



# Stinging and Biting Pests

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When insects, mites and ticks bite, they often inject saliva to digest the tissue and aid in the feeding process. Your body's reaction to the components of the saliva causes the itching, redness and swelling that is associated with these bites. In addition to the saliva, insects and scorpions that sting and spiders that bite often inject venom, which is used to subdue prey or protect themselves. This venom usually produces a painful reaction in people. Bees and wasps that live in colonies can attack in large numbers, potentially exposing victims to dangerous amounts of venom. These insects typically cause the most problems when they perceive their nest is threatened.

For most people, a single sting will cause pain, swelling and stiffness (if the sting was in a joint). The discomfort may last only a few minutes or for one or more days. Some people can develop more serious reactions. Swelling may involve an entire arm or leg, last several days or require hospital treatment.

A third type of reaction is called "anaphylactic shock." In a few people, the immune system goes "wrong," and within minutes after receiving a sting they may develop: (a) nausea and constriction in the chest; (b) difficulty breathing and swallowing; (c) a drop in blood pressure; (d) blue color in the skin (due to lack of oxygen); and, in extreme cases, (e) unconsciousness or death.

People who develop more than just the normal symptoms from a single sting should see their physician about the need to be desensitized. People concerned about experiencing severe reactions to stings should consider the need to carry an allergy first-aid kit with them when afield.

## Stinging

Bees, wasps, hornets, fire ants and scorpions that inject venom from the tip of their abdomen are sometimes considered beneficial because of their importance in pollination or in preying on other pest insects. However, anyone who has ever been stung by one of these creatures will usually think otherwise. After being stung, it is important to immediately remove the stinger and venom sac if they are present at the sting site. This can be done with a fingernail, the edge of a credit card or tweezers. Immediate removal will stop venom from being released. Avoid squeezing the venom sac. Wash the site with soap and water and apply cold compresses to relieve pain and swelling. For more pronounced reactions, apply hydrocortisone

cream or calamine lotion to reduce itching and swelling. If itching and swelling are bothersome, take an oral antihistamine like diphenhydramine (Benadryl) or chlorpheniramine (Chlor-Trimeton). For severe reactions, seek immediate medical attention.

Home remedies include applying wet salt to the site within five minutes of being stung. Leave the salt in place for 30 minutes. In theory, the salt will draw the venom from the wound. Similar results have been obtained with moistened tobacco, wet baking soda or wet aspirin. These home remedies have not been proven scientifically, but won't hurt you if you choose to use them.

## The Solitary Stingers

The cicada killer, mud dauber and scorpion are solitary creatures and are usually encountered one at a time. They are non-aggressive but will sting if provoked or trapped against bare skin. Their food consists of spiders and insects.



**Cicada Killers:** The cicada killer is a large wasp that varies in length from 1 to 1.5 inches and is black or rusty colored with yellow bands on the abdomen. This wasp

nects in burrows in the ground and provisions its nest with one or two paralyzed cicadas for the developing larvae. Nesting usually occurs in sod-covered areas but the grass is not harmed. The solitary adult is often seen hovering 1 to 2 feet above the ground near the entrance to its nest.

**Mud Daubers:** Pipe-organ mud daubers are elongated, slender and usually shiny-black wasps that vary in length from about a half inch to an inch or more. These wasps make their mud nests with the cells arranged in the form of long tubes, hence the common “pipe organ” name. Individual wasps make a buzzing sound as they shape mud into a nest and provision it with spiders for their larvae to feed upon during development. The female wasp stings and paralyzes the spider and then lays an egg on it and seals it in the mud tube. The nests are often in protected but open areas under the roof eaves of buildings and sheds or in garages. Mud daubers rarely sting and are generally considered beneficial in reducing spider populations.



**Scorpions:** Scorpions are found across the country. The abdomen is broadly joined to the head area and is differentiated into two parts:

a broad seven-segmented front portion and a much narrower five-segmented rear portion that terminates in a stinger. Scorpions prefer to nest under rocks, tree bark, boards, garbage cans and rubbish piles. Those found in Georgia are about 2 inches long and the pain of the sting is similar to that of a bee or wasp.

## Control

Chemical controls are usually not necessary or appropriate for the solitary stingers. Turf areas can be treated with insecticides labeled for these sites to discourage nesting of cicada killers. Scorpions can be killed with an application of insecticide, but eliminating their breeding areas is more effective and long-lasting. There is not a good insecticide registered for control of mud daubers. Mud daubers are not aggressive and their nests can usually be physically destroyed with little danger from the wasp.

## The Social Insects

Bees, wasps, hornets and ants develop colonies where there may be a few dozen to thousands of individuals with a queen, workers and an elaborate social structure. These are the social insects. While most individuals are non-aggressive, all will sting if handled. The social bees, wasps and hornets are a greater stinging threat than the solitary pests because they will attack in large numbers if they perceive their nest is in danger. Those that make a paper nest construct them of plant fiber and salivary secretions. In the fall, when temperatures decline and food becomes scarce, the female wasps and hornets frequently enter homes for hibernation.



### Honey Bees:

One of the most widely known social insects, the honey bee was brought to this country from Europe many years ago. Most colonies are managed in



manmade hives, but escaped swarms often nest in hollow trees, wall voids and attics. Honey bee colonies last several years with the queen and workers overwintering in the hive. A queen may live several years. Individual honeybees are encountered beyond their nest when they are collecting nectar and pollen from blossoms. People usually get stung while walking barefoot across a lawn that has blooming clover or dandelions, or if a bee gets trapped between clothing and skin.



**Bumble Bees:** Most people are familiar with this big, buzzing, furry, yellow and black bee that can produce a very painful sting. The yellow pubescence on the abdomen differentiates bumble

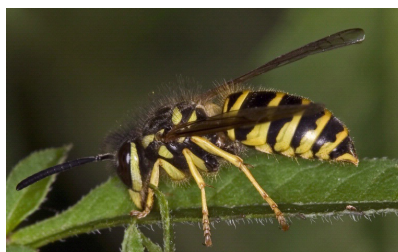
bees from carpenter bees, which have a smooth and shiny black abdomen. Like yellow jackets and hornets, only fertilized females hibernate during the winter and each starts a new nest during the spring. Nests are usually constructed in cavities in the soil previously used by field mice. The opening to the nest will often have fresh soil around it as a result of excavation activities. People are usually not stung unless they disturb the nest.



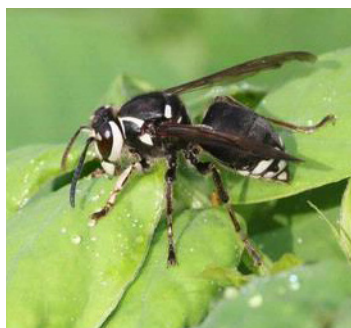
**Umbrella Wasps (Polistes Wasps):** Umbrella wasps, also called polistes wasps, are dusky brown with various orange markings. They construct an open paper

nest suspended from a short stalk. Wasps that build their nests under the eaves of houses, on porches, in attics or in dense shrubbery can become a problem. A new nest is made each year, initiated by a fertilized overwintering queen. These wasps feed themselves and their young on caterpillars. Nests are small compared to those of yellow jackets and hornets and contain up to about 250 wasps.

**Yellow Jackets:** Yellow jackets are small (half-inch-long) wasps marked with black and yellow banding. Colonies are initiated by overwintering queens that make paper nests underground, but occasionally they



will use hollow trees, wall voids and attics or branches over a stream. A fully developed nest may contain from a few hundred to many thousand adults. Yellow jackets feed on a variety of pest insects, but will also forage for meat or soft drinks at picnic, camp and garbage sites. This habit often brings them into close association with people. Good sanitation in picnic areas can help reduce problems with these pests. Solitary scavenging yellow jackets are usually non-aggressive unless handled, but become very aggressive as a group if their nest is threatened. Yellow jackets will vigorously pursue an intruder who threatens their nest and are generally considered the most dangerous of the social insects.



**Baldfaced Hornets:** The white or light yellowish markings on the face, thorax and part of the abdomen help to identify the baldfaced hornet. These hornets are actually a type of yellow jacket that build

their nests suspended in trees and bushes. The nest looks like a “bloated football” high off the ground in a tree or bush. Usually, there is a single entrance opening at the lower end of the nest. These hornets are widespread, having been found in 46 states, Canada and Alaska.



**European Hornets (Giant Hornets):** The European hornet (also known as the giant hornet) is large (over 1 inch long),

with its head and thorax a characteristic dark brown with yellow markings on the abdomen. Paper nests are constructed in hollow tree trunks, buildings and occasionally in the ground or in the aerial environment. The European hornet chews the bark off living plants, such as lilacs, to make paper for its nest and is attracted to ripening fruit, meat and sweets. This hornet can be attracted to lights on summer evenings, but they are not usually a problem unless their nest is near human activity.



**Fire Ants:** Fire ants are now the most common and troublesome ant in the southeastern United States. These pests were introduced into the Port of Mobile in 1918 and have spread from

Texas to the piedmont of North Carolina. Many native ant species have been displaced by these pests. Superficially, fire ants look much like ordinary house and garden ants. As with wasps and hornets, fire ants inject venom from the tip of the abdomen. Their sting causes a swollen, red area with a blister that fills with a pus-like material and heals slowly. A single fire ant mound may contain up to 200,000 workers.

## Control

Most social bees, wasps and hornets are beneficial and should not be controlled unless their nest and activities are close to humans and create a hazard. For bees, wasps and hornets, apply an insecticide in the evening when the insects are at rest. With the wind at your back and an escape route selected, aim the insecticide at nest openings in trees, bushes, under eaves, ground cracks and crevices in and around nest openings. Re-treatment may be necessary. If possible, destroy the nest or seal the nest opening.

Readily available insecticides include a variety of formulations of aerosols for quick knockdown and kill. Some aerosols produce a jet stream of up to 20 feet for operator safety and the ability to reach nests high off the ground. For honey bees nesting in buildings, control procedures are more complicated. Colony removal services are available for a fee. Contact your Extension agent for more information.

For fire ants, treat individual mounds when they are freshly rebuilt after rains. Pour an insecticidal drench over a mound so that the mixture will break the surface; do not stir the mound. Use 1 to 2 gallons for an average (12- to 14-inch diameter) mound. Granular and bait formulations are also available.

## Contact Irritants

### *Caterpillars with venomous spines*

The caterpillars of some moths have sharp, hollow spines or hairs that contain venom. Contact with these spines causes a burning inflammation of the skin, but can be more serious when in contact

with a mucous membrane or the eyes. The spines from dead caterpillars are still problematic. Most of these caterpillars feed on the leaves of various hardwood trees and shrubs and contact with people is uncommon. The venomous spines are a defense mechanism and the colorful patterns or unusual body shapes serve as a warning to their enemies. About 25 species have spines that can be painful. Three of the more common species are described below.



### **Puss Caterpillars:**

Puss caterpillars may be pale yellow, gray or reddish brown, about 1 inch long and densely covered with hairs.

Among these hairs are hollow spines with venom. Stings on the hand can cause the entire arm to swell and become numb. Later, there can be severe pain followed by itching. Young children are often more severely affected. Large population increases in local areas can cause a problem.



### **Saddleback**

**Caterpillars:** The saddleback caterpillar is approximately 1 inch long and has a brown slug-like body with a green

mid-section. In the middle of the green mid-section there is a distinctive brown saddle mark with a white border. Venom-filled spines are located on fleshy "knobs" on all sides of its body. Contact with this caterpillar's spines can be extremely painful and severe reactions are possible for sensitive individuals.



### **Hag Moth**

**Caterpillars:** The hag moth caterpillar is a strange-looking brownish caterpillar with six pairs of curly projections, three long and three short, coming from the flattened body.

The plume-like projections on its back project out to the sides, suggesting the disarranged hairs of a hag. Among the brown hairs on the projections are longer black stinging hairs. These caterpillars are solitary and can easily be mistaken for leaf debris.



## Control

Control is usually not needed since contact is uncommon and these caterpillars are usually solitary. If a number of stinging caterpillars are seen feeding on the foliage around areas where children are active, spray the foliage with an insecticide labeled for tree and shrub application. Remember, dead caterpillars can still cause painful stings. Spread a cloth or plastic sheet under a tree or shrub to collect the fallen dead caterpillars, and then carefully dispose of them.

## Biting

Mosquitoes, flies, fleas, ticks, chiggers and spiders can all produce irritating and sometimes painful bites. The pain and irritation is usually associated with the puncture from the bite, the saliva injected to aid feeding or the venom injected by spiders.



**Mosquitoes:** There are more than 60 species of mosquitoes in Georgia, many of which will feed on people. The female mosquito must have a blood meal before her eggs will develop. Eggs are laid near or on the water, depending on the species. The eggs hatch into larvae or “wigglers.” These develop into pupae or “tumblers” and the adult emerges from the pupa. The egg-to-adult transition can occur in seven to 10 days. Female mosquitoes will range from 300 feet to 20 miles or more in search of a blood meal, depending upon the species. Most can fly at least 1 mile from a larval habitat. Most, but not all, females prefer to feed in the evening. The saliva they inject helps to keep blood from coagulating as they feed. It is also an irritant responsible for some of the itching and swelling people experience after they are bitten. The larvae of mosquitoes that bite at dawn and dusk often develop in ditches, ponds, temporary pools, marshes and swamps. The larvae of mosquitoes that bite during the day often develop in artificial containers, such as tires, buckets and various litter and debris, particularly in the northern part of Georgia.

**Deer and Horse Flies:** Deer and horse flies are strong fliers and a serious nuisance of warm-blooded animals and people. Only the females need a blood meal. Their mouthparts are bladelike and it is painful when they cut through the skin. When the blood is



Horse Fly



Deer Fly

flowing from the wound they will “lap” it up. The larvae feed in a wide variety of wet or damp sites that are high in organic material. Most females feed during the warmer parts of the day, but some species prefer the hours at dawn or dusk. Horse flies are larger than deer flies and usually have clear wings, while the deer fly has dark markings on the wings.



### **Biting Midges, “No-see-ums,” “Punkies” and “Sand Flies”:**

These pests are very small flies (about 1/32 to to 1/16-inch long) whose small, bladelike mouthparts

make a painful wound out of proportion to its tiny size. Welts and lesions from the bite may last for days. The larvae of various species develop in a wide variety of damp or wet places high in organic matter. Most are attracted to lights. One vicious biter develops along the Atlantic coast in salt marshes and wet soil. Another species, found in mountainous areas, feeds in the evening and night hours and is small enough to pass through ordinary screens. These are important pests in coastal and mountainous areas and can seriously interfere with outdoor activities.



**Black Flies (Buffalo Gnats):** Black flies, also known as buffalo gnats, are small (1/16- to 1/8-inch long), blood-sucking flies that are usually black to gray

in color. They typically bite in shaded or partially shaded areas and may fly as far as 15 miles or more from a larval habitat. The larvae are found attached to underwater objects in fast-flowing sections of rivers and streams. For this reason, they can be very troublesome in mountainous areas. The saliva injected while feeding causes swelling and soreness that may persist for days.

## Control

Because of the widespread larval habitats and long flight range of most mosquitoes, deer and horse flies, biting midges and black flies, control by homeowners is not always practical. Aerosols can be used indoors for occasional invaders. For day-biting mosquitoes, the elimination of artificial containers as a larval habitat can reduce biting since these mosquitoes only fly a few hundred feet from these sites. Turn over, puncture, cover with plastic or store potential larval habitats in an area protected from rain.

Repellents should be used when outdoors as needed. Various formulations (many different brand names) containing “DEET” (N, N-diethyl-m-toluamide) can be applied to the skin to give several hours of protection. Perspiration and activity tend to reduce the length of protection. Those formulations with a higher percent of “DEET” tend to last longer but also tend to cost more. The CDC has recently approved Picaridin, Oil of Lemon Eucalyptus and IR3535 as effective alternatives to DEET. For additional protection against mosquitoes that bite through clothing, Permanone (the brand name of an aerosol containing permethrin), which is sprayed on clothing to repel and kill ticks, is also effective against flying insect pests for a day or more.

Electromagnetic and ultrasonic devices are sometimes advertised to control these pests; however, there are no scientific studies that substantiate these claims. There is no evidence that black lights with electric grids for outdoor patios give any control of these insects.



**Fleas:** All adult fleas feed exclusively on the blood of their host. Fleas are common on most mammals, including cats, dogs and rodents. They are wingless and have strong legs for jumping. Eggs from the female usually hatch in the nest or resting areas of

the host. The eggs hatch in about 10 days into tiny, worm-like white larvae that feed on flea excrement, skin scales and other debris. The larva require a week to several months to complete development before they pupate and emerge as adults. Adult fleas can survive for two to four months without a blood meal. Cat and dog fleas will readily bite humans, especially when the normal host is absent. When people go on

vacation for a week or more, a large number of fleas can often be found waiting for the owners upon their return. Large numbers of fleas can also build up in yards. Fleas most often bite people on the legs and ankles. A small red spot usually appears at the bite site surrounded by a red halo with little swelling. Young children tend to be more sensitive to flea bites than older children.



**Chiggers:** The chigger is a tiny, red mite that, in its immature stage, will feed on humans, rodents, birds, snakes and a wide variety of other animals. Chiggers are especially common in second growth areas, blackberry

patches and forest edges. Chiggers are very active in crawling about looking for a host, and may crawl over the skin for some hours before beginning to feed. When the mouthparts are inserted into the skin, a fluid is injected that dissolves the cells upon which it feeds. The chigger does not, as is commonly believed, burrow into the skin. Itching can begin three to six hours after exposure. Examination of the skin may reveal minute red mites moving about. A soapy bath taken as soon as their presence is noted will often remove many of them before they begin feeding.

**Ticks:** The two most common ticks that feed on humans in Georgia are the American dog tick and the lone star tick. The adult female tick drops from the host after a blood meal to lay her eggs. The eggs hatch and develop through three stages: the larva (six-legged, very tiny — sometimes called a “seed tick”), the eight-legged nymph and the adult. During each of these three stages, the tick will attach itself to a host, take a blood meal, then drop off to continue the cycle. All stages of the lone star tick will attack humans, but only the adult stage of the American dog tick will. Both ticks feed on a wide variety of animals, although the American dog tick is especially common on dogs and the lone star tick on deer and livestock. Ticks are most common along trails and feeding and resting areas of their hosts. Both species can carry Rocky Mountain Spotted Fever (RMSF), a dangerous disease that causes a skin rash and high fever that may be mistaken for measles.





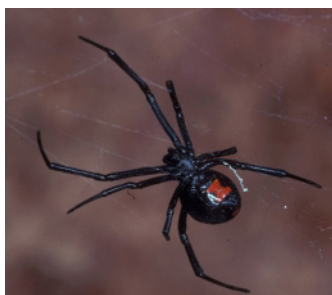
**Lone Star Tick**



**American Dog Tick**

The black-legged tick is less commonly found on people, but transmits Lyme disease. This disease initially has flu-like symptoms and sometimes an expanding red rash at the bite site. Months or years later the disease can invade the neurological or cardiovascular system or joints of the body. Lyme disease mimics other diseases, such as rheumatoid arthritis. The characteristic bull's-eye rash only occurs in about 70 percent of the cases. Early treatment with antibiotics is much more effective than treatment months or years later.

When in tick-infested areas, you should check your body (especially the back of the head) at least twice a day for ticks. Since imbedded ticks need 12 to 24 hours to transmit RMSF or Lyme disease, early removal is a good preventative for these diseases. Imbedded ticks should be removed with tweezers or wrapped in cloth or paper to avoid contact with the fingers. Grasp the tick as close to the skin as possible and gently pull directly, but firmly, away from the skin. Immediately wash the bite site and your hands with hot, soapy water to minimize the chance of infection, as juices from an infected tick can transmit RMSF.



**Black Widow**



**Brown Recluse**

**Spiders:** While spiders are beneficial in that they feed on various insects, there are at least two species in Georgia that are dangerous to humans. One is the black widow, which is very common throughout the state. It is shiny black with a red hourglass design under the abdomen. This spider makes an irregular web in piles of trash and lumber, around rock borders

and in cracks and crevices around the foundations of homes. The black widow is timid and will not usually bite unless handled. The other species is the brown recluse, which is extremely rare in Georgia. Its dark violin-shaped marking is distinctive. This spider is also timid and seldom seen since it lives in undisturbed areas inside buildings (e.g., under the basement steps, in unused clothing) or outside under rocks, piles of tires, under houses or under loose tree bark. The bite of the black widow is very painful, while the bite of the brown recluse can cause a spreading ulcer that is slow to heal and can leave a scar. Suspected bites should be treated promptly by a physician and the identification of the spider confirmed — your county Extension agent can help.

## Control

Controlling fleas on pet dogs and cats greatly reduces the problem on people. Vacuuming pet resting areas at least twice a week in the house reduces all flea stages in the carpet and flooring. Aerosol sprays can be used to fumigate infested rooms. The inclusion of methoprene, a growth regulator, with an insecticide is the best combination for long-term control. Methoprene is slow in its action since it only stops the growth of the flea (the insecticide usually combined with it will give a quick kill). This method of control is a very safe and effective long-term solution. Various formulations of insecticide can be used in the yard. Read the label carefully for proper use. A repellent is often the most practical method of personal protection from chiggers and ticks due to the widespread areas in which they are found. Repellents containing "DEET" are available under many brand names. Application to the skin or clothing will usually give several hours of protection. Those with a higher percentage active ingredient usually last longer, but also often cost more. Permethrin (Permanone by brand name) comes as an aerosol and is applied to the clothing only. It is effective in repelling and killing chiggers and ticks. Using "DEET" on the skin and permethrin on the clothing seems to give the best protection, although either alone can be effective.

Open, sunlit areas where the grass is cut short discourage ticks and chiggers because these areas are not humid enough for their survival.

Reduce spiders by removing piles of wood and trash close to inhabited areas. Spot-treat infested areas with products labeled for this use.

# Attention! Pesticide

## Precautions

Observe all directions, restrictions and precautions on pesticide labels. It is dangerous, wasteful and illegal to do otherwise. Avoid pollinators and plants where pollinators are likely to occur.

1. Store all pesticides in original containers with labels intact and behind locked doors. **KEEP PESTICIDES OUT OF THE REACH OF CHILDREN.**
2. Use pesticides at correct label concentrations and intervals to avoid illegal residues or injury to plants and animals.
3. Apply pesticides carefully to avoid drift or contamination of non-target areas.
4. Surplus pesticides and containers should be disposed of in accordance with label instructions so that contamination of water and other hazards will not result.
5. Follow directions on the pesticide label regarding restrictions as required by state and federal laws and regulations.
6. Avoid any action that may threaten an endangered species or its habitat. Your county extension agent can inform you of endangered species in your area, help you identify them, and through the Fish and Wildlife Service Field Office, identify actions that may threaten endangered species or their habitat.

Refer to the current version of the *Georgia Pest Management Handbook* for appropriate and effective pesticide recommendations for all of the pests described in this publication.

Commercial:

[extension.uga.edu/publications/detail.cfm?number=SB28](http://extension.uga.edu/publications/detail.cfm?number=SB28)

Homeowner:

[extension.uga.edu/publications/detail.cfm?number=SB48](http://extension.uga.edu/publications/detail.cfm?number=SB48)

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- Pipe Organ Nest Wikipedia, User: Pollinator
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- Honey Bee David Cappaert, Michigan State University Bugwood.org
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- Puss Caterpillar Herbert A. "Joe" Pase III, Texas Forest Service, Bugwood.org
- Saddleback Caterpillar Herbert A. "Joe" Pase III, Texas Forest Service, Bugwood.org
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- Mosquito Pennsylvania Department of Conservation and Natural Resources,
- Forestry Archive, Bugwood.org
- Deer Fly Sturgis McKeever, Georgia Southern University, Bugwood.org
- Horse Fly Sturgis McKeever, Georgia Southern University, Bugwood.org
- Biting Midge Ed T. Schmidtman, USDA/ARS
- Black Fly Entomology and Plant Pathology, Oklahoma State University
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