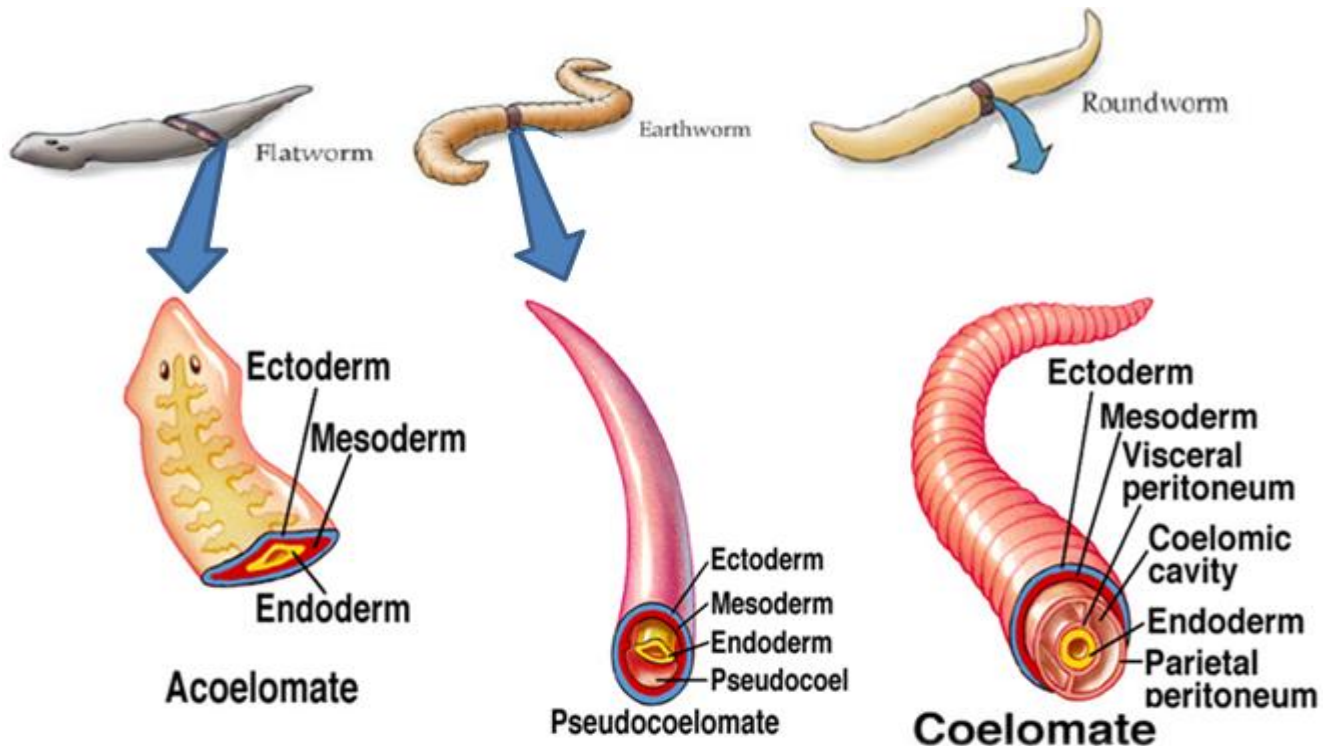


Phylum: Platyhelminthes ‘Flat Worms’:

General characteristics:

1. **Flattened dorsoventrally** are mostly parasites, but some are free living animals.
2. They are **bilateral** symmetry, the body with three germ layers (**triploblastic***), no coelom or body cavity (**acoelomate**) & other organelles.
3. Respiratory and Circulatory systems are not found. They are done by **diffusion**.
4. Excretion is done by **protonephridial organs** consisted of **flame cells**.
5. Nervous system is simply formed of longitudinal and transverse fibers with brain. Sense organs are found.
6. The worms are **monoecious** (hermaphroditic), except *Schistosoma* sp. are **dioecious** animals.
7. Lifecycle is either **simple and direct**; or **complex and indirect** with more than one host; including alternation of asexual and sexual reproduction generations.
8. Digestive system incomplete and it is absent in some.



Classification

Phylum: Platyhelminthes divided into three Classes as follow:

1. **Class:** Turbellaria, example; [Planaria sp.](#)
2. **Class:** Trematoda, example; [Fasciola hepatica](#) ;[Schistosoma sp.](#); [Fasciolopsis buski](#); [Heterophyes heterophyes](#) and [Paragonimus westermani](#).
3. **Class:** Cestoda, example; [Taenia saginata](#); [Taenia solium](#) and [Echinococcus granulosus](#).

1/Class: Turbellaria

Order: Tricladida

Planaria maculate

1. Planaria sp. freely lives in fresh and sea water.

2. Body is colorful; a leaf-like; unsegmented; **1 - 4** cm length; skin cells have rhabdites bodies with pigments; ventral side of body has ciliated glandular epidermis.

3. It is broad at the anterior end but pointed at the posterior end. Anterior end of body is elongated and developed into **2** lateral lobes called **Auricles** that bearing sense organs (eyespots), no attaching organs

4. **Incomplete** digestive system, consist of a mouth near the middle of the ventral surface, a long muscular pharynx and branched intestine to three main trunks with small lateral extensions; with blind ends (no anus), It is a carnivorous animal eating small arthropods like crustacean. The undigested product gets out through mouth.

5. **Reproduces asexually** by **regeneration** and **sexually** by **gametes formation**. Reproductive system consists of both male (testis, penis and genital pore) and female (ovary, oviduct and genital pore) reproductive organs in the same individual. They are hermaphroditic (monoecious).

4. Lifecycle is simple and direct.

♂♀ Gametes → Egg (in cocoons) → Small worm like parents → Adult

