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HOSTS OF JUNIPER MISTLETOE AT WALNUT CANYON NATIONAL MONUMENT, ARIZONA

Frank G. Hawksworth¹ and Robert L. Mathiasen²

ABSTRACT.— Four species of junipers, *Juniperus osteosperma*, *J. scopulorum*, *J. monosperma*, and *J. deppeana*, occur in mixed stands at Walnut Canyon National Monument, Arizona. All are parasitized by *Phoradendron juniperinum*, but the mistletoe was most common on *J. osteosperma* and least common on *J. scopulorum*. Fernbush (*Chamaebatiaria millefolium*, Rosaceae) was a very rare host.

Phoradendron juniperinum Engelm. ex A. Gray parasitizes several species of southwestern junipers (Hedgcock 1915), but no information has been published on the relative susceptibility of its various hosts. The Walnut Canyon National Monument Area, southeast of Flagstaff, Arizona, presents a unique area for host studies as four species of junipers occur together in mixed stands: Utah juniper (*Juniperus osteosperma* (Torr.) Little), Rocky Mountain juniper (*J. scopulorum* Sarg.), one-seed juniper (*J. monosperma* [Engelm.] Sar.), and alligator juniper (*J. deppeana* Steud.).

Stands in the vicinity of Monument Headquarters, the Rim Trail, and the Island Trail were studied and each juniper over three meters high was examined for mistletoe. In all, 282 junipers of the four species were examined.

Mistletoe was most common on *Juniperus osteosperma* as nearly two-thirds of the trees examined were infected. Perhaps this is because *J. osteosperma* is the largest of four junipers in this area, and birds which disseminate the mistletoe tend to prefer taller trees. *Juniperus scopulorum* had the least mistletoe. Infection of *J. monosperma* was intermediate, and too few *J. deppeana* trees were present to evaluate its susceptibility in this area.

Phoradendron juniperinum was found once on fernbush (*Chamaebatiaria millefolium* (Torr.) Maxim., Rosaceae) near the Monument Headquarters. Fernbush has also been reported to be a very rare host for this mistletoe at Grand Canyon National Park (Hawksworth 1952).

ACKNOWLEDGMENT

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LITERATURE CITED

- HAWKSWORTH, G. F. 1952. Unusual hosts for two southwestern mistletoes.
 HEDGCOCK, G. G. 1915. Some notes on tree diseases in our national forests. *Phytopathology* 5:175-181.

TABLE 1. Name of this table.

Host	Trees examined No.	Trees with <i>Phoradendron juniperinum</i> Percent
<i>J. osteosperma</i>	78	64
<i>J. deppeana</i>	6	50
<i>J. monosperma</i>	125	44
<i>J. scopulorum</i>	73	22

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