Carpenter Ants

COMMON NAME:	Carpenter ant
SCIENTIFIC NAME:	*Camponotus* spp.
CLASS/ORDER/FAMILY:	Insecta/Hymenoptera/Formicidae
METAMORPHOSIS:	Complete

INTRODUCTION. The black carpenter ant, *Camponotus pennsylvanicus* (DeGreer), is a native species and the common species in the east. *Camponotus modoc* Wheeler is the common western species. These ants get their common name from their habit of hollowing out galleries in pieces of wood for nesting purposes. This nesting habit can result in structural damage. Carpenter ants are found throughout the United States.

RECOGNITION. Workers polymorphic, large (1/8-1/2" or 3.5-13 mm) but vary greatly in size; queens about 112-518" (13-17 mm) long. Color black, combinations of red and black, or completely red or brown. Antenna 12-segmented, without a club. ***Thorax*** lacks spines, ***profile evenly rounded***d on upper side. ***Peel 1-segmented. Gassier with*** anal opening round, surrounded by ***circlet of hairs***. Stinger absent. Workers capable of emitting a strong formic acid odor.

Camponotus pennsylvanicus with workers about 1/4-1/2" (6-13 mm) long and completely black except top of gaster with long, pale yellowish hairs pressed against its surface. ***Camponotus modoc*** with workers about 1/4-1/2" (5-11 mm) long, dull black with reddish legs and with golden hairs covering abdomen. Queens up to 5/8+" (17+ mm) long. Other species black, various combinations of red and black, or completely red or brown. Although carpenter ants do not sting, their bites can be quite painful, especially when they inject formic acid into the wound.

SIMILAR GROUPS. (1) Dark field (*Formica* spp.), larger yellow (*Acanthomyops interjectus*), and Allegheny mound (*F. exsectoides*) ants have profile of thorax not evenly rounded, with distinct impression(s); in addition dark field ants with front and hind margins of node steeply or equally sloped. (2) Velvety tree ants (*Liometopum* spp.) lack circular anal opening surrounded by circlet of hairs. (3) Other medium to large dark ants with 2-segmented pedicel.

DAMAGE. The only external indication of infestation other than the presence of workers and/or swarmers is the appearance of small openings or windows on the surface of the wood. Through these, the workers expel debris which consists of sawdust-like shavings and/or fragments of insulation and insect body parts. The accumulation of such debris below such holes is a good indication of an infestation.

Inside, the galleries follow the softer spring wood with numerous connections through the harder/dark

summer wood. The gallery walls are smooth, with a sand-papered appearance. The active galleries are kept clean of debris.

They prefer to attack wood softened by fungus and are often associated with moisture problems.

BIOLOGY. Black carpenter ant colonies are of moderate size, usually containing over 3,000 workers (up to 10-15,000 including satellite nests) when maturity is reached in about 3 to 6 years. The typical western carpenter ant (*C. modoc*) mature colony contains about 10-20,000 workers, with large colonies having up to 100,000 workers. Developmental time (egg to adult) for workers takes at least 60 days. Workers are polymorphic, with majors, minors and intermediates present. There is usually only one functional, wingless queen per colony. Swarmers are not produced until the colony is more than 2 years old, usually 3.5-4 years old for *C. pennsylvanicus* and often 6-10 years old for *C. modoc*. Swarmers appear from May until August in the east and from February through June in the west.

HABITS. Most carpenter ant species establish their first nest in decayed wood and later expand or enlarge this into sound wood. Inside, nests are located in wood (preferably softened by fungus rot), in insulation, and/or in wall voids. Workers are a nuisance when out searching for food but are destructive to timbers utilized for nesting activities. Outside, nests are typically located in rotting fence posts, stumps, old firewood, dead portions of standing trees, and under stones or fallen logs.

The presence of a carpenter ant nest is sometimes indicated by a rustling sound coming from wall voids or from wood where the colony is located. Otherwise, the emergence of swarmers indoors may be the first indication of an indoor colony.

Carpenter ants feed primarily on insect honeydew, plant and fruit juices, insects, and other arthropods. Inside, they will also feed on sweets, eggs, meats, cakes, and grease.

The workers forage for distances of up to 300 feet (91.4m) from the nest. They typically enter buildings around door and window frames, eaves, plumbing and utility lines, and shrub and tree branches in contact with the building. Although some workers are active during the day, most activity is from dusk till dawn, with peak activity between 10 pm and 2 am. The trail between the parent and satellite nest is usually about 1/4-13/16" (6-20 mm) wide and is kept clear of vegetation and debris. It usually follows contours but typically will cut across lawns.

CONTROL. The first step is to determine if the ants present are merely foraging inside or if there is a nest inside. The best indication of a nest is the presence of sawdust piles containing insect body parts. Another indication is the sound produced as the workers remove wood to expand the nest. Outside, check around the building's perimeter for foraging trails, especially in the direction of trees and shrubs; easiest to locate between sunset and sunrise when the ants are most active.

The second step is to locate any inside nests. Look for sawdust piles with insect body parts. Listen for ant sounds mentioned above; listening devices are helpful. Gently tap with a screwdriver, etc. all exposed wood such as floor joists, sill plates, roof rafters, etc. and listen for sound changes; nest cavities give a hollow or dull ring. Check suspicious areas with a knife blade which will readily penetrate infested wood. Be sure to check crawl spaces, basements, and attics. Carpenter ants have a network of trails they follow throughout a structure and often use the tops of electrical Wires and water pipes, so be sure to check where these are. A moisture meter can be helpful in locating areas of higher moisture in which the ants prefer to locate their initial nests.

The third step is to determine if the inside colony is a parent or satellite colony. Inspect and search. Detection of a trail directs one to the parent colony. For effective control, it is imperative to locate and eliminate the parent colony.

Once the colony or colonies are located, they should be treated directly with an appropriately labeled pesticide. Inside, this may involve drilling wall voids and applying dust and/or drilling wood members and pressure injection. Barrier treatment is effective in preventing entry, with wettable powder and microencapsulated formulations working best. All branches of trees and shrubs in contact with the building must be trimmed back. Be sure to check where electrical and water lines enter the building and caulk any gaps. Sometimes treating the bottom 3-6 feet (1-2 m) of tree trunks and/or utility poles is helpful.