

externally, and their upper and under faces approach one another rather sharply, owing to the convexity of the upper surface of the basals, so that their inner ends are very thin. The centre of the funnel which they form is occupied by the compact plug of close calcareous network which was mistaken by Sars for a basal rosette (Pl. VIIIa. fig. 7 ; Pl. X. figs. 1, 4—*br*). This is attached firmly to the inner ends of the radials, and comes away with them. It lies on the top of the convex upper surface of the basals, the sloping sides of which are divided into fossæ for the reception of the radials. Close to the inner end of each fossa is an elongated opening; and there is a similar one at the centre of the inner end of each radial; but it is not exposed until after the removal of the central plug. Ludwig's view, however, requires that there should be an opening at the inner lateral angle of each radial and none in the centre, as is really the case. The inference from this fact is that the primary interradial cords actually fork in the basals, and that the left branch of one fork, and the right branch of the next one pass out together through one of the elongated openings on the upper surface of the basal ring, which crosses the line of the interbasal suture. I find this to be actually the case. Sections through the uppermost part of the basal ring, above the level of the chambered organ, clearly show the forking of the primary cords, though no interradial lines of suture are visible at these points, as should be the case on Ludwig's theory of the composition of the calyx. At the same time I can readily understand how the use of the section-method alone led him to fall into this error. For owing to the convexity of the upper surface of the basals, a horizontal section through their central upper part might pass through the lowest and outer edge of the radial pentagon, and thus show interradial sutures, although the central portion of the section with the forking cords really belonged to the basals. The question is not a very important one; and but for my having been able to examine a dissected calyx, the exclusive use of the section-method would have led me to follow Ludwig's description, except in one point. He does not seem to have noticed the presence of the intraradial commissures first described by himself in *Antedon*; for he neither mentions them, nor introduces them in his diagram and figures. The special interradial commissures are of course absent, being unctonally replaced by the secondary interradial cords; but every two of these which converge within the substance of a radial are united by an intraradial commissure, just as they are in the *Comatulæ*. This is clearly distinguishable in both the series of horizontal sections which I have cut through the calyx of *Rhizocrinus lofotensis* (Pl. VIIIa. fig. 6, *ico*).

The distribution of the axial cords in the calyx of *Rhizocrinus* is thus somewhat different from that described by Ludwig, as will be seen if the accompanying woodcut (fig. 18) be compared with fig. 18 on Taf. vi. of his memoir.

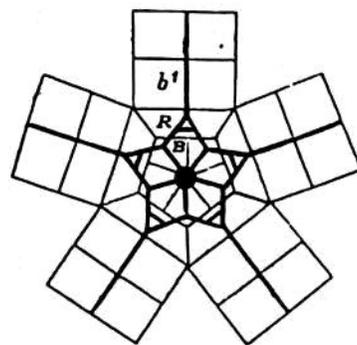


FIG. 18.—Diagram of the distribution of the axial cords in the calyx of *Rhizocrinus lofotensis*. B, basals; R, radials; *b'*, first brachials.