

MAINTENANCE GUIDEBOOK VII TERMITE, INSECT, AND RODENT CONTROL

CHAPTER THIRTEEN - SPIDERS

SECTION A CHARACTERISTICS AND RECOGNITION

1. GENERAL

Only a few species of spiders live in structures; most are accidentally carried into dwellings on firewood, laundry, or flowers. Since they feed on insects, they are rarely problems in buildings without an insect food source. They are objectionable pests to people fearful of them, even though most are harmless. There are only two spiders considered dangerous to human beings in the United States: the black widow and the brown recluse. These generic names, however, represent several different species. The following discussion describes these two spiders, but generally applies to all spiders.

2. BLACK WIDOW SPIDER

Several kinds of black widow spiders are widely distributed over the eastern, southern, western, and northwestern states of this country. Black widow spiders are normally outdoor species; however, they sometimes move or are accidentally brought indoors. Young spiders may migrate inside on ground-floor levels. Outside, the black widow can be found in crawl spaces, bird nests, on low-growing plants, grape arbors, and under porches, garages, and sheds. But they are also found in stacked pots, baskets, boards, firewood piles, rodent burrows, water meters, and under bricks and stones.

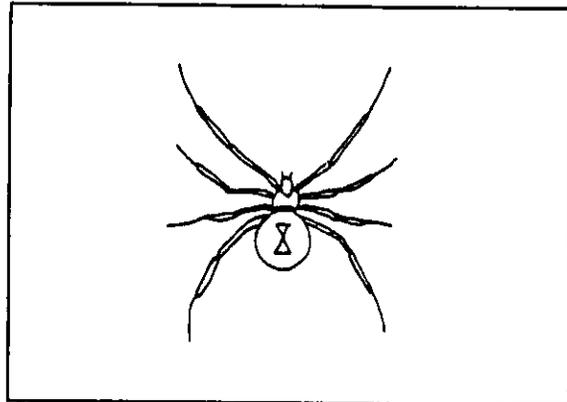


Figure 13-1

The female black widow has poison glands and fangs with which she kills insect prey. These spiders can go for as long as three to four months without eating at all. Although the female black widow rarely leaves the web, males are more adventurous, especially when seeking a mate. When they first hatch, males are slightly venomous, but the potency of venom is lost as they mature. Male black widow spiders are not dangerous to people.

The adult female black widow spider (Fig. 13-1) has a shiny black abdomen that usually carries on the

underside red or yellow-red markings resembling an hourglass, and visible when she hangs upside down in the web. The markings, which may be absent, vary in different individuals from that of a typical hourglass shape to a pattern of two or more triangles; occasionally, some spiders may only possess a long, irregularly colored area. Male black widow spiders are small, white, and streaked with red, white, or yellow. Although female black widows are about 1/2-inch long, males are only about half that size and have longer legs.

Adult female black widow spiders are primarily nocturnal. They weave tangled webs of coarse silk in dark locations, and in late summer begin to lay batches of eggs in units of 300 to 400 on the web. During a season, they can produce from four to nine batches of eggs, which are covered with a silken sac. The female guards the egg capsules and moves them as necessary when repairing the web. Females tend to be hungry and aggressive after egg-laying, during which time most human-related bites seem to occur. Eggs hatch in eight to ten days, and the young disperse by riding air currents on short strands of web. Black widows mature in about four months and only mate once. Although some believe the female kills the male after mating (hence, the name "widow"), others contend that the female rarely does so. The life span of a spider is from eighteen to twenty-four months.

3. BROWN RECLUSE SPIDER

About seven kinds of brown recluse spiders make up this group. These are dusky-tan or brown spiders that range over most of the United States, sometimes "hitch-hiking" into dwellings on luggage or household furnishings from other places.

The brown recluse spider is an outdoor species that hunts at night. It doesn't use a web to capture prey, but runs fast to overtake it instead. In the south, the brown recluse lives under loose bark, in woodpiles, under sheds, and beneath debris.

In the North, it has to live indoors, especially in the sleeves of clothing hung for long periods of time in closets. The brown recluse spider has a high moisture requirement, and is often found near water heaters. It may also be found behind or under furniture and boxes.

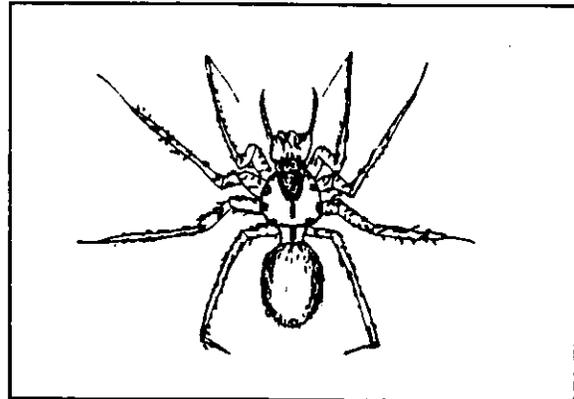


Figure 13-2

The brown recluse (Fig. 13-2) is a medium-sized spider (about 5/16 to 1/2-inch) and smaller than the black widow. Unlike the black widow, the brown recluse has an oval abdomen that is uniformly tan-to-brown and without markings. A dark "violin-shaped" fiddle back mark is obvious on the cephalothorax (combined head and thorax portions) on most species. The broad base of the fiddle

begins at the eyes and the narrow part of the fiddle neck ends just above the attachment of the abdomen. The brown recluse has six eyes placed in a semi-circular pattern. Its legs are long, the second pair longer than the first.

Although the brown recluse makes a fine, irregular web, it wanders around to hunt after maturing. During a lifetime, females produce one to five egg cases of 30 to 50 eggs each. Eggs are placed on the web in a loosely woven sac of wispy sheets of silk. Usually one or two young spiders per brood survive, because adults are cannibalistic (and also feed on black widow spiders). Recluse spiders mature in seven to twelve months, and they generally live one or two years.

SECTION B HAZARDS OF INFESTATION

1. BLACK WIDOW SPIDER BITES

Death results in less than four percent of persons bitten by black widow spiders. Strong, healthy adults rarely succumb to a bite, but young children are more vulnerable. Deaths among the elderly are usually the result of complications beyond the spider's bite.

Female black widow spiders are quite timid and usually make no effort to bite, even when provoked. Bites may occur when a spider is accidentally squeezed against a person's body. Spiders make webs in the folds of clothing, shoes, or under objects in dark corners.

The severity of the black widow bite depends on the amount of venom injected, age and condition of both the victim and the spider, part of the body bitten, degree of immunity of the victim, and treatment given. A black widow spider bite is not always felt, and in most cases, only two tiny spots along with redness appear at the bite site. Pain begins to increase around the bite after half an hour or more, along with other symptoms such as headache, dizziness, shortness of breath, and abdominal and back pain. The pain lasts for 12 to 48 hours and is generally worst by the second or third hour. Muscles in the victim's abdomen become rigid, and the person may develop nausea and, in some case, convulsions.

a. How to Treat a Black Widow Bite

Anyone bitten by a black widow spider should be treated for shock by being kept quiet, preferably in bed and covered with a blanket. Get victims to a hospital as soon as possible. Antivenin is readily available to most physicians; if a doctor is not available, wash the skin around the bite but make sure any venom still remaining on the skin is flushed away from and not into the wound.

Recommendations are to continually apply ice to the bite site, since cold delays absorption of the

poison and gives the body an opportunity to neutralize the venom. Never administer alcohol since it increases sensitivity to the venom. Give the patient plenty of water and sweet weak tea.

2. BROWN RECLUSE SPIDER BITES

Brown recluse spiders generally avoid areas of human activity, and are usually found only in unused rooms. Even though indoor infestations may be large, household residents are seldom bitten. The brown recluse is not aggressive but bites and causes severe wounds when squeezed against a person's skin, as in putting on shoes or clothing (most bites occur on arms and legs). Bites can be expected when previously unused rooms are occupied or when clothing stored for a long time in closets is brought out for use. Brown recluse bites sometimes produce a sharp sensation at first, which may be mistaken for a bee sting or insect bite. However, it may not be noticed at all. Victims may not realize the full extent of the trouble for eight to twelve hours, when pain becomes intense. A reddened area and accompanying painful swelling develop at the bite, and nausea, vomiting, fever, and a rash may appear. The site of the bite becomes dark and dry and after seven to fourteen days, tissues surrounding the bite become an open ulcerous wound. Without prompt medical attention and over a period of days, the ulcerous wound becomes a festering sore. Although scabs may form over the wound, they tend to fall off and the wound continually grows deeper and fails to heal for several months (up to a year). There is always the potential for gangrenous infection and skin grafts are sometimes required to close the wound. Death from bites is extremely rare, but bites are very debilitating and traumatic.

a. How to Treat a Brown Recluse Bite

Apply ice to a bite as soon as possible, elevate the limb, and take the victim to a physician. The brown recluse is a delicate spider and after a bite it can usually be found near where it was slapped by the victim. The spider should be killed (without destroying it, so it can be identified) and taken with the victim to the physician. Identification of the spider is important for proper treatment, because a few other biting arthropods produce similar injury.

3. OTHER HAZARDS

Some spider webs may clog vent pipes and trap fumes or odors inside structures.

SECTION C INSPECTION AND MONITORING

Move cautiously when inspecting or treating sites where there is potential spider harborage.

1. INSPECTING FOR RECLUSE SPIDERS

Wear long sleeves, long pants, socks, and gloves and use a flashlight during inspections along walls in little-used, cluttered storage areas such as closets and attics. Look for loose irregular webs, cast skins and silky egg cases (about 1/3 inch in diameter), but avoid placing hands in dark places. Spiders shed their skins in order to grow; these "cast" skins are fragile but retain a characteristic violin marking. Such skins indicate infestation.

Inspect behind and under furniture, in kitchen and bathroom cabinets, closets, ceiling light fixtures, stacks of fire wood, and water-heater closets. Other locations for inspection should include mattresses and bedding; walls and floors and stacked boxes, bags, papers in store rooms and sheds; behind picture frames; under stairs; and hanging clothing that has not been used for some time. Concentrate on areas outside daily traffic patterns. Outdoors, brown recluses are found between the soil and foundations, door stoops, and in window wells.

2. MONITORING BROWN RECLUSE SPIDERS

The presence of brown recluse spiders can be monitored in sticky traps. Tent-top or other sticky traps with covers seem the most effective.

SECTION D CONTROLS

Spiders should be conserved whenever possible; they are natural control agents for many pests.

1. MAJOR MISTAKES IN SPIDER CONTROL PROCEDURES

The following are mistakes made in spider control procedures:

- Spiders are re-introduced into structures by way of firewood, laundry, and flowers.
- Failure to eliminate the insect food source.
- Over-responding in control due to spider misidentification.
- Extensive pesticide application when only a few harmless spiders are present, which could be controlled by physical or mechanical means.

2. PHYSICAL, MECHANICAL, AND CULTURAL CONTROLS

a. Sanitation

Habitat modification, good sanitation, and exclusion are absolutely necessary for long-term spider elimination. Inform residents of the need and the techniques.

- Frequently and thoroughly vacuum (with an industrial vacuum) all cracks and crevices, closets, behind furniture, and mop floors to destroy webs, egg sacks, and young spiders. Clean dark corners (using leather or rubber gloves). Concentrate efforts for brown recluse control in seldom-used rooms. Remove webs from exterior of building so that spiders leave.
- Remove lumber, scrap, rubbish, and debris from near and under buildings; frequently clean rain gutters. Stack firewood, brick, and stone piles away from buildings; inspect firewood for spiders and egg sacs. Keep grass mowed and cut very short next to buildings; establish an 18-inch swathe of gravel cleared of vegetation all around buildings. Keep trees and shrubs trimmed back at least twelve inches from structural walls. Pick up leaf litter and other debris in yard, especially next to buildings.
- Make residents aware that spiders are often introduced into dwellings on firewood, lawn furniture, garden implements, and children's toys. Remove the bark from firewood or be sure that it has been solidly frozen before bringing it inside; don't bring in any more wood than will be burned in an hour or two.
- Perform annual spring cleaning: turn mattresses, clean closets; dispose of unused items, rotate seldom-used items in garages, under beds, other areas; neatly stack items inside away from walls; remove and wash all bedding; remove and clean drawers from dressers, remove cobwebs. This is very important for brown recluse control because it interrupts the spider's reclusive habits. Re-inspect spaces disturbed by dusting, vacuuming, and mopping the same evening, and kill any moving spiders.
- Inspect winter clothing and other unused closets during spring and summer. Before returning clothing to storage, clean it and pack it in sealed plastic bags.
- Repair all water leaks and sources of condensation on pipes.
- Reduce the numbers of insects in and around the building. To avoid attracting spiders, arrange outside lighting so as not to attract insects, move lights onto poles and away from structures; trim weeds and remove debris around foundations, caulk entry holes, install tight-fitting screens and door sweeps. Spiders need a ready supply of insects to survive, and invade homes infested with insects.
- Regularly clean floors and baseboards and remove debris. Do not leave old clothing or bedding or boxes and piles of paper on floors.
- Thoroughly clean attached garages and basements, crawlspaces, and outbuildings.
- Dry out crawlspaces, or spider problems will recur.

b. Exclusion

Inspect doors and window casings to be sure screens function properly; caulk holes large enough to admit spiders, including openings around water pipes and electrical lines. Keep tubs, sinks, and drains stoppered at night. Install tight-fitting door sweeps to exclude spiders and crawling insects.

3. OTHER CONTROLS

a. Biological Controls

Mud dauber wasps, birds, rodents, and predatory insects prey on spiders.

b. Heat

Infested rooms can be treated by heating them to 120 degrees F for one-half hour.

c. Direct Controls

Step on individual spiders, kill them with a fly swatter, or remove them with a vacuum.

4. CHEMICAL CONTROLS

Chemical control, when used, should be combined with nonchemical controls. Although spiders are susceptible to most insecticides, chemicals are seldom used because of difficulties in getting spiders into contact with pesticides: they do not ingest pesticides during grooming and walk on hairs on their feet which prevents surface contact. Web-building spiders seldom leave their webs.

Pesticide dusts, however, are sometimes applied in attics and crawlspaces and residual sprays are used for perimeter treatment. If a good spider reduction is done in the fall, few problems should occur until early to late summer of the next year.

When using pesticides to treat dwellings for spiders, warn residents that spiders not killed will wander for a few days following treatment and residents should be cautious in rooms that were treated.

Carefully analyze the micro-habitat occupied by problem spiders and use appropriate nonchemical and chemical controls.

a. Indoors

If necessary, use crack-and-crevice application dust like boric acid or diatomaceous earth to treat the structure, including attic and crawlspace, window and door frames and casings, baseboards, cracks and crevices, room corners, beneath and behind furniture, closet bottoms, and garage, in order to reduce insects spiders feed on. Since web-building spiders recycle silk (eat and digest old webs), light dust applications on webs may be effective.

If spider populations are not reduced, spot-treat areas of infestation with residual chemicals by directing insecticide into voids, cracks, and crevices.

b. Outside

Using the above techniques and materials, treat around foundations, windows, doorways, pipe openings, wooden fences, weep holes in brick walls or veneers, and building perimeters. Dustings should be wide-spread to eliminate spiders before they enter the dwelling. There is no need to treat the lawn.

END OF CHAPTER THIRTEEN