

Spiders

Class:

Arachnida (spiders, daddy-longlegs, ticks, mites, and scorpions)

Order:

Araneida (spiders)

Development:

Simple (egg-immature-adult)

Mouthparts:

Venomous piercing jaws (chelicerae)

Spiders

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Many spiders can be found indoors in basements, crawl spaces, and other areas where it is somewhat damp. Other species prefer a drier location and can be found in the upper corners of rooms, in attics, and in floor vents. The presence of spiders in homes may be considered a nuisance due to some species' habit of building webs in corners, closets, on furniture, across windows, and around doorways.

Some fear of spiders persists because of the myths of dangerous spiders and the publicity given to occasional human poisonings from the bite of a few species. As a general rule, spiders are seldom aggressive toward humans and will usually only bite when trapped or injured. They naturally prey on insects and should be considered beneficial.



Figure 1. Wolf spider.

General Body Form and Behavior of Spiders

Egg: Females lay their eggs in dark, well-protected areas, or in silk cocoons called egg sacs. The females of some species guard their eggs, while other species carry the egg sac with them as they travel from place to place in search of food. Many common species of spiders produce about 100 eggs per female. The eggs are usually laid over a period of time. Mating

and egg-laying may occur at any time during the year, depending on the species of spider.

Immature: Newly emerged spiders, known as spiderlings, scatter as quickly as possible after leaving their eggs. Spiderlings often disperse by a technique known as "ballooning." The young spider sends out a silken thread which is picked up by the wind, carrying it through the air. This

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method is used by most spiders and is extremely effective in transporting young spiders. Spiderlings feed and develop over a period of several months, during which time they go through a number of molts, until the final molt to the adult stage. Most common spiders have one generation per year, with the adults appearing in the late summer months.

Adult: Adults look like the immature in body form and often in coloration and markings. Spiders are members of the Class Arachnida. Unlike insects, arachnids have only two body regions: a combined head and thorax (or cephalothorax) and an abdomen. Spiders have up to eight simple eyes; insects generally have two compound eyes. Spiders have four pairs of legs and no antennae. Like all arachnids, spiders have knife-like mouthparts which pierce the bodies of their prey. Both immature and adult spiders inject a enzyme-containing venom into the prey. After the tissues have been thoroughly digested inside the prey's body, the spider ingests the liquid through its mouthparts. Spiders have silk-producing organs, or spinnerets, on the underside of

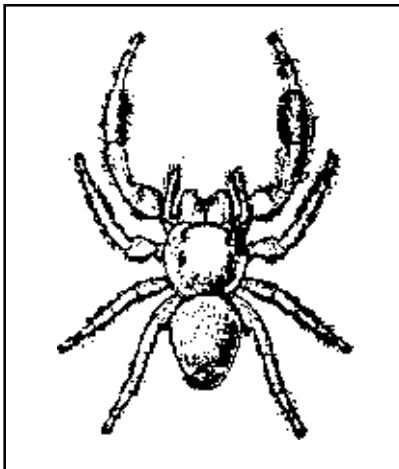


Figure 2. Jumping spider.

the abdomen. Some make webs and others do not.

Life History and Body Form of Specific Spiders

Spiders can be separated into two groups based upon the way in which they capture their prey. The two groups are the “hunters” and the “waiters.” Spiders in the hunter group actively search for their prey, and they may travel long distances to find an area with sufficient food to survive and reproduce. The waiters create a web and wait for their prey to get caught on the sticky silk. A brief overview of the life histories of some common spiders, categorized into each of the two groups, is discussed below.

Common hunting spiders are wolf spiders (Lycosidae) and jumping spiders (Salticidae).

Wolf spiders are common, fast and large, so they are often feared. Many of the species are approximately 1/2 inch in length, but some species reach a size of 1 to 1 1/2 inches. Most wolf spiders are brown or gray and move very quickly. They may hunt day or night and do not produce webs. As the outside temperature drops, wolf spiders begin to move into sheltered areas, including homes, in order to escape the cold. During the summer wolf spiders may follow prey into buildings, but they are considered “outdoor” spiders. The larger species of wolf spiders can produce a mildly painful bite, but the symptoms do not last long unless secondarily infected. They have eight dark eyes which are unequal in size and are arranged in three rows of four, two, and two eyes from the front of the head to the top.

Jumping spiders are extremely active. Their bodies are robust and are often covered with brightly colored hairs. They are most active during the day and jump while in pursuit of prey and when disturbed. The middle two eyes in the first (headmost) row are large and are seen easily. Most jumping spiders are between 1/8 to 1/2 inch in length. They seldom reproduce in homes, and human contact with them usually occurs during the late part of the season when they accidentally enter homes to survive the frosts.

Common waiting spiders are orb weavers (Araneidae), funnel weavers (Agelenidae), and cobweb spiders (Theridiidae).

Orb weaver spiders create large flat webs which are made of threads radiating from a central point with a circular design, and they wrap their prey completely in silk. They tend to make their webs in tree branches and corners of eaves, and attract attention because of their size and elaborate web construction. Removal of webs is an effective way to reduce orb weavers and to detect new invaders. Orb weavers are attracted to buildings to make their webs, but rarely enter homes. They vary considerably in body shape but certain species of this group may be the size of a quarter in diameter as adults.

Funnel weavers (or funnel-web spiders) vary in size from 1/8 to 3/4 inch, with dark-colored rings on their legs. They produce funnel-shaped webs which are made in lawns or in protected corners of buildings during the late summer. Funnel weavers may also be found in cellars and bathrooms and are often trapped in sinks or bathtubs. Although funnel-web spiders

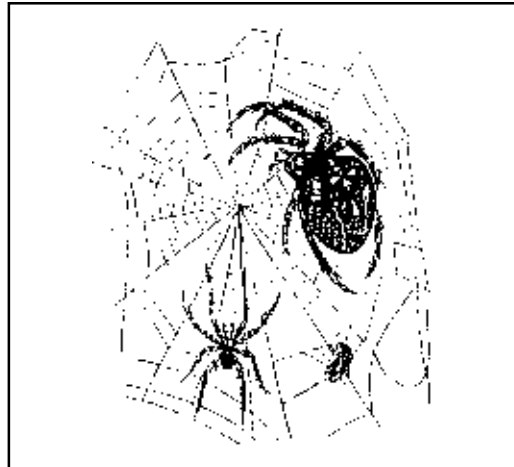


Figure 3. Orb weaver spiders.

are commonly found in homes and are often mistaken for wolf spiders or brown recluse spiders, most of them are not aggressive and pose little threat to humans. However, one species of funnel weaver spiders has the potential for causing injury—the hobo spider, also called the aggressive house spider. This species has been detected recently in western Wyoming and is described below, in “Spiders of Special Concern.”

Cobweb spiders (or combfooted spiders) are extremely common in homes, and most of the species in this group are capable of surviving indoors if there is an adequate food source (i.e., a large number of insects) available. These spiders range from 1/8 to 1/2 inch in length and are generally found in irregular webs in dark areas such as the corners of rooms. Their webs are often made with their bases attached to the ground, sometimes with a tentlike mass of thread in which the spider stays when inactive. Almost all cobweb spiders are completely harmless, except for widow spiders.

Spiders of Special Concern Due to Their Venom

Three species in Wyoming of special public concern are the black widow spider, the brown recluse spider (also known as the “fiddler,” “fiddleback,” or “violin” spider), and the aggressive house spider. The venom of these species is highly toxic to humans. As with many other health concerns, the very young, old, and ill members of the community may be particularly susceptible to injury from bites made by these spiders

These spiders all tend to avoid contact with humans whenever possible, but will bite when threatened, disturbed, or when the female of the species is protecting an egg sac.

Black widow spiders are widespread in Wyoming. Full-grown female black widow spiders, the poisonous individuals of this species, are approximately 1/2 inch in length, are shiny black or dark brown, and have large round abdomens. Black widow females have reddish-orange markings on the underside of the abdomen in the shape of an hourglass, al-



Figure 4. Black widow female.

though this pattern may vary, sometimes occurring as two unconnected dots. A few related species have similar markings but are less venomous. The webs made by widow spiders are large and irregular and are usually found in dark, quiet areas such as abandoned rodent holes, shrubs, and the corners of outbuildings. Widow spiders also nest in crawl spaces and undisturbed parts of homes.

Widow spiders tend to avoid trouble, but become more aggressive when guarding eggs. Most bites occur when a person traps the spider against the skin unintentionally. The bite of a black widow directly affects the nervous system, and a person who has been bitten by a female black widow will likely experience a burning sensation, swelling, and redness in the area. Pain from a black widow spider bite may become increasingly more uncomfortable and medical attention should be sought. Severe cramping of the leg, arm, and chest muscles is common, and in many cases, the abdominal muscles may also react in a similar manner. Black widow bites should be treated as soon as possible by trained medical personnel.

The brown recluse spider occasionally occurs in eastern Wyoming and in other parts of the state along transportation routes. Other harmless funnel-web species are often misidentified as brown recluse spiders. Brown recluse spiders range from yellowish-brown to dark brown in color. Close inspection of brown recluse spiders demonstrates a distinctive fiddle pattern on the cephalothorax which can be seen from above without the use of

magnification. The bite of a brown recluse spider may go unnoticed initially, or a burning sensation that lasts from two to eight hours may be experienced in the location of the bite. A blister may form around the area of the bite, and the region may become red and swollen. After the initial reaction to the bite, the affected area will not begin to heal like a typical injury. Medical attention should also be sought when a suspected brown recluse bite has occurred. If possible, the spider should be caught and brought in for identification.

One large species of funnel-web spiders, the hobo, or aggressive house spider, has been associated with human spider bites in the Pacific Northwest, and may cause symptoms similar to those of a brown recluse. Despite its name, the spider is not especially aggressive, but will often bite quickly after being trapped or threatened. The hobo spider can be distinguished from other funnel-web species by its large size, from one to 1-3/4 inch long, and the absence of rings on its legs. The hobo spider is a tannish, quick-moving spider that will not be found on vertical surfaces or ceilings. This species is relatively common in the Pacific Northwest states, Montana and Utah, and has been detected in Uinta County, Wyoming.

Management

Controlling spider populations in the yard and in garden areas is not necessary unless they are harmful species or a nuisance. Two easy ways to avoid potential problems and encounters with spiders are to keep them out of the home by maintaining a well-secured house and reducing the harborage for spiders in the home.

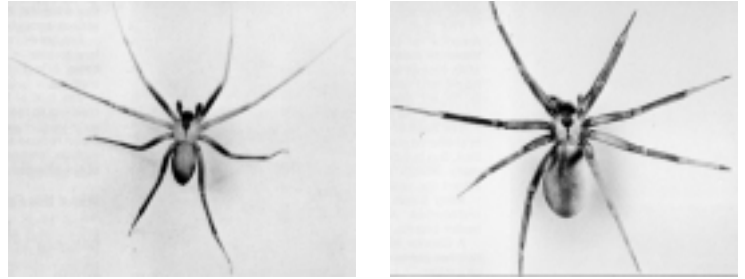


Figure 5. Brown recluse male (left) and female (right).

Closing gaps around windows, weather-stripping completely around doors, filling cracks in siding and around the foundation, and sealing any other gaps in the house are all ways of minimizing the chances of spiders entering the home. Inspecting firewood before bringing it into the house is also a good way to prevent introducing spiders living under or in the wood pile. Within the home, regular cleaning of closets, wall and window corners, window blinds, and storage areas will reduce the presence of spiders. Removing webs regularly will help the homeowner reduce encounters with spiders, as well as help identify new invaders.

The most frequently asked question about a spider in an area is, "Is it poisonous?" The best answer for this question is usually that the spider is poisonous, but not dangerous to humans. Under most circumstances, spiders are beneficial because they feed on a variety of insects. Spiders in yards and gardens should not be of concern unless they are dangerous (black widow spiders will nest in the ground in untended areas). A large population of spiders in an area indicates that a large number of insects is also present in that area. Therefore, if spiders cannot

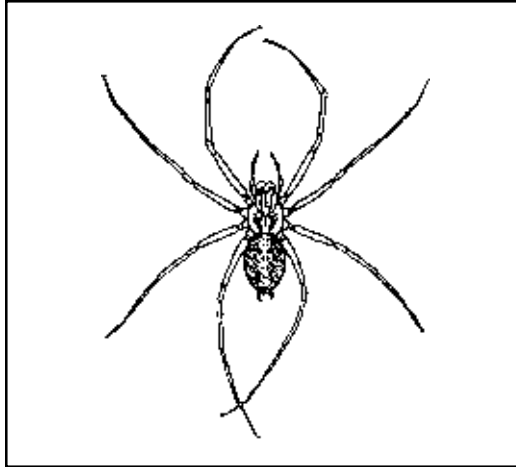


Figure 6. Hobo spider.

be tolerated, maintain an area that is free of plants and other sources of food for insects and spiders.

If chemical control is warranted due to the presence of venomous spiders or an intolerable number of spiders in an area, several products are available to the public. Be sure to verify that the product can be used in the area to be treated (for example, not all outdoor products can be used indoors). Also, to achieve long-term

control, reduce spider harborage and entry into the home in addition to using a chemical product. Lastly, be aware that most products for spider control kill insects as well, including beneficial insects, and may induce allergic reactions to chemically-sensitive individuals. Often, modest tolerance of non-venomous spiders combined with good home, yard, and garden maintenance is sufficient for spider management around homes.

Sources of further information

Household Insects of the Rocky Mountain States (PSIS-3), are available from the University of Wyoming Bulletin Room, Merica Hall (307-766-2115). This guide provides information on spiders not covered in this bulletin. Other guides on spiders and their control, including spiders of medical concern, are available from various sources. University of Wyoming or Wyoming Department of Agriculture representatives may help locate literature.

Credits: Photos (wolf and widow spiders) courtesy W. Cranshaw, Colorado State University. Line drawings (jumping spider and orb weavers) courtesy W. Cranshaw, Colorado State University. Photo (brown recluse spider) from USDA leaflet 556. Line drawing (hobo spider) courtesy of W. Lanier, Montana State University.

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Issued in furtherance of Cooperative Extension work, Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Edna L. McBreen, Director, Cooperative Extension Service, University of Wyoming, Laramie, WY 82071.

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