



Locust Borer, *Megacyllene robiniae* (Forst.)
Coleoptera: Cerambycidae

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Description The locust borer is a native insect that attacks black locust (*Robinia pseudoacacia* L.) and its ornamental cultivars. Adult locust borers are conspicuous black and yellow beetles with long black antennae and reddish legs. There is a yellow W-shaped band across the wing covers with other yellow stripes. Their elongated bodies are somewhat cylindrical and measure 11–28 mm (0.43–1.1 inches) long.



Adult locust borer (*Megacyllene robiniae*) on goldenrod. (Kevin D. Arvin, Bugwood.org)



Locust borer larvae (*Megacyllene robiniae*) and damage to black locust. (Whitney Cranshaw, Colorado State University, Bugwood.org)

Larvae are white with a dark, round head capsule and constrictions between body segments that make them look lumpy. They measure about 2.5 cm (1 inch) long when mature. Pupae resemble a yellow mummy with the adult characteristics of legs, antennae, and head readily noticeable. Eggs are laid in the cracks and crevices of the bark, while the larval and pupal stages are found in the wood. Larvae and pupae of the locust borer are rarely seen unless infested black locust wood is being split.

Locust borer belongs to the cerambycid family of beetles. Adult cerambycids are often called longhorn borers in reference to their long antennae. The larvae are known as roundheaded borers.

Life cycle The locust borer has a complete life cycle consisting of an egg, larval, pupal, and adult stages. Eggs are laid in cracks of the bark of black locust from late summer into early October. Larvae hatch and bore into the inner bark where they overwinter. When warmer spring temperatures trigger leaf buds to swell, larvae become active again and continue boring into the tree. Pupation occurs by mid-summer,

and adult beetles generally emerge from tunnels by early August. Adults are often seen feeding on goldenrod pollen (*Solidago* spp.) in late summer. Developmental times are strongly influenced by temperatures, so populations of locust borer may emerge earlier in warmer areas than in cooler areas.

Damage Locust borer attacks only black locust. Tunneling by locust borer larvae weakens tree limbs, making them susceptible to breakage by wind and ice. Trees may respond to tunneling in the trunk with faster growth in those damaged areas, resulting in the formation of knotty swellings. In general, damage in black locust may go unnoticed until many tree limbs are broken and the crowns have begun to thin and die back, or when large amounts of sawdust-like frass accumulate at the base of the trunk. Repeated infestations over time lead to the loss of the timber's value for use as fence posts or firewood.



Exit holes in trunk of locust tree infested with locust borer (*Megacyllene robiniae*). (Whitney Cranshaw, Colorado State University, Bugwood.org)



Sawdust-like frass at base of locust tree infested with locust borer (*Megacyllene robiniae*). (Whitney Cranshaw, Colorado State University, Bugwood.org)

Habitat Locust borer occurs throughout the native range of black locust and into other areas where black locust has been planted or has naturalized across the continental United States. Locust borer does not attack honey locust (*Gleditsia triacanthos* L.) or other tree species.

Control Black locust is a fast growing tree that does well on poor sites and is often favored for land reclamation or planting in disturbed areas. However, black locusts grown in poor, thin soils are more susceptible to attack by locust borer than trees grown under better conditions in more favorable locations. Drought and poor pruning can also predispose trees to borer attack. Siting the tree in a good

location at planting, proper pruning, and sufficient water, will give black locust the best chance of withstanding attack by locust borer. Healthy, vigorously growing trees may not need insecticide intervention.

Highly valued ornamental black locust trees may benefit from insecticide application for protection against locust borer. See the Virginia Pest Management Guide 018, Home Grounds and Animals, for the chemical controls currently recommended for locust borer. Apply only insecticides labeled for control of roundheaded borers on ornamental trees and follow the label recommendations. Some materials may not be available for homeowner use but can be applied by commercial applicators. Thoroughly spray the bark of the trunk and larger branches with the selected material in late August to mid-September, or when goldenrod is in bloom. Do not spray goldenrod itself, as it is an important nectar source for honey bees and other pollinators. This spray schedule will kill females laying eggs in the bark as well as newly hatched larvae chewing into the tree. Materials sprayed on the tree will not kill larvae already inside the tree and not in contact with the treated bark.

The systemic insecticides dinotefuran and imidacloprid can be applied as a preventative treatment against roundheaded borers before infestation occurs. Applied as soil drenches, these materials move up into the tree through the tree's vascular system. They must be applied when the trees are actively growing and transpiring, and application must be early enough that sufficient quantities are translocated into the tree well ahead of when adults begin laying eggs on the tree. These insecticides may kill both the females chewing on the bark to form notches where they will lay their eggs as well as newly hatched larvae boring into the sapwood. Neither dinotefuran nor imidacloprid will have little effect on any roundheaded borer larvae already in the tree's heartwood.

Black locust growing in low value stands may not be worth the cost of insecticide treatment. Consider cutting trees early if they are being grown for timber. Owners should consider cutting and removing infested stands if the trees become a hazard due to falling branches or if the stand is serving as a source of infestation for other more highly valued black locust trees nearby. Falling limbs from damaged black locust may present a hazard in high traffic areas. Consult an arborist for an evaluation of hazardous trees.

Note The painted hickory borer, *Megacyllene caryae* (Gahan), looks very much like the closely related locust borer. Unlike locust borer adults, painted hickory borer adults emerge in early spring. They attack stressed or recently cut hickory and other hardwoods. Painted hickory borer is commonly found in cut firewood and may emerge from firewood brought inside the home, where it is a nuisance but not a structural pest.

Adult painted hickory borer (*Megacyllene caryae*). (Natasha Wright, Florida Department of Agriculture and Consumer Services, Bugwood.org)

