

of the spiniform prolongation of the mouth-plates which is developed in *Gnathaster*, at even an earlier stage than this. It is to be remarked that *Gnathaster* is much more hispid in the young stage than in the adult, a character probably common to other forms of the *Pentagonasteridæ*.

7. *Pentagonaster arcuatus*, n. sp. (Pl. LII. figs. 1 and 2; Pl. XVIII. figs. 5 and 6).

Rays five. $R = 45$ mm.; $r = 23.5$ mm. $R = 1.93 r$. The minor radius is thus in the proportion of 52.2 per cent.

General form flat, but moderately thick. Marginal contour stellato-pentagonal, with the radial angles produced and tapering to an acute extremity, which is slightly turned upward. Interbrachial arcs widely rounded. Margins equally rounded abactinally and actinally. Abactinal area not elevated above the level of the marginal plates; slight depressions are present in the interradial areas near the margin, which are probably indicative of a limited capability of inflation. Actinal area subplane, with small well-defined depressions external to the mouth-plates.

The abactinal area is covered with small, subcircular plates, closely placed, united by short, narrow prolongations, which leave interspaces for comparatively large papulæ in the radial regions. The abactinal plates extend to the tip of the ray, two or more series separating the outermost supero-marginal plates from the corresponding plates on the other side of the ray. Seen from above the abactinal plates have a strikingly paxilliform appearance, when their granulation is intact; the subcircular tabulum is surrounded by a marginal series of small uniform, slightly elongate granules, moderately spaced, and so placed that they appear to radiate slightly apart. Within this ring are several small hemispherical granules, the majority of which are larger than the marginal series, but are in no sense elongate. A small valvate pedicellaria formed by two contingent granules is present on the tabulum of a few of the paxillæ, but these organs are of rare occurrence. The plates on the outer part of the ray and those adjacent to the margin throughout are devoid of stellate prolongations, and appear to have more or less of an imbricating character.

The supero-marginal plates, which are seventeen or eighteen in number, counting from the median interradial line to the extremity, form a well-defined border to the abactinal area, which diminishes in breadth towards the extremity of the rays. The plates near the interradial line have their breadth rather greater than their length, and the length distinctly increases in a few of the succeeding plates, and then diminishes on the outer half of the ray. The surface of the plate, which is slightly convex in the transverse direction, is covered with rather large, well-spaced, hemispherical granules, those which bound the margin being rather smaller than the others, and regularly disposed in lineal series. The odd terminal plate is very small.