ON THE NEPHRIDIA OF PRIONOSPIO CIRRIFERA

BY PROF. R. GOPALA AIYAR
(From the University Zoological Research Laboratory, Madras)

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This spionid is very common in the brackish water, Madras, though Southern (1921) does not mention its occurrence in his Polychaete fauna of the Chilka Lake. Fauvel (1932) gives an account of this species in his Annelida Polychaeta of the Indian Museum. He records it from Vizagapatam "bottom and channel". The worms are pinkish yellow generally with a green tinge at the anterior end. While examining the worms causally my attention was drawn to this beautiful green colour in front and after further examination under the binocular it was clear that the green colour is due not to any pigment in the body wall but to three pairs of long thread-like tubes occupying setigerous segments 4, 5 and 6. Each tube is in the form of a U with the two limbs closely pressed against each other in the anterior part and slightly twisted one over the other in the posterior. The course and the disposition of the tubes could be seen with the greatest clearness. Though the structures belong to segments 4, 5 and 6, they are so long that they can be seen to extend as far backwards as the ninth segment. This is rendered possible by the posterior septa belonging to segments 4, 5 and 6 being pushed back to the hind end of the pharynx where they find their inner attachment to the alimentary canal. They are kept in position by the presence of very slender muscle fibres passing between the hind ends of the nephridial loops on the one hand and the hind end of the pharynx on the other. Behind this region, from the twelfth segment onwards in mature worms, the segmental compartments are filled with reproductive elements, ova or sperms as the case may be. This reproductive region continues to the very posterior end of the worm. While the front part or the nephridial region is clear, enabling the nephridial tubes to be seen, the second part, the reproductive region, is opaque due to the closely packed reproductive elements.

Detailed Structure of the Nephridia

Microphotograph 1 and Text-Fig. 1 show the nephridia as they appear in a living worm. For purposes of description the nephridium may be divided into four regions: (1) the funnel, (2) the narrow straight tube leading backwards to (3) the U-shaped tube with two parallel limbs the
second of which leads into (4) the short terminal part opening to the outside by means of the nephridiopore (Microphotograph, 2). It will be seen that except at the two ends the limbs of the U-shaped structure are very close together. The internal opening is placed very near the body wall where the

Text-Fig. 1.—Diagram of the anterior end of the Polychaete showing the Nephridia shining through the body wall.

Text-Fig. 2.—Transverse section of the worm showing the cut view of the 3 pairs of Nephridia.

anterior septum of the segment to which the nephridium belongs joins it. This opening is large and the lips which are strongly ciliated form a large clear funnel one side of which is prominent (Microphotograph 4). The walls of the funnel are formed of cells of large size with round nucleus and the lip by a single row of cubical cells. The nephridial funnel narrows and pierces the septum and then emerging into the posterior compartment merges into the anterior end of the nephridium proper which runs backwards having almost a straight course, then turns upon itself and runs forwards