CANADA

Timber Talks

Department of Fisheries and Forestry

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Damage in Fir Forests No. 65

Throughout the spruce-alpine fir forests in northern interior British Columbia and the high elevations in the southern interior, alpine fir is subject to a bark disease from infection by the balsam bark disease fungus that results in dieback and cankering of the main stem and branches. Its presence can be detected in nearly all stands; in some areas of regeneration, and in residual stands after logging, it may be very prevalent.

Three major symptoms characterize this disease. Red-flagging is the most common and the most conspicuous. Branch ends are killed and turn reddish brown, contrasting vividly with the green color of healthy foliage. Another symptom is **stem** canker that frequently occurs near the base of a branch whorl where one of the branchlets has been infected and died. The fungus spreads to the stem, producing a sunken reddish-brown area on the bark but rarely girdling the tree. Cankers are produced annually, and fruiting of the fungus occurs in the killed bark that has become resin-soaked and has, in some instances, been retained on the tree for several years. The cambium beneath the canker is killed but the sapwood remains undamaged. Dieback of the leader is a further symptom. The fungus spreads from the infected leader tip or branchlet near the top of the tree to the main stem, which it girdles, and grows down for a variable distance, killing the leader and causing a red-top. Progression of the infection down the main stem of seedlings sometimes results in complete mortality.

Dieback and canker disease of alpine fir in British Columbia is mainly attributed to a parasitic fungus, Potebniamyces balsamicola Smerlis, but is sometimes associated with other species of lesser importance. It fruits consistently on diseased tissues and on stem cankers. Infection is usually initiated when the tree is dormant. The following spring, developing fruiting bodies of the fungus gives the bark a finely pimpled appearance. Spores mature in the summer and are discharged into the atmosphere to reinfect other dormant trees. The disease is most prevalent in forests that have been disturbed and where residual trees have not fully adjusted to their changed environment.

REPORT: Potebniamyces (Phacidiella) Disease of the True Firs in British Columbia. A. Funk. Forest Research Laboratory, Victoria, B. C.