

margin of the plate gently concave and forming a little bay along which the ambulacral tube-foot passes. Adjacent plates are united by a rather broad tract of muscular ligament, and when this is removed by alkali the plates appear to stand widely spaced. The armature of the adambulacral plates is very simple. On the middle of the plate one large spine stands perpendicularly; this is more than half the length of the lateral spines above described, its measurement being 6.5 mm., and like these it is clothed in a precisely similar membranous sheath, crowded with pedicellariæ, and furnished with a similar saccular expansion at the tip. On the inner portion of the ray this spine is truncate at its distal extremity and often flaring; beyond the ovarian region it is tapering and sharply pointed, and the spines increase slightly in length till the maximum is attained within the middle third of the ray. At the aboral extremity of the plate, and immediately on the furrow margin, is a very minute spinelet not more than a millimetre in length, and directed at an angle of about 45° over the furrow. This spine is cylindrical, tapering, and covered with a closely-fitting membrane, without the crowded pedicellariæ; two to six pedicellariæ, however, usually stand in a little group, and form a sort of collarette midway between the extremities of the spine. Occasionally this small inner spine is accompanied by a companion spine of similar size and character, standing close to it, but rather more adoral and higher in the furrow. On the outer margin of the plate, and articulating on a small rudimentary infero-marginal plate ankylosed to the adambulacral plate, and appearing like a subtubercular elevation near the aboral end, is the long lateral spine above described, and this as already noticed is usually present only on alternate plates. No other spines are borne on the adambulacral plates.

The actinostome is large and of wide expanse, occupying three-fifths of the actinal surface of the disk, its diameter being 12 mm., in a disk of 20 mm. diameter. Within its periphery, and at a higher level within the disk, extends a more or less broad tract of buccal membrane, in the centre of which is the large mouth. The muscular system of the buccal membrane is strongly developed, and the margin of the mouth is crenulated by the numerous plications, the lines of which upon the membrane near the mouth-opening have a verrucose appearance.

The mouth-plates are small and inconspicuous, the united pair forming a shield-shaped "mouth-angle," with a well-rounded margin adorally and subparallel sides. The median juncture is invisible on account of the investing membrane. On the adoral margin three or four mouth-spines stand on each side of the median line, equidistantly spaced, radiating apart, and directed over the buccal membrane; they are very little more than 1 mm. long (scarcely 1.5 mm.), the inner pair being perhaps a trifle longer than the others; the third spine (or the fourth when present) is placed a little further back from the margin, on the surface of the plate, than its predecessors, and is succeeded by a large secondary spinelet, 3.75 to 4 mm. long, quite on the surface of the plate but still near the margin; this is followed by one, or sometimes a pair of small spinelets, in the same