

An Introduction to Some Common and Charismatic Florida Spiders¹

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Audience and Purpose

This publication is intended as a general introduction to some of the common and charismatic spiders found in Florida. While this is not a comprehensive list, it will serve as a helpful resource for anyone looking to identify a spider or learn more about the biology of spiders they encounter. This publication is accompanied by a coloring book (<https://edis.ifas.ufl.edu/publication/IN1390>) for all ages, a creative educational tool for parents, educators, Extension agents, and any member of the public interested in spiders.

Introduction

There are over 250 species of spiders found in Florida, with a striking diversity of body shapes, colors, sizes, hunting strategies, and habitats (Edwards and Marshall 2002). Tiny jumping spiders rely on vision and catlike leaps to capture food. Giant orb weavers wait patiently for their web to vibrate with the promise of prey. But these are just a few examples of Florida's vast spider diversity. Most spiders live harmoniously with people, providing important ecological services by eating other invertebrates (Foelix 2011). Not only do spiders eat pest insects (such as those that attack crops or vector disease), but they also play essential roles in ecosystems by keeping insect populations from exploding (Wise 2001). Despite being voracious predators with poor reputations in our society, spiders are mostly non-aggressive, shy, and generally not a threat to humans.

To capture and consume their prey, most spiders use venom. Venom is used to immobilize insect prey, then dissolve it into a "smoothie" for spiders to ingest, as they are unable to eat solid foods (Foelix 2011). Thus, most spiders are venomous (with a few exceptions, see Uloboridae), but few have venom of concern to humans. In Florida, few spiders have venom that is considered "medically significant," meaning a bite could require medical care (Edwards 2002). The only spiders native to or established in Florida with medically significant venom are the widow spiders (*Latrodectus* spp.). Though many claims implicate brown recluses (*Loxosceles reclusa*) as perpetrators of spider bites in Florida, many of these cases are dubious. This species is not established in most of the state, confirmed sightings are rare, and infestations are typically restricted to a single building (Vetter et al. 2004).

This publication highlights some of the most commonly encountered spiders in Florida and some less common, but particularly charismatic, groups.

Family Araneidae

Garden orb weavers (*Argiope* spp.)

There are four different species of *Argiope* that can be found in Florida: yellow garden orb weavers (*Argiope aurantia*), banded orb weavers (*A. trifasciata*), silver orb weavers (*A. argentata*), and Florida garden spiders (*A. florida*) (Figure 1). Females of this genus are among the largest and most

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conspicuous web-building spiders and are similar in size to the golden silk orb weaver (see below) while males are tiny (Elgar 1991; Griffith and Gillett-Kaufman 2019). While these large spiders are common in gardens, they pose no threat to humans and provide essential biological control for insect pests. The abdominal color patterns of *Argiope* spp. and the lack of tufts of hair on the legs easily distinguishes them from the golden silk orb weavers (see Figure 1 vs. Figure 4). *Argiope* spp. often adorn their webs with unique silk decorations called stabilimenta that form zigzag patterns (Figure 1d). The functions of these stabilimenta are the subject of much scientific debate; they may make the web more conspicuous to attract insect prey, they may make the spider look larger to predators, and/or they may keep larger animals such as birds from accidentally flying or walking into the web and destroying it (Eisner and Nowicki 1983; Blackledge 1998; Abrenica-Abrat et al. 2015).



Figure 1. (a) A female yellow garden orb weaver (*Argiope aurantia*) eating her skipper prey. (b) A female banded orb weaver (*Argiope trifasciata*) suspended in her web. (c) A female silver orb weaver (*Argiope argentata*). (d) A pair of Florida garden spiders (*Argiope florida*). The large female is in the foreground while the small male is in the background. The zipper-like stabilimentum (web decoration) is also visible.

Credits: (a, b) Daniel Dye, (c) iNaturalist user zgyy (CC0), and (d) iNaturalist user cwarneke (CC0).

Spiny-backed orb weaver (*Gasteracantha cancriformis*)

The spiny-backed orb weaver (*Gasteracantha cancriformis*) is adorned with colorful spiny projections. These spiders feast on mosquitoes and other small insects that are captured in their orb webs (Muma 1971). Orb webs are generally defined as two-dimensional circular webs that

resemble wheels; webs are made from silk that comes from the spinnerets (pair of posterior appendages). The species name “cancriformis” means “crab shaped” because of the resemblance of the spiders’ abdomen to the carapace of a crab (Figure 2). Despite their name’s meaning, they should not be confused with crab spiders in the family Thomisidae, which don’t live in orb webs (see Figure 20 below) (Edwards 2000a). The spiny-backed orb weaver is widespread: it is found in North, Central, and South America and is established in Hawaii (Suman 1964; Chamberland et al. 2020).



Figure 2. Female spiny-backed orb weaver (*Gasteracantha cancriformis*) resting in her orb web. These spiders can range in color from white with red spines to yellow with black spines.

Credits: Erin C. Powell, FDACS-DPI

Bolas spiders (*Mastophora* sp.)

During the day, bolas spiders in the genus *Mastophora* rest on leaves mimicking bird poop (Figure 3a). At night, they use a special strategy to hunt their prey. Rather than building an orb web like most members of the family Araneidae, bolas spiders hunt using a ball of sticky glue (Figure 3b) that they swing from a silk line to catch moths (Yeargan 1994). Many species are known to mimic pheromones produced by female moths; these pheromones (airborne chemical signals used in communication) attract male moths that are out looking for mates. The spiders lure in these moths and capture them with their sticky bolas (Yeargan 1994).

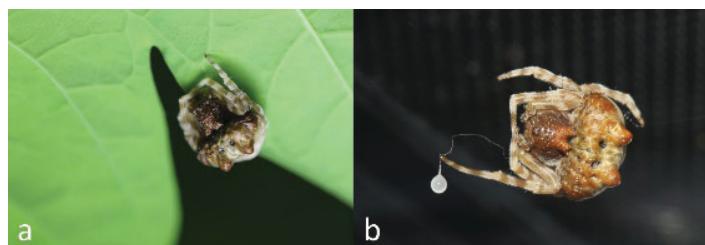


Figure 3. Bolas spider (*Mastophora* sp.). (a) At rest, the bolas spider mimics bird poop to evade predators. (b) The female holds the bolas she uses to capture moth prey.

Credits: Lisa A. Taylor, UF/IFAS

Golden silk orb weaver (*Trichonephila clavipes*)

The golden silk orb weaver (*Trichonephila clavipes*) is also commonly known as the banana spider in Florida. Their silk is particularly renowned for its golden hue and extreme strength among spiders (Vollrath 2000). Female golden silk orb weavers often have smaller spiders lurking in their webs, including tiny males that are a fraction of their size (Figure 4) (Elgar 1991; Weems Jr. and Edwards 2011). Another occupant often found in the web of *T. clavipes* are the small kleptoparasitic dewdrop spiders (*Argyrodes* sp.) that nibble on the prey left behind (Agnarsson 2003).



Figure 4. A pair of golden silk orb weavers (*Trichonephila clavipes*). The tiny adult male rests above the large adult female. Note the golden hue of the silk.

Credits: Lisa A. Taylor, University of Florida

In some areas of Florida, the golden silk orb weaver is a preferred prey item of the spider-hunting mud dauber wasp, *Sceliphron caementarium* (Powell and Taylor 2017). These wasps capture and paralyze spider prey to feed their offspring.

Trichonephila clavipes was formerly known as *Nephila clavipes* until a taxonomic revision in 2019 (Kuntner et al. 2019); this outdated name is still commonly in use online and in books.

Family Deinopidae

Ogre-faced spider (*Deinopis spinosa*)

Nocturnal ogre-faced spiders (*Deinopis spinosa*), sometimes known as “net-casting spiders,” have remarkably large posterior median eyes and an unusual hunting strategy: they spin a small, sticky net-like web that they hold in their front legs to grab prey at night (Figure 5a,b) (Stafstrom and Hebets 2016). When they aren’t hunting, they rest with their legs outstretched to resemble a stick (Figure 5c).

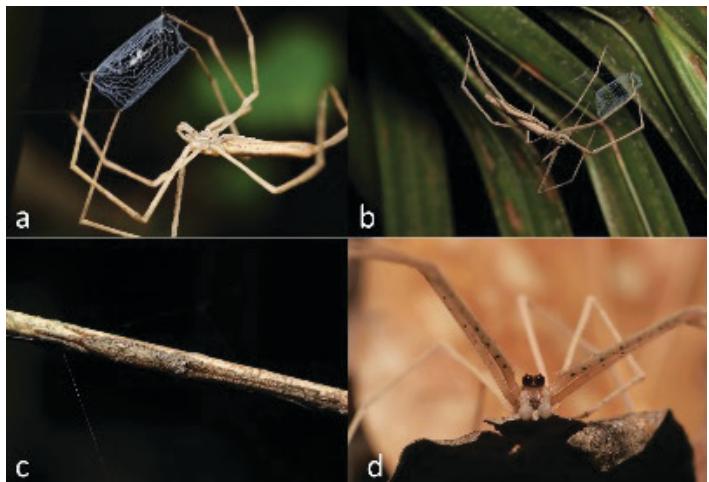


Figure 5. (a–b) Ogre-faced spiders (*Deinopis spinosa*) hunt with unique sticky webs that they cast like fishing nets. (c) When they are not hunting, they rest with their legs extended to resemble a stick. (d) A subadult male ogre-faced spider shows his huge posterior median eyes characteristic of this spider family.

Credits: Erin C. Powell, FDACS-DPI

Family Filistatidae

Southern house spider (*Kukulcania hibernalis*)

Males and females of the southern house spider look very different from one another. Males are light brown and lanky (Figure 6a), while females are velvety dark brown with thicker bodies (Figure 6b) (Edwards and McCanless 2000). Males are often mistaken for brown recluses, but a closer look can help distinguish them: southern house spiders have eight eyes (brown recluses have only six), and they have very long pedipalps (appendages that extend from the face, almost appearing as an additional pair of legs)(Figure 6a). *Kukulcania hibernalis* often build their thick, messy webs in urban habitats, such as the corners of window eaves.

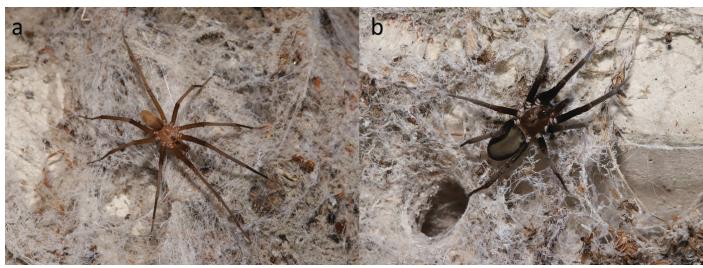


Figure 6. Male (a) and female (b) southern house spider (*Kukulcania hibernalis*). The male is light brown with long pedipalps, while the female is a dark velvety brown with shorter pedipalps.

Credits: Erin C. Powell, FDACS-DPI

Family Lycosidae

Wolf spiders

Wolf spiders provide maternal care to their offspring—they are great moms (Higashi and Rovner 1975). After laying eggs, they diligently carry their egg sac behind them, attached to the spinnerets (silk-spinning appendages on their abdomens) (Figure 7a). If the female loses her egg sac for some reason (e.g., if it is eaten or damaged), she may even try to replace it with a pebble or another round object, even, in some cases, an isopod (the familiar tiny animal commonly known as “roly-poly” or “pill bug”) (Brown 2018). When their eggs hatch, they carry their spiderlings on their back until they are big enough to fend for themselves (Figure 7b). Wolf spiders are the only spiders in the world known to carry their offspring on their backs.

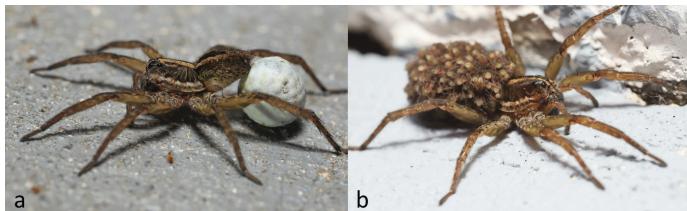


Figure 7. A female wolf spider carrying her egg sac attached to her spinnerets (her web spinning appendages). (b) After the spiderlings hatch, they ride on the mother's back until they are ready to disperse.

Credits: Erin C. Powell, FDACS-DPI

Family Mimetidae

Pirate spiders

Pirate spiders (Mimetidae) have a unique hunting technique to capture and eat other spiders. They creep into the webs of other spiders and use their legs to pluck on their silk lines. When the resident spider, expecting prey or a mate, comes out to investigate, the pirate launches a surprise attack and eats them (Jackson and Whitehouse 1986; Kloock 2001). While pirate spiders are known mostly to eat other spiders, they also consume some insect prey (Kloock 2001).



Figure 8. A female pirate spider resting on vegetation. Their unique pattern of leg spines distinguishes them from other families of spiders.

Credits: Sean McCann

Family Oxyopidae

Green lynx spider (*Peucetia viridis*)

Green lynx spiders are often found on vegetation where they sit and wait for prey (Figure 9a, Weems Jr. and Whitcomb 2004). These spiders have distinctive spiny setae (hairs) on their legs (Figure 9b). The green lynx spider is often green in color, as the common name suggests, but one of their most unique features is their ability to change color to match the background of their environment (Robertson et al. 1994). Scientists do not yet understand the mechanisms that allow them to change color, but individuals can be found in nature ranging from yellow to green to pink to purple (pers. obs.). Like many spider families, the lynx spiders have a distinct eye arrangement unique to the family Oxyopidae (Figure 9b).

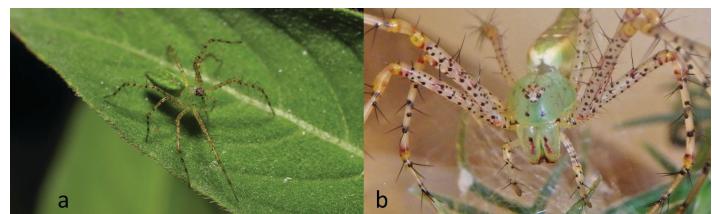


Figure 9. Green lynx spiders (*Peucetia viridis*) have distinctive spines on their legs. (a) A juvenile rests on vegetation. (b) A closeup of a female showing the unique circular eye pattern.

Credits: (a) Erin C. Powell, FDACS-DPI, (b) Samm Wehman Epstein

Family Pholcidae

Cellar spiders or daddy long legs spiders (*Pholcus* spp.)

The daddy long legs spiders, or cellar spiders, are often found in urban environments, such as the corners of homes, under eaves, and in sheds, cellars, basements, and

attics (Figure 10). Cellar spiders build webs and capture a variety of insect prey (Figure 10b), but will also eat other spiders by invading their webs (Jackson and Brassington 1987). Cellar spiders should not be confused with harvestmen, which share the common name “daddy long legs.” Harvestmen are not spiders; they are in a different order of arachnids and have only a single body segment, no venom glands, and no silk glands to spin webs (Novak 2007). The pervasive myth that daddy long legs (referring to either spiders or harvestmen) are the most venomous spider but are unable to bite humans is untrue. Spiders in this family do have venom but it is only strong enough to affect their invertebrate prey (Zobel-Thropp et al. 2019).

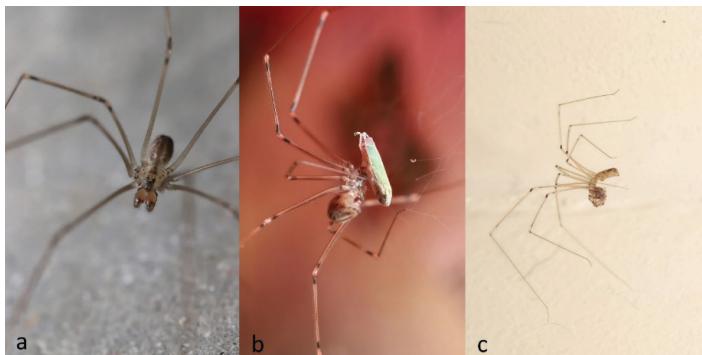


Figure 10. *Pholcus* sp. cellar spiders. (a) A male cellar spider (with enlarged pedipalps characteristic of adult males), (b) a juvenile cellar spider eating a small bug, and (c) a female cellar spider consuming another spider in her web.

Credits: Erin C. Powell, FDACS-DPI

Family Pisauridae

Fishing spiders (*Dolomedes* spp.)

As their common name suggests, these spiders are often found in or near water sources. They are able to capture fish, frogs, and other small vertebrates but primarily eat invertebrates (Figure 11, Bleckmann and Lotz 1987, Zimermann and Spence 1989). Female fishing spiders can be aggressive and kill potential mates, a phenomenon known as sexual cannibalism (Johnson and Sih 2005).

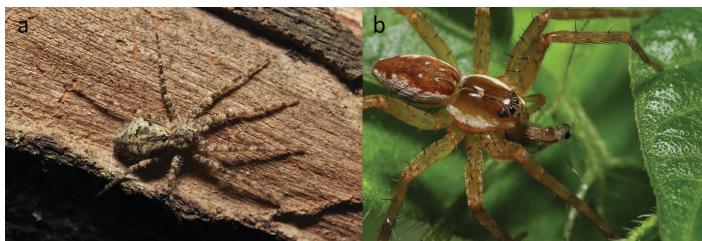


Figure 11. A white-banded fishing spider (*Dolomedes albineus*). The common name refers to a band of white hairs on the face of this species. From above, they are well camouflaged against their background. (b) A juvenile six-spotted fishing spider (*Dolomedes triton*) with insect prey. The common name of this species refers to the white spots on the abdomen.

Credits: Erin C. Powell, FDACS-DPI

Family Salticidae

Habronattus jumping spiders

At least eleven species of tiny jumping spiders in the genus *Habronattus* can be found in Florida (Griswold 1987; Coco and Taylor 2017). *Habronattus* jumping spiders are common inhabitants of backyards, gardens, and organic farms. Like all jumping spiders (i.e., all members of the family Salticidae), *Habronattus* have enlarged, forward-facing eyes (known as the anterior median eyes) and exceptional vision (Harland and Jackson 2012, see Figure 12). Male *Habronattus* jumping spiders are known for their elaborate courtship dances that combine color, motion, and substrate-borne vibrations, all presumably to impress females (Elias et al. 2012; Taylor et al. 2014; Blackburn and Maddison 2015). This genus is also unique among jumping spiders for their enhanced color vision and the ability to see and discriminate colors ranging from ultraviolet to red (Zurek et al. 2015).



Figure 12. An adult male *Habronattus trimaculatus* sitting on a penny, highlighting his small size. Note the two enlarged forward-facing eyes that are characteristic of all jumping spiders.

Credits: Lisa A. Taylor, University of Florida

Magnolia green jumping spider

(*Lyssomanes viridis*)

Magnolia green jumping spiders are distinctive with their translucent green coloration (Figure 13). Males have striking red-orange jaws that they show off to other males in ritualized contests (fights) to win female mates (Figure 13b) (Todore and Johnsen 2012). As their common name implies, magnolia green jumping spiders are commonly found on the leaves of magnolia trees. However, they are not restricted or specialized to magnolias or plants in general; they are found on sweetgum trees, palmettos (Richman and Whitcomb 1981), various other plants, and all manner of other things, such as cars and compost bins.

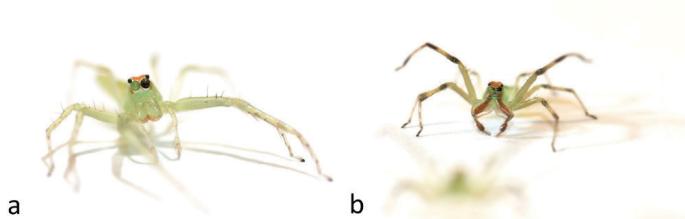


Figure 13. Magnolia green jumping spiders (*Lyssomanes viridis*). (a) A female magnolia green jumping spider. (b) A male magnolia green jumping spider aggressively displaying at a rival male. Males have distinctive large orange-red jaws (chelicerae) and bulbous pedipalps. Credits: Lisa A. Taylor, UF/IFAS

Though they look somewhat similar, magnolia green jumping spiders can be distinguished from the green lynx spiders described above by their huge, forward-facing eyes (characteristic of all jumping spiders) and the lack of long spines on the legs (see Figure 13 vs. Figure 9).

Dimorphic jumping spider (*Maevia inclemens*)

Dimorphic jumping spider (*Maevia inclemens*) males come in two morphs, or forms, that occur together in the same population: the gray morph has striking zebra-striped legs and bright yellow pedipalps (Figure 14a), while the tufted morph has three black tufts of hair on his forehead (Figure 14b; Clark and Uetz 1993; Lietzenmayer and Taylor 2018). The existence of two different morphs of males within the same species is rare among spiders. In addition to the difference in appearance, these two male morphs even have different courtship dances that they use to impress females. The females look different than either of the male morphs: they are light tan to orange in color without tufts or leg stripes (Figure 14c).

Regal jumping spider (*Phidippus regius*)

Phidippus regius is one of the largest jumping spider species (Edwards 2000b). It is a voracious and cat-like predator that can take down prey much larger than itself, including small frogs and lizards (Nyffeler et al. 2017). However, these huge meals are exceptional, and this species' diet consists mostly of insect prey (Edwards 1990). Males and females are very different in color. Both sexes have white markings, but females can be either orange, grey, or brown (Figure 15b), while males are always black (Figure 15a).

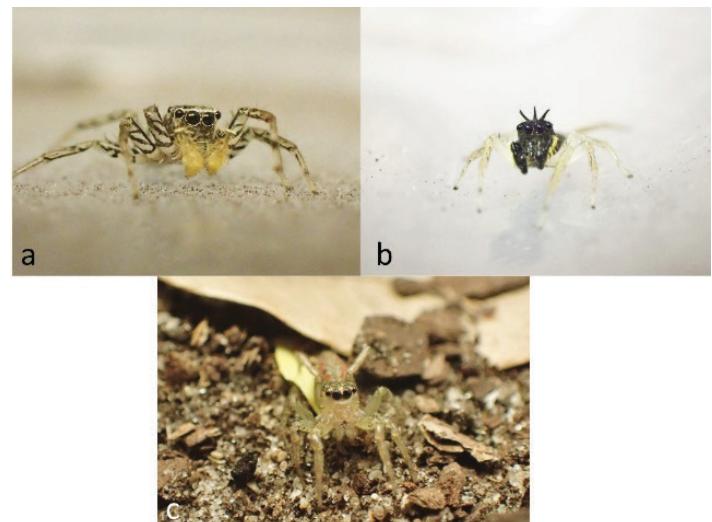


Figure 14. Dimorphic jumping spiders (*Maevia inclemens*) have two distinct male morphs. (a) The gray male morph has zebra-striped legs and bright yellow pedipalps. (b) The tufted male morph has three black tufts of hair on his forehead. (c) Females are more cryptic in color, ranging from light tan to orange without any ornaments. Credits: Laurel Lietzenmayer, UF/IFAS

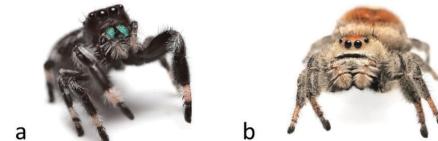


Figure 15. (a) Male; and (b) female regal jumping spider (*Phidippus regius*). The chelicerae (jaws) of this species are iridescent (in both sexes), meaning that the color changes when viewed from different angles.

Credits: Erin C. Powell, FDACS-DPI
Family Scytodidae

Spitting spiders (Scytodes spp.)

Spitting spiders are known for a unique hunting trick: they spit a sticky glue on their prey to pin them down before attack (Gilbert and Rayor 1985). This substance is a mixture of silk, glue, and venom that is made within the venom glands (Suter and Stratton 2009). Spitting spiders are also attentive mothers: they carry their egg sac in their jaws as the baby spiders (spiderlings) develop inside (Li et al. 1999). During this time, with their jaws preoccupied, they are unable to hunt or defend themselves (Li et al. 1999). After hatching, spiderlings remain in the mother's web for a while before dispersing to build their own webs (Li et al. 1999). Spitting spiders can be identified by their domed carapace and having only six eyes (unlike most other large spiders, which usually have eight eyes) (Figure 16).



Figure 16. Spitting spiders (*Scytodes* sp.) have a distinctive arrangement of only six eyes (arranged in three pairs).
Credits: Lisa A. Taylor, UF/IFAS

Family Sicariidae

Recluse spiders (*Loxosceles* spp.)

There is currently no scientific evidence to suggest that any recluse spider is established in Florida (Edwards 2001; Vetter et al. 2004), but we include them here because many people mistakenly believe that they are common in Florida (Edwards 2003). Three species of *Loxosceles* have occasionally been intercepted in Florida: brown recluse (*Loxosceles reclusa*), Chilean recluse (*Loxosceles rufescens*), and Mediterranean recluse (*Loxosceles laeta*) (Figure 17). Countless myths, rumors, and stories surround recluse spiders. Mystery bites and wounds and bacterial infections that require treatment with antibiotics are commonly misdiagnosed as recluse bites by the public, by doctors, and by veterinarians, none of which are trained in spider identification (Vetter et al. 2004). Without directly seeing the spider inflict the bite, it is difficult to accurately determine that such injuries are caused by a spider at all.

Recluses can be distinguished from other commonly encountered spiders by having only 6 eyes (unlike the more usual pattern of 8 eyes) and a dark violin-shaped pattern on their relatively flat cephalothorax (head), though the violin pattern is not always consistent and should not be relied upon for identification. They also have long, slender legs and are relatively less hairy than other spiders that they are commonly confused with (e.g., wolf spiders [Figure 7], fishing spiders [Figure 11], and male southern house spiders [Figure 6a]). They also have short pedipalps when compared with male southern house spiders (Figure 6a).



Figure 17. Three species of recluse spiders have been intercepted in Florida. Recluse spiders can be distinguished from other spiders in multiple ways. First, recluses have a distinct pattern of six eyes that differentiates them from other spiders. They also typically have a violin or fiddle shaped marking on their cephalothorax (head), and slender legs. They are also less hairy than many of their lookalikes. (a) A brown recluse (*Loxosceles reclusa*), (b) female brown recluse with spiderling and egg sac (*Loxosceles reclusa*), (c) Mediterranean recluse (*Loxosceles laeta*) and (d) Chilean recluse (*Loxosceles rufescens*).
Credits: Lou Coticchio

Family Tetragnathidae

Orchard spiders or orchard orb weavers (*Leucauge* spp.)

These bright little spiders build orb webs from which they hang upside down (Figure 18) (Hall 2019). Two species are found in Florida, *Leucauge argyrobapta* and *L. argyra* (Ballesteros and Hormiga 2018). *Leucauge argyrobapta* has bright orange spots on the abdomen, while *L. argyra* does not. Orchard orb weavers are common and may be confused with widow spiders (see below) because of the bright orange dots on the abdomen. They are also sometimes misidentified as juvenile golden silk orb weavers (*Trichonephila clavipes*). Their orb web shape, color patterns, and thinner elongate abdomen distinguishes them from widow spiders with messy cobwebs and bulbous round abdomens. Orchard orb weavers can be distinguished from golden silk orb weavers by their color pattern and lack of leg tufts (Figure 18 vs. Figure 4).

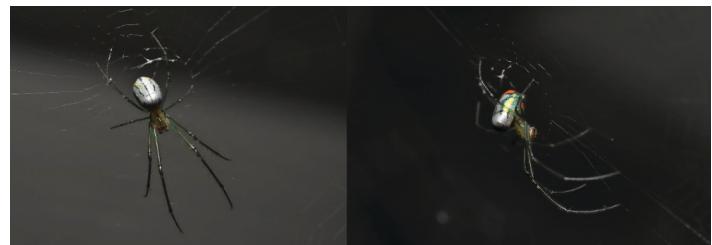


Figure 18. An orchard orb weaver (*Leucauge argyrobapta*), suspended in her web. The orange markings on the abdomen indicate that this is *Leucauge argyrobapta* rather than *Leucauge argyra*.
Credits: Erin C. Powell, FDACS-DPI

Family Theridiidae

Widow spiders (*Latrodectus* spp.)

The widow spiders found in Florida include the southern black widow (*Latrodectus mactans*), the brown widow (*L. geometricus*), the northern black widow (*L. variolus*), and the red widow (*L. bishopi*) (Edwards 2002; Eiden and Kaufman 2013). Widow spiders have characteristic red markings on their large round abdomens. They build a messy cobweb where they usually hang upside down (Figure 19). Widow spiders have medically significant venom, meaning people may require medical care if bitten (Bronstein et al. 2001). However, widow spiders are shy and non-aggressive, and bites rarely occur unless the spider is taunted or accidentally crushed/pinched in clothing (Edwards 2002).



Figure 19. Female brown widow (*Latrodectus geometricus*) producing silk. Note the conspicuous red hourglass on the underside of the abdomen. Brown widows can range from light brown to very dark brown like the individual pictured.

Credits: Erin C. Powell, FDACS-DPI

Thomisidae

Flower crab spiders (*Mecaphesa*, *Misumena*, *Misumenoides*, and *Misumessus* spp.)

Flower crab spiders come in a brilliant array of colors including white, orange, pink, and yellow (Figure 20a–c). These crab spiders are sit-and-wait hunters with a special strategy. They rest on flowers that match their color, and some can even change their own color to match their background, providing camouflage as they hunt for incoming pollinators such as bees, flies, and wasps (Figure 20c, Chittka 2001).

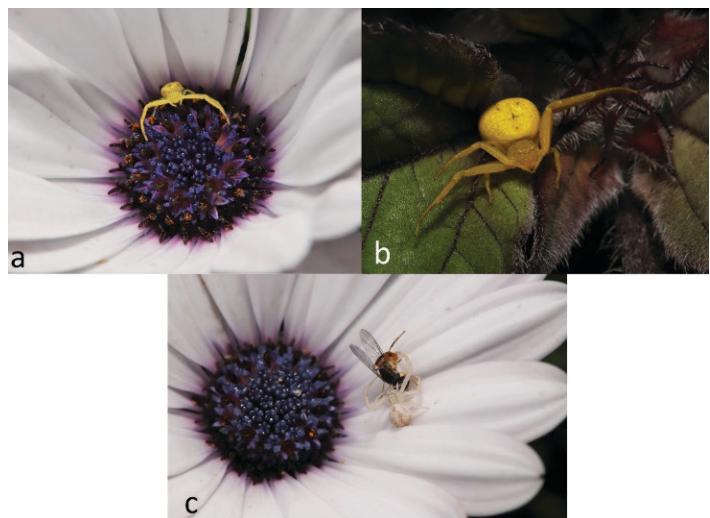


Figure 20. *Mecaphesa* sp. flower crab spiders come in a range of colors. (a, b) Flower crab spiders often rest with their forelegs extended, waiting to grab unsuspecting prey. Note that the first two pairs of legs are long and crab-like; this is characteristic of members of the family Thomisidae. (c) A juvenile with its hoverfly prey.

Credits: Erin C. Powell, FDACS-DPI

Family Uloboridae

Hackled orb weavers or cribellate orb weavers

The hackled orb weavers belong to the only family of spiders that lack venom glands, Uloboridae. They have a special type of silk called cribellate (hackled) silk with fine fuzzy fibers that help ensnare their prey (Figure 21). While members of this family build a typical spiralled orb web, their webs have a characteristically wooly appearance. When prey lands in their webs, they wrap it thoroughly. Even though they do not use venom to subdue their prey, they still must spit up digestive enzymes to pre-dissolve the prey before eating (Weng et al. 2006).



Figure 21. A hackled orb weaver (Uloboridae) in its fuzzy hackled orb web. Spiders in this family often rest in their webs with the first and second pairs of legs outstretched.

Credits: Lisa A. Taylor, University of Florida

Conclusions

Spiders are often misunderstood and under appreciated animals despite being important members of the ecosystem and generally harmless to humans. This fascinating group of arthropods has evolved an extraordinary diversity of behaviors, adaptations, web types, and coloration. The coloring book (<https://edis.ifas.ufl.edu/publication/IN1390>) associated with this publication is designed for people of all ages to learn about and appreciate spiders.

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