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Identifying and controlling wood-destroying insects

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Several types of insects damage or infest wood and wood products. There are also several insects closely associated with wood commodities, such as farm-sawed lumber and firewood, that do not infest finished wood products.

If you suspect a problem with wood-destroying insects, be sure to accurately identify the insects before taking control measures. Damage inflicted by wood-destroying insects occurs over a long time (months), and it is likely that these creatures were present long before you discovered them. Therefore, do not panic and seek an immediate remedy. Take your time to accurately identify the pest, and to assess the amount of actual and potential damage. Wood-destroying pests can be divided into four categories: (1) carpenter ants, (2) termites, (3) bark beetles and woodborers, and (4) powderpost beetles.

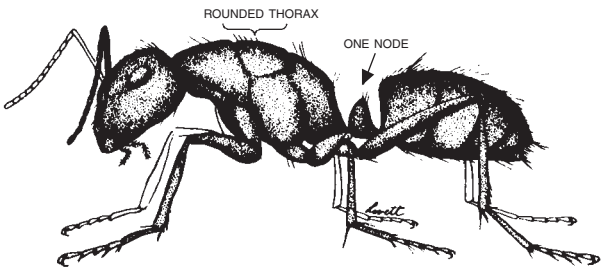
Carpenter ants

Many individuals with ant problems fear the insects are termites. Carpenter ants are cavity dwellers. They often establish nests in the space between a double wall of a building, in hollow trees, and even in hollow-core doors. They also prefer weakened or rotting wood, and insulation materials.

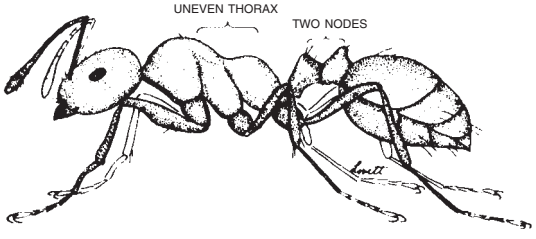
Termite

Winged ant

Carpenter ant



Most other ants look like this



Once established, carpenter ants enlarge their nests by excavating the surrounding materials. They rarely damage sound wood. However, once a nest is established, enough moisture is produced from their activity to rot wood, enabling them to further enlarge the nest and damage the structure.

Carpenter ants obtain no nutrition from the wood; workers normally must hunt for food outside the nest, usually the time when they are noticed. They eat bits of organic matter including dead insects. Finding insect fragments mixed with wood shavings in areas such as window sills or the top of a foundation can help you trace the location of the nest.

Locating the exact position of a carpenter ant nest is a challenge requiring considerable patience. A logical place to begin is where you would suspect rotting wood, such as around a window sill, chimney or water pipe. Place small particles of food, such as bread crumbs or pet food, around an area and watch where they are carried. Applying a residual insecticide without first finding the nest may not be effective; it could kill the foraging workers, leaving the nest undisturbed.

Locating the nest and correcting the structural damage usually will control or eliminate the problem. As an added insurance, apply an insecticide to the surrounding area. Before using an insecticide, check the label to be sure it's approved for controlling ants. Follow all mixing and application directions.

If you live in a heavily wooded area, do not worry about finding an occasional ant in the house. Ants occasionally forage in your home for food, but nest outdoors in hollow trees and stumps. In winter they may come in with firewood. Usually these are worker ants and can not establish a colony.

Termites

Throughout the world, termites undoubtedly are the most destructive wood-destroying pest. But, in temperate climates, the amount of damage is less, primarily due to low temperature. However, once protectively established in a building, they thrive, doing considerable damage. Termites have been found in Wisconsin. While damage to a specific building can be extensive, the number of different structures infested are few. Before undertaking any kind of control procedures, make certain the pests are, in fact, termites.

There are two types of termites: dry wood and subterranean. Social insects, termites live in colonies. A newly formed colony might consist of a male, female and several workers. An established colony, however, can exist in a building for years and usually consists of thousands of members.

The possibility of dry wood termites establishing themselves in Wisconsin is remote. However, they could be brought in from southern or tropical areas in wood, packing, and crating materials and in wood products sold as souvenirs.

Subterranean termites, as the name suggests, feed beneath the surface. The colony needs a source of moisture, usually soil, although a leaking basement water pipe might be adequate. These termites use wood (cellulose) as food. They normally feed inside wood, leaving a thin outer layer as a protective barrier against water loss. They construct tunnels or tubes between pieces of wood, and between the wood and the soil surface or a similar source of moisture. A termite inspection involves examining the structure for their presence and determining the seriousness and extent of the damage. The challenging part of a termite inspection is to find all the tubes, especially those built in cracks within the foundation. Tubes are made from bits of soil, small pieces of wood and other debris glued together with salivary secretions. Termite colonies have no openings to the outside surface. If a gallery or tunnel is punctured, workers will quickly repair it.

Termite control involves locating the damage and poisoning the soil around the building and under the foundation. Chemical control of termites is a highly specialized operation and should be left for professionals.

Bark beetles

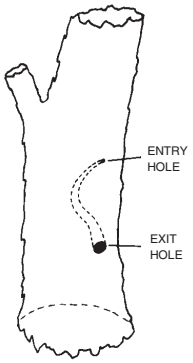
There are several small insects that normally attack weakened, injured, or dying trees. If you wish to prevent this damage, remove the bark as soon as possible after cutting the tree. Occasionally a tree may be infested before it is cut. This happens, for example, in fire-injured conifers or elms infested with Dutch elm disease.

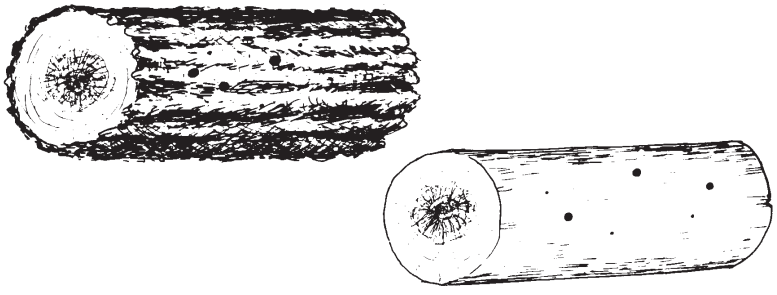
Bark beetle galleries

Bark beetles and wood borers bore through the bark of trees, feeding in the region between the bark and the wood. Feeding tunnels are very characteristic of the species of insect. Because of the superficial feeding, these creatures do not weaken wood. They can, however, be serious nuisance pests, and inflict monetary loss to individuals owning log cabins, wood furniture and decorative items made from ''bark on'' products. These creatures lie dormant during the winter, becoming active in warm weather. After emerging, they begin to fly towards windows where they are readily noticed. Though a nuisance, these insects are harmless; they will not attack seasoned wood or wood products. Insecticides are unnecessary to control them.

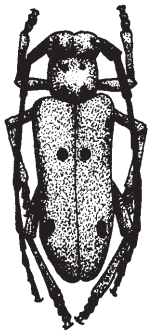
Wood borers

Wood borer larvae burrow or tunnel into solid wood. Once developed, they emerge through a conspicuous round hole. Adult insects select weakened or recently cut trees and deposit an egg in a crack or crevice of the bark. The rate of development depends upon such factors as moisture and temperature, and may extend to three or more years. Because of this, it is fairly common for these insects to emerge from a finished log, timber, or board in a home—much to the surprise or dismay of the occupant. Processing wood products through a kiln dryer usually destroys all stages of the insect within the wood.





Emergence holes of wood borers (right). The wood borer egg is laid in a crevice of the tree's bark. The larvae burrows into the tree and tunnels through the wood until it emerges as an adult through the large, round exit hole (upper right).



Wood-boring beetles are distinguished by their unusually long antennae.

Except for the large exit hole on the finished surface, these creatures are harmless. They *will not reinfest finished wood products* in the home. Adult beetles are frequently brought into the home in firewood. Keeping firewood outdoors or in a cool area reduces or eliminates the problem.

Powderpost beetles

This is the most serious and widespread wood-destroying pest in Wisconsin. Powderpost beetles are wood-boring creatures but their activities and behavior are quite different from those of insects already discussed. As their name suggests, powderpost beetles change the wood they eat to a fine powder or dust.

Three families of insects belong to this group. Some confine their activities to starch-rich, large-pored hardwoods, such as ash, hickory, oak, walnut, and cherry. Others destroy softwoods.

Many different kinds of wood commodities and structures have been damaged by powderpost beetle infestations. Timbers, planks and flooring in houses and barns, axe and hammer handles, musical instruments and museum wood carvings are examples of items damaged or destroyed. Powderpost beetles often are a serious problem for individuals remodeling or renovating old buildings and/or salvaging lumber from old wooden structures.

Farm-sawed lumber is another source of powderpost beetle problems. An active infestation of powderpost beetles can easily be detected on the exposed wood surfaces. A heavily infested piece of wood will have the characteristic ''shot-holed'' appearance from which adults emerge and fine, powder-like sawdust constantly is emitted. To determine whether the infestations are active, simply dust off the surrounding area. If powderpost beetles are still active, you will notice fresh dust around the emergence holes, most likely within a few days.

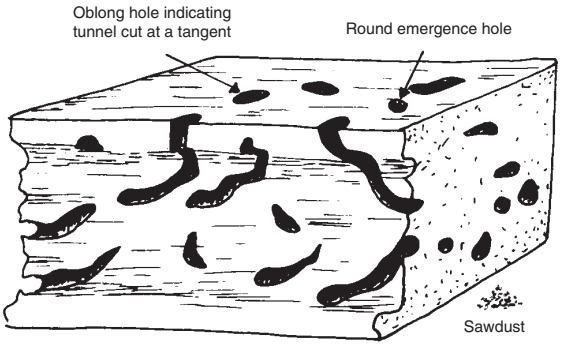
After the adult female emerges, she seeks other open-grained wood and deposits an egg in a pore. After hatching, the larvae eat their way into the wood, completing the cycle in about one year. This process may be repeated on the same piece of wood one-quarter to one-half inch from the emergence hole. Wood finishes—varnish, paint and waxes—prevent an infestation. However, the insects already inside the wood when the finish was applied will continue to thrive and eventually will emerge through the treated surface.

The type of wooden structure infested will determine the technique used to eradicate or control the problem. If the infestation existed before the lumber was milled, there will be some oblong holes indicating the tunnel was cut at a tangent; emergence holes are normally round. Kiln-dried wood products are normally free of powderpost beetles, but may become reinfested if left unprotected after drying.

Small pieces of infested wood, such as picture frames and carvings, can be placed in an oven and heated to about 125°–150°F. This temperature will kill the insect in all stages. However, the heat must penetrate to where the insects are living. Controlling powderpost beetle infestations in buildings usually is far more challenging. Many farm buildings are made from different kinds of wood. Sometimes the infestations are limited to one or two pieces of ash or oak, with nearby wood free of powderpost beetles. Replacing infested pieces with treated lumber often corrects the problem.

Chlorpyrifos (Dursban) is registered for control of powderpost beetles and other wood-destroying insects. This insecticide will kill adult beetles as they emerge or attack the surface of the wood. Follow dosage, mixing, and application directions exactly as described on the product label.

When spraying overhead interior areas of homes where runoff may occur, cover all surfaces with plastic sheeting or other disposable materials. Chlorpyrifos can be applied with a paintbrush or low-pressure sprayer. Applications must be made annually for at least two to three years to bleed out populations. May is the peak of adult activity and the best time to treat. Do not let people or pets contact treated surfaces until the spray has dried.



Powderpost beetle damage

A more permanent wood treatment is disodium octaborate tetrahydrate (Tim-Bor, Bora-Care, Pen-a-treat). These borate mixtures will penetrate into wood and, if protected from the leaching effects of excess water, will permanently make the wood toxic to wood-eating insects. The mixtures can be sprayed or painted on by professionals, or ordered from log home supply and other specialty companies. They must be applied to unfinished or sanded surfaces to be effective. Various sealers can be added on exposed outdoor surfaces. These materials have little odor and are registered for use in livestock buildings.

Fumigation treatments for powderpost beetles will quickly eliminate ongoing problems, but do not leave any residual protection. Fumigants are highly poisonous and must be handled by certified professionals. Sometimes, buildings must be wrapped in plastic and vacated for two to three days. Fumigation is costly and should not be chosen without a close examination of the problem.

Insecticides

Insecticides are secondary considerations in controlling some wood-destroying insects. However, when using them, keep the following points in mind:

- Use only products approved (labeled) for use on the pest or location listed on the label. Rather than improvising, consult a professional exterminator or your local Extension agent for additional information on a specific problem.
- Check the directions and safety recommendations every time you use insecticides.
- Keep insecticides in their original labeled containers in a place away from uninformed persons, children, and animals.
- Store insecticides where they cannot be accidentally mistaken for food or cleaning products.
- Remove or carefully cover foods, dishes, and utensils before spraying.
- Keep people and animals away from places being treated.
- Avoid unnecessary exposure when using insecticides.
- Don't smoke, eat, or drink when you are working with insecticides.
- Wash hands and face thoroughly with soap and water after using insecticides.
- Throw empty containers in the trash. Do not leave them where children or animals can get them.

NOTE: In case of accidental poisoning, call your doctor immediately. Be sure to show the physician the insecticide label.

References to products in this publication are for your convenience and are not an endorsement of one product over other similar products. You are responsible for using chemicals according to the manufacturer's current label directions. Follow directions exactly to protect the environment and people from chemical exposure. Failure to do so violates the law.

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