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CARPENTER ANTS

Carpenter ants (*Camponotus pennsylvanicus* (DeG.), *C. noveboracensis* (Fitch), and *C. nearcticus* Emery) are destructive pests of wood throughout New York State. In the forest, these ants are often considered beneficial because they prey on other insects and enhance the decay of stumps and other wood debris. Unfortunately, however, given favorable conditions, they also attack wood in service and the interiors of living trees.

Carpenter ants attack wherever excessive moisture accumulates in parts of dwellings, other buildings, power poles, and fence posts. Especially vulnerable are porches, roofing and areas near kitchens and bathrooms where water from poles and building foundation timbers in contact with the ground absorb large amounts of moisture from the soil and are thus susceptible to ant colonization.

The ants enter wood through cracks or normal cleavages, such as between siding and sheathing or between flooring and subflooring. In trees they usually enter wood through trunk wounds or the stubs of broken branches and extend their galleries from the decayed portion into the sound wood. The insect attack adds to the harmful effects of wood-rotting fungi, both in reducing the physical strength of the tree and in lowering the quality of the wood.



Fig. 1. Sawdust from carpenter ants near a retaining wall timber. (Edward H. Holsten, USDA www.bugwood.org)



Fig. 2. Sawdust/frass from carpenter ants at the base of a tree. (David Powell, USDA Forest Service www.bugwood.org)

SYMPTOMS: The presence of otherwise unexplained coarse sawdust beside a house timber (**Fig. 1.**), pole, or tree (**Fig. 2.**) usually indicates that carpenter ants are at work. They chew the wood into small fragments, which they discard outside the tunnel, thus forming a "nest" to use as a shelter in which to breed and from which to forage. Their food is varied: They gather sweet secretions from other insects (aphids, etc.) and plants; prey on other living insects; scavenge dead insects; and gather household foods, such as fats, sugar and other sweets. Their need to travel outside their wood tunnels in search of food (foraging trails) often reveals the location and extent of the colony.

DAMAGE: The tunnels or galleries (**Fig. 3.**) are principally gnawed by the workers and gradually enlarged to accommodate a growing ant colony. These galleries usually follow the soft portions of the wood, parallel to the grain. The inner surfaces of the galleries are clean and appear as if they had been coarsely sanded.

Most damage occurs during the warm summer months when carpenter ants are most active. Their outdoor activity varies with the weather, but usually they are active between the first of May and the end of September. In heated buildings ant activity may continue later in the fall and begin earlier in the spring than is usual with outdoor colonies.

DESCRIPTION: Carpenter ants vary in length from 1/4 inch to more than 1/2 inch. The most common variety is black, although some of the varieties of less importance are partly red. In the early life of the colony, the ants produce wingless workers (**Fig. 4.**). After three or more years some of the ants, are born with wings as reproductive males and females (**Fig. 5.**), swarm and mate. The females attempt to start new colonies.

Since carpenter ants are often mistaken for termites, refer to (**Fig. 6.**) below which illustrates winged reproductive termites.

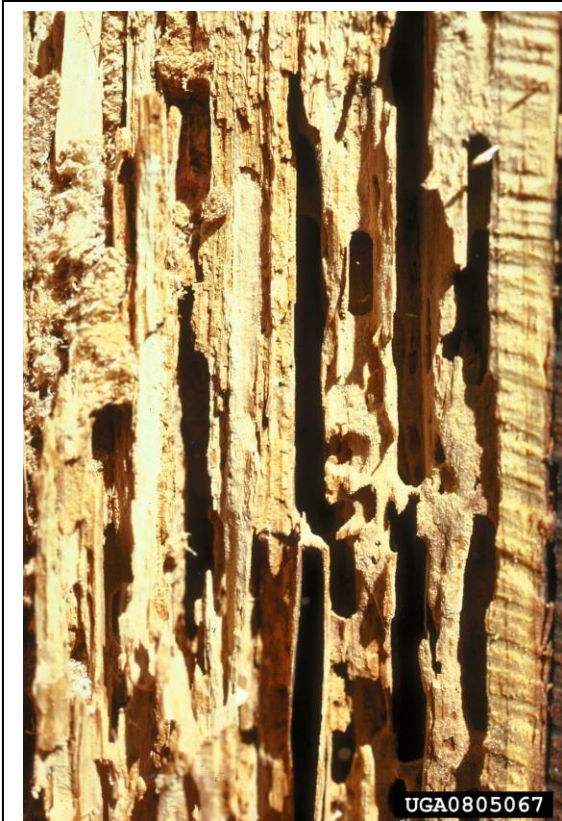


Fig. 3. Galleries formed in a timber by carpenter ant workers. (R. Werner, USDA Forest Service www.bugwood.org)



Fig. 4. Carpenter ant worker. (Note the attachment of the abdomen to the thorax and compare this with the termites in Figure 6) (Clemson University, USDA Cooperative Extension Slide Series www.bugwood.org)

Termites eat the wood in which they live. For this reason, unlike carpenter ants, termite workers are seldom seen outside their nest tunnels.

LIFE CYCLE: Mating takes place in flight during late spring and early summer when winged males and females leave an old colony. The male dies soon after mating and the female, called the queen, locates a nesting place in wood. She then excavates a small chamber in which she secludes herself and lays her first eggs.

When the eggs hatch, the queen nourishes the larvae until they are fully developed. The larvae enter a pupal period within a tan-colored cocoon before becoming adults. Development from egg to adult takes about three months, depending on temperature conditions, during the warmer part of the year.

First-year broods are small, sometimes consisting of only 10 to 20 ants. In following years, colonies often increase to 2,000 to 3,000 ants. It is from these large colonies that winged males and females swarm, mate and start new broods.

PREVENTION: In the Northeast, simple and inexpensive measures to keep wood dry will reduce carpenter ant damage in buildings. It is imperative that moisture be minimized by the following measures:

- Use construction which permits wood to shed water quickly and to dry easily.
- Avoid placing wood in contact with the ground.
- Separate wood from concrete or masonry with a waterproofing compound, such as coal tar or asphalt.
- Provide adequate ventilation in damp areas.
- Provide vapor barriers when insulating outside walls.
- Keep gutters and downspouts clear of debris.
- Inspect regularly to detect and repair leaks in roofing and siding, flashing around chimneys, skylights and gables.
- Also check these danger points: wood porches, steps, columns, corner supports, and wood near "sweaty" plumbing leading to laundry rooms, bathrooms and kitchens where moisture may condense.
- To prevent carpenter ant attacks in living trees, prune carefully to induce rapid healing. Good growing conditions should be maintained.

CONTROL: Carpenter ant colonies in houses may be exterminated by properly applying an insecticide in and around the nest according to label instructions. However, the full effectiveness of recommended

insecticides may only be temporary, **UNLESS THE SOURCE OF MOISTURE IS AVOIDED OR ELIMINATED. IF NOT, THE WOOD WILL EVENTUALLY BECOME, OR MAY STILL BE, SUSCEPTIBLE TO A NEW ATTACK.**

Locating and treating the nesting site cannot be overemphasized. Since these ants prefer to nest in damp or moist wood, check any areas where suspected leaks may exist. The presence of coarse sawdust or crackling sounds as the ants enlarge their tunnels may indicate the nest's location. Observing the ants as they establish foraging trails can also be helpful in locating nesting sites. They simply must leave the nest to obtain their food! The ultimate goal is to destroy the queen.

The presence of a few carpenter ants in homes in the spring does not necessarily mean that the infestation is in the structure. Early in the spring the ants become active as their nests are warmed by sunlight. Their sources of nourishment being scarce at this time of year, ants from nearby outdoor colonies often enter houses in search of food, water and possibly, even a better place to live!



Fig. 5. Winged reproductive male (*top*) and female (*bottom*) carpenter ants. (Whitney Cranshaw, Colorado State University www.bugwood.org)



Fig. 6. Winged reproductive termites (*Note the straight antennae, length and shape of the wings, and the straight body sides*)

Control inside the home: If you need to use an insecticide indoors, explore your options and choose the least toxic material. Apply in limited amounts and provide adequate ventilation during and after application. Be sure that all the pesticides you use are *household formulations* and that the pest and the site are clearly listed on the label. Uses inconsistent with the label are illegal and could be dangerous.

Baits are often the best choice. Terro Ant Killer II, a liquid borax bait, has shown good results in research trials. Other baits specifically for carpenter ants are also available, including Maxforce, Combat, or Raid. Use as manufacturer directs.

Alternatively, treat the nest site with boric acid, deltamethrin, lambda-cyhalothrin, or permethrin. If you cannot locate or treat the colony yourself, you may want to enlist the services of a Pest Management Professional

Control outside the home: Baits are available for use outdoors for carpenter ants around the home. Products labeled for spot or perimeter treatments by homeowners include bifenthrin, boric acid (borax), cyfluthrin, deltamethrin, fipronil, lambda-cyhalothrin, or permethrin. Consult a certified pesticide applicator for difficult situations.

Text is from: *Carpenter Ants*; New York State Tree Pest Leaflet No. F-3, prepared by Dr. John B. Simeone, emeritus professor, in cooperation with Dr. Lawrence P. Abrahamson, Faculty of Environmental and Forest Biology, State University of New York College of Environmental Science and Forestry and Carolyn Klass, Department of Entomology, New York State College of Agricultural and Life Sciences at Cornell University, 8/88.

Pesticide recommendations obtained from *2009-2010 Pest Management Around the Home Part II – Pesticide Guidelines*. Copies are available from Cornell Cooperative Extension – Suffolk County.

The Pesticide Management Education Program (PMEP), in cooperation with the New York State Department of Environmental Conservation (NYSDEC), maintains a web site with a searchable database for pesticide products currently registered in New York State. Individuals who have Internet access can locate currently registered products containing the active ingredients suggested above at <http://pmep.cce.cornell.edu/pims/current> (NYS PIMS).

This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are still possible. Some materials mentioned may no longer be available, and some uses may no longer be legal. All pesticides distributed, sold, or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension specialist or your regional DEC office. Read the label before applying any pesticide.

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