

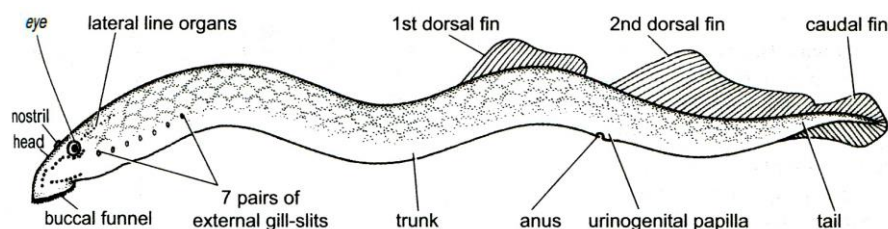
Petromyzon

Systematic position:

Petromyzon is popularly known as **sea lamprey**. It is the most primitive living vertebrate. It has no jaws and hence it is included in the superclass **Agnatha**. It has a circular mouth and hence it is included in the class **Cyclostomata**. It has a single nostril and hence, it is included in the subclass **Monorhina**.

Distribution & Habitat:

Lampreys have almost worldwide distribution. Lampreys are both freshwater and marine forms. **Petromyzon marinus** is marine. It is an **ectoparasite**. It sucks the blood of fish and turtles.



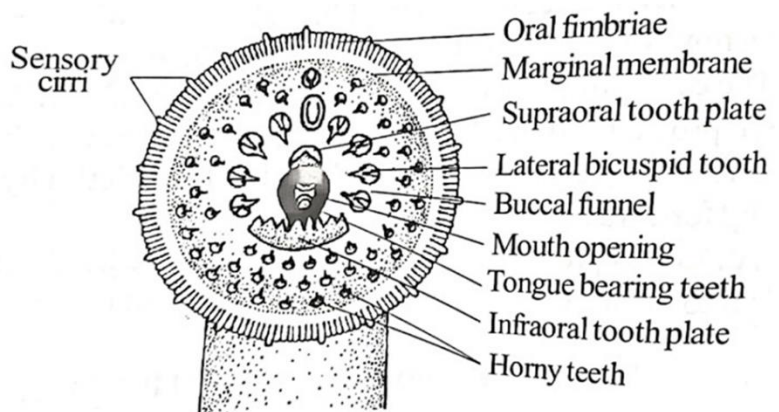
External features:

It has an elongated cylindrical and eel-like body. It is about one foot long. The surface of the body is smooth and scales are absent. The body is divisible into 3 regions, namely **head**, **trunk** and **tail**.

Head:

The head is cylindrical and has a **buccal funnel**, a **mouth**, a single **naris**, a pair of **eyes** and seven pairs of **gill slits**.

The head region is characterised by a special circular cup-like structure called a **buccal funnel**. It is a downwardly directed depression. The **mouth** is surrounded by the buccal funnel. It functions as a **sucker**. The buccal funnel is surrounded by a **marginal membrane**. This membrane is beset with numerous soft projections called **oral fimbriae**. In between, the oral fimbriae many **sensory cirri** project out.



The inner surface of the buccal funnel is beset with radiating rows of conical, yellowish, **horny teeth**. The teeth in the upper and lower sides of the mouth fuse to form large tooth plates called **supra-oral** and **infra-oral tooth plates** respectively. The mouth is surrounded by concentric rows of lateral teeth called as **lateral bicuspid teeth**.

A **tongue** protrudes through the mouth bearing larger horny teeth. The tongue makes a hole in the skin of the victim by moving forwards and backwards.

A **naris** is present on the dorsal surface of the head. It leads to an **olfactory sac**, an organ of smell. On each lateral side of the head is a large prominent **eye** having **no eyelids**.

Behind the eye, laterally there are seven rounded external **gill slits**.

Trunk:

The trunk is also cylindrical. Paired fins are absent. There is a **median dorsal fin** which is divided into two unequal parts. The fins are supported by thin cartilaginous **fin rays**.

At the junction of the trunk and tail, the **anus** and the **urinogenital aperture** are present on the ventral side.

Tail:

The tail is laterally compressed. It has a **caudal fin** supported by fin rays.

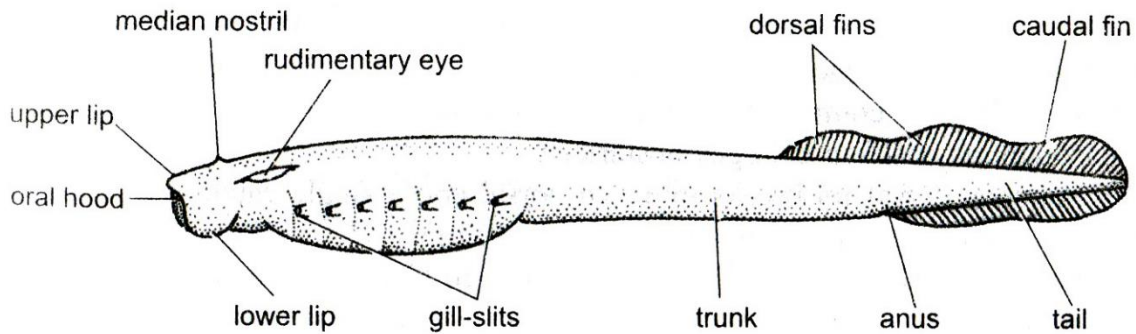
The sexes are separate. Petromyzon breeds only once in life, and migrate from sea to rivers called **anadromous migration**. The development is **indirect**. It includes a larva called **ammocoetes larva**.

Ammocoetes Larva

Ammocoetes Larva is the larva of Petromyzon. It has the following salient features:
Ammocoetes is a freshwater larva of the marine Petromyzon.

1. It looks like an Amphioxus in its morphology and habits.
2. It is a transparent larva.
3. It lives for 3-7 years.
4. In the beginning, it is about 7 mm in length and it can attain a length 175 mm.
5. It lives inside a U-shaped burrow. At times it comes out of the burrow.
6. It is muddy brown in colour.

7. It has an *eel*-like body.
8. The body is divisible into a **head**, **trunk** and **tail**.
9. The head has an **oral hood** and a pair of eyes hidden under the skin.
10. The oral hood surrounds the mouth in the place of the buccal funnel.



11. The trunk has a single **dorsal fin**.
12. The tail has a **caudal fin** which is in continuation of the dorsal fin.
13. The trunk has **7 pairs of gill slits** just behind the head.
14. The alimentary canal includes a mouth, buccal cavity, pharynx, intestine and anus.
15. It exhibits **filter feeding**.

Metamorphosis

After a prolonged period of 3-7 years, the **Ammocoetes** larva undergoes metamorphosis.

During metamorphosis, the following changes occur:

1. The larva leaves the burrow and leads a free-swimming life.
2. It migrates from the freshwater habitat to the marine habitat.
3. The filter feeding habit of the larva is changed into a blood-sucking habit.
4. The oral hood disappears and a buccal funnel with teeth and tongue appears.
5. The continuous median fin breaks into two dorsal fins and a caudal fin.
6. The two eyes get opened and functional.
7. The endostyle changes into the thyroid gland.
8. The gall bladder and bile duct disappear.
9. Gill develops into pouches and opens into the pharynx.
10. The pronephros is replaced by a mesonephros.
11. The spinal cord becomes flattened.