

# NEET ULTIMATE

CRASH COURSE FOR NEET - 2022

**Structural Organisation in  
Animals and Digestion  
and absorption**

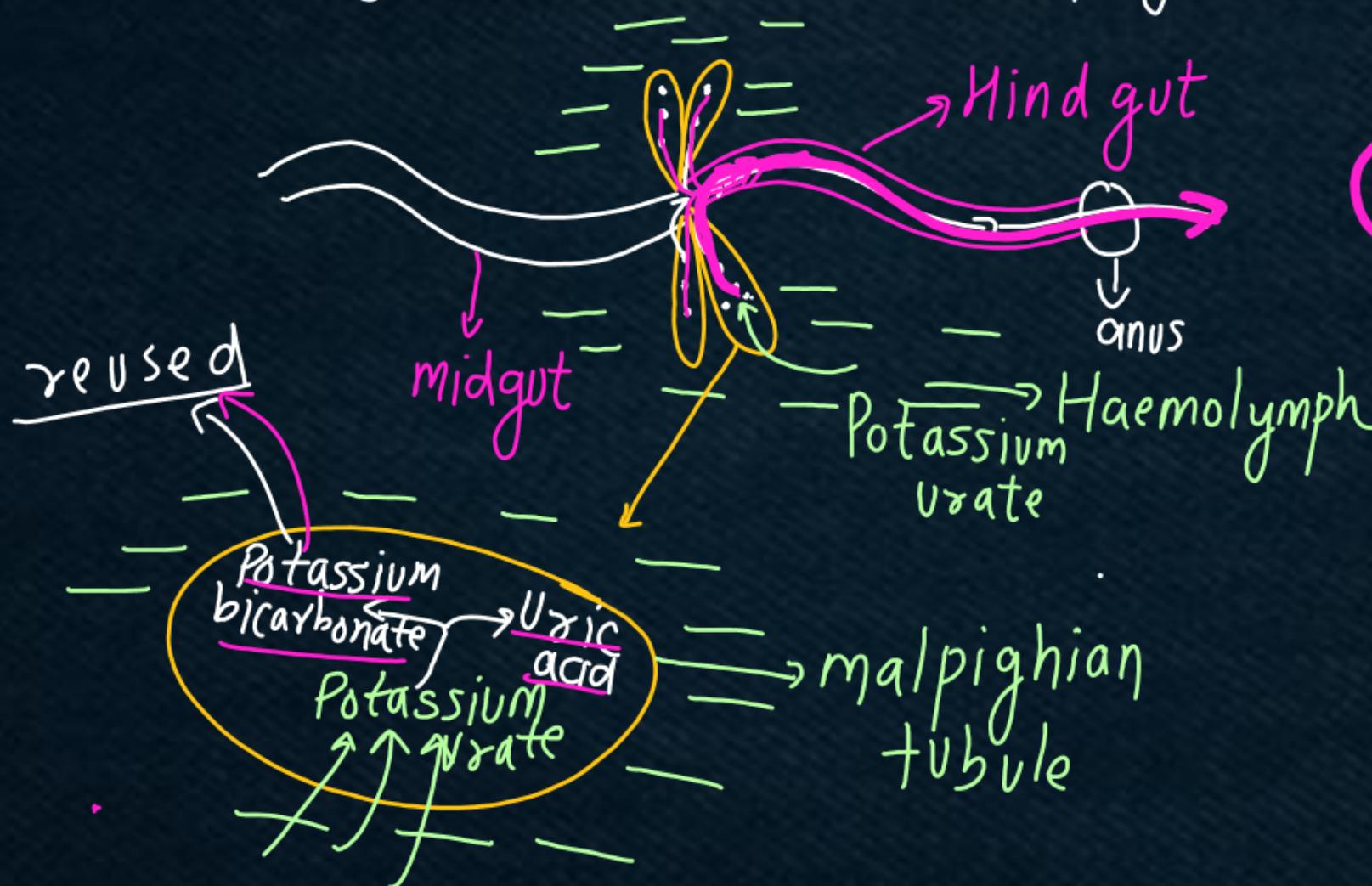
**LECTURE-05**



**BY – Nomesh Sir**

**Todays Goal : Cockroach /Digestion and  
Absorption part 1**

## Excretory System



Osmoregulation + excretion → maintenance of fixed conc of salt and H<sub>2</sub>O in the body

Malpighian tubules 100-150 Yellow colour

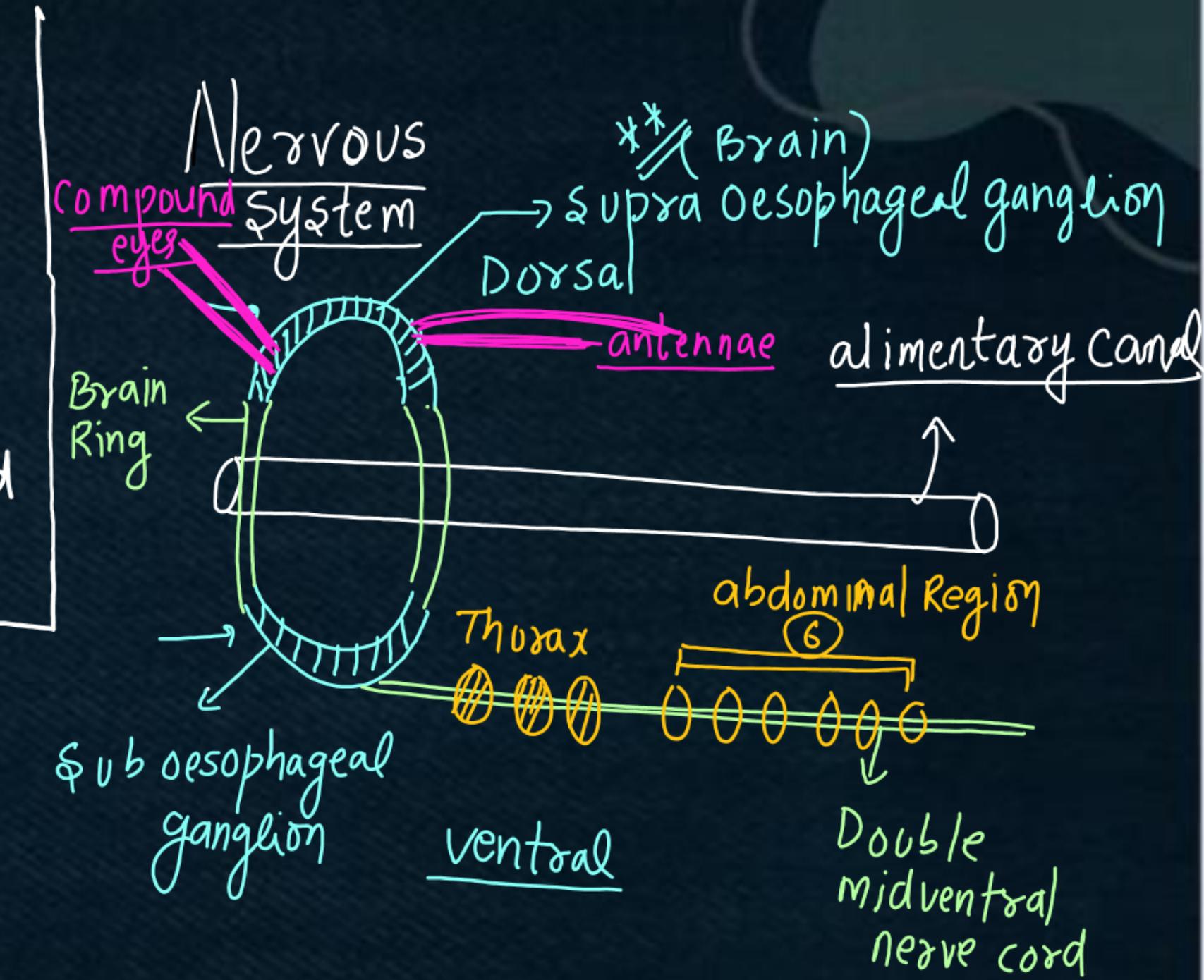
Uricotelic

- Malpighian tubules absorb potassium urate from haemolymph
- MT convert Pot urate into Uric acid and Pot bicarbonate
- Uric acid is released in Hind gut and goes out of body via anus

## Other excretory mechanism

- ✓ Fat body
- ✓ Urate cells
- ✓ Nephrocytes
- ✓ Uricose gland (male)

ganglion - collection of cyton and dendrites of neuron



(\*) (1 pair)  Dorsal surface  
of Head

Compound eyes

## ① Brain Ring :-

Supraoesophageal ganglion

Sub oesophageal ganglion

② Double mid ventral nerve cord is  
itself ganglionated - 3 ganglion - Thoracic ganglion  
6 ganglion - abdominal ganglion

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→ Very small part of nervous system is present  
in head, if the head of cockroach still it can  
stay alive for 7 days

→ Each compound eye contains  
2000 units called ommatidia



→ Mosaic vision

→ Sensitivity is very good

→ Resolution is less/poor

→ Nocturnal vision

Simple eyes - ocelli / ocellus  
1 pair  
(Head) → vestigial / inactive

Other sense organs :-  
- Anal cecae  
Labial palps (labium) → <sup>mouth</sup> part  
Maxillary palps (maxilla)  
Antennae

## MALE REPRODUCTIVE SYSTEM

It consists of:

❖ **TESTIS - (Pair)**

- One lying on each lateral side in the 4<sup>th</sup>-6<sup>th</sup> abdominal segments.

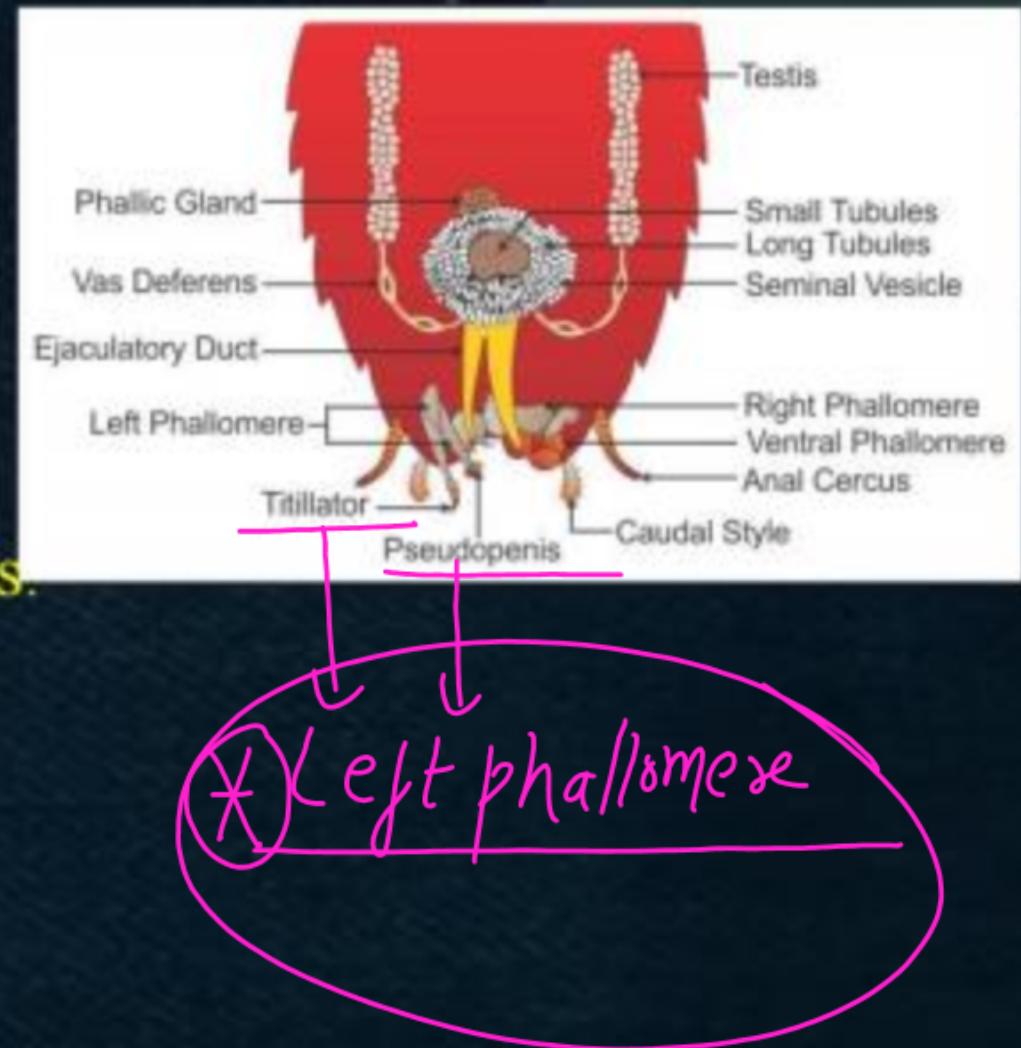
❖ **MUSHROOM SHAPED GLAND - Accessory reproductive gland**

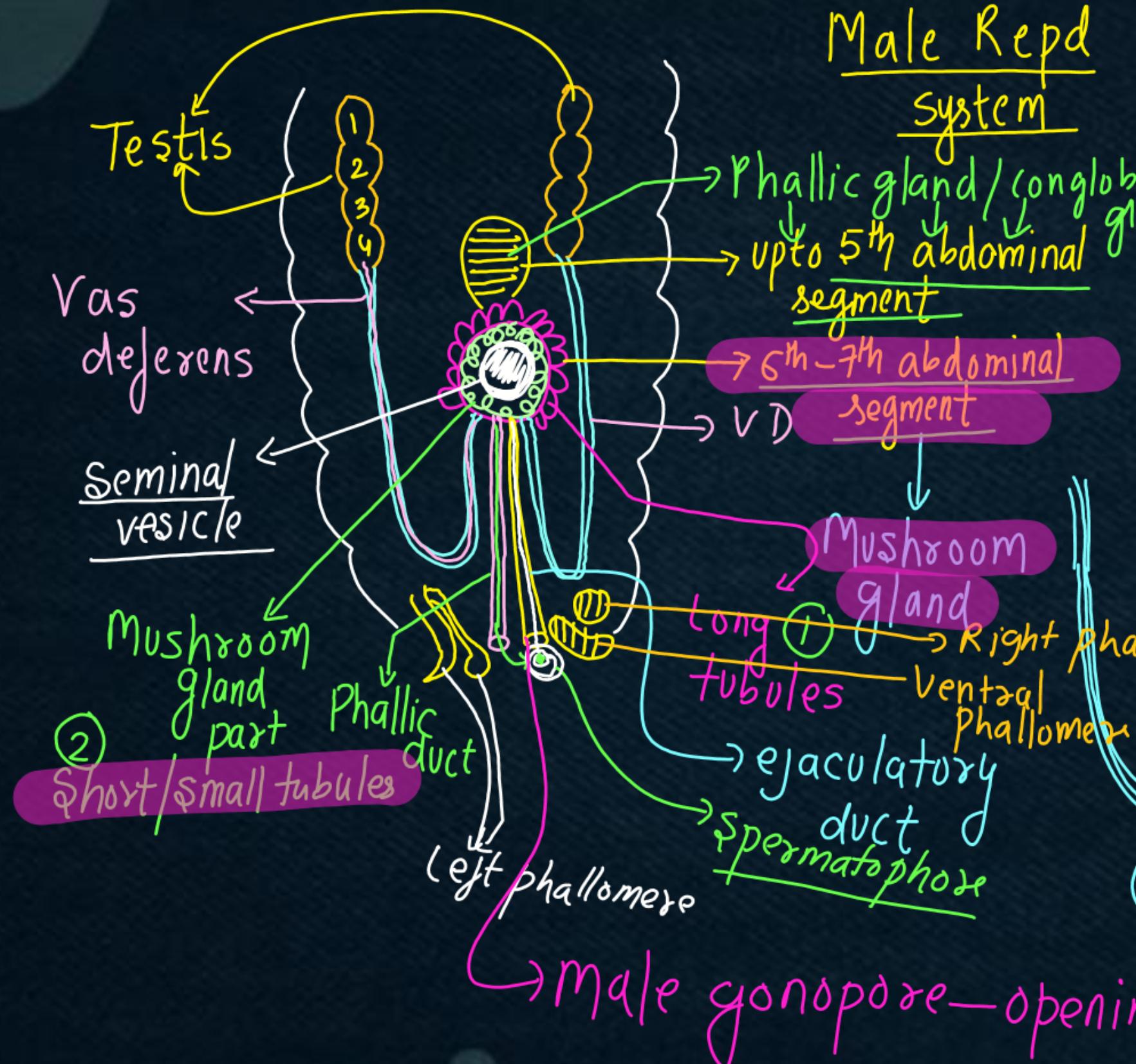
- 6<sup>th</sup>-7<sup>th</sup> abdominal segments

**MALE GONOPORE** (ventral to anus)

❖ **External Genitalia - MALE GONAPOPHYSIS or PHALLOMERE**

- Phallomere are chitinous assymetrical structures, surrounding the male gonopore.



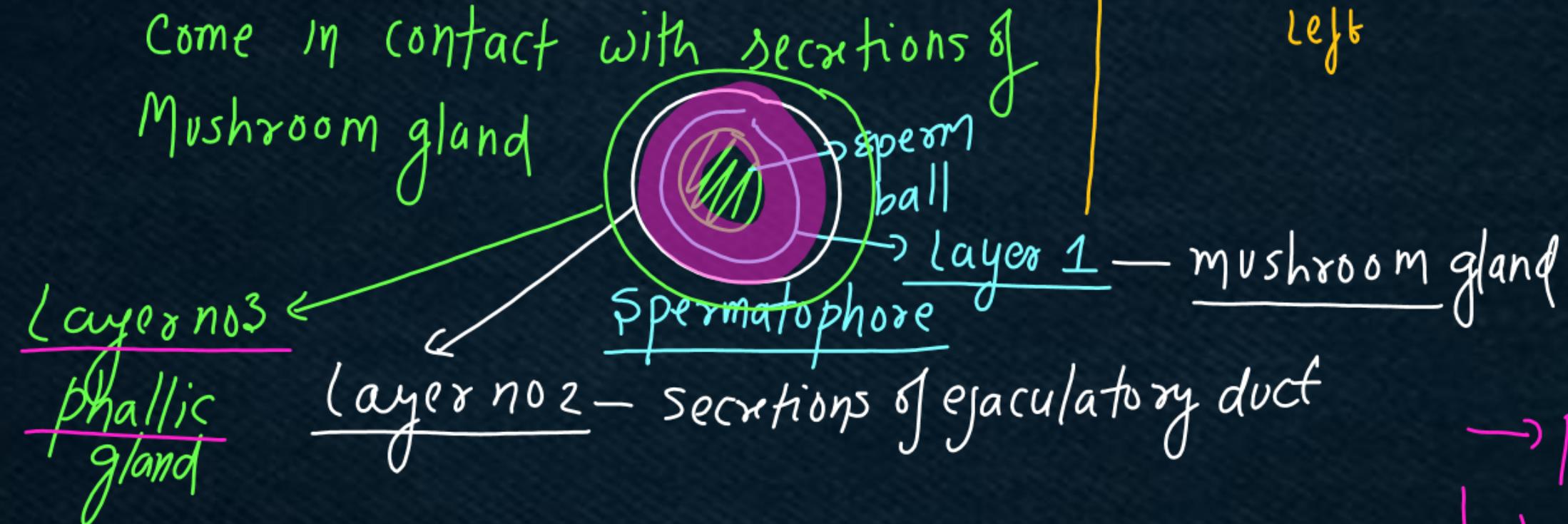


### Male Repd System

- ① 1 pair of Testis are present at or b/w 4-6<sup>th</sup> abdominal segment. Each testis contain 3-4 lobes. Vas deferens takes the sperms from the testis (both)
- ② In seminal vesicle the sperms are stored as well as glued together

→ Ball of sperm in seminal vesicle

Come in contact with secretions of  
Mushroom gland



→

Their are 3 phallomeres genetilia)

Left

Right

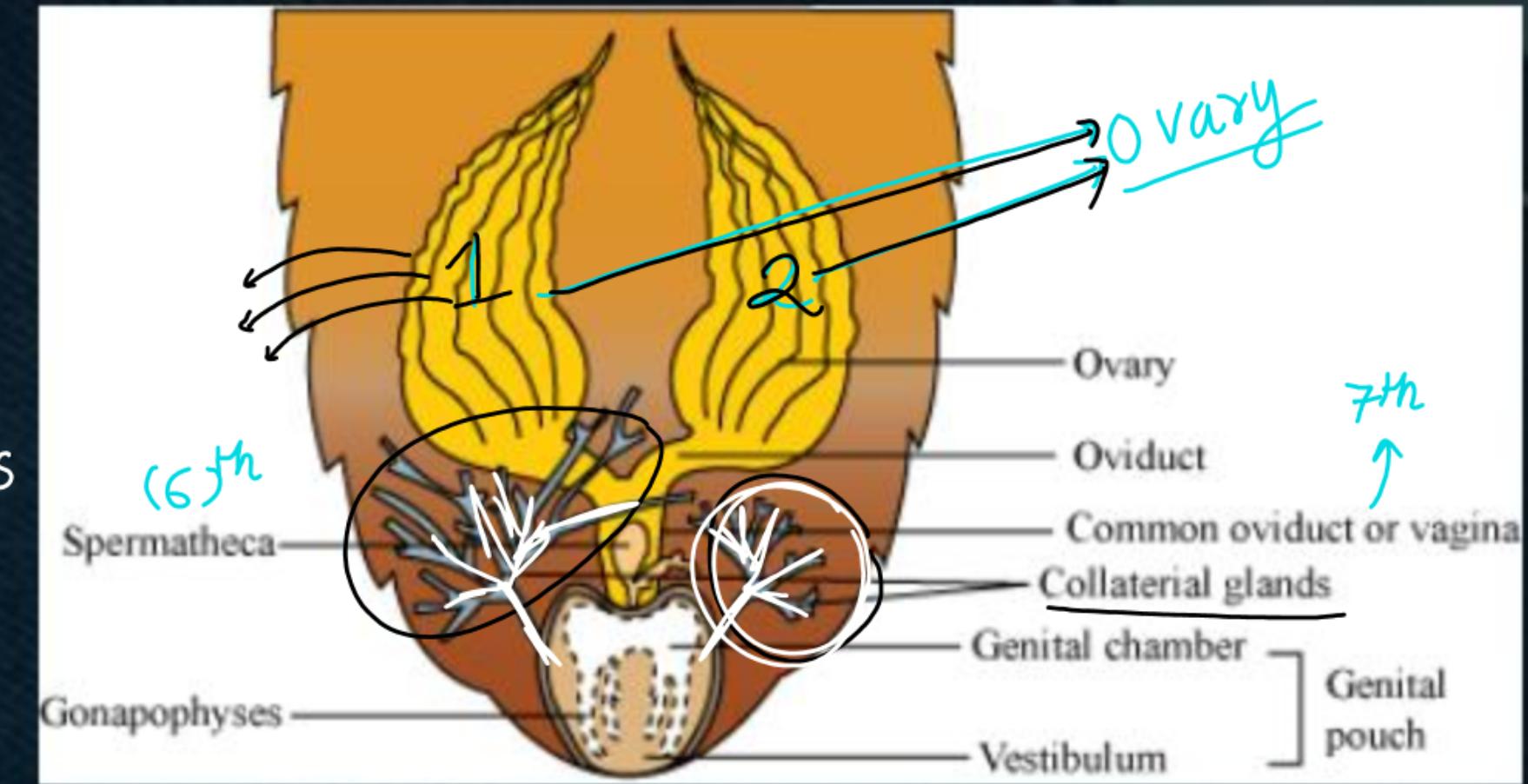
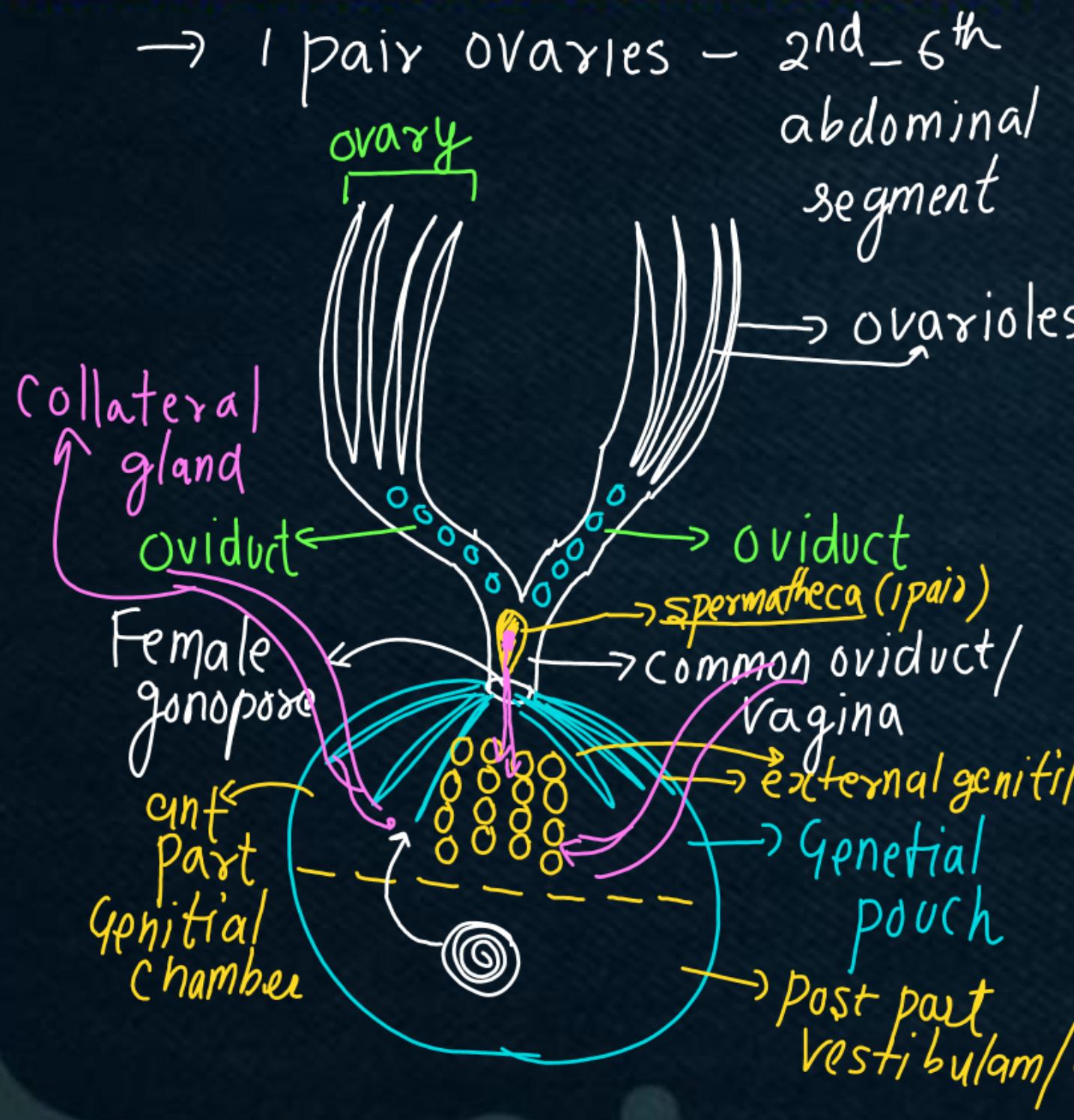
Ventral

Phallomeres

Made up  
of chitin

→ Phallomeres surround  
Male gonopore  
→ ejaculatory duct  
→ male gonopon

## FEMALE REPRODUCTIVE SYSTEM



- Each ovary contains 8 ovarioles
- Each ovariole makes one ovum — Total 16 ovum  
Produced at a time by both ovaries
- opening of vagina into genital pouch is called female gonopore

→ Genital pouch has 2 parts

ant part: Genital chamber

post part: ootheca / chamber / vestibulum

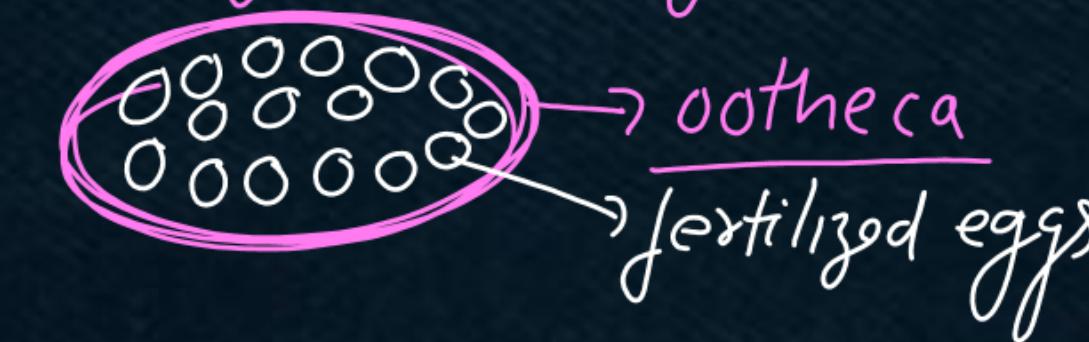
→ 2 pairs of external genitalia / ovipositor processes arrange all ovum  
In 2 Rows in genital chamber

→ Male cockroach during copulation inserts spermatophore inside genital pouch in such a way that all sperms enter spermatheca and get stored

→ Sperm fertilize the ovum — Genital pouch

→ Fertilized eggs are covered by secretions of collateral glands (1 pair)

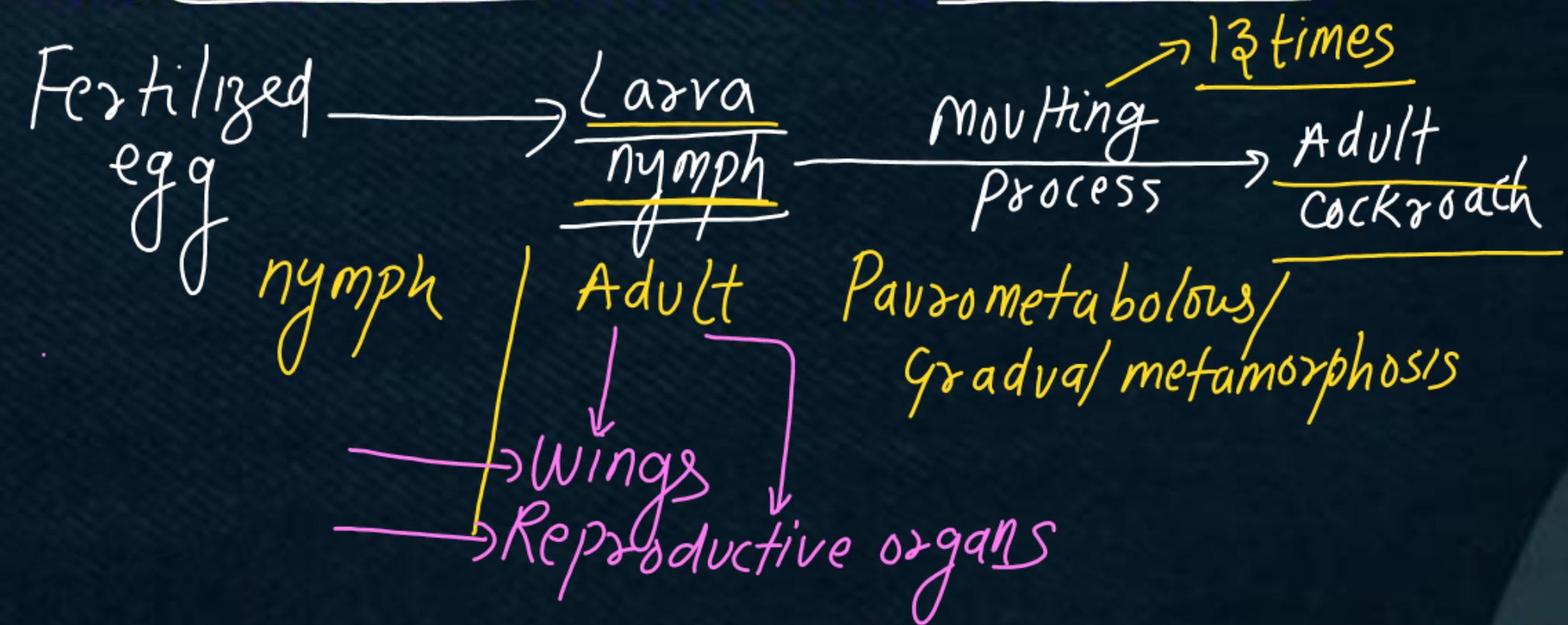
→ The secretions dry up



OOTHECAE  
brown capsule ✓

{On an average females produce 9-10 oothecae  
each containing 14-16 eggs.}

Dropped or glued to a suitable surface, usually in a crack or crevice of high relative  
humidity near a food source.

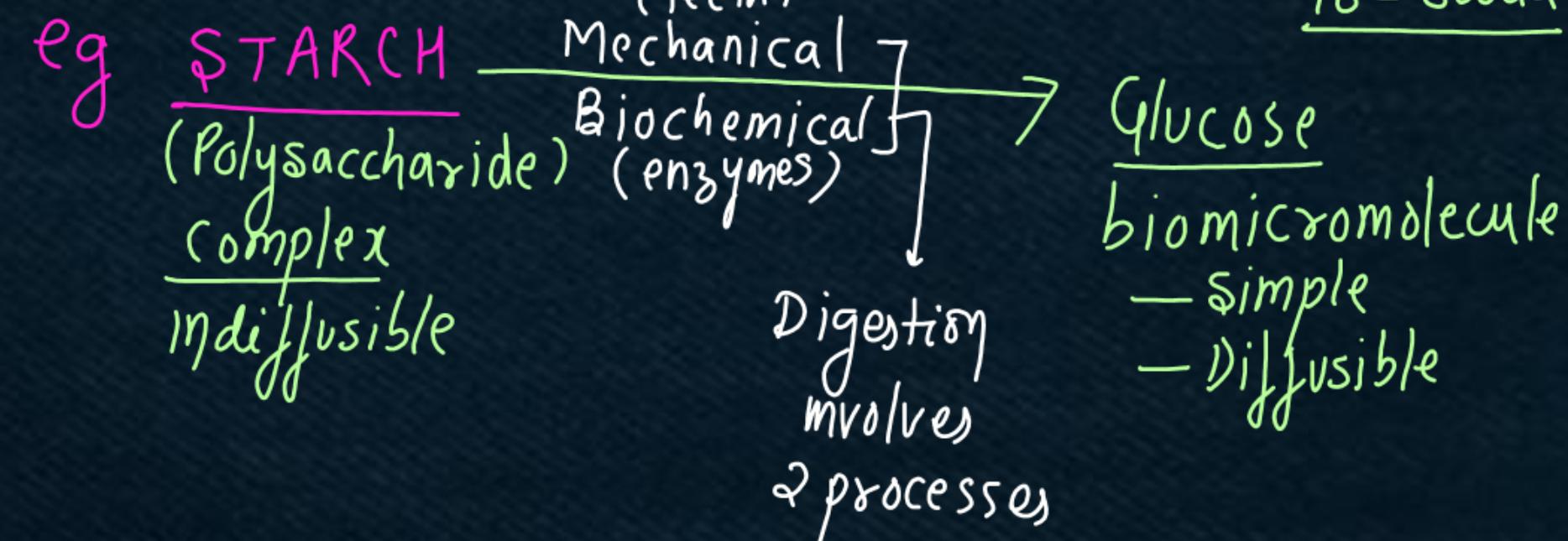


Dark reddish to blackish

3/8" (8mm) long

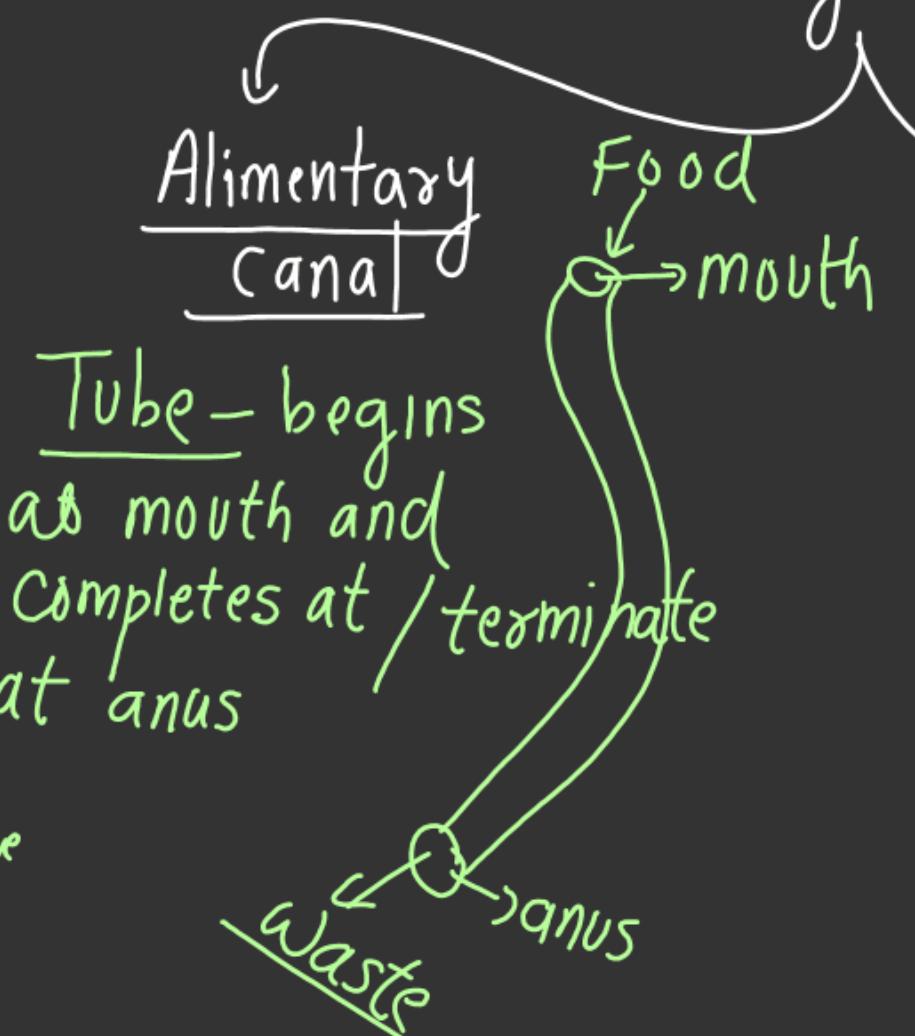
# Digestion and Absorption

Digestion : Is a process where **complex** **indiffusible** molecules (**biomacromolecules**) converted into **diffusible** **simple** molecules (**biomicromolecules**)

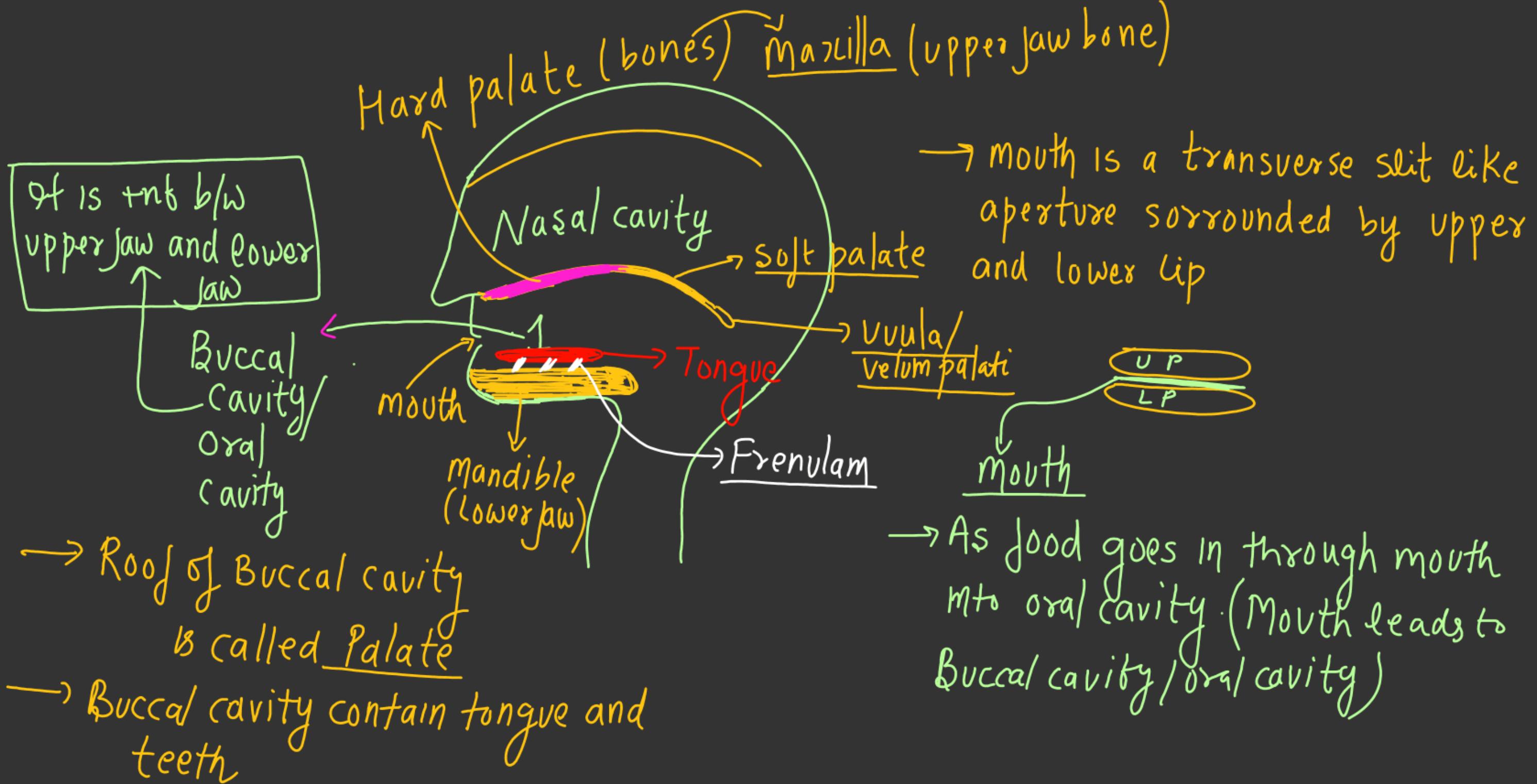


# Digestive system

- mouth
- buccal cavity
- pharynx
- oesophagus
- stomach
- small intestine
- large intestine
- anus



- Accessory digestive organs
  - Teeth
  - Tongue
  - salivary glands
  - Liver
  - Pancreas
  - Gall bladder



✓ Tongue is a muscular structure

/ It is present at the floor of buccal cavity

✓ Tongue is connected to the floor of buccal cavity / lower jaw  
by a ligamentous fold called FRENULUM

THANK - YOU