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Pest Management and Insect Identification Series
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Lyctus carbonarius, Southern Lyctus Beetle

(Coleoptera: Bostrichidae)

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Description

The southern lyctus beetle is one of a group of beetles referred to as powder post beetles. Adult southern lyctus beetles are elongate-parallel, and slightly flattened in shape. They range from ⅛ to ¼ of an inch (4 to 6 mm) in body length. Color is brown or reddish-brown, and sometimes nearly black. The head is smaller and narrower than the thorax and covered with fine hairs, with bulging eyes at the widest point of the head. The antennae are 11 segmented, and the last two segments are broadened into a short club. The mouthparts are directed forward and slightly downward. The thorax is wider than long, and considerably shorter than the modified forewings (elytra) that cover the abdomen. The elytra are more than twice longer than wide, with a series of ridges (costae) extending from front to rear. The eggs are translucent, about 1/25 of an inch (1 mm) long, cylindrical with rounded ends. Larvae are yellowish-white, "C-shaped," and about ⅕ of an inch (5 mm) long. Larvae are rarely seen exposed.

The species names *Lyctus carbonarius* and *L. planicollis* are synonyms for the same species of beetle. The latter name is used in older literature about the species, and this can be a source of confusion. Lyctus beetles were previously considered to be members of the family Lyctidae, but have since been transferred to Bostrichidae. The name "powder post beetles" refers to several species within the families Bostrichidae and Ptinidae, and refers to the powder-like fecal matter (frass) that the larvae produce when feeding on the wood. This powdery frass is considered important evidence of the possible presence of powder post beetles but not diagnostic for any particular species. Southern powder post beetles are similar to many other small brown beetles and require detailed study under a microscope to correctly identify to species.



Adult Lyctus carbonarius (Mike Quinn, Bugguide.net, Creative Commons 3.0).

Life Cycle

As is the case with other beetles, southern lyctus beetles undergo complete metamorphosis to complete development. Adults mate shortly after emergence and females lay eggs in wood, inserting them into holes and crevices using an egg laying apparatus called the ovipositor. Duration of the egg stage is six to 15 days, depending on temperature. After hatching, the tiny larvae actively feed on the wood, making tunnels for an extended period of time, typically several months, but larval duration varies greatly depending on wood quality, including temperature, moisture content and age. Indoors, development can be accelerated

by higher temperatures or retarded by low quality wood. As they feed, they fill the tunnels with their characteristic powder-like frass. When mature, larvae undergo a period of inactivity that lasts for two or three days, then transform into pupae. Duration of the pupal stage ranges from 12 days to a month under typical conditions. After that, the newly enclosed adults chew to the surface, leaving behind a 1/30 to 1/15 of an inch (0.8 to 1.5 mm) circular hole that is usually surrounded by frass from larval feeding. Soon after emergence, they mate and repeat the life cycle. Most adults live one to three months, are nocturnal and are strongly attracted to artificial lights. Due to indoor heating, development can continue year-round. Normally, most activity occurs during spring and summer. Adults emerge most commonly from April to July.

Ecological Significance and Pest Status

Southern lyctus beetles feed on sapwoods and hardwoods such as ash, hickory, oak, maple and mahogany. In urban settings, most infestations are found in wood paneling, door and window frames, hardwood floors, furniture, plywood, etc. They can also feed on bamboo. The beetles are widely distributed in North America, from Canada to Mexico, and they have been introduced to Europe as well. Lyctus beetles are responsible for considerable economic loss due to damage to lumber and newly manufactured goods.

Lyctid powder post beetles prefer recently cut and milled wood, and rarely infest wood more than five years old. They can cause serious damage to urban structures and furniture.

In Louisiana, powder post beetles can be a problem and are listed, along with termites, in the insects to be reported in the Wood Destroying Insect Report required by homeowners in real estate transactions. These reports are important monitoring tools for the presence of powder post beetles.

Control

Monitoring. Monitoring for the presence of adults is important to prevent population increases. Examination of furniture and structural woods for the presence of small holes, or powder-like frass, is useful to assess the level of damage and methods of control. Existence of powder post beetle emergence holes is not confirmation of an active infestation. Many older homes have evidence of old infestations. If the powdery frass is present and increasing over time, then adults are emerging, indicating a possible active infestation. Kiln-drying kills beetles that may be present, but monitoring during storage is essential to prevent reinfestation.

Cultural control. Prevention is a powerful and affordable tool in the management of powder post beetles. The application of wood varnishes or other surface treatments prevent female powder post beetles from laying eggs. Alternatively, proper storage of recently cut wood and milled lumber will prevent attack by adult beetles. If an infestation is suspected or observed, disposal of infested wood is the best strategy to eliminate beetles. However, if that is not possible, chemical treatments can be utilized to control the infestation. Wood treated with varnish, paint or urethane is not likely to be reinfested even if adult emergence holes are present.

Chemical control. Chemical control can be applied to the surface of infested wood, or through fumigation. The latter is considered to be the most effective method for control, but also most costly. Alternatively, treating newly cut woods with boric acid, or copper salts will prevent infestations. Chemical control of powder post beetles should only be performed by a licensed pest control operator using chemical formulations labeled for control of powder post beetles.



Lyctus carbonarius larvae (USDA Forest Service - Wood Products Insect Lab, USDA Forest Service, Bugwood.org)



Powderpost beetle damage to wood (USDA Forest Service - Wood Products Insect Lab, USDA Forest Service, Bugwood.org)

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Contact Us: For advice about arthropod identification or diagnosis, contact the LSU AgCenter Department of Entomology. Reach the department through the Contact Us webpage: https://bit.ly/36c4awm.

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