

ing from *Millericrinus* in the verticillate arrangement of the cirri, and in having very small basals, which do not meet externally. Thus he says "pièces basales fort petites, en général arrondies, non contiguës et reposant sur les cinq angles de la tige." On the other hand, *Cainocrinus* has a complete ring of basals like *Millericrinus*, but a stem with verticils of cirri like *Pentacrinus*. I cannot, however, regard this classification as satisfactory; for even in those species of *Pentacrinus* which have an incomplete basal ring there is a great amount of variation in the extent to which the central ends of the basals are joined, and in the size of their outer ends which appear between the radials and the top stem-joint (Pl. XI.; Pl. XII. fig. 16; Pl. XIII. fig. 1; Pl. XIV.; Pl. XV. figs. 1, 2; Pls. XXVIII., XXIX.; Pl. XXX. figs. 1, 4; Pl. XXXI. figs. 1, 2; Pl. XXXIV. figs. 1, 8; Pls. XXXV., XXXVI.; Pl. XXXVII. figs. 1, 2). I have elsewhere stated my reasons for not adopting *Cainocrinus* as a genus distinct from *Pentacrinus*;¹ and the results of my examination of the large series of Pentacrinidæ dredged by the Challenger and the "Blake" Expeditions has only served to strengthen my opinion. It must be remembered that the question of the more or less perfect closure of the basal ring simply has reference to its appearance on the exterior of the calyx. The inner ends of the basals always meet one another around the neurovascular axis. But they are sometimes not in contact by the whole length of their sides, so that their outer ends appear to be separated by the radials (compare Pl. XII. figs. 1, 2, 16; Pl. XIII. fig. 1; Pl. XIX. figs. 6, 7; Pl. XX. figs. 1-3; Pl. XXVI. fig. 11; Pl. XXX. figs. 1, 4; Pl. XXXIV. figs. 1, 8; Pl. XXXVI.).

The closure of the basal ring, therefore, is so extremely variable within specific limits that it scarcely affords characters of specific, much less of generic value.

So far as the fossil species are concerned, however, it is quite possible that the more or less perfect closure of the basal ring on the exterior of the calyx may afford characters of some systematic value. But I strongly suspect that the examination of a large series of specimens would indicate a very great variability in the size of the basals, just as in the recent types.

The unique specimen of *Pentacrinus maclearanus* (Pl. XVI.) has a closed basal ring, and would therefore be called a *Cainocrinus* by de Loriol. In *Pentacrinus wyville-thomsoni* there is sometimes a very close union between the pentagonal basals as in Pl. XIX. figs. 6, 7, and Pl. XX. figs. 1-3; while in other specimens the basals are more triangular in shape and less closely united, as is shown, with a little exaggeration, in Pl. XVIII. figs. 1, 2. It occasionally happens that one or two of the basals fail to meet their fellows, but the ring is always more or less complete.

Variations of a similar kind, though greater in degree, are presented by *Pentacrinus alternicirrus*. Some individuals have prominent, rhomboidal basals not meeting laterally, like those of *Pentacrinus asterius* (Pl. XIII. fig. 1); while in others they are much less

¹ *Journ. Linn. Soc. Lond. (Zool.)*, vol. xv. p. 210; and *Bull. Mus. Comp. Zool.*, vol. x., No. 4, p. 168.