

## INSECT COLLECTION REQUIREMENTS

### SPECIMEN PRESERVATION AND MOUNTING

Different insects require certain preservation and/or pinning methods. Consult your textbook and other entomology texts in the lab (e.g. *How to Know the Insects*) for additional guidelines on mounting and preserving your specimens.

### SPECIMEN IDENTIFICATION

All specimens (immature and adults) must be identified to order. Adults of most orders must also be identified to the family level. See the grayed boxes on the Collection Grade Sheet for orders that do not need to be identified to family. Use your textbook and *How to Know the Insects* to identify specimens to order and family; incorporate taxonomic revisions where noted.



**COLLECTION COMPOSITION:** 70 specimens total  
no more than one specimen of each morphospecies may be included

**Adults - Pinned:** a total of 55 pinned specimens from at least 9 orders, including:  
Ephemeroptera, Odonata, Plecoptera, Orthoptera, Dermaptera, Blattodea, Mantodea,  
Phasmatodea, Hemiptera, Neuroptera, Megaloptera, Mecoptera, Coleoptera, Lepidoptera,  
Trichoptera, Hymenoptera, Diptera

No family may be represented by more than two morphospecies

Each of the following dry mount techniques must be represented in your collection:

- direct pinning (including at least three wing-spread specimens)
- double mount minuten pinning – at least 2 specimens of appropriate type/size
- point mount – at least 2 specimens of appropriate type/size

**Adults - Slide Mounted or Alcohol:** A total of 5 adult specimens from a minimum of 4 orders are required in slide mounts or alcohol.

***Slide mounts:*** Small, flat insects (Collembola, Thysanoptera, Phthiraptera, Siphonaptera and small soft-bodied “Homoptera” - e.g. small scales, mealybugs and aphids) should be **slide mounted**. Mount three individuals (if available) of a given species on a single slide to ensure that identifying characters are visible.

***Alcohol vials:*** Adults of larger soft-bodied insects in the orders Thysanura, Psocoptera, Isoptera and large soft-bodied “Homoptera” should be preserved in vials of **alcohol** instead of being pinned.

**Immatures - Alcohol:** a total of 10 specimens (nymphs, naiads, or larvae) representing 7 orders from the following list must be preserved in vials with **alcohol**:

Ephemeroptera, Odonata, Plecoptera, Neuroptera, Megaloptera, Coleoptera, Lepidoptera,  
Trichoptera, Hymenoptera, Diptera

## LABELING AND PRESENTATION

Each **pinned specimen** must bear two labels. These are oriented parallel to the long axis of the insect, or, if the specimen is mounted on a point, the labels are positioned parallel to the point. Word document templates for these labels are available on Moodle. Modify as needed.

The upper label gives locality of collection (county and state – more precise location optional), date of collection, and collector's name. Note the date format: day first, then month, and year in full (e.g. 2004, not 04).

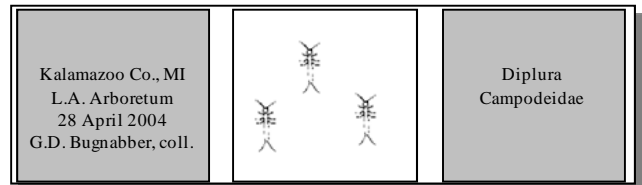
County, State  
Collection location (name of town, park, etc)  
Date (day month year)  
Collector's name, "coll."

Kalamazoo Co., MI  
Lillian Anderson Arboretum  
28 April 2004  
G.D. Bugnabber, coll.

The lower label gives the identity of the insect, first to order, then to family.

Hymenoptera  
Formicidae

**Slides** must bear two labels (peel and stick labels available). The left hand label will contain the county/state, locality, date, and collector data. The right hand label will give the order and family identification.



**Alcohol-preserved specimens** should have the county/state, locality, date, and collector printed lengthwise on the label, and the order name should appear at the top of this label. Place the label inside the vial with the specimen (use your alcohol-proof marker).

Plecoptera

Kalamazoo Co., MI  
Kalamazoo Nature Center  
28 April 2004  
G.D. Bugnabber, coll.

## PINNED ARRANGEMENT

Wait to arrange your collection box until the very end. Place pinned specimens in columns, starting at the top (back) left corner of the box. Arrange specimens in approximate phylogenetic order (e.g. similar to the order presented on your Collection Grade Sheet with modifications within hemi- or holometabolous groups for best fit and appearance), and group specimens by family (e.g. place multiple species within the same family next to one another). Maintain a half-inch margin from the sides of the box and place specimens in a way that avoids overlapping labels and insect parts.

## GRADING

The insect collection you submit comprises 30% of your course grade. Collections will be assessed according to the Collection Grade Sheet provided. Note that this assessment takes into account identification as well as overall composition, arrangement, mounting techniques, labeling, and general neatness and care. Use the Grade Sheet as a checklist when assembling your collection, and to help see the relative importance of each element in the assessment of the collection grade. Additional copies of the form can be downloaded from Moodle.

Templates for printed labels for pinned specimens can be downloaded from Moodle.

**Immatures in alcohol are due Monday of Week 8.** The **adult collection** (pinned, slide mounted, alcohol-preserved) is **due Friday of Week 10** (by 4 PM).