

less than half their length; and the upper margin only of the plate forms the boundary of the abactinal surface of the ray. On the centre of each plate is a large well-defined tubercle, on which is articulated a robust, cylindrical, tapering spine, the ninth from the interradial line being about 8 mm. in length. The surface of the plate is covered with membrane and bears no spines, excepting occasionally a minute thornlet, irregularly placed near the base of the large spine.

In the median interradial line there is one large odd supero-marginal plate, developed abactinally into a prominent, truncate, conical tubercle, upon which is borne a powerful robust spine about 8 mm. in length, directed vertically, and thicker than any of the other spines on this species.

The infero-marginal plates are similar in form and character to the superior series, each being nearly exactly beneath its corresponding upper companion. Like them, each has a prominent tubercular eminence, upon which is borne a straight, robust, tapering, and sharply-pointed spine, the sixth or seventh from the interradial line measuring about 10 mm. in length; the length decreasing slightly as they proceed along the ray. A second similar but rather smaller spine, articulated on a tubercle, stands close to the lateral spine on the inner side. The surface of the plate is covered with membrane; and two or three irregularly placed microscopic thornlets may be present. On the two or three innermost plates on each side of the median interradial line, the lateral spines and their companions are greatly reduced in size, being little more than mere miliary spinelets.

In the interbrachial arcs, the marginal plates have the appearance of being brought over upon the disk; and their surface forms a peculiar bevelled area sloping outwards and downwards, the lower margin only of the infero-marginal plates falling in the outline of the interbrachial arc.

The adambulacral plates are large and massive, of great breadth, and rather broader than long. They are comparatively widely separate, and the interspaces are filled up with ligament; the furrow margin is slightly convex. Their armature consists of:—(1.) a furrow series of five very small, short, equal, cylindrical, obtusely pointed spinelets, which radiate apart and form a small isolated semicircular comb directed over the furrow, the successive combs being well spaced apart. (2.) On the actinal surface of the plate are two large, robust, tapering, but obtusely pointed spinelets, placed one behind the other, which are subequal in length, or occasionally the outermost is the longest; this measures 4 mm. on the sixth or eighth adambulacral plate, the longest spinelets of the furrow series not exceeding 1 mm. One minute thornlet usually stands on the adoral side of the outer of the two superficial spines; no other spinelets are present, and the surface of the plate is covered with a membranous tissue. The ambulacral furrows are comparatively widely open. The tube-feet are large, and have a rounded, well-developed, knob-like termination.