Powderpost Beetles In and Around the Home

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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 larvaes' feeding that reduces wood to a fine powder or pelleted frass. Damage by powderpost beetle occurs in a wide variety of wood products, including flooring, molding, paneling, crating, furniture, antiques, tool handles, gunstocks, etc.

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

Figure 1. Lyctid powderpost-beetle damage to a hardwood tool handle. The emergence holes are clearly visible here.

Figure 2. Another view of lyctid powderpost-beetle damage to a hardwood handle, this time with the damage in plain view.

Lyctidae

Lyctids are the true powderpost beetles. Larval feeding within wood produces a very fine powder with the consistency of flour. 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 (1 inch = 25.4 mm). Mature larvae are C-shaped and slightly hairy, with 3 pairs of small, spinelike legs immediately behind the head. Larval body color is yellowish-white, and he head is tan to brown (figure 4).

Adult females mate and lay most of their eggs the first week after emergence. Eggs are deposited within pores of wood or in cracks and crevices. Upon hatching, larvae begin feeding on and tunneling into the wood. Most larval feeding outdoors occurs in the spring and summer, but in heated rooms feeding may be continuous. After the larval feeding is complete, pupation occurs just below the surface of the wood.

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Figure 3. Adult lyctid

Figure 4. Lyctid larva

Adults emerge by chewing a small circular hole 2 to 3 mm in diameter through the remaining wood. The complete life cycle (from egg-laying to adult emergence) ordinarily requires 9 to 12 months; under favorable conditions of high temperature, this period 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.

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

Anobiidae

Anobiids are sometimes called "death watch" beetles because of the ticking noise that one beetle in this family makes. To superstitious people, this noise foretold impending death in the household. Adult beetles make the sound by tapping their heads on a hard surface during the mating season.

Members of this group will eat heartwood and sapwood, though they prefer sapwood (figure 5). Unlike the lyctids, anobiids reduce wood to pellets (instead of a fine powder).

Adults of species that are commonly found attacking wood range from 3 to 7mm long, and their slender, cylindrical bodies are generally reddish-brown to nearly black. In most anobiid species the head is bent downwards and is not visible when you view it from above (figure 6). The larvae, similar to lyctid larvae, are C-shaped and nearly white except for a darkened head capsule (figure 7).

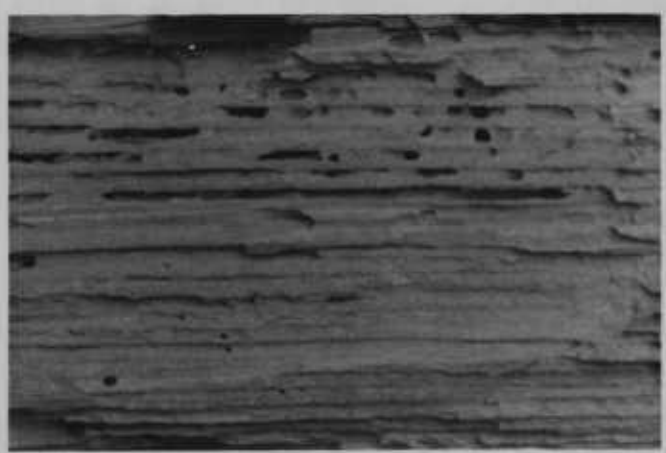

Figure 5. Damage caused by anobiid powerpost beetles to Douglas-fir wood.

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 is usually confined to the lower portion of structures.

Figure 6. Adult anobiid

Figure 7. Anobiid larva

Bostrichidae

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

If you find bostrichid adults indoors, they are typically 3 to 6 mm long, with slender, cylindrical bodies. Their reddish-brown to black color is similar to that or other powderpost beetles. The head projects downward as in species of anobiids and is not visible from above. The segment immediately behind the head often bears numerous short spines that produce a rasplike appearance (figure 8). The larvae are also C-shaped grubs; however, in this family the body segments immediately behind the head capsule are much wider that the body segments near the tail end (figure 9).

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 10).

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.

Figure 8. Adult bostrichid

Figure 9. Bostrichid larva

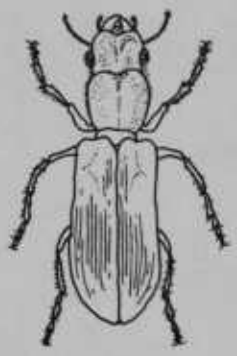

Figure 10. Adult black polycaon beetle

Figure 11. Black polycaon beetle damage to three-ply veneer.

The black polycaon beetle attacks any softwood and several hardwoods. It sometimes burrows into the softwood interior of certain multiple-ply veneers and produces damage that may not be noted until adult beetles bore through to the surface of panels that have been made into furniture (figure 11).

Dinoderus minutus (Farbicius), the bamboo powder post beetle, is a species that is found in baskets, picture frames, furniture, and other bamboo material imported from the Orient.

PREVENTION AND CONTROL OF POWDERPOST BEETLE INFESTATIONS

Most powderpost beetle infestations are present in wood or wood products before you purchase the wood to use in your home. Even though people do discover infestations when they see new adult emergence holes or powdery frass on finished wood products, it is important to understand that prevention and control should begin at the lumbermill and be continued in lumberyards, builders' lots, and other areas where wood or wood products are stored and manufactured.

An extremely important phase of prevention is sanitation. In nature, beetles breed in old and dried wood, such as dead branches and limbs of trees. These possible sources of powderpost beetles should be eliminated to prevent the infestation of valuable wood in the area.

Lumber just after kiln drying will be totally free of wood destroying insects. However, kiln-dried lumber will be much more expensive than lumber that has not been kiln-dried.

Once you discover an infestation, there are steps that you can take 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 will prevent "tasting," and eggs will not be laid. Larvae already in the wood at the time of coating will continue their development, but you will have minimized the possibility of reinfestation by a new generation of beetles. It is 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 certified 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 such treatment begins. If you decide to apply an insecticide treatment yourself, without the aid of a professional applicator, consult your Extension agent first, for advice on the legal and safe use of insecticides for control of powderpost beetles. Do *not* use insecticides on kitchen utensils, food preparation surfaces, children's cribs, furniture—or anything that comes in direct contact with people.