

MAINTENANCE GUIDEBOOK VII TERMITE, INSECT, AND RODENT CONTROL

CHAPTER FIFTEEN - MISCELLANEOUS PESTS

SECTION A CHARACTERISTICS AND RECOGNITION

1. SCORPIONS

There are twenty to thirty kinds of scorpions in the United States that range in size from 1/2-inch to 7-1/4 inches long. Most species live in warm, dry areas of the Southwest, but a number are also found across the southern states from the Atlantic to the Pacific Ocean. All scorpions are nocturnal and prey on insects; most are found under loose bark of large trees and logs, under objects lying on the ground, in woodpiles, and in crumbling stone and brick foundations. Although scorpions can live six months without food or water, free water attracts them, and they are often found near air conditioners, bathrooms, kitchens, and utility rooms. After eating, scorpions may hide for two or three months. Scorpions shun temperatures above 90 to 100 degrees F, and will often move into cooler living

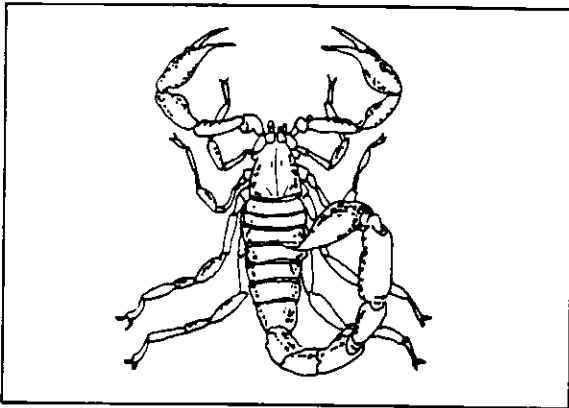


Figure 15-1

spaces from attics during summer. Heavy rains force scorpions to higher ground from dry river beds, and this is when many move into cool hiding places in homes—in crawlspaces, attics, and closets. The female bears between fourteen and more than 100 living young in mid-summer, and the young climb to ride on her back for up to two weeks, until their first molt. It takes one to four years for scorpions to mature, and their span of life is two to seven years. The sting of two kinds of scorpions from extreme southern Arizona, California, New Mexico, and Texas can cause human fatalities.

The most widely distributed scorpion in the southern states (from South Carolina to New Mexico) is the striped scorpion (Fig. 15-1). This small scorpion is about 1-1/2 inches long, tan-colored, with two dark stripes running lengthwise down the body, and is found under rocks, generally on south-facing hillsides.

2. CENTIPEDES

Centipedes are many-segmented arthropods with elongated antennae and one pair of legs attached to each body segment. Most adults are over one-inch long and run in an almost fluid manner on their numerous, long legs. Centipedes kill their insect prey with venom that is injected by means of fangs located on the front claws. Except for one group (house centipedes), these arachnids are accidental invaders of dwellings, and normally live outside under stones and debris. Extended periods of dry weather force them to wander, and they may enter structures. People are often bitten when putting on sweaty or damp clothing that had been on the floor and to which a centipede was attracted because of the moisture it contained.

a. The House Centipede

The house centipede (Fig. 15-2), common throughout the United States, usually lives its entire life indoors in dark, moist areas such as bathrooms, basements, and damp closets. This centipede is one to 1-1/2 inch long, has long slender antennae, and fifteen pair of legs unusually long for its body size. It has three stripes running the length of a grayish-yellow body, and its legs are banded in white. The house centipede usually infests basements

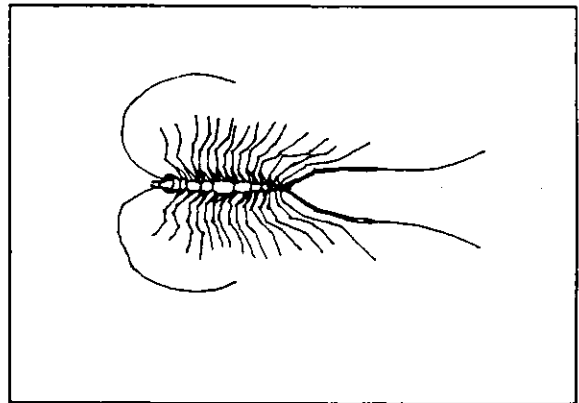


Figure 15-2

and other rooms not continually occupied in buildings where it preys on spiders and insects.

3. MILLIPEDES

There are about 1,000 different kinds of millipedes in the United States. These are slow-moving vegetarians that feed on damp and decaying organic matter and tender roots and green leaves. Millipedes require high moisture levels and are found in leaf litter, mulch beds, firewood piles, compost heaps, and loose flower-bed soil. They overwinter in the soil. Some millipedes are about six inches long, but species found in residences are usually one to 1-1/2 inches long.

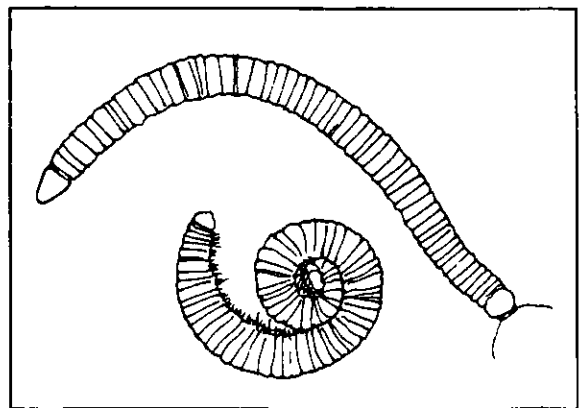


Figure 15-3

Millipedes (Fig. 15-3) are cylindrically-shaped, brown or black, many-segmented arthropods with short

antennae and two pair of legs attached to each body segment. Outside, they may become numerous and, in dry weather, migrate into basements, ground floors, and window wells. During migrations millipedes crawl over anything in their path, including dwellings. They are mostly a problem in residences located near woodlands. Females lay clusters of up to 300 eggs in moist soil. These hatch into small larvae with only three pair of legs and seven body segments. Most require two years to reach maturity.

4. CRICKETS

There are three kinds of crickets common throughout the United States that often become pests in structures: house crickets, field crickets, and camel crickets.

a. House Cricket

House cricket adults (Fig. 15-4) are 3/4-inch to one-inch long and have a light-colored head marked with three dark cross bands, yellowish-brown to straw-colored body, long and thin antennae, and heavy mandibles. House crickets fly but also have large rear jumping legs like a grasshopper. These are nocturnal insects that enter dwellings in spring or before winter, attracted to shelter, light, moisture, and warmth. House crickets are

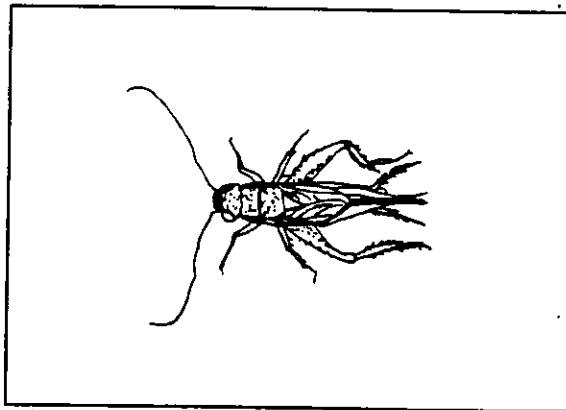


Figure 15-4

mainly attracted to warm areas around stoves, fireplaces, and furnaces, but they can also be found throughout the residence. Incessant nocturnal chirping by the male makes this a nuisance pest. Outside, house crickets live in compost piles, debris, and garbage dumps. Usually there is one generation per year. Eggs laid in sandy soil during fall hatch in late spring; young often enter dwellings under doors or through cracks and voids and complete their life cycle indoors, where they develop all year and lay eggs in cracks. Nymphs mature in mid- to late-summer.

Outside, house crickets feed on plants and other insects. Inside, their diet is more diverse: they feed in early evening on bread crumbs, fruits, vegetables, liquids, paper (such as soiled newsprint), clothing, rubber, silk, wool, linen, rayon, fur, feathers, meat and meat products, dead insects, and leather. House crickets contaminate foods by walking over it.

b. Field Crickets

Field crickets (Fig. 15-5) are common pests attracted indoors by light; however, once inside, they die before early winter because they cannot adapt to indoor conditions. Adults are 1/2-inch to 1-inch long and look very similar to house crickets, except that field crickets are usually black to dark brown in color, have brown wings, a shiny head, and antennae much longer than the body. Males have two spear-like appendages at the tip of

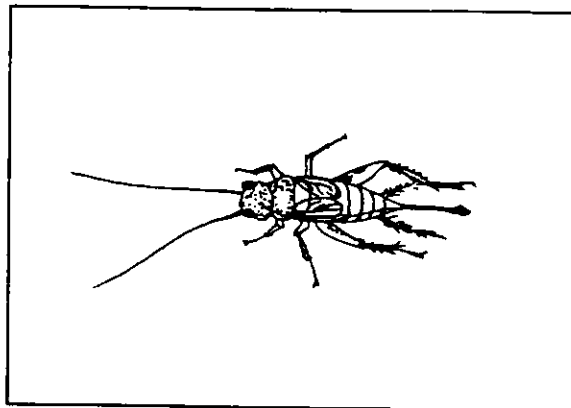


Figure 15-5

the abdomen. Females have three similar appendages. The field cricket also flies and jumps.

In northern parts of the United States, eggs deposited in the ground are the overwintering stage for most field crickets. The small remainder pass the winter as half-grown nymphs under leaves, trash, and debris. There is only one generation per year. In the South, where field crickets can feed outdoors on soft plants year-round, there may be three generations per year with the nymphs overwintering in the soil. Females lay 150 to 400 eggs about 1/4-inch to 1-inch deep in the soil in late August to September. Eggs hatch in May to June and nymphs develop in nine to fifteen weeks. Adults are only found outside from late July until the first hard freeze. Field crickets migrate into structures during fall, when populations are large, or as vegetation dries up. Indoors, field crickets are attracted to such warm, dark areas as water-heater closets and large appliances; they are usually found in basements and ground-floor levels where they feed on human food, debris, and clothing.

c. Cave or Camel Cricket

Cave or camel cricket (Fig. 15-6) populations build up indoors during fall, when large numbers of these insects move under doors and through cracks seeking dark, cool, damp areas in crawl-spaces, basements, utility rooms, garages, and outdoor sheds (especially those with partial dirt floors); they are rarely found in living spaces. Their natural habitat is outside, where camel crickets live under stones and logs or in animal burrows. Camel

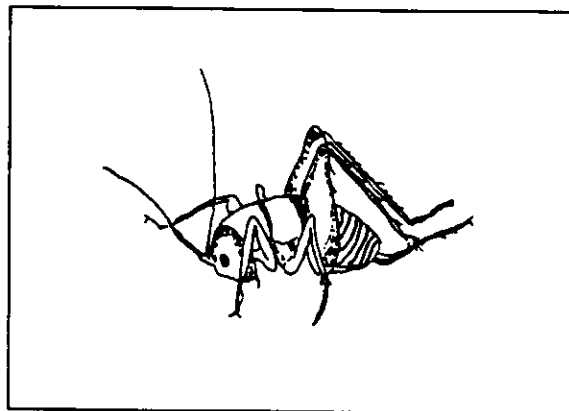


Figure 15-6

crickets have a rounded, hump-backed appearance with a head bent downwards. They are light brown in color with darker brown bands and markings. Camel crickets are easily identified by their long antennae and long and large jumping hind legs. They are wingless, don't chirp, and are not attracted to light. Most importantly, camel crickets serve as a warning or indicator of excessive moisture problems.

5. EARWIGS

Earwigs (Fig. 15-7) are 1/2 to 3/4 inch long, conspicuous and easily recognized. They are nocturnal insects with a flattened shape and forceps or pinchers at the tail end. At first glance, earwigs appear to be wingless, but they will fly to lights at night. Earwigs feed on other insects and often scavenge in garbage and moist plant material. They are dependent on high-moisture conditions and serve as a warning or indicator species for moisture problems. Earwig females

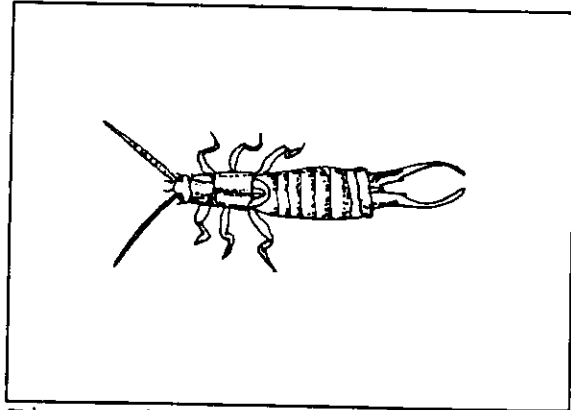


Figure 15-7

place 50 to 90 eggs in moist depressions or holes and tend them until hatching; after eggs hatch, earwig mothers continue to guard and groom the young nymphal stages. Earwigs often enter on ground floors and then make their way into other parts of the house. Some species of earwigs produce a noxious odor when crushed.

6. SILVERFISH AND FIREBRATS

Silverfish (Fig. 15-8) are wingless, flat and carrot-shaped insects, about 1/2-inch long, and covered with a sheen of silvery scales. They possess three long, slender antennae-like appendages that project rearward from the abdomen. Silverfish prefer temperatures between 70 and 80 degrees F, and high humidity. Adults may live from two to three and up to eight years, and can survive as long as a year without food. Silverfish feed on

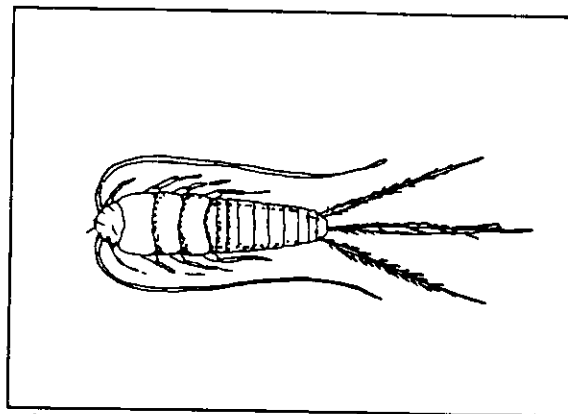


Figure 15-8

starches like flour, starch, glue, paste, and textile and paper sizings, but they can also digest cellulose. Silverfish build up around materials upon which they feed, such as spilled flour in cupboards, corrugated cardboard boxes in damp basements, and on insulation, glue, and stored books in unventilated attics. Their feeding leaves irregular, yellow-

stained holes in textiles and paper, damaged surfaces on corrugated cardboard, and irregular chewed areas on cloth-bound books. Damaged materials often have dark fungus growing on them supported by humidity and insect fecal pellets. Large populations of silverfish spread into other humid areas within the building from basements and wall voids penetrated by pipes, and are often trapped in wash basins and bath tubs.

Firebrats are similar insects but not silver-colored, rather mottled dark-gray and dull-yellow. Their size, shape, and appendages very much resemble silverfish, but firebrats prefer decidedly higher temperatures and surroundings, to 90 degrees F or above. Firebrats are commonly found in furnace rooms, steam-pipe tunnels, hot apartment bathrooms, and partition walls of water-heater rooms.

SECTION B HAZARDS OF INFESTATION

1. SCORPIONS AND CENTIPEDES

Scorpions and centipedes sting or bite when accidentally crushed or contacted, but most are relatively nonvenomous. The venom is no more poisonous than that of a bee or wasp. Although beneficial, these pests frighten people.

a. Precautions

Use a stick to turn over objects on the ground, or carefully inspect their undersides, before picking them up. Be careful or wear gloves when placing hands into dark, damp areas or holes in the ground. Shake out and inspect shoes and clothing before putting them on in the morning.

Move beds away from walls and be sure that the bedspread does not touch the floor. Since scorpions and centipedes can't climb clean glass, place crib or table legs in wide-mouth glass jars at night, where warranted. Further, use a flashlight and do not walk around barefoot at night where such pests are suspected.

2. MILLIPEDES

Many millipedes roll into a ball when disturbed, but other species expel caustic, noxious, pungent secretions that may be irritating to human skin and smell unpleasant or leave temporary stains. Some species forcibly eject the spray secretion.

3. CRICKETS

a. House Crickets

House crickets feed on, damage, or contaminate human foods and possessions.

b. Field Crickets

Field crickets damage garden and field crops when feeding on flowers and young seeds. Large unsightly and unsanitary swarms of crickets are attracted to windows and street lights. Cats feeding exclusively on cricket swarms become emaciated and subject to fits. When inside, field crickets feed on and contaminate foods.

4. EARWIGS

Earwigs may be destructive to chrysanthemum and dahlia flowers, often causing complete seedling losses. Earwigs eat holes in various parts of other plants and destroy buds. The bite of an earwig is uncomfortable, but is not serious to humans. Earwigs contaminate food when walking over it.

5. SILVERFISH AND FIREBRATS

Silverfish and firebrats are destructive to books, paper, fabrics, and may contaminate foods. They are often found in libraries, used book stores, and areas where old books and papers are stored.

SECTION C INSPECTION AND MONITORING

1. OUTSIDE

- Conduct a flashlight inspection under bark, boards, and stones near the dwelling's foundation (be careful if scorpions or centipedes may be present).
- Inspect for open cracks around foundations and door stoops.
- Inspect for pests behind bird houses, tree-trunk wrappings, and under plant mulch. Carefully examine crawlspaces and attics.

2. INSIDE

- Inspect kitchen sink cabinets and bathroom areas, open cracks and pipe chases that lead into wall voids, or crawlspaces for the presence of pests.

- Check food packages, starch-based materials, and stored textiles for pest infestation and damage.
- Inspect water-heater closets, utility rooms, and attics, especially areas of high humidity or temperature.

SECTION D CONTROLS

1. PHYSICAL, MECHANICAL, AND CULTURAL CONTROLS

Control or elimination of miscellaneous pests in structures requires careful inspection to find established populations and correct conditions that support pests. General physical, mechanical, and cultural control methods which apply to all miscellaneous structural pests include the following:

a. Outside

Tighten up and caulk all possible points of entry. Most pests find easy entry into dwellings beneath doors. Seal foundation cracks, floor entries, windows, cracks between door stoops and patios, and building foundations near ground level. Be sure weatherstripping and sweeps on doors and windows fit tightly.

Raise garbage cans off the ground to dry out soils, and tightly close their lids to prevent pests from entering cans. Use yellow "bug lights" or high-pressure sodium bulbs. Provide all vents with metal screens. Remove lumber, firewood, trash piles, stones, boards, leaves, grass, compost piles, or other materials which provide pest harborage and are stacked near buildings.

Reduce moisture both outside and inside; repair plumbing leaks and dry out wet areas. Eliminate standing water and change the grade so that water drains away from structures. Trim hedges and plants away from foundations, and trees away from the roof. Prune shrubbery back from buildings and foundations; keep lawns mowed and landscape weeded. Replace mulch near doors and window wells with plastic ground cover, then cover plastic with 2-inches of gravel. Clean leaves and debris from roof gutters. Control insects on plants that attract predatory pests.

b. Inside

Check all floor-level doors (see if outside light comes in under door sweeps) and window openings for tight closure. Repair leaking pipes or pipes that accumulate condensation. Caulk loose-fitting baseboards and holes around electrical and plumbing utility lines and seal cracks.

Clean up cellars and basements. Keep trash covered and remove garbage every night; keep

trash receptacles clean. To prevent access from sewer lines, plug or screen sink and floor drains (especially at night); cap or keep liquid in drain traps.

Reduce the numbers of insects that predators (centipedes, scorpions, earwigs) feed on. Move outside lights away from doors to prevent attracting insects to doorways. Many moisture-loving pests can be trapped during dry weather under damp burlap bags or newspapers.

Use dry heat (120 to 140°F) to control many insects that favor cool locations or high moisture. A heat treatment using forced air heat may be provided by a licensed pest-control company.

2. CHEMICAL CONTROLS

Chemical controls do not correct situations that foster pest populations, and will only provide relief for short periods of time. Pesticides, used alone, will not control pests satisfactorily without also performing habitat alteration. Long-term control requires correcting the conditions that support pests.

Aerosol, spray, dust, and bait pesticides are available for insect and spider control; however, their effectiveness can be enhanced if:

- Pesticides are properly applied with narrow extension tubes deep into cracks, crevices, and voids where household pests hide and where greatest effects are obtained.
- Regular and follow-up inspections are conducted. Determine whether the eggs of a pest have hatched or if pests have emerged from deep recesses in the structure, where they hide for a couple months after feeding or during bad weather.
- Exclusion by closing cracks and crevices is used to prevent entry of outdoor pests (such as field crickets) that cannot become established indoors but which may enter the house through open cracks and crevices.
- Pesticides with residual action when applied on alkaline (gypsum or concrete) or on porous surfaces (such as unpainted wood) are used.
- Toxic baits used are attractive to pests and transferred to reproductive members of the pest population.
- Pests have not developed resistance to pesticides used.

END OF CHAPTER FIFTEEN