

may be recognised readily by the structure of the paxillæ, the resultant character of the abactinal surface, and the armature of the adambulacral plates.

3. *Retaster gibber*, Sladen (Pl. LXXIV. figs. 5 and 6 ; Pl. LXXVII. figs. 7 and 8).

*Retaster gibber*, Sladen, 1882, Journ. Linn. Soc. Lond. (Zool.), vol. xvi. p. 199.

Marginal contour substellate, interbranchial arcs acute, not rounded. Minor radial proportion about 50 per cent.  $R = 28$  mm. ;  $r = 14$  mm. Rays five, well rounded, tapering continuously from the angle to the extremity, with sides rounded, tumid, and curving over upon the actinal area as in *Echinaster*. Abactinal profile high, gibbous, rounded. On the actinal area the mouth and surrounding portions are deeply sunken.

The supradorsal membrane has reticulated fibrous bands, which mark it off into square or rhomboidal meshes of great regularity. In the centre of each, three or four paxillar spinelet-tips are visible ; and other spinelets radiate to the mesh fibres, one (or occasionally two) spiracula being situated in the interspaces. The white fibres of the meshes form a conspicuous feature, and the slightly protrusive tips of the spinelets impart a granulose appearance to the abactinal area, the whole being covered with a thin fleshy membrane. The oscular orifice is small, closed by a number of subpapillate spinelets, rather longer, more prominent, and more robust than those of the paxillæ proper.

The adambulacral furrows are narrow and deeply sunken. The combs of the adambulacral armature, which are quite within the furrow and below the level of the test, are composed of three to five spinelets, which are short, rather robust, and webbed together, the membrane being very slightly indented, and with a slight knob over the end of each spinelet. The ambulacral tube-feet are completely hidden by the over-arching combs.

The mouth-plates are deeply sunken ; the mouth-spines are longer than the spines of the adambulacral armature, three on each plate, the whole six being webbed together into a continuous comb. Each plate bears one large isolated secondary or superficial spine, longer than the mouth-spines, very robust, covered with a thick membrane, except at the tip, which is translucent and sharply pointed.

The segmental apertures are elongate and narrow, the papillæ being free on the aboral side only.

The actino-lateral spines are very short and robust, almost hidden within the furrow, of which they appear to form the sides, and only protrude a short way beyond the level of the test ; they stand nearly perpendicular to the plane of the ray, and in some parts show a tendency even to arch over the furrow slightly. This disposition, together with the abortive character of the fringe, imparts a feature very different from that usually presented by this structure in the Pterasteridæ. In the immediate angle, near the actinostome, the actino-lateral spines are somewhat longer, and are laid over upon the rounded surface of the interradial area, their web being continuous and forming a smooth, fleshy triangular area leading up to the mouth-angle.