

BIO 353 - Entomology Lab
Notes on Killing, Pinning, Pointing, and Spreading Insects

Killing: Ethyl Acetate

Insects that will be spread, pinned or pointed must be killed first with ethyl acetate. You can also kill by freezing, but it takes longer and may not always work. Plus, it is awfully difficult to carry a freezer around in the field! See your book for a more detailed description of the following. This should just serve as a helpful reminder.

Remove and pin insects as soon as possible to avoid brittleness and discoloration.

Pinning:

1. Pins should be inserted into the body just to the right of the insect's midline, use appropriate pin size.
2. Bees, wasps, flies, and butterflies should all be pinned between the bases of the forewings.
3. Bugs (Hemiptera) should be pinned through the scutellum.
4. Grasshoppers (Orthoptera) should be pinned through the pronotum.
5. Beetles (Coleoptera) should be pinned through the right elytron, halfway between the two ends of the body.

Pointing

All small, hard bodied insects should be pointed. Glue the point on the right side with the head pointing forward.

Beetles (Coleoptera) should be pointed so that the ventral side of the body is visible.

Flies, wasps and other insects in which wings are extended above the body should be mounted on their right side, preferably with wings oriented vertically.

Spreading

Warning: Insects Must Be Relaxed Before Spreading

Butterflies and moths should be spread so that the rear margins of the forewings are at right angles to the body. The hind wings should then be far enough forward so that there is no large gap between the front and hind wings. No wrinkles in the hindwings should exist. Follow directions in your text. An example will be shown in class.

Grasshoppers are often mounted with the right wing spread. However, it is not required that you spread grasshoppers in your collection for this course.

Dragonflies and damselflies can be spread. However, for purposes of this course, it is preferred that you store them in glassine envelopes with their wings extended behind their back.

Killing and Preservation in Ethyl Alcohol:

All small soft bodied adults, nymphs, immature stages and non-insecta must be killed and preserved in 70% ethanol. In general, all ants are placed in ethanol as well.

Large larvae (> 2cm) or other very soft-bodied arthropods should be boiled first and fixed.

Each specimen is placed in a vial and labeled as required in the handout. Only place one species/location/date in each vial. DO NOT mix different species or even place individuals of the same species together that were collected on different days or in different locations.

You should remove the ethanol used for killing later and add fresh solution since the insect will exude solutions that dilute and discolor the preservative. See the attached sheet for a list of which organisms should be preserved in ethanol.

Slides

Small arthropods, less than 2 mm should be mounted on slides. They will first be killed in 70% EtOH, but must be "dried" before mounting. Drying simply removes all water and requires passing a specimen through an alcohol series from 70% to 95% EtOH before mounting. See the additional slide preparation handout.