Bryophyte flora of the Huon Peninsula, Papua New Guinea. LXXVII. Sematophyllaceae (Musci) 3. Macrohymenium, Mastopoma, Rhaphidorrhynchium, Sematophyllum, Tris megistia and Warburgiella, with a key to the genera and a checklist of the taxa

BENITO C. TAN 1, TIMO KOPONEN 2 & DANIEL H. NORRIS 3

1The University Herbarium, University of California at Berkeley, CA, USA 94720 (B.C. Tan deceased on 23 December 2016 in San Francisco, California)

2Finnish-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.


Received Apr. 23, 2016, accepted Jan. 30, 2017

In Papua New Guinea and Western Melanesia the genus Macrohymenium Müll.Hal. has one species with two varieties, the genus Mastopoma Cardot has three species and four varieties, the genus Rhaphidorrhynchium (Schimp.) M. Fleisch. has one species, R. auneae B.C. Tan, T.J. Kop. & D.H. Norris, spec. nov., the genus Sematophyllum Mitt. has four species of which S. subhumile (Müll.Hal.) M. Fleisch. has two varieties, the genus Tris megistia (Müll.Hal.) Müll.Hal. has two species and four varieties, and the genus Warburgiella Broth. is with two species and two varieties. The genera are described and each species description includes discussions on taxonomy and classification, as well as nomenclatural notes and range descriptions. A total of 19 names are synonymized.

Aptychella perdecurrens (Dixon) T.J. Kop., Macrohymenium mitratum var. muelleri (Dozy & Molk.) B.C. Tan, T.J. Kop. & D.H. Norris, M. mitratum var. stricium (Bosch & Sande Lac.) B.C. Tan, T.J. Kop. & D.H. Norris, Mastopoma armitii var. deningeri (Herzog) B.C. Tan, T.J. Kop. & D.H. Norris, M. armitii var. epiphyllum (Broth.) B.C. Tan, T.J. Kop. & D.H. Norris, M. armitii var. uncinifolium (Broth.) B.C. Tan, T.J. Kop. & D.H. Norris, M. delicatum (Broth.) B.C. Tan, T.J. Kop. & D.H. Norris, Tris megistia complanatula var. spinosodontata (Zanten) B.C. Tan,
T.J. Kop. & D.H. Norris and Warburgiella leptocarpa var. cylindrica (A. Jaeger) B.C. Tan, T.J. Kop. & D.H. Norris are new combinations. Lectotypes are designated for Acanthocladium armitii Broth. & Geh., A. uncinifolium Broth., Hypnum subhumile Müll.Hal., H. phoeniceum Müll.Hal. and Warburgiella cupressinoides Müll.Hal. ex. Broth. Some additions and corrections are presented for the treatment in previous parts 1 and 2 of the Huon Sematophyllaceae. A key to the 23 genera and a synopsis of 77 accepted species with one subspecies and 40 varieties in Western Melanesia are given. New country and island records are reported to Fiji, Indonesia, Papua New Guinea, Philippines, Solomon Islands and Vanuatu.

Key words: Acroporion, Aptychella, checklist, Clastobryum, Indonesia, Isocladielopsis, keys, Macrohymenium, Mastopoma, nomenclature, Papua New Guinea, Radulina, ranges, Rhaphidorrhynchium, Solomon Islands, Sematophyllaceae, Sematophyllum, synopsis of taxa, taxonomy, Trismegistia, Warburgiella

Abstract2

Bryophyte flora of the Hunan Province, China. 21. Makinoaceae, Pallaviciniaceae and Pellieae (Hepaticae, Jungermanniopsida)

SINIKKA PIIPPO

Siniikka Piiippo, Varpustie 7, FI-00780 Helsinki, Finland


Received: Jan. 15, 2017, accepted March 11, 2017

In Hunan, the family Makinoaceae has one genus Makinoa Miyake with M. crispa (Steph.) Miyake, Pallaviciniaceae has the genus Pallavicinia S. Gray with three species, P. levieri Schiffn., P. lyelli (Hook.) Carruth., and P. subciliata (Austin) Steph., and Pellieae has in the genus Apopellia Schütz, Quandt & Nebel one species, A. endiviifolia (Dicks.) Schütz, Quandt & Nebel, Pellia Raddi two species, P. epiphylla (L.) Corda and P. neesiana (Gottsch.) Limpr.. P. epiphylla is newly reported for Hunan. Pallavicinia ambigu (Mitt.) Steph. was synonymized with P. subciliata (Austin) Steph. The literature and illustrations of the taxa are referred. Habitats and substrates of the species are discussed, altitudinal range maps of the species in Hunan are provided and frequency in Hunan estimated. The ranges in Hunan and China and their total ranges are given.
Abstract

Bryophyte flora of the Hunan Province, China. 22. Families Lepidoziaceae and Pseudolepiceoleaceae and additions to Cephaloziaceae and Cephaloziellaceae (Hepaticae, Jungermanniopsida)

SINIKKA PIippo


Received: Jan. 15, 2017, accepted March 11, 2017

The family Pseudolepiceoleaceae has 2 species in Hunan, Blepharostoma minus Horik. and B. trichophyllum (L.) Dumort. (both new for Hunan), the family Lepidoziaceae has 5 species, Kurzia abietinella (Herzog) Grolle (new), K. gonyotricha (Sande Lac.) Grolle, K. makinoana (Steph.) Grolle (new), Lepidzia fauriana Steph., and L. wallichiana Gottsche (new). Additional records are given for Cephaloziella spinicaulis Douin (Cephaloziellaceae) and Schiffneria hyalina Steph. (Cephaloziaceae). The literature and illustrations of the taxa are referred. Habitats and substrates of the species are discussed, altitudinal range maps of the species in Hunan are provided and frequency in Hunan estimated. The ranges in Hunan and China and their total ranges are given.
Bryophyte flora of the Hunan Province, China. 23. Trichocoleaceae and Neotrichocoleaceae (Hepaticae, Jungermanniopsida)

SINIKKA PIIPPO

Sinikka Piippo, Varpustie 7, 00580 Helsinki, Finland


Received: Jan. 15, 2017, accepted March 11, 2017

In Hunan, the family Trichocoleaceae has one genus, Trichocolea Dumort. which contains a single species, T. tomentella (Ehrh.) Dumort. Similarly, Neotrichocoleaceae has only one genus Trichocoleopsis S. Okamura with T. succulata (Mitt.) S. Okamura. Trichocolea pluma (Reinw. et al.) Mont., T. japonica T.Katag. and T. tomentella are treated as conspecific. The presence of T. tomentella and Trichocoleopsis succulata in Hunan is confirmed. Keys are provided for the Chinese species of Trichocolea and Leiomitra Lindb. (since Trichocolea merrillana Steph. has been transferred to Leiomitra) as well as for Trichocoleopsis. The taxonomy of the species and related genera are discussed. The literature and illustrations of the taxa are referred. Habitats and substrates of the species are described, altitudinal range maps of the species in Hunan are provided and frequency in Hunan estimated. The ranges in Hunan and China and their total ranges are given.
Abstract

Bryophyte flora of Hunan Province, China. 24. Pottiaceae and Splachnobryaceae (Musci)

PHILIP SOLLMAN¹ & TIMO KOPONEN²

¹Notarisappel 2, 9076LB, St. Annapar, The Netherlands.
²Finnish-Chinese Botanical Foundation, Mailante 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


Received Nov. 19, 2016, accepted Jan. 30. 2017

In Hunan province of China, the moss family Pottiaceae consist of 21 genera and 56 species. Anoectangium Schwägr. has 1 species, Barbula Hedw. (4 species), Bellibarbula P.C. Chen (1), Bryoerythrophyllum P.C. Chen (2), Chionoloma Dixon (1), Didymodon Hedw. (9), Hydrogonium (Müll.Hal.) A. Jaeger (5), Hymenosyrum Brid. (2), Hyophila Brid. (4), Leptodonium (Müll.Hal.) Hampe (2), Molendoa Lindb. (1), Reimersia P.C. Chen (1), Scopelophila (Mitt.) Lindb. (1), Streblotrictum P. Beauv. (1), Timmiella (De Not.) Limpr. in Rabenh. (2), Tortella (Lindb.) Limpr. (2), Tortula Hedw. (2), Trichostomum Bruch (7), Tuerckheimia Broth. (1), Weisiopsis Broth. (2) and Weissia Hedw. (5). Splachnobryaceae has one species, Splachnobryum obtusum (Brid.) Müll.Hal. The presence of Didymodon maschalogenus (Ren. & Cardot) Broth. in China is confirmed. Nineteen species are new to Hunan province. Bryoerythrophyllum ferruginascens (Stirt.) Giacom. (Barbula ferruginascens Stirt.) is a new synonym of Bryoerythrophyllum brachystegium (Besch.) K. Saito. The synonymization of Leptodontium taiwanense Nog. with L. aggregatum (Müll.Hal.) Kindb. is confirmed. L. aggregatum is a new record for China. Streblotrictum propaguliferum X.J. Li & M.X. Zhang is excluded from the Pottiaceae and tentatively placed in Dichodontium Schimp. (Dicranaceae). Lectotype is selected for Barbula aquatica Cardot & Thér., Hydrogonium aquaticum (Cardot & Thér.) P. Sollman & T.J. Kop. is a new combination. Hyophila setschanwica (Broth.) P.C. Chen is returned to its original classification as Weisiopsis setschanwica Broth. Weissia semipallida Müll.Hal. is not a synonym of W. edentula but is an independent species. For most of the species the habitats and substrates are described and the frequency in Hunan estimated. Most of the species are very rare or rare in Hunan. The ranges in Hunan and China and their total ranges are given. Altitudinal range maps are provided for 26 species. The altitudinal ranges of some Pottiaceae taxa in Hunan are compared with their ranges on the Huon Peninsula of Papua New Guinea. The taxa are placed into floristic elements according
to the system of bioclimatic vegetation zones. Pottiaceae differs from some other families in having a large number of circumpolar temperate – meridional and pantropical – pansubtropical taxa.

Key words: China, distribution, floristic elements, genera, habitats, Hunan, mosses, new records, nomenclature, Papua New Guinea, Pottiaceae, ranges, Splachnobiaceae, taxonomy

Abstract

Bryophyte flora of Hunan Province, China. 25. Neckeraeaceae and Miyabeaceae (Musci)

JOHANNES ENROTH1,2* & TIMO KOPONEN3,4

1 Department of Biosciences, P.O. Box 65, FI-00014 University of Helsinki, Finland; 2 Finnish Museum of Natural History, Botany Unit (Bryology), P.O. Box 7, FI-00014 University of Helsinki, Finland

(*corresponding author, e-mail: johannes.enroth@helsinki.fi)

3Finnish-Chinese Botanical Foundation, Mailantie 109, FI-08800 Lohja, Finland


Received Dec. 14, 2016, accepted Jan. 28, 2017

In Hunan Province of China, the moss family Neckeraeaceae has 24 species in eight genera, namely Circulifolium S. Olsson, Enroth & D. Quandt (with 1 species), Forststroemia Lindb. (3), Homalia Brd. (1), Homaliodendron M. Fleisch. (7), Neckera Hedw. (5), Neckeropsis Reichardt (2), Pinnatella M. Fleisch. (2), Taiwanoberyum Nog. (2) and Thamnobryum Nieuw. (1). The family Miyabeaceae contains one genus, Homaladelphia Dixon & P. de la Varde with one species. Forststroemia noguchii L.R. Stark. Neckera seischwanica Broth., and N. konoi Broth. ex Cardot are new records for Hunan. The presence of Taiwanoberyum speciosum Nog. in Hunan is confirmed and Pinnatella taiwanensis Nog. is new to mainland China. Forststroemia cryphaeoides Cardot is excluded from the Hunan flora. Neckera decurrens Broth. is reported for the first time from Vietnam. A key to the species is provided and their habitats, substrates and taxonomy are discussed. The taxa are divided into floristic elements on the basis of their total range and range in Hunan. Altitudinal ranges of 11 taxa are mapped.

Key words: China, floristic elements, habitats, Hunan, Miyabeaceae, Neckeraeaceae, nomenclature, substrates, ranges, taxonomy
Abstract

Bryophyte flora of Hunan Province, China. 26. Sematophyllaceae (Musci)

BENITO C. TAN1 & TIMO Koponen2,3

1 The University and Jepson Herbaria, University of California at Berkeley, CA USA 94720 (deceased on 23 December 2016 in San Francisco, California)
2 Finnish-Chinese Botanical Foundation, Mailantie 109, FI-08800 Lohja, Finland;
3 Finnish Museum of Natural History, Botany Unit (bryology), P.O. Box 7, FI-00014 University of Helsinki, Finland


Received May 8, 2016, accepted Feb. 2, 2017

In Hunan Province of China, the moss family Sematophyllaceae, sensu lato, has 23 species in ten genera, namely, Aptychella (Broth.) Herzog (2 species), Brotherella M. Fleisch. (6), Gamiella Broth. (1), Heterophyllum Kindb. (1), Isocladiella Dixon (1), Papillidiopsis W.R. Buck & B.C. Tan (3), Pylaisiadelphe Cardot (2), Sematophyllum Mitt. (3), Trichosteleum Mitt. (2), and Wijkia H.A. Crum (2). Aptychella, Gamiella, Isocladiella, and Papillidiopsis are new generic records to the province. Twelve species and one variety are new to Hunan Province. Of these, Wijkia concavifolia (Cardot) H.A. Crum, known hitherto only from Japan, and Papillidiopsis malayana (Dixon) B.C. Tan, a widespread Male- sian species, are new to China. P. rambolina (Thwaites & Mitt.) B.C. Tan & Y. Jia is a new record for mainland China. Many of the species are very rare, rare or rather rare in Hunan, occurring in meridional zone of the country, and are mainly epiphytic. Wijkia hornschuchii (Dozy & Molk.) H.A. Crum is the exception and it grows mostly as a petrophyte or on rotten wood. The ranges of the species in Hunan Province, in China, and worldwide ranges are given. The taxonomy of the taxa is shortly discussed and useful sources of illustrations are cited for reference. The altitudinal range map is presented for 19 species and the taxa are grouped into floristic elements. Keys to the species in genera with more than one taxon represented in Hunan is provided.

Key words: Aptychella, Brotherella, China, Gamiella, habitats, Heterophyllum, Hunan, Isocladiella, key, new records, Papillidiopsis, Pylaisiadelpha, ranges, Sematophyllum, taxonomy, Trichosteleum, Wijkia
Abstract
A synopsis of the Mniaceae (Bryophyta). X. Malesian taxa, with a world list of the taxa in Mniaceae

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, FI–00014 University of Helsinki, Finland


Received Nov. 10, 2016, accepted Feb. 2, 2017

In the area of SE Asia covering Indonesia, Malaysia, Papua New Guinea, the Philippines and Singapore, three genera of the Mniaceae are known: Mnium Hedw. with M. lycopodioides Schwägr., and, hesitatingly, M. marginatum (Dicks.) P. Beauv., Orthommion Wils. with O. dilatatum (Mitt.) P.C. Chen, O. elimbatum (Nog.) T.J. Kop and O. javense (M. Fleisch.) T.J. Kop., and Plagiommium T.J. Kop. with P. cordatum T.J. Kop. & D.H. Norris, P. elimbatum (M. Fleisch.) T.J. Kop., (= Orthommion tanii T.J. Kop.), nom. nov., P. inteigrum (Bosch & Sande Lac.) T.J. Kop., P. rhynchothorium (Hook.) T.J. Kop., P. rostratum (Schrad.) T.J. Kop. and P. succulentum (Mitt.) T.J. Kop. P. subelimbatum (Dixon) T.J. Kop. (= Mnium subelimbatum) is synonymized with P. integrum. The ranges are documented by mapping or by citing a number of voucher specimens and literature references. A key to the species is given, the taxonomy of the taxa discussed and a selection of illustrations useful for identification are cited. Range maps are presented for Orthommion javense, Plagiommium integrum and P. succulentum. The traditional family Mniaceae has 9 genera and 73 species with two varieties. A final list of the taxa in the Mniaceae is given, as well as the world ranges of the species.

Key words: Indonesia, Malaysia, Mniaceae, Mnium, nomenclature, Orthommion, Papua New Guinea, the Philippines, Plagiommium, ranges, Singapore, taxonomy, world list of Mniaceae