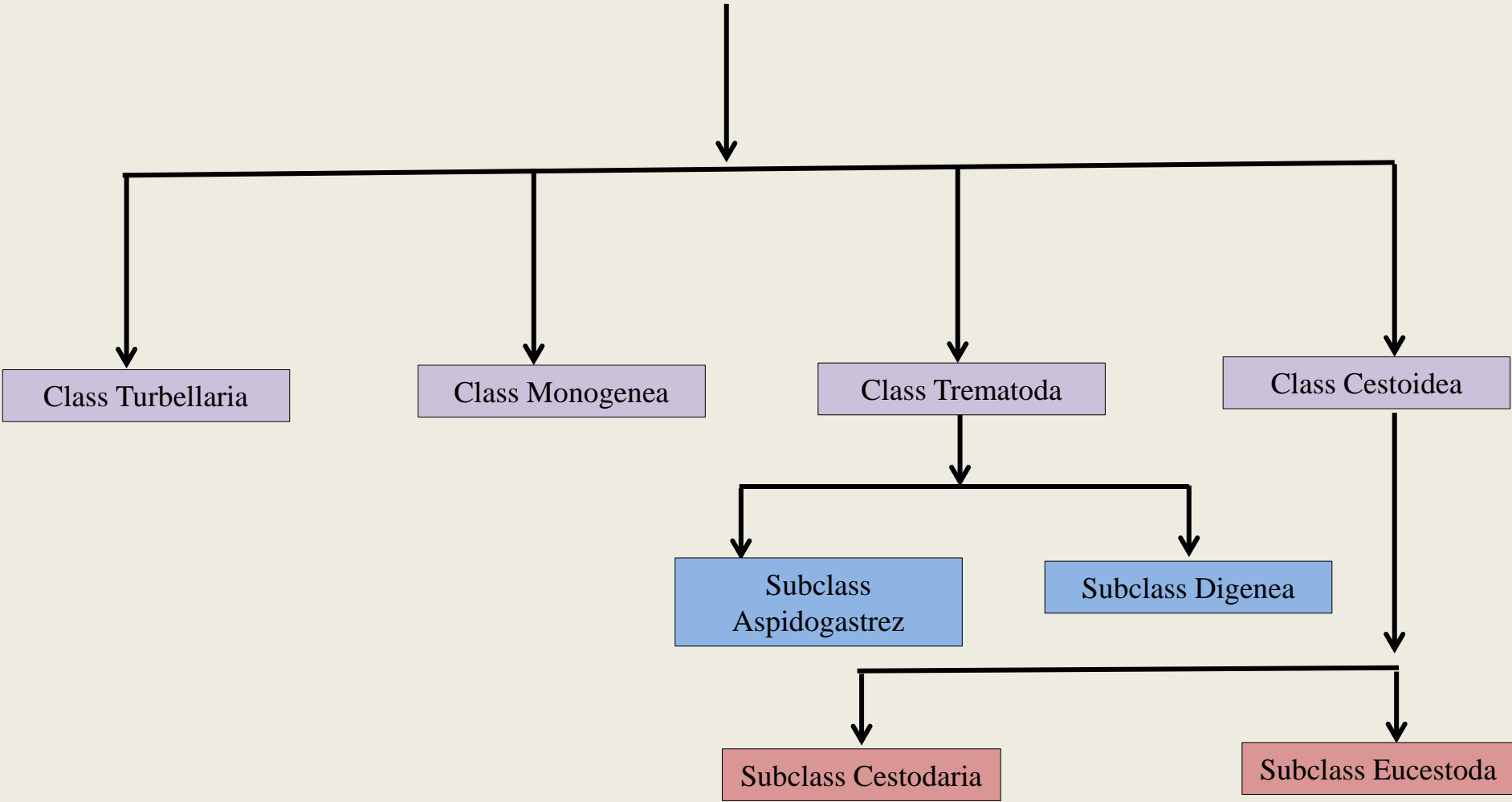


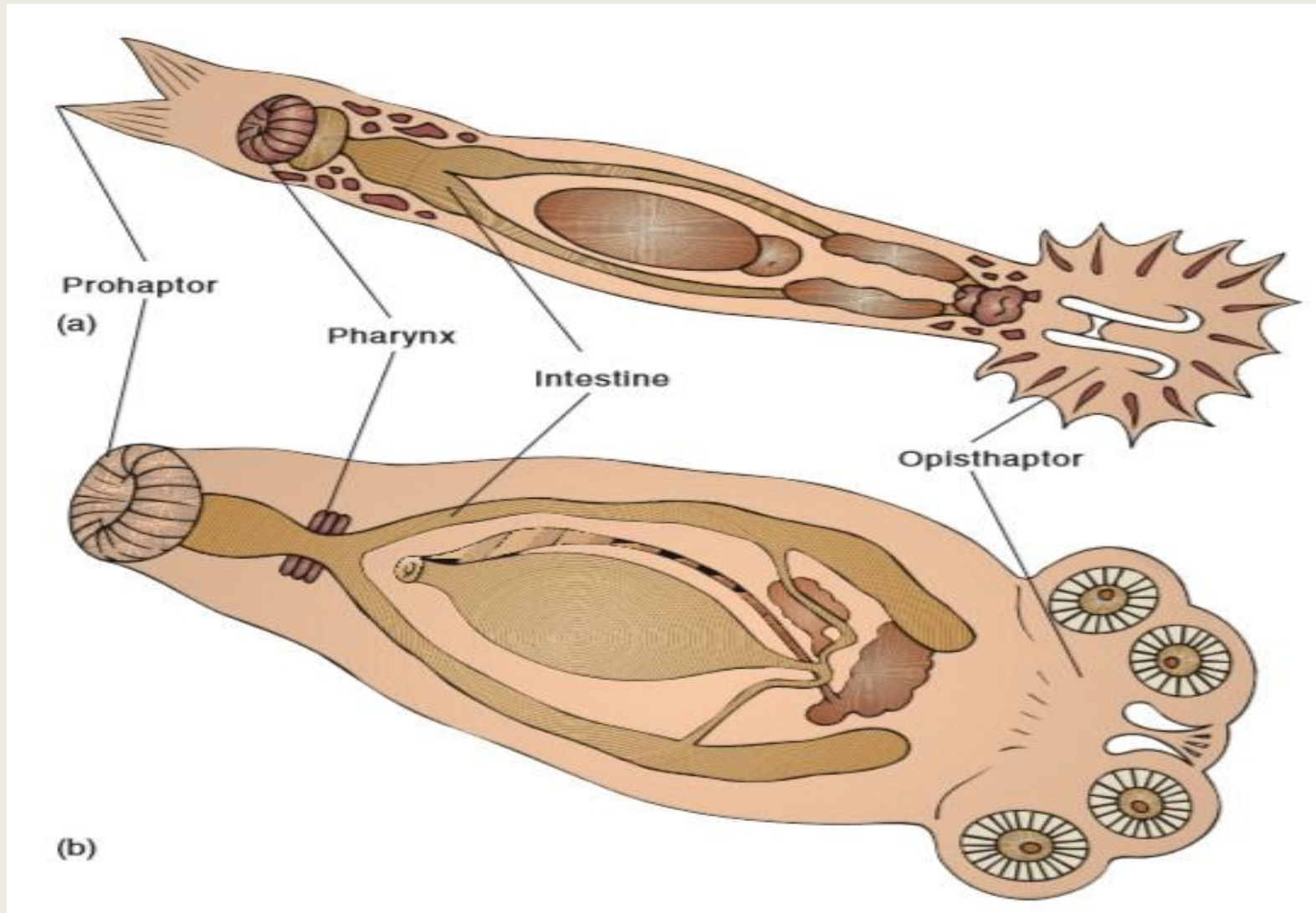
# CLASSIFICATION OF PLATYHELMINTHES



# **CLASS MONOGENEA**

## Characteristics :

- ✓ They have only one generation in their life cycle.
- ✓ Mostly ectoparasites of freshwater and marine fishes.
- ✓ They attach to the gill filaments and feed on epithelial cells, mucus, or blood.
- ✓ A large, posterior attachment organ called **opisthaptor**.
- ✓ eggs have one or more sticky threads that attach the eggs to the fish gill.
- ✓ A ciliated larva called an **oncomiracidium** hatches from the egg and swims to another host fish.



**Fig: Class Monogenea. Two monogeneid trematodes. (a) Gyrodactylus. (b) Sphyranura.** Note the opisthaptors by which these ectoparasites cling to the gills of their fish hosts. Both of these monogenea are about 1 cm long.

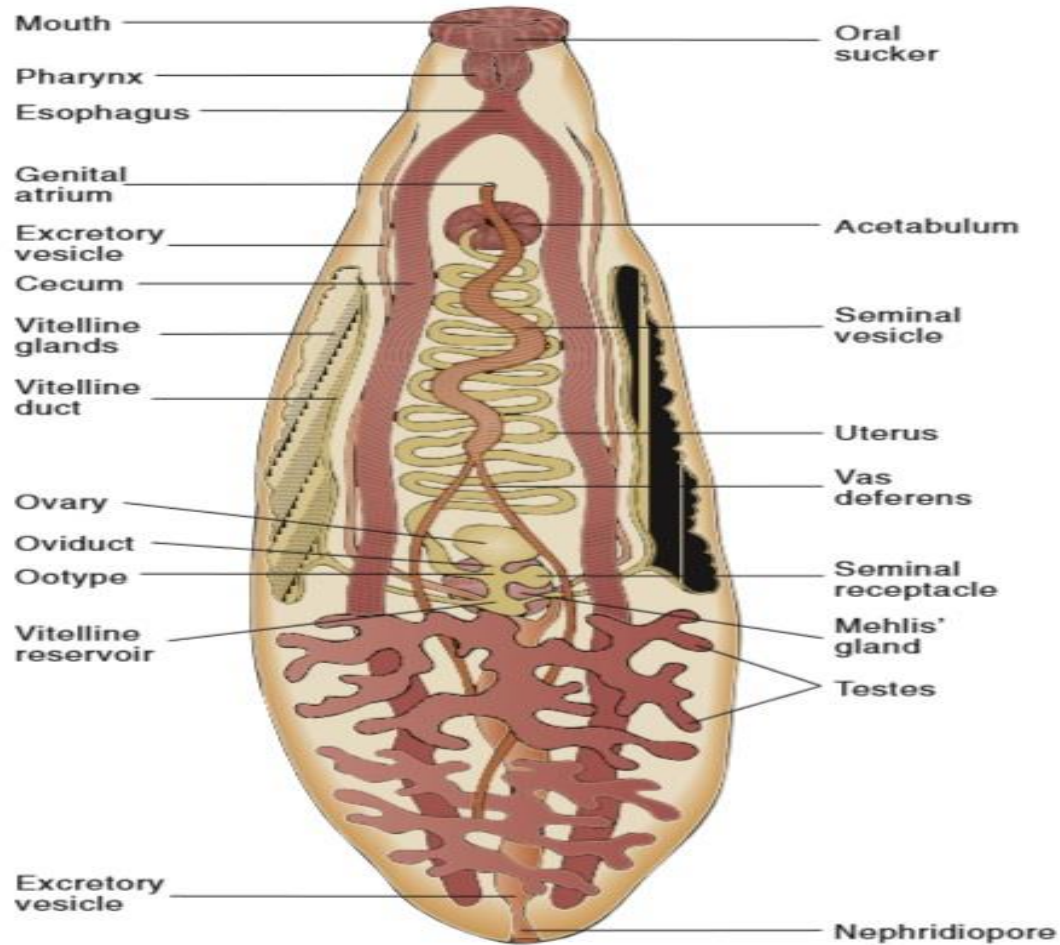
# **CLASS TREMATODA**

## **Characteristics :**

- ✓ Approximately eight thousand species of parasitic flatworms collectively called flukes.
- ✓ Many species are of great economic and medical importance.
- ✓ Most flukes are flat and oval to elongate,
- ✓ less than 1 mm to 6 cm in length.

## **Digestion and Nutrition**

- ✓ They feed on host cells and cell fragments.
- ✓ The digestive tract includes a mouth and a muscular, pumping pharynx.
- ✓ Posterior to the pharynx, the digestive tract divides into two blind-ending, variously branched pouches called caecae.

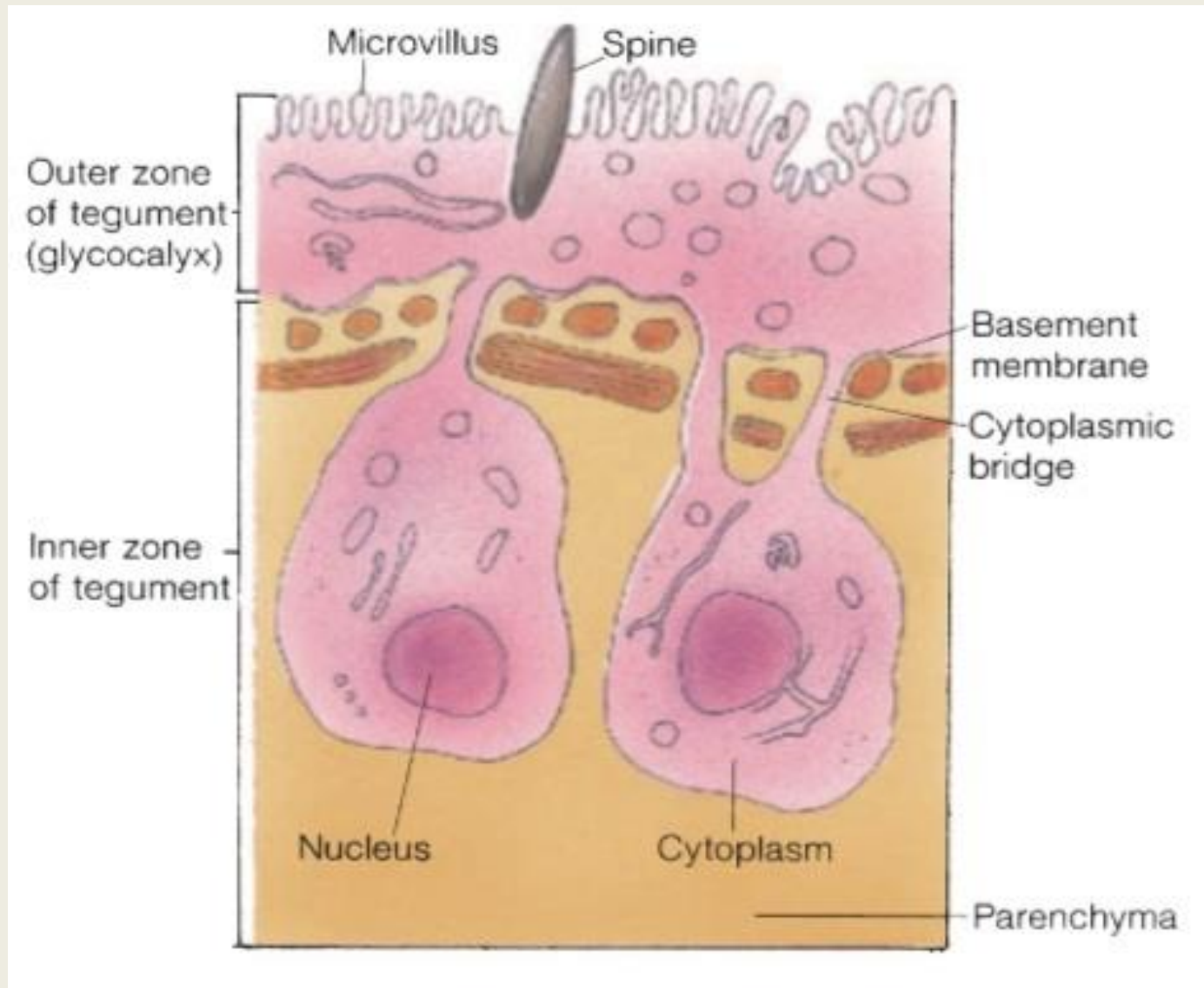


**Fig: Generalized Fluke (Digenetic Trematode).** Note the large percentage of the body devoted to reproduction. The Mehlis' gland is a conspicuous feature of the female reproductive tract; its function in trematodes is uncertain

## Body-wall structure

- ✓ tegument forms a syncytium.
- ✓ microvilli facilitate nutrient exchange.
- ✓ The outer zone of the tegument consists of an organic layer of proteins and carbohydrates called the **glycocalyx**.
  - ❖ Function of glycocalyx include:
    - Transport of nutrients, wastes, and gases across the body wall
    - Protects the fluke against enzymes and the host's immune system.
- ✓ Slender cell processes called cytoplasmic bridges connect the cytoplasmic bodies with the outer zone of the tegument.





**Fig: Trematode Tegument.** The fine structure of the tegument of a fluke. The tegument is an evolutionary adaptation that is highly efficient at absorbing nutrients and effective for protection.

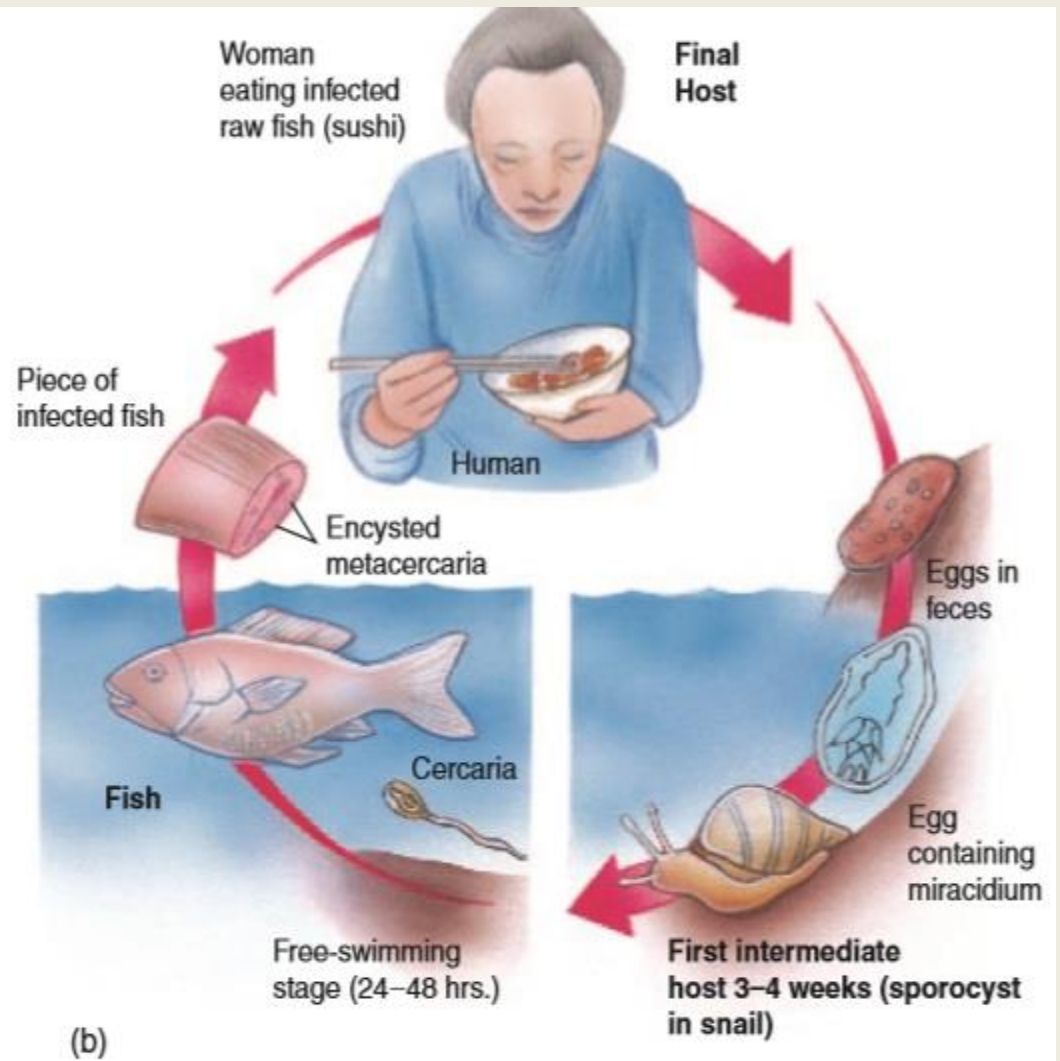
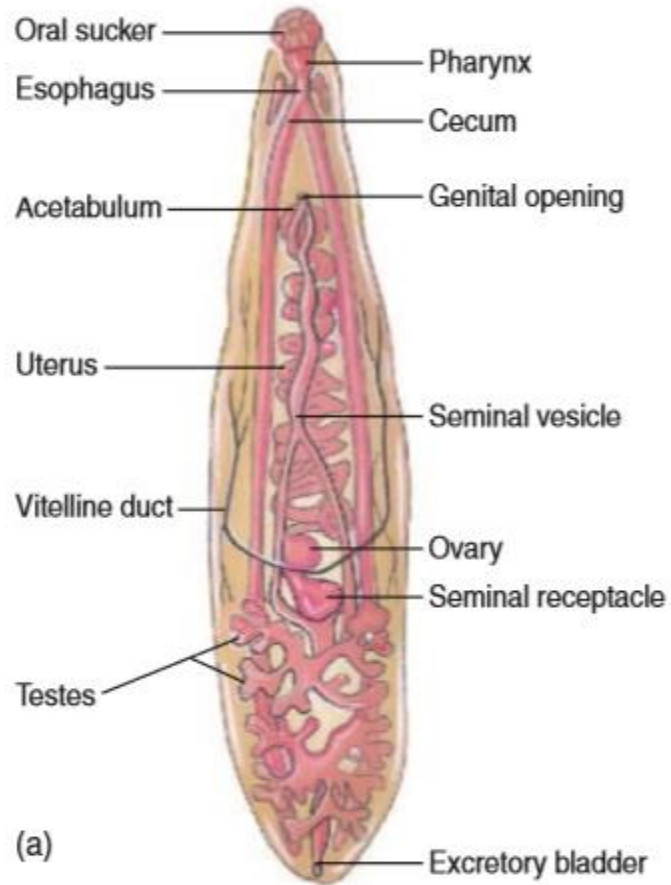
## Trematode Parasites

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graph TD; A[Trematode Parasites] --> B["The Chinese liver fluke  
(Clonorchis sinensis)"]; A --> C["Sheep liver fluke  
(Fasciola hepatica)"]; A --> D["Blood flukes  
(Schistosomes)"];
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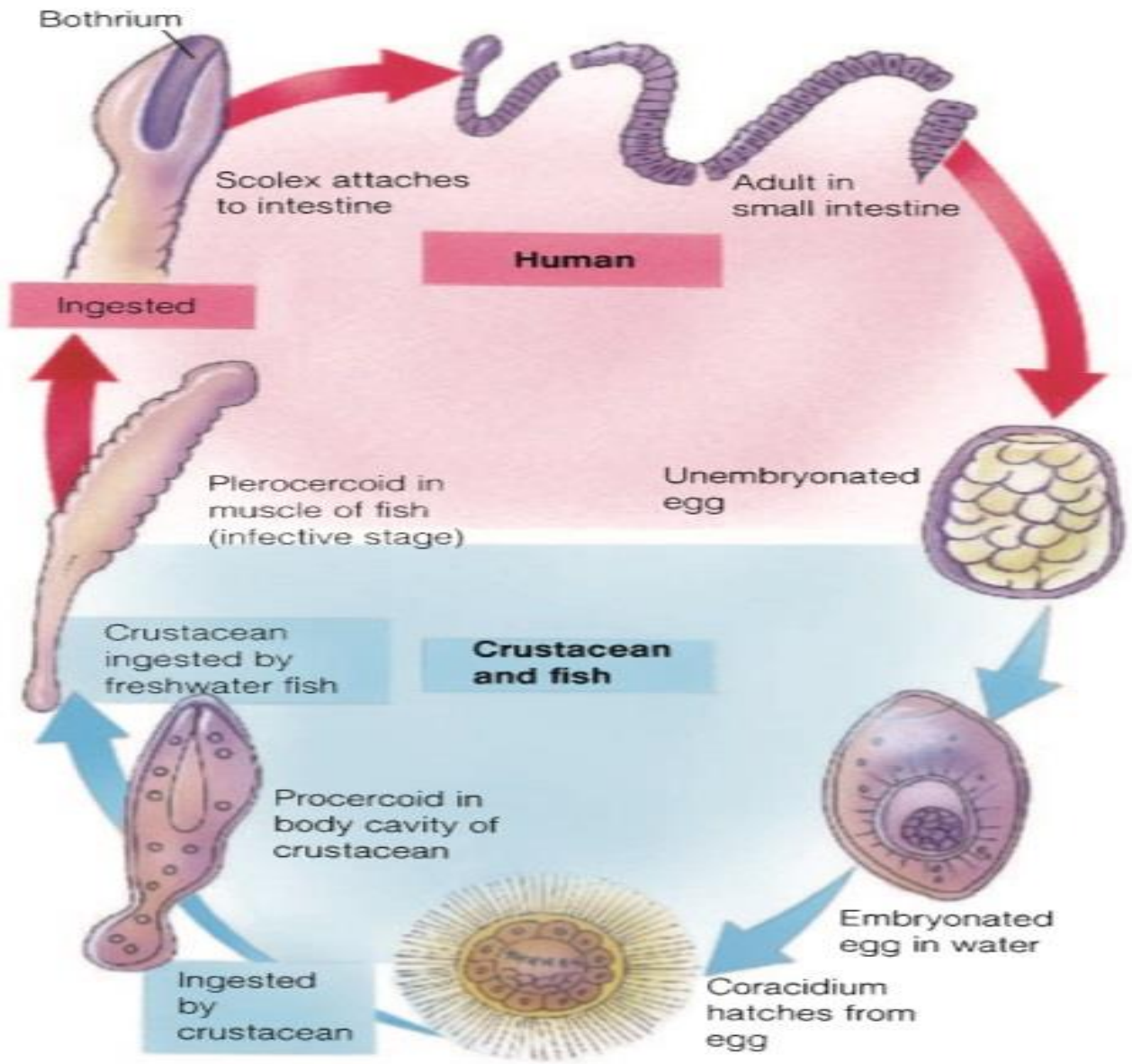
The Chinese liver fluke  
(*Clonorchis sinensis*)

Sheep liver fluke  
(*Fasciola hepatica*)

Blood flukes  
(*Schistosomes*)



**Chinese Liver Fluke, *Clonorchis sinensis*.** (a) Dorsal view. (b) Life cycle. The adult worm is 10 to 25 mm long and 1 to 5 mm wide.



**Fig: Life Cycle of the Broad Fish Tapeworm, *Diphyllobothrium latum*. Adult worms may be 3 to 10 m long.**