Carinellidæ and in the Schizonemertea, in fact in all Nemertea, with the exception of the Hoplonemertea. In the latter the mouth is always in front of the brain; it has thus shifted forwards, the extreme range of this shifting process being reached when the mouth becomes confluent with the opening of the rhynchodæum just recorded.

Another difference between the Hoplonemertea and the two other orders of the class, with respect to the digestive system, is found in the relative position of the œsophagus and hind-gut. While in the two last-named groups these two subdivisions of the intestine pass into each other along a straight line and do not overlap, we see that such an overlapping does occur to a more or less considerable extent in the Hoplonemertea. In a number of transverse sections the hind-gut is cut when the œsophagus is also still present in the section, showing that the latter overlaps the former. Still, I should be inclined to adopt the view that the gradual process by which this came about was not so much a further extension backwards of the œsophagus, as a tendency of the hind-gut to spread out and to reach forwards below the œsophagus. This would seem to be indicated by the fact that in these Hoplonemertea the intestinal cæca, that properly belong to the hind-gut, but that have come to be situated below the œsophagus (Pl. XV. fig. 20), may even reach so far forwards as to become situated close to the brain-lobes, a phenomenon which is never observed in the lower groups, where the whole length of the œsophagus separates the brain-lobes from the hind-gut. Possibly the shifting forwards of the hind-gut and its diverticula may be a phenomenon that runs parallel with (if not due to the same cause as) the disappearance of the lacunar blood-spaces round the œsophagus, and the substitution for them of cylindrical blood-vessels communicating by transverse ducts with the medio-dorsal vessel. The latter arrangement is also typical of the region of the hind-gut in the Schizonemertea, where, however, the circumœsophageal portion of the blood-system is eminently lacunar.

These speculations need not, however, be further insisted upon, and we may now pass to a description of the œsophagus in the Challenger Palæonemertea. Here, again, *Carinina* offers features of interest. In the first place, the exceedingly close application of the œsophageal epithelium against the muscular body-wall below and the thin muscular layer of the proboscidian sheath above is peculiar (Pl. IV. fig. 3). There is no gelatinous connective tissue between the cells and the bundles of circular muscles, not even a basement membrane, and strong powers are wanted to demonstrate any intervening tissue between the bundles themselves, so strongly are they interwoven, and so dense are the muscular layers in this region of the body-wall. Anteriorly there is a sharp bend downwards where the mouth is situated, and in front of this a short bulging out forms a prostomial extension to the œsophagus, which is seen to be cut through in Pl. II. fig. 3.

The cells of the œsophagus, as seen from the section figured, are finely granular, and below those which actually clothe the lumen there are sometimes seen others also with large nuclei (Pl. IV. fig. 7) but less granular and with less distinct boundaries. This