

## **CEPHALOCHORDATA** **(Amphioxus)**

The members of the subphylum Cephalochordata are small, marine and superficially fish-like. The most extensively studied cephalochordate type, and also the best known example is *Branchiostoma* (= *Amphioxus*) commonly called as 'lancelet' or 'lancet'. Amphioxus is especially interesting because it has the five distinctive characteristics of chordates in simple form.

The old generic name *Amphioxus* (Gr., *amphi*= double + *oxys* = sharp) and the common name 'lancet' or 'lancelet' (a little lance) refer to both ends of the body which are sharp, pointed and lance like.

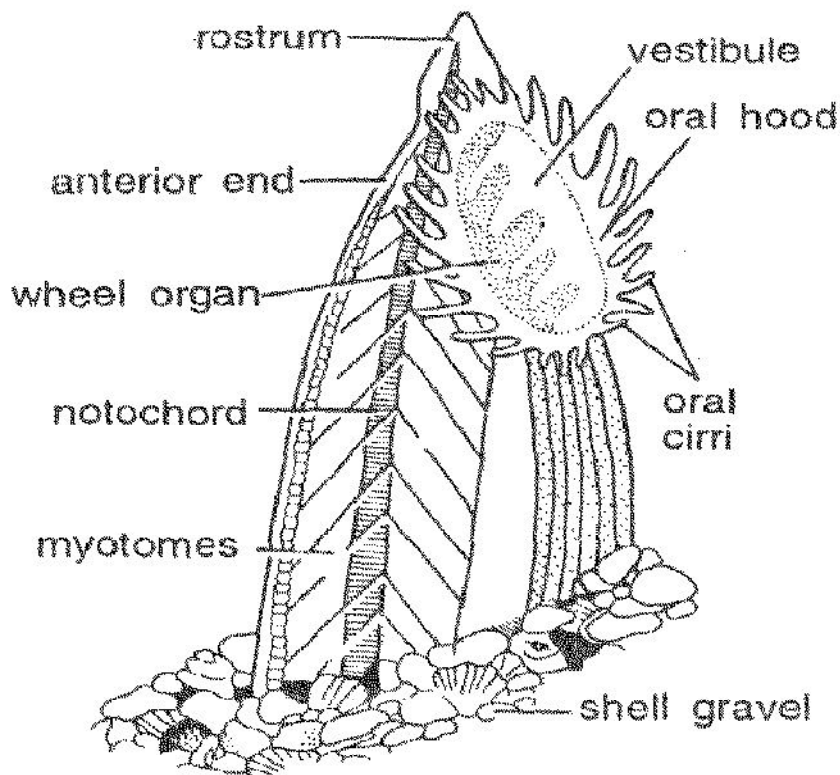
### **Systematic Position**

<b>Phylum</b>	:	Chordata
<b>Group</b>	:	Acrania
<b>Subphylum</b>	:	Cephalochordata
<b>Class</b>	:	Leptocardii
<b>Family</b>	:	Braachiostomidae
<b>Type</b>	:	Branchiostoma (=Amphioxus) (The Lancelet)

### **Characteristics (of the Subphylum Cephalochordata) at a Glance.**

- Notochord: well-developed and persists throughout life of the animal. It runs the length of the animal from the tail to the tip of the nose on the head - a feature that gives subphylum its name (cephalo- meaning head). In lancelets, the notochord runs the entire length of the dorsal nerve cord and persists throughout the animal's life.
- As they lack a skull, the cephalochordates are also called acrania.
- Numerous gill slits over 100 used to trap food particles during filter feeding

- Dorsal nerve cord.
- Post-anal tail.
- Marine and fish-like in appearance (both ends pointed).
- The pharynx is perforated by over 100 pharyngeal slits or "gill slits", which are used to strain food particles out of the water.
- The musculature of the body is divided up into V-shaped blocks or myotomes.
- No normal vertebrate endoskeleton.
- External fertilization.
- Some metamerism (body segmentation) in the musculature.
- No heart.
- Use haemocyanin pigment (no haemoglobin).
- Closed blood circulatory system.



**Fig.** Brachiostomata in natural habitat partly buried in shell with anterior end Protruding.

- \* These scale less chordates occur widely in shallow water throughout the oceans of the world. There are about 30 species of this subphylum.
- \* Lancelets spend most of their time partly buried in sandy or muddy substrates, with only their anterior ends protruding. They can swim, although they rarely do so. Their muscles can easily be seen through their thin, transparent skin as a series of discrete blocks, called myomeres.
- \* Lancelets have many more pharyngeal gill slits than fishes do. Their skin lacks pigment and has only a single layer of cells, unlike the multilayered skin of vertebrates. The lancelet body is pointed at both ends. There is no distinguishable head or sensory structure other than pigmented light receptors.