

BSC 201L

Lab #4: Acoelomate Animals

Use the text and figures in **Exercise 9 (The Acoelomate Animals)** to aid your study of the prepared slides and preserved specimens; examine the additional specimens as indicated.

What does **acoelomate** mean?

Things to know for Phylum Platyhelminthes:

Free living or symbiotic (commensal, mutualist, or parasite)?

Host, if symbiotic

Fresh water, marine water, or terrestrial?

Phylum Platyhelminthes

- Bilateral symmetry
- True tissues and organ level of organization
- Incomplete digestive tract: there is no anus
- **Cephalization**: evolution of a specialized head with feeding and sensory structures and the nervous tissues that enervate them

Class Turbellaria, flatworms

- most are free living; some are symbiotic

Dugesia, planarian

- free living
 - fresh water
 - observe cephalization
1. Slide (w.m.) – Fig. 9-1
 - **LABELS**: auricle, eyespot, pharynx, mouth, anterior branch and two posterior branches (diverticula) of the intestine (a triclad digestive tract)
 2. Slide (x.s.) – Fig. 9-2
 - Observe all cross-sections; need draw only the section through the pharynx
 - **LABELS**: diverticula, pharynx, and lumen of pharynx

Bdelloura candida

- a commensal on horseshoe crabs
 - marine water
3. Slide (w.m.)
 - **LABELS**: eyespots, triclad digestive tract, and branching diverticula

Bipalium kewense

- free living
 - terrestrial
 - head is flat and distinctively shovel shaped
 - cosmopolitan distribution, due to **phoresis** (spread in root balls of nursery plants)
4. Preserved specimen

Class Trematoda, digenetic flukes

- all flukes are parasitic
- have an **oral sucker** and a **ventral sucker** (acetabulum)

Clonorchis sinensis, human liver fluke – text p. 145

5. Slide – Fig. 9-3

- **LABELS**: oral sucker and acetabulum (=ventral sucker)

Fasciola hepatica, sheep liver fluke

6. Slide

- **LABELS**: oral sucker and acetabulum (=ventral sucker)

Observation: preserved specimen

- be able to distinguish dorsal and ventral surfaces; note oral sucker and ventral sucker

Class Cestoda, tapeworms

- all tapeworms are parasitic
- lack digestive system (why?)

Taenia pisiformis, dog tapeworm

- tapeworm of dogs and cats

7. Slide – Fig. 9-6 – draw all three sections (you may need to move the slide around to see them all)

- **LABELS**: scolex, suckers, hooks, neck, immature proglottid, mature proglottid, gravid proglottid, genital pore

Dipylidium caninum, small dog tapeworm

8. Slide – Fig. 9-7 – draw all three sections (move the slide around if necessary)

- **LABEL**: genital pores

Be able to distinguish between *Taenia* and *Dipylidium*:

- *Taenia* has one genital pore, on left or right side of proglottid
- *Dipylidium* has two genital pores, one on each side of proglottid

9. Cysticercus – a.k.a. bladder worms

- juvenile stage – this is the form a tapeworm takes in the intermediate host (for example, a flea or a rabbit)
- the black specks you can see under high power are hooks

Observation: Preserved *Taenia pisiformis* specimen.

Observation: Examine the Platyhelminthes Biosmount. (Not necessary to draw.)

Things to know for Phylum Nemertea:

Freshwater, marine water, or terrestrial

Phylum Nemertea, ribbon worms

- eversible proboscis
- complete digestive tract, with mouth and anus
- simplest animals to have a blood vascular system
- most are free living; some are commensals

Cerebratulus sp., ribbon worm

- anterior end is pointed; posterior end is broader
- has cephalic grooves with a concentration of receptors on the anterior end
(NOTE: cephalic grooves are NOT found in all spp. of ribbon worms nor in all species of *Cerebratulus*)
- free living; marine water

10. Preserved specimen

- **LABELS:** head, cephalic grooves

11. Preserved unidentified ribbon worm

- **LABEL:** everted proboscis

FOR NEXT LAB MEETING:

- download handout for Lab #5 and read **Exercise 10** (The Pseudocoelomate Animals) AND **Exercise 12** (Annelids)
- write out each taxonomic summary in your Laboratory Specimen Notebook BEFORE lab