

Carpenter Ants

John D. Hopkins
Associate Professor and
Extension Entomologist

Kelly M. Loftin
Associate Professor and
Extension Entomologist

Identification

Carpenter ants (Figure 1) are among the largest of the common ants seen in Arkansas. They are a nuisance by their presence when found inside the home. They do not eat wood, but remove quantities of it to expand their nest size, sometimes causing structural damage.

Winged forms are called alates with winged males being smaller than winged females. Wingless queens measure 5/8 inch, winged queens 3/4 inch, large major workers 1/2 inch and small minor workers 1/4 inch.

Color varies with species ranging from black to red with some species being a combination of both. Workers are usually reddish-brown to black in coloration. Workers have large heads and a small thorax, while adult swarmers have a smaller head and large thorax. The petiole has one node, and the profile of the thorax, in workers only, has an evenly rounded upper surface (Figure 2).

These ants usually nest in logs, stumps, hollow trees or decayed wood, but may be found nesting in sound lumber. Infestations often occur in or near homes where they may be confused with termites. Carpenter ants are most active at night, emerging from the colony after sundown.



Figure 1. Carpenter ant (worker)



Figure 2. Carpenter ants have a single node on the petiole, and the thorax has a rounded upper surface.

People sometimes confuse carpenter ants with termites. Termite workers are small, 1/8 to 3/16 inch long, white and do not run freely over unexposed surfaces. Winged termites are black, 1/8 to 3/16 inch long and have four milky-colored wings all of the same length. The winged forms only occur during flight from the colony and may

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appear suddenly in large numbers. **Size alone is sufficient to distinguish between termites and carpenter ants.**

When crushed, carpenter ants have a distinct acid (formic) odor. Carpenter ants are common household pests that are especially fond of sweet foods. They will bite people, but do not sting since they do not possess a stinger.

Life History

All ants undergo complex metamorphosis, or change, and pass through the following stages: egg, larva, pupa and adult. At the end of their developmental period, the larvae pupate and eventually emerge as workers. Under normal conditions, the egg-to-adult sequence takes about 60 days. The colony does not produce reproductives (winged males and females) until it is from 6 to 10 years old and contains about 2,000 workers. Alates, or winged reproductives, are produced in the late summer, overwinter in the colony and swarm the following spring or early summer. After mating in the air, the male dies and the newly mated female (queen) searches for a nesting site. Upon finding a suitable site, the new queen breaks off her wings, establishes a nest and lays about 20 eggs.

Carpenter ants may establish nests in a number of different locations, both inside and outside the structure. Also, two kinds of nests are constructed. Parent colonies, when mature, contain an egg-laying queen, brood and 2,000 or more worker ants. Satellite colonies may have large numbers of worker ants but no queen, eggs or young larvae. Carpenter ants inside a home may have originated from the parent colony or from one or more satellite nests. The extent and potential damage to a home depends on how many nests are actually present within the structure and how long the infestation has been active. Although large carpenter ant colonies are capable of causing structural damage, the damage is not normally as serious as that from termites. In some cases, the damage may be relatively insignificant, but damage assessment can only be made after the nest area is located and exposed.

The natural food for these ants consists of insects and other arthropods in addition to sweet exudates from aphids and other insects. Carpenter ants are also attracted to other sweet materials such as decaying fruits.

Signs of Infestations

The following are signs of carpenter ant infestations:

- Large, dark-colored ants running outside or inside the home.
- Piles of coarse sawdust-like borings, most likely in a garage, basement, window frame or porch.
- Swarms of large, black, winged ants in or near the home.

Damage

Carpenter ants damage wood by excavating or hollowing out nesting cavities. They do not eat the wood. Their excavated galleries in wood have a smooth, sandpapered appearance. Wood damaged by carpenter ants contains no mud-like material, as is the case with termites. Shredded fragments of wood are ejected from the galleries through preexisting cracks or slits made by the ants. These accumulations (typically containing dead ants and bits of insects which the carpenter ants have eaten) are a good indication that a carpenter ant nest is nearby. Usually, however, the excavated sawdust remains hidden behind a wall or in some other concealed area. Although carpenter ants prefer moisture-damaged wood for nesting, they will burrow in seasoned hard or soft wood, sometimes causing structural damage that requires repair. However, nests are more likely to be found in wood dampened by water leaks. They usually enter a house through openings around foundations or windows. The portions of a home to examine for damage are sills, joists, studs, supporting timbers and casings.

Preventing Infestations

To prevent a carpenter ant infestation, correct moisture problems that are attractive to the ants. Also, caulk or seal all openings that can be found to prevent ant entry, eliminate structural wood-to-ground contact, control colonies outside that are near the home, do not bring infested fireplace logs into homes and remove decaying stumps, logs or large pieces of wood near homes. Remove all tree limbs that overhang the roof and vegetation in contact with the structure. Carpenter ants commonly drop from limbs to the roof and enter homes in this manner. Homeowners may also wish to check the electrical and

water lines entering the house. These frequently provide ready access to the house for the ants. Plugging the gaps with a plastic caulking material will deter entry by the ants.

Control

Carpenter ants are most effectively controlled when their nests are located and destroyed. Carpenter ants follow distinct scent trails between the satellite colonies and the parent nest. They also rely on scent trails to recruit their nest mates to food. With patience and a little effort, homeowners can use this trailing behavior to locate and eliminate the nests. When carpenter ants are first observed, **do not spray them**. Instead, use a sweet bait (diluted honey) to attract them and then follow the ants as they return to their nest. Carpenter ants are most active late at night, so be persistent and eventually the nest will be located. Treat wall voids and other hidden spaces where ants are entering by drilling a series of small (1/8-inch) holes and puffing boric acid into the suspected nest areas. Boric acid powder will disperse in the hidden void and contact and kill the ants. If you suspect the nest is in a wall, drill and treat at least 3 to 6 feet on either side of where ants are entering so as to maximize the chances of contacting the nest. Nests, when located, may also be treated with insecticide sprays containing bifenthrin (Ortho), cyfluthrin (Bayer Advanced) or permethrin (Spectracide, etc.). As a safety precaution, do not apply sprays near electrical lines.

Carpenter ants seen in the home may actually be nesting outdoors and only foraging indoors. Consequently, ants baited inside may lead you to a parent nest outdoors, or if the use of indoor treatments fails to solve the problem, then outdoor nests may also be treated with insecticide sprays containing bifenthrin (Ortho), cyfluthrin (Bayer Advanced) or permethrin (Spectracide, etc.). If outdoor nests are suspected, the homeowner should also inspect around the foundation of the building at night with a flashlight, especially around doors, weep holes and openings where utility pipes and wires enter the structure.

Sometimes, but not always, carpenter ants can be managed through the use of insecticidal baits. If baits are chosen as the method of control, do not apply insecticide sprays to ants or bait as this contamination will make the bait unacceptable to

foraging carpenter ants. Insecticidal ant baits that have shown promise in controlling carpenter ants include abamectin B1 (Advance Carpenter Ant Bait), fipronil (Combat Ant Killing Gel, MaxForce Carpenter Ant Bait Gel), hydramethylnon (Combat Outdoor Ant Killing Granules) and sodium tetraborate decahydrate (Terro Ant Killer II, liquid borax bait). Check the bait label to be sure it is effective against carpenter ants and whether it is labeled for indoor and/or outdoor use.

All chemical information is given with the understanding that no endorsement of named products is intended, nor is criticism implied of similar products that are not mentioned. Always read and follow label directions. Before purchasing or using any pesticide, always read and carefully follow the directions on the container label.

For additional recommendations, see the Household Section of MP144, *Insecticide Recommendations for Arkansas*. This publication is available at your University of Arkansas county Extension office.

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Revised from FSA7013, Household Insect Series: Carpenter Ants, authored by Bill Jones (retired), former Extension entomologist, University of Arkansas, Fayetteville, Arkansas.

Printed by University of Arkansas Cooperative Extension Service Printing Services.

DR. JOHN D. HOPKINS is associate professor and Extension entomologist and **DR. KELLY M. LOFTIN** is associate professor and Extension entomologist with the University of Arkansas Division of Agriculture, Little Rock and Fayetteville, respectively.

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FSA7013-PD-3-13RWC