

The structure of this branchial partition is entirely muscular; at the point where the apertures occur it is somewhat less thick. The epithelium of the ventral surface of the partition is continued on the lips of the apertures; it is ciliated there, but has no special modification.

As in *Poromya* and *Silenia*, the muscular partition has, on its outer borders, delicate muscular bundles which are attached to the shell (Pl. IV. figs. 1, 3, 4, r).

SUMMARY ON THE GENERA POROMYA, "SILENIA," AND CUSPIDARIA.

A. *Classification*.—The genus "*Silenia*" is placed by Smith¹ among the Anatinidæ, and by Fischer,² doubtfully, among the Lyonsiidæ. But the structure of the gills in these two families is absolutely unlike that observed in *Silenia*.

Among recent authors Jeffreys,³ Sars,⁴ and Smith⁵ range *Poromya* and *Cuspidaria* (= *Neæra*) among the Corbulidæ, and Fischer⁶ classes *Poromya* in the Anatinidæ. But here, again, the gill-structure of *Poromya* and *Cuspidaria* is quite different from that of the Corbulidæ and Anatinidæ.

What strikes us first in the three genera cited, is the presence of a muscular partition extending from one adductor to the other, and taken by previous authors for the body-wall. We have shown that this partition is formed by the gills, which have lost the structure habitual to these organs in the Pelecypoda, and, consequently, form an arrangement quite unique among them.

Among the Anatinacea, where the three genera in question are ranged, they form a sub-group quite different from the other Pelecypoda beside which they have been placed. These others (Anatinacea, *s. str.*) are true "Lamellibranchia;" that is to say, they have gills of the typical, normal structure. I propose, therefore, to designate this abnormal sub-group Septibranchia.

The structure of this group remained unknown, in consequence of the habit the majority of conchologists have of not troubling themselves about the soft portions. In the present instance this has resulted in the classifying of the forms in question as described above; a fact which shows that we need expect little assistance from the shell in determining the systematic position of a mollusc.

I have been able to study the structure of each of the three genera, and I have proved that *Poromya* and "*Silenia*" are more nearly allied to each other than to *Cuspidaria*. In the former the apertures in the partitions are in groups; the

¹ Zool. Chall. Exp., part xxxv. p. 75.

² British Conchology, vol. iii. pp. 45, 47.

³ Zool. Chall. Exp., part xxxv. pp. 35, 54.

⁴ Manuel de Conchyliologie, p. 1164.

⁵ Mollusca regionis arcticæ Norvegiæ, pp. 85, 96.

⁶ Manuel de Conchyliologie, p. 1172.