(*cf.* Pl. VI. figs. 7, 8; Pl. XIV. figs. 6–8, 11). What the physiological meaning of this glandular investment may be must remain unsolved for the present, although we will return to this question further on. *Carinina* demonstrates that, as the brain-lobes are direct derivatives of the integument, so is the glandular investment of the posterior one. I may here note that, in studying the development of *Lineus obscurus*, I have (XIV) been able to determine the fact that the glandular investment and the nerve-cells of the posterior brain-lobes also arise in that species out of the same mass of embryonic cells. Moreover, I must add that the glandular significance of this investment was for the first time more emphatically brought forward by Dewoletzky in a short notice on the Nemertea (II). Although I cannot accept all the conclusions to which this naturalist arrives with respect to the apparatus of which we are here treating, and must demur when he rejects the specially adapted respiratory significance which the brain canal must necessarily have in very many species, still it is only fair to call attention to his inquiry into the nature of this cellulo-glandular investment.

The only point which has still to be noticed, and which is partly a repetition of what has been already described in the paragraph on the nervous system, is the fact of the actual observation by myself in *Drepanophorus lankesteri*, from the Challenger collection, of the passage of the contents of part of these glandular investing cells into the lumen of the canal (Pl. XIV. fig. 10). Moreover, one point should not be lost sight of, viz., that between the glandular cells that form an actual investment of the posterior lobe (and which in *Carinina* could be identified with the deeper glandular structure of the integument) and the actual integumentary glands, there exists in Schizonemertea a constant and considerable difference, even with respect to the affinities for staining reagents, and still more in the general aspect. The case of *Carinina* is on this account all the more interesting. We must only be careful not to look upon the exceptional case which I was able to observe and to figure (Pl. XIV. fig. 11, *gl*), in which an additional glandular (?) ring surrounds the ciliated canal after it has passed out of the brain-lobe on its way to the exterior, as one of transition. I hardly think that this special adaptation, which has been already noticed above (p. 60), pertains to the layer of the deeper skin-glands; and though I am not prepared to offer a definite opinion, I am much more inclined to compare this curious accumulation of distinct and nucleated cells with a similar accumulation which we have also noticed in *Carinina*, and have there encountered more peripherally but still surrounding the ciliated canal (Pl. VI. figs. 1–3). In either case the physiological significance of the arrangement cannot at present be decided.

And to a certain extent this may also be said to be the case with respect to the whole of the posterior brain-lobe. As long as it went by the name of side-organ—which, however, did no justice to its intimate connection with the brain—it was generally regarded as a specific sense-organ of unknown function (Quatrefages, M'Intosh, &c.). Later on I published a paper (IX) in which the attempt was made to show that, in a very large number