

# Some Commonly Encountered Pennsylvania Spiders

(and two rarely encountered but medically important species)



**PennState Extension**



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# Introduction

Spiders, along with daddylonglegs, ticks, mites, and scorpions, belong to the class Arachnida. They are beneficial animals that feed on a variety of insects and other arthropods, including many we consider pests. About 3,000 species of spiders are found in the United States. Spiders rarely bite people, and most species found in the world are harmless. However, some people may be allergic to a spider's bite, and a few species of spiders are known to produce bites that may have serious medical implications for humans. The most medically important spiders in the state are the black widow spider and the brown recluse spider and its relatives, which are rarely encountered in Pennsylvania. Black widows are native to Pennsylvania and generally found outdoors; brown recluse spiders are not native and cannot survive in Pennsylvania's climate unless they remain inside heated structures. Many spiders indigenous to Pennsylvania will come into homes, mostly during the autumn, and a few of the more common and important of these will be discussed here.

To facilitate an accurate description of each of these species, and to aid the reader, a glossary of terms is included at the end of this publication. Sizes indicated in the "Description" subsections under each species refer to the length of the spider from the front of the cephalothorax to the rear of the abdomen.

## A Note on Venom, "Toxic Venoms," and "Poisonous Venoms"

All spiders have fangs and most possess venom. However, most spider bites have little or no effect on humans. The exceptions include people with compromised immune systems or other medical conditions that leave them vulnerable to spider venoms. Most spiders are too small to be of concern to humans. The fangs of these tiny creatures cannot penetrate the human epidermis unless the spider is held in place and allowed to bite the very thin skin between the fingers or toes. Larger spiders can bite, but they are shy and will attempt to escape unless trapped between the skin and some other object (e.g., clothing, sheets, and shoes).

Venoms from any spider are poisonous and/or toxic to their prey, but most are not poisonous or toxic to humans. The terms "poisonous venoms" and "toxic venoms" are somewhat misleading and should be replaced with "potentially harmful venoms." Very few spiders produce venoms that are potentially harmful to humans.



# Agelenidae—Funnel Weavers

## Grass Spiders

(*Agelenopsis* sp.)

Grass spiders are very common in Pennsylvania. The webs, which are large, somewhat concave, mostly horizontal, and sheetlike with a funnel or tunnel located off to one side, are often observed more frequently than the spiders themselves. The webs are found on grass, weeds, and ground covers such as ivy, pachysandra, or periwinkle, and in numerous exterior places such as fencerows, bushes, and brush piles. However, homeowners frequently see these fast-moving spiders indoors in the autumn as the spiders seek protection from falling temperatures.

### Description

Besides their distinctive webs (described above), grass spiders can be identified by their greatly elongated hind spinnerets and the dorsal markings on the carapace and abdomen. Females are from 10 to 20 millimeters and the males from 9 to 18 millimeters in length. The carapace is yellow-brown to brown with a pair of darker longitudinal bands extending back from the lateral eyes, and another pair of very thin lines located one on each side of the carapace. The abdomen is generally darker than the carapace and has a lighter median band, sometimes with a scalloped edge. The legs are frequently annulated, darker at the distal ends of the segments.

### Life History/Behavior

The female deposits a lens-shaped, white egg sac in the late summer to fall. The eggs hatch in the spring, and after a series of molts, the immatures become adults in late summer. Although it is common to find these spiders entering structures in the fall, the adults do not overwinter.

As previously mentioned, the webs are found in many locations and serve as both a platform on which the spider captures prey and a retreat in which the spider can remain hidden. The grass spider web is not sticky but relies on a network of threads above the sheet to divert or impede insect flight, causing them to fall onto the sheet, where they are captured by the rapidly running grass spider.

### Medical Importance

These spiders are extremely fast and shy. Consequently, very few people are bitten. Their bites have been reported to cause pain, swelling, redness, and itching, with the duration of symptoms ranging from one to ten days but without serious consequences.



*Agelenopsis* species female

Steven Jacobs, Penn State Extension



A grass spider on her web

Steven Jacobs, Penn State Extension



*Tegenaria domestica* male

Steven Jacobs, Penn State Extension

## Barn Funnel Weaver

(*Tegenaria domestica*)

While not commonly encountered in some areas, this species is found throughout most of the United States, most notably in sheds and barns, around and in the crevices of doors, as well as in the cracks of rock faces and under rocks and boards.

### Description

The female barn funnel weavers range from 7.5 to 11.5 millimeters and the males range from 6 to 9 millimeters in length. The cephalothorax is a red-brown with a covering of pale-yellow hairs and two pale-gray longitudinal lines. The abdomen ranges from a pinkish to a pale flesh color with a pattern of gray to black patches. The legs are spiny with very pale gray annulations at the distal end of the femurs.

The webs are similar to those made by the grass spiders, but they are typically smaller in diameter with the retreat within the web sheet rather than off to one side.

### Life History/Behavior

These spiders have been reported to live for as long as seven years, producing upward of nine egg sacs. The sacs are placed in many different locations close to the web, often suspended above the web from silk lines. The males are frequently found on the web along with the female during the mating season from May through July. These spiders can be found in structures anytime during the year.

### Medical Importance

Like their cousins the grass spiders, these spiders are extremely fast and shy. Although there are no documented cases of bites from barn funnel weavers, it seems reasonable to assume they would not produce symptoms greater than the grass spiders regarding pain, swelling, redness, itching, and duration of symptoms.

# Amaurobiidae—Hacklemesh Weavers

## Hacklemesh Weavers

(*Amaurobius* and *Callobius* sp.)

Amaurobiids are often found under bark, leaf litter, and stones, as well as in woodpiles and other protected areas. They may be found in damp basements, especially during the fall and winter.

### Description

The females range from 5 to 14 millimeters and the males from 5 to 12.5 millimeters in length. The carapace is a reddish mahogany brown, darkest at the front in the region of the eyes and the chelicerae. The legs are lighter in color than the carapace. The abdomen is generally gray, although the background color varies from a pinkish flesh color to a dark charcoal gray. A pattern of lighter areas or spots (which sometimes run together) can produce a larger, lighter central area. It is common to have chevron-type lighter areas on the posterior portion of the abdomen.

The web is an irregular “mesh” with an ill-defined tube retreat.

### Life History/Behavior

The males overwinter as immature spiders, molt twice the following spring, and become adults in April. They die after mating. The females have been found during all seasons, indicating that they probably live for at least two years. The egg sacs are deposited in the same locations that the spiders are found—often in the webs. The number of eggs found in the sac ranges from 73 to 175.

### Medical Importance

These spiders are frequently found in damp basements and other areas of the home in autumn. However, there are few indications that these spiders will readily bite or that the bites are medically important. The one verified record of a bite by an immature *Callobius* species resulted in pain, itching, swelling, redness, and nausea.



*Callobius bennetti* male

Tom Murray, BugGuide.net, photo# 348659



# Araneidae—Orbweavers

## Yellow Garden Spider

(*Argiope aurantia*)

These are some of the largest and showiest of the spiders commonly encountered in Pennsylvania. They are found in gardens, tall weeds, and sunny areas with bushes and other supporting structures on which they build the large orb webs. Yellow garden spiders are found throughout most of the United States.

### Description

Yellow garden spider females range from 19 to 28 millimeters in length. The carapace is covered with silver hairs, and the eight eyes are procurved with the lateral four eyes nearly joined and seated upon two projections or humps on either side of the front of the carapace. The second, third, and fourth pair of legs are black with the femora yellow to red. The front legs are frequently entirely black. The abdomen is an elongated oval that is pointed to the rear, notched in front, patterned yellow and black, and has two anterior humps or shoulders.

The males are 5 to 8 millimeters in length and their legs are lighter in color than those of the females. The immature spiders have banded legs. The spherical, brown, papery egg sacs are deposited in the late summer.

The web is large (50- to 100-centimeter diameters are not uncommon) and orientated vertically with a white zigzag stripe down the center, which is called the stabilimentum. The exact function of this structure is unclear.

### Life History/Behavior

In early spring, the spiderlings, numbering from 500 to 1,000, emerge from the egg sac. Many of them will succumb to cannibalism and predation from mud-dauber wasps. Those that do survive are usually unnoticed by humans until they reach maturity in the late summer.

### Medical Importance

Although these large, showy spiders sometimes cause alarm to individuals who are uncomfortable with spiders, they are not known to be medically important. People are not likely to be bitten unless they handle a female with an egg sac in the web. Even then, the bite would likely cause no more discomfort than a wasp or bee sting for most individuals.



*Argiope aurantia* on web showing stabilimentum  
Deisy Mendoza, WikiMedia



*Argiope aurantia* egg sac  
Steven Jacobs, Penn State Extension



# Banded Garden Spider

(*Argiope trifasciata*)

Banded garden spiders are not as commonly encountered in Pennsylvania as yellow garden spiders, although they inhabit similar locations. Where the habitat is favorable, this spider is found throughout the United States.

## Description

The banded garden spider female is 15 to 25 millimeters in length—slightly smaller than the yellow garden spider. The carapace is covered with silvery hairs. The abdomen is an elongated oval with the posterior somewhat pointed and the anterior rounded without the humps or notch described in the yellow garden spider. The abdominal background color is a pale yellow/silver with numerous lateral bands or stripes of black. The legs are also a pale yellow with darker spots or bands.

The males are 4 to 5 millimeters in length and their abdomens are mostly white. The immature banded garden spiders also have a mostly white dorsal surface of the abdomen. The egg sac is similar in texture and color as that of the yellow garden spider, but it is shaped more like a kettledrum.

The web is similar in size and shape to that of the yellow garden spider. It is not uncommon for the stabilimentum to be absent or have variability in shape.

## Life History/Behavior

Banded garden spider adults can be found from mid- to late summer through the first freeze. Egg sacs are deposited in early fall and consist of several hundred eggs. The immature spiders emerge the following spring.

A behavioral study of web construction determined that the majority of *Argiope trifasciata* orient their webs along an east-to-west axis. The spiders hang head-down in the center of the web with their abdomens facing south. Since the underside (venter) of the spider is mostly black, the orientation of both web and spider is believed to maximize solar radiation for heat gain—an important consideration for spiders that are active late in the year.

## Medical Importance

Similar to yellow garden spiders, banded garden spiders are not known to be medically important. It is unlikely that bites would occur unless people handled a female with an egg sac in the web. Even then, the bite would likely cause no more discomfort than a wasp or bee sting in most individuals.



*Argiope trifasciata* female

Jorge Iñiguez Yarza, Flickr



*Argiope trifasciata* (ventral)

Curtis Michael Eckerman, BugGuide.net, photo# 34401



*Araneus diadematus* female

Steven Jacobs, Penn State Extension



*Araneus diadematus* immature

Steven Jacobs, Penn State Extension



*Araneus marmoreus* female

Steven Jacobs, Penn State Extension

## Cross Orbweaver

(*Araneus diadematus*)

The cross orbweaver was probably introduced from Europe, where it has been studied at some length. While a showy orbweaver, it is commonly encountered on or next to buildings with exterior lighting, including lighted stairwells of structures in more rural settings. It is known from Pennsylvania north throughout New England, throughout Canada, and then south into Washington and Oregon.

### Description

Adult females range in length from 6.5 to 20 millimeters, and the males are 5.5 to 13 millimeters long. The color varies greatly from specimen to specimen. Generally, the smaller and/or younger individuals are darker, while the adult females are lighter. The background color is yellow to brown with two wavy or scalloped longitudinal lines (folium). There are several white or yellow spots within and around the folium. Four elongated spots appear toward the anterior end of the abdomen, creating what appears to be a cross. As with the banded garden spider, the carapace has three dark longitudinal lines or bands.

### Life History/Behavior

Adults are found from late summer through autumn. In late September, the females leave their webs and seek out protected locations to deposit between 300 to 900 eggs. The eggs are enclosed within a cocoon of yellow silken threads, shaped in a hemisphere. Typical egg deposition sites include under the bark of dead trees and in cracks and crevices.

### Medical Importance

Verified bites by this species are reported to produce a range of symptoms, including pain, swelling, and redness. Systemic reactions include anxiety, nausea, headache, and muscle cramps, but not all individuals have the same reactions. Symptoms/reactions can last from two days to three weeks.

## Marbled Orbweaver

(*Araneus marmoreus*)

The genus *Araneus* has about 1,500 species worldwide, making it the largest of all the spider genera. *Araneus marmoreus* is found throughout all of Canada to Alaska, the northern Rockies, from North Dakota to Texas, and then east to the Atlantic.

### Description

Adult female marbled orbweavers are 9 to 20 millimeters in length with very large abdomens that are mostly orange with brown to purple markings and spots of pale yellow. Occasionally the abdomens are nearly white in color. The cephalothorax is yellow to burnt-orange with a central dark line and dark lines down either side. The femora and patellae are orange. The other leg segments are yellow, becoming brown at the distal ends, as are all of the legs of the males.

## Life History/Behavior

The webs are found in trees, shrubs and tall weeds, and grasses in moist, wooded settings and can frequently be found along the banks of streams. The webs are oriented vertically and have a “signal” thread attached to the center that notifies the spider when prey has been captured. Unlike the *Argiope* garden spiders, *Araneus marmoreus* hides in a silken retreat to the side of the web (at the end of the signal thread). Adults construct this retreat using leaves folded over and held together with silk. Immature spiders make their retreats out of silk only.

Egg sacs, which contain several hundred eggs, are generally deposited in October and are constructed of white silk formed in a flattened sphere. Immature spiders emerge from the sacs in spring. Adults are seen from mid-summer until the first hard freeze of fall.

## Medical Importance

See banded garden spider on page 7.

## Fierce Orbweaver

(a suggested common name)

(*Araneus saevus*)

*Araneus saevus* is a northern species found in Canada and the northern United States. It is often confused with other large, dark orbweavers such as *A. nordmanni*.

## Description

*A. saevus* is a large dark-brown to black species with conspicuous dorsal humps on the lateral anterior abdomen. The humps may be lighter in color than the other areas. The abdomen is generally very dark brown and has a dorsal black folium. Between the abdominal humps there is a stripe of white or cream of varying length/width depending on the specimen at hand. The underside of the abdomen has two white spots located opposite each other. Females are 11 to 21 millimeters long, and males are 9 to 14 millimeters in length and darker than females.

## Life History/Behavior

Little information is available on the life history of this species, but it likely overwinters in the egg stage with adults found from mid-summer to mid-autumn. Most often found in forested locations on a variety of trees, it can also be seen in suburbia that is landscaped with mature plantings.

## Medical Importance

Most orbweavers either scurry to a silken retreat or drop to the ground when disturbed. The single verified case of a fierce orbweaver bite caused pain, swelling, fever, and numbness.



*Araneus saevus* male

Steven Jacobs, Penn State Extension



## Spined Micrathena

(*Micrathena gracilis*)

*Micrathena gracilis* is commonly encountered in wooded locations, including landscaped residential and suburban locales. This spider is frequently overlooked because of its small size, although hikers may be familiar with the strong silk dragline it produces that stretches across trails at about eye level. It is found in most states east of the Rocky Mountains.



*Micrathena gracilis* female

Steven Jacobs, Penn State Extension

### Description

The spined micrathena is a distinctively shaped orbweaver. The females are typically black with white markings and have five pairs of black cones/spines/conical tubercles encircling the lateral margins of the abdomen. The underside of the abdomen is cone shaped. There is great variability among the color of these spiders. While many are mostly white and may have orange or brown spots, typically most are black with white markings. Males look quite different from females. They are brown and have elongated and more flattened abdomens that are blunted at the posterior. Females are 7.5 to 10 millimeters in length, while males are 4.5 to 5 millimeters long.

### Life History/Behavior

This species overwinters in the egg stage. Males and females mature in early summer, and females can be found until October. Webs are built along flyways and trails that have bushes and vegetation spanning about 6 feet apart.

### Medical Importance

This spider is not known to bite people and is probably not medically important.



*Trachelas tranquillus* female

Steven Jacobs, Penn State Extension

## Corinnidae—Corinnid Sac Spiders

### Broad-Faced Sac Spider

(*Trachelas tranquillus*)

*Trachelas tranquillus* ranges from New England and adjacent Canada, south to Georgia and Alabama, and west to Kansas and Minnesota. They are found outdoors walking on foliage; under leaf litter, stones, and boards; and on buildings under the windowsills and siding. They construct silken retreats, within which they hide during the day. Most occurrences of *T. tranquillus* in homes coincide with falling temperatures in autumn. They do not, as a rule, establish reproducing colonies in homes.

### Description

The females are 7 to 10 millimeters in length; the males are 5 to 6 millimeters. The chelicerae and carapace are thick, hard, reddish-brown, and covered with what appear to be tiny punctures. The abdomen is pale yellow to light gray, with a slightly darker dorsal stripe. The front pair of legs is darker and thicker; the other three pairs become increasingly lighter and thinner toward the last pair.



## Life History

These spiders prefer warmer and drier habitats. They can be found at the bases of plants, on fences, inside rolled leaves, and under stones and boards. Mature females are often collected while they wander around in homes during the autumn. Males mature and mate in mid-summer, and each female deposits a pure white egg sac containing thirty to fifty eggs in September or October. A common oviposition site is under loose tree bark. A peculiar trait of this spider is its reported tendency to scavenge on dead spiders and insects.

## Medical Importance

The broad-faced sac spider has been reported to produce a painful bite, with records of severe secondary infection associated with the bites. It has been suggested that these infections may result from the spider's propensity for feeding on dead and decaying arthropods. Typically, the bite produces a painful erythema similar to that of a bee or wasp sting. Individuals who are sensitive to arthropod venoms may exhibit a more severe and possibly systemic reaction.



*Dysdera crocata* female

Steven Jacobs, Penn State Extension

# Dysderidae—Dysderid Spiders

## Woodlouse Hunter

(*Dysdera crocata*)

Originally from the Mediterranean region, *Dysdera crocata* has been introduced to South Africa, Australia, Chile, and Asia. In North America, it is found from New England to Georgia and west to California. The woodlouse hunter preys on pill bugs or sow bugs (order Isopoda) and derives its common name from the British common name for these crustaceans. *D. crocata* is known to feed on other arthropods as well. This is the only species of the family Dysderidae known to occur in Pennsylvania.

## Description

Female *D. crocata* are 11 to 15 millimeters in length, and the males are 9 to 10 millimeters. The cephalothorax and legs are reddish-orange and the abdomen is a dirty white. The chelicerae are large, thick, and slanted far forward. The six eyes are arranged in an oval.

## Life History

The woodlouse hunter probably overwinters in its adult form. Mating is reported to occur in April, with the eggs being deposited shortly thereafter. The eggs are suspended within the female's silken retreat by a few strands of silk. Up to seventy eggs are deposited at a time. The spiderlings will remain with the mother at first, living in her retreat for a period before moving out on their own.

## Medical Importance

*D. crocata* bites have been implicated in causing a localized, intensely itching erythema 4 to 5 millimeters in diameter. The bites apparently do not result in any systemic neurotoxicity or cytotoxicity.

## Gnaphosidae—Ground Spiders

### Parson Spider

(*Herpyllus ecclesiasticus*)

Unlike orbweavers, ground spiders actively hunt prey without the use of a web. They typically hunt at night and spin silken retreats in leaves and under boards and stones to hide in during the day. There are seventeen genera in the United States. The most commonly encountered of these is the parson spider, which enters structures in the fall to seek a hibernation site for the winter.

#### Description

*Herpyllus ecclesiasticus* is a rather hairy spider with flat-lying black hairs on the cephalothorax and gray hairs on the abdomen. The exoskeleton (easily seen on the legs) is a chestnut brown. The common name “parson spider” is derived from the distinctive white dorsal pattern on the abdomen that somewhat resembles a clerical collar worn in the seventeenth and eighteenth centuries called a cravat. A small white spot is located just above the spinnerets. These spiders are not very large; females are 8 to 13 millimeters long and males average 6 millimeters in length.

#### Life History/Behavior

During the day, parson spiders hide in a silken retreat in rolled leaves, under bark, stones, or debris, and in similar locations in wooded areas. At night they hunt for prey and can move very fast. These spiders will run in a zigzag fashion to evade predators; for this reason, they can be hard to capture when seen in homes. Females deposit a white egg sac during the fall under the bark of trees and logs. They will also hibernate in these locations and protect the sac from predation.

#### Medical Importance

While the bite from a parson spider is painful, and some individuals may experience an allergic reaction of varying symptoms, they are generally not considered medically important. Most bites occur when the spiders are trapped against the skin in clothing and bedding.



*Herpyllus ecclesiasticus* female

Steven Jacobs, Penn State Extension

# Lycosidae—Wolf Spiders

## Wolf Spiders

(*Hogna*, *Tigrosa*, and other genera)

This group contains approximately 240 species in twenty-one genera in the United States. The genera *Hogna* and *Tigrosa* contain nineteen and five species, respectively, including some of the biggest wolf spiders in our area. Two notable species, *H. carolinensis* and *T. aspersa*, are among the largest and most commonly encountered in Pennsylvania homes.

### Description

*Hogna carolinensis* females are 22 to 35 millimeters in length, and the males are 18 to 20 millimeters. The carapace is a dark brown with scattered gray hairs that are typically not arranged in any discernible pattern. The abdomen is similarly colored, with a somewhat darker dorsal stripe. The legs are a solid color.

*Tigrosa aspersa* females are 18 to 25 millimeters in length, and the males are 16 to 18 millimeters. They are similar to *H. carolinensis* in body color but have a distinct narrow line of yellow hairs on the carapace in the vicinity of the eyes. The legs are banded with a lighter brown color at the joints. The males are much lighter in color than the females, and only their third and fourth pairs of legs are banded with a lighter color.

### Life History

Both of these spiders are found in similar habitats and have similar habits. These spiders build retreats (holes or tunnels) in the soil; under and between boards, stones, and firewood; under siding; and in similar protected areas. They are hunting spiders and only come out of hiding during the night to look for prey. Mating occurs in the autumn, and the males die before the onset of winter. The fertilized females overwinter in protected locations, including human-made structures, and produce egg cocoons the following May or June. The spiderlings hatch in June and July and will attain only half of their full size by the following winter. They too will overwinter in protected sites and complete their growth the following spring and summer. The females may live for several years beyond the year in which they reach maturity. It is common to find the females carrying their young spiderlings on their backs during the summer months.

### Medical Importance

Wolf spiders will bite if mishandled or trapped next to the skin. Typical reactions include initial pain and redness with the potential for some localized swelling. Symptoms generally subside within 24 hours. No serious medical consequences of these bites have been noted.



*Tigrosa* female carrying young spiderlings

Justin Cret, BugGuide.net, photo# 1122233



*Tigrosa aspersa*

Jim Eckert, BugGuide.net, photo #1540834

## Miturgidae—Prowling Spiders



*Cheiracanthium inclusum* male

Steven Jacobs, Penn State Extension

### Agrarian Sac Spider

(*Cheiracanthium inclusum*)

and

### Longlegged Sac Spider

(*Cheiracanthium mildei*)

Sac spiders can be found walking about on foliage; under leaf litter, stones, and boards; on buildings under the windowsills and siding; and in the corners of walls and ceilings within homes. *C. inclusum* is indigenous to much of the United States (except the northernmost states), while *C. mildei*, an introduced species from Europe, is now found throughout the United States north of Virginia, Utah, and California.

### Description

Both species are of similar size (females, 5 to 10 millimeters; males, 4 to 8 millimeters) and coloration. *C. inclusum* is a light-yellow to cream color with dark-brown chelicerae, tips of the tarsi, and palps. *C. mildei* has a slightly greenish tinge to its abdomen and a pale-yellow cephalothorax. The chelicerae, tarsi, and palps are similar to those of *C. inclusum*. Both spiders have a slightly darker dorsal stripe running lengthwise down the abdomen.

Sac spider retreats may be found outdoors under objects or indoors in the corners of walls and ceilings. These retreats are silken tubes or sacs in which the spiders hide during the daytime. In homes with light, neutral-colored walls and ceilings, the retreats may go unnoticed, as they are small and blend in with the background coloration.

### Life History

The agrarian sac spiders deposit their eggs in June or July. The eggs are loosely deposited within a silken retreat, and the female remains nearby to guard them. *C. inclusum* is more often encountered outside; the majority of these spiders deposit their eggs on the undersides of leaves or other foliage. *C. mildei* is more often encountered within human-made structures and oviposits almost exclusively indoors. The young spiderlings will often remain within the silken retreat for a short period, eventually venturing out at night in search of food. The young will frequently return at daybreak to hide within the protection of the retreat.

Prowling spiders are “active hunters,” searching for prey rather than capturing it within a web. It is during these nighttime forays that the spiders encounter humans and bite when they become trapped between a person’s skin and sheets, clothing, shoes, and so forth.



## Medical Importance

These two spiders account for a significant number of human bites. People usually incur *C. inclusum* bites outdoors while gardening in the summer. *C. mildei* will readily bite, despite their small size, and they have been observed crawling across the human skin surface and biting without provocation. Although most of these bites are painful at the outset, they normally do not result in any serious medical conditions. The bite is usually very painful and burning at the outset with developing erythema, edema, and intense itching. The burning sensation associated with the bite will last for an hour or more, and a rash and blistering will occur during the next 10 hours. Some patients may exhibit systemic reactions with fever, malaise, muscle cramps, and nausea. Although it was thought until recently that necrotic lesions were associated with bites from *Cheiracanthium* species, studies of a large number of verified human bites have failed to confirm these lesions happen.



*Dolomedes tenebrosus* female

Steven Jacobs, Penn State Extension

## Pisauridae—Nursery Web Spiders

### Fishing Spider

(*Dolomedes tenebrosus*)

Fishing spiders are similar to the larger wolf spiders in size, shape, and coloration. Species in the genus *Dolomedes* are called fishing spiders because most live near water and have been reported to catch small fishes and aquatic insects from the water as they walk on the surface. The species *Dolomedes tenebrosus* is more frequently associated with wooded areas (it would be more accurately classified as a tree-dwelling spider) and is a common household invader in these locations. It occurs from New England and Canada south to Florida and Texas.

### Description

*D. tenebrosus* is a fairly large spider. The females are 15 to 26 millimeters in length; males are 7 to 13 millimeters. Both sexes are brownish gray in color with black and lighter brown markings. The legs of both male and female are banded with alternating brown/black, scalloped annulations on the femora and reddish-brown/black annulations on the tibia. A closely related species, *D. scriptus*, is similar but has white “W” markings on the posterior portion of the abdomen.

### Life History

*Dolomedes tenebrosus* is frequently found far away from water, usually in wooded settings. They hibernate as immature adults (penultimate instar) under stones or loose bark, in tree cavities, and in human-made structures and mature in the spring. Mature individuals may be found from early May through September. The egg sacs are deposited in June and are carried around by the females until the spiderlings are ready to hatch. Young spiderlings may be found from July through September. The young are guarded by the female in a nursery web and may number 1,000 or more.



*Pholcus phalangioides* female with eggs  
Olaf Leillinger, Wikimedia



*Pholcus phalangioides*  
Anita Gould, Flickr

## Medical Importance

Fishing spiders are quite shy and generally run from humans at the slightest movement. Bites are typically no more severe than a bee or wasp sting. Exceptions do occur in individuals who are sensitive to spider venoms.

## Pholcidae—Cellar or Daddylong-legs Spiders

### Longbodied Cellar Spider

(*Pholcus phalangioides*)

The longbodied cellar spider is the most common of the Pholcidae in the United States. It has extremely long legs and is found in many types of buildings throughout the year. Although these spiders can develop large populations in protected locations, they are not known to be in any way harmful. This spider is commonly found in cellars, warehouses, garages, caves, and other dark, quiet, protected spots.

### Description

The females are from 7 to 8 millimeters and the males 6 millimeters in length. The carapace is very wide. The abdomen is about three times as long as it is wide and cylindrical in shape. The eyes are arranged in two triads of larger, light-colored eyes on the top of the cephalothorax and a pair of dark, small eyes on the front. The color of the carapace and abdomen is a pale tan or yellow with a gray mark in the center of the carapace.

The forelegs of the adult female are about 50 millimeters in length. The webs are an irregular mesh of threads.

### Life History/Behavior

Both male and female spiders can be found in heated structures throughout the year. It takes approximately one year for the spiders to mature and they can live for two or more years as adults.

The eggs, which are about 1 millimeter in diameter, are deposited in clusters of twenty-five to sixty and wrapped in a thin layer of silk. The sac is held by the female in her chelicerae as she hangs inverted in her web.

An unusual behavior is that the spiders will rapidly vibrate in a circular fashion in the web if threatened, making it difficult to see them.

### Medical Importance

These spiders are not known to bite people and are not a medically important species.

# Salticidae—Jumping Spiders

## Bronze Jumper

(*Eris militaris*)

This spider is found throughout most of the continental United States and Canada. Only a handful of salticids have such an extensive geographical range (two of those species, *Phidippus audax* and *Salticus scenicus*, are also included in this publication).

### Description

The males have a dark cephalothorax with white bands along the sides. The chelicerae are relatively long and extend forward from the front. The abdomen is lighter in color than the cephalothorax and it too has white bands that run laterally. Females have a lighter cephalothorax than the males and a slightly darker abdomen, but they do not have the lateral white bands. The abdomen has a short white band near the cephalothorax and a series of elongated dorsal white spots. Females are 6 to 8 millimeters long, while males are 4.7 to 6.7 millimeters.

### Life History/Behavior

*Eris militaris* is a jumping spider that can be seen around many homes and in fields and woods, though it is often overlooked due to its small size and bronze-brown color. Found in both rural and suburban locations, it is most often seen in the fall crawling on the exterior or interior of buildings. Bronze jumpers will sometimes aggregate in the fall to overwinter under the bark of dead trees.

### Medical Importance

This species is not medically important. (Note: The original author of this publication had personal experience in this regard. While attempting to get the spider to look at the camera by using his index finger to get the spider's attention, the male pounced upon the fingertip, bit it, and hopped off. The pain was immediate and surprisingly distracting. After only 15 seconds the pain was gone and no other symptoms developed.)



*Eris militaris*

Lynette Elliott, BugGuide.net, photo# 457511



*Eris militaris* in retreat

Lynette Elliott, BugGuide.net, photo# 457512

## Emerald Jumper

(*Paraphidippus aurantius*)

*Paraphidippus aurantius* ranges from Delaware to Nebraska and south to Florida and Arizona.

### Description

*Paraphidippus aurantius* is quite variable in appearance, owing somewhat to the iridescent scales that appear as different colors depending on the observer's point of view. Additionally, the color of some of the markings can range from a light golden brown to white.

The female has a band of light-colored scales extending from the eyes around the lateral margins of the cephalothorax and also around the sides of the abdomen. The dorsal surfaces of both the cephalothorax and abdomen are a light reddish-brown with iridescent green scales. The eyes are surrounded by a patch of black scales. The abdomen has four pairs of white spots—the third pair elongated laterally—and orange spots midway on the sides of the abdomen. The legs are brown, with the first pair having black bands. Males are much darker, which makes the abdominal spots stand out while the orange spots are harder to see. Females are 8 to 12 millimeters long, while males are 7 to 10 millimeters in length.



*Paraphidippus aurantius* female

Isa Betancourt, BugGuide.net, photo# 1031635

### Life History/Behavior

This spider is found in both rural and suburban wooded locations and is most often observed in the fall when crawling on the exterior or interior of buildings. It shelters within a silken retreat that is created in a folded leaf.

### Medical Importance

As with other jumping spiders, this species is most likely not medically important.



*Paraphidippus aurantius* male

Henry Kindervatter, BugGuide.net, photo# 1396769



## Bold Jumper

(*Phidippus audax*)

The jumping spiders, as a rule, are relatively small, compact hunting spiders. They have very good eyesight and can pounce on their victims from a great distance. Spiders in the genus *Phidippus* are the largest-bodied of the salticids. *Phidippus audax*, the most commonly encountered jumping spider in and around Pennsylvania homes, is found from Canada and the Atlantic Coast states west to California.

### Description

*P. audax* is a black, hairy spider measuring 8 to 19 millimeters for the females and 6 to 13 millimeters for the males. There is a pattern of white, yellow, or orange spots on the top of the abdomen (orange on the younger spiders), and the chelicerae frequently have an iridescent green hue. The males have “eyebrows,” or tufts of hairs over the eyes. Occasionally, white bands extend back from the rear pair of eyes. The eyes located at the center of the front end of the cephalothorax are by far the largest and aid the spiders in capturing prey.

### Life History

These spiders overwinter as nearly mature, or penultimate, individuals. They mature into adults in April and May, mate, and deposit eggs in June and July. The *P. audax* female suspends her eggs in a silken sheet within her retreat. In contrast to many other hunting spiders, jumping spiders require daylight to hunt their prey. They can be found on windowsills, tree trunks, and deck railings; under stones; and in other locations during daylight hours.

### Medical Importance

Bold jumpers are shy spiders that retreat from humans when approached. If handled, they generally do not bite. When bites occur, minor pain, itching, swelling, and redness may persist for one to two days.



*Phidippus audax* showing green chelicerae

Ryan Kaldari, WikiMedia



*Salticus scenicus* female  
Steven Jacobs, Penn State Extension

## Zebra Jumper

(*Salticus scenicus*)

Originally from Europe and Asia, this spider is found sporadically from Nova Scotia to British Columbia, south to Georgia, and westward to Colorado. Although not recorded in the Rocky Mountain states, it is found in Oregon and California. It is also found in many other locations throughout the world.

### Description

The zebra jumper is a relatively small salticid. It is readily identifiable by the pattern that is similar in both sexes. The cephalothorax has a white lateral band with additional white hairs in the eye region. Iridescent scales may appear near the eyes. The abdomen has white or light-colored hairs arranged in opposing stripes with a band around the anterior end. The females are often lighter in color than the males and may be mistaken as separate species. Males have very large, dark chelicerae that project forward rather than down as in most other spiders. Females range from 4.3 to 6.4 millimeters in length; males are 4 to 5.5 millimeters long.

### Life History/Behavior

This spider is frequently found under stones, in high grass, on bushes and fences, and both inside and on the exterior of buildings. A retreat is frequently spun between cracks and crevices of boards or similar locations. Mating occurs in late spring and eggs are deposited in June and July depending on environmental conditions.

### Medical Importance

As with other jumping spiders, this species is not considered medically important.

## Sicariidae — Sixeyed Sicariid Spiders

### Brown Recluse Spiders

(*Loxosceles reclusa* and other *Loxosceles* sp.)

Eleven species of *Loxosceles* are indigenous to the continental United States, four of which are known to be harmful to humans. Brown recluse spiders are established in sixteen states: Alabama, Arkansas, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Nebraska, Ohio, Oklahoma, Tennessee, and Texas. In addition, isolated occurrences have been reported in Arizona, California, the District of Columbia, Florida, North Carolina, New Jersey, Pennsylvania, Washington, and Wyoming. Brown recluse spiders are rarely encountered in Pennsylvania, but they may be transported in boxes and similar items from a locale where the spiders normally occur.

The Mediterranean recluse, *Loxosceles rufescens*, is a closely related species that was introduced from southern Europe. It is established in the steam tunnels of Penn State and in other locations in the Northeast. These spiders are not known to have bitten any employees or students, despite their long sojourn in the Penn State steam tunnels. The bites of these spiders do not produce the severe reactions typically associated with the brown recluse spider.

## Description

These spiders are chocolate brown in color, and their bodies are about 9 millimeters in length with long legs. They have three pairs of eyes, arranged in a triad, and have a violin-shaped marking on the cephalothorax. The body of the “violin” is near the eyes and the neck of the “violin” extends backward, ending before the abdomen. Males are similar to females in appearance.

## Life History

After mating in June or July, the female will deposit twenty to fifty eggs in a spherical case. She can produce two to five such batches of eggs during her lifetime. Laboratory-raised individuals can live for two to three years. The young require about one year to mature. The brown recluse, *L. reclusa*, in its normal range, prefers to inhabit gaps under rocks, boards, and the bark of dead trees and logs. In structures, it will live inside cracks in walls and boards and behind and under any number of items in storage. The brown recluse prefers nesting sites that are warm and dry. In contrast, *L. rufescens* prefers to nest in cooler, more humid places.

## Medical Importance

Multiple studies have found that “brown recluse bites” are overdiagnosed and the majority of “bites” are misdiagnoses of other issues, including poison ivy, chemical burns, and diabetic ulcers. Within their native range, brown recluse can be common and abundant in homes, yet confirmed bites are rarely reported (one study reported a home in which more than 2,000 spiders were collected over a six-month period, yet the residents hadn’t been bitten in six years). When bites do occur, it is usually because a spider is trapped against the skin and feels threatened, such as when someone puts on shoes that were left out overnight or rolls over a spider while sleeping.

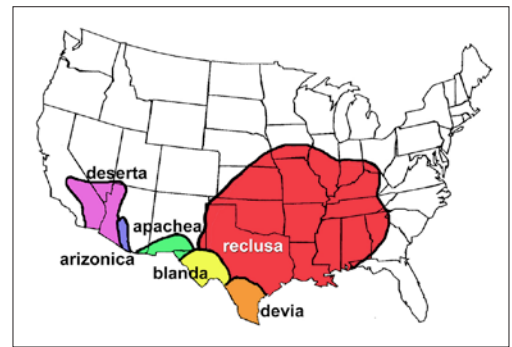
Outside their native range (which includes Pennsylvania), brown recluse are restricted to buildings and are almost exclusively brought in by humans (such as when someone moves from an area where brown recluse are native). They are therefore extremely rare and localized. They are not found outdoors, and the risk of being bitten is virtually nonexistent.

Brown recluse bites are commonly thought to cause large, necrotic lesions. While this can occur, they are rare. Approximately 90 percent of brown recluse bites result in no reaction or a small (~5 millimeter), red papule that heals on its own. Approximately 10 percent of bites result in dermonecrotic lesions. These lesions develop over the course of two weeks, during which the skin surrounding the bite turns black, dries out, and eventually sloughs off. These bites take two to four months to fully heal. Dermonecrosis is exaggerated in obese victims because of the increased



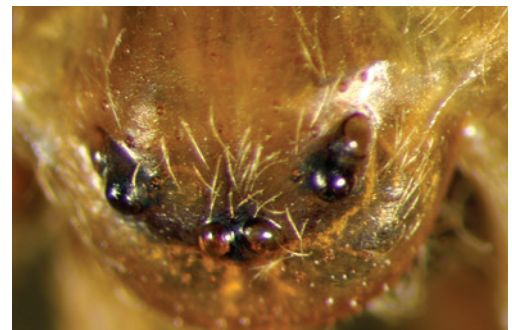
*Loxosceles reclusa* male

Richard Vetter



Native ranges of *Loxosceles* species in the United States. Recluse spiders outside of these areas are rare and almost exclusively restricted to buildings.

Richard Vetter, used with permission



Brown recluse eye pattern

Steven Jacobs, Penn State Extension





*Lactrodectus mactans* female and egg case  
Steven Jacobs, Penn State Extension



*Lactrodectus mactans* female underside showing red hourglass  
Jeff Hollenbeck, BugGuide.net, photo# 46533



*Lactrodectus mactans* male  
Lynette Elliott, BugGuide.net, photo# 34225



*Lactrodectus variolus* female dorsum showing red spots  
Meghan Cassidy, BugGuide.net, photo# 1488945

destruction of poorly vascularized adipose tissue. Less than 1 percent of bites result in systemic symptoms that include hemolytic anemia and acute kidney injury. These symptoms are most common in children and can be fatal in 12–36 hours, so they do represent a true medical emergency.

In summary, brown recluse bites are commonly reported, but they are actually relatively rare where brown recluse natively occur, and virtually nonexistent where they are not native. When bites do occur, the vast majority cause no or minor symptoms. However, serious medical issues, such as dermonecrotic lesions and potentially fatal systemic symptoms, can occur, so confirmed bites should be monitored and treated with caution.

## Theridiidae—Cobweb Weavers

### Southern Black Widow Spider

(*Lactrodectus mactans*)

The widow spiders, genus *Lactrodectus*, are found worldwide in the warmer regions of most continents. The taxonomy of these spiders is challenging and as few as six to as many as twenty-eight species are recognized. In the United States, there are probably five species: the southern black widow, *L. mactans*; northern black widow, *L. variolus*; western black widow, *L. hesperus*; brown widow, *L. geometricus*; and the red widow, *L. bishopi*.

The southern black widow, *L. mactans*, is found in Pennsylvania. It is probable that the northern black widow, *L. variolus*, is also present. Occasionally, the brown and the red widow spiders are introduced on potted plants from southern Florida.

#### Description

The female southern black widow is shiny and jet black. The underside of the abdomen has the well-known orange to red hourglass marking, while the dorsum is unmarked or can have up to four red dots. They are 8 to 13 millimeters in body length and measure 25 to 35 millimeters with legs extended. The male, which is black and has white underbody markings with red spots, is only 4 to 6 millimeters long (12 to 18 millimeters including its legs).

#### Life History

Black widows can be found under stones, in stumps or woodpiles, in vacant rodent holes, in the dark corners of barns and garages, and in outdoor privies and other undisturbed cavities. Their webs are skimpy and disorganized.

Males are often killed and eaten by the females shortly after mating, thus the origin of the name “widow.” A female may live for a year or more and produce up to nine 0.5-inch-diameter egg sacs, each containing 200 to 800 eggs. Eggs hatch in about eight days, but the young spiders remain in the egg case for about nine more days, molting once during that time. They then disperse, traveling on thin silken threads through a process known as “ballooning.” The female stands guard over the eggs during the summer months—when the majority of widow bites occur.



## Medical Importance

Immature and male black widows do not possess fangs large enough to pierce human skin, so bites are almost entirely due to adult female spiders, especially females protecting an egg sac. Reactions to bites can range from no reaction or localized symptoms to a severe systemic reaction, which is described below.

Black widow venom is principally neurotoxic, so at first a bite is almost painless. However, pain will be felt one to two hours later, and occasionally the patient may experience a tingling along the nerves or down the spine. There is almost no swelling at the site of the bite, although the site may exhibit two red fang marks and be surrounded by a rash or erythema.

Generalized body symptoms, which develop within one to three hours, may include any of the following: nausea, chills, slight fever, rise in blood pressure, retention of urine, burning sensation of the skin, fatigue, motor disturbances, breathing difficulty, constipation, and muscle aches, particularly in the abdomen. These symptoms generally dissipate within four days, but they may last as long as a week.

Treatment for a bite targets the symptoms and can include the use of muscle relaxants, antihistamines, and analgesics. Latrodectus antivenin is available, but it is generally reserved for extreme cases as there is a risk of anaphylaxis (allergic reaction) to the antivenin.

While a black widow bite is extremely unpleasant, deaths from black widow bites are extremely rare. According to the American Association of Poison Control Centers, approximately 2,200 people are bitten in the United States by black widows every year, but no deaths have been recorded due to black widow bites since 1983.

## Common House Spider

*(Parasteatoda tepidariorum)*

*Parasteatoda tepidariorum* is a cosmopolitan spider that is widely distributed throughout most of the world. It is extremely common in barns and houses, where it constructs webs in the corners of walls, floor joists, and windows. The common house spider may also be found outside under objects such as rocks and boards, as well as beneath bridges and similar structures. In homes, it is most often encountered in damp areas such as basements and crawl spaces. Because this spider frequently abandons its web to build a new one nearby, it can produce many webs in a short period of time. This behavior causes homeowners much grief.

## Description

The common house spider female is 5 to 6 millimeters in length with a yellowish-brown carapace and a dirty-white to brown abdomen with gray chevrons. The legs are yellow, with darker rings at the end of each segment. Some individuals have a triangular black spot on the top of the abdomen. The male is 3.8 to 4.7 millimeters in length with orange legs.



*Parasteatoda tepidariorum* female

Steven Jacobs, Penn State Extension



Common house spider web and egg cases

Steven Jacobs, Penn State Extension



*Steatoda grossa* female

Steven Jacobs, Penn State Extension

## Life History

Males and females can be found at any time of year, and there are reports of the spiders living for a year or more after maturing. The male and female will coexist in the web and mate repeatedly. The egg sacs are brown and ovoid with tough, papery covers and can be 6 to 9 millimeters in diameter. A female may deposit twelve or more egg sacs over her lifetime, each containing 140 to 380 eggs.

## Medical Importance

*Parasteatoda tepidariorum* is not regarded as a medically important species. In fact, given this spider's tendency to populate houses, plus the paucity of reported bites in the literature, it is apparent that the house spider does not often bite people. The few recorded and verified bites were accompanied by pain (increasing for one hour), red mark, or redness, with the duration of pain being 4 to 24 hours.

## False Black Widow

(*Steatoda grossa*)

Eight *Steatoda* species occur in the United States, including *S. grossa*, which is found along the coastal states of the Atlantic, Gulf, and Pacific regions. It is a common spider in homes and other structures in the southern and western states. It makes an irregular web and is reported to capture and prey upon other spiders, including the true black widow spiders. Female *Steatoda* spiders have been reported to live for up to six years (males live for a year to a year and a half), producing numerous offspring.

## Description

Similar to the true black widow, the false black widow female is 6 to 10.5 millimeters in length, but it lacks the red hourglass pattern on the underside of the abdomen, which is more oval in shape than that of the true black widow. In most specimens, the abdomen has a purplish-brown to black color with light, pale-yellow to grayish markings. In many specimens, these markings may be faded and difficult to see. The cephalothorax is a red-brown color with slightly darker legs.

## Life History

These spiders mate in the spring, and the females can produce three or more egg sacs, or cocoons, from May through July. Each sac can contain 200 or more cream-colored eggs. Although the males can live for up to 18 months, they die shortly after mating. All stages of immature and adult spiders can be found in human-made structures throughout the year. Outside, these spiders can be found on low-growing foliage, under bark, in rock crevices, and under bridges.

A closely related species, *S. borealis*, is similar in shape and coloration but slightly smaller. This spider is more common in the northern states (Pennsylvania included) and can be found in dwellings throughout the year.

## Medical Importance

False black widows produce symptoms that are similar to but much less severe than those of a true black widow bite. There are documented cases of *Steatoda* bites leading to blistering at the site of the bite and a general malaise lasting for several days. Additionally, symptoms can include moderate to severe pain that increases for the first hour (did not include diaphoresis) and occasionally, mild to moderate nausea, headache, and lethargy. The duration of all symptoms and effects ranged from one to 60 hours.

## Control

Avoid bites by wearing gloves when doing yard work. Be careful when reaching under stones, logs, or firewood, or when reaching behind undisturbed household items such as cabinets, furniture, and boxes. Black widows, brown recluses, and other spiders tend to inhabit such undisturbed areas.

Reduce the number of potential nesting sites around the home. These include woodpiles, lumber stacks, rock piles, brush, high weeds and grasses, and discarded human-made items. Frequently cleaning and moving stored items in basements, storage areas, and garages will reduce the number of spiders by disturbing their habitats. Vacuum spiders and their webs from behind objects, under tables, and in wall and ceiling corners. Close openings in exterior walls and install weather stripping and thresholds at the bottom of doors. Leave firewood outside until you are ready to place it in a stove or fireplace. Firewood that is stored inside, even for short periods of time, will begin to warm, and any overwintering spiders hiding there will become active and may crawl out from under bark and crevices in the wood.

Some spiders will collect in large numbers on buildings with bright exterior lighting. The lights attract a variety of flying insects on which the spiders feed. Spider populations can be reduced by spraying a high-pressure water stream onto the building, and by switching from mercury vapor to sodium vapor exterior lighting.

Most insecticide sprays, whether they are applied to the interior or exterior of a building, do little to control or prevent spiders from entering. If spiders are sprayed with an insecticide, they will eventually die; however, it is still advisable to remove those spiders by the means previously mentioned rather than by applying a pesticide. If you have a confirmed infestation of either black widow or brown recluse spiders in your home, contact a licensed pest control company, the Penn State Department of Entomology, or the Penn State Extension office in your county for more information.

# Glossary

**Annulated**—colored with darker banding and frequently referring to banded legs

**Antivenom**—a chemical antidote designed to counteract the effects of specific venom; also called antivenin

**Ballooning**—a behavior exhibited by some newborn arthropods wherein a recently hatched arthropod spins out some silk, which then catches the wind and carries the immature arthropod for a distance

**Carapace**—the hard integument forming the dorsal surface of the cephalothorax (not including the appendages)

**Cephalothorax**—the fused head/thorax region, as found in spiders

**Chelicerae**—(sing., “chelicera”) the front jaws of a spider consisting of a stout basal segment and a terminal fang

**Chevron**—a figure, pattern, or object having the shape of a “V” or an inverted “V”

**Cytotoxin**—any material that is destructive to cells

**Diaphoresis**—profuse perspiration

**Distal**—that portion of a structure that is farther from the central body (e.g., a human wrist is distal to the elbow)

**Edema**—excessive fluid buildup in cells or tissues

**Envenomation**—the introduction of venom into the body of another organism as a defense or feeding mechanism

**Erythema**—a flush on the skin surface produced by congestion within the capillaries

**Femora (femur)**—the third segment of the spider leg following the coxa and trochanter

**Folium**—a pattern or design on the abdomen surface



**Millimeter**—metric unit of length (25 millimeters = 1 inch)

**Necrotic**—tissue in a dead or decaying condition

**Neurotoxin**—any material that causes damage to the nervous system

**Palps**—(also “palpi” or “pedipalps”) paired, forward-projecting sensory organs of spiders located behind the chelicerae but in front of the legs; the second appendages of the cephalothorax

**Papules**—small, inflamed, congested areas of the skin

**Patella**—the fourth segment of the spider leg following the coxa, trochanter, and femora (femur)

**Penultimate instar**—the next-to-last developmental stage of an arthropod before it molts into an adult

**Procurved**—eyes that are arranged in an upside-down “U” when viewed from the front

**Pruritus**—itching skin

**Spinnerets**—appendages that produce silk and are located at the posterior portion of the abdomen

**Stabilimentum**—a heavy band of silk deposited in the center of the web of some of the orb-weaving spiders

**Tarsi**—the last or terminal segments of a spider’s legs bearing two or occasionally three claws

**Tibia**—the fifth segment of the spider leg following the patella and preceding the tarsi

**Venom**—a poisonous substance that is produced by various animals (e.g., spiders, scorpions, and other arthropods; snakes and certain lizards) for defense or to subdue prey; can cause pain and swelling but rarely fatality when injected into humans

**Venter**—the underside of the spider; typically referring to the abdomen

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