In Pritchard's History of the Infusoria (p. 841), we read :—"All the species of *Omphalopelta* resemble *Actinoptychus senarius*," and indeed all the specific forms there recorded have six compartments and the characteristic submarginal spines. The Diatom now in question, however, forms a beautiful disc, with eighteen compartments, each of which is furnished with a distinct denticule or spine. As in all the species of *Omphalopelta*, the segments are alternately elevated and depressed, while the centre is occupied by a smooth ill-defined area. The axis of each segment is marked by a radial line, which extends from the central area and disappears soon after reaching the middle of the compartment. At the circumference, and at the middle of the outer margin of each compartment, there is an evident denticule which is of the utmost importance for the generic determination. The valve is ornamented with small decussately disposed granules, while traces of areolation are found here and there.

The frustule presents a great resemblance to a Diatom found abundantly by Shadbolt[1] in guano from Callao, as well as in the Port Natal gathering, upon which that observer instituted the genus *Actinophœnia*, and which he named *Actinophœnia splendens*. It is hard to understand the reason which induced Pritchard[2] to class this form with the genus *Actinoptychus*, since he described it as possessing a denticule or spine in each compartment, and so should have named it *Omphalopelta splendens*. On comparing, however, the description with our present figure, it may be observed that in Shadbolt's species the umbilical hyaline area, instead of being indefinite, is well defined. It is further to be noted, on consulting the figures of *Actinophœnia splendens* given by Roper,[3] that the denticules correspond to the point of division between two compartments. Thus in Pritchard's supposed *Actinoptychus*, the segments would not be alternate in the ordinary sense, we should rather have to regard the number of the compartments as being double what is stated, and to look upon the denticules not as placed at the middle of the segments but as marking the extremities of the divisional lines. Moreover, in our present frustule, the number of denticules is greater than in that of Shadbolt, and the vertices of the elevated segments are narrower than those of the depressed segments. Finally, Shadbolt's species is destitute of the striated margin seen in the present case. From such considerations the specific value of the present form from the Sea of Japan can hardly be questioned.

Omphalopelta (?), sp. (?) (Plate XVI. fig. 8.)

This small irregular disc is probably a monstrous form of some species of *Omphalopelta*. The cuneate septa are almost invisible, while the outline of the valve is entirely anomalous. Like other species of this genus, however, it possesses a hyaline umbilical

[1] See a note entitled A defence of the proposed new genus *Actinophœnia*, Shadb., in *Micr. Journ.*, vol. ii. pp. 201–203; Edwards on Diatomaceæ collected in the United States, *Micr. Journ.*, vol. vii. 1859, p. 88.

[2] Pritchard, *op. cit.*, p. 840.

[3] Roper on the Diatomaceæ of the Thames, *Micr. Journ.*, vol. ii. pp. 73, 74, pl. vi. fig. 2.