

pendently in the Chordata. It is easily intelligible how, as this phenomenon gradually becomes more and more marked, no more ventral connecting fibres across the non-muscular region were required for the innervation of the musculature of the right and left half of the body.

The process by which the transverse nerve-tract, with radial nerve-fibres leaving it at short intervals, both centripetally and centrifugally gradually assumed the form of a nerve-stem with a dorsal and a ventral branch, such as we find in the spinal nerves, must have gone on *pari passu* with those numerous other changes, which we cannot as yet fully trace, but which must have occurred when (1) the muscular metamery became gradually established, (2) the dorso-median medullary tract became so preponderant that an increase in mass, with economy of bulk, was only to be obtained by a process of folding-in already discussed above, and (3) the attachment of the spinal nerves (transverse tracts) to the medulla was modified in consequence of this process.

None of these phenomena, however, offer anything that is in any way inconsistent with, or opposed to, the general theory here developed.

We have now sufficiently insisted on the chief point of comparison here proposed, viz., that between the Nemertean medullary nerve and its metameric transverse nerve-cords, and the Vertebrate cerebro-spinal axis and spinal nerves.

If *Amphioxus* were the only Vertebrate known, we should, recognising the phylogenetic importance of the plexiform arrangement still met with in the adult of that species, admit that, as far as we know at present, the primary lateral nerves with their anterior swellings of the Vermian ancestors had disappeared in the same measure as the dorso-median spinal cord had come more and more into the foreground.

But our consideration of other Vertebrates leads us to the conclusion that, when once the general homology between the two nervous systems is admitted, there may perhaps be secondary points in regard to which the comparison can be further extended. And it must be recognised, that if we should also succeed in rendering more or less probable a comparison in secondary details, this might again be favourably interpreted for the primary and more important part of the hypothesis.

The search after these secondary points of agreement was instituted by me, when the question above alluded to presented itself, viz., if any remnant could be traced of the central nervous system of Nemertea-like ancestors, *i.e.*, of the brain-lobes and lateral stems, in those Vertebrate descendants in which the medio-dorsal tract had become so preponderant as to give rise to the unpaired medulla and brain.

It is clear that if it shall be possible to trace any such remnants, and to render their homology with the Nemertean central nervous system probable, they will have to be sought for—(a) in the head, as lateral more or less independent nerve-centra, innervating sense-organs of the integument, and passing posteriorly into parallel longitudinal stems; or (b) in the trunk, as longitudinal nerve-stems, in which the central character should