

of a pedicle with a slightly expanded base and a rounded clavate extremity, on which the spinelets that form the crown are articulated. The expansion of the base of the paxillæ is very slight, subcircular, or irregular in outline, and usually exhibiting two or three faint prolongations. The bases of the paxillæ are closely placed, and occasionally a trace of overlapping may be found here and there. This structure is identical with that met with in the Astropectinidæ, and has hitherto been looked upon as specially characteristic of that group.

The adambulacral plates, their armature, and the mouth-plates have strictly the characters of the *Pentagonasteridæ*. The marginal plates are likewise suggestive of the same group, and, notwithstanding their inequality and insignificant development, approach the habit of such forms as *Gnathaster paxillosus*, Gray, sp., from which also the general outline of the body of *Mimaster tizardi* is not far removed.

The actinal intermediate plates recall in their character the intermediate plates of the *Asterinidæ*, whilst their arrangement also approaches in a certain degree that of some of the *Pentagonasteridæ*.

2. *Mimaster cognatus*, n. sp. (Pl. XLVII. figs. 3 and 4; Pl. LXII. figs. 4 and 5).

Rays five. $R = 63-65$ mm.; $r = 21.5$ mm. $R = 3 r$. Breadth of a ray near the base, between the third and fourth infero-marginal plates, 20 mm.

General form stellato-pentagonal. Rays moderately produced, broad at the base and tapering gradually to the extremity, which is slightly upturned. Abactinal area more or less inflated, causing a puffy appearance over the disk and an irregular subcylindrical form to the rays. Actinal area subplane, but with a tendency to become convex along the ray. Interbranchial arcs wide and subacute.

The abactinal area is covered with a great number of small paxillæ, which show an obliquely transverse arrangement at the sides of the ray, especially distinct near the base, but are irregular in their disposition in the central region of the disk, along the median line of the ray, and at the extremity. The regularly disposed paxillæ are larger than the others, and all gradually diminish in size as they approach the extremity of the ray, where they become almost microscopic. The paxillæ consist of a delicate pedicle, which expands considerably at the distal extremity, and is surmounted by a crown of numerous delicate spinelets, which radiate more or less, and produce a tufted form of paxilla. The papulæ are comparatively large.

The marginal plates are small and confined to the lateral and actinal surfaces. The supero-marginal series are inconspicuous and scarcely distinguishable from the paxillæ of the abactinal area; in fact, they are unnoticeable when the starfish is viewed from above. The infero-marginal plates, which are about thirty-six in number, counting from the median interradial line to the extremity, are comparatively large and well developed, forming a