

of *Ophiochondrus* (Pl. XLIII. fig. 13), whose arm bones are, however, utterly different in other respects. Scarcely less curious are the mouth angles which are covered above by a large, swollen, spongy peristomial plate, and this is continued down the outer open angle by a film or veil of lime crust. Over the madreporic mouth shield this veil takes on the form of a sort of rude pillar of spongy lime scales, or spiculæ. The closing of the open angle of the mouth frame wings by a sort of crust is found elsewhere, but not in so complete a form. The jaws and jaw plate are swollen and powerful, and the teeth thick and cylindrical. The arm spines are solid with a peculiar wedge formation in cross section; and have a single row of thorns on each edge.

This is a genus like an elaborated *Ophiacantha* and which, by its great radial shields and its arm spines leans towards *Ophiothrix*, and yet one face of its arm bones has an *Astrophyton* structure! Here is one warning, among many, not to seek in Nature for a regular, progressive and consecutive development. To suppose that this arm bone was a last remnant of an *Astrophyton* progenitor, or the first hint of a future *Astrophyton*, would be to drag the camel through the postern. (See Pl. XLI. figs. 9-11.)

Some of the species, at any rate, are viviparous. A new one, dredged in an expedition of the U.S. Steamer "Blake," had a large bursa (Pl. XLVI. fig. 4, *Bu*), in whose wall were imbedded lime scales. Between this and the disk roof was a pocket (ovarial tube?) containing an embryo (δ'), which was too macerated by alcohol to show much structure. The wall of the bursa was joined with that of the digestive cavity (*St*).

A section of the entire disk is given in Plate XLVII. fig. 5, showing the way in which the ovarian bursæ throw a fold over the digestive cavity.

Ophiocamax vitrea, Lym. (Pl. XIV. figs. 10-12).

Ophiocamax vitrea, Lym., Bull. Mus. Comp. Zool., vol. v., part 7, p. 156, pl. viii. figs. 218-221, pl. ix. figs. 242-244, 1878 (young).

Mouth papillæ numerous, spine-like, arranged in a tuft. Tentacle scales blunt spiniform, two or three to each pore. Disk covered above with rounded, equal, thin scales set thickly with minute thorns and crochets.

(Type specimen from Station 219.) Diameter of disk 17 mm. Width of arm without spines 4.4 mm. About thirty, long, spiniform, equal papillæ to each angle, set in two or three ranks; of which half a dozen are arranged under the teeth, and may be considered tooth papillæ; and three on either side are borne on a small plate or scale, at outer corner of mouth-slit, and cover the second mouth tentacle. Seven broad flat teeth, with a rounded cutting edge. Mouth shields small, broader than long, with an obtuse angle within and a truncated angle without, bearing a few short spines; length to breadth, 1.5 : 2. Side mouth shields exceptionally large and wide, meeting broadly within, having their inner sides gently curved. Under arm plates with a wide, slightly curved, somewhat swollen outer edge, and a narrow projection within, where they join