

of the Pteropods, and as derived from the Heteropods! On the other hand, *Limacina* explains the relations of the Cavoliniidæ, which if the Limacinidæ no longer existed would never have been understood, in spite of the existence of fossil Limacinidæ; for the morphological results obtained from the study of fossil shells are exceedingly small, and render those who devote themselves exclusively to this study liable to singular misconceptions.

Finally, thanks to the Limacinidæ, it will be possible, as we shall shortly see, to trace out the affinity of the Thecosomata to the other Molluscs, and to determine their phylogenetic origin.

#### SUMMARY ON THE THECOSOMATA.

The Thecosomata possess only one pair of cephalic tentacles.

The fins embrace the head as far as its dorsal surface.

The mantle presents on the floor of the pallial cavity a large pallial gland.

All the Thecosomata, except *Gleba* and *Cymbuliopsis*, have a radula, the formula of which is 1 : 1 : 1, two jaws placed laterally, and, contrary to the assertions of Gegenbaur, a pair of short salivary glands.

The stomach is a masticatory gizzard with muscular walls, and exhibits four large symmetrical masticatory plates (never two, as stated by Huxley,<sup>1</sup> and copied from him by Woodward and Tryon), a fifth posterior plate, and generally eight small anterior plates. The liver does not pour its secretion into the gizzard, but into the posterior part of the stomach, into which it opens by a very small number of apertures.

At the anus is generally situated an anal gland.

The copulatory organ is situated on the anterior dorsal part of the head near the tentacles.

The cerebral ganglia are situated at the sides of the œsophagus and united by a long supracœsophageal commissure; the pleural ganglia close beside the cerebral, and seem united with them.

## II. GYMNOSOMATA.

As may be seen from the systematic Report upon this group,<sup>2</sup> I divide these animals into five families, one of which (Pneumonodermatidæ) includes three genera, whilst the others (Clionopsidæ, Notobranchæidæ, Clionidæ, and Halopsychidæ) include only one each.

Of the family Notobranchæidæ I was not able to obtain a single specimen for anatomical investigation, so that my researches refer only to the other divisions.

<sup>1</sup> On the Morphology of the Cephalous Mollusca, p. 42, *Phil. Trans.*, 1853.

<sup>2</sup> Zool. Chall. Exp., part lviii. p. 11.