

others rather resemble *Rhizocrinus* and *Bathycrinus* in the arrangement of the digestive tube. *Pentacrinus decorus* is one of the latter. Even at the level of the radial axillaries the gut appears in section as a simple, but spacious cavity, with slight extensions at two points round the connective, or rather calcareous, tissue in which the plexiform gland is embedded. But it could hardly be called kidney-shaped, as it is in *Rhizocrinus* and *Bathycrinus*.

Some sections of a *Pentacrinus* disk, that were made for Sir Wyville Thomson by Dr. Stirling, show the indentation of one wall of the gut at the level of the radial axillaries by the plexiform gland and its surroundings to be considerably more marked than in *Pentacrinus decorus* (Pl. LVIII. fig. 4).¹ I am unfortunately unable to determine the species, as the sections were not properly labelled, and the series is not sufficiently complete for the purpose.

In *Pentacrinus wyville-thomsoni*, however, the condition of the gut is much more like that found in *Antedon*, which it further resembles in its disk being somewhat more independent of the skeleton than in other Pentacrinidæ. Even at the level of the second radials, a horizontal section of the disk shows a strong concavity at one side of the gut, which is thus almost crescentic in outline. The plications of the inner wall, however, are by no means so well developed as they are in many Comatulæ.

In the remarkable genus *Actinometra*, the radial centre of the water-vascular system does not correspond with that of the dorsal skeleton; and the curious duality of the Crinoid organisation is thus seen more distinctly in this type than in any other. The mouth is not sub-central but excentric, or even marginal (Pl. LXI. fig. 2), and there is no regular symmetry in the distribution of the ambulacra (Pl. LV. figs. 1, 2; Pl. LVI. fig. 7). The mouth may be radial, as in all endocyclic Crinoids, and such species of *Actinometra* as *Actinometra solaris*, *Actinometra pulchella*, and *Actinometra jukesii* (Pl. LV. figs. 1, 2); or it may be interradiar, as in *Actinometra magnifica* (Pl. LVI. fig. 7); while in some types its exact position is difficult to determine. This is, however, immaterial as regards the course of the digestive tube, which proceeds directly downwards to a point somewhat behind and on the left (*east*) of the centre of the disk, and then commences to wind.

Its direction, just as in the endocyclic Crinoids, follows the watch-hand when seen from the ventral side; but there are four coils instead of one. This is shown in fig. 3, where the + at the end of the first coil marks the termination of that part of the gut which represents the whole digestive tube in the endocyclic forms.

This first coil occupies the extreme edge of the lowest part of the disk, and consequently passes in front of the mouth, so as to appear beneath it in longitudinal section (Pl. LXI. fig. 2). The second coil passes immediately behind it, and is followed by two more in an ever narrowing but ascending spiral, which terminates in the more or less central anal

¹ This figure nearly corresponds to the southeast corner of Pl. VIIb. fig. 7.