Although most Floridians could identify a black widow spider, few may know of the brown, red or northern widows. Scientists have disagreed on the number of widow or hourglass spiders in Florida, but currently four species are recognized. All are venomous and should be treated with caution.

We've been taught that widow spiders are black all over with a red hourglass-shaped mark on the belly. While this describes a typical black widow (also known as the southern black widow), the markings of the brown, red and northern widow spiders are somewhat different. Laymen and even some medical professionals often assume that any darkly colored spider with red or orange markings is a widow spider.

All widow spiders are smooth and shiny, ranging in color from light tan to black. The abdomen may be marked with prominent white, yellow and/or red patterns, and when a female is starved or has recently laid an egg mass, her abdomen will appear quite dull and wrinkled. The abdomens of juveniles and males are often so differently marked that they are not immediately recognized as widow spiders.

The spider's abdomen generally has an orange to red hourglass marking. Unfortunately, this mark is not always consistent, making identification more difficult. The two halves of the hourglass may even be separated and appear as two distinct triangles, or the mark may have an irregularly shaped border or appear as a spot. Most widow spiders have tan to black colored bodies and legs. The red widow, as the name suggests, has red to reddish-orange legs and cephalothorax (fused head and thorax).

Southern black widow spiders are found in fields or open areas under rocks, wood and other debris. Rodent or small mammal burrows and most other protected cavities can serve as a nesting site for the widow. So can tall weeds or cultivated crops. Birdwatchers, campers and sportsmen should be especially careful when entering blinds or cabins that have not been used for extended periods. Outdoor privies and other small outbuildings always have been a favored habitat for black widow spiders. Empty nursery cans, especially the one-gallon size metal cans, provide ideal web sites for black widows. Containers sheltering water, gas or electric meters are other likely spider refuges. Around the house, widow spiders can be found in garages, attics, cellars and crawl-spaces as well as on outdoor furniture.

While black widow spiders are found throughout the state, the other species are more restricted in their Florida distributions. The brown widow probably was introduced into Florida. It is most abundant in coastal cities in the lower part of the peninsula, but it recently has...
Unlike the southern black widow, the northern widow spider female has several red dots on the abdomen. The two halves of the red hourglass mark are separated.

The red widow has the most restricted distribution of any North American widow spider. It is found only in sand pine scrub habitats in central and southeast Florida, where it spins its web onto palmettos.

The northern widow spider is known in Florida from regions west of Tallahassee and is especially abundant in the vicinity of Torreya State Park, where it makes webs on the ends of tree branches and on shrubs.

Adults of the black and brown widows are active year round and do not appear to have a seasonal breeding cycle. The northern and red widows have a well-defined reproductive cycle in Florida. Adults mate in late spring with the males dying shortly thereafter. Females remain with the egg sacs during the summer, but by late fall all adults are gone. Juveniles spend the winter in the forest litter, maturing and moving up into the vegetation the following spring.

Adult females lay their egg sacs in an upside-down cup constructed of silk and suspended within the female's web. The average development time of the eggs is two weeks, but this varies with air temperature and the type of widow spider. The colder the air, the slower the development. Spiderlings will spend from one day (during summer) to a month (during winter) inside the sac before leaving. Without the aid of the mother, young spiders emerge from the tough sac and generally congregate around it for a few days. Red widows congregate much longer than the others. Although the female will guard the egg sac, she is occasionally cannibalistic on some of the newly emerged young. A female guarding an egg sac is more pugnacious than normal and is more likely to bite an unintentional intruder.

After dispersing from their mother's web, the spiderlings begin spinning an irregularly shaped web. As they grow, the capture progressively larger food items and extend the size of their webs. In protected

The red widow has reddish legs and cephalothorax. The female often has red, yellow and white markings on the abdomen, but the venter lacks a complete hourglass mark.
areas especially rich in food, widow spider webs often will be very close together and sometimes touch. Under ideal growth conditions, a female will reach adulthood in two to five months and will live for one to two years. While adult females remain in their webs, adult males leave theirs to search for females.

All Florida hourglass spiders appear to be dangerous to humans and domestic animals. Their venoms are about 15 times more poisonous than an equal weight of rattlesnake venom. Fortunately, these spiders inject a relatively small amount of venom — many times less than that of rattlesnakes — when biting. Because the poison-producing apparatus of these spiders is equipped with muscles, they can control the amount of venom being injected. Thus, the symptoms of widow spider bites vary with the amount of poison being received by the victim. The large females are the main threat to humans, since the fangs of smaller males and juveniles are often too small to penetrate clothing or the tougher skin of hands and feet. Even the fang of an adult female is only about 1/6 inch in length.

While both male and female widow spiders possess poison glands and fangs, the glands of the male are only about one-third to one-half the size of the female's. The glands of the female increase in size and the venom increases in strength as she ages. The male is oppositely; his glands become inactive and atrophy with age. By the time he is an adult, his venom is so weak and meager that he is incapable of producing serious symptoms in humans.

Widow spiders are wholly carnivorous and cannibalistic. Young brothers and sisters eagerly eat each other when other foods are not plentiful. Likewise, adult females eat other females that might wander into their webs (a rare event) as well as any incautious suitor. The habit of devouring one's mate, which actually happens infrequently, is certainly the reason for the coining of the common name. Adult female widows can go for several months without food. One specimen in captivity survived nine months without feeding.

People are not the only enemies of widow spiders. Several kinds of wasps feed spiders, including widow spiders, to their young. Like something out of a horror movie, a female wasp will attack a spider and inject a paralyzing venom. The paralyzed spider is then entombed inside a chamber with a newly laid wasp egg. When the egg hatches, the hungry larva goes about its business of slowly eating the living, but paralyzed, victim.

A small fly also preys upon the unhatched eggs of widow spiders. Without attracting the female spider's attention, the tiny flies land on the spider's egg sac and begin laying eggs. The eggs then hatch into fly larvae that, while hidden in the sac, consume the spider eggs.

Some lizards and birds are known to eat widow spiders, as do scorpions, centipedes and other spiders. Scientists currently are studying an unusual association of widow spiders and some cellar or pholcid spiders. The webs of the two spiders are sometimes observed to intertwine. It is uncertain which, if either, spider is benefiting most from the association. Both spiders are known to eat each other when possible.

The first published records of widow spider envenomation in Florida were in 1839. From then until 1943, 126 cases were reported, although others no doubt went unreported or were misdiagnosed. Since 1959 at least eight people have died from widow spider poisoning in Florida. The symptoms are similar to other maladies, so much so that some operations for appendicitis, acute pancreatitis and ruptured gastric or duodenal ulcers were needlessly performed in the first half of the century.

Because there is no immunological test for diagnosing widow spider envenomation, some less severe poisonings are probably still being misdiagnosed. The incidence of widow bites undoubtedly has decreased with the less frequent use of outdoor toilets and the increased use of mechanical cultivation and harvesting of crops. The outdoor privy was clearly a major site for spider-human contact.

Like most spiders, hourglass spiders are shy and retreating. When disturbed, a
widow spider often will crawl to the corner of its web, fold its legs and feign death. Brown widows sometimes will drop out of the web to the ground, where they remain very still, as if hiding. Bites usually occur after the spider’s web is disturbed. Typical innocent actions that may result in spider bites include touching one that has attached itself to the underside of an object, putting on clothes that harbor a spider or rolling over on one that has entered a bed or sleeping bag.

You may not feel a spider biting you, or you may notice a slight sensation like a pin prick. Sometimes there is swelling and redness at the area of the bite. The two tiny holes left by the fangs are seldom visible to the naked eye. Initially, there may be pain at the site of the bite, which lasts for an hour or two with subsequent cramps in a major muscle group near the bite. Effects of the venom often start within 30 minutes and become intense in one to three hours.

The pain generally spreads from the site of the bite to the abdomen, where the muscles become very rigid. Tightness in the chest, difficulty in breathing, paralysis of the limbs, insomnia, headaches, nausea, vomiting and profuse perspiration are generally present. Acute psychosis may develop. Hypertensive individuals are susceptible to cerebral, heart or kidney damage or failure as blood pressure generally rises, and there is a marked increase in pulse rate, up to 120, during the first hours.

Left untreated, the acute symptoms generally subside after two or three days. Complete recovery from spider poisoning may require several months. This period of convalescence can be marked by weakness, fatigue, pains, headaches, insomnia and impotence. Healthy adults have died from widow bites within 14 hours to seven days. From the limited records available for the United States, it appears few deaths can be attributed directly to the lethal potency of the spider venom. In the reported cases, the patient either was very young or perhaps bitten by several spiders at the same time. More commonly, the deaths are attributed to cerebral hemorrhage or apoplectic stroke. In the earlier years of this century, deaths resulting from infections gaining entrance through the wounds were more common.

If You’re Bitten

See a physician as soon as possible after a widow spider bite. Carry along the dead spider — try not to smash it beyond recognition — for expert identification of the culprit. Do not take alcohol, morphine or barbiturates for the pain, as these substances interfere with breathing. Because of the small volume and neurotoxic nature of the venom, a tourniquet will have no beneficial effect. Treatment by the physician generally includes specific antivenin and calcium gluconate injections. Muscle relaxants are sometimes given when the calcium therapy does not relieve the pain. Unfortunately, antivenin is not always available, because of its short shelf-life and the infrequency of patients. Those properly treated with antivenin should recover within one to three hours.

A group of scientists from around the world have banded together to study all aspects of hourglass spiders. Anyone wishing to aid their studies with data or financial support should contact either author or Dr. Robert Raven, Queensland Museum, P.O. Box 300, South Brisbane, Queensland 4101, Australia.

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Some sac spiders (above) and jumping spiders (below) are sometimes misidentified as widow spiders.