

however, is contrasted with them very considerable differences are encountered, one of the most decided being the straightness of the canal and its terminal anus.

The *Nervous System* is præ-oral in *Cephalodiscus* and it has a somewhat peculiar structure. It is situated between the hypoderm externally and the basement-tissue internally. None has yet been described in *Rhabdopleura*, and thus comparison at present must remain in abeyance. In *Phoronis* the nervous elements, which lie along the base of the branchial processes, are similar to those in *Cephalodiscus*, and there is also a central area between mouth and anus. The nervous system is subhypodermic, and is chiefly concentrated in the corresponding region to that in *Cephalodiscus*. So far as known, therefore, all have something in common under this head.

Unless the oviducts in *Cephalodiscus* are to be credited with remarkable functions, sense-organs, so far as can be noticed in the spirit-preparations, are absent. Further inquiry is necessary on this head, but I am inclined to consider with Dr. Marcus Gunn, on whose special experience and caution I place reliance, that there is no refractive mechanism. This localized pigment perhaps indicates either phosphorescent organs or local heat-producers. In *Rhabdopleura* a pair of ciliated pads or papillæ occur at the bases of the plumes, the minute structure of which, however, is in need of careful revision. *Phoronis*, again, presents only the ciliated furrows, which are external to the anus, and have a nervous expansion beneath the hypoderm. In *Loxosoma* papillæ similar to those just described occur on the dorsal aspect, and the subœsophageal ganglion is well developed, as shown in Harmer's beautiful researches on *Loxosoma crassicauda*.

The structure of the *Body-wall* in *Cephalodiscus* considerably diverges from that in *Rhabdopleura*, the definite layers of hypoderm and basement-tissue in this form contrasting with the cuticular epithelium and underlying connective-tissue cells in the latter. Something like basement-tissue seems to be indicated in Lankester's pl. xl. fig. 12 (though no mention of it is made), and he describes and figures the enteric epithelium lining the body-cavity, the cells being connected with the wall of the stomach by processes. The body-wall in *Phoronis* again deviates from that in either of the foregoing, since, besides cuticle, hypoderm and basement-tissue, it shows a circular and a longitudinal muscular coat, the latter being chiefly grouped in longitudinal bands which in transverse section show a somewhat pennate arrangement. There is little in common, therefore, beneath the basement-tissue, and the absence of the pedicle in *Phoronis* is a marked feature of divergence. The structure of the body-wall of *Cephalodiscus* most nearly approaches that of *Balanoglossus* (a phosphorescent form), though there is a wide gap in this respect as there also is between it and *Phoronis*. In *Loxosoma* a transparent cuticle and a hypodermic layer, "associated at certain points with muscular fibres more or less pronounced," according to Vogt are present.

*Cephalodiscus* and *Rhabdopleura* agree in certain respects in regard to the *Body-cavity*, but the former has the pedicle as an appendix. *Phoronis* on the other hand has