

HOUSEHOLD INSECTS AND THEIR CONTROL

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HOUSEHOLD INSECTS and their control

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INSECTS FIND THEIR WAY into our homes no matter how careful we are with our housekeeping. Some of these insects damage foods, clothing, rugs, furniture, or woodwork. Others carry diseases. Some merely irritate us.

Many household insects are controlled easily. 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 in aiding in control or preventing infestations of many kinds of household pests.

EQUIPMENT—A small hand duster or sprayer and a brush to treat window and door screens are all the equipment you need to control household insects. Aerosol sprays are effective for quick knockdown of flies and mosquitoes, but don't have much effect on insects in protected places.

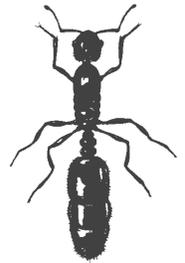
ANTS

Several kinds of ants enter homes and infest food supplies. Some species prefer sweet foods; others prefer grease and meats.

Termites are sometimes mistaken for ants, but they do not have narrow waists like true ants.

CONTROL—Sprays containing 2 or 3 per cent chlordane in stainless kerosene may be used effectively in the home. Spray or paint the solution on cracks in floors or walls and around sinks, bathtubs, and kitchen cupboards.

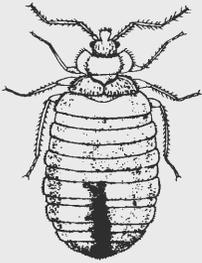
To control ants outdoors, apply a dust containing 5 per cent chlordane, or 2 per cent dieldrin, or 5 per cent heptachlor to their nests and other areas they frequent. Do not apply to food plants. If you use sprays containing chlordane, dieldrin, or heptachlor instead of dusts, follow directions on the label.



House Ant

BED BUGS

The mature bed bug is a flat, wingless, brown insect between $\frac{1}{4}$ and $\frac{3}{8}$ inch long. Bed bugs feed by piercing



Bed Bug

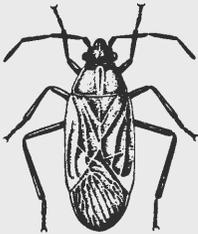
the skin and sucking blood. They appear in homes at all seasons of the year, usually hiding during the day and feeding at night.

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

When not feeding, bed bugs hide in the tufts or seams of mattresses, in cracks and crevices of the bedstead, 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—A kerosene spray containing 5 per cent DDT, or 2 per cent chlordane, or 0.5 per cent dieldrin is effective. Spray thoroughly but lightly over the frames and springs of beds; over the tops, bottoms, and sides of mattresses; and over upholstered furniture. Also spray cracks in floors, around baseboards, and other areas where bed bugs may hide. You may have to make several treatments at 30-day intervals for complete control.

BOXELDER BUGS



Boxelder Bug

Boxelder bugs are about $\frac{1}{2}$ inch long, from brown to black, and have red lines running along the back. The adults spend the winter around buildings and in hollow stumps and other sheltered places. During warm spring days they may gather in large numbers on sunny sides of buildings and occasionally enter homes. They cause no damage in the home, but can be a nuisance. They often appear in large numbers on the trunks and around the bases of boxelder and maple trees.

CONTROL—Indoors use a household spray containing 5 per cent DDT or 3 per cent chlordane. Spray the insects and the areas where they appear. Outdoors spray or dust the walls of buildings and the trunks and the area around the bases of boxelder or maple trees with a heavy application of chlordane, or lindane, or 0.5 per cent dieldrin.

CARPENTER ANTS

Carpenter ants are large, black ants that tunnel in logs, stumps, and hollow trees. They become serious pests

when they move indoors and tunnel in building timbers.

Carpenter ants are frequently confused with the damp-wood termite. Both insects live in colonies and mine wood. However, carpenter ants bore in wood to provide living quarters, but do not feed on it. They expel their borings as "sawdust" from their mines. In contrast, termites consume the wood in which they live so no "sawdust" marks their presence.

The 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 to start new colonies.

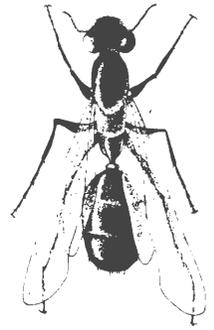
Usually carpenter ants enter a house through openings about the foundations. They seem to prefer moist, rotting timbers, but readily mine sound, dry wood any place in a house. Among the commonly mined portions are porch pillars and supporting timbers, sills, girders, joists, studs, and window and door casings.

CONTROL—Carpenter ants may be controlled by spraying or dusting chlordane around house foundations and other areas of infestation and by applying it to lawns and shrubbery. Use a dust or a spray made from a wettable powder on lawns and shrubs. If nests are located within the woodwork of homes, drill small holes into the nesting area and use a hand duster to force a 10 per cent chlordane dust into the holes.

CARPET BEETLES

Several kinds of carpet beetles are found in homes. Only the larvae—longish, oval, immature insects with brownish or black bristles—cause damage. They feed on rugs, feathers, clothing, and various foods. They attack nylon fabrics under certain conditions. Damage from these insects can be distinguished from that caused by clothes moths by the absence of webbing spun by moths. Cast larval skins also help identify their work.

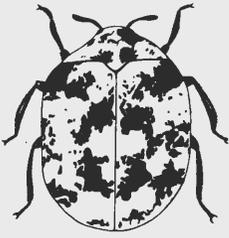
The larvae of the carpet beetle are brown and their bodies are covered with hairs. The adults are small; black, mottled brown, or white; and about $\frac{3}{16}$ inch long. In the spring they collect at windows in an effort to get



Winged Carpenter Ant



*Varied Carpet Beetle
Mature Larva*



*Varied Carpet Beetle
Adult*

outside and feed on pollen of spiraea, goldenrod, and other plants.

CONTROL—The larvae of carpet beetles wander around and may scatter from attic to basement. They can live on hair, lint, and other materials which accumulate in corners, in cracks under flooring, under radiators, and in similar places. Thoroughly clean as many of these places as possible. Discarded fur pieces, rugs, feathers, and fleecelined slippers provide ideal breeding places. Remove such materials and spray infested areas.

Use household sprays containing 2 per cent chlordane, or 3 to 5 per cent malathion, or 0.5 per cent lindane, or 0.5 per cent dieldrin in closets, around baseboards, and along the edges of rugs or floors. Spray or dust the top surface of rug pads with 5 per cent DDT to help protect rugs. Where possible, occasionally vacuum or sweep the undersides of rugs. Washable woolens may be protected by washing or rinsing in water containing EQ-53. This material, which is sold under various trade names, contains DDT.

You may protect clothing and blankets stored in tight trunks, boxes, or closets by spraying them with 5 per cent DDT in stainless kerosene or by using flake naphthalene or paradichlorobenzene crystals. Use the flakes or crystals at the rate of 1 pound per trunk of clothing or blankets. Put them between layers of thin paper at several levels in the trunk. For closets that are kept tightly closed, hang a muslin sack containing 1 pound of either material for each 100 cubic feet of space.

CLOTHES MOTHS

The two common species of clothes moths are the webbing clothes moth and the case-making moth. Both feed 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 adult webbing clothes moth is buff colored. The case-making 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. Only the larvae cause damage since the adult moths do not feed.

CONTROL—The first step in control is to locate the source of the infestation. It may be in fleecelined slippers,



*Case-Making Clothes Moth
Adult*



*Case-Making Clothes Moth
Larva*

wool rugs and blankets, flannel pants, a wool sweater, a fur piece, or an accumulation of lint. Upholstered furniture also serves as a breeding place for moths.

Treat infested material with 5 per cent DDT stainless kerosene spray. Where possible, remove and burn the infested material.

Washable woolens may be protected by washing or rinsing in water containing EQ-53. This material, which is sold under various trade names, contains DDT.

Sun and thoroughly brush or clean clothing before storing it. Spray closet walls thoroughly twice a year with 5 per cent DDT in stainless kerosene. You may also protect woolen articles by spraying them with 5 per cent DDT in stainless kerosene. Clothing that is to be stored may also be treated with flakes or crystals as outlined under carpet beetles on page 6.

CLOVER MITES

Clover mites are not usually pests in homes, but occasionally they move into houses in large numbers. They do not feed on man or animal, but may feed on house plants. They can also be a definite nuisance.

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

CONTROL—Spray odorless white kerosene directly onto the mites and also in cracks and other areas where they may hide. Sprays containing DDT, or chlordane, or pyrethrin in stainless kerosene are also effective.

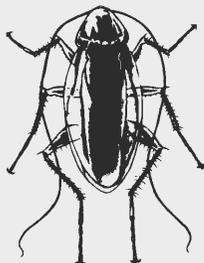
To prevent re-entry into homes, spray outside window sills and door sills as well as the lawn around the house foundation with Kelthane, or malathion, or Aramite. Follow directions on the container. Sulfur dust may also be used outside.

A grass-free strip 18 to 24 inches wide around the dwelling may aid in reducing mite infestations in the home. A variety of flowers, such as zinnia, marigold, salvia, roses, chrysanthemums, and petunias, which are not attractive to clover mites, may be planted in the strip.



Clover Mite

COCKROACHES



American Cockroach

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

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

CONTROL—DDT, chlordane, Diazinon, dieldrin, and supreme grade malathion are the most effective insecticides for cockroach control. You may use 5 per cent DDT, or 2 to 3 per cent chlordane, or 0.5 per cent Diazinon, or 0.5 per cent dieldrin, or 2 per cent malathion in kerosene sprays.

A 2 per cent dieldrin dust may also be used where you won't mind the visible residue. Use a duster to blow dust into cracks and crevices. Spray or dust runways, window or door frames, underneath and behind the drainboard, around the sink, in cupboards, behind drawers, around water pipes, behind baseboards and moldings, in cracks, between walls, and any other hiding places where roaches will come in contact with the insecticide. Sodium fluoride dust will also control cockroaches.

Do not allow any of these materials to get on dishes, cooking utensils, or in food. It may take two or three weeks to obtain control and a second treatment may be required in a month or six weeks.



Field Cricket

CRICKETS

Field crickets sometimes enter houses although they rarely become very abundant. Their chirping may annoy you and they may eat holes in clothing and household fabrics.

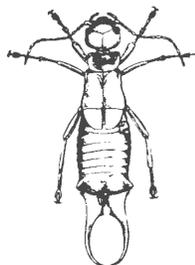
CONTROL—Apply a household spray containing 2 to 3 per cent chlordane or 0.5 per cent dieldrin to floors along baseboards. You may also use a 5 per cent chlordane or DDT dust. Use a hand duster to blow the dust into cracks

and other hiding places. Repeat applications at intervals of ten days to two weeks as long as crickets are a problem.

EARWIGS

The European earwig is more annoying than damaging in the home. Although earwigs can fly, they usually enter homes hidden in flowers, vegetables, or newspapers and may crawl under doors or through open windows. Earwigs are various shades of brown and $\frac{1}{2}$ to $\frac{3}{4}$ inch long.

CONTROL—Earwigs can be destroyed outdoors by spraying or dusting infested areas with DDT or chlordane. Use a 5 per cent dust or a spray containing 1 pound of 50 per cent wettable powder in 25 gallons of water. Apply to the entire infested area, giving particular attention to areas around foundations or buildings and fences and walks. Do not water treated areas for at least two nights after application. Several treatments during the summer may be necessary. Earwig baits may also be used.



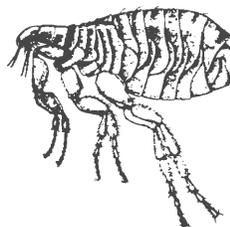
European Earwig

FLEAS

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

CONTROL—Thoroughly rub a tablespoonful of 4 or 5 per cent malathion dust or 1 per cent lindane dust into the fur of dogs. Begin at the head and work backward. A 0.2 per cent pyrethrin dust or a 1 per cent rotenone dust is suggested for cats. Sleeping quarters of pets should also be dusted with malathion.

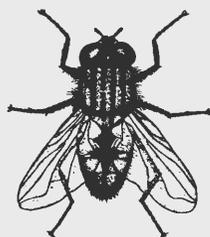
Spray basements, unfurnished areas, infested lawns, and the bare ground under porches with malathion or Diazinon. In infested rooms, use a household spray with 3 per cent malathion or 0.5 per cent Diazinon on floors, baseboards, and rugs. Several treatments a month apart may be necessary where infestations are heavy. Fleas may be controlled outdoors by spraying or dusting infested areas with malathion or Diazinon.



Cat Flea

FLIES

Several different kinds of flies infest homes. Among the more important are the house fly, fruit fly, stable fly, the lesser house fly, blowflies, and cluster fly. Probably 90 per cent of the flies in homes throughout the year are house flies. Most of those found in homes breed in decaying organic matter. The common house fly reproduces rapidly in such material and may carry diseases via food to man.



House Fly

CONTROL—Sanitation is the first step in fly control. Keep garbage in tight containers and dispose of it every few days. Spray garbage containers frequently with DDT, or Diazinon, or malathion. Breeding areas, including decaying plant and animal matter and pet manure, should be eliminated.

Good window screens and screen doors are also very important. Screens should be sprayed or painted with 5 per cent DDT or 2 per cent chlordane in kerosene. Treat them several times during the fly season. Spray favored resting places, such as window sills, ceilings, or walls. For a quick knock-down of flies, use space sprays containing pyrethrin or pyrethrin plus methoxychlor. Aerosol bombs are also very effective. If only a few flies are in a room, a fly swatter may be the simplest way of disposing of them.

Cluster flies are parasitic on earthworms and control of the maggots is not practical. To prevent the adult flies from entering the home in the fall, close all openings through which they enter, such as sash cord channels. Fill all cracks around windows. Paint window sashes and cases with a 5 per cent DDT solution or a 2 per cent chlordane solution. Use aerosols containing pyrethrin or allethrin as needed indoors.



*Flatheaded Borer
Larva*

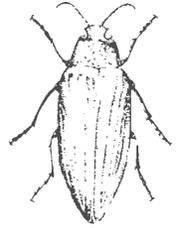
GOLDEN BUPRESTID

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. The adult is about $\frac{3}{4}$ inch long and iridescent gold-green or blue-green with 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. The mines or tunnels may be from 3 to 15 feet long and the larvae may live in the wood for 15 or 20 years before they transform into beetles and emerge.

CONTROL—This insect is very difficult to control in the home because of the long period of time the larva remains in the wood, the length of the tunnels, and the fact that infestations are not usually evident until the adult emerges from the wood. However, infestations are seldom extensive enough to cause serious structural weakness. Exit holes in flooring or other exposed wood may be filled with plastic wood where advisable. Later, if no new emergence occurs, the damaged wood may be replaced.



*Golden Buprestid
Adult*

HOUSE CENTIPEDES

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 well elevated above the surface over which it moves.

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

CONTROL—House centipedes are beneficial; however, if you want to control them, spray areas where they have been seen with a household spray containing 5 per cent DDT or 2 per cent chlordane.

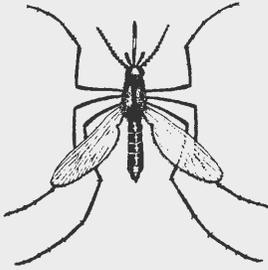


House Centipede

MOSQUITOES

Several kinds of mosquitoes are pests of man and are found around homes. Some species transmit malaria and others transmit encephalitis to men and horses. All mosquitoes breed in water and their eggs will not hatch unless moistened with water. The larvae must have water in order to develop.

CONTROL—The first step in controlling mosquitoes is to eliminate their breeding areas. Remove from the yard all unneeded cans, pails, jars, tires, or other objects which may hold water. Containers used for storing water should be tightly covered. Keep any small streams near your



Mosquito

home free from debris or vegetation which slows the flow of the water. If possible, drain low areas where water collects.

Permanent ponds or pools which do not provide humans, animals, or poultry with drinking water may be sprayed with 5 per cent DDT, or 0.5 per cent lindane, or 2 per cent malathion several times during the season. You may also apply kerosene or fuel oil at full strength. Stock ornamental ponds with fish, which feed on mosquito larvae. *Do not use DDT, malathion, lindane, kerosene, or fuel oil on pools containing fish.* A light application of liquid pyrethrin solution will not injure fish, however.

Spraying your porch and painting or spraying door and window screens with 5 per cent DDT or 1 per cent lindane in kerosene will prevent most mosquitoes from entering homes. You can spray shrubs, trees, and lawns with 50 per cent DDT wettable powder at the rate of 1 pound to 25 gallons of water. It will be necessary to spray several times during the season.

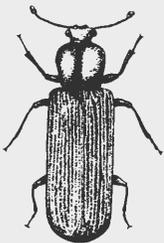
Destroy mosquitoes inside the home by spraying with 5 per cent DDT in deodorized kerosene. Aerosols containing DDT, or malathion, or methoxychlor are also very effective and easy to use.

Repellents such as Deet (diethyltoluamide), Rutgers 612, and Indalone will protect humans from mosquito bites for one to five hours. When using repellents, be sure to follow the directions on the label.

POWDER POST BEETLES

These wood-boring beetles breed in the wood and reduce it to a powder-like dust which becomes evident as the infestation increases. The insects are usually brought into the home in hardwood lumber used for flooring or finishing. They may also be brought in with hardwood furniture or other items of hardwood. Ash, oak, pecan, and hickory may become infested in lumber stock piles and the infestation may continue to develop after the lumber is used in the home.

CONTROL—The area of beetle infestation is usually limited and 5 per cent DDT in refined kerosene applied to the infested area with a small brush will provide control. More than one application may be required and best results are obtained when the finish is removed before



Powder Post Beetle

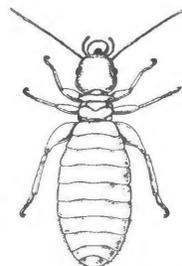
treatment. Small hardwood articles may be dipped in the DDT preparation.

Heating small hardwood articles in an oven at 130° F. for 1½ hours will also kill the insects. The use of heat, however, may warp the wood, loosen the joints, or injure the finish.

PSOCIDS OR BOOKLICE

Psocids are tiny, soft-bodied, flat, wingless insects about 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 and may be annoying when they increase to large numbers. Dampness and warmth favor their development and they are most likely to be found in damp, dark, poorly ventilated rooms.

CONTROL—Dry out areas where you find psocids. They don't thrive where there is furnace heat and are seldom a problem in the winter when buildings are kept warm and dry. Spray exposed woodwork with 5 per cent DDT in kerosene. Do not get spray material on food or cooking utensils. Destroy infested foods and eliminate dampness in food storage areas where possible. Store food in tight, moisture-proof containers.



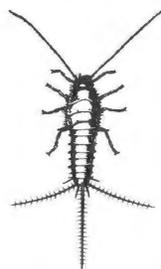
Common Booklouse

SILVERFISH AND FIREBRATS

Silverfish and firebrats are wingless, fast-running, scaly insects about ½ inch long. Their bodies taper evenly from head to tail and they have a pair of long antennae or feelers on the head and three long filaments that protrude from the tail.

Silverfish are shiny and silver or pearl gray in color. They prefer warm and damp places, but may be found in almost any part of the home. Firebrats are similar in appearance, but are mottled gray. They are most abundant around furnaces and heated water pipes. These insects feed at night on wallpaper, book bindings, rayon fabrics, and starched clothing.

CONTROL—Spray walls and other areas over which silverfish and firebrats crawl with household sprays containing 5 per cent DDT, or 2 per cent chlordane, or 2 per cent supreme grade malathion, or 0.5 per cent dieldrin.



Silverfish

Areas to be treated include the back walls of shelves, baseboards, cupboards, and holes where pipes pass through floors or walls. *Do not use these sprays near open flames.* Use 5 per cent DDT dust or 5 per cent chlordane dust in basements or around open flames. A second treatment may be necessary.

SPIDERS

Spiders, unlike true insects, have four pairs of legs and do not have antennae or feelers. Except for black widow spiders, most spiders found in homes do more good than harm although they are nuisances when numerous.

The black widow spider is poisonous to man. The female has a rounded, shiny, black body and usually has an orange or red hourglass design on the underside of the body. The male is much smaller with stripes of white and pale brown along the sides. Black widow spiders build loose irregular webs in protected dark corners of basements, garages, and outhouses and in spaces under stones and pieces of wood.

CONTROL—Spray basements, attics, and other places where spiders are found with chlordane, or dieldrin, or lindane household sprays. These materials kill spiders on contact and will continue to kill spiders visiting the treated areas for a month or more.

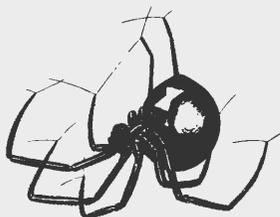
For basements and other areas where you won't mind a visible residue, sprays of 3 ounces of 50 per cent chlordane wettable powder or 1 ounce of 25 per cent lindane wettable powder per gallon of water may be used.

Tightly screened windows and doors help keep spiders from entering homes.

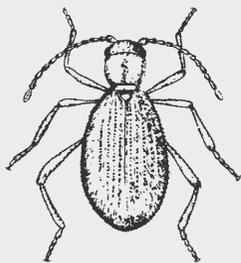
SPIDER BEETLES

Several kinds of spider beetles occasionally infest homes, but rarely become numerous enough to cause concern. They are about 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—Spray basements, walls, and other areas over which spider beetles crawl with household sprays containing 5 per cent DDT, or 2 per cent chlordane, or 0.5 per cent dieldrin. Destroy infested foods.



Black Widow Female



Spider Beetle

TERMITES

Control of termites is often rather difficult and it is advisable to have an inspection and cost estimate by a reliable pest control operator before attempting a control program.

Subterranean Termites

Termites are social insects that live in nests or colonies in the soil. They often destroy woodwork in buildings.

Each colony is made up of classes—reproductives, workers, and soldiers. The 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 pairs of long wings of equal length. Termites can be distinguished from ants by the equal length of their two pairs of wings and by their thick waistlines as contrasted to the narrow waistlines of ants.

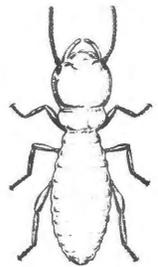
The winged termites, which are about $\frac{3}{8}$ inch long, swarm in the early spring or fall. Often this is the first sign that a home is infested. Other signs of termites are the shelter tubes or runways on the surfaces of foundation walls. Termites may be present, however, even though no shelter tubes are found.

CONTROL—Termites must be close both to the soil with its moisture, in which they live, and to the wood or wood products on which they feed. They are most likely to infest soil beneath basementless buildings where there is poor drainage and ventilation. The first step in controlling termites is to break permanently their contact with the soil or other sources of moisture, such as leaky pipes. Structural changes, replacement of infested wood, mechanical barriers, and soil poisons will usually do the job. 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.

Soil treatments with dieldrin, chlordane, aldrin, heptachlor, or BHC are effective where the infestation is only in areas along basement walls.

Dieldrin—0.5 per cent emulsion. Use 1 gallon of 18



*Western
Subterranean Termite
Worker*

per cent emulsifiable concentrate to 36 gallons of water.

Chlordane—1 per cent emulsion. Use 1 gallon of 72 per cent emulsifiable concentrate to 99 gallons of water.

Aldrin—0.5 per cent emulsion. Use 1 gallon of 25 per cent emulsifiable concentrate to 47 gallons of water.

Heptachlor—0.5 per cent emulsion. Use 1 gallon of 25 per cent emulsifiable concentrate to 47 gallons of water.

BHC—0.8 per cent emulsion. Use 1 gallon of the 12 per cent gamma isomer formulation to 15 gallons of water.

One treatment should give protection for five to ten years. Do not apply to water-soaked or frozen soils.

BASEMENTLESS HOUSES—For infestations along foundation walls of basementless buildings, dig a trench along the inside of the wall 6 to 8 inches wide and a few inches deep, taking care not to go below the top of the footings. Along the outside, dig a trench 6 to 8 inches wide and 15 inches deep. Never dig the trench below the footing, but extend it along the wall 4 to 5 feet in each direction beyond the area of the termite infestation.

Use 2 gallons of the diluted insecticide per 5 linear feet of trench along the interior foundation walls. Use 2 or 2½ gallons per 5 linear feet along the exterior. Pour or sprinkle some of the insecticide in the bottom of the trench, add a few inches of soil, and then more of the solution and soil until the trench has been filled.

HOUSES WITH BASEMENTS—Where infestations occur along exterior foundation walls in homes having full basements, dig a trench 6 to 8 inches wide and about 30 inches deep along the wall. Extend it 4 to 5 feet in each direction beyond the area of termite infestation. Then use a crowbar, pipe, or rod to drill holes in the bottom of the trench down to the area near the footing. Make the holes about an inch in diameter and a foot apart. This will give better distribution of the chemical in the soil. Use 5 gallons of diluted insecticide for each 5 linear feet of trench and apply as suggested for basementless houses.

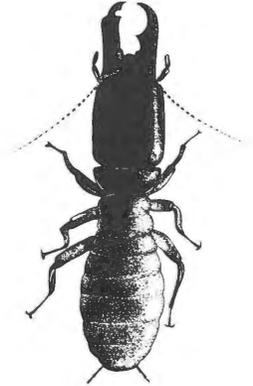
SLAB-ON-GROUND CONSTRUCTION—For termite infestations occurring beneath concrete floor slabs on ground, it

is suggested that you call on a pest control operator. Such infestations are often very difficult to control, the more so if radiant heat is involved.

Damp-Wood Termites

These termites, unlike the subterranean types, enter directly into dampened wood through decayed spots, cracks, or holes at swarming time. They do not require moist soil in order 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 may extend their workings into sound wood. They are much larger than the subterranean termite, with the nymphs being $\frac{1}{2}$ inch long and the soldiers $\frac{3}{4}$ inch.

CONTROL—Infested wood should be replaced and the conditions which permitted excessive moisture should be corrected. Provide adequate drainage or use materials other than wood in foundation areas which cannot be protected from excessive exposure to moisture. Creosote-impregnated wood should be used for house foundations and other moist areas where wood is likely to be subject to termite attack. Chlordane dust or spray applied on and into termite-infested areas will aid in control.



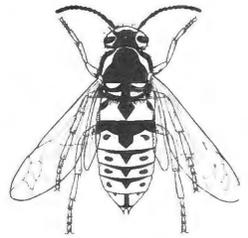
*Common Damp-Wood Termite
Soldier*

WASPS, YELLOW JACKETS, HORNETS, AND BEES

Wasps, hornets, and yellow jackets often enter attics or nest around homes during the summer. Bees occasionally nest inside the walls of buildings.

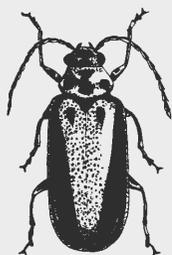
CONTROL—If you can locate the nests of wasps, hornets, or yellow jackets, thoroughly spray them in the evening when the insects are all in their nests. Use sprays containing 2 per cent chlordane, or 0.5 per cent dieldrin, or 0.5 per cent lindane in kerosene. Do not use dieldrin or chlordane for overall spraying of the interior of rooms.

To destroy bees nesting in walls of buildings, inject a liberal application of chlordane or lindane dust or spray through their entrance hole. Do this in the evening after all the bees have returned to their nest. After the bees have completely disappeared, close the entrance to the nest. It is advisable to remove the honey. Destroy it because of possible insecticide residue.



Yellow Jacket

OTHER INSECTS THAT INVADE HOMES

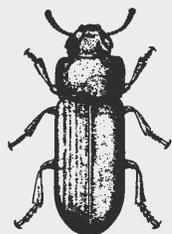


Elm Leaf Beetle

Strawberry root weevils, elm leaf beetles, lady beetles, and several other kinds of insects often invade the home in sufficient numbers to become pests, although they cause no damage indoors. Most of these insects usually become a problem in the fall of the year when they are apparently seeking a place to overwinter.

CONTROL—Applications of 5 per cent chlordane or 2 per cent lindane around the foundations of homes and to areas where the insects are able to enter may be used to control these pests outdoors. Household sprays of DDT or chlordane will aid in controlling them indoors.

INSECTS WHICH DEVELOP IN STORED FOODS



Confused Flour Beetle

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

Flour Beetles

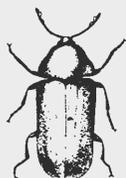
The adult flour beetles are about $\frac{1}{8}$ inch long, smooth, and reddish brown. The larvae are about $\frac{1}{4}$ inch long with white to yellow bodies and black heads. These insects infest flour, cereal products, and other stored foods. Infestations often develop in food products which are used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



Granary Weevil

Granary and Rice Weevils

The granary and rice 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 grains, but will also feed on spaghetti, macaroni, and similar foods.



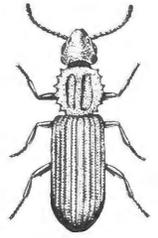
Drug Store Beetle

Drug Store Beetles

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

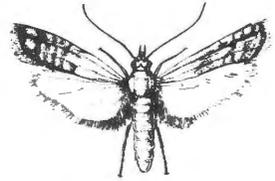
The saw-toothed grain beetle is about $\frac{1}{8}$ inch long, dark brown, slender, and flat. It has a row of saw-toothed projections along each side of the body section just behind the head. The larvae, which are quite active, are yellowish white with brown markings, about $\frac{1}{8}$ inch in length,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



Saw-Toothed Grain Beetle

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 tip two-thirds of the forewings. The Mediterranean flour moth is gray, has forewings with wavy black lines, and dusky white hind wings with darker margins. The larvae of these moths, which are white or pinkish, spin webbing through the food they infest. They eat cereal and cereal products, dried fruits, chocolate, candies, shelled nuts, and similar foods.



*Indian Meal Moth
Adult*

CONTROL

CONTROL—The first step in controlling insects infesting stored foods is to find the infested material and destroy it. Remove all foods from cupboard shelves and clean and thoroughly spray the storage area with 5 per cent DDT in kerosene. Do not get spray on food, dishes, or cooking utensils.

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. The oven door should be propped open slightly to prevent scorching of the food. Uninfested or heat-treated foods should be stored in containers with tight-fitting lids until infestations have been eliminated.



*Indian Meal Moth
Larva*

PLAY SAFE WITH INSECTICIDES

Most insecticides are poisonous to people and animals. *Be sure to read and follow the directions on the label.*

Keep insecticides where children and pets cannot reach them. Do not use insecticides on pets unless recommended. Do not contaminate food, dishes, silverware, or cooking utensils with insecticides. Do not store them with or near food. Do not breathe spray mist or dust.

Most solutions of household insecticides are inflammable and must not be used near open flame or heat. If insecticide is spilled on the skin, wash it off promptly with soap and water. Change and launder your clothes if you spill insecticide on them. Keep children and pets and foodstuffs off sprayed surfaces that have not dried.

When you have finished applying an insecticide, empty unused material into the original container. Bury any leftover insecticide which has been diluted with water. Clean the sprayer, duster, or paint brush and wash all exposed surfaces of the body with soap and water.