of the larval stem, I have preferred to describe it in the same part of the Crinoid Report as the Stalked Crinoids. For it is only among certain of the Palæocrinoidea that we meet with characters which are at all like the more striking pecularities of *Thaumatocrinus*.

There can, I think, be no doubt that the large and comparatively dense oral plates are not in a state of resorption as they are in other Comatulæ of the same size; for they have all the appearance of being permanent structures. *Thaumatocrinus* is therefore the only *Comatula* yet known in which the oral plates of the larva persist through life as in *Hyocrinus* and *Rhizocrinus*.

Another striking peculiarity is presentèd by the closed ring of relatively large basals which have remained in their primitive position upon the exterior of the calyx and have not undergone transformation into a rosette, as is the case in most other Comatulæ. The only other recent type in which the basals remain visible on the exterior of the calyx is the curious genus *Atelecrinus*;[1] and here they are very small in proportion to the radials. This is probably also the case in the Cretaceous species which is mentioned by Schlüter[2] as provided with a closed basal ring.

Both the persistence of the basals and the considerable development of the orals are characters which, either singly or combined, would cause the type to be regarded as one of no little interest; but they are altogether cast into the shade by the other peculiarities of the calyx, viz., the complete separation of the radials by relatively large interradial plates and the presence of the anal appendage. It has been shown elsewhere[3] that in the separation of its radials laterally *Thaumatocrinus* is permanently in the condition of a Crinoid larva at a very early period of Pentacrinoid life, and that this condition is characteristic of certain Palæocrinoids belonging to the family Rhodocrinidæ. Some genera, such as the Lower Silurian *Reteocrinus* and *Xenocrinus*, have the radials separated by what Messrs. Wachsmuth and Springer[4] describe as an "interradial series resting directly upon the basals, consisting of a very large number of minute pieces of irregular form, and without definite arrangement." A similar development of small irregular plates between the rays occur in many Neocrinoids, both stalked and free, but the interradial series always commence at the level of the second or third radials, and are completely separated from the basals by the ring of united first radials. This is well seen in *Pentacrinus asterius* (Pl. XIII. fig. 1) and in the fossil *Extracrinus*.

In other genera of the Rhodocrinidæ such as *Rhodocrinus* itself, *Thylacocrinus*, and others forming the section *Rhodocrinites*, the first radials are separated not by small and irregular plates as in *Reteocrinus*, but by large plates, one resting on a basal in each interradius; and this is the condition of *Thaumatocrinus* (Pl. LVI. figs. 1–4). While

[1] *Bull. Mus. Comp. Zoöl.*, vol. ix., No. 4, 1881, p. 16, pl. i. figs. 1–7.
[2] *Zeitschr. d. deutsch. geol. Gesellsch.*, Jahrg. 1878, p. 66.
[3] *Phil. Trans.*, 1883, part iii. pp. 923–925; and *ante*, pp. 39, 40.
[4] Revision, part ii. p. 192.