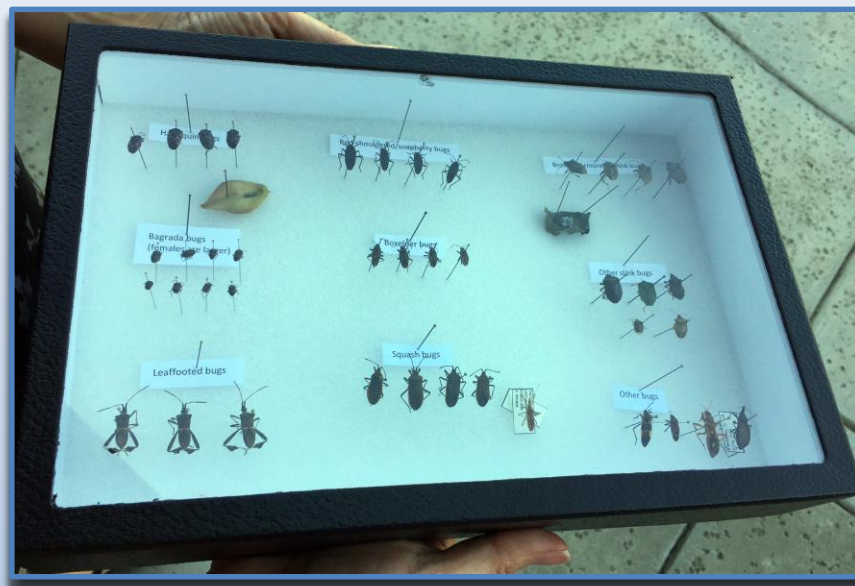


How to Make an Insect Collection



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Housekeeping

- This will be a fast-paced, one hour class
- Not enough time to review all slides in detail
- Please hold questions until after the presentation
- The main goal is to show you how to pin insects!



About Insects

- Most abundant animals on earth!
 - 3 body parts: head, thorax, abdomen
 - Arthropods/exoskeleton
 - 3 pairs jointed appendages
- Classification
 - Kingdom, Phylum, Class, Order, Family, Genus, Species (common name)
 - Example: - *Mantis religiosa* (Order-Mantodea)
- Non-insects sometimes lumped into same category
 - Spiders, centipedes, mites, snails, pillbugs



Insect Order Examples

- Blattodea: Cockroaches & Termites
- Coleoptera: Beetles
- Dermaptera: Earwigs
- Diptera: Flies and Mosquitoes
- Hemiptera: Aphids, Cicadas, Hoppers, True Bugs
- Hymenoptera: Bees and Wasps

Syrphid fly



Soldier beetle



Insect Order Examples Continued

- Lepidoptera: Butterflies and Moths
- Mantodea: Mantids
- Neuroptera: Antlions and Lacewings
- Odonata: Dragonflies and Damselflies
- Orthoptera: Grasshoppers, Crickets, Katydid
- Siphonoptera: Fleas
- Thysanoptera: Thrips

Sevenspotted
lady beetle



Why Have an Insect Collection?

- Show the public: common pests, natural enemies, and invasive species
- Compare “look-alike” bugs
- “Good” Bugs vs “Bad” Bugs
- Insects in person are smaller than in photos!

Bordered plant bug



Red-shouldered bug



Squash bug

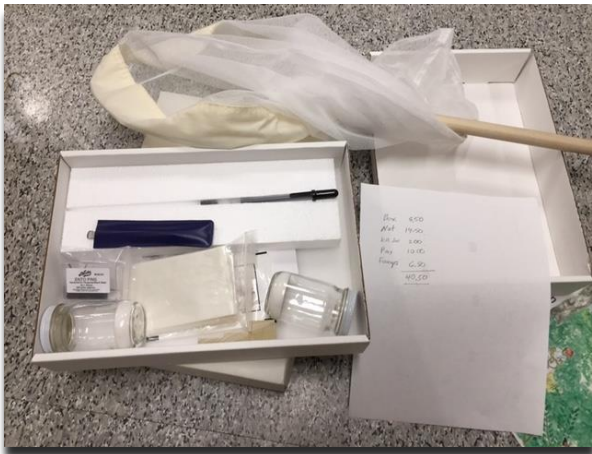






Recommended Tools

- Free “starter kit” for your County!
 - Net, killing jar, forceps, pinning block, spreading board, pins, labels, storage box
 - Instruction Manual!
- Purchase additional display and storage boxes
 - Glass and plexiglass are the best
 - Try to limit insect exposure to elements



Collecting Methods

- Sweep or butterfly net
- Attract using black light and sheet at night
- Small insects – tap plant onto white sheet of paper
- Any kind of container for catching/collection insects
 - Plastic bags aren't best for future preservation
 - Remember to put a tag in the collection container! Include the date, who collected it and location.



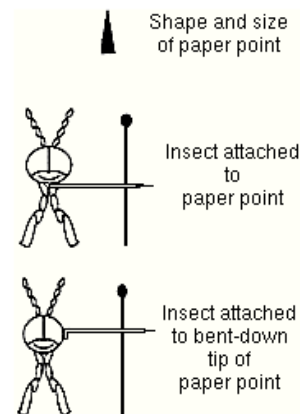
Killing Methods

- Kill jar
 - A fumigation method that uses ethyl acetate or acetone soaked into plaster
 - Do more research on insect killing methods
- Freezer
 - Put specimen in sealed container in freezer
 - Note: larger insects and bed bugs can several days

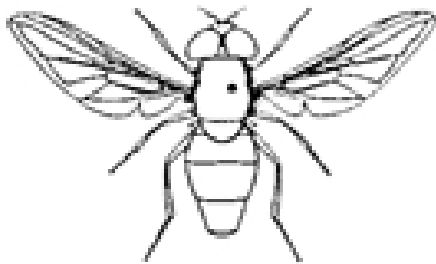


Mounting and Preservation for Adult Insects - Pinning

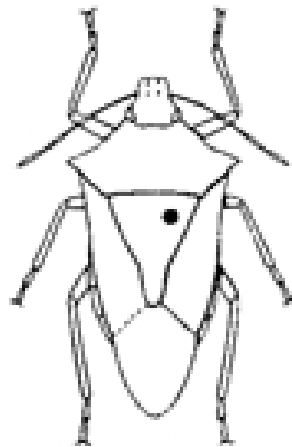
- Immature and larval stages do not pin well
- Various pin sizes available; get a variety
- Use points attached to pin for small insects
 - Glue insect onto point
- Diagram of mounting positions handout
- Spreading board for Lepidoptera and large winged insects



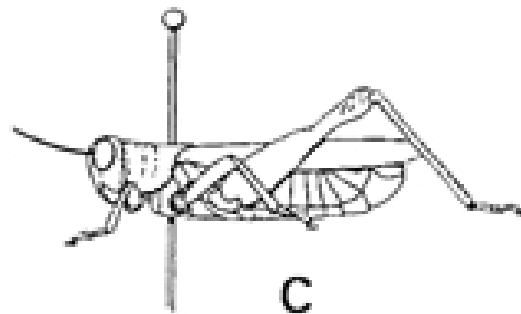
Pinning Diagram



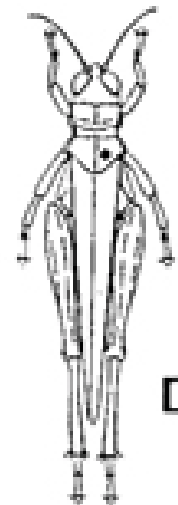
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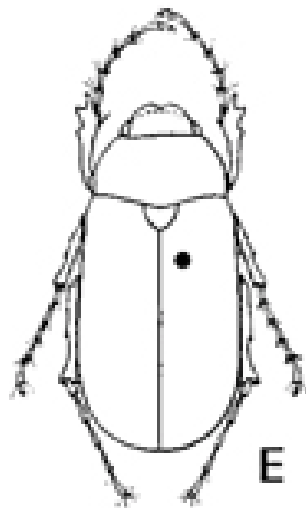
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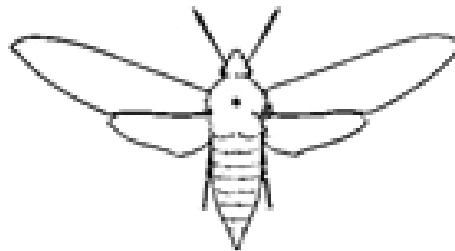
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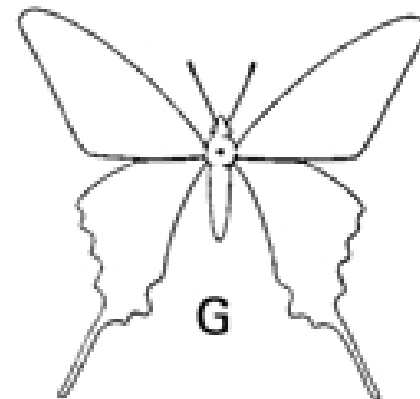
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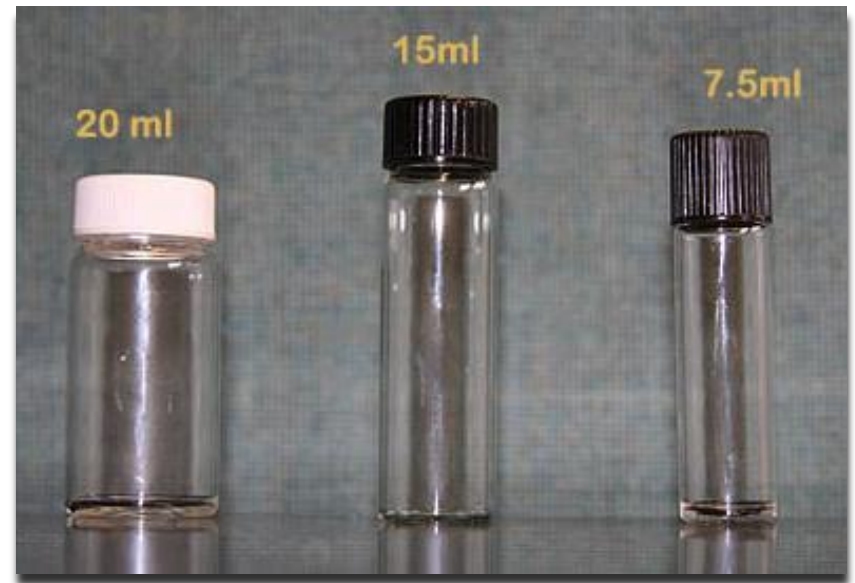
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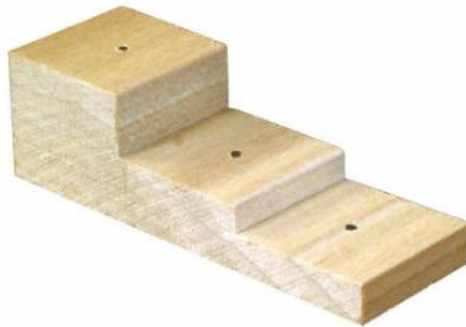
Preservation for Soft Bodied Insects and Arthropods

- For soft bodied insects and arthropods use 70% rubbing alcohol
- Organisms may lose their color, especially larvae



Proper Labeling

- Top label: location, date, collector's name (A. Schellman)
- 2nd label: habitat and method of collection
- 3rd label: species if known (optional)
- -should fit your needs, i.e. GPS information, Order



Pinning block



Storage

- Fumigant protection from pests like carpet beetles (**use with caution**)
 - Naphthalene (moth balls)
 - Paradichlorobenzene strips
 - Dichlorovos strips
- Check monthly for damage, replace specimens as needed
- Store in a cool, dry place out of sunlight. Store and transport flat.



Knowledge Resources

- *How to Know the Insects* by R. G. Bland and H.E. Jaques (3rd edition)
- How to Start a Proper Insect Collection - Bugguide.net
<http://bugguide.net/node/view/36900>
- UCD Entomology & Nematology - How to Make an Insect Collection - videos and information
http://entomology.ucdavis.edu/News/howtomakeinsectcollection_647/
- Collecting and Pinning Insects - Minnesota
<https://www.extension.umn.edu/youth/mn4-H/projects/environment/entomology/collecting-and-preserving-insects/>
- Insects Pinning Videos - Purdue
https://extension.entm.purdue.edu/401Book/default.php?page=pinning_videos

Supply Resources

- Bioquip <https://www.bioquip.com/>
- Nasco <https://www.enasco.com/>
- Carolina Biological Supply
<http://www.carolina.com>
- Ward's Science <https://www.wardsci.com/store/>
- Other sources
 - Local Universities, hobby stores, scientific supply stores

Thank You -
Get Ready to Pin Some Insects!