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DISTRIBUTION OF LIMBER PINE DWARF MISTLETOE IN NEVADA

Robert L. Mathiasen¹ and Frank G. Hawksworth²

Limber pine dwarf mistletoe, *Arceuthobium cyanocarpum* (A. Nels. ex Rydb.) A. Nels. (Viscaceae), parasitizes several species of white pine (subgenus *Strobus*) in the western United States from Montana and Colorado to Oregon and California (Hawksworth and Wiens 1972, Mathiasen and Hawksworth 1988). The principal hosts of this mistletoe are limber pine (*Pinus flexilis* James), whitebark pine (*P. albicaulis* Engelm.), Great Basin bristlecone pine (*P. longaeva* D. K. Bailey), and Rocky Mountain bristlecone pine (*P. aristata* Engelm.). It also occurs on western white pine (*P. monticola* Dougl.) and foxtail pine (*P. balfouriana* Grev. & Balf.) in northern California (Hawksworth and Wiens 1972, Mathiasen and Hawksworth 1988). The limber pine dwarf mistletoe causes local, severe mortality in several areas (Hawksworth and Wiens 1972, Mathiasen and Hawksworth 1988).

The distribution of limber pine dwarf mistletoe in Nevada is poorly documented (Hawksworth and Wiens 1972, Hawksworth 1988, Kartez 1988). First collected in Nevada in 1881 on Great Basin bristlecone pine in the Spring Creek (Charleston) Mountains in Clark County, it was not collected elsewhere in Nevada until 1958 when it was found in the Ruby Mountains near Elko (Elko County) (Hawksworth and Wiens 1972). It has since been reported from the Sheep Mountains (Clark County), Copper and East Humboldt mountains (Elko County) (Hawksworth and Wiens 1984), and the South Snake Mountains (White Pine County) (collection by D. K. Bailey). Hawksworth (1988) suggests that the mistletoe probably occurred in the Toiyabe Mountains of Nye County because Linsdale et al. (1952) illustrated a limber pine that appeared to be infected by this mistletoe. This

note confirms Hawksworth's suspicion that limber pine dwarf mistletoe occurs in the Toiyabe Mountains.

In 1989 the senior author found *Arceuthobium cyanocarpum* at several new localities in Nevada (Fig. 1): on limber pine in the North Snake Mountains (White Pine County) near Mount Moriah, in the Bull Run Mountains (Elko County) near Porter Peak, in the Santa Rosa Mountains (Humboldt County) south of Windy Gap, at three locations in the Toiyabe Mountains (North Toiyabe Peak and Bunker Hill, Lander County, and near Arc Dome, Nye County), and on the southeast slopes of Boundary Peak in the White Mountains (Esmeralda County) just east of the California state line. Limber pine dwarf mistletoe was also collected on limber pine and Great Basin bristlecone pine near Mount Washington in the South Snake Mountains, probably near the same location where D. K. Bailey collected it on Great Basin bristlecone pine. In addition, a population of limber pine dwarf mistletoe was found in the Warner Mountains of northeastern California (Modoc County) on whitebark pine. Specimens of dwarf mistletoes collected are deposited at the USDA Forest Service Pathology Herbarium (FPF), Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado. Four additional mountain ranges in Nevada were visited: the Toiyabe Mountains (Mount Jefferson area) and the Monitor Range (Monitor Peak area) in Lander County, the Independence Mountains (Jack Peak area) in Elko County, and the Pine Forest Mountains (Duffer Peak area) in Humboldt County. Although extensive populations of limber pine and/or whitebark pine were observed in those areas, no dwarf mistletoe was found. However, it is probable that the parasite occurs in other

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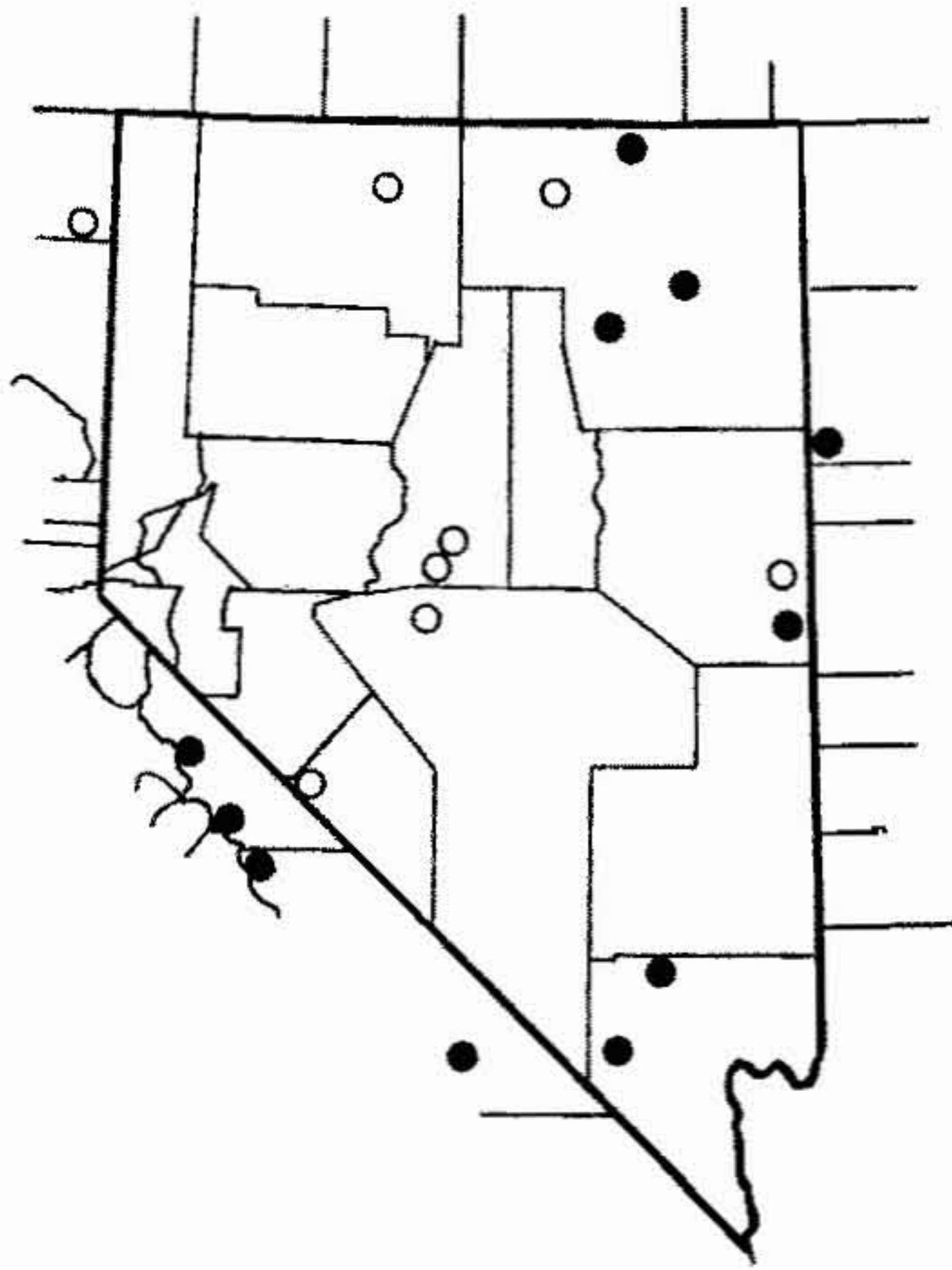


Fig. 1. Distribution of *Arceuthobium cyanocarpum* in Nevada and adjacent areas. Solid dots denote previously reported locations (Hawksworth and Wiens 1972, 1984), and open circles indicate locations first reported in this study.

parts of these ranges as well as other isolated mountain ranges in Nevada that support sizeable populations of limber pine, Great Basin bristlecone pine, or whitebark pine (Critchfield and Allenbaugh 1969, Critchfield and Little 1971).

Considering that limber pine dwarf mistletoe is noted for its extremely disjunct distribution in the western United States (Hawksworth and Wiens 1972, 1984) and its occurrence in adjacent areas in western Utah (Deep Creek Mountains) and eastern California (Panamint Mountains and Warner Mountains), it is not surprising to find it surviving in

widely separated mountain ranges in Nevada. Both limber and Great Basin bristlecone pines occurred some 800 to 1,000 m lower than at present during the late Quaternary (Thompson and Mead 1982). Thus, their dwarf mistletoe was presumably much more widely distributed then also. However, as the climate warmed, the pines and their associated dwarf mistletoe receded to the higher elevations of major ranges and the dwarf mistletoe became restricted to scattered relictual populations.

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