

The armature of the adambulacral plates consists of four distinct series of spinelets. The innermost or furrow series consists of ten to twelve (normally ten) small, flattened, obtuse spinelets, which form a compact scoop-like comb, the middle spines being longest, and the outer ones very short; these spines are placed very high in the furrow, and each successive comb is separated from that on the neighbouring plate by a rather large forceps-shaped pedicellaria near the adoral end of the series. On the actinal surface of the plate is a series of four or five large robust, flat, obtuse spinelets, which stand close together, palisade-like, the series being more or less scoop-shaped owing to the slight curvature of the base line and the general rounding of the top of the series; the spinelets may also have a slight individual curvature like front teeth. These are followed by a second series of four or five, and a third series of usually three spines, both series being similar in size and character to those above mentioned. On the outer part of the plate are often three or four irregular, prominent, subprismatic granules or incipient spinelets, irregularly placed. Near the extremity of the ray the outer series are less flattened, and may show irregularity in number and position, the number being less. Between the furrow series of spinelets and the first actinal series are a number of small flat granules.

The actinal intermediate plates are covered with a rather coarse uniform granulation, and bear small, short, subconical, prominent spinelets or papilliform granules. On the second and third series of plates, behind the adambulacral plates, these spinelets are placed in a line on the plate at right angles to the furrow, from three to five in each. On the plates next the adambulacral plates the same lineal arrangement is discernible, but it is more or less masked by grouping or doubling of the line. On the remaining plates, which are near the margin, the spines are one, two, or three together; and the comparative propinquity of the groups leads to the inference that the intermediate plates are small there. It is impossible to make out any trace of the shape of the intermediate plates, the granular surface already mentioned forming a uniform level ground. On the intermediate areas of the disk, and at the base of the rays, very numerous valvate pedicellariæ are present. These form lineal series between the lines of spines above described, but on the inner part of the area become more numerous and irregular. Their length is equal to the breadth of three or four granules, or even more. Near the adambulacral plates foraminal pedicellariæ are present; and these are more numerous along the ray beyond the base, and extend on the intermediate plates there, where the valvate pedicellariæ are either absent or of very rare occurrence. Behind the mouth-plates there is some gibbosity on the actinal interradial area, and irregular spinelets are present.

The armature of the mouth-plates consists entirely of a marginal series of mouth-spines, which appear to be greatly enlarged representatives of the furrow series of spines on the adambulacral plates.

The madreporiform body, which is very large and irregularly oval in form, is situated