

SPIDERS INSIDE!

Spiders are not insects, but rather predatory arthropods that feed on insects and other arthropods. Most often they are quite beneficial to our environment and are harmless to humans. In the United States 20,000 different species have been identified and only four are occasionally harmful to humans.

There are a few things all spiders have in common: four pairs of legs, three to four pairs of eyes (the number and arrangement of which are used to identify species), they are predatory and most can inflict a venomous bite. Males of most spider species are smaller than the female and have enlarged mouthparts (palps) that resemble boxing gloves and are used for mating purposes.

The brown spiders (*Loxosceles* spp.) found in Arizona are often mistakenly referred to as brown recluse spiders. The true brown recluse spider (*Loxosceles reclusa*) does not occur in Arizona, but resides in the Midwest and south to the Gulf of Mexico. The closely related Arizonian species, *Loxosceles arizonica* and *L. deserta*, are quite similar.

Brown spider

Adult brown spiders are indeed brown and the body is about 1/2 inch long. Their legs are long and delicately covered



with short, dark hairs. The adult leg span is about 1½ – 2 inches. Key characteristics include three pairs of eyes arranged in a semicircle on the cephalothorax (combined head and abdomen) and a violin-shaped marking immediately behind the eyes.

Males, females and even spiderlings are capable of venomous bites, creating **necrotic lesions**. The bite itself is often unnoticed, but in the hours and days that follow a reaction will develop. The bitten area often becomes painful, swollen and blistered within hours. This site will evolve into what has classically been described as a bulls-eye lesion with a dark center (dead skin), outlined by white and set on a red and inflamed background. Brown spider bites such as this often result in scarring. **Medical attention should be sought immediately if bitten.**

Most brown spiders are found living in groups,



woodpiles, crates or other wood, storage areas such as garages and closets, and can even be found resting in clothing left on the floor. They prefer dry undisturbed areas, so cluttered storage areas are a common spider harborage.

The common "black widow" spider specifically refers to the eastern species *Latrodectus mactans*, which does not occur in Arizona. Our **widow species *Latrodectus hesperus***, is however, very similar in appearance to the true black widow. Only the female is venomous. She is shiny black, about 1½ inches long, and carries the famous reddish hourglass shape on the underside of her abdomen.

Widow spider



Like the brown spider, the widow spider bite itself is not terribly painful, but local pain does follow very shortly after. The venom can cause abdominal pain similar to appendicitis as well as pain to muscles and the soles of the feet, and possibly alternating salivation and dry-mouth, paralysis of the diaphragm, profuse sweating and swollen eyelids. Most healthy people recover rapidly in two to five days, but rare fatalities can occur due to heart and lung failure. No fatalities have been reported in Arizona.

If bitten, clean the site well with soap and water. Apply a cool compress over the bite location and keep the affected limb elevated to about heart level. Aspirin or acetaminophen may be taken to relieve minor symptoms.

In the case of a brown spider or widow spider bite, contact a physician or **Arizona Poison and Drug Information Center at 1-800-222-1222** as soon as possible for advice and assistance. If possible, collect the spider to aid diagnosis and correct treatment procedures.

Tarantula spiders belong to the family Theraphosidae. They are Arizona's largest spiders. The males can reach a length of 2 - 2½ inches and the female 4 inches. These

spiders feed on arthropods and small vertebrates such as mice, lizards and snakes. They can live as long as 20 years. **All species are nocturnal, living in holes that they construct.**

During our late summer months the males are seen moving through the desert in search of mates, and during this time may wander under the crack of a garage door, cracks in foundations, etc. Tarantulas are usually very timid and secretive. When threatened, they can cause a painful bite with their large fang-like chelicerae; however, **their venom is usually harmless to humans.**

Tarantula



Tarantulas also employ another method of defense: using the hind legs to rub hairs off the top of the abdomen. This cloud of fine hairs can irritate the eyes and mucus membranes, so be careful when handling these spiders.

Wolf spiders, family Lycosidae, like tarantulas, look far more fearsome than they are. These mobile ground hunters do not build webs but rather can be found in most natural environments in search of prey. Their hunting efforts may lead them into dwellings on occasion, though this is not a preferred habitat.

Wolf spider



Their size, like their diversity, varies greatly - from only ¼ inch body length to 1½ inches with a leg span of up to 3 inches. They may be colored brown with black and white markings or similar earth tone, and have long bodies covered with hair.

The female's maternal behavior distinguishes this spider: she carries her egg sac on the underside of her abdomen until it hatches, after which time the spiderlings ride around with her atop her back for up to a week (Hedges). If disturbed or

threatened, the spiderlings will scatter from the mother's back and later regroup.

Despite their often large size and fast-moving abilities, wolf spiders and their venom are not a threat to humans. If found inside, wolf spiders should be herded, not captured, outdoors where they are considered extremely beneficial.

Crab spiders, genus *Selenops* and *Olios* in Arizona, can be found waiting in ambush for their prey in prickly pear and cholla cacti flowers. They can also be found during the day or night in the urban environment behind wall hangings and furniture, or around cracks and crevices in walls such as those found in brick or areas around windowsills (Smith).

Crab spider



Crab spiders are easily identified simply from the way their **two front pairs of legs are held out to the side at right angles**, the same as their namesake. They have relatively flat, wide bodies and can even scuttle sideways and backwards like a crab (Hedges)! Their color varies between white, yellow, or light green to match the color of the plant or flower they are trying to blend in with.

These spiders can reach an impressive 5.5 cm in Arizona species, but despite this they are non-aggressive toward humans and their venom is of no particular concern (Smith). Crab spiders make excellent garden pest predators, and if found inside should be relocated outdoors.

Cellar spider

Cellar spiders, family Pholcidae, are familiar to most of us; though they are often confused with the similar-looking harvestman (both are called daddy longlegs). Both have enormously long legs and a tiny body; however, the harvestman - with only two



pairs of eyes - is not a true spider, and is found mainly outdoors under rocks and logs.

Cellar spiders are abundant in human dwellings, usually seen hanging upside down in their web. They have **messy webs with no structure**, often built in corners of cellars or basements, utility rooms, stairwells, or other underutilized rooms. When disturbed, the adult spider will cause the web to vibrate which helps to deter predators.

Cellar spiders are equipped with relatively small fangs; however, there is no documentation supporting the myth that they cannot bite humans. They are accomplished predators, and will feed on most any type of arthropod that gets caught in their web (including their next of kin when pickings are slim).

For this reason, **cellar spiders are especially good indicators of insect pests in urban areas.**

Jumping Spiders, family Salticidae, are a group of hunting spiders that can leap 10 to 40 times their body length. Jumping spiders are usually less than 2 cm (less than 0.8 in) in length with females generally larger than males. They are among the most ornate of spiders; many species are brightly colored and strikingly patterned, with stout bodies, short legs, and a very large pair of eyes on the front of the face.

Jumping spider

The jumping spider has four pairs of eyes, with the large principal eyes giving it sharper vision than any other animal of similar size.

It can identify prey, predators, and mates from up to 30 cm (up to 12 in) away.



The jumping spider is an active predator, usually hunting during daylight. It will stalk to within a few body lengths of the prey, crouch, crawl slowly forward, and then lift its front legs and pounce. It accomplishes its spectacular jumps by means of muscular contractions in the body that force body fluids into the legs, causing the legs to extend rapidly. Most jumping spiders feed on insects, while others feed primarily on web-building spiders.

Jumping spider

The male's front pair of legs are colored and have distinctive bands of hair. In many species the male performs complex courtship displays in which he bobs his body and waves his front legs in a highly specific manner. After mating, the female lays her



eggs in a silk-lined shelter under stones or bark, or on the surface of plants. The female will often guard the eggs and newly hatched young

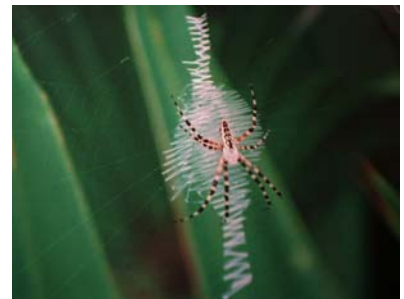
The Garden Spider, family Areneidae, *Argiope* spp. are common orb weaver spiders. It is found throughout most of the continental United States.

Its body is generally 1/16" to 1 3/4" long. With the legspan, some individuals may cover much of the surface of one's palm. The body is mostly hairless, and has a yellow and black patterned abdomen. Its legs may be somewhat hairy.

This spider weaves a somewhat circular web, with many sections radiating outward from the center. Their diligence in constructing these webs, despite disturbance from weather or humans, has been documented as far back as the 13th century (Hedges). Webs are suspended vertically in trees, bushes, or anywhere there is an opening through which flying insects may pass. The garden spider typically hangs at the center of the web, with its head hanging down.

Argiope species

Garden spider



Other Orb Weaver Spiders common to the southwest are *Neoscona oaxensis*, and *N. crucifera*. They are typically pale to bright yellow on the abdomen accentuated with reddish-brown or black markings.

These architects of the arachnid world begin building their impressive webbing by releasing a single thread into the wind and waiting for it to attach onto a nearby structure - the eaves of buildings or trees. The spider moves position and releases a second thread to the center of the first, forming a simple "Y" shape. After several more strands are attached to the center, the spider will build its impressive circular orb, up to 2 feet wide for some *Neoscona* spp.! When finished, they will move to the edge of the web and hide, waiting in ambush for their prey.

Neoscona spp. build their web in the evening, then deconstruct it the following morning and consume the protein-rich webbing. You may never know you have this orb weaver around unless you're out at night! The exception to this behavior is females, who will continue to hunt during the day, perhaps needing additional nourishment for her developing eggs (University of Florida).



Integrated Pest Management for spiders

Check out these simple steps to minimize the risk of spider bites, clean up the school environment, and reduce pest populations which spiders prey on.

- 1) Reduce CLUTTER indoors and outside the building. This is the best way to take care of spiders AND the pests they prey on. Begin with removing outdoor harborage such as wood piles or stacked lumber, away from the building and store off the ground; revisit storage rooms and under counter areas, throwing out anything not used in the last 12 months. *Note of caution: wear gloves and don't reach where you can't see.*
- 2) Sanitation. Sweep, mop, and vacuum hard-to-reach corners regularly. Use spray wash method or a broom for undersides of benches (careful! Widow Spiders can be found here). Store **brooms and mops with the head off the ground** as spiders will use these for food and cover.
- 3) Replace all outdoor lights with yellow bulbs and/or sodium vapor lighting. Insects are not drawn to these types of lights. Consequently, spiders won't be found there looking for food.
- 4) Exclusion. All doors should have sweeps installed and good thresholds such that no daylight can be seen around door frames. Seal any holes or cracks around windowsills, around pipe entrances, light fixtures, etc.
- 5) For the occasional spider, preferably relocate it outside, or use a vacuum with boric acid crystals in the bag (found over the counter).

Preventing spider bites

- Control clutter bugs! No we don't mean management of an insect or arthropod, we mean **People!**
- Shake out clothing and shoes before getting dressed
- Inspect bedding and towels before use
- Wear gloves when handling firewood, lumber, and rocks (be sure to inspect the gloves for spiders before putting them on)
- Don't store boxes and other items underneath beds
- Exercise care when handling cardboard boxes (some spiders may inhabit the space under folded cardboard flaps)

Following IPM strategies for spiders not only reduces the risk of spider sightings (and potentially harmful spider bites), but also reduces overall pest populations. Spiders are hunters who will follow pest critters wherever they go!

Information taken from:

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For Further Information Contact:
Dawn or Jennifer, 520-568-2273
dhgouge@ag.arizona.edu