



Spiders of Medical Concern in Virginia

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Introduction

Several species of spiders found in Virginia have fearsome reputations for painful bites resulting in life-threatening complications. All spiders use venom to kill their prey, but many spiders are not nearly as aggressive or dangerous as they are presented in urban legends and the media. Spider identification requires specialized knowledge and sufficient magnification. Many harmless species are mistakenly identified as being dangerous due to a lack of training or a good microscope.

Even medical doctors cannot diagnose a wound as a spider bite based solely on the appearance of the wound. A wound can only be diagnosed definitively as resulting from a spider bite if a spider is observed in the act of biting. Many necrotic “spider bites” are actually the result of other causes, such as bacterial infection or other insect bites. Given the frequency of incorrect identifications, misdiagnosed spider bites, and media hype about venomous spiders, it’s no wonder that so many people are terrified of spiders. The purpose of this fact sheet is to describe some of the spider species in Virginia that people commonly inquire about as being dangerous. This information may help address a homeowner’s concern about personal safety and possibly eliminate a suspect spider as one of the more medically dangerous species.

Most spider species are not aggressive or considered to be dangerous. Spider bites typically occur when a spider is handled roughly or trapped and pressed against the skin. Even if a spider does bite someone, it may not inject any, or only very little, venom into the bite. For many people, spider bites are often no worse than a bee sting with localized pain, swelling, and sometimes itching of the skin. Most spider bites can be treated with just ice and a pain reliever. However, there are a few species of spiders found in

Virginia that do produce more severe symptoms requiring medical attention.

Important Note

There is always the possibility that spider venom from a normally harmless species may cause severe symptoms in very sensitive individuals, especially in the young, the old, or the immunocompromised. If a sensitive person is bitten by a spider, or if the spider is thought to be a species known to be of medical concern, apply ice to the bite, elevate the wound, and seek prompt medical attention. Whenever possible, kill and take the spider to the physician for positive identification. An expert may be able to tell if it is a spider of medical concern or not even if the spider is smashed.

Spiders with Potentially Harmful Venom Found in Virginia

Widow Spiders

(Family Theridiidae, *Latrodectus* spp.) Both the northern (*L. variolus* Walckenaer) and the southern (*L. mactans* F.) black widow spiders are commonly found in Virginia. Female *L. variolus* and *L. mactans* have shiny black bodies with red markings on the underside of the abdomen. Female *L. mactans* usually have a complete hourglass with both triangles connected in the middle and an additional red spot near the spinnerets at the dorsal tip of the abdomen (Fig. 1). Female *L. variolus* tend to lack a complete hourglass and may instead have two red bars on both the top and the underside of the abdomen. Immature *L. variolus* and *L. mactans* of either sex have banded legs and, on the abdomen, white patches with red or orange dots. Mature males of both species retain the immature coloration and

are about half the size of the female but with proportionally longer legs. Adult females measure about 1.25 cm (0.5 inch) with a leg span of about 4.5 cm (1.5 inches). Adult males are much smaller, with a leg span of about 1.25 cm (0.5 inch). Immatures and males of both species are not considered to be of medical concern (Figure 2).



Figure 1. Female southern black widow spider showing the typical red hourglass marking on the underside of the abdomen. (Ed Freytag, City of New Orleans, Bugwood.org)



Figure 2. Immature southern black widow spiders. (David Cappaert, Bugwood.org)

Brown Recluse Spider

(Family Sicariidae, *Loxosceles reclusa* Gertsch & Mulaik) Brown recluse spiders belong to a group of spiders commonly known as violin spiders or fiddlebacks, named so because of a characteristic fiddle-shaped pattern on their head region (never on the abdomen) (Figs. 3 and 4). Brown recluse spiders range in color from tan to dark brown, but they are

often golden brown. There are no stripes or bands on the legs. The fiddle marking is usually dark brown or black, with the neck of the fiddle pointing towards the abdomen (Fig. 4). Hairs on the body are fine, not coarse, and the fiddle pattern is often shiny. The body measures 8-10 mm long (about 0.4 inch). Wolf, nursery web, and funnel weaver spiders are often mistaken for brown recluse spiders. Unlike these other spiders, brown recluse spiders never have stripes or bands on their legs, or spots or multiple stripes on the abdomen.



Figure 3. Brown recluse spider. (Ed Freytag, City of New Orleans, Bugwood.org)

Brown recluse spiders have six eyes arranged in three groups of two eyes each, with space between each pair of eyes (Fig. 4). This is an excellent way to identify a brown recluse spider as most spiders have eight eyes arranged in two rows, but it does require proper magnification to see clearly.



Figure 4. Closeup of brown recluse spider showing the characteristic eye pattern and the typical “fiddle marking” behind the eyes. (Lisa Ames, University of Georgia, Bugwood.org)

Brown recluse spiders are found primarily in the Midwest and south-central states. Its natural range reaches to the very tip of southwestern Virginia, but isolated populations have been confirmed in several locations across Virginia. These small, isolated introductions are likely the result of household goods or firewood transported from the brown recluse's natural range into areas where it was not previously known to occur. The spider commonly lives in basements and garages of houses and often hides behind boards and boxes. It does not make webs out in the open. Populations of brown recluse spiders can be very high in infested buildings.

Despite alarming stories in the media, brown recluse spiders seldom bite and the severity of the bite frequently varies from person to person (Vetter 2013). Symptoms may range from no harm at all to a very severe reaction. Often the initial bite is painless, followed by a systemic reaction within 24-36 hours with restlessness, fever, chills, nausea, weakness, and joint pain. Tissue death may occur at the bite wound and the skin may slough off. In some severe cases, a wound may develop that lasts several months. More severe symptoms are seen in the very young, the very old, or in the immunocompromised. However, many people live in areas where there are native populations of brown recluse spiders, often in very high densities, and they are rarely bitten or have only very mild reactions after being bitten.

In Virginia, But Not Deserving Their Reputation

Yellow sac spiders

[Family Miturgidae, *Cheiracanthium inclusum* (Hentz) and *C. mildei* Koch]

Cheiracanthium inclusum is native to the United States, while *C. mildei* was introduced from Europe. Both species are similar in size (4-10 mm or 0.2-0.4 inch) and coloration (light yellow or beige with darker brown tips on the legs and mouthparts) (Fig. 5). *Cheiracanthium mildei* may have a greenish tinge in color. Both species have a darker midline stripe that begins behind the head but does not completely reach the tip of the abdomen (Fig. 5).

Cheiracanthium mildei tends to be found inside man-made structures, often on walls and ceilings, while *C. inclusum* occurs outdoors on foliage and in grasses.



Fig. 5. Yellow sac spider, *Cheiracanthium inclusum*. (Joseph Berger, Bugwood.org)

Both species are frequently found in or near their silken tube or “sac” that they use as a protective retreat during the day (Fig. 6), but these spiders are nocturnal ambush hunters and do not spin a web to trap their prey. Bites are generally mild and self-limiting in severity; they usually heal in a few weeks if the wound is kept clean and free of secondary infection. Yellow sac spiders do not deserve the reputation they have gained as having dangerously toxic venom. A medical review of verified *Cheiracanthium* spp. bites indicated that venom from these spiders does not typically result in large necrotic lesions despite initial reports by other researchers (Vetter et al. 2006).



Fig. 6. Female yellow sac spider, *Cheiracanthium inclusum*, with eggs in her silken retreat. (Joseph Berger, Bugwood.org)

Not Known to Occur in Virginia

Hobo spider

[Family Agelenidae, *Eratigena agrestis* (Walckenaer)] This species is only found in the Pacific Northwest and does not occur in other parts of the United States. Despite its reputation, there is no strong scientific evidence that this spider is of medical importance. Hobo spiders are not aggressive and their venom does not appear to cause necrotic lesions as once thought (Vetter and Isbister 2004).

Species Often Mistaken as Being Dangerous

Jumping spiders

(Family Salticidae) These are active, hairy predators with large conspicuous eyes and often bold coloration (Fig. 7). They do not spin webs but hunt their prey, often leaping on to them with surprising speed. Jumping spiders are commonly found outdoors on plants and manmade structures.



Figure 7. Jumping spider. (David Cappaert, Bugwood.org)

Wolf spiders

(Family Lycosidae) Wolf spiders are large, hairy, active predators with long legs. They are typically colored brown with various patterns of darker stripes or mottling on the body and the legs (Fig. 8). Some species in the genus *Hogna* are quite large, measuring 18-35 mm (about 2-3.5 in) in size. These are ground dwelling spiders that hunt their prey and do not spin webs. Females carry their egg sac attached to their spinnerets at the tip of their abdomen.



Figure 8. Wolf spider. (Whitney Cranshaw, Colorado State University, Bugwood.org)

Nursery web spiders

(Family Pisauridae) These are similar in appearance to the wolf spiders with long legs, hairy bodies, and brown stripes or mottled coloration (Fig. 9). Females are often seen carrying their egg sac with their mouthparts.

Funnel Weavers

(Family Agelenidae) These spiders spin webs with a tube or “funnel” retreat, often on grasses, shrubs, or in corners of porches and other structures (Fig. 10). They wait in the silken funnel for prey to walk across the web, then ambush the prey and drag it back into the funnel. Do not confuse funnel weavers with the infamous Sydney funnel-web spider [*Atrax robustus* O.P.-Cambridge (Family Hexathelidae)], which occurs in Australia and has never been found in North America.



Figure 9. Nursery web spider. (David Cappaert, Bugwood.org)



Figure 10. Nursery web spider. (David Cappaert, Bugwood.org)

House Spiders

(Family Theridiidae) The common house spider [*Parasteatoda tepidariorum* (Koch)] and spiders in the genus *Steatoda* are sometimes mistaken for black widow spiders (*Lactrodectus* spp.) (Fig. 11). While they belong to the same family as the widow spiders, they are not considered dangerous. In fact, the false black widow spider [*Steatoda grossa* (Koch)] is actually a specialist predator of black widow spiders.



Figure 11. Cobweb weaver spider, *Steatoda triangulosa*. (Joseph Berger, Bugwood.org)

Avoiding Spider Bites

Some simple precautions can prevent many spider bites, especially in areas known to have populations of potentially harmful spiders. Limit the entry of spiders into the house by checking that all screens and weather stripping around doors and windows are secure. Seal all cracks and crevices in the foundation, attic, around pipes, etc. as well. Clear clutter and junk from in and around the home to eliminate hiding places for spiders and their invertebrate prey. Don't stack firewood beside the house for the same reasons. Clean closets, attics, basements, and other storage areas regularly to discourage spiders from taking up residence in them. Vacuum regularly behind and underneath furniture and large appliances. Consider removing bed skirts, furniture slipcovers that reach the floor, and long draperies that may conceal spiders.

Wear long sleeves and gloves when moving firewood or other items that may harbor spiders, such as cardboard boxes, stored papers, or anything left undisturbed for a length of time. Long sleeves and gloves are also a good idea when doing yard work. Shake out clothing, towels, or bedding before use. Also shake out your shoes or gloves before putting them on, especially if they have been left outside. Spiders cannot bite through fabric, but they can bite if trapped or pressed against the skin.

Sticky traps are effective in monitoring spider populations and can help reduce their numbers inside buildings. Individual spiders can be killed with a fly swatter or with an aerosol insecticide spray. Insecticides with residual activity can be

applied for spider control, but sealing any entry points into the home and removing potential hiding places is a more effective strategy for controlling spiders.

Revised

Theresa A. Dellinger, February 7, 2020.

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