

A. *Asterias rubens* group: *ASTERIAS vera*.

1. *Asterias vesiculosa*, n. sp. (Pl. XCIX. figs. 1 and 2; Pl. CIII. figs. 9 and 10).

Rays six. $R = 81$ mm.; $r = 16$ mm. $R > 5 r$. Breadth of a ray at the base, 15 to 16 mm.; breadth about midway between the disk and the extremity, 9 mm.

Rays elongate, subdepressed, tapering from the base to the extremity, the outer part of the ray being narrow and rather attenuate. Disk subdepressed, only slightly inflated; abactinal surface of the rays slightly convex, also slightly convex at the base on the actinal surface, the disk being marked with depressions in the actinal interradial lines. Interbrachial arcs acutely angular.

The abactinal plates are entirely masked. The whole area is beset with isolated, widely spaced, short, robust, obtuse spinelets, each of which is encircled by, and appears to protrude through, a widely expanded puffy vesicle. Occasionally one or more rather large pedicellariæ may be imbedded. No definite order of arrangement can be detected in the disposition of the spinelets. The interspaces between the vesicles are closely crowded with numerous large papulæ, amongst which pedicellariæ are occasionally interspersed, and sometimes the latter are borne on a vesicle resembling in miniature that of the spinelets. Viewed with the naked eye the whole abactinal surface has a coarse, irregularly granular and studded appearance.

The armature of the adambulacral plates consists of two short, robust, cylindrical, slightly tapering, obtuse spinelets, which form two regular longitudinal rows. At the base of the innermost spine, and quite within the furrow, are numerous very large forficiform pedicellariæ. External to the adambulacral plates is a rather wide space covered with a thick, puffy, wrinkled membrane, through which protrude a single longitudinal series of widely spaced and rather large papulæ, and this space is bounded at the margin of the actinal area by a longitudinal series of plates (probably the representatives of infero-marginal plates) upon which are borne one or usually two diagonally placed small spinelets, almost hidden in an expansive vesicle beset with isolated pedicellariæ. Above this series of infero-marginal plates is a wide area which occupies the lateral wall of the rays, covered with thick wrinkled skin, punctured with rather numerous papulæ, and bearing, at least near the base of the rays, large forficiform pedicellariæ. It is bounded superiorly by a regular longitudinal series of plates—the representatives of the supero-marginal series—upon each of which is borne a single rather small spinelet, surrounded by a large, widely expanded vesicle in which are imbedded from three to five pedicellariæ. Here and there upon the abactinal surface and elsewhere may be seen isolated and very large forficiform pedicellariæ usually on a vesicular base.

The madreporiform body, which is situated about midway between the centre of the disk and the margin, has its surface grooved with fine convoluted striations.