

ANIMAL BIOLOGY LABORATORY
Lab 7: Phylum Arthropoda (Kingdom Animalia)

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

Objectives:

- Recognize the basic structure and organization of the arthropod subphyla.
- Recognize the basic structure and organization of crayfish.
- Recognize the basic structure and organization of grasshoppers.
- Compare and contrast the basic structure and organization of crayfish and grasshoppers.

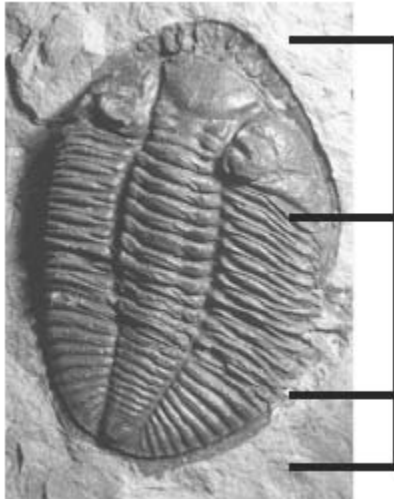
Phylum Arthropoda

Subphylum Trilobitomorpha

Identify the three body regions:

- Cephalon
- Thorax
- Pygidium

Recall that trilobites are extinct and only known from fossils



Subphylum Chelicerata (horseshoe crabs, scorpions, spiders, & mites)

Lab Manual: pp. 135-140

Exercise 11: Class Merostomata (horseshoe crabs; Fig. 11.1)

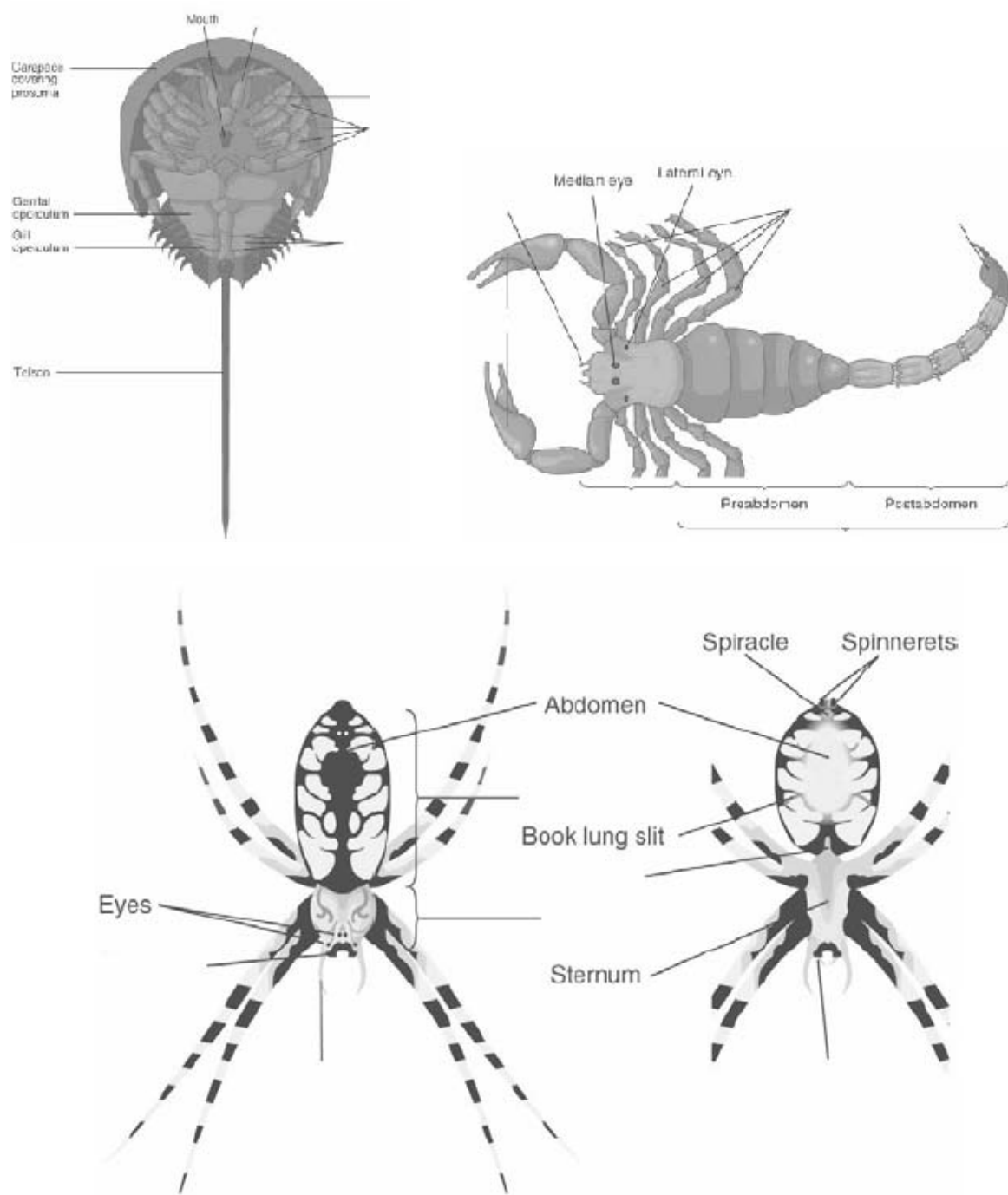
Exercise 11: Class Arachnida (spiders, scorpions, mites; Figs. 11.3-11.4)

Identify two body tagmata:

- Prosoma
- Opisthosoma

Identify the following structures and label on the image below:

- Chelicerae
- Pedipalps
- Telson (horseshoe crab, scorpion)
- Four pairs of walking legs
- Book gills (horseshoe crab)
- Pedicel (spider)



What modifications of horseshoe crabs, scorpions and spiders reflect their different lifestyles?

Review Questions
 All questions pp. 139-149

Exercise 12: Crayfish Anatomy

Crayfish dissection

(see instructions Lab Manual pp. 141-148; Figs. 12.1, 12.4)

Subphylum Crustacea (crayfish, shrimp, lobsters, crabs)

Identify the following body regions:

- Cephalothorax
- Abdomen

Identify the following external structures:

- Chelipeds
- Antennae
- Mandibles
- Periopods
- Antennules
- Mouth
- Pleopods
- Compound eyes
- Anus
- Uropod
- Rostrum
- Telson
- Maxillipeds

Identify the following internal structures:

- Stomach
- Intestine
- Antennal glands
- Digestive glands
- Heart
- Ventral nerve cord

Review Questions

All questions pp. 142-148

Exercise 13A: Subphylum Myriapoda (millipedes, centipedes)

Lab Manual: pp. 153-155 (Figs. 13.2)

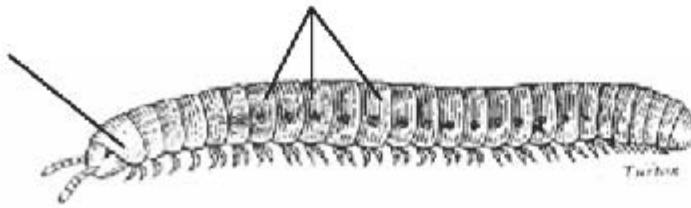
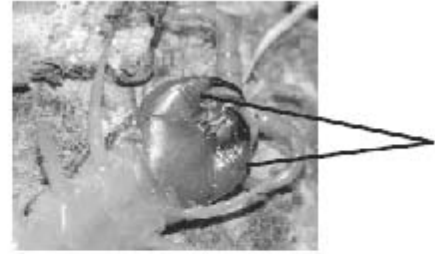
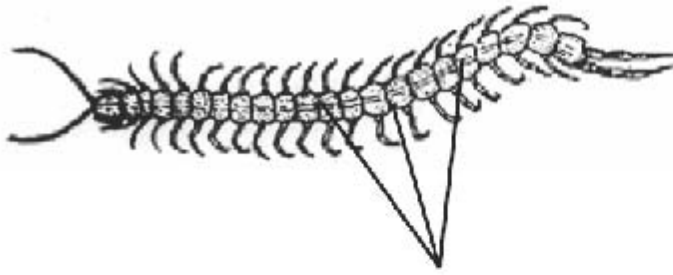
Identify the following structures:

- Collum
- Poison claws
- Diplosegments
- Unfused segments

How do millipedes and centipedes differ in feeding, movement, and body structure?

Review Questions

All questions pp. 153-154



Exercise 13B: Grasshopper Anatomy

Grasshopper dissection

(see instructions on pages 155-157; Figs. 13.3, 13.4)

Subphylum Hexapoda

Identify the following body regions:

- Head
- Thorax
- Abdomen

Identify the following external structures:

- Spiracles
- Ocelli
- Antennae
- Wings
- Compound eyes
- Mouthparts

Identify the following internal structures: (use Fig. 13.9 in Lab Manual to help you)

- Crop
- Anus
- Ovipositor (female)
- Gastric ceca
- Testes (male)
- Malpighian tubules
- Intestine
- Ovaries (female)

Review Questions

All questions pp. 156-157

**Read pages 172-173, 187 in your lab manual before coming to lab next week.*