

posterior brain-lobe, then, indeed, *Carinina* may be said to represent—also with respect to the fissures and grooves on the head—a stage of development in which both the characteristic features of the Hoplonemertea and the Schizonemertea are still present in combination. In deviating from the original arrangement, the Schizonemertea would have gone a longer way than would the Hoplonemertea, some of which still answer to the original type of structure found in *Carinina*.

I now wish to consider more closely certain details of these different cephalic fissures, which cannot be discussed in a more appropriate place than in the section treating of the sense-organs, although their exact significance must for the present remain unsolved. In spirit preparations the ciliated coating of the body is generally never better preserved than in these furrows; and the cells carrying the cilia, as well as their nuclei, are in most cases exceedingly distinct. However, in a few cases it is only the superficial layer of the integument that is thus continued as a clothing of the inner surface of these furrows. In most cases I could observe the deeper layer of integumentary glands (Schizonemertea) to be continued, although less compact, along the whole inner surface of the cephalic slits. Generally these deeper glandular layers appear to have undergone some special modification in connection with the canal that opens out at the bottom of the furrow, and leads into the brain-substance, a modification which may already be noticed in so primitive a genus as *Carinina*, which, however, with respect to this apparatus, may be said to be more differentiated than the allied genus *Carinella*.

We find in *Carinina* (Pl. VI. figs. 1-3) that all round the bottom of this groove (*Cg*) there is a marked increase of the number of nuclei in the integumentary tissue; and although these nuclei can scarcely be said to belong to the layer of the deeper glands (*cf.* Pl. IV. fig. 1 *E*, and the paragraph on the integument), but rather to the one exterior to this, the fact of their accumulation in this marked way, just along the inner surface of the cephalic groove, is a most reliable indication that the integument is in some way modified in adaptation to the significance of these grooves. In Pl. VI. fig. 1 a distinctly pointed shape is assumed by this wedge-like or horse-shoe-shaped accumulation of nuclei, and a fibrous band connecting them with the intermuscular tissue is even visible, more or less clearly, separating—at least in this section—a posterior brain-lobe *Br'*, into which the canal passes, from the anterior brain-mass *Br* (*cf.* woodcut, p. 81). The glandular layer is, however, not indifferent or neutral during these changes in the exterior nuclear one; and although the two specimens at my disposal do not permit me to unravel the whole of the modifications it undergoes, I may still be permitted to observe that in figs. 2 and 3 of Pl. VI. its participation (*Gi* and *gl.br*) cannot be denied, whereas a comparison of all the three figures here given makes it appear very probable that these glandular elements (*gl.br*), derived from the deeper layer of the integument (*Gi*), play a part with respect to the posterior brain-lobe of *Carinina*, which may best be compared to the glandular investment of the posterior brain-lobe, as it is encountered in all the other Nemertea