

The further course of the rectum is shown in Pl. VIIb. fig. 8, which represents a section through the upper part of the disk at the level of the articulation between the first and second brachials; and the last trace of the plexiform gland (*x*) is seen between the fore-gut and the final coil of the intestine.

Both *Rhizocrinus* and *Bathycrinus* exhibit a peculiarity in the relations of the digestive tube and visceral mass which does not appear in the Pentacrinoid. The large crests at the sides of the arm-groove in the second brachials of *Rhizocrinus*, which were well figured by Sars,<sup>1</sup> have always been a puzzle to me, for they are something more than unusual developments of the muscle-plates at the distal end of the joint. Horizontal sections of the cup show, however, that they support the sides of comparatively large interradiial diverticula from the intestinal coil, the outer ends of which are overlapped to some extent by the broad dorsal surfaces of the brachials (Pl. VIIIa. fig. 8).

The first traces of these extensions of the digestive cavity appear in *Rhizocrinus lofo-tensis* at the level of the muscle-plates of the first brachials, by which they are in a great measure supported. They become more independent of the skeleton at the syzygy with the second brachials; but enter into close relations with these joints at their distal ends, where the crests on the ventral surface become more prominent. They are much more marked in some individuals than in others, but the outline of the visceral mass is always distinctly pentagonal, even if its angles be not produced outwards, so as to give it a stellate appearance. The same peculiarity appears in *Bathycrinus*. The crests on the radial axillaries are large, wing-like processes, altogether distinct from the muscle-plates to which the first brachials are attached, as is shown in Pl. VII. fig. 4*α*, and Pl. VIIa. fig. 17; and they afford a large amount of support to the interradiial diverticula of the gut (Pl. VIIb. fig. 7). These develop themselves gradually from below upwards, no trace of them appearing below the articulation of the second and the axillary radials; but indications of them are still visible at the upper part of the first brachials, as shown in Pl. VIIb. fig. 8.

In this figure, too, may be seen the earlier and simpler stages of that plication of the inner or adcentral wall of the gut which is so much more marked in *Pentacrinus*, and still more so in the Comatulæ, especially in *Antedon eschrichti*, *Promachocrinus*, and allied forms (Pl. LVIII. figs. 4-6).

The disk of the Comatulæ is generally flatter than that of the stalked Crinoids, and is almost entirely independent of any lateral support from the second radials. These lie beneath more or less of its dorsal surface, but do not protect its sides.

The descending portion of the fore-gut is therefore comparatively short, and the coiled intestine into which it passes lies spread out on the upper surface of the radials; so that there is no general dilatation of the gut at the bottom of the cup as in *Rhizocrinus*, *Bathycrinus*, and the Pentacrinoid. Some of the Pentacrinidæ approach *Antedon*, while

<sup>1</sup> *Op. cit.*, figs. 55-57.