Habitat.—Station 235. June 4, 1875. Lat. 34° 7′ N., long. 138° 0′ E. Depth, 565 fathoms; bottom temperature, 3·3° C.; mud. One specimen.

On first examining this form, I was surprised to find neither calcareous deposits in the body-wall nor any calcareous ring surrounding the gullet; besides, the thickness of the perisoma as well as its spongy structure were very striking indeed, and on account of this I at first thought myself justified in founding a new genus. After a renewed examination, however, I was convinced that calcareous deposits as well as the calcareous ring are really present, though the calcareous substance for some reason or other had been dissolved, most probably by some impurity in the alcohol. By making horizontal sections of the perisoma, and treating them with hæmatoxylin, the extremely thin sheaths which envelope the deposits become visible; and by studying the integument most carefully in this manner I have been able to distinguish three forms of deposits closely resembling those in *Lætmogone violacea*, which species bears the strongest resemblance to the present one. The genus *Cryodora* must accordingly be annulled.

Some of the tentacles are considerably smaller than others. The dorsal processes vary in size, sometimes attaining a length of 25 to 30 mm. and a diameter at the base of about 5 mm. Wherever a process protrudes from the body the perisoma rises, and thus the processes appear as if they ran out from low ridges. The pedicels are especially wide and long. It is impossible to make a detailed examination of the form and the number of the calcareous bodies. The cruciform or star-like deposits (Pl. XXXIX. fig. 6) which seem to be the most numerous, present a rather irregular form and measure about 0·22 mm. in diameter; their arms are rather arcuated and provided with large spines. I have not been able to distinguish any small wheels, though they may probably be present; the wheels which I made out measure about 0·24 mm. in diameter (Pl. XXXIX. fig. 5).

Traces of a calcareous ring are found in the form of an extremely fine network of minute tubes, the calcareous substance ensheathed by the tubes being now dissolved. The madreporic canal opens externally by ten minute pores, which lie close together in the medio-dorsal line immediately in front of the inconsiderable genital process about 20 or 23 mm. behind the anterior extremity of the body. The polian vesicle is short, and measures only 15 to 20 mm. The anal termination of the alimentary canal presents only a slight cloacal dilatation.

The resemblance between this species and the preceding one is most striking, and the only more important character which distinguishes them from one another seems to be the thickness of the perisoma in *Lætmogone spongiosa*; it is, however, not impossible that the thickness of the integument may depend upon its maceration in impure alcohol, in which case this characteristic peculiarity would also vanish. My opinion is, that until we obtain better material, and are enabled to determine with certainty the form and