Oral hood of *Brancheostoma*

The oral hood is a prominent anatomical feature found in the adult form of *Branchiostoma*, commonly known as lancelets or *amphioxus*. Lancelets are small, fish-like marine chordates belonging to the subphylum Cephalochordata. The oral hood is a key component of the feeding apparatus in lancelets and serves several important functions.

Location: The oral hood is located at the anterior end of the lancelet's body, surrounding the mouth opening. It is a specialized structure that is part of the pharyngeal region.

Structure: The oral hood is formed by the dorsal and lateral projections of the anterior end of trunk. It combines-

(a) Buccal cirri. Free ventrolateral edge or margin of oral hood is beset with 10 to 11 pairs of stiff, slender and ciliated oral or buccal cirri (or tentacles) which bear sensory papillae. Their number increases with age. The buccal cirri and the edge of oral hood are internally supported by stiff, gelatinous skeletal rods. The buccal cirri form a sieve or filter to prevent entry of larger particle with food current.

(**b) Vestibule.** The oral hood encloses a large funnel-shaped cavity called buccal cavity or vestibule into which opens the mouth. As this cavity is lined with ectoderm, it is regarded as stomodaeum and its external opening the true mouth.

(c) Wheel organ. Basally, the epithelial lining of oral hood forms 6 to 8 pairs of finger-like folds or patches each formed by a ciliated groove bounded by a ciliated ridge. Collectively

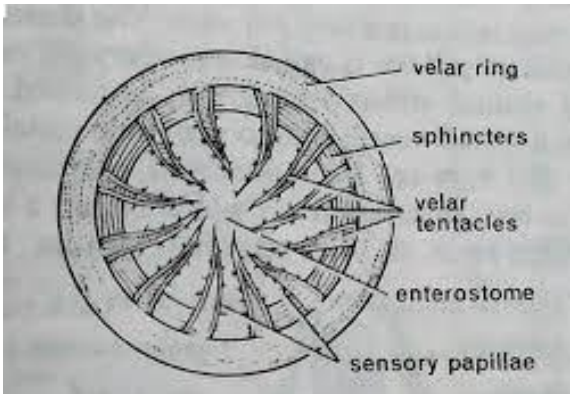
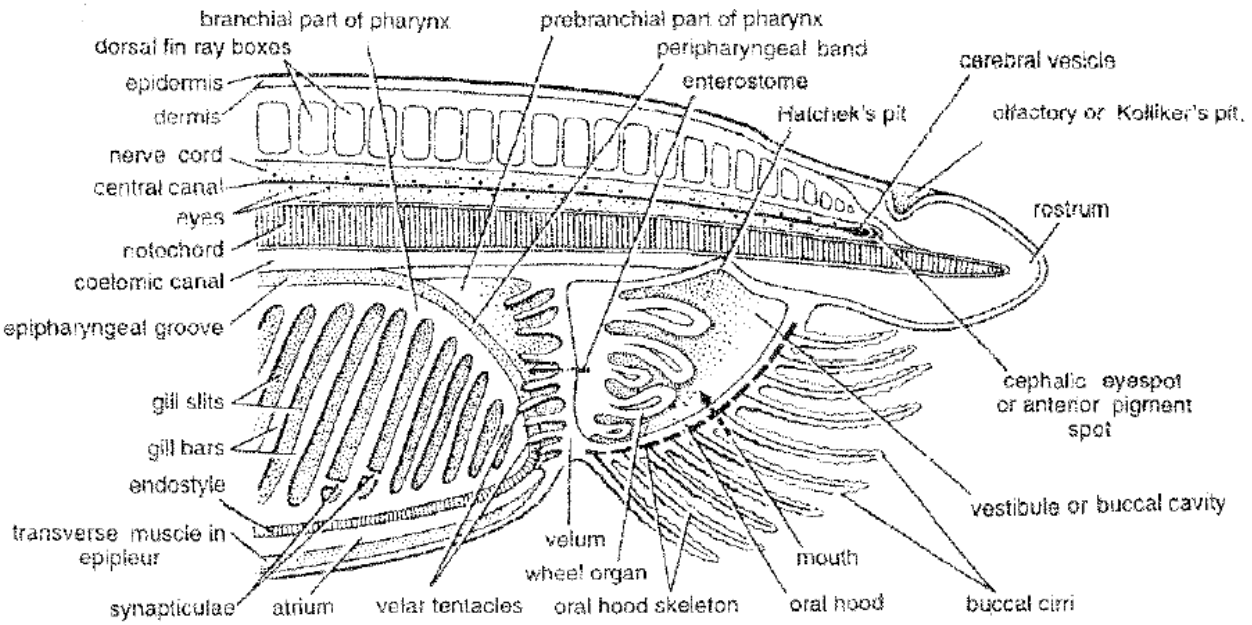


Fig. . *Branchiostoma*. Wheel organ.

these form a wheel organ or rotatory organ or Muller's organ. The cilia of wheel organ set up a vortex or whirling water current to sweep food organisms into mouth. The mid-dorsal groove is the largest which ends in a small depression on the roof of buccal cavity. These are named Hatschek's groove and Harschek's pit, respectively.



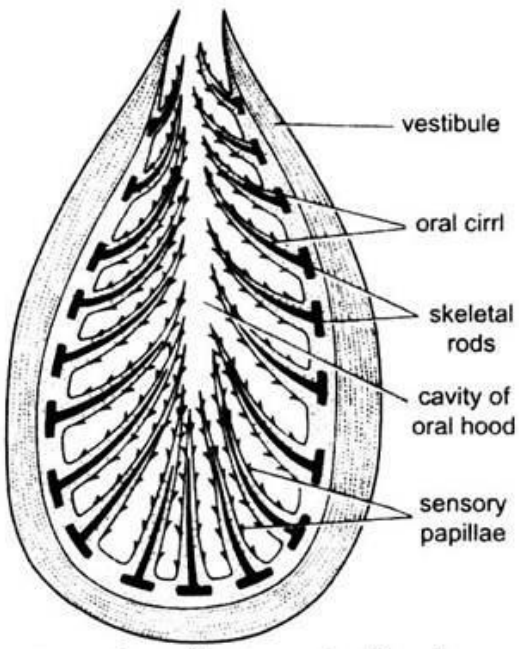
Branchiostoma. Enlarged L.S. of anterior end in right lateral view.

Functions:

Feeding: The primary function of the oral hood is feeding. Lancelets are filter feeders, and the oral hood plays a crucial role in capturing food particles from the surrounding water. Ciliary movement on the surface of the oral hood creates a current that draws water and suspended food particles into the mouth.

Food Capture: The tentacles or cirri on the oral hood aid in the capture and manipulation of food particles. These structures are equipped with sensory cells that detect the presence of food and facilitate its transfer to the mouth for ingestion.

Protection: In addition to its role in feeding, the oral hood also helps to protect the delicate structures of the pharynx and mouth opening. It serves as a barrier against larger particles or debris that could potentially damage the internal organs.



Branchiostoma. Oral hood.

Adaptations: The morphology of the oral hood may vary slightly among different species of lancelets, reflecting adaptations to specific feeding strategies and environmental conditions. For example, some lancelet species may have longer or more elaborate tentacles on the oral hood, while others may have modifications in the shape or size of the hood itself.

Overall, the oral hood is a specialized structure in lancelets that plays a vital role in feeding and food capture. Its anatomy and function highlight the unique adaptations of lancelets as filter-feeding marine organisms and contribute to their ecological niche in marine environments.