

have established for the lower Chordata (Cephalochorda and Cyclostomata) that the typical chordate spinal nerve is not originally provided with a double root, but that this double root appears to have arisen by the coalescence of what were primitively in the groups just mentioned, separate and alternating dorsal and ventral nerve-tracts. With these so much simpler spinal nerves the transverse nerve-stems of the Nemertea undoubtedly offer points of comparison. These Nemertean nerves specially differ from the Vertebrate spinal nerves in two respects: (1) they give off nerve-fibres in different directions, which are probably motor as well as sensory and visceral, according to the different organ systems they terminate in; and (2) they go round ventrally, each of them forming a loop all round the body. As to the first point of difference just alluded to, it is the expression of a low and primitive degree of differentiation, and when a step forwards is made, differentiation of labour will tend to develop certain tracts more particularly containing sensory and visceral nerve-fibres, which are more especially directed towards the epithelia (the primitive dorsal or posterior roots), and others more particularly containing motor nerve-fibres, and more especially directed inwards towards the muscles (the primitive ventral or anterior roots), because the musculature, as was already mentioned, is originally situated internally to the nervous system.

For the present we can only hold it to be established that the fibres of these three categories are blended in the Nemertean plexus, without being able to determine in how far the specialisation therein observed, of the appearance of transverse metameric nerves, may at the same time be accompanied by a commencement of differentiation, such as has just been alluded to. We may, in other words, not yet assume that among these metameric stems there is already a tendency to an alternation between such as have sensory and visceral, and such as have motor predispositions.

Only in a few cases may we be justified in saying that certain nerve-tracts belonging to the Nemertean peripheral system are more especially sensory (Pl. XIV. fig. 2) or visceral (Pl. XIV. fig. 4), and these no doubt offer important analogies in their situation and connections to similar nerve-tracts of the Vertebrata.

The second point of difference, viz., the continuity in the ventral median line of the transverse tracts of the Nemertea, is no doubt a consequence (*a*) of their origin in a perfectly continuous plexus, (*b*) of the cylindrical arrangement of the muscular layers, which in most cases are uninterrupted both in the dorsal and in the ventral median line. It is all the more important to notice, that more especially in the primitive Carinellidæ, the tendency is very marked towards a scission of this muscular body-wall into a right and a left half (*cf.* p. 72). A comparison of figs. 4, 5 on Pl. XI. will show this. In the Schizonemertea, too, and in *Eupolia* it affects the primitive muscular layer (Pl. XI. figs. 10, 12), in a more or less marked degree.

This longitudinal scission is no doubt the first expression of the phenomenon which shows us the musculature of the right and left half of the body, developing quite inde-