

lamellar connective tissue of the basement layer *Bct*, upon which the whole of the integument rests, may here be specially insisted upon, and is indicated in the same figures.

Finally, I have to mention the two layers of fibres which, though very delicate, form in *Eupolia* very constant and characteristic parts of the integument. They are immediately applied against the inner surface of the supernumerary basement layer *B*—an outer layer of circular and an inner one of longitudinal fibres. Fig. 9 (*Eupolia delineata*, long. sec.) shows them to be more conspicuous than figs. 2, 3 (*Eupolia australis*). Fig. 9 moreover, serves to demonstrate that the pigment, to which in this species the peculiar longitudinal brown stripes are due, is accumulated in the same stratum of the integument, where these fibrous layers are found; the section represented shows an unpigmented zone between two pigmented ones. The pigment is granular, and appears to be limited to this stratum. It was not met with in the other species of *Eupolia*.

That I am justified in looking upon the integumentary arrangement of *Eupolia* as a higher differentiation of a lower type, which in general resembles the integument of *Carinina*, must now be shown by a short account of the condition of things in *Cephalothrix* and *Carinoma*, two other Palæonemertea, both of them inhabitants of the European seas.

*Cephalothrix* shows an advance in differentiation upon *Carinina*, by the deeper situation of the lateral nerve-stems (Pl. XI. fig. 15), imbedded in the outer longitudinal muscular layer. Still it deserves special attention, that in this genus the medio-dorsal nerve is still situated *in the deepest layer of the integument* (Pl. XI. fig. 5) outside of the basement membrane, and that, at the same time, the integument wholly answers to the description that we have given of the integument of *Carinina*.

*Carinoma*, whilst generally agreeing with *Cephalothrix* in the situation of the lateral nerve-stems, no longer retains the longitudinal medio-dorsal nerve as part of the integument, but in a somewhat deeper situation, enclosed in the basement-membrane. It also shows very decided complications in the structure of the integument. Whereas the basement layer is most closely similar to that of *Carinina* and *Carinella*, the outermost integumentary layer is much more distinctly cellular, provided with unicellular glands, and separated from the deeper glandular layer by the development of two layers of muscular fibres that were first noticed by M'Intosh (XXIV), and by him interpreted as two accessory muscular layers of the body-wall. They are such, in fact, although I feel confident that we may look upon them as forming an integral part of the integument, and as being, together with it, wholly of epiblastic origin. Not wishing to give a figure of *Carinoma*, which does not form part of the Challenger collection (the diagrams on Pl. XI. may, however, be consulted), I must needs appeal to the confidence of the reader that a glance at a transverse section of the integument of *Carinoma* carries with it the conviction that it is, in this respect, truly the most conclusive intermediate form between *Carinina* and *Eupolia*, so that we are amply justified (1) in declaring the basement membrane (*B* of Pl. III. figs. 3, 4, 7; Pl. IV. fig. 1) to be not homologous with the one