

## Public Health Entomology Research & Education Center



# EntGuide



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## Florida Spiders: Biology & Control

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### General

Spiders are arachnids, a group of arthropods that include scorpions, harvestmen (daddy-long- legs), mites, and ticks. Approximately 3,500 species occur in North America.

Spiders, like insects (another group of arthropods), have jointed legs and a hard external skeleton. They have four pairs of legs, with a body divided into two regions (cephalothorax and abdomen), while insects have three pair of legs and their body is divided into three regions: head, thorax and abdomen. The top part of the cephalothorax is called the carapace. Spiders have no wings or antennae, but have enlarged sharply pointed jaws (chelicerae) with fangs.

All spiders are predators. They feed on a wide variety of insects and other soft-bodied invertebrate animals. Generally, spiders attack and subdue their prey by biting them with their fangs (a small group lacks venom glands) to inject a poison. Thus, all spiders are venomous. However, fear of spiders is unjustified since most are too small or possess venom too weak to harm humans. Only a few spiders have bites that are considered

dangerous to humans.

The most dangerous spiders to humans in North America are the widow spiders (*Latrodectus* spp.), recluse spiders (*Loxosceles* spp.), and hobo spider (*Tegeneria agrestis*). Although sometimes considered dangerous, a tarantula bite is rarely severe and does not cause lasting pain. If handled improperly, defensive hairs on the abdomen of some species can be irritating and sometimes causes a rash or blistering of the skin. Rarely, an allergic response to the hairs may cause difficulty in breathing.

In general, spiders are beneficial organisms because they feed on insects, many of which are pests. Indoors and out, spiders help to control a wide variety of insect pests. Unfortunately, the majority of spiders that are seen and killed by most people pose no threat at all.

## Spider Management

### Capture & Removal of Individual spiders.

Invert a wide-mouthed container over the spider. Then slide a stiff piece of paper or thin cardboard large enough to cover the mouth of the jar under the container while keeping the jar pressed against the surface on which the spider is standing. Work slowly so the spider is not harmed.

Next, while keeping the paper/card over the mouth of the jar, turn the jar over and tap the paper so the spider falls into the container.

Holding the paper over the top as a cap, carry the jar outside and release the spider by removing the cap and setting the jar on its side on the ground or shaking the container.

An unwanted tarantula can be removed by gently sweeping it into a dustpan, dropping it into a large paper/plastic bag, and releasing outside. Tarantulas have notoriously bad vision so this method is safe. This primarily applies to people living west of the Mississippi River.

**Eliminating Food Sources.** Outside lighting attracts insects and spiders that prey on them. Prompt removal of organic wastes and proper storage of food items (stored grains, flour etc.) may reduce insect populations and thus making the place less inviting to spiders.

To prevent initial or repeated indoor spider infestations, attention should be paid to repairing cracks and crevices in window casings, sealing spaces above and below doors, repairing holes especially at entry points of water pipes and electrical lines, and keeping screens securely on chimneys. The use of window and door screens (or repairing damage screens) can also help reduce insect and subsequent spider invasions into the residence.

**Mechanical control.** Unwanted spiders can be eliminated, over time, with routine vacuuming. Vacuuming removes food sources. Periodic vacuuming in previously undisturbed areas, especially along baseboards and under furniture near the floor, also will remove webs, nests, and egg sacs, helps in their control.

Inspect firewood for spiders or their egg sacs before entering the house. Lastly, keep woodpiles and other debris

away from the house.

Following the recommendations above will reduce your spider population to a tolerable and livable level. In rare instances where spiders are numerous and constantly entering the house, you may wish to use an insecticide. Sprays containing Dursban in a ME (microencapsulated formulation) or other encapsulated chemical insecticides are best. Do not exceed the recommended dosage given on the label and follow directions completely. These materials are best applied only along baseboards, door casements, and corners, and should be applied only where spiders are present.

## Identification and Biology

### Widow spiders (Family: Theridiidae)

Four species are found in Florida (*Latrodectus mactans*, **the southern black widow**; *L. variolus*, **the northern black widow**, *L. bishopi*, **the red widow**; and *L. geometricus* **the brown widow**).

Distribution: *L. mactans*: throughout Florida, *L. variolus*: limited to Panhandle area of Florida, *L. bishopi*: sand pine areas in central and south Florida. *L. geometricus*: residential areas in most of peninsular Florida.

Descriptions: *L. mactans* and *L. variolus* are shiny black spiders with the characteristic red hourglass design on the underside of the abdomen. Because their webs are near the ground these spiders tend to hang upside down in the web, the "hour glass" design is often striking and readily apparent. Adult males, which are not dangerous, are small and patterned with whitish streaks, bars, or dots on top of the abdomen.

The red widow, *L. bishopi*, is reddish in color with numerous red or orange round spots on top of the abdomen (each spot often ringed with yellow), while the underside has a prominent red bar or irregular hour glass underneath. The tropical brown widow, *L. geometricus*, has a patterned brown abdomen with an orange hourglass underneath and banded legs. This species varies in color from very light to very dark brown

Habits and Habitats: Widows, as a group, spin an irregular, tangled web containing a dense cone-shaped area in the center or in one corner where they hide. Webs are spun in quiet, undisturbed locations usually, but not always, close to the ground. Monitoring for black widows is best conducted at night with a flashlight or headlamp. The following is a list of some of their favorite web building areas (retreats): small crevices, eaves of buildings, undersides of outside wooden furniture, piles of wood, bricks, concrete blocks, and stones. Other favorite sites include water meters, outhouses, storage rooms, and undersides of raised trailers. Red widows often make their webs in the leaves of small palms, whereas brown widows are usually on man-made structures, such as houses, sheds, barns, deck furniture, and fences. Where they occur, brown widows are much more prevalent on houses than are black widows,

Bites and First Aid: Widows are shy, retiring creatures and will bite only when aroused. Although the bite may not be felt at first, it soon becomes painful. Identification of the spider is important in treatment, so if possible, collect the suspected specimen, regardless of condition, in a container with an alcohol preservative (rubbing alcohol or a mouthwash are fine) and bring it along with the patient to the doctor. Wash the area around the wound, calm the victim, and consult a doctor as soon as possible. Symptoms include headache, general lethargy, nausea, and shortness of breath, intense muscle pain and rigidity of abdomen and legs. An injection of calcium

gluconate can relieve the pain if antivenin is not available. Without treatment, these symptoms usually subside in 2 to 3 days. A black widow bite is more serious for a small child or elderly person.

## **Brown Recluse or Violin Spiders (Family Sicariidae formerly in family Loxoscelidae)**

This common name refers only to spiders in the genus *Loxosceles*. All species are presumed to be dangerous, *L. reclusa*, **the brown recluse spider** and *L. rufescens*, **the Mediterranean recluse**, occasionally have been found in Florida but are not presently established. The Chilean species, *L. laeta*, was introduced into California and Massachusetts.

Distribution: *L. reclusa* is found from the midwestern to the southern states (Alabama, Arkansas, Georgia, Louisiana, Mississippi, Missouri, North and South Carolina, Oklahoma, Tennessee and Texas) but has yet to become established in Florida. The even more venomous *L. laeta* has been introduced to the United States in California and Massachusetts but no establishment has been noted in the southeastern United States. The Mediterranean recluse, *L. rufescens*, has been reported once from Miami, and became established in one building in Orlando, where it was subsequently eradicated.

Descriptions: These spiders are commonly called fiddlebacked or violin spiders since they have a dark violin-like pattern on the top of their cephalothorax. Unlike most other spiders, they have only three pair of eyes (instead of eight as in many spiders). Their overall color varies from tan to dark brown.

Habits and Habitats: These spiders are retiring and sedentary and are active mostly at night. Their preferred habitats include: closets, piles of undisturbed clothing, crawlspaces, storerooms, behind furniture, and in baseboard cracks and crevices. Outdoors they can be found in foundation cracks, cracks in the soil and window wells.

Bite and First Aid: The bite of the brown recluse spider may either go unnoticed for days or may be followed by severe localized reaction characterized by scabbing, sloughing off of affected tissue (tissue necrosis) and very slow healing. Identification of the spider is important in treatment so, again, if possible, collect the suspected specimen, regardless of condition, in a container with an alcohol preservative and bring along it with the patient to the physician. Wash the area around the wound and calm the victim, consult a doctor as soon as possible. No effective antivenin exists, treatment with corticosteroids within 24 hrs of the bite has been effective in relieving some of the necrotic effects of tissue destruction. Thus, treatment is primarily aimed at controlling the symptoms and limiting the amount of damaged tissue. Doctors and/or victims of spider bites should not excise any of the affected tissue.

## **Sac Spiders. (Family: Clubionidae)**

These yellowish spiders are common throughout the southeastern United States and occasionally invade residences. This spider builds flat, tubular nests that are open at both ends under bark debris e.g., wood piles, or rolled leaves. Sac spiders are wandering nocturnal hunters of insect prey. Contact with a human is generally accidental. Spider bites almost always occur when the spider is unknowingly trapped against the skin by the victim. Sac spiders most commonly involved in this type of occurrence and accidental envenomations are in the genus *Cheiracanthium*. The bite produces local pain, nausea, and severe muscle discomfort lasting several hours. Tissue necrosis sometimes has been recorded around the bite.

## **Orb Weaving Spiders. (Family: Araneidae)**

This is the largest family of spiders in the world (180+ species north of Mexico). All construct circular, flat, wheel-like webs in which they trap flying insects. The very large black and yellow garden spider, *Argiope*, and the imposing large golden silk spider *Nephila* are classic and common examples.

Envenomations by *Argiope* have been reported: the victim slapping the spider into an exposed portion of their skin and a spider bite ensued. The patient felt no symptoms after an immediate sharp pain at the bite site. Oral administration of diphenhydramine hydrochloride at 50 mg relieved the pain, and the anxiety associated with the bite soon subsided.

## **Other Common Spiders associated with Man**

### **Cellar or Daddy-Long-Legs Spiders. (Family: Pholcidae)**

These spiders should not be confused with harvestman (daddy-long-legs) because they make webs and they have unusually thin, long, slender legs with flexible ends. They are found commonly throughout the United States in corners of houses and cellars/basements. The small whitish or gray spiders are usually found hanging upside down in their loose webs. When disturbed, the web and spider shake and blur rapidly and seem to disappear. No bites have been reported.

### **Combfooted Spiders. (Family: Theridiidae)**

This family of spiders is one of the largest (approx. 230 species north of Mexico, which include the black widow). The common house spider, *Achaeranea tepidariorum*, is especially prevalent in houses in Florida. Their bodies are globular in shape, like their close relatives the widow spiders (see description above), but unlike their poisonous cousins are **not** dangerous.

Description: They tend to be drab in color ranging from yellowish to brown. Their legs are banded with darker rings; and their abdomen is higher than long. No red or orange-red markings in the shape of an hourglass are present.

Habits and Habitat: Their webs are a tangle or a typical cobweb and are commonly found between adjoining edges of buildings e.g., eaves and a wall or an outside light and the wall. Many individuals may occur in the same building location giving the cursory appearance of being a colony of spiders.

### **Crevice Spiders. (Family: Filistatidae)**

The southern house spider (*Kukulcania* [formerly *Filistata*] *hibernalis*) is a commonly encountered arachnid in Florida because of its relatively large size, and it has a distinctive flat, tangled web. Furthermore these spiders exhibit a great degree of sexual dimorphism (sexes appear different), Females are a dark charcoal gray while the males superficially appear to resemble the brown recluse spider (see description above). Their bite is **not** dangerous, however two bite cases causing pain and swelling lasting two days have been reported.

Description: Females are large charcoal gray to nearly black in color. Their abdomens are oblong and tend to be gray in color. Males are khaki to amber in color and have very long, slender legs and palpi ("feelers"). Males also have a brown stripe from behind the eye prominence that narrows quickly to include the thoracic groove giving a violin-like appearance. The brown recluse has a conspicuously wider violin body shaped mark that continues narrowly (the neck) to the end of the carapace. Additionally, Filistatid males eyes have 8 eyes that are clumped together on a raised prominence ("bump"), rather than the 6 eyes in 3 pairs with no prominence in brown recluse.

Habits and Habitats: These spiders are generally found within their distinctive tangled web in holds or spaces within the masonry of buildings especially along dark recesses of window sills, shutters, and overhangs. These webs have a decidedly unkempt appearance with debris and body parts of insect prey they have devoured. These spiders are retiring and sedentary species which may live up to 8 years.

### **Wolf Spiders. (Family: Lycosidae)**

These are common; medium to large-sized, dark brown spiders with varying yellow or whitish streaks. They hunt prey by running them down along the ground. They often wander into the home in search of prey throughout the year in Florida. This large family has many different species and some are quite large, hairy, and impressive; yet their bite is **not** dangerous to man.

### **Ground spiders. (Family: Gnaphosidae)**

These spiders are usually uniformly black to reddish brown with few markings. Their abdomen is slightly flattened, with front spinnerets cylindrical and well separated. All are nocturnal hunters and in the daytime are found commonly under stones or loose bark. The egg sac of these spiders is generally pinkish in color or a white papery disc. Their bite is **not** dangerous, however cases have been reported where sharp pains following envenomation.

### **Jumping Spiders. (Family: Salticidae)**

These compact, active and usually colorful spiders are often found on windowsills, screening, and porch railings searching for prey with their excellent vision. These spiders visually locate, stalk, and pounce on their prey (just like miniature cats!). One of the most common jumping spiders in Florida is *Anasaitis canosa*, a small compact spider which is black in appearance with whitish streaks along its palps and a characteristic silver lining along the outside margin of its abdomen. **None** of these beneficial predators bite is dangerous to man. Although the largest species can give a bite that maybe painful for several minutes.

### **Crab Spiders. (Family: Thomisidae)**

These spiders can be drab in color or quite colorful depending on where they wait to ambush their prey. The colorful ones generally wait on the petals of flower blossoms. They all have a superficial crab-like appearance. The bites of these spiders pose **no** health threat to man.

### **Hackled Band Weavers. (Family: Amaurobiidae)**

A common spider in the Florida Panhandle, *Metaltella simoni*, is a recent introduction to the state (1966). Originally from South America, this species has quickly spread throughout Florida. These spiders are found under logs, boards, in crevices of buildings. These spiders are medium bodied with the cephalothorax being creamy brown with dark brown areas near the fangs while the abdomen is mottled gray. These spiders bite pose **no** health threat to man but concern exists that it might be replacing a native spider species.

### Spitting spiders. (Family: Scytodidae)

This spider family has been found to be associated with some residences in the panhandle of Florida. This group can be easily recognized by the shape of its cephalothorax (dome shaped except for the front which is extended) and eye arrangement (3 pair of eyes similar to the related brown recluse). The spider is yellowish in color with numerous black bands on the legs, and irregular black stripes or patches on its cephalothorax and abdomen. A reddish-brown species also exists. Some make webs up high in corners of buildings, others are or at ground level or under bark. This spider squirts streams of glue at prey that holds it for envenomation. The bite of this spider is **not** dangerous.

### Species Identification

Anyone suspecting a spider to be dangerous should collect it carefully (without crushing) and send it in a leak proof vial of alcohol (any type) to the *Mulrennan Sr. Public Health Entomology Research and Education Center, Florida A&M University, 4000 Frankford Ave., Panama City, Florida 32405-1933* for identification.

### References for More Information

1. Akre, Roger D. and E. P. Catts. 1992. Spiders. Washington State University Cooperative Extension Pullman, WA, Bulletin #EB1548. 8pp
2. Gorham, J. R. and T.B. Rheney. 1968. Envenomation by the spiders *Chiracthium inclusum* and *Argiope aurantia*. JAMA 206:1958-1962.
3. Edwards, G.B. 1983. The southern house spider *Filistata hibernalis* Hentz (Araneae: Filistatidae). Entomology Circular No. 255. FDACS Division of Plant Industry. 2pp.
4. Edwards, G.B. 1985. The common house spider *Achaeranea tepidarioum* (Araneae: Theridiidae). Entomology Circular No. 279. FDACS Division of Plant Industry. 2pp.
5. Edwards, G. B. 1991. An introduced cribellate spider, *Metella simoni* (Araneae: Amaurobiidae) in Florida. Entomology Circular No. 338. FDACS Division of Plant Industry. 2pp.
6. Hedges, S.A. and M.S. Lacey. 1995. Pest Control Technology. Field guide for management of urban spiders. Franzak and Foster Co., Cleveland, OH 220pp.
7. Hite, J.M., Wm. J. Gladney, J.L. Lancaster, and W.H. Whitcomb. 1966. Biology of the brown recluse spider. Ark. Agr. Expt. Sta. Bull. 711. 26pp.
8. Kaston, B.J. 1972. How to know the spiders. Wm. C. Brown Co. Publishers, Dubuque, Iowa. 289 pp.
9. Koehler, P.G. and D.E. Short. 1979. Stinging or venomous insects and related pests. University of Florida Cooperative Extension, Gainesville, FL, Circular 448 #12-15M-79. 10pp.
10. Levi, H.W. and L.R. Levi. 1990. Spiders and their kin. Golden Books Publishing Co. Inc. New York. 160pp.

11. Weems, H.V. and W.H. Whitcomb. 1975. The brown recluse spider, *Loxosceles reclusa* Gertsch and Mulaik (Araneae:Loxoscelidae). Entomology Circular No. 158. FDACS Division of Plant Industry. 2pp.

Web resources of Florida spiders -

<http://hammock.ifas.ufl.edu/en/spiders2.html>

[http://www.ifas.ufl.edu/~insect/urban/spiders/southern\\_house\\_spider.htm](http://www.ifas.ufl.edu/~insect/urban/spiders/southern_house_spider.htm)

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