FOREST INSECT AND DISEASE SURVEY
PEST REPORT
Forest Research Laboratory • Canadian Forestry Service • Victoria

June 3, 1971

Bark Beetles and Wood Borers in Conifer Logs in British Columbia

D. A. Ross

Even though wood handlers in British Columbia are aware of the importance of bark beetles and wood borers in conifer logs, they undoubtedly find the habits and damage of these pests confusing. This article attempts to clarify the problem to ensure greater effectiveness of preventive measures.

Logs cut from dying and fire-killed or year old wind-felled trees are usually infested and often are badly damaged before logging. Such should be kept separate from those of healthy living trees because these unseasoned logs may also become infested and damage will ensue if they are not processed early in the year.

A. Bark Beetles

Bark beetles complete their life cycle in the bark and therefore do not damage the wood of logs other than through the introduction of stain organisms. The tiny piles of reddish-brown boring dust in bark crevices are an indication of the presence of bark beetles, Some, such as the destructive Dendroctonus spp., (the spruce beetle. Douglas-fir beetle and mountain pine beetle) on completing their life cycles in logs, fly to attack, often killing nearby conifers of commercial size. An illustration of this is the frequency of beetle-killed Douglas-fir trees about millyards in the dry interior forests.

B. Wood Boring Insects

Numerous species of borers infest and damage logs. The major groups are the ambrosia beetles, the flatheaded wood-boring beetles, and the roundheaded wood-boring beetles and the woodwasps. Ambrosia beetles prefer logs felled in the fall to those felled during the following spring. Most other wood borers attack only the spring-felled logs with their relatively fresh "green" bark.

Ambrosia Beetles

Ambrosia beetles are a greater problem on the Coast than in the Interior. The major species attack early in the spring, boring pin-head sized galleries that penetrate as much as two inches into the sapwood. Attack is characterized by small piles of wood-coloured boring dust that the beetles push out of the tunnels. The galleries and the adjacent wood become darkened by the fungi introduced by the beetles. Most of the boring damage is completed early in the summer.

Flatheaded Wood Borers

Numerous flatheaded or metallic wood-boring beetles infest logs but generally cause little damage since the larvae of most species feed on or just under the bark, and penetrate the wood only three-fourths of an inch or so to pupate. One of the exceptions, the golden buprestid, is long-lived and may continue to burrow a network of galleries up to 20 or more years after the infested log has been converted to lumber and used in a building.

Round-headed Wood Borers

The most frequently destructive wood borers in logs, particularly in the interior forests of British Columbia, are the round-headed or long-horned wood-boring beetles. This family contains a number of economically important species but most of the damage in recent years has been attributed to two groups of "sawyer beetles", Monochamus spp. and Tetropium spp. The larvae of these groups spend several weeks feeding in and under the bark, then some time after mid-June they penetrate the wood to complete their feeding and development. Monochamus spp. are large beetles with antennae longer than their bodies. Their larvae burrow two or three inches into the sapwood filling their galleries, as they advance, with packed shreds of wood. The Tetropium are small beetles whose larvae penetrate less than two inches into the sapwood. These small borers are frequently a problem in export spruce lumber that has not been satisfactorily kiln-treated.

Woodwasps

Woodwasps or horntails lay their eggs in the wood of green logs early in the summer and their larvae burrow extensive galleries during the ensuing months. Woodwasps are more common in lumber than is generally believed. Their galleries are readily overlooked because they are tightly packed with inconspicuous (slightly yellowed) boring waste that roughly matches the colour of the wood. Often when infested wood is processed for veneer the boring waste readily falls from the galleries making them conspicuous. Woodwasp damage has frequently been a problem in peeler logs cut from fire-damaged trees in interior British Columbia.

Preventive Measures

Logs should be utilized as soon as it is feasible. If logs cannot be processed before the borers attack or are likely to do their damage, preventive measures may be taken:

1. Continuous thorough sprinkling of logs at least during daylight hours should protect them from insect attack.

2. Peeling logs before attack is a good preventive measure when such is practical. Apparently all bark beetles and borers require bark either as a repository for their eggs or for successful tunnelling.

3. Logs stored in water before larvae tunnel into the wood generally remain free of borer damage, even if all larvae are not drowned. Generally water storage prevents attack although in some instances, bark beetles may infest the upper surface of logs and develop to the adult stage.

4. Some insecticides are effective in protecting logs against insect attack. Information on their use is available from:

Canadian Forestry Service
Forest Research Laboratory
506 West Burnside Road
Victoria, B. C.

Phone: 479-7131