## Arceuthobium cyanocarpum in Oregon

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## ABSTRACT

Knutson, D. M., and Tinnin, R. O. 1981. Arceuthobium cyanocarpum in Oregon. Plant Disease 65: 445.

The presence of Arceuthobium cyanocarpum in Oregon has been confirmed. It was found near Sisters, OR, on Pinus albicaulis and Tsuga mertensiana. This is the first report of A. cyanocarpum on T. mertensiana.

We recently confirmed the existence of limber pine dwarf mistletoe (Arceuthobium cyanocarpum Coult. and Nels.) in Oregon. The parasite was found growing on Pinus albicaulis Engelm. and Tsuga mertensiana (Bong.) Carr. A. cyanocarpum occurs primarily on Pinus flexilis James in scattered locations throughout the mountains of Idaho, Montana, Wyoming, Colorado, Utah, Nevada, California, and possibly Arizona (1). The confirmed sites of infection nearest to Oregon are in northern California.

The only prior report of the taxon in Oregon is a 1903 collection made from P.

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albicaulis at "Obsidian Cliff" (1). We examined one location known as Obsidian Cliffs in the Three Sisters Wilderness at a site 20 km south of McKenzie Pass on the west side of the Cascade Crest and at another site on Paulina Peak, which is near an obsidian outflow. At neither site did we find A. cyanocarpum, although both supported P. albicaulis.

We found A. cyanocarpum near Little Three Creek Lake approximately 26 km south of Sisters, OR (T175, R9E, sec. 15–16). The elevation ranges from 2,040 to 2,140 m. The forest stand was composed of Abies lasiocarpa (Hook.) Nutt., Pinus contorta Dougl. (infected with A. americanum Nutt. ex Engelm.), and P. albicaulis and T. mertensiana (both infected with A. cyanocarpum). The area, about 75–100 ha, lies between Little Three Creek Lake and Tam MacArthur Rim (Fig. 1).

THREE CREEK LAKE

THREE CREEK LAKE

O 1.0 Km

Elev. range 2 042 - 2 140 m

Longitude 121'38'W.

Latitude 44'06' N.

| Infected Area

Fig. 1. Location of Arceuthobium cyanocarpum growing on Pinus albicaulis and Tsuga mertensiana in Oregon.

Although no systematic survey was made, we did not find the host-parasite combinations within the hemlock outside the area delineated. However, Hawksworth (personal communication) reports it east of Little Three Creek Lake about halfway between Little Three Creek and Three Creek Lake.

The site was rocky and steep; the ground was 90% bare. The soil was granular and derived from weathered igneous materials. Understory vegetation included Arctostaphylos nevadensis Gray, Juniperus communis L., Ribes sp., sedges, and grasses. Permanent snow fields were present within 300 m of the infected stands. Large, fallen tree trunks (75 cm dbh) of T. mertensiana suggest long-term colonization of the site by trees.

Both host trees supported high levels of infection by A. cyanocarpum. Infected trees showed flagging (dead branches) and dead tops. Large numbers of aerial shoots often extended 30-40 cm along swollen branches on the P. albicaulis. The branches had many prominent brooms. Mistletoe fruits from infections on P. albicaulis were mature in late September. Infections were frequently seen on the main bole of T. mertensiana and the brooms were very dense with few aerial shoots. The largest infected tree was a T. mertensiana that exceeded 1 m dbh

On the northwest corner of the lake, *P. contorta* infected with *A. americanum*, and *P. albicaulis* infected with *A. cyanocarpum* were growing within 5 m of each other, but there was no evidence of cross-infection. *A. americanum*, however, rarely occurs on *P. albicaulis* at Three Creek Lake about 1 km east of Little Three Creek Lake.

This report extends the known range of A. cyanocarpum about 300 km north of its previously known range along the Cascade Mountains, and it is the first report of the parasite on T. mertensiana.

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## LITERATURE CITED

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