

the openings in the lateral faces of the radials, but close to their inner edges, are well shown in Pl. VII. fig. 6*a*.

As in the *Comatulæ*, therefore, the circular commissure of *Bathycrinus* (Pl. VIIb. fig. 4, *cco*) is in the innermost part of the radial pentagon, *i.e.*, quite near its centre. There is but a thin layer of limestone between it and the central space, while almost the whole of the fibres forming the interradial ligaments are outside it. The length of these primary interradial cords and their reception in grooves on the apposed surfaces of contiguous radials is very anomalous; and although I detected the true nature of these grooves at first sight, it was nevertheless very long before I could get rid of the notion that the radial openings on the top of the basal ring (Pl. VIIa. figs. 12, 13) were those of the converging branches of the forked interradial canals, as in other Crinoids; and it was not until after some time that I was able to reconcile the apparently conflicting evidence afforded by the study of series of transverse sections on the one hand and of the dissected calyx on the other.

From the facts detailed above, it will be seen that *Bathycrinus* occupies a somewhat anomalous position among Neocrinoids. In *Comatula*, *Pentacrinus*, *Apiocrinus*, and *Encrinus* the primary interradial cords fork within the basals; and the adjacent branches of neighbouring forks enter the radials by more or less distinctly double openings on their inner or under faces; but in *Bathycrinus* not only do the cords not fork within the basal ring, but they rise through half the height of the radial pentagon before doing so (woodcuts, fig. 13, *ai*; fig. 14). The nearest approach to this condition is presented by *Rhizocrinus*, though the relative proportions of the plates are exactly the reverse of what we meet with in *Bathycrinus*. In fact, if we make allowance for this difference the condition of *Bathycrinus*, except for the presence of the intraradial commissure, is almost exactly that which was described by Ludwig in *Rhizocrinus*; though, as pointed out already, the real condition of this genus is slightly more normal, *i.e.*, the primary cords fork within the basals, and their converging branches enter the inner ends of the radials as in other Crinoids.

The first radials, which form by their apposition a rapidly expanding cup, have an elongated, trapezoidal outline and rounded outer surface. According to Sir Wyville Thomson,¹ those of *Bathycrinus aldrichianus* are "often free; but in old examples they also are frequently anchylosed into a funnel-shaped piece." In all specimens of this type which I have seen, however, the radials are united laterally, just as in other Crinoids; though they separate more readily than usual when treated with hot alkalies. The ligaments uniting them are close and well defined in the lower part of the funnel (Pl. VIIb. fig. 4, *l*); but in the upper part, *i.e.*, just below the level of the articular surface, there is no interradial ligament (Pl. VIIb. fig. 5), which probably explains the description that has just been quoted from Sir Wyville Thomson. The distal articular faces of the radials

¹ *Journ. Linn. Soc. Lond. (Zool.)*, 1876, vol. xiii. p. 50.