

***DIDYMODON CORDATUS* JUR. (POTTIACEAE), NEW TO THE MOSS
FLORA OF CHINA**

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Didymodon Hedw., represented by approximately 122 species (Zander, 1993), is taxonomically one of the most problematic groups in the moss family Pottiaceae, and distributed throughout the world and mostly found on rock or soil. In China, Li *et al.* (2001) listed 19 species of the genus, and the most recent treatment of Chinese *Didymodon* included 26 species (Ren, 2011). Recently, we collected one specimen of *Didymodon* from the field from Qingshuihe county in Inner Mongolia Autonomous Region. The specimen has been identified as *D. cordatus* Jur. following Jiménez (2006). The species was listed earlier by Redfearn and Wu (1986) from China without distributional records, and the author treated it as taxonomic synonym with *Barbula gigantea* Funck. It is commonly accepted (e.g., Jiménez *et al.*, 2005; Jiménez, 2006; Zander, 2007) that *Barbula gigantea*, basionym of *Didymodon giganteus* (Funck) Jur., is a very distinctive species, recognizable by its relatively enormous size and porous basal cells, which is easily differentiated from *Didymodon cordatus*. Redfearn *et al.* (1996) did not include *D. cordatus* in the updated checklist of Chinese mosses owing to a lack of information of Chinese locations. Moss Flora of China may be the most authentic reference for study of Chinese mosses, however, Li *et al.* (2001) did not include the species as well. Thus, *Didymodon cordatus* is reported here as a new addition to China with exact distributional information. The species is broadly distributed, and it has been reported from North America, Europe, Asia and sub-Saharan Africa. The voucher specimen of the species has been deposited at Inner Mongolia University Herbarium (HIMC).

The description and digital photographs of the species based on fresh material are given below.

***Didymodon cordatus* Jur. Bot. Zeitung (Berlin) 24: 177, 8A (1866). (Fig. 1).**

Plants 0.5-1.0 cm high, growing in dense turfs, green to dark green. Stems erect, simple, central strand differentiated. Leaves appressed and incurved when dry, spreading when moist, oblong deltoid or lanceolate. Lamina unistratose; apex broadly acute; margin entire, revolute up to the apex or near it, unistratose or very rarely bistratose near to apex. Costa very stout, shortly excurrent in a wide mucro; ventral cells of the leaf quadrate or shortly rectangular, papillose; in transverse section at upper and middle leaves rounded; with 5-8 guide cells in 1 layer, with 3-4 ventral stereids and 2-3 layers of dorsal stereids, without hydroids, ventral epidermis differentiated, not bulging, papillose, dorsal epidermis differentiated, papillose or smooth. Upper and middle laminal cells quadrate, rounded or shortly rectangular, with 1-2 papillae per cell; basal cells rectangular or quadrate, not differentiated, smooth, thin-walled; marginal basal cells not differentiated. Gemmae absent. Sporophyte not seen.

Specimen examined: **China:** Inner Mongolia Autonomous Region, Qingshuihe county, D. P. Zhao, J. N. Wang and Y. Liu, Z 201306001(HIMC).

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Distribution: North America, Austria, Britain, France, Germany, Hungary, Italy, Russia (North Ossetia), Spain, Switzerland, Serbia and Montenegro, Yemen (Socotra), Kazakhstan and Mongolia.

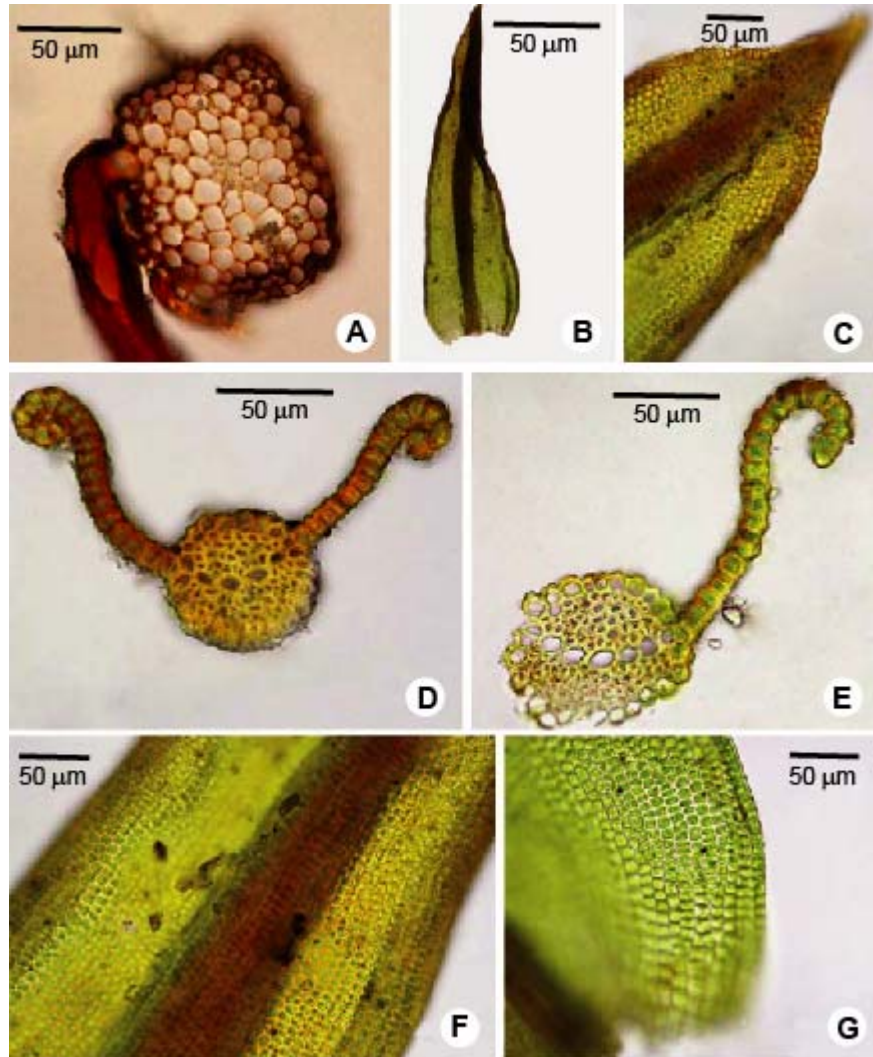


Fig. 1. *Didymodon cordatus* Jur.: A). Transverse section of stem, B). Leaf, C). Upper laminal cells, D). Transverse section at upper leaf, E). Transverse section at mid-leaf, F). Middle laminal cells, G). Basal laminal cells.

Ecology: *Didymodon cordatus* grows on limestone in Wanjiazhai reservoir at loess Hill-Gully region together with *Grimmia laevigata* (Brid.) Brid. and another unknown species of *Didymodon*.
Notes: Most authors dealing with *Didymodon cordatus* describe the multicellular gemmae borne on rhizoids in the axils of the leaves (Kuçera, 2000; Pedrotti, 2001; Smith, 2004; Jiménez, 2006;

Luth, 2006), while the Chinese specimens lack such gemmae. *Didymodon tectorum* (Müll. Hal.) K. Saito, a widespread loess hilly taxon, is similar to *D. cordatus* in appearance but could be differentiated because of its numerous gemmae, strongly differentiated stem central strand, semicircular transverse section of costa, and weakly differentiated ventral stereids. *Didymodon cordatus* is somewhat similar to *D. rigidulus*, however, it differs from the latter by having margins unistratose or very rarely bistratose near to apex, but never evenly so throughout the leaf.

Acknowledgements

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