

SPECIES FACT SHEET

Common Name: Holzingers' Orthotrichum

Scientific Name: *Orthotrichum holzingeri* Ren. & Card.

Recent synonyms: none

Division: Bryophyta

Class: Bryopsida

Order: Orthotrichales

Family: Orthotrichaceae

Taxonomic Note: Substratum information and sporophytes are needed to determine this genus to the species level.

Technical Description: Plants brownish green to dark green forming loose flat mats up to 2 cm tall, stems branched; leaves ovate-lanceolate to oblong lanceolate, apex broadly acute to obtuse; margins revolute to just below the apex; upper median cells rounded-quadrate, 9–12 μm wide without papillae; costa ending in the apex; sporophyte exserted, broadly cylindric, 2.5–2.8 mm long, lightly 8 ribbed about $\frac{1}{2}$ the length when dry, ribbing becoming stronger when older, stomates, superficial, abundant in the lower part of the urn; peristome single, smooth, and endostome is lacking, calyptra naked, plicate.

Distinctive characters: (1) smooth leaf cells (2) smooth peristome teeth, and (3) superficial stomata.

Similar species: The smooth leaf cells; lack of endostome, naked calyptrae; and broader more obtuse leaves separate this species from *Orthotrichum laevigatum* and *Orthotrichum rupestre*. *Orthotrichum rivulare* has immersed stomates.

Other descriptions and illustrations: Lawton (1971), Vitt (1973).

Life History: Few details are known about *O. holzingeri*. Protonema, bud and shoot formation is typical for all moss development.

Range, Distribution, and Abundance: Western North American Endemic; known from Washington, Oregon, Idaho, Wyoming, and California.

Oregon Natural Heritage Information Center reports it from Union County.

BLM: None documented, suspected on Vale District.

USFS: None documented, suspected on Umatilla and Wallowa-Whitman NFs.

Uncommon to rare, possibly under collected.

Habitat Associations: According to Vitt (1991) *Orthotrichum holzingeri* is found on vertical calcareous rock surfaces and at the bases of *Salix* bushes just above rock that is frequently inundated by seasonally high water in dry coniferous forests.

Threats: Quarrying, rock climbing, and trail and road construction could be threats to this species. Changes in water levels in seasonally high water zones may eliminate populations.

Conservation Considerations: Because this species depends on limestone in the substratum, areas with limestone deposits could be surveyed for new populations. Revisit known populations to determine the extent of the distribution.

Conservation Rankings and Status:

Global: G3, Idaho (S1), Oregon (S1).

Oregon: ORNHIC List 3

Washington: Not ranked

BLM/USFS Strategic Species in Oregon

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Edited by: Rob Huff

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Updated by Camille Duncan in February 2010 (Update added

Attachment 1: Photos, to the Species Fact Sheet.)

ATTACHMENTS:

(1) Photos

References

Lawton, E. 1971. Moss Flora of the Pacific Northwest. The Hattori Botanical Laboratory. Nichinan, Miyizah, Japan. 362 pp.

NatureServe Explorer. 2008. An Online Encyclopedia of Life.
<http://www.natureserve.org/explorer/>

Vitt, D. 1973. A revision of the genus *Orthotrichum* in North America,

north of Mexico. Bryophytorum Bibliotheca 1: 1-208.

Vitt, D. 1991. Rediscovery of *Orthotrichum holzingeri*: Its Morphology and Habitat in Western North America. The Bryologist 94:77-79.

Attachment 1: Photos

All photos by Dr. Judy Harpel, under contract with the Oregon/Washington Bureau of Land Management



Whole mount wet



Whole mount dry



Whole leaf



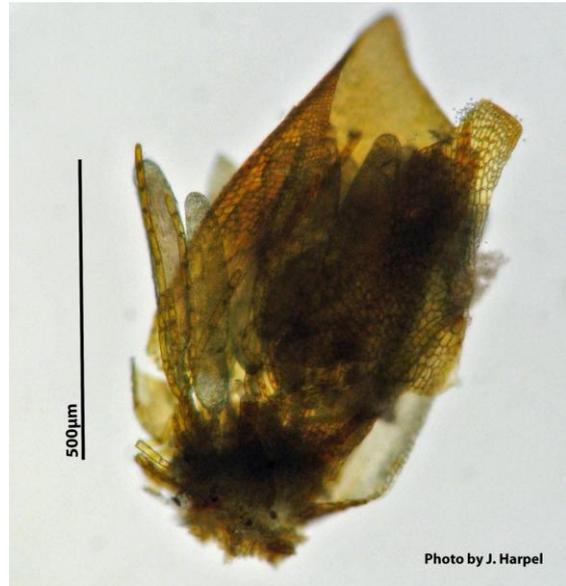
Leaf apex



Calyptra close-up



Perigonum



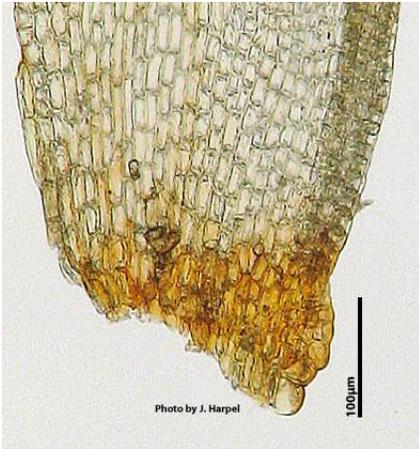
Perigonum close-up



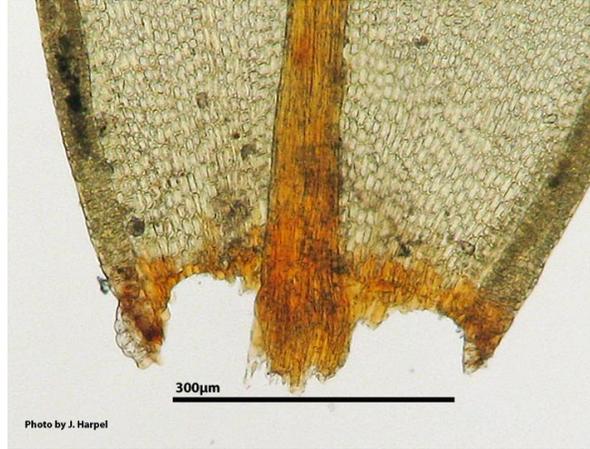
Leaf cross-section



Leaf cross-section



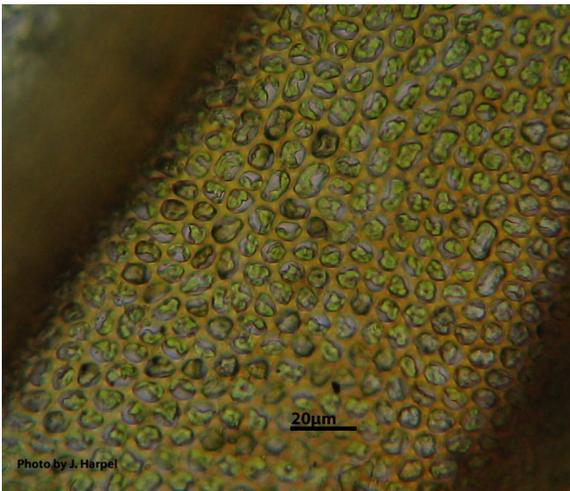
Alar cells



Alar and basal cells



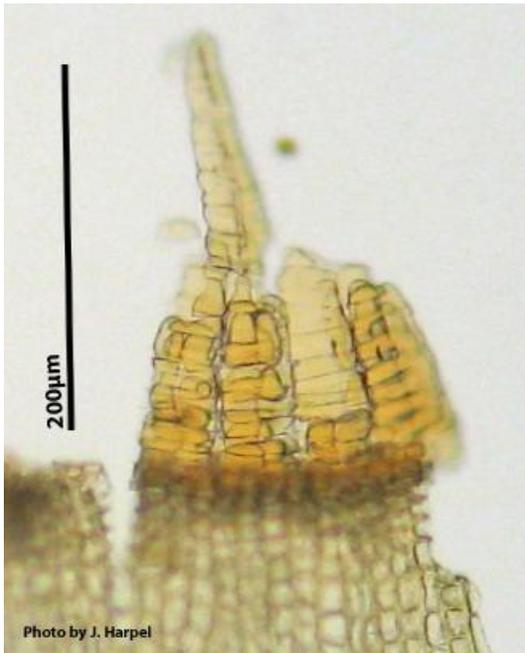
Superficial stomata



Upper medial cells



Sporophyte close-up



Peristome teeth