

by a sphincter, on the right side. On the other hand it opens into the pericardium as in all Mollusca.

The heart (Pl. IV. fig. 1, *n*), within its large pericardium, lies at the base of the pallial cavity under the penis, above the kidney, and on the dorsal surface of the visceral mass.

As was remarked above, gills are entirely wanting. Very probably in the Cymbuliidæ, as in all the abbranchiate Thecosomata (*Clio*, *Cuvierina*, &c.), respiration is carried on by some parts of the integument.

*The Generative Organs.*—The genital gland (Pl. III. fig. 9, *a*) is slightly asymmetrical, its left side being more developed than the right; it is somewhat excavated in front to receive the accessory glands and the genital duct. This latter (*b*), very thin at its origin, enlarges rapidly throughout its middle portion, and then narrows again till it reaches the accessory glands. It is not very long and surrounds these latter.

They form a large mass situated anteriorly and a little to the right, and include a large muciparous gland (*d*) and a small albuminiparous gland (*e*) on the right side of the duct. These two glands, along with an ovoid receptaculum seminis (*c*) with a short duct, open into the distal enlarged portion of the genital duct.

The genital aperture (*f*) is situated in front on the right of the visceral mass (Pl. IV. fig. 1, *j*). A spermatic groove, ciliated, proceeds from it towards the dorsal surface on the right side; a little posterior to the genital opening, this groove becomes transformed into a canal by the fusion of its margins (Pl. IV. fig. 1). This canal opens into the cavity occupied by the copulatory organ.

This latter, as I have already had occasion to remark, is situated on the dorsal surface of the head. It has the same structure as in other Thecosomata; but the position of its orifice is different, being situated in the middle line of the dorsal surface of the head (*k*), a little behind the tentacles.

*The Nervous System.*—The central nervous system (Pl. IV. fig. 1, *o*) is placed a little farther back than in the preceding forms.

As regards the cerebral and pedal ganglia the central nervous system of *Cymbulia* resembles that of other Thecosomata (compare figs. 1 and 10, Pl. III.), as was recognised by van Beneden, Gegenbaur, and Souleyet. That is to say—

1. The cerebral ganglia are situated at the sides of the œsophagus (Pl. III. fig. 11, *a*), and united by a long supracesophageal cerebral commissure (*e*).

2. The pedal ganglia (*b*) are situated below the œsophagus, approximated to each other and to the cerebral ganglia; they are not fused with the visceral ganglia, however, as is represented in the figure of von Jhering.<sup>1</sup>

These latter have been the subject of great disagreement among the four anatomists who have studied the genus *Cymbulia*, and especially between the figures and description of one of them.

<sup>1</sup> Vergleichende Anatomie des Nervensystemes und Phylogenie der Mollusken, pl. v. fig. 19.