

# SPIDERS

Not to be afraid of, but to be aware of.

Jennifer Berry

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Ever since I was a little kid, bugs have always fascinated me. This, of course, drove my mother nuts because I wanted to bring a variety of these six and eight-legged creatures into the house for closer observation. Mostly, she didn't approve of my extra curricular activity because she was terrified of both insects and spiders. Over the years, I have slowly and with much effort, tried to extinguish her fears. She can now, at least look at a beetle, praying mantis or spider without immediately going into what I call the "spider dance." You know the one; I'm sure you've seen it or perhaps even done it yourself. After seeing something you think is exceptionally creepy, your body begins to wiggle uncontrollably. Your arms start flailing. You are running around erratically, bouncing off walls and furniture, all the while making a strange, high-pitched screeching noise! After the fact, I think some people take pride in their own version of this dance, while others are simply embarrassed.

For a kid with such enthusiasm for bugs, a farm was the place to be. Each day it seemed there were numerous critters to seek out and investigate. As for spiders, we could always find them. Barns, sheds, root cellars, silos, fences and garden rows were perfect places. There were big ones, small ones, brown ones and green ones. You could find them in webs or on the ground. They were always plentiful. But the home run, so to say, was finding that giant, black and yellow garden spider, a.k.a. the writing spider, usually in between the rows of corn. As kids, we would dare one another to run down these long rows without stopping or swerving to miss the large webs. After one row, we were usually done. There is something about having an entire sticky web clinging to your face, hair and body, or, even worse, when it included the

unlucky spider struggling to stay in her web, that can send shivers up your spine. Garden spiders do bite; while they're not poisonous, they can make you wince in pain. I'd probably want to inflict a little pain on the one who destroyed my home, too!

Speaking of spider bites, an urban (or suburban) myth about spiders is that they bite people at night while they're sleeping. Folks who find a two-pronged (or single) bite mark on their body in the morning immediately jump to the conclusion that it is a spider bite. Actually, most spiders inhabiting our homes are of the smaller variety whose fangs are too short or too weak to puncture human skin. To have such a wound, one would have to have been bitten by one of the larger varieties of spiders, like tarantulas, garden spiders, giant night spiders or wolf/timber spiders. Simply, this is very unlikely. What is much more likely is that other insects are to blame, such as flies, mosquitoes, fleas, mites, ticks or bed bugs.

Think about it. For a bite to be visible, you're talking about a pretty large spider. Are these really crawling around in your bed??? Are there gangs of spiders convening in bedrooms at night just waiting for their human prey to start snoring before pouncing on them and feeding until sunrise? Spiders have no motivation to bite humans because, first of all, we are too big for them to consume, and, second, they don't want to waste venom on us. Each time a spider discharges venom, it can take up to two weeks for the venom to be regenerated, which means the spider goes hungry until then.

My enthusiasm for spiders has not waned over the years even after hearing a pretty creepy story about one particular species. Several years ago, we had an extension agent from Tennessee deliver a seminar talk for our Entomology Department. It was

one of those talks that I'll never forget, but some of the details may be a bit fuzzy. It was 1998 when he spoke to our department.

Built back in 1929, the Georgian-styled, governor's mansion in Tennessee had slowly deteriorated over the years and was in need of major repairs. However, the governors were a bit wary about making those repairs since it would have required the use of state tax dollars, which may have displeased certain voters. With widening cracks and crevices, it provided the perfect home to many unwanted pests.

One night, during a dinner party, a guest of the governor noticed a spider swimming in the punch bowl. The spider was quickly scooped up and saved for later investigation. The next day, the spider was taken to an extension specialist and identified as a brown recluse, which are found in every county in Tennessee.





*A Brown Recluse spider.*

The brown recluse, or violin spider, is a small (7-12 mm) brown spider with a dark patch, which may resemble a violin (hence the name), on the cephalothorax (the head and thorax are fused together in certain subphyla of arthropods). The eight legs are lighter brown, and the abdomen is darker brown or even green. Nocturnal feeders, brown recluse spiders prefer the darkness of undisturbed places, like under furniture. Since staying out of sight during the day is their habit, they love to nest in that old pair of boots stored in the shed or that Winter coat hanging in the back of the closet. They are not aggressive and rarely bite unless provoked, for instance, when pinched between a body part and another surface. A toe pushed into a shoe, or an arm pressed against a garment or mattress, is a typical example.

The governor was advised to have the entire mansion fumigated in order to do away with these pests and the possibility of being bitten. However, the governor's wife was heavily involved in environmental issues and wouldn't allow the mansion to be fumigated with any kind of pesticide. As an alternative, as well as in an effort to quantify the infestation level and locate breeding areas, hundreds of sticky traps were placed throughout the mansion. These sticky traps were 12" x 12" cardboard squares with glue on the upper surface. Anything walking across one was sure to get stuck.

From the attic to the basement, traps were placed under chairs, couches, tables, beds, dressers, and sideboards. They were put behind furniture and pictures, plus in corners, bookshelves, and cabinets. Twenty-four hours later, as the traps were

being collected, the extension agent became terribly disturbed. Each trap was completely covered with brown recluse spiders. And, these were not just the traps in the more remote locations, but also the ones under the bed where the governor and his wife slept, the couch where their children played and the kitchen table where they all ate together. This was not good. This was not good at all! Yet, the most surprising thing was that no one had ever been bitten even with all these spiders roaming around.

The bite of brown recluse may go unnoticed for several hours or even days. Depending on the amount of poison injected and the sensitivity of the person bitten, there can be a wide range of symptoms. The poison from the spider causes necrosis (death) of the tissue adjacent to the bite area. Other symptoms include fever, itching, nausea, vomiting and shock. Long-term effects are scarring at the bite site, kidney insufficiency and even death (less than 3%). But, the brown recluse, along with their other eight-legged cousins, may be getting a bad rap according to our departmental spider expert, Dr. Nancy Hinkle.



*A Black Widow with her obvious red spots.*

When a patient presents an unexplained, dermatological wound to their doctor, spiders, especially the brown recluse, seem to get the blame, even when the spider doesn't exist in the area. For example, according to Rick Vetter, Urban Entomologist for UC Riverside, in 41 months, 216 brown recluse spider bite diagnoses were made in California, Oregon, Washington and Colorado. Yet, these are all states in which the brown recluse doesn't reside! Medical person-

nel are even quicker to misdiagnose any type of necrotic wound as the result of a brown recluse. In fact, such wounds or infections have likely been caused by a bacteria, virus, fungus, or vascular disorder than by spider bite. Though, I concede that, "You've been bitten by a spider," sounds a whole lot better than, "Sorry, Miss. You've been infected with a flesh eating bacteria."

The brown recluse's native range is from Central Texas, east to Western Georgia, north to Kentucky and west to southern Nebraska. Here, in the Piedmont region of Georgia, brown recluse spiders are rare to none. However, we have another spider that is very common, especially under beehives.

The black widow spider has been so named because, after she mates, she usually kills and consumes her male suitor. So, throughout history, the black widow spider has gained an ugly reputation as a bloodthirsty maniac, wandering the streets in search of her next victim. This is not quite the case. The reason that female spiders, along with other insects in the wild kingdom, post-coitally devour their mates is for the survival of the young. By eating the male, the female acquires nutrients important for the development of the eggs she will soon deposit and protect with her life.

The black widow is a shiny, black orb-weaver spider with long skinny legs and a distinguishable, red hourglass-shaped marking usually on the underneath of her abdomen. However, not all black widows have this red hourglass. Some may have yellow, orange, or red spots, dotting areas on the top or bottom of their abdomen, as well. Black widows, like the brown recluse, prefer areas that are dark and undisturbed. Outside, they are commonly found under rocks, in woodpiles, hollow stumps, and abandoned rodent burrows. They are also fond of those dark corners, cracks and crevices found in sheds, garages, basements and crawl spaces. But, in the beeyard, especially here in Georgia, black widows love the cozy underbellies of a beehive. With available food, warmth, and protection from the elements, what better place to call home? However, we never apply any kind of insecticide in or around our hives to kill spiders.

Here at the UGA lab apiary, most of our colonies sit atop cinder



blocks or horizontal, 4" x 4" fence posts. During the Spring and summer months each hive, including the stored equipment as well, will have at least one black widow as a resident. It's crazy. Even the horticultural farm crew (with whom we share the farm) complains about constantly finding black widows in their storage sheds, pump houses, empty pots, and soil bins. A few years back, we were moving some nucs (nucleus hives – four or five-frame starter hives) off-site. I was carrying them to the truck and handing them over, when one of our grad students said, "Um Jen, I think you have a black widow crawling up your shirt!" Sure enough, there she was.

The black widow spins a very unorganized, erratic web, unlike the orb spiders with their classic, spiral, wheel-shaped home. The web is very sticky and will snare most unaware insects that come too close. Once snagged in the web, the black widow will quickly spin a silken cocoon around her victim. When feeding, she punctures the insect with her fangs and administers digestive enzymes which liquefy the prey's internal structures, so the contents or body juices can be easily sucked out. Yummy!

Black widows are common and widespread across the U.S. Yet, there are very few reports of actual bites from black widows, and no one has died in over 10 years from these most-feared spiders. But, if you are bitten and venom is injected, you will probably need to be admitted into a hospital. At first, the bite area will resemble a target with a pale area in the center surrounded by a red ring. Within a few hours severe muscle cramps will develop along with headache, nausea, vomiting, breathing difficulty, weakness, itching and increased blood pressure. The very young, elderly and infirm are at the highest risk of developing life-threatening complications.

With that said, I know of someone who was bitten on the toe by a black widow as he put on a pair of boots, which he had left outside over night in downtown Athens, GA. He spent several days in the hospital receiving morphine to ease the pain. So, while being bitten may be a rare likelihood, I keep my eye out when handling equipment (either in storage or in the field), gardening,

moving rocks (which I do a lot), and hauling firewood because I don't ever want to have the type of pain that necessitates that much morphine administration.

As the picture shows, we also occasionally find black widows in the handholds of our supers. A certain amount of caution should always be taken while working bees. From not letting a hot smoker burn down the apiary or honey house to not becoming overheated or dehydrated. It is just as important to keep an eye out for the occasional poisonous spider, snake or charging hippo (which are always dangerous this time of year)!

Spiders are probably some of the most misunderstood of all the animal groups, which is a shame since they are extremely beneficial to us and the environment. In a way, it's much like how the general public reacts to the buzzing sound of bees; they tend to run screaming while swatting wildly at the air (a variation of the spider dance)! But, at least people are becoming aware of the importance of bees, due to all the media attention during the CCD scare. Spiders, unfortunately, are still left in the wings with no hope of better favor in sight. I just can't imagine there being much of an outcry if, all of a sudden, spiders began dying off in droves. However, it wouldn't take long for us to notice the increase in insects, especially the ones that invade our homes and food supply. So, the next time you



*A black Widow, resting on the brand on this hive.*

see a little spider scurrying across the floor, and before you drench it with insecticidal spray or make it a permanent fixture on the bottom of your shoe, you may want to recognize it as an amazing creature with its own important role to play. Try picking it up with a sheet of paper, releasing it outside and letting life happen. Just a thought. **BC**

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*Thanks again to Philip Quinn for repairing grammatical issues within this article.*

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