

tube. It is connected with the plexiform gland proper by numerous intervisceral vessels, which pass both above and below the fore-gut so as to completely surround it.

The plexiform gland proper bends directly forwards as soon as it enters the visceral mass, lying at first a little way from the right end of the gullet, but ultimately comes to be close to its anterior end.

This is more nearly in the median longitudinal plane of the disk, so that the plexiform gland lies between the gullet and the first or outside coil of the gut; and as in *Actinometra pulchella*, the glandular structure passes directly into the labial plexus at the right angle of the mouth.¹ It does not therefore, as in the more regular forms, directly give off the œsophageal bundle, being only in connection with it by the intervisceral vessels which encircle the gullet; but it is the centre for all the vessels of the right and anterior sides of the disk, just as the corresponding structure is in *Actinometra pulchella*.

The plexiform gland diminishes gradually in size when it has passed out of the visceral mass into the central funnel within the radials; and it begins to lose its glandular, more or less lobulated appearance (Pl. XXIV. fig. 9, X). This is retained longer in forms like *Bathycrinus* and *Rhizocrinus*, which have relatively high radials (Pl. VIIb. figs. 3-5; Pl. VIIIa. fig. 7—*x*). Vascular cavities begin to appear in it and group themselves into an inner set surrounded by a ring of five vessels, which are radially disposed. These expand within the basals into the chambers of the chambered organ (Pl. VIIb. fig. 2; Pl. XXIV. figs. 6-8; Pl. LVIII. figs. 1-3—*ch*). Ludwig has given an excellent account of this connection in *Antedon rosacea*,² which applies equally well to *Actinometra*, *Rhizocrinus*, *Bathycrinus*, and *Pentacrinus*.

According to Perrier,³ however, "Le corps ovoïde s'implante chez la Comatule adulte sur l'un des planchers horizontaux de l'organe cloisonné." In this, as in the former case, I am at a loss to make out Perrier's real meaning. For he admits in a later communication⁴ that the ovoid gland or axial organ terminates below "en un tube conique qui pénètre, en s'amincissant toujours, dans l'axe de l'organe cloisonné;" and that this tube is the upward continuation of the cellular "cordon" in the centre of the larval stem.

If, however, he intends to deny the communication of the cavities of the chambers with those of the plexiform, or, as he calls it, the "ovoid" gland, I must totally disagree with him. For I have the most satisfactory evidence of this connection in my series both of horizontal and of vertical sections through these structures in *Pentacrinus decorus*, and also in other types.

The upper part of the stem contains the usual six vessels, five peripheral and one central (Pl. XXIV. figs. 2, 5; Pl. LVIII. fig. 3). The single axial vessel which represents Perrier's "cordon central" in the larval stem divides when it enters the chambered

¹ Two figures, illustrating these points in *Actinometra parvicirra*, will be found in the *Quart. Journ. Micr. Sci.*, N. S., vol. xxi., 1881, pl. xii. figs. 14, 15.

² Crinoideen, *loc. cit.*, p. 317.

³ *Comptes rendus*, t. xxvii. p. 188.

⁴ *Comptes rendus*, t. xxviii. pp. 445, 446.