

spinelets, forming regular crowns, which elevate the membrane into rhomboid or pentagonal areas, apparently raised in relief, and closely placed, the margins of the raised areas being more or less incurved, and the intervening spaces deep and furrow-like. The muscular fibres are closely interwoven, the bands ill-defined, and the meshes irregular; the spiracula are small, and frequently two or more together, this structure being uniform over elevated areas and interspaces alike. The tips of the paxillæ-spinelets are only slightly protuberant; the relief-areas which fall in the margin of the ray are smaller, more compressed, and somewhat modified in form as compared with the others. About seven longitudinal rows of elevated areas or paxillæ-crowns may be counted at the base of a ray.

The oscular orifice is small, the circumference at the base of the valves pentagonal, 9.25 mm. in diameter, and marked out by spinelets. There are five valves, which are very regularly triangular, with their apices sharply pointed, and all webbed together, the whole forming a regular pyramid when closed. The innermost two spines of each valve stand somewhat apart, and the membrane is rather deeply drawn in between, producing a well-defined furrow along the median line. The projecting tips of spinelets are prominent at the sides of the valves. At the base of each valve are two large elevated areas, formed by paxillæ-crowns of six to eight spinelets, and thus nearly twice the size of the other crowns upon the abactinal surface; they are subpentagonal in shape, and the ten form a conspicuous and well-defined circlet round the oscular pyramid.

The ambulacral furrows are rather wide, straight, uniform in breadth, except at the extremity, where they rapidly converge. The armature of the adambulacral plates consists of three very short, cylindrical, slightly tapering spines, covered with membrane, and placed in line oblique to the furrow.

The aperture-papillæ are large and subcircular, with their investing membrane somewhat Japanese fan-shaped. The calcareous portion of the papillæ is very flaring in habit, sometimes appearing as if made up of a comb of radiating spinelets.

The mouth-plates are small, short, but broad, and with widely expanded lateral flanges, broadly rounded in front; the keel along the line of junction is feebly developed, the aboral extremity being only slightly prominent. Two secondary or superficial spines are borne on slight tubercles, one near the adoral extremity and the other near the middle of the plate. These spines are short, comparatively small, broad at the base, and taper slightly at the tip,—the adoral pair being rather the smaller and not much larger than the spines on the adambulacral plates. There are three mouth-spines, which are similar in size and form to the adambulacral spines, arranged on the lateral margin of the plate and away from the adoral peak of the keel.

The actino-lateral spines are widely spaced, the difference in the length being comparatively small along the inner two-thirds of the ray. About twenty-seven spines are present on each side of a ray, the sixth or seventh from the mouth being slightly longest. None of the spines meet in the median interradial line, but are widely separate; they