

interbrachial arc is very wide, and its rounding is more or less obliterated by the subpentagonal character of the disk.

The abactinal area is covered with a leathery integument, beset with minute, compact, and closely crowded pseudo-paxillæ, composed of from four to eight spinelets, which occupy the whole area. The paxillæ are smaller in the immediate centre of the disk, but there is no special protuberance. The actinal portion of the disk slopes downwards, with an inward-bending curve from the margin to the mouth-plates, producing a very prominent convexity on the under surface.

The marginal plates are deep and almost vertical. Along the whole of the ray beyond the disk the supero-marginal series of each side meet, and from being bent inwards very slightly, produce the laterally compressed and high-arched character of the ray. The supero-marginal plates are twenty-three in number on one side of a ray, and all the plates are longer than high. Along the whole of the free portion of the ray each alternate supero-marginal plate bears a long sharply pointed spine on its upper edge, and the spine-bearing plates of the two sides of a ray alternate, the unarmed plate of the one side corresponding to the armed plate of the other; hence it follows that a straight single line of vertically directed spines extends along the whole of the median radial line. The spines are robust at the base, conical, and taper to a very finely pointed extremity. The spines are longer than the depth (height) of the ray, and they normally decrease in size as they proceed outwards, but the regularity of this is sometimes broken by the occurrence of a shorter spine here and there. The spines are slightly curved in the plane of the direction of the ray, the point turning outwards. Occasionally a small additional spine is intercalated here and there, in the otherwise equally spaced series, in consequence of the corresponding plate of the opposite side of the ray also bearing a spine. The terminal plate is rather large, compressed, and elongate, its abactinal surface sloping upwards at an angle of  $45^{\circ}$  from the general abactinal line of the ray, and its actinal surface is rounded, thereby emphasising the character of the upturned tip of the ray. The terminal plate bears three spines—one at the extremity in the prolongation of the median radial line, and one on each side at a lower level on the furrow margin, all quite at the extremity and close together. In a large specimen an additional spine is present, larger than the terminal abactinal one, and is placed behind it in the median abactinal line of the plate.

The infero-marginal plates are much shallower than the superior series, their length being nearly twice their height. In large specimens they frequently alternate with, instead of corresponding to, the companion supero-marginal plate, especially on the outer part of the ray; and sometimes an intermediate lateral series of plates almost as large as the infero-marginals is intercalated between the superior and inferior series and entirely separates them. This intermediate series may be represented by only a few plates on the outer part of the ray, or may be continuous along a considerable portion of the ray.