

and a large head, irregularly scattered among the others of the same kind as on the abactinal side (Pl. XVIII.^a fig. 12). I have not found the peculiar tetradactyle pedicellariæ (Echinids of Porcupine, Trans. Roy. Soc., 1874, pl. lxxvii. fig. 6) described by Thomson as so characteristic of *Phormosoma fenestratum*. In this species the ambulacral plates perforated by the pores are larger than in *Phormosoma placenta* figured by Thomson.

Phormosoma tenue and *Phormosoma uranus* are at once readily distinguished from *Phormosoma placenta* on account of the greater similarity in the structure of the actinal and abactinal surface of the test.

Station 274. Sept. 11, 1875. Lat. 7° 25' S., long. 152° 15' W.; 2750 fathoms; bottom temperature, 0·9° C.; radiolarian ooze.

Station 237. June 17, 1875. Lat. 34° 37' N., long. 140° 32' E.; 1875 fathoms; bottom temperature, 1·7° C.; mud.

Station 272. Sept. 8, 1875. Lat. 3° 48' S., long. 152° 56' W.; 2600 fathoms; bottom temperature, 1·0° C.; radiolarian ooze.

**Phormosoma luculentum* (Pls. IX., X., X.^a figs. 3-7; Pl. XXXIX. fig. 8; Pl. XL. figs. 31-36; Pl. XLIV. figs. 25-27.

Phormosoma luculenta, A. Agassiz, 1879, Proc. Am. Acad., vol. xiv. p. 201.

This is perhaps the most striking of the Echinothuridæ collected by the Challenger. The test is of a beautiful light violet colour, forming a brilliant contrast to the white lines (Pls. IX., X., X.^a figs. 3, 4) indicating the sutures of the coronal plates, to the jet black or deep violet, long, smooth shiny primary spines, and to the silvery-white hoofs tipping the large primary spines of the ambulacral and interambulacral areas scattered here and there along the edge of the test, when seen from the abactinal side, and projecting over the lower surface of the test when seen from the actinal side. This species is marked by the long narrow coronal plates of the abactinal surface (Pl. IX. fig. 1; Pl. X.^a fig. 3), the small size of the few primary tubercles irregularly placed on the abactinal side of the test near the ambitus, the narrow ambulacral system, and the narrow poriferous zone. The abactinal surface of the test is covered with short, sharp miliary and secondary spines, few in number, and irregularly placed on the plates, leaving the test nearly bare, although pitted with numerous miliaries carrying no spines (Pl. X.^a fig. 3). On the actinal side the primary tubercles are large, and are arranged in three more or less regular horizontal rows near the ambitus (Pl. X.^a fig. 4); these tubercles are surmounted by large hollow cylindrical spines tipped with truncated conical hoofs (Pl. X. fig. 1).

The small secondaries scattered over the actinal surface carry short club-shaped or pointed spines (Pl. X. fig. 1). The flat intertubercular spaces are filled by short, sharp miliary spines closely packed together between the large primaries near the ambitus,