Heller, in his diagnosis of *Styela*, states that the dorsal lamina has a smooth edge; but this species, which is undoubtedly a *Styela* in all its other characters, has a series of short tapering languets along the dorsal line of the sac. Another new species (*Styela flava*) has the dorsal lamina ribbed transversely, and slightly pectinated at the margin, evidently a condition intermediate between that seen in *Styela bythia* and that found in other members of the genus. Hence I had no hesitation in changing the characters of the genus slightly, so as to admit of the reception of *Styela bythia*.

It is a compact, irregularly hemispherical species, and was dredged from 2600 fathoms, attached to a manganese nodule, along with a specimen of *Styela squamosa* (Pl. XVIII. fig. 1. The lower specimen on the nodule is *Styela bythia*). The test is thick and stiff, but rather brittle. It adheres closely to the mantle below, but when detached shows a white inner surface.

The branchial sac (Pl. XVIII. fig. 6) looks rather thick and opaque. This appearance is caused by the large number of internal longitudinal bars present. These are broad and ribbon-like, and are so closely placed that the meshes between them usually contain only one or sometimes two stigmata each (Pl. XVIII. fig. 6). Otherwise the branchial sac has no very notable features. The transverse vessels are all of the same size, the meshes are small and particularly narrow, and are all divided transversely and symmetrically by narrow membranes. Figure 7 on Plate XVIII. shows a small portion of the sac from the outside and more highly magnified. The outline of the stigma is rather irregular, and no cilia could be discovered in any part of the sac which was examined.

The languets (Pl. XVIII. fig. 8, *l.*) are short but stout, and spring from a narrow, transversely ribbed membrane (*d.l.*) forming the basal part of the dorsal lamina.

One specimen of this interesting species was dredged to the south of Australia, at Station 160; March 13, 1874; lat. 42° 42′ S., long. 134° 10′ E.; depth, 2600 fathoms; bottom temperature, 0°·2 C.; bottom, red clay.

Styela squamosa, Herdman (Pl. XVIII. figs. 1–5).

Styela squamosa, Herdman, Prelim. Rep., Proc. Roy. Soc. Edin., 1880–81, p. 66.

External Appearance.—The body is roughly hemispherical, and is slightly compressed laterally. The anterior end is very large, and rises somewhat towards its ventral extremity; the ventral edge is nearly straight, while the dorsal is gently convex. The body is attached by the wide posterior end, and the margin is slightly expanded. The apertures are sessile, distant and inconspicuous. The branchial is at the ventral end, and the atrial at the dorsal end of the anterior extremity.

The surface is smooth but scaly. The colour is creamy white and slightly yellow in parts.

Length of the body, 2 cm.; breadth of the body, 1·5 cm.

The Test is thick and solid, but soft.

The Mantle is very thin, and adheres slightly to the test.