As regards the visceral ganglia, they are asymmetrical in the Aplysioidea (*Aplysia*, *Notarchus*,[1] *Dolabella rumphii*,[2] *Dolabella neapolitana*, &c.) as in the Gymnosomata; the right ganglion is larger than the left, and gives origin to three principal nerves (right pallial and two visceral nerves), whilst the left ganglion only gives rise to the left pallial nerve.

In the Aplysioidea (*Aplysia*, &c.) I have observed the same pleuro-pedal anastomoses (cervical plexus) as has been above described in all the Gymnosomata.

The situation of the osphradium is the same both in the Aplysioidea and the Gymnosomata—between the genital opening and the aperture of the kidney, a little ventrally (compare the figure of *Clione*, Pl. V. fig. 5, *j*, with that of *Aplysia* published by my esteemed teacher Professor E. Ray Lankester[3]).

The careful comparison of the Gymnosomata and the Gastropods shows then that the former have very close affinities with the Aplysioidea; that they differ less from them than from the Thecosomata; and that, on the other hand, the Aplysioidea differ less from the Bulloidea than from the Gymnosomata.

V. DO THE PTEROPODA CONSTITUTE A PRIMITIVE OR A DERIVED GROUP?

The view has often been expressed that the Pteropoda constitute a primitive group in the phylum Mollusca. Haeckel[4] in his phylogeny of the Mollusca shows that Pteropods are situated at the base of the two groups Cephalopoda and Gastropoda.

In the same way von Jhering[5] considered that Pteropods are the ancestors of the Cephalopods; but he has since abandoned the idea of the affinity between these two groups. Wagner, on the other hand, points to the Pteropoda as the probable source of the Cephalopods.[6] Lastly, several zoologists still regard the Pteropods as primitive in consequence of the simplicity which is observed in certain parts of their organisation, as for example the circulatory apparatus (Roule,[7] &c.).

To the question at the head of this chapter we have now to reply:—No, the Pteropods are not primitive Molluscs; on the other hand, they constitute a derived group among the Mollusca.

In support of this view, arguments may be adduced from—(1) comparative anatomy, (2) embryology, (3) palæontology.

1. A. The profound asymmetry of the organisation of the Pteropods indicates a group

[1] *Ibid.*, pl. iv. figs. 94, 95.
[2] Amaudrut, Le Système nerveux de la Dolabella Rumphii, *Bull. Soc. Philom. Paris*, sér. 7, t. x. p. 70.
[3] Mollusca, in Encyclopædia Britannica, 9th ed., vol. xvi. p. 657, fig. 63, *m*, between *k* and *o*.
[4] Natürliche Schöpfungsgeschichte, ed. 3, p. 475; Generelle Morphologie, t. ii. p. cxiii, and pl. vi.
[5] Vergleichende Anatomie des Nervensystemes und Phylogenie der Mollusken, p. 249.
[6] Die Wirbellosen des weissen Meeres, Bd. i. p. 117.
[7] Recherches histologiques sur les Lamellibranches, *Journ. Anat. et Phys.*, 23e année, p. 72.