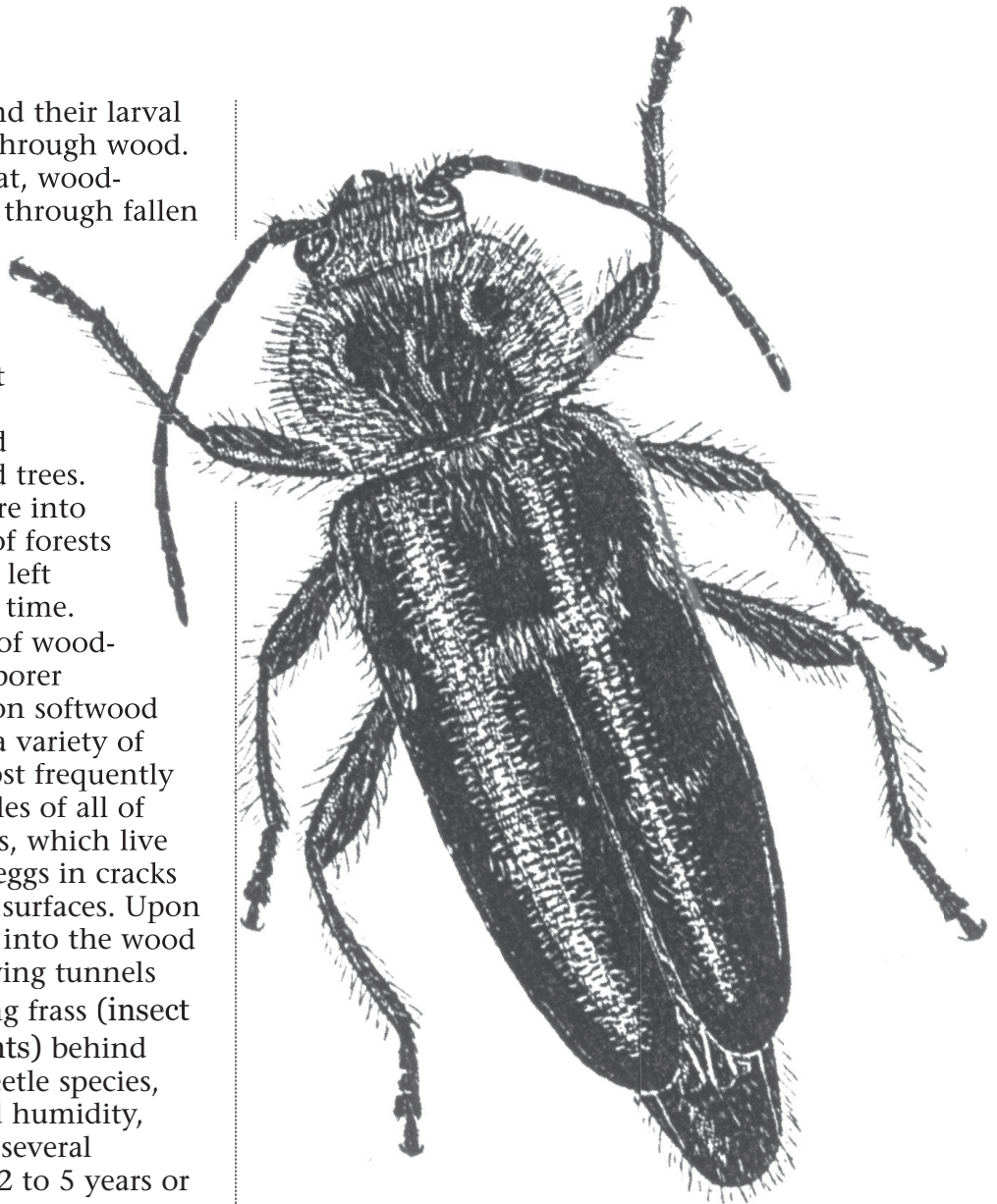


## Wood-Boring Beetles

### Old House Borer and Powderpost Beetles

A variety of beetles spend their larval stages slowly boring through wood. In their natural habitat, wood-boring beetles tunnel through fallen tree trunks and branches, which are then exposed to more rapid decay by fungi, bacteria, and termites. These beetles thus play an important ecological role in accelerating the process of wood decay and recycling the nutrients of dead trees. Unfortunately, beetles that bore into dead wood in homes instead of forests can cause structural damage if left unchecked for long periods of time.

There are two main groups of wood-boring beetles: the old house borer beetle, which generally feeds on softwood timbers (primarily pine); and a variety of powderpost beetles, which most frequently infest hardwoods. The life cycles of all of these beetles are similar: adults, which live only a few days or weeks, lay eggs in cracks and crevices of exposed wood surfaces. Upon hatching, the tiny larvae bore into the wood and begin feeding, slowly carving tunnels as they bore ahead and packing frass (insect excrement and wood fragments) behind them. Depending upon the beetle species, as well as the temperature and humidity, individual insects spend from several months to (more commonly) 2 to 5 years or



more in the destructive larval stages. Mature larvae pupate near the surface of the wood; adults then chew their way out and emerge to mate and repeat the life cycle.

## Old House Borer Beetle

The old house borer beetle, also known as the long-horned beetle (*Hylotrupes bajulus*), normally infests homes that are less than 10 years of age, preferring timbers of pine, spruce, hemlock, and fir. Successive generations of beetles often reinfest wood in the same area. The wood-eating larva or beetle grub is cream colored with dark mandibles. Mature larvae are approximately 1 $\frac{1}{4}$  inches (20 to 40 millimeters) long. On each side of the head is a distinctive row of three dark-colored eye spots. The adult old house borer beetle is  $\frac{5}{8}$  to 1 inch (15 to 25 millimeters) long. Its black or brownish-black body is slightly flattened (Figure 1).

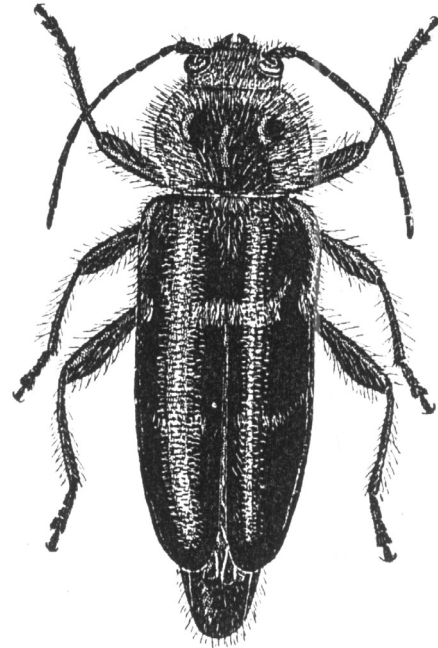


Figure 1

## Powderpost Beetles

Beetles of the family Lyctidae are true powderpost beetles, although that common name is frequently applied to beetles of similar habits in the families Anobiidae (the most commonly encountered furniture or deathwatch beetles) and Bostrichidae (false powderpost beetles).

Larval stages of these beetles are considerably smaller than old house borers. Infestations frequently occur in hardwood floors, furniture, paneling, and trim. Oak, hickory, and ash are most susceptible, but walnut, pecan, poplar, sweetgum, wild cherry, and many tropical hardwoods also are attacked. Bamboo is vulnerable because of its high starch content. Anobiid and Bostrichid beetles also attack softwoods such as pine and spruce. Bostrichid beetles normally disperse as adults, rarely infesting the immediate area from which they emerge. Other types of powderpost beetles, however, may lay eggs close to where they matured, thus reinvigorating an infestation with more wood borers.

## Characteristics of an Active Infestation

If you find one or two beetles in your house, they may have come in with firewood or through an open window, and they do not necessarily indicate an active infestation. The following signs suggest that beetles are infesting wood within the structure.

### Sounds

The rasping or clicking sounds of large larvae chewing wood sometimes can be heard from infested timbers, especially during spring and summer months when the wood moisture is relatively high. Stethoscopes are sometimes used to diagnose an infestation of active wood borers, but the species of beetle is impossible to determine based only on sound.

### Exit holes

When adult beetles emerge through the surface of wood, they leave exit holes, which provide hints about the type of beetle and current activity. Old house borers leave an

oval exit hole of about 1/4- to 3/8-inch (6.5 to 10 millimeters) maximum diameter. The edges of these holes are often ragged. Powderpost beetles normally leave small (1/32- to 1/8-inch diameter and occasionally up to 3/8-inch diameter or 1 to 10 millimeters), round exit holes. The presence of emergence holes indicates that some beetles completed their life cycle in the wood; it must then be determined if other (live) larvae remain.

If beetle larvae are active in the wood, their frass (which looks like fine sawdust) may fall from the exit holes, forming small piles on the floors or surfaces below the wood. Pale-colored, fresh-looking frass around or under an exit hole indicates a relatively recent emergence. If sawdust (frass) piles are swept away or vacuumed up and more appear in a week or two, the infestation is still active.

## Control

If you suspect that you have an active wood-boring beetle infestation in your house, there is no need for immediate alarm or action. The larvae work slowly, so you can take weeks or even a few months to assess the infestation and evaluate treatment options. Be certain that the beetles are still feeding in the wood and that you are not simply observing residual signs of a past infestation.

If you are selling the house, you must either remove or replace infested wood. If an active infestation is widespread, inaccessible, or in wood that is impractical to remove, the structure must be fumigated. Fumigation is an elaborate and expensive procedure that can be performed only by a licensed pest control operator with proper certification. Application of pesticides directly to infested wood is a less certain option, which, if effective, requires up to a year or more to achieve control.

If furniture or art objects in the house are infested but the house is not, the individual items can be treated by professionals in a temporary fumigation vault or, in some cases,

placed into a large freezer for a sufficient period to freeze and kill the insects.

## Five Ways To Help Avoid the Introduction of Wood-Infesting Beetles

- Old house borer and powderpost beetle larvae are most frequently introduced to homes through building materials from lumberyard stock piles or deliveries of seasoned firewood or in oak flooring, paneling, or furniture brought into a house. Wood that has been properly kiln or air dried is less likely to be infested with beetles. Inspect timber and wood products delivered to your home for the small emergence holes of wood-destroying beetles.
- Debark and split firewood (to speed drying), and stack it away from the house.
- Reduce moisture levels within the house by installing proper ventilation, dehumidifiers, and drainage systems.
- Sand and coat susceptible wood with varnish, shellac, or paint. These topical applications fill small cracks and pores in the wood, eliminating sites for egg deposition.
- As a preventive measure, borax-based products can be painted or sprayed directly onto unpainted or unsealed susceptible wood by a licensed pest control operator. Borates pose no significant risks for humans. Borates penetrate wood very slowly and are persistent, nonvolatile compounds that inhibit local infestation of all wood-destroying organisms (beetles, termites, carpenter ants, and fungi). Multiple applications (with drying between coats) are recommended to build adequate concentrations both at the wood exterior and inward through diffusion. Sealers are recommended after exterior borate applications, because borates will leach out of wood if water flows over treated areas for extended periods of time.

## **Wood-Boring Beetles: Old House Borer and Powderpost Beetles**

by

**Barbara L. Thorne, Ph.D.**  
Assistant Professor  
Department of Entomology,  
University of Maryland

**Nancy L. Breisch, Ph.D.**  
Research Entomologist  
Department of Entomology,  
University of Maryland

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, University of Maryland, College Park, and local governments. Bruce Gardner, Interim Director of Maryland Cooperative Extension, University of Maryland.

The University of Maryland is equal opportunity. The University's policies, programs, and activities are in conformance with pertinent Federal and State laws and regulations on nondiscrimination regarding race, color, religion, age, national origin, gender, sexual orientation, marital or parental status, or disability. Inquiries regarding compliance with Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Educational Amendments; Section 504 of the Rehabilitation Act of 1973; and the Americans With Disabilities Act of 1990; or related legal requirements should be directed to the Director of Human Resources Management, Office of the Dean, College of Agriculture and Natural Resources, Symons Hall, College Park, MD 20742.



**R2004**