



The Distribution of North American Bryophytes
***Isopterygiopsis muelleriana* (Schimp.) Iwat.**

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Isopterygiopsis muelleriana has been placed in the Plagiotheciaceae (Vitt 1984, Ireland et al. 1987) or in the Hypnaceae (Crum & Anderson (1981). This species is differentiated by a complanate arrangement of leaves and shiny yellow-green color. The leaves are not at all secund as in *Isopterygium pulchellum*. Rather, each leaf cups the one above, somewhat like that in *Fissidens*. The stems possess a hyalodermis, and no differentiated alar cells are present. Crum & Anderson (1981) nicely describe the leaves as rigidly distichous-complanate and usually crowded and pectinate in arrangement. At least in the west, the species occurs only on acidic substrates. In these situations, it is found on thin soil in small crevices of rock outcrops. Often it occurs with *Arctoa fulvella*, *Amphidium mougeotii*, *Cynodontium tenellum*, *Rhabdoweisia crispata*, and *Grimmia torquata*.

Previously, Vitt & Horton (1979) have mapped its distribution in North America. Further details on its relationships, world distribution, and differentiation from other species are present in Ireland (1969), Iwatsuki (1970), and Ochyra (1976).

The North American distribution of *Isopterygiopsis muelleriana* is notably bicentric. In the east, it has been found from Newfoundland and southern Labrador, west to the east coast of Hudson Bay and southward to Lake Superior, Wisconsin, Ohio, and the southern Appalachians of the Carolinas and Tennessee. Probably disjunct in southeastern Missouri and northwestern Arkansas. It should be looked for in southern Illinois and perhaps in eastern Arizona. In the west, it occurs from northern Alaska, south into the Yukon Territory, with one station in extreme southwestern Northwest Territories, and several in the Alaskan Panhandle. The locality near Prince Rupert, British Columbia is as far south as it has been reported and is the only area from the Canadian west coast from which the species has been collected. It is probably more common along the British Columbia coast than presently indicated by known collections.

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This bicentric distribution pattern appears to reflect two centers from which dispersal took place after the last glaciation. The western populations presently occur in and around unglaciated Beringia, whereas the eastern populations are mostly confined to areas south of the maximum extent of Wisconsinan glaciation. In the east, migration northward onto the Canadian shield is evident, or it is possible that some of these populations may have survived in refugia north of the southern glacial margin. Thus, this species is typical of those that seem to have survived the last glaciation in two centers, one north of the glaciers and one south of it. Seemingly, habitat availability in the east (acidic substrates) allowed more extensive northward migration during the last 10,000 years or so, whereas in the west predominantly calcareous substrates, drier environments, and rugged terrain limited dispersal.

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

NEXT SPECIES: *Seligeria donniana* (Sm.) C. Müll.

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