

especially the brain-lobes.¹ In a former publication (IX), where the medullary nerve was for the first time noticed and described as the proboscidian-sheath-nerve, I traced its origin to the dorsal commissure between the two lateral halves of the brain (*loc. cit.*, pl. i. fig. 1). Thanks to certain very favourable specimens in the Challenger collection, I have now been able to add new data to this statement. Sections through the brain of *Cerebratulus macroren*, *Cerebratulus corrugatus* and *Cerebratulus angusticeps* (Pl. XII. figs. 1, 7, 8; Pl. XIII. fig. 1) show that the condition of things is indeed less simple than this original statement would imply,—that the medullary nerve is not an eminently fibrous cord springing at right angles from the eminently fibrous upper brain-commissure, but that the nerve-tissue constituting the foremost and uppermost portions of the upper brain-lobes spreads out over a far more considerable surface than the fibrous tract which is known as the dorsal commissure. This expansion of nerve-tissue, in which the cellular elements are no less conspicuous than the fibrous, is posteriorly directly continuous with the plexus above described, laterally with the brain-lobes, anteriorly with the cephalic nerves springing from these lobes. It attains its fullest development just before and behind the region where a transverse bundle of fibres uniting the fibrous core of the lateral brain-lobes forms the well-known dorsal brain-commissure. This commissure is a transverse fibrous tract forming part of a more extensive nerve-plate. To this expansion of nerve-tissue the presence of nerve-cells gives a more primitive, at any rate a less specialised, character. These nerve-cells and nerve-fibres are directly continuous with those of the medullary nerve and (backwards) with those of the nerve-plexus, of which this nerve is only the median longitudinal thickening. There is even more reason to look upon the fibres of this medullary nerve as a tract of the general fibrous stroma not necessarily connected with the fibres of the brain-commissure. In other cases a more direct continuity between the commissural and the medullary nerve-fibres was however observed.

In order clearly to understand the relative importance of the different parts of the nervous system here noticed, the primitive Palæonemertea offer the best starting-point.

Thus in *Carinella* we find the brain-lobes not yet separated into distinct upper and lower lobes, nor do we find a posterior lobe (side-organ). The brain is a double lateral and anterior thickening in the nerve-plexus, situated like it and like the lateral nerve-stems outside the muscular body-wall in the deeper strata of the integument. The only difference between the medio-dorsal medullary nerve in this species and the lateral nerves with their anterior enlargements (the brain-lobes) is its position and its greater tenuity (Pl. XVI. fig. 1), which, however, does not prevent its being very clearly observable in every transverse section (Pl. XI. figs. 3, 4). Its connection with the brain-commissure was already described (IX, p. 25), and figured by me (*loc. cit.*, pl. iii. fig. 31). It must,

¹ In the course of these considerations a certain amount of repetition of facts already noticed in the paragraph on the nervous system cannot well be avoided.