, but is clothed with the general tissue of the actinal area, the aboral lateral margin alone being free and