

rather more uniformly distributed over the apposed surfaces of the joints than those uniting the basals to the top of the stem. The upper surface of the basal ring presents five smooth and single sutural fossæ for the attachment of the radials. They slope downwards and outwards from the edge of the central funnel, and each is marked near its outer edge by a single crescentic opening, or by two smaller ones in close proximity (Pl. VIIa. figs. 12, 13). At first sight this more or less double opening would naturally be taken for the termination of the converging right and left forks of two adjacent interradial canals within the basal ring. This apparently obvious explanation is, however, very far from being the true one. The under faces of the radials which rest in these fossæ on the upper surface of the basal ring are marked in the same way by more or less double openings; but these are not the openings of the central canals, as the apparently similar openings are on the under faces of the radials of *Pentacrinus* and *Metacrinus* (Pl. XII. figs. 11, 22; Pl. XX. fig. 9; Pl. L. fig. 5). They are usually quite small and inconspicuous, and not nearly so well defined as the openings of the central canals on the distal faces (Pl. VIIa. fig. 15), with which indeed they have no communication, for they are merely small pits into which portions of the basiradial ligament are inserted; and the

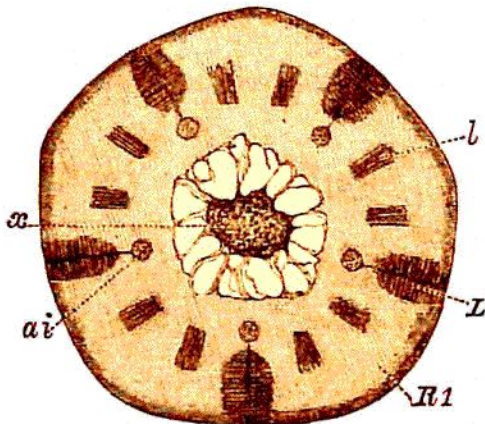


FIG. 12.—Diagram of a horizontal section through the calyx of *Bathycrinus aldrichianus*, at the level of the upper part of the basiradial suture;  $\times 45$ . *ai*, primary interradial cords; *l*, parts of the basiradial ligament; *L*, interradial ligament uniting *R1*, the first radials; *z*, plexiform gland.

same is the case with the corresponding openings in the fossæ on the upper surface of the basal ring (Pl. VIIa. figs. 12, 13). Although the fibres of the basiradial ligament are generally distributed over the whole synosteal surface, they are more especially concentrated in ten bundles which are lodged in ten corresponding pits on each of the apposed surfaces of the basal and radial circlets. Owing to the curvature of these surfaces, these more defined bundles are not shown in the section represented in Pl. VIIb. fig. 3, which passes rather above their level through the general plane of the synostosis; but in the next section they are clearly visible, cut somewhat obliquely as shown in the woodcut (fig. 12, *l*). Both in the woodcut, and in Pl. VIIb. fig. 3,

the axial cords (*ai*) are seen to be situated interradially. They retain this position until they reach about half the height of the radial pentagon, where they fork for the first time; and the branches enter the radials by the openings in their lateral faces (Pl. VII. fig. 6*a*). The right branch of one fork and the left branch of its neighbour in the adjoining basal occupy converging canals in the intervening radial, which meet almost directly, so that there is only one opening on the distal face (Pl. VIIa. fig. 15).

The circular commissure of *Bathycrinus* is thus mainly formed by the actual branches of the primary interradial cords, and not by special interradial commissures uniting these branches as in the Comatulæ and Pentacrinidæ (Pl. XXIV. fig. 9, *cco*). This is also the