

Salient features and affinities of Cyclostomata

Q. Describe the structure and metamorphosis of ammocoete larva and add a note on its significance.

or
Describe the structure of ammocoete larva and discuss its affinities.

or
Describe the affinities of cyclostomata

Ans:— Series are separate in lampreys. Egg is small (1mm) and telolecithal. cleavage is unequal holoblastic. morula consists of upper lying micromeres and lower lying megameres. Blastocoel lies near upper pole. Gastrulation involves epiboly and emboly. Blastopore shifts to posterolateral end on completion of gastrulation. Neurulation differs from that of Amphioxus. The rest of the development is same as in anura. The young hatches from the egg in 3-4 weeks as a peculiar larval form called "Ammocoete larva". The latter is characterised by following features:—

(i) it is transparent at first and measures about 10mm in length which may increase upto 177mm. The larva is blind and harmless. it makes its way out of the nest and moves down stream in the quite water. it burrows in mud. The larva period spent in the burrow lasts for about 3-7 years. The larva lives and feeds in the 'U' shaped tunnels of mud and sand. it comes out of tunnel only at night or for changing the feeding ground.

(ii) The larva has the continuous dorsal fin. it has a hood shaped upper lip instead of the suckorial mouth of the adult. Teeth are absent. A set of branched buccal tentacles guard the entrance to the alimentary canal.

Behind the tentacles lies the vacuum, a pair of cup shaped structure attached to the anterior wall of the pharynx.

(iii) Pharynx is perforated by seven pairs of gill slits supported by gill arches on each side. Branchial basket expands and contracts alternatively and pumps water in and out of the pharynx through gill slits, at the same time during the passage of a food current through the mouth.

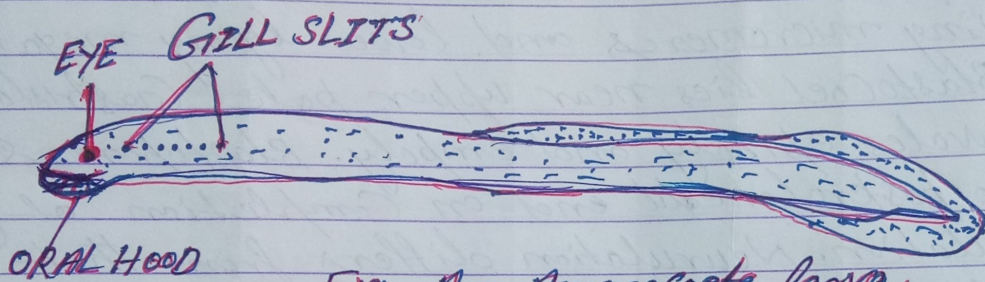


Fig - An Ammocoete larva.

(iv) Endostyle lies on the floor of pharynx. It is made up of a pair of tubes, each with four columns of mucus secreting gland cells. Endostyle is related to the pharynx by a single opening.

(v) Floor of the pharynx bears a groove. Mucus from the endostyle reaches in the groove of pharynx. The peripharyngeal groove lying behind the velum maintains a stream of water in the pharynx.

(vi) Food consists of unicellular algae and bacteria. The food enters the mouth with the water current. The feeding current is maintained by muscular movement of velum and pharynx.

(vii) The paired eyes remain covered by skin.

(viii) Special photoreceptors are located in the skin at tail. There fore, the larva begins swimming quickly when the tail is illuminated. The head is less sensitive to light. The nasal and hypopharyngeal sacs are very poorly developed.