



Timber Talks



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WITCHES'-BROOMS

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Throughout the coniferous forests of Canada, different species of dwarf mistletoe are present. These parasitic plants cause distortion of wood cells, reduce height growth and sometimes kill the tree. Infections from these plants on hemlock and larch in British Columbia may cause a 50 per cent loss in the volume of the stand.

Early evidence of an infection are swellings on the trunk and branches of the tree and the presence of the plant. Mistletoe is a spiky, moss-like-appearing plant, yellowish-green in colour, about 1"-5" in length and occurs in clusters. Development of the mistletoe causes a proliferation of the branches of the tree, resulting in the easily recognizable witches'-brooms.

The disease is spread when the seed is forcibly ejected from the mistletoe fruit. Seeds that fall on tree needles gravitate to the leaf axils, where they germinate. Rootlets penetrate the bark tissues and the plant develops as a parasite of the tree. The extent of the spread of the disease is dependent upon the quantity of seed and the pattern of their dispersal. To obtain a more complete understanding of its infectious nature, mistletoe seeds from a severely infected 35' hemlock on Vancouver Island and a lightly infected 63' larch in southeastern British Columbia were trapped in 1964 and 1965.

Quantity of seed produced and the expanse of their dispersal was much greater in 1965 than in 1964. In the later year, 41,950 seeds from mistletoe on the hemlock were dispersed over an area of 5,800 sq. ft. and from the larch 2,725 seeds over 2,200 sq. ft. Ten such hemlock or 20 larch that were suitably spaced, could infect all trees over a whole acre. The period of peak seed dispersal seemed related to climate. In both locations it was earlier in 1965 than in the cooler summer of 1964, and more advanced when the plant was growing under the continental environment of southeastern British Columbia than under the maritime conditions of Vancouver Island.

Spread of the disease is accelerated when infected trees are left after logging, fire or other disturbances. Effective control requires that large and small trees severely and lightly infected be removed as soon as possible.