

length of the joints does not increase in the same proportion; and I am therefore not surprised at having met with but one individual in which the stem-joints are longer than wide, as shown in Pl. XXXV. fig. 1.

A comparison of the figures on this plate, which represent the two youngest individuals dredged by the "Blake," with those of the older, but still immature forms figured in Pl. XXXVI., will show, however, that the great relative height of the stem-joints is a very characteristic feature in the development of *Pentacrinus decorus*. The same feature is apparent in *Pentacrinus wyville-thomsoni* (Pls. XVIII., XIX.), *Pentacrinus naresianus* (Pl. XXVIII.; Pl. XXXa. fig. 1), and *Metacrinus nodosus* (Pl. L. fig. 3; Pl. LI. fig. 1).

The sculpture on the terminal faces of these internodal joints of young individuals (Pl. XXXa. figs. 2, 3; Pl. XXXVII. fig. 9; Pl. LI. figs. 2-5), as in the case of those intercalated between the pre-existing joints in other stems (Pl. XXII. figs. 3-12; Pl. XXXVII. figs. 10, 13, 14), is more or less obscure; but the petaloid markings are evident from the first, as might be expected.

The external appearance of the nodal joints not unfrequently alters considerably during growth. Thus, for example, in *Pentacrinus decorus* the characteristic expansion down to the upper edge of the cirrus-socket (Pl. XXXVI.) scarcely appears at all in the young nodal joint (Pl. XXXVII. fig. 5); while in *Pentacrinus naresianus* there is a trace of this expansion in the young stem, though it entirely disappears in the adult. In *Pentacrinus wyville-thomsoni*, again, the overlap of the lower edge of the cirrus-socket above the infra-nodal joint is far less evident in the young stem (Pl. XVIII. fig. 3) than it is in the adult (Pl. XIX. figs. 3, 4). In *Metacrinus nodosus*, however, the characteristic enlargement of the nodal joints between their cirrus-sockets is very evident in a young stem with relatively high joints (Pl. LI. figs. 6, 7).

C. *The Calyx and its Contents.*

The calyx, *i.e.*, the combined ring of basals and radials, is constituted in the same way in both the living genera of Pentacrinidæ, *viz.*, *Pentacrinus* and *Metacrinus*, as is evident from a glance at Pl. XII. The former may therefore be taken as the type; for it is the better known genus, and has a long geological history, while *Metacrinus* is not yet known to occur in the fossil state. The calyx of *Pentacrinus*, while more like that of ordinary Comatulæ, *i.e.*, *Antedon*, *Actinometra*, and *Eudiocrinus*, than the corresponding part is in *Rhizocrinus* and *Bathycrinus*, nevertheless differs from it in a very important character. This is the presence of unmetamorphosed basals, such as are only found in *Atelecrinus* and *Thaumatoocrinus* (Pl. LVI. figs. 1-4) among Comatulæ; for the embryonic basals of the ordinary types undergo the well known transformation into a rosette. This structure covers in the chambered organ which is lodged within the