which has already undergone numerous modifications, and has become widely separated from the primitive symmetrical Archimollusc.

B. The concentration of the nervous centres indicates a very specialised and highly differentiated group.

2. In the course of their development the Pteropods pass through a stage even more asymmetrical than the adult. This fact indicates clearly that they arise from ancestors more asymmetrical than themselves, and that their apparent symmetry has been acquired in the course of time by adaptation to their natatory habits.

Comparative anatomy and embryology indicate then that the Pteropoda are not primitive Mollusca, and furthermore, that they are derived from ancestors which themselves are not primitive, but on the contrary already specialised. Some naturalists entirely misunderstand the degree of specialisation of the Gastropoda; thus Boutan[1] regards as the most primitive those Gastropods which he calls typical, that is to say those in which the asymmetry is carried to the highest pitch, and he criticises the opinion of Spengel, who regards the Fissurellidæ as primitive Gastropoda. Among the asymmetrical Gastropoda, *Fissurella* and its allies are in fact the most primitive, as is shown by the conformation of some of their organs (*e.g.*, those of circulation and excretion); such is the inaccurate point of view which Boutan has adopted and from which he has been led to confound the judicious conclusions of Spengel with the rash generalisations of von Jhering.

3. The organisms from the Primary formations, which are usually referred to the Pteropoda, have no affinities with these latter, as I shall show further on. In the Secondary rocks there are no traces of Pteropods, the first undoubted remains of this group being found in the lower Tertiaries. They are then of recent origin.

We are consequently justified in saying:—The Pteropoda do not form a primitive group, but on the contrary a recent and specialised one—a terminal group. The greater part of the characters of terminal groups, as formulated by my esteemed teacher, Professor Giard,[2] are entirely applicable to the Pteropoda:—

(1) They are profoundly modified in adaptation to a special mode of existence.

(2) They exhibit very slight variability.

(3) They include only a small number of species.

VI. POLYPHYLETIC ORIGIN OF THE PTEROPODA.

We regard it then as proved that the Pteropoda (both Thecosomata and Gymnosomata) are derived animals and of recent origin, and by no means primitive Mollusca.

[1] Recherches sur l'anatomie et le développement de Fissurella, *Archives de Zool. Expér.*, sér. 2, t. iii. bis, pp. 150, 151.
[2] Observations . . . (sur les mammifères ovipares), *Bull. Scient. Départ. Nord*, 1886, p. 416.