BOHART Museum of Entomology University of California, Davis

INFORMATION

No. 046

Powder Post Beetles

The name powderpost beetle is often used to refer to several different groups of in the families Anobiidae and Bostrichidae. A subfamily of bostrichids, Lyctinae or lyctids, are the only true powderpost beetles, so named because their tunnels and galleries are filled with very fine powdery frass (droppings).

These beetles can be serious pests of hardwoods, particularly in the southern U.S. Lyctids normally infest seasoned wood less than 5 years old. There are 11 species in North America, which all have very similar natural histories. Many lyctid species are widespread worldwide. They are readily transported in wood products, such as furniture, timbers, crates, picture frames, baskets and hardwood flooring. Adults are found primarily during the warm months.

Powder post beetles have very different larval and adult stages. The larvae are pale, yellowish to white, C-shaped grubs. Adults are brown to blackish elongate beetles, ranging in length from 2.0-7.5 mm. The adult antenna has a distinctive two-segmented club.

These beetles are largely invisible while feeding. It is not until the adults begin to emerge, leaving small circular exit holes (see below) behind that they are noticed. The holes are about 1 mm in diameter. Adults are nocturnal and are attracted to lights at night. They can live up to 3 months. As soon as the adults emerge they mate and the females began laying eggs. In a week they can lay between 15 and 50 eggs.

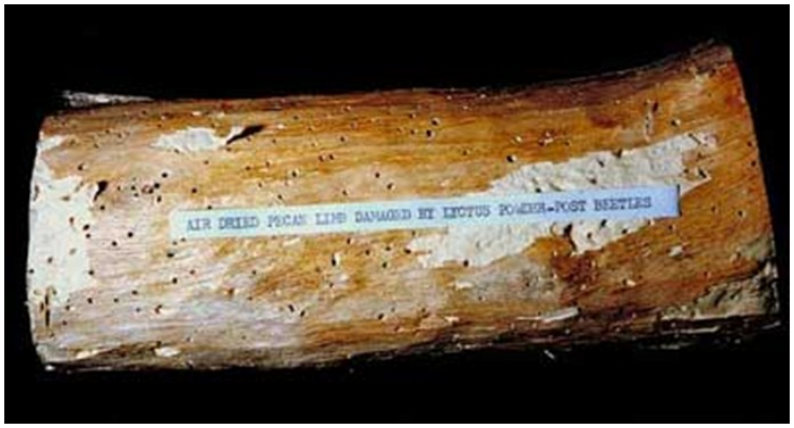
Development is temperature dependent, proceeding more wood without breaking out to the surface. This can lead to heavily infested wood having a paper-like surface. When the larva is fully developed it burrows close to the surface and creating a chamber to pupate. The pupal stage lasts several weeks to one month again depending on temperature.

Lyctid beetles require a certain level of wood moisture. They can survive in wood with a moisture content between 6 and 30% but greatest survival is with moisture levels of 10-20%. Wood starch content needs to be at least 3% for females to oviposit. Evidently, powder post beetles feed on starch in the wood, but since they do not produce cellulase or lignase enzymes they cannot digest the structural components of the wood. As a result their activity is restricted to sapwood or woods impregnated with some kind of carbohydrate.

There are a number of ways of handling infestations, depending on the situation and the severity of the infestation. Wood can be treated by varnishing, painting, sealing or the use of wax. This treatment will prevent re-infestation however it will not kill beetles already present in the wood. It is important to also fill emergence holes as they occur to prevent re-infestation.

Other measures include replacing infested wood, freezing or chemical treatments. If it is determined that the infestation is limited to a single piece of wood, removal and replacement are indicated. If a small article is infested then freezing at 0°F for at least 72 hrs or heating to 120-130 °F for 5 hrs or so should be effective. However, eggs are very cold tolerant.

There are two forms of chemical treatment, surface and fumigation. Fumigation is considered to be the most effective but it does not prevent re-infestation. Surface treatments take a long time, sometimes years, but may be more effective in the long term.



Adult *Lyctus carbonarius*, and wood damage; photos by USDA USDA Forest Service, www.forestryimages.org

For more information and additional information pages go to:
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