

Laboratory 21

Introduction to Invertebrates

Student Tip Sheet

The following 3 labs are an introduction to the study of vertebrate and invertebrates organisms. These, of course, are the animals with and without backbones. They are found in fresh and salt water, on the land, and below. They provide much information for study of their classification, body styles, means of reproduction, and position in our ecosystem. There are varied means of studying these organisms. You as students will be asked to perform initial activities such as simple viewing of drawings and pictures, to more complex studies or dissection of specimens, advancing to observations or collections of living organisms. Sometimes a computer CD-ROM or video simulation can assist the task. These aids should be used as ancillary materials and not as substitutions for the real thing. Your instructor will be your guide as to how you progress through these chapters.

Tips on the study of sponges, and roundworms and flatworms

- Now is another time that your file of classification cards will be helpful. Add additional cards with correct taxonomy, specific characteristics, names of examples, and perhaps memory cues. We all use tricks to assist in the study of detailed taxa. Sometimes these seem silly, but whatever works as a study aid is worthwhile.
- On your next trip to the beach, look around at the souvenir shops for various specimens. Many times there are representative samples of the different sponge body types available for observation or for sale.
- Try to view any living members of the phylum Cnidaria. Local pet shops or aquarium stores sometimes have saltwater specimens on display in large saltwater tanks. These truly are the flowers of the ocean and neither pictures nor digitized representations can really display all of their beauty.

Dissection Preparation and Tips

The study of invertebrates has continued up the phylogenetic tree to the point of examining larger animals rather than smaller specimens that can be best studied as whole objects. Roundworms are a diverse group of specimens with which you may be familiar because of their sometimes parasitic nature or from an infestation in your home flower or vegetable garden of the common garden roundworm, the nematode. Both can be unpleasant experiences. Preserved specimens however are not dangerous or harmful. Most commercially available specimens are now preserved in noncarcinogenic fluid with minimum smell. Preserved *Ascaris* sp. is a parasitic roundworm that has large and easily dissectable body parts.

The following tips may be helpful for this and future dissections:

1. Dress appropriately. Casual, washable clothes are appropriate. Splashes of preservative are not uncommon.
2. You may wish to wear protective gloves and eyewear. If you have long exposure to preservative fluid, gloves may be necessary, but for brief periods, gloves may be an unnecessary barrier. Eyewear such as plastic goggles or regular eyeglasses will protect your eyes from splashes of liquid preservative.

3. Your class will probably be divided into groups for dissection. Teamwork can share responsibilities and conserve resources, but this should not mean that one person does the work while the others watch. Everyone should have a turn using the dissecting instruments, and therefore each student will certainly be responsible for knowing the identification and/or function of the required structures.
4. You will be given a dissecting pan with wax or soft plastic filler and various appropriate tools. You may be surprised that pins, a sharp or blunt probe, and a single-edge razor blade will be your primary instruments. Scissors and scalpels can do major damage to delicate structures that are out of sight. Use these tools sparingly.
5. Proper dissection requires a delicate hand and careful attention to diagrams and instructions. Think through each step carefully as you progress through the process.
6. Pin or label your required structures so that everyone in your group will have a chance to record all of the information.
7. Clean up your materials as your teacher instructs. Dispose of your specimens properly in a trash bag or label and reseal the specimens in plastic for continued use at another time. Be kind to the trash collectors and wrap the dissected specimens completely. Wash, dry, and replace your instruments carefully so that they will not rust and will be ready for your next dissection.