

# Cyclostomata

## General characters—

Body is long, rounded and eel-like.

Skin is soft, smooth and without any exoskeleton.

Mouth is **suctorial** devoid of functional jaws.

Nostrils is single and median.

Paired fins or lateral appendages are absent.

Skeleton is cartilaginous.

Notochord is persistent.

Heart is two chambered and aortic arches are many.

Single gaped without duct.

Development is direct or indirect.

# Cyclostomata

orders

**Petromyzontia**

**Myxinoidea**

- Dorsal fin well developed.
- Mouth suctorial and grasping tongue.
- Seven pairs of gill-slits.
- Development is indirect.

- dorsal fin absent.
- gill-slits 6-14 pairs.
- branchial basket is reduced.
- development is direct.

② Petromyzon

② - Myxine  
 - Bdellostoma



# MUSEUM SPECIMENS OF CYCLOSTOMATA

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## 17. Petromyzon

### Classification :

Phylum	...	Chordata	→ Dorsal tubular nerve cord, notochord and paired gill-slits are present.
Group	...	Vertebrata	→ Notochord is replaced by vertebral column; two pairs of appendages; circulatory system closed; hepatic portal system present; blood red containing R.B.C.
Subphylum	...	Agnatha	→ Jaws and appendages are absent.
Class	...	Cyclostomata	→ Mouth suctorial devoid of functional jaws.
Order	...	Petromyzontia	→ Well-developed dorsal fin; complete branchial-basket; naso-hypophysial sac blind; seven pairs of gill-slits.
Genus	...	<i>Petromyzon</i>	
Species	...	<i>marinus</i>	

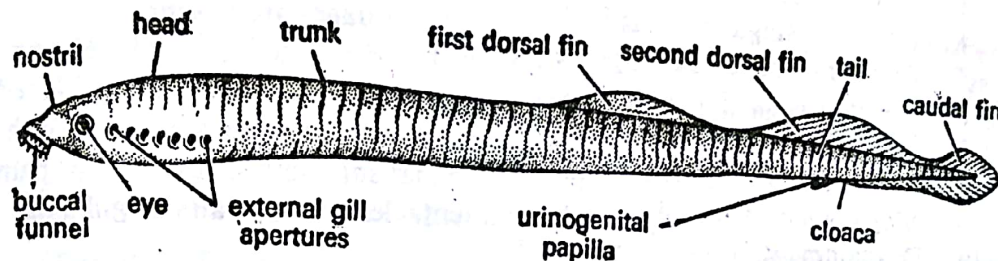


Fig. 72. *Petromyzon marinus*.

### Characters :

1. *Petromyzon* is commonly known as lamprey or lamper eel and found in fresh and salt waters.
2. Body is eel-like measuring about 1 metre and differentiated into head, trunk and tail.
3. The surface of the body is smooth and slimy and generally heavily pigmented.
4. Head region is characterized by the great forward development of the upper lip region forming the **buccal funnel**.
5. Mouth is circular armed with numerous horny teeth.
6. The paired eyes are relatively large and functional. Two small median eyes—the pineal and parietal eyes.
7. Nostril is single and dorsal.
8. Seven pairs of external gill-apertures and well-developed branchial basket.
9. Two dorsal fins and one caudal fin, all are supported by cartilaginous rays.
10. Jaws and paired fins are absent.
11. Sexes are separate in adults and there is only single large gonad.
12. Fertilization is external.
13. It leads an ectoparasitic life on fishes.

coasts of both North and South  
Zealand.

## 20. Ammocoete Larva

(Petromyzon)

### Classification :

Phylum ... Chordata

Group ... Vertebrata

Subphylum ... Agnatha

Class ... Cyclostomata

Order ... Petromyzontia

- Dorsal tubular nerve cord, notochord, and paired gill-slits are present,
- Notochord is replaced by vertebral column; two pairs of appendages; circulatory system closed; hepatic portal system present; blood red containing R.B.C.
- Jaws and paired appendages are absent.
- Mouth suctorial devoid of functional jaws
- Well developed dorsal fin, complete branchial-basket; naso-hypophyseal-sac blind, seven pairs of gill-slits.

Type ... Ammocoete larva of Petromyzon

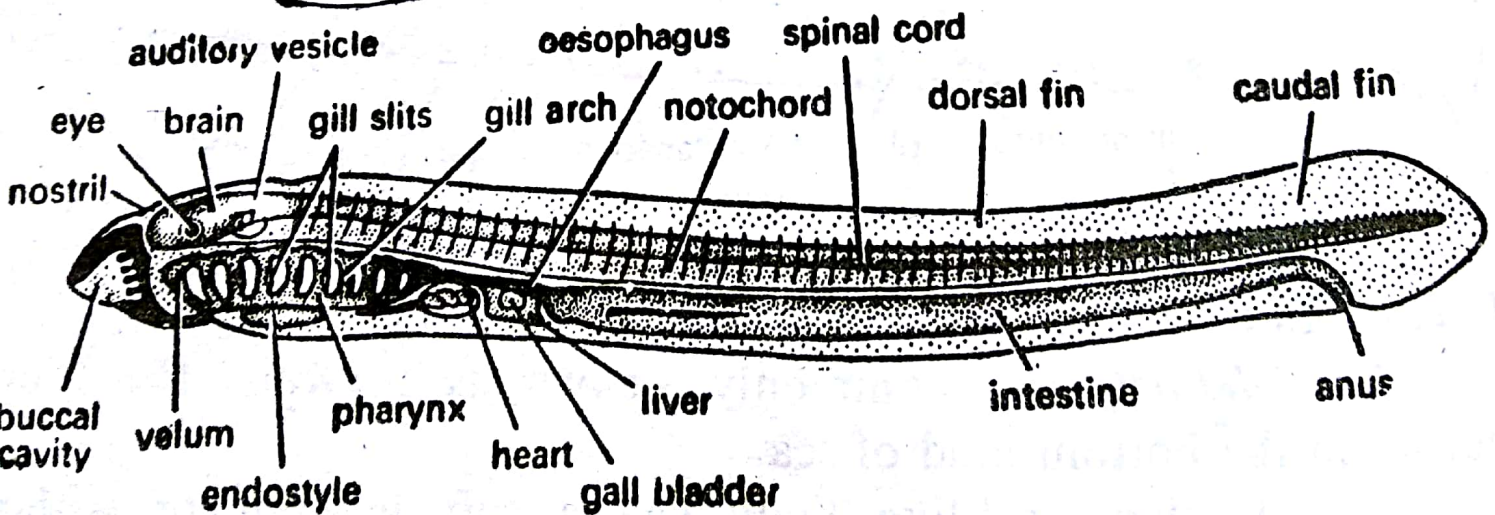


Fig. 75. Ammocoete larva.



### Characters :

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1. Ammocoete larva hatches out of the egg of *Petromyzon*.
2. It looks like a minute translucent *Amphioxus* and about 10 mm long.
3. The head differs from that of the adult *Petromyzon*, the buccal cavity is surrounded by upper and lower lips and provided with a number of buccal tentacles or oral cirri but devoid of teeth and tongue.
4. At the posterior end of the buccal cavity, there is velum which is followed by the pharynx.
5. Seven pairs of gill-slits are present in the pharynx.
6. Endostyle lies along the ventral surface of the pharynx.
7. In the dorsal region of head median nostril, an eye, an auditory vesicle and brain are present.
8. The median fin is continuous along the greater part of the body, forming a continuous dorsal and a caudal fin around the tail.
9. The spinal cord and notochord extend along nearly the entire length of the body.
10. The heart, liver and gall-bladder lies posterior to the pharynx.
11. The alimentary canal consists of pharynx, oesophagus and intestine.
12. The larva lies in mud and feeds on small organisms brought by the currents of water produced by the muscular action of the branchial apparatus.
13. The larval stage lasts for a long period of about 3 or 4 years and during this period it grows and becomes adult.

**Geographical distribution :** Ammocoete larva has an almost world wide distribution, being present in both salt and fresh waters of North America, Europe, West Africa, Japan, Chili, Australia, New Zealand and Tasmania.