

rounded margin of the ray and is directed outward at an angle of about 45° to the plane of the abactinal surface. The surface of the plate is entirely covered with small, equal, papilliform granules, or minute stunted clavate spinelets; and occasionally one or two immediately below the conical spine are longer, more definitely spine-like, and tapering.

The infero-marginal plates alternate with the superior series, and both their height and their breadth are greater than their length. Each plate bears a short, robust, conical but often truncate lateral spine, which is, however, longer and more robust than the spine on the supero-marginal plates; and this is followed by two or three, or even more, smaller tapering and pointed spinelets; the character of the whole spinulation along the median part of the plate being definitely spine-like, the spinelets decreasing in size as they recede from the lateral spine and approach the inner end of the plate; two or sometimes three irregular series may be frequently defined, one series, however, being larger than the others. The rest of the surface of the plate is covered with small papilliform spinelets, which become more crowded, delicate, and cilia-like along the margins of the transverse sutures.

The adambulacral plates are broad and form prominent angular projections into the furrow. Their armature consists of:—(1.) A furrow series of six or seven rather elongate spinelets, rather robust at the base, tapering and sharply pointed; the median spinelet is the longest, and all radiate apart. (2.) On the surface of the plate is an obliquely transverse series of two or three robust conical spinelets, rather longer than any of the furrow series, the outer one being longest when two are present, and the middle one when there are three; on each side of these are two or three small spinelets near the margins of the plate.

The mouth-plates are large, convex, and subtubercular; and their surface is covered with short, conical, pointed spinelets, which decrease slightly in size as they recede from the mouth, but no definite order of disposition can be made out, and the mouth-plates have consequently a remarkably echinulate appearance. The true mouth-spines consist of a marginal series of about nine tapering, pointed spinelets on each plate, the two innermost being fully twice as long and robust as the others, and slightly compressed. There are thus four powerful mouth-spines at each angle guarding the actinostome; and two or three of the superficial spines immediately behind these are equally robust.

The actinal interradiar areas are of very small dimensions, and the intermediate or ventral plates are few in number and do not extend beyond the fourth or fifth adambulacral plate. The separate plates are indistinguishable in spirit specimens, and their surface is covered with small, conical, and pointed spinelets.

The anal aperture is central and distinct, often surrounded by larger spinelets.

The madreporiform body is large, oval, and slightly convex, the inner end of the plate being about midway between the centre of the disk and the margin. Its surface is furrowed with numerous fine and deeply cut striations; many sharply bent and con-