

towards the furrow is very slightly convex. Their armature consists of:—(1.) A furrow series of seven or eight moderately elongate, subprismatic spinelets, perfectly rectangular in section, slightly compressed laterally, and tapering slightly towards the tip, which is more or less pointed. The base is broad, with its greatest dimension transverse to the longitudinal axis of the ray; and when viewed in this aspect the tapering of the spine is seen to be considerable, but when viewed in the other dimension, parallel to the axis of the ray, the thickness of the spine is nearly uniform almost to the tip, and the tapering is very slight. The outermost spine at each extremity of the series is much smaller than the others, of which the median are the longest (about 2 mm. in length), and the rest decrease slightly as they recede on each side. In many cases there are not more than five worthy of being called marginal spinelets. The spines stand parallel and touch one another, the group thus forming a subtriangular or wedge-like comb, with the apex roundly truncate. (2.) On the actinal surface of the plate, behind the marginal series, is a more or less irregular row of about five or six small, cylindrical, rather widely spaced, subequal, papilliform granules, which in some specimens have a tendency to become more spiniform on a few of the plates on the inner part of the ray; and external to these is a second row of merely papilliform granules running along the outer margin of the plate. The inner eight or ten adambulacral plates, which are broader than the others, have several irregularly disposed papilliform granules or spinelets interspersed between the two series, and the regularity of the arrangement above noted is somewhat affected thereby. In the second lineal series, behind the furrow spines, at least along the inner half of the ray, is usually a small pseudo-pedicellaria, formed by two or three slightly modified papilliform spinelets, and its position is usually at the aboral extremity of the series, but not invariably so, neither is it always present.

The mouth-plates are large and conspicuous, the united pair being elongately oval, and prominently convex or subtubercular, rising abruptly from the otherwise level interradial area. Their armature consists of a marginal series of true mouth-spines about nine in number on each plate, similar in form and character to the furrow series on the adambulacral plates. The actinal surface of the plates is echinulate, with numerous irregularly disposed small papilliform spinelets, which increase slightly in length as they approach the inner end of the mouth-plates, where, however, they are less than the marginal or true mouth-spines, and can scarcely be said to become definite spinelets.

The actinal interradial areas are comparatively extensive and well-developed, reaching as far as the seventh or eighth adambulacral plate; they are covered with plates bearing papilliform groups, which form series running between the adambulacral and the marginal plates, although a definite order is scarcely perceptible on account of the crowding of the small papilliform spinelets composing them; these short papillæ spring from a membrane which covers an apparently subcircular tabulum, and there are about nine or ten on each, some being central and some marginal, but with little regularity.