

1. *Pythonaster murrayi*, n. sp. (Pl. XCV. figs. 1-5).

Rays five. $R = 150$ mm.; $r = 17$ mm. $R < 9 r$. Breadth of a ray at the base, 19 mm.; breadth at 19 mm. from the base, 9 mm.; midway between the centre and the extremity, 5.5 mm.

Rays very elongate, flexible, narrow, subcylindrical, subcarinate and compressed laterally on the outer part, considerably swollen and inflated at the base but rapidly becoming slender at a short distance from the disk; they then appear to maintain a nearly uniform breadth for some distance along the ray, and finally taper gradually to an attenuate extremity.

A transverse section of the ray, midway between the centre and the extremity, would present an outline nearly resembling that of a gothic arch, with the apex slightly rounded, the vertical height being greater than the breadth. The lateral walls terminate with an abrupt rounding upon the actinal surface, this rounding being occupied entirely by the adambulacral plates; nearly the whole of the actinal surface of the ray is thus taken up by the ambulacral furrow.

The disk is small, and its real size is so much masked that the starfish has the appearance of being composed of five united rays only, the deception being produced by the presence of a deep sulcus or channel, which traverses each interradial line. This constriction emphasises the swelling at the base of the ray, and also causes the ray to appear to be continued nearly to the centre of the disk. In the central area there is some depression, in the midst of which is located a well-developed valvular apparatus similar to that closing the oscular orifice in the *Pterasteridæ*. This consists of five triangular fan-like valves, radial in position, each composed of delicate spinelets united by membrane, which meet together when shut down and completely close the dorso-central aperture.

The abactinal and lateral areas are beset with extremely delicate plates, which are imbedded in membrane and are invisible without microscopic preparation. The ornamentation of these surfaces presents a very remarkable appearance. It consists of short, minute spinelets, grouped together into fasciculi, five to ten in each, borne on the plates above mentioned; and each fasciculus is enclosed in a membranous sac, which causes them to appear like little semiglobular bags only. Under magnification the extremities of spinelets may here and there be seen protruding through the membrane, and the interspaces are also covered with membrane. The fasciculi are arranged with great regularity in obliquely transverse lines on each side of the median radial line, and pass along the deep lateral wall of the ray up to the adambulacral plates. In the median portion of the radial areas of the disk and along the median line of the ray, the sacculi are smaller and are disposed without order and consequently independent of the transverse series. This irregular median band is very narrow along the ray, but expands towards the base and on the radial area of the disk. The rows run nearly parallel to the interradial line, and maintain the