

fact, the first of these, *Pentacrinites vulgaris*, designates a fossil type to which he also referred (under the name of *Encrinus caput-Medusæ*) the recent specimens described by Guettard and Ellis. These were subsequently referred by Miller to his *Pentacrinus caput-Medusæ* (= *Pentacrinus asterius*, Linn, sp.); and the type was eventually rendered classical by the researches of Müller. Under these circumstances I see no reason for departing from the practice of d'Orbigny, Forbes, Pictet, de Loriol, and Zittel, and have therefore attributed the genus to Miller, with the date 1821. When establishing it, he simply converted into a generic designation the name which had long been commonly employed for fragments of stems with the characteristic petaloid markings on their terminal faces. Miller's generic diagnosis of this type, like those of the numerous other Crinoids described by him, corresponds to the definition of a family, when considered by the help of our present knowledge.

Five species were established by Miller<sup>1</sup>—(1) the recent *Pentacrinus caput-Medusæ* from the West Indies; (2) the two fossil species from the Lias, *Pentacrinus briareus* and *Pentacrinus subangularis*; and (3) two other fossils which need not be considered here. Although apparently taking the single recent species then known as the type of the genus, he gave a generic diagnosis which represents, although imperfectly, the dissected calyx of one of the two Liassic species. These have the radials prolonged downwards over the upper stem-joints between and below the outer ends of the basals; and the Messrs. Austin consequently proposed to establish the new genus *Extracrinus* for their reception, while restricting *Pentacrinus* to species having the general character of the recent *Pentacrinus caput-Medusæ* (= *Pentacrinus asterius*, Linn, sp.).

Miller described the "pelvis" of the fossil *Pentacrinus briareus* and *Pentacrinus subangularis* as similar in character to that of the recent *Pentacrinus asterius*, namely, as consisting of five small and nearly cuneiform basals in contact by their central ends. The Messrs. Austin, in accordance with their peculiar method of nomenclature, gave the name "dorsocentral plate" to the pelvis of Miller (basals, Müller); and they described that of *Pentacrinus asterius* as "resembling an enlarged and thickened supracolumnar joint," without divisions, the salient angles of which alternate with the five first radials, or, as they called them, the first series of perisomic pieces. The pelvis of the three fossil species *Pentacrinus johnsoni*, *Pentacrinus tuberculatus*, and *Pentacrinus milleri*, was described as closely resembling that of *Pentacrinus asterius*; but in their diagnoses of *Extracrinus briareus* and *Extracrinus subangularis* they differed considerably from Miller and Goldfuss. They gave the name dorsocentral plate, not as usual to the pelvis of Miller as in *Pentacrinus asterius*, but to five small and nearly concealed pieces which are placed beneath the true pelvis, and were unknown to Miller. They are radial in position, and not interradian like the pieces described by Miller and Goldfuss as composing the pelvis of these two Liassic species. These, the true basals, which thus alternate with

<sup>1</sup> A Monograph on Recent and Fossil Crinoidea, Bristol, 1843-45, p. 95.