



# Entomological Notes

Department of Entomology

## BRONZE BIRCH BORER

*Agrilus anxius* Gory

The bronze birch borer is a serious secondary pest of white, paper, and cut-leaf weeping birches. This native flatheaded borer will attack yellow, gray, and other species of birch. It has also been reported on beech (Fig. 1).

### DESCRIPTION

Bronze birch borer adults are slender, dark, iridescent, often greenish-bronze, beetles, 7-12 mm long. A fully grown larva is slightly longer than 12 mm, very slender, and has a flattened, enlarged area behind its head (Fig. 2).

### LIFE HISTORY

This species overwinters mostly as fourth instar larvae in a boat-shaped depression just under the bark. In late April or early May larvae molt into the pupal (resting) stage. During early June adults chew their way through the bark and emerge leaving the characteristic "D"-shaped hole. After mating, females lay eggs in cracks, beneath bark flaps, or other damaged areas. Eggs hatch in a few days into tiny white larvae that chew their way into the bark and start feeding. They make crooked, criss-crossing galleries in the inner bark. In the fall, larvae bore into the sapwood to overwinter. This species may have a 1- or 2-year life cycle with the latter being more common. The length of development is mainly governed by host plant condition and the time of year that eggs are laid.

### DAMAGE

The first indication that a tree is infested with borers is wilting and dying of the upper crown. Closer examination may reveal ridges and bumps on limbs and branches as well as "D"-shaped adult emergence holes in the bark. In some cases these holes will be surrounded by a rusty red stain. This is an indication that borers may be present.

Removal of the bark where ridges are abundant will reveal irregular, winding, sawdust-packed tunnels called galleries that are made by larvae excavating

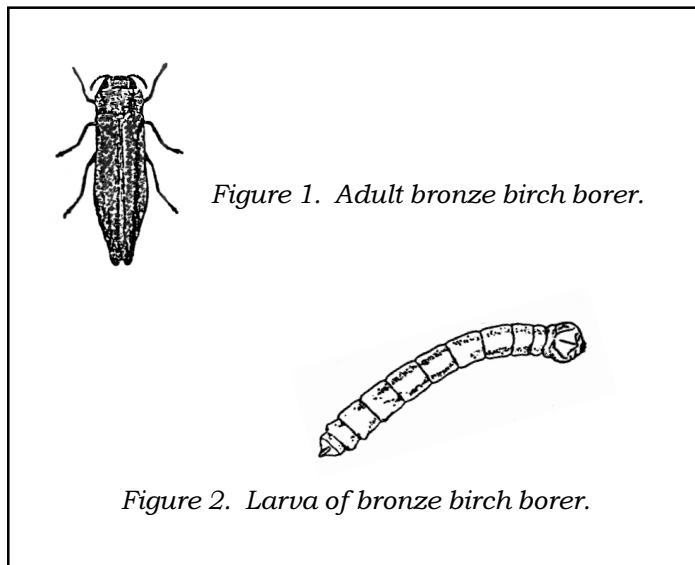


Figure 1. Adult bronze birch borer.

Figure 2. Larva of bronze birch borer.

plant material from between bark and wood. Borers usually first attack 3/4 inch diameter branches in the crown of the tree. Girdling of the cambium by tunneling larvae interferes with movement of plant sap and nutrients that may result in partial or complete death of a branch or tree.

### MANAGEMENT

#### Non-Chemical

Plant birch trees in a cool, moist, shaded environment. They do not grow well in an open, sunny exposed area, such as the middle of a large, open yard or the exposed south or west side of a building. Further, borers prefer to lay their eggs on trees in full sunlight.

Keep birch trees healthy by watering and fertilizing as needed. Larvae are reported not to survive in healthy trees. Birch species most susceptible to injury by bronze birch borer include *Betula papyrifera*, *B. pendula* and its cultivars, and *B. populifolia*. Monarch birch, *B. maximowicziana*, *B. platyphylla* var. *japonica*, and river birch, *B. nigra*, and other brown bark species of birch are thought to be resistant or more tolerant.

Branches showing damage symptoms, or which are completely dead, should be pruned and destroyed by early May.

## **Chemical**

Application of registered insecticides for bronze birch borer management should be timed to coincide with hatching of young larvae. To prevent newly hatched larvae from successfully chewing their way into the host plant, thoroughly spray branches and trunk with registered insecticides during the first and third weeks of June.

## **WARNING**

Pesticides are poisonous. Read and follow directions and safety precautions on labels. Handle carefully and store in original labeled containers out of the reach of children, pets, and livestock. Dispose of empty containers right away, in a safe manner and place. Do not contaminate forage, streams, or ponds.

Gregory A Hoover  
Sr. Extension Associate  
Dept. of Entomology  
January 2002

TS-9

© The Pennsylvania State University 2001

This publication is available in alternative media on request.

Where trade names are used, no discrimination is intended and no endorsement by The Pennsylvania State University or Pennsylvania Department of Agriculture is implied.

Entomological Notes are intended to serve as a quick reference guide and should not be used as a substitute for product label information. Although every attempt is made to produce Entomological Notes that are complete, timely, and accurate, the pesticide user bears the responsibility of consulting the pesticide label and adhering to those directions.

Issued in furtherance of Cooperative Extension Works, Acts of Congress May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture and the Pennsylvania Legislature. T.R. Alter, Director of Cooperative Extension, The Pennsylvania State University.

The Pennsylvania State University is committed to the policy that all persons shall have equal access to programs, facilities, admission, and employment without regard to personal characteristics not related to ability, performance, or qualifications as determined by University policy or by state or federal authorities. It is the policy of the University to maintain an academic and work environment free of discrimination, including harassment. The Pennsylvania State University prohibits discrimination and harassment against any person because of age, ancestry, color, disability or handicap, national origin, race, religious creed, sex, sexual orientation, or veteran status. Discrimination or harassment against faculty, staff, or students will not be tolerated at The Pennsylvania State University. Direct all inquiries regarding the nondiscrimination policy to the Affirmative Action Director, The Pennsylvania State University, 201 Willard Building, University Park, PA 16802-2801, Tel 814-865-4700/V, 814-863-1150/TTY.