

# Cankers

## **Black Canker** *Ceratocystis fimbriata* Ellis & Halst.

**Host:** Aspen

**Symptoms/signs:** Cankers are target shaped with concentric ridges of dead callus. Older cankers typically have a central area of dead wood surrounded by a series of bark calluses. These callused areas may be concentric in outline, but usually are irregularly shaped and ragged in appearance because of the massive callus folds and flaring dead bark. Bark and exposed wood darken, resulting in a black canker.

### **Biology:**

*Ceratocystis fimbriata* can infect through the epidermis of leaf blades, petioles, and young stems; but trunk wounds are considered to be the primary places of infection. Several species of beetles have been found to carry the fungus and are believed to vector it. Infection first appears as a circular necrotic area on the trunk around a fresh wound or branch junction. During cambial growth in the spring, the tree forms a callus at the margins of the canker, which temporarily walls off infection. The fungus invades the new cambium and inner bark during the tree's next dormant season and kills a new zone of tissue. This process is repeated each year until



*Figure 210. Callus folds and flaring dead bark caused by Ceratocystis fimbriata.*

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the canker, consisting of successive rings of dead bark and wood, is formed. The fruiting structures, perithecia, are formed in the spring along the border of the canker on tissues dead at least a year. Spores ooze from the perithecia in sticky masses and are often vectored to other wounded trees by insects. Boring insects are often found in cankered areas. There appears to be a genetic predisposition to infection, as some aspen clones are more susceptible to infection than others.

**Effects:** *C. fimbriata* seldom kills large trees since trees generally grow faster in circumference than black cankers enlarge. However, it is possible for several cankers to coalesce and girdle a tree. The greatest damage from this disease is stem deformation and subsequent decay that can result in bole breakage.

**Similar Insects and Diseases:** Sooty bark (*E. pruinosa*) is also black in color but does not form a target canker like *Ceratocystis*.



Figure 211. Bark and callus removed to expose target canker.

**References:** 38, 39, 44, 92