

The Shot-hole Borer

by Lloyd Eighme, retired entomologist

The large family Scolytidae includes the bark beetles which are of great economic importance because of the damage they do to trees. Gardeners are concerned about bark beetles that feed on fruit trees. One of these is the shot-hole borer (*Scolytus rugulosus*) introduced to America from Europe. It is a common pest in our area. It is not often seen because the adult beetle is only about 2 mm (less than 1/8 inch) long. What is seen are the small holes in the bark made by the emerging adult beetles. By then damage is already done by the larvae that feed on the inner bark. After completing their growth they emerge all at once as adult beetles through small holes they chew through the bark. A heavily infested branch looks like it was hit by a blast from a shotgun, hence the name shot-hole borer.

Many insects are strongly attracted to plants that are dying or stressed due to lack of water or any other factor that weakens the plant, causing it to give off a distinctive chemical odor. The shot-hole borer not often attacks sick trees, but it may successfully invade a tree that is low on water or nutrients. If these beetles are not checked and they do build up a large population in weakened branches or twigs on a healthy tree, they might successfully invade the healthy wood and can kill a tree. The borers may complete two generations in one season. The first brood may be small, but can grow from egg to adult in one month or less, depending upon the temperature. The female beetle chews a tunnel into the bark and lays 10-20 eggs in small niches in the sides of the tunnel. Females from the first brood may each make a new tunnel with eggs. That many tunnels in the inner bark of the tree can disrupt the flow of water and nutrients sufficiently to kill the tree or the infested limb. The mature larvae may bore into the wood to pupate and emerge as adults the following spring, starting a new population.

When small trees grown in dense rows in the nursery are planted out by themselves with no protection they may sunburn. The sunburned bark is attractive to shot-hole borers and they may girdle the bark of the small stem, killing the tree. Some protection for the new stem such as white latex paint or stem wrappers can protect the new trees from shot-hole borers. All infested stems or twigs should be removed and burned. A healthy tree is less likely to be damaged by these borers.

The European shot-hole borer (*Xyleborus dispar*) is not a true bark beetle and should not be confused with (*Scolytus rugulosus*). The European shot-hole borer does not feed on the bark or wood of the tree. The female makes a tunnel under the bark in which to lay her eggs, but the larvae feed on a special fungus that is planted in the tunnel by the female. A heavy infestation of the European shot-hole borer can kill a small tree by making many tunnels into the stem, cutting off the circulation and weakening the stem. For more information about the European shot-hole borer see PLS 29.