

tissue still supports its margin all round, and especially posteriorly toward its termination. The secerning tissue is thus largely developed at its outer and inner regions.

The foregoing canals were noticed by Kowalewsky, and their function correctly interpreted. Nothing, however, has been seen resembling the long moniliform canal described by Kölliker,¹ which ends blindly at the anterior region. Dyster states that the ova were discharged alternately by the two ducts.

Caldwell² describes the posterior pair of mesodermic diverticula opening in the larva in the middle line and communicating with the exterior in each case by a small pore, which he thinks probably persists as the nephridial opening of its side. The excretory cells lie in the blood-space of the splanchnopleure, and not in the body-cavity. He also states that the external openings of the nephridia are parts of the blastopore. The nephridia attach themselves entirely to the posterior mesoderm (for the latter is divided into an anterior and a posterior part). "The division of the blastopore caused the division of the mesoderm, and results, amongst other things, in metameric segmentation."

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The ova are developed in the posterior region of the body in racemose masses attached to the vessels round the main division of the alimentary canal. While one side of the body is thus occupied, the other has a bulky lobulated (in section somewhat areolated) granular tissue, which represents the male elements (Pl. II. fig. 2, *ovr* and *t*). Kowalewsky mentions that the latter occur in a different region from the former, but such was not indicated in the present specimens. Dyster correctly observed both ova and spermatozoa "beneath" the stomach. The ova are thus shed into the body-cavity, fertilized therein, undergoing, according to Kowalewsky, the earlier stages of their development there, and then pass outward by the nephridia to lodge in the branchial whorls.

The ova lie freely amongst the tentacles; and there was no indication in the preparations that they adhere together. Certain specimens would indicate that the older larvæ occupy the outer whorls of the tentacles, the earlier forms mainly occurring in the centre (Pl. III. fig. 1). This condition, however, may simply indicate that the action of the cilia in the free larvæ had caused a change of position.

The history of the development of the young *Phoronis* is most interesting. The larval form was first found in the sea off Heligoland by Johannes Müller,³ in one of his memorable excursions; and he gave it the name of *Actinotrocha*, from its ciliated arms; but he was unaware of its relationships—indeed, he thought it might be a larval Mollusk. A more detailed account of its structure was published the following year by

¹ *Op. cit.*, p. 12.

² *Quart. Journ. Micr. Sci.*, vol. xxv. p. 19, 1885.

³ *Müller's Archiv f. Anat. u. Physiol.*, p. 101, Taf. v. figs. 1, 2, 1846.