THREE NEW HOST RECORDS FOR DWARF MISTLETOES IN BRITISH COLUMBIA

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While the signs and symptoms of dwarf mistletoe are fairly conspicuous, some host-parasite combinations occur so infrequently in British Columbia that new ones are still being discovered. Three new combinations are discussed in this note.

1. LARCH DWARF MISTLETOE (Arceuthobium laricis [Piper] St. John) ON PONDEROSA PINE (Pinus ponderosa Laws.)

Hawksworth and Wiens **(2)** reported that this combination was first observed in 1911 in Montana. They examined four other collections and rated nonderosa pine as an occasional host for larch mistletoe, i.e. 5% to 50% of trees infected when within 20 ft of heavily infected western larch (Larix occidentalis Nutt.), the primary host. In Canada, the first collection was made in 1970, 12 miles west of Creston, alongside Hwy. 3 (Fig. 1,A). This was a single main-stem infection on a 4 ft ponderosa nine located under an overstory of severely mistletoe-infected western larch. No other ponderosa pines were in the immediate area. *Two* more collections of this combination were made in 1972, one 8 miles south of Creston alonq Dodge Creek Trail (Fig. 1,B), the other at the junction of Hwys. 3A and 6 near South Slocan (Fig. 1,C). Although stands in both locations were dominated by infected western larch, they also contained numerous ponderosa pines. At the Dodqe Creek site, only 2 infections were noted on one ponderosa pine, whereas 8 to 10 dead infections and several live ones were present on the infected ponderosa pine at South Slocan. As the neighboring uninfected Donderosa pine trees at South Slocan appeared equally exwosed to larch dwarf mistletoe seed, the degree of susceptibility of ponderosa nine to larch dwarf mistletoe wrobably varies greatly amonq individual trees. All infections examined had caused well-defined, localized swellings with no branch proliferation or production of witches' brooms.

Ponderosa pine is also attacked by lodgepole nine dwarf mistletoe (Arceuthobium americanum Nutt. ex Engelm.) in British Columbia (3).

2. LARCH DWARF MISTLETOE ON GRAND FIR (Abies grandis [Dougl.] Lindl.)

Hawksworth and Wiens (2) list a collection representing this combination made in 1915 in Oregon and four others from western United States. In Canada, the first collection was made in 1971 at the junction of Hwys. 3A and 6 near South Slocan (Pig. 1,D). The stand contained mistletoe-infected larch overstory with qrand fir in the understory. A second collection was made in 1372 on Dodge Creek Trail about 7 miles south of Creston (Fig. 1,E). Though lacking aerial shoots, this one consisted of a well-defined swelling with numerous basal cups, indicating the nresence of dwarf mistletoe. The parasite was assumed to be larch dwarf mistletoe because it was abundant on the surrounding western larch trees and was the onlv one observed in the area. Some branch proliferation but no actual development of witches' brooms was noted on the infected grand fir branches. The combination is listed as rare in the United States (less than 5% of trees infected within 20 ft of heavily infected western larch) (2), and our surveys confirm this same status in Canada.

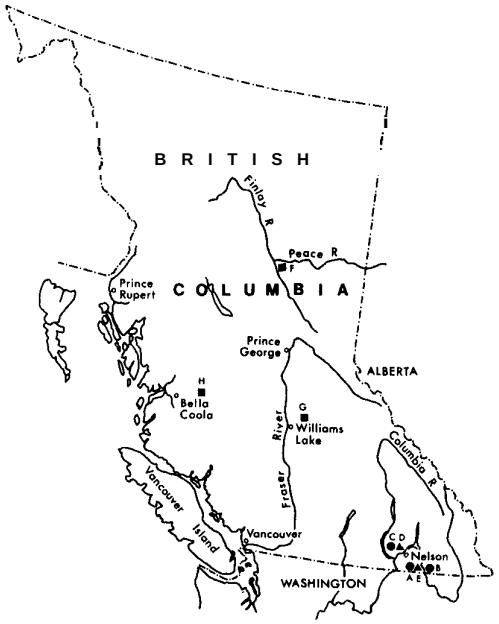

Figure 1. Locations of new host records for dwarf mistletoe in British Columbia; ● = larch dwarf mistletoe on ponderosa pine; ▲ = larch dwarf mistletoe on grand fir; ■ = lodgepole pine dwarf mistletoe on white spruce.

Grand fir is also occasionally attacked by Douqlas-fir dwarf mistletoe (Arceuthobium douglasii Enqelm.), in British Columbia **(4)**.

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3. LODGEPOLE PINE DWARF MISTLETOE (Arceuthobium americanum) ON WHITE SPRUCE (Picea glauca [Moench] Voss)

This combination is commonly found in Alberta where white spruce occurs under heavily mistletoe-infected lodgepole pine (1). The infections are systemic, the witches' brooms small and compact, and the aerial shoots are generally sparse. In British Columbia, this combination appears less frequently. In 1970, the first collection was made at mile 65 on the Parsnip Forestry Road (35 miles north of MacKenzie) (Fig. 1,F). The infected tree had numerous brooms but no localized branch swellings. Only one of the brooms had aerial shoots. As is often the case in Alberta, surrounding white spruce trees were not infected. A second collection was made 13 miles south of Horsefly along Moffat Creek in 1972 (Fig. 1,G). The infected tree was severely broomed and aerial shoots were abundant. Three nearby white spruce were uninfected. A third collection was made about 13 miles east of Anahim Lake (Fig. 1,H). Two infected white spruce, both with several witches' brooms, were found within the understory of a lodgepole pine stand severely infected with dwarf mistletoe. About 30 other spruce examined in the same stand were uninfected. Thus, while the combination is rare in terms of number of trees infected, individual white spruce may be severely damaged.

In British Columbia, lodgepole pine dwarf mistletoe is the only mistletoe recorded in nature on white spruce.

Literature cited

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