

portant to the Hertwigs,¹ viz., the question whether the delicate longitudinal fibres composing the longitudinal muscular layers, and which in transverse sections are often arranged in rings (Pl. III. fig. 6; Pl. XIII. fig. 6), have their matrix cells between them or not. Having very often succeeded in demonstrating an evident nucleus in the midst of this ring of cut fibres, and having constantly observed a difference in the effect of the staining reagent upon this central space and upon the connective tissue surrounding the muscle bundles, I must answer this question in the affirmative.

Finally, two points deserve a short notice in this place. First, that the layer *a* of the longitudinal Nemertean muscles is very often separated into two, a right and a left half, by a dorso-median, sometimes also by an additional ventro-median solution of continuity. It is very marked in the primitive Palæonemertea, especially in those cases where this layer is the preponderating component part of the body musculature (*cf.* Pl. XI.); it is very rarely wholly absent in *Eupolia* and the Schizonemertea; it is less marked or even absent in the Hoplonemertea. In how far this separation may have general morphological significance, will be discussed in the chapter devoted to general considerations.

The second point on which I shall offer speculative remarks in that chapter (*cf.* p. 127) has again reference to the same muscular layer. Sometimes it was observed that in this layer darker patches of contracted fibres alternate with lighter ones in which these contractions were absent (Pl. XV. figs. 9, 10). As this phenomenon of contraction was not wholly local but stretched all round the body in rings, the question must be considered whether we have here successive waves of contraction preserved at the moment of death, or whether the phenomenon has a deeper significance, is more permanent and indeed allows of direct comparison with myotomes. The comparative rarity of the phenomenon for the present prevents us from very emphatically advocating the latter view.

How the circular layer of the Schizonemertea only stretches to the posterior brain-lobes, how the longitudinal muscles decussate in all directions in the head, how the development of the cephalic musculature is ontogenetically separated from that of the body musculature, are points already known to former investigators of the anatomy and embryology of the group. The fact of their having found ample discussion and mention in other monographs, and the Challenger material not having furnished new points of interest, will explain my silence in this Report on these and other points (such as the muscular dissepiments, the musculature of the cephalic slits, &c.) connected with the muscular system.

¹ Die Cœlomtheorie, p. 37.