

DI (200, H)

HEMICHORDATA (BALANOGLOSSUS) continue

ENDOSKELETON: is represented by -

- I. Buccal diverticulum or stomochord: It is ^{lolloo} ~~lolloo~~ pre-oral extension from the anterior wall of the oral cavity projecting into the proboscis. It is neither homologous to the notochord.
- (II) Proboscis skeleton or nuchal skeleton: It lies beneath stomochord, formed by the thickening of basement membrane in the form of a 'A' shaped structure, its median part called basal plate with a mid ventral keel lies in the proboscis stalk while its two horns called cornea extend on the roof of the buccal cavity on each side of the same.
- (III) Branchial skeleton: It suppose gill clefts in the form of primary and secondary gill bars which are formed by the thickening of basement membrane.
- (IV) Pygostyle: It is a strong rod like structure in the caudal region formed by a median derivative of the ventral face of the gut.

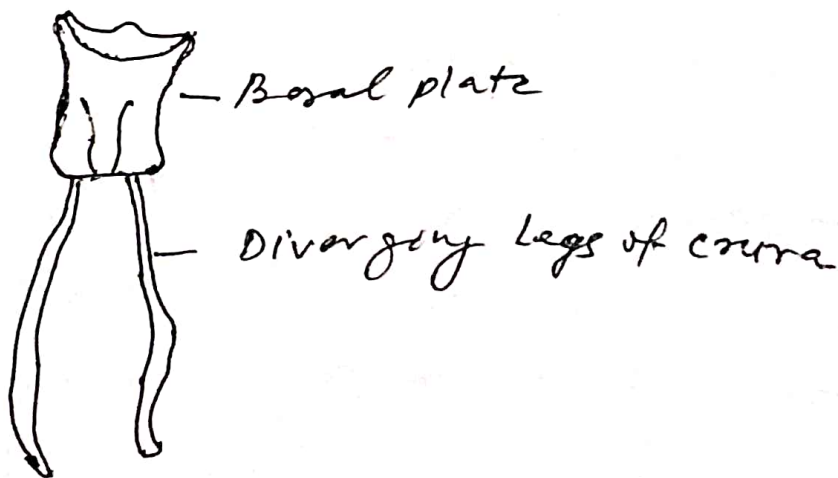


Fig: Proboscis skeleton of Balanoglossus

Digestive system: It consists of round mouth located in a ventral groove between collar and ^{proboscis} ~~proboscis~~ ^{oral} ~~proboscis~~

cavity lying in the collar in the form of broad canal, Pharynx beginning at the junction of collar and trunk and extending in the anterior part of the trunk, its lumen is divided into dorsal branchial and ventral digestive regions, the former bears gill clefts while the latter conducts food and is called Oesophagus, ~~int~~ intestine lies behind oesophagus and is divisible, into anterior hepatic caeca and posterior intestine parts, the latter leads to the exterior through sphincter muscles bearing terminal anus. Palanoglossus is ciliary feeder

Digestion begins when the food particles get attached with the proboscis slime which contains amylase. The glandular oesophagus also helps in digestion. Most of the digestive enzymes are secreted by hepatic caecae. Digestion and absorption occur in intestine.

Respiratory system: It consists of series of numerous gill clefts (up to 700 pairs) on each side of dorsal pharyngeal wall. Each gill cleft is 'U' shaped downward projection of the dorsal end of the gill cleft is termed to 'yue bar' while the part of pharynx between two gill clefts is called septum. Both tongue bars and septa are supported with skeletal rods called primary gill rods (forked ventrally) and secondary gill bars respectively).

Each gill cleft communicates pharynx to a bag like structure called branchial pouch or gill sac located between the wall of the pharynx and body wall. Exchange of O_2 and CO_2 occurs in vascular gill clefts.

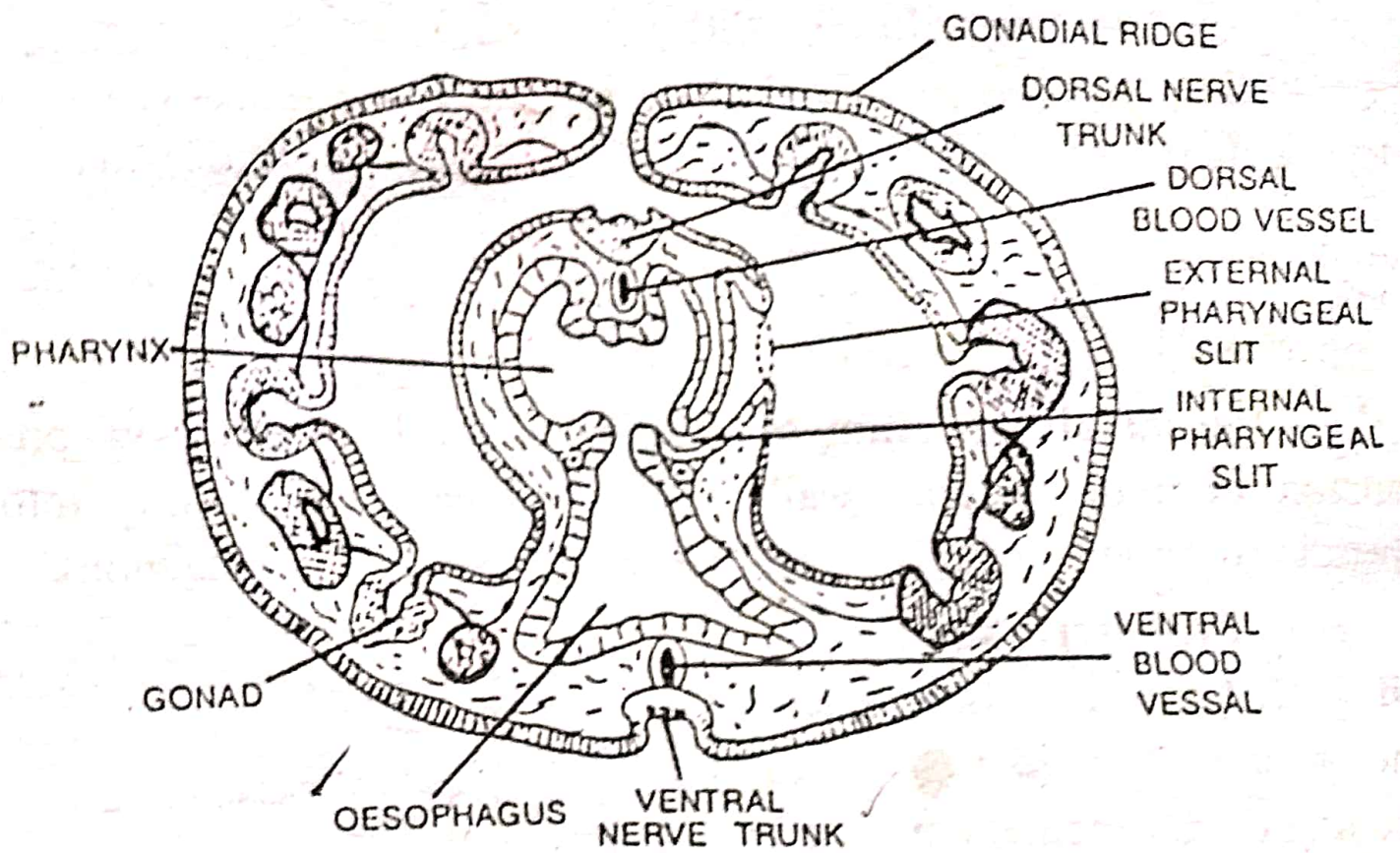


Fig. 5. T. S. of *Balanoglossus* through pharynx.

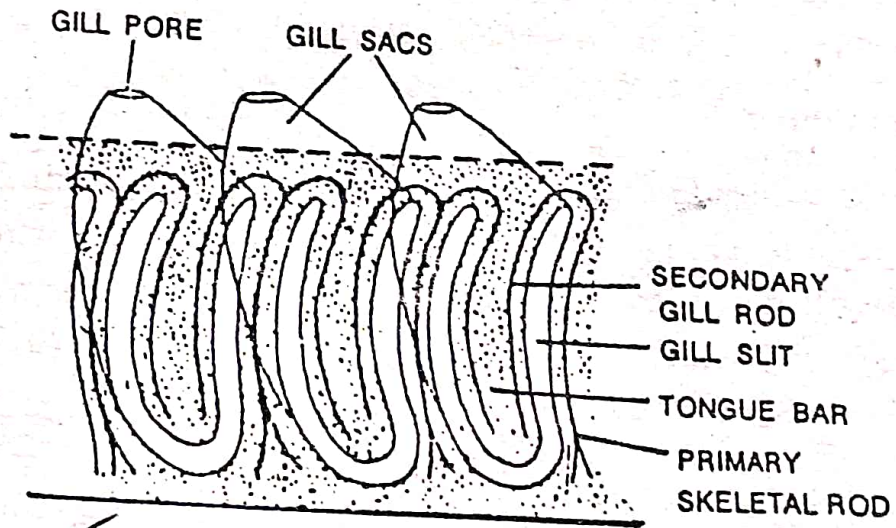


Fig. 6. A part of pharyngeal wall of *Balanoglossus* to show gill clefts.