The facts as they lie before us do not, however, admit of any very circumstantial comparison so far as the nerves in particular are concerned, and I purposely refrain from entering into any details. Yet it should be remarked—

(1) That the polymerous root of the Vertebrate vagus nerve is very readily explicable if we take the Nemertean arrangement as a starting-point (Pl. XVI. figs. 1, 2, *vag*), as is also the mixture of sensory and motor elements in this root.[1]

(2) That similarly, if the anterior cephalic nerves (*e.g.*, the fifth) should prove to be polymerous, this would in no way be astonishing nor difficult to bring into harmony with that same starting-point.

(3) That the presence of superficial branches to the integument and to the musculature, and of deeper branches to the intestinal epithelium in those parts that will contribute to form the cephalic nerves, is similarly foreshadowed in the Nemertea.

(4) That the equivalent of the Nemertean vagus nerve will have to be sought for in such branches of the Vertebrate vagus as more especially innervate the intestinal epithelium,[2] whereas the innervation of the Vertebrate gill-slits, which marks a later phylogenetic stage, in which these perforations of the anterior trunk region have appeared, may be as well put to the account of more superficial parts of the transverse tracts.

(5) That the common starting-point of the sensory, lateral, and the intestinal portion of the vagus has also attracted the attention of former observers. Ransom and d'Arcy Thompson write :—" In the embryo dog-fish the second or ventral commissure described by Balfour, &c., as uniting the roots of the vagus, ventral to the ganglia, is essentially a sympathetic commissure, whose (visceral) fibres pass on, as described by Balfour, to form the intestinal branch of the vagus. In that intestinal branch we have an outflow of visceral fibres, quite comparable to, *e.g.*, a splanchnic branch of the dorsal sympathetic system. The connection between the origin of the lateralis and this ventral commissure connecting the vagus roots in the dog-fish, and similarly the relation of the lateralis to the loops uniting the ganglia of the 5th, 7th, and 10th nerves in *Petromyzon* may probably be described as indicating a fusion in this region of the two great commissural systems which posteriorly are separate, viz., that of the sensory branches (lateralis) and the visceral or sympathetic.

[1] Rohon, Ueber den Ursprung des Nervus vagus bei Selachiern, *Arbeit. Zool. Inst. Wien*, vol. i. p. 159.

[2] I have good reasons, based upon actual observations made by my pupil, Mr. Dobberke, to believe that the ramus intestinalis vagi in adult Elasmobranchs may be traced centripetally from its region of innervation of the foremost portion of the intestinal wall, towards the brain, as a bundle of nerve-fibres running parallel to and combined with those for the branchial apparatus, but that, nevertheless, this bundle can be separately traced up to the vagus ganglion, without any further intimate relation to those branchial branches (*cf.* Beard, *loc. cit.*, p. 110). If this should actually be the case, *the possibility of a direct comparison between the Nemertean vagus nerve and the Vertebrate ramus intestinalis vagi*, of course, comes more closely within our reach. It need not be insisted upon that if these comparisons prove correct, the separate intestinal nerve-systems (sympathetic nerve system) of other Invertebrates (Annelids, Arthropods, Molluscs) cannot be looked upon as homologous with the sympathetic nerve system of the Vertebrates, but would rather be homologous with that portion of the intestinal innervation of the latter which comes to the account of their cephalic nerves, in so far as these represent derivatives of the Nemertean vagus, and are marked *v* in figs. 1 and 2 of Pl. XVI.