

Salahaddin University - Erbil
 Collage of Agricultural Engineering sciences
 plant protection Department



زانكۆی سه لاهه دین - هه ولییه
 Salahaddin University-Erbil

3rd Lab

Collection of insects

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Horticulture insect 4th stage

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Collection of insects

Why we collect insects?

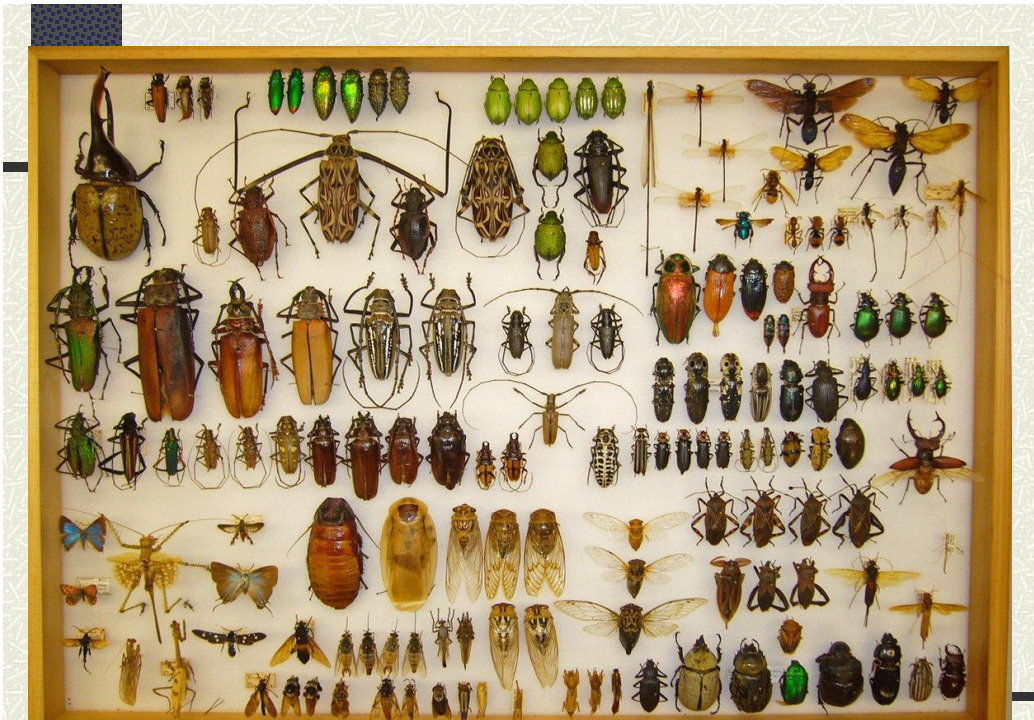
1. Identification of insects is a specialty within the study of insects based on studies by taxonomists that describe species (e.g., orders, family, genera, etc.). Through collection and preservation efforts, new species are found and described.

2. As a hobby and for the enjoyment.

3- To see where different insects are found

4. During the exercise of collecting insects, collectors learn about relationships between insects and their environment, the importance of habitat, and the relationships between species groups such as hosts, predators and parasites, i.e.

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Where We can survey insects from:

- A. Air (Aerial survey):** e.g. Sweep nets and pheromone traps.
- B. Vegetative part of plants (Foliage survey):** e.g. direct observation, sweep net and shake cloth.
- C. Soil (Soil survey):** e.g. bait traps, Aspirator and sifting.
- D. Water (aquatic survey):** e.g. dip net and black mesh aquatic insect net.

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Equipment and Collecting Methods

- **Equipment or appropriate tool**
- Forceps, Vials containing alcohol
- Killing jars
- aspirators.
- Notebook
- hand lens
- A small, fine brush for picking up minute specimens.



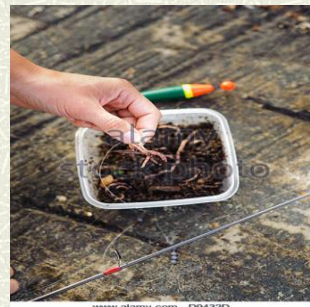
.Small boxes for storing specimens after their removal from killing jars.

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Method or appropriate way

1-picking up insects by hand

The insects are picked up by hand and placed in a container. This method is used for collecting large insects such as beetles, bugs and grasshoppers.



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2-Collecting Nets

Collecting nets come in tow basic forms:

A.Aerial nets is designed especially for collecting butterflies and other flying insects

The general insect net is a light cloth bag hung from a loop that is attached to a handle.



B.Aquatic nets

are used for gathering insects from water.



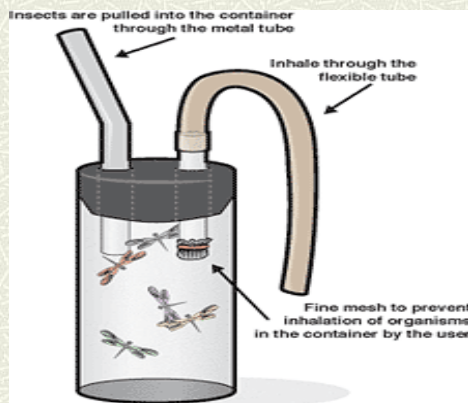
C. Sweeping net:- Sweeping is a suitable method for collecting many insects. The sweep net is used to sweep through herbage, and after a few strokes grasshoppers, bugs and other insects are collected in the net.



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3- Aspirators

The aspirator is an effective device for collecting small insects and mites



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4. Traps

a) light traps

With light traps, advantage is taken of the attraction of many insects to a light source which increasingly active at night



b) **Sticky traps:** These are useful for collecting insects which are active during both the day and night. sticky trap consists of a cylinder covered with a sticky material. This is set up on a twig at crop level or at any suitable height. The insects trapped can then be removed and preserved.



C. Pheromone traps:

A pheromone trap is a type of insect trap that uses pheromones to trap insects. mating pheromones and aggregating pheromones are the most common types used.

Pheromone traps are very sensitive, meaning they attract insects present at very low densities. They can be used for control, and monitor



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5- **Beating:** This method is suitable for collecting crawling insects and those which rest on branches.

beating is held under a branch which is then hit sharply with a stick. When a beating tray is not available, an inverted umbrella may be used.



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6.Sieve or sifter

Many insects spend all or part of their lives in ground litter debris and leaf mold. These cannot be captured by ordinary collecting methods because they are too active to be caught by hand or they death when they disturbed, a sifter is used to collect them.



Preservation of insects

killing insect

After collecting living insects, put in jars.

These bottles have different sizes and tight lid, chemicals are added to kill insects.

The most important chemicals used to kill insects

Ciano sodium

or potassium

chloroform and ethyl acetate.



2.Refrigeration and Freezing.

Medium to large specimens may be left in tightly closed bottles for several days in a refrigerator and still remain in good condition for pinning as will smaller specimens if left overnight.

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3.Preserving soft body insect

soft-bodied insects should be preserved in plastic or glass vials with alcohol (70% ethanol alcohol

These insects include larvae

scale insects,

termites, aphids,

thrips, silverfish,



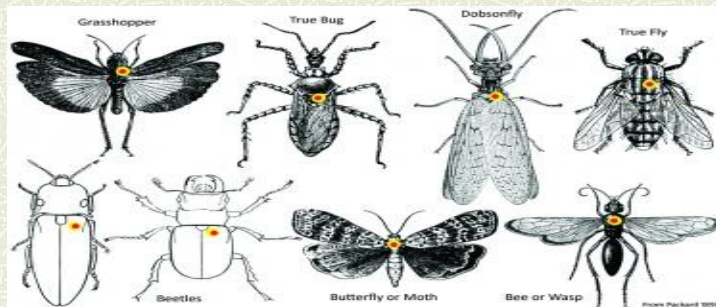
Spreading Board

Spreading Board. All butterflies and moths, and sometimes other insects, are mounted with their wings spread. A spreading board is therefore an important piece of equipment for the insect collector.



Pining of insects:-

Most insects are pinned through the mesothorax just to the right of the midline.



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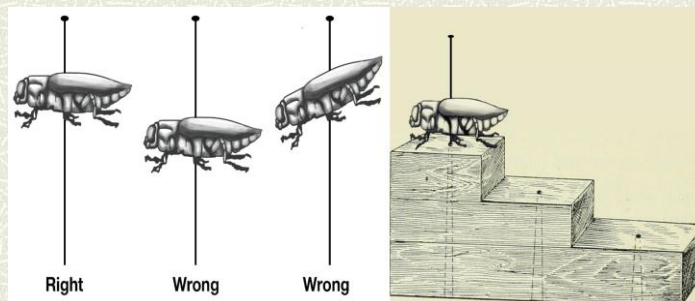
Pinning block

Step one: Place the pin in the insect thorax in the right position on the top step of the pinning block.

Push the pin gently as far as it will go.

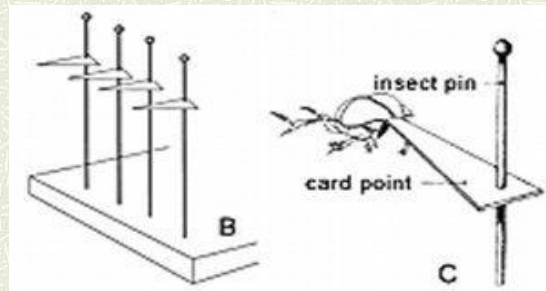
Step two: Position the collection label on the middle step.

Step three:
Position
the insect
identification
label using the
lowest step.

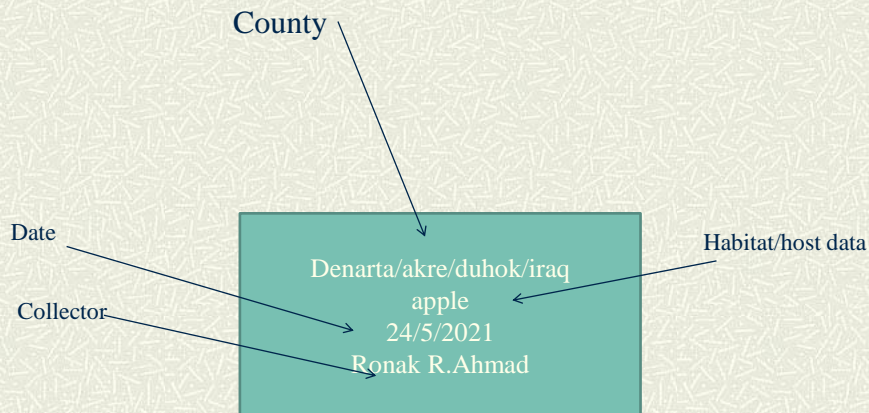


Pinning Small Insects :-

These should be attached on card points.
 Card points are slender triangles of paper.
 With the help of glue attach the insect.
 Soft body insects
 silverfish can not be
 pinned.



Data Label



Housing Your Insect Collection



•Must have a tightly-fitting lid, keeping out pests that will destroy dry, brittle specimens



These are commercially available boxes. Box on right is for permanent museum display or storage

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