

# Carpenter Ants

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Entomology

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## Identification

Carpenter ants are among the largest ants in Minnesota. Workers, usually black, or red and black in color, range in size from 3/8 to 1/2 inch. Queen ants may be up to 1 inch in size. However, size is not reliable for identifying carpenter ants. Ants are divided into different castes, i.e. queens, males, and major and minor workers (fig. 1).

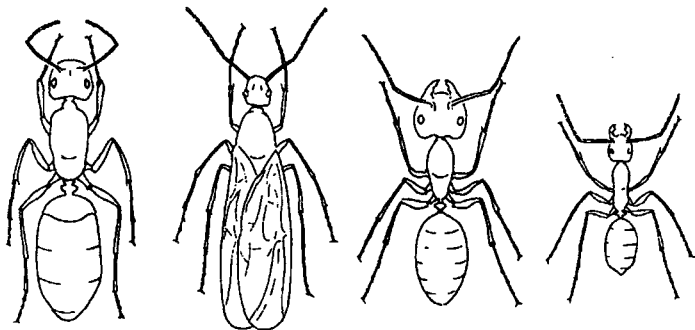


Figure 1. Carpenter ant castes, from left to right: queen, winged male, major worker, minor worker

Within one species the size of workers can vary considerably. The best way to separate carpenter ants from other ants is by the following characteristics: (1) a waist with one node (petiole) and (2) a thorax with an evenly rounded upper surface (fig. 2).

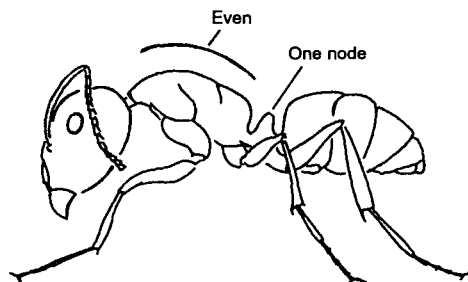


Figure 2. Carpenter ant worker

There are other ants that appear similar and are occasionally mistaken for carpenter ants. They may have one or two nodes and can be distinguished from carpenter ants by the uneven profile of their thorax (fig. 3).

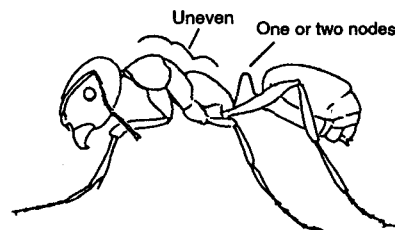


Figure 3. Typical non-carpenter ant worker

These ants are usually not wood-infesting. Therefore, it is important to correctly identify the ants before attempting control, as control strategies vary with different nesting sites.

## Ant or Termite?

Carpenter ants differ from termites by having dark-colored bodies, narrow waists, elbowed (bent) antennae, and, if present, hind wings shorter than front wings (fig. 4).

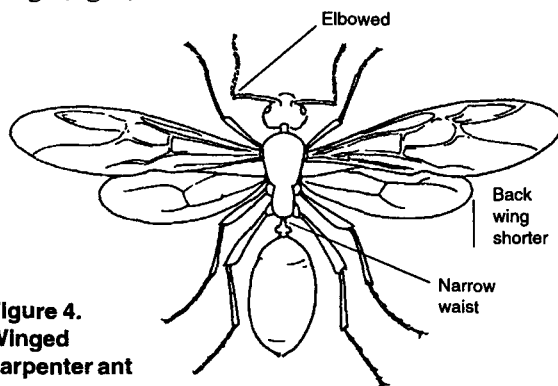


Figure 4. Winged carpenter ant

Termites are light-colored, have no waist constrictions, have straight antennae and, if present, wings of equal length (fig. 5).

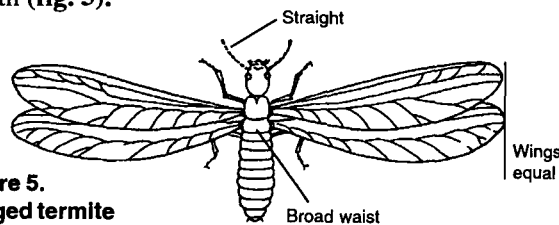


Figure 5. Winged termite

Carpenter ants are commonly seen in the open, but termites avoid light and are rarely seen. Refer to "Are They Really Termites?" (AG-FS-0994) for more information on termites.

## What They Eat

Carpenter ants feed on insects, both living and dead. Honeydew, a sweet liquid produced by aphids and scale insects, is particularly attractive. They also eat meats or sweets, including syrup, honey, sugar, jelly, grease, and fat. Carpenter ants DO NOT eat wood; they chew wood to create galleries and tunnels.

They do most of their foraging at night between 8:00 p.m. and 4:00 a.m. during spring and summer months. Sometimes workers travel up to 100 yards from a nest in search of food.

## Where They Live

Carpenter ants nest in moist wood. This includes places such as rotting trees, tree roots or tree stumps, and logs or boards lying on or buried in the ground. They may also nest in buildings in moist or decayed wood that may result from exposure of the wood to leaks, condensation, or poor air circulation. Nests have been found behind bathroom tiles; around tubs, sinks, showers, and dishwashers; under roofing, in attic beams, and under subfloor insulation; and in hollow spaces such as doors, curtain rods, and wall voids. Carpenter ants may also nest in foam insulation.

A parent carpenter ant colony sometimes establishes one or more satellite nests in nearby indoor or outdoor sites. Satellite nests are composed of a relatively small number of workers, pupae, and mature larvae. A satellite nest does not require moisture because the workers do not tend eggs; the eggs dry out without sufficient humidity. For this reason, sound wood may be infested by satellite nests. Satellite nests can be potentially more damaging because of the ants' ability to nest in sound wood. The workers of satellite colonies move readily between their nest and the parent colony. In summer, winged reproductives, i.e. queens and males, may emerge from pupae transported into satellite colonies.

## Damage

Carpenter ants damage wood by excavating and creating galleries and tunnels. These areas are clean, i.e. they do not contain sawdust or frass, and are smooth, with a sandpaper-like appearance (**fig. 6**).

The damage to wood structures is variable. In most cases damage from carpenter ants is slight because they nest in wood previously and primarily damaged by moisture. However, if timbers are weakened, carpenter ant damage can be severe. As a colony grows and moist wood is unavailable, the ants may expand the nest into dry, sound wood. If sound wood is involved, structural damage can occur more quickly, possibly as soon as several months.



Figure 6. Damage caused by carpenter ants

## Carpenter Ants During Spring

It is common to find carpenter ants in homes during spring. It is important to try to determine whether the ants are coming from an outdoor or an indoor nest, although this can be difficult. Their presence is not sufficient evidence to conclude that there is a nest in your home. You may be able to make a more accurate determination based on when you first see carpenter ants. For example, if you find carpenter ants in your home within several days of the first warm, sunny weather in March or April, that suggests the ants are coming from a nest in or very near the building.

If your first sighting of carpenter ants does not occur until weeks or months after the onset of spring weather, those carpenter ants may be coming from an outdoor nest and are only foraging for food. However, it is also possible that they could be a satellite nest establishing an indoor colony.

You may also see carpenter ant swarms, i.e. the reproductive queens and males, during spring (**fig. 1 and 4**). Carpenter ants produce large numbers of winged queens and males during late summer. These winged ants emerge from nests the following year in spring for their nuptial flights. After mating, queens search for suitable sites to begin new nests. Once they land, their wings break off and the queens start constructing new nests.

When carpenter ant nests are indoors, mating swarms become trapped inside. Finding large numbers of winged ants indoors is a sure sign that an indoor nest exists and may give the approximate location of the colony.

Finding one to several winged queens (**fig. 4**) does not automatically mean a nest is present indoors. It is more likely the queens have just mated and have entered the home, searching for nesting sites. Wingless queens (**fig. 1**) found walking indoors are new queens that have recently shed their wings but are still searching for nesting sites. They are not an indication of an indoor nest.

# Carpenter Ants During Winter

In almost all cases, carpenter ants seen inside during winter are an indication that there is an indoor nest. One exception is when ants are brought into buildings in firewood. Workers from firewood are not able to start nests in homes, nor do they damage wood structures in buildings.

Carpenter ants nesting in homes may become active in winter if the nest receives sufficient warmth from sunlight, mild outdoor temperatures, or from indoor heat. When ants are active during winter they will forage at night, searching for moisture. It is common for a home dweller to enter a room early in the morning, turn on the lights, and see ants scurrying for cover. Common places to sight them are cabinets, sinks, dishwashers, rolled-up towels, bathroom tubs, sink and toilet areas, or other places where moisture is abundant. On a bright sunny day, ants may be seen walking randomly through different areas of the house.

It is also possible for a carpenter ant nest to exist in a house during winter but not be noticed. If the nest exists at a site that does not receive sufficient indoor heat or sunshine, e.g. a north-facing outside wall, the ants will remain dormant until spring.

## Prevention

The best way to prevent carpenter ant problems inside is to eliminate high moisture conditions that are attractive to them. Also, replace any moisture-damaged wood. Be careful that wood or lumber that is stored in a garage or near the house is kept dry and, if possible, elevated to allow air circulation.

Store firewood as far away from buildings as possible. Trim branches that overhang the home. **Note: Be sure the tree or shrub species can be pruned at the time you wish; e.g., do not prune oak between April 15 and July 1 because of the risk of oak wilt.** Also, prune branches that touch electrical lines or other wires that are connected to the house; carpenter ants can travel from branches to lines and use them like a highway to buildings.

## Detection

In order to eliminate carpenter ants nesting indoors, you need to locate and destroy their nest. To prevent the possibility of reinfestation, eliminate damaged or decayed wood and correct moisture problems.

The nest may be located by careful and patient observations of worker ants, especially between 8:00 p.m. and 4:00 a.m. during spring and summer months when carpenter ants are most active. Other signs that indicate an active nest is nearby include small piles of coarse sawdust or wood shavings, consistent indoor sightings of large numbers of wingless worker ants, i.e. 20 or more (the later it is in the summer, the more ants you can expect), and large swarms of winged ants in late winter or spring.

Also pay attention to areas where steady moisture is or has been a problem; firewood stored in an attached garage, next to the foundation, along an outside wall, or in a basement; the basement area around the plumbing or vent entrances; and trees with branches overhanging the house. These are possible sources of carpenter ant nests.

Sound detection may be helpful in locating a nest. An active colony may make a dry, rustling sound that becomes louder if the colony is disturbed. This sound, thought to be a form of communication, is made with the mandibles (jaws) and is not related to wood chewing. When trying to detect carpenter ants, tap the suspected area and then press an ear to the surface in order to hear any sound.

More than one nest may be present in a house. If one nest is found, watch for evidence of additional nests.

## Control

### Indoors

Every effort should be made to locate and destroy the nest, replace damaged or decayed wood, and if possible eliminate any moisture problems. When the nest is concealed, e.g. behind a wall or in a hollow door, it may be necessary to drill small holes, about 1/8 inch diameter, and apply an insecticidal dust labeled for use indoors. Products available to the public for this purpose include: bendiocarb (e.g. Ficam), chlorpyrifos, and boric acid (e.g. Roach Prufe). These products may come in ready-to-use applicators. If not, use a plastic squeeze bottle or some type of flexible plastic container with a tube tip to apply the insecticide. Fill the container about 1/3 or 1/2 full and squeeze a small amount of dust into the desired location. **CAUTION: Read all label directions carefully before buying insecticides and again before applying them.**

If you can not find the nest's exact location, you can dust into wall voids through electrical outlets. Carpenter ants commonly travel along electrical wiring and are likely to encounter the insecticides. This method works more slowly than a direct treatment into the nest. **CAUTION: Use extreme care around electrical wiring and take all necessary steps to avoid accidental electric shocks.**

If the nest is exposed, e.g. due to remodeling or reroofing, you can use a liquid or aerosol ready-to-use product containing a residual insecticide, such as chlorpyrifos (e.g. Dursban), permethrin, propoxur (e.g. Baygon) [may be listed as *o* Isopropoxyphenyl methylcarbamate], cyfluthrin, or fenvalerate [may be listed as cyano(3-phenoxyphenyl)methyl 4-chloro alpha-(1-methylethyl) benzeneacetate]. Spray the insecticide directly into as much of the nest as possible.

You can purchase insecticides from hardware stores, garden centers, variety retail stores, and similar places.

Sprays on surfaces where ants travel or congregate, such as along baseboards or in holes or cracks in the walls and floors, may reduce the frequency and number of ants you see. However, they are not effective for nest control because 1) the ants carry very little insecticide back to their nests and 2) most ants forage outside and do not come in contact with the insecticides. Baits, such as Terro, are not effective against carpenter ants. Carpenter ants have such a wide range of feeding habits that baits currently on the market are not consistently attractive to control them.

Be aware of the potential for more than one nest in a building, but only treat nests that you know exist. Do not treat areas of a building where additional nests are not found. If a carpenter ant treatment is done correctly, it is not necessary to make additional applications.

Pest control operators have the training and experience to deal with carpenter ant problems. They also have access to insecticides not available to the public. Contact a reputable pest control company if you want to have your carpenter ant problem handled by a professional.

## Outdoors

Often carpenter ant nests found indoors are satellite nests that can be traced back to a parent colony outdoors in trees, stumps, fence posts, landscape timbers, and other wood structures. When possible, remove wood that contains carpenter ant nests, or destroy the colony.

When this is not practical, and there is evidence of carpenter ants entering your home, spray an insecticide around the building's exterior in a band, covering the

foundation and under the lower edge of the siding to help keep ants from coming inside. Trim branches that overhang buildings or electrical wiring to avoid giving carpenter ants easy access to your home.

**Note: Be sure the tree or shrub species can be pruned at the time you wish, e.g., do not prune oak between April 15 and July 1 because of the risk of oak wilt.**

Insecticides available to the public for this use include chlorpyrifos or diazinon. These insecticides are purchased as liquid ready-to-use or liquid concentrates and are available in many stores, including hardware stores, gardening centers, and variety retail stores. **CAUTION: Read all label directions carefully before buying insecticides and again before applying them.**

Professional pest control services have the training and experience to deal with carpenter ant problems. They also have access to longer lasting insecticides, such as Ficam. Contact a reputable pest control company if you want a professional to treat your home's exterior.

## In trees

Carpenter ants nest in trees in one of two situations: 1) in rotted, decayed wood or 2) in the center heartwood section of the tree. In neither case are they harmful to the tree. Control is unnecessary for the trees' health, as the ants are taking advantage of preexisting soft, weak wood to establish their colony. Insects, disease, or environmental conditions, such as drought, are often responsible for weakening and killing limbs or sections of trees. This allows wood rot to set in, which results in wood decay, giving carpenter ants the opportunity to colonize the tree. Carpenter ants use knots, cracks, holes, and old insect tunnels to gain access to these areas.

Control of carpenter ants in trees is difficult and impractical. Of more importance is the possibility of satellite nests entering homes from colonies in trees. If there is evidence of this, the best control is a perimeter treatment around the building (see above, **CONTROL: Outdoors**).



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