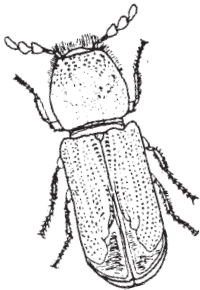
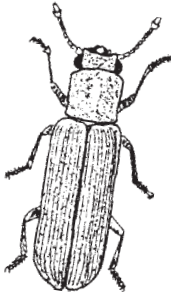


Preventing and controlling Powderpost beetles in and around the home

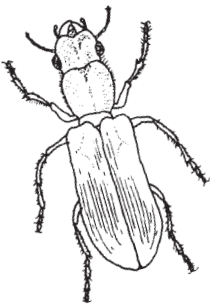
J. DeAngelis



The common name *powderpost beetle* loosely applies to three closely related beetle families, Lyctidae, Anobiidae, and Bostrichidae. Powderpost beetles breed in dead wood, as well as dried and cured lumber. It is their larvae's feeding that reduces wood to what scientists call frass—a fine powder or a mass of small pellets. Damage by powderpost beetles occurs in a wide variety of wood products—floors, molding, paneling, crates, furniture, antiques, tool handles, gunstocks, etc.



Damage usually is not evident until adults cut holes and emerge; then the powder becomes visible (Figure 1). Where damage is extreme, wood is converted to a mass of powder or pellets held together by a thin outer surface penetrated by numerous exit holes. Damage this severe usually indicates that several generations of beetles have reinfested the same piece of wood (Figure 2).



Lyctidae

Lyctids are the true powderpost beetles. Larval feeding within wood produces a frass as fine as face powder, which will stream from the exit holes at the slightest jar or tremor. The appearance of powder does not necessarily indicate an active infestation. Remove the wood and examine it closely to confirm the presence of live insects.

You may not see adult beetles; however, they're attracted to light and may appear on windows or sills. Have them identified by an expert. There are many look-alike beetles such as bark beetles from fireplace wood.

Lyctids attack only large-pored hardwoods such as oak, ash, hickory,

myrtle, and mahogany. Bamboo is also subject to attack.

Adult lyctids (Figure 3) are flattened, slender, dark brown to nearly black beetles generally 3 to 6 mm long ($\frac{1}{10}$ to $\frac{1}{5}$ inch). Mature larvae are C-shaped and slightly hairy, with three pairs of small, spinelike legs immediately behind the head. Larval body color is yellowish-white, and the head is tan to brown (Figure 4).

Females mate after emerging from wood and lay most of their eggs the first week. Eggs are deposited within pores of wood or in cracks and crevices. Upon hatching, larvae begin feeding on and tunneling into the wood. After the larval feeding is complete, pupation occurs just below the wood surface.

Adults emerge by chewing a small circular hole 2 to 3 mm in diameter through the remaining wood. The complete life cycle (from egg to adult) ordinarily requires 9 to 12 months; under favorable conditions, it may be reduced to only 6 or 7 months. Under adverse conditions, the life cycle may be prolonged to 2 to 4 years or longer.

Revised by Jack D. DeAngelis, Extension entomologist, Oregon State University.

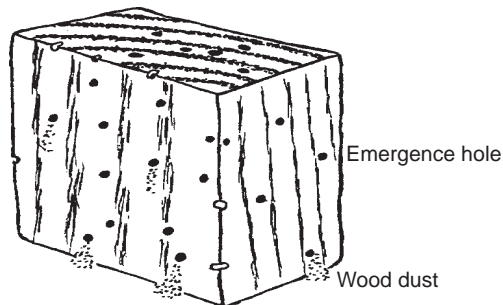


Figure 1.—Anobiid powderpost-beetle damage.

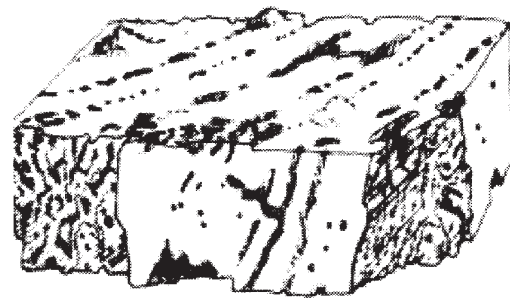


Figure 2.—Lyctid powderpost-beetle damage.

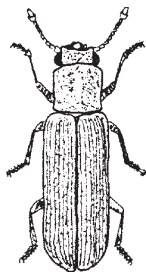


Figure 3.—Adult lyctid.



Figure 4.—Lyctid larva.

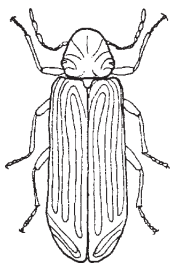


Figure 5.—Adult anobiid.

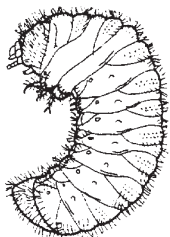


Figure 6.—Anobiid larva.

Two lyctid species that are common pests in the Pacific Northwest are *Lyctus planicollis* LeConte and *Lyctus brunneus* (Stephens). The latter species frequently is found in furniture made from bamboo.

Anobiidae

Anobiid powderpost beetles attack sapwood but only rarely heartwood. Unlike the lyctids, anobiids reduce wood to pellets, instead of a fine powder.

Adults range from 3 to 7 mm long, and their slender, cylindrical bodies generally are reddish-brown to nearly black. In most anobiid species, the head is bent downwards, and the eyes are not visible when viewed from above (Figure 5). The larvae, similar to lyctid larvae, are C-shaped and nearly white except for a darkened head capsule (Figure 6).

The life cycle of anobiids may require 2 to 3 years for completion, depending on the prevailing temperature and condition of the wood. Adult exit holes are round and range from 1.6 to 3 mm in diameter.

An important member of this family is the native powderpost beetle, *Hadrobregmus gibbicollis* (LeConte). This beetle is most abundant along the coast, where it commonly attacks unpainted Douglas-fir timber in barns and bridges and the basement timbers of dwellings. Greatest damage usually is confined to the lower portion of structures.

The frass of anobiids is tightly packed in the galleries (feeding areas). It is not powdery but composed largely of tiny fecal pellets that

give the frass a slightly gritty feel. Once the sapwood is consumed, infestations may die out. If there are large numbers of exit holes and frass is bright and light-colored like freshly sawed wood, the infestation is old and active.

In the Pacific Northwest, anobiids are most common in unheated or infrequently heated buildings. They do best in wood with a moisture content above 14 percent. Coastal second homes, wooden shelters or buildings in rest areas, bridges, etc. are all susceptible to attack.

Bostrichidae

Bostrichids are most abundant in the tropics, so they're not as important as the lyctids and anobiids in temperate regions. However, some species do attack wood in the Pacific Northwest. Most bostrichids feed on the sapwood of hardwoods, but a few also attack conifers.

Bostrichid adults typically are 3 to 6 mm long, with slender, cylindrical bodies. Their reddish-brown to black color is similar to other powderpost beetles. The head projects downward as in species of anobiids, and the eyes are not visible from above.

The segment immediately behind the head often bears numerous short spines that produce a rasplike appearance (Figure 7). The larvae are also C-shaped grubs; however, in this family, the segments immediately behind the head are much wider than the segments near the tail end (Figure 8).

An exception to the general appearance of adults of this family is the

“black polycaon beetle,” *Polycaon stoutii* (LeConte). This coal-black bostrichid is 12 to 25 mm long, and its prominent head extends forward. The segment immediately behind the head does not have a spiny surface (Figure 9).

The bostrichid life cycle is similar to that of other powderpost beetles, but its egg-depositing behavior is unique. Female beetles bore into wood and prepare “egg tunnels” instead of laying eggs in pores or cracks on the wood surface.

The frass of bostrichids is meal-like and contains no pellets. It is tightly packed in the galleries and does not sift out of the wood easily.

Although they’re found occasionally, the bostrichids are not considered a serious pest of structures in the Pacific Northwest. When problems occur, they originate in hardwoods shipped from other more susceptible parts of the country or from other countries. Many of the species do not infest wood after it has been seasoned, so damage is limited to that inflicted by the first generation.

The black polycaon beetle attacks any softwood and several hardwoods. It sometimes burrows into the softwood interior of certain multiple-ply veneers, and it produces damage that may not be noted until adult beetles bore through to the surface of panels that have been made into furniture.

Dinoderus minutus (Fabricius), the bamboo powderpost beetle, is found in baskets, picture frames, furniture, and other bamboo material imported from the Orient.

Prevention and control

Most powderpost beetle infestations are present in wood or wood products before purchase. Infestations are discovered when new adult emergence holes or powdery frass form on finished wood products. Therefore, prevention and control should begin at the lumber mill and continue in lumberyards, builders’ lots, and other areas where wood or

wood products are stored and manufactured.

Once you discover an infestation, there are steps to eliminate the infestation and prevent reinfestation and further damage. Base your decision to use one or more of the control measures described below on the value, size, and use of your infested wood.

Painting or coating the surface

Before the female powderpost beetle lays an egg (or begins egg tunneling, as with the bostrichids), she first “tastes” the wood to determine whether it contains enough starch and sugar to nourish her offspring. If you coat the surface with paraffin wax, varnish, shellac, or paint, you’ll prevent “tasting,” and eggs will not be laid.

Larvae already in the wood at the time of coating will continue their development, but you’ll have minimized the possibility of reinfestation by a new generation of beetles. It’s also recommended that you patch all existing holes before you apply any surface treatment.

Freezing

You can place small wooden articles, and even infested furniture, in a home freezer or large walk-in freezer to kill existing beetles and grubs in the wood. To sufficiently reduce temperatures within infested wood, keep these articles in the freezer (at or below 0°F) for at least 48 hours.

Insecticides and fumigation

Some homeowners may wish to employ a professional pesticide applicator to control infestations by using an insecticide or fumigant. These treatments may be expensive, and you should consider the value of the infested articles before you begin such treatment.

For further reading

Anobiid Beetles in Structures, EB 1577, by Daniel A. Suomi (Washington State University, Pullman, 1991).

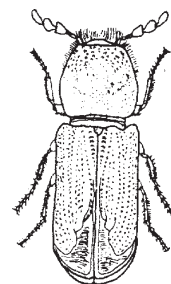


Figure 7.—Adult bostrichid.



Figure 8.—Bostrichid larva.

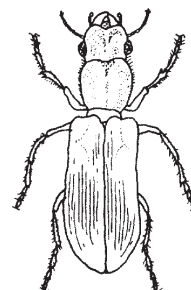


Figure 9.—Adult black polycaon beetle.

Figures 1 and 2 were created by Gary Parsons, research assistant in entomology, Oregon State University.

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