

## Phylum Platyhelminthes: PARASITES

### Advances to prodomos:

Bilaterally symmetrical:

- Have head and tail so waste does not come out same hole as food goes in
- Allows cephalisation (conc of sense organs/ nervous control)

Triploblastic:

- Require internal organs
- Complexity promotes advancement
- Development of organs

Flat : Provides largest SA:V ratio

### Four classes :

#### **Turbellaria : flatworms**

- Hermaphroditic
- Undulating motion (Ripple body) = Locomotion marine
- Slide over slime = locomotion land
- Blind guts (one entrance/exit) draw fluid in = food absorption
- Both sexual/asexual reproduction

#### **Monogea : monogenetic flukes**

- Hermaphroditic
- Posterior hooks
- Direct life cycle = egg -> ciliated larvae
- Single host

#### **Cestoda : tapeworms**

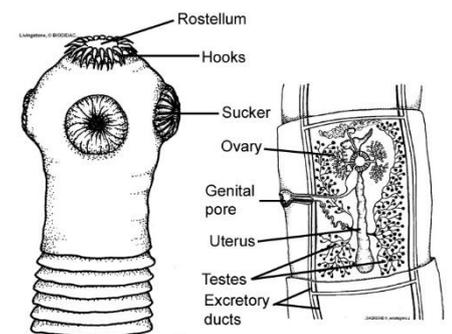
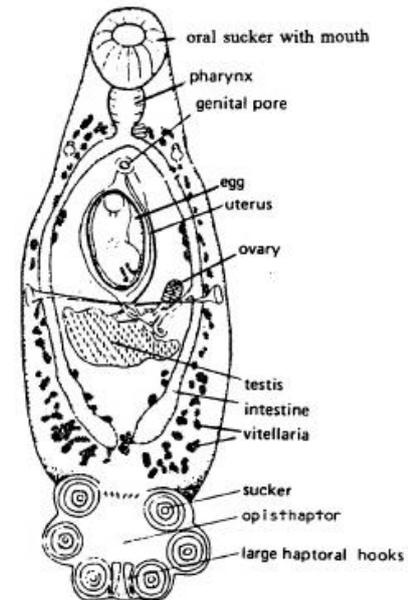
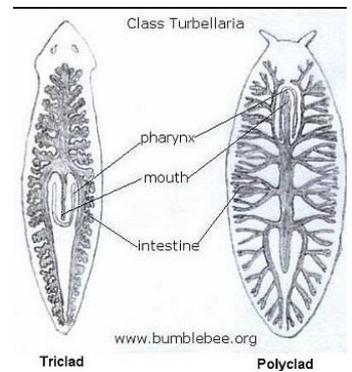
- Scolex (suckers/hooks) = attachment
- Proglottids = reproduction
- Microtriches (microvilli) = food absorption
- Both sexual/Asexual reproduction

#### **Trematoda : flukes**

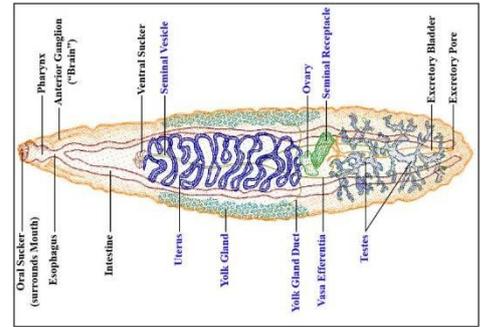
- Hooks/ Suckers
- Cyst material glands (hides recognition by host defences)

Eg: Human liver fluke

- A. Digestion – pharynx/ muscular esophagus/ 2 long unbranched intestinal ceca
- B. Excretion – 2 tubes branches/ flame cells form bladder open to outside



- C. Nervous – 2 cerebral ganglion/ transverse connection
- D. Reproduction - hermaphroditic



**Phylum Mollusca:** Shelled, soft-bodied animals; seven classes, the familiar snails and slugs (Gastropoda), clams (Bivalvia), squids and octopods (Cephalopoda), and the less familiar chitons (Polyplacophora), tusk shells (Scaphopoda), the monoplacophorans (Monoplacophora) and the primitive Aplacophora; ca 93,000 extant described species (and an estimated 90,000 to be described) and 70,000 described fossil species.

1. Unsegmented coelomate protostomes
2. Coelom restricted to small spaces around the nephridia, heart and, in part, the intestine
3. Main body cavity a hemocoel (i.e. forming an open circulatory system)
4. Viscera concentrated dorsally as a visceral mass
5. Body covered by the mantle, a thick epidermal-cuticular sheet of skin in which lie the ctenidia, osphradia, nephridiopores, gonopores and anus
6. Mantle with shell glands that secrete calcareous epidermal spicules, shell plates or shells Heart, composed of ventricle and atria, lies in pericardial chamber
7. With large, well defined muscular foot
8. Buccal region with radula -> digestion
9. Complete gut with marked regional specialisation, including digestive caeca
10. With large, complex metanephridia (kidneys)
11. Sensory organs + photosensitive cells

#### Gastropoda: Snails/slugs

- Torsion/ coiling in shell
- Mouth/ anus together
- Ctenidium (gills)
- Hermaphroditic
- Sexual reproduction - exchange sperm

#### Cephalopoda: Squids/ octopus

- Sexual reproduction
- Three hearts
- Gills
- Large brain
- 8 arms

#### Polyplacophora: chitons

- Dorsoventrally flattened
- 7 articulating plates
- Separate sexes
- Sexual reproduction

#### Bivalvia: Clams

- Laterally compressed
- Free spawn

**Phylum Annelida:** Segmented worms, typically with 3 or 4 classes sometimes only 2 recognized: the Polychaeta (sand, tube, clam worms), Clitellata (earthworms, leeches –classified in Hickman et al. as separate classes: Oligochaeta (earthworms) Hirudinida (leeches); ca 16,500 extant species.

1. Schizocoelous
2. Alimentary tract complete, usually with regional specialisation
3. With closed circulatory system; several respiratory pigments
4. Well developed nervous system, with dorsal cerebral ganglion, circumoesophageal connectives and ventral ganglionated nerve cords