The second brachials of *Rhizocrinus* (Pl. VIIIa. fig. 8, B_2), and the second radials of *Bathycrinus* (Pl. VIIb. fig. 6, R_2) are in contact by their lower edges, but soon become entirely free from one another (Pl. VII.; Pl. VIII. figs. 1, 2; Pl. IX. figs. 1–3; Pl. X. figs. 1, 2, 6–8); while the corresponding plates in *Hyocrinus* (Pl. VI.) are absolutely free. But in many Crinoids the second radials are often very closely united by ligamentous bundles. These are lodged in fossæ at the sides of the proximal face which is not quite so wide as the distal one (Pl. XII. figs. 9, 10; Pl. XXI. figs. 5*a*, 5*c*). The first joints beyond every axillary are more or less closely united in the same way (Pl. XXI. figs. 3*b*, 4*b*). But the second joints and the axillaries themselves are free, though often in very close contact with their neighbours, so that their apposed sides are more or less flattened (Pl. XXI. figs. 1*b*, 2*b*); and in some cases the first four or five of the free brachials have their sides flattened in this way, where they come in contact with one another and with the corresponding joints of adjacent rays (Pl. XV. fig. 2; Pl. XVI. fig. 1; Pl. XXXa. fig. 8).

In all the Pentacrinidæ there are invariably five rays. I have never met with any exception to this rule, and all the specimens of *Bathycrinus* that I have seen conform to it also. The original specimen of *Holopus* is tetramerous; while I have seen four Comatulæ with the same peculiarity, and one with six rays. Four and six rays are more common in *Rhizocrinus* (Pl. VIIIa. figs. 6, 7), and in very rare cases there may be seven. In the Comatulid genus *Promachocrinus*, however, ten is the normal number, but the basals are pentamerous. Only five rays extend outwards from the central rosette to appear externally beneath five of the radials (fig. 1, A), and they must therefore be regarded as representing the primary interradii of the type. Hence those radial pieces which are not separated from the centro-dorsal by basal rays are the original embryonic radials, homologous with those of other Crinoids and of the five-rayed Star-fishes. The five others may perhaps be compared to the additional radials developed in many-armed Star-fishes, in which, however, the positions of the five primary rays are not indicated in the adult as they are in *Promachocrinus*.

C. The Interradials.

In almost all adult Neocrinoids the first radials meet one another all round the calyx so as to form a complete ring; and until lately this character has been regarded as one specially distinctive of the group. For in a large number of Palæocrinoids an anal plate retains its primitive embryonic position and rests upon a basal, thus separating two of the radials and destroying the complete pentamerous symmetry of the calyx. A good instance of this type is the Carboniferous genus *Belemnocrinus*, which has a calyx very similar to that of the recent *Rhizocrinus* except for the presence of the intercalated anal