

Distichophyllum carinatum Dixon and W.E.Nicholson

Status: **Endangered (EN)** B1,2c

Class: Bryopsida

Order: Hookeriales

Family: Hookeriaceae

Description and Biology: A tiny pleurocarpous moss growing in whitish-green carpets, sometimes tinged with brown colour; the shoots are vermiform and fragile; the leaves are concave and keeled with a very fine nerve. Sporophytes have never been found.

Distribution and Habitats: Scattered localities in the European Alps (Austria, Germany, Switzerland), in central Honshu (Japan) and Mnt Omei (China). In total it is known from less than ten populations. It occurs on wet, shaded rocks with a pH of between 5.0 and 6.5, especially in wooded ravines. The habitat is not obviously threatened, but *D. carinatum* is probably an example of species very sensitive to subtle changes in habitat conditions due to the pollution of the atmosphere.

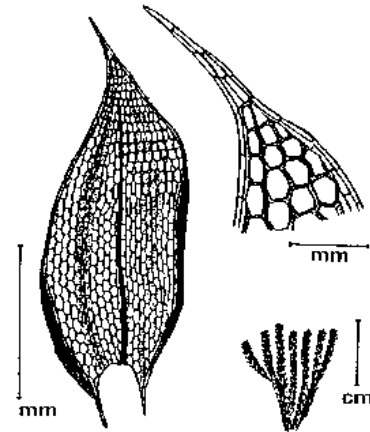
History and Outlook: *D. carinatum* is a species with a very disjunct distribution. It is known worldwide only from less than ten localities. In Europe the species has been re-discovered at only two localities, despite repeated searches (Dr R. Lübenau-Nestle *pers. comm.* 1998). One of the sites was destroyed by road construction; the causes for the loss of the other populations are not known. In Japan, students of Prof. N. Kitagawa (*pers. comm.* 1994) successfully re-discovered the species in a "safe" site in central Honshu. Statutory protection, through the designation of nature reserves, is required for the sites of the known remaining populations of this species both in Europe, Japan and China. The sites also need regular monitoring to ensure survival of the species. If it increases in extent, transplanting it to some of the other safe localities should be considered. A small amount should be taken into cultivation for *ex situ* conservation.

This species is included on Appendix I of the Bern Convention and on Annex 2 of the EC Habitats and Species Directive.

References: Futschig, J. 1954. *Distichophyllum carinatum* Dixon et Nicholson in den Allgäuer Alpen. *Ber. Bayer. bot. Ges.* 30: 15-18; Noguchi, A. 1991. *Illustrated Moss Flora of Japan*, Part 4. The Hattori Botanical Laboratory, Obi, Nichinan-shi, Miyazaki-ken, Japan; Urmi, E. 1984. Zur Moosflora des Alpenraumes. *Bot. Helvet.* 94: 177-188.

Red Data sheet authors: Ph. Martiny, E. Urmi, R. Lübenau-Nestle.

Illustrations: in Mönkemeyer 1927, Futschig, 1954 and Urmi 1984.



Distichophyllum carinatum Dix. and Nich. A. leaf; B. leaf tip, C. habit. Redrawn from Mönkemeyer 1927.

Last updated: December 2000