

Digestive System of Herdmania

includes Ali. canal & digestive glands.

ventral Canal → Ali. canal is coiled & tubular. It is distinguished into following parts -

Branchial Aperture 1 - Branchial aperture or Mouth opens on the top of branchial siphon. &

is bordered by 4 lips.

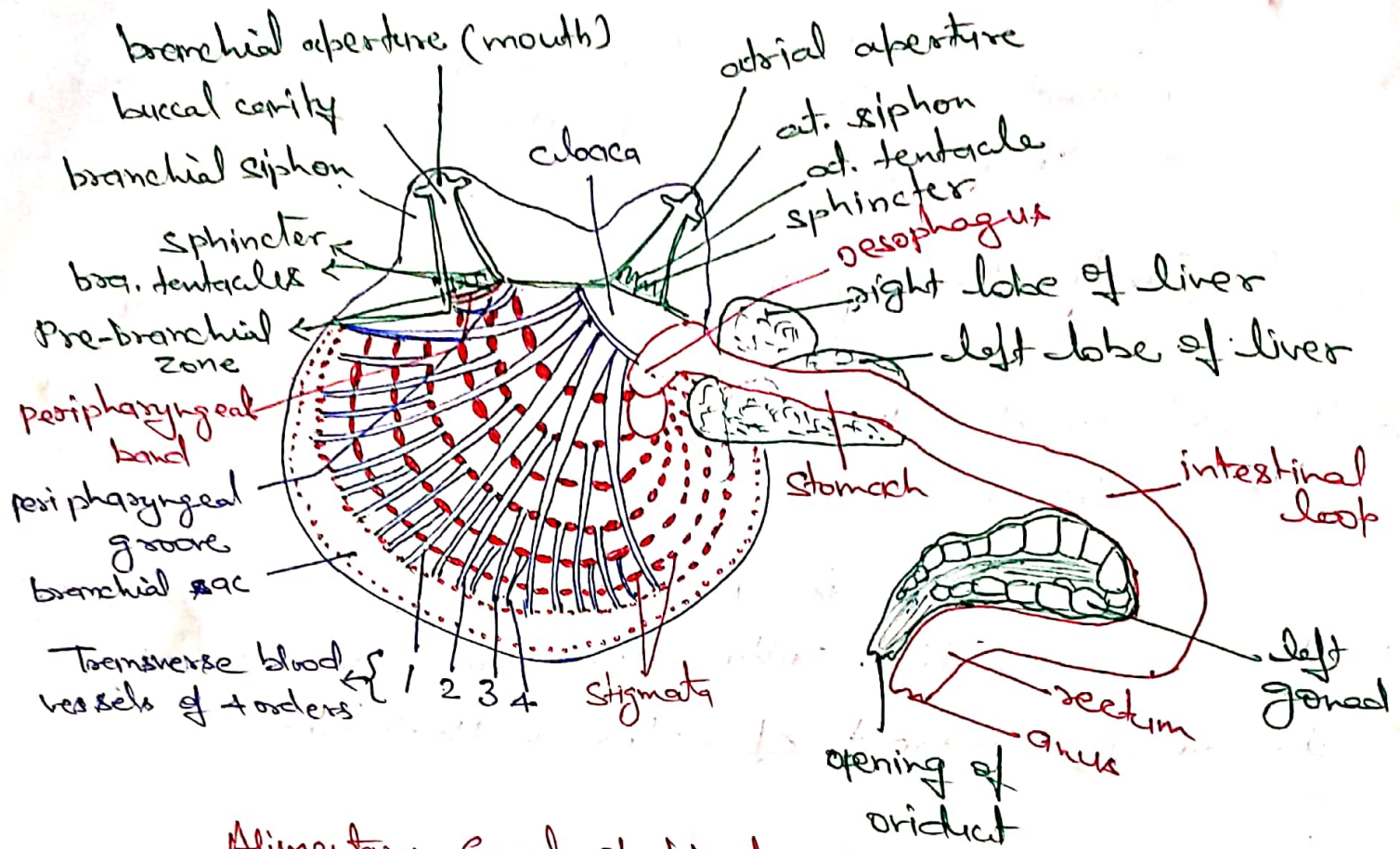
Buccal Cavity 1 - The short & narrow cavity of Branchial siphon is called Buccal cavity or Stomodaeum.

A Branchial Sphincter is int. at the base & regulates its opening. It is surrounded by about 64 highly branched & delicate branchial tentacles = form a sort of sieve. This sieve allows only the smaller food particles to pass th. it.

3) pharynx 1 - pharynx occupies the major part of the body. It is differentiated into a Prebranchial zone & a branchial zone.

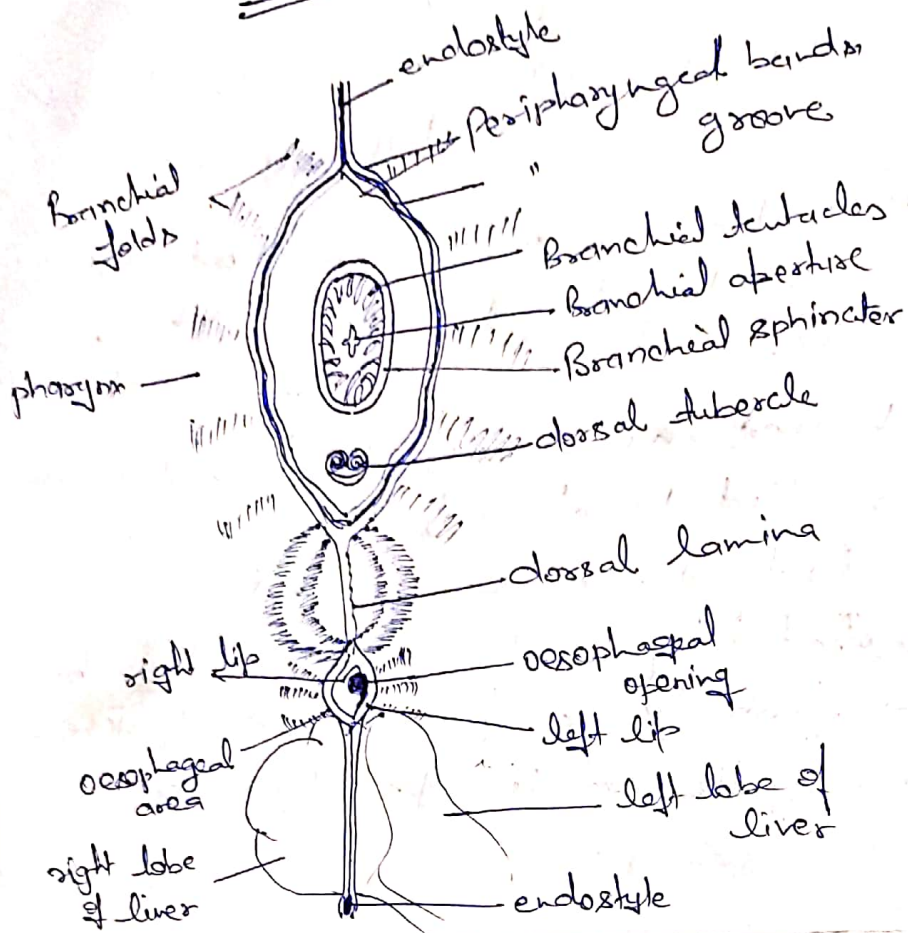
a) Prebranchial zone is smallest ant. region. It is demarcated from the branchial sac by two circular & parallel ridges, called ant. & post. peripharyngeal bands. These enclose a narrow ciliated peripharyngeal band groove. In the mid-dorsal region of peripharyngeal band a swollen dorsal tubercle is found, it is made up of two spiral coils.

The post. peripharyngeal band is interrupted mid-dorsally by the Dorsal lamina & mid-ventrally by the endostyle.

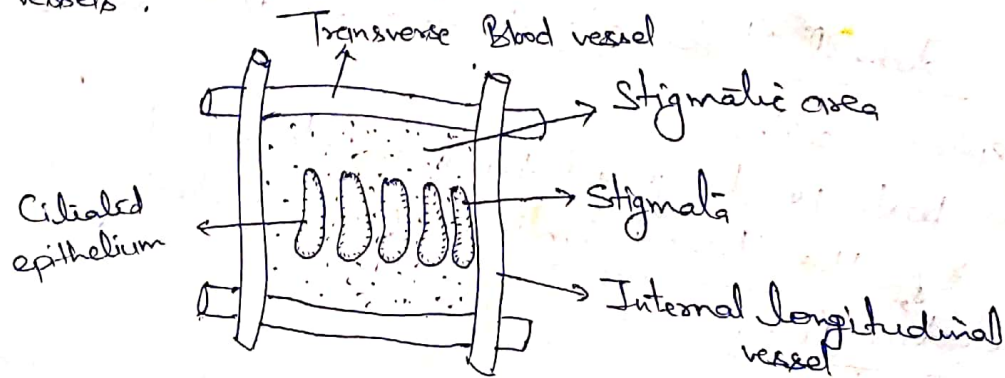


Alimentary Canal of Herdmania

b) Branchial sac :-



It is the larger part region of pharynx. its lateral walls are perforated by numerous gill slits or stigmata. The pharyngeal wall consists of a network of broad longitudinal & transverse bars at regular intervals, enclosing many squares & rectangular areas; called stigmatic areas, each having 5 or 6 stigmata. The bars contain internal longitudinal & external transverse blood vessels.

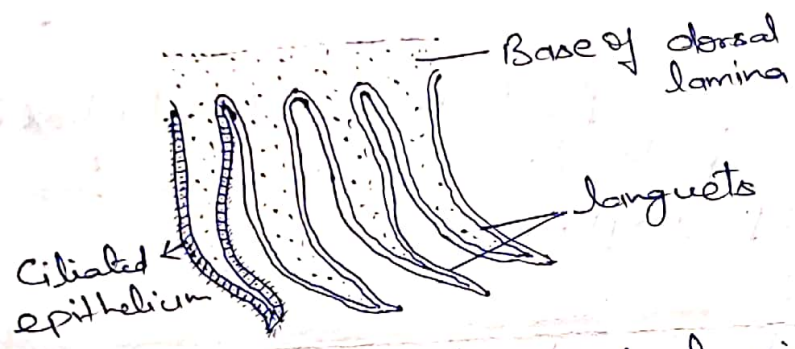


A Stigmatic area showing stigmata

1) Trabeculae → The outer wall of branchial sac is connected to mantle by several hollow strands, rla trabeculae, each containing a blood vessel.

2) Dorsal lamina → It is a fold, suspended from the mid dorsal border of the roof of branchial sac.

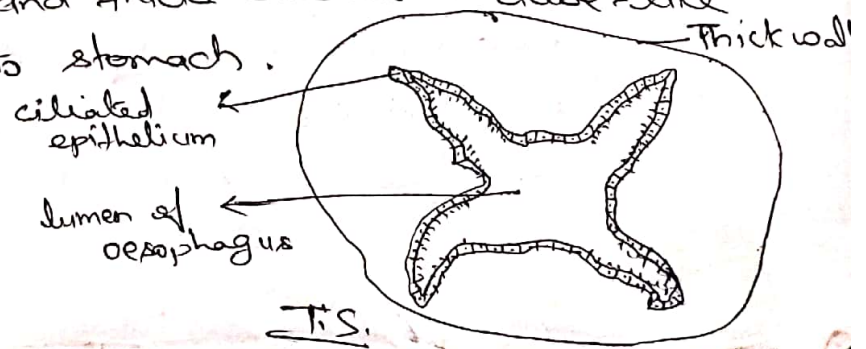
A row of 20-30 conical, tapering tongue-like processes called 'Dorsal languets' hang down from dorsal lamina. they form a groove for conducting food



3) Endostyle → A longitudinal mid-ventral groove cut on the floor of the branchial sac rla Endostyle. It carries a median row of ciliated cells & 2 rows of mucus-secreting gland cells on either side.

4) Oesophageal area → The post-most region of branchial sac has a small & circular oesophag. area.

Oesophagus → The branchial sac leads into a short, curved and thick walled o-dube-like oesophagus, & opens into stomach.



Stomach :- It is thin-walled tube having branched pyloric glands.

Intestine :- The stomach opens into a thin-walled & U-shaped intestine. The intestinal loop encloses the left gonad.

Rectum :- Intestine leads into rectum. It bends upward & opens into the abium (anus) in a four-sided abium anus.

Digestive glands :-

i) Liver → It is a large, bilobed gland associated, attached on either side of the stomach. Liver secretion contains a strong amylase, a protease & a mild lipase.

ii) Pyloric gland → The tubules of pyloric gland lie embedded in the walls of stomach, intestine & rectum. These tubules join to form large ducts & open into the intestine. These function as pancreas & excretory organs.

Feeding & Digestion

Herdmania is ciliary or filter feeder.

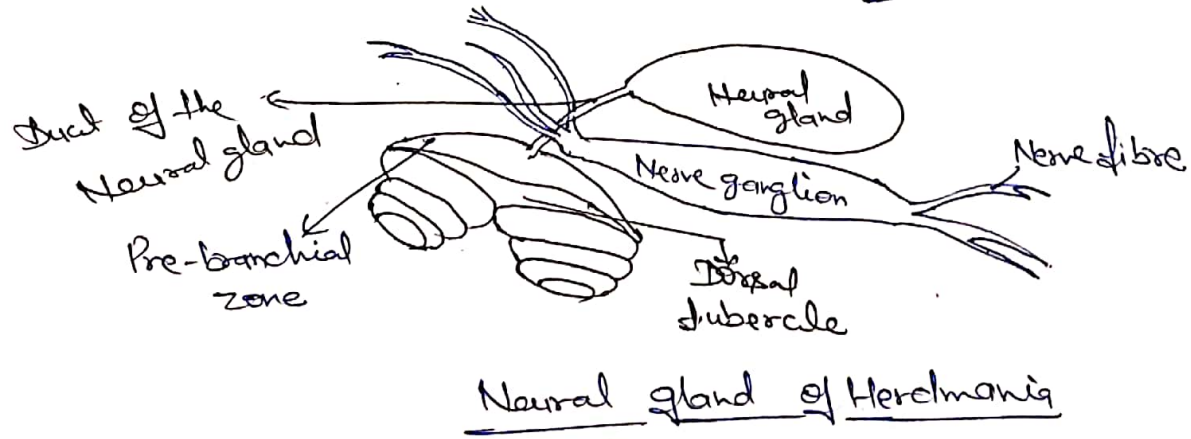
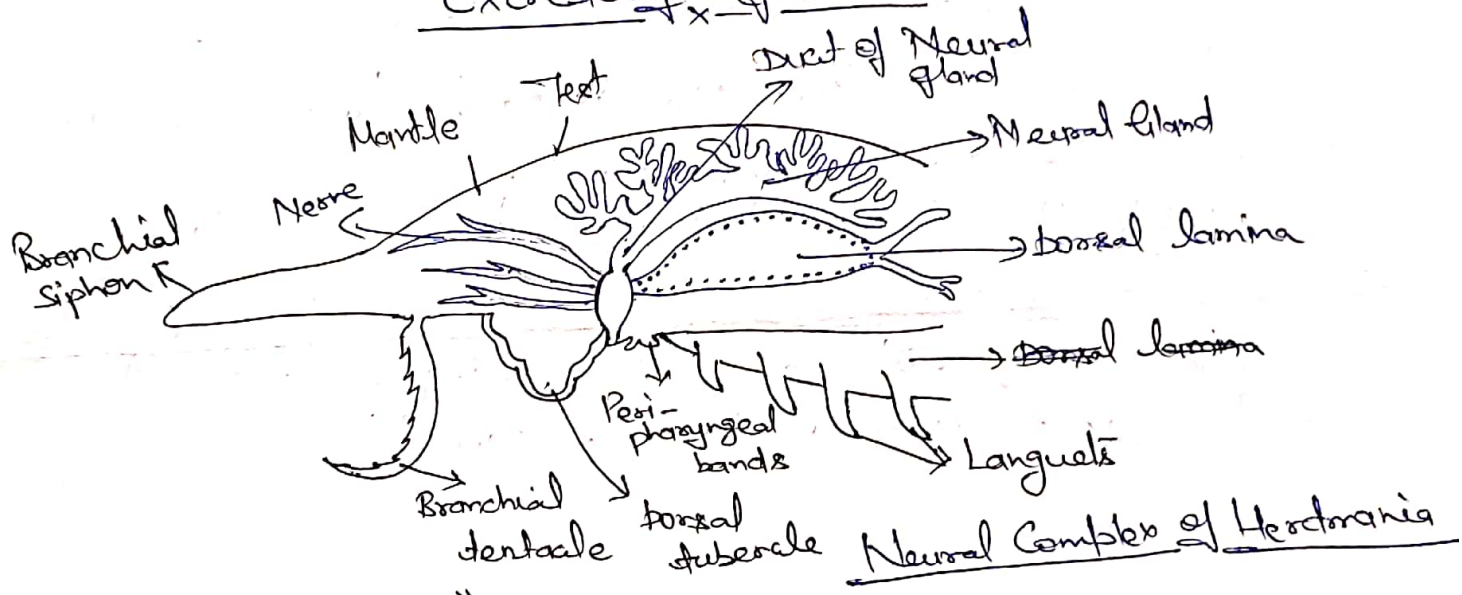
Food consists of microscopic organisms like algae, diatoms & other planktonic orgms.

Along with the water current food orgms come into the body. Cilia lining the stigma set up the water-current. Branchial tentacles form a sieve & allow the small

Food particles to pass into the branchial sac. Mucus secreted by the endostyle entangles the food particles. Inside the stomach the dig. enzymes of liver & pyloric gland mix in the food & bring about the digestion.

The undigested residue pass down into the rectum & finally expelled out into the anus.

Excretory System



Ex. organ of H. is the Neural gland.

Neural gland is brown coloured, elongated gland, lies mid-dorsally b/w the 2 siphons. It is embedded in the mantle, just above the nerve ganglion or brain.

St. → It consists of a central tubular part & an ant. duct.

- No. of tubules arise from the periphery of central part.
- Duct opens in the pre-branchial zone of pharynx at the base of dorsal tubercle.

Waste products are mainly xanthine & urate particles.

⇒ Acc. to few workers Neural gland functions as mucus-secreting gland, lymph gland.

- While other believe that it controls oviposition, dent & metamorphosis
- It is also said to control feeding & detects the trace of eggs or sperm in the water current.