

HOUSEHOLD INSECTS

and
Their
Control

EB0472

Insects find their way into our homes no matter how careful we are with our housekeeping. Some of these insects damage food, clothing, rugs, or furniture; others carry disease.

Many household insects are easily controlled. To get rid of others, such as termites and carpet beetles, you need considerable persistence and effort. Good housekeeping and thorough sanitation are highly important as aids to control or prevent infestations of many kinds of pests.

This bulletin presents information for use by the homeowner. If pest infestations are too complex or severe, obtain the services of a professional pest control operator.

If, as a homeowner, you decide to use an insecticide to kill pests, you must use the correct formulation. This is the form in which the active chemical is combined with other ingredients for application. Chemicals formulated for use on agricultural crops may be too hazardous for home use. Formulations developed for use inside homes may severely damage plants because of the type of solvents

present. Carefully follow directions on the pesticide container label. Do not use a pesticide in any manner that is not described on the label.

Most insecticides are suggested for use by chemical name, not brand name. Check the container label for active ingredients before you buy. In general, do not use oil-based solutions around asphalt or vinyl tile floors. Some insecticides have other important restrictions, such as not for use on rugs or tapestries. Check the label for restrictions.

Space sprays or an aerosol bomb containing pyrethrins can be used to control flying insects inside a home. This type of spray is most effective when applied directly onto the insects. Pyrethrins break down rapidly and are not satisfactory where long-lasting control is needed or where you cannot spray insects directly. More persistent or residual insecticides are needed to control such insects as cockroaches, ants, and termites, which can seldom be sprayed directly or dusted. Satisfactory control of these insects depends on placing an insecticide deposit where they will come into contact with it hours, days, or perhaps weeks later.

ANTS



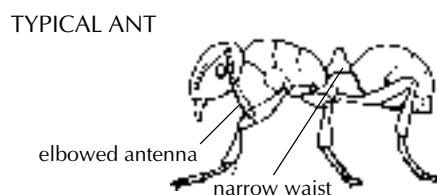
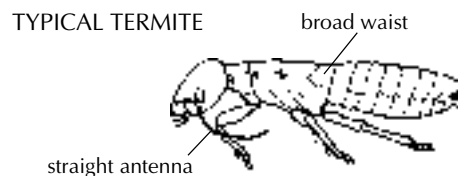
CARPENTER ANT

Several kinds of ants enter homes and may infest food supplies or houseplants. Some food-infesting species prefer sweet foods; others prefer grease and meats. Two major kinds of ants cause "structural" problems for homeowners in our area. These are carpenter ants and moisture ants. Although both kinds can be a nuisance in foodstuffs, the major concern is that they mine wooden structures. Other ants, such as thatching ants, do not mine wood but can be a pest.

Termites are sometimes mistaken for ants. Ants differ from termites in that ants have a constricted waist where abdomen joins the thorax. Termites have an abdomen that is broadly joined to the thorax. Also, termites have long, straight, threadlike antennae, while ant antennae are elbowed or bent.

Carpenter ants. These ants are large and black. They tunnel in logs, stumps, and hollow trees. They become serious pests when they move indoors and tunnel into building timbers. These ants frequently are confused with the dampwood termite. Both insects live in colonies and mine wood. However, carpenter ants bore in wood solely to provide living quarters and do not feed on it. They expel their borings as a fibrous sawdust from their mines.

Workers of carpenter ants are wingless, long legged, wasp waisted, black or reddish black, and about $\frac{1}{2}$



inch long. The winged ants resemble workers in shape and color but are about $\frac{3}{4}$ inch long and have four wings. The front pair of wings is much larger than the hind pair. Winged ants swarm on warm days in the spring or summer to start new colonies.

Usually carpenter ants enter a house through openings in the foundation. They prefer moist, rotting timbers but may mine sound, dry wood anywhere in a house. Commonly mined portions are porch pillars and supporting timbers, sills, girders, joists, studs, and window and door casings.

Moisture ants. These are small- to medium-sized, golden-colored ants. Like carpenter ants, they will infest wood, but they will infest only damp, wet, rotting wood in situations where wood is in continuous contact with the soil. Usually you can remedy the problem by removing the rotting timber and replacing it with sound wood.

Control. The following are materials that can be used for control of ants:

cyfluthrin	malathion (outdoors only)
diazinon**	propoxur
Dursban* (chlorpyrifos)	

Before using any insecticide inside the home, make sure this use agrees with label instructions. Also, check that an insecticide application is actually needed. Cyfluthrin and other pyrethroids may be used against individual ants. Apply diazinon or cyfluthrin outside around foundations in areas where ants are coming into the house. Spray propoxur or cyfluthrin around window frames, door sills, foundations, patios, or other places where ants may crawl before entering homes. Insecticide treatment may be unsatisfactory unless the ant “nest” is destroyed. Try to locate where the ants are nesting. This is sometimes outside the house, often in a tree stump or perhaps inside the house in one of the structural timbers. Apply insecticide where it will come into contact with the ants. You often need patience and persistence to control an infestation; it may take time and several insecticide applications. If ants persist, you may want to seek help from a reputable exterminator.

*All sales of Dursban for home use ceased on 12/31/01.

**All sales of diazinon for home use, except on lawns, will cease on 12/31/04.

Existing stocks of either pesticide can be used as labeled until gone.

BED BUGS



BED BUG

The adult bed bug is a flat, wingless, brown insect between $\frac{1}{4}$ inch and $\frac{3}{8}$ inch long. Bed bugs feed by piercing the skin and sucking blood. They appear in homes at all seasons of the year, usually hiding during the day and feeding at night.

Bed bugs may be carried into homes in clothing, baggage, or secondhand furniture. They migrate from room to room but ordinarily not from home to home.

When not feeding, bed bugs hide in the tufts of mattress seams, in cracks and crevices of bedsteads, or in upholstered furniture. As they become more numerous, they scatter and hide behind baseboards, window and door casings, pictures or picture moldings, loosened wallpaper, or cracks in plaster.

Control. Use the following material to control bed bugs:

pyrethrin

Thoroughly but lightly spray bed springs and frames. Spray the sides and edges of mattresses and overstuffed furniture as well as cracks in floors and in baseboards. Apply every 30 days until no bed bugs are found alive. Sprays having pyrethrin added are of increased effectiveness because they stimulate bed bugs to leave cracks, crevices, and other hiding places.

CARPET BEETLES AND CLOTHES MOTHS



VARIED CARPET BEETLE LARVA



BLACK CARPET BEETLE ADULT



CLOTHES MOTH LARVA



CLOTHES MOTH ADULT

Both carpet beetles and clothes moths feed on clothing and fibers of animal origin.

Carpet beetles. Several kinds of carpet beetles appear in homes. The immature carpet beetle larvae are long, oval, and have brownish or black bristles. This is the stage that causes damage. The larvae feed on rugs, feathers, clothing and various foods. Distinguish damage from carpet beetles from that caused by clothes moths by the absence of webbing spun by moths. Cast larval skins also help identify beetle presence.

Larvae of the carpet beetle are brown, and their bodies are covered with hairs. The adults are black, mottled brown, or white, and about $\frac{3}{16}$ inch long. In the spring they collect at windows in an effort to get outdoors and feed on pollen of spirea, goldenrod, and other plants.

Carpet beetle larvae wander around and may scatter from attic to basement. They can live on hair, lint, and other materials that accumulate in corners, in cracks under flooring, under radiators, and in similar places.

Clothes moths. This insect feeds mainly on wool, silk, fur, hair, and feathers. The moths are small—about $\frac{1}{4}$ inch long with a wingspread of about $\frac{1}{2}$ inch. The moth of one species, the webbing clothes moth, is buff colored. Another species, the casemaking clothes moth, is similar but has indistinct dark spots on the wings.

Moths do not feed on cotton, linen, rayon, or other fabrics of vegetable origin, though they can damage

such fabrics soiled with foodstuffs. Only the larvae cause damage since the adult moths do not feed.

Prevention. Do not permit excessive dust and lint accumulations. Give attention to hard-to-reach places such as behind radiators, baseboards, moldings, cold-air ducts, or ventilation ducts. Vacuum cleaning is the best way to remove lint from such places.

Clothes, woolen scraps, and garments that include fur or feathers left for long periods on shelves or in corners, boxes, or drawers are often a source of infestation. Infestations often can be traced to old garments or wool remnants stored in the home.

Do not store soiled garments. Clean all garments before storing. Protect woolens by storing them in tight containers and adding moth crystals. Store clothing in a part of the home that is relatively cool and dry. Take expensive furs to a furrier for storage or treatment.

Carpet beetle larvae feed on a variety of materials, including dog food and other high protein cereals and fertilizers made of animal by-products. They also may feed on dead insects that accumulate near baseboards or in other places where they are not readily noticed.

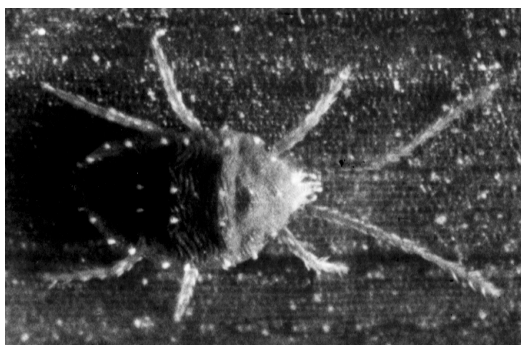
Watch for infestations that might start under heavy furniture that is moved infrequently.

Control. If possible, locate the source of infestation and treat or destroy as circumstances indicate.

After thorough cleaning, apply a registered household material. Spray around and behind baseboards, along edges of carpeting, in corners, and in other hard-to-clean places. Where infestations are under wall-to-wall carpeting, loosen and treat between rug and pad. Professional services may be required to loosen and refasten margins. Apply insecticides with a household sprayer that produces a continuous coarse mist. You also may use pressurized containers that produce a coarse spray.

Fumigation is the most practical means of eliminating infestations in overstuffed furniture. Fumigation should be done in a fumigation chamber, and by an experienced operator.

CLOVER MITES



CLOVER MITE

Clover mites are not usually pests in homes. They occasionally move into houses in large numbers. They do not bite humans or animals or damage home structures, but they can be annoying. When squashed, they will stain walls and furnishings.

Clover mites are oval in shape, usually reddish brown, and about $\frac{3}{100}$ inch long. They swarm over outer walls of buildings, particularly those with sunny exposures, and make their way indoors through cracks and crevices around windows, doors, and foundations. Invasions usually occur in the spring or the fall.

Control. Registered materials for clover mites include:

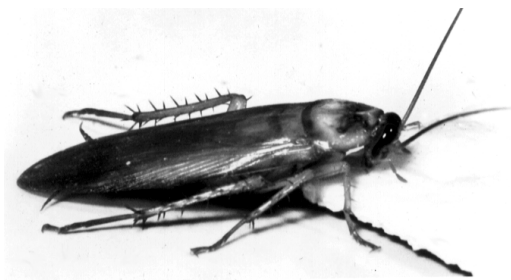
OUTDOORS ONLY

Insecticidal soaps

(**only** for use on plant foliage)
cyfluthrin

There are no registered materials for controlling this pest on walls or foundations. Spray surrounding foliage with insecticidal soaps in this area. Repeat applications are frequently needed. If infestations are severe, control is difficult using hand equipment.

COCKROACHES



COCKROACH

Cockroaches are among our most disagreeable household insects. Several kinds, including the American, Australian, Oriental, German, and brown-banded cockroach, appear in homes. The different species vary from $\frac{3}{8}$ inch to $1\frac{1}{2}$ inches in length, and from tan to black in color. They are rather flat, fast-moving insects, which are active at night and hide during the day.

Cockroaches contaminate food and often leave a disagreeable odor on food over which they crawl. They are general feeders. In addition to most foods, they chew bookbindings, stamps, paper, and even starched clothing.

Cleanliness, not leaving food scraps around, is perhaps the most important step in preventing the establishment of cockroaches.

Control. The following materials are registered for cockroach control:

cyfluthrin

diazinon**

Dursban* (chlorpyrifos; available in mixtures)

propoxur

pyrethrin

Treat under sink, undersides of drawers, along baseboards, and other places where free moisture occurs. **Use only products whose labels clearly allow indoor use.**

*All sales of Dursban for home use ceased on 12/31/01.

**All sales of diazinon for home use, except on lawns, will cease on 12/31/04.

Existing stocks of either pesticide can be used as labeled until gone.

CRICKETS



CAMEL CRICKET

Field crickets or camel crickets sometimes enter houses, although they rarely become abundant. Their chirping may annoy you, and they may chew holes in clothing and household fabrics. They may also contaminate food.

Control. Use one of the following, if necessary:

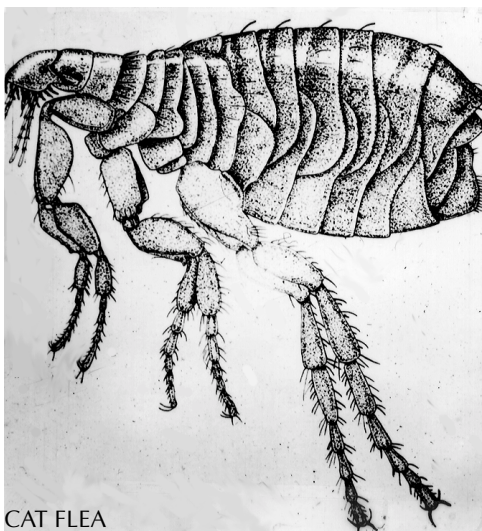
cyfluthrin	malathion (outdoors only)
Dursban* spray (chlorpyrifos)	propxur

Outdoors—spray around foundation and entrances to the home.

Indoors—spray materials registered for indoor use into cracks and crevices, around baseboards, and in other places where crickets may hide. Vacuuming may be as effective as a pesticide.

*All sales of Dursban for home use ceased on 12/31/01. However, existing stocks can be used as labeled until gone.

FLEAS



CAT FLEA

Fleas which infest homes usually come from cats and dogs. Fleas are small, wingless, dark reddish brown insects. They have narrow bodies and legs well developed for jumping. The small, whitish, hairy, legless larvae feed on dried animal matter lodged in cracks in the floor, under carpets, under porches where pets sleep, or any place they can obtain food. Lawns also are occasionally infested with fleas, particularly in warm, humid areas.

Control. These materials are registered for fleas:

INDOORS	OUTDOORS
methoprene	diazinon**
propxur	malathion
pyrethrin	Sevin (carbaryl)

Thorough cleaning of your home is essential, especially in cracks. Spray floors with pressurized sprays containing propoxur or pyrethrin. Avoid treating food, water, or food-serving or eating surfaces. Spray infested outdoor areas, such as kennels and lawns, according to label directions. Keep spray away from food and water. **Note: Lawn sprays usually are not warranted in the Pacific Northwest.**

Commercial flea powders are readily available. Carefully read label directions.

Flea growth regulator products which are administered to pets orally and topically are available from veterinarians. Veterinarians also carry other flea products, which eventually will replace many of the above products, as they are more environmentally sound and safer to pets.

*All sales of diazinon for home use except on lawns will cease on 12/31/04. However, existing stocks can be used as labeled until gone.

FLIES



HOUSE FLY

Several kinds of flies infest homes. Among the more important are the house fly, face fly, green bottle fly, fruit fly, stable fly, the lesser house fly, blowfly, and cluster fly. Most of these flies breed in decaying organic matter. The common house fly reproduces rapidly in such material and may carry germs to food. Cluster flies are parasitic on earthworms, and control of maggots is not practical. To prevent adult

flies from entering the home in the fall, close all openings through which they enter, such as sash-cord channels or holes where pipes enter the house. Fill all cracks around windows. Good window and door screens are essential for general fly prevention.

Control. The following materials are registered for fly control:

INDOORS
cyfluthrin
pyrethrin

OUTDOORS
malathion

Keep garbage in tight containers. **Remove all breeding areas, including plant and animal refuse.** Use household sprays and bombs where flies tend to congregate. Several commercial light traps are effective in reducing fly numbers indoors. Do not place traps near food or eating areas. Do not use outdoors, as light traps kill enormous numbers of beneficial insects.

GOLDEN BUPRESTID



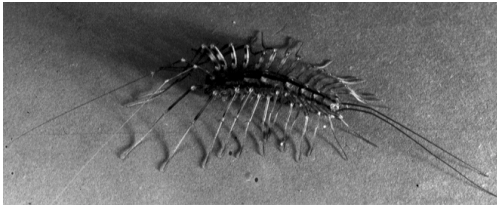
GOLDEN BUPRESTID ADULT

Oval-shaped holes in fir, pine, or spruce siding, window casements, flooring, or other parts of the home indicate activity of one of the flatheaded borers. The most common of these is the golden buprestid. Adult golden buprestids are about $\frac{3}{4}$ inch long, iridescent gold-green or bluegreen, and have outside wings edged with a copper margin.

The adult beetle lays its eggs on trees, preferably those that are dead or dying, or in the cracks of freshly sawn lumber. Most of the infestations in lumber occur before manufacture. Insect mines or tunnels may be from 3 to 15 feet long, and the larva may live in the wood for 15 to 20 years before it transforms into a beetle and emerges. The larva is a white grub about $\frac{1}{4}$ inch to $1\frac{1}{2}$ inches long.

Control. This insect is very difficult to control in the home because of the long period the larva remains in the wood, the length of the tunnels, and the fact that infestations are not usually evident until the adult emerges. However, infestations seldom cause serious structural weakness. Fill exit holes in flooring or other exposed wood with plastic wood. Later, if no new emergence occurs, replace the damaged wood. No chemical control is suggested.

HOUSE CENTIPEDE



HOUSE CENTIPEDE

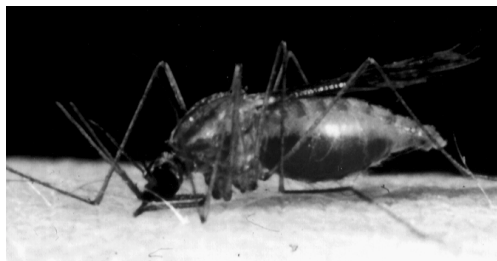
The house centipede has a wormlike body an inch or more long with a pair of long, slender antennae

and 15 pairs of legs. It runs rapidly holding its body above the surface over which it moves.

House centipedes feed on cockroaches, flies, spiders, moths, and other small insects. They thrive in damp basements and often find their way to the upper floors.

Control. Since house centipedes feed on other insects, they should be regarded as beneficial. If they are a nuisance, use a direct spray from a household insect bomb to kill individuals.

MOSQUITOES



MOSQUITO

Several kinds of mosquitoes are human pests, and are found around homes. Some species transmit malaria, and others transmit encephalitis or West Nile virus to humans and horses (and also to birds). All mosquitoes breed in nonflowing water, and their eggs will not hatch unless moistened with water. The larvae must have water to develop.

Control. The first step in controlling mosquitoes is to eliminate their breeding areas. In general, mosquitoes are best controlled on an area-wide basis. Remove from the yard all unneeded cans, pails, jars, tires, or other objects that may hold water. Containers for storing water should be tightly covered. Keep small streams near your home free from debris or vegetation that slows the flow of water. If possible, drain or fill depressions where water collects.

These materials may be used to keep mosquitoes from breeding:

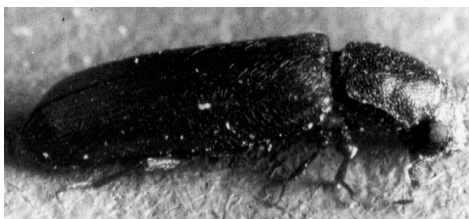
<i>Bacillus thuringiensis</i>	cyfluthrin
var. <i>israelensis</i>	malathion (outdoors only)
methoprene	

Small permanent ponds or pools, which do not provide humans or animals with drinking water (e.g., poultry, wild birds), which do not contain desirable fish, and which do not drain into streams, canals, or other waterways, may be sprayed with B.t. or methoprene several times during the mosquito season. You may wish to seek help from a professional. Do not use any insecticide on pools or ponds until you are certain what the water is used for and until you have determined that the pesticide you plan to use is registered for your particular situation. Neither malathion nor cyfluthrin can be applied to water. Many household insecticides will kill fish, so check first before treating any body of water with pesticides for mosquito control. Application to large water bodies or moving waters requires a licensed professional.

Mosquitoes inside the home can be killed by direct spraying with one of the household insect aerosol bombs containing pyrethrins or pyrethroids.

Repellents such as CUTTERS or DEET will protect humans from mosquito bites for 1 to 5 hours. Use only according to label directions.

POWDER POST BEETLES



POWDER POST BEETLE

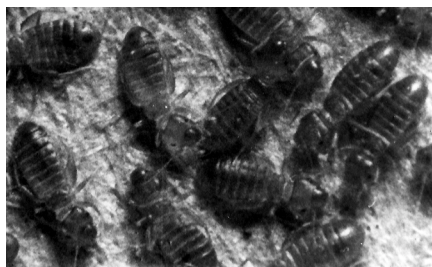
These beetles reduce wood to a powderlike dust which becomes evident as the infestation increases. The insects usually are brought into the home in hardwood lumber used for flooring, furniture, or implement handles. Ash, oak, pecan, and hickory can become infested in lumber

stockpiles, and the infestation may continue after the lumber is used in the home. These beetles are usually black or brown, elongate, and about $\frac{1}{8}$ to $\frac{1}{4}$ inch in length.

Control. The area of beetle infestation is usually limited. No chemicals for this pest are available to homeowners; however, professional pest control operators can legally treat this pest.

Heating small hardwood articles in an oven at 130°F for 1½ hours or freezing the articles for 24 to 48 hours also will kill the insects. Use of heat or extreme cold may warp or crack the wood, loosen joints, or injure finish.

PSOCIDS OR BOOKLICE



BOOKLICE

Psocids are flat, soft-bodied insects about $\frac{1}{16}$ inch long. They are white or grayish white. Because of their small size and color, they are often not noticed.

They occasionally appear in starch, cereals, flour, and sugar, or may be found in paper, bookbindings and wallpaper. These insects may be annoying when they increase to large numbers. They are most likely to be found in damp, dark, warm, poorly ventilated rooms.

Control. Dry out areas where you find booklice. These insects seldom are a problem in dry buildings. Spray areas with a registered indoor household pesticide where booklice are numerous. Destroy infested foods and eliminate dampness in food storage areas where possible. Store food in tight, moisture-proof containers. Eliminate hiding places such as piles of paper, infested books, and wallpaper.

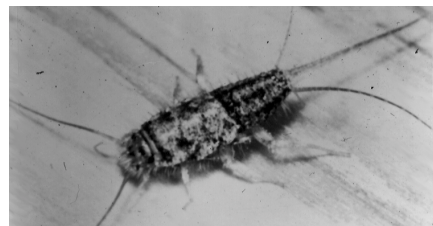
SILVERFISH AND FIREBRATS



SILVERFISH



SILVERFISH DAMAGE



FIREBRAT

Silverfish and firebrats are wingless, scaly, fast-running insects about $\frac{1}{2}$ inch long. Their bodies taper evenly from head to tail, and they have a pair

of long antennae on the head and three long filaments that protrude from the tail. Silverfish are shiny and silver or pearl gray. They prefer warm and damp

places but may appear in almost any part of the house. Firebrats are similar in appearance but mottled tan; they are most abundant around furnaces and heated water pipes. These insects feed at night on wallpaper, bookbindings, and starched clothing.

Keep old books, and papers at a minimum in the home. Clean up areas where wood or other hiding places for these insects are noticeable.

Control. These insecticides may be used:

cyfluthrin	propoxur
diazinon**	

Spray in areas where silverfish or firebrats are seen. This usually is around closets, shelves, under and in sinks, and around steam pipes. Dusts are frequently preferable to sprays.

**All sales of diazinon for home use (except on lawns) will cease on 12/31/04. However, existing stock can be used as labeled until gone.

SPIDER BEETLES



SPIDER BEETLE

Several kinds of spider beetles occasionally infest homes but rarely become numerous enough to cause concern. They are about $\frac{1}{7}$ inch long and reddish to pale brown with or without white markings. They feed on cereals, cereal products, seeds, wool, and furs.

Control. Find infested foods, remove, and discard them.

TERMITES



DAMPWOOD TERMITE (WORKER)

Control of termites is often rather difficult. Request an inspection and cost estimate from a reliable pest control operator before attempting a control program. Pest control operators may use certain pesticides that are not available to the homeowner.

Subterranean termites. Termites are social insects. They live in nests or colonies in the soil. They often destroy wood in buildings. Each colony is made up of classes—reproductives, workers, and soldiers. Adult workers and soldiers are wingless and grayish

white. They live within their tunnels in wood and soil. The reproductive adults have brown or black bodies and two pair of long wings of equal length. You can distinguish termites from ants by the equal length of their two pair of wings and by their thick waistlines. Contrast with the narrow waistlines of ants.

The winged termites, about $\frac{3}{8}$ inch long, swarm in early spring or fall. Often this is the first sign that a home is infested.

Other signs of termites are shelter tubes or runways on the surfaces of foundation walls. Termites may be present, however, even though no shelter tubes are found.

Control. Termites must be close to both soil and moisture. They are most likely to infest soil beneath basementless buildings where drainage and ventilation are poor. The first step in controlling termites is to permanently break their contact with the soil and sources of moisture such as leaky pipes. Structural changes, replacement of infested wood, mechanical

barriers, and soil poisons usually will do the job. Remove and burn badly damaged infested wood and the wood immediately surrounding the infested spot. Make sure none of the wood in the structure is in contact with the ground. Every termite infestation is different and requires individual treatment. Termite infestations in slab-on-ground construction often create particularly difficult control problems.

Treatment with a registered chlorpyrifos* or cyfluthrin formulation that addresses termite control methods will provide protection against termites.

Dampwood termites. These termites, unlike the subterranean types, enter directly into dampened wood through decayed spots, cracks, or holes at swarming time (late summer or fall). They do not require moist soil to exist. They do, however, require considerable moisture for their development and

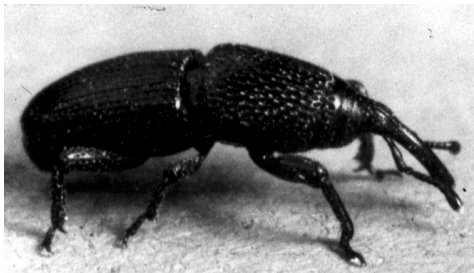
usually attack decaying wood exposed to considerable dampness. Although damp-wood termites usually occur in decaying wood, they can extend their workings into sound wood. They are much larger than the subterranean termite, the nymphs being $\frac{1}{2}$ inch long and the soldiers $\frac{3}{4}$ inch long.

Control. Replace infested wood and correct conditions that permitted excessive moisture. Provide adequate drainage or use materials other than wood in foundation areas which cannot be protected from excessive moisture.

Use treated wood for house foundations and other moist areas where wood is likely to be subject to termite attack.

*All sales of Dursban for home use ceased on 12/31/01. However, existing stock can be used as labeled until gone.

STORED FOOD INSECTS



GRANARY WEEVIL

Several kinds of beetles, weevils, and moths infest flour, cereals, spices, and other dry food products in the home. These foods are perfect targets for insect infestation, as temperatures are usually ideal and food ample.

Flour beetles. Adult flour beetles are about $\frac{1}{8}$ inch long, smooth, and reddish brown. The larvae are about $\frac{1}{4}$ inch long, with white to yellow bodies and black heads. These insects infest flour, cereal products, and other stored foods. Infestations often develop in seldom used food products that remain on hand for long periods.

Granary and rice weevils. These two weevils are similar in appearance and habits. The adult weevils are about $\frac{1}{8}$ inch long, dark brown, cylindrical, and have rather long snouts or beaks. The larvae are white, legless grubs. These insects prefer whole



MEAL MOTH LARVA



MEAL MOTH ADULT

grain, but also will feed on spaghetti, macaroni, and similar foods.

Drug store beetles. These beetles are small, robust, oval, and light brown. They have sharply bent-down

heads, which give them a humped appearance when viewed from the side. The beetles are usually about $\frac{1}{10}$ inch long. They feed on drugs, pepper, spices, cereals, and other processed foods.

Saw-toothed grain beetles. This beetle is about $\frac{1}{8}$ inch long, dark brown, slender, and flat. It has a row of saw-tooth projections along each side of the body just behind the head. The larvae, which are quite active, are yellowish white with brown markings. They are about $\frac{1}{8}$ inch long, and have well developed legs. This insect feeds on cereals, cereal products, nuts, dried fruits, and other products.

Flour and meal moths. The two most common species of flour and meal moths found in homes are the Indian meal moth and the Mediterranean flour moth. The Indian meal moth is pale gray with metallic copper-colored markings on the distal two-thirds of the forewings. The Mediterranean flour moth is gray, has forewings with wavy black lines,

and dusky white hindwings with darker markings. The larvae of these moths are white or pinkish; they spin webbing throughout the food they infest. They eat cereal and cereal products, dried fruits, candies, chocolate, shelled nuts, and similar foods.

Control. The first step in controlling insects that infest stored foods is to find the infested material and destroy it. Remove all foods from cupboard shelves, and thoroughly clean the storage area. Thorough cleanup and scrub-out of shelves and cupboards with warm water and detergent is important. Allow scrubbed shelves to dry before spraying.

Food which has been exposed but shows no signs of infestation may be placed in shallow pans and heated in an oven for one-half hour at 140°F. Prop the oven door slightly open to prevent scorching the food. Thorough freezing also will destroy an infestation. Store uninfested foods in containers with tight-fitting lids.

A.L. Antonelli, Ph.D., Washington State University Extension entomologist, WSU Puyallup; Carrie Foss, M.S., WSU Extension pesticide educator, Puyallup; and Catherine H. Daniels, Ph.D., Extension manager WSU Pesticide Information Center, WSU Tri-Cities.

Warning. Use pesticides with care. Apply them only to plants, animals, or sites listed on the label. When mixing and applying pesticides, follow all label precautions to protect yourself and others around you. It is a violation of the law to disregard label directions. If pesticides are spilled on skin or clothing, remove clothing and wash skin thoroughly. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

College of Agricultural, Human, and Natural Resource Sciences

Issued by Washington State University Extension and the U.S. Department of Agriculture in furtherance of the Acts of May 8 and June 30, 1914. Extension programs and policies are consistent with federal and state laws and regulations on nondiscrimination regarding race, sex, religion, age, color, creed, national or ethnic origin; physical, mental or sensory disability; marital status, sexual orientation, and status as a Vietnam-era or disabled veteran. Evidence of noncompliance may be reported through your local Extension office. Trade names have been used to simplify information; no endorsement is intended. Revised April 2004. Subject codes 352, 670. D