

which the upward direction of the cirri and the grooving of the supra-nodal joint are tolerably constant characters (Pl. XXXVIII. ; Pl. XXXIX. figs. 3, 9 ; Pls. XL., XLII., XLV. ; Pl. XLVII. figs. 1, 2 ; Pl. XLVIII.).

Another small point of resemblance between the European *Pentacrinus* and the Pacific *Metacrinus* is the slight tendency sometimes shown by the basals of the former to send median downward extensions over the interradial ridges at the top of the stem (Pl. XVIII. fig. 2), for this character is very generally distinctive of *Metacrinus* (Pl. XXXIX. fig. 1 ; Pl. XLIII. figs. 1, 3 ; Pl. XLVIII.). The basals of *Pentacrinus wyville-thomsoni* are almost always markedly pentagonal, the height being decidedly greater in the middle than at the sides, where, however, it is usually distinctly appreciable (Pl. XVIII. fig. 3 ; Pl. XIX. figs. 1, 6, 7 ; Pl. XX. fig. 3). Sometimes, however, they become almost triangular in outline (Pl. XVIII. figs. 1, 2), and one or more of them occasionally fail to meet their fellows, a variation which is more frequently met with in *Pentacrinus milleri* (Pl. XV. figs. 1, 2) and *Pentacrinus naresianus* (Pls. XXVIII., XXIX.).

The number of arms in *Pentacrinus wyville-thomsoni* is comparatively small, being sometimes as low as fourteen ; for two or even three of the rays may have no axillary but the third radial, as is sometimes the case in *Pentacrinus decorus* (Pl. XXXV.); and the distichal axillaries, when present, rarely occur all round the cup (Pl. XVIII. fig. 3). The examples figured in Pl. XVIII. figs. 1, 2, and Pl. XIX. figs. 1, 6, 7, are some of those with the greatest number of arms, a tertiary (palmar) axillary being occasionally present beyond the distichal ; but I do not know of any specimen in which the number of arms exceeds twenty-two.

The disk (Pl. XVII. fig. 6) is closely covered by a pavement of anambulacral plates, several of which are pierced by water-pores. These are almost entirely absent in the anal interradius, in the proximal part of which the plates are closer set than usual, and arranged into two lateral groups. At first sight these look like large single plates, and are suggestive of orals, but they become resolved on further examination into small and very closely set plates. The ambulacra of the disk are protected by irregular plates which cover them in completely in the dry state. They are more regularly arranged on the arms, but are discontinuous on alternate sides between the pinnule-bases (Pl. XVII. fig. 4) ; and the perisome covering the muscular bundles is likewise plated, as in the allied *Pentacrinus alternicirrus* (Pl. XXVII. fig. 6). The covering plates of the pinnule-ambulacra are not very distinctly marked off from the lateral calcareous band, especially at the bases of the pinnules ; and this band itself is but very imperfectly differentiated into side plates (Pl. XVII. figs. 2, 3).

Unlike many of the Pacific Pentacrinidæ, which were white when fresh, living examples of *Pentacrinus wyville-thomsoni* have a beautiful grass-green colour. This becomes duller in spirit, which acquires a purplish-red tinge. Prof. Moseley kindly