



Black widow and brown recluse spiders

One very common, the other very rare in Wyoming

The topic of spiders generally gets a reaction from people—usually not positive.

I don't have the education in psychology to understand why many people can have such a strong phobia about eight-legged creatures (but it's a common trait). I identify insects, spiders, and mites for the public as part of my position with the University of Wyoming Extension. I started in May of 2003 and had a brown recluse spider (*Loxosceles reclusa*) submitted for identification from a house in Wyoming the very first month on the job.

Even as the inexperienced spider taxonomist I was then, it was easily identified by the species' very distinctive arrangement of six eyes (Fig. 1). The number and the pattern of a spider's eyes is an important step in their identification, with most species having 8, but 6, 4, 2, and even eyeless species are known.

The people who submitted the spider had recently visited a state in the native range of the brown recluse (Fig. 2). They searched their house but never found another. Fourteen years

passed before Natalie Stalick, who manages the educational Facebook page "Spiders of Wyoming," sent me a brown recluse she had collected in Casper from a box of parts sent from Missouri.

Brown recluse look-a-likes

Over the years, people have submitted hundreds of spiders they suspected were brown recluses, but the vast majority have been the barn funnel weaver (*Tegenaria domestica*) (Fig. 3). The barn funnel weaver is originally a European species that can thrive in human structures and has now spread all over the temperate regions of the world.

If brown recluses had the same adaptability as the barn funnel weavers, they would now be all over the United States as people accidentally moved them around; however, they are apparently an outdoor spider that spills indoors in their native range, the southcentral U.S.

Brown recluses do have the ability to cause a necrotic skin wound with a venomous bite but are not

aggressive and are reluctant to bite even where they are abundant. In a study published in 2002, over 400 brown recluse spiders, physically big enough to bite through human skin, were collected over a six-month period in an eastern Kansas home of a family of four that had lived there for years without ever being bitten.

The primary author of that study, Richard Vetter, has spent years busting the myth held by people, including some medical professionals, that brown recluse spiders are common throughout the U.S. and are frequently the source of necrotic skin lesions outside their native range.

He doesn't do this to defend the brown recluse spider's reputation but to make sure people get properly diagnosed and treated for one of the many other possible causes of necrotic wounds. For example, a bad brown recluse bite is just treated to prevent secondary infection. There is no anti-venom treatment for brown recluse venom.

If you get a wound that won't heal, make sure you seek medical treatment and competent diagnosis as

skin infections are very common and are still curable.

Real western black widow

The western black widow spider (*Latrodectus hesperus*) (Fig. 4, page 18), in contrast to the brown recluse, can be very common outdoors in Wyoming. If you sneak up to an old badger hole in the summer you can often spot a black widow sunning herself on a cool morning, hanging upside down in her “tangle mess” style web, exposing her distinctive red hourglass marking. Black widows can also use human-created habitat such as clutter in low-light, seldom-used areas of buildings.

Tiny black widow spiderlings, after hatching and when dispersing, look for dark “hide holes” their species prefer to build their messy webs across. Spiderlings, in general, are so small it is impractical to have buildings be tight enough to exclude them. We should strive to keep our buildings free of the indoor pest insects that spiders must prey upon to survive. The spiders will be unable to survive to adulthood without food.

Black widows bite very few people despite being common in Wyoming. If you don't intentionally handle them or accidentally stick your hand in a web with an egg sack, which triggers a mother's protective instinct, they



Lisa Ames, University of Georgia, bugwood.org

Fig. 1. The eye pattern of a brown recluse is very distinctive and consists of three pairs termed dyads on the cephalothorax. They have long slender legs with no barring or thick hairs or spines on them.



Joseph Berger, bugwood.org

Fig. 3. The barn funnel weaver (*Tegenaria domestica*) is distinguished from brown recluses at a distance by thick hairy legs with faint dark barring, a robust cephalothorax, and a two-tone abdomen often with light chevrons. When viewed up close, the barn funnel weaver has 8 eyes versus the brown recluses' 6 eyes.



Fig. 2. Distribution of the brown recluse spider (blue shading) and other species of *Loxosceles* spiders in the U.S. (green shading) (adapted from distribution map of R. Vetter, Univ. Calif. Riverside).

are not going to come to you looking for trouble.

Black widow females rarely leave their webs once they have found a good spot to catch insect prey. Only the nearly fully grown juveniles (Fig. 5) and adult female black widow spiders have the ability to penetrate human skin with their fangs. Their venom acts

as a neurotoxin and doesn't cause a large wound at the bite site.

If bitten by a black widow, you can be treated with both anti-venom and medications to relieve the pain and muscle cramping. As always, the "dose makes the poison," so a big person bitten is going to be less

impacted by the same amount of venom as a small child.

I frequently get species of the "false widows," which are spiders from the genus *Steatoda* (Fig. 6) submitted for identification. These spiders can be very common in and around buildings. They are in the same family, Theridiidae, as the black widow, so they share the same eye pattern, bulbous abdomen, and the presence of "combs" on the hind legs. All of the false widows lack the red hourglass, and none are considered dangerously venomous.

I have only had one client submit a false widow spider who said it had bitten them. They said it hurt, and their finger swelled at the site of the bite but that it went away after a day. As common as they are, the false widows are very reluctant to bite people.

I grew up in the Wyoming countryside in an area where rattlesnakes were occasionally found. When I was let outside to play, my mother would remind me, "Don't put your hands or feet into places you can't see into first."

This is still solid advice for avoiding snake and spider bites plus insect stings of all sorts!

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 We know we're going to take his mother's advice! **Scott Schell** is the University of Wyoming Extension entomologist and can be reached at (307) 766-2508 or at sschell@uwyo.edu.



Whitney Cranshaw, Colorado State University, bugwood.org



Joseph Berger, bugwood.org

Fig. 4. A typical adult female western black widow spider.

Fig. 5. Immature western black widows are not all black like the adults, but they still have the red hourglass-shaped marking on the ventral side of the abdomen.



S. Schell

Fig. 6. This adult male false widow (*Steatoda* species) wouldn't pose calmly on the penny provided for scale but stopped nearby. The adult females are a little larger and have the large bulbous abdomen, long smooth legs, and shiny exoskeleton typical of the cobweb spider family Theridiidae. They never have red markings on the abdomen that black widows have.