Bryophyte flora of Hunan Province, China. 28. Rhizogoniaceae, Climaciaceae, Hedwigiaceae and Hylocomiaceae, excluding *Ctenidium* (Bryophyta)

TIMO KOPONEN

Timo Koponen, *Finnish-Chinese Botanical Foundation, Mailantie 109, FI-08800 Lohja, Finland,* and: *Finnish Museum of Natural History, Botany Unit (Bryology), P.O. Box 7 (Unioninkatu 44), FI-00014 University of Helsinki, Finland*

Koponen, T. 2022: Bryophyte flora of Hunan Province, China. 28. Rhizogoniaceae, Climaciaceae, Hedwigiaceae and Hylocomiaceae, excluding *Ctenidium* (Bryophyta). – *Acta Bryolichenologica Asiatica* 10: 9–29.

In the Hunan province of China, the family Rhizogoniaceae is represented by *Pyrrhobryum* with species *P. dozyanum*, *P. latifolium* and *P. spiniforme*. The family Climaciaceae in *Climacium* has two species, *C. dendroides* and *C. japonicum*. The family Hedwigiaceae has *Hedwigia ciliata*, and the family Hylocomiaceae has *Hylocomium splendens*, *Neodolichomitra yunnanensis* and *Rhytidiadelphus japonicus*. The habitats, substrates and ranges of the taxa in Hunan are given and the ranges in China and total ranges summarized. *Hylocomium splendens* is the first record to Hunan. The taxonomy is shortly discussed and the keys given and altitudinal ranges in Hunan mapped for most of the taxa. Representative illustrations are cited and illustrations are provided for *Neodolichomitra yunnanensis* and *Rhytidiadelphus japonicus*. The taxa are divided into floristic elements based on their total ranges in the bioclimatic vegetation zones. The taxa grow in mesic to moist, shaded forest habitats and do not survive the total destruction of forest.

Key words: *Climacium,* conservation, *Hedwigia, Hylocomium, Neodolichomitra, phytogeography, Pyrrhobryum,* ranges, *Rhytidiadelphus,* SE Asia, taxonomy

Bryophyte flora of Hunan Province, China. 29. *Chionoloma* (Pottiaceae, Bryophyta)

PHILIP SOLLMAN[1] & TIMO KOPONEN[2]

[1]*Philip Sollman, Notarisappel 2, 9076LB, St. Annapar. The Netherlands*

[2]Timo Koponen, *Finnish-Chinese Botanical Foundation, Mailantie 109, FI-08800 Lohja, Finland,* and: *Finnish Museum of Natural History, Botany Unit (Bryology), P.O. Box 7 (Unioninkatu 44), FI-00014 University of Helsinki, Finland*

Sollman, P. & Koponen, T. 2022: Bryophyte flora of Hunan Province, China. 29. *Chionoloma* (Pottiaceae, Bryophyta). – *Acta Bryolichelogica Asiatica* 10:

The restudy of the Hunanese specimens named as *Chionoloma bombayense* (Müll.Hal.) P. Sollman revealed that they belong into several taxa: *C. angustatum* (Mitt.) M. Menzel, *C. borneense* (Dixon) M. Alonso, M.J. Cano & J.A. Jiménez, *C. sarawakense* (Dixon) M. Alonso, M.J. Cano & J.A. Jiménez and *C. subduriusculum* (Müll.Hal.) M. Menzel. In addition, *Trichostomum tenuirostre* (Hook. & Taylor) Lindb. is recognized in *Chionoloma*, as *C. tenuirostre* (Hook. & Tayl.) M. Alonso, M.J. Cano & J.A. Jiménez. *Chionoloma borneense* and *C. sarawakense* are new records to the Hunan Province and to China. The habitats and substrates of the taxa are described and the frequency in Hunan estimated. The ranges in Hunan and China and their total ranges are given. An altitudinal range map is provided for three species.

Key words: China, *Chionoloma*, Hunan, new taxa to Hunan and China, nomenclature, *Pseudosymblepharis*, ranges, taxonomy, *Trichostomum*

Revision of Mniaceae (Bryophyta) in Pakistan

TIMO KOPONEN[1], AAMIR SHEHZAD KHAN[2,3,] & SYED ANEEL AHMAD GILANI[4]

[1]Timo Koponen, Finnish-Chinese Botanical Foundation, Mailantie 109, FI-08800 Lohja, Finland, and: Finnish Museum of Natural History, Botany Unit (Bryology), P.O. Box 7 (Unioninkatu 44), FI-00014 University of Helsinki, Finland.

[2, 3]Aamir Shehzad Khan, Peatland Ecology Research Group (PERG/GRET), Centre for Northern Studies (CEN) and Department of Plant Sciences, Université Laval, 2480 Boulevard Hochelaga, Québec, QC G1V 0A6, Canada and: Department of Plant Sciences, Quaid-i-Azam University Islamabad, 45320, Pakistan.

[4]Syed Aneel Ahmad Gilani, Botanical Science Division, Pakistan Museum of Natural History, Garden Avenue, Shakarparian, Islamabad, 44000, Pakistan.

Koponen, T., Khan, A.S. & Gilani, S.A.G. 2022: Revision of Mniaceae (Bryophyta) in Pakistan. – *Acta Bryolichenologica Asiatica* 10: 39–54.

The Mniaceae flora of Pakistan includes five species of the genus *Mnium* (*M. heterophyllum, M. lycopodioides, M. marginatum, M. stellare, M. thomsonii*) and four species of the genus *Plagiomnium* (*P. cuspidatum*, *P. himalayanum, P. medium, P. rhynchophorum*). *Mnium laevinerve, M. riparium* and *Plagiomnium rostratum* are excluded from the flora. The record of *Plagiomnium maximoviczii* could not be confirmed. Earlier holotype statement for *M. maximoviczii* is treated as error correctable to lectotype under Art. 9.10 of the current *Code*. *Mnium thomsonii*, *Plagiomnium himalayanum* and *P. rhynchophorum* are additions to the flora. A few plants are illustrated and reliable illustrations, typifications and lists of synonyms are cited. The taxonomy and ranges of the taxa are discussed. A key to the species is presented. In the Appendix, *Rhodobryum ontariense* (Kindb.) Paris, is reported as new to Pakistan.

Key words: Azad Jammu and Kashmir, Gilgit-Baltistan, Khyber Pakhtunkhwa, Punjab, *Mnium*, nomenclature, phytogeography, *Plagiomnium*, *Rhodobryum*, taxonomy

Plagiomnium himalayanum T.J. Kop., *spec. nov*. (Bryophyta, Mniaceae) from western Himalaya: possible sister to *P. integrum* and progenitor of *P. rostratum*

TIMO KOPONEN

Timo Koponen, Finnish-Chinese Botanical Foundation, Mailantie 109, FI-08800 Lohja, Finland, and: *Finnish Museum of Natural History, Botany Unit (Bryology), P.O. Box 7 (Unioninkatu 44), FI-00014 University of Helsinki, Finland*

Koponen, T. 2022: *Plagiomnium himalayanum* T.J. Kop., *spec. nov*. (Bryophyta, Mniaceae) from western Himalaya: possible sister to *P. integrum* and progenitor of *P. rostratum* – *Acta Bryolichenologica Asiatica* 10: 55–60.

Synoicous *Plagiomnium himalayanum* T.J. Kop. is described. Dioicous *P. integrum* (Bosch & Sande Lac.) T.J. Kop. is its nearest relative on the basis of the morphological characters and habitats. *P. himalayanum* has a limited range in western Himalaya, in India and Pakistan. *P. rostratum*, which ranges from N America through Europe to western Asia, differs from *P. himalayanum* by absence of decurrent leaf bases and by smaller leaf cells. Phylogenetically, *P. integrum* and *P. himalayanum* possibly are a dioicous – synoicous sister pair, and *P. rostratum* is a descendant of *P. himalayanum*.

Key words: India, Kashmir, Mniaceae, moss, new species, Pakistan, phylogeny, *Plagiomnium*, sister species

The homotypic synonomy of *Mnium ambiguum* and *M. marginatum* var. *dioicum* and its taxonomic implications, and the status of *M. riparium* (Mniaceae, Bryophyta)

TIMO KOPONEN[1] & RYSZARD OCHYRA[2]

[1]*Timo Koponen, Finnish-Chinese Botanical Foundation, Mailantie 109, FI-08800 Lohja, Finland,* and: *Finnish Museum of Natural History, Botany Unit (Bryology), P.O. Box 7 (Unioninkatu 44), FI-00014 University of Helsinki, Finland*

[2]*Ryszard Ochyra, W. Szafer Institute of Botany, National Collection of Biodiversity of Modern and Fossil Organisms, Bryophyte Section, Polish Academy of Sciences, ul. Lubicz 46, 31-512 Kraków, Poland*

Koponen, T. & Ochyra, R. 2022: The homotypic synonymity of *Mnium ambiguum* and *M. marginatum* var. *dioicum* and its taxonomic implications, and the status of *M. riparium* (Mniaceae, Bryophyta). − *Acta Bryolichenologica Asiatica* 10: 61–73.

The taxonomy and nomenclature of *Mnium ambiguum* H. Müll., *M. marginatum* (Dicks.) P. Beauv. var. *dioicum* (H. Müll.) Crundw., *M. riparium* Mitt. and *M. lycopodioides* Schwägr. are discussed and summarised. *Mnium marginatum* (Dicks.) P. Beauv. var. *dioicum* is lectotypified and the earlier holotype statements for *M. heterophyllum* Hook. and *M. thomsonii* Schimp. are treated as errors correctable to lectotypes under Art. 9.10 of the current *Code*. *Mnium ambiguum* and *M. marginatum* var. *dioicum* are based on the same type, thus their homotypic synonymy is self-evident. The type of *M. riparium* consists of male plants of the otherwise synoicous *M. marginatum* and is known from the single or a few specimens worldwide. It is probably a karyological aberration and does not deserve a status at any taxonomic level.

Key words: Bryophytes, dioecy, lectotypes, *Mnium heterophyllum*, *M. lycopodioides*, *M. orthorhynchum*, *M. thomsonii*, nomenclature, *Plagiomnium medium*, species pairs, taxonomy

New records and range extensions of Pottiaceous mosses (Bryophyta) to seven countries and four provinces of China in SE Asia, and two countries in Central Africa

PHILIP SOLLMAN[1] & TIMO KOPONEN[2]

[1]*Philip Sollman, Notarisappel 2, 9076 LB St. Annaparochie, The Netherlands*

[2]Timo Koponen, *Finnish-Chinese Botanical Foundation, Mailantie 109, FI-08800 Lohja, Finland,* and: *Finnish Museum of Natural History, Botany Unit (Bryology), P.O. Box 7 (Unioninkatu 44), FI-00014 University of Helsinki, Finland*

Sollman, P. & Koponen, T. 2022: New records and range extensions of Pottiaceous mosses (Bryophyta) to seven countries and four provinces of China in SE Asia, and two countries in Central Africa. – *Acta Bryolichenologica Asiatica* 10: 75–90.

First records of Pottiaceous mosses are presented to SE Asiatic countries: Bhutan (8 new records), China (1), India (1), Nepal (2), Papua New Guinea (1), Philippines (2), Thailand (1), and to the Chinese provinces Qinghai (3), Sichuan (5), Taiwan (1) and Yunnan (4). New records to Central African Tanzania (1) and Democratic Republic of Congo (Zaire) (1) are included. In addition, range extensions of several taxa are recorded in these same areas. The following genera are noted: *Aloina* (records for 2 species), *Anoectangium* (1), *Bellibarbula* (1), *Bryoerythrophyllum* (1), *Chionoloma* (9), *Didymodon* (6), *Gymnostomiella* (1), *Hennediella* (1), *Hydrogonium* (2), *Hymenostylium* (2), *Molendoa* (1), *Pachyneuropsis* (1), *Plaubelia* (1), *Syntrichia* (1), *Tortula* (3) and *Trichostomum* (1). The collectors, collecting areas and years, with indication of herbaria where the specimens are deposited, are summarized in Table 1 and the substrates in Table 2.

Key words: Central Africa, distribution, new records, Pottiaceae, ranges, SE Asia, taxonomy

Bartramiaceae and Mniaceae specimens collected by M. Higuchi in Myanmar in 2017, with *Plagiomnium wui* new to Myanmar

TIMO KOPONEN[1], MASANOBU HIGUCHI[2] & MU MU AUNG[3]

[1]Timo Koponen, Finnish-Chinese Botanical Foundation, Mailantie 109, FI-08800 Lohja, Finland & Finnish Museum of Natural History, Botany Unit (Bryology), P.O. Box 7 (Unioninkatu 4), FI-00014 University of Helsinki, Finland

*[2]Masanobu Higuchi, Department of Botany, National Museum of Nature and Science, Amakubo 4-1-1, Tsukuba, Ibaraki 305-0005, Japan *E-mail: higuchi@kahaku.go.jp*

[3]Mu Mu Aung, Forest Research Institute, Forest Department, Ministry of Natural Resources and Environmental Conservation, Yezin, Nay Pyi Taw, Myanmar

Koponen, T., Higuchi, M. & Aung, M.M. 2022: Bartramiaceae and Mniaceae specimens collected by M. Higuchi in Myanmar in 2017, with *Plagiomnium wui* new to Myanmar. – *Acta Bryolichenologica Asiatica* 10: 93–101.

We report the specimens of Bartramiaceae and Mniaceae collected by M. Higuchi in Myanmar in 2017. Three species of the Batramiaceae, *Philonotis falcata* (Hook.) Mitt., *P. mollis* (Dozy & Molk.) Mitt. and *P. roylei* (Hook. f.) Mitt. and two species of the Mniaceae, *Orthomnion bryoides* (Griffith) Nork. and *Plagiomnium wui* (T.J. Kop.) Y.J Yi & S. He are recorded. *Plagiomnium wui* is a new record to Myanmar. *Philonotis aristifolia* E.B. Bartram and *P. perlaxifolia* Dixon are tentatively excluded from the flora. A new checklist of *Philonotis* in Myanmar is presented. The taxonomy and ranges of the taxa are discussed and relevant descriptions and illustrations cited.

Key words: Burma, checklist, Myanmar new synonyms, *Othomnion bryoides*, *Philonotis falcata*, *P. mollis*, *P. roylei*, ranges, taxonomy

Abstract 8

ACTA BRYOLICHENOLOGICA ASIATICA 10 (2022)

A collection of *Philonotis* (Musci, Bartramiaceae) from the Philippines, with *P. norrisii*, *P. pseudomollis* and *P. vescoana* new to the country, and *P. vescoana* var. *flexuosa*, *var. nov.*

TIMO KOPONEN[1] & ULE SCHWARZ[2]

[1]*Timo Koponen, Finnish-Chinese Botanical Foundation, Mailantie 109, FI-08800 Lohja, Finland & Finnish Museum of Natural History, Botany Unit (Bryology), P.O. Box 7 (Unioninkatu 4), FI-00014 University of Helsinki, Finland*

[2]*Uwe Schwarz, Prellerstrasse 37, 04155 Leipzig, Germany*

Koponen, T. & Schwarz, U. 2022: A collection of *Philonotis* (Musci, Bartramiaceae) from the Philippines, with *P. norrisii*, *P. pseudomollis* and *P. vescoana* new to the country, and *P. vescoana* var. *flexuosa*, *var. nov*. – *Acta Bryolichenologica Asiatica* 10: 102–118.

A recent set of *Philonotis* collections and a few herbarium specimens from the southern islands of the Philippines contain seven species of *Philonotis*. *P. norrisii* T.J. Kop., *P. pseudomollis* (Müll.Hal.) A. Jaeger and *P. vescoana* Besch. are recorded for the first time to the Philippines. *P. vescoana* var. *flexuosa* T.J. Kop. & U. Schwarz is described. The collections were made in habitats influenced by human activities. The altitudinal ranges of the Philippine taxa and their habitats and substrates are compared with those in Papua New Guinea and Hunan province of China. The taxonomy and ranges of the species are discussed and relevant illustrations cited.

In 1991, altogether 14 species of *Philonotis* were known from the Philippines. Since then, four species were reduced as synonyms and for one species an earlier name was discovered. After these changes the number of *Philonotis* taxa in the Philippines is still fourteen.

Key words: checklist, habitats, new records, *Philonotis bartamioides*, *P. calomicra*, *P. hastata*, *P. thwaitesii*, synonymies, SE Asia, substrates, taxonomy