

top stem-joint. A few fossil species, however, have been figured or described as not possessing any external basals. Two of these are from British rocks, *Pentacrinus fisheri* and *Pentacrinus dixonii*. The former was described by Baily,<sup>1</sup> who was unable to detect the presence of interradianal basals, and was led therefore to regard the first radials as basals. True basals are really present, however, and may be seen in the original specimen in the Dorchester Museum, or in another found subsequently and now in the possession of Mr. Damon of Weymouth.

The same is the case with the specimen of *Pentacrinus dixonii* in Mr. Willett's collection at Brighton, which was figured in Dixon's Geology of Sussex (1878 edition, pl. xix. fig. 22). In both these species, therefore, the supposed absence of basals is really due to error; and I think it likely that the same may be true both of *Isocrinus pendulus*, von Meyer, and of the Forest Marble specimen from Farley in Wiltshire, which was described by Goldfuss<sup>2</sup> as *Pentacrinus scalaris*; and also of *Pentacrinus pentagonalis personatus* from the Brown Jura. According to Quenstedt<sup>3</sup> three pieces rest on the top of the stem "womit jedes der 5 Hauptradiale beginnt." But neither then nor in the Encriniden did he make any comment on the absence of basals, though he must have noticed it. They may perhaps be small and only just in contact by their central ends, so that they are concealed beneath the radials, as sometimes happens in *Encrinus* and in the fossil Comatulæ.<sup>4</sup> But it appears to me improbable that the embryonic basals of any *Pentacrinus* should have undergone transformation into a rosette, as those of many Comatulæ do. A Stalked Crinoid with a rosette would be a novelty indeed.

One would greatly like to know the real condition of the anomalous specimen of *Metacrinus costatus* represented in Pl. XLIX. fig. 2, which has no basals visible externally. They are generally so very well developed in this genus that their absence altogether seems unlikely; and I suspect therefore that they are quite small and concealed between the top stem-joint and the radial pentagon, as in the case of *Encrinus* and the fossil Comatulæ.

It is a curious fact that there are so very few species of Pentacrinidæ with only one ray-division, *i.e.*, with only ten arms; while at the same time the number of arms rarely reaches the large total of one hundred or more, as it does in some of the giant species of *Actinometra* from the Philippines. In *Pentacrinus maclearanus* (Pl. XVI.), *Pentacrinus wyville-thomsonii* (Pls. XVIII., XIX.), *Pentacrinus alternicirrus* (Pl. XXV.), *Pentacrinus blakei* (Pl. XXXI.), and *Pentacrinus decorus* (Pls. XXXIV.–XXXVII.), the rays may divide three times, *i.e.*, there may be distichal and palmar axillaries above the radials.

<sup>1</sup> Description of a new Pentacrinite from the Kimmeridge, *cf.* Oxford Clay of Weymouth, Dorsetshire, *Ann. and Mag. Nat. Hist.*, ser. 3, vol. vi. pp. 25–28, pl. i.

<sup>2</sup> Petrefacta Germaniæ, vol. i. pl. lx. fig. 10.

<sup>3</sup> Der Jura, 1858, pp. 363, 364.

<sup>4</sup> *Journ. Linn. Soc. Lond.* (Zool.), vol. xv. p. 195, pl. ix. fig. 6.