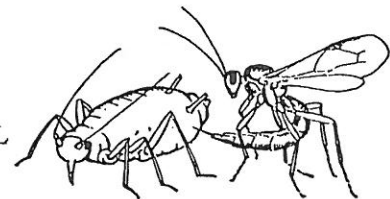


## PESTS IN PERSPECTIVE

A Public Service of  
THE CHURCHILL AREA ENVIRONMENTAL COUNCIL  
2300 William Penn Highway, Pittsburgh, PA 15235 1992

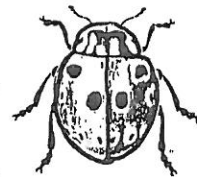


A pest to one may be a meal to another! The cardinal rule on pest problems is that **BIOLOGICAL CONTROL** works best and is safest. Birds were eating "bugs" long before man and his "bug bomb" appeared. The average home owner can do many things to discourage weeds and pests and to encourage healthy plant growth.

Aphid and parasitic wasp

### I. USE NATURAL HELPERS AND PEST ENEMIES:

- Select resistant varieties of trees, shrubs, herbs and vegetables. Plant native species with proved vigor instead of unproved exotics. Fertilize all plants regularly and water when dry.
- Place bird houses and feeders in or near insect-prone trees (e.g. birches, fruit trees.) Keep feeders stocked all year around and plant berry-bearing shrubs to attract additional birds.
- Purchase and distribute lady beetles and preying mantid egg cases from Burpee, 300 Park Ave., Warminster, PA, 18974. Attract Spined Soldier Bugs (which eat over 100 kinds of pests, including gypsy moth larvae) with "Rescue," a hormone lure sold at most garden stores. Discourage fleas and Japanese Beetle grubs by keeping lawns as dry as possible. For severe grub infestations long-term control can be obtained by dusting turf areas with milky spore bacterial disease (sold as "Doom" and "Japidemic.") For leaf-chewing caterpillars such as cabbage looper, gypsy moth and tent worms, try "Thuricide" (also sold as "Bactur," "BT" and "Dipel." These products contain spores of *Bacillus thuringiensis*, a specific parasite of butterfly and moth larvae.
- Try companion plantings. Marigolds repel nematode worms as well as cucumber, bean and Japanese beetles. Sage will protect neighboring cabbage plants from looper worms. Daffodil bulbs keep rodents at bay. Tansy repels ants. Asparagus is anathema to nematodes. And these are just a few good neighbors.



Lady Beetle

### II. APPLY OLD FASHIONED ELBOW GREASE:

- Hand pick large insects (evergreen bag worms, Japanese Beetle adults, tomato hornworms) into a killing jar of soapy water. Cut and burn tent worm nests if only a few reachable limbs are affected.
- Dig those weeds! Weeds are plants growing where they are not wanted. Heavy mulching and hand digging will usually control them. Excellent weeding tools exist and the exercise is healthful. Herbicides are chemicals that will kill plants selectively if used properly. But, observe the following rules for safe herbicide use:
  - Do not apply herbicides routinely as part of a lawn fertilizer mix. These chemicals have adverse effects on all plants, including grasses, although at the concentrations recommended they are most toxic to the broad-leaved weeds in turf (dandelion, chickweed, etc.)
  - For severe problems, identify the weed and buy an herbicide specifically designed to eliminate it. **READ THE PRODUCT LABEL** and apply the herbicide locally with a fine nozzle sprayer on a calm day. Avoid use near shrubbery, flower beds, etc. as these plants are very sensitive. It will take several days to observe the killing effect and repeat applications may be needed.
    - crabgrass and other annual weed grasses (which grow from seed each spring.) Dig out individual plants. Apply a pre-emergence seed killer before April 15 to problem lawn areas. Try "Dacthal" or "Trifluralin."
    - dandelion, chickweed, plantain, clover, poison ivy and other broad-leaved weeds. Use "2,4 D."
    - non-selective - for destruction of ALL vegetation on driveways, paths etc. Use glyphosphate-containing products such as "Roundup."

### III. USE CHEMICAL PESTICIDES ONLY IF NECESSARY:

Avoid being a hysterical "bug" killer. Many insects are harmless. Some are helpful. Most are far less dangerous than the chemicals used to kill them. Remember, most plants, if well-watered, fed and properly trimmed, grow with enough vigor to survive sizable pest attacks with very little permanent damage.

- Identify the insect pest accurately. Check with local garden clubs, nurseries, the Allegheny County Agriculture Extension Service (392-8540,) the entomology department of The Carnegie Museum (622-3131) or the Pittsburgh Civic Garden Center (441-4442.)
- If the insect infestation is severe, and you must use a chemical control:
  - Consult the accompanying chart (post it near your gardening equipment.)
  - Select the safest and least toxic remedy. These are listed first on the chart, reading left to right.
  - Be knowledgeable and firm when purchasing a product. Read the label and study the "active ingredients." Reject the product if there are "extra" chemical components. Wide-spectrum poisons (e.g. Sevin) are to be avoided since they kill everything, including beneficial honeybees and beautiful butterflies.
  - Reject products containing arsenates, mercury compounds and lead.
  - Buy the smallest size of the product that will do the job. Then use it up or share it with a neighbor before discarding the empty container.
  - All pesticides are potential poisons. That is, after all, what they do - kill! Store and use them with appropriate caution and ALWAYS follow the label instructions for mixing and using.
  - For particularly vulnerable ornamental plants (non-food,) systemic chemicals may be of some use. Very local applications of Orthene or Cygon around the roots of plants will be absorbed, making the whole plant toxic to any creature that eats it (including insects.) These chemicals are long-lasting and should be used very sparingly only on out-of-the-way plants.
  - Inside the home use only insecticidal soaps or products containing pyrethrums, and then only if a fly swatter or similar approach is insufficient.
  - If you employ a "lawn care" service, do NOT allow them to apply a mix of herbicides and pesticides routinely along with fertilizer. If they insist on such mixes, get a new service. Turf chemicals contaminate ground and surface water and can affect the health of people and pets. The key to a healthy lawn is properly watered, fertile soil and quality grass species. Consider reducing the size of this high upkeep part of the yard.



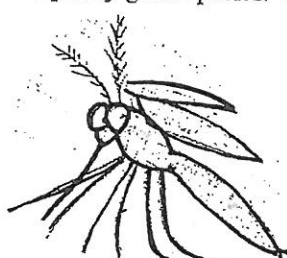
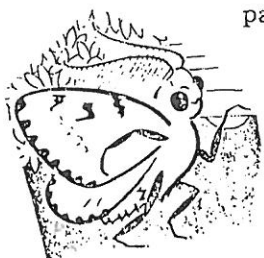
Tick



Bagworm case



Chigger





Yellow jacket

#### IV. HANDLING MISCELLANEOUS PESTS (Listed alphabetically.)

**Ants** - Indoors sprinkle chili powder around entry areas or use pyrethrin spray. Caulk crevices. Outdoors pour boiling water on nests. For persistent problems sprinkle pyrethrins, propoxur or diazinon in nest opening. **Bats** - Seal openings in eaves and attic louvers with hardware cloth AFTER all bats have left in the evening. Scatter moth balls over the floor or hang them from joists in mesh bags.

**Bees, Wasps and Yellow Jackets** - Most are beneficial as pollinators or as predators of harmful insects. However, most will sting *if disturbed* and some people are severely allergic to the venom. If a reaction develops to a sting, seek medical help immediately. If a nest or colony must be destroyed, wait until a cool evening (preferably 45 F or below.) Spray pyrethrin, propoxur or diazinon into the nest opening. **Bird pests** in vegetable garden - To scare birds use 4' poles 20' apart with cloth or plastic streamers (2"x20") laced to the top. The poles can double as plant stakes. Cover berries and fruits with cheesecloth during ripening. For refractory problems call W. Pa. Audubon (963-6100.)

**Cats and Dogs** - Repel with moth balls strategically and frequently replaced. Or try a commercial repellent containing citral or creosote. Dispose of feces in the toilet.

**Centipedes and Millipedes** - Sprinkle nicotine solution (tobacco tea or "Blackleaf 40") on soil.

**Chipmunks and Squirrels** - Repel with moth balls placed in holes and runs. Trap with a Havahart live trap of suitable size; release captives in parkland.

**Cucumber Wilt** - This is caused by a virus transmitted by beetles. Plant marigolds and radishes to repel beetles. Plant cucumbers on a bi-weekly schedule to stretch the harvest season.

**Deer** - Fencing must be 8' high to be effective. Try repellents like Thiram and Ziram (fungicides) and capsaicin (extract of chili peppers.) Spray tree trunks generously every 2-3 weeks. Fresh human hair (from barber) hung from branches in mesh bags can be effective.

**Fleas on pets** - Shampoo pet with Dawn dishwashing detergent. Gradually introduce into pet's diet brewer's yeast and garlic (available as "Therape!" from pet supply stores.) Consult a vet for serious cases.

**Fungus or Blight** - This can be a problem on peonies, lilacs, roses, grapes etc., especially in damp weather. Prune all plants to maintain an open, aerated pattern. Try sulfur and copper mixtures ("Bordeaux Mix") first. For difficult problems use organic products like "captan," "zineb" or "maneb." Unless spotted early, most fungus problems are difficult to treat. Inspect susceptible plants often.

**Gypsy Moth** - Keep trees well watered and fed. Destroy moth egg masses (tan, fuzzy blobs 2-3" long) over the winter. Put burlap bands around tree trunks in early June and kill caterpillars that collect under the cloth. Remove and store bands in mid-July. For severe infestations of valuable trees, spray with "BT" (or "Dipel," "Thuricide") in mid-May.

**House Plant Pests** - Prevention is best; isolate new plants for 2 weeks. Observe all plants often with a magnifying lens to catch infestations early. Wash affected foliage with soapy water or insecticidal soap ("Safer Soap.") Remove aphids and mealybugs with a toothpick or swab with a Q-Tip dipped in alcohol. Use pyrethrum sprays on difficult cases or take plants out-of-doors to spray with malathion on a calm, mild day. Repeat in 2 weeks. Discard heavily infested plants.

**Iris Borer** - Cut back and destroy leaves in July. Keep beds free of all dead leaves, but mulch heavily with bark chips. Dig up beds every 4 years and destroy borer-infested stems. Spray with malathion or "Cygon" (a systemic) twice at 2 week intervals beginning when leaves are about 3/4" long.

**Mice** (in home) - Eliminate food sources; plug entry holes. Trap in Havahart Mouse Traps and release outside. **Moles** (in yard) - Eliminate food grubs in turf with milky spore disease ("Doom") Use moth balls or flakes in burrows to discourage moles from staying.

**Mosquitoes** - Drain standing water; add fish to garden pools to eat larvae. Personal repellents outdoors include DEET or Permethrin. Use sparingly and protect eyes and mouth when spraying.

**Moths** (in closets or chests) - Sprinkle clothes with dried lavender and cedar chips. Use moth balls or flakes sparingly in the home and only if more conservative methods fail.

**Nematodes** (in soil) - Plant marigolds. Mulch heavily with rotted compost after applying agricultural lime to infested soils. Practice crop rotation and pull up and dispose of all annuals in the fall.

**Pantry Pests** - These may include grain moths, beetles, weevils, mealworms, etc. Empty and clean kitchen shelves; discard contaminated products or feed to birds. Spray lightly with pyrethrins and allow to dry thoroughly. Restock shelves, keeping all staples in sealed glass or metal containers.

**Rabbits** - Use tight chicken wire fencing around vegetables. Repel with dried blood, nicotine sulfate ("Black-leaf 40") or "Repel," all available from garden supply stores. Trap with a Havahart live trap, using carrot or apple slices as bait; release in parkland.

**Raccoons and Groundhogs (Woodchucks)** - Get professional help from someone who does live trapping. Call the Allegheny County Agriculture Extension Service (392-8540.)

**Roaches** - Remove accessible food sources. Caulk all entry crevices. Mix boric acid or baking soda with a little powdered sugar and sprinkle around baseboards and in cupboards. Vacuum and replace weekly.

**Slugs and Snails** - Mulch plants with wood ashes or sawdust. Scatter "Sluggeta" on flower beds and "Buggeta" in the vegetable garden. Trap these molluscs in shallow saucers of beer buried to ground level and refilled twice weekly. Or, attract them to the underside of wet boards and destroy by hand.

**Sow bugs (Pillbugs)** - Trap with damp boards, folded newspaper or dark plastic and destroy by hand. problem areas, apply malathion or propoxur around shrubbery and foundation walls. Unless very numerous, these crustaceans do little harm and are part of the natural decay process.

**Spiders** in the house - They are harmless, even beneficial (except Black Widow and Brown Recluse.) Capture using an inverted cup and a piece of stiff paper to slide underneath as a lid. Release outdoors.

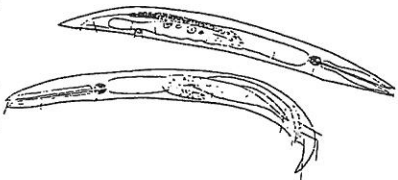
**Termites and Carpenter Ants** - Seek reliable, professional help. Demand proof of infestation. **Ticks** - Use rotenone dust on dogs or cats. Replace pet bedding often and wash used bedding in very hot water with added chlorine bleach. Consult a vet for serious cases. For personal use when hiking in tick areas, use DEET or permethrin repellent. Wear long, protective clothing.



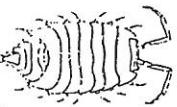
Flea



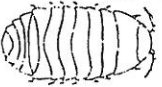
Gypsy Moth  
larva



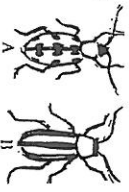
Nematode Worm  
(microscopic)



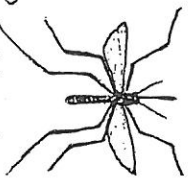
Sow Bug



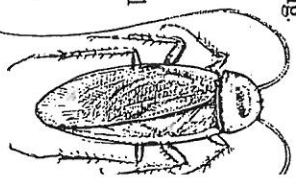
Pill Bug



Cucumber Beetle  
A. Spotted; B. Striped

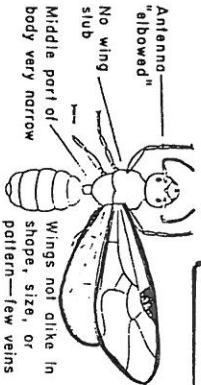


Mosquito

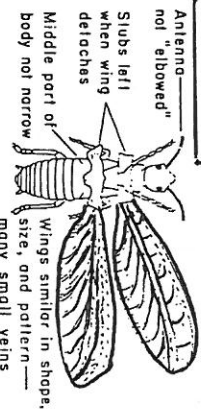


Cockroach

#### HOW TO DISTINGUISH ANTS FROM TERMITES



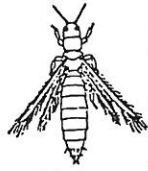
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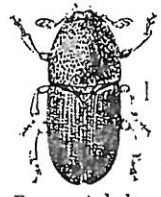
TERMITE



Mite



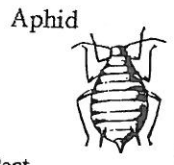
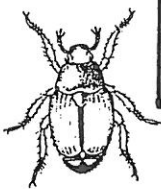
Thrips



Borer Adult



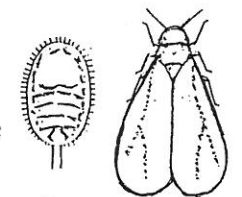
Larva (grub)  
Japanese Beetle adult



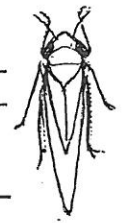
Aphid

### INSECT CONTROL CHART (Outdoor Pests)

Type of Plant Pest	TRY THESE FIRST Preferred Controls (Non-poisonous)	USE THESE IF NEEDED Botanical Controls (Poisonous Extracts of Plants)			USE THESE AS A LAST RESORT Synthetic Controls (Manufactured Organophosphates)		
		Nicotine sulphate <sup>1</sup>	Pyrethrum <sup>2</sup>	Rotenone <sup>3</sup>	Malathion	Diazinon	Cygon or Orthene <sup>4</sup>
<b>Sucking Pests</b>							
aphids (plant lice)	forceful water spray; lady beetles	x	x	x	x		x
chinch bugs in turf					x	x	
leafhoppers	forceful water spray	x	x	x	x	x	x
mealybugs	dormant oil <sup>5</sup> ; wipe with alcohol				x	x	
mites (red spider)	forceful water spray; "Mitac" spray				x	x	
scale insects	dormant oil <sup>5</sup> ; lady beetles				x (spring)	x	x
spittlebugs	remove by hand and kill			x	x		
thrips	insecticidal soap spray ("Safer")		x	x	x	x	
whitefly	bright yellow sticky strips			x	x	x	x
<b>Chewing Pests</b>							
ants	hot, soapy water; repeat as needed		x		x	x	
bagworm of evergreens	hand pick into soapy water to kill				x	x	
borers (larvae of moths; beetles)	get expert help; on squash slit stem to remove borer; mound soil over wound; splant squash in late June.				x	x	
cabbage looper (moth larvae)	sprinkle or spray "BT" ("Dipel")				x		
coddling moth (apples)	spray with "BT" ("Dipel")				x		
corn earworm	spray with "BT;" drop mineral oil down drying silks.				x		
cutworms of vegetables	paper collars around young stems; wood ash mulch					x	
grubs in turf (beetle larvae)	encourage birds; milky spore ("Doom")					x	
gypsy moth	see Section IV-Miscell. Pests; "BT"						
hornworms of vegetables	hand pick and kill; "BT" ("Dipel")						
Japanese Beetle adults	hand pick and kill; "Bag-A-Bug" traps				x		x
miners (of leaves)							
birch and holly	encourage birds; spray spring & summer	x		x	x	x	
columbine	rake soil well in spring	x		x	x		
tentworm (spring)	hand cut tents from trees and burn				x	x	
webworm (fall)	hand cut tents from trees and burn		x		x		
wireworm (rootworm) of veg.	trap in pieces of raw potato and kill					x	



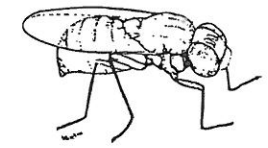
Whitefly  
Nymph Adult



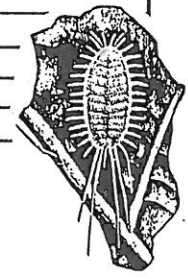
Leafhopper



Tentworm larva



Leaf Miner Fly



Mealybug

<sup>1</sup>From tobacco; sold as "BlackLeaf 40"  
<sup>2</sup>From flowers of African Painted Daisies; sold as "Pyrethrin"  
<sup>3</sup>From roots of Peruvian Deris and CubePlants  
<sup>4</sup>Cygon is dimethoate; Orthene is acephate. Both are systemic organophosphates and make treated plants poisonous.  
<sup>5</sup>Dormant oil is a refined, superior grade of white oil. Spray on affected plants during the winter or very early spring periods when there are no leaves. Do not use on evergreens.

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