

in ihrer ursprünglichen Gestalt veränderte Basalia." He supposed these basals to be in a more embryonic condition than those forming the rosette of *Comatula*, and still remaining independent of one another as five isolated plates. But if this be the case one would surely expect to find the basals below the radials, and separating them from the top stem-joint as in the early stages of the Pentacrinoid larva of *Comatulæ* and in the Stalked Crinoids generally.

Ludwig, however, represents the supposed basals both in horizontal and in vertical sections as occupying a position *above* the radials, and forming the floor of the body-cavity some way above the chambered organ, with which the basals of Crinoids are always closely related. The position assigned by him to the basals of *Rhizocrinus* is one which I have no hesitation in describing as utterly impossible for these plates to occupy; and the dotted line inserted in his longitudinal section to mark the junction of the supposed basals with the first radials below them is purely imaginary. The same may be said of the lines that indicate an enveloping of the radials by upward processes of the supposed top stem-segment below them, which would cut off the radials altogether from the exterior of the calyx (compare wood-cut, fig. 17). That part of the calyx of *Rhizocrinus* which was considered by Ludwig to represent the embryonic basals altered in position, though not in nature, really belongs to the radials as was figured by Sars,<sup>1</sup> who spoke of these plates as follows:—"étant tronquées dans leur partie intérieure, elles forment réunies un large anneau en laissant entre elles au milieu un espace arrondi ou un peu pentagone, rempli par la plaque 'en rosette' (fig. 42, 43, *r*) mentionnée plus haut, reste probable des basales. Au point où cette plaque rencontre le bout tronqué

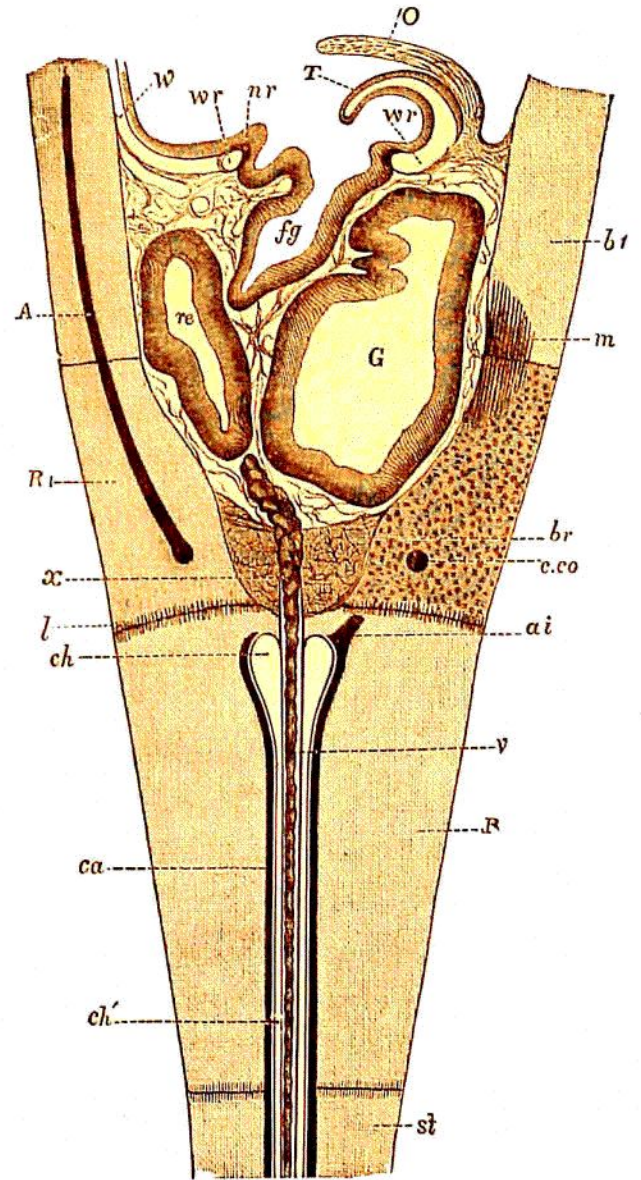


FIG. 17.—Diagrammatic vertical section through the calyx and disk of *Rhizocrinus lefotensis*;  $\times 75$ . Altered from Ludwig. The section is represented as passing through the middle line of a ray on the left hand side, and as almost (but not quite) interradial on the right. A, axial cord of ray; ai, primary interradial cord; B, basal tube; b<sub>1</sub>, first brachial; br, central calcareous plug, the basal rosette of Sars; ca, fibrillar sheath round vascular axis of stem; ch, chambers of the quinquelocular organ; ch' their downward extension into the stem; c.co., portion of circular commissure formed by the secondary interradial cords; fg, fore-gut; G, mid-gut; l, basiradial ligament; m, muscle; nr, oral ring of the ambulacral nervous system; O, oral plate; R<sub>1</sub>, radial; re, rectum; st, top stem-joint; T, tentacle; v, central vessel of stem; wr, radial water-vessel; wr, water-vascular ring; x, plexiform gland.

<sup>1</sup> Crinoïdes vivants, p. 14.