

*Commonly
Encountered
Pennsylvania*

Spiders

**and two rarely
encountered but
medically
important
species**



PENNSTATE



COLLEGE OF AGRICULTURAL SCIENCES
AGRICULTURAL RESEARCH AND COOPERATIVE 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 all sorts of arthropods, including insects. 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. Two of the more medically important types are the black widow spiders, and the brown recluse spider and its relatives. These two types of spiders are rarely encountered in Pennsylvania. Although black widows can be found native in Pennsylvania, the brown recluse spiders must be introduced 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"

For the most part, all spiders have jaws and fangs to deliver 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* species)

Grass spiders are very common in Pennsylvania and can be recognized by the large, somewhat concave, mostly horizontal, sheet-like web with a funnel or tunnel located off to one side. 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. Homeowners frequently see these fast-moving spiders indoors in the autumn as the spiders seek protection from falling temperatures.

Description

Grass spiders can be identified by their distinctive webs, the dorsal markings on the carapace and abdomen, and the greatly elongated hind spinnerets. 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, 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 as a retreat in which the spiders can remain hidden. The grass spider web is not sticky but relies upon 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

There is no evidence that grass spider bites are medically important.



Agelenopsis species female



A grass spider on her web

Barn Funnel Weaver

(*Tegenaria domestica*)

This funnel weaver is not as common as the previous species. It is found, however, 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 weaver is from 7.5 to 11.5 millimeters in length and the males range from 6 to 9 millimeters in length. The cephalothorax is 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 upwards 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 from May through July, during the mating season. These spiders can be found in structures anytime during the year.

Medical Importance

Although these spiders are encountered in and around human-made structures, there are no reports of adverse reactions to their bites.



Tegenaria domestica male

Amaurobiidae—Hackledmesh Weavers

Hackledmesh Weavers

(*Amaurobius* and *Callobius* species)

The Amaurobiidae superficially resemble the previous spiders, the funnel weavers, in the family Agelenidae. In fact, two genera in Agelenidae, *Coras* and *Wadotes*, have recently been transferred to the amaurobiids, bringing the number of genera in this family to thirteen.

Description

Amaurobiidae have eight eyes that are similar in size, are typically of light (or white) color, and are arranged in two rows. The females range from 5 to 14 millimeters in length and the males from 5 to 12.5 millimeters. 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 in the areas previously described.

Life History/Behavior

Callobius and *Amaurobius* species have similar life histories and behaviors. They are most often found in damp locations under bark, leaf litter, and stones, as well as in woodpiles and other protected areas.



Amaurobius species female

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 numbers of eggs found in the cocoons range from 73 to 175.

Medical Importance

These spiders are frequently found in damp basements and other areas of the home in the autumn. However, there are no indications that these spiders will readily bite or that the bites are medically important.

Araneidae—Orbweavers

Yellow Garden Spider

(*Argiope aurantia*)

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

Description

Yellow garden spider females range in length from 19 to 28 millimeters. 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 egg cocoons are deposited in the late summer and are spherical, brown papery sacs.

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, will emerge from the cocoon. 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 cocoon in the web. Even then, the bite would likely cause no more discomfort for most individuals than a wasp or bee sting.



Argiope aurantia female



Argiope aurantia egg case

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 previous species. 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 cocoon 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 cocoons are deposited in early fall and consist of several hundred eggs. The immature spiders emerge the following spring.



Argiope trifasciata female

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 their cousin *Argiope* spiders, the 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 cocoon in the web. Even then, the bite would likely cause no more discomfort in most individuals than that of a wasp or bee sting.

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. It is one of our showiest orbweavers.

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.



Araneus marmoreus female

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). In adults, the retreat is made of leaves folded over and held together with silk. Immature spiders make their retreats out of silk only.

Egg cocoons, 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 cocoons in spring. Adults are seen from midsummer until the first hard freeze of fall.

Medical Importance

See banded garden spider on previous page.

Cross Orbweaver

(*Araneus diadematus*)

The cross orbweaver was probably introduced from Europe, where it has been studied at some length. This is another one of the showy orbweavers and although it may be found in many of the same areas as the other orbweavers, it is commonly encountered next to buildings with exterior lighting—even occurring in 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 longitudinal, wavy or scalloped 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 previous species, the carapace has three dark, longitudinal lines or bands.

Life History/Behavior

The 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

As with the other orbweavers, the cross orbweaver is not considered a medically important species.



Araneus diadematus female



Araneus diadematus immature

Clubionidae—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 midsummer, and each female will deposit a pure white egg sac containing 30 to 50 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. There are records of severe secondary infection associated with the bite. 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.



Trachelas tranquillus female

Dysderidae—Dysderid Spiders

Woodlouse Hunter

(*Dysdera crocata*)

Dysdera crocata is a hunting spider found from New England to Georgia and west to California. It is also a commonly encountered spider in England, northern Europe, and Australia. 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. Seventy eggs may be 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.



Dysdera crocata female

Lycosidae—Wolf Spiders

Wolf Spiders

(*Hogna* [previously known as *Lycosa*] species)

There are thirteen genera of wolf spiders in the United States. The genus *Hogna* contains numerous species and includes some of the biggest wolf spiders in our area. Two notable species, *H. carolinensis* and *H. 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.

Hogna 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. *Hogna* 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



Hogna (Lycosa) aspersa female

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 handled or if trapped next to the skin. However, their venoms are not very harmful to humans, which is fortunate since the *Hogna* species are very large spiders whose bites could do serious damage if their venoms were more potent. Typical reactions include initial pain and redness, which subsides with time. No serious medical consequences of these bites have been noted.

Miturgidae—Prowling Spiders

Agrarian Sac Spider

(*Cheiracanthium inclusum*)

and a 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, was found throughout much of the Northeast as of 1978. It is likely that *C. mildei* has substantially increased its range since that time.

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 jaws (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 and will eventually venture 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 probably 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



Cheiracanthium inclusum male

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. For *C. inclusum* victims and some individuals sensitive to *C. mildei*, the bites will exhibit the symptoms described below.

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 ten hours. Some patients may exhibit systemic reactions with fever, malaise, muscle cramps, and nausea. These symptoms are similar to black widow bite symptoms but are much less severe. A necrotic lesion and ulceration may also occur at the site, but this has been described as being less serious than the similar symptoms accompanying a brown recluse bite. Although there is evidence that guinea pigs and rabbits develop necrotic lesions after bites from *Cheiracanthium* species, the evidence for a similar reaction in humans is unclear.

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 are 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. *D. tenebrosus* matures in the spring and will subsequently mate. Mature individuals may be found from early May through September. The egg cases 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.

Medical Importance

Although a large spider such as *D. tenebrosus* is able to bite humans, it is a shy spider that will run from people. Bites are typically no more severe than a bee or wasp sting. Exceptions do occur for individuals who are sensitive to spider venoms.



Dolomedes tenebrosus female

Pholcidae—Cellar or Daddylonglegs 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 anytime of the year. It takes approximately one year for the spiders to mature and they can live for at least another two.

The eggs, which are about 1 millimeter in diameter, are deposited in clusters of 25 to 60 and wrapped



Pholcus phalangioides female

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

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.



Phidippus audax female

Life History

These spiders overwinter as nearly mature, or penultimate, individuals. In April or May, they finish maturing and mate, with eggs being deposited 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

The chances of being bitten by *P. audax* are slim to none. These spiders are difficult for collectors to catch, and they appear fearful of humans. Additionally, their habit of hunting during the daytime helps to reduce the number of human bites. Information concerning the effect of these bites is inconclusive, but they probably result in no more than a painful sting and the temporary appearance of an erythematic region.

Sicariidae—Sixeyed Sicariid Spiders

Brown Recluse Spiders

(*Loxosceles reclusa* and other *Loxosceles* species)

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 15 states: Alabama, Arkansas, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Mississippi, Missouri, 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.

A closely related species that is believed to have been introduced from southern Europe, *Loxosceles rufescens*, the Mediterranean recluse, has become 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 20 to 50 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.



Loxosceles reclusa male



Brown recluse eye pattern

Medical Importance

The bite of the brown recluse spider is often not immediately painful, although a slight stinging sensation may be felt. This spider's venom includes a neurotoxic component, but the principal concern is its necrotic or cytotoxic properties, which cause it to destroy the tissue where it is injected. About seven hours after a bite, a small blister-like sore appears that will grow in size. There may be a generalized or systemic body reaction in sensitive individuals. Symptoms include chills, fever, bloody urine, fatigue, jaundice, pain in the joints, nausea, rash, and in extremely rare cases, convulsions and death. The amount of damage depends on the amount of venom injected. The damaged area may be the size of a dime or as large as 20 centimeters in diameter. Affected tissue becomes gangrenous, turns black, and eventually sloughs off, leaving a depression in the skin. Healing is slow and scar tissue results from the wound. Healing may take six to eight weeks or require up to a year if the wound is large.

Theridiidae—Cobweb Weavers

Common House Spider

(*Achaearanea tepidariorum*)

Achaearanea 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.

Life History

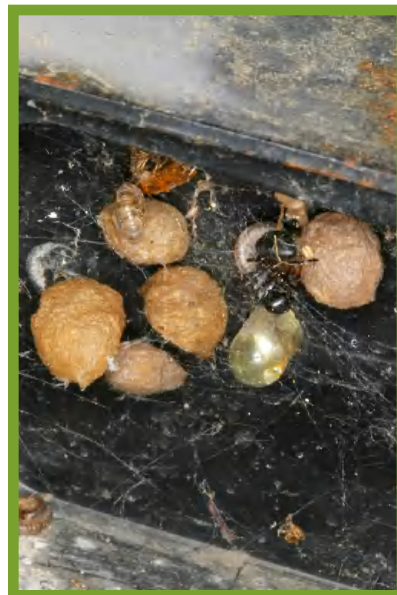
Males and females can be found at anytime of year, and there are reports of the spiders living for a year or more after maturing. The male and female will coexist in the web and mate repeatedly. The egg sacs are brown and ovoid with tough, papery covers and can be 6 to 9 millimeters in diameter. A female may deposit 12 or more egg sacs over her lifetime, each containing 140 to 380 eggs.

Medical Importance

Achaearanea tepidariorum is not known as a medically important species. In fact, given this spider's tendency to populate houses, plus the absence of reported bites in the literature, it is apparent that the house spider does not often bite people.



Achaearanea tepidariorum female



Common house spider web and egg cases

Southern Black Widow Spider

(*Latrodectus mactans*)

The widow spiders, genus *Latrodectus*, are found worldwide in the warmer regions of most continents. The taxonomy of these spiders is a challenge to scientists and has resulted in claims of few (six) to many (twenty-eight) distinct species. In the United States, there are probably five species. They are 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 normally a shiny, jet-black spider 8 to 13 millimeters in body length. With legs extended, the female measures about 25 to 35 millimeters long. 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). The female has the well-known reddish hour-glass marking on the underside of her abdomen.

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 cases (called “cocoon”), 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

The bite of female black widows is, at first, relatively painless. Pain will be felt about one to two hours later, and occasionally the patient may experience a tingling along the nerve routes or down the spine. There is almost no swelling at the site of the bite. However, the site will typically exhibit two red fang marks and may be surrounded by a rash or erythema.

Black widow venom is principally neurotoxic. 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 usually disappear after four days. Death does not normally occur, except in the elderly or very young.

Treatment typically includes the use of calcium gluconate (to reduce muscle cramps), *Latrodectus* antivenom, and diphenhydramine hydrochloride (Benadryl®) to counteract allergic reactions to the antivenom. Additional treatments include antispasmodic medications and analgesics.



Latrodectus mactans female and egg case

False Black Widow

(*Steatoda grossa*)

Steatoda grossa, one of at least eight *Steatoda* species occurring in the United States, is found along the coastal states of the Atlantic, Gulf, and Pacific regions. In the southern and western states, it is a common spider in homes and other structures, where it makes an irregular web (a trait shared by most comb-footed spiders) 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 the immature spiders can be found in human-made structures throughout the year, as can the adults. 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 is slightly smaller. This spider is more common in the northern states (Pennsylvania included) and can be found in dwellings throughout the year.

Medical Importance

These spiders are capable of biting but produce symptoms that are 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 to a general malaise lasting for several days. Care should be taken in diagnosing a black widow bite and in the administration of widow antivenom in the case of *Steatoda* bites. In all instances, it is advisable to submit the specimen to an entomologist for verification of the species.



Steatoda grossa female

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 amount 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.

Unfortunately, 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 Cooperative Extension office in your county for additional 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

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 mm = 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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