

possibly on account of the clumsy nomenclature adopted by these authors. Ramsay, Phillips, and Etheridge have used it in this country; but the well known German palæontologist Quenstedt,¹ who has probably seen it in greater abundance than any other naturalist, speaks of it in a decidedly scoffing tone. This, however, is only to be expected from one who does not separate *Bourgueticrinus* from *Apiocrinus*. Zittel mentions Austin's name, but without committing himself to an acceptance of it; and I have reason to believe that M. de Loriol is prepared to accept the genus after it has been redefined in a manner which is consistent with the present state of our knowledge.

The genus *Extracrinus*, which includes the two groups "Briariden" and "Subangularen" of Quenstedt, is thus distinguished by the presence of under-basals (dorsocentral plate, Austin) and the downward prolongation and jointing of the radials. But it also differs very markedly from the Post-Liassic and recent Pentacrinites in the characters of its stem and arm-divisions.

The precise structure of the stem of *Extracrinus*, *i.e.*, the relations of its nodal and internodal joints, has yet to be worked out. Some fragments of stem, probably from near the top, seem to consist entirely of nodal joints; while in others there are several joints between any two whorls of cirri, just as in the ordinary Pentacrinites. The joint-faces of *Extracrinus*, however, are very different from those of *Pentacrinus*. In the latter genus, the five petaloid figures indicating the position of the stem ligaments are more or less oval in shape, pointed at one or both ends, and bounded by strong ridge-like processes, with alternating furrows (Pl. XIII. figs. 2-6, 9-11; Pl. XXII. figs. 13, 14, 22; Pl. XXX. figs. 25-30; Pl. XXXa. fig. 7; Pl. XXXII. fig. 3; Pl. XXXVII. fig. 22). There may be only about three of these on each side of the petal, as in most recent forms, or there may be from six to twelve of a smaller size. But all of these ridges, except those most centrally placed, slant inwards from the edge of the joint, where their outer ends cause the denticulation which is so marked in all but the oldest specimens (Pl. XIX. figs. 2-5; Pl. XXVII. fig. 1; Pl. XXXa. fig. 6; Pl. XXXI. fig. 3; Pls. XXXV., XXXVI.).

In *Extracrinus*, however, the five interrarial petals are quite narrow, and much less distinctly oval than in *Pentacrinus*, sometimes being linear with rounded outer ends. Even when the joints are stellate the petals do not occupy more than the central portion of each ray of the star, instead of the whole of it as in *Pentacrinus*; and when the joints are pentagonal or circular there is a more or less triangular space between every two petals, which is plain and devoid of sculpture. Then again the markings at the sides of the petals are much more delicate than in *Pentacrinus*, having more the character of striæ or crenulation than of coarse ridges. They are also much more numerous than in *Pentacrinus*, and are strictly limited to the sides of the petals, not reaching the outer edge of the joint. These characters are well shown in several of the figures published

¹ Encriniden, p. 270.