

*Acera*; and since these Bulloidea probably resembled *Acera*, we may still find a feature of resemblance in the "proboscis" of this latter and that of *Peracelis* and the young Cymbuliidæ.

I have said that the Thecosomatous Pteropods must have arisen towards the end of the Cretaceous or in the early part of the Tertiary epoch. Indeed, in the Secondary period there exists no Pteropod analogous to the Tertiary Thecosomata; and, as I have already said, I cannot admit among the Thecosomata the so-called Primary "Pteropoda."

There exists a considerable number of these fossils (more than a hundred species), which, not being assignable to any other group, have been placed among the Pteropoda on account of certain apparent resemblances.

The absence, which has been already mentioned, of any organic remains in the Secondary rocks which could possibly be attributed to the Pteropoda, and the enormous interval of time which consequently separates these fossils from the true Tertiary Thecosomata, is of itself an argument against the interpretation which has been given by palæontologists of these organisms.

The only so-called "Pteropods" in the Secondary rocks are two species of *Conularia* analogous to those of the Primary formations—*Conularia* sp., Bittner,<sup>1</sup> from the Trias, and *Conularia cancellata*, Argeliez, from the Lias.

In spite of the distance in time which separates the Primary "Pteropoda" from the true Thecosomata of the Tertiary period, the former have hitherto been always ranged among the latter, although only a small number of them show an external resemblance to certain species of *Clio* of the subgenera *Creseis* and *Hyalocylis*.

The fossils which exhibit this supposed resemblance to the existing Cavoliniidæ are as follows:—

1. The "*Creseis*" and "*Styliola*" of the Silurian and Devonian. These are fossils which are not very well preserved, have no embryonic shell like that of *Clio*, and often exhibiting a longitudinal striation such as is seen in no existing species of *Clio*. No real affinity can be found between these organisms and the genus *Clio* (*Creseis*); on the other hand, the great size of these Primary fossils separates them from all known forms of Pteropoda in the same manner as they are separated by stratigraphical considerations, for from the Devonian to the lower Tertiary there is no fossil which could be referred to an extinct Thecosome of this group.

As to the supposed specimens of *Creseis* of small size described by Ehrenberg,<sup>2</sup> their strong regular curvature, their oblique mouth, their apex without any distinct embryonic shell, separate them entirely from all the known Thecosomata, and render it impossible to unite them with the subgenus *Creseis* of *Clio*.

<sup>1</sup> *Verhandl. k. k. geol. Reichsanst.*, 1878, p. 281.

<sup>2</sup> Ueber massenhaft jetzt lebende oceanische und die fossile ältesten Pteropoden der Urwelt, *Monatsber. d. k. preuss. Akad. d. Wiss. Berlin*, 1861, figs. 19–21.