Zoology Part LIV: Report on the NEMERTA. By Professor A. A. W. Hubrecht. Bound in Volume 19,1887.

The brain of the Schizonemertea was fully discussed in a former publication (IX). The Challenger Schizonemertea all conform to this type, with the additional facts alluded to above in connection with the medullary nerve. The difference in the size of the ganglion cells in different regions of the brain, as it appears in Pl. XII. figs. 7, 8, and Pl. XIII. fig. 1, is much more marked in certain species of *Cerebratulus* than in others. The larger sized nerve-cells appear to be principally peripherally and anteriorly situated; that they are absent, or less numerous, in certain other species, may be seen by comparing Pl. XII. fig. 1, with the above mentioned figures. The relative distribution of fibrous and cellular nerve-matter in the brain need not be any further described in detail after our foregoing description and figures of *Eupolia*. The size and shape of the posterior lobe is, however, somewhat different in the Schizonemertea. This will be obvious by comparing pl. i. fig. 1 of the treatise referred to (IX) with our present figures of *Eupolia*.

Not having been able to study any of the Challenger species alive, we should have to be content with reconstruction from section series, if I were to enter more fully into the discussion of the respective differences, and for that reason I wish to restrict myself to these general remarks.

One other point connected with the posterior lobe and its ciliated duct deserves special mention, viz., the observation I was able to make that the duct which leads from the bottom of the cephalic slits into the nerve-tissue of the posterior brain-lobe (inside the brain-lobe it very generally has an S-shaped, and, at the same time, a spiral twist, thus being very often as in Pl. XIV. fig. 6, cut in three places, all in one section), and which is clothed in the neighbourhood of its external opening with an epithelium directly continous with, and similar to, that of the outer surface, not only shows certain differences in its epithelium, as we pass further inwards (Pl. XIV. fig. 11), but also offers certain complications, which we have now to consider. These complications very distinctly concern the participation of deeper cellular layers of the integument. As indicated by *gl* in Pl. XIV. fig. 11, these deeper layers segregate and form a ring-shaped or cushion-shaped addendum to the simple epithelial tube. It must be doubted whether they communicate with the exterior, as do the deeper glands of the integument, although this deserves special attention, because of the glandular significance which must be attached, according to Dewoltezky (II), to the strongly refractive cells present on the posterior surface of the hinder brain-lobe (*cf.* p. 94). The epithelium has undergone still more considerable alteration when it passes inside the posterior brain-lobe. Its nuclei are distinct (Pl. XIV. figs. 6, 7, 8), but instead of direct cell partitions we may observe a fine striation vertical to the axis of the ciliated canal (fig. 8). This feature, known to former observers (IX, figs. 35, 36), may here be more especially alluded to, because in Hoplonemertea (Pl. XIV. fig. 10) we find that the discharge of glandular products from the deeper gland-cells takes place between the interstices of this striated region. This discharge into the lumen of the canal is a point that is put beyond doubt by numerous Challenger sections.

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