"No Touchy" Arthropods of Ichauway Additional information





Jasmine A.L. Cates, Thomas N. Sheehan, and Kier D. Klepzig

Forest Entomology Lab – The Jones Center at Ichauway 2022

Overview

While some arthropods pose medical significance to humans, the vast majority are harmless and incredibly beneficial to humans and the environment at large. Arthropods deserve the same respect and interest as other animals. Bugs are cool, and ecologically important, but some just need to be approached with care. Use caution when lifting logs, rocks, and other structures that provide crevices for arthropods to hide. Use forceps, a collecting jar, or your camera to observe without directly touching.

Many arthropods use aposematism (warning colors) to tell you "Leave me alone!" This might include tentacles, protruding hairs, and bright colors like red, orange, and yellow.

If you are bitten or stung, wash the area of wound to prevent infection. If you are bitten or stung by a medically important arthropod, consider seeking medical attention.

This resource is intended to complement the brochure entitled "No Touchy Arthropods of Ichauway" that can be found here. The following document is a brief overview of some insects and other arthropods you may encounter in southwestern Georgia that can potentially harm humans (and some lookalikes). This is not an exclusive list. Many harmful arthropods that vector disease are not included in this list, such as mosquitoes and ticks. To avoid these, use an EPA-registered insect repellent, wear long-sleeved shirts and pants, use screens, and empty containers that hold standing water.

For additional general information on potentially dangerous arthropods, please visit:

- "Stinging and biting pests" from University of Georgia Extension
- "Potentially dangerous arachnids and insects" from BugGuide
- <u>"Prevent mosquito bites" from the Centers for Disease Control and Prevention</u>

Brown Recluse (Loxosceles reclusa) BugGuide entry

Perhaps as notorious as the black widow, the brown recluse is a medically significant spider that occurs in Georgia, although only in the northern and western areas (likely NOT on Ichauway). On average, the brown recluse is about 3/8 of an inch in length, with a consistent brown coloration. It is known for an iconic violin-shaped dorsal stripe on the cephalothorax. Though the brown recluse has a dangerous reputation, their name accurately speaks to their behavior of hiding. They are nocturnal and hunt for their arthropod prey at night. Their activity is at its peak between April to early July when they hunt and look for mates.

The brown recluse is considered a medically significant spider species. Though rare (10% of bites are considered severe), the symptoms of a bite can be lifethreatening and should be taken seriously. More severe symptoms can include fever, ulcers, joint pain, and seizures. Typically, symptoms of a brown recluse bite are localized and simply result in inflammation that tends to go away after three weeks with minimal medical intervention. Many other spiders are often misidentified as brown recluses. Many other skin conditions (bacterial infections, fungal infections, poison ivy rashes, etc.) are misdiagnosed as brown recluse bites, even in states where brown recluses have never been reported.

Additional resources on brown recluses:

- "Why you need not fear the poor, misunderstood brown recluse spider" from Wired
- "Brown recluse spider" from Texas A&M University Extension
- "Is the brown recluse really that dangerous?" from Plunkett's Pest Control



Have a picture of a spider you want to know if it is a recluse or not? Check out this website:

Or tweet a pic and tag @RecluseorNot

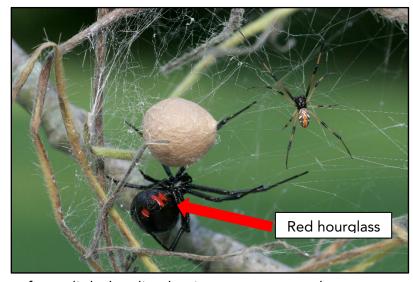
Distinctive violin pattern

Unlikely to bite; seek medical attention if you are bitten though

Southern Black Widow (Latrodectus mactans) BugGuide entry

The southern black widow is another notorious spider due to its powerful neurotoxic venom. Non-aggressive and even considered shy, the black widow can be found hiding in dark cervices and man-made structures. Given that they are not aggressive,

the primary way people are bitten by these spiders is if the spider is pressed up against them. Though it is unfortunate to be bitten by a black widow, most bites from females don't produce enough venom to be fatal. Additionally, male widows typically cannot deliver a venomous bite. Though if someone is bitten by a female widow, symptoms can arise within 1–2 hours, in some cases an even shorter



period. The symptoms can range from slight localized pain to severe muscle contractions, swelling, fever, and high blood pressure. If these symptoms occur it is best to consider medical attention in case the symptoms worsen.

Black widows are easily recognizable with their striking black appearance and iconic abdominal red hourglass marking. They demonstrate sexual dimorphism, meaning the males and females of the species look vastly different. In opposition to the rotund body of the female, the male is small with long legs. The males also lack the simplistic coloration of the female and can be seen with red and white lines scattered around their abdomens along with a sequence of orange and black patterning on the legs.

Though not a complete myth, most female widows do not cannibalize their mates. If the female is particularly hungry and if the male is somehow trapped within her web, then the chance is there. Fragile looking with its papery texture, the egg sac can house between 25 to 400 eggs. As they reach their full development, the eggs become spiderlings. When the spiderlings are ready to emerge, they'll break through the sac and stay in the haven of the mother's web for about 10 to 14 days. It is by this time that the spiderlings turn cannibalistic and must disperse. Widows will eat anything they can ensnare in their web.

Additional resources on black widows:

- "Southern black widow" from University of Florida Extension
- "Southern black widow spider" from Texas A&M University Extension
- <u>"Southern black widow spider" from Penn State</u> Extension

Unlikely to bite; seek medical attention if you are bitten though

Brown Widow (Latrodectus geometricus) BugGuide entry

Though related to the native southern black widow, the brown widow is a non-native widow that was first found in the United States in 2003. This species is also called the comb-footed spider due to the bristles on their tarsi (feet). The brown widow looks similar to the black widow, but brown widows are generally smaller, have brown banding on their legs, an orange-hued hourglass marking on the abdomen, and have "spiky" egg sacs.

Unlike some of its relatives, the brown widow does show a preference for more exposed habitats. These widows can commonly be found near crevices and corners of manmade structures to make a quick escape to safety. If faced with a predator the widow will demonstrate "thanatosis," otherwise known as playing dead. The female brown widow can live up to three years, while a male has a much shorter lifespan of six months to one year. Throughout their lives, widows remain carnivorous and will feed on a variety of other arthropods.



Though they are very similar to the black widow, the medical importance of the brown widow is generally less extreme. If bitten by a brown widow, the symptoms are minor. There may be localized pain at the bite site. It is important to clean the bite site, due to the potential for infection. If it is difficult to determine whether it was a brown widow or a southern black widow that caused the bite, one should seek medical attention.

Additional resources on brown widows:

- "Brown widow spider" from University of California Riverside Extension
- "Brown widow" from Texas Invasive Species Institute

Southern House Spider (Kukulcania hibernalis) BugGuide entry

The southern house spider is a common species to find in southern states. In

particular, the males of this species will be confused for the brown recluse spider.

Morphologically, the males of

Morphologically, the males of this species have a solid brown body, with thin, long legs. Though it shares similarities to the recluse, the southern house spider does lack the classic violin-shaped marking on the cephalothorax. This species is not dangerous and will not produce a medically significant bite. Though by no means fatal, this spider is still venomous, as



all spiders are. Though the venom's impact is typically reserved for prey (other arthropods) it is possible to have some slight swelling if bitten.

Additional resources on the southern house spider:

"Southern house spider" from University of Florida Extension

Harmless

Common House Spider (Parasteatoda tepidariorum) BugGuide entry

Like the southern house spider, the males of this species may be misidentified for



brown recluse spiders. This species does look less like the brown recluse than other spiders due to the patterning on the abdomen and legs. As the name suggests, this species is common to find within the home but poses no threat to humans. The impact of their venom is reserved for their prey of smaller arthropods.

Additional resources on the common house spider:

• "Common house spider" from University of Florida Extension

Harmless

Bark Scorpions (Centruroides vittatus) BugGuide entry

The only scorpion species that occurs on Ichauway is the striped bark scorpion *Centruroides vittatus*, which occurs in much of southern Georgia. Further north in Georgia, you may find the southern unstriped scorpion (*Vaejovis carolinianus*). The striped bark scorpion is a relatively small scorpion with an average length of 2 inches. The pincers (pedipalps) are slender but still distinguishable. The coloration of the striped bark scorpion consists of an almost plaid pattern of yellow, beige, and brown. Another classic feature of the scorpion is the tail, which is longer in the males. An



interesting note about the scorpion's appearance is the fluorescence of their cuticle under ultraviolet light. Their fluorescence can be helpful when searching for these nocturnal scorpions in the dark.

Due to their nocturnal nature, these scorpions seek shelter for most daylight hours, preferring a dark crevice under bark. Technically the scorpions don't burrow; they simply hide in tight spaces. They are considered very active foragers. Their diet consists of other arthropods and can also include cannibalization. At the end of the gestation period, the female gives (ovoviviparous) live birth to 10–50 young scorpions. The young scorpions climb on the mother's back and stay there until they have their first molt. Scorpions are relatively long-lived arachnids, living up to 3–8 years.

As far as medical importance, scorpions can deliver a sting that is not considered extreme or needing of medical attention. The scorpion has poison glands in the tip of their tails. The sting can cause local pain and swelling. Other symptoms of a

scorpion sting might include nausea and tightening of the chest. On average the pain from a sting might last about 15 to 20 minutes.

Additional resources on bark scorpions:

- "Striped bark scorpions" from Encyclopedia of Arkansas
- "Striped bark scorpion" from Texas A&M University Extension

Centipedes (Order Chilopoda) BugGuide entry

Centipedes are long, flat-bodied arthropods with one pair of legs per segment of their body. They come in a variety of sizes and colors. For example, there is a species of centipede in Georgia called the Florida blue centipede, which has a blue/green body with yellow legs. Centipedes use maxillipeds, toxin-containing fangs, for defense and for catching prey. Unlike millipedes, centipedes have venom that they will inject in their prey or in an attacker. Though still venomous, the species in Georgia are not deadly, just painful. The sting of a Georgia centipede species could be compared to a wasp sting.



The preferred habitat of centipedes differs greatly depending on the species. Centipedes are generally secretive and will seek shelter if exposed. With a preference for hiding, centipedes can easily be found underneath bark, logs, and rocks. Centipedes are known for being incredibly fast moving, which aids them in quickly finding places to hide. Due to their pain-inducing bite and their sting, it's best to proceed with caution when flipping logs and rocks.

Millipedes (Order Diplopoda) BugGuide entry

These creatures are worm-like, with rounded bodies. They have two pairs of legs per segment of their bodies. Millipedes are not venomous and are mostly harmless. They can produce an irritating fluid when agitated. There are numerous chemicals in the irritating fluid that are capable of temporarily staining skin. The fluid can simply be washed off, though a foul odor may remain if not washed thoroughly. Skin sensitivity to this fluid will depend on the individual person.

Millipedes are detritivores, meaning their diet consists of decaying organic matter. Due to their dietary needs, they are commonly found in dark, humid areas. Commonly, they are found underneath logs or leaf matter. Some species are more active than others. For instance, the Florida ivory millipede is common to find in Georgia and are extremely active foragers.



Millipedes vs. Centipedes

Millipedes	Centipedes
Slow moving	Fast moving
Eat decaying vegetation	Eat insects and other arthropods
2 pairs of legs per segment	1 pair of legs per segment
Generally cylindrical	Generally flatter
Poisonous (bad to eat!)	Venomous (bad to get stung!)

For an article going a bit more depth into their differences:

"Centipede or millipede? What's the difference?" from Carnegie Museum of Natural History

Harmless but wash your hands

Scorpionflies (Family Panorpidae) BugGuide entry

These fascinating insects are neither scorpions nor flies! Instead, they belong to the order Mecoptera, a rather small obscure order of insects that also include hangingflies and earwigflies. Though they may look frightening, they are completely harmless to humans.

They have an almost wasp-like appearance, with an elongated rostrum that resembles a beak. Another characteristic of scorpionflies are their wings, that when laid down have a "V" shape along their body. One of the most telltale signs of a male scorpionfly is the appendage at the end of the abdomen that resembles that of a scorpion stinger. Despite its resemblance to that of a scorpion, its stinger cannot sting! Instead, it is used for mating. Unlike the males, the females have a tapered abdomen with no appendage.

These interesting insects can commonly be found in upland ecological communities such as meadows and grasses. Scorpionflies are scavengers, feeding on dead insects, but will also occasionally feed on nectar.

Male scorpionflies will offer a gift of food to a potential female mate to attract her, while also emitting attractive pheromones.



Additional resources on scorpionflies:

• "Scorpionflies and hangingflies" from University of Kentucky Entomology

Harmless

Giant Water Bugs, aka "Toe-biters" (Family Belostomatidae) #BugGuide entry

Giant water bugs are an impressive group of true bugs, belonging to the insect order Hemiptera. Living up to their common name, giant water bugs can reach the considerable length of 4.5 inches in some parts of the world. These fierce, predatory bugs are also given the common name toe-biters. This deserved name is due to the large pincer appendages that they use to hold prey. Capable of holding rather large prey, these bugs feed upon arthropods, fish, and tadpoles. Aside from having a firm grip, these bugs also inject digestive enzymes that liquify their prey for easier consumption with their piercing mouthparts. Many people report extreme pain when pinched or bitten by these bugs.



These bugs are typically found in slow-moving freshwater habitats that have a wide arrangement of aquatic vegetation that provides shelter. These bugs also require mud to overwinter in. Giant water bugs can be

throughout spring and early summer searching for mates. After mating, a female giant water bug can produce over 100 eggs. A rare mating characteristic of some species is that the females will deposit the eggs on to the male. The male will then proceed to take care of the young by using various methods to help embryonic respiration. Without the parental care from the male, the eggs would not survive.

Additional resources on giant water bugs:

- "Giant water bug" from the National Park Service
- "Giant water bug" from Texas A&M University Extension
- <u>"Belostomatidae: from University of New Hampshire Center for Freshwater Biology</u>

Velvet Ants (Family Mutillidae) #BugGuide entry

Velvet ants are actually wasps, not ants! They are very common in the southeastern United States and can often be seen in open areas such as sandy roads. The females are wingless and resemble an ant, hence their common name. The males are winged and more closely resemble other wasps. Both males and females have hairy bodies, earning the "velvet" in their name. The females have typically vibrant hairs that come in colors of red, orange, yellow, and brown. Males have a similar color patten though some tend to be more solid black, with transparent black tinted wings.

These wasps are solitary and as adults will feed on nectar. Though not an aggressive wasp, when threatened the female will deliver an extremely painful sting. The sting is so powerful, that a common name for one species is cow killer. (No, they cannot kills cows!) An interesting fact about wasps (of all species) is that only females have stingers. The stinger of a wasp is a modified ovipositor (egg depositor), and as only females lay eggs, only females have stingers. Before stinging, a velvet ant might make squeaking sounds as a vocalized warning.



Additional resources on velvet ants:

- "Velvet ants" from University of Kentucky Entomology
- <u>"Velvet ants" from University of Florida Extension</u>

Blister Beetles (Family Meloidae) BugGuide entry

Blister beetles range from 1/4-3/4 inches in length. They have elongated, cylindrical

bodies and rounded elytra. A key characteristic is that the pronotum (segment directly behind the head) is narrower than the head. Blister beetles come in many colors, such as orange, black, yellow, and green.

These beetles are diurnal (active during the day) and are common to find in agricultural fields, particularly alfalfa fields. They are medically significant to humans because of the blistering agent "cantharidin" in their hemolymph (blood) that oozes from their exoskeleton when they are smashed. These blisters are temporary and can be painful for some people. Within a few days, potentially a few weeks, the blisters will go away on their own. Cantharidin is considered toxic to







horses. Unfortunately, since blister beetles are commonly found in alfalfa fields, horses are more at risk for accidentally eating them.

Additional resources on blister beetles:

- "Blister beetles" from University of Illinois Extension & Outreach
- <u>"Dealing with blister beetles" from University of Nebraska-Lincoln Institute of</u> Agriculture and Natural Resources
- "Blister beetles in alfalfa hay" from University of Minnesota Extension

False Blister Beetles (Family Oedemeridae) BugGuide entry

False blister beetles (also known as pollen-feeding beetles) has their common name due to the morphological similarity to blister beetles. These beetles range in size from 1/4–1/2 inches. Anatomically, false blister beetles have a pronotum that is wider in the front and narrower near the elytra, which differs from the blister beetle. The hemolymph of the false blister beetle contains the blistering agent cantharidin as well though. The beetle will release hemolymph if it is smashed against skin. Severity of the reaction to cantharidin varies between people.

Additional resources on false blister beetles:

• <u>"False blister beetles" from University of Florida Extension</u>

Bombardier Beetle (Family Carabidae, Genus Brachinus) <u>BugGuide entry</u>

The bombardier beetle is easily identifiable due to its orange colored pronotum and head, as well as its black elytra. These beetles are nocturnal and will primarily feed on other arthropods. The beetle can eject a chemical compound that can stain and irritate

the skin of humans. The spray is shot from a rotating posterior orifice, which allows them to accurately aim the spray at an attacker. The chemicals involved in creating the beetle's spray are hydroquinone and hydrogen peroxide. These chemicals are kept in two separate abdominal chambers and are then mixed with water in a third abdominal chamber with catalytic enzymes. The combination of all these results in a boiling fluid (100°C!!), which works as an excellent deterrent for any attacker. Notably, if the abdominal chambers were not a feature of the beetle's anatomy it would not survive harboring the chemicals inside its body.

True bombardier (Red head)

False bombardier (Black head)



False Bombardier Beetle (Family Carabidae, Genus Galerita) BugGuide entry

The false bombardier beetle can be easily identified from the bombardier beetle due to its black head. These beetles are also nocturnal and have a carnivorous diet. They are commonly found in open wooded habitats. They do have some medical importance due to their ability to spray a chemical deterrent. This deterrent is made up of formic acid (found also in ants) and acetic acid (found also in vinegaroons). The foul smell of the spray is its main deterring quality.

Additional resources on true and false bombardier beetles:

- "False bombardier beetle redux (Family Carabidae)" from University of Wisconsin Milwaukee
- "Bombardier beetles and false bombardier beetles" from North Carolina State Extension

Puss Caterpillar (Megalopyge opercularis) BugGuide entry

The puss caterpillar is an incredibly hairy caterpillar that resembles a light beige toupee. These caterpillars prefer deciduous forests, particularly certain trees such as: oaks, hickories, pecan, and persimmon. Unfortunately, this fuzzy caterpillar is medically significant to humans. Typically, the touch of this caterpillar and its venomous spines will cause an immediate intense burning pain that's followed by a red grid-like pattern rash. Other symptoms from this caterpillar include headache, fever, nausea, vomiting, tachycardia, low blood pressure, seizures, muscle spasms, and convulsions. Given the severity of some of the symptoms, if someone is touched by this caterpillar it is important to consider medical attention.



Painful; seek medical attention for severe reactions

Additional resources on puss caterpillars:

- "Puss caterpillar (larva), southern flannel moth (adult)" from University of Florida Extension
- "Stinging caterpillars" from Florida Poison Center

Hag Caterpillar (Phobetron pithecium) BugGuide entry

The hag caterpillar is very distinctive with a brown hairy body and tentacle-like projections. Another common name for this caterpillar is the monkey slug. These caterpillars are found in deciduous forests. The caterpillar prefers oak, dogwood, and



apple trees. The adult moths are found between May to October, and the caterpillars are found between July to October. Hag caterpillars are medically significant due to their irritating hairs that cause stinging pain and inflammation. The severity of the reaction to the irritating hairs is dependent on the individual.

Additional resources on hag caterpillars:

• <u>"Hag moth caterpillar" from Virginia</u> <u>Cooperative Extension</u>

Painful; seek medical attention for severe reactions

Tussock Moth Caterpillar (Orgyia leucostigma) BugGuide entry

The tussock moth caterpillar is a very colorful caterpillar that has gray, orange, yellow, and red markings. They can be found in deciduous and evergreen forests, eating hickory, oak, apple, cherry, and spruce. Due to the caterpillar's irritating hairs, touching this



caterpillar will result in an allergic reaction consisting of skin redness and welts. Children are reportedly more likely to have an allergic reaction to the caterpillar sting than adults. An interesting thing to note about adult females, is that they are flightless because of their short, little wings.

Additional resources on tussock moth caterpillars:

- "Tussock moths" from University of Florida Extension
- <u>"Whitemarked tussock moth" from North Caroline</u>
 State Extension

Painful; seek medical attention for severe reactions

Io Moth Caterpillar (Automeris io) BugGuide entry

The appearance of this caterpillar changes throughout its instars. Initially, the caterpillar is dull in color (brown, yellow, and orange). As they grow, the larva



becomes a bright green color with more prominent spines. These caterpillars are found in deciduous forests and will feed on a variety of host plants. The adults are present from May–September. Touching these caterpillars will result in immediate pain, followed by welts. An

interesting fact is that while in their early instar, the caterpillars will march in a line as they follow silk trails to find new places to feed.

Additional resources on io moth caterpillars:

• <u>"lo moths" from University of Florida Extension</u>

Painful; seek medical attention for severe reactions

Hover flies (Family Syrphidae) BugGuide entry

Many insects mimic wasps and bees in various ways. Hover flies, or flower flies, display some of the most remarkable mimicry. These are considered essential pollinators for many plants, as well as bioindicators of healthy ecosystems. The larval diet varies, but adults generally consume nectar and pollen. Many species look similar to bees or wasps, with black and yellow markings on the body. Some hover flies even have setae that resemble that of a bumblebee. Despite their resemblance, hover flies are harmless to humans. Some species



of hover flies have aquatic larvae with anal breathing tubes, earning them the nickname "rat-tailed maggots."





Additional resources on hover flies and other mimics:

- "Hover fly" from North Caroline State Extension
- "Insects that look like bees" from Michigan State University Extension

Harmless

Red imported fire ant (Solenopsis invicta) BugGuide entry

Solenopsis invicta is an exotic ant that first entered the United States about 1918 near Mobile, Alabama, it has since spread to cover most of the Southeast. This ant creates

large, distinctive mounds without any noticeable entrance holes.

These ants cause pain not from their bite, but from their venomous sting. Some humans may have an allergic reaction to the

venom that produces an unpleasant white,

raised pustule.







Additional resources on fire ants:

- "Fire ants" from Mississippi State University Extension
- "Managing imported fire ants in urban areas" from University of Georgia Extension
- "Fire ants in commercial turfgrass, home lawns and landscapes" from North Caroline State Extension

Painful; seek medical attention for severe reactions

Glossary

Abdomen: One of the three main body segments of insects, furthest from the head

Aposematism: An advertisement by an organism to potential predators that it contains defensive properties such as poison or a foul taste

Arthropod: Belonging to the phylum Arthropoda; invertebrate animals that have a segmented body and jointed appendages, a usually chitinous exoskeleton molted at intervals, and a dorsal anterior brain connected to a ventral chain of ganglia. These include insects, spiders, crustaceans, millipedes, centipedes, and many other groups.

Cantharidin: An odorless, colorless chemical secreted by blister beetles that irritate the skin of humans

Cephalothorax: Found in spiders, it is the anatomical feature of the head and thorax combined

Detritivore: An organism that feeds on dead organic material

Diurnal: Active during the day (as opposed to nocturnal)

Elytra: Hardened fore wings that protect the hind wings in insects (particularly beetles)

Head: One of the three main body segments of insects, furthest from the abdomen

Hemolymph: Circulating fluid in arthropods that is analogous to blood and lymph in vertebrates

Inflammation: Immune response to a localized area that can include swelling, redness, heat, and increased blood flow

Instar: A phase between two periods of molting in the development of an insect larva or other invertebrate animal

Larva: The active immature form of an insect that undergoes metamorphosis, especially one that differs greatly from the adult and forms the stage between egg and pupa

Mimicry: When an organism has evolved to look like another organism or object

Nocturnal: Active during the night (as opposed to diurnal)

Ovipositor: Egg laying organ that a female arthropod uses to deposit eggs. In many Hymenoptera (wasps, bees, ants, etc.) it has been modified to deliver venom

Ovoviviparous: Producing young by means of eggs which are hatched within the body of the parent

Poisonous: Used to describe an organism that is ingested to deliver its toxins (as opposed to venomous, where an organism bites or stings to inject its toxins)

Pronotum: Anatomical plate that covers the thorax of an insect

Pupa: The inactive and final life stage of an insect that undergoes metamorphosis directly before maturing into being an adult

Rostrum: a beaklike project off the head of an insect

Sexual Dimorphism: When there is a distinct anatomical difference between the sexes of the same species

Tachycardia: Increased heart rate of over 100 beats per minute

Tarsi: The last segment of an arthropod leg (analogous to a human's foot)

Thanatosis: Behavior in which an animal gives the appearance of being dead (aka "playing dead," "playing possum," etc.)

Thorax: One of the three main body segments of insects, between the head and abdomen

Venomous: Used to describe an organism that bites or stings to inject its toxins (as opposed to poisonous, where an organism is ingested to deliver its toxins)