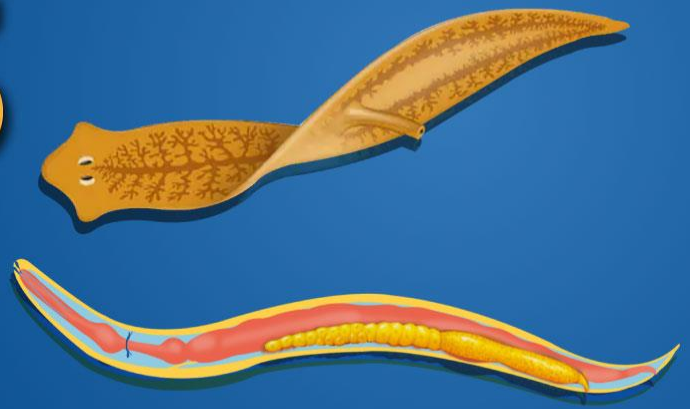
PLATYHELMINTHES AND ASCHELMINTHES

ANIMAL KINGDOM

- L3



MISSION MBBS 11th | ZOOLOGY

PUSHPENDU SIR

12TH CLASS | TUESDAY, THURSDAY
11TH CLASS | MONDAY, WEDNESDAY, FRIDAY

3 PM | 4 PM | 5 PM | 6 PM

MISSION MBBS

VIVEK SIR

CHEMISTRY | 3:00 PM

ANUSHRI MA'AM

PHYSICS | 4:00 PM

SACHIN SIR

ZOOLOGY | 5:00 PM

PANKHURI MA'AM

BOTANY | 5:00, 6:00 PM

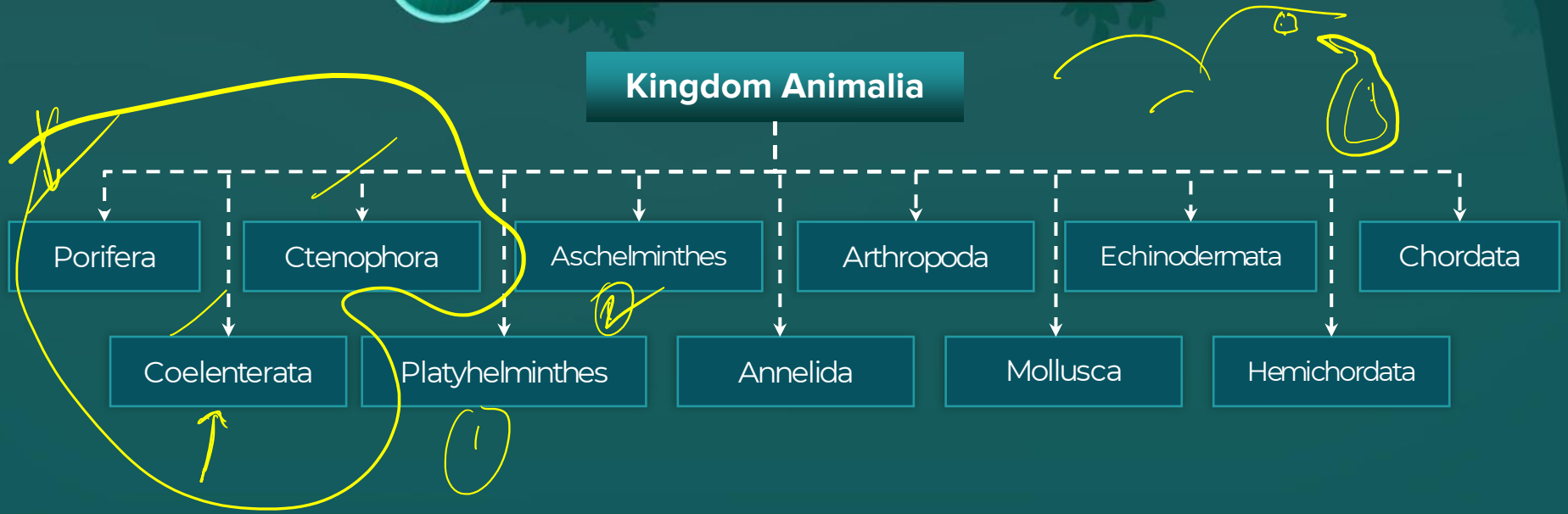
PUSHPENDU SIR

ZOOLOGY | 6:00 PM

Aakash App for JEE & NEET

BYJU'S

Recall! Kingdom Animalia



Today's Topics

Phylum Platyhelminthes

Phylum Aschelminthes


Phylum
Platyhelminthes

Phylum Platyhelminthes

Blind sac

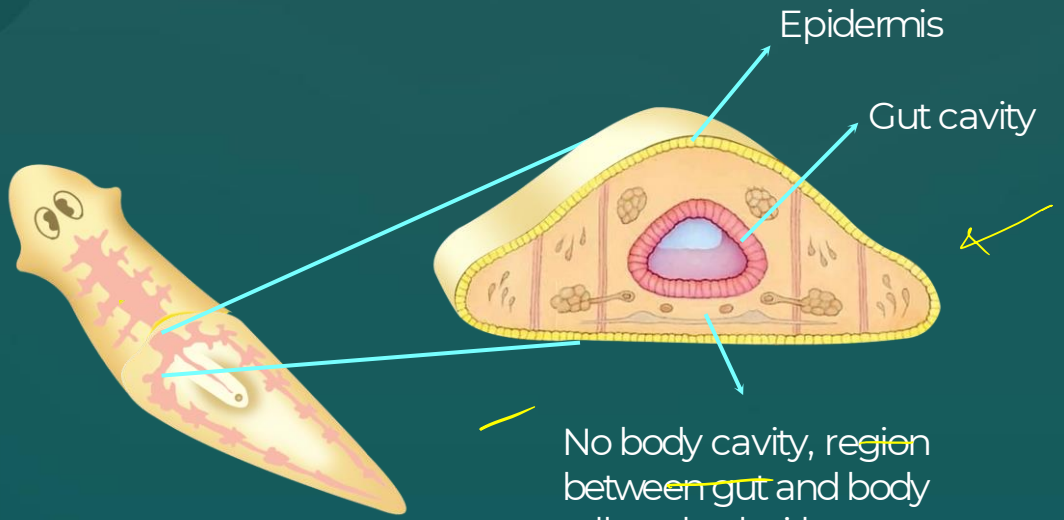
Phylum Platyhelminthes	
Level of organization	Organ
Body symmetry	Bilateral
Germ layer	Triploblastic
Coelom	Acoelomate
Segmentation	Unsegmented

Phylum Platyhelminthes

- Commonly known as **flatworms** as they are **dorsoventrally flat**
- Mostly are **endoparasites** (e.g. liver fluke) in animals including human
- Some **are free living** (e.g. *Planaria)*

Dorsoventrally flat body

Phylum Platyhelminthes



- Triploblastic
- No coelom, segmentation or notochord

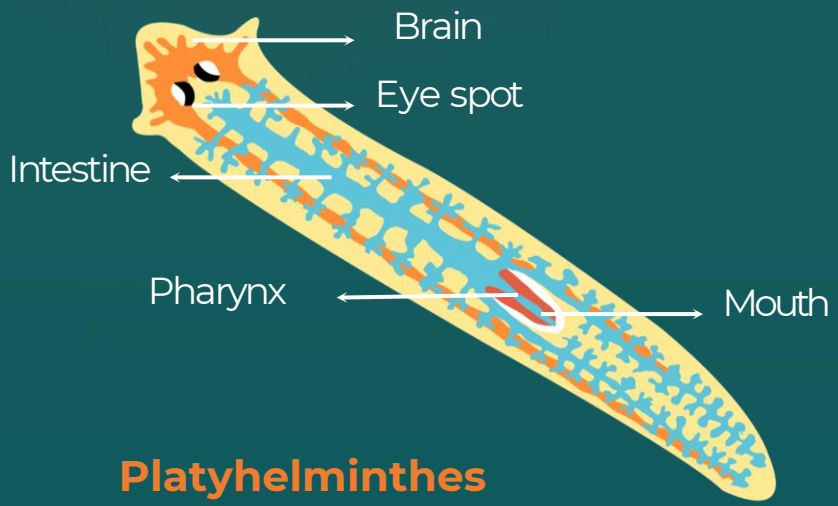
Acoelomate flatworms

Platyhelminthes are the **only animals** which are **triploblastic but acoelomate**

Phylum Platyhelminthes

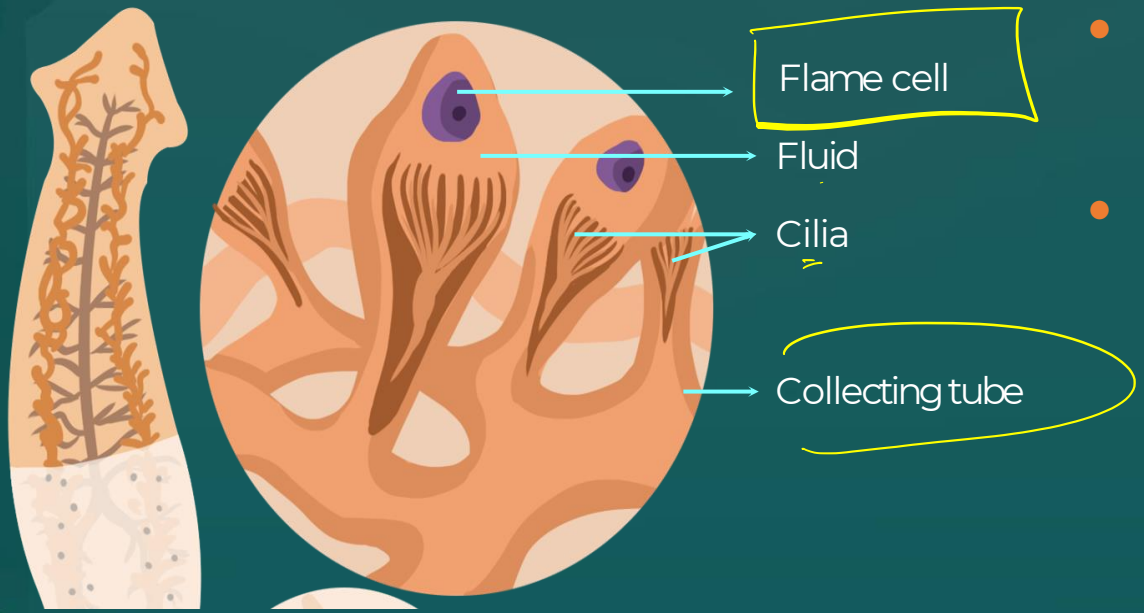
- Digestive tract is **incomplete in free living**
- Digestion is both extracellular and intracellular

Diffusion - Free living.
Parasitic - anaerobically.



Platyhelminthes

Phylum Platyhelminthes

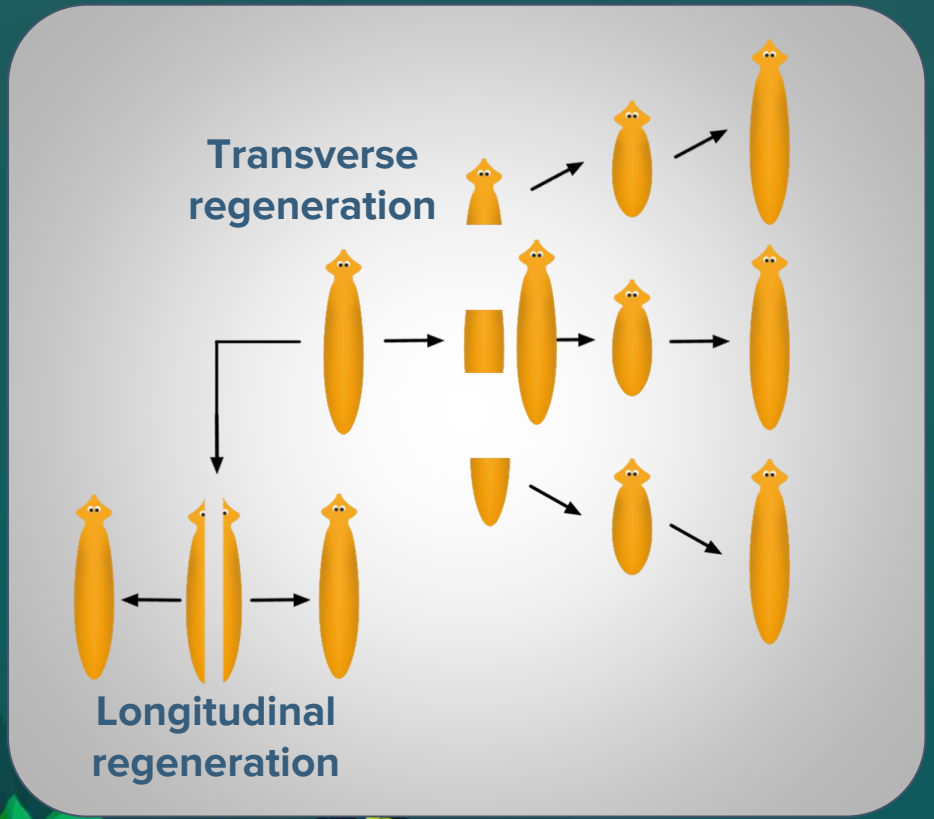


- Have specialized cells called **flame cells** for excretion and osmoregulation
- Have **cilia which beat up together like a flame**, hence the name

Phylum Platyhelminthes

- Flatworms are **hermaphrodite or bisexual or monoecious** except *Schistosoma*
- Fertilisation is **internal**
- **Development is indirect** through many larval stages
- Some members like *Planaria* possess **high regeneration capacity**
- **Cephalization** appeared for the first time in platyhelminthes

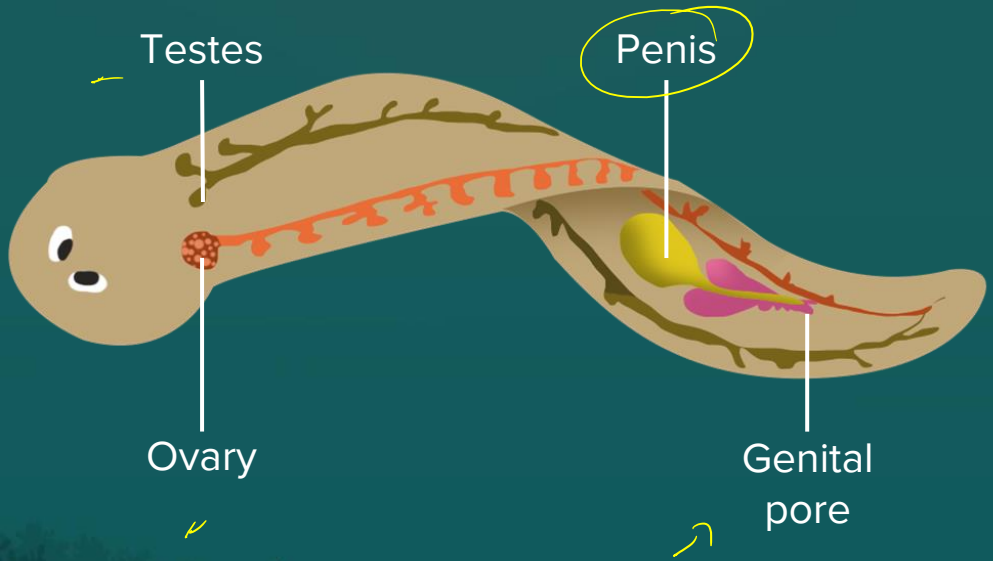
Asexual Reproduction in Planaria



Asexual Reproduction.

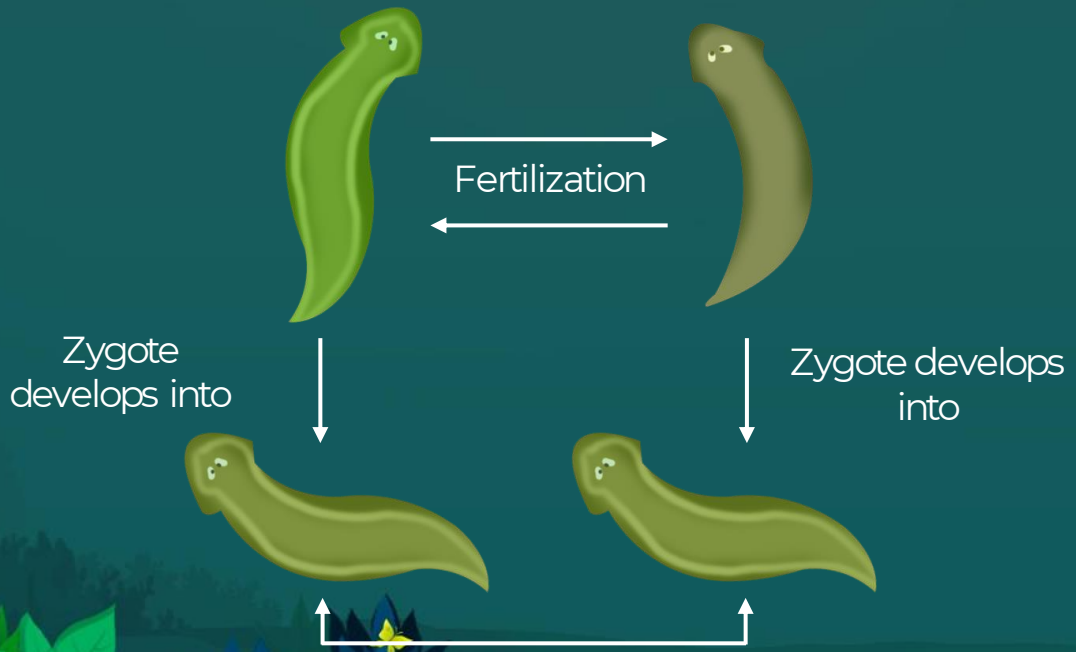
Sexual Reproduction in Planaria

- Sexes are **not separate**



Sexual Reproduction in Planaria

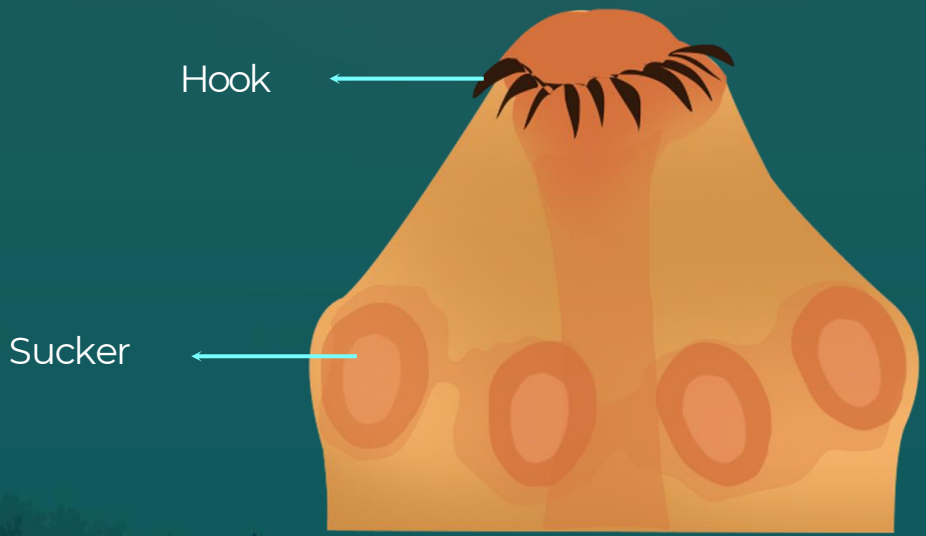
- Fertilization is **internal**
- Development indirect with many larval stages



Phylum Platyhelminthes

- **Hooks** aid the organism to attach to the organs in the host
- **Suckers** absorbs nutrients from the host intestine

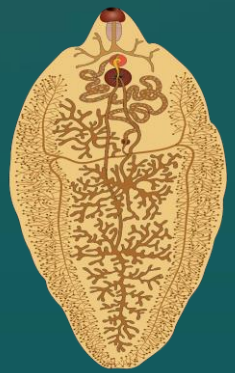
Taenia
Fasciola



Phylum Platyhelminthes

Examples : ***Taenia*** **(Tapeworm- digenetic),** ***Fasciola*** **(Liver fluke-digenetic),** ***Planaria*****,** ***Dugesia*****,** ***Schistosoma*** **(Blood fluke)**

Planaria



Fasciola

Taenia


Phylum
Aschelminthes

Phylum Aschelminthes

Phylum Aschelminthes	
Level of organization	Organ
Body symmetry	Bilateral
Germ layer	Triploblastic
Coelom	Pseudocoelomates
Segmentation	Unsegmented

Phylum Aschelminthes

- Commonly known as **roundworms** as body appears round in a transverse cross section
- Contains more than 15,000 species
- Mostly are **endoparasites (*Ascaris*)**
- Organ system level of organisation

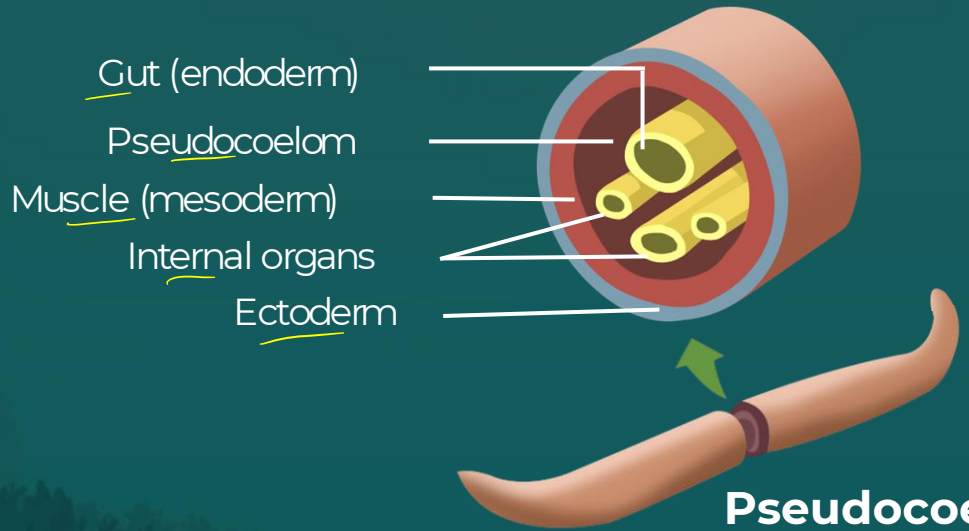
Ascaris

Ancylostoma

Wuchereria

Phylum Aschelminthes

- **Triploblastic** and **pseudocoelomate**
- **Bilaterally** symmetrical

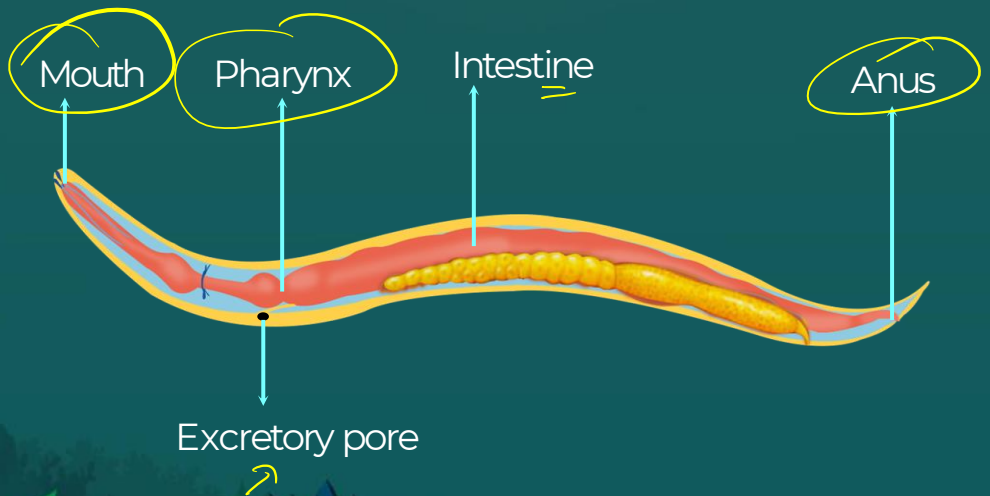


Pseudocoelomate

Phylum Aschelminthes

Digestive system

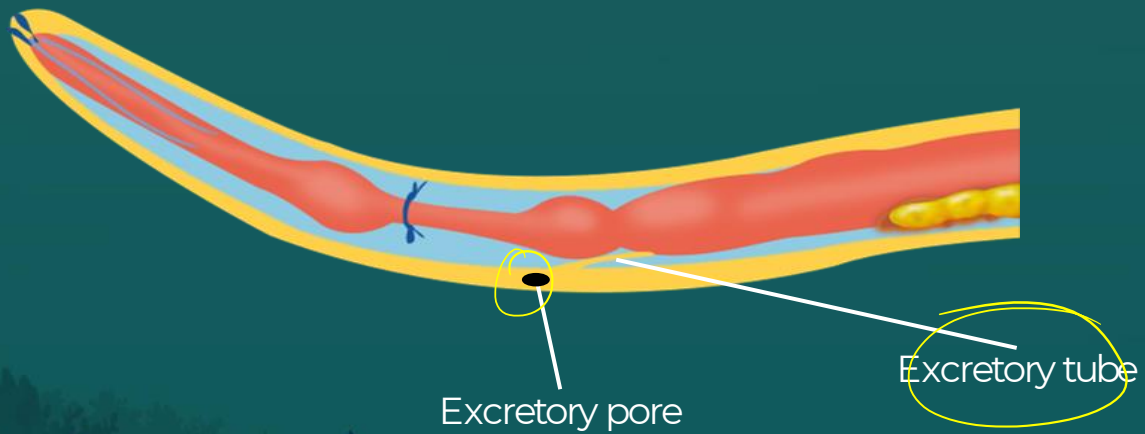
- **Complete** with both mouth and anus
- Alimentary canal with well developed muscular pharynx which helps in suction of food particles, blood, etc



Phylum Aschelminthes

Excretory system

- **Excretory tube:** Removes wastes from body cavity
- **Excretory pore:** Eliminates wastes from body



Phylum Aschelminthes

Reproductive system

- **Unisexual or dioecious** with sexual dimorphism.
- **Females** are usually **longer** than **males**.
- Reproduction is **sexual**
- Fertilization is **internal**
- Development : Both direct and indirect

Phylum Aschelminthes

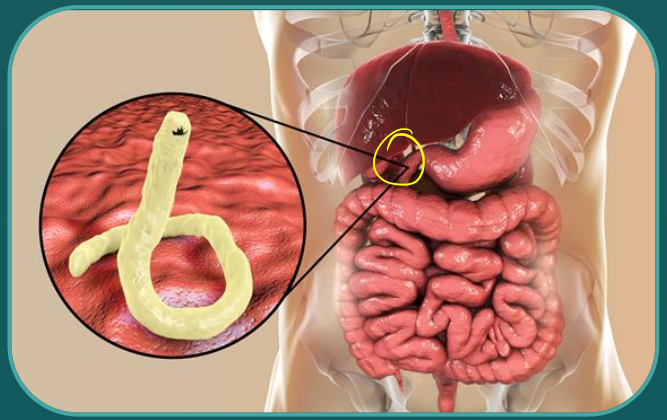
Ascaris

Left : female, longer with straight tail

Right : male, shorter with curved tail

Phylum Aschelminthes

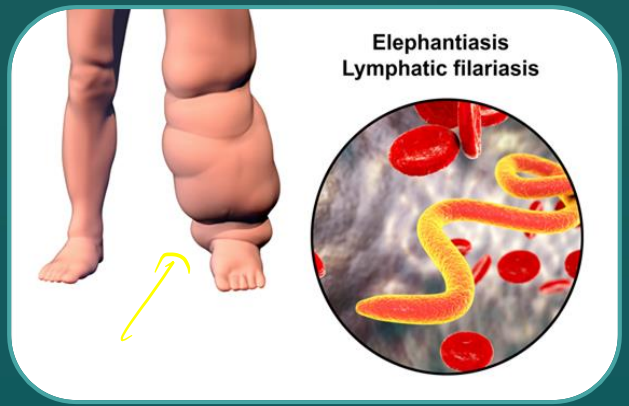
Disease	Infectious organism	Description
Ancylostomiasis (Hookworm infection)	*Ancylostoma duodenale*	Infection of the Intestines



Ancylostoma

Phylum Aschelminthes

Disease	Infectious organism	Description
Lymphatic Filariasis (Elephantiasis)	*Wuchereria bancrofti*	Infection of the lymphatic system



Wuchereria

Question Time!

Ascaris is characterized by the

A. presence of true coelom and metamerism

B. presence of metamerism only

C. presence of neither true coelom nor metamerism

D. presence of true coelom but an absence of metamerism

Ascaris is characterized by the

A. presence of true coelom and metamerism

B. presence of metamerism only

C. presence of neither true coelom nor metamerism

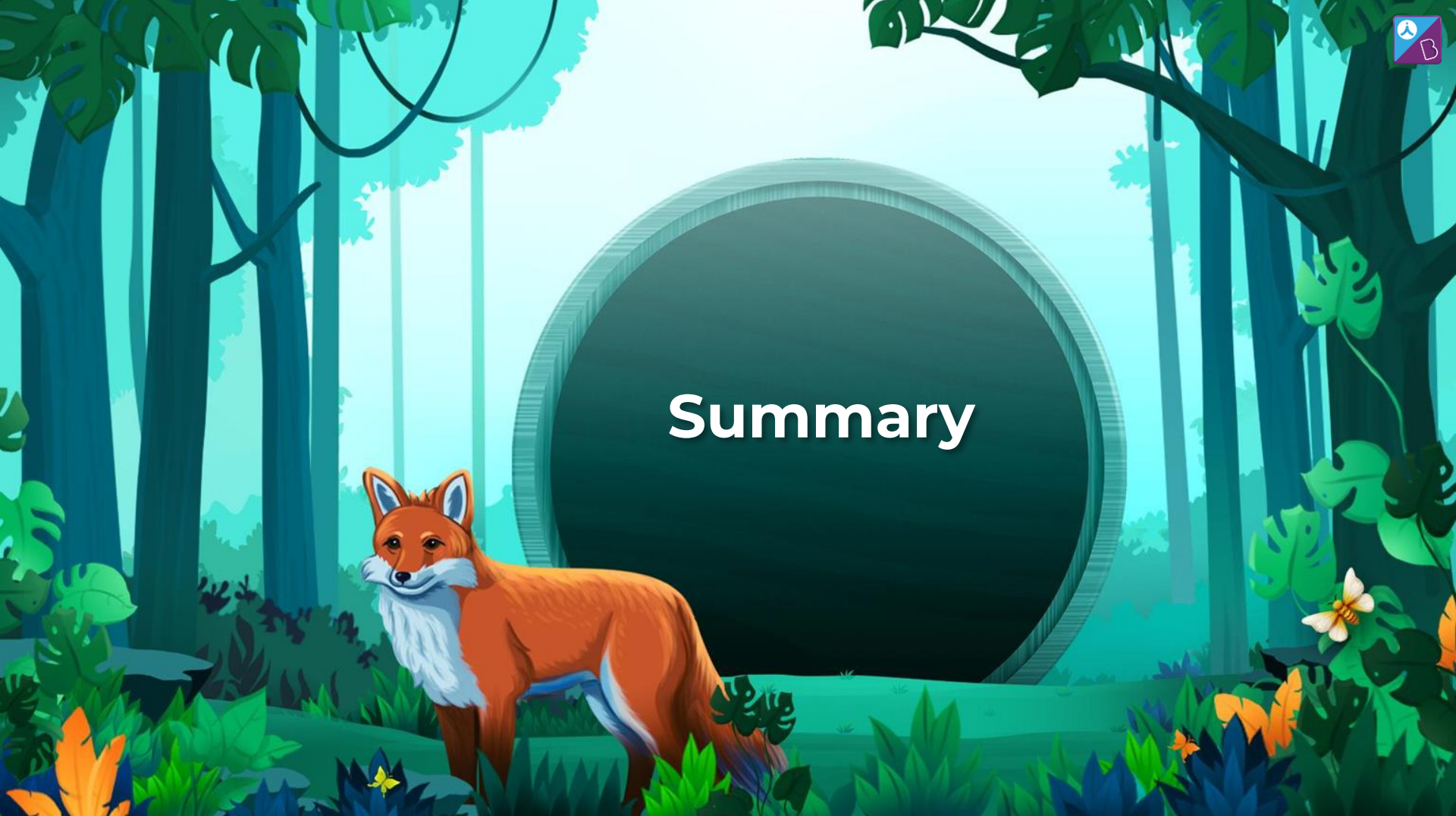
D. presence of true coelom but an absence of metamerism

Discussion

Ascaris

- ***Ascaris*** belongs to phylum Aschelminthes.
- It is characterized by the presence of **pseudocoelom** and an **absence of metamerism.**

Summary



	Phylum Platyhelminthes	Phylum Aschelminthes
Level of organization	Organ	Organ
Body symmetry	Bilateral	Bilateral
Germ layer	Triploblastic	Triploblastic
Coelom	Acoelomate	Pseudocoelomate
Segmentation	Unsegmented	Unsegmented
Reproduction	Sexual	Sexual
Fertilisation	Internal	Internal
Development	Indirect	Direct or Indirect

Past Year Question

Planaria possess high capacity of (NEET 2014)

A metamorphosis

B regeneration

C alternation of generation

D bioluminescence

Planaria possess high capacity of (NEET 2014)

A metamorphosis

B regeneration

C alternation of generation

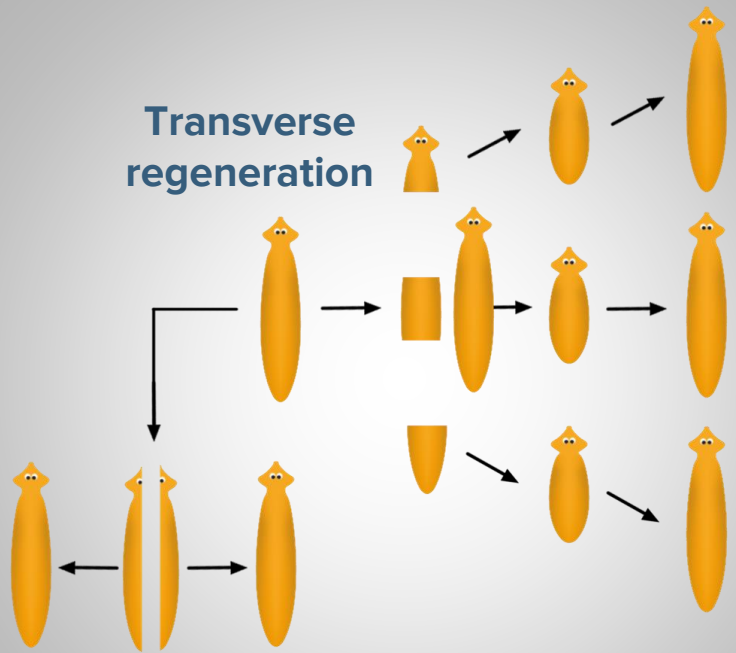
D bioluminescence

Discussion

- Platyhelminthes members like planaria possess **high regeneration capacity.**
- After amputation, stump cells form a **blastema** formed from neoblasts which is a pluripotent cell found throughout the planarian body.
- The **neoblast** forms the whole new body **from each fragment.**

Planaria

Discussion



5


Keep
Learning!