

position as the spinelets arming the adambulacral plates, indeed from the fact that this spine (or pair of spines) separates the first and second pair of ambulacral tube-feet, it is doubtful whether they can properly be ranked with the mouth-plate armature or not. It is here easy to see that the secondary or superficial mouth-spine is the representative of the large outer perpendicular spine of the adambulacral armature throughout the ray; like them also it is encased in a membranous sheath crowded with pedicellariæ. The short marginal mouth-spines are cylindrical and tapering, covered with a close-fitting membrane, with a few isolated pedicellariæ on their shaft, usually situated more or less midway between the extremities.

The ambulacral tube-feet are stout and short, with a well-developed sucker-disk strongly invaginated centrally.

The madreporiform body is small and more or less hidden by the dermal spinelets of the disk; its presence, however, is indicated by the irregularity of spinelets about it, and its position is very little removed from the margin of the abactinal surface.

Colour in alcohol, a bleached yellowish white, the lateral spinelets being a purer white.

Locality.—Station 237. Off the coast of 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.—*Freyella pennata* may be distinguished from the other members of the genus by the character of the armature of the mouth-plates and of the adambulacral plates, and by the presence of ten comparatively broad robust rays. The presence of the additional small spinelet on the furrow margin of the adambulacral plates appears to be dependent on age. In some large fragments of this species even three are present at the base of the ray, and form a small oblique series; this number, however, appears to be of rare occurrence.

2. *Freyella polycnema*, n. sp. (Pl. CIX. figs. 12-17).

Rays seventeen. $R = ?$ mm.; $r = 5.75$ mm. Breadth of a ray at the base, 1.8 mm.

Rays very delicate, subtriangular in section, with a median carination. Unfortunately only a few small fragments were collected, and all are detached from the disk and much mutilated; it is, therefore, impossible to state the length or to describe the general habit of the rays.

The disk is very small and depressed, with the abactinal surface slightly concave in its present state, and the margin abruptly bevelled to the base of the rays. The abactinal surface of the disk is covered with delicate membrane, which appears to be beset with minute plates bearing minute, conical, sharply pointed thornlets, distinctly spaced and quite microscopic in size. The membrane which covers the abactinal surface of the rays