

## A Taxonomic Study of the Genus *Orthotrichum* (Orthotrichaceae, Musci) in China

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A total of 40 species and two varieties of the genus *Orthotrichum* previously reported from China are revised in this study. Four new synonyms (*Orthotrichum crispifolium*, *O. griffithii*, *O. notabile* and *O. sinuosum*) are proposed, and two species (*O. brassii* and *O. pamiricum*) are excluded from the flora of China. Twenty-seven species are confirmed to be present in China, while the presence of seven species is still uncertain.

Among the 27 species, ten (*Orthotrichum dasymitrium*, *O. erosum*, *O. jetteae*, *O. laxum*, *O. leiolecythis*, *O. pulchrum*, *O. revolutum*, *O. schofieldii*, *O. subpunitum* and *O. vermiferum*) are endemic to China, while three (*O. anomalum*, *O. rupestre* and *O. speciosum*) are common throughout the Northern Hemisphere. The remaining species all have intercontinental distribution, with the exception of three (*Orthotrichum consobrinum*, *O. erubescens* and *O. hookeri*) that are present only in Asian countries. In this work all 27 species are fully described based on Chinese materials. Illustrations are provided, including photos for all species and SEM images for most. Their local distribution in China is mapped based on the specimens used in the present study. A key to all the taxa of *Orthotrichum* in China is provided.

Most *Orthotrichum* species in China are epiphytic, with only four species typically found on rocks or cliffs. The most frequent records of phorophytes in Chinese *Orthotrichum* species are *Picea* and *Tsuga*. Most *Orthotrichum* species occur at altitudes between 1 200 m to 3 000 m, with extremes ranging as low as 220 m for *O. consobrinum* and as high as 5 080 m for *O. rupestre*.

The most widespread species in *Orthotrichum* within China are *O. erubescens* and *O. leiolecythis*. The highest diversity of the genus is found in

western China, where the climate is generally arid and temperate. In this region, most *Orthotrichum* species occur in two hotspots around the Hengduan and Qinling Mts, and the Tianshan and Altai Mts.

Key words: China, distribution, geography, morphology, Musci, nomenclature, *Orthotrichum*, revision, taxonomy.

## A collection of Pottiaceae (Bryophyta) from Sichuan and Yunnan, China, with contributions to other families

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Altogether c. 3 500 specimens of bryophytes were collected in 1985 in Yunnan Province of China and in 1991 in Sichuan Province. Of them, c. 350 specimens (10 %) belongs to the Pottiaceae. In this paper, 54 species are identified and documented, with a number of specimens belonging to other families. *Bryoerythrophyllum rubrum* (Geheeb) P.C. Chen, *Didymodon asperifolius* (Mitt.) H. Crum, W.C. Steere & L.E. Anderson, *D. johansenii* (R.S. Williams) H.A. Crum, *D. icmadophilus* (Schimp. ex Müll.Hall.) K. Saito, *Molendoa sendmeriana* (Bruch & Schimp.) Limpr., *Pachyneuropsis perinvolutum* (Tixier) M. Alonso, M.J. Cano & J.A. Jiménez, *Syntrichia ruraliformis* (Besch.) Mans., *S. submontana* (Broth.) Ochyra and *Tortula mucronifolia* Schwägr. are new provincial records to Sichuan and *Aloina brevirostris* (Hook. & Grev.) Kindb., *Barbula amplexifolia* (Mitt.) A. Jaeger, and *Syntrichia fragilis* (Taylor) Ochyra are new records to Yunnan. The taxonomy of some species are discussed, and the protologues, illustrations and taxonomic treatments are cited. The substrate of the Pottiaceous taxa is often petrophytic or soil, but many of them grow occasionally or constantly on other substrates such as trunks of trees. Most of the collecting sites are either primeval or disturbed, open to shadowed forests. The taxa are divided into floristic elements according to the bioclimatic vegetation zones.

Key words: bioclimatic vegetation zones, Ditrichaceae, Fissidentaceae, floristic elements, habitats, Hunan, meridional, nomenclature, Oncophoraceae, oroboreal, oronemoral, Orthotrichaceae, ranges, substrates, taxonomy