

# Carpenter Ants



Wizzie Brown and Roger E. Gold\*



Carpenter ants, *Camponotus sp.*, are social insects that make their colonies primarily in wood. They hollow out wood or excavate insulation to build their nests. Unlike termites, they do not eat wood.

Outdoors, carpenter ants are not serious pests. Although their excavations may occasionally weaken tree branches and limbs, in most cases, carpenter ants nest in wood that is already rotten or damaged by termites.

They become pests when they nest or forage for food in homes and other buildings. An infestation usually begins when part of an existing colony moves into a house.

The presence of carpenter ants can indicate that a building has problems such as moisture, rotting wood, or other conditions conducive to infestations. Texas species of carpenter ants cause less damage to structural wood than do carpenter ants from other parts of the United States. They are nuisance pests and rarely cause damage to framing lumber. But, their presence is especially undesirable for home sellers in Texas because they are considered a potential wood-destroying organism.

## Identification

Carpenter ants are relatively large. Adults (Fig. 1) vary in length from about ¼ inch to ⅝ inch for worker ants, and up to ¾ inch for winged



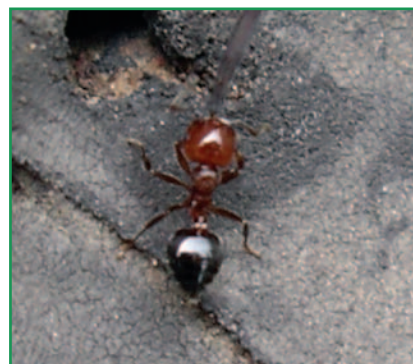
Figure 1. Adult carpenter ant.

reproductives (kings and queens). Each colony has only one functional queen, except in mature colonies during the swarming season.

Carpenter ants can be yellowish red, solid black, or a combination of black, red, and reddish orange. Unlike other ants, they have only one segment (or node) between the thorax and abdomen, a circle of hairs at the tip of the abdomen, and an evenly rounded thorax (no spines or bumps) when viewed from the side.

Winged carpenter ants resemble winged termites and, in Texas, it is not uncommon for both of these wood-destroying insects to swarm at the same time. It is vital that they be identified accurately, because control measures differ greatly between the two insect groups.

Ants are constricted between the thorax and abdomen and have a “wasp waist.” Their wings are

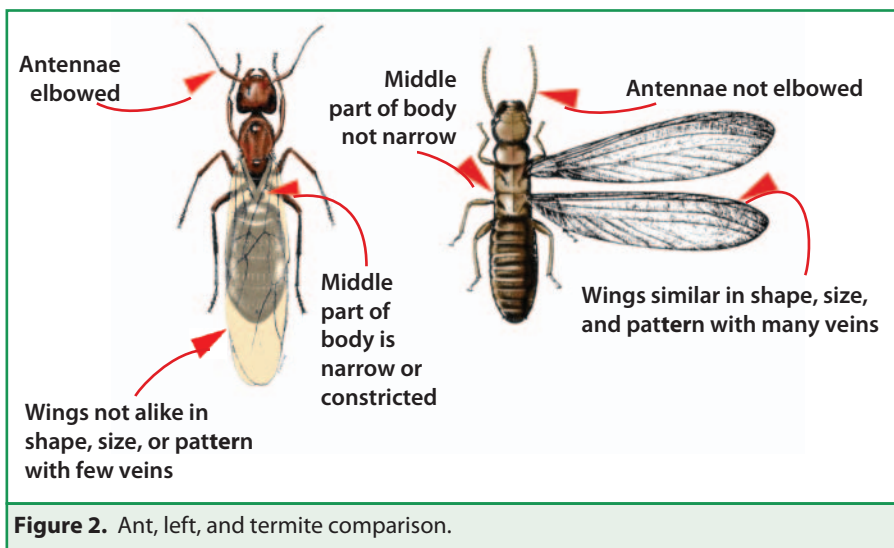


The acrobat ant.

### The carpenter ant look-alike

Acrobat ants, *Crematogaster sp.*, are often confused with carpenter ants since both may nest in dead wood. Acrobat ants are smaller than carpenter ants, ⅛ inch to ⅜ inch, and have a heart-shaped abdomen.

\*Extension Program Specialist, Integrative Pest Management; Professor and Extension Specialist in Urban Entomology, The Texas A&M System.



unequal in length, with the front pair longer than the hind pair. Their antennae are bent at right angles about mid-length (Fig. 2).

Termite bodies are broadly joined between the thorax and abdomen; their wings are of equal length; and their antennae are straight with bead-like segments.

## Biology and habits

Mature carpenter ant colonies produce male and female winged reproductive ants (Fig. 3). Environmental conditions cause reproductive ants to emerge and swarm. They mate during these swarms (nuptial flights), which may occur over several days or weeks. After the nuptial flight, the males die and the females begin searching for a nesting site.

After establishing the nest, the female lays eggs and cares for the larvae by feeding them with fluids secreted from her body. Under favorable conditions, the larvae grow, pupate, and become adult worker ants in 4 to 8 weeks. After becoming adults, the new generations of workers expand the nest, excavate galleries, and take over the task of providing food for the queen and larvae.



**Figure 3.** Winged reproductives—male on left, female on right.

Carpenter ant colonies start out small the first 2 or 3 years, but then grow rapidly. In 4 to 6 years they can contain up to 3,000 or more ants, depending on the species. These ants can also have interconnected satellite colonies.

Older, mature colonies continuously produce winged reproductives to replace those that die. They produce 200 to 400 winged individuals for reproductive flights each year. Winged reproductives usually develop in late summer, spend winter in the nest, and swarm in spring and early summer.

## Nesting sites

Carpenter ants normally build their nests in hollow trees, landscaping timbers, logs, posts, and wood used in homes and other structures. They shelter themselves and their brood (eggs, larvae, pupae) in wood and gaps in insulation and wood framing. Colony growth for some species is influenced by moisture, with higher moisture levels favoring growth and brood development. This may explain why carpenter ant nests are more common in wood with higher moisture content.

Carpenter ants excavate their galleries following the grain of the wood and excavate the spring, or lighter-colored, wood rings. Unlike termites, which often line their wood galleries with mud, the carpenter ant galleries are clean and smooth.

They carry dead insects, shredded wood fragments, and other nest debris from the excavations and place them outside. Cone-shaped piles of these fragments, or frass piles, build up beneath nest openings. If you look closely, you can see the “kick-hole” or tiny opening to the gallery, where ants bring frass to drop it from the nest. Locating a kick-hole provides a way to access a nest for treatment with an insecticide. Frass is not always visible because ants may dispose of it in hollow parts of trees, in unused galleries in the nest, or in void areas in structures.

Carpenter ants enter structures through cracks and crevices around windows and in foundation walls, through heating or air-conditioning ducts, where tree branches or utility lines contact a structure, and through ventilation openings in the attic.

They nest in wood that is moist or has been previously damaged by water or termites. This damage can happen where there is a leak, condensation, or contin-

uously high relative humidity. Typical nest locations include:

- wood affected by clogged gutters, damaged flashing, improper pitch of porch floors, leaking door and window frames, or water seepage from water leaks;
- wood between the ceiling and roof of flat-deck porches;
- areas around plumbing in kitchens and bathrooms where water leaks have soaked the surrounding wood;
- wood in contact with soil, such as porch supports, siding, and stair risers;
- wood in areas of poor ventilation or condensation such as attics, cellars, crawl spaces, and under porches;
- voids or insulation around bathtubs, hot tubs, or showers;
- hollow ceiling beams, shower and curtain rods, wooden doors, porch posts and columns, and tongue-and-groove construction;
- window and door framing;
- attic, crawl space, and wall insulation, including rigid foam board insulation.

## Diet

Carpenter ants are omnivorous. They eat a great variety of both animal and plant foods including fresh fruits; honeydew from aphids, scale insects, and other plant-sucking insects; living or dead insects; plant juices; other small invertebrates; common sweets such as fruit, honey, jelly, sugar, and syrup; and most kinds of fat, grease, and meat. Unlike termites, they cannot digest wood cellulose.

Carpenter ants forage mostly at night, following fence rails, garden edging, tree branches, water hoses, or other linear guidelines to make their way from a nest in a tree to indoor locations.

## Management

### Inspection

The key to managing carpenter ants is to identify all locations where a colony could exist. Thoroughly inspect the structure, both inside and out. Carefully examine common infestation areas for signs of carpenter ants. Conical piles of shredded wood debris (frass piles) indicate that a nest may be nearby.

Outside a structure, examine any attached fences, dead or dying shrubbery, roof edges, tree stumps,

trim boards, and wooden porch floors and columns. Also inspect overhanging power or utility lines, tree limbs, and vines. In living trees, openings to a nest usually occur in crotch angles, dead areas, knotholes, or scars. Carpenter ants may travel as far as 100 yards from their nest to a food source; you can sometimes follow foraging carpenter ants to find their nest.

During the inspection, you may find other wood-infesting insects or damage they caused. For more information, refer to Extension publications E-368, *Subterranean Termites*; E-367, *Formosan Subterranean Termites*; E-366, *Drywood Termites*; and L-1826, *Carpenter Bees*.

### Prevention

These actions can reduce the likelihood of carpenter ant infestations:

- Correct moisture problems such as leaking faucets, roof leaks, and water drainage issues.
- Replace termite- or decay-damaged wood.
- Ensure proper clearance between soil and structural wood.
- Provide good ventilation under the house and in the attic.
- Remove logs, stumps, and wood debris near the house. Store firewood away from the house.
- Trim tree or shrub limbs that touch the structure.

## Insecticide treatment

### Baits

Baits are a mixture of a toxicant and food that is attractive to carpenter ants. Baits can reach colonies in out-of-reach or undetected locations and are relatively safe and easy to apply. Several commercial products designed specifically for carpenter ant control include such active ingredients as abamectin, fipronil, and hydramethylnon. This type of insecticide is effective when foraging carpenter ants take the baits and pass the toxin to the queen and brood.

Carpenter ants can be selective in what baits they will accept. Some colonies readily take baits; others accept only certain baits at different times of the year. Carpenter ants tend to have a varied diet, so availability of other foods may also play a role in bait acceptance. If you buy a carpenter ant bait and it is not readily carried away by the ants, try the same product later in the season and it may work.

Do not use the containerized baits that are commonly sold in grocery and hardware stores

and are designed for general ant control around the home. They are not effective for Texas carpenter ants. Instead, use carpenter-ant-specific baits in gel or granule form, which are available online, through pest control companies, or through specialized, do-it-yourself pest control shops.

### **Nest treatment**

One of the most effective ways to treat carpenter ant nests is to apply an insecticide dust, aerosol, or foam directly into the nest galleries.

Drill 1/8-inch holes into the suspected nest area and inject the insecticide. You may need to drill holes into hollow doors, wall voids, and window and door frames. Pesticide dusts are particularly effective because they can better penetrate cavities and may be carried by ants deeper into the nest. Use only products labeled for such uses. Boric acid dust is not an effective product for carpenter ant control.

Treat wooden structural members and other exposed, frequently wet wood with a wood preservative to slow decay. Products made with boron salts are toxic when ingested by insects that feed on the wood. They can also be used to protect against wood decay; however, these products will not control carpenter ants since carpenter ants do not actually ingest wood.

### **Hire a professional**

Carpenter ant control is highly specialized, and treatments for termites or other pests will not control carpenter ants. Because carpenter ants can be

difficult to control, the best solution is often to hire a pest management professional. Professionals are familiar with the biology and control of local species of carpenter ants and have experience in finding the nests. Also, pest management professionals have access to insecticides that may not be available to consumers. Consider the cost of control versus the expected benefit.

Because carpenter ants in Texas rarely cause significant structural damage, the presence of a few carpenter ant workers or even an occasional swarm of carpenter ants in the home may not justify an expensive treatment program. Carpenter ant control can be accomplished via several visits over a month or two, or can be part of an annual pest control contract. Do not feel compelled to sign an ongoing contract if you are concerned only about carpenter ants. On the other hand, a pending real estate transaction may justify an aggressive carpenter ant management effort.

---

### **Acknowledgments**

The authors would like to thank Kim Schofield, Mike Merchant, and Salvador Vitanza for review of this publication.

All images courtesy of Mike Merchant.

---

### **Produced by AgriLife Communications, The Texas A&M System**

Extension publications can be found on the Web at <http://AgriLifebookstore.org>

Visit Texas AgriLife Extension at <http://AgriLifeExtension.tamu.edu>

**Texas A&M AgriLife Extension Service** *AgriLifeExtension.tamu.edu*

More Extension publications can be found at *AgriLifeBookstore.org*

Educational programs of the Texas A&M AgriLife Extension Service are open to all people without regard to race, color, sex, disability, religion, age, or national origin.