

ZOOLOGY 101 SECTION 5 LECTURE NOTES

Acoelomate Animals:

- Flatworms, Ribbon Worms, and Jaw Worms

I. Phylum Platyhelminthes

Characteristics:

1. Acoelomate = no true internal body space
2. Triploblastic = three well defined tissue or germ layers
3. Organ-system level of organization
4. Bilateral symmetry
5. Beginnings of centralization of the nervous system, nervous system reduced
6. Do have an excretory 'system'
7. Digestive system incomplete (gastrovascular type)
8. Complex reproductive system
9. Body dorsoventrally flattened
10. No respiratory, circulatory, or skeletal systems

Ecological Relationships

- Four classes, mostly parasitic with complex life cycles
- Many larval stages, each requires a host
- Adults may be **dioecious** or **monoecious** (hermaphroditic)

A. Class Turbellaria

- Mostly free living, few are symbiotic
- Mostly marine with some fresh water bottom dwellers or living in moist habitats
- Body covered by ciliated cellular epidermis for locomotion

- Epidermis contains **rhabdites** = mucous secreting cells of skin

Ex. Planaria

B. Class Trematoda

- Liver and blood flukes
- Entirely parasitic on other animals, endoparasites
- Body covered by **syncytial** dermis (a continuous skin) with cuticle, ventral and oral suckers
- Epidermis without cilia, cell bodies sunk beneath distal layer of continuous cytoplasm with no intervening cell membranes

Ex. Schistosoma = shistosomiasis (blood fluke)

C. Class Cestoda

- Tapeworms and Ribbon Worms
- Entirely parasitic, endoparasites
- Body plan: scolex and proglottids

Ex. Taenia solium = pork tapeworm

D. Class Monogenea

- Monogeneans
- Entirely parasitic, ectoparasites on animal skin

General Body Features

Three layers of muscle fibers beneath epidermis: circular, longitudinal, and diagonal

Parenchyma = a meshwork of cells, developed from mesoderm, filling spaces between the muscles and organs

Digestive cavities lined with gastrodermis