

It will be well to consider this connective tissue more closely before we pass to the description of the muscular layers of the body-wall. From the foregoing it may already be inferred that there is a direct continuity between the different parts of this gelatinous tissue, be it situated close to the intestinal epithelium or to the integument, and that this continuity is more or less completely interrupted by the muscular layers. We may thus conclude that it will be most prominent in those species that have the muscular body-wall reduced to a minimum, whereas it will be hardly visible in species that have a very strongly and massively developed musculature. This is indeed the case, *Pelagonemertes* offering a very striking example of the first category, *Carinina* of the second.

Although the latter species is by far the most primitive, I would hesitate very much in at the same time regarding the relation of the gelatinous tissue to the body-musculature of this deep-sea form as typically representing the original arrangement. Both species mentioned represent an extreme; the normal starting point may be more easily derived from what we find in *Eupolia* and in most Hoplonemertea. It then becomes obvious that our gelatinous tissue, though uniform and continuous, still appears in three principal modifications, which, however, are often connected by transitional phases having the characteristic features of more than one of these modifications.

The first of these modifications is found between the muscles and the integument, the second in the midst of the muscular bundles, the third between the muscular investment and the internal organs.

The first modification just alluded to appears in *Carinina* (as also in *Carinella* and other Palæonemertea not collected by the Challenger) as a wholly homogeneous basement layer, on which the deeper cell layers of the integument are implanted, partially honeycombing it in the way above noticed. It is strongly stained by picrocarmine, and in *Carinella* traversed along circular and longitudinal tracts by nervous tissue. In *Carinina* the corresponding tracts are still situated in the deeper layers of the integument itself. Nuclei are very rare. What is a distinct basement layer in the more primitive Palæonemertea just named, retains this character with but little change in the Hoplonemertea. One change which is revealed at first sight is a distinct though exceedingly fine stratification, that becomes apparent in the basement membrane of nearly all Hoplonemertea. Along with this we very often find included in the Hoplonemertean basement layer distinct and sometimes numerous nuclei. The other inclusions in it, as they are figured on Pl. X. fig. 1, *B*, appear to be parasitic unicellular organisms infesting this particular specimen (see p. 49). Besides the exceedingly fine stratification which is parallel to the surface of the body, and which is often thrown into wavy folds, there are numerous radial tracts that would seem to transverse this basement layer, but are often only due to slight differences in texture and coloration, or to hardly susceptible folding or contraction (Pl. VIII. fig. 13). Where actual radiating fibres can be demonstrated, they