

suture being elevated so as to form a rounded elongate tubercular protuberance, the lateral margins being flattened out. Their armature consists of seven or eight mouth-spines on each plate, similar to those constituting the armature of the adambulacral plates, excepting the innermost one, which is much larger and stouter. Two large spines are thus conspicuous at each mouth-angle, and are directed towards the centre, the series entirely closing the actinostome, which is remarkably small. The small mouth-spines upon the margin of the plate interlock with those of the adjacent mouth-angle, and form a continuous series with the armature of the adambulacral plates. The rudiments of a secondary mouth-spine, represented by a thorn-like granule, occur on each plate, near the median suture, and at the highest portion of the keel.

The actinal interradiar areas are triangular in outline, flat, extensive, and covered with imbricating scales of more or less regularly symmetrical hexagonal form. These plates are broader than long, and arranged in regular series of single columns extending from the margin of the disk to the ambulacral furrow. Their breadth diminishes somewhat as they approach the margin, and consequently that of the columns also. The adambulacral plates join up to the infero-marginal plates along the whole length of the free portion of the ray, and there is consequently no extension of the interradiar area along the ray. The imbricating plates bear a few widely spaced miliary tubercles or large granules upon their surface, usually four or five to the plate, upon which, however, they have no definite arrangement.

Colour in alcohol, grey; the paxillar area being a much darker shade, which shows a strong contrast with the greyish white of the marginal plates.

Young Phase.—There is a small example of this species, which, though measuring only $R = 10$ mm., $r = 5$ mm., so closely resembles in all respects the characters of the adult, that there is not the slightest hesitation in determining it specifically. Beyond the fact that the rays are shorter, the terminal plate more tubercular and broader, and that a less number of supero-marginal plates on the two sides of a ray meet in the median radial line, I can scarcely detect a feature worthy of mention as differentiating the immature from the adult form; excepting the changes in size, proportion, and number which affect plates and appendages normally. There are five supero-marginal plates between the median interradiar line and the terminal in the small specimen.

Locality.—Station 237. Off Japan, south of Kawatsu. June 17, 1875. Lat. $34^{\circ} 37' 0''$ N., long. $140^{\circ} 32' 0''$ E. Depth 1875 fathoms. Blue mud. Bottom temperature $35^{\circ} 3$ Fahr.; surface temperature $73^{\circ} 0$ Fahr.

Remarks.—*Hyphalaster inermis* is distinguished from the other species with seven cribriform organs by its robust and rigid body-frame, by the supero-marginal plates meeting in the median radial line, by these being devoid of spinelets, by the fully developed paxillæ, and by the narrow cribriform organs.