

Museum Specimens

Prochordata

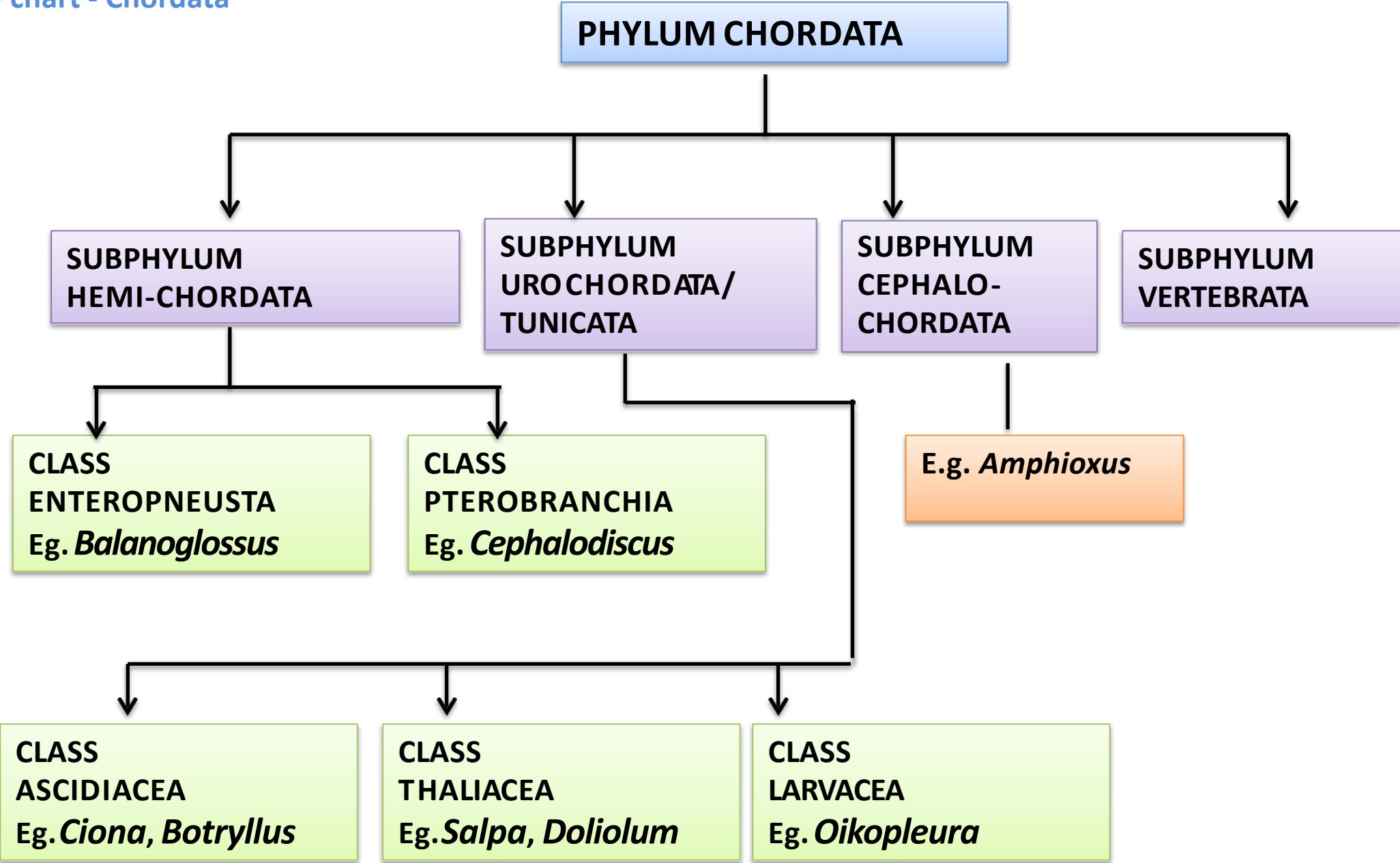
Specimens for Protochordata –
Balanoglossus, Herdmania, Amphioxus

Compiled by Dr. Sadqua Shameem

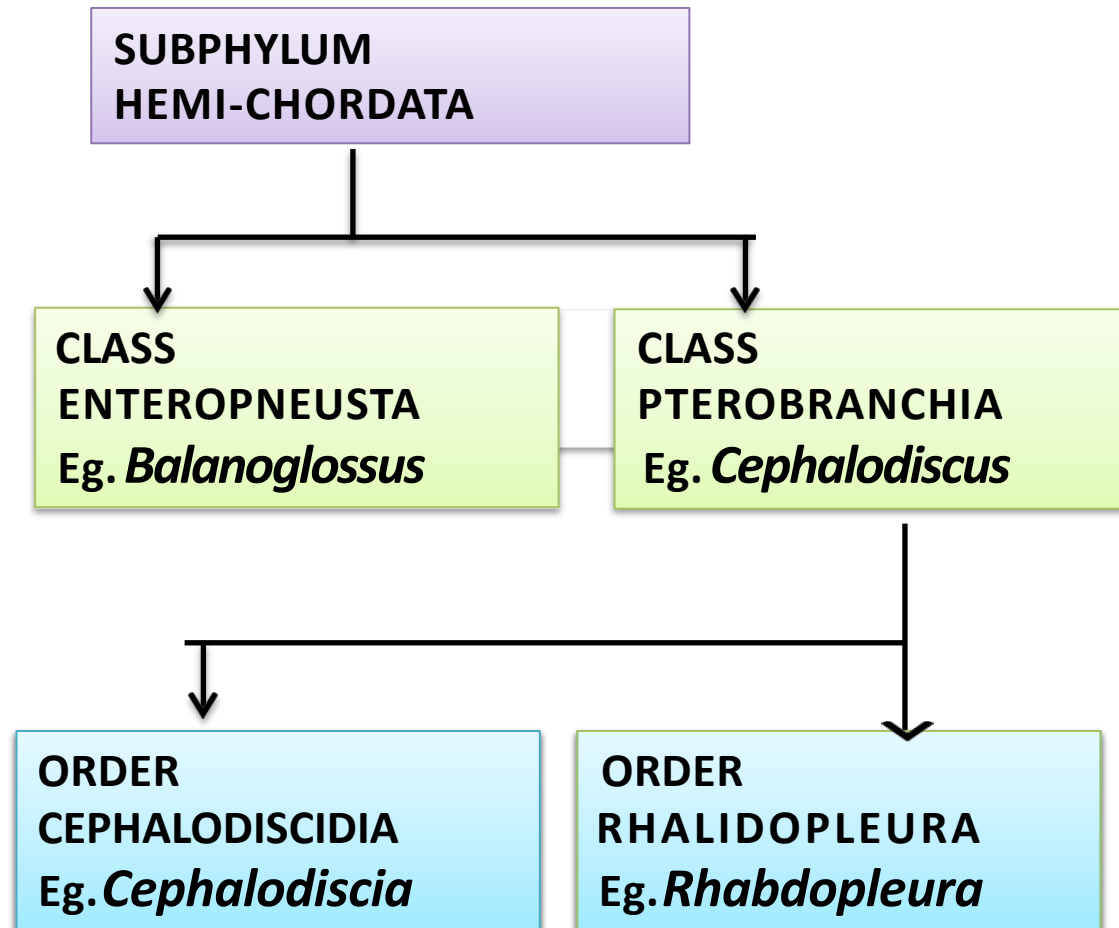
Diagram credits

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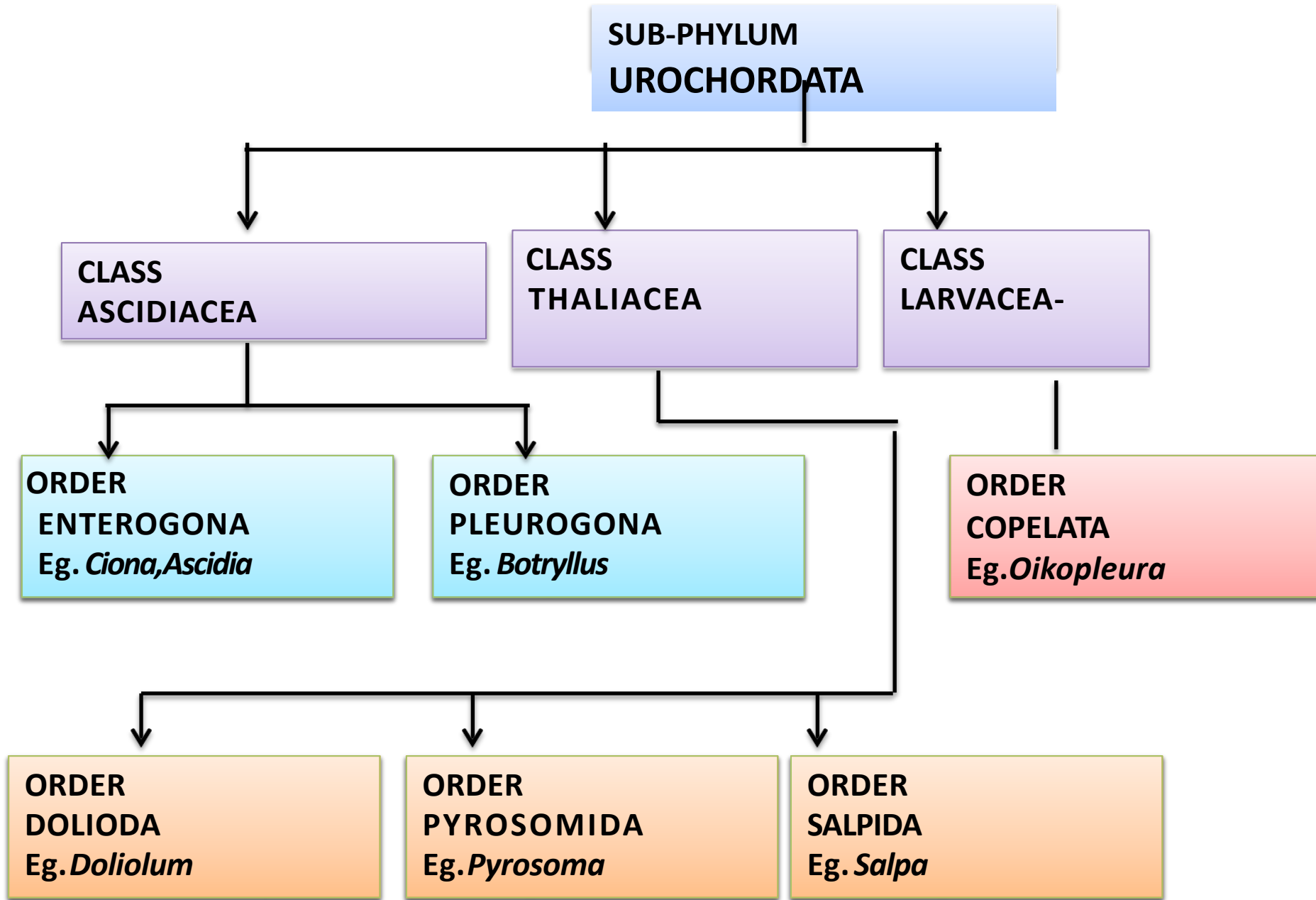
Flow chart - Chordata



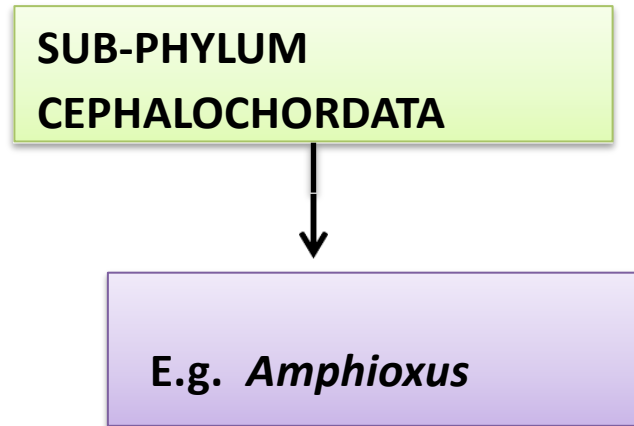
Flow chart – Hemi - Chordata



Flow chart – Urochordata



Flow chart – Cephalochordata



Balanoglossus

Common name: Acron worm

Geographical Distribution : *Balanoglossus* is cosmopolitan or world-wide in distribution.

Scientific Classification with Justifications:

Phylum: Chordata The presence of a notochord.

Subphylum: Hemichordata Notochord occurs only in the anterior end of body.

Class: Enteropneusta Body divisible into proboscis ,collar and trunk.

Alimentary canal straight, two rows of caeca.

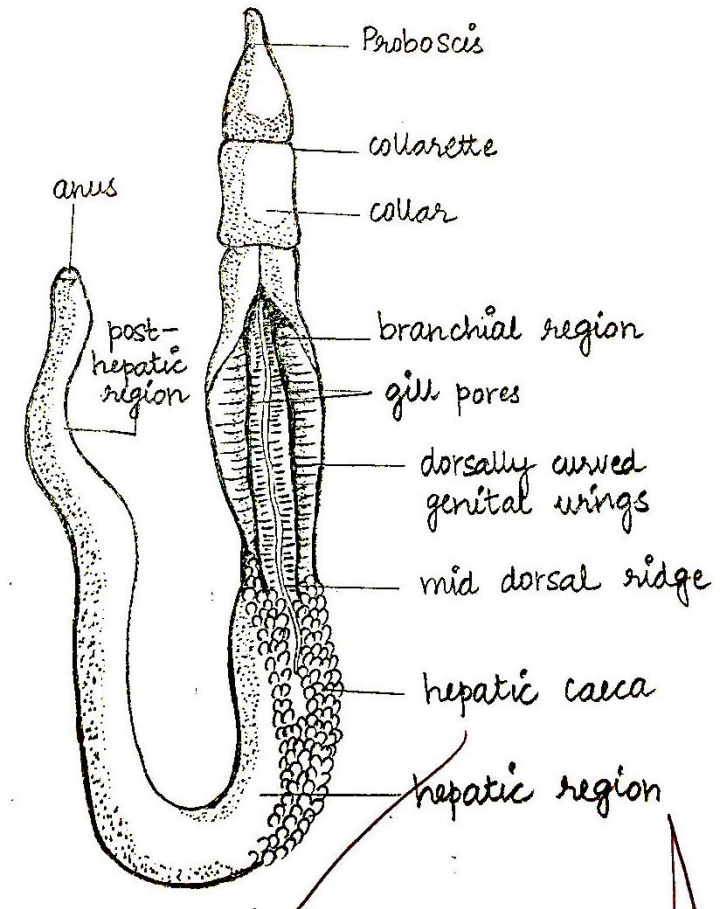
Genus- *Balanoglossus*



Balanoglossus

Characteristic feature:

1. Body: soft and cylindrical having ciliated surface
2. Body length reaches 10-50 cm and is divided into short conical **proboscis**, **collar** and long **trunk**.
3. The **mouth** lies at the base of proboscis and is encircled by the edge of the collar.
4. Trunk divided into anterior branchio-genital region, a middle hepatic region and a posterior abdominal region
5. The branchio-genital region has a pair of genital wings formed by internal gonads and a branchial groove having numerous paired gill-slits arranged in 2 rows
6. The hepatic region has double rows of hepatic caecae.
7. Straight alimentary canal
8. Anus is present on posterior end of body
9. Sexes are separate and fertilization is external. Development includes a free-swimming pelagic larva called tornaria larva.



Balanoglossus

Additional resources :

www.youtube.com/watch?v=tilD7Aqjxhl

www.youtube.com/watch?v=TcJmWpmSNeg

Herdmania

Common name: Sea squirt

Geographical Distribution : India, Pacific and the Atlantic oceans and from Malaya and West Indies .

Scientific Classification with Justifications:

Phylum: Chordata The presence of a notochord.

Subphylum: Urochordata Notochord and nerve cord is only present in the tail of the larva .

Class: Ascidiacea Sessile animals, remain firmly attached to substratum.

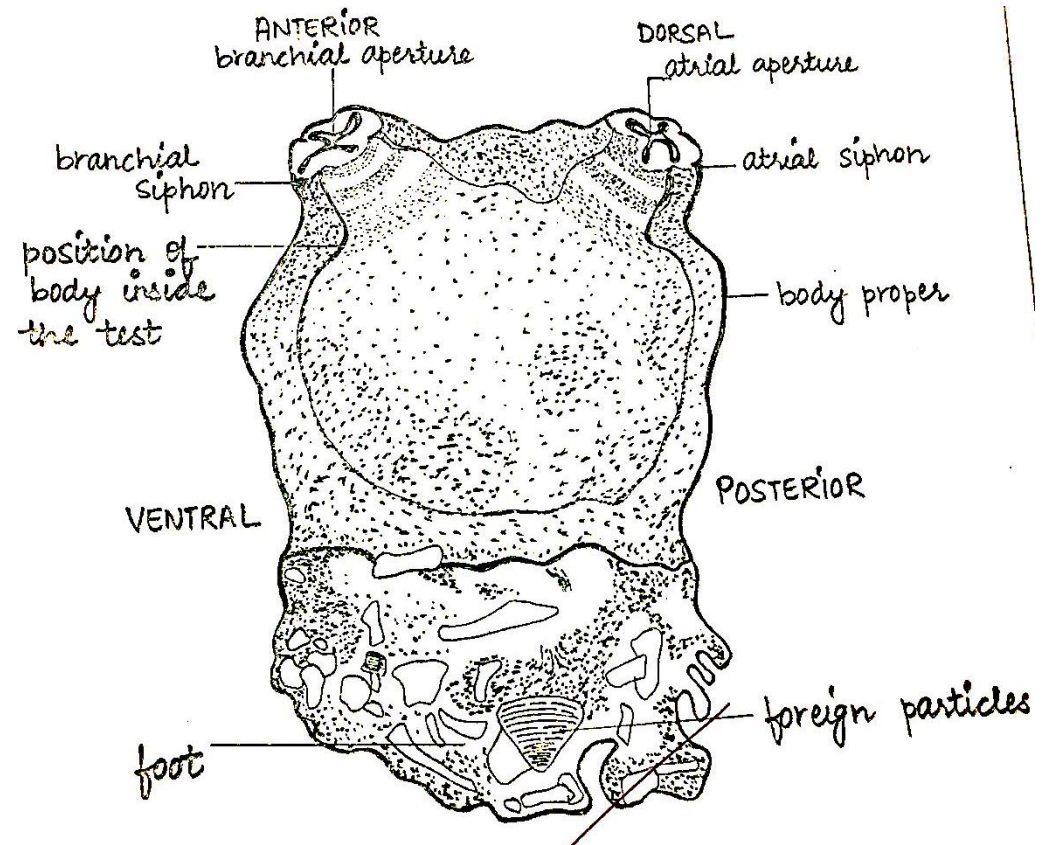
Genus- *Herdmania*



Herdmania

Characteristic feature:

1. The bag-like body is laterally compressed and somewhat oblong or rectangular in shape.
2. Attachment of animal is at posterior ventral end by foot.
3. Body free end is provided with two external openings of the branchial and the atrial apertures.
4. Opening of mouth through branchial aperture or siphon, while anus by atrial aperture.
5. Sac-like pharynx perforated by numerous stigmata
6. The test is a protective covering as well as an accessory respiratory organ, besides also being a receptor organ. It is soft, leathery and translucent.



Herdmania

Additional resources:

www.youtube.com/watch?v=yolyLSpGJLM

www.youtube.com/watch?v=s95rfGncIX0

www.youtube.com/watch?v=FyChVNKAAd0M

Amphioxus

Common name: Lancelet

Geographical Distribution :World -wide in distribution, found on the shores of all continents and many oceanic islands

Scientific Classification with Justifications:

Phylum: Chordata The presence of a notochord.

Subphylum: Cephalochordata Notochord and nerve cord extend the entire length of the body.

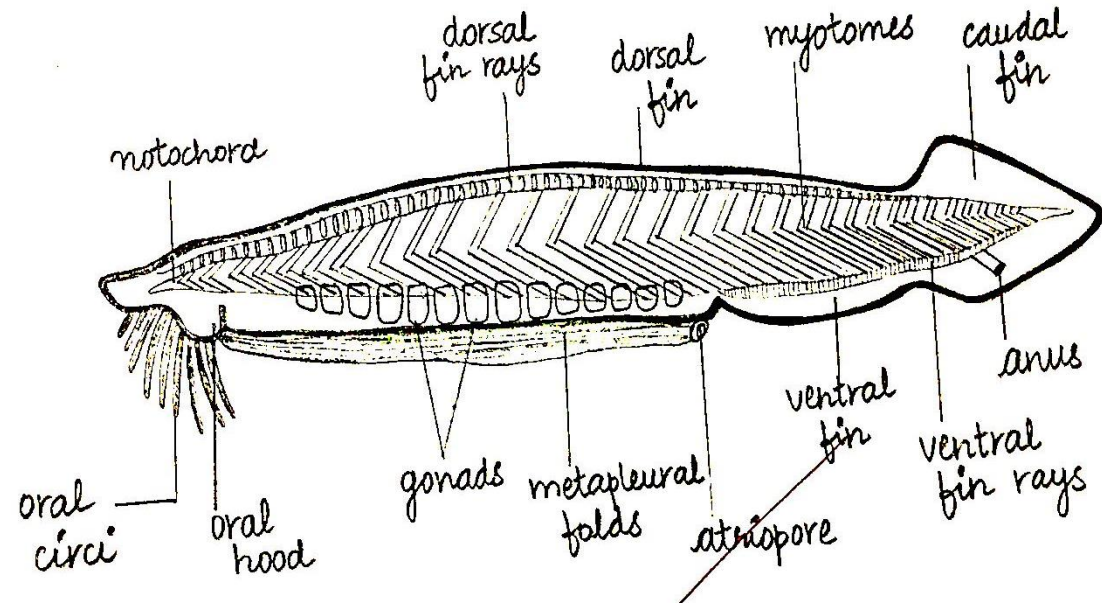
Genus- *Amphioxus*



Amphioxus

Characteristic feature:

1. Body is elongated, laterally compressed and pointed at both the ends.
2. Anterior end of body projected forward which is called **rostrum**
3. The trunk bears three openings, **mouth**, **atriopore** and **anus**. The entire body can be divided into (i) Cephalic (ii) Abdominal and (iii) Atrial regions.
4. Low and continuous fins - three types:
 - a) dorsal fin
 - b) ventral fin
 - c) caudal fin
5. On each lateral side of the body are a series of <- shaped **myotomes** or muscle bands, which are visible through the transparent body wall of the animal.
6. Sexes separate but can't be distinguish externally



Amphioxus

Additional resources :

www.youtube.com/watch?v=c4r2yf9t6V0

www.youtube.com/watch?v=e5I_SHaCMe8

www.youtube.com/watch?v=t3SZPq3nF8Q