

species that, besides the distinctly granular cells included in it, striation in nearly every direction forms a prominent feature of this intermuscular substance.

Inside the innermost muscular coat the gelatinous tissue appears in the third modification which we have established for it. This modification is in many respects the most important, and at the same time most liable to a considerable amount of variation according to the species we happen to examine. It has been already noticed that of all Nemertea *Pelagonemertes* shows it in its fullest development, whereas the eminently muscular *Carinina* is only very sparsely provided with it. It will thus be safest first of all to examine it in *Pelagonemertes*, and to indicate by what features the other genera differ and gradually lead to grades of development as far down as *Carinina*.

The most striking feature in examining any section of *Pelagonemertes*, either with low or high powers, with a special view to the gelatinous tissue inside the muscular body-wall, is the homogeneity of this tissue, the comparative scarceness of nuclei, and the uniform imbibition of the staining reagent, by which it has obtained a delicate rose colour. A comparison with the medusoid jelly, or, more distantly, with the intercellular substance of cartilage, is here inevitable.

This general feature being established, the secondary characteristics are—(1) the imbedded nuclei of this jelly; (2) the fibres forming part of its substance, other fibres traversing it in apparently tubiform channels; (3) differences in the coloration of the jelly in different regions, and lastly, a fibrillation of the utmost tenuity, only visible by the aid of very high powers, which appears in different regions of the apparently homogeneous jelly, other and large portions, however, retaining the homogeneous aspect even with these high powers, though then not appearing wholly limpid but cloudy, perhaps an indication of a yet finer fibrillation escaping the analysing power of our objectives when studied, not in the fresh state, but in Canada balsam.

The different coloration of the jelly in different regions is partly arbitrary, *i.e.*, darker-coloured patches are irregularly scattered throughout the general lighter hue. At certain places the darker staining is, however, constant, *viz.*, contiguous to those regions where the jelly is interrupted. Thus the channels above alluded to, in which nerve-fibres and others take their course through the jelly, are marked by a double boundary line of darker colour (Pl. VIII. fig. 6, *n''*), corresponding to the tract along which the continuity of the jelly is interrupted for the passage of these fibres. These nervous tracts being exceedingly numerous, the transversely or obliquely cut ends of similar distinctly red tubes are discovered in every section (Pl. VIII. fig. 3). Moreover, all round the two principal nerve-stems (figs. 6, 8), and bounding the cavity of the proboscidian sheath (Pl. VIII. fig. 12, *B*), the blood spaces (fig. 8, *bl*), and the cavities in which the generative products are lodged (fig. 8), the same continuous dark red tint, which that portion of the jelly has acquired by the picrocarmine, is observed.

A peculiarity which I have further to notice in the sections, is the different hue that