

based essentially on the presence or absence of a canaliculated structure in the calyx and arm plates." The last of his three leading divisions, the Canaliculata, corresponds to the Articulata, Müller; but Chapman's name does not appear to me to be so greatly superior to Müller's that it could be adopted without hesitation. *Platycrinus*, *Marsupites*, and *Uintacrinus* have perforated first radials. They are, however, placed by Chapman among the Emedullata, in which "the calyx plates are without internal canals."

The absence of canals in the calyx plates is a character of very general occurrence among the Palæocrinoids, and one which does not present itself in any adult Neocrinoid. But there are several Palæocrinoids in which it does not occur at all, and it cannot therefore be used as the principal "differentia" for separating the older (Tessellate) from the younger (Articulate) Crinoids.

Reasons have already been given for preferring the name "Neocrinoidea" for the latter group to either Stomatocrinoidea or Articulata. The second of these names is certainly founded upon a misconception, and I believe the same to be the case with the first one; while neither of them was ever properly defined by its author. The name Neocrinoidea is coming gradually into use; and as the essential differences between this order and that of the Palæocrinoidea have already been discussed in Chapter X., it is not necessary for me to go into them again, though they may be conveniently put in the form of a definition.

Order NEOCRINOIDEA.

Crinoids with a regularly pentamerous calyx, which is generally without primary interradial plates, and except in one genus has no anal or azygous side. The calyx-radials are perforated, and are generally united to the succeeding plates by a muscular articulation. The rays may remain simple, or divide from one to eight times, the first axillary being usually the second joint after the primary radials of the calyx. Orocentral plate probably never developed; orals, when present, may be limited to larval existence, or remain through life partially covering the peristome, but capable of being separated so as to open the mouth to the exterior. The oral surface of the visceral mass, with the ambulacra traversing it, may be more or less paved by plates, but is not in any way covered up and shut off from the exterior by a vault.