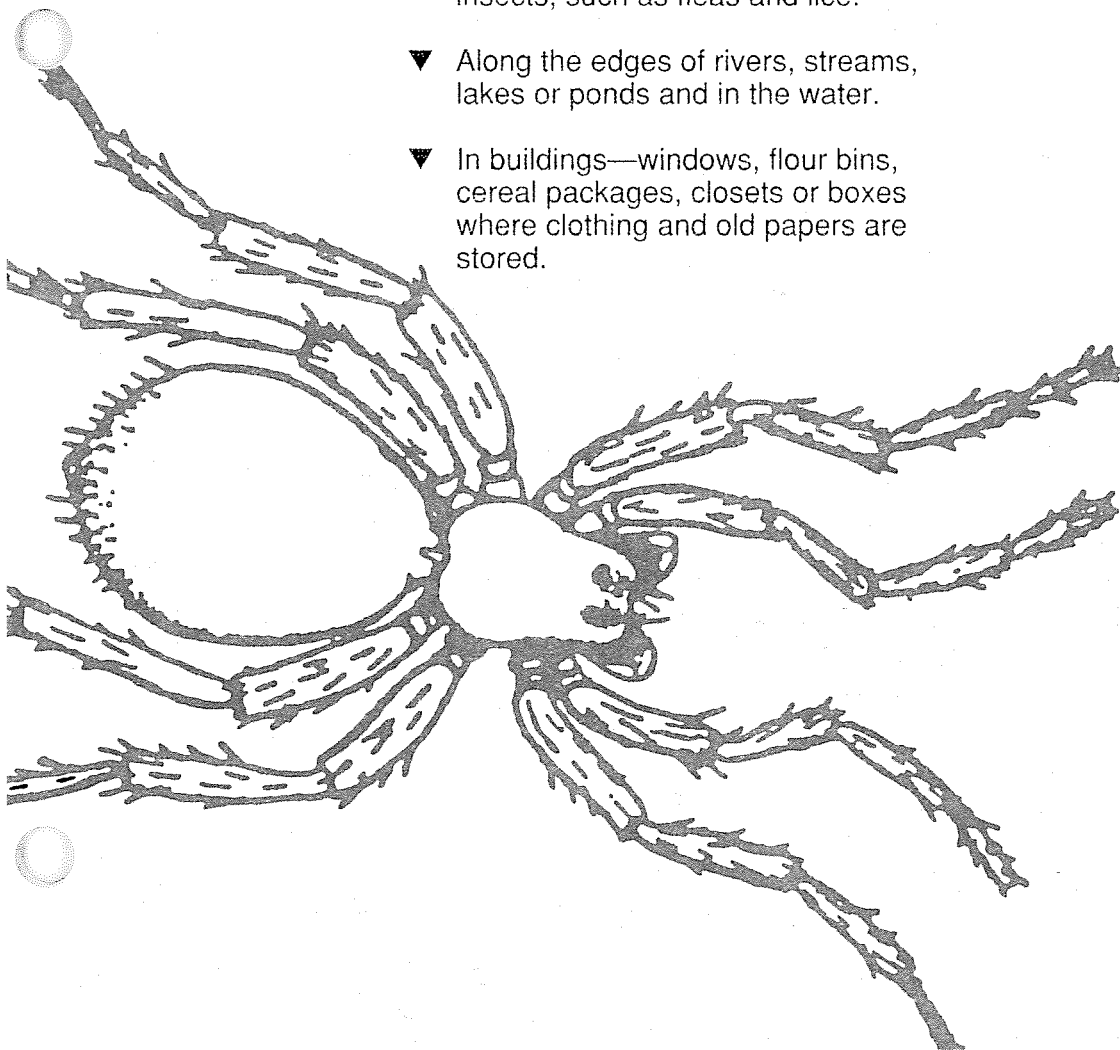
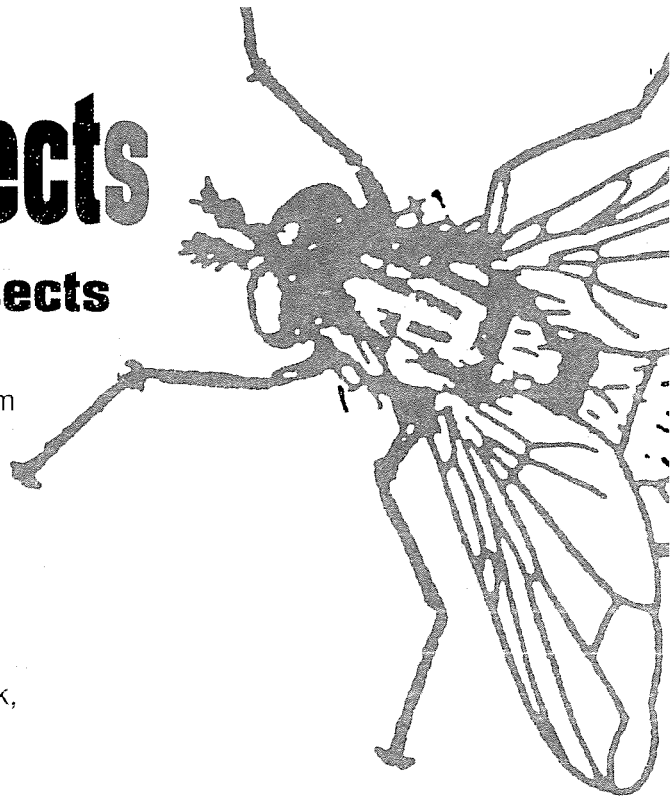


# Collecting Insects

## Where to Look For Insects

- ▼ In the air for flying insects on warm days from early spring to late fall.
- ▼ On a wide variety of vegetation (plants), both day and night.
- ▼ Around street lights, porch lights and study lamps.
- ▼ In woodpiles and under loose bark, especially in spring and early summer.
- ▼ In the soil and under rocks.
- ▼ On (or in) fresh or decaying fruit.
- ▼ On domestic animals for parasitic insects, such as fleas and lice.
- ▼ Along the edges of rivers, streams, lakes or ponds and in the water.
- ▼ In buildings—windows, flour bins, cereal packages, closets or boxes where clothing and old papers are stored.



## Make A Collecting Net

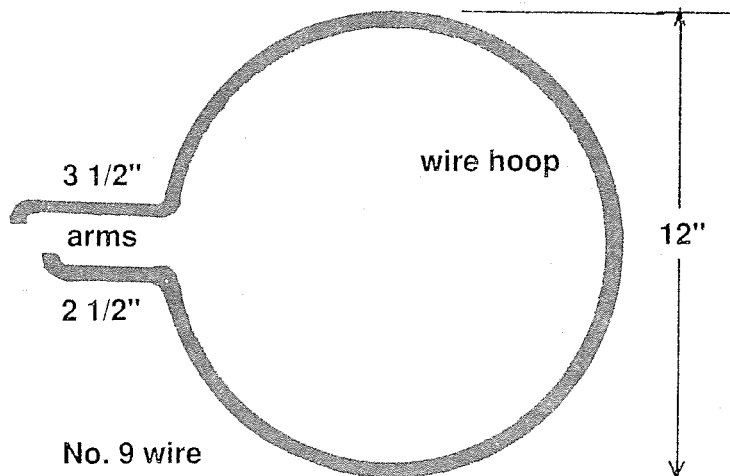
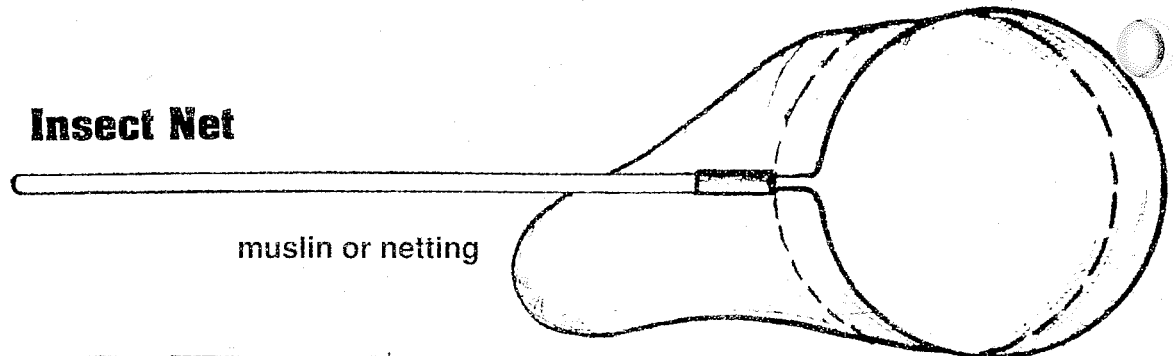
### You'll need:

- ▼ Small wood handle, 3 feet long (broom handle or dowel).
- ▼ About 5 feet of heavy wire (No. 9) for hoop.
- ▼ Piece of unbleached muslin or netting, 3 feet x 5 feet.
- ▼ Soft wire, heavy string or metal sleeve for net handle to hold hoop wire.
- ▼ Needle and heavy thread.

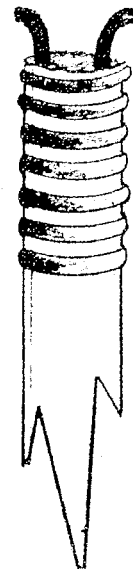
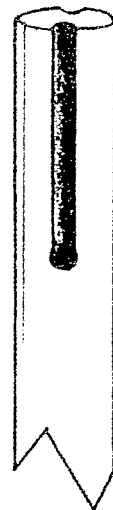
### What to do:

- ▼ Bend heavy wire into a circle (about 12 inches) to form a hoop. Bend arms 2 1/2 inches and 3 1/2 inches for fitting in net handle.
- ▼ Bore holes in the net handle for arm hooks. If you want a smooth fit, groove handle as shown.
- ▼ See "Net Bag Construction" for instructions to make a bag.
- ▼ Thread the wire hoop through the hem of the bag and insert wire arms into the handle. Slip the metal sleeve over the net handle to hold the wire arms in place. If preferred, the hoop arms may be attached to the net handle by wrapping with soft wire or heavy string.

### Insect Net

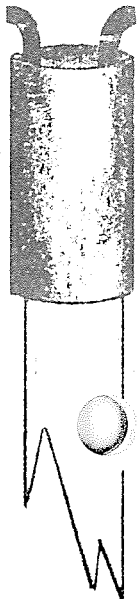


groove



wire or string

metal sleeve



# Net Bag Construction

To construct the net bag, lay a 20 inch x 30 inch piece of net material (muslin or netting) on another piece of same size (Figure A) and fold them making the folded material 10 inches by 30 inches (Figure B). Cut the material from the bottom folded corner diagonally up and across to a point 10 inches below the top unfolded corner (Figure C). The net bag after cutting will be in two, roughly triangular pieces (Figure D).

Stitch the two halves of the net together making the seam about 1/2-inch from the cut edge and leave 10 inches free on one side at the top where the net hoop will be inserted (Figure E). Turn the cut edges inside and stitch the seam down flat (flat felled seam).

To make a loop for the wire hoop, fold the top edge down five inches (Figure F). Then turn the folded edge down 2 1/2 inches and stitch hem (Figure G). If desirable to reinforce the hem of aerial nets made of netting, you can make only one fold and cover the fold with a strip of muslin 5 inches by 40 inches. Then fold again and stitch. The muslin will protect the netting around the wire hoop.

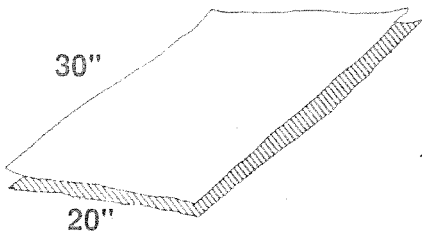


Figure A

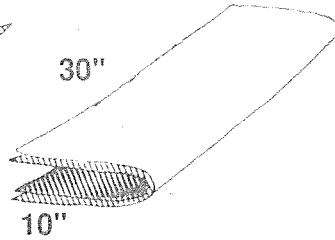


Figure B

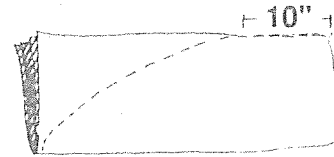


Figure C

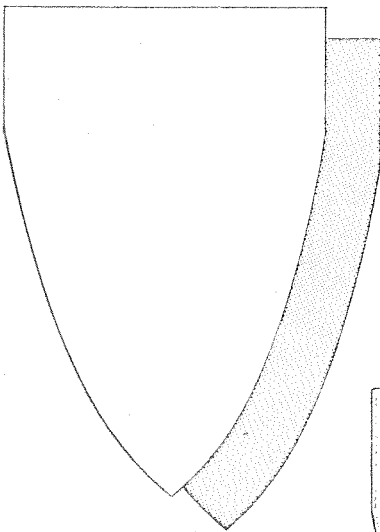


Figure D

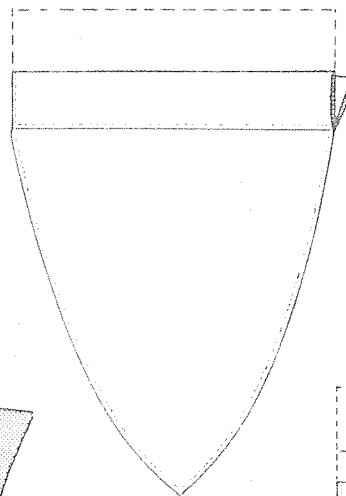


Figure F

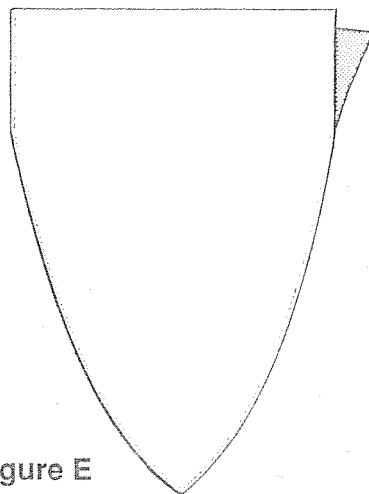


Figure E

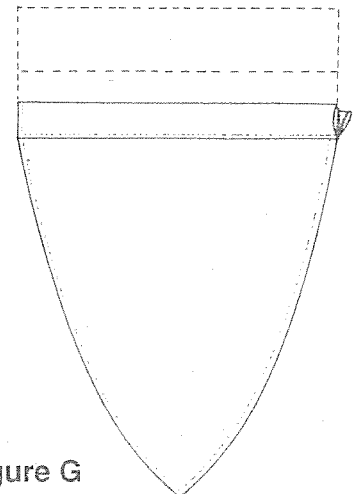


Figure G

# How To Collect Insects With A Net

A special technique should be followed in netting certain insects, especially stinging and "biting" insects like wasps, bees, hornets, assassin bugs and tiger beetles. Sweep the insect into the net and with a quick jerk force it to the bottom of the bag. Then grasp one hand around the bag just above the captured insect. Insert the end of the bag along with the captured insect into the killing jar as tightly as possible and hold it for 30 to 60 seconds until the insect becomes motionless. Remove the end of the net from the killing jar and put the stunned insect back in the killing jar. Always stand sideways to the wind while opening and handling your killing jar.

Collecting butterflies and moths, without damaging the specimen, also requires special care in handling the net. To prevent butterflies or moths from escaping after being netted, whip the net so the insect goes to the bottom of the bag. Quickly flip the bag bottom making it rest across the wire hoop. Then squeeze the thorax of the butterfly between the thumb and forefinger while it still is in the net. This will stun the insect and prevent it from beating the scales off its wings when it is dropped in the killing jar.

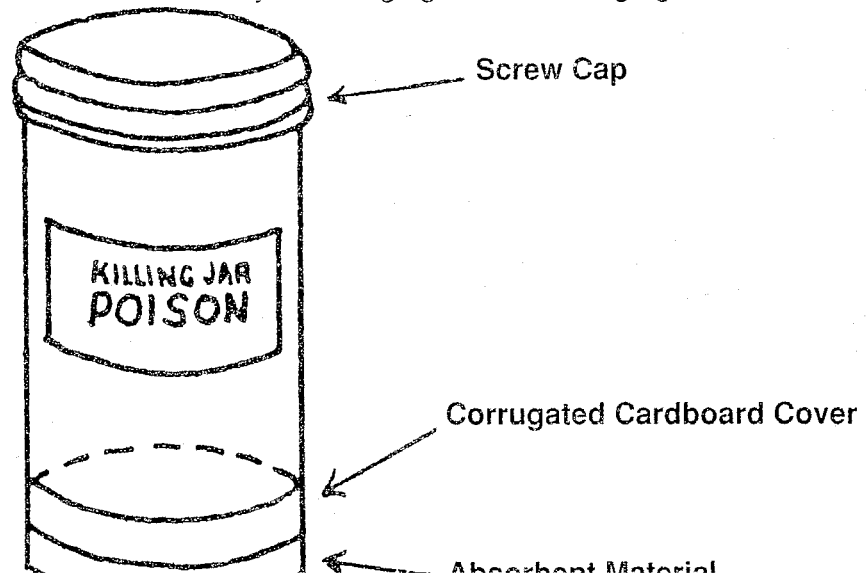
Many kinds of insects "play possum" and become inactive when disturbed. To catch these insects, hold your net under plants and shake the insects off into the net. Then transfer them into the killing jar.

## Something To Do

### Prepare An Insect Killing Jar

A killing jar is one of the most essential items. The size jar depends on the size and kind of insects collected. For butterflies and moths, a wide-mouth pint mayonnaise or pickle jar with a screw cap is satisfactory. A smaller wide-mouth jar can be used for collecting beetles, bugs and most small insects.

Place some chips of rubber in the bottom of the jar. Fill the jar to a depth of 3/4 to 1 inch with a piece of sponge, celotex, cotton or similar absorbent material to absorb the killing agent. Cover the material with a piece of corrugated cardboard which fits snugly against the inside walls of the jar. This will hold the absorbent material in place and prevent the insects from getting tangled or wet. It is now ready for charging with the killing agent.



Plaster of paris can also be used as an absorbent material. Mix eight heaping teaspoons of plaster of paris with five teaspoons of water in a mixing cup. This should make a paste about as thick as frosted malted milk drink. Stir until smooth. Pour or spoon it into a pint killing jar. Tap the jar against the ground so the plaster of paris makes a smooth surface. With the cap off the jar, let the plaster of paris set for one day. When it is thoroughly set, pour as much killing agent into the jar as will be absorbed by the plaster of paris. Pour out any excess liquid. As above, cover the material with a piece of corrugated cardboard which fits snugly against the inside walls of the jar. Cap the jar immediately.

## **Using Killing Agents**

When ready to collect, place a teaspoon of killing agent in the jar. The best and safest agent is either ethyl acetate (also called acetic ether) or fingernail polish remover. Ethyl acetate is sold at biological supply houses. It is safe to use, kills insects quickly and keeps the insects flexible until they are removed from the jar to be pinned. Carbon tetrachloride is not recommended, because it makes the insects dry and brittle and can be absorbed through the skin. Sodium cyanide should not be used because it is too dangerous.

Keep your supply of ethyl acetate in a dropper bottle. Then, the jar can be recharged as needed by adding a few drops to the absorbent material and waiting until it is soaked up. The killing agent evaporates very rapidly, so always keep the jar tightly covered except when placing insects inside. A crumpled piece of tissue paper or paper toweling in the jar provides something for the insects to crawl on until they die, instead of becoming tangled with each other.

As an alternative, many insects can be killed without the use of dangerous chemical killing agents. You may wish to kill some insects by placing them directly in a bottle filled with either 70 percent ethyl or 35 percent isopropyl (rubbing) alcohol. This works well for beetles, bugs, hoppers, most flies and many other insects. However, this should not be used for killing bees, butterflies and moths, because it will ruin the specimens. If it is all right with your parents, you may want to kill your insects by placing them in the freezer (for several hours to overnight, depending on the type of insect). Always place the insects in a closed container, as this prevents moisture from ruining the specimens when you take them out of the freezer. After the container and specimens reach room temperature, you can easily and safely prepare the specimens for your collection.

## **Charging The Killing Jar**

Killing agents are poisonous to swallow or breathe and some can be absorbed through the skin. To reduce danger while charging the killing jar, go outdoors and stand sideways to the wind so fumes will blow past you. Remove the corrugated cardboard cover. Use a medicine dropper to place the chemical onto the absorbent filler. Repeat until the absorbent material is saturated. Be careful not to get the liquid on your hands. Wear rubber gloves, if possible. After charging the killing jar, replace the cardboard cover over the saturated absorbent material and screw the cap on tightly. Wash your hands thoroughly and clean the medicine dropper immediately with soap and water.

## **Labeling The Killing Jar**

Paste or stick a "Poison" label on the killing jar where it will be easily seen. Keep it closed when not in use. Do not breathe the fumes or let anyone smell the killing jar.

## **Recharging The Killing Jar**

When necessary to recharge the killing jar, follow the same procedure as for charging it. Do the job outdoors, use a medicine dropper to transfer the killing agent, wash hands and clean the dropper with soap and water as soon as finished.

## **Protect The Killing Jar**

Prevent breaking the jar by wrapping several layers of masking tape around its base. This padding will prevent shattering, if accidentally dropped.

Read and follow the label instructions on the killing agent container. Store the bottle out of the reach of small children.

Remember, choose a jar suitable for the purpose, charge it carefully outdoors, label it properly, and protect it from breakage. Be sure to wash hands after each handling; wear rubber gloves, if possible. Do not breathe the fumes or get the liquid on the skin.

