

**The Distribution of North American Bryophytes  
*Orthotrichum striatum* Hedw.**

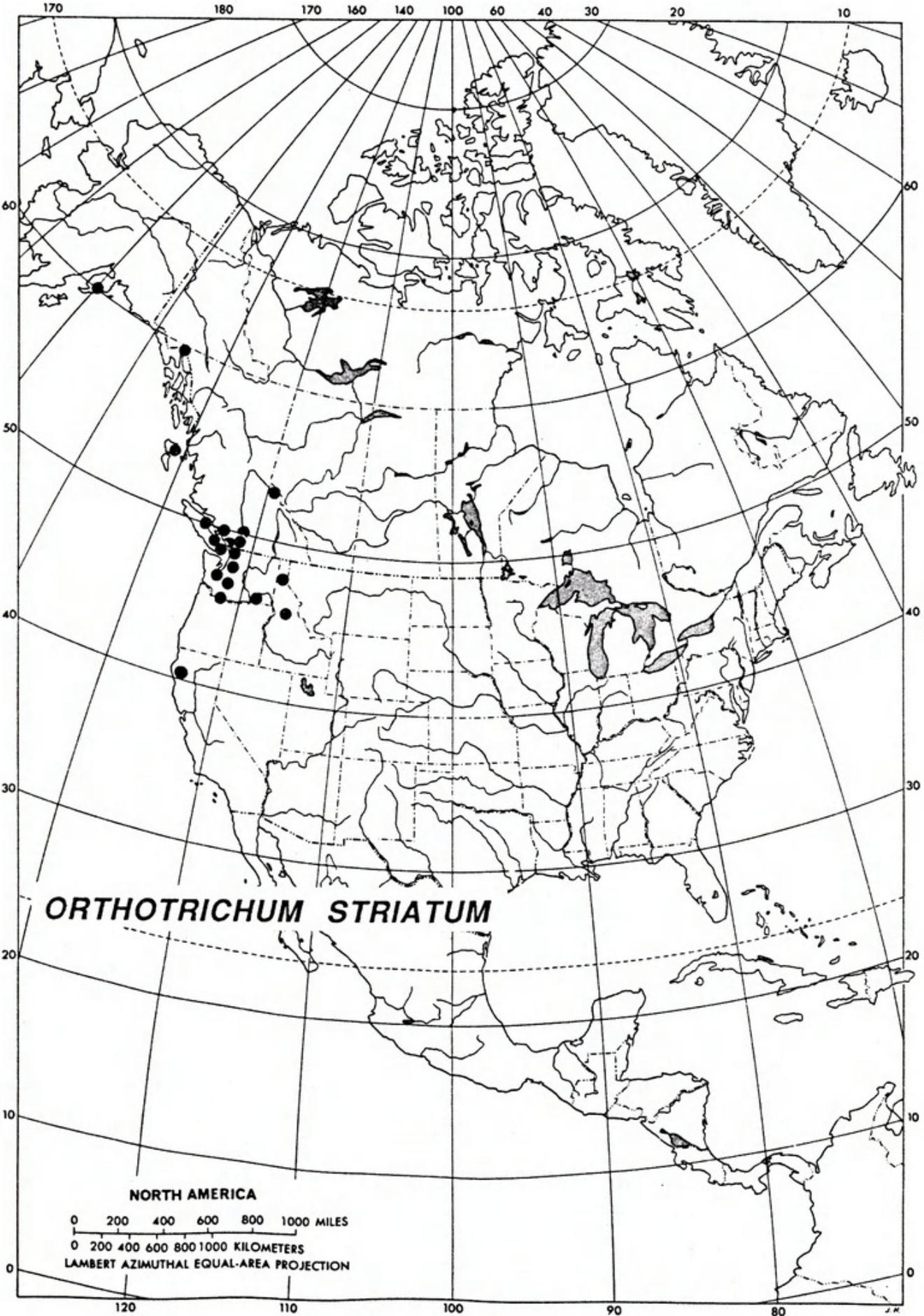
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The Orthotrichaceous peristome is characterized by having 1) the outer peristomial layer thicker than the primary peristomial layer, 2) the lack of ability to produce cilia, and 3) endostome segments positioned either alternate or opposite to the exostome teeth. Within the genus *Orthotrichum*, the segments are always alternate to the teeth. In general, mesophytic species have well developed endostome segments associated with functional, recurved exostome teeth, while xerophytic species have poorly developed or absent segments associated with non-functional, erect teeth. The mesophytic species often have endostome segments that are two cells wide and are among the most robust found in the genus. Among North American species of the genus, *O. speciosum*, *O. pycnophyllum*, *O. keeverae*, *O. striatum*, and *O. lyellii* are members of the subgenus Phaneroporum, section Leiocarpa and generally occur in relatively mesophytic habitats (Vitt 1973).

*Orthotrichum striatum* is distinguished by having smooth, immersed capsules with well developed peristomes. The peristome has 16 recurved teeth and 16 well-developed, wide, erect-inflexed segments that appear erose owing to the irregular cell pattern. In comparison, *O. speciosum* (including the variety *elegans*) has 8 exostome teeth and 8 endostome segments; *O. lyellii*, *O. pycnophyllum*, and *O. keeverae* have lightly ribbed capsules, and the Mexican *O. hortoniae* has long exserted capsules. *Orthotrichum affine* has deeply ribbed capsules. Gametophytically, *O. striatum* is a relatively large species with recurved leaf margins and an autoicous sexual condition and probably cannot be differentiated from the largely sympatric *O. speciosum*.

In the northern part of its North American range, *O. striatum* occurs on the branches and trunks of trees in coniferous forests dominated by *Thuja plicata*, *Pseudotsuga menziesii*, *Picea sitchensis*, *Tsuga menziesii*, and *Chamaecyparis nootkatensis*. However in these forests, it usually occurs on the angiosperm subdominants, particularly species of *Alnus* and *Acer*. It often is found in association with *Metaneckera menziesii*, *Porella navicularis*, *Dendroalsia menziesii*, *Orthotrichum lyellii*, and *O. speciosum*. Also, *O. consimile* and *O. pulchellum* occur in similar habitats as *O. striatum*. In northern California, Dan Norris (in letter) has found this species to be not uncommon on the twigs of deciduous oaks at the edge of natural grassy meadows. These meadows are found between 500 and 1000 metres, inland from the coastal redwoods. Along the west coast of North America and when compared to associated species of *Orthotrichum*, *O. striatum* is always the least common in an area and seemingly sometimes occurs on twigs and small branches well above ground level.

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In North America, *O. striatum* is restricted to the west coast of the continent. It is a rare species that is known from the Kenai Peninsula of Alaska (Portage Glacier area, *Vitt 18526a* ALTA) south through coastal British Columbia, and Washington to the Columbia River. It is probably more common in northeastern British Columbia than indicated on the map. This paper reports the species from northern California (Humboldt Co., *Norris 68261* ALTA). Inland, the species has been collected in eastern Washington, northern Idaho, and recently along the western slope of the Rocky Mountains of eastern British Columbia (Mt. Robson Provincial Park, *Vitt 25840* ALTA). Although reported from eastern North America, the .pa specimens are either mis-identified or seemingly mislabeled as discussed in Vitt (1973) and Crum & Anderson (1981). *Orthotrichum striatum* is circumboreal in distribution, presently known in Europe from Scandinavia and Great Britain south and east to Switzerland, Austria, Italy, Hungary, Poland and France; and also reported from The Caucasus(!), Kashmir, Algeria. I have not been able to confirm herbarium material named *O. striatum* from northeastern China.

Additional reports, new collections and range extensions should be sent to the author. These findings can be reported in the future editions of this series.

#### Literature Cited

- Crum, H. A. & L. E. Anderson. 1981. *Mosses of Eastern North America*. Volume 2. pp. 665-1328. Columbia University Press, New York.
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