

bounded by the fibres form regular triangular meshes, and enclose several small spiracula, generally three to five in number. Sometimes the fibres are doubled, and the tips of the spinelets protrude prominently.

The valves of the oscular orifice are not conspicuous, the general tissue of the supradorsal area just described being apparently continued up to the extremities of the valves, whilst their bases of attachment, which are usually well marked out by spinelets on prominent bosses, are indistinguishable in the present example.

The ambulacral furrows are rather narrow, and not petaloid. The armature of the adambulacral plates consists of three long and needle-shaped spines placed in line parallel to the median line of the ray, the adoral spine being longer than the breadth of the furrow. The aperture-papillæ are of moderate size and subquadrate, or rather elongate in shape, when invested with membrane.

The mouth-plates are short, with wide lateral flanges; the keel along the line of junction very prominent aborally. There are five or six mouth-spines on each plate, which are moderately long and subacicular, the middle one being longest; the innermost one ought perhaps to be ranked as a secondary or superficial mouth-spine, although similar in form and serial in position to the true mouth-spines. Midway on the superficies of the plate and well away from the median keel is a longer and slightly more robust secondary spinelet, similar in character to the rest of the armature.

The actino-lateral spines are very wide apart, and there are probably not more than twenty on a side, although the rays are so long; the fourth or fifth spine from the mouth is longest; these and the preceding spines, which are included within the disk, all converge towards the interbrachial arc instead of running parallel to one another as in nearly all the species of this genus.

Locality.—Station 286. In the Mid-South Pacific, near the meridian of 135° W., approximately midway between Sydney and Valparaiso. October 16, 1875. Lat. 33° 29' 0" S., long. 133° 22' 0" W. Depth 2335 fathoms. Red clay. Bottom temperature 34°·8 Fahr.; surface temperature 63°·0 Fahr.

Remarks.—*Hymenaster geometricus* is distinguished by the great attenuation of the rays, and by the remarkable regularity in the disposition of the muscular fibres in its supradorsal membrane. These characters, irrespective of any other points of structure, are sufficient to distinguish this form from the other species of *Hymenaster*.

18. *Hymenaster pullatus*, Sladen (Pl. XCII. fig. 1; Pl. XCIII. figs. 1-3).

Hymenaster pullatus, Sladen, 1882, Journ. Linn. Soc. Lond. (Zool.), vol. xvi. p. 235.

Marginal contour more decidedly stellate than pentagonoid. The interbrachial arcs appear to have been well rounded, with the minor radius probably in the proportion of about 57 per cent. $R = 35$ mm.; $r =$ about 20, but the specimen is unfortunately so much damaged in each of the interbrachial arcs that it is impossible to give the smaller dimen-