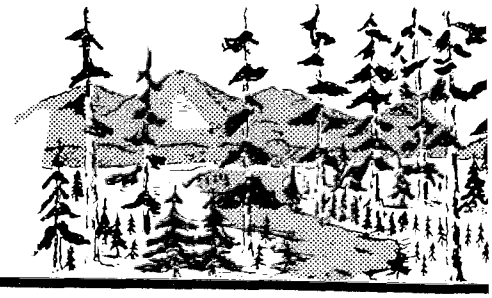
DEPARTMENT OF FORESTRY CANADA

Timber Talks



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ANOTHER FUNGUS THAT CAUSES TREE DISEASE

No. 33

Trees and forests become diseased from many causes and constant awareness of prevailing forest conditions is required to detect abnormalities, identify causal agents, evaluate potential damage and to implement precautionary measures to inhibit its spread.

Normal tree development prevailed in a 25-year-old Douglas-fir plantation on Vancouver Island until 1966, when it became sub-normal. Leader growth was restricted, tops bushy, needles on current twigs chlorotic and unusual loss of needles evident in leader and top branchlets. Symptoms that the stand was diseased was dieback in the upper crown and stem canker at the base of dead branches. Some large trees had been killed back 15-20 feet and small trees that had regenerated naturally were top-killed. Declining vigor of the trees was probably conducive to attack by fungi, but reasons for the reduced vigor could not be substantiated. Adverse climatic conditions can influence tree development but the only unusual weather condition was abnormal snowfall in 1965 and 1966. It seems questionable to attribute the decline to this factor.

Examination revealed that there was an association between spread of the disease within the stand and a new species of fungus. It was identified as the ascigerous state, whereby reproduction is sexual, of a species that had been considered asexual. Asexual and sexual fruiting bodies sometimes occurred on the same host but rarely intermingled.

Fruiting bodies of the new species were cultured in distilled water or malt agar and germinated at temperatures between 5 to 25°C. When maintained at 5 to 10°C the culture covered an area about 9 cm in diameter in about two months. White to grayish stromatic bodies that formed throughout the cultures, were capable of re-initiating growth several months after becoming completely dried.

Isolated outbreaks of disease from the fungus have been previously detected in British Columbia on poor quality sites. There is now evidence that the fungus caused disease on good quality sites, although the vigor of the trees within the infected stand had previously declined from some unknown cause. It would seem that spread of the infection can only be partially attributed to site quality. Although damage may be minor now, losses could become serious as programs of reforestation expand.

REPORT: *Diaportha lokoyae* N. Sp., The Perfect State of *Phomopsis lokoyae* Hahn.
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