ANIMAL BIOLOGY LABORATORY
Lab 6: Phyla Mollusca and Annelida (Kingdom Animalia)

Read pages 105-106 and 120-121 in your lab manual before coming to lab.

Objectives:
- Recognize the basic structure and organization of molluscs.
- Compare and contrast filter-feeding and predatory molluscs.
- Recognize and distinguish between annelid classes and subclasses.
- Compare and contrast free-living aquatic, free-living terrestrial and ectoparasitic annelids.

Phylum Mollusca
- Four major morphological features:
- Shell
- Mantle
- Visceral mass
- Foot

Exercise 9A: Bivalve Anatomy
Freshwater Clam (*Anodonta*) Dissection
(see instructions on pages 106-113; Figs. 9.2, 9.3, 9.4, 9.5, 9.6, and 9.7)

Class Bivalvia (clams, oysters, mussels)
- Marine and freshwater
- Body compressed between two hinged shells

Identify the following body regions:
- Cranial
- Caudal
- Dorsal
- Ventral

Identify the following structures:
- Incurrent siphon
- Umbo
- Mouth
- Excurrent siphon
- Foot
- Stomach
- Gills
- Visceral mass
- Digestive gland
- Mantle
- Adductor muscles
- Intestine
- Shell
- Labial palps
- Gonad

Review Questions
All questions pp. 109-113

Exercise 9C: Cephalopod Anatomy

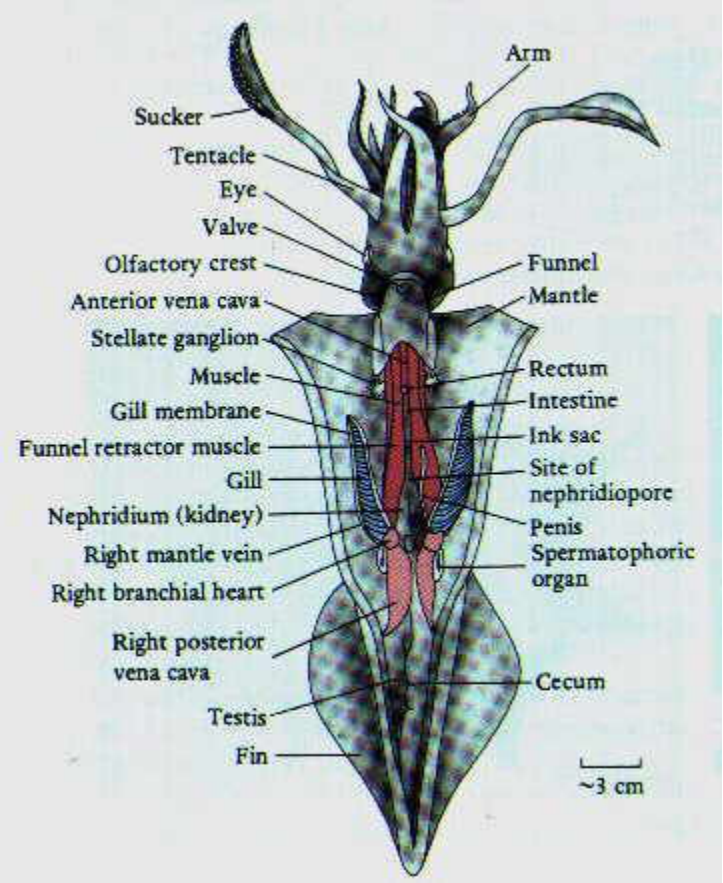
Class Cephalopoda

- Marine predators
- Foot separated into tentacles and arms
- Well-developed eyes

Identify the following structures:

- Collar
- Eyes
- Digestive cecum
- Branchial hearts
- Tentacles
- Fins muscles
- Mantle
- Arms
- Siphon retractor
- Siphon • Gills
- Anus
- Ink sac

Lab Manual: pp. 116-119; Fig. 9.13 & Figure below.



Why do cephalopods have more sensory structures than bivalves?

Observe the additional preserved specimens on display and answer the following questions.

What are similarities and differences among the nautilus, octopus and squid?

What features of the chiton reflect living in the intertidal zone?

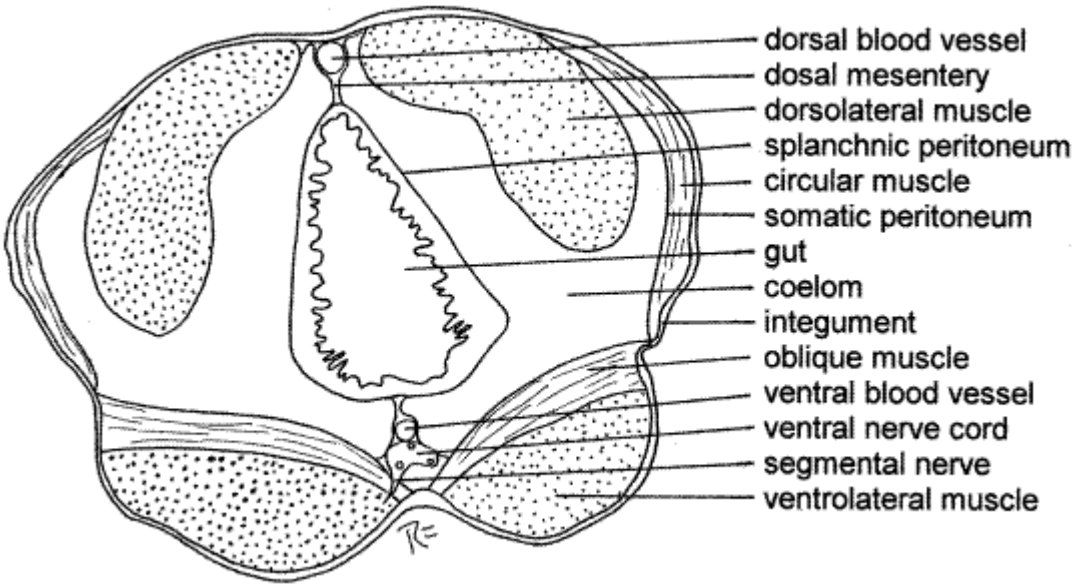
What problems are faced by terrestrial gastropods?

Phylum Annelida (sandworms, earthworms, leeches)
• Segmented worms
• True coelom
• Closed circulatory system
• Complete digestive tract

Class Polychaeta
• Many chaite
• Parapodia
• Well developed head
• No clitellum
• Mostly marine

Exercise 10A: Polychaete (Nereis) Anatomy
Nereis: preserved specimen (Fig. 10.1)
Identify the following structures:
• Head • Tentacles • Parapodia • Setae

Nereis: cross-section slide (*see figure below*) **Identify** the following structures:
• Dorsal blood vessel • Coelom • Intestine •



Review Questions
All questions p. 122

Exercise 10B: Oligochaete (Lumbricus) Anatomy
Earthworm Dissection
(see instructions: pg. 123-129)

Class Clitellata Subclass Oligochaeta
- Clitellum present
- Few setae
- No parapodia
- Mostly terrestrial and freshwater

Lumbricus: dissection (Figs. 10.3 & 10.4)
Identify the following structures:
- Mouth
- Clitellum
- Pharynx
- Esophagus
- Crop
- Gizzard
- Intestine
- Hearts
- Seminal vesicles
- Nephridia
- Septa

Lumbricus: cross-section slide (Fig. 10.5)
Identify the following structures:
- Dorsal blood vessel
- Intestine
- Coelom
- Ventral nerve cord
- Epidermis
- Circular muscles
- Longitudinal muscles
- Ventral blood vessel

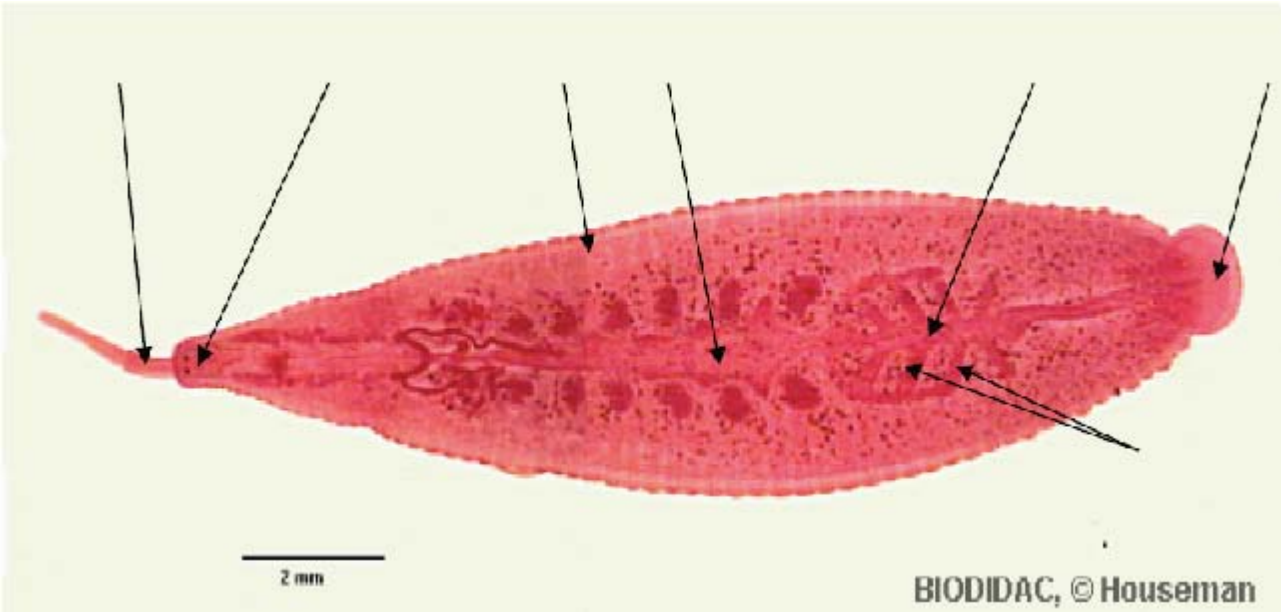
Review Questions
All Questions p. 123-128

Class Clitellata Subclass Hirudinea
- Many annuli
- Clitellum present
- No setae
- No parapodia
- Anterior and posterior suckers

Exercise 10C: Hirudinea Anatomy and Locomotion

Leech: preserved specimen (Figs. 10.6 & 10.7)
Identify the following structures:
- Anterior sucker
- Posterior sucker
- Segments

Leech: whole mount slide (Fig. 10.7)
Identify the following structures and label the image below:
- Anterior sucker
- Posterior sucker
- Intestine
- Crop
- Coelom
- Intestinal ceca
- Proboscis



What is the function of the large crop?

Review Questions
All questions p. 131

** Read pages 135-140; 141; 153; 155 in your lab manual before coming to lab next week.*