



## Banded Elm Bark Beetle

*Scolytus schevyrewi* Semenov (Coleoptera: Curculionidae: Scolytinae)

### Introduction:

The Banded Elm Bark Beetle (BEBB) is an exotic invasive beetle native to northern China, central Asia and Russia, which now threatens America's elm trees. It probably entered the U.S. in infested wood pallets or shipping crates with bark attached. Reported in Colorado and Utah in 2003, a subsequent survey of museum specimens revealed it had been collected a decade earlier in Colorado, in 1994. Scientists are concerned BEBB may prove to be a carrier of Dutch elm disease.

### U.S. Distribution/Spread:

BEBB is found in 22 states from California to New Jersey, Montana to Oklahoma, Maryland and Pennsylvania, suggesting it was already distributed nationwide when first reported in 2003. Adults are weak short range fliers, and can also be dispersed by air currents, but widespread distribution in the U.S. results from people moving infested elm nursery stock and wood products with bark (firewood, logs) into uninfested areas.

### Host Plants:

In the U.S., BEBB has been found infesting and breeding only in elm species. The beetle has been collected from elm trees that are drought stressed, fallen or dying from Dutch elm disease, and from broken elm branches and firewood.

### Biology and Damage:

BEBB overwinter underneath the bark either as mature larvae, pupae or adults. It takes 40-45 days to complete a life cycle, and there may be 2-3 overlapping generations a year. New adults emerge in early spring and begin feeding in the crotches of tender twigs. Adults are most active on warm, sunny afternoons. Females excavate entrance holes in the bark of elm trees, mate there with males, then construct a single vertical egg gallery about 2-3.5" (5-9 cm) long in the cambium underneath the bark. Galleries contain an average of 60 individual egg niches (range: 23-123) closely arranged along each side of the gallery wall, sealed with a mixture of sawdust and adhesive secretions.

Newly hatched larvae feed under the bark, constructing individual mines somewhat perpendicular to the sides of the egg gallery, which eventually meander up, down, and even across each other. The larval stage is the most destructive as larvae feed on the cambium (growth cells) and phloem layers (food conduction tissue) under the bark, and high larval densities can lead to complete girdling of the cambium. Larvae eventually move to just under the outer layer of bark to pupate in chambers constructed at the ends of the galleries. All life stages of BEBB may be present later in the summer.

### Description:

- Adults are small, 0.12-0.16" (3-4 mm) long, cylindrically shaped beetles.
- The body is shiny, reddish-brown; the head and thorax are dark brown/black.



BEBB dorsal view. Whitney Cranshaw, Colorado State University, Bugwood.org

- A dark brown transverse band across the elytra (wing covers) is usually present, but can be absent.
- The wing tips extend beyond the end of the abdomen, and the bottom part of the abdomen rises steeply to meet the elytra.



BEBB lateral view. E. Richard Hoebeke, Cornell University, Bugwood.org

- Mature larvae are milky-white, legless, C-shaped grubs, with creamy yellow heads slightly retracted into the prothorax, and brown mouthparts.
- Mature larvae, at 0.2-0.3" (5-7.5 mm) long, are slightly larger than adult beetles.
- Larvae are found in the cambium under the outer bark.

## What to Look For:

BEBB usually attack elms weakened and stressed by drought, and prefer trees over 4 years old with trunks or branches greater than 2.0" (> 5 cm) in diameter. BEBB are capable of killing mature, drought-stressed elms, and during outbreaks may attack healthy elms.

## Symptoms of BEBB infestation include:

- Wilted and/or fading foliage and branch breakage.
- Small round entrance/exit holes 0.06-0.08" (1.6-2.0 mm) in diameter, in the bark.
- Sawdust and occasionally sap flow may be found on the bark near entrance holes.
- Bark may easily slough off or be peeled away due to larvae feeding on the inner bark.
- Repeated attacks on declining trees can lead to tree death.



Exit holes in a Siberian elm trunk made by the adult BEBB.  
Photo: Wyoming State Forestry Division.

- BEBB galleries are asymmetric with a single vertical egg gallery and numerous overlapping larval mines radiating from both sides.



BEBB galleries with a single vertical egg gallery and individual mines meandering away from the center. Jose F. Negrón, USDA Forest Service Rocky Mountain Research Station

## Look-alike Insect:

BEBB is similar to the smaller European elm bark beetle (SEEBB), *Scolytus multistriatus* Marsham, the exotic, invasive bark beetle largely responsible for the spread of Dutch elm disease (DED) in the U.S. BEBB is slightly larger than SEEBB, appears to be more aggressive, and is able to survive further north, extending the range of potential damage. If BEBB is confirmed as a vector of DED, it could ultimately become a greater threat to elms in the U.S. than SEEBB.

**Identification of bark beetle species is difficult and should be confirmed by a professional entomologist.**

### How to Report a Possible Sighting/Infestation

#### **In Maryland:**

**University of Maryland Cooperative Extension Exotic Pest Threats Website:**  
<http://hgic.umd.edu/faq/sendAQuestion.cfm>

**Maryland Department of Agriculture:** call 410-841-5920 to report suspect pests; visit [http://www.mda.state.md.us/plants-pests/invasive\\_species.php](http://www.mda.state.md.us/plants-pests/invasive_species.php) for information.

**Nationally: USDA-Animal and Plant Health Inspection Service (APHIS)**  
[http://www.aphis.usda.gov/services/report\\_pest\\_disease/report\\_pest\\_disease.shtml](http://www.aphis.usda.gov/services/report_pest_disease/report_pest_disease.shtml)

**Adult BEBB  
Actual Size:**



## Where to Get More Information:

UMD Cooperative Extension Exotic Pest Threats Website: <http://www.PestThreats.umd.edu/index.cfm>

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