

covered and converted into canals by what Beyrich calls "an inner epiphysis."¹ This was of no great thickness, and was therefore easily worn so as to expose the grooves beneath. In *Apiocrinus*, however, the basals were simply grooved for the reception of the bifurcating interradial cords, though the radials were pierced by canals as usual. Beyrich² speaks of the arrangement of the canals being the same as in *Encrinus*, and de Loriol refers to the circular canal;³ but I have been unable to make out definitely whether any intraradial commissure were present or not. At any rate the type resembles *Pentacrinus* rather than *Encrinus*; for there is only one opening on the distal face of each radial instead of two, and in correspondence with this only a single series of arm-joints.

We know nothing respecting the distribution of the canals in the calyx of the Bourgueticrinidæ, but the course of the axial cords in *Rhizocrinus* is somewhat different from that of *Apiocrinus*, and this is still more the case in *Bathycrinus*. The basals of *Rhizocrinus* are of considerable height (Pl. IX. figs. 1-3; Pl. X. figs. 2, 3; Pl. LIII. figs. 7, 8), and the primary interradial cords of greater length than usual; but they are completely enclosed in canals, and bifurcate immediately beneath the synosteal surface on which the first radials rest. The two limbs of each fork are very widely separated, turn off horizontally, and form themselves the interradial portion of the circular commissure, instead of proceeding directly onwards through the radials, as their fellows do in *Pentacrinus* (Pl. XXIV. figs. 8, 9, *ar*). The two secondary cords which enter the small radial are immediately united just within its inner face by an intraradial commissure (Pl. VIIIA. fig. 6, *c.co*), and then proceed onwards towards the single opening on the distal face (Pl. X. figs. 1-4). The above description differs in some points from that given by Ludwig, who took an entirely erroneous view with respect to the basals of this type, and failed to find the intraradial commissure. The subject is discussed more fully in the anatomical account of the genus (pp. 249-252).

A still simpler condition than that of *Rhizocrinus* is presented by the aberrant genus *Bathycrinus*. The basals are low and the radials high (Pl. VII. fig. 2; Pl. VIIIA. fig. 1), exactly the reverse of what we meet with in *Rhizocrinus* (Pl. IX. figs. 1-3; Pl. X. figs. 2, 3; Pl. LIII. figs. 7, 8). The primary interradial cords (Pl. VIIb. figs. 2, 3, *ai*) do not fork within the basals, as is usually the case; but they pass upwards between every two radials, the sides of which are grooved for their reception (Pl. VII. fig. 6*a*). At the level of about half the height of the radials the primary cords divide, and the two branches of each pass off right and left into the radials, where they form an interradial commissure, from the angles of which the axial cords of the rays proceed (Pl. VIIb. fig. 4, *c.co*); while the two converging portions of the interradial commissure within each radial are united by an intraradial commissure just as in *Rhizocrinus*. The principal difference between the two types is that the primary interradial cords of *Rhizocrinus* fork within the basals, while those of *Bathycrinus* pass upwards between the radials, and then turn off laterally within

¹ *Op. cit.*, p. 22.² *Op. cit.*, p. 21.³ *Paléont. Franç., op. cit.*, p. 313.