

Wyville made no further reference to them except to say that they sometimes remained permanently in the adult *Antedon*, usually in groups of three or five. These last, however, like those already noticed in *Pentacrinus* (Pl. XIII. fig. 1), are merely perisomatic plates developed in the tissue uniting the second radials. Good figures of them were given by Dr. Carpenter;¹ and it is by no means certain that they are a further development of the primitively single plates which appear between the orals and basals, for the direct continuity of the two structures has never been definitely traced.

I am inclined to believe that where they do appear in ordinary Comatulæ these primary calyx-interradials eventually undergo resorption like the orals and the anal plate. But they are permanent in *Thaumatocrinus* (Pl. LVI. figs 1-4), as are also the orals (fig. 5). This remarkable genus has five calyx-interradials which rest on basals and separate the radials just as in certain Ophiurids and in some types of the Palæozoic Rhodocrinidæ. It is much to be regretted that this extraordinarily interesting form is only represented by a single individual. For the study of the distribution of the axial cords within the calyx would have been of some importance.

If *Thaumatocrinus* resembles the ordinary Comatulæ and Pentacrinidæ, the circular commissure (Pl. XXIV. fig. 9, *c.co.*, *i.co.*) is formed by both interradiial and intraradiial commissures which connect the paired branches of the five primary interradiial cords (Pl. XXIV. figs. 7-9; Pl. LVIII. figs. 1-3—*ar*); and the interradiial commissures must traverse, or at any rate, lie upon the inner surfaces of the interradiial plates. But the general embryonic characters of *Thaumatocrinus* lead me to think that the arrangement of its axial cords must be more like that which occurs in *Bathycrinus*. In this genus the primary cords do not fork within the basal ring, but pass upwards through it and enter more or less complete canals which are formed by the apposition of two grooves, one on each of the contiguous lateral faces of adjacent radials (Pl. VII. fig. 6*a*). When they reach about half the height of the radials they fork, and the resulting branches themselves form the interradiial commissures, entering the radials by the apertures in their lateral faces.

I cannot help suspecting that the same condition may occur in *Thaumatocrinus*, *i.e.*, that the primary interradiial cords run upwards through the basals into the interradials, and there fork, one branch entering each of the two radials which are separated by the interradiial lodging the primary cord. This simple condition would correspond very well with the general embryological characters of the type, as revealed in other ways. But owing to the want of material there is unfortunately but little chance of the above hypothesis being verified or disproved.

While resembling the Rhodocrinites in having five large plates separating the radials, *Thaumatocrinus* differs from most Palæocrinoids, with the exception of the Platycrinidæ, in the absence of any higher series of interradiial plates. Except on the anal side these

¹ *Phil. Trans.*, 1866, pl. xxxiii. fig. 7 A, B.