

farther out on the arms are smaller than the corresponding pinnules of *Metacrinus costatus*; while the lowest pinnules are smaller, smoother, and have more rounded joints than the more massive but flattened pinnules of *Metacrinus costatus* with their serrate ends. On the other hand, the expansion of the two basal joints in the pinnules beyond the palmar axillary is more conspicuous in *Metacrinus wyvillii* than in *Metacrinus costatus*, and the remaining pinnule-joints are distinctly stouter than in that species.

There is a great amount of difference between the two specimens described above except in the characters of the stem, which are extremely constant, the number of internodal joints being almost invariably seven or eight. In the first place the basal plates of one individual are entirely absent; and each of the radials, which are slightly higher than in the other example, has a small downward projection in the middle of its base which rests directly on the top of one of the five ridges of the stem, as shown in Pl. XLIX. fig. 2. The basals of the other example are smaller than is usually the case in the genus; but their total absence, at any rate on the exterior of the calyx, is a most singular anomaly. One result of it is that the position of the cirri is interradiial and not radial, as is generally the case; and presumably therefore the peripheral vessels from which the cirrus-vessels are supplied have a similar position. But these peripheral vessels are continuous above with the chambers of the chambered organ, which are normally set in the direction of the rays (Pl. XXIV. figs. 5-8; Pl. LVIII. figs. 1, 2; Pl. LXII.—*ch*); while the primary axial cords of the rays start from the interradiial angles of the chambered organ (Pl. XXIV. fig. 7; Pl. LVIII. figs. 1, 3; Pl. LXII.—*ai*). If the mutual relation of these organs in this anomalous specimen were only known it would very probably throw much light upon the structure of the lower part of the calyx in those Palæocrinoids which have interradiial cirri, such as *Heterocrinus*, *Iocrinus*, *Barycrinus*, and *Belemnocrinus florifer*. It is of course possible that the basals may be internal and concealed as in most Comatulæ and in some varieties of *Encrinus*; but I cannot help thinking that if they were really present at all the cirri would be placed radially as they usually are, and not interradially as is actually the case.

This baseless specimen presents the only irregularity in the number of the radials which occurs in the two individuals. The second radial is not traversed by a syzygy, as is invariably the case in all the other rays, though the second syzygy is in its normal position between the fifth and sixth joints of the primitive ray as in the ordinary type; but there is no additional joint between this syzygy and the axillary, so that the ray consists of six joints with the fifth a syzygy.

All the ten primary arms of this individual, however, consist of six joints, of which the third is traversed by a syzygy; while in the other specimen with a more normal calyx there is only one distichal series of this character, together with one of eight joints, of which the second is a syzygy; and the remaining six also consist of eight joints, but have a syzygy in the third. The later arm-divisions of the baseless specimen are