

# Common Stinging Insects: Wasps and Bees

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## Introduction

Stinging insects frighten nearly everyone. Even though bees and wasps rarely sting, most people feel threatened in their presence. Getting stung is a painful experience and can even be fatal for those few highly allergic individuals. Fearing a sting, however, is similar to fearing a doctor's injection: the anticipation is usually more foreboding than the act itself.

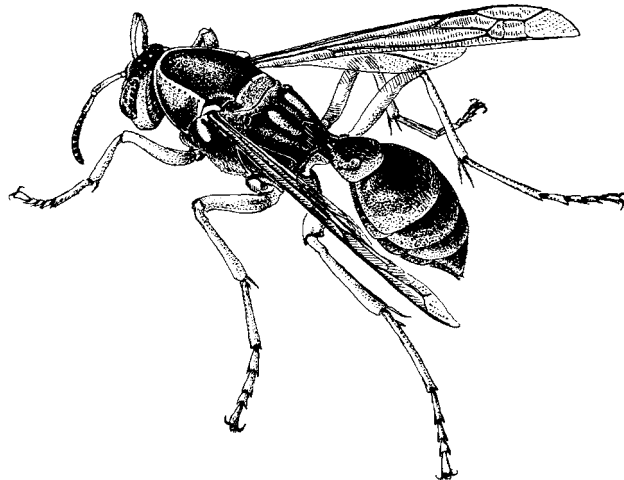
Wasps and bees actually rank among the most beneficial of insects. Bees are essential for the pollination of many plants, and wasps capture a wide variety of insect pests as food for their young. These benefits are often lost on people who have experienced the capacity of a bee or wasp to defend itself. It is the social bees and wasps that are responsible for most stings. These species create large nests where a queen produces eggs. The resultant worker bees or wasps take care of the queen, her eggs, and the immature wasps by food gathering, feeding, and building, cleaning, and defending the nest. Social bees and wasps most frequently sting in defense of their nest. Because many species nest in, on, or close by human dwellings, painful encounters are sometimes unavoidable.

If you discover a nest of bees or wasps on your property, a pest control professional can safely eliminate it. However, there are currently no reliable means of removing all stinging insects from an outdoor area. Therefore, the purpose of this bulletin is:

- to help you identify problem species;
- to explain what to expect if you call a professional for assistance;
- to advise you how to minimize your risk of being stung; and
- to enable you to distinguish between normal and allergic reactions to stings.

## Social Wasps

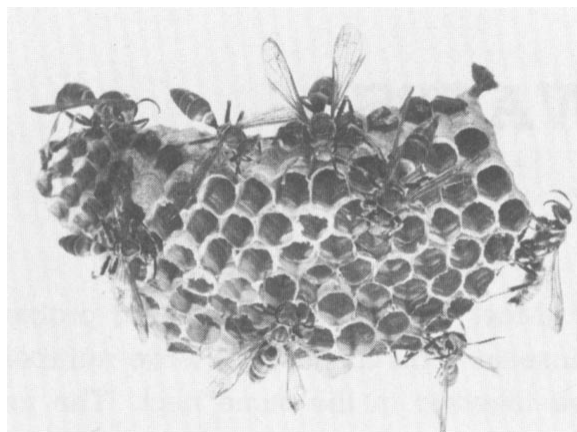
### Paper Wasps



Paper wasps are common in Maryland. Their colors range from reddish brown to dark brown, to bright yellow and black, depending on species. All are slender, with long, thin legs. They are much slower in flight than the common yellowjacket. Paper wasps build gray, paper nests that resemble a honeycomb when viewed from below. The nest is attached at the top from a single point near the center of the comb. If the nest is built in an open area, such as under a window sash or eaves, it will be roughly circular. Nests built within spaces, such as inside hedges, flower pots, or garden equipment—an unused leaf blower, for instance—will conform to fit the available space.

Fertile queens begin working on nest construction in spring. These spring or nest-founding queens produce workers that enlarge the nest and feed insect prey to the developing young. Paper wasps, which are especially fond of caterpillars, are considered important biological control agents for pests of some crops. Unfortunately, these wasps often pick a spot just above the front door of a house to build their nest, and they may sting to defend the nest if sufficiently disturbed.

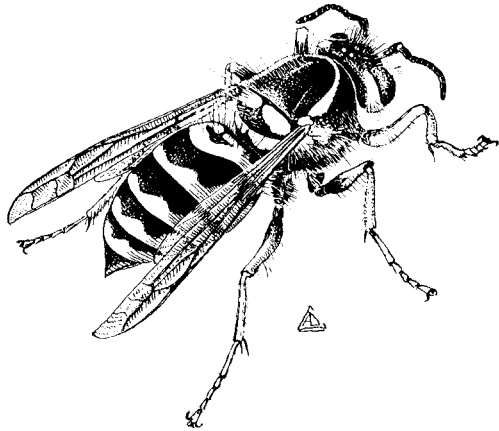
At the end of summer new queens are produced, which will



found new colonies the following spring. In their search for a protected, dry place to spend winter, new queens can cluster indoors in large numbers. Queens are large, and few homeowners have any desire to be hospitable to dozens of these royal wasps as they look for winter quarters.

## Yellowjackets

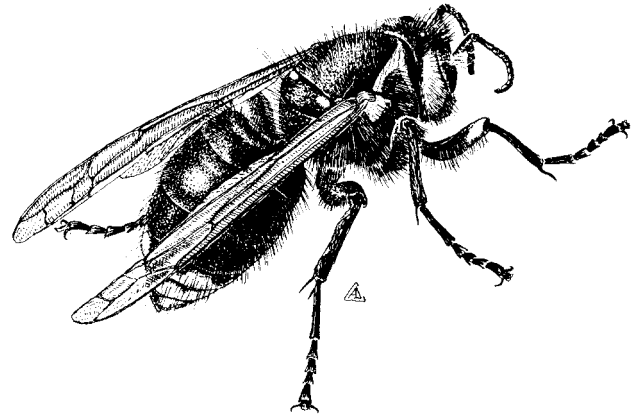
Yellowjacket wasps are the cause of most stings people attribute



to bees. These colorful black and yellow insects build gray or tan paper nests, which are hidden in cavities. Nests can be underground with only a nickel-sized hole to allow entry, or they may be built in hollow trees or buildings. A single queen begins her nest in April or May. As the number of workers grows, the nest enlarges to include a series of combs, with each new comb layered below the previous one. The combs, enclosed in layers of paper, are not visible from outside. A large yellowjacket nest can support thousands of workers. Yellowjackets will remain active until late fall if weather and food supplies are favorable. Food is primarily other insects, but yellowjackets will eat fruit, garbage, and almost any picnic item from hot dogs to soda.

Yellowjackets cause more human stings than any other stinging insect for several reasons: they are extremely numerous, they often nest in or around buildings, and they are attracted to human food. Multiple stings are often the result of someone disturbing a yellowjacket nest. Any activity near the nest, especially one causing vibrations, such as lawn mowing or hedge trimming, can cause dozens of angry wasps to attack. Yellowjackets hunting food away from their nest may sting if swatted. Many people get stung outdoors while drinking soda or juice from cans. A thirsty wasp can quickly crawl inside an open can and be concealed from view. When an unsuspecting human takes a sip the result can be startling and painful. Stings like these can be extremely dangerous if the victim's throat swells and breathing is blocked.

## Hornets



There is only one true hornet in Maryland: the large yellow-and-chestnut-colored European hornet. This big, relatively docile wasp builds fragile, tan paper nests in concealed places—especially in hollow trees and, occasionally, in buildings. The European hornet eats yellowjackets and bees, as well as other insects. Unlike other social wasps, they often hunt at night and may be attracted to porch lights. Worker hornets sometimes attack tree species such as ash and lilac, gnawing bark from twigs, eating sap, and eating other insects attracted to the sap flow.

Two large yellowjacket species, commonly called hornets, construct large, grey paper nests in trees. The bald-faced hornet is a large black and white wasp with a pale face. The much smaller, and less common, aerial yellowjacket is black and yellow. Nests of both of these species are most commonly found suspended from the branch of a shrub or tree, although nests sometimes appear under the eaves of houses. Bald-faced hornets are especially common around people's homes because they feed on the flies attracted to garbage and pet feces. Like other social wasps, single queen hornets start working on their nests in spring. The outer paper envelope protects the layers of combs inside. A large nest may contain several hundred workers. Nests are never reused the next year; all but new queens die in fall. During winter, birds, squirrels, and weather destroy the abandoned nests.



## Control of Social Wasps

Following are important points related to the control of social wasps.

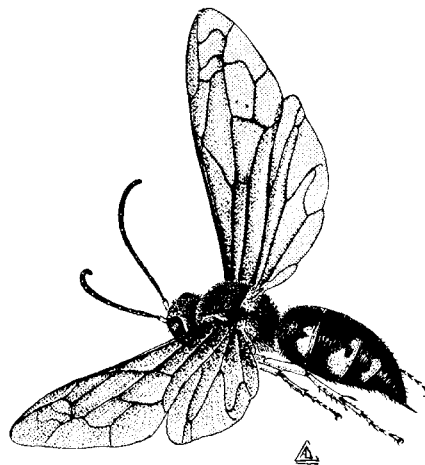
- Pest control professionals have the equipment and chemical controls to destroy wasp nests safely and effectively. We strongly recommend that you use their services rather than take unnecessary risks. Making mistakes during do-it-yourself attempts can have dangerous consequences: multiple stings can cause serious illness or death, even for people not allergic to stings.
- Chemical controls are generally directed at the nest entrance. Aerosol sprays are safest for the general public to use, but not nearly as safe as paying a professional to kill the nest. Many formulations can damage plants and painted surfaces.
- Do not attempt to treat a nest at night. Wasps can follow a flashlight beam to its source. In the dark it is easier to make mistakes or trip over obstacles. Also, wasps are not necessarily more docile at night when it is cooler, nor are they necessarily more apt to be inside the nest. At least one species actively hunts at night.
- Never block the entrance to a nest, especially when the entrance hole is in the wall of a building. Wasps will quickly find an alternative exit. They can chew through wallboard and have been known to emerge by the hundreds from behind a wall inside a house.
- Professional pest controllers often use an insecticidal dust to treat large colonies nesting inside a building. A light application to the nest entrance (too much insecticide is a repellent) allows worker wasps to enter and exit normally, but the slightest contact with the dust assures their death. The entire colony will die within a few days; most will be dead within hours. During the days following a treatment, monitor the nest opening for activity, but only from a safe distance.
- If a nest is in an inaccessible location or if the wasps do not present a problem, leave the nest alone. All wasps will die during winter, except for new queens, which overwinter elsewhere. Nests are not reused the next season. Home remedies such as flooding with a hose or burning the nest are dangerous, not necessarily effective, and may result in multiple stings. Disturbed nests pose an additional danger to innocent passersby, who may be attacked without warning.

## Other Wasps

Many common species of solitary wasps cause homeowners concern, although the wasps rarely sting, and then only when actually handled. The majority of these wasps nest in the soil. When wasps find suitable conditions—often south- or west-facing slopes with well-drained sandy soil in full sun—they may concentrate many nests in these areas. The wasps, however, do not sting in defense of their nests. Metallic-colored spider hunter wasps, low-flying wasps that are parasites of Japanese beetles, and cicada killers often worry people, but only cicada killers and mud daubers occasionally reach pest status.

## Cicada Killers

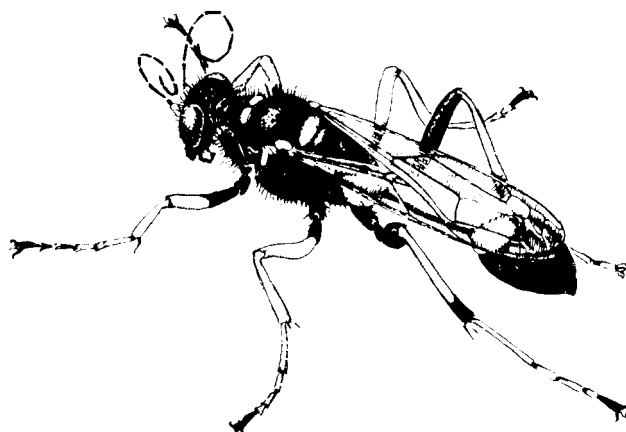
Although cicada killers are not a stinging hazard, the territory-guarding behavior of males—which cannot sting!—terrifies



people. Males perch near nest holes dug by females and chase everything from the postman to the family dog passing too near the hole. Females are rarely seen because they are either in the burrows or hunting cicadas in the treetops. Burrows in turfgrass may be unsightly, but in most instances the nests do no harm. Nests in playgrounds should be destroyed because young children trying to catch female wasps may get stung. A very light dusting of carbaryl in the hole will kill the female. No control measures need to be directed against the harmless males who will die naturally in a few weeks.

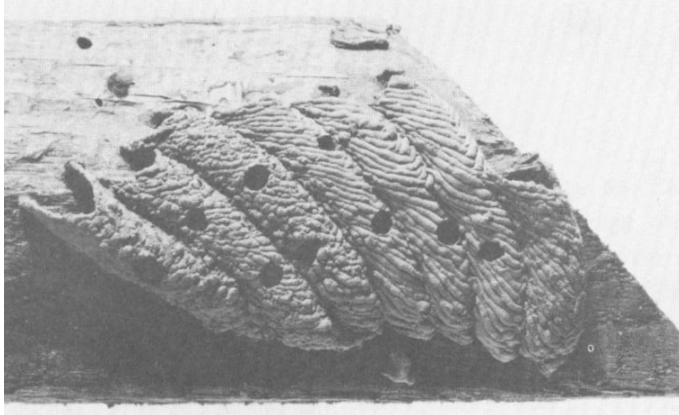
## Mud Daubers

Mud daubers are dark wasps with long, thin waists. The most common species are black and yellow, metallic black, or metallic blue. The metallic blue mud dauber is actually a parasite of the



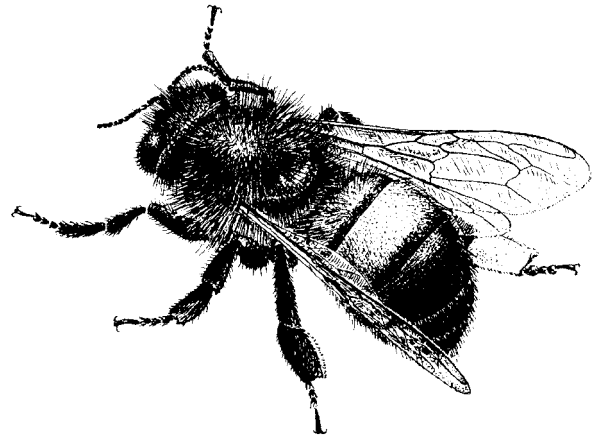
black and yellow nest-building species. Organ pipe mud daubers build a series of long, cylindrical tube nests of compacted mud, as shown on page 4. Common mud daubers build a less sculpted mud nest. The nests of all species are built in protected places. As mud daubers do not sting in defense of their nests, it is safe to scrape the mud tube from surfaces, taking care not to touch the

wasp. Nests are filled with paralyzed spiders that provide fresh food for the wasp young. People encounter these wasps most often near puddles where they collect mud or on surfaces where they build their nests. Mud daubers may build hundreds of nests behind siding on houses, but the wasps present little threat to the occupants and none to the structure.



## Bees

### Honey Bees



Honey bees are social. They are the familiar small, fuzzy, brown bees that collect nectar and pollen from flowers to feed other colony members. Although honey bees will sting in self-defense if stepped on or bumped, they are generally reluctant to do so. Unlike wasps that can sting repeatedly, honey bees can only sting once and then they die. Honey bees will also sting in defense of their nest, but cultivated bees are kept in white hive boxes, which people should know to avoid. Wild colonies of honey bees, relatively rare because of a parasite outbreak, often nest in tree hollows or in the walls or other hollow spaces of buildings. Entomology Leaflet #76\* describes the procedure for removing a honey bee nest.

### Bumble Bees

These large, hairy, black and yellow bees nest in the ground. They make small nests, usually in an abandoned rodent hole and do not sting unless the nest is stepped on. Nests are seldom seen. Although the bees seem imposing, they are not aggressive while they collect nectar and pollen from flowers.

### Carpenter Bees

Carpenter bees are very similar in appearance to bumble bees but lack dense hair on the tail end. The solitary females bore holes in unprotected wood, where they create and provision chambers for each of their eggs. Females will sting if handled, but they do not sting to protect their nests. Harmless males readily chase anyone approaching a nest entrance. Entomology Leaflet #29\* discusses the control of carpenter bees.

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\*To obtain Entomology Leaflets No. 29 and 76, contact your county or Baltimore city Extension agent (listed in the blue pages of local phone books under "Cooperative Extension Service").

# Wasp and Bee Stings

Both honey bees and wasps have barbed stings.\*\* Honey bees and some wasps will leave the sting in the skin where it continues to pump in more venom. As soon as you are stung, inspect the site and remove any material still in the skin. The faster you pull away or scrape off the sting, the less venom will be injected, and the smaller the resulting swelling.

Although a wasp or bee sting can be very painful, the normal reaction of most people is usually limited to discomfort at the sting site. After the sting's initial burning pain, the site reddens and may swell. This occurs within an hour of the sting. During the next several days the sting site may itch as well as burn and stay swollen. Itching persists even after the swelling and redness fade. Your physician may recommend an over-the-counter medication to alleviate these symptoms. Some people react more strongly than others and may experience severe swelling associated with the sting site. As long as symptoms remain localized there is no need for alarm (for instance, it is normal for your arm to swell if you are stung on the hand). However, people who suffer allergic reactions, rather than local reactions, should seek medical assistance immediately (see following list). In some cases, even a single sting can be fatal.

## Life-Threatening Reactions

Most life-threatening reactions from stings occur within the first hour of being stung. Symptoms include some or all of the following:

- Labored breathing
- Difficulty swallowing
- Hoarseness or thickened speech
- Nausea or vomiting
- Weakness
- Dizziness or confusion

Severe allergic reactions to wasp and bee stings are rare, but the normal pain, burning, and itching are often misinterpreted as allergic responses. If you suspect you are allergic to wasp or bee stings, ask your physician about receiving immunotherapy and appropriate first aid measures.

## First Aid Following a Sting

- Remove the sting if it remains in the skin. Scraping it away with a fingernail or credit card works as well as pulling it out if tweezers are not readily available.
- Apply a cold compress to minimize pain and swelling. These symptoms will return when the compress is removed. Other home remedies may benefit the victim psychologically but will not change the reaction.
- If any of the symptoms of true allergy are exhibited (see above), seek immediate medical attention.

## Avoiding Stings

Following are steps to take to keep from getting stung:

- Be careful and alert when doing yard work. Most people are stung while working outside.
- Avoid eating or drinking outdoors. Almost any food attracts stinging insects, and they may fall into drinks. If you drink outside, put beverages into clear containers that you can inspect before each sip, or use totally closed containers with only a narrow straw at the opening.
- Do not go barefoot outdoors. Understandably, insects sting when stepped on.
- Be cautious around outdoor pools. Many stinging insects collect water from pools and some inevitably fall in. These waterlogged struggling insects cling to bathers and may sting.
- Stay on established trails in parks and other natural areas. Nests will probably have been removed from well-traveled areas, and if you do encounter angry wasps or bees, your escape route is clear.
- If you accidentally bump or bother a nest, walk quickly or run toward shelter. A colony that has been disturbed remembers the incident for about two weeks (the life span of any individual worker). During this time even less provocation will cause the colony to respond more aggressively.

An occasional stinging insect trapped in the home can be swatted, but at present no means exist to eliminate these insects outdoors. However, the following steps will minimize the attractiveness of a home or other premises to yellowjackets:

- Keep garbage tightly covered.
- Do not feed pets outside.
- Promptly clean up pet feces.
- Keep the ground under fruit trees clear of fallen fruit.

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\*\* "Sting" is the correct term for what most people erroneously refer to as a "stinger."

## Stinging-Insect Myths

**Myth:** Bees are the usual offenders.

**Fact:** Most stings come from yellow-jackets.

**Myth:** Individual stinging insects are short-tempered and aggressive.

**Fact:** These insects are aggressive only when their nest is disturbed. Away from the nest they sting when struck or squeezed.

**Myth:** A sting left in the wound means a honey bee was the culprit.

**Fact:** Honey bees always leave their sting behind, but at least one common species of yellowjacket often loses its sting after an attack.

**Myth:** Swelling and itching at the sting site indicates an allergic reaction.

**Fact:** Swelling and itching are normal reactions. In contrast, allergic reactions involve the whole body, with symptoms such as generalized rash, weakness or dizziness, nausea or vomiting, and difficulty breathing.

**Myth:** One can avoid stings by wearing white clothing, long sleeves, and tight-fitting clothes; by not using perfumes and colognes, and by avoiding flowers and trash receptacles.

**Fact:** This advice is often repeated but has little to do with whether stings occur.

**Myth:** Traps and general outdoor spraying will minimize stinging insects.

**Fact:** Traps sold for yellowjacket control may catch hundreds of insects but do not necessarily make any real difference in local populations or reduce the risk of getting stung. In addition, traps need regular maintenance to remove dead insects and replace bait solutions. Traps can kill large numbers of beneficial honey bees from colonies nearby. Baits, specific to many stinging insect pests, are in development but are not yet available.