

covered with short, small, conical-tapering, and sharply pointed thornlets, which are rather widely spaced, adpressed, and diminished in size near the margins, the smaller ones being less sharply pointed. At the extreme margin of the plate adjacent to the superomarginal series there are a few of the rounded granules similar to those on the latter, which gradually form a transition to the thornlets above described. At the lateral margins of the plates the thornlets stand in a lineal series which is directed obliquely towards the adjacent plate and forms a sub-fasciolar fringe arching over the slight channel at the suture. On the inner part of the channel six or seven of the thornlets on each of the adjacent plates are modified into short flattened truncate papillæ, those of one plate being directly opposed to the corresponding series on the adjoining plate, and thus form a peculiar and more definitely fasciole-like organ. On the three innermost sutures in the interbrachial arc this structure is not present, but it may be traced along the ray as a definite organ almost to the tip, diminishing of course in size as it proceeds outwards.

The armature of the adambulacral plates consists of a furrow series of eight or nine short, slightly compressed, obtusely rounded papilliform spinelets, equal in length, and with the flattening at right angles to the direction of the ray. The spines appear slightly geniculated and stand upright side by side, and their base line is a flattened curve, the curvature inwards being greatest at the aboral extremity of the series. The two last spinelets at this end of the series stand slightly apart from the rest and from one another, are somewhat smaller and different in character, and the outermost spinelet at the adoral extremity of the series is also a little smaller than those which actually form the general ranks of the series. The comb of furrow-spinelets, even when standing perpendicularly, touches that of the corresponding plate on the opposite side of the furrow, and consequent on the curvature of the line of furrow spines on each adambulacral plate a series of small circular apertures is formed in the median line of the furrow through which the ambulacral tube-feet may be seen, and indeed were it not for these apertures the ambulacral furrow would be entirely enclosed. External to the furrow series is an irregular lineal series of four or five short, conical-tapering, pointed spinelets, running parallel to the furrow; these are rather wide apart and shorter than the furrow series on the inner part of the ray, where they are little more than blunted papillæ, but increase slightly in length as they proceed outwards, and one or two of the middle ones may be twice the length of the others. On the plates near the mouth there are seldom any other granules external to the lineal series; near the commencement of the free part of the ray, however, a few very small thornlike granules are present, whilst near the middle of the ray these may form a second irregular lineal series external and parallel to the outer series of spinelets above-mentioned.

The actinal interradial areas are comparatively small. The series of plates adjacent to the adambulacral plates have a regular marginal arrangement of papillæ simulating