

ECDYSOZOA II: THE PANARTHROPODS

1. Find the culture of living tardigrades. Describe their movement and appearance. Are you surprised to learn that they are called "water bears"?

2. Carefully examine a preserved demonstration of *Peripatus*. How is this animal like an annelid? How is it like an arthropod?

3. Trilobites represent a very successful group of animals that died out by the end of the Paleozoic Era.. What common features can you discern from among the demonstration fossils?

4. *Limulus*, the horseshoe crab, resembles the trilobites. Find the major body regions. On a preserved animal find: [book gills](#), [chelicerae](#), compound and simple eyes, and the caudal spine or [telson](#).

- 5.a. Examine the preserved scorpions. How many legs do they have?

- 5.b. Describe the sting.

- 5.c. How is a scorpion like *Limulus*?

- 6.a. Similarly, look at preserved spiders. Use the dissecting microscope and find their chelicerae and fangs.

- 6.b. How many eyes do they have? Are they all the same?
- 7.a. Find the culture of *Triops* and *Eubbranchipus*. For both taxa describe the appearance and methods of swimming.
- 7.b. What structures do they use for locomotion?
- 7.c. *Artemia* (brine shrimp) is a common hypersaline crustacean. Note the eggs and developing larval stages. Describe the [nauplii](#) swimming in the medium. Adult brine shrimp resemble *Eubbranchipus*.
8. Find a variety of living and preserved crustaceans. Be able to identify the [cephalothorax](#), abdomen, antennae, gills, eyes, and legs in the following:
- *Daphnia*
 - *Cyclops*
 - Ostracods
 - Amphipods
 - Isopods
 - Crab (particularly the slide of a larval crab)
 - Lobster
9. Now look at preserved barnacles. How have they become modified from the basic crustacean plan?
- 10.a. Describe the differences between preserved millipedes and centipedes.
- 10.b. Now watch a living millipede walk. How does it superficially resemble an earthworm?

11.a. Insects comprise one of the largest groups of living things. Look at the array of insects out on demonstration. Find the legs, head, thorax, [spiracles](#), and abdomen in all mature insects provided.

11.b. Which of them have wings?

11.c. Which of them have complete metamorphosis?

12. Mealworms are larval beetles. Find and describe all stages in the complete metamorphosis of that beetle.

13.a. Ants and termites superficially resemble each other but are not closely related in the insect clade. How are they similar?

13.b. Examine their social interactions. How do they appear to "greet" each other?