



Carpenter Ants

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Carpenter ants are social insects that live in colonies, primarily in wood. They hollow out wood to build their nests, making their galleries and chambers velvety-smooth as if a carpenter had sanded the surfaces. Their tunneling in wood and foraging for food and water lead to their “pest” status in or around homes.

Carpenter ants are an excellent indicator of moisture problems in a building, or other conditions conducive to their infestation, such as rotting wood, that need attention. Those of economic importance as wood destroyers belong to the genus *Camponotus*, with 14 species occurring in Texas.

Homeowners can minimize damage to their houses from carpenter ants by learning how to identify the ants, knowing their nest site preferences, and taking proper preventive and control measures.

Identification

Carpenter ants are among the largest ants in the United States. Adults vary in length from about 1/4 inch (6 mm) for a minor worker, to 1/2 inch (12 mm) for a major worker, and up to 7/16 inch (18 mm) for winged reproductives. Each colony has one functional, wingless queen, 9/16 inch (20 mm) long.

The ants develop through several stages in their metamorphosis: egg, larva, pupa and adult. All stages can be found in a colony, but identification is made from the adults, which are the familiar ant-like insects with 6 legs, 3 distinct body regions with a constricted waist, and



Carpenter ant.

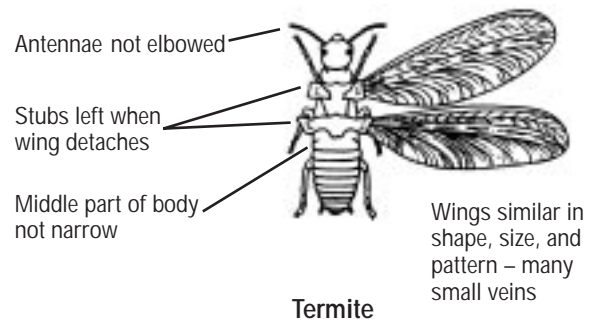
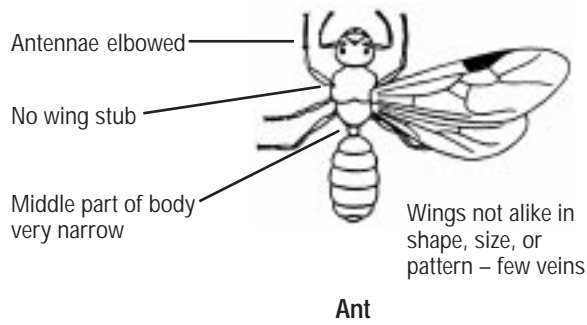
prominent elbowed antennae. These ants vary from a solid dull black or yellowish-red to a combination of black and dull red or reddish-orange. Carpenter ants have only one segment or node between their thorax and abdomen, a circle of hairs at the tip of their abdomen, and an evenly rounded thorax when viewed from the side.

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

Ants have small, constricted waists; wings of unequal length, with the front pair longer than the hind pair; and antennae bent at right angles about mid-length. Termite bodies are not narrowed at the middle; their wings are of equal length; and their antennae are rather straight with bead-like segments.

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DIFFERENCES BETWEEN ANTS AND TERMITES



Biology and habits

Mature carpenter ant colonies produce male and female winged reproductives from early spring to summer. Environmental conditions trigger their emergence, which may occur over several days or weeks. Mating occurs in flight, called a nuptial flight, after which the males die and the females begin searching for a nesting site. The new queen breaks off her wings either just before or after choosing the nesting site.

After establishing the nest, the female deposits 15 to 20 eggs. Under favorable conditions, the eggs progress through the larval and pupal stages and into the worker stage in about 2 months. The queen cares for the initial larvae and feeds them with fluids secreted from her body. After becoming adults, these new workers expand the nest as the colony population increases, excavate galleries, and provide food for the queen and the new brood (egg, larvae, and pupae).

The first-generation worker ants are small. They regurgitate food to nourish developing larvae. Older larvae are fed solid food; they feed partially digested food to the queen. The queen produces eggs for the rest of her life.

The colony remains small during the first year, but in later years it grows rapidly, up to a maximum of 2,000 to 3,000 ants. It usually takes 3 to 6 years for a colony to reach this size, at which time winged reproductives are produced. Upon reaching its mature size, the colony rarely grows larger, but workers are produced continually to replace ones that die or are lost.

A mature colony produces 200 to 400 winged individuals each year. Production drains colony resources, keeping ant numbers down. Winged reproductives usually develop in late summer, overwinter in the nest and swarm in spring and early summer.

Nesting sites

Carpenter ants normally build their nests in hollow trees, logs, posts, landscaping timbers and wood used in homes and other structures. Unlike termites, they do not feed on wood but merely use it as a place in which to build a nest. They prefer moist or partially decayed wood, frequently entering existing cavities or void areas through cracks and crevices.

The ants usually cut galleries with the grain of the wood, following the softer parts. They leave the harder wood as walls separating the tunnels. They cut openings in these walls to interconnect the galleries. Access to the outside may be through natural openings, or the ants may cut openings where none exist naturally.

Occupied galleries are kept immaculate. Shredded wood fragments from the excavations are carried from the nest and deposited outside. Cone-shaped piles of these fragments sometimes build up beneath the “windows” or other nest openings. The piles may also contain inedible parts of insects from their diet, bits of sand or soil, dead ant bodies from the colony, and general debris. This “sawdust” or “frass” is not always visible, because ants may dispose of it in hollow parts of trees, void areas in structures, or unused galleries in the nest.

Carpenter ants become pests when they nest in one of the voids or damp areas in human construction, or when they forage for food in our houses. Usually, an infestation occurs when all or part of an existing colony moves into a house from outside. Ants can enter when tree branches or utility lines contact a structure; through cracks and crevices around windows and in foundation walls; through ventilation openings in the attic; and through foundation heating or air conditioning ducts.

They usually nest in wood that is very moist or previously damaged by water or termites. A colony develops best in wood with moisture content above 12 to 15 percent. This requires the wood to be wet by rain, leaks, condensation or high continuous relative humidity. Typical locations include

- Wood affected by water seepage from plugged drain gutters, damaged flashing, wood shingle roofs, poorly fitted or damaged siding, improper pitch of porch floors, between the roof and ceiling of flat deck porches, hollow porch posts and columns, or leaking door and window frames;
- Areas around plumbing in kitchens and bathrooms where water leaks have occurred, soaking 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 cellars, crawl spaces, attics or under porches;
- Wood scraps in dirt-filled slab porches;
- Voids under bathtubs or hot tubs;
- Hollow wooden doors, hollow ceiling beams, hollow shower and curtain rods;
- Sill plates and floor joists;
- Voids under attic insulation or under insulation in crawl spaces; and
- Voids above windows, doors and bay windows.

Diet

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

They forage mostly at night. Solitary ants seen during the day are usually scouts looking for suitable food sources.

Management

Inspection

The key to successfully managing carpenter ants is to identify all locations where a colony could exist. Inspect the structure thoroughly, both inside and out. Carefully examine the areas

listed above for signs of carpenter ants. Conical piles of shredded wood debris are an excellent indicator of a nest site.

Outside a structure, examine any tree stumps, roof edges, trim boards, attached fences, dead or dying shrubbery, wooden porch floors and columns, and overhanging tree limbs, vines, power or utility lines. In living trees, openings to a nest are usually in knotholes, scars, dead areas, or crotch angles. Carpenter ants may travel as far as 100 yards from their nest to a food source, and it is sometimes possible to follow foraging carpenter ants to find the nest.

During the inspection, you may find other wood-infesting insects or damage by them. Refer to Extension publications L-1781, *Subterranean Termites*; L-1784, *Wood-Destroying Beetles*; L-1782, *Drywood Termites*; and L-1826, *Carpenter Bees*, for more information on these insects.

Prevention

To greatly reduce the likelihood of carpenter ant infestations:

- Remedy or replace damp or decaying wood, where carpenter ants are likely to nest;
- Repair plumbing or roof leaks promptly and replace damaged wood;
- Make sure there is proper clearance between soil and structural wood;
- Provide good ventilation under the house and in the attic;
- Drain water away from the structure;
- Remove stumps, logs and wood debris near the house;
- Store firewood away from the house;
- Trim back any tree or shrub limbs touching the structure;
- Remove or treat with insecticides any carpenter ant colonies within 100 feet of the house; and
- Keep exposed wood in good condition, with all cracks, knot holes, checks, or joints properly sealed with wood putty, and all surfaces painted.

Insecticide treatment

Treat carpenter ant nests with a residual insecticide applied either as a dust or spray. You may need to drill small holes into wall voids, window and door sills, baseboards and other areas to reach the nest or major part of the colony. Dust formulations are particularly effective, as the ant activity tends to spread the dust throughout the colony.

Several types of insecticides are effective, including carbaryl (Sevin®), chlorpyrifos (Dursban®), diazinon, propoxur (Baygon®), or any of the synthetic pyrethroids (permethrin, cypermethrin, cyfluthrin, etc.).

Treat wooden structural members and other exposed, frequently wet wood with a wood preservative to slow decay.

Pest-control operators can be enlisted to control carpenter ants. They are familiar with the biology and control of these ants and have expe-

rience in finding the nests. Homeowners can give the pest-control operator clues about the ants' movement and sightings, which can help the operator find and eliminate colonies.

Some baits are labeled for carpenter ants. The colony can be controlled successfully if foraging ants take the baits and pass the toxin to the queen and brood. Research is being conducted to find baits acceptable to these foraging ants; some baits available now do not always attract them.

Acknowledgment

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