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World Checklist of Hornworts and Liverworts

Lars Söderström
Norwegian University of Science and Technology

Anders Hagborg
Field Museum, Chicago, IL

Matt von Konrat
Field Museum, Chicago, IL

Sharon Bartholomew-Began
West Chester University of Pennsylvania, sbegan@wcupa.edu

David Bell
University of British Columbia

See next page for additional authors

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Authors
Lars Söderström, Anders Hagborg, Matt von Konrat, Sharon Bartholomew-Began, David Bell, Laura Briscoe, Elizabeth Brown, D. Christine Cargill, Denise P. Costa, Barbara J. Crandall-Stotler, Endymion D. Cooper, Gregorio Dauphin, John J. Engel, Kathrin Feldberg, David Glenny, S. Robbert Gradstein, Xiaolan He, Jochen Heinrichs, Jörn Hentschel, Anna Luiza Ilkiu-Borges, Tomoyuki Katagiri, Nadezhda A. Konstantinova, Juan Larraín, David G. Long, Martin Nebel, Tamás Pócs, Felisa Puche, Elena Reiner-Drehwald, Matt A.M. Renner, Andrea Sass-Gyarmati, Alfons Schäfer-Verwimp, José Gabriel Segarra Moragues, Raymond E. Stotler, Phiangphak Sukkharak, Barbara M. Thiers, Jaime Uribe, Jiří Váňa, Juan Carlos Villarreal, Martin Wigginton, Li Zhang, and Rui-Liang Zhu

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CHECKLIST

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World checklist of hornworts and liverworts

Lars Söderström[1,*], Anders Hagborg[2,*], Matt von Konrat[2,*], Sharon Bartholomew-Began[3], David Bell[4], Laura Briscoe[2], Elizabeth Brown[5,†], D. Christine Cargill[6], Denise P. Costa[7], Barbara J. Crandall-Stotler[8], Endymion D. Cooper[9], Gregorio Dauphin[10], John J. Engel[2], Kathrin Feldberg[11], David Glenny[12], S. Robbert Gradstein[13], Xiaolan He[14], Jochen Heinrichs[11], Jörn Hentschel[15], Anna Luiza Ilkiu-Borges[16], Tomoyuki Katagiri[17], Nadezhda A. Konstantinova[18], Juan Larraín[2], David G. Long[19], Martin Nebel[20], Tamás Pócs[21], Felisa Puche[22], Elena Reiner-Drehwald[23], Matt A.M. Renner[5], Andrea Sass-Gyarmati[21], Alfons Schäfer-Verwimp[24], José Gabriel Segarra Moragues[25], Raymond E. Stotler[8,†], Phiangphak Sukkharak[26], Barbara M. Thiers[27], Jaime Uribe[28], Jiří Váňa[29], Juan Carlos Villarreal[30], Martin Wigginton[31], Li Zhang[32], Rui-Liang Zhu[33]

1 *Department of Biology, Norwegian University of Science and Technology, N-7491 Trondheim, Norway* **2** *Department of Science and Education, Field Museum, 1400 South Lake Shore Drive, Chicago, IL 60605–2496, United States of America* **3** *Department of Biology, West Chester University, West Chester, PA 19383, United States of America* **4** *Department of Botany, University of British Columbia, 6270 University Boulevard, Vancouver, BC, V6T 1Z4, Canada* **5** *Royal Botanic Gardens and Domain Trust, Mrs Macquaries Road, Sydney NSW2000, Australia* **6** *Centre for Australian National Biodiversity Research, Australian National Herbarium, GPO Box 1600, Canberra, ACT 2601, Australia* **7** *Instituto de Pesquisas Jardim Botânico do Rio de Janeiro, Rua Pacheco Leão 915, 22460-030, Rio de Janeiro, RJ, Brazil* **8** *Department of Plant Biology, Southern Illinois University, Carbondale, Illinois 62901-6509, United States of America* **9** *CMNS-Cell Biology and Molecular Genetics, 2107 Bioscience Research Building, University of Maryland, College Park, MD 20742-4451, United States of America* **10** *Apartado 5-1500, Acosta, Costa Rica* **11** *Systematic Botany and Mycology, Ludwig Maximilian University of Munich, Menzinger Str. 67, 80638 Munich, Germany* **12** *Allan Herbarium, Landcare Research, P O Box 69-040, Lincoln 7608, New Zealand* **13** *Muséum National d'Histoire Naturelle, Department Systématique et Evolution, C.P. 39, 57 Rue Cuvier, 75231 Paris 05, France* **14** *Botany Unit, Finnish Museum of Natural History, University of Helsinki, P.O. Box 7, Helsinki FI-00014, Finland* **15** *Department of Systematic Botany with Herbarium Haussknecht and Botanical Garden, Friedrich Schiller University, Fürstengraben 1, 07737 Jena, Germany* **16** *Museu Paraense Emilio Goeldi, Coordenaçao de Botanica, Av. Magalhaes Barata 376, 66040-1 70 Belem, Para, Brazil* **17** *Department of Biological Science, Graduate School of Science, Hiroshima University, Kagamiyama 1–3–1, Higashihiroshima-shi, Hiroshima 739–8526, Japan* **18** *N.A. Avrorin Polar-Alpine Botanical Garden–Institute of Kola SC RAS, 184236 Kirovsk-6, Russia* **19** *Royal Botanic Garden, Edinburgh EH3 5LR, United Kingdom* **20** *Staatliches*

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Museum für Naturkunde Stuttgart, Rosenstein 1, 70191 Stuttgart, Germany **21** *Botany Department, Institute of Biology, Eszterházy Károly College, Eger, Pf. 43, H-3301, Hungary* **22** *Departamento de Botánica, Facultad de Ciencias Biológicas, Universitat de València. C/ Dr. Moliner 50, E-46100, Burjassot (Valencia), Spain* **23** *Albrecht-von-Haller-Institut für Pflanzenwissenschaften, Department of Systematics, Biodiversity and Evolution of Plants, Untere Karspüle 2, 37073 Göttingen, Germany* **24** *Mittlere Letten 11, 88634 Herdwangen-Schönach, Germany* **25** *Centro de Investigaciones sobre Desertificación (CIDE-CSIC-UV-GV), C/ Carretera de Moncada-Náquera Km. 4.5, E-46113, Moncada (Valencia), Spain* **26** *Department of Biology, Faculty of Science, Burapha University, Mueang, 20131 Chonburi, Thailand* **27** *William and Lynda Steere Herbarium, The New York, Botanical Garden, Bronx, New York 10458-5126, United States of America* **28** *Instituto de Ciencias Naturales. Universidad Nacional de Colombia. Apartado 7495, Bogotá D.C., Colombia* **29** *Department of Botany, Charles University, Benátská 2, CZ-128 01 Praha 2, Czech Republic* **30** *Department of Biology, Ludwig-Maximilians-Universität, Menzinger Str. 67, D-80638, München, Germany* **31** *36, Big Green, Warmington, Peterborough PE8 6TU, United Kingdom* **32** *Shenzhen Key Laboratory of Southern Subtropical Plant Diversity, Fairylake Botanical Garden, 160 Xianhu Rd., Liantang, Shenzhen 518004, Guangdong, China* **33** *Department of Biology, School of Life Sciences, East China Normal University, 3663 Zhong Shan North Road, Shanghai 200062, China*

* Editors

Corresponding author: *Lars Söderström* (lars.soderstrom@ntnu.no)

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This checklist is dedicated to Elizabeth Brown and Ray Stotler, who sadly left us during our work with it.

"……Charles Darwin wrote of his desire to provide financial support 'for the formation of a perfect M.S. catalogue of all known plants' (Darwin 1881, letter 13570). It is a personal embarrassment to me, and should be chastening to us all, that more than 120 years later we still have not delivered on that commitment." (Crane 2004).

Abstract

A working checklist of accepted taxa worldwide is vital in achieving the goal of developing an online flora of all known plants by 2020 as part of the Global Strategy for Plant Conservation. We here present the first-ever worldwide checklist for liverworts (Marchantiophyta) and hornworts (Anthocerotophyta) that includes 7486 species in 398 genera representing 92 families from the two phyla. The checklist has far reaching implications and applications, including providing a valuable tool for taxonomists and systematists, analyzing phytogeographic and diversity patterns, aiding in the assessment of floristic and

taxonomic knowledge, and identifying geographical gaps in our understanding of the global liverwort and hornwort flora. The checklist is derived from a working data set centralizing nomenclature, taxonomy and geography on a global scale. Prior to this effort a lack of centralization has been a major impediment for the study and analysis of species richness, conservation and systematic research at both regional and global scales. The success of this checklist, initiated in 2008, has been underpinned by its community approach involving taxonomic specialists working towards a consensus on taxonomy, nomenclature and distribution.

Keywords
Marchantiophyta, Anthocerophyta, nomenclature, taxonomy

Introduction

The natural world is changing fast (Balmford et al. 2005). The Global Strategy for Plant Conservation (GSPC) was adopted by the Conference of Parties (COP) of the Convention on Biological Diversity (CBD) in April 2002 (http://www.cbd.int/decision/cop/?id=7183; accessed 2014.06.02). The Strategy set out 16 outcome-oriented targets that were to be achieved by 2010. The GSPC was designed as a framework for action to halt the loss of plant diversity. Target 1 of the Strategy was to complete "a widely accessible working list of all known plant species, as a step towards a complete world Flora" (Lughadha 2004). As early as 1881 Charles Darwin expressed a wish to have a catalogue of all known plants (Crane 2004). However, over 125 years later, this wish is not yet fulfilled. Without a working checklist, many of the other objectives in the GSPC cannot be met and botanists around the world cannot communicate about plants on a global basis (Crane 2004). A working list of known plant species is critical for (I) its underpinning role in the effective implementation of the other targets through provision of baseline information; (II) increasing the accessibility and use of accurate botanical name information for research, conservation and sustainable use; and (III) real-world politics and how taxonomists respond to the decisions of policy makers (Paton et al. 2008).

Version 1.0 of The Plant List (http://www.theplantlist.org/) was released in December 2010 aimed to be comprehensive for species of vascular plants (flowering plants, conifers, ferns and their allies) and of bryophytes (mosses, liverworts and hornworts), as a response to the 2010 Target 1 of the GSPC and to a clear global need for such data. The Plant List is a broad collaboration, coordinated by the Royal Botanic Gardens, Kew, and the Missouri Botanical Garden (MO), involving diverse partnerships. Paton (2013) noted The Plant List represents a work in progress with future versions planned to improve the quality of names and decrease the number of unresolved names. Target 1 has since been revised and agreed at the 10th COP of the CBD in Nagoya, Japan, with the goal of developing "an online flora of all known plants" by 2020 (http://www.cbd.int/decision/cop/default.shtml?id=12283; accessed 2014.06.02). Paton (2013) identified several factors that might assist in the implementation of the

revised target, stressing that achieving a working list for plant taxa worldwide was a vital step to an online flora.

Earlier, Paton et al. (2008) assessed the progress made at that time and discussed prospects for the completion of Target 1. Paton noted that good progress had been made in bryophytes (mosses, liverworts and hornworts), ferns and gymnosperms with widely accessible working lists either complete or almost so for those groups. For bryophytes alone, he tabulated 13,370 accepted species noting that the data was largely derived from Tropicos. However, although Tropicos is an indispensable reference for anyone dealing with bryophyte names and the database is very strong for mosses, the nomenclatural and auxiliary data for liverworts is less complete, especially for larger genera (von Konrat et al. 2008a). The lack of a central source providing a synthesis of nomenclatural data and global distributional data was the impetus toward developing the current checklist of liverworts and hornworts (von Konrat et al. 2008a, 2010d, Söderström et al. 2012e). Checklists are powerful and important tools that can integrate the almost overwhelmingly scattered information concerning taxonomy, systematics, nomenclature, distribution, and even frequency (Söderström et al. 2008).

Ecological and biological significance of liverworts and hornworts

Liverworts and hornworts (Figure 1) are of critical biological, ecological, and phylogenetic significance (e.g. Asakawa 1998, Longton 1992, Hallingbäck and Hodgetts 2000, Gradstein et al. 2001b, Wellman et al. 2003, Qiu et al. 2007). Liverworts are found on soil, rocks, and trees throughout the world, from coastal Antarctica to the tundra of the Northern Hemisphere, and from semi-arid areas of Australia to the Amazon rainforests (Hallingbäck and Hodgetts 2000). Although there are xero-tolerant taxa, the majority of liverworts are found in relatively humid and shaded terrestrial ecosystems (Gradstein and Costa 2003). Liverworts and hornworts are an important component of the vegetation in many regions of the world, constituting a major part of the biodiversity in moist forest, wetlands, mountain, and tundra ecosystems (Hallingbäck and Hodgetts 2000).

Liverworts, hornworts and mosses offer microhabitats that are critical to the survival of a tremendous diversity of organisms such as single-celled eukaryotes, protozoa, and numerous groups of invertebrates (Gerson 1982). Their structural contribution to levels of diversity might be as significant as that of vascular plants, albeit at a smaller scale (von Konrat et al. 2008a). These plants are also important environmental and ecological indicators (Rao 1982, Pitcairn et al. 1995, Gradstein et al. 2001b, Giordano et al. 2004). Liverworts, in concert with mosses and hornworts, play a significant role in the global carbon budget (O'Neill 2000) and CO_2 exchange (De Lucia et al. 2003), plant succession (Cremer and Mount 1965), net production and phytomass (Frahm 1990), nutrient cycling (Coxson 1991), and water retention (Pócs 1980a, Gradstein et al. 2001b). These groups of land plants also have been used as indicators of past climate change, to validate climate models, and as potential indicators of global warming (Gignac 2001, Tuba et al. 2011).

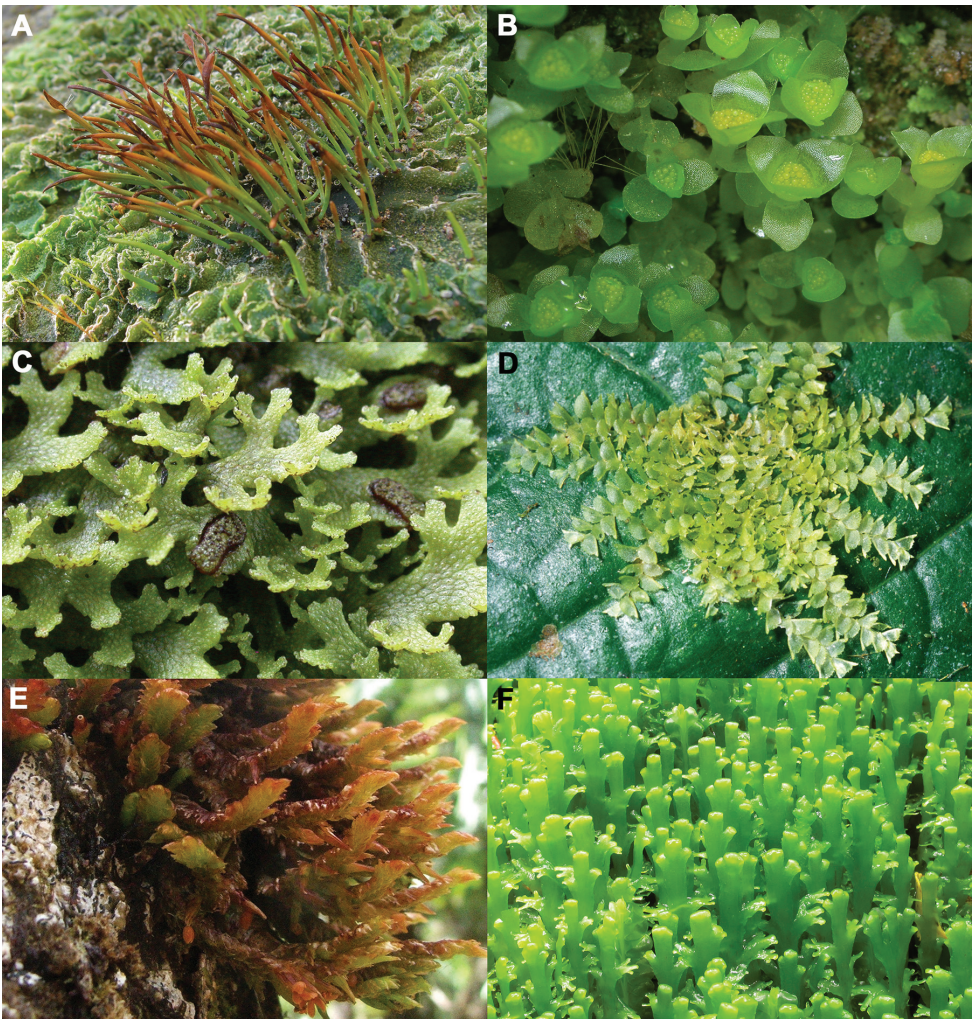

Figure 1. Habit images of selected lineages of Anthocerotophyta (hornworts) and Marchantiophyta (liverworts). **A** *Phaeomegaceros squamuliger*, photo by J. Hollinger **B** *Haplomitrium mnioides*, photo by L. Zhang **C** *Conocephalum japonicum*, photo by D. G. Long **D** *Colura vitiensis*, photo by T. Pócs **E** *Pleurozia gigantea*, photo by L. Söderström **F** *Riccardia spegazziniana,* photo by Juan Larraín.

Species numbers

There are estimated to exist only 215 hornwort species. By comparison estimates of liverwort species richness have varied considerably, by as much as 50%, with estimates ranging from 4,500 to 9,000 (e.g. Pearson 1995, Forrest et al. 2006). In the last decade or so estimates in the range of 5,000 to 6,000 liverwort species have been widely accepted (e.g. Gradstein and Costa 2003, Gradstein and Ilkiu-Borges 2009, Heinrichs et al. 2007). von Konrat et al. (2010a) provided a mean estimate of 7,500

for the number of liverwort species based on estimating rates of synonymy in a sample of recently monographed and revised taxa. A standardized global worldwide liverwort checklist with strong community participation, as presented here, coupled with the critical need for ongoing monographs and revisions, will aid in arriving at clearer estimates of liverwort and hornwort diversity. Significantly, a list of standardized names reviewed by taxonomic experts will enable more meaningful geographical and biogeographical species comparative studies. The global checklist of accepted liverwort and hornwort taxa has vast potential, not only in aiding our understanding of liverwort diversity, patterns, and processes, but also to the broader biological community (von Konrat et al. 2008a).

Below we provide context to the worldwide checklist, including a brief historical account and current informational resources, structure and layout, systematic and classification concepts, and methodology, including a brief overview of the underlying data set and nomenclatural elements.

Major historical works

Schuster (1966d) has provided a detailed account on the history of hepaticology, up to the first half of the 20th century. Earlier, Verdoorn (1934c) also outlined a valuable historical review of important figures in hepaticology. In the early 19th century, possibly the two most influential persons who provided an early framework for taxonomic concepts were W.J. Hooker and G. Raddi. During the middle of the 19th century C.G. Nees von Esenbeck, C.M. Gottsche and J.B.W. Lindenberg provided vastly significant contributions towards developing a classification framework. Frahm and Eggers (2001) provided a brief biography of these workers. This was later followed by R. Spruce and the Austrian-born H. Leitgeb in the second half 19th century. Leitgeb in particular was instrumental in liverwort plant morphology and anatomy including a six part treatise, "Untersuchungen ueber die Lebermoose", from 1874 to 1881. Towards the end of 19th century and early 20th century V. Schiffner, F. Stephani, and A. Evans were prominent hepaticologists. In the first half of the 20th century A. Evans, H. Buch, F. Verdoorn, and K. Müller (Frib.) were leading influential hepaticologists. In the second half of the 20th century, R. Grolle and R.M. Schuster were of extraordinary influence in working towards contemporary classification schemes. Many of these groundbreaking concepts still serve the foundation from which our current classification scheme is derived. R.M. Schuster's major contribution to botany and hepaticology lies in the astounding new diversity of liverworts he added to our knowledge. He described a staggering 463 species, 83 genera and 15 families new to science. It is difficult to name another contemporary botanist who discovered this much new diversity of a major clade of land plants (Qiu et al. 2013). R.M. Schuster's contribution to botany went beyond hepatics. He was one of the first botanists who recognized the importance of Wallace's Line in plant biogeography, separating Australia of Gondwanaland from Southeast Asia of Laurasia (Cronquist 1988).

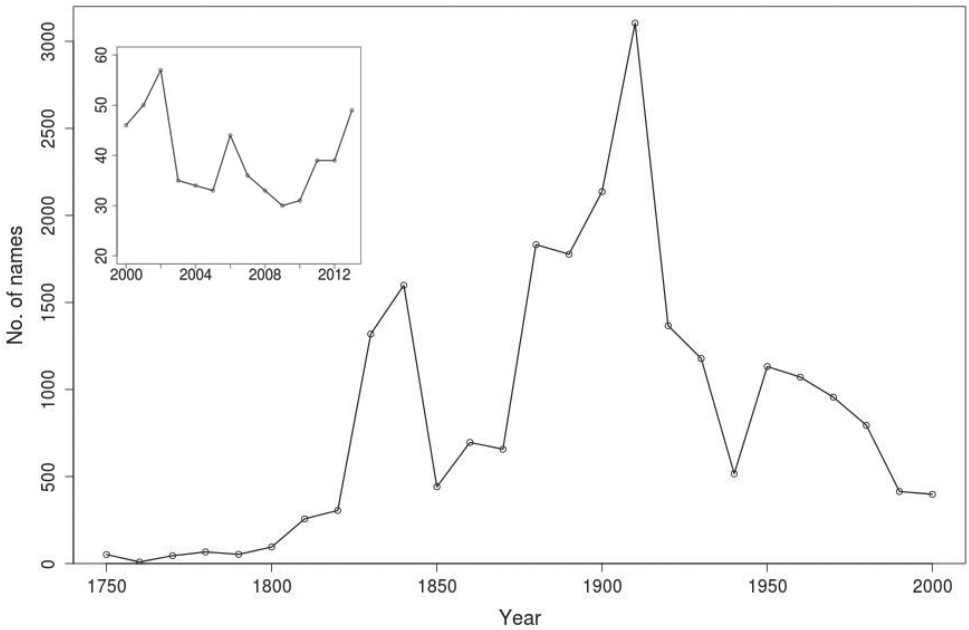

Figure 2. Number of novel liverwort species, excluding new combinations, which have been described over the last 250 years, with an inset of the number described from 2001–2012.

Figure 2 depicts the number of novel liverwort species, excluding new combinations that have been described over the last 250 years. The first major peak corresponds to the works of several early 19th century botanists, including Synopsis Hepaticarum by Gottsche, Lindenberg, and Nees (1844–1847). The three decades leading into, but prior to the highest peak, between 1860 and 1890, correspond to publications by a number of prominent bryologists including W. Mitten, J.D. Hooker, T. Taylor, and V. Schiffner. The second and highest peak of almost 1,200 names, in the early 1900s corresponds largely to the plethora of taxa described by F. Stephani (1898–1924) in his monumental work Species Hepaticarum. The periods of highest rates of new species described in the 1830s and around 1900 are the same for seed plants (Mutke and Barthlott 2005). The third peak over the four decades between 1950 and 1980 can be attributed mainly to the works of R.M. Schuster, H. Inoue, and S. Hattori. H. Inoue and S. Hattori were influential on large species-rich genera such as *Plagiochila, Frullania*, and *Porella*. The decline in newly described species since 1970 does not necessarily translate to the conclusion that taxonomists are closer to discovering all known species. The almost 200 novel liverwort species that have been described in the past six years alone still represent a significant number, considering the relatively few liverwort taxonomists and monographers. Moreover, bryological exploration has been very uneven in many parts of the world. For example, many areas of the Neotropics still remain without a single bryophyte record (Gradstein et al. 2001a). Paradoxically, scores of new species are still being discovered and described in relatively well-studied

areas such as New Zealand, e.g. over 50 new taxa since 2000 alone (e.g. Engel and Schuster 2001, Engel and Glenny 2008a, Renner and de Lange 2011, von Konrat et al. 2012b). Recent attention to cryptic speciation in bryophytes is also revealing novel liverwort species (e.g. Szweykowski et al. 2005). The combination of collecting in yet-to-be explored areas, the continued discovery of species in well-studied regions, and an increased understanding of the biology of liverworts (including cryptic speciation), will lead to a significant number of newly discovered species in the foreseeable future. The corollary of this, coupled with increased monographic and revisional work, will be the increased discovery and the unravelling of synonymy.

Contemporary resources

Data availability and information needs associated with liverworts and hornworts have been reviewed extensively by von Konrat et al. (2008a, 2010a). A fundamental problem common to all nomenclatural indexing projects is the dispersed nature of the biological literature, some of which may date back over 250 years (Lughadha 2004). Our own data records, from 1990 to the present alone, indicate there are over 190 periodical titles and non-serials in which liverwort nomenclatural novelties were published. The most useful and successful web-accessible bryophyte nomenclatural database is Tropicos (http://www.tropicos.org), which offers name data with references and type information as well as links to specimen data of its holdings. Tropicos has therefore become an indispensable reference for anyone dealing with bryophyte names. However, as stated above, the database is particularly strong for mosses and far less comprehensive for liverworts. Moreover, Tropicos does not prescribe taxonomic disposition of names, i.e., there is no attempt to adopt a single consistent view on the status of any particular name (Lughadha 2004, von Konrat et al. 2008a).

A major nomenclatural work is the *Index Hepaticarum* (http://www.ville-ge.ch/musinfo/bd/cjb/hepatic/index.php), which includes all effectively published liverwort epithets spanning 12 volumes with the closing date of 1973. The indices were prepared as a purely nomenclatural resource and did not claim to express any particular taxonomic concept. Recently, Crosby and Engel (2006) provided an equally valuable nomenclatural resource and catalog of names at all ranks for liverworts and hornworts published during 1974 to 2000. Subsequently, indices of the citations for names published for bryophytes have been compiled for the years 2001-2004 (Crosby and Magill 2005) and 2005 (Crosby and Magill 2006). The Early Land Plants Today initiative has continued this series (von Konrat et al. 2010c, Söderström et al. 2012b, 2014).

The application of molecular phylogenetics continues to generate new insights into the evolutionary history of liverworts and hornworts. In recent years, inferences made from these phylogenies have especially revolutionized liverwort classification (Crandall-Stotler et al. 2009). Yet, the reconstruction of the phylogenetic history of the Marchantiophyta and Anthocerotophyta remains an ongoing effort and the classification is fluid (von Konrat et al. 2010a). The current checklist largely follows the comprehensive

phylogenetic liverwort classification scheme provided by Crandall- Stotler et al. (2009) and the hornwort classification scheme of Stotler and Crandall-Stotler (2005). Thus the checklist largely adheres to their higher classification namely from class to suborder, and the majority of family and genera arrangements provided therein. However, there are some notable exceptions, especially in the systematic treatment of liverworts, which largely either reflect publications subsequent to 2009, or are a slight departure in taxonomic opinion based on earlier works, e.g. the concepts of Saccogynaceae and Stephaniellaceae depart from Crandall-Stotler et al. (2009). Since 2010 there have been a number of realignments and novel hypotheses proposed that were generated from conclusions based on molecular evidence which have influenced the systematic treatment presented here. These include, for example, Adelanthaceae (e.g. Konstantinova and Vilnet 2009, Feldberg et al. 2010b, 2010a, Söderström et al. 2010b, Vilnet et al. 2010), Anastrophyllaceae (e.g. Söderström et. al 2010b), Gymnomitriaceae (e.g. Vilnet et al 2007a, 2010, Váňa et al. 2010b, Shaw et al. 2015), Lepidoziaceae (Cooper 2013), Lophocoleaceae (Söderström et al. 2013b), and Scapaniaceae (e.g. Vilnet et al. 2010, Heinrichs et al. 2012a). In all cases, any such departures, new families, or realignments are noted and very briefly discussed throughout the checklist. As noted by Crandall-Stotler et al. (2009) many small families still remain to be investigated using molecular data, and many of the large families and genera that have been sampled appear to be either polyphyletic or paraphyletic.

The systematic treatment as outlined here also includes the addition of subfamily and infrageneric classification; ranks not presented by Crandall-Stotler et al. (2008b, 2009). Although there are arguably a number of ambiguous placements, especially at the infrageneric rank, and there remain many areas of contention, particularly at the familial and generic level, the systematic treatment itself serves as an excellent synopsis of contemporary taxonomic opinion, including infrageneric ranks. The infrageneric treatments will also aid future efforts in providing a taxonomic framework that will be particularly useful for extremely large genera. In large part, the infrageneric treatments only deal with those taxa that represent phylogenetic clades with strong support. Care has been taken to reduce ambiguity and those taxa where infrageneric placement is weak or without evidence are simply listed under the genus and not placed systematically.

Structure and format of the checklist

The checklist is presented in a taxonomic framework as outlined above with four main sections. The first is arranged systematically with taxa ordered alphabetically within the nearest higher rank. A brief discussion for selected families is provided in the main body of the text under the respective families. This does not appear uniformly for all families, but typically for larger more complicated families. Rather, a brief description is provided mainly where concepts depart from Crandall-Stotler et al. (2009) or if new information has come to light since that publication. Subfamilies and infrageneric ranks have been incorporated where appropriate. However, if the subgeneric place-

ment is unclear the species are listed under "*Incertae sedis*". From the rank of genus and below, all entries include a three star confidence ranking (described below), accepted taxon name, authority, abbreviated publication title, page number and date, which is cross- referenced to the full citation in the reference list, as well as the basionym if appropriate. A typical entry appears as follows:

*** *Oleolophozia* L.Söderstr., De Roo et Hedd., Phytotaxa 3: 50, 2010 (Söderström et al. 2010b).

*** *Oleolophozia perssonii* (H.Buch et S.W.Arnell) L.Söderstr., De Roo et Hedd., Phytotaxa 3: 51, 2010 (Söderström et al. 2010b). Bas.: *Lophozia perssonii* H.Buch et S.W.Arnell, Bot. Not. 97: 382, 1944 (Buch 1944).

There are comprehensive footnotes throughout the systematic section of the checklist. These are applied to selected names representing the rank of genus and below only. Footnotes without any literature citation represent observations from the authors of the respective family. Footnotes are wide ranging in their content. Generally, footnotes can be categorized into the following: i) general statements relating to taxonomic opinion, ii) comments on the type specimen, iii) comments about possible conspecificity, including citation of conflicting opinions, and iv) comment about species complexes.

This section is followed by a list of taxa in genera that we do not recognize. Those names represent taxa that have not been studied recently and have not been recognized in any recent treatment. However, many of those names are old and may gain priority over some recognized taxa once their identity is determined.

The next section is an alphabetical list of taxa of the ranks of species and below. The alphabetical list includes the confidence level, the taxon name and authority as well as a reference to the page of the corresponding entry in the systematic section. Thus, the alphabetical list provides a rapid gateway requiring no prior knowledge of higher taxonomy, but also serves as an index to the corresponding name in the systematic section that includes more detailed information.

The last section is a reference list where full bibliographic citations are given to all references for taxa included in the checklist. Titles and references have all been checked and verified, except in a few cases where we could not get hold of the publications.

Taxon confidence levels

Significantly, each accepted taxon is qualified using a three level ranking system that summarizes our knowledge about a taxon. The coding convention we are adopting largely follows that described by von Konrat et al. (2010d) using one to three stars, which has been applied to recent regional checklists produced by the Early Land Plants Today initiative, e.g. Söderström et al. (2010a, 2011a, 2011b, 2012g, 2013e). The conventions are briefly outlined below coupled with samples illustrating how these conventions are applied in practice. The application of a confidence level to a taxon's

status and whether it represents a genuine "species" that is reached through community consensus may go towards refining species estimates using an evidence-based approach (von Konrat et al. 2008a, 2008b). The confidence levels coupled with the detailed annotations in the form of footnotes may also provide a rapid assessment of taxa and help aid and drive future research into specific taxonomic or nomenclatural problems and issues.

The coding convention:

* Serious doubts. There are doubts about the value of the taxon. It can be that there are conflicting views without any substantial evidence in any direction, conflicting views with substantiating evidence supporting one or both positions, or evidence pointing towards synonymization but it is premature to do it. We have adhered to the principle that it is better to keep a taxon with one star (and preferably a note) than to synonymize it too quickly. Example: *Bazzania asymmetrica* is conspecific with *Bazzania macgregorii* in Grolle (1968a), but Kitagawa (1979a) kept them separate. Example: *Nardia kamtschatica* may be conspecific with *Nardia assamica* (Váňa 1976c), but the type specimen could not be studied.

** Knowledge problem. The taxon is not well known by the person evaluating it. It may be a newly described species or a species originally not well described and not restudied recently. Example: *Jungermannia erectii* Ajit P.Singh et V.Nath was recently described and has not been independently studied by someone with a global overview. It is therefore difficult to evaluate.

*** Accepted. A good taxon as currently understood based on personal experience or on taxonomic revisions that have been convincingly performed. Nomenclature and/or taxonomic position may, however, be questioned. Elements may be excluded from the taxon, but the taxon with the current type will still be accepted. Example: H. Bischler-Causse revised the genus *Marchantia* worldwide in a series of publications. Although she had a broad species concept, she also recognized infraspecific taxa. The taxa that she recognized without doubt should be accepted unless new evidence against it exists. Adopting a narrower species concept so that many of her subspecies are elevated to species does not change her view of what a good taxon is.

Methodology

The foundation of the checklist is in the underlying data set from which it is derived. It was briefly described by von Konrat et al. (2008a, 2010a). The working data sets now includes a bibliography of 25,000 publications; approximately 39,000 published liverwort names (including "accepted" taxa, synonyms, invalid and illegitimate names). The data quality and standards were outlined by von Konrat et al. (2010d). In summary, for authorities and for the citation abbreviations, we follow the standards set by the on-line version of *Authors of Plant Names* at the Royal Bota-

nical Gardens, Kew Website (http://www.ipni.org), with whom we collaborate closely and provide with updated data records. Publications and journal abbreviations follow *Taxonomic Literature: A selective guide to botanical publications and collections with dates, commentaries and types* (Stafleu and Cowan 1976–2009) (http://www.sil.si.edu/digitalcollections/tl- 2/search.cfm) and *Botanico Periodicum Huntianum* Lawrence et al. (1968) (http://huntbot.andrew.cmu.edu/HIBD/Departments/Databases.shtml).

There has been an intense systematic effort focusing on data quality. In all but a few cases nomenclatural data has been verified against original publications. Söderström and Hagborg have checked and confirmed almost every original publication (three publications have not been available) for correct author, title and journal/book citation, date of publication as far as possible, page number for the protologue, and if the name is validly and legitimately published according to the International Code of Nomenclature for algae, fungi and plants (Melbourne Code; McNeill et al. 2012). Most significantly, the checklist has been community driven and collaborative. Broader participation by taxonomic specialists and regional experts has lead to the checklist containing high quality data (cf. Söderström et al. 2008). Development of the checklist has included three international meetings (the first one in 2009) and generated 74 published notes on taxonomy and nomenclature under the auspices of the Early Land Plants Today initiative from 2012 to 2015. The series of meetings were instrumental in providing a framework for direct interaction with taxonomic experts, workshops reviewing names, and helping identify potential participants who were taxonomic experts in specific taxonomic groups, whether these were individual genera or entire families.

The notes, published in the journal Phytotaxa, have included 38 authors from 13 countries. These are the results of several years of revisions of taxonomic groups by taxonomic experts. Following these revisions and working with participants identifying nomenclatural and taxonomic problems that would impact the worldwide checklist, Söderström, Hagborg and von Konrat led editorial efforts in compiling manuscripts with baseline information and nomenclatural or taxonomic issues that required resolving. The work was then coordinated with the taxonomic experts who drove and led the process and often identified further issues. The series of notes on taxonomy and nomenclature of liverworts and hornworts provided updated nomenclature, corrected invalid and illegitimate names and described new taxa based on studies (mainly molecular) that did not draw nomenclatural conclusions. Those notes are all open access and any changes were effective immediately as the Melbourne Code of Botanical Nomenclature allows publishing on internet from 1 Jan. 2012 (Knapp et al. 2011).

This checklist builds on all published taxonomic and nomenclatural papers, that have come to our attention until June 30, 2015.

Summary statistics

We here present the first-ever worldwide checklist for liverworts (Marchantiophyta) and hornworts (Anthocerotophyta) that includes 8,078 taxa (species and below) in 7,486 species representing 398 genera, 92 families, 20 orders and 7 classes from the two phyla. The list includes 3,533 species with three stars, 2,988 species with two stars and 915 species with one star. The checklist also has extra utility in that it contains 3,106 references in the bibliography that serve as a powerful bibliographic resource for liverwort and hornwort systematic and taxonomic research.

Concluding remarks

The marked-up publication form of the current checklist by PhytoKeys provides a virtual instrument with a linked environment both internally (e.g. within an article) and externally (GBIF, IPNI, Tropicos, Wikispecies, etc.) that will undoubtedly help accelerate taxonomic research. The published checklist was the first phase in providing a worldwide list of accepted names. The next phase is to establish a generally recognized online repository to augment the huge underlying informational auxiliary data of over 25,000 publications, almost 39,000 published names, and the over 700,000 geographical observations. Several features of Web-based technology make it an essential tool, including 1) a vehicle to facilitate data access, 2) to unify the vastly scattered data on distributional information and nomenclature, 3) offering dynamic rather than static data in a searchable forum. The broader accessibility to the wealth of auxiliary data will help augment monographic and revisional work for many taxonomic groups, aid in identifying the need for increased floristic and survey work in many regions throughout the world, and have broad implications and applications beyond taxonomic research such as conservation science. The current Early Land Plants Today model has strong participation from taxonomic experts and an online resource will provide an opportunity to expand stakeholders to include ecologists, conservationists, scientists from other disciplines and general interest groups. However, such an effort can only be successful if it comes with sustained funding and infrastructure rather than depending on an ad hoc commitment by a few individuals, however dedicated.

The project will help augment monographic and revisional work for many taxonomic groups and aid in identifying the need for increased floristic and survey work in many regions throughout the world. Although there are many challenges ahead to obtain high quality data, quantifying global liverwort diversity is a tractable, multifaceted and scientifically important goal, and everyone stands to gain by fostering this endeavour. The success of the project will lie on strong collaboration between institutions and the bryological community in general.

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Taxonomic list

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Anthocerotidae Rosenv.
Anthocerotales Limpr.

*** Anthocerotaceae Dumort.

by J.C. Villarreal and D.C. Cargill

Notes on nomenclature and taxonomy can also be found in Cargill et al. (2013b) and Villarreal et al. (2015)

*** ***Anthoceros* L.**, Sp. Pl. 1: 1139, 1753 (Linnaeus 1753). [1]
*** *Anthoceros adscendens* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 24, 1832 (Lehmann 1832).
*** *Anthoceros agrestis* Paton, J. Bryol. 10 (3): 257, 1979 (Paton 1979a), *nom. conserv.* [2]
*** *Anthoceros alpinus* Steph., Sp. Hepat. (Stephani) 6: 425, 1923 (Stephani 1923).

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1 *Anthoceros* includes *Aspiromitus*, but some taxa have neither been transferred nor synonymized. They are listed in the "Names in genera not currently accepted" section below.

2 *Anthoceros agrestis* is conserved against the earlier *Anthoceros nagasakiensis* Steph. 1916. *Anthoceros cristatus* Steph. 1916 is also an earlier synonym and a proposal to conserve *Anthoceros agrestis* against it is in progress.

* *Anthoceros angustifolius* Gottsche, Lindenb. et Nees, Syn. Hepat. 4: 582, 1846 (Gottsche et al. 1846). [3]

*** *Anthoceros angustus* Steph., Sp. Hepat. (Stephani) 5: 1001, 1916 (Stephani 1916b).

*** *Anthoceros bharadwajii* Udar et A.K.Asthana, Proc. Indian Natl. Sci. Acad., B 51 (4): 484, 1985 (Udar and Asthana 1985b).

** *Anthoceros buettneri* Steph., Sp. Hepat. (Stephani) 5: 997, 1916 (Stephani 1916b).

*** *Anthoceros capricornii* Cargill et G.A.M.Scott, J. Hattori Bot. Lab. 82: 55, 1997 (Cargill and Scott 1997).

*** *Anthoceros caucasicus* Steph., Izv. Kavkazsk. Muz. 8: 87, 1914 (Voronov' 1914).

** *Anthoceros cavernosus* Steph., Sp. Hepat. (Stephani) 5: 998, 1916 (Stephani 1916b).

* *Anthoceros chambensis* Kashyap, J. Bombay Nat. Hist. Soc. 25 (2): 281, 1917 (Kashyap 1917).

** *Anthoceros chungii* Khanna, J. Indian Bot. Soc. 17 (5/6): 316, 1938 (Khanna 1938).

** *Anthoceros crispatus* Griff., Not. pl. asiat. 2: 349, 1849 (Griffith 1849).

** *Anthoceros dimorphus* Sim, Trans. Roy. Soc. South Africa 15 (1): 114, 1926 (Sim 1926).

*** *Anthoceros erectus* Kashyap, New Phytol. 14 (1): 9, 1915 (Kashyap 1915).

** *Anthoceros expansus* (Steph.) J.C.Villarreal et Cargill, Phytotaxa 208 (1): 92, 2015 (Villarreal et al. 2015). Bas.: *Aspiromitus expansus* Steph., Sp. Hepat. (Stephani) 5: 961, 1916 (Stephani 1916b).

* *Anthoceros ferdinandi-muelleri* Steph., Sp. Hepat. (Stephani) 5: 1007, 1916 (Stephani 1916b). [4]

*** *Anthoceros fragilis* Steph., Sp. Hepat. (Stephani) 5: 1006, 1916 (Stephani 1916b).

*** *Anthoceros fusiformis* Austin, Bull. Torrey Bot. Club 6 (4): 28, 1875 [1876] (Austin 1875a).

*** *Anthoceros fusiformis* var. *taiwanensis* J.Haseg., Acta Phytotax. Geobot. 44 (2): 100, 1993 (Hasegawa 1993b).

** *Anthoceros gasongorii* Gola, Mem. Reale Accad. Sci. Torino (ser. 2) 65 (1): 10, 1916 (Gola 1916).

** *Anthoceros granulatus* Gottsche, Mexik. Leverm.: 275, 1863 (Gottsche 1863).

** *Anthoceros harrisanus* (Steph.) Parihar, Univ. Allahabad Stud., Bot. 1961-2: 31, 1962 (Parihar 1962). Bas.: *Aspiromitus harrisanus* Steph., Sp. Hepat. (Stephani) 5: 965, 1916 (Stephani 1916b).

* *Anthoceros helmsii* Steph., Hedwigia 32 (3): 142, 1893 (Stephani 1893b). [5]

** *Anthoceros jamesonii* Taylor ex Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 171, 1855 (Mitten 1855).

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3 *Anthoceros angustifolius* (type from Europe) has neither been recognized in any recent treatment nor synonymized. The name may have priority once its identity is determined.

4 *Anthoceros ferdinandi-muelleri* is similar to *Anthoceros punctatus*, but *Anthoceros* still needs to be revised for Australia.

5 *Anthoceros helmsii* was treated as conspecific with *Anthoceros muscoides* by Campbell (1982), but it is in need of a revision.

* *Anthoceros javanicoides* H.A.Mill., Phytologia 47 (4): 319, 1981 (Miller 1981). *Nom. nov. pro Anthoceros javanicus* Steph., Sp. Hepat. (Stephani) 5: 988, 1916 (Stephani 1916b), *nom. illeg.* [6]

** *Anthoceros jungermannioides* Schwein., Spec. Fl. Amer. Crypt.: 25, 1821 (Schweinitz 1821).

* *Anthoceros kajumas* (K.I.Goebel) Prosk., Bull. Torrey Bot. Club 78 (4): 347, 1951 (Proskauer 1951a). Bas.: *Aspiromitus kajumas* K.I.Goebel, Ann. Jard. Bot. Buitenzorg 39: 69, 1928 (Goebel 1928).

* *Anthoceros koshii* Khanna, J. Indian Bot. Soc. 15 (4): 237, 1936 (Khanna 1936).

*** *Anthoceros lamellatus* Steph., Sp. Hepat. (Stephani) 5: 1000, 1916 (Stephani 1916b).

*** *Anthoceros laminifer* Steph., J. Linn. Soc., Bot. 29 (201): 266, 1892 (Stephani 1892b).

*** *Anthoceros macounii* M.Howe, Bull. Torrey Bot. Club 25 (1): 19, 1898 (Howe 1898a).

*** *Anthoceros macrosporus* Steph., Sp. Hepat. (Stephani) 5: 1005, 1916 (Stephani 1916b).

** *Anthoceros maritimus* Steph., Sp. Hepat. (Stephani) 5: 984, 1916 (Stephani 1916b).

* *Anthoceros megasporus* Meijer, J. Hattori Bot. Lab. 18: 6, 1957 (Meijer 1957).

** *Anthoceros muscoides* Colenso, Trans. & Proc. New Zealand Inst. 16: 361, 1884 (Colenso 1884).

*** *Anthoceros myriandroecius* Steph., Wiss. Ergebn. Deut. Zentr.-Afr. Exped. (1907-08), Bot. 2: 134, 1911 (Stephani 1911a).

** *Anthoceros natalensis* Steph., Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr. 88: 732, 1913 (Stephani 1913b).

*** *Anthoceros neesii* Prosk., Leberm. Eur. 2 (9): 1312, 1958 (Proskauer 1958). *Nom. nov. pro Anthoceros punctatus* α* *monocarpus* Nees, Naturgesch. Eur. Leberm. 4: 339, 1838 (Nees 1838a).

** *Anthoceros niger* Steph., Sp. Hepat. (Stephani) 5: 1005, 1916 (Stephani 1916b).

** *Anthoceros orizabensis* (Steph.) Hässel, Candollea 45 (1): 211, 1990 (Hässel 1990b). Bas.: *Aspiromitus orizabensis* Steph., Sp. Hepat. (Stephani) 5: 965, 1916 (Stephani 1916b).

*** *Anthoceros pandei* Udar et A.K.Asthana, J. Indian Bot. Soc. 64: 305, 1985 (Udar and Asthana 1985a).

*** *Anthoceros patagonicus* Hässel, Candollea 45 (1): 207, 1990 (Hässel 1990b).

*** *Anthoceros patagonicus* subsp. *gremmenii* J.C.Villarreal, J.J.Engel et Váňa, Mem. New York Bot. Gard. 105: 32, 2013 (Váňa and Engel 2013).

** *Anthoceros peruvianus* Steph., Sp. Hepat. (Stephani) 5: 999, 1916 (Stephani 1916b).

** *Anthoceros pinnatus* Steph., Bol. Soc. Brot. 4: 154 [182], 1885 [1886] (Stephani 1885c).

*** *Anthoceros punctatus* L., Sp. Pl. 1: 1139, 1753 (Linnaeus 1753). [7]

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6 *Anthoceros javanicoides* belongs to the *Anthoceros punctatus* species complex (Söderström et al. 2010a).

7 *Anthoceros punctatus* is a species complex in need of a revision.

* *Anthoceros pusillus* Colenso, Trans. & Proc. New Zealand Inst. 18: 255, 1886 (Colenso 1886b).
*** *Anthoceros rosulans* J.Haseg., J. Hattori Bot. Lab. 60: 379, 1986 (Hasegawa 1986b).
*** *Anthoceros sambesianus* Steph., Sp. Hepat. (Stephani) 5: 996, 1916 (Stephani 1916b).
*** *Anthoceros scariosus* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 230, 1869 (Austin 1869).
** *Anthoceros schroederi* Steph., 52 (5): 306, 1912 (Stephani 1912a).
** *Anthoceros serratus* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 90, 1911 (Stephani 1911b).
** *Anthoceros simulans* M.Howe, Proc. Calif. Acad. Sci. (ser. 4) 21 (17): 204, 1934 (Howe 1934).
** *Anthoceros spongiosus* Steph., Sp. Hepat. (Stephani) 5: 1003, 1916 (Stephani 1916b).
*** *Anthoceros subtilis* Steph., Sp. Hepat. (Stephani) 5: 1003, 1916 (Stephani 1916b).
*** *Anthoceros telaganus* Steph., Sp. Hepat. (Stephani) 5: 1005, 1916 (Stephani 1916b).
*** *Anthoceros tristanianus* J.C.Villarreal, J.J.Engel et Váňa, Mem. New York Bot. Gard. 105: 33, 2013 (Váňa and Engel 2013).
*** *Anthoceros tuberculatus* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 25, 1832 (Lehmann 1832).
** *Anthoceros venosus* Lindenb. et Gottsche, Syn. Hepat. 4: 584, 1846 (Gottsche et al. 1846).

Excluded from the genus

* *Anthoceros aethyopicus* Gola, Ann. Bot. (Rome) 13 (1): 73, 1914 (Gola 1914a). [8]
* *Anthoceros brunnthaleri* Steph., Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr. 88: 732, 1913 (Stephani 1913b). [9]
* *Anthoceros floribundus* Steph., Sp. Hepat. (Stephani) 5: 977, 1916 (Stephani 1916b). [10]
* *Anthoceros mildbraedii* Steph., Sp. Hepat. (Stephani) 6: 428, 1923 (Stephani 1923). [11]
* *Anthoceros parvifrons* Steph., 52 (5): 307, 1912 (Stephani 1912a). [12]
* *Anthoceros pseudocostus* Steph., Sp. Hepat. (Stephani) 5: 977, 1916 (Stephani 1916b). [13]
* *Anthoceros rossoi* Gola, Mem. Reale Accad. Sci. Torino (ser. 2) 65 (1): 10, 1916 (Gola 1916). [14]

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8 *Anthoceros aethyopicus* is probably a *Phaeoceros* species (Wigginton 2009).
9 *Anthoceros brunnthaleri* was annotated by Hasegawa in 1993 as probably conspecific with *Phymatoceros bulbiculosus* but the synonymy seems not to have been published.
10 *Anthoceros floribundus* type specimen in G was annotated by Hasegawa in 1993 as conspecific with *Anthoceros parvifrons* which is a *Phaeoceros* species.
11 *Anthoceros mildbraedii* is probably conspecific with *Phaeoceros carolinianus* (Wigginton and Grolle 1996).
12 *Anthoceros parvifrons* is annotated as a *Phaeoceros* species by Hasegawa in 1993 but the new combination has never been published.
13 *Anthoceros pseudocostus* is a *Phaeoceros* species of uncertain status (Grolle 1995).
14 *Anthoceros rossoi* is a *Phaeoceros* species of uncertain status (Wigginton 2009).

*** ***Folioceros* D.C.Bharadwaj**, Geophytology 1 (1): 9, 1971 (Bharadwaj 1971).

*** *Folioceros amboinensis* (Schiffn.) Piippo, Acta Bot. Fenn. 148: 36, 1993 (Piippo 1993b). Bas.: *Anthoceros amboinensis* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 45, 1890 (Schiffner 1890).

** *Folioceros apiahynus* (Steph.) Hässel, Candollea 45 (1): 215, 1990 (Hässel 1990b). Bas.: *Anthoceros apiahynus* Steph., Sp. Hepat. (Stephani) 5: 999, 1916 (Stephani 1916b).

** *Folioceros argillaceus* (Steph.) J.C.Villarreal et Cargill, Phytotaxa 208 (1): 93, 2015 (Villarreal et al. 2015). Bas.: *Aspiromitus argillaceus* Steph., Sp. Hepat. (Stephani) 5: 970, 1916 (Stephani 1916b).

*** *Folioceros assamicus* D.C.Bharadwaj, Geophytology 1 (1): 10, 1971 (Bharadwaj 1971).

** *Folioceros dilatatus* (Steph.) J.C.Villarreal et Cargill, Phytotaxa 208 (1): 93, 2015 (Villarreal et al. 2015). Bas.: *Anthoceros dilatatus* Steph., Bot. Jahrb. Syst. 8 (2): 95, 1886 (Stephani 1886d).

*** *Folioceros dixitianus* (Mahab.) D.C.Bharadwaj, Geophytology 5 (2): 227, 1975 (Bharadwaj 1975). Bas.: *Aspiromitus dixitianus* Mahab., Curr. Sci. 10 (12): 532, 1941 (Mahabale 1941).

*** *Folioceros fuciformis* (Mont.) D.C.Bharadwaj, Geophytology 5 (2): 227, 1975 (Bharadwaj 1975). Bas.: *Anthoceros fuciformis* Mont., Ann. Sci. Nat. Bot. (sér. 2) 20: 296, 1844 (Montagne 1844b).

*** *Folioceros glandulosus* (Lehm. et Lindenb.) D.C.Bharadwaj, Geophytology 5 (2): 227, 1975 (Bharadwaj 1975). Bas.: *Anthoceros glandulosus* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 26, 1832 (Lehmann 1832).

*** *Folioceros incurvus* (Steph.) D.C.Bharadwaj, Geophytology 5 (2): 227, 1975 (Bharadwaj 1975). Bas.: *Anthoceros incurvus* Steph., Hedwigia 32 (3): 143, 1893 (Stephani 1893b).

*** *Folioceros indicus* D.C.Bharadwaj, Geophytology 8 (1): 114, 1978 (Bharadwaj 1978).

*** *Folioceros kashyapii* S.C.Srivast. et A.K.Asthana, Bryologist 92 (2): 219, 1989 (Srivastava and Asthana 1989).

*** *Folioceros mangaloreus* (Steph.) D.C.Bharadwaj, Geophytology 5 (2): 227, 1975 (Bharadwaj 1975). Bas.: *Aspiromitus mangaloreus* Steph., Sp. Hepat. (Stephani) 5: 967, 1916 (Stephani 1916b).

*** *Folioceros paliformis* D.K.Singh, Bull. Bot. Surv. India 29: 176, 1987 [1989] (Singh 1987b).

*** *Folioceros physocladus* D.C.Bharadwaj, Geophytology 8 (1): 115, 1978 (Bharadwaj 1978). Based on: *Anthoceros physocladus* Schiffn. ex Pandé, Proc. Indian Sci. Congr. Assoc. 47 (2): 98, 1960 (Pandé 1960), *nom. inval.*

*** *Folioceros pinnilobus* (Steph.) D.C.Bharadwaj, Geophytology 5 (2): 227, 1975 (Bharadwaj 1975). Bas.: *Anthoceros pinnilobus* Steph., Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr. 81: 299, 1907 (Stephani 1907a).

*** *Folioceros satpurensis* D.C.Bharadwaj et K.P.Srivast., Geophytology 8 (1): 112, 1978 (Bharadwaj 1978). Based on: *Anthoceros satpurensis* K.P.Srivast., Proc. Indian Sci. Congr. Assoc. 47 (3): 337, 1960 (Srivastava 1960), *nom. inval.*

*** *Folioceros udarii* A.K.Asthana et S.C.Srivast., Cryptog. Bryol. Lichénol. 7 (2): 151, 1986 (Asthana and Srivastava 1986).
*** *Folioceros verruculosus* (J.Haseg.) R.L.Zhu et M.J.Lai, Ann. Bot. Fenn. 48 (5): 383, 2011 (Wang et al. 2011). Bas.: *Anthoceros verruculosus* J.Haseg., Acta Phytotax. Geobot. 44 (2): 103, 1993 (Hasegawa 1993b).

Dendrocerotidae R.J.Duff, J.C.Villarreal, Cargill et Renzaglia

Dendrocerotales Hässel

*** Dendrocerotaceae J.Haseg.

by J.C. Villarreal and D.C. Cargill

*** ***Dendroceros* Nees**, Syn. Hepat. 4: 579, 1846 (Gottsche et al. 1846).

** **subg. *Apoceros* R.M.Schust.**, Phytologia 63 (3): 200, 1987 (Schuster 1987b).
*** *Dendroceros cavernosus* J.Haseg., J. Hattori Bot. Lab. 47: 306, 1980 (Hasegawa 1980).
*** *Dendroceros difficilis* Steph., Sp. Hepat. (Stephani) 5: 1009, 1917 (Stephani 1917b).
*** *Dendroceros muelleri* Steph., Hedwigia 28 (2): 133, 1889 (Stephani 1889a).
*** *Dendroceros ogeramnangus* Piippo, Acta Bot. Fenn. 148: 40, 1993 (Piippo 1993b).
*** *Dendroceros pedunculatus* Steph., Sitzungsber. Naturf. Ges. Leipzig 36: 14, 1909 (Stephani 1909c).
** *Dendroceros subdifficilis* S.Hatt., Bot. Mag. (Tokyo) 64 (755/756): 119, 1951 (Hattori 1951c).

** **subg. *Dendroceros***
*** *Dendroceros acutilobus* Steph., Sitzungsber. Naturf. Ges. Leipzig 36: 18, 1909 (Stephani 1909c).
*** *Dendroceros borbonicus* Steph., Bull. Soc. Roy. Bot. Belgique, Compt. Rend. 32 (2): 31, 1893 [1894] (Stephani 1893e).
*** *Dendroceros crispus* (Sw.) Nees, Syn. Hepat. 4: 581, 1846 (Gottsche et al. 1846). Bas.: *Anthoceros crispus* Sw., Prodr. (Swartz): 146, 1788 (Swartz 1788).
*** *Dendroceros foliicola* J.Haseg., J. Hattori Bot. Lab. 47: 296, 1980 (Hasegawa 1980).
*** *Dendroceros japonicus* Steph., Sitzungsber. Naturf. Ges. Leipzig 36: 15, 1909 (Stephani 1909c).
*** *Dendroceros javanicus* (Nees) Nees, Syn. Hepat. 4: 582, 1846 (Gottsche et al. 1846). Bas.: *Anthoceros javanicus* Nees, Enum. Pl. Crypt. Javae: 1, 1830 (Nees 1830).
*** *Dendroceros subplanus* Steph., Sitzungsber. Naturf. Ges. Leipzig 36: 20, 1909 (Stephani 1909c).
*** *Dendroceros tubercularis* S.Hatt., Bot. Mag. (Tokyo) 58 (685): 6, 1944 (Hattori 1944b).

*** *Dendroceros validus* Steph., Sp. Hepat. (Stephani) 5: 1016, 1917 (Stephani 1917b).
** *Dendroceros vesconianus* Gottsche, J. Bot. (Morot) 12: 150, 1898 (Bescherelle 1898).
** *Dendroceros wattsianus* Steph., Sitzungsber. Naturf. Ges. Leipzig 36: 17, 1909 (Stephani 1909c).

Incertae sedis

* *Dendroceros adglutinatus* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 4: 580, 1846 (Gottsche et al. 1846). Bas.: *Monoclea adglutinata* Hook.f. et Taylor, London J. Bot. 4: 96, 1845 (Hooker and Taylor 1845). [15]
*** *Dendroceros africanus* Steph., Sitzungsber. Naturf. Ges. Leipzig 36: 18, 1909 (Stephani 1909c).
** *Dendroceros allionii* Steph., Sp. Hepat. (Stephani) 5: 1014, 1917 (Stephani 1917b).
** *Dendroceros australis* Steph., Sitzungsber. Naturf. Ges. Leipzig 36: 17, 1909 (Stephani 1909c).
** *Dendroceros breutelii* Nees, Syn. Hepat. 4: 581, 1846 (Gottsche et al. 1846).
** *Dendroceros breutelii* var. *surinamensis* Lindenb. et Gottsche, Linnaea 24 (6): 639, 1851 [1852] (Lindenberg and Gottsche 1851a).
*** *Dendroceros cichoraceus* (Mont.) Gottsche, Bot. Zeitung (Berlin) Beil. 16: 16, 1858 (Gottsche 1858). Bas.: *Anthoceros cichoraceus* Mont., Ann. Sci. Nat. Bot. (sér. 3) 4: 355, 1845 (Montagne 1845b).
* *Dendroceros crassicostatus* Steph., Sp. Hepat. (Stephani) 5: 1015, 1917 (Stephani 1917b).
** *Dendroceros crassinervis* (Nees) Gottsche, Bot. Zeitung (Berlin) Beil. 16: 18, 1858 (Gottsche 1858). Bas.: *Anthoceros crassinervis* Nees, Syn. Hepat. 4: 589, 1846 (Gottsche et al. 1846).
*** *Dendroceros crispatus* (Hook.) Nees, Syn. Hepat. 4: 579, 1846 (Gottsche et al. 1846). Bas.: *Monoclea crispata* Hook., Bot. Misc. 1: 117, 1830 (Hooker 1830).
** *Dendroceros crispatus* var. *simplicior* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 574, 1885 (Spruce 1885).
** *Dendroceros cucullatus* Steph., Sp. Hepat. (Stephani) 6: 429, 1923 (Stephani 1923). [16]
* *Dendroceros exalatus* Steph., Sitzungsber. Naturf. Ges. Leipzig 36: 14, 1909 (Stephani 1909c). [17]
* *Dendroceros gracilis* Steph., Sp. Hepat. (Stephani) 5: 1015, 1917 (Stephani 1917b).
*** *Dendroceros granulatus* Mitt., Fl. vit.: 419, 1871 [1873] (Mitten 1871).
** *Dendroceros herasii* M.Infante, J. Bryol. 32 (4): 285, 2010 (Infante 2010).
** *Dendroceros humboldtensis* Hürl., Bauhinia 1 (3): 254, 1960 (Hürlimann 1960).
** *Dendroceros paivae* C.A.Garcia, Sérgio et J.C.Villarreal, Cryptog. Bryol. 33 (1): 5, 2012 (Garcia et al. 2012).

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15 *Dendroceros adglutinatus* is conspecific with *Dendroceros crispus* in Proskauer (1960), but later authors accept it.

16 *Dendroceros cucullatus* was treated as conspecific with *Dendroceros difficilis* by Hasegawa (1980), but re-instated by Chantanaorrapint et al. (2014).

17 *Dendroceros exalatus* was reported from the Moluccas in Stephani (1909c), but Hasegawa (1980) states that this is a Brazilian species. *Dendroceros* has not been recently revised for Brazil.

* *Dendroceros rarus* Steph., Sp. Hepat. (Stephani) 5: 1014, 1917 (Stephani 1917b).
* *Dendroceros reticulus* Herzog, Memoranda Soc. Fauna Fl. Fennica 26: 37, 1950 [1951] (Herzog 1950b). [18]
** *Dendroceros rigidus* Steph., Sp. Hepat. (Stephani) 5: 1017, 1917 (Stephani 1917b).
*** *Dendroceros seramensis* J.Haseg., Acta Phytotax. Geobot. 37 (1/3): 10, 1986 (Hasegawa 1986a).
** *Dendroceros subtropicus* C.J.Wild, Trans. Nat. Hist. Soc. Queensland 1: 49, 1893 (Wild 1893).
** *Dendroceros tahitensis* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 30 (5): 138, 1873 (Ångström 1873).

*** ***Megaceros* Campb.**, Ann. Bot. (Oxford) 21 (4): 484, 1907 (Campbell 1907).
** *Megaceros aneuriformis* Steph., Sp. Hepat. (Stephani) 5: 949, 1916 (Stephani 1916b).
*** *Megaceros austronesophilus* Cargill et Seppelt, Austral. Syst. Bot. 26 (5): 372, 2013 (Cargill et al. 2013a).
** *Megaceros ciliatus* K.I.Goebel, Ann. Jard. Bot. Buitenzorg 39: 74, 1928 (Goebel 1928).
*** *Megaceros denticulatus* (Lehm.) Steph., Sp. Hepat. (Stephani) 5: 956, 1916 (Stephani 1916b). Bas.: *Anthoceros denticulatus* Lehm., Nov. Stirp. Pug. 10: 25, 1857 (Lehmann 1857).
*** *Megaceros flagellaris* (Mitt.) Steph., Sp. Hepat. (Stephani) 5: 951, 1916 (Stephani 1916b). Bas.: *Anthoceros flagellaris* Mitt., Fl. vit.: 419, 1871 [1873] (Mitten 1871).
*** *Megaceros gracilis* (Reichardt) Steph., Sp. Hepat. (Stephani) 5: 955, 1916 (Stephani 1916b). Bas.: *Anthoceros gracilis* Reichardt, Verh. K.K. Zool.-Bot. Ges. Wien 16: 957, 1866 (Reichardt 1866).
** *Megaceros leptohymenius* (Hook.f. et Taylor) Steph., Sp. Hepat. (Stephani) 5: 955, 1916 (Stephani 1916b). Bas.: *Monoclea leptohymenia* Hook.f. et Taylor, London J. Bot. 3: 575, 1844 (Hooker and Taylor 1844d).
*** *Megaceros pellucidus* (Colenso) E.A.Hodgs., J. Roy. Soc. New Zealand 2 (1): 115, 1972 (Hodgson 1972). Bas.: *Anthoceros pellucidus* Colenso, Trans. & Proc. New Zealand Inst. 17: 263, 1885 (Colenso 1885).
** *Megaceros tjibodensis* Campb., Ann. Bot. (Oxford) 21 (4): 484, 1907 (Campbell 1907).

Excluded from the genus [19]
* *Megaceros flavens* (Spruce) Campb., Ann. Bot. (Oxford) 21 (4): 483, 1907 (Campbell 1907). Bas.: *Anthoceros flavens* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 575, 1885 (Spruce 1885).
* *Megaceros jamesonii* (Taylor) Steph., Biblioth. Bot. 87 (2): 268, 1916 (Stephani 1916a). Bas.: *Dendroceros jamesonii* Taylor, London J. Bot. 7: 285, 1848 (Taylor 1848b).

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18 *Dendroceros reticulus* was mentioned by Hasegawa (1980). He did not synonymise it with *Dendroceros javanicus*, he just stated that Herzog thought it similar to *Dendroceros elegans* which is conspecific with *Dendroceros javanicus*.

19 *Megaceros flavens* and *Megaceros jamesonii* are probably conspecific with *Nothoceros vincentianus* (Villarreal et al. 2010a).

*** ***Nothoceros* (R.M.Schust.) J.Haseg.**, J. Hattori Bot. Lab. 76: 32, 1994 (Hasegawa 1994b). Bas.: *Megaceros* subg. *Nothoceros* R.M.Schust., Phytologia 63 (3): 200, 1987 (Schuster 1987b).

*** *Nothoceros aenigmaticus* J.C.Villarreal et K.D.McFarland, Bryologist 113 (1): 109, 2010 (Villarreal et al. 2010b). Based on: *Megaceros aenigmaticus* R.M.Schust., Hepat. Anthocerotae N. Amer. 6: 830, 1992 (Schuster 1992d), *nom. inval.*

*** *Nothoceros canaliculatus* (Pagán) J.C.Villarreal, Hässel et N.Salazar, Bryologist 110 (2): 283, 2007 (Villarreal et al. 2007). Bas.: *Dendroceros canaliculatus* Pagán, Bryologist 45 (4): 111, 1942 (Pagán 1942a).

*** *Nothoceros endiviifolius* (Mont.) J.Haseg. ex J.C.Villarreal, Hässel et N.Salazar, Bryologist 110 (2): 283, 2007 (Villarreal et al. 2007). Bas.: *Anthoceros endiviifolius* Mont., Voy. Pole Sud, Bot. 1: 211, 1845 (Montagne 1845c).

** *Nothoceros fuegiensis* (Steph.) J.C.Villarreal, Bryologist 113 (1): 109, 2010 (Villarreal et al. 2010b). Bas.: *Megaceros fuegiensis* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 91, 1911 (Stephani 1911b).

*** *Nothoceros giganteus* (Lehm. et Lindenb.) J.Haseg. ex J.C.Villarreal, Hässel et N.Salazar, Bryologist 110 (2): 283, 2007 (Villarreal et al. 2007). Bas.: *Anthoceros giganteus* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 25, 1832 (Lehmann 1832).

*** *Nothoceros minarum* (Nees) J.C.Villarreal, Molec. Phylogen. Evol. 78: 34, 2014 (Villarreal and Renner 2014). Bas.: *Anthoceros minarum* Nees, Naturgesch. Eur. Leberm. 4: 340, 1838 (Nees 1838a).

** *Nothoceros renzagliensis* J.C.Villarreal, L.V.Campos et Uribe, Syst. Bot. 37 (1): 32, 2012 (Villarreal et al. 2012).

*** *Nothoceros schizophyllus* (Steph.) J.C.Villarreal, Molec. Phylogen. Evol. 78: 34, 2014 (Villarreal and Renner 2014). Bas.: *Megaceros schizophyllus* Steph., Sp. Hepat. (Stephani) 5: 949, 1916 (Stephani 1916b).

*** *Nothoceros superbus* J.C.Villarreal, Hässel et N.Salazar, Bryologist 110 (2): 280, 2007 (Villarreal et al. 2007).

*** *Nothoceros vincentianus* (Lehm. et Lindenb.) J.C.Villarreal, Bryologist 113 (1): 111, 2010 (Villarreal et al. 2010b). Bas.: *Anthoceros vincentianus* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 16, 1834 (Lehmann 1834).

** ***Phaeomegaceros* R.J.Duff, J.C.Villarreal, Cargill et Renzaglia**, Bryologist 110 (2): 241, 2007 (Duff et al. 2007).

*** *Phaeomegaceros coriaceus* (Steph.) R.J.Duff, J.C.Villarreal, Cargill et Renzaglia, Bryologist 110 (2): 241, 2007 (Duff et al. 2007). Bas.: *Anthoceros coriaceus* Steph., Sp. Hepat. (Stephani) 5: 991, 1916 (Stephani 1916b).

*** *Phaeomegaceros fimbriatus* (Gottsche) R.J.Duff, J.C.Villarreal, Cargill et Renzaglia, Bryologist 110 (2): 241, 2007 (Duff et al. 2007). Bas.: *Anthoceros fimbriatus* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 187, 1864 (Gottsche 1864).

*** *Phaeomegaceros foveatus* (J.Haseg.) J.C.Villarreal, Nova Hedwigia 91 (3/4): 352, 2010 (Villarreal et al. 2010a). Bas.: *Phaeoceros foveatus* J.Haseg., Bryol. Res. 7 (12): 374, 2001 (Hasegawa 2001).

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*** *Phaeomegaceros plicatus* (Mitt.) J.C.Villarreal, J.J.Engel et Váňa, Mem. New York Bot. Gard. 105: 85, 2013 (Váňa and Engel 2013). Bas.: *Anthoceros plicatus* Mitt., Rep. Challenger, Bot. 1 (2): 178, 1884 (Mitten 1884a).

*** *Phaeomegaceros skottsbergii* (Steph.) R.J.Duff, J.C.Villarreal, Cargill et Renzaglia, Bryologist 110 (2): 241, 2007 (Duff et al. 2007). Bas.: *Anthoceros skottsbergii* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 90, 1911 (Stephani 1911b).

*** *Phaeomegaceros squamuliger* (Spruce) J.C.Villarreal, Nova Hedwigia 91 (3/4): 351, 2010 (Villarreal et al. 2010a). Bas.: *Anthoceros squamuliger* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 576, 1885 (Spruce 1885).

** *Phaeomegaceros squamuliger* subsp. *hasselii* J.C.Villarreal, Cargill et Goffinet, Nova Hedwigia 91 (3/4): 352, 2010 (Villarreal et al. 2010a).

Phymatocerotales R.J.Duff, J.C.Villarreal, Cargill et Renzaglia

*** Phymatocerotaceae R.J.Duff, J.C.Villarreal, Cargill et Renzaglia

by J.C. Villarreal and D.C. Cargill

*** ***Phymatoceros* Stotler, W.T.Doyle et Crand.-Stotl.**, Phytologia 87 (2): 113, 2005 (Stotler et al. 2005).

*** *Phymatoceros bulbiculosus* (Brot.) Stotler, W.T.Doyle et Crand.-Stotl., Phytologia 87 (2): 114, 2005 (Stotler et al. 2005). Bas.: *Anthoceros bulbiculosus* Brot., Fl. lusit. 2: 430, 1804 [1805] (Brotero 1804).

*** *Phymatoceros phymatodes* (M.Howe) R.J.Duff, J.C.Villarreal, Cargill et Renzaglia, Bryologist 110 (2): 240, 2007 (Duff et al. 2007). Bas.: *Anthoceros phymatodes* M.Howe, Bull. Torrey Bot. Club 25 (1): 12, 1898 (Howe 1898a).

Notothylatidae R.J.Duff, J.C.Villarreal, Cargill et Renzaglia

Notothyladales Hyvönen et Piippo

*** Notothyladaceae Müll.Frib. ex Prosk.

by J.C. Villarreal and D.C. Cargill

** Notothyladoideae Grolle

*** ***Notothylas*** **Sull. ex A.Gray**, Amer. J. Sci. Arts (ser. 2) 1 (1): 74, 1846 (Gray 1846).

** **subg. *Notothylas***
*** *Notothylas anaporata* Udar et D.K.Singh, Rev. Bryol. Lichénol. 45 (2): 202, 1979 (Udar and Singh 1979b).
*** *Notothylas breutelii* (Gottsche) Gottsche, Bot. Zeitung (Berlin) Beil. 16: 21, 1858 (Gottsche 1858). Bas.: *Anthoceros breutelii* Gottsche, Syn. Hepat. 4: 583, 1846 (Gottsche et al. 1846).
*** *Notothylas depressispora* J.Haseg., Acta Phytotax. Geobot. 30 (1/3): 26, 1979 (Hasegawa 1979).
*** *Notothylas dissecta* Steph., Sp. Hepat. (Stephani) 5: 1020, 1917 (Stephani 1917b).
*** *Notothylas himalayensis* Udar et D.K.Singh, J. Bryol. 11 (3): 451, 1981 (Udar and Singh 1981a).
*** *Notothylas indica* Kashyap, Proc. Lahore Philos. Soc. 4: 54, 1925 (Kashyap and Dutt 1925).
*** *Notothylas javanica* (Sande Lac.) Gottsche, Bot. Zeitung (Berlin) Beil. 16: 20, 1858 (Gottsche 1858). Bas.: *Blasia javanica* Sande Lac., Syn. hepat. jav.: 94, 1856 [1857] (Sande Lacoste 1856b).
*** *Notothylas orbicularis* (Schwein.) Sull., Amer. J. Sci. Arts (ser. 2) 1 (1): 75, 1846 (Gray 1846). Bas.: *Targionia orbicularis* Schwein., Spec. Fl. Amer. Crypt.: 23, 1821 (Schweinitz 1821).
*** *Notothylas pandei* Udar et V.Chandra, Geophytology 7 (2): 142, 1977 (Udar and Chandra 1977).

** **subg. *Notothyloides* A.K.Asthana et S.C.Srivast.**, Bryophyt. Biblioth. 42: 106, 1991 (Asthana and Srivastava 1991).
*** *Notothylas khasiana* Udar et D.K.Singh, J. Indian Bot. Soc. 60: 112, 1981 (Udar and Singh 1981b).
*** *Notothylas pfleidereri* Udar et D.K.Singh, Lindbergia 5 (1): 28, 1979 (Udar and Singh 1979a).

Incertae sedis
*** *Notothylas decurva* (Mitt.) Steph., Cat. Afr. Pl. (Hiern) 2 (2): 320, 1901 (Stephani 1901d). Bas.: *Anthoceros decurvus* Mitt., Trans. Linn. Soc. London 23 (1): 58, 1860 (Mitten 1860a).
*** *Notothylas flabellata* Steph., Cat. Afr. Pl. (Hiern) 2 (2): 320, 1901 (Stephani 1901d).
*** *Notothylas galapagensis* M.Howe, Proc. Calif. Acad. Sci. (ser. 4) 21 (17): 203, 1934 (Howe 1934).
** *Notothylas irregularis* Chantanaorr., Acta Bot. Hung. 56 (3/4): 270, 2014 (Chantanaorrapint 2014).

*** *Notothylas kashyapii* D.K.Singh, Indian J. Forest. 23 (4): 386, 2000 (Singh and Semwal 2000).
*** *Notothylas nepalensis* D.K.Singh, J. Bombay Nat. Hist. Soc. 84 (3): 650, 1987 [1988] (Singh 1987a).
*** *Notothylas temperata* J.Haseg., Acta Phytotax. Geobot. 30 (1/3): 20, 1979 (Hasegawa 1979).
*** *Notothylas udarii* D.K.Singh et Semwal, Phytotaxonomy 1: 35, 2001 (Singh and Semwal 2001).
* *Notothylas verdoornii* Khanna, Rev. Bryol. Lichénol. 6: 118, 1933 (Khanna 1933).
*** *Notothylas vitalii* Udar et D.K.Singh, Misc. Bryol. Lichenol. 8 (9): 173, 1980 (Udar and Singh 1980).
** *Notothylas yunnanensis* T.Peng et R.L.Zhu, Phytotaxa 156 (3): 157, 2014 (Peng and Zhu 2014).

** Phaeocerotoideae Hässel

* ***Mesoceros* Piippo**, Acta Bot. Fenn. 148: 30, 1993 (Piippo 1993b). [20]
* *Mesoceros mesophoros* Piippo, Acta Bot. Fenn. 148: 30, 1993 (Piippo 1993b).
* *Mesoceros porcatus* Piippo, Haussknechtia, Beih. 9: 279, 1999 (Piippo 1999).

** ***Paraphymatoceros* Hässel**, Phytologia 88 (2): 208, 2006 (Hässel 2006a).
*** *Paraphymatoceros diadematus* Hässel, Phytologia 88 (2): 209, 2006 (Hässel 2006a).
*** *Paraphymatoceros hallii* (Austin) Hässel, Phytologia 88 (2): 209, 2006 (Hässel 2006a). Bas.: *Anthoceros hallii* Austin, Bull. Torrey Bot. Club 6 (4): 26, 1875 [1876] (Austin 1875a).
*** *Paraphymatoceros pearsonii* (M.Howe) J.C.Villarreal et Cargill, Phytotaxa 208 (1): 94, 2015 (Villarreal et al. 2015). Bas.: *Anthoceros pearsonii* M.Howe, Bull. Torrey Bot. Club 25 (1): 8, 1898 (Howe 1898a).
*** *Paraphymatoceros proskaueri* (Stotler, Crand.-Stotl. et W.T.Doyle) J.C.Villarreal et Cargill, Phytotaxa 208 (1): 94, 2015 (Villarreal et al. 2015). Bas.: *Phaeoceros proskaueri* Stotler, Crand.-Stotl. et W.T.Doyle, Fieldiana, Bot. (n.ser.) 47: 232, 2008 (Crandall-Stotler et al. 2008a).

*** ***Phaeoceros* Prosk.**, Bull. Torrey Bot. Club 78 (4): 346, 1951 (Proskauer 1951a).
** *Phaeoceros austroandinus* Hässel, Candollea 44 (2): 721, 1989 (Hässel 1989a).
** *Phaeoceros bolusii* (Sim) S.W.Arnell, Hepat. South Africa: 401, 1963 (Arnell 1963b). Bas.: *Anthoceros bolusii* Sim, Trans. Roy. Soc. South Africa 15 (1): 114, 1926 (Sim 1926).

20 *Mesoceros* was described from a collection that contains a mixture of both *Anthoceros* and *Phaeoceros* material.

** *Phaeoceros brevicapsulus* (Steph.) Hässel, Candollea 44 (2): 725, 1989 (Hässel 1989a). Bas.: *Anthoceros brevicapsulus* Steph., Sp. Hepat. (Stephani) 5: 981, 1916 (Stephani 1916b).

*** *Phaeoceros carolinianus* (Michx.) Prosk., Bull. Torrey Bot. Club 78 (4): 347, 1951 (Proskauer 1951a). Bas.: *Anthoceros carolinianus* Michx., Fl. bor.-amer. (Michaux) 2: 280, 1803 (Michaux 1803).

*** *Phaeoceros delicatus* E.O.Campb. et Outred, New Zealand J. Bot. 33 (3): 285, 1995 (Campbell and Outred 1995).

*** *Phaeoceros dendroceroides* (Steph.) Hässel, Beih. Nova Hedwigia 134: 487, 2009 (Hässel and Rubies 2009). Bas.: *Anthoceros dendroceroides* Steph., Sp. Hepat. (Stephani) 5: 984, 1916 (Stephani 1916b). [21]

*** *Phaeoceros engelii* Cargill et Fuhrer, Fieldiana, Bot. (n.ser.) 47: 248, 2008 (Cargill and Fuhrer 2008).

** *Phaeoceros erectus* Udar et D.K.Singh, Geophytology 11 (2): 257, 1981 (Udar and Singh 1981c). *Nom. nov. pro Anthoceros erectus* Steph., Sp. Hepat. (Stephani) 5: 984, 1916 (Stephani 1916b), *nom. illeg*.

*** *Phaeoceros evanidus* (Steph.) Cargill et Fuhrer, Fieldiana, Bot. (n.ser.) 47: 245, 2008 (Cargill and Fuhrer 2008). Bas.: *Anthoceros evanidus* Steph., Sp. Hepat. (Stephani) 5: 990, 1916 (Stephani 1916b).

*** *Phaeoceros exiguus* (Steph.) J.Haseg., J. Hattori Bot. Lab. 60: 387, 1986 (Hasegawa 1986b). Bas.: *Anthoceros exiguus* Steph., Sp. Hepat. (Stephani) 5: 988, 1916 (Stephani 1916b).

*** *Phaeoceros flexivalvis* (Gottsche et Nees) Hässel, Candollea 44 (2): 728, 1989 (Hässel 1989a). Bas.: *Anthoceros flexivalvis* Gottsche et Nees, Syn. Hepat. 4: 586, 1846 (Gottsche et al. 1846).

*** *Phaeoceros fulvisporus* (Steph.) J.Haseg., Trop. Bryol. 8: 52, 1993 (Hasegawa 1993a). Bas.: *Anthoceros fulvisporus* Steph., 52 (5): 306, 1912 (Stephani 1912a).

*** *Phaeoceros gemmifer* (Horik.) J.Haseg., J. Hattori Bot. Lab. 57: 252, 1984 (Hasegawa 1984). Bas.: *Anthoceros gemmifer* Horik., Sci. Rep. Tôhoku Imp. Univ., Ser. 4, Biol. 4 (2): 426, 1929 (Horikawa 1929a).

** *Phaeoceros gualaquizanus* (Steph.) Gradst., J. Hattori Bot. Lab. 45: 123, 1979 (Gradstein and Hekking 1979). Bas.: *Anthoceros gualaquizanus* Steph., Sp. Hepat. (Stephani) 5: 979, 1916 (Stephani 1916b).

*** *Phaeoceros himalayensis* (Kashyap) Prosk. ex Bapna et G.G.Vyas, J. Hattori Bot. Lab. 25: 88, 1962 (Bapna and Vyas 1962). Bas.: *Anthoceros himalayensis* Kashyap, New Phytol. 14 (1): 8, 1915 (Kashyap 1915).

*** *Phaeoceros huebschmannii* Hässel, Veröff. Geobot. Inst. ETH Stiftung Rübel Zürich 91: 301, 1986 (Hässel 1986b).

*** *Phaeoceros inflatus* (Steph.) Cargill et Fuhrer, Fieldiana, Bot. (n.ser.) 47: 246, 2008 (Cargill and Fuhrer 2008). Bas.: *Anthoceros inflatus* Steph., Sp. Hepat. (Stephani) 5: 990, 1916 (Stephani 1916b).

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21 *Phaeoceros dendroceroides* may belong to *Phaeomegaceros*

*** *Phaeoceros kashyapii* A.K.Asthana et S.C.Srivast., Bryophyt. Biblioth. 42: 129, 1991 (Asthana and Srivastava 1991).

*** *Phaeoceros laevis* (L.) Prosk., Bull. Torrey Bot. Club 78 (4): 347, 1951 (Proskauer 1951a). Bas.: *Anthoceros laevis* L., Sp. Pl. 1: 1139, 1753 (Linnaeus 1753).

** *Phaeoceros maranguensis* (Steph.) Bapna, Univ. Udaipur Res. Stud. 3: 138, 1966 (Bapna 1966). Bas.: *Aspiromitus maranguensis* Steph., Sp. Hepat. (Stephani) 5: 960, 1916 (Stephani 1916b).

* *Phaeoceros microsporus* (Steph.) Hässel, Candollea 44 (2): 721, 1989 (Hässel 1989a). Bas.: *Aspiromitus microsporus* Steph., Sp. Hepat. (Stephani) 5: 963, 1916 (Stephani 1916b). [22]

*** *Phaeoceros minutus* (Mitt.) S.W.Arnell, Hepat. South Africa: 403, 1963 (Arnell 1963b). Bas.: *Anthoceros minutus* Mitt., J. Linn. Soc., Bot. 16 (91): 195, 1877 (Mitten 1877).

*** *Phaeoceros mohrii* (Austin) Hässel, Candollea 44 (2): 721, 1989 (Hässel 1989a). Bas.: *Anthoceros mohrii* Austin, Bull. Torrey Bot. Club 6 (52): 304, 1879 (Austin 1879).

*** *Phaeoceros oreganus* (Austin) Hässel, Candollea 44 (2): 718, 1989 (Hässel 1989a). Bas.: *Anthoceros oreganus* Austin, Bull. Torrey Bot. Club 6 (4): 26, 1875 [1876] (Austin 1875a).

*** *Phaeoceros parvulus* (Schiffn.) J.Haseg., J. Hattori Bot. Lab. 57: 248, 1984 (Hasegawa 1984). Bas.: *Anthoceros parvulus* Schiffn., Österr. Bot. Z. 49 (11): 391, 1899 (Schiffner 1899c).

*** *Phaeoceros perpusillus* Chantanaorr., Acta Bot. Hung. 51 (1/2): 30, 2009 (Chantanaorrapint 2009).

** *Phaeoceros pichinchensis* (Spruce) Hässel, Candollea 44 (2): 725, 1989 (Hässel 1989a). Bas.: *Anthoceros pichinchensis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 577, 1885 (Spruce 1885).

** *Phaeoceros propagulifer* (Steph.) Prosk., Bull. Torrey Bot. Club 78 (4): 347, 1951 (Proskauer 1951a). Bas.: *Anthoceros propagulifer* Steph., Sp. Hepat. (Stephani) 5: 1001, 1916 (Stephani 1916b).

* *Phaeoceros striatisporus* J.Haseg., J. Hattori Bot. Lab. 75, 268 (Hasegawa 1994a).[23]

*** *Phaeoceros tenuis* (Spruce) Hässel, Veröff. Geobot. Inst. ETH Stiftung Rübel Zürich 91: 303, 1986 (Hässel 1986b). Bas.: *Anthoceros tenuis* Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: cxcvi, 1889 [1890] (Spruce 1889).

** *Phaeoceros tigrinus* (Gola) J.C.Villarreal, Phytotaxa 208 (1): 95, 2015 (Villarreal et al. 2015). Bas.: *Anthoceros tigrinus* Gola, Ann. Bot. (Rome) 13 (1): 72, 1914 (Gola 1914a).

*** *Phaeoceros tuberosus* (Taylor) Prosk., J. Indian Bot. Soc. 42A: 185, 1964 (Proskauer 1964). Bas.: *Anthoceros tuberosus* Taylor, London J. Bot. 5: 412, 1846 (Taylor 1846b).

*** *Phaeoceros udarii* A.K.Asthana et V.Nath, Proc. Natl. Acad. Sci. India, B 63 (4): 461, 1993 (Asthana and Nath 1993).

** *Phaeoceros wrightii* (Steph.) Hässel, Candollea 44 (2): 722, 1989 (Hässel 1989a). Bas.: *Anthoceros wrightii* Steph., Sp. Hepat. (Stephani) 5: 999, 1916 (Stephani 1916b).

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22 *Phaeoceros microsporus* may be conspecific with *Phaeoceros mohrii* in Schuster (1992d), but he did not study any material.

23 *Phaeoceros striatisporus* was nested within Phaeoceros in Li et al. (2011). Morphologically it was supposed to differ by its unique spores which, however, turns out to be fungal infections (Villarreal & Renner 2012).

LEIOSPOROCEROTOPSIDA Stotler et Crand.-Stotl.
Leiosporocerotales Hässel

*** Leiosporocerotaceae Hässel ex Ochyra

by J.C. Villarreal and D.C. Cargill

*** ***Leiosporoceros* Hässel**, J. Bryol. 14 (2): 255, 1986 (Hässel 1986a).
*** *Leiosporoceros dussii* (Steph.) Hässel, J. Bryol. 14 (2): 255, 1986 (Hässel 1986a). Bas.: *Anthoceros dussii* Steph., Hedwigia 32 (3): 142, 1893 (Stephani 1893b).

MARCHANTIOPHYTA
HAPLOMITRIOPSIDA Stotler et Crand.-Stotl.
Haplomitriidae Stotler et Crand.-Stotl.
Calobryales Hamlin

*** Haplomitriaceae Dědeček

by S. Bartholomew-Began

The treatment of Haplomitriaceae follows Bartholomew-Began (1991). Morphogenetic and molecular studies support the infrageneric ranks of *Haplomitrium* (Crandall-Stotler et al. 2009, Forrest et al. 2006).

*** ***Haplomitrium* Nees**, Naturgesch. Eur. Leberm. 1: 109, 1833 (Nees 1833c) nom. conserv.

*** **subg. *Calobryum* (Nees) R.M.Schust.**, Nova Hedwigia 13 (1/2): 40, 1967 (Schuster 1967c). Bas.: *Calobryum* Nees, Syn. Hepat. 4: 507, 1846 (Gottsche et al. 1846).
*** *Haplomitrium blumei* (Nees) R.M.Schust., J. Hattori Bot. Lab. 26: 225, 1963 (Schuster 1963b). Bas.: *Monoclea blumei* Nees, Enum. Pl. Crypt. Javae: 2, 1830 (Nees 1830).
*** *Haplomitrium mnioides* (Lindb.) R.M.Schust., J. Hattori Bot. Lab. 26: 225, 1963 (Schuster 1963b). Bas.: *Rhopalanthus mnioides* Lindb., Not. Sällsk. Fauna Fl. Fenn. Förh. 13: 391, 1874 (Lindberg 1874a).

*** **subg. *Haplomitrium***

** **sect. *Archibryum* (R.M.Schust.) J.J.Engel**, Ann. Missouri Bot. Gard. 68 (4): 675, 1981 (Engel 1981). Bas.: *Haplomitrium* subg. *Archibryum* R.M.Schust., Nova Hedwigia 13 (1/2): 28, 1967 (Schuster 1967c).

*** *Haplomitrium gibbsiae* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 26: 225, 1963 (Schuster 1963b). Bas.: *Calobryum gibbsiae* Steph., Sp. Hepat. (Stephani) 6: 76, 1917 (Stephani 1917a).
*** *Haplomitrium intermedium* Berrie, Proc. Linn. Soc. New South Wales (ser. 2) 87 (399): 191, 1963 (Berrie 1963).

** **sect. *Haplomitrium***
*** *Haplomitrium hookeri* (Lyell ex Sm.) Nees, Naturgesch. Eur. Leberm. 1: 111, 1833 (Nees 1833c). Bas.: *Jungermannia hookeri* Lyell ex Sm., Engl. Bot. 35: tab. 2555, 1814 (Smith and Sowerby 1814).
*** *Haplomitrium hookeri* var. *minutum* (E.O.Campb.) Barthol.-Began, Bryophyt. Biblioth. 41: 230, 1991 (Bartholomew-Began 1991). Bas.: *Steereomitrium minutum* E.O.Campb., Mem. New York Bot. Gard. 45: 569, 1987 (Campbell 1987).
*** *Haplomitrium monoicum* J.J.Engel, Ann. Missouri Bot. Gard. 68 (4): 668, 1981 [1982] (Engel 1981).
*** *Haplomitrium ovalifolium* R.M.Schust., Bryologist 74 (2): 136, 1971 (Schuster 1971d).

Treubiidae Stotler et Crand.-Stotl.
Treubiales Schljakov

*** Treubiaceae Verd.

by R. Stotler and B.J. Crandall-Stotler

Stech et al. (2002) showed a clear molecular distinction between *Treubia* and *Apotreubia*, which is in accordance with their morphological differences and supports their recognition as separate genera.

*** ***Apotreubia* S.Hatt. et Mizut.**, Bryologist 69 (4): 491, 1966 [1967] (Hattori et al. 1966).
*** *Apotreubia hortoniae* Konstant., Phytotaxa 76 (3): 33, 2013 (Konstantinova et al. 2013b). Based on: *Apotreubia hortoniae* R.M.Schust. et Konstant., J. Hattori Bot. Lab. 78: 55, 1995 (Schuster and Konstantinova 1995), *nom. inval.*
*** *Apotreubia nana* (S.Hatt. et Inoue) S.Hatt. et Mizut., Bryologist 69 (4): 492, 1966 [1967] (Hattori et al. 1966). Bas.: *Treubia nana* S.Hatt. et Inoue, J. Hattori Bot. Lab. 11: 99, 1954 (Hattori and Inoue 1954).
** *Apotreubia pusilla* (R.M.Schust.) Grolle, Acta Bot. Fenn. 125: 63, 1984 (Grolle and Piippo 1984). Bas.: *Treubia pusilla* R.M.Schust., Nova Hedwigia 15: 515, 1968 (Schuster 1968b).

*** *Apotreubia yunnanensis* Higuchi, Cryptog. Bryol. Lichénol. 19 (4): 321, 1998 (Higuchi 1998).

*** ***Treubia* K.I.Goebel**, Ann. Jard. Bot. Buitenzorg 9 (1): 1, 1890 [1891] (Goebel 1890) nom. conserv.
*** *Treubia insignis* K.I.Goebel, Ann. Jard. Bot. Buitenzorg 9 (1): 1, 1890 [1891] (Goebel 1890).
** *Treubia insignis* subsp. *bracteata* (Steph.) R.M.Schust. et G.A.M.Scott, J. Hattori Bot. Lab. 32: 241, 1969 (Schuster and Scott 1969). Bas.: *Treubia bracteata* Steph., Bot. Jahrb. Syst. 23 (1/2, 3): 302, 1896 (Stephani 1896a).
** *Treubia insignis* subsp. *caledonica* R.M.Schust. et G.A.M.Scott, J. Hattori Bot. Lab. 32: 243, 1969 (Schuster and Scott 1969).
** *Treubia insignis* subsp. *vitiensis* R.M.Schust. et G.A.M.Scott, J. Hattori Bot. Lab. 32: 242, 1969 (Schuster and Scott 1969).
*** *Treubia lacunosa* (Colenso) Prosk., Bryologist 58 (3): 199, 1955 (Proskauer 1955). Bas.: *Noteroclada lacunosa* Colenso, Trans. & Proc. New Zealand Inst. 18: 248, 1886 (Colenso 1886b).
** *Treubia lacunosoides* T.Pfeiff., W.Frey et M.Stech, Nova Hedwigia 75 (1/2): 249, 2002 (Pfeiffer et al. 2002).
*** *Treubia pygmaea* R.M.Schust., Phytologia 56 (7): 460, 1985 (Schuster 1985c).
*** *Treubia scapanioides* R.M.Schust., J. Hattori Bot. Lab. 32: 246, 1969 (Schuster and Scott 1969).
*** *Treubia tahitensis* (Nadeaud) Besch., J. Bot. (Morot) 12: 147, 1898 (Bescherelle 1898). Bas.: *Gottschea tahitensis* Nadeaud, Énum. Pl. Tahiti: 7, 1873 (Nadeaud 1873).
*** *Treubia tasmanica* R.M.Schust. et G.A.M.Scott, J. Hattori Bot. Lab. 32: 248, 1969 (Schuster and Scott 1969).

JUNGERMANNIOPSIDA Stotler et Crand.-Stotl.
Jungermanniidae Engl.
Jungermanniales H.Klinggr.
Cephaloziineae Schljakov

*** Adelanthaceae Grolle

by K. Feldberg, J. Váňa and J. Heinrichs

The subfamily Jamesonielloideae was excluded from Lophoziaceae/Scapaniaceae by De Roo et al. (2007) and this status was confirmed by e.g. Vilnet et al. (2010). The family was described and defined by Feldberg et al. (2010a). Some taxonomic and nomenclatural notes can also be found in Feldberg et al. (2010b, 2011), Váňa et al. (2014d).

*** Adelanthoideae K.Feldberg, Heinrichs et Váňa

*** ***Adelanthus* Mitt.**, J. Proc. Linn. Soc., Bot. 7 (28): 243, 1864 (Mitten 1864b) nom. conserv.

** **sect. *Adelanthus***
*** *Adelanthus falcatus* (Hook.) Mitt., J. Proc. Linn. Soc., Bot. 7 (28): 243, 1864 (Mitten 1864b). Bas.: *Jungermannia falcata* Hook., Musci Exot. 1: tab. 89, 1818 (Hooker 1818).
*** *Adelanthus occlusus* (Hook.f. et Taylor) Carrington, Trans. Bot. Soc. Edinburgh 10: 381, 1870 (Carrington 1870). Bas.: *Jungermannia occlusa* Hook.f. et Taylor, London J. Bot. 3: 369, 1844 (Hooker and Taylor 1844a).

** **sect. *Calyptrocolea* (R.M.Schust.) Grolle**, J. Hattori Bot. Lab. 35: 331, 1972 (Grolle 1972c). Bas.: *Calyptrocolea* R.M.Schust., Rev. Bryol. Lichénol. 34 (3/4): 685, 1966 (Schuster 1966a).
*** *Adelanthus aureomarginatus* R.M.Schust., Phytologia 39 (4): 250, 1978 (Schuster 1978a).
*** *Adelanthus gemmiparus* (R.M.Schust.) E.A.Hodgs., Trans. Roy. Soc. New Zealand, Biol. Sci. 11 (18): 241, 1970 (Hodgson 1970). Bas.: *Calyptrocolea gemmipara* R.M.Schust., Rev. Bryol. Lichénol. 34 (3/4): 695, 1966 [1967] (Schuster 1966a).
** *Adelanthus lingulatus* J.J.Engel et Váňa, Mem. New York Bot. Gard. 105: 26, 2013 (Váňa and Engel 2013).
*** *Adelanthus tenuis* J.J.Engel et Grolle, J. Hattori Bot. Lab. 35: 333, 1972 (Grolle 1972c).

** **sect. *Lindenbergiani* Grolle**, J. Hattori Bot. Lab. 35: 331, 1972 (Grolle 1972c).
*** *Adelanthus carabayensis* (Mont.) Grolle, J. Hattori Bot. Lab. 35: 348, 1972 (Grolle 1972c). Bas.: *Plagiochila carabayensis* Mont., Ann. Sci. Nat. Bot. (sér. 4) 5: 348, 1856 (Montagne 1856c).
*** *Adelanthus integerrimus* Grolle, J. Hattori Bot. Lab. 35: 340, 1972 (Grolle 1972c).
*** *Adelanthus lindenbergianus* (Lehm.) Mitt., J. Proc. Linn. Soc., Bot. 7 (28): 244, 1864 (Mitten 1864b). Bas.: *Jungermannia lindenbergiana* Lehm., Linnaea 4: 367, 1829 (Lehmann 1829).

** **sect. *Pittieri* Grolle**, J. Hattori Bot. Lab. 35: 331, 1972 (Grolle 1972c).
*** *Adelanthus pittieri* (Steph.) Grolle, J. Hattori Bot. Lab. 35: 337, 1972 (Grolle 1972c). Bas.: *Tylimanthus pittieri* Steph., Sp. Hepat. (Stephani) 6: 250, 1922 (Stephani 1922).
*** *Adelanthus squarrosus* Grolle, J. Hattori Bot. Lab. 67: 243, 1989 (Grolle 1989d).

*** ***Pseudomarsupidium* Herzog**, Svensk Bot. Tidskr. 47 (1): 42, 1953 (Herzog 1953b).

*** *Pseudomarsupidium aureocinctum* (R.M.Schust.) J.J.Engel, Novon 17 (3): 312, 2007 (Engel 2007). Bas.: *Adelanthus decipiens* subsp. *aureocinctus* R.M.Schust., Phytologia 39 (4): 250, 1978 (Schuster 1978a).

*** *Pseudomarsupidium borneensis* (Grolle) Váňa, L.Söderstr., A.Hagborg et von Konrat, Phytotaxa 65: 60, 2012 (Váňa et al. 2012f). Bas.: *Adelanthus borneensis* Grolle, J. Hattori Bot. Lab. 35: 362, 1972 (Grolle 1972c).

*** *Pseudomarsupidium decipiens* (Hook.) Grolle, Trans. Brit. Bryol. Soc. 4 (3): 443, 1963 (Grolle 1963a). Bas.: *Jungermannia decipiens* Hook., Brit. Jungermann.: tab. 50, 1813 (Hooker 1813).

*** *Pseudomarsupidium piliferum* (Steph.) Herzog ex Grolle, Trans. Brit. Bryol. Soc. 4 (3): 443, 1963 (Grolle 1963a). Bas.: *Marsupidium piliferum* Steph., Bull. Herb. Boissier (sér. 2) 8 (8): 602 (386), 1908 (Stephani 1908e).

*** ***Wettsteinia* Schiffn.**, Ann. Jard. Bot. Buitenzorg, suppl. 2: 44, 1898 (Schiffner 1898c).

*** *Wettsteinia densiretis* (Herzog) Grolle, J. Hattori Bot. Lab. 28: 99, 1965 (Grolle 1965f). Bas.: *Tylimanthus densiretis* Herzog, Nat. Hist. Juan Fernandez (Botany) 2 (5): 712, 1942 (Herzog 1942a).

*** *Wettsteinia inversa* (Sande Lac.) Schiffn., Ann. Jard. Bot. Buitenzorg, suppl. 2: 45, 1898 (Schiffner 1898c). Bas.: *Plagiochila inversa* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 289, 1864 (Sande Lacoste 1864).

*** *Wettsteinia rotundifolia* (Horik.) Grolle, J. Hattori Bot. Lab. 28: 100, 1965 (Grolle 1965f). Bas.: *Adelanthus rotundifolius* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 181, 1934 (Horikawa 1934).

*** *Wettsteinia schusteriana* Grolle, J. Hattori Bot. Lab. 28: 99, 1965 (Grolle 1965f).

** Jamesonielloideae Inoue

*** ***Cuspidatula* Steph.**, Bull. Herb. Boissier (sér. 2) 1 (10): 1141 (124), 1901 (Stephani 1901c).

*** *Cuspidatula contracta* (Reinw., Blume et Nees) Steph., Bull. Herb. Boissier (sér. 2) 1 (11): 1141 (124), 1901 (Stephani 1901c). Bas.: *Jungermannia contracta* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 233, 1824 [1825] (Reinwardt et al. 1824a).

*** *Cuspidatula flaccida* (Steph.) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 142, 2010 (Feldberg et al. 2010b). Bas.: *Anastrophyllum flaccidum* Steph., Sp. Hepat. (Stephani) 6: 105, 1917 (Stephani 1917a).

*** *Cuspidatula flexicaulis* (Nees) Váňa et L.Söderstr., Phytotaxa 76 (3): 35, 2013 (Váňa et al. 2013h). Bas.: *Jungermannia flexicaulis* Nees, Linnaea 6 (4): 604, 1831 (Nees 1831).

*** *Cuspidatula kirkii* (Steph.) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 142, 2010 (Feldberg et al. 2010b). Bas.: *Jamesoniella kirkii* Steph., Hedwigia 34 (2): 47, 1895 (Stephani 1895c).

*** *Cuspidatula monodon* (Taylor) Steph., Bull. Herb. Boissier (sér. 2) 1 (11): 1143 (126), 1901 (Stephani 1901c). Bas.: *Jungermannia monodon* Taylor, Nov. Stirp. Pug. 8: 7, 1844 (Lehmann 1844).

*** *Cuspidatula orbicularis* (Grolle) Váňa et L.Söderstr., Phytotaxa 76 (3): 36, 2013 (Váňa et al. 2013h). Bas.: *Jamesoniella orbicularis* Grolle, Feddes Repert. 82 (1): 42, 1971 (Grolle 1971b).

*** *Cuspidatula robusta* (Austin) Váňa et L.Söderstr., Phytotaxa 76 (3): 36, 2013 (Váňa et al. 2013h). Bas.: *Jungermannia robusta* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 219, 1869 (Austin 1869).

** ***Denotarisia* Grolle**, Feddes Repert. 82 (1): 6, 1971 (Grolle 1971b).

*** *Denotarisia linguifolia* (De Not.) Grolle, Feddes Repert. 82 (1): 6, 1971 (Grolle 1971b). Bas.: *Plagiochila linguifolia* De Not., Epat. Borneo: 13, 1874 (De Notaris 1874).

** ***Nothostrepta* R.M.Schust.**, Phytologia 45 (5): 420, 1980 (Schuster 1980b).

*** *Nothostrepta bifida* (Steph.) R.M.Schust., Phytologia 45 (5): 420, 1980 (Schuster 1980b). Bas.: *Plagiochila bifida* Steph., Annuario Reale Ist. Bot. Roma 2: 86, 1885 [1886] (Stephani 1885d).

*** *Nothostrepta longissima* (Steph.) R.M.Schust., Phytologia 45 (5): 420, 1980 (Schuster 1980b). Bas.: *Anastrophyllum longissimum* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 17): 13, 1901 (Stephani 1901b).

** ***Pisanoa* Hässel**, Lindbergia 14 (3): 179, 1988 [1989] (Hässel 1988).

*** *Pisanoa chilensis* Hässel, Lindbergia 14 (3): 179, 1988 [1989] (Hässel 1988).

** ***Protosyzygiella* (Inoue) R.M.Schust.**, Hepat. Anthocerotae N. Amer. 4: 334, 1980 (Schuster 1980c). Bas.: *Syzygiella* subg. *Protosyzygiella* Inoue, J. Hattori Bot. Lab. 29: 180, 1966 (Inoue 1966c).

*** *Protosyzygiella pseudoconnexa* (Herzog) R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 334, 1980 (Schuster 1980c). Bas.: *Plagiochila pseudoconnexa* Herzog, Rev. Bryol. Lichénol. 21 (3/4): 259, 1952 [1953] (Herzog 1952d).

*** ***Syzygiella* Spruce**, J. Bot. 14: 234, 1876 (Spruce 1876a). [24]

*** **subg. *Anomalae* (Inoue) K.Feldberg, Váňa, Hentschel et Heinrichs**, Cryptog. Bryol. 31 (2): 143, 2010 (Feldberg et al. 2010b). Bas.: *Syzygiella* sect. *Anomalae* Inoue, J. Hattori Bot. Lab. 29: 183, 1966 (Inoue 1966c).

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24 *Syzygiella* includes *Jamesoniella* (cf. Feldberg et al. 2010a), but one taxon has neither been transferred nor synonymized. It is listed in the "Names in genera not currently accepted" section below.

*** *Syzygiella anomala* (Lindenb. et Gottsche) Steph., Bull. Herb. Boissier (sér. 2) 2 (5): 471 (190), 1902 (Stephani 1902f). Bas.: *Plagiochila anomala* Lindenb. et Gottsche, Syn. Hepat. 5: 646, 1847 (Gottsche et al. 1847).

*** *Syzygiella bilobata* Inoue, J. Hattori Bot. Lab. 29: 186, 1966 (Inoue 1966c).

** *Syzygiella ciliata* Gradst. et A.R.Benitez, Nova Hedwigia 99 (1/2): 115, 2014 (Gradstein and Benitez 2014).

*** *Syzygiella concreta* (Gottsche) Spruce, J. Bot. 14: 234, 1876 (Spruce 1876a). Bas.: *Jungermannia concreta* Gottsche, Mexik. Leverm.: 82, 1863 (Gottsche 1863).

*** *Syzygiella manca* (Mont.) Steph., Hedwigia 31 (1): 14, 1892 (Jack and Stephani 1892). Bas.: *Chiloscyphus mancus* Mont., Syll. Gen. Sp. Crypt.: 63, 1856 (Montagne 1856b).

*** *Syzygiella pectiniformis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 501, 1885 (Spruce 1885).

*** *Syzygiella tonduzana* Steph., Sp. Hepat. (Stephani) 6: 118, 1917 (Stephani 1917a).

*** *Syzygiella trigonifolia* (Steph.) Herzog, Hedwigia 74 (2): 87, 1934 (Herzog 1934a). Bas.: *Jamesoniella trigonifolia* Steph., Biblioth. Bot. 87 (2): 185, 1916 (Stephani 1916a).

*** **subg. *Cryptochila* (R.M.Schust.) K.Feldberg, Váňa, Hentschel et Heinrichs**, Cryptog. Bryol. 31 (2): 143, 2010 (Feldberg et al. 2010b). Bas.: *Cryptochila* R.M.Schust., J. Hattori Bot. Lab. 26: 284, 1963 (Schuster 1963b).

*** *Syzygiella acinacifolia* (Hook.f. et Taylor) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 143, 2010 (Feldberg et al. 2010b). Bas.: *Jungermannia acinacifolia* Hook.f. et Taylor, London J. Bot. 3: 367, 1844 (Hooker and Taylor 1844a).

*** *Syzygiella nigrescens* (Steph.) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 143, 2010 (Feldberg et al. 2010b). Bas.: *Jamesoniella nigrescens* Steph., Hedwigia 34 (2): 48, 1895 (Stephani 1895c).

*** *Syzygiella paludosa* (Steph.) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 143, 2010 (Feldberg et al. 2010b). Bas.: *Jamesoniella paludosa* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 17): 11, 1901 (Stephani 1901b).

*** *Syzygiella pseudocclusa* (E.A.Hodgs.) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 143, 2010 (Feldberg et al. 2010b). Bas.: *Jamesoniella pseudocclusa* E.A.Hodgs., Trans. Roy. Soc. New Zealand 85 (4): 583, 1958 (Hodgson 1958).

*** *Syzygiella sonderi* (Gottsche) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 143, 2010 (Feldberg et al. 2010b). Bas.: *Jungermannia sonderi* Gottsche, Linnaea 28 (5): 550, 1856 [1857] (Gottsche 1856).

*** *Syzygiella spegazziniana* (Spruce ex C.Massal.) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 144, 2010 (Feldberg et al. 2010b). Bas.: *Jungermannia spegazziniana* Spruce ex C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 216, 1885 (Massalongo 1885).

*** **subg. *Pseudoplagiochila* Inoue**, J. Hattori Bot. Lab. 29: 182, 1966 (Inoue 1966c).

*** *Syzygiella ovalifolia* Inoue, J. Hattori Bot. Lab. 29: 191, 1966 (Inoue 1966c).

* *Syzygiella securifolia* (Nees) Inoue, J. Hattori Bot. Lab. 46: 232, 1979 (Inoue 1979a). Bas.: *Plagiochila securifolia* Nees, Sp. Hepat. (Lindenberg) 2-4: 58, 1840 (Lindenberg 1840). [25]

*** *Syzygiella subintegerrima* (Reinw., Blume et Nees) Spruce, J. Linn. Soc., Bot. 30 (210): 362, 1895 (Gepp 1895b). Bas.: *Jungermannia subintegerrima* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 238, 1824 [1825] (Reinwardt et al. 1824a).

*** *Syzygiella tasmanica* (Hook.f. et Taylor) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 144, 2010 (Feldberg et al. 2010b). Bas.: *Jungermannia tasmanica* Hook.f. et Taylor, London J. Bot. 5: 274, 1846 (Taylor 1846a).

*** **subg. *Roivainenia* (Perss.) K.Feldberg, Váňa, Hentschel et Heinrichs**, Cryptog. Bryol. 31 (2): 144, 2010 (Feldberg et al. 2010b). Bas.: *Roivainenia* Perss., Nova Hedwigia 3 (1): 43, 1961 (Persson and Grolle 1961).

*** *Syzygiella jacquinotii* (Mont.) Hentschel, K.Feldberg, Váňa et Heinrichs, Cryptog. Bryol. 31 (2): 144, 2010 (Feldberg et al. 2010b). Bas.: *Jungermannia jacquinotii* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 250, 1843 (Montagne 1843).

*** **subg. *Syzygiella***

*** *Syzygiella autumnalis* (DC.) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 144, 2010 (Feldberg et al. 2010b). Bas.: *Jungermannia autumnalis* DC., Fl. Franç. (DC. & Lamarck), 5 (6): 202, 1815 (De Candolle and Lamarck 1815).

*** *Syzygiella campanulata* Herzog, Rev. Bryol. Lichénol. 11 (1): 9, 1938 [1939] (Herzog 1938a).

*** *Syzygiella colorata* (Lehm.) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 144, 2010 (Feldberg et al. 2010b). Bas.: *Jungermannia colorata* Lehm., Linnaea 4: 366, 1829 (Lehmann 1829).

** *Syzygiella colorata* var. *collenchymata* J.J.Engel et Váňa, Mem. New York Bot. Gard. 105: 102, 2013 (Váňa and Engel 2013).

*** *Syzygiella contigua* Steph., Bull. Herb. Boissier (sér. 2) 2 (5): 470 (189), 1902 (Stephani 1902f). *Nom. nov. pro Jungermannia contigua* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 118, 1864 (Gottsche 1864), *nom. illeg*.

*** *Syzygiella elongella* (Taylor) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 144, 2010 (Feldberg et al. 2010b). Bas.: *Jungermannia elongella* Taylor, London J. Bot. 5: 274, 1846 (Taylor 1846a).

*** *Syzygiella macrocalyx* (Mont.) Spruce, J. Bot. 14: 234, 1876 (Spruce 1876a). Bas.: *Jungermannia macrocalyx* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 248, 1843 (Montagne 1843).

*** *Syzygiella nipponica* (S.Hatt.) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 145, 2010 (Feldberg et al. 2010b). Bas.: *Jamesoniella nipponica* S.Hatt., J. Jap. Bot. 19 (11): 350, 1943 (Hattori 1943b).

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25 *Syzygiella securifolia* is a sister taxon to *Syzygiella subintegerrima* (Feldberg et al. 2010b) and it is debatable if they are different enough to warrant separation on the species level. Morphologically they are very similar (Söderström et al. 2010a).

** *Syzygiella oenops* (Lindenb. et Gottsche) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 145, 2010 (Feldberg et al. 2010b). Bas.: *Jungermannia oenops* Lindenb. et Gottsche, Syn. Hepat. 5: 673, 1847 (Gottsche et al. 1847).

*** *Syzygiella perfoliata* (Sw.) Spruce, J. Bot. 14: 234, 1876 (Spruce 1876a). Bas.: *Jungermannia perfoliata* Sw., Prodr. (Swartz): 143, 1788 (Swartz 1788).

*** *Syzygiella purpurascens* (Steph.) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 145, 2010 (Feldberg et al. 2010b). Bas.: *Jamesoniella purpurascens* Steph., Bull. Soc. Roy. Bot. Belgique, Compt. Rend. 30 (2): 200, 1891 [1892] (Stephani 1891b).

*** *Syzygiella rubricaulis* (Nees) Steph., Bull. Herb. Boissier (sér. 2) 2 (5): 468 (187), 1902 (Stephani 1902f). Bas.: *Jungermannia rubricaulis* Nees, Fl. Bras. (Martius) 1 (1): 344, 1833 (Nees 1833a).

*** *Syzygiella setulosa* Steph., Bull. Herb. Boissier (sér. 2) 2 (5): 469 (188), 1902 (Stephani 1902f).

*** *Syzygiella teres* (Carrington et Pearson) Váňa, Phytotaxa 76 (3): 35, 2013 (Váňa et al. 2013h). Bas.: *Jungermannia teres* Carrington et Pearson, Pap. & Proc. Roy. Soc. Tasmania 1887: 9, 1888 (Carrington and Pearson 1888b).

*** *Syzygiella undata* (Mont.) K.Feldberg, Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 145, 2010 (Feldberg et al. 2010b). Bas.: *Jungermannia undata* Mont., Ann. Sci. Nat. Bot. (sér. 4) 14: 183, 1860 (Montagne 1860).

Incertae sedis

*** *Syzygiella eatonii* (Austin) Inoue, J. Jap. Bot. 37 (12): 359, 1962 (Inoue 1962a). Bas.: *Plagiochila eatonii* Austin, Trans. Connecticut Acad. Arts 8 (15): 257, 1891 (Evans 1891).

*** *Syzygiella uleana* Steph., Hedwigia 44 (4): 224, 1905 (Stephani 1905a).

** ***Vanaea* (Inoue et Gradst.) Inoue et Gradst.**, Trop. Bryol. 1: 33, 1989 (Gradstein and Florschütz-de Waard 1989). Bas.: *Anastrophyllum* subg. *Vanaea* Inoue et Gradst., Bull. Natl. Sci. Mus. Tokyo, B 14 (3): 88, 1988 (Inoue and Gradstein 1988).

*** *Vanaea plagiochiloides* (Inoue et Gradst.) Inoue et Gradst., Trop. Bryol. 1: 33, 1989 (Gradstein and Florschütz-de Waard 1989). Bas.: *Anastrophyllum plagiochiloides* Inoue et Gradst., Bull. Natl. Sci. Mus. Tokyo, B 14 (3): 88, 1988 (Inoue and Gradstein 1988).

*** Anastrophyllaceae L.Söderstr., De Roo et Hedd.

by J. Váňa and L. Söderström

Anastrophyllaceae was described by Söderström et. al (2010b) from elements usually included in Lophoziaceae. Further taxonomic and nomenclatural notes can be found in Váňa et al. (2013k, 2013a). The complex of *Chandonanthus/Plicanthus/Tetralophozia* should be checked using molecular methods before generic and specific status of most

of the species can be confirmed. The placement of *Hattoria* and *Zantenia* in the family is still provisional. The placement of *Isopaches* is also unclear, de Roo et al. (2007) placed it in the family, but the study of Vilnet et al. (2010) showed that it can not be placed there.

*** ***Anastrepta* (Lindb.) Schiffn.**, Hepat. (Engl.-Prantl): 85, 1893 (Schiffner 1893b). Bas.: *Jungermannia* sect. *Anastrepta* Lindb., Kongl. Svenska Vetensk.-Akad. Handl. (n.ser.) 23 (5): 40, 1889 (Lindberg and Arnell 1889).

*** *Anastrepta orcadensis* (Hook.) Schiffn., Hepat. (Engl.-Prantl): 85, 1893 (Schiffner 1893b). Bas.: *Jungermannia orcadensis* Hook., Brit. Jungermann.: tab. 71, 1815 (Hooker 1815).

*** ***Anastrophyllum* (Spruce) Steph.**, Hedwigia 32 (3): 139, 1893 (Stephani 1893b). Bas.: *Jungermannia* subg. *Anastrophyllum* Spruce, J. Bot. 14: 235, 1876 (Spruce 1876a).

*** *Anastrophyllum alpinum* Steph., Sp. Hepat. (Stephani) 6: 103, 1917 (Stephani 1917a).

*** *Anastrophyllum assimile* (Mitt.) Steph., Hedwigia 32 (3): 140, 1893 (Stephani 1893b). Bas.: *Jungermannia assimilis* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 93, 1860 [1861] (Mitten 1860c).

*** *Anastrophyllum auritum* (Lehm.) Steph., Bull. Herb. Boissier (sér. 2) 1 (11): 1137 (120), 1901 (Stephani 1901c). Bas.: *Jungermannia aurita* Lehm., Linnaea 4: 368, 1829 (Lehmann 1829).

*** *Anastrophyllum ciliatum* Steph., Hedwigia 32 (3): 139, 1893 (Stephani 1893b).

*** *Anastrophyllum donnianum* (Hook.) Steph., Hedwigia 32 (3): 140, 1893 (Stephani 1893b). Bas.: *Jungermannia donniana* Hook., Brit. Jungermann.: tab. 39, 1813 (Hooker 1813).

*** *Anastrophyllum ellipticum* Inoue, Bull. Natl. Sci. Mus. Tokyo, B 4 (1): 13, 1978 (Inoue 1978b). [26]

** *Anastrophyllum esenbeckii* (Mont.) Steph., Hedwigia 32 (3): 140, 1893 (Stephani 1893b). Bas.: *Jungermannia esenbeckii* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 247, 1843 (Montagne 1843).

*** *Anastrophyllum fissum* Steph., Bull. Herb. Boissier 5 (10): 845, 1897 (Stephani 1897c).

*** *Anastrophyllum joergensenii* Schiffn., Hedwigia 49 (4): 396, 1910 (Schiffner 1910b).

* *Anastrophyllum lignicola* D.B.Schill et D.G.Long, Ann. Bot. Fenn. 39 (2): 130, 2002 (Schill and Long 2002). [27]

*** *Anastrophyllum michauxii* (F.Weber) H.Buch, Memoranda Soc. Fauna Fl. Fennica 8: 289, 1932 [1933] (Buch 1932). Bas.: *Jungermannia michauxii* F.Weber, Hist. Musc. Hepat. Prodr.: 76, 1815 (Weber 1815).

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26 *Anastrophyllum ellipticum* is only tentatively placed in the genus following Mamontov & Vilnet (2013).

27 *Anastrophyllum lignicola* is possibly conspecific with *Anastrophyllum ellipticum* and its generic placement is uncertain.

*** *Anastrophyllum nigrescens* (Mitt.) Steph., Hedwigia 32 (3): 140, 1893 (Stephani 1893b). Bas.: *Jungermannia nigrescens* Mitt., Hooker's J. Bot. Kew Gard. Misc. 3: 358, 1851 (Mitten 1851).

*** *Anastrophyllum obtusum* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 285, 1950 (Herzog 1950a).

*** *Anastrophyllum piligerum* (Nees) Steph., Hedwigia 32 (3): 140, 1893 (Stephani 1893b). Bas.: *Jungermannia piligera* Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 414, 1824 [1825] (Reinwardt et al. 1824b).

*** *Anastrophyllum squarrosum* Herzog, Ann. Bryol. 5: 72, 1932 (Herzog 1932b).

*** *Anastrophyllum stellatum* R.M.Schust., Phytologia 39 (4): 243, 1978 (Schuster 1978a).

*** *Anastrophyllum tubulosum* (Nees) Grolle, J. Hattori Bot. Lab. 28: 101, 1965 (Grolle 1965e). Bas.: *Jungermannia tubulosa* Nees, Enum. Pl. Crypt. Javae: 32, 1830 (Nees 1830).

*** ***Barbilophozia* Loeske**, Verh. Bot. Vereins Prov. Brandenburg 49 (1): 37, 1908 (Loeske 1908).

** **subg. *Barbilophozia***

*** *Barbilophozia barbata* (Schmidel ex Schreb.) Loeske, Verh. Bot. Vereins Prov. Brandenburg 49 (1): 37, 1908 (Loeske 1908). Bas.: *Jungermannia barbata* Schmidel ex Schreb., Spic. Fl. Lips.: 107, 1771 (Schreber 1771).

*** *Barbilophozia hatcheri* (A.Evans) Loeske, Verh. Bot. Vereins Prov. Brandenburg 49 (1): 37, 1908 (Loeske 1908). Bas.: *Jungermannia hatcheri* A.Evans, Bull. Torrey Bot. Club 25 (8): 417, 1898 (Evans 1898).

*** *Barbilophozia lycopodioides* (Wallr.) Loeske, Verh. Bot. Vereins Prov. Brandenburg 49 (1): 37, 1908 (Loeske 1908). Bas.: *Jungermannia lycopodioides* Wallr., Comp. fl. Germ. 2 (III): 76, 1831 (Bluff and Fingerhuth 1831).

*** *Barbilophozia rubescens* (R.M.Schust. et Damsh.) Kartt. et L.Söderstr., Ann. Bot. Fenn. 29 (2): 120, 1992 (Söderström et al. 1992). Bas.: *Lophozia rubescens* R.M.Schust. et Damsh., Phytologia 63 (5): 325, 1987 (Schuster and Damsholt 1987).

** **subg. *Sudeticae* (Schljakov) L.Söderstr., De Roo et Hedd.**, Phytotaxa 3: 50, 2010 (Söderström et al. 2010b). Bas.: *Lophozia* sect. *Sudeticae* Schljakov, Pečen. Mchi Sev. SSSR 3: 113, 1980 (Shliakov 1980a).

*** *Barbilophozia sudetica* (Nees ex Huebener) L.Söderstr., De Roo et Hedd., Phytotaxa 3: 50, 2010 (Söderström et al. 2010b). Bas.: *Jungermannia sudetica* Nees ex Huebener, Hepaticol. germ.: 142, 1834 (Hübener 1834). [28]

28 *Barbilophozia sudetica* was transferred from *Lophozia* by Söderström et al. (2010a), but transferred to the new genus *Pseudolophozia* Konstant. and Vilnet (sister to *Barbilophozia*) by Konstantinova and Vilnet (2009).

*** ***Biantheridion* (Grolle) Konstant. et Vilnet**, Arctoa 18: 67, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Jamesoniella* sect. *Biantheridion* Grolle, Trans. Brit. Bryol. Soc. 4 (4): 662, 1964 (Grolle 1964i).

*** *Biantheridion undulifolium* (Nees) Konstant. et Vilnet, Arctoa 18: 67, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Jungermannia schraderi* β *undulifolia* Nees, Naturgesch. Eur. Leberm. 1: 306, 1833 (Nees 1833c).

*** ***Chandonanthus* Mitt.**, Handb. N. Zeal. fl. 2: 753, 1867 (Hooker 1867).

*** *Chandonanthus squarrosus* (Menzies) Mitt., Handb. N. Zeal. fl. 2: 753, 1867 (Hooker 1867). Bas.: *Jungermannia squarrosa* Menzies, Musci Exot. 1: tab. 78, 1818 (Hooker 1818).

*** ***Crossocalyx* Meyl.**, Bull. Soc. Vaud. Sci. Nat. 60 (249): 266, 1939 (Meylan 1939).

*** *Crossocalyx hellerianus* (Nees ex Lindenb.) Meyl., Bull. Soc. Vaud. Sci. Nat. 60 (249): 266, 1939 (Meylan 1939). Bas.: *Jungermannia helleriana* Nees ex Lindenb., Syn. hepat. eur: 64, 1829 (Lindenberg 1829).

*** *Crossocalyx tenuis* (Harry Williams) Schljakov, Novosti Sist. Nizš. Rast. 15: 246, 1978 (Shliakov 1978). Bas.: *Anastrophyllum tenue* Harry Williams, Bryologist 71 (1): 34, 1968 (Williams 1968).

*** ***Gymnocolea* (Dumort.) Dumort.**, Recueil Observ. Jungerm.: 17, 1835 (Dumortier 1835). Bas.: *Jungermannia* sect. *Gymnocolea* Dumort., Syll. Jungerm. Europ.: 52, 1831 (Dumortier 1831).

*** *Gymnocolea borealis* (Frisvoll et Moen) R.M.Schust., Lindbergia 12 (1): 7, 1986 (Schuster 1986). Bas.: *Lophozia borealis* Frisvoll et Moen, Lindbergia 6 (2): 138, 1980 [1981] (Frisvoll and Moen 1980).

** *Gymnocolea fascinifera* Potemkin, Arctoa 2: 76, 1993 (Potemkin 1993).

*** *Gymnocolea inflata* (Huds.) Dumort., Recueil Observ. Jungerm.: 17, 1835 (Dumortier 1835). Bas.: *Jungermannia inflata* Huds., Fl. Angl. (Hudson), ed. 2: 511, 1778 (Hudson 1778).

* *Gymnocolea inflata* subsp. *acutiloba* (Schiffn.) R.M.Schust. et Damsh. ex L.Söderstr. et Váňa, Lindbergia 27 (1): 43, 2002 (Söderström et al. 2002). Bas.: *Lophozia acutiloba* Schiffn., Hedwigia 48 (3): 187, 1909 (Schiffner 1909a). [29]

*** ***Hamatostrepta* Váňa et D.G.Long**, Fieldiana, Bot. (n.ser.) 47: 134, 2008 (Váňa and Long 2008).

*** *Hamatostrepta concinna* Váňa et D.G.Long, Fieldiana, Bot. (n.ser.) 47: 134, 2008 (Váňa and Long 2008).

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29 *Gymnocolea inflata* subsp. *acutiloba* is a problematic taxon that sometimes has been treated as conspecific with *Gymnocolea inflata*, sometimes as a separate species.

** ***Hattoria* R.M.Schust.**, Rev. Bryol. Lichénol. 30 (1/2): 69, 1961 (Schuster 1961a).
*** *Hattoria yakushimensis* (Horik.) R.M.Schust., Rev. Bryol. Lichénol. 30 (1/2): 70, 1961 (Schuster 1961a). Bas.: *Anastrophyllum yakushimense* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 149, 1934 (Horikawa 1934).

*** ***Isopaches* H.Buch**, Memoranda Soc. Fauna Fl. Fennica 8: 287, 1932 [1933] (Buch 1932).
*** *Isopaches alboviridis* (R.M.Schust.) Schljakov, Novosti Sist. Nizš. Rast. 16: 205, 1979 (Shliakov 1979). Bas.: *Lophozia alboviridis* R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 487, 1969 (Schuster 1969b).
*** *Isopaches bicrenatus* (Schmidel ex Hoffm.) H.Buch, Memoranda Soc. Fauna Fl. Fennica 8: 288, 1932 [1933] (Buch 1932). Bas.: *Jungermannia bicrenata* Schmidel ex Hoffm., Deutschl. Fl., Theil 2 (Hoffm.): 11 (addenda), 1795 [1796] (Hoffmann 1795).
*** *Isopaches decolorans* (Limpr.) H.Buch, Memoranda Soc. Fauna Fl. Fennica 8: 288, 1932 [1933] (Buch 1932). Bas.: *Jungermannia decolorans* Limpr., Jahresber. Schles. Ges. Vaterl. Cult. 57: 316, 1879 [1880] (Limpricht 1879).
*** *Isopaches pumicicola* (Berggr.) Bakalin, Arctoa 17: 162, 2008 [2009] (Bakalin 2008b). Bas.: *Lophozia pumicicola* Berggr., New Zealand Hepat.: 21, 1898 (Berggren 1898).

*** ***Neoorthocaulis* L.Söderstr., De Roo et Hedd.**, Phytotaxa 3: 49, 2010 (Söderström et al. 2010b).
*** *Neoorthocaulis attenuatus* (Mart.) L.Söderstr., De Roo et Hedd., Phytotaxa 3: 49, 2010 (Söderström et al. 2010b). Bas.: *Jungermannia quinquedentata* δ *attenuata* Mart., Fl. crypt. erlang.: 177, 1817 (Martius 1817).
*** *Neoorthocaulis binsteadii* (Kaal.) L.Söderstr., De Roo et Hedd., Phytotaxa 3: 49, 2010 (Söderström et al. 2010b). Bas.: *Jungermannia binsteadii* Kaal., Skr. Vidensk.-Selsk. Christiana, Math.-Naturvidensk. Kl. 1898 (9): 9, 1898 (Kaalaas 1898).
*** *Neoorthocaulis floerkei* (F.Weber et D.Mohr) L.Söderstr., De Roo et Hedd., Phytotaxa 3: 50, 2010 (Söderström et al. 2010b). Bas.: *Jungermannia floerkei* F.Weber et D.Mohr, Bot. Taschenb. (Weber): 410, 1807 (Weber and Mohr 1807).
** *Neoorthocaulis hyperboreus* (R.M.Schust.) L.Söderstr., De Roo et Hedd., Phytotaxa 3: 50, 2010 (Söderström et al. 2010b). Bas.: *Lophozia floerkei* var. *hyperborea* R.M.Schust., Bull. Natl. Mus. Canada 164: 21, 1959 (Schuster et al. 1959).

*** ***Orthocaulis* H.Buch**, Memoranda Soc. Fauna Fl. Fennica 8: 293, 1932 [1933] (Buch 1932).
*** *Orthocaulis atlanticus* (Kaal.) H.Buch, Memoranda Soc. Fauna Fl. Fennica 8: 294, 1932 [1933] (Buch 1932). Bas.: *Jungermannia atlantica* Kaal., Skr. Vidensk.-Selsk. Christiana, Math.-Naturvidensk. Kl. 1898 (9): 11, 1898 (Kaalaas 1898).
* *Orthocaulis cavifolius* H.Buch et S.W.Arnell, Memoranda Soc. Fauna Fl. Fennica 26: 71, 1951 (Buch 1951).

** ***Plicanthus*** **R.M.Schust.**, Nova Hedwigia 74 (3/4): 484, 2002 (Schuster 2002a).

*** *Plicanthus birmensis* (Steph.) R.M.Schust., Beih. Nova Hedwigia 119: 223, 2002 (Schuster 2002b). Bas.: *Chandonanthus birmensis* Steph., Bull. Soc. Roy. Bot. Belgique 38 (1): 43, 1899 (Stephani 1899h). [30]

** *Plicanthus difficilis* (Steph.) L.Söderstr. et Váňa, Phytotaxa 81 (1): 30, 2013 (Váňa et al. 2013a). Bas.: *Chandonanthus difficilis* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 101, 1914 (Stephani and Watts 1914).

** *Plicanthus giganteus* (Steph.) R.M.Schust., Nova Hedwigia 74 (3/4): 485, 2002 (Schuster 2002a). Bas.: *Chandonanthus giganteus* Steph., Wiss. Ergebn. Deut. Zentr.-Afr. Exped. (1907-08), Bot. 2: 124, 1911 (Stephani 1911a). [31]

*** *Plicanthus hirtellus* (F.Weber) R.M.Schust., Nova Hedwigia 74 (3/4): 492, 2002 (Schuster 2002a). Bas.: *Jungermannia hirtella* F.Weber, Hist. Musc. Hepat. Prodr.: 50, 1815 (Weber 1815).

*** ***Schizophyllopsis*** **Váňa et L.Söderstr.**, Phytotaxa 152 (1): 48, 2013 (Váňa et al. 2013f). *Nom. nov. pro Anastrophyllum* subg. *Schizophyllum* R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 739, 1969 (Schuster 1969b). [32]

** *Schizophyllopsis aristata* (Herzog ex N.Kitag.) Váňa et L.Söderstr., Phytotaxa 152 (1): 48, 2013 (Váňa et al. 2013f). Bas.: *Anastrophyllum bidens* var. *aristatum* Herzog ex N.Kitag., J. Hattori Bot. Lab. 33: 216, 1970 (Kitagawa 1970).

*** *Schizophyllopsis bidens* (Reinw., Blume et Nees) Váňa et L.Söderstr., Phytotaxa 152 (1): 48, 2013 (Váňa et al. 2013f). Bas.: *Jungermannia bidens* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 208, 1824 [1825] (Reinwardt et al. 1824a).

** *Schizophyllopsis lanciloba* (Steph.) Váňa et L.Söderstr., Phytotaxa 152 (1): 48, 2013 (Váňa et al. 2013f). Bas.: *Anastrophyllum lancilobum* Steph., Sp. Hepat. (Stephani) 6: 107, 1917 (Stephani 1917a).

*** *Schizophyllopsis papillosa* (J.J.Engel et Braggins) Váňa et L.Söderstr., Phytotaxa 152 (1): 48, 2013 (Váňa et al. 2013f). Bas.: *Anastrophyllum papillosum* J.J.Engel et Braggins, J. Bryol. 20 (2): 381, 1998 (Engel and Braggins 1998).

*** *Schizophyllopsis sphenoloboides* (R.M.Schust.) Váňa et L.Söderstr., Phytotaxa 152 (1): 49, 2013 (Váňa et al. 2013f). Bas.: *Anastrophyllum sphenoloboides* R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 741, 1969 (Schuster 1969b).

*** ***Schljakovia*** **Konstant. et Vilnet**, Arctoa 18: 66, 2009 [2010] (Konstantinova and Vilnet 2009).

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30 *Plicanthus birmensis* seems to be closely related to *Tetralophozia* (Vilnet et al. 2010), but Grolle (1995) considered it a possibly depauperate form of *Plicanthus hirtellus*. However, it may be a good species, possibly of the genus *Tetralophozia*.

31 *Plicanthus giganteus* is often treated as a subspecies of *Plicanthus hirtellus* (e.g. Pócs and Lye 1999).

32 *Schizophyllopsis* was originally published as *Schizophyllum* (R.M.Schust.) Váňa et L.Söderstr. (Váňa et al. 2013k), but that is a later homonym of *Schizophyllum* Fr. (1815; Fungus) and Nutt. (1841; Asteraceae).

*** *Schljakovia kunzeana* (Huebener) Konstant. et Vilnet, Arctoa 18: 66, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Jungermannia kunzeana* Huebener, Hepaticol. germ.: 115, 1834 (Hübener 1834).

*** ***Schljakovianthus* Konstant. et Vilnet**, Arctoa 18: 66, 2009 [2010] (Konstantinova and Vilnet 2009).

*** *Schljakovianthus quadrilobus* (Lindb.) Konstant. et Vilnet, Arctoa 18: 66, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Jungermannia quadriloba* Lindb., Kongl. Svenska Vetensk.-Akad. Handl. (n.ser.) 23 (5): 55, 1889 (Lindberg and Arnell 1889).

*** ***Sphenolobopsis* R.M.Schust. et N.Kitag.**, Nova Hedwigia 22: 152, 1971 [1972] (Schuster 1971b).

*** *Sphenolobopsis pearsonii* (Spruce) R.M.Schust., Nova Hedwigia 22: 153, 1971 [1972] (Schuster 1971b). Bas.: *Jungermannia pearsonii* Spruce, J. Bot. 19: 33, 1881 (Spruce 1881b).

*** ***Sphenolobus* (Lindb.) Berggr.**, New Zealand Hepat.: 22, 1898 (Berggren 1898). Bas.: *Jungermannia* sect. *Sphenolobus* Lindb., Not. Sällsk. Fauna Fl. Fenn. Förh. 13: 369, 1874 (Lindberg 1874a).

*** *Sphenolobus austroamericanus* (Váňa) Váňa, Phytotaxa 81 (1): 30, 2013 (Váňa et al. 2013a). Bas.: *Anastrophyllum austroamericanum* Váňa, J. Hattori Bot. Lab. 48: 225, 1980 (Váňa 1980).

*** *Sphenolobus minutus* (Schreb. ex D.Crantz) Berggr., New Zealand Hepat.: 22, 1898 (Berggren 1898). Bas.: *Jungermannia minuta* Schreb. ex D.Crantz, Forts. Hist. Grönland: 285, 1770 (Crantz 1770; non vidi).

*** *Sphenolobus saxicola* (Schrad.) Steph., Bull. Herb. Boissier (sér. 2) 2 (2): 168 (160), 1902 (Stephani 1902d). Bas.: *Jungermannia saxicola* Schrad., Syst. Samml. Crypt. Gew. 2: 4, 1797 (Schrader 1797).

** ***Tetralophozia* (R.M.Schust.) Schljakov**, Novosti Sist. Nizš. Rast. 13: 227, 1976 (Shliakov 1976). Bas.: *Chandonanthus* subg. *Tetralophozia* R.M.Schust., J. Hattori Bot. Lab. 23: 206, 1960 [1961] (Schuster 1960a).

*** *Tetralophozia cavallii* (Gola) Váňa, Trop. Bryol. 8: 102, 1993 (Váňa 1993). Bas.: *Blepharostomum cavallii* Gola, Ann. Bot. (Rome) 6 (2): 274, 1907 (Gola 1907).

*** *Tetralophozia filiformis* (Steph.) Urmi, J. Bryol. 12 (3): 394, 1983 (Urmi 1983). Bas.: *Chandonanthus filiformis* Steph., Sp. Hepat. (Stephani) 3: 644, 1909 (Stephani 1909a).

** *Tetralophozia pilifera* (Steph.) R.M.Schust., Nova Hedwigia 74 (3/4): 482, 2002 (Schuster 2002a). Bas.: *Chandonanthus pilifer* Steph., Sp. Hepat. (Stephani) 3: 644, 1909 (Stephani 1909a).

*** *Tetralophozia setiformis* (Ehrh.) Schljakov, Novosti Sist. Nizš. Rast. 13: 228, 1976 (Shliakov 1976). Bas.: *Jungermannia setiformis* Ehrh., Hannover. Mag. 22 (8): 142, 1784 (Ehrhart 1784).

*** ***Zantenia* (S.Hatt.) Váňa et J.J.Engel**, Mem. New York Bot. Gard. 105: 29, 2013 (Váňa and Engel 2013). Bas.: *Anastrophyllum* subg. *Zantenia* S.Hatt., Bot. Mag. (Tokyo) 79 (937): 342, 1966 (Hattori 1966a).

*** *Zantenia borneensis* (Herzog) Váňa et J.J.Engel, Mem. New York Bot. Gard. 105: 29, 2013 (Váňa and Engel 2013). Bas.: *Anastrophyllum borneense* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 282, 1950 (Herzog 1950a).

*** *Zantenia denticulata* (Grolle) Váňa et J.J.Engel, Mem. New York Bot. Gard. 105: 30, 2013 (Váňa and Engel 2013). Bas.: *Anastrophyllum denticulatum* Grolle, Nova Hedwigia 16: 148, 1968 (Grolle 1968d).

*** *Zantenia karstenii* (Schiffn.) Váňa et J.J.Engel, Mem. New York Bot. Gard. 105: 30, 2013 (Váňa and Engel 2013). Bas.: *Anastrophyllum karstenii* Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 268, 1893 (Schiffner 1893a).

*** *Zantenia prionophylla* (S.Hatt.) Váňa et J.J.Engel, Mem. New York Bot. Gard. 105: 30, 2013 (Váňa and Engel 2013). Bas.: *Anastrophyllum prionophyllum* S.Hatt., Bot. Mag. (Tokyo) 79 (937): 342, 1966 (Hattori 1966a).

*** Cephaloziaceae Mig.

by J. Váňa with contributions by S.R. Gradstein (*Odontoschisma*)

Cephaloziaceae was recently studied by Vilnet et al. (2012) and Feldberg et al. (2013). Some taxonomic and nomenclatural notes were published by Váňa et al. (2013g, 2013i) and Gradstein et al. (2014b).

** Alobielloideae R.M.Schust.

** ***Alobiella* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 98, 1893 (Schiffner 1893b). Bas.: *Cephalozia* subg. *Alobiella* Spruce, Cephalozia: 28, 1882 (Spruce 1882).

*** *Alobiella husnotii* (Spruce) Schiffn., Hepat. (Engl.-Prantl): 98, 1893 (Schiffner 1893b). Bas.: *Cephalozia husnotii* Spruce, Cephalozia: 30, 1882 (Spruce 1882).

** ***Alobiellopsis* R.M.Schust.**, Nova Hedwigia 10 (1/2): 25, 1965 (Schuster 1965b).

*** *Alobiellopsis acroscypha* (Spruce) R.M.Schust., Nova Hedwigia 10 (1/2): 25, 1965 (Schuster 1965b). Bas.: *Cephalozia acroscypha* Spruce, Cephalozia: 30, 1882 (Spruce 1882).

*** *Alobiellopsis dominicensis* (Spruce) Fulford, Mem. New York Bot. Gard. 11 (3): 350, 1968 (Fulford 1968). Bas.: *Alobiella dominicensis* Spruce, J. Linn. Soc., Bot. 30 (210): 355, 1895 (Gepp 1895b).

*** *Alobiellopsis heteromorpha* (Lehm.) R.M.Schust., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 12 (3): 682, 1969 (Schuster 1969a). Bas.: *Jungermannia heteromorpha* Lehm., Linnaea 4: 362, 1829 (Lehmann 1829).

*** *Alobiellopsis parvifolia* (Steph.) R.M.Schust., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 12 (3): 679, 1969 (Schuster 1969a). Bas.: *Alobiella parvifolia* Steph., Bull. Herb. Boissier (sér. 2) 8 (8): 568 (352), 1908 (Stephani 1908e).

*** *Alobiellopsis pillansii* (Sim) R.M.Schust., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 12 (3): 683, 1969 (Schuster 1969a). Bas.: *Cephalozia pillansii* Sim, Trans. Roy. Soc. South Africa 15 (1): 87, 1926 (Sim 1926).

** Cephalozioideae Müll.Frib.

*** ***Cephalozia* (Dumort.) Dumort.**, Recueil Observ. Jungerm.: 18, 1835 (Dumortier 1835). Bas.: *Jungermannia* sect. *Cephalozia* Dumort., Syll. Jungerm. Europ.: 60, 1831 (Dumortier 1831).

*** *Cephalozia acuminata* (Herzog) Váňa, Phytotaxa 112 (1): 11, 2013 (Váňa et al. 2013g). Bas.: *Hygrobiella acuminata* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 292, 1950 (Herzog 1950a).

** *Cephalozia acutiloba* (Inoue) Váňa, Phytotaxa 112 (1): 11, 2013 (Váňa et al. 2013g). Bas.: *Metahygrobiella acutiloba* Inoue, Bull. Natl. Sci. Mus. Tokyo (n.ser.) 10 (2): 155, 1967 (Inoue 1967c).

*** *Cephalozia albula* Steph., Hedwigia 32 (5): 318, 1893 (Stephani 1893d). *Nom. nov. pro Jungermannia albula* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 93, 1860 [1861] (Mitten 1860c), *nom. illeg.*

*** *Cephalozia ambigua* C.Massal., Malpighia 21 (7/8): 310, 1907 (Massalongo 1907).

*** *Cephalozia austrigena* R.M.Schust. ex J.J.Engel, Novon 17 (3): 312, 2007 (Engel 2007). Based on: *Cephalozia bicuspidata* subsp. *austrigena* R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 712, 1974 (Schuster 1974), *nom. inval.*

*** *Cephalozia badia* (Gottsche) Steph., Bull. Herb. Boissier (sér. 2) 8 (7): 483 (313), 1908 (Stephani 1908f). Bas.: *Jungermannia badia* Gottsche, Int. Polarforsch., Deutsch. Exped. 2: 452, 1890 (Gottsche 1890).

*** *Cephalozia bicuspidata* (L.) Dumort., Recueil Observ. Jungerm.: 18, 1835 (Dumortier 1835). Bas.: *Jungermannia bicuspidata* L., Sp. Pl. 1: 1132, 1753 (Linnaeus 1753).

* *Cephalozia bicuspidata* subsp. *lammersiana* (Huebener) R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 730, 1974 (Schuster 1974). Bas.: *Jungermannia lammersiana* Huebener, Flora 15 (20): 306, 1832 (Hübener 1832).

*** *Cephalozia chilensis* (J.J.Engel et R.M.Schust.) R.M.Schust., Beih. Nova Hedwigia 119: 29, 2002 (Schuster 2002b). Bas.: *Metahygrobiella chilensis* J.J.Engel et R.M.Schust., Brittonia 40 (2): 203, 1988 (Engel and Schuster 1988).

*** *Cephalozia conchata* (Grolle et Váňa) Váňa, Syst. Bot. 40 (1): 38, 2015 (Shaw et al. 2015). Bas.: *Jungermannia conchata* Grolle et Váňa, Fragm. Florist. Geobot. 37 (1): 3, 1992 (Grolle and Váňa 1992).

*** *Cephalozia crossii* Spruce, Cephalozia: 46, 1882 (Spruce 1882).

*** *Cephalozia darjeelingensis* Udar et D.Kumar, Geophytology 6 (1): 36, 1976 (Udar and Kumar 1976).

*** *Cephalozia drucei* (R.M.Schust.) Váňa, Phytotaxa 112 (1): 11, 2013 (Váňa et al. 2013g). Bas.: *Metahygrobiella drucei* R.M.Schust., J. Hattori Bot. Lab. 26: 273, 1963 (Schuster 1963b).

*** *Cephalozia fuegiensis* Váňa, Phytotaxa 112 (1): 12, 2013 (Váňa et al. 2013g). *Nom. nov. pro Hygrobiella dusenii* Steph., Sp. Hepat. (Stephani) 6: 444, 1924 (Stephani 1924).

*** *Cephalozia hamatiloba* Steph., Bull. Herb. Boissier (sér. 2) 8 (6): 427 (303), 1908 (Stephani 1908g).

*** *Cephalozia hamatiloba* subsp. *siamensis* (N.Kitag.) Váňa, Acta Bot. Fenn. 177: 16, 2004 (Koponen et al. 2004). Bas.: *Cephalozia siamensis* N.Kitag., J. Hattori Bot. Lab. 32: 293, 1969 (Kitagawa 1969c).

*** *Cephalozia lacinulata* (J.B.Jack ex Gottsche et Rabenh.) Spruce, Cephalozia: 45, 1882 (Spruce 1882). Bas.: *Jungermannia lacinulata* J.B.Jack ex Gottsche et Rabenh., Hepat. Eur., Leberm. 62-64: no. 624, 1877 (Gottsche and Rabenhorst 1877).

*** *Cephalozia lucens* (A.Evans) Steph., Bull. Herb. Boissier (sér. 2) 8 (7): 496 (326), 1908 (Stephani 1908f). Bas.: *Jungermannia lucens* A.Evans, Trans. Connecticut Acad. Arts 8 (15): 258, 1891 (Evans 1891).

*** *Cephalozia macgregorii* (Steph.) Váňa, Phytotaxa 112 (1): 12, 2013 (Váňa et al. 2013g). Bas.: *Hygrobiella macgregorii* Steph., Hedwigia 34 (2): 45, 1895 (Stephani 1895c).

*** *Cephalozia macounii* (Austin) Austin, Hepat. bor.-amer.: 14, 1873 (Austin 1873). Bas.: *Jungermannia macounii* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 222, 1869 (Austin 1869).

*** *Cephalozia maxima* Steph., Sp. Hepat. (Stephani) 6: 441, 1924 (Stephani 1924).

*** *Cephalozia mollusca* (De Not.) Váňa, Phytotaxa 112 (1): 12, 2013 (Váňa et al. 2013g). Bas.: *Jungermannia mollusca* De Not., Epat. Borneo: 16, 1874 (De Notaris 1874).

* *Cephalozia neesiana* Steph., Bull. Herb. Boissier (sér. 2) 8 (6): 429 (305), 1908 (Stephani 1908g). [33]

*** *Cephalozia nishimurae* (N.Kitag.) Váňa, Phytotaxa 112 (1): 12, 2013 (Váňa et al. 2013g). Bas.: *Hygrobiella nishimurae* N.Kitag., Misc. Bryol. Lichenol. 9 (4): 69, 1982 (Kitagawa 1982).

** *Cephalozia pachygyna* R.M.Schust. ex J.J.Engel, Novon 17 (3): 313, 2007 (Engel 2007).

** *Cephalozia physocaula* (Hook.f. et Taylor) Steph., Bull. Herb. Boissier (sér. 2) 8 (7): 485 (315), 1908 (Stephani 1908f). Bas.: *Jungermannia physocaula* Hook.f. et Taylor, London J. Bot. 3: 455, 1844 (Hooker and Taylor 1844b).

** *Cephalozia schusteriana* J.J.Engel, Novon 17 (3): 313, 2007 (Engel 2007).

*** *Cephalozia stolonacea* (Herzog) Váňa, Phytotaxa 112 (1): 12, 2013 (Váňa et al. 2013g). Bas.: *Hygrobiella stolonacea* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 293, 1950 (Herzog 1950a).

*** *Cephalozia tubulata* (Hook.f. et Taylor) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 417, 1877 (Trevisan 1877). Bas.: *Jungermannia tubulata* Hook.f. et Taylor, London J. Bot. 3: 463, 1844 (Hooker and Taylor 1844b).

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33 *Cephalozia neesiana* may be conspecific with *Cephalozia hamatiloba* (Váňa 1988).

Excluded from the genus

* *Cephalozia hians* Steph., Sp. Hepat. (Stephani) 6: 441, 1924 (Stephani 1924). [34]

* *Cephalozia indica* Udar et D.Kumar, Geophytology 6 (1): 42, 1976 (Udar and Kumar 1976). [35]

* *Cephalozia kodaikanalensis* G.Asthana et Saumya Srivast., Geophytology 43 (1): 63, 2013 (Asthana and Srivastava 2013). [36]

* *Cephalozia parvifolia* Arnell, Rev. Bryol. 25 (1): 1, 1898 (Arnell 1898). [37]

* *Cephalozia tricuspidata* (Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 417, 1877 (Trevisan 1877). Bas.: *Jungermannia tricuspidata* Nees, Enum. Pl. Crypt. Javae: 31, 1830 (Nees 1830). [38]

*** ***Fuscocephaloziopsis* Fulford**, Mem. New York Bot. Gard. 11 (3): 353, 1968 (Fulford 1968).

** *Fuscocephaloziopsis affinis* (Lindb. ex Steph.) Váňa et L.Söderstr., Phytotaxa 112 (1): 9, 2013 (Váňa et al. 2013g). Bas.: *Cephalozia affinis* Lindb. ex Steph., Bull. Herb. Boissier (sér. 2) 8 (4): 277 (291), 1908 (Stephani 1908j).

*** *Fuscocephaloziopsis africana* (Váňa) Váňa et L.Söderstr., Phytotaxa 112 (1): 9, 2013 (Váňa et al. 2013g). Bas.: *Cephalozia africana* Váňa, Beih. Nova Hedwigia 90: 187, 1988 (Váňa 1988).

*** *Fuscocephaloziopsis albescens* (Hook.) Váňa et L.Söderstr., Phytotaxa 112 (1): 9, 2013 (Váňa et al. 2013g). Bas.: *Jungermannia albescens* Hook., Brit. Jungermann.: tab. 72, 1815 (Hooker 1815).

* *Fuscocephaloziopsis albescens* var. *islandica* (Nees) Váňa et L.Söderstr., Phytotaxa 112 (1): 9, 2013 (Váňa et al. 2013g). Bas.: *Jungermannia islandica* Nees, Naturgesch. Eur. Leberm. 2: 29, 1836 (Nees 1836).

*** *Fuscocephaloziopsis baldwinii* (C.M.Cooke) Váňa et L.Söderstr., Phytotaxa 112 (1): 9, 2013 (Váňa et al. 2013g). Bas.: *Cephalozia baldwinii* C.M.Cooke, Trans. Connecticut Acad. Arts 12 (1): 35, 1904 (Cooke 1904).

** *Fuscocephaloziopsis biloba* (Herzog) Fulford, Mem. New York Bot. Gard. 11 (3): 355, 1968 (Fulford 1968). Bas.: *Alobiella biloba* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 166, 1955 (Herzog 1955).

*** *Fuscocephaloziopsis catenulata* (Huebener) Váňa et L.Söderstr., Phytotaxa 112 (1): 9, 2013 (Váňa et al. 2013g). Bas.: *Jungermannia catenulata* Huebener, Hepaticol. germ.: 169, 1834 (Hübener 1834).

*** *Fuscocephaloziopsis catenulata* subsp. *nipponica* (S.Hatt.) Váňa et L.Söderstr., Phytotaxa 112 (1): 9, 2013 (Váňa et al. 2013g). Bas.: *Cephalozia nipponica* S.Hatt., Bull. Tokyo Sci. Mus. 11: 74, 1944 (Hattori 1944d).

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34 *Cephalozia hians* is probably an *Isotachis* or *Lophocolea* species.

35 *Cephalozia indica* is a *Lophocolea* species and probably conspecific with "*Cephalozia*" *kodaikanalensis*.

36 *Cephalozia kodaikanalensis* is a *Lophocolea* species, possibly conspecific with "*Cephalozia*" *indica*.

37 *Cephalozia parvifolia* is a *Cephaloziella* species although the type specimen has not been found.

38 *Cephalozia tricuspidata* is a *Lepidozia* species (Schiffner 1898b).

*** *Fuscocephaloziopsis connivens* (Dicks.) Váňa et L.Söderstr., Phytotaxa 112 (1): 9, 2013 (Váňa et al. 2013g). Bas.: *Jungermannia connivens* Dicks., Fasc. Pl. Crypt. Brit. 4: 19, 1801 (Dickson 1801).

*** *Fuscocephaloziopsis connivens* subsp. *fissa* (Steph.) Váňa et L.Söderstr., Phytotaxa 112 (1): 9, 2013 (Váňa et al. 2013g). Bas.: *Cephalozia fissa* Steph., Hedwigia 30 (5): 204, 1891 (Stephani 1891a).

*** *Fuscocephaloziopsis connivens* subsp. *sandwicensis* (Mont.) Váňa et L.Söderstr., Phytotaxa 112 (1): 9, 2013 (Váňa et al. 2013g). Bas.: *Jungermannia sandwicensis* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 249, 1843 (Montagne 1843).

*** *Fuscocephaloziopsis crassifolia* (Lindenb. et Gottsche) Váňa et L.Söderstr., Phytotaxa 112 (1): 10, 2013 (Váňa et al. 2013g). Bas.: *Jungermannia crassifolia* Lindenb. et Gottsche, Syn. Hepat. 5: 685, 1847 (Gottsche et al. 1847).

*** *Fuscocephaloziopsis gollanii* (Steph.) Váňa et L.Söderstr., Phytotaxa 112 (1): 10, 2013 (Váňa et al. 2013g). Bas.: *Cephalozia gollanii* Steph., Bull. Herb. Boissier (sér. 2) 8 (6): 428 (304), 1908 (Stephani 1908g).

*** *Fuscocephaloziopsis leucantha* (Spruce) Váňa et L.Söderstr., Phytotaxa 112 (1): 10, 2013 (Váňa et al. 2013g). Bas.: *Cephalozia leucantha* Spruce, Cephalozia: 68, 1882 (Spruce 1882).

*** *Fuscocephaloziopsis loitlesbergeri* (Schiffn.) Váňa et L.Söderstr., Phytotaxa 112 (1): 10, 2013 (Váňa et al. 2013g). Bas.: *Cephalozia loitlesbergeri* Schiffn., Österr. Bot. Z. 62 (1): 10, 1912 (Schiffner 1912b).

*** *Fuscocephaloziopsis lunulifolia* (Dumort.) Váňa et L.Söderstr., Phytotaxa 112 (1): 10, 2013 (Váňa et al. 2013g). Bas.: *Jungermannia lunulifolia* Dumort., Syll. Jungerm. Europ.: 61, 1831 (Dumortier 1831). [39]

*** *Fuscocephaloziopsis macrostachya* (Kaal.) Váňa et L.Söderstr., Phytotaxa 112 (1): 10, 2013 (Váňa et al. 2013g). Bas.: *Cephalozia macrostachya* Kaal., Rev. Bryol. 29 (1): 8, 1902 (Kaalaas 1902).

*** *Fuscocephaloziopsis macrostachya* subsp. *australis* (R.M.Schust.) Váňa et L.Söderstr., Phytotaxa 112 (1): 10, 2013 (Váňa et al. 2013g). Bas.: *Cephalozia macrostachya* subsp. *australis* R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 754, 1974 (Schuster 1974).

*** *Fuscocephaloziopsis macrostachya* subsp. *macrostachya var. spiniflora* (Schiffn.) Váňa et L.Söderstr., Phytotaxa 112 (1): 10, 2013 (Váňa et al. 2013g). Bas.: *Cephalozia spiniflora* Schiffn., Hedwigia 54 (6): 323, 1914 (Schiffner 1914a).

*** *Fuscocephaloziopsis monticola* (J.D.Godfrey) Váňa et L.Söderstr., Phytotaxa 112 (1): 11, 2013 (Váňa et al. 2013g). Bas.: *Schofieldia monticola* J.D.Godfrey, Bryologist 79 (3): 315, 1976 (Godfrey 1976).

*** *Fuscocephaloziopsis pachycaulis* (R.M.Schust.) Váňa et L.Söderstr., Phytotaxa 112 (1): 11, 2013 (Váňa et al. 2013g). Bas.: *Cephalozia pachycaulis* R.M.Schust., Bryologist 96 (4): 623, 1993 (Schuster 1993b).

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39 *Fuscocephaloziopsis lunulifolia* is a species complex also including *Fuscocephaloziopsis affinis* and *Fuscocephaloziopsis schusteri*.

*** *Fuscocephaloziopsis pleniceps* (Austin) Váňa et L.Söderstr., Phytotaxa 112 (1): 11, 2013 (Váňa et al. 2013g). Bas.: *Jungermannia pleniceps* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 222, 1869 (Austin 1869).

** *Fuscocephaloziopsis pleniceps* var. *caroliniana* (R.M.Schust.) Váňa et L.Söderstr., Phytotaxa 112 (1): 11, 2013 (Váňa et al. 2013g). Bas.: *Cephalozia pleniceps* var. *caroliniana* R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 780, 1974 (Schuster 1974).

*** *Fuscocephaloziopsis pulvinata* (Steph.) Fulford, Mem. New York Bot. Gard. 11 (3): 355, 1968 (Fulford 1968). Bas.: *Alobiella pulvinata* Steph., Bull. Herb. Boissier (sér. 2) 8 (8): 572 (356), 1908 (Stephani 1908e).

* *Fuscocephaloziopsis schusteri* (Sushil K.Singh et D.K.Singh) Váňa, Phytotaxa 183 (4): 291, 2014 (Váňa et al. 2014a). Bas.: *Cephalozia schusteri* Sushil K.Singh et D.K.Singh, Lindbergia 32 (1): 1, 2007 (Singh and Singh 2007a).

*** *Fuscocephaloziopsis subintegra* Gradst. et Váňa, Cryptog. Bryol. 25 (3): 274, 2004 (Parolly et al. 2004).

*** *Fuscocephaloziopsis zoopsioides* (Horik.) Váňa et L.Söderstr., Phytotaxa 112 (1): 11, 2013 (Váňa et al. 2013g). Bas.: *Cephalozia zoopsioides* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 178, 1934 (Horikawa 1934).

*** ***Nowellia* Mitt.**, Nat. hist. Azores: 321, 1870 (Mitten 1870).

** **sect. *Acronowellia* R.M.Schust.**, Hepat. Anthocerotae N. Amer. 3: 816, 1974 (Schuster 1974).

*** *Nowellia reedii* H.Rob., Bryologist 73 (1): 150, 1970 (Robinson 1970).

*** *Nowellia yunckeri* Fulford, Mem. New York Bot. Gard. 11 (3): 329, 1968 (Fulford 1968).

** **sect. *Metanowellia* (Grolle) R.M.Schust.**, Hepat. Anthocerotae N. Amer. 3: 816, 1974 (Schuster 1974). Bas.: *Nowellia* subg. *Metanowellia* Grolle, J. Hattori Bot. Lab. 31: 33, 1968 (Grolle 1968b).

*** *Nowellia borneensis* (De Not.) Schiffn., Hepat. (Engl.-Prantl): 98, 1893 (Schiffner 1893b). Bas.: *Jungermannia curvifolia* var. *borneensis* De Not., Epat. Borneo: 19, 1874 (De Notaris 1874).

*** *Nowellia dominicensis* Steph., Sp. Hepat. (Stephani) 6: 443, 1924 (Stephani 1924).

*** *Nowellia evansii* Grolle, J. Hattori Bot. Lab. 31: 33, 1968 (Grolle 1968b).

*** *Nowellia langii* Pearson, J. Linn. Soc., Bot. 46 (305): 25, 1922 (Pearson 1922b).

*** *Nowellia pusilla* Grolle, J. Hattori Bot. Lab. 31: 37, 1968 (Grolle 1968b).

*** *Nowellia wrightii* (Gottsche ex Spruce) Steph. ex Duss, Enum. musc. Antilles franç., Hép.: 21, 1903 (Duss 1903). Bas.: *Cephalozia wrightii* Gottsche ex Spruce, J. Linn. Soc., Bot. 30 (210): 354, 1895 (Gepp 1895b).

** **sect. *Nowellia***

*** *Nowellia aciliata* (P.C.Chen et P.C.Wu) Mizut., Hikobia 11: 469, 1994 (Mizutani 1994). Bas.: *Nowellia curvifolia* var. *aciliata* P.C.Chen et P.C.Wu, Obs. fl. Hwangs.: 6, 1965 (Chen and Wu 1965).

*** *Nowellia curvifolia* (Dicks.) Mitt., Nat. hist. Azores: 321, 1870 (Mitten 1870). Bas.: *Jungermannia curvifolia* Dicks., Fasc. Pl. Crypt. Brit. 2: 15, 1790 (Dickson 1790).

** Odontoschismatoideae H.Buch ex Grolle

*** ***Odontoschisma* (Dumort.) Dumort.**, Recueil Observ. Jungerm.: 19, 1835 (Dumortier 1835). Bas.: *Pleuroschisma* sect. *Odontoschisma* Dumort., Syll. Jungerm. Europ.: 68, 1831 (Dumortier 1831).

** **sect. *Cladopodiella* (H.Buch) Gradst., S.C.Aranda et Vanderp.**, Taxon 63 (5): 1017, 2014 (Aranda et al. 2014). Bas.: *Cladopodiella* H.Buch, Memoranda Soc. Fauna Fl. Fennica 1: 89, 1927 (Buch 1927).

*** *Odontoschisma francisci* (Hook.) L.Söderstr. et Váňa, Phytotaxa 112 (1): 12, 2013 (Váňa et al. 2013g). Bas.: *Jungermannia francisci* Hook., Brit. Jungermann.: tab. 49, 1813 (Hooker 1813).

** **sect. *Denudata* R.M.Schust.**, Hepat. Anthocerotae N. Amer. 3: 833, 1974 (Schuster 1974).

*** *Odontoschisma brasiliense* Steph., Bull. Herb. Boissier (sér. 2) 8 (8): 585 (369), 1908 (Stephani 1908e).

** *Odontoschisma cleefii* Gradst., S.C.Aranda et Vanderp., Taxon 63 (5): 1017, 2014 (Aranda et al. 2014).

*** *Odontoschisma denudatum* (Mart.) Dumort., Recueil Observ. Jungerm.: 19, 1835 (Dumortier 1835). Bas.: *Jungermannia scalaris* var. *denudata* Mart., Fl. crypt. erlang.: 183, 1817 (Martius 1817).

** *Odontoschisma denudatum* subsp. *naviculare* (Steph.) Gradst., S.C.Aranda et Vanderp., Taxon 63 (5): 1019, 2014 (Aranda et al. 2014). Bas.: *Jamesoniella navicularis* Steph., Sp. Hepat. (Stephani) 6: 101, 1917 (Stephani 1917a).

** *Odontoschisma denudatum* subsp. *sandvicense* (Ångstr.) Gradst., S.C.Aranda et Vanderp., Taxon 63 (5): 1019, 2014 (Aranda et al. 2014). Bas.: *Sphagnoecetis sandvicensis* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 29 (4): 22, 1872 (Ångström 1872).

*** *Odontoschisma elongatum* (Lindb.) A.Evans, Rhodora 14 (157): 13, 1912 (Evans 1912b). Bas.: *Odontoschisma denudatum* f. *elongatum* Lindb., Helsingf. Dagbl. 1874 (45, 16 Feb): 2, 1874 (Lindberg 1874b).

*** *Odontoschisma engelii* Gradst. et Burghardt, Fieldiana, Bot. (n.ser.) 47: 194, 2008 (Gradstein and Burghardt 2008).

*** *Odontoschisma longiflorum* (Taylor) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 419, 1877 (Trevisan 1877). Bas.: *Sphagnoecetis longiflora* Taylor, London J. Bot. 5: 281, 1846 (Taylor 1846a).

*** *Odontoschisma macounii* (Austin) Underw., Bull. Illinois State Lab. Nat. Hist. 2 (1): 92, 1884 (Underwood 1884). Bas.: *Sphagnoecetis macounii* Austin, Bull. Torrey Bot. Club 3 (3): 13, 1872 (Austin 1872).

*** *Odontoschisma portoricense* (Hampe et Gottsche) Steph., Hedwigia 27 (11/12): 296, 1888 (Stephani 1888c). Bas.: *Sphagnoecetis portoricensis* Hampe et Gottsche, Linnaea 25 (3): 343, 1852 [1853] (Hampe and Gottsche 1852).

** *Odontoschisma pseudogrosseverrucosum* Gradst., S.C.Aranda et Vanderp., Taxon 63 (5): 1019, 2014 (Aranda et al. 2014).

*** *Odontoschisma purpuratum* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 297, 1950 (Herzog 1950a).

*** *Odontoschisma soratamum* Fulford, Mem. New York Bot. Gard. 11 (3): 338, 1968 (Fulford 1968).

*** *Odontoschisma variabile* (Lindenb. et Gottsche) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 419, 1877 (Trevisan 1877). Bas.: *Sphagnoecetis variabilis* Lindenb. et Gottsche, Syn. Hepat. 5: 688, 1847 (Gottsche et al. 1847).

** *Odontoschisma zhui* Gradst., S.C.Aranda et Vanderp., Taxon 63 (5): 1020, 2014 (Aranda et al. 2014).

** **sect. *Iwatsukia* (N.Kitag.) Gradst., S.C.Aranda et Vanderp.**, Phytotaxa 162 (4): 232, 2014 (Gradstein et al. 2014b). Bas.: *Iwatsukia* N.Kitag., J. Hattori Bot. Lab. 27: 178, 1964 (Kitagawa 1964).

*** *Odontoschisma bifidum* (Fulford) Gradst., S.C.Aranda et Vanderp., Phytotaxa 162 (4): 232, 2014 (Gradstein et al. 2014b). Bas.: *Cladomastigum bifidum* Fulford, Acta Bot. Venez. 2 (5/8): 80, 1967 (Fulford 1967).

*** *Odontoschisma jishibae* (Steph.) L.Söderstr. et Váňa, Phytotaxa 112 (1): 13, 2013 (Váňa et al. 2013g). Bas.: *Cephalozia jishibae* Steph., Sp. Hepat. (Stephani) 6: 437, 1924 (Stephani 1924).

*** *Odontoschisma spinosum* (Fulford) Gradst., S.C.Aranda et Vanderp., Phytotaxa 162 (4): 232, 2014 (Gradstein et al. 2014b). Bas.: *Cladomastigum spinosum* Fulford, Mem. New York Bot. Gard. 23: 840, 1972 (Fulford 1972).

** **sect. *Neesia* Gradst., S.C.Aranda et Vanderp.**, Taxon 63 (5): 1017, 2014 (Aranda et al. 2014).

*** *Odontoschisma fluitans* (Nees) L.Söderstr. et Váňa, Phytotaxa 112 (1): 12, 2013 (Váňa et al. 2013g). Bas.: *Jungermannia fluitans* Nees, Flora 6 (2): 30, 1823 (Link 1823).

** **sect. *Odontoschisma***

*** *Odontoschisma grosseverrucosum* Steph., Bull. Herb. Boissier (sér. 2) 8 (8): 593 (377), 1908 (Stephani 1908e).

*** *Odontoschisma sphagni* (Dicks.) Dumort., Recueil Observ. Jungerm.: 19, 1835 (Dumortier 1835). Bas.: *Jungermannia sphagni* Dicks., Fasc. Pl. Crypt. Brit. 1: 6, 1785 (Dickson 1785).
** *Odontoschisma steyermarkii* Gradst. et Ilk.-Borg., Nova Hedwigia 100 (1/2): 38, 2015 [2014 online] (Gradstein and Ilkiu-Borges 2015).

Incertae sedis
* *Odontoschisma obcordatum* (Spruce) Steph., Bull. Herb. Boissier (sér. 2) 8 (8): 586 (370), 1908 (Stephani 1908e). Bas.: *Cephalozia obcordata* Spruce, Cephalozia: 61, 1882 (Spruce 1882). [40]

** Schiffnerioideae R.M.Schust.

** ***Schiffneria* Steph.**, Österr. Bot. Z. 44 (1): 1, 1894 (Stephani 1894c).
*** *Schiffneria hyalina* Steph., Österr. Bot. Z. 44 (1): 1, 1894 (Stephani 1894c).

** Trabacelluloideae R.M.Schust.

** ***Haesselia* Grolle et Gradst.**, J. Hattori Bot. Lab. 64: 327, 1988 (Grolle and Gradstein 1988).
*** *Haesselia acuminata* Gradst., Trop. Bryol. 1: 30, 1989 (Gradstein and Florschütz-de Waard 1989).
*** *Haesselia roraimensis* Grolle et Gradst., J. Hattori Bot. Lab. 64: 327, 1988 (Grolle and Gradstein 1988).

** ***Trabacellula* Fulford**, Acta Bot. Venez. 2 (5/8): 86, 1967 (Fulford 1967).
*** *Trabacellula tumidula* Fulford, Acta Bot. Venez. 2 (5/8): 86, 1967 (Fulford 1967).

*** Cephaloziellaceae Douin

by J. Váňa

The treatment of Cephaloziellaceae follows what was outlined in Váňa et al. (2013e). Some nomenclatural and taxonomic notes can also be found in Söderström et al. (2013a) and Váňa et al. (2013b, 2013l). The placement of *Phycolepidozia* follows Gradstein et al. (2014a).

40 *Odontoschisma obcordatum* is to be excluded from *Odontoschisma* but its identity remains unclear as the type is not found. Based on the original description this species might belong to *Alobiellopsis* (Gradstein & Ilkiu-Borges 2014: 81).

*** ***Allisoniella* E.A.Hodgs.**, Trans. Roy. Soc. New Zealand, Bot. 3 (4): 80, 1965 (Hodgson 1965).

** **sect. *Allisoniella***
*** *Allisoniella nigra* (Rodway) R.M.Schust., Nova Hedwigia 22: 137, 1971 [1972] (Schuster 1971b). Bas.: *Sphenolobus niger* Rodway, Tasm. Bryoph.: 33, 1917 (Rodway 1917b).
** *Allisoniella nigra* var. *acutiloba* J.J.Engel, Novon 17 (3): 313, 2007 (Engel 2007).
** *Allisoniella nigra* subsp. *novaezelandiae* R.M.Schust., Nova Hedwigia 22: 143, 1971 [1972] (Schuster 1971b).
*** *Allisoniella recurva* R.M.Schust., Nova Hedwigia 22: 146, 1971 [1972] (Schuster 1971b).
*** *Allisoniella subbipartita* (C.Massal.) R.M.Schust. et J.J.Engel, Nova Hedwigia 22: 147, 1971 [1972] (Schuster 1971b). Bas.: *Cephalozia subbipartita* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 235, 1885 (Massalongo 1885).
*** *Allisoniella tasmanica* R.M.Schust., Nova Hedwigia 22: 145, 1971 [1972] (Schuster 1971b).

** **sect. *Protomarsupella* (R.M.Schust.) R.M.Schust.**, Nova Hedwigia 22: 150, 1971 (Schuster 1971b). Bas.: *Protomarsupella* R.M.Schust., Rev. Bryol. Lichénol. 34 (1/2): 264, 1966 (Schuster 1966b).
*** *Allisoniella scottii* (R.M.Schust.) R.M.Schust., Nova Hedwigia 22: 151, 1971 [1972] (Schuster 1971b). Bas.: *Protomarsupella scottii* R.M.Schust., Rev. Bryol. Lichénol. 34 (1/2): 267, 1966 (Schuster 1966b).

*** ***Amphicephalozia* R.M.Schust.**, Nova Hedwigia 22: 131, 1971 [1972] (Schuster 1971b).
*** *Amphicephalozia africana* Váňa et M.Wigginton, J. Bryol. 30 (1): 55, 2008 (Váňa and Wigginton 2008).
*** *Amphicephalozia amplexicaulis* R.M.Schust., Nova Hedwigia 22: 133, 1971 [1972] (Schuster 1971b).
*** *Amphicephalozia geisslerae* Pócs et Váňa, Polish Bot. J. 46 (2): 145, 2001 (Pócs and Váňa 2001).

*** ***Anastrophyllopsis* (R.M.Schust.) Váňa et L.Söderstr.**, Phytotaxa 81 (1): 15, 2013 (Váňa et al. 2013k). Bas.: *Anastrophyllum* sect. *Anastrophyllopsis* R.M.Schust., Beih. Nova Hedwigia 119: 310, 2002 (Schuster 2002b).
*** *Anastrophyllopsis involutifolia* (Mont. ex Gottsche, Lindenb. et Nees) Váňa et L.Söderstr., Phytotaxa 81 (1): 15, 2013 (Váňa et al. 2013k). Bas.: *Jungermannia involutifolia* Mont. ex Gottsche, Lindenb. et Nees, Syn. Hepat. 1: 81, 1844 (Gottsche et al. 1844).
*** *Anastrophyllopsis revoluta* (Steph.) Váňa et L.Söderstr., Phytotaxa 81 (1): 16, 2013 (Váňa et al. 2013k). Bas.: *Anastrophyllum revolutum* Steph., Hedwigia 32 (3): 139, 1893 (Stephani 1893b).

*** *Anastrophyllopsis subcomplicata* (Lehm. et Lindenb.) Váňa et L.Söderstr., Phytotaxa 81 (1): 16, 2013 (Váňa et al. 2013k). Bas.: *Jungermannia subcomplicata* Lehm. et Lindenb., Nov. Stirp. Pug. 7: 4, 1838 (Lehmann 1838).

** ***Cephalojonesia* Grolle**, Rev. Bryol. Lichénol. 37 (4): 763, 1970 [1971] (Grolle and Vanden Berghen 1970).
*** *Cephalojonesia incuba* Grolle et Vanden Berghen, Rev. Bryol. Lichénol. 37 (4): 764, 1970 [1971] (Grolle and Vanden Berghen 1970).
*** *Cephalojonesia incuba* subsp. *mexicana* Burghardt, Gradst. et Váňa, J. Hattori Bot. Lab. 100: 35, 2006 (Burghardt et al. 2006).

** ***Cephalomitrion* R.M.Schust.**, Nova Hedwigia 61 (3/4): 550, 1995 (Schuster 1995b).
*** *Cephalomitrion aterrimum* (Steph.) R.M.Schust., Nova Hedwigia 61 (3/4): 554, 1995 (Schuster 1995b). Bas.: *Cephalozia aterrima* Steph., Bull. Herb. Boissier (sér. 2) 8 (7): 501 (331), 1908 (Stephani 1908f).

*** ***Cephaloziella* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 98, 1893 (Schiffner 1893b) nom. conserv. Bas.: *Cephalozia* subg. *Cephaloziella* Spruce, Cephalozia: 62, 1882 (Spruce 1882). [41]

** **subg. *Cephaloziella***
*** *Cephaloziella aenigmatica* R.M.Schust., Nova Hedwigia 63 (1/2): 20, 1996 (Schuster 1996d).
*** *Cephaloziella anthelioides* S.W.Arnell, Bot. Not. 105: 322, 1952 (Arnell 1952a).
*** *Cephaloziella arctogena* (R.M.Schust.) Konstant., Arctoa 3: 126, 1994 (Konstantinova and Vasil'ev 1994). Bas.: *Cephaloziella rubella* var. *arctogena* R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 125, 1980 (Schuster 1980c).
** *Cephaloziella arenaria* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 26: 280, 1963 (Schuster 1963b). Bas.: *Cephalozia arenaria* Steph., Bull. Herb. Boissier (sér. 2) 8 (7): 504 (334), 1908 (Stephani 1908f).
*** *Cephaloziella aspericaulis* Jørg., Bergens Mus. Skr. (n.ser.) 16: 197, 1934 (Jørgensen 1934).
*** *Cephaloziella baumgartneri* Schiffn., Verh. K.K. Zool.-Bot. Ges. Wien 56 (3): 273, 1906 (Schiffner 1906c).
** *Cephaloziella breviperianthia* C.Gao, Fl. Hepat. Chin. Boreali-Orient.: 208, 1981 (Gao and Chang 1981).
** *Cephaloziella brinkmannii* Douin, Mém. Soc. Bot. France 29: 75, 1920 (Douin 1920).
*** *Cephaloziella capensis* (Sim) S.W.Arnell, Bot. Not. 105: 326, 1952 (Arnell 1952a). Bas.: *Cephalozia capensis* Sim, Trans. Roy. Soc. South Africa 15 (1): 87, 1926 (Sim 1926).

41 *Cephaloziella* is a large genus and the subgeneric division is unclear. The traditional subdivisions used here do not necessary agree with recent phylogenetic studies.

*** *Cephaloziella capillaris* (Steph.) Douin, Mém. Soc. Bot. France 29: 59, 1920 (Douin 1920). Bas.: *Cephalozia capillaris* Steph., Bull. Herb. Boissier (sér. 2) 8 (7): 496 (326), 1908 (Stephani 1908f).

*** *Cephaloziella crassigyna* (R.M.Schust.) R.M.Schust., Nova Hedwigia 61 (3/4): 556, 1995 (Schuster 1995b). Bas.: *Cephaloziella aterrima* var. *crassigyna* R.M.Schust., Nova Hedwigia 22: 211, 1971 [1972] (Schuster 1971b).

*** *Cephaloziella crispata* N.Kitag., J. Hattori Bot. Lab. 32: 301, 1969 (Kitagawa 1969c).

*** *Cephaloziella densifolia* R.M.Schust., Nova Hedwigia 22: 199, 1971 [1972] (Schuster 1971b).

** *Cephaloziella densifolia* var. *dubia* R.M.Schust., Nova Hedwigia 22: 202, 1971 [1972] (Schuster 1971b).

*** *Cephaloziella divaricata* (Sm.) Schiffn., Hepat. (Engl.-Prantl): 99, 1893 (Schiffner 1893b). Bas.: *Jungermannia divaricata* Sm., Engl. Bot. 10: tab. 719, 1800 (Smith and Sowerby 1800).

** *Cephaloziella divaricata* var. *scabra* (M.Howe) Haynes, Bryologist 12 (4): 68, 1909 (Haynes 1909). Bas.: *Cephalozia divaricata* var. *scabra* M.Howe, Mem. Torrey Bot. Club 7: 129, 1899 (Howe 1899). [42]

** *Cephaloziella dusenii* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 6): 49, 1900 (Stephani 1900b).

*** *Cephaloziella elachista* (J.B.Jack ex Gottsche et Rabenh.) Schiffn., Sitzungsber. deutsch. naturwiss.-med. Vereins Böhmen "Lotos" Prag 48: 336, 1900 (Schiffner 1900d). Bas.: *Jungermannia elachista* J.B.Jack ex Gottsche et Rabenh., Hepat. Eur., Leberm. 58-59: no. 574, 1873 (Gottsche and Rabenhorst 1873a).

** *Cephaloziella elachista* var. *spinophylla* (C.Gao) C.Gao, Fl. Bryoph. Sin. 9: 181, 2003 (Gao 2003). Bas.: *Cephaloziella spinophylla* C.Gao, Fl. Hepat. Chin. Boreali-Orient.: 208, 1981 (Gao and Chang 1981).

** *Cephaloziella elegans* (Heeg) Schiffn., Sitzungsber. deutsch. naturwiss.-med. Vereins Böhmen "Lotos" Prag 48: 336, 1900 (Schiffner 1900d). Bas.: *Cephalozia elegans* Heeg, Rev. Bryol. 20 (5): 82, 1893 (Heeg 1893).

*** *Cephaloziella exigua* R.M.Schust., Nova Hedwigia 63 (1/2): 49, 1996 (Schuster 1996d).

*** *Cephaloziella exiliflora* (Taylor) Douin, Mém. Soc. Bot. France 29: 72, 1920 (Douin 1920). Bas.: *Jungermannia exiliflora* Taylor, London J. Bot. 5: 279, 1846 (Taylor 1846a).

** *Cephaloziella fragillima* (Spruce) Fulford, Mem. New York Bot. Gard. 11 (4): 409, 1976 (Fulford 1976). Bas.: *Cephalozia fragillima* Spruce, Mem. Torrey Bot. Club 1 (3): 131, 1890 (Spruce 1890).

*** *Cephaloziella garsidei* S.W.Arnell, Rev. Bryol. Lichénol. 23 (1/2): 173, 1954 (Arnell 1954a).

*** *Cephaloziella grandiretis* (R.M.Schust.) R.M.Schust., Nova Hedwigia 63 (1/2): 35, 1996 (Schuster 1996d). Bas.: *Cephaloziella byssacea* subsp. *grandiretis* R.M.Schust., Nova Hedwigia 22: 195, 1971 [1972] (Schuster 1971b).

42 The correct name for the variety was discussed by Söderström et al. (2012d).

*** *Cephaloziella grimsulana* (J.B.Jack ex Gottsche et Rabenh.) Lacout., Hépat. France: 52, 1905 (Lacouture 1905). Bas.: *Jungermannia grimsulana* J.B.Jack ex Gottsche et Rabenh., Hepat. Eur., Leberm. 53–55: no. 526, 1872 (Gottsche and Rabenhorst 1872).

*** *Cephaloziella hampeana* (Nees) Schiffn. ex Loeske, Moosfl. Harz.: 92, 1903 (Loeske 1903). Bas.: *Jungermannia hampeana* Nees, Naturgesch. Eur. Leberm. 3: 560, 1838 (Nees 1838b).

** *Cephaloziella hebridensis* Steph., Hedwigia 32 (5): 316, 1893 (Stephani 1893d).

*** *Cephaloziella herzogiana* (Pandé et K.P.Srivast.) Udar et D.Kumar, Geophytology 6 (1): 45, 1976 (Udar and Kumar 1976). Bas.: *Cephalozia herzogiana* Pandé et K.P.Srivast., Feddes Repert. Spec. Nov. Regni Veg. 58: 75, 1955 (Pandé and Srivastava 1955).

** *Cephaloziella heteroica* (C.M.Cooke) Douin, Mém. Soc. Bot. France 29: 76, 1920 (Douin 1920). Bas.: *Cephalozia heteroica* C.M.Cooke, Trans. Connecticut Acad. Arts 12 (1): 38, 1904 (Cooke 1904).

** *Cephaloziella hyalina* Douin, Mém. Soc. Bot. France 29: 77, 1920 (Douin 1920).

* *Cephaloziella hyalina* var. *rappii* (Douin) R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 56, 1980 (Schuster 1980c). Bas.: *Cephaloziella rappii* Douin, Mém. Soc. Bot. France 29: 77, 1920 (Douin 1920).

*** *Cephaloziella inaequalis* R.M.Schust., Nova Hedwigia 22: 186, 1971 [1972] (Schuster 1971b).

*** *Cephaloziella invisa* R.M.Schust., Nova Hedwigia 63 (1/2): 30, 1996 (Schuster 1996d).

** *Cephaloziella kilohanensis* (C.M.Cooke) Douin, Mém. Soc. Bot. France 29: 85, 1920 (Douin 1920). Bas.: *Cephalozia kilohanensis* C.M.Cooke, Trans. Connecticut Acad. Arts 12 (1): 37, 1904 (Cooke 1904).

*** *Cephaloziella longii* Váňa, Folia Geobot. Phytotax. 27 (2): 193, 1992 (Váňa 1992).

*** *Cephaloziella lycopodioides* (Sim) S.W.Arnell, Bot. Not. 105: 321, 1952 (Arnell 1952a). Bas.: *Cephalozia lycopodioides* Sim, Trans. Roy. Soc. South Africa 15 (1): 85, 1926 (Sim 1926).

** *Cephaloziella mammillifera* R.M.Schust. et Damsh., Phytologia 63 (5): 327, 1987 (Schuster and Damsholt 1987).

*** *Cephaloziella massalongi* (Spruce) Müll.Frib., Lebermoose 2 (17): 191, 1913 (Müller 1913a). Bas.: *Cephalozia massalongi* Spruce, Cephalozia: 71, 1882 (Spruce 1882).

*** *Cephaloziella muelleriana* R.M.Schust., Nova Hedwigia 63 (1/2): 24, 1996 (Schuster 1996d).

*** *Cephaloziella natalensis* (Sim) S.W.Arnell, Hepat. South Africa: 338, 1963 (Arnell 1963b). Bas.: *Cephalozia natalensis* Sim, Trans. Roy. Soc. South Africa 15 (1): 86, 1926 (Sim 1926).

** *Cephaloziella nicholsonii* Douin, Rev. Bryol. 40 (6): 81, 1913 (Douin 1913b).

*** *Cephaloziella nothogena* R.M.Schust., Nova Hedwigia 63 (1/2): 37, 1996 (Schuster 1996d).

** *Cephaloziella obtusilobula* R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 108, 1980 (Schuster 1980c).

** *Cephaloziella patulifolia* (Steph.) Douin, Mém. Soc. Bot. France 29: 70, 1920 (Douin 1920). Bas.: *Cephalozia patulifolia* Steph., Bull. Herb. Boissier (sér. 2) 8 (7): 509 (339), 1908 (Stephani 1908f).

*** *Cephaloziella phyllacantha* (C.Massal. et Carestia) Müll.Frib., Lebermoose 2 (17): 194, 1913 (Müller 1913a). Bas.: *Anthelia phyllacantha* C.Massal. et Carestia, Nuovo Giorn. Bot. Ital. 12 (4): 340, 1880 (Massalongo and Carestia 1880).

*** *Cephaloziella polystratosa* (R.M.Schust. et Damsh.) Konstant., Bot. Zhurn. (Moscow & Leningrad) 85 (10): 127, 2000 (Konstantinova 2000). Bas.: *Cephaloziella byssacea* var. *polystratosa* R.M.Schust. et Damsh., Phytologia 63 (5): 327, 1987 (Schuster and Damsholt 1987).

*** *Cephaloziella pseudocrassigyna* R.M.Schust. ex J.J.Engel, Novon 17 (3): 313, 2007 (Engel 2007).

*** *Cephaloziella pulcherrima* R.M.Schust., Nova Hedwigia 22: 203, 1971 [1972] (Schuster 1971b).

** *Cephaloziella pulcherrima* subsp. *sphagnicola* R.M.Schust., Nova Hedwigia 22: 205, 1971 [1972] (Schuster 1971b).

** *Cephaloziella pungens* Steph. ex Fulford, Mem. New York Bot. Gard. 11 (4): 410, 1976 (Fulford 1976).

*** *Cephaloziella rubella* (Nees) Warnst., Krypt.-Fl. Brandenburg, Leber- & Torfmoose: 231, 1902 (Warnstorf 1902). Bas.: *Jungermannia rubella* Nees, Naturgesch. Eur. Leberm. 2: 236, 1836 (Nees 1836).

*** *Cephaloziella schelpei* S.W.Arnell, Bot. Not. 110 (1): 18, 1957 (Arnell 1957a).

*** *Cephaloziella spegazziniana* (C.Massal.) Douin, Mém. Soc. Bot. France 29: 69, 1920 (Douin 1920). Bas.: *Cephalozia spegazziniana* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 234, 1885 (Massalongo 1885).

*** *Cephaloziella spinicaulis* Douin, Mém. Soc. Bot. France 29: 62, 1920 (Douin 1920).

*** *Cephaloziella spinigera* (Lindb.) Jørg., Bergens Mus. Skr. (n.ser.) 16: 189, 1934 (Jørgensen 1934). Bas.: *Cephalozia spinigera* Lindb., Musci Scand.: 4, 1879 (Lindberg 1879).

*** *Cephaloziella stellulifera* (Taylor ex Carrington et Pearson) Croz., Rev. Bryol. 30 (2): 31, 1903 (Crozals 1903a). Bas.: *Jungermannia stellulifera* Taylor ex Carrington et Pearson, Hepat. Brit. Exsicc. Fasc. I: no. 32, 1878 (Carrington and Pearson 1878).

*** *Cephaloziella stephanii* Schiffn. ex Douin, Mém. Soc. Bot. France 29: 85, 1920 (Douin 1920).

** *Cephaloziella stolonifera* R.M.Schust., Phytologia 39 (6): 426, 1978 (Schuster 1978b).

** *Cephaloziella subtilis* (Lindenb. et Gottsche) Steph., Hedwigia 32 (5): 318, 1893 (Stephani 1893d). Bas.: *Jungermannia subtilis* Lindenb. et Gottsche, Syn. Hepat. 5: 685, 1847 (Gottsche et al. 1847).

*** *Cephaloziella sumatrana* Schiffn. ex Douin, Mém. Soc. Bot. France 29: 59, 1920 (Douin 1920).

*** *Cephaloziella tabularis* S.W.Arnell, Bot. Not. 105: 318, 1952 (Arnell 1952a).

*** *Cephaloziella transvaalensis* S.W.Arnell, Bot. Not. 110 (1): 19, 1957 (Arnell 1957a).

*** *Cephaloziella triplicata* S.W.Arnell, Bot. Not. 115: 203, 1962 (Arnell 1962a).

*** *Cephaloziella umtaliensis* S.W.Arnell, Bot. Not. 110 (1): 20, 1957 (Arnell 1957a).
*** *Cephaloziella uncinata* R.M.Schust., Meddel. Grønland 199 (1): 316, 1974 (Schuster and Damsholt 1974).
** *Cephaloziella uncinata* var. *brevigyna* R.M.Schust. et Damsh., Phytologia 63 (5): 327, 1987 (Schuster and Damsholt 1987).
** *Cephaloziella uncinata* var. *sphagnicola* R.M.Schust., Meddel. Grønland 199 (1): 323, 1974 (Schuster and Damsholt 1974).
*** *Cephaloziella vaginans* Steph., Wiss. Ergebn. Deut. Zentr.-Afr. Exped. (1907-08), Bot. 2: 119, 1911 (Stephani 1911a).
*** *Cephaloziella varians* (Gottsche) Steph., Wiss. Ergebn. Schwed. Südpolar-Exped. [1901–1903] 4 (1): 4, 1905 (Stephani 1905e). Bas.: *Jungermannia varians* Gottsche, Int. Polarforsch., Deutsch. Exped. 2: 452, 1890 (Gottsche 1890).
*** *Cephaloziella verrucosa* Steph., Hedwigia 32 (5): 318, 1893 (Stephani 1893d).
* *Cephaloziella villaumei* (Steph.) Váňa, Phytotaxa 112 (1): 3, 2013 (Váňa et al. 2013e). Bas.: *Cephalozia villaumei* Steph., Sp. Hepat. (Stephani) 6: 437, 1924 (Stephani 1924). [43]
** *Cephaloziella violacea* Schljakov, Novosti Sist. Nizš. Rast. 15: 242, 1978 (Shliakov 1978).
** *Cephaloziella welwitschii* (Steph.) Douin, Mém. Soc. Bot. France 29: 58, 1920 (Douin 1920). Bas.: *Cephalozia welwitschii* Steph., Bull. Herb. Boissier (sér. 2) 8 (6): 432 (308), 1908 (Stephani 1908g).

** **subg. *Dichiton* (Mont.) Müll.Frib.**, Lebermoose 2 (27): 787, 1916 (Müller 1916). Bas.: *Dichiton* Mont., Syll. Gen. Sp. Crypt.: 52, 1856 (Montagne 1856b).
*** *Cephaloziella calyculata* (Durieu et Mont.) Müll.Frib., Lebermoose 2 (27): 787, 1916 (Müller 1916). Bas.: *Jungermannia calyculata* Durieu et Mont., Ann. Sci. Nat. Bot. (sér. 3) 11: 34, 1849 (Montagne 1849).
*** *Cephaloziella integerrima* (Lindb.) Warnst., Krypt.-Fl. Brandenburg, Leber- & Torfmoose: 232, 1902 (Warnstorf 1902). Bas.: *Cephalozia integerrima* Lindb., Acta Soc. Sci. Fenn. 10: 502, 1875 (Lindberg 1875).

** **subg. *Evansia* (Douin et Schiffn.) Müll.Frib.**, Lebermoose 2 (27): 787, 1916 (Müller 1916). Bas.: *Evansia* Douin et Schiffn., Rev. Bryol. 40 (5): 66, 1913 (Douin 1913a).
*** *Cephaloziella antillana* (Besch. et Spruce) Fulford, Mem. New York Bot. Gard. 11 (4): 405, 1976 (Fulford 1976). Bas.: *Cephalozia antillana* Besch. et Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: clxxxiii, 1889 [1890] (Bescherelle and Spruce 1889).
*** *Cephaloziella dentata* (Raddi) Steph., Bull. Herb. Boissier 5 (2): 78, 1897 (Stephani 1897b). Bas.: *Jungermannia dentata* Raddi, Jungermanniogr. Etrusca: 21, 1818 (Raddi 1818a).
*** *Cephaloziella hirta* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 26: 280, 1963 (Schuster 1963b). Bas.: *Cephalozia hirta* Steph., Bull. Herb. Boissier (sér. 2) 8 (8): 561 (345), 1908 (Stephani 1908e).

43 *Cephaloziella villaumei* is possibly conspecific with *Cephaloziella anthelioides*.

** *Cephaloziella squarrosula* (Trevis.) Steph., Hedwigia 32 (5): 318, 1893 (Stephani 1893d). Bas.: *Cephalozia squarrosula* Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 417, 1877 (Trevisan 1877).
*** *Cephaloziella subspinosa* R.M.Schust., Nova Hedwigia 22: 210, 1971 [1972] (Schuster 1971b).

** **subg. *Prionolobus* (Spruce) Müll.Frib.**, Lebermoose 2 (16): 110, 1912 (Müller 1912). Bas.: *Cephalozia* subg. *Prionolobus* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 508, 1885 (Spruce 1885).
*** *Cephaloziella acanthophora* (S.Hatt.) Horik., Hikobia 1 (2): 79, 1951 (Horikawa 1951c). Bas.: *Prionolobus acanthophorus* S.Hatt., Bull. Tokyo Sci. Mus. 11: 29, 1944 (Hattori 1944d).
*** *Cephaloziella biokoensis* Váňa et Frank Müll., Trop. Bryol. 24: 1, 2003 (Váňa and Müller 2003).
*** *Cephaloziella granatensis* (J.B.Jack ex Steph.) Fulford, Mem. New York Bot. Gard. 11 (4): 411, 1976 (Fulford 1976). Bas.: *Cephalozia granatensis* J.B.Jack ex Steph., Bull. Herb. Boissier (sér. 2) 8 (7): 500 (330), 1908 (Stephani 1908f).
*** *Cephaloziella grisea* R.M.Schust., Phytologia 39 (6): 425, 1978 (Schuster 1978b).
* *Cephaloziella meghalayensis* Udar et Ad.Kumar, Lindbergia 8 (1): 34, 1982 (Udar and Kumar 1982d). [44]
*** *Cephaloziella microphylla* (Steph.) Douin, Mém. Soc. Bot. France 29: 59, 1920 (Douin 1920). Bas.: *Cephalozia microphylla* Steph., Bull. Herb. Boissier (sér. 2) 8 (7): 513 (343), 1908 (Stephani 1908f).
*** *Cephaloziella tenuissima* (Lehm.) Steph., Hedwigia 32 (5): 318, 1893 (Stephani 1893d). Bas.: *Jungermannia tenuissima* Lehm., Linnaea 4: 367, 1829 (Lehmann 1829).
*** *Cephaloziella turneri* (Hook.) Müll.Frib., Lebermoose 2 (17): 202, 1913 (Müller 1913a). Bas.: *Jungermannia turneri* Hook., Brit. Jungermann.: tab. 29, 1812 (Hooker 1812).

Incertae sedis
** *Cephaloziella dentifolia* Udar et Ad.Kumar, Lindbergia 8 (1): 30, 1982 (Udar and Kumar 1982d).
** *Cephaloziella filum* (Trevis.) Steph., Hedwigia 32 (5): 318, 1893 (Stephani 1893d). Bas.: *Cephalozia filum* Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 417, 1877 (Trevisan 1877).
* *Cephaloziella flexuosa* C.Gao et K.C.Chang, Bull. Bot. Res., Harbin 4 (3): 88, 1984 (Chang and Gao 1984). [45]
** *Cephaloziella intricata* Schiffn. ex Douin, Mém. Soc. Bot. France 29: 59, 1920 (Douin 1920).

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44 *Cephaloziella meghalayensis* is probably conspecific with *Cephaloziella acanthophora* or *Cephaloziella microphylla*.

45 *Cephaloziella flexuosa* may be a form of *Plicanthus birmensis* or a juvenile form of *Tetralophozia filiformis*.

** *Cephaloziella levieri* Schiffn. ex Douin, Mém. Soc. Bot. France 29: 80, 1920 (Douin 1920).
*** *Cephaloziella pellucida* R.M.Schust., Nova Hedwigia 63 (1/2): 57, 1996 (Schuster 1996d). [46]
* *Cephaloziella pygmaea* (Spruce) Váňa, Phytotaxa 183 (4): 290, 2014 (Váňa et al. 2014a). Bas.: *Cephalozia pygmaea* Spruce, Cephalozia: 69, 1882 (Spruce 1882). [47]
* *Cephaloziella secundifolia* Pearson, Ann. Bryol. 4: 106, 1931 (Pearson 1931b). [48]
** *Cephaloziella sinensis* Douin, Rev. Bryol. 41 (1): 8, 1914 (Douin 1914).

** ***Cephaloziopsis* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 85, 1893 (Schiffner 1893b). Bas.: *Jungermannia* sect. *Cephaloziopsis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 511, 1885 (Spruce 1885).
*** *Cephaloziopsis intertexta* (Gottsche) R.M.Schust., Nova Hedwigia 22: 183, 1971 [1972] (Schuster 1971b). Bas.: *Jungermannia intertexta* Gottsche, Syn. Hepat. 1: 107, 1844 (Gottsche et al. 1844).

** ***Chaetophyllopsis* R.M.Schust.**, J. Hattori Bot. Lab. 23: 69, 1960 [1961] (Schuster 1960b).
*** *Chaetophyllopsis whiteleggei* (Carrington et Pearson) R.M.Schust. ex Hamlin, Rec. Domin. Mus. 7: 255, 1972 (Hamlin 1972). Bas.: *Jungermannia whiteleggei* Carrington et Pearson, Proc. Linn. Soc. New South Wales (ser. 2) 2 (4): 1051, 1888 (Carrington and Pearson 1888a).

** ***Cylindrocolea* R.M.Schust.**, Bull. Natl. Sci. Mus. Tokyo (n.ser.) 12 (3): 666, 1969 (Schuster 1969a).

** **subg. *Cylindrocolea***
*** *Cylindrocolea kiaeri* (Austin) Váňa, Phytotaxa 112 (1): 2, 2013 (Váňa et al. 2013e). Bas.: *Jungermannia kiaeri* Austin, Bull. Torrey Bot. Club 6 (3): 18, 1875 (Austin 1875b).
*** *Cylindrocolea sanctae-helenae* M.Wigginton, Polish Bot. J. 58 (1): 107, 2013 (Wigginton 2013).

** **sect. *Cylindrocolea***
*** *Cylindrocolea andersonii* R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 33, 1980 (Schuster 1980c).
*** *Cylindrocolea brasiliensis* D.P.Costa, N.D.Santos et Váňa, Bryologist 111 (4): 667, 2008 (Costa et al. 2008).
*** *Cylindrocolea chevalieri* (Steph.) R.M.Schust., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 12 (3): 666, 1969 (Schuster 1969a). Bas.: *Alobiella chevalieri* Steph., Bull. Herb. Boissier (sér. 2) 8 (8): 567 (351), 1908 (Stephani 1908e).

46 *Cephaloziella pellucida* is probably not a *Cephaloziella*, but the type specimen has not been found.
47 *Cephaloziella pygmaea* is possibly conspecific with *Cephaloziella granatensis* (Váňa et al. 2014a).
48 *Cephaloziella secundifolia* could not be studied by Fulford (1976) and she did not know what it is.

*** *Cylindrocolea gittinsii* (E.W.Jones) R.M.Schust., Nova Hedwigia 22: 172, 1971 [1972] (Schuster 1971b). Bas.: *Cephaloziella gittinsii* E.W.Jones, Trans. Brit. Bryol. Soc. 3 (3): 437, 1958 (Jones 1958).

*** *Cylindrocolea madagascariensis* (Steph.) R.M.Schust., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 12 (3): 666, 1969 (Schuster 1969a). Bas.: *Lophozia madagascariensis* Steph., Sp. Hepat. (Stephani) 6: 112, 1917 (Stephani 1917a).

*** *Cylindrocolea nigerica* (E.W.Jones) R.M.Schust., Nova Hedwigia 22: 172, 1971 [1972] (Schuster 1971b). Bas.: *Cephaloziella nigerica* E.W.Jones, Trans. Brit. Bryol. Soc. 3 (3): 435, 1958 (Jones 1958).

*** *Cylindrocolea novae-caledoniae* (Grolle) R.M.Schust., Nova Hedwigia 22: 161, 1971 [1972] (Schuster 1971b). Bas.: *Cephaloziella novae-caledoniae* Grolle, Rev. Bryol. Lichénol. 29 (3/4): 208, 1960 [1961] (Grolle 1960a).

*** *Cylindrocolea planifolia* (Steph.) R.M.Schust., Nova Hedwigia 22: 164, 1971 [1972] (Schuster 1971b). Bas.: *Cephaloziella planifolia* Steph., Hedwigia 32 (5): 317, 1893 (Stephani 1893d).

*** *Cylindrocolea sprucei* R.M.Schust., Nova Hedwigia 22: 163, 1971 [1972] (Schuster 1971b).

*** *Cylindrocolea ugandica* (E.W.Jones) R.M.Schust., Nova Hedwigia 22: 171, 1971 [1972] (Schuster 1971b). Bas.: *Cephaloziella ugandica* E.W.Jones, Trans. Brit. Bryol. Soc. 3 (3): 433, 1958 (Jones 1958).

** **sect. *Platycaulis* R.M.Schust.**, Nova Hedwigia 22: 173, 1971 (Schuster 1971b).

*** *Cylindrocolea recurvifolia* (Steph.) Inoue, J. Jap. Bot. 47 (11): 348, 1972 (Inoue 1972a). Bas.: *Cephalozia recurvifolia* Steph., Bull. Herb. Boissier (sér. 2) 8 (7): 497 (327), 1908 (Stephani 1908f).

*** *Cylindrocolea tagawae* (N.Kitag.) R.M.Schust., Nova Hedwigia 22: 174, 1971 [1972] (Schuster 1971b). Bas.: *Cephaloziella tagawae* N.Kitag., J. Hattori Bot. Lab. 32: 303, 1969 (Kitagawa 1969c).

** **subg. *Cylindroscyphus* (Douin) R.M.Schust.**, Hepat. Anthocerotae N. Amer. 4: 20, 1980 (Schuster 1980c). Bas.: *Cephaloziella* subg. *Cylindroscyphus* Douin, Mém. Soc. Bot. France 29: 56, 1920 (Douin 1920).

*** *Cylindrocolea abyssinica* (Gola) Váňa, Phytotaxa 112 (1): 2, 2013 (Váňa et al. 2013e). Bas.: *Cephaloziella abyssinica* Gola, Ann. Bot. (Rome) 13 (1): 68, 1914 (Gola 1914a).

** *Cylindrocolea obtusifolia* Fulford, Mem. New York Bot. Gard. 11 (4): 401, 1976 (Fulford 1976).

** *Cylindrocolea reticulata* Udar et Ad.Kumar, Lindbergia 8 (3): 181, 1982 [1983] (Udar and Kumar 1982c).

*** *Cylindrocolea rhizantha* (Mont.) R.M.Schust., Nova Hedwigia 22: 175, 1971 [1972] (Schuster 1971b). Bas.: *Jungermannia rhizantha* Mont., Hist. Phys. Cuba, Bot., Pl. Cell.: 454, 1842 (Montagne 1842a).

*** ***Gottschelia* Grolle**, J. Hattori Bot. Lab. 31: 13, 1968 (Grolle 1968c).
*** *Gottschelia maxima* (Steph.) Grolle, J. Bryol. 25 (1): 6, 2003 (Grolle et al. 2003). Bas.: *Tylimanthus maximus* Steph., Sp. Hepat. (Stephani) 6: 249, 1922 (Stephani 1922).
*** *Gottschelia schizopleura* (Spruce) Grolle, J. Hattori Bot. Lab. 31: 16, 1968 (Grolle 1968c). Bas.: *Jungermannia schizopleura* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 517, 1885 (Spruce 1885).

** ***Gymnocoleopsis* (R.M.Schust.) R.M.Schust.**, Phytologia 39 (4): 243, 1978 (Schuster 1978a). Bas.: *Gymnocolea* subg. *Gymnocoleopsis* R.M.Schust., Bryologist 70 (1): 111, 1967 (Schuster 1967b).
*** *Gymnocoleopsis capensis* (S.W.Arnell) R.M.Schust., J. Hattori Bot. Lab. 78: 123, 1995 (Schuster 1995c). Bas.: *Lophozia capensis* S.W.Arnell, Svensk Bot. Tidskr. 47 (1): 112, 1953 (Arnell 1953a).
*** *Gymnocoleopsis cylindriformis* (Mitt.) R.M.Schust., J. Hattori Bot. Lab. 78: 126, 1995 (Schuster 1995c). Bas.: *Jungermannia cylindriformis* Mitt., J. Linn. Soc., Bot. 15 (84): 196, 1876 (Mitten 1876b).

*** ***Herzogobryum* Grolle**, Rev. Bryol. Lichénol. 32 (3/4): 160, 1963 [1964] (Grolle 1963d). *Nom. nov. pro Chondrophyllum* Herzog, Rev. Bryol. Lichénol. 21 (1/2): 46, 1952 (Herzog 1952f).
*** *Herzogobryum atrocapillum* (Hook.f. et Taylor) Grolle, Österr. Bot. Z. 113 (2): 228, 1966 (Grolle 1966j). Bas.: *Gymnomitrion atrocapillum* Hook.f. et Taylor, London J. Bot. 5: 258, 1846 (Taylor 1846a).
*** *Herzogobryum filiforme* R.M.Schust., Phytologia 45 (5): 422, 1980 (Schuster 1980b).
*** *Herzogobryum molle* Grolle, Österr. Bot. Z. 113 (2): 226, 1966 (Grolle 1966j).
*** *Herzogobryum vermiculare* (Schiffn.) Grolle, J. Hattori Bot. Lab. 28: 103, 1965 (Grolle 1965e). Bas.: *Gymnomitrion vermiculare* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 2, 1890 (Schiffner 1890).

** ***Kymatocalyx* Herzog**, Memoranda Soc. Fauna Fl. Fennica 25: 56, 1950 (Herzog 1950c).
*** *Kymatocalyx africanus* Váňa et M.Wigginton, Haussknechtia, Beih. 9: 158, 1999 (Gradstein and Váňa 1999).
*** *Kymatocalyx dominicensis* (Spruce) Váňa, Österr. Bot. Z. 118 (5): 575, 1970 (Váňa 1970b). Bas.: *Jungermannia dominicensis* Spruce, J. Linn. Soc., Bot. 30 (210): 363, 1895 (Gepp 1895b).
*** *Kymatocalyx madagascariensis* (Steph.) Gradst. et Váňa, Haussknechtia, Beih. 9: 164, 1999 (Gradstein and Váňa 1999). Bas.: *Acrobolbus madagascariensis* Steph., Bull. Herb. Boissier (sér. 2) 2 (5): 460 (179), 1902 (Stephani 1902f).
*** *Kymatocalyx rhizomaticus* (Herzog) Gradst. et Váňa, Haussknechtia, Beih. 9: 166, 1999 (Gradstein and Váňa 1999). Bas.: *Stenorrhipis rhizomatica* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 290, 1950 (Herzog 1950a).

*** ***Lophonardia* R.M.Schust.**, Phytologia 39 (4): 244, 1978 (Schuster 1978a).
*** *Lophonardia jamesonii* (Mont.) L.Söderstr. et Váňa, Phytotaxa 81 (1): 19, 2013 (Söderström et al. 2013a). Bas.: *Jungermannia jamesonii* Mont., Syll. Gen. Sp. Crypt.: 60, 1856 (Montagne 1856b).
*** *Lophonardia laxifolia* (Mont.) L.Söderstr. et Váňa, Phytotaxa 81 (1): 20, 2013 (Söderström et al. 2013a). Bas.: *Sarcocyphos laxifolius* Mont., Ann. Sci. Nat. Bot. (sér. 3) 4: 346, 1845 (Montagne 1845b).
*** *Lophonardia tristaniana* (S.W.Arnell) L.Söderstr. et Váňa, Phytotaxa 81 (1): 20, 2013 (Söderström et al. 2013a). Bas.: *Jungermannia tristaniana* S.W.Arnell, Results Norweg. Sci. Exped. Tristan da Cunha 42: 12, 1958 (Arnell 1958b).

*** ***Nothogymnomitrion* R.M.Schust.**, J. Hattori Bot. Lab. 80: 43, 1996 (Schuster 1996a).
*** *Nothogymnomitrion erosum* (Carrington et Pearson) R.M.Schust., J. Hattori Bot. Lab. 80: 44, 1996 (Schuster 1996a). Bas.: *Cesius erosus* Carrington et Pearson, Pap. & Proc. Roy. Soc. Tasmania 1887: 8, 1888 (Carrington and Pearson 1888b).

*** ***Obtusifolium* S.W.Arnell**, Ill. Moss Fl. Fennosc. Hep.: 309, 1956 (Arnell 1956b).
*** *Obtusifolium obtusum* (Lindb.) S.W.Arnell, Ill. Moss Fl. Fennosc. Hep.: 133, 1956 (Arnell 1956b). Bas.: *Jungermannia obtusa* Lindb., Musci Scand.: 7, 1879 (Lindberg 1879).

*** ***Oleolophozia* L.Söderstr., De Roo et Hedd.**, Phytotaxa 3: 50, 2010 (Söderström et al. 2010b).
*** *Oleolophozia perssonii* (H.Buch et S.W.Arnell) L.Söderstr., De Roo et Hedd., Phytotaxa 3: 51, 2010 (Söderström et al. 2010b). Bas.: *Lophozia perssonii* H.Buch et S.W.Arnell, Bot. Not. 97: 382, 1944 (Buch 1944).

** ***Phycolepidozia* R.M.Schust.**, Bull. Torrey Bot. Club 93 (6): 438, 1966 [1967] (Schuster 1966f).

** **subg. *Metaphycolepidozia* Gradst., J.-P.Frahm et U.Schwarz**, Taxon 63 (3): 506, 2014 (Gradstein et al. 2014a).
** *Phycolepidozia indica* Gradst., J.-P.Frahm et U.Schwarz, Taxon 63 (3): 499, 2014 (Gradstein et al. 2014a).

** **subg. *Phycolepidozia***
*** *Phycolepidozia exigua* R.M.Schust., Bull. Torrey Bot. Club 93 (6): 440, 1966 [1967] (Schuster 1966f).

** ***Protolophozia* (R.M.Schust.) Schljakov**, Novosti Sist. Nizš. Rast. 16: 204, 1979 (Shliakov 1979). Bas.: *Lophozia* subg. *Protolophozia* R.M.Schust., Nova Hedwigia 15: 472, 1968 (Schuster 1968b).

** *Protolophozia androgyna* R.M.Schust. ex Váňa et L.Söderstr., Phytotaxa 76 (3): 51, 2013 (Váňa et al. 2013l). Based on: *Lophozia androgyna* R.M.Schust., Beih. Nova Hedwigia 119: 266, 2002 (Schuster 2002b), *nom. inval.*

** *Protolophozia autoica* (R.M.Schust.) Váňa et L.Söderstr., Phytotaxa 76 (3): 51, 2013 (Váňa et al. 2013l). Bas.: *Lophozia autoica* R.M.Schust., Nova Hedwigia 15: 479, 1968 (Schuster 1968b).

** *Protolophozia crispata* (R.M.Schust.) Váňa et L.Söderstr., Phytotaxa 76 (3): 51, 2013 (Váňa et al. 2013l). Bas.: *Lophozia crispata* R.M.Schust., Nova Hedwigia 15: 474, 1968 (Schuster 1968b).

*** *Protolophozia druceae* (Grolle et E.A.Hodgs.) Váňa et L.Söderstr., Phytotaxa 76 (3): 51, 2013 (Váňa et al. 2013l). Bas.: *Lophozia druceae* Grolle et E.A.Hodgs., J. Roy. Soc. New Zealand 2 (1): 112, 1972 (Hodgson 1972).

*** *Protolophozia elongata* (Steph.) Schljakov, Novosti Sist. Nizš. Rast. 16: 204, 1979 (Shliakov 1979). Bas.: *Lophozia elongata* Steph., Bull. Herb. Boissier (sér. 2) 2 (1): 41 (141), 1902 (Stephani 1902c).

*** *Protolophozia herzogiana* (E.A.Hodgs. et Grolle) Váňa et L.Söderstr., Phytotaxa 76 (3): 51, 2013 (Váňa et al. 2013l). Bas.: *Lophozia herzogiana* E.A.Hodgs. et Grolle, Rev. Bryol. Lichénol. 31 (3/4): 152, 1962 [1963] (Grolle 1962c).

*** *Protolophozia lancistipa* (Grolle) Váňa et L.Söderstr., Phytotaxa 76 (3): 51, 2013 (Váňa et al. 2013l). Bas.: *Andrewsianthus lancistipus* Grolle, Marion Prince Edw. Is: 230, 1971 (Grolle 1971d).

*** *Protolophozia leucorhiza* (Mitt.) Váňa et L.Söderstr., Phytotaxa 76 (3): 51, 2013 (Váňa et al. 2013l). Bas.: *Jungermannia leucorhiza* Mitt., J. Linn. Soc., Bot. 15 (82): 68, 1876 (Mitten 1876a).

*** *Protolophozia longiflora* (Herzog) L.Söderstr. et Váňa, Phytotaxa 76 (3): 51, 2013 (Váňa et al. 2013l). Bas.: *Orthocaulis longiflorus* Herzog, Rev. Bryol. Lichénol. 23 (1/2): 32, 1954 (Herzog 1954).

** *Protolophozia monoica* (E.A.Hodgs.) Váňa et L.Söderstr., Phytotaxa 76 (3): 52, 2013 (Váňa et al. 2013l). Bas.: *Metahygrobiella monoica* E.A.Hodgs., Trans. Roy. Soc. New Zealand, Bot. 3 (4): 76, 1965 (Hodgson 1965).

*** *Protolophozia multicuspidata* (Hook.f. et Taylor) Váňa et L.Söderstr., Phytotaxa 76 (3): 52, 2013 (Váňa et al. 2013l). Bas.: *Jungermannia multicuspidata* Hook.f. et Taylor, London J. Bot. 3: 375, 1844 (Hooker and Taylor 1844a).

** *Protolophozia nivicola* (R.M.Schust.) Váňa et L.Söderstr., Phytotaxa 76 (3): 52, 2013 (Váňa et al. 2013l). Bas.: *Lophozia nivicola* R.M.Schust., Nova Hedwigia 15: 477, 1968 (Schuster 1968b).

*** *Protolophozia perssoniana* (H.A.Mill.) Váňa et L.Söderstr., Phytotaxa 76 (3): 52, 2013 (Váňa et al. 2013l). Bas.: *Lophozia perssoniana* H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 508, 1963 (Miller 1963).

** *Protolophozia subalpina* (R.M.Schust.) Váňa et L.Söderstr., Phytotaxa 76 (3): 52, 2013 (Váňa et al. 2013l). Bas.: *Lophozia autoica* var. *subalpina* R.M.Schust., Nova Hedwigia 15: 482, 1968 (Schuster 1968b).

*** *Protolophozia tasmanica* (R.M.Schust.) Váňa et L.Söderstr., Phytotaxa 76 (3): 52, 2013 (Váňa et al. 2013l). Bas.: *Lophozia tasmanica* R.M.Schust., Nova Hedwigia 15: 484, 1968 (Schuster 1968b).

*** *Protolophozia verruculosa* (R.M.Schust.) Váňa et L.Söderstr., Phytotaxa 76 (3): 52, 2013 (Váňa et al. 2013l). Bas.: *Lophozia verruculosa* R.M.Schust., Phytologia 39 (4): 242, 1978 (Schuster 1978a).

*** Lophoziaceae Cavers

by L. Söderström and J. Váňa

Lophoziaceae was broadly defined by de Roo et al. (2007) excluding Anastrophyllaceae and Jamesonielloideae and also moving several traditionally included genera to other families. Vilnet et al. (2010) further refined the family. Nomenclatural and taxonomic notes can also be found in Vilnet et al. (2007b, 2008), Söderström et al. (2013c) and Váňa et al. (2013m). The placement of *Gerhildiella* and *Pseudocephaloziella* in the family is provisional.

*** ***Andrewsianthus* R.M.Schust.**, Rev. Bryol. Lichénol. 30 (1/2): 66, 1961 (Schuster 1961a).

** **subg. *Andrewsianthus***

*** *Andrewsianthus aberrans* (Nees et Mont.) Grolle, Trans. Brit. Bryol. Soc. 4 (3): 440, 1963 (Grolle 1963a). Bas.: *Jungermannia aberrans* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 250, 1843 (Montagne 1843).

*** *Andrewsianthus bidens* (Mitt. ex Steph.) R.M.Schust., Nova Hedwigia 15: 492, 1968 (Schuster 1968b). Bas.: *Lophozia bidens* Mitt. ex Steph., Bull. Herb. Boissier (sér. 2) 2 (1): 41 (141), 1902 (Stephani 1902c).

*** *Andrewsianthus bilobus* (Mitt.) Grolle, Trans. Brit. Bryol. Soc. 4 (3): 437, 1963 (Grolle 1963a). Bas.: *Gymnanthe biloba* Mitt., J. Proc. Linn. Soc., Bot. 7 (27): 166, 1863 (Mitten 1863).

*** *Andrewsianthus carinatus* Grolle, Marion Prince Edw. Is: 229, 1971 (Grolle 1971d).

*** *Andrewsianthus cavifolius* Grolle et Váňa, J. Hattori Bot. Lab. 38: 640, 1974 (Váňa 1974b).

*** *Andrewsianthus chimbuensis* R.M.Schust., Nova Hedwigia 15: 491, 1968 (Schuster 1968b).

*** *Andrewsianthus kinabaluensis* N.Kitag., J. Hattori Bot. Lab. 33: 205, 1970 (Kitagawa 1970).

*** *Andrewsianthus koponenii* Váňa et Piippo, Ann. Bot. Fenn. 26 (3): 284, 1989 (Váňa and Piippo 1989).

*** *Andrewsianthus mizutanii* N.Kitag., J. Hattori Bot. Lab. 32: 307, 1969 (Kitagawa 1969a).

*** *Andrewsianthus papillosus* N.Kitag., J. Hattori Bot. Lab. 33: 207, 1970 (Kitagawa 1970).
*** *Andrewsianthus perigonialis* (Hook.f. et Taylor) R.M.Schust., Beih. Nova Hedwigia 119: 336, 2002 (Schuster 2002b). Bas.: *Jungermannia perigonialis* Hook.f. et Taylor, London J. Bot. 3: 368, 1844 (Hooker and Taylor 1844a).
*** *Andrewsianthus puniceus* (Nees) R.M.Schust. ex Grolle, Trans. Brit. Bryol. Soc. 4 (3): 439, 1963 (Grolle 1963a). Bas.: *Jungermannia punicea* Nees, Enum. Pl. Crypt. Javae: 32, 1830 (Nees 1830).
*** *Andrewsianthus recurvifolius* (Nees) R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 710, 1969 (Schuster 1969b). Bas.: *Jungermannia recurvifolia* Nees, Enum. Pl. Crypt. Javae: 32, 1830 (Nees 1830).
*** *Andrewsianthus sundaicus* (Schiffn.) R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 710, 1969 (Schuster 1969b). Bas.: *Anastrophyllum sundaicum* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 202, 1898 (Schiffner 1898a).
*** *Andrewsianthus zantenii* Váňa, J. Hattori Bot. Lab. 38: 645, 1974 (Váňa 1974b).

** **subg. *Cephalolobus* (R.M.Schust.) R.M.Schust.**, Beih. Nova Hedwigia 119: 326, 2002 (Schuster 2002b). Bas.: *Cephalolobus* R.M.Schust., Rev. Bryol. Lichénol. 34 (1/2): 244, 1966 (Schuster 1966b).
*** *Andrewsianthus hodgsoniae* (R.M.Schust.) R.M.Schust. ex J.J.Engel, Novon 17 (3): 311, 2007 (Engel 2007). Bas.: *Cephalolobus hodgsoniae* R.M.Schust., Rev. Bryol. Lichénol. 34 (1/2): 254, 1966 (Schuster 1966b).
*** *Andrewsianthus marionensis* (S.W.Arnell) Grolle, Marion Prince Edw. Is: 232, 1971 (Grolle 1971d). Bas.: *Lophozia marionensis* S.W.Arnell, Svensk Bot. Tidskr. 47 (3): 421, 1953 (Arnell 1953c).
*** *Andrewsianthus scabrellus* (C.Massal.) R.M.Schust. ex J.J.Engel, Novon 17 (3): 311, 2007 (Engel 2007). Bas.: *Cephalozia scabrella* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 233, 1885 (Massalongo 1885).
** *Andrewsianthus sphenoloboides* (R.M.Schust.) R.M.Schust. ex J.J.Engel, Novon 17 (3): 311, 2007 (Engel 2007). Bas.: *Cephalolobus sphenoloboides* R.M.Schust., Rev. Bryol. Lichénol. 34 (1/2): 251, 1966 (Schuster 1966b).

** ***Gerhildiella* Grolle**, Rev. Bryol. Lichénol. 34 (1/2): 187, 1966 (Grolle 1966a).
*** *Gerhildiella rossneriana* Grolle, Rev. Bryol. Lichénol. 34 (1/2): 187, 1966 (Grolle 1966a).

*** ***Heterogemma* (Jørg.) Konstant. et Vilnet**, Arctoa 18: 67, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Lophozia* sect. *Heterogemma* Jørg., Bergens Mus. Skr. (n.ser.) 16: 146, 1934 (Jørgensen 1934).
*** *Heterogemma capitata* (Hook.) Konstant. et Vilnet, Arctoa 18: 67, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Jungermannia capitata* Hook., Brit. Jungermann.: tab. 80, 1816 (Hooker 1816a).

*** *Heterogemma laxa* (Lindb.) Konstant. et Vilnet, Arctoa 18: 67, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Jungermannia laxa* Lindb., Acta Soc. Sci. Fenn. 10: 529, 1875 (Lindberg 1875).

*** *Heterogemma patagonica* (Herzog et Grolle) L.Söderstr. et Váňa, Phytotaxa 97 (2): 29, 2013 (Söderström et al. 2013c). Bas.: *Lophozia patagonica* Herzog et Grolle, Rev. Bryol. Lichénol. 28 (3/4): 343, 1959 [1960] (Grolle 1959a).

*** ***Lophozia* (Dumort.) Dumort.**, Recueil Observ. Jungerm.: 17, 1835 (Dumortier 1835). Bas.: *Jungermannia* sect. *Lophozia* Dumort., Syll. Jungerm. Europ.: 53, 1831 (Dumortier 1831). [49]

*** *Lophozia ascendens* (Warnst.) R.M.Schust., Bryologist 55 (3): 180, 1952 (Schuster 1952). Bas.: *Sphenolobus ascendens* Warnst., Hedwigia 57 (1/2): 63, 1916 (Warnstorf 1916).

* *Lophozia austrosibirica* Bakalin, Ann. Bot. Fenn. 40 (1): 49, 2003 (Bakalin 2003).

** *Lophozia ciliata* Damsh., L.Söderstr. et H.Weibull, Lindbergia 25 (1): 3, 2000 (Söderström et al. 2000).

*** *Lophozia guttulata* (Lindb. et Arnell) A.Evans, Proc. Wash. Acad. Sci. 2: 302, 1900 (Evans 1900c). Bas.: *Jungermannia guttulata* Lindb. et Arnell, Kongl. Svenska Vetensk.-Akad. Handl. (n.ser.) 23 (5): 51, 1889 (Lindberg and Arnell 1889).

* *Lophozia jamaicensis* (Nees) Steph., Bull. Herb. Boissier (sér. 2) 1 (2): 128 (155), 1901 (Stephani 1901h). Bas.: *Jungermannia jamaicensis* Nees, Syn. Hepat. 1: 105, 1844 (Gottsche et al. 1844). [50]

** *Lophozia lacerata* N.Kitag., Hikobia 3 (3): 172, 1963 (Kitagawa 1963a).

** *Lophozia lantratoviae* Bakalin, Ann. Bot. Fenn. 40 (1): 47, 2003 (Bakalin 2003).

** *Lophozia murmanica* Kaal., Rep. Second Norweg. Arctic Exped. 11: 34, 1906 (Bryhn 1906).

** *Lophozia pacifica* Bakalin, Bryologist 114 (2): 302, 2011 (Bakalin 2011).

* *Lophozia pallida* (Steph.) Grolle, J. Jap. Bot. 39 (6): 174, 1964 (Grolle 1964a). Bas.: *Anastrophyllum pallidum* Steph., Bull. Herb. Boissier (sér. 2) 1 (10): 1131 (114), 1901 (Stephani 1901c). [51]

** *Lophozia savicziae* Schljakov, Novosti Sist. Nizš. Rast. 10: 299, 1973 (Shliakov 1973).

* *Lophozia schusterana* Schljakov, Novosti Sist. Nizš. Rast. 12: 320, 1975 (Shliakov 1975).

*** *Lophozia silvicola* H.Buch, Beret. 18 Skand. Naturforskarmøde: 228, 1929 (Buch 1929).

*** *Lophozia silvicoloides* N.Kitag., J. Hattori Bot. Lab. 28: 276, 1965 (Kitagawa 1965).

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49 *Lophozia* has many nomenclatural and taxonomic problems. This treatment follows Söderström et al. (2013c).

50 *Lophozia jamaicensis* is probably not a *Lophozia*, but the type specimen is missing in Nees's herbarium (Söderström et al. 2010a).

51 *Lophozia pallida* may be conspecific with *Lophozia guttulata* (Bakalin 2003).

* *Lophozia subapiculata* R.M.Schust. et Damsh., Meddel. Grønland 199 (1): 104, 1974 (Schuster and Damsholt 1974). [52]

** *Lophozia udarii* S.Srivast., S.C.Srivast. et K.K.Rawat, Nelumbo 55: 130, 2013 (Srivastava et al. 2013). [53]

*** *Lophozia ventricosa* (Dicks.) Dumort., Recueil Observ. Jungerm.: 17, 1835 (Dumortier 1835). Bas.: *Jungermannia ventricosa* Dicks., Fasc. Pl. Crypt. Brit. 2: 14, 1790 (Dickson 1790). [54]

* *Lophozia wenzelii* (Nees) Steph., Bull. Herb. Boissier (sér. 2) 2 (1): 35 (135), 1902 (Stephani 1902c). Bas.: *Jungermannia wenzelii* Nees, Naturgesch. Eur. Leberm. 2: 58, 1836 (Nees 1836). [55]

Excluded from the genus

* *Lophozia serpens* (Dumort.) Dumort., Recueil Observ. Jungerm.: 17, 1835 (Dumortier 1835). Bas.: *Jungermannia serpens* Dumort., Syll. Jungerm. Europ.: 56, 1831 (Dumortier 1831). [56]

** ***Lophoziopsis* Konstant. et Vilnet**, Arctoa 18: 66, 2009 [2010] (Konstantinova and Vilnet 2009).

*** *Lophoziopsis excisa* (Dicks.) Konstant. et Vilnet, Arctoa 18: 66, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Jungermannia excisa* Dicks., Fasc. Pl. Crypt. Brit. 3: 11, 1793 (Dickson 1793).

** *Lophoziopsis excisa* var. *elegans* (R.M.Schust.) Konstant. et Vilnet, Arctoa 18: 66, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Lophozia excisa* var. *elegans* R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 522, 1969 (Schuster 1969b).

** *Lophoziopsis excisa* var. *infuscata* (R.M.Schust. et Damsh.) Konstant. et Vilnet, Arctoa 18: 66, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Lophozia excisa* var. *infuscata* R.M.Schust. et Damsh., Meddel. Grønland 199 (1): 94, 1974 (Schuster and Damsholt 1974).

** *Lophoziopsis excisa* var. *succulenta* (R.M.Schust. et Damsh.) Konstant. et Vilnet, Arctoa 18: 66, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Lophozia excisa* var.

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52 *Lophozia subapiculata* may be a form of *Lophozia guttulata*, but Bakalin (2005) treated it as conspecific with *Lophozia ventricosa*.

53 *Lophozia udarii* has recently been described using the generic concept of *Lophozia* in the wide sense (as e.g. Schuster 1969b). We do not know where to refer the species. It is possibly a *Schistochilopsis* species close to *Schistochilopsis incisa*.

54 *Lophozia ventricosa* is very variable and many segregates at various subspecific levels have been described. The species complex also includes at least *Lophozia austrosibirica*, *Lophozia schusteriana* and *Lophozia wenzelii*.

55 *Lophozia wenzelii* is closely related to *Lophozia ventricosa* according to De Roo et al. (2007) and Vilnet et al. (2010) based on molecular and morphological evidence. It is variable and many varieties are described. The variability and relationships to related species needs further study.

56 *Lophozia serpens* is probably conspecific with *Schistochilopsis incisa*.

succulenta R.M.Schust. et Damsh., Meddel. Grønland 199 (1): 96, 1974 (Schuster and Damsholt 1974).

*** *Lophoziopsis longidens* (Lindb.) Konstant. et Vilnet, Arctoa 18: 66, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Jungermannia longidens* Lindb., Helsingf. Dagbl. 1876 (323, 26 Nov.): 2, 1876 (Lindberg 1876a).

** *Lophoziopsis longidens* subsp. *arctica* (R.M.Schust.) Váňa et L.Söderstr., Phytotaxa 97 (2): 28, 2013 (Söderström et al. 2013c). Bas.: *Lophozia longidens* subsp. *arctica* R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 539, 1969 (Schuster 1969b). [57]

*** *Lophoziopsis pellucida* (R.M.Schust.) Konstant. et Vilnet, Arctoa 18: 67, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Lophozia pellucida* R.M.Schust., Canad. J. Bot. 39 (4): 978, 1961 (Schuster 1961b).

** *Lophoziopsis pellucida* var. *minor* (R.M.Schust.) L.Söderstr. et Váňa, Phytotaxa 97 (2): 28, 2013 (Söderström et al. 2013c). Bas.: *Lophozia pellucida* var. *minor* R.M.Schust., Canad. J. Bot. 39 (4): 984, 1961 (Schuster 1961b).

*** *Lophoziopsis polaris* (R.M.Schust.) Konstant. et Vilnet, Arctoa 18: 67, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Lophozia alpestris* subsp. *polaris* R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 614, 1969 (Schuster 1969b).

** *Lophoziopsis polaris* var. *sphagnorum* (R.M.Schust.) Konstant. et Vilnet, Arctoa 18: 67, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Lophozia alpestris* f. *sphagnorum* R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 619, 1969 (Schuster 1969b).

* *Lophoziopsis propagulifera* (Gottsche) Konstant. et Vilnet, Arctoa 18: 67, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Jungermannia propagulifera* Gottsche, Int. Polarforsch., Deutsch. Exped. 2: 451, 1890 (Gottsche 1890). [58]

** *Lophoziopsis rubrigemma* (R.M.Schust.) Konstant. et Vilnet, Arctoa 18: 67, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Lophozia rubrigemma* R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 621, 1969 (Schuster 1969b).

** ***Pseudocephaloziella* R.M.Schust.**, Phytologia 39 (4): 243, 1978 (Schuster 1978a).

*** *Pseudocephaloziella epiphytica* R.M.Schust., Phytologia 39 (4): 243, 1978 (Schuster 1978a).

*** ***Trilophozia* (R.M.Schust.) Bakalin**, Monogr. Lophozia: 34, 2005 (Bakalin 2005). Bas.: *Tritomaria* subg. *Trilophozia* R.M.Schust., Amer. Midl. Naturalist 49 (2): 382, 1953 (Schuster 1953).

*** *Trilophozia quinquedentata* (Huds.) Bakalin, Monogr. Lophozia: 34, 2005 (Bakalin 2005). Bas.: *Jungermannia quinquedentata* Huds., Fl. Angl. (Hudson): 433, 1762 (Hudson 1762).

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57 *Lophoziopsis longidens* var. *arctica* was treated as a form of *Lophoziopsis pellucida* by Bakalin (2005).

58 *Lophoziopsis propagulifera* belongs to the *Lophoziopsis excisa* species complex. It is probably only a modification (cf. discussion by Váňa and Engel 2013).

** *Trilophozia quinquedentata* var. *asymmetrica* (Horik.) L.Söderstr. et Váňa, Phytotaxa 97 (2): 32, 2013 (Söderström et al. 2013c). Bas.: *Lophozia asymmetrica* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 153, 1934 (Horikawa 1934).

*** ***Tritomaria* Schiffn. ex Loeske**, Hedwigia 49 (1/2): 13, 1909 (Loeske 1909). Based on: *Tritomaria* Schiffn., Ber. Naturwiss.-Med. Vereins Innsbruck 31 [Beilage]: 12, 1908 (Schiffner 1908a).

*** *Tritomaria exsecta* (Schmidel) Schiffn. ex Loeske, Hedwigia 49 (1/2): 13, 1909 (Loeske 1909). Bas.: *Jungermannia exsecta* Schmidel, Syst. Samml. Crypt. Gew. 2: 5, 1797 (Schrader 1797), *nom. conserv*.

** *Tritomaria exsecta* subsp. *novaezelandiae* J.J.Engel, Bryologist 109 (1): 61, 2006 (Engel 2006b).

*** *Tritomaria exsectiformis* (Breidl.) Schiffn. ex Loeske, Hedwigia 49 (1/2): 13, 1909 (Loeske 1909). Bas.: *Jungermannia exsectiformis* Breidl., Mitt. Naturwiss. Vereins Steiermark 30: 321, 1894 (Breidler 1894).

** *Tritomaria exsectiformis* subsp. *arctica* R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 661, 1969 (Schuster 1969b).

** *Tritomaria exsectiformis* subsp. *camerunensis* S.W.Arnell ex Váňa, Phytotaxa 167 (2): 216, 2014 (Váňa et al. 2014b). Based on: *Tritomaria camerunensis* S.W.Arnell, Svensk Bot. Tidskr. 52 (1): 64, 1958 (Arnell 1958a), *nom. inval*.

*** *Tritomaria ferruginea* (Grolle) Váňa, Phytotaxa 81 (1): 24, 2013 (Váňa et al. 2013m). Bas.: *Andrewsianthus ferrugineus* Grolle, Khumbu Himal 1 (4): 275, 1966 (Grolle 1966k).

* *Tritomaria koreana* Bakalin, S.S.Choi et B.Y.Sun, Arctoa 18: 163, 2009 [2010] (Bakalin et al. 2009a).

* *Tritomaria mexicana* Bakalin, Arctoa 17: 162, 2008 [2009] (Bakalin 2008b).

*** *Tritomaria scitula* (Taylor) Jørg., Bergens Mus. Aarbok 1919/20 (7): 3, 1922 (Jørgensen 1922). Bas.: *Jungermannia scitula* Taylor, London J. Bot. 5: 274, 1846 (Taylor 1846a).

*** Scapaniaceae Mig.

by J. Váňa

Scapaniaceae, in its classical concept, was recognized as monophyletic and nested within Lophoziaceae s. lat. (cf. Davis 2004, Schill et al. 2004, Yatsentyuk et al. 2004, He-Nygrén et al. 2006). More recent molecular studies classified Scapaniaceae as a sister clade to Lophoziaceae, and the genus *Schistochilopsis*, a segregate of the genus *Lophozia* s. lat., more closely related to Scapaniaceae than to Lophoziaceae (cf. de Roo et al. 2007, Vilnet et al. 2007). The genus *Scapania* was recently studied by morphological methods by Potemkin (2002), by molecular methods by Vilnet et al. (2007) and especially Heinrichs et al. (2012a). Some taxonomic and nomenclatural notes

can be found in Váňa et al. (2012a, 2013j, 2015) and Konstantinova et al. (2013a). The placement of *Pseudotritomaria, Saccobasis* and *Schistochilopsis* in the family follows Vilnet et al. (2010).

*** ***Diplophyllum* (Dumort.) Dumort.**, Recueil Observ. Jungerm.: 15, 1835 (Dumortier 1835) nom. conserv. Bas.: *Jungermannia* sect. *Diplophyllum* Dumort., Syll. Jungerm. Europ.: 44, 1831 (Dumortier 1831).

*** **subg. *Austrodiplophyllum* R.M.Schust.**, Bull. Natl. Sci. Mus. Tokyo (n.ser.) 11 (1): 18, 1968 (Schuster 1968a).
** *Diplophyllum recurvifolium* C.Massal., Atti Reale Ist. Veneto Sci. Lett. Arti 87 (2): 221, 1928 (Massalongo 1928).
*** *Diplophyllum squarrosum* Steph., Sp. Hepat. (Stephani) 4: 116, 1910 (Stephani 1910b).
*** *Diplophyllum verrucosum* R.M.Schust., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 11 (1): 19, 1968 (Schuster 1968a).

*** **subg. *Diplophyllum***

*** **sect. *Diplophyllum***
*** *Diplophyllum albicans* (L.) Dumort., Recueil Observ. Jungerm.: 16, 1835 (Dumortier 1835). Bas.: *Jungermannia albicans* L., Sp. Pl. 1: 1133, 1753 (Linnaeus 1753).

*** **sect. *Protodiplophyllum* (R.M.Schust.) Váňa et L.Söderstr.**, Phytotaxa 76 (3): 29, 2013 (Váňa et al. 2013j). Bas.: *Diplophyllum* subg. *Protodiplophyllum* R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 192, 1974 (Schuster 1974).
*** *Diplophyllum africanum* S.W.Arnell, Ark. Bot. (n.ser.) 3 (16): 527, 1956 (Arnell 1956e).
*** *Diplophyllum andicola* R.M.Schust., Phytologia 39 (4): 248, 1978 (Schuster 1978a).
*** *Diplophyllum andrewsii* A.Evans, Bryologist 25 (2): 28, 1922 (Evans 1922).
* *Diplophyllum androgynum* J.J.Engel et G.L.Merr., J. Hattori Bot. Lab. 84: 277, 1998 (Engel and Smith Merrill 1998).
* *Diplophyllum angustifolium* J.J.Engel et G.L.Merr., J. Hattori Bot. Lab. 84: 262, 1998 (Engel and Smith Merrill 1998).
*** *Diplophyllum apiculatum* (A.Evans) Steph., Sp. Hepat. (Stephani) 4: 110, 1910 (Stephani 1910b). Bas.: *Diplophylleia apiculata* A.Evans, Bot. Gaz. 34 (5): 372, 1902 (Evans 1902b).
** *Diplophyllum dioicum* R.M.Schust., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 11 (1): 20, 1968 (Schuster 1968a).
** *Diplophyllum exiguum* Steph., Sp. Hepat. (Stephani) 6: 500, 1924 (Stephani 1924).
* *Diplophyllum gemmiparum* J.J.Engel et G.L.Merr., J. Hattori Bot. Lab. 84: 255, 1998 (Engel and Smith Merrill 1998).

* *Diplophyllum incrassatum* J.J.Engel et G.L.Merr., J. Hattori Bot. Lab. 84: 265, 1998 (Engel and Smith Merrill 1998).

*** *Diplophyllum nanum* Herzog, Memoranda Soc. Fauna Fl. Fennica 26: 48, 1950 [1951] (Herzog 1950b).

* *Diplophyllum novum* J.J.Engel et G.L.Merr., J. Hattori Bot. Lab. 84: 274, 1998 (Engel and Smith Merrill 1998).

*** *Diplophyllum obtusatum* (R.M.Schust.) R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 215, 1974 (Schuster 1974). Bas.: *Diplophyllum apiculatum* var. *obtusatum* R.M.Schust., Amer. Midl. Naturalist 49 (2): 432, 1953 (Schuster 1953).

*** *Diplophyllum obtusifolium* (Hook.) Dumort., Recueil Observ. Jungerm.: 16, 1835 (Dumortier 1835). Bas.: *Jungermannia obtusifolia* Hook., Brit. Jungermann.: tab. 26, 1812 (Hooker 1812). [59]

** *Diplophyllum obtusifolium* subsp. *domesticum* (Gottsche) Váňa, Phytotaxa 76 (3): 29, 2013 (Váňa et al. 2013j). Bas.: *Jungermannia domestica* Gottsche, Linnaea 28 (5): 548, 1856 [1857] (Gottsche 1856).

*** *Diplophyllum serrulatum* (Müll.Frib.) Steph., Sp. Hepat. (Stephani) 4: 112, 1910 (Stephani 1910b). Bas.: *Diplophylleia serrulata* Müll.Frib., Bull. Herb. Boissier (sér. 2) 3 (1): 34, 1903 (Müller 1903).

*** *Diplophyllum taxifolium* (Wahlenb.) Dumort., Recueil Observ. Jungerm.: 16, 1835 (Dumortier 1835). Bas.: *Jungermannia taxifolia* Wahlenb., Fl. Lapp. (Wahlenberg): 389, 1812 (Wahlenberg 1812).

** *Diplophyllum taxifolium* var. *mucronatum* R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 203, 1974 (Schuster 1974).

*** *Diplophyllum trollii* Grolle, Khumbu Himal 1 (4): 273, 1966 (Grolle 1966k).

*** ***Douinia* (C.E.O.Jensen) H.Buch**, Scapan. N.-Eur. Sib.: 13, 1928 (Buch 1928). Bas.: *Diplophylleia* subg. *Douinia* C.E.O.Jensen, Danmarks mosser: 145, 1915 (Jensen 1915).

*** *Douinia imbricata* (M.Howe) Konstant. et Vilnet, Phytotaxa 76 (3): 31, 2013 (Konstantinova et al. 2013a). Bas.: *Scapania imbricata* M.Howe, Bull. New York Bot. Gard. 2 (6): 104, 1901 (Howe 1901b).

*** *Douinia ovata* (Dicks.) H.Buch, Scapan. N.-Eur. Sib.: 14, 1928 (Buch 1928). Bas.: *Jungermannia ovata* Dicks., Fasc. Pl. Crypt. Brit. 3: 11, 1793 (Dickson 1793).

*** *Douinia plicata* (Lindb.) Konstant. et Vilnet, Phytotaxa 76 (3): 31, 2013 (Konstantinova et al. 2013a). Bas.: *Diplophyllum plicatum* Lindb., Acta Soc. Sci. Fenn. 10: 235, 1872 [1873] (Lindberg 1872b).

** ***Pseudotritomaria* Konstant. et Vilnet**, Arctoa 18: 66, 2009 [2010] (Konstantinova and Vilnet 2009).

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59 *Diplophyllum obtusifolium* is a species complex also including *Diplophyllum androgynum*, *Diplophyllum angustifolium*, *Diplophyllum gemmiparum*, *Diplophyllum incrassatum* and *Diplophyllum novum*.

*** *Pseudotritomaria heterophylla* (R.M.Schust.) Konstant. et Vilnet, Arctoa 18: 66, 2009 [2010] (Konstantinova and Vilnet 2009). Bas.: *Tritomaria heterophylla* R.M.Schust., Canad. J. Bot. 36 (2): 272, 1958 (Schuster 1958b).

** ***Saccobasis* H.Buch**, Memoranda Soc. Fauna Fl. Fennica 8: 291, 1932 [1933] (Buch 1932).
*** *Saccobasis polita* (Nees) H.Buch, Memoranda Soc. Fauna Fl. Fennica 8: 292, 1932 [1933] (Buch 1932). Bas.: *Jungermannia polita* Nees, Naturgesch. Eur. Leberm. 2: 145, 1836 (Nees 1836).
** *Saccobasis polymorpha* (R.M.Schust.) Schljakov, Novosti Sist. Nizš. Rast. 16: 205, 1979 (Shliakov 1979). Bas.: *Tritomaria polita* subsp. *polymorpha* R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 700, 1969 (Schuster 1969b).

*** ***Scapania* (Dumort.) Dumort.**, Recueil Observ. Jungerm.: 14, 1835 (Dumortier 1835) nom. conserv. Bas.: *Radula* sect. *Scapania* Dumort., Syll. Jungerm. Europ.: 38, 1831 (Dumortier 1831).

** **subg. *Ascapania* Grolle**, Khumbu Himal 1 (4): 268, 1966 (Grolle 1966k).
*** *Scapania contorta* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 101, 1860 [1861] (Mitten 1860c).

** **subg. *Gracilidae* (H.Buch) Váňa, Hentschel, Joch.Müll. et Heinrichs**, PhytoKeys 10: 15, 2012 (Váňa et al. 2012a). Bas.: *Scapania* sect. *Gracilidae* H.Buch, Scapan. N.-Eur. Sib.: 106, 1928 (Buch 1928).
*** *Scapania ampliata* Steph., Bull. Herb. Boissier 5 (2): 106, 1897 (Stephani 1897b).
** *Scapania ampliata* subsp. *queenslandica* M.L.Hicks, J. Hattori Bot. Lab. 69: 130, 1991 (Hicks 1991).
*** *Scapania bolanderi* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 218, 1869 (Austin 1869).
*** *Scapania gracilis* Lindb., Morgonbladet (Helsinki) 1873 (286, 9 Dec): 2, 1873 (Lindberg 1873a).
** *Scapania macroparaphyllia* T.Cao, C.Gao et J.Sun, Acta Phytotax. Sin. 42 (2): 180, 2004 (Cao et al. 2004).
*** *Scapania maxima* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 223, 1934 (Horikawa 1934).
*** *Scapania nipponica* (Amakawa et S.Hatt.) Amakawa, J. Hattori Bot. Lab. 30: 319, 1967 (Amakawa 1967a). Bas.: *Scapania bolanderi* var. *nipponica* Amakawa et S.Hatt., J. Hattori Bot. Lab. 14: 83, 1955 (Amakawa and Hattori 1955).
** *Scapania paraphyllia* T.Cao, C.Gao, J.Sun et B.R.Zuo, Acta Phytotax. Sin. 45 (3): 311, 2007 (Zuo et al. 2007b).
*** *Scapania subnimbosa* Steph., Sp. Hepat. (Stephani) 4: 150, 1910 (Stephani 1910b).

** **subg. *Macroscapania* R.M.Schust.**, Hepat. Anthocerotae N. Amer. 3: 248, 1974 (Schuster 1974).
* *Scapania geppii* Steph., Hedwigia 44 (1): 14, 1904 (Stephani 1904i).
*** *Scapania portoricensis* Hampe et Gottsche, Linnaea 25 (3): 342, 1852 [1853] (Hampe and Gottsche 1852).
** *Scapania portoricensis* var. *boliviensis* (Steph.) Herzog, Ann. Bryol. 1: 110, 1928 (Herzog 1928). Bas.: *Scapania boliviensis* Steph., Biblioth. Bot. 87 (2): 231, 1916 (Stephani 1916a).
** *Scapania portoricensis* var. *organensis* (Herzog) Herzog, Ann. Bryol. 1: 110, 1928 (Herzog 1928). Bas.: *Scapania organensis* Herzog, Repert. Spec. Nov. Regni Veg. 21 (1/7): 27, 1925 (Herzog 1925a).
** *Scapania portoricensis* var. *roraimensis* Warnst., Hedwigia 63 (2): 109, 1921 (Warnstorf 1921).

** **subg. *Plicaticalyx* Müll.Frib.**, Bull. Herb. Boissier (sér. 2) 3 (1): 36, 1903 (Müller 1903).

** **sect. *Planifoliae* (Müll.Frib.) Potemkin**, J. Hattori Bot. Lab. 85: 56, 1998 (Potemkin 1998). Bas.: *Scapania* Gruppe *Planifoliae* Müll.Frib., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 83: 286, 1905 (Müller 1905).
*** *Scapania davidii* Potemkin, Ann. Bot. Fenn. 38 (2): 83, 2001 (Potemkin 2001).
** *Scapania ferruginaeoides* T.Cao, C.Gao et J.Sun, Guihaia 24 (1): 23, 2004 (Sun et al. 2004).
** *Scapania gaochii* X.Fu ex T.Cao, Phytotaxa 97 (2): 26, 2013 (Cao et al. 2013). Based on: *Scapania gaochii* X.Fu ex T.Cao, Acta Bot. Yunnan. 25 (5): 541, 2003 (Cao et al. 2003), *nom. inval.*
*** *Scapania harae* Amakawa, J. Hattori Bot. Lab. 27: 5, 1964 (Amakawa 1964a).
*** *Scapania nimbosa* Taylor, Nov. Stirp. Pug. 8: 6, 1844 (Lehmann 1844).
*** *Scapania ornithopodioides* (With.) Waddell, Moss Exch. Club Cat. Hepat.: 4, 1897 (Waddell 1897). Bas.: *Jungermannia ornithopodioides* With., Bot. arr. veg. Gr. Brit. 2: 695, 1776 (Withering 1776).
*** *Scapania rotundifolia* W.E.Nicholson, Symb. Sin. 5: 31, 1930 (Nicholson et al. 1930).
*** *Scapania secunda* Steph., Mém. Soc. Nat. Sci. Nat. Math. Cherbourg 29: 226, 1894 (Stephani 1894b).
*** *Scapania zhukovae* Potemkin, Arctoa 9: 121, 2000 (Potemkin 2000b).

** **sect. *Plicaticalyx* (Müll.Frib.) Potemkin**, Ann. Bot. Fenn. 39 (4): 326, 2002 (Potemkin 2002). Bas.: *Scapania* subg. *Plicaticalyx* Müll.Frib., Bull. Herb. Boissier (sér. 2) 3 (1): 36, 1903 (Müller 1903).
*** *Scapania ciliatospinosa* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 222, 1934 (Horikawa 1934).

*** *Scapania ferruginea* (Lehm. et Lindenb.) Lehm. et Lindenb., Syn. Hepat. 1: 72, 1844 (Gottsche et al. 1844). Bas.: *Jungermannia ferruginea* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 20, 1832 (Lehmann 1832).
*** *Scapania hians* Steph. ex Müll.Frib., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 83: 223, 1905 (Müller 1905).
** *Scapania hians* subsp. *salishensis* J.D.Godfrey et G.Godfrey, Bryologist 81 (3): 362, 1978 (Godfrey and Godfrey 1978).
*** *Scapania orientalis* Steph. ex Müll.Frib., Bull. Herb. Boissier (sér. 2) 1 (6): 606, 1901 (Müller 1901a).
*** *Scapania pseudocontorta* Potemkin, Arctoa 9: 115, 2000 (Potemkin 2000b).
*** *Scapania sinikkae* Potemkin, Ann. Bot. Fenn. 38 (2): 85, 2001 (Potemkin 2001).
*** *Scapania spiniloba* Potemkin, Arctoa 9: 117, 2000 (Potemkin 2000b).

** **subg. *Pseudomacrodiplophyllum* Váňa, Hentschel, Joch.Müll. et Heinrichs**, PhytoKeys 10: 15, 2012 (Váňa et al. 2012a).
*** *Scapania microdonta* (Mitt.) Müll.Frib., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 83: 262, 1905 (Müller 1905). Bas.: *Martinellius microdontus* Mitt., Trans. Linn. Soc. London, Bot. 3 (3): 196, 1891 (Mitten 1891).

*** **subg. *Scapania***

** **sect. *Aequilobae* (Müll.Frib.) H.Buch**, Scapan. N.-Eur. Sib.: 110, 1928 (Buch 1928). Bas.: *Scapania* Gruppe *Aequilobae* Müll.Frib., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 83: 219, 1905 (Müller 1905).
*** *Scapania aequiloba* (Schwägr.) Dumort., Recueil Observ. Jungerm.: 14, 1835 (Dumortier 1835). Bas.: *Jungermannia aequiloba* Schwägr., Hist. Musc. Hepat. Prodr.: 24, 1814 (Schwägrichen 1814).
*** *Scapania aspera* M.Bernet et Bernet, Cat. hép. Suisse: 42, 1888 (Bernet 1888).

** **sect. *Americanae* Váňa, Hentschel, Joch.Müll. et Heinrichs**, PhytoKeys 10: 15, 2012 (Váňa et al. 2012a).
*** *Scapania americana* Müll.Frib., Bull. Herb. Boissier (sér. 2) 3 (1): 44, 1903 (Müller 1903).

** **sect. *Apiculatae* H.Buch**, Scapan. N.-Eur. Sib.: 53, 1928 (Buch 1928).
*** *Scapania apiculata* Spruce, Hep. Pyr. Exsic.: no. 15, 1847 (Spruce 1847).
*** *Scapania carinthiaca* J.B.Jack ex Lindb., Rev. Bryol. 7 (4): 77, 1880 (Lindberg 1880a).
*** *Scapania carinthiaca* var. *massalongi* Müll.Frib., Bull. Herb. Boissier (sér. 2) 1 (6): 598, 1901 (Müller 1901a).
*** *Scapania umbrosa* (Schrad.) Dumort., Recueil Observ. Jungerm.: 14, 1835 (Dumortier 1835). Bas.: *Jungermannia umbrosa* Schrad., Syst. Samml. Crypt. Gew. 2: 5, 1797 (Schrader 1797).

** **sect. *Ciliatae* Grolle**, Khumbu Himal 1 (4): 272, 1966 (Grolle 1966k).
*** *Scapania bhutanensis* Amakawa, Fl. E. Himalaya 2: 230, 1971 (Hattori 1971a).
*** *Scapania ciliata* Sande Lac., Prolus. fl. jap.: 209, 1867 (Sande Lacoste 1867).
*** *Scapania ciliata* subsp. *hawaiica* (Müll.Frib.) Potemkin, Ann. Bot. Fenn. 39 (4): 321, 2002 (Potemkin 2002). Bas.: *Scapania hawaiica* Müll.Frib., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 83: 160, 1905 (Müller 1905).
*** *Scapania hirosakiensis* Steph. ex Müll.Frib., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 83: 120, 1905 (Müller 1905).
*** *Scapania hollandiae* W.S.Hong, Bryologist 83 (1): 56, 1980 (Hong 1980).
*** *Scapania koponenii* Potemkin, Ann. Bot. Fenn. 37 (1): 41, 2000 (Potemkin 2000c).
*** *Scapania lepida* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 101, 1860 [1861] (Mitten 1860c).
*** *Scapania sandei* Schiffn. ex Müll.Frib., Bull. Herb. Boissier (sér. 2) 1 (6): 612, 1901 (Müller 1901a).

** **sect. *Compactae* (Müll.Frib.) H.Buch**, Scapan. N.-Eur. Sib.: 101, 1928 (Buch 1928). Bas.: *Scapania* Gruppe *Compactae* Müll.Frib., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 83: 53, 1905 (Müller 1905).
*** *Scapania compacta* (Roth) Dumort., Recueil Observ. Jungerm.: 14, 1835 (Dumortier 1835). Bas.: *Jungermannia compacta* Roth, Tent. Fl. Germ. 3: 375, 1800 (Roth 1800).
*** *Scapania kaurinii* Ryan, Bot. Not. 42: 210, 1889 (Ryan 1889).
*** *Scapania spitsbergensis* (Lindb.) Müll.Frib., Bull. Herb. Boissier (sér. 2) 1 (6): 607, 1901 (Müller 1901a). Bas.: *Martinellius spitsbergensis* Lindb., Kongl. Svenska Vetensk.-Akad. Handl. (n.ser.) 23 (5): 31, 1889 (Lindberg and Arnell 1889).

** **sect. *Curtae* (Müll.Frib.) H.Buch**, Scapan. N.-Eur. Sib.: 55, 1928 (Buch 1928). Bas.: *Scapania* Gruppe *Curtae* Müll.Frib., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 83: 245, 1905 (Müller 1905).
*** *Scapania curta* (Mart.) Dumort., Recueil Observ. Jungerm.: 14, 1835 (Dumortier 1835). Bas.: *Jungermannia curta* Mart., Fl. crypt. erlang.: 148, 1817 (Martius 1817).
** *Scapania curta* var. *grandiretis* R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 393, 1974 (Schuster 1974).
** *Scapania curta* var. *isoloba* R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 396, 1974 (Schuster 1974).
*** *Scapania diplophylloides* Amakawa et S.Hatt., J. Hattori Bot. Lab. 9: 59, 1953 (Amakawa and Hattori 1953).
*** *Scapania esterhuyseniae* S.W.Arnell, Bot. Not. 110 (1): 26, 1957 (Arnell 1957a).
*** *Scapania fulfordiae* W.S.Hong, Bryologist 83 (1): 46, 1980 (Hong 1980).
*** *Scapania gamundiae* R.M.Schust., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 11 (1): 14, 1968 (Schuster 1968a).

*** *Scapania helvetica* Gottsche, Hepat. Eur., Leberm. 42-44: no. 426, 1868 (Gottsche and Rabenhorst 1868).
*** *Scapania irrigua* (Nees) Nees, Syn. Hepat. 1: 67, 1844 (Gottsche et al. 1844). Bas.: *Jungermannia irrigua* Nees, Naturgesch. Eur. Leberm. 1: 193, 1833 (Nees 1833c).
** *Scapania irrigua* subsp. *rufescens* (Loeske) R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 471, 1974 (Schuster 1974). Bas.: *Scapania irrigua* f. *rufescens* Loeske, Moosfl. Harz.: 71, 1903 (Loeske 1903).
*** *Scapania lingulata* H.Buch, Meddel. Soc. Fauna Fl. Fenn. 42: 92, 1916 (Buch 1916).
** *Scapania lingulata* var. *microphylla* (Warnst.) R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 415, 1974 (Schuster 1974). Bas.: *Scapania microphylla* Warnst., Hedwigia 63 (2): 75, 1921 (Warnstorf 1921).
** *Scapania magadanica* S.S.Choi, Bakalin et B.Y.Sun, Bot. Pacifica 1: 46, 2012 (Choi et al. 2012).
*** *Scapania mucronata* H.Buch, Meddel. Soc. Fauna Fl. Fenn. 42: 91, 1916 (Buch 1916).
*** *Scapania obcordata* (Berggr.) S.W.Arnell, Ark. Bot. (n.ser.) 4 (6): 117, 1959 (Arnell and Mårtensson 1959). Bas.: *Sarcocyphos obcordatus* Berggr., Kongl. Svenska Vetensk.-Akad. Handl. (n.ser.) 13 (7): 96, 1875 (Berggren 1875).
** *Scapania parvifolia* Warnst., Hedwigia 63 (2): 78, 1921 (Warnstorf 1921).
*** *Scapania praetervisa* Meyl., Jahresber. Naturf. Ges. Graubündens (n.f.) 64: 364, 1926 (Meylan 1926).
*** *Scapania scandica* (Arnell et H.Buch) Macvicar, Stud. handb. Brit. hepat. (ed. 2): 394, 1926 (Macvicar 1926). Bas.: *Martinellius scandicus* Arnell et H.Buch, Bot. Not. 74: 1, 1921 (Arnell and Buch 1921).
** *Scapania scandica* var. *argutedentata* H.Buch, Scapan. N.-Eur. Sib.: 75, 1928 (Buch 1928).
** *Scapania scandica* var. *dimorpha* R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 453, 1974 (Schuster 1974).
** *Scapania scandica* var. *grandiretis* (Schljakov) Schljakov, Pečen. Mchi Sev. SSSR 4: 152, 1981 (Shliakov 1981). Bas.: *Scapania parvifolia* var. *grandiretis* Schljakov, Novosti Sist. Nizš. Rast. 8: 332, 1971 (Shliakov 1971).
*** *Scapania uliginosa* (Lindenb.) Dumort., Recueil Observ. Jungerm.: 14, 1835 (Dumortier 1835). Bas.: *Jungermannia undulata* var. *uliginosa* Lindenb., Syn. hepat. eur: 58, 1829 (Lindenberg 1829).
*** *Scapania valdonii* Váňa, Bedn.-Ochyra et Cykowska, Nova Hedwigia 89 (1/2): 126, 2009 (Váňa et al. 2009).
*** *Scapania zemliae* S.W.Arnell, Svensk Bot. Tidskr. 41: 215, 1947 (Arnell 1947).

** **sect. *Cuspiduligerae* H.Buch**, Scapan. N.-Eur. Sib.: 125, 1928 (Buch 1928).
*** *Scapania cuspiduligera* (Nees) Müll.Frib., Lebermoose 2 (22): 472, 1915 (Müller 1915a). Bas.: *Jungermannia cuspiduligera* Nees, Naturgesch. Eur. Leberm. 1: 180, 1833 (Nees 1833c).
** *Scapania cuspiduligera* var. *diplophyllopsis* R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 361, 1974 (Schuster 1974).

** **sect. *Grolleoscapania* Potemkin**, Ann. Bot. Fenn. 39 (4): 329, 2002 (Potemkin 2002).
*** *Scapania karl-muelleri* Grolle, Khumbu Himal 1 (4): 270, 1966 (Grolle 1966k).

** **sect. *Hyperboreae* Váňa, Hentschel, Joch.Müll. et Heinrichs**, PhytoKeys 10: 16, 2012 (Váňa et al. 2012a).
*** *Scapania hyperborea* Jørg., Forh. Vidensk.-Selsk. Kristiania 1894 (8): 56, 1894 (Jørgensen 1894).
*** *Scapania paludicola* Loeske et Müll.Frib., Lebermoose 2 (21): 425, 1915 (Müller 1915b).
** *Scapania paludicola* var. *viridigemma* R.M.Schust., Bull. Natl. Mus. Canada 122: 20, 1950 [1951] (Schuster 1950).
*** *Scapania tundrae* (Arnell) H.Buch, Scapan. N.-Eur. Sib.: 99, 1928 (Buch 1928). Bas.: *Martinellius tundrae* Arnell, Bot. Not. 74: 289, 1921 (Arnell 1921).

** **sect. *Kaalaasia* (H.Buch) Jørg.**, Bergens Mus. Skr. (n.ser.) 16: 210, 1934 (Jørgensen 1934). Bas.: *Scapania* subg. *Kaalaasia* H.Buch, Scapan. N.-Eur. Sib.: 47, 1928 (Buch 1928).
*** *Scapania calcicola* (Arnell et J.Perss.) Ingham, Naturalist (Hull) 564: 11, 1904 (Ingham 1904). Bas.: *Martinellius calcicola* Arnell et J.Perss., Rev. Bryol. 30 (6): 97, 1903 (Arnell 1903).
*** *Scapania gymnostomophila* Kaal., Bot. Not. 49: 21, 1896 (Kaalaas 1896).
*** *Scapania ligulifolia* R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 306, 1974 (Schuster 1974).
*** *Scapania pseudocalcicola* R.M.Schust., Phytologia 63 (5): 327, 1987 (Schuster and Damsholt 1987).

* ***Scapania* sect. *Muelleria* Potemkin**, Ann. Bot. Fenn. 39 (4): 320, 2002 (Potemkin 2002).
*** *Scapania himalayica* Müll.Frib. ex Herzog, Ann. Bryol. 12: 81, 1939 (Herzog 1939b).
*** *Scapania schljakovii* Potemkin, Ann. Bot. Fenn. 38 (2): 87, 2001 (Potemkin 2001).

** **sect. *Nemorosae* (Müll.Frib.) H.Buch**, Scapan. N.-Eur. Sib.: 152, 1928 (Buch 1928). Bas.: *Scapania* Gruppe *Nemorosae* Müll.Frib., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 83: 155, 1905 (Müller 1905).
*** *Scapania brevicaulis* Taylor, London J. Bot. 5: 272, 1846 (Taylor 1846a).
*** *Scapania crassiretis* Bryhn, Rev. Bryol. 19 (1): 7, 1892 (Bryhn 1892).
* *Scapania degenii* Schiffn. ex Müll.Frib., Lebermoose 2 (22): 497, 1915 (Müller 1915a). [60]
* *Scapania glaucoviridis* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 221, 1934 (Horikawa 1934). [61]

60 *Scapania degenii* is conspecific with *Scapania brevicaulis* in Potemkin (1998), but recognized by Konstantinova et al. (2009).

61 *Scapania glaucoviridis* was treated as conspecific with *Scapania parvitexta* by Potemkin (2002), but accepted by Zuo et al. (2007a).

** *Scapania grossidens* Steph. ex Müll.Frib., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 83: 146, 1905 (Müller 1905).
*** *Scapania hedbergii* S.W.Arnell, Ark. Bot. (n.ser.) 3 (16): 556, 1956 (Arnell 1956e).
*** *Scapania integerrima* Steph., Sp. Hepat. (Stephani) 4: 148, 1910 (Stephani 1910b).
*** *Scapania matveyevae* Potemkin, Arctoa 9: 97, 2000 (Potemkin 2000a).
*** *Scapania nemorea* (L.) Grolle, Rev. Bryol. Lichénol. 32 (3/4): 160, 1963 [1964] (Grolle 1963d). Bas.: *Jungermannia nemorea* L., Syst. Nat., ed. 10., 2: 1337, 1759 (Linnaeus 1759).
** *Scapania parvidens* Steph., Hedwigia 44 (1): 15, 1904 (Stephani 1904i). [62]
*** *Scapania parvitexta* Steph., Bull. Herb. Boissier 5 (2): 107, 1897 (Stephani 1897b).
*** *Scapania rigida* Nees, Syn. Hepat. 1: 69, 1844 (Gottsche et al. 1844).

** **sect. *Scapania***
*** *Scapania gigantea* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 15, 1931 (Horikawa 1931b).
** *Scapania grandiloba* Steph., Sp. Hepat. (Stephani) 6: 502, 1924 (Stephani 1924).
*** *Scapania komagadakensis* Amakawa, J. Hattori Bot. Lab. 31: 96, 1968 (Amakawa 1968a).
*** *Scapania obscura* (Arnell et C.E.O.Jensen) Schiffn., Österr. Bot. Z. 58 (10): 377, 1908 (Schiffner 1908b). Bas.: *Martinellius obscurus* Arnell et C.E.O.Jensen, Moose Sarekgeb.: 91, 1907 (Arnell and Jensen 1907).
** *Scapania paludosa* (Müll.Frib.) Müll.Frib., Mitt. Bad. Bot. Vereins 4 (182/183): 287, 1902 (Müller 1902). Bas.: *Scapania undulata* var. *paludosa* Müll.Frib., Beih. Bot. Centralbl. 10 (4/5): 220, 1901 (Müller 1901b).
*** *Scapania rufidula* Warnst., Hedwigia 63 (2): 94, 1921 (Warnstorf 1921).
*** *Scapania serrulata* R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 539, 1974 (Schuster 1974).
*** *Scapania subalpina* (Nees ex Lindenb.) Dumort., Recueil Observ. Jungerm.: 14, 1835 (Dumortier 1835). Bas.: *Jungermannia subalpina* Nees ex Lindenb., Syn. hepat. eur: 55, 1829 (Lindenberg 1829).
** *Scapania subalpina* var. *haynesiae* Frye et L.Clark, Univ. Wash. Publ. Biol. 6 (4): 638, 1946 (Frye and Clark 1946).
** *Scapania subalpina* var. *muddiae* C.D.Bird et W.S.Hong, Bryologist 83 (1): 51, 1980 (Hong 1980).
*** *Scapania undulata* (L.) Dumort., Recueil Observ. Jungerm.: 14, 1835 (Dumortier 1835). Bas.: *Jungermannia undulata* L., Sp. Pl. 1: 1132, 1753 (Linnaeus 1753).

** **sect. *Scapaniella* (H.Buch) Potemkin**, J. Hattori Bot. Lab. 85: 43, 1998 (Potemkin 1998). Bas.: *Scapaniella* H.Buch, Scapan. N.-Eur. Sib.: 33, 1928 (Buch 1928).

62 *Scapania parvidens* was treated as conspecific with *Scapania parvitexta* by Potemkin (2002), but accepted by Zuo et al. (2007a) and Choi et al. (2012).

*** *Scapania glaucocephala* (Taylor) Austin, Bull. Torrey Bot. Club 6 (16): 85, 1876 (Austin 1876c). Bas.: *Jungermannia glaucocephala* Taylor, London J. Bot. 5: 277, 1846 (Taylor 1846a).
*** *Scapania glaucocephala* var. *saxicola* (R.M.Schust.) Potemkin, Bryologist 102 (1): 36, 1999 (Potemkin 1999). Bas.: *Scapania saxicola* R.M.Schust., Amer. Midl. Naturalist 49 (2): 448, 1953 (Schuster 1953).
* *Scapania scapanioides* (C.Massal.) Grolle, Feddes Repert. 87 (3/4): 235, 1976 (Grolle 1976a). Bas.: *Jungermannia scapanioides* C.Massal., Hepaticol. ven.: 64, 1879 (Massalongo 1879). [63]

** **sect. *Simmonsiae* (R.M.Schust.) Váňa, Hentschel, Joch.Müll. et Heinrichs**, PhytoKeys 10: 16, 2012 (Váňa et al. 2012a). Bas.: *Scapania* subsect. *Simmonsiae* R.M.Schust., Hepat. Anthocerotae N. Amer. 3: 612, 1974 (Schuster 1974).
*** *Scapania simmonsii* Bryhn et Kaal., Rep. Second Norweg. Arctic Exped. 11: 51, 1906 (Bryhn 1906).

** **sect. *Sphaeriferae* Konstant. et Potemkin**, Ann. Bot. Fenn. 31 (2): 125, 1994 (Konstantinova and Potemkin 1994).
*** *Scapania sphaerifera* H.Buch et Tuom., Memoranda Soc. Fauna Fl. Fennica 11: 227, 1936 (Buch and Tuomikoski 1936).

** **sect. *Stephaniae* Potemkin**, J. Hattori Bot. Lab. 85: 57, 1998 (Potemkin 1998). Based on: *Scapania* sect. *Stephaniae* Amakawa et S.Hatt., J. Hattori Bot. Lab. 12: 94, 1954 (Amakawa and Hattori 1954). *nom. inval.*
*** *Scapania griffithii* Schiffn., Österr. Bot. Z. 49 (6): 204, 1899 (Schiffner 1899a).
*** *Scapania javanica* Gottsche, Natuurk. Tijdschr. Ned.-Indië 4: 575, 1853 (Gottsche 1853).
* *Scapania javanica* var. *scabra* Schiffn., Arch. Hydrobiol., suppl. 21 (3/4): 397, 1955 (Schiffner 1955).
*** *Scapania ligulata* Steph., Hedwigia 44 (1): 14, 1904 (Stephani 1904i).
** *Scapania ligulata* subsp. *stephanii* (Müll.Frib.) Potemkin, Piippo et T.J.Kop., Ann. Bot. Fenn. 41 (6): 423, 2004 (Potemkin et al. 2004). Bas.: *Scapania stephanii* Müll.Frib., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 83: 273, 1905 (Müller 1905).

** **sect. *Verrucosae* Potemkin**, J. Hattori Bot. Lab. 85: 54, 1998 (Potemkin 1998).
*** *Scapania udarii* S.C.Srivast. et A.Srivast., J. Indian Bot. Soc. 72: 237, 1993 (Srivastava and Srivastava 1993).
*** *Scapania verrucosa* Heeg, Rev. Bryol. 20 (5): 81, 1893 (Heeg 1893).

*** ***Schistochilopsis* (N.Kitag.) Konstant.**, Arctoa 3: 125, 1994 (Konstantinova and Vasil'ev 1994). Bas.: *Lophozia* subg. *Schistochilopsis* N.Kitag., J. Hattori Bot. Lab. 28: 289, 1965 (Kitagawa 1965).

63 *Scapania scapanioides* is possibly conspecific with *Scapania glaucocephala* (Potemkin 2002).

*** *Schistochilopsis cornuta* (Steph.) Konstant., Arctoa 3: 125, 1994 (Konstantinova and Vasil'ev 1994). Bas.: *Schistochila cornuta* Steph., Sp. Hepat. (Stephani) 4: 84, 1909 (Stephani 1909d).

*** *Schistochilopsis grandiretis* (Lindb. ex Kaal.) Konstant., Arctoa 3: 125, 1994 (Konstantinova and Vasil'ev 1994). Bas.: *Jungermannia grandiretis* Lindb. ex Kaal., Nyt Mag. Naturvidensk. 33 (4/5): 322, 1893 (Kaalaas 1893b).

** *Schistochilopsis hyperarctica* Konstant. et L.Söderstr., Phytotaxa 162 (4): 240, 2014 (Konstantinova et al. 2014b). Based on: *Lophozia hyperarctica* R.M.Schust., Canad. J. Bot. 39 (4): 967, 1961 (Schuster 1961b), *nom. inval.*

*** *Schistochilopsis incisa* (Schrad.) Konstant., Arctoa 3: 125, 1994 (Konstantinova and Vasil'ev 1994). Bas.: *Jungermannia incisa* Schrad., Syst. Samml. Crypt. Gew. 2: 5, 1797 (Schrader 1797).

* *Schistochilopsis nakanishii* (Inoue) Konstant., Arctoa 3: 125, 1994 (Konstantinova and Vasil'ev 1994). Bas.: *Lophozia nakanishii* Inoue, Bull. Natl. Sci. Mus. Tokyo (n.ser.) 9 (1): 37, 1966 (Inoue 1966a). [64]

** *Schistochilopsis opacifolia* (Culm. ex Meyl.) Konstant., Arctoa 3: 125, 1994 (Konstantinova and Vasil'ev 1994). Bas.: *Lophozia opacifolia* Culm. ex Meyl., Beitr. Kryptogamenfl. Schweiz 6 (4): 174, 1924 (Meylan 1924). [65]

*** *Schistochilopsis setosa* (Mitt.) Konstant., Arctoa 3: 125, 1994 (Konstantinova and Vasil'ev 1994). Bas.: *Jungermannia setosa* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 92, 1860 [1861] (Mitten 1860c).

Jungermanniineae R.M.Schust. ex Stotler et Crand.-Stotl.

*** Acrobolbaceae E.A.Hodgs.

by L. Briscoe and J.J. Engel

** ***Enigmella* G.A.M.Scott et K.G.Beckm.**, J. Bryol. 17 (2): 297, 1992 (Beckmann and Scott 1992).

** *Enigmella thallina* G.A.M.Scott et K.G.Beckm., J. Bryol. 17 (2): 297, 1992 (Beckmann and Scott 1992).

** Acrobolboideae R.M.Schust. ex Briscoe

*** ***Acrobolbus* Nees**, Syn. Hepat. 1: 5, 1844 (Gottsche et al. 1844).

** *Acrobolbus africanus* (Pearson) Briscoe, Phytotaxa 202 (1): 59, 2015 (Briscoe et al. 2015). Bas.: *Tylimanthus africanus* Pearson, Forh. Vidensk.-Selsk. Kristiania 1887 (9): 14, 1887 (Pearson 1887b).

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64 *Schistochilopsis nakanishii* is possibly conspecific with *Schistochilopsis incisa*.

65 *Schistochilopsis opacifolia* is sometimes treated as a subspecies of *Schistochilopsis incisa* (e.g. Bisang 1991).

*** *Acrobolbus anisodontus* (Hook.f. et Taylor) Briscoe, Phytotaxa 202 (1): 59, 2015 (Briscoe et al. 2015). Bas.: *Jungermannia anisodonta* Hook.f. et Taylor, London J. Bot. 4: 79, 1845 (Hooker and Taylor 1845).

** *Acrobolbus antillanus* R.M.Schust., J. Hattori Bot. Lab. 90: 143, 2001 (Schuster 2001a).

** *Acrobolbus azoricus* (Grolle et Perss.) Briscoe, Phytotaxa 202 (1): 59, 2015 (Briscoe et al. 2015). Bas.: *Tylimanthus azoricus* Grolle et Perss., Svensk Bot. Tidskr. 60 (1): 169, 1966 (Grolle and Persson 1966).

*** *Acrobolbus caducifolius* R.M.Schust., J. Hattori Bot. Lab. 90: 154, 2001 (Schuster 2001a).

*** *Acrobolbus ciliatus* (Mitt.) Schiffn., Hepat. (Engl.-Prantl): 86, 1893 (Schiffner 1893b). Bas.: *Gymnanthe ciliata* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 100, 1860 [1861] (Mitten 1860c).

*** *Acrobolbus cinerascens* (Lehm. et Lindenb.) Bastow, Pap. & Proc. Roy. Soc. Tasmania 1887: 242, 1888 (Bastow 1888). Bas.: *Jungermannia cinerascens* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 46, 1832 (Lehmann 1832).

*** *Acrobolbus concinnus* (Mitt.) Steph., Trans. & Proc. New Zealand Inst. 24: 399, 1892 (Colenso 1892). Bas.: *Gymnanthe concinna* Mitt., Bot. antarct. voy. III (Fl. Tasman. 2): 230, 1860 (Mitten 1860b).

** *Acrobolbus cuneifolius* (Steph.) Briscoe, Phytotaxa 202 (1): 59, 2015 (Briscoe et al. 2015). Bas.: *Tylimanthus cuneifolius* Steph., Bull. Herb. Boissier (sér. 2) 5 (12): 1138 (10), 1905 (Stephani 1905b).

*** *Acrobolbus diversifolius* R.M.Schust., J. Hattori Bot. Lab. 90: 150, 2001 (Schuster 2001a).

*** *Acrobolbus epiphytus* (Colenso) Briscoe, Phytotaxa 202 (1): 59, 2015 (Briscoe et al. 2015). Bas.: *Marsupidium epiphytum* Colenso, Trans. & Proc. New Zealand Inst. 21: 64, 1889 (Colenso 1889).

*** *Acrobolbus flavicans* (J.J.Engel et Grolle) Briscoe et J.J.Engel, Phytotaxa 202 (1): 59, 2015 (Briscoe et al. 2015). Bas.: *Marsupidium flavicans* J.J.Engel et Grolle, J. Hattori Bot. Lab. 34: 438, 1971 (Engel and Grolle 1971).

*** *Acrobolbus gradsteinii* (Grolle) Briscoe, Phytotaxa 202 (1): 59, 2015 (Briscoe et al. 2015). Bas.: *Marsupidium gradsteinii* Grolle, J. Hattori Bot. Lab. 66: 337, 1989 (Grolle 1989a).

** *Acrobolbus integrifolius* (A.Evans) Briscoe, Phytotaxa 202 (1): 59, 2015 (Briscoe et al. 2015). Bas.: *Tylimanthus integrifolius* A.Evans, Trans. Connecticut Acad. Arts 8 (15): 259, 1891 (Evans 1891).

*** *Acrobolbus knightii* (Mitt.) Briscoe, Phytotaxa 202 (1): 59, 2015 (Briscoe et al. 2015). Bas.: *Marsupidium knightii* Mitt., Handb. N. Zeal. fl. 2: 753, 1867 (Hooker 1867).

** *Acrobolbus kunkelii* (Hässel et Solari) Briscoe et J.J.Engel, Phytotaxa 202 (1): 60, 2015 (Briscoe et al. 2015). Bas.: *Tylimanthus kunkelii* Hässel et Solari, Darwiniana 17: 574, 1972 (Hässel and Solari 1972).

*** *Acrobolbus laxus* (Lehm. et Lindenb.) Briscoe, Phytotaxa 202 (1): 60, 2015 (Briscoe et al. 2015). Bas.: *Plagiochila laxa* Lehm. et Lindenb., Sp. Hepat. (Lindenberg) 2-4: 68, 1840 (Lindenberg 1840).

*** *Acrobolbus limbatus* (Steph.) Briscoe et J.J.Engel, Phytotaxa 202 (1): 60, 2015 (Briscoe et al. 2015). Bas.: *Tylimanthus limbatus* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 25, 1911 (Stephani 1911b).

*** *Acrobolbus lophocoleoides* (Mitt.) Mitt., Handb. N. Zeal. fl. 2: 753, 1867 (Hooker 1867). Bas.: *Gymnanthe lophocoleoides* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 144, 1854 (Mitten 1854).

** *Acrobolbus madeirensis* (Grolle et Perss.) Briscoe, Phytotaxa 202 (1): 60, 2015 (Briscoe et al. 2015). Bas.: *Tylimanthus madeirensis* Grolle et Perss., Svensk Bot. Tidskr. 60 (1): 166, 1966 (Grolle and Persson 1966).

** *Acrobolbus mittenii* Steph., Bull. Herb. Boissier (sér. 2) 2 (5): 460 (179), 1902 (Stephani 1902f).

*** *Acrobolbus ochrophyllus* (Hook.f. et Taylor) R.M.Schust., Rev. Bryol. Lichénol. 30 (1/2): 64, 1961 (Schuster 1961a). Bas.: *Jungermannia ochrophylla* Hook.f. et Taylor, London J. Bot. 3: 368, 1844 (Hooker and Taylor 1844a).

*** *Acrobolbus papillosus* (J.J.Engel et Glenny) Briscoe, Phytotaxa 202 (1): 60, 2015 (Briscoe et al. 2015). Bas.: *Marsupidium papillosum* J.J.Engel et Glenny, Nova Hedwigia 87 (3/4): 289, 2008 (Engel and Glenny 2008c).

*** *Acrobolbus perpusillus* (Colenso) Briscoe, Phytotaxa 202 (1): 60, 2015 (Briscoe et al. 2015). Bas.: *Tylimanthus perpusillus* Colenso, Trans. & Proc. New Zealand Inst. 19: 286, 1887 (Colenso 1887).

*** *Acrobolbus perpusillus* var. *denticulatus* (J.J.Engel et Glenny) Briscoe, Phytotaxa 202 (1): 60, 2015 (Briscoe et al. 2015). Bas.: *Marsupidium perpusillum* var. *denticulatum* J.J.Engel et Glenny, Nova Hedwigia 87 (3/4): 284, 2008 (Engel and Glenny 2008c).

*** *Acrobolbus plagiochiloides* (J.J.Engel et Glenny) Briscoe, Phytotaxa 202 (1): 60, 2015 (Briscoe et al. 2015). Bas.: *Marsupidium plagiochiloides* J.J.Engel et Glenny, Nova Hedwigia 87 (3/4): 284, 2008 (Engel and Glenny 2008c).

*** *Acrobolbus pseudosaccatus* (Grolle) Briscoe, Phytotaxa 202 (1): 60, 2015 (Briscoe et al. 2015). Bas.: *Tylimanthus pseudosaccatus* Grolle, Nova Hedwigia 6 (3/4): 391, 1963 (Grolle 1963c).

*** *Acrobolbus renifolius* (Hässel et Solari) Briscoe et J.J.Engel, Phytotaxa 202 (1): 60, 2015 (Briscoe et al. 2015). Bas.: *Tylimanthus renifolius* Hässel et Solari, Darwiniana 17: 583, 1972 (Hässel and Solari 1972).

** *Acrobolbus ruwenzorensis* (S.W.Arnell) Briscoe, Phytotaxa 202 (1): 60, 2015 (Briscoe et al. 2015). Bas.: *Tylimanthus ruwenzorensis* S.W.Arnell, Ark. Bot. (n.ser.) 3 (16): 560, 1956 (Arnell 1956e).

*** *Acrobolbus saccatus* (Hook.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 423, 1877 (Trevisan 1877). Bas.: *Jungermannia saccata* Hook., Musci Exot. 1: tab. 16, 1818 (Hooker 1818).

*** *Acrobolbus setulosus* (Mitt.) Briscoe, Phytotaxa 202 (1): 60, 2015 (Briscoe et al. 2015). Bas.: *Gymnanthe setulosa* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 144, 1854 (Mitten 1854).

*** *Acrobolbus spinifolius* R.M.Schust., J. Hattori Bot. Lab. 90: 137, 2001 (Schuster 2001a).

*** *Acrobolbus sumatranus* (Schiffn.) Briscoe, Phytotaxa 202 (1): 61, 2015 (Briscoe et al. 2015). Bas.: *Lophozia sumatrana* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 203, 1898 (Schiffner 1898a).

*** *Acrobolbus surculosus* (Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 423, 1877 (Trevisan 1877). Bas.: *Scapania surculosa* Nees, Syn. Hepat. 1: 62, 1844 (Gottsche et al. 1844).

*** *Acrobolbus tenellus* (Taylor) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 423, 1877 (Trevisan 1877). Bas.: *Gymnanthe tenella* Taylor, Nov. Stirp. Pug. 8: 1, 1844 (Lehmann 1844).

*** *Acrobolbus tenellus* var. *diversifolius* (E.A.Hodgs.) Briscoe, Phytotaxa 202 (1): 61, 2015 (Briscoe et al. 2015). Bas.: *Tylimanthus diversifolius* E.A.Hodgs., Trans. Roy. Soc. New Zealand 85 (4): 575, 1958 (Hodgson 1958).

*** *Acrobolbus urvilleanus* (Mont.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 423, 1877 (Trevisan 1877). Bas.: *Plagiochila urvilleana* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 247, 1843 (Montagne 1843).

*** *Acrobolbus viridis* (Mitt.) Briscoe et J.J.Engel, Phytotaxa 202 (1): 61, 2015 (Briscoe et al. 2015). Bas.: *Tylimanthus viridis* Mitt., J. Linn. Soc., Bot. 15 (84): 197, 1876 (Mitten 1876b).

*** *Acrobolbus wilsonii* Nees, Syn. Hepat. 1: 5, 1844 (Gottsche et al. 1844).

** *Acrobolbus wilsonii* var. *andinus* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 522, 1885 (Spruce 1885).

Excluded from the genus

* *Acrobolbus bispinosus* (J.B.Jack et Steph.) Steph., Bull. Herb. Boissier (sér. 2) 2 (5): 459 (178), 1902 (Stephani 1902f). Bas.: *Tylimanthus bispinosus* J.B.Jack et Steph., Hedwigia 31 (1): 26, 1892 (Jack and Stephani 1892). [66]

** Austrolophozioideae R.M.Schust. ex Crand.-Stotl., Váňa et Stotler

** ***Austrolophozia* R.M.Schust.**, J. Hattori Bot. Lab. 26: 282, 1963 (Schuster 1963b).

** *Austrolophozia andina* R.M.Schust., Nova Hedwigia 15: 495, 1968 (Schuster 1968b).

*** *Austrolophozia camensis* (Steph.) Grolle ex Hässel et Solari, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 3 (6): 240, 1970 (Hässel and Solari 1970). Bas.: *Tylimanthus camensis* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 24, 1911 (Stephani 1911b).

*** *Austrolophozia paradoxa* R.M.Schust., J. Hattori Bot. Lab. 26: 282, 1963 (Schuster 1963b).

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66 *Acrobolbus bispinosus* is a *Plagiochila* species (Burghardt and Gradstein 2008).

*** ***Goebelobryum* Grolle**, J. Hattori Bot. Lab. 25: 135, 1962 (Grolle 1962b).
*** *Goebelobryum grossitextum* (Steph.) Grolle, J. Hattori Bot. Lab. 25: 137, 1962 (Grolle 1962b). Bas.: *Marsupidium grossitextum* Steph., Sp. Hepat. (Stephani) 6: 446, 1924 (Stephani 1924).
*** *Goebelobryum unguiculatum* (Hook.f. et Taylor) Grolle, J. Hattori Bot. Lab. 25: 137, 1962 (Grolle 1962b). Bas.: *Jungermannia unguiculata* Hook.f. et Taylor, London J. Bot. 5: 279, 1846 (Taylor 1846a).
*** *Goebelobryum vermiculare* J.J.Engel et Glenny, Nova Hedwigia 95 (3/4): 320, 2012 (Engel and Glenny 2012).

** Lethocoleoideae Grolle

*** ***Lethocolea* Mitt.**, Handb. N. Zeal. fl. 2: 751, 1867 (Hooker 1867) nom. conserv.
** *Lethocolea congesta* (Lehm.) S.W.Arnell, Bot. Not. 108: 311, 1955 (Arnell 1955b). Bas.: *Jungermannia congesta* Lehm., Linnaea 4: 365, 1829 (Lehmann 1829).
*** *Lethocolea glossophylla* (Spruce) Grolle, Bot. Mag. (Tokyo) 78 (921): 83, 1965 (Grolle 1965c). Bas.: *Symphyomitra glossophylla* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 503, 1885 (Spruce 1885).
** *Lethocolea indica* G.Asthana et Maurya, Natl. Acad. Sci. Lett. 37 (6): 535, 2014 (Asthana and Maurya 2014).
*** *Lethocolea javanica* (Schiffn.) Grolle, Bot. Mag. (Tokyo) 78 (921): 83, 1965 (Grolle 1965c). Bas.: *Symphyomitra javanica* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 193, 1898 (Schiffner 1898a).
** *Lethocolea naruto-toganensis* Furuki, Bryologist 104 (2): 306, 2001 (Furuki 2001).
*** *Lethocolea pansa* (Taylor) G.A.M.Scott et K.G.Beckm., Symp. Biol. Hung. 35: 212, 1987 (Scott and Beckmann 1987). Bas.: *Jungermannia pansa* Taylor, London J. Bot. 5: 275, 1846 (Taylor 1846a).
*** *Lethocolea radicosa* (Lehm. et Lindenb.) Grolle, Bot. Mag. (Tokyo) 78 (921): 83, 1965 (Grolle 1965c). Bas.: *Jungermannia radicosa* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 35, 1834 (Lehmann 1834).
* *Lethocolea repens* S.Winkl., Mitt. Inst. Colombo-Alemán Invest. Ci. 3: 67, 1969 (Winkler 1969).

** Saccogynidioideae Crand.-Stotl., Váňa et Stotler

*** ***Saccogynidium* Grolle**, J. Hattori Bot. Lab. 23: 43, 1960 [1961] (Grolle 1960d).

** **sect. *Decurvum* Grolle**, J. Hattori Bot. Lab. 23: 59, 1960 (Grolle 1960d).
*** *Saccogynidium decurvum* (Mitt.) Grolle, J. Hattori Bot. Lab. 23: 59, 1960 [1961] (Grolle 1960d). Bas.: *Lophocolea decurva* Mitt., Bot. antarct. voy. III (Fl. Tasman. 2): 227, 1860 (Mitten 1860b).

** **sect. *Jugata* Grolle**, J. Hattori Bot. Lab. 23: 55, 1960 (Grolle 1960d).
** *Saccogynidium rigidulum* (Nees) Grolle, J. Hattori Bot. Lab. 23: 52, 1960 [1961] (Grolle 1960d). Bas.: *Jungermannia rigidula* Nees, Enum. Pl. Crypt. Javae: 25, 1830 (Nees 1830).

** **sect. *Saccogynidium***
*** *Saccogynidium australe* (Mitt.) Grolle, J. Hattori Bot. Lab. 23: 49, 1960 [1961] (Grolle 1960d). Bas.: *Saccogyna australis* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 145, 1854 (Mitten 1854).
** *Saccogynidium caldense* (Ångstr.) Grolle, J. Hattori Bot. Lab. 23: 44, 1960 [1961] (Grolle 1960d). Bas.: *Chiloscyphus caldensis* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 33 (7): 80, 1876 [1877] (Ångström 1876).
** *Saccogynidium goebelii* (Herzog) Grolle, J. Hattori Bot. Lab. 23: 52, 1960 [1961] (Grolle 1960d). Bas.: *Leioscyphus goebelii* Herzog, Ann. Bryol. 5: 89, 1932 (Herzog 1932a).
** *Saccogynidium muricellum* (De Not.) Grolle, J. Hattori Bot. Lab. 36: 80, 1972 [1973] (Grolle and Schultze-Motel 1972). Bas.: *Chiloscyphus muricellus* De Not., Epat. Borneo: 24, 1874 (De Notaris 1874).
*** *Saccogynidium vasculosum* (Hook.f. et Taylor) Grolle, J. Hattori Bot. Lab. 23: 46, 1960 [1961] (Grolle 1960d). Bas.: *Jungermannia vasculosa* Hook.f. et Taylor, London J. Bot. 3: 461, 1844 (Hooker and Taylor 1844b).

Incertae sedis
** *Saccogynidium chiloscyphoides* R.M.Schust., J. Hattori Bot. Lab. 26: 272, 1963 (Schuster 1963b).
** *Saccogynidium irregularospinum* C.Gao, T.Cao et M.J.Lai, Bryologist 104 (1): 129, 2001 (Gao et al. 2001).

*** Antheliaceae R.M.Schust.

*** ***Anthelia* (Dumort.) Dumort.**, Recueil Observ. Jungerm.: 18, 1835 (Dumortier 1835). Bas.: *Jungermannia* sect. *Anthelia* Dumort., Syll. Jungerm. Europ.: 63, 1831 (Dumortier 1831).
*** *Anthelia julacea* (L.) Dumort., Recueil Observ. Jungerm.: 18, 1835 (Dumortier 1835). Bas.: *Jungermannia julacea* L., Sp. Pl., ed. 2: 1601, 1763 (Linnaeus 1763).
** *Anthelia juratzkana* (Limpr.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 416, 1877 (Trevisan 1877). Bas.: *Jungermannia juratzkana* Limpr., Hedwigia 15 (2): 18, 1876 (Limpricht 1876).

*** Arnelliaceae Nakai

Crandall-Stotler et al. (2009) placed *Stephaniella* and *Stephaniellidium* in Arnelliaceae following de Roo et al. (2007). However, Váňa et al. (2012e) argued based on further molecular evidence that Arnelliaceae should be retained as a monotypic family with a single species.

*** ***Arnellia* Lindb.**, Kongl. Svenska Vetensk.-Akad. Handl. (n.ser.) 23 (5): 35, 1889 (Lindberg and Arnell 1889).

*** *Arnellia fennica* (Gottsche) Lindb., Kongl. Svenska Vetensk.-Akad. Handl. (n.ser.) 23 (5): 35, 1889 (Lindberg and Arnell 1889). Bas.: *Jungermannia fennica* Gottsche, Hepat. Eur., Leberm. 42-44: no. 418, 1868 (Gottsche and Rabenhorst 1868).

*** Balantiopsidaceae H.Buch

by J.J. Engel with contribution by J. Váňa (*Neesioscyphus*)

The placement of *Pseudoisotachis* in Balantiopsidaceae is only preliminary (cf. Váňa 2013).

*** ***Acroscyphella* N.Kitag. et Grolle**, Acta Phytotax. Geobot. 36 (1/3): 58, 1985 (Kitagawa and Grolle 1985). *Nom. nov. pro Acroscyphus* N.Kitag., Acta Phytotax. Geobot. 35 (1/3): 1, 1984 (Kitagawa 1984).

*** *Acroscyphella iwatsukii* (N.Kitag.) N.Kitag. et Grolle, Acta Phytotax. Geobot. 36 (1/3): 58, 1985 (Kitagawa and Grolle 1985). Bas.: *Acroscyphus iwatsukii* N.Kitag., Acta Phytotax. Geobot. 35 (1/3): 3, 1984 (Kitagawa 1984).

*** *Acroscyphella phoenicorhiza* (Grolle) N.Kitag. et Grolle, Acta Phytotax. Geobot. 36 (1/3): 58, 1985 (Kitagawa and Grolle 1985). Bas.: *Neesioscyphus phoenicorhizus* Grolle, Österr. Bot. Z. 111 (1): 27, 1964 (Grolle 1964e).

*** *Acroscyphella tjiwideiensis* (Sande Lac.) N.Kitag. et Grolle, Acta Phytotax. Geobot. 36 (1/3): 58, 1985 (Kitagawa and Grolle 1985). Bas.: *Chiloscyphus tjiwideiensis* Sande Lac., Ned. Kruidk. Arch. 3: 418, 1854 [1855] (Sande Lacoste 1854).

** ***Pseudoisotachis* Váňa**, Polish Bot. J. 58 (1): 55, 2013 (Váňa 2013).

** *Pseudoisotachis pocsii* Váňa, Polish Bot. J. 58 (1): 55, 2013 (Váňa 2013).

*** Balantiopsidoideae J.J.Engel et Váňa

*** ***Balantiopsis* Mitt.**, Handb. N. Zeal. fl. 2: 751, 1867 (Hooker 1867).

*** *Balantiopsis asymmetrica* (Herzog) J.J.Engel, Nova Hedwigia 16: 93, 1968 (Engel 1968). Bas.: *Balantiopsis latifolia* var. *asymmetrica* Herzog, Rev. Bryol. Lichénol. 23 (1/2): 53, 1954 (Herzog 1954).

*** *Balantiopsis bisbifida* (Steph.) Steph., Sp. Hepat. (Stephani) 4: 101, 1910 (Stephani 1910b). Bas.: *Isotachis bisbifida* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 17): 24, 1901 (Stephani 1901b).

*** *Balantiopsis brasiliensis* Steph., Sp. Hepat. (Stephani) 4: 104, 1910 (Stephani 1910b).

*** *Balantiopsis cancellata* (Nees) Steph., Sp. Hepat. (Stephani) 4: 103, 1910 (Stephani 1910b). Bas.: *Ptilidium cancellatum* Nees, Syn. Hepat. 2: 251, 1845 (Gottsche et al. 1845a).

*** *Balantiopsis ciliaris* S.Hatt., J. Jap. Bot. 41 (5): 129, 1966 (Hattori 1966b).

** *Balantiopsis ciliaris* subsp. *novoguineensis* S.Hatt., J. Jap. Bot. 41 (5): 131, 1966 (Hattori 1966b).

*** *Balantiopsis convexiuscula* Berggr., New Zealand Hepat.: 44, 1898 (Berggren 1898).

*** *Balantiopsis crocea* Herzog, Beih. Bot. Centralbl. 60B (1/2): 12, 1939 (Herzog 1939c).

*** *Balantiopsis diplophylla* (Hook.f. et Taylor) Mitt., Handb. N. Zeal. fl. 2: 753, 1867 (Hooker 1867). Bas.: *Jungermannia diplophylla* Hook.f. et Taylor, London J. Bot. 3: 377, 1844 (Hooker and Taylor 1844a).

** *Balantiopsis diplophylla* var. *hockenii* (Berggr.) J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 37: 11, 1997 (Engel and Smith Merrill 1997). Bas.: *Balantiopsis hockenii* Berggr., New Zealand Hepat.: 46, 1898 (Berggren 1898).

*** *Balantiopsis erinacea* (Hook.f. et Taylor) Mitt., Handb. N. Zeal. fl. 2: 753, 1867 (Hooker 1867). Bas.: *Jungermannia erinacea* Hook.f. et Taylor, London J. Bot. 3: 462, 1844 (Hooker and Taylor 1844b).

*** *Balantiopsis lingulata* R.M.Schust., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 11 (1): 26, 1968 (Schuster 1968a).

*** *Balantiopsis montana* (Colenso) J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 37: 12, 1997 (Engel and Smith Merrill 1997). Bas.: *Chiloscyphus montanus* Colenso, Trans. & Proc. New Zealand Inst. 21: 62, 1889 (Colenso 1889).

** *Balantiopsis neocaledonica* Pearson, J. Linn. Soc., Bot. 46 (305): 28, 1922 (Pearson 1922b).

** *Balantiopsis paucidens* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 17): 29, 1901 (Stephani 1901b).

*** *Balantiopsis purpurata* Mitt., Rep. Challenger, Bot. 1 (3, 1): 86, 1884 (Mitten 1884b).

*** *Balantiopsis rosea* Berggr., New Zealand Hepat.: 43, 1898 (Berggren 1898).

*** *Balantiopsis splendens* (Steph.) J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 37: 55, 1997 (Engel and Smith Merrill 1997). Bas.: *Isotachis splendens* Steph., Hedwigia 34 (2): 49, 1895 (Stephani 1895c).

*** *Balantiopsis tumida* Berggr., New Zealand Hepat.: 45, 1898 (Berggren 1898).

*** *Balantiopsis verrucosa* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 37: 16, 1997 (Engel and Smith Merrill 1997).

*** Isotachidoideae Grolle

*** ***Isotachis* Mitt.**, Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 148, 1854 (Mitten 1854).

*** *Isotachis armata* (Nees) Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 121, 1864 (Gottsche 1864). Bas.: *Jungermannia armata* Nees, Syn. Hepat. 1: 129, 1844 (Gottsche et al. 1844).

*** *Isotachis aubertii* (Schwägr.) Mitt., J. Linn. Soc., Bot. 22 (146): 322, 1886 (Mitten 1886b). Bas.: *Jungermannia aubertii* Schwägr., Hist. Musc. Hepat. Prodr.: 19, 1814 (Schwägrichen 1814).

* *Isotachis boliviensis* Gottsche, Sp. Hepat. (Stephani) 3: 670, 1909 (Stephani 1909a).

** *Isotachis chinensis* C.Gao, T.Cao et J.Sun, Bryologist 105 (4): 694, 2002 [2003] (Gao et al. 2002).

** *Isotachis erythrorhiza* (Lehm. et Lindenb.) Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 338, 1885 (Spruce 1885). Bas.: *Jungermannia erythrorhiza* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 44, 1832 (Lehmann 1832).

*** *Isotachis fragilis* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 67, 1911 (Stephani 1911b).

** *Isotachis grandis* Carrington et Pearson, Proc. Linn. Soc. New South Wales (ser. 2) 2 (4): 1041, 1888 (Carrington and Pearson 1888a).

*** *Isotachis grossidens* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 69, 1911 (Stephani 1911b).

** *Isotachis hastatistipula* (Steph.) J.J.Engel, Phytotaxa 183 (4): 299, 2014 (Engel et al. 2014). Bas.: *Balantiopsis hastatistipula* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 98, 1914 (Stephani and Watts 1914).

* *Isotachis hians* Steph., Sp. Hepat. (Stephani) 3: 665, 1909 (Stephani 1909a).

*** *Isotachis humectata* (Hook.f. et Taylor) Steph., Sp. Hepat. (Stephani) 3: 654, 1909 (Stephani 1909a). Bas.: *Jungermannia humectata* Hook.f. et Taylor, London J. Bot. 3: 462, 1844 (Hooker and Taylor 1844b).

** *Isotachis inflata* Steph., Arch. Mus. Nac. Rio de Janeiro 13: 113, 1905 (Stephani 1905c).

*** *Isotachis intortifolia* (Hook.f. et Taylor) Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 121, 1864 (Gottsche 1864). Bas.: *Jungermannia intortifolia* Hook.f. et Taylor, London J. Bot. 3: 374, 1844 (Hooker and Taylor 1844a).

** *Isotachis japonica* Steph., Sp. Hepat. (Stephani) 3: 652, 1909 (Stephani 1909a).

* *Isotachis lacustris* Herzog, Hedwigia 74 (2): 94, 1934 (Herzog 1934a).

*** *Isotachis lopezii* (R.M.Schust.) Gradst., Mem. New York Bot. Gard. 84: 66, 1999 (Gradstein 1999). Bas.: *Ruizanthus lopezii* R.M.Schust., Phytologia 39 (4): 241, 1978 (Schuster 1978a).

*** *Isotachis lyallii* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 149, 1854 (Mitten 1854).

*** *Isotachis minima* Pearson, Univ. Calif. Publ. Bot. 10 (4): 322, 1923 (Pearson 1923).

*** *Isotachis montana* Colenso, Trans. & Proc. New Zealand Inst. 21: 68, 1889 (Colenso 1889).

*** *Isotachis multiceps* (Lindenb. et Gottsche) Gottsche, Mexik. Leverm.: 105, 1863 (Gottsche 1863). Bas.: *Jungermannia multiceps* Lindenb. et Gottsche, Syn. Hepat. 5: 687, 1847 (Gottsche et al. 1847). [67]

** *Isotachis multiceps* var. *fendleri* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 125, 1864 (Gottsche 1864).

** *Isotachis nigella* Herzog, Memoranda Soc. Fauna Fl. Fennica 27: 107, 1952 (Herzog 1952c).

*** *Isotachis obtusa* Steph., Sp. Hepat. (Stephani) 6: 354, 1922 (Stephani 1922).

** *Isotachis olivacea* R.M.Schust., J. Hattori Bot. Lab. 83: 207, 1997 (Schuster and Engel 1997).

*** *Isotachis plicata* J.J.Engel, J. Hattori Bot. Lab. 83: 210, 1997 (Schuster and Engel 1997).

** *Isotachis pusilla* Steph., Sp. Hepat. (Stephani) 3: 655, 1909 (Stephani 1909a).

** *Isotachis riparia* Rodway, Tasm. Bryoph.: 63, 1917 (Rodway 1917b).

*** *Isotachis serrulata* (Sw.) Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 121, 1864 (Gottsche 1864). Bas.: *Jungermannia serrulata* Sw., Prodr. (Swartz): 143, 1788 (Swartz 1788).

*** *Isotachis spegazziniana* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 220, 1885 (Massalongo 1885).

* *Isotachis sprucei* Beauverd, Sp. Hepat. (Stephani) 6: 572, 1924 (Stephani 1924). *Nom. nov. pro Isotachis trifida* Steph., Sp. Hepat. (Stephani) 6: 356, 1922 (Stephani 1922), *nom. illeg*.

*** *Isotachis stephanii* E.S.Salmon, Rev. Bryol. 28 (4): 75, 1901 (Salmon 1901).

* *Isotachis vexans* Steph., Sp. Hepat. (Stephani) 3: 662, 1909 (Stephani 1909a).

*** *Isotachis westlandica* (E.A.Hodgs.) R.M.Schust., Nova Hedwigia 15: 455, 1968 (Schuster 1968b). Bas.: *Rhizocaulia westlandica* E.A.Hodgs., Trans. Roy. Soc. New Zealand, Bot. 3 (4): 78, 1965 (Hodgson 1965).

*** ***Neesioscyphus* Grolle**, Österr. Bot. Z. 111 (1): 19, 1964 (Grolle 1964e).

*** *Neesioscyphus allionii* (Steph.) Grolle, Rev. Bryol. Lichénol. 34 (1/2): 185, 1966 (Grolle 1966c). Bas.: *Isotachis allionii* Steph., Sp. Hepat. (Stephani) 6: 350, 1922 (Stephani 1922).

*** *Neesioscyphus argillaceus* (Nees) Grolle, Österr. Bot. Z. 111 (1): 24, 1964 (Grolle 1964e). Bas.: *Jungermannia argillacea* Nees, Fl. Bras. (Martius) 1 (1): 338, 1833 (Nees 1833a).

*** *Neesioscyphus bicuspidatus* (Steph.) Grolle, Rev. Bryol. Lichénol. 34 (1/2): 182, 1966 (Grolle 1966c). Bas.: *Isotachis bicuspidata* Steph., Symb. Antill. 2: 471, 1901 (Stephani 1901f).

*** *Neesioscyphus carneus* (Nees) Grolle, Österr. Bot. Z. 111 (1): 20, 1964 (Grolle 1964e). Bas.: *Jungermannia carnea* Nees, Fl. Bras. (Martius) 1 (1): 337, 1833 (Nees 1833a).

*** *Neesioscyphus homophyllus* (Nees) Grolle, Österr. Bot. Z. 111 (2/3): 188, 1964 (Grolle 1964f). Bas.: *Jungermannia homophylla* Nees, Fl. Bras. (Martius) 1 (1): 336, 1833 (Nees 1833a).

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67 *Isotachis multiceps* is sometimes treated as a *Hypoisotachis*, but recent molecular studies (Forrest et al. 2006, Cooper et al. 2012b) point towards inclusion in *Isotachis*.

** Ruizanthoideae R.M.Schust. ex J.J.Engel et G.L.Merr.

*** ***Ruizanthus* R.M.Schust.**, Phytologia 39 (4): 240, 1978 (Schuster 1978a).
*** *Ruizanthus venezuelanus* R.M.Schust., Phytologia 39 (4): 240, 1978 (Schuster 1978a).

*** Blepharidophyllaceae R.M.Schust. ex J.J.Engel

by J.J. Engel

*** ***Blepharidophyllum* Ångstr.**, Öfvers. Kongl. Vetensk.-Akad. Förh. 30 (5): 151, 1873 (Ångström 1873).
*** *Blepharidophyllum densifolium* (Hook.) Ångstr. ex C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 208, 1885 (Massalongo 1885). Bas.: *Jungermannia densifolia* Hook., Musci Exot. 1: tab. 36, 1818 (Hooker 1818).
*** *Blepharidophyllum vertebrale* (Gottsche) Ångstr. ex C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 208, 1885 (Massalongo 1885). Bas.: *Scapania vertebralis* Gottsche, Syn. Hepat. 1: 72, 1844 (Gottsche et al. 1844).

*** ***Clandarium* (Grolle) R.M.Schust.**, New Manual Bryol. 1: 541, 1983 [1984] (Schuster 1983a). Bas.: *Blepharidophyllum* subg. *Clandarium* Grolle, J. Hattori Bot. Lab. 28: 65, 1965 (Grolle 1965a).
*** *Clandarium clandestinum* (Mont.) R.M.Schust., New Manual Bryol. 1: 541, 1983 [1984] (Schuster 1983a). Bas.: *Plagiochila clandestina* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 247, 1843 (Montagne 1843).
*** *Clandarium gottscheanum* (Grolle) R.M.Schust., New Manual Bryol. 1: 541, 1983 [1984] (Schuster 1983a). Bas.: *Blepharidophyllum gottscheanum* Grolle, J. Hattori Bot. Lab. 28: 69, 1965 (Grolle 1965a).
*** *Clandarium xiphophyllum* (Grolle) R.M.Schust., Phytologia 56 (2): 68, 1984 (Schuster 1984). Bas.: *Blepharidophyllum xiphophyllum* Grolle, J. Hattori Bot. Lab. 28: 65, 1965 (Grolle 1965a).

*** Calypogeiaceae Arnell

by M.A.M. Renner

Calypogeiaceae is shown to be monophyletic (Masuzaki et al. 2010b) and the classification follows Schuster (2000a) and Masuzaki et al. (2010b).

*** ***Calypogeia* Raddi**, Jungermanniogr. Etrusca: 31, 1818 (Raddi 1818a) nom. conserv.

** **subg. *Asperifoliae* (Warnst.) R.M.Schust.**, Hepat. Anthocerotae N. Amer. 2: 115, 1969 (Schuster 1969b). Bas.: *Calypogeia* [unranked] *Asperifoliae* Warnst., Bryol. Z. 1 (7): 111, 1917 (Warnstorf 1917).
*** *Calypogeia arguta* Nees et Mont., Naturgesch. Eur. Leberm. 3: 24, 1838 (Nees 1838b).
** *Calypogeia sullivantii* Austin, Hepat. bor.-amer.: 19, 1873 (Austin 1873).

** **subg. *Calypogeia***
*** *Calypogeia andicola* Bischl., Candollea 18: 79, 1962 (Bischler 1962a).
** *Calypogeia annabonensis* Steph., Sp. Hepat. (Stephani) 6: 447, 1924 (Stephani 1924).
** *Calypogeia azorica* Bischl., Rev. Bryol. Lichénol. 37 (1): 116, 1970 (Bischler 1970).
*** *Calypogeia azurea* Stotler et Crotz, Taxon 32 (1): 74, 1983 (Stotler and Crotz 1983).
*** *Calypogeia bidentula* (F.Weber) Nees, Syn. Hepat. 2: 199, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia bidentula* F.Weber, Hist. Musc. Hepat. Prodr.: 38, 1815 (Weber 1815).
** *Calypogeia falcata* Bischl., Candollea 18: 112, 1962 (Bischler 1962c).
*** *Calypogeia fissa* (L.) Raddi, Jungermanniogr. Etrusca: 33, 1818 (Raddi 1818a). Bas.: *Mnium fissum* L., Sp. Pl. 1: 1114, 1753 (Linnaeus 1753), *nom. conserv.* [68]
** *Calypogeia fissa* subsp. *neogaea* R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 169, 1969 (Schuster 1969b).
** *Calypogeia goebelii* (Schiffn.) Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 677 (409), 1908 (Stephani 1908d). Bas.: *Kantius goebelii* Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 260, 1893 (Schiffner 1893a).
** *Calypogeia goebelii* var. *siamensis* N.Kitag., Beih. Nova Hedwigia 90: 165, 1988 (Kitagawa 1988).
*** *Calypogeia grandistipula* (Steph.) Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 669 (401), 1908 (Stephani 1908d). Bas.: *Kantius grandistipulus* Steph., Hedwigia 34 (2): 52, 1895 (Stephani 1895c).
*** *Calypogeia integristipula* Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 662 (394), 1908 (Stephani 1908d).
*** *Calypogeia laxa* Gottsche et Lindenb., Syn. Hepat. 5: 713, 1847 (Gottsche et al. 1847).
*** *Calypogeia lechleri* (Steph.) Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 680 (412), 1908 (Stephani 1908d). Bas.: *Kantius lechleri* Steph., Hedwigia 34 (2): 53, 1895 (Stephani 1895c). [69]
** *Calypogeia lechleri* var. *densifolia* (Steph.) Bischl., Candollea 18: 101, 1962 (Bischler 1962c). Bas.: *Kantius densifolius* Steph., Hedwigia 34 (2): 52, 1895 (Stephani 1895c).
** *Calypogeia longifolia* Steph., Sp. Hepat. (Stephani) 6: 449, 1924 (Stephani 1924).
** *Calypogeia lophocoleoides* Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 677 (409), 1908 (Stephani 1908d).

68 *Calypogeia fissa* contains two well separated taxa (Buczkowska et al. 2011), but a formal taxonomic treatment is not yet available.

69 *Calypogeia lechleri* was treated as conspecific with *Calypogeia leptoloma* by Bischler (1962c) with hesitation (type specimen not found).

** *Calypogeia mascarenensis* Bischl., Rev. Bryol. Lichénol. 37 (1): 89, 1970 (Bischler 1970).

** *Calypogeia microstipula* (Steph.) Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 670 (402), 1908 (Stephani 1908d). Bas.: *Kantius microstipulus* Steph., Hedwigia 34 (2): 53, 1895 (Stephani 1895c).

*** *Calypogeia miquelii* Mont. ex Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 200, 1845 (Gottsche et al. 1845a).

*** *Calypogeia muelleriana* (Schiffn.) Müll.Frib., Beih. Bot. Centralbl. 10 (4/5): 217, 1901 (Müller 1901b). Bas.: *Kantius muellerianus* Schiffn., Sitzungsber. deutsch. naturwiss.-med. Vereins Böhmen "Lotos" Prag 48: 342, 1900 (Schiffner 1900d). [70]

** *Calypogeia muelleriana* subsp. *blomquistii* R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 187, 1969 (Schuster 1969b).

*** *Calypogeia neesiana* (C.Massal. et Carestia) Müll.Frib., Verh. Bot. Vereins Prov. Brandenburg 47: 320, 1905 (Loeske 1905). Bas.: *Kantius trichomanis* var. *neesianus* C.Massal. et Carestia, Nuovo Giorn. Bot. Ital. 12 (4): 351, 1880 (Massalongo and Carestia 1880).

** *Calypogeia neesiana* subsp. *subalpina* (Inoue) Inoue, Mem. Natl. Sci. Mus. (Tokyo) 4: 58, 1971 (Inoue 1971a). Bas.: *Calypogeia subalpina* Inoue, J. Jap. Bot. 37 (4): 103, 1962 (Inoue 1962b).

*** *Calypogeia oblata* Herzog, Svensk Bot. Tidskr. 51 (1): 189, 1957 (Herzog 1957a).

*** *Calypogeia peruviana* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 9: 47, 1838 (Montagne 1838).

*** *Calypogeia rhombifolia* (Spruce) Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 667 (399), 1908 (Stephani 1908d). Bas.: *Kantius rhombifolius* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 413, 1885 (Spruce 1885).

** *Calypogeia rhombifolia* var. *colombiana* Bischl., Candollea 18: 104, 1962 (Bischler 1962c).

*** *Calypogeia sphagnicola* (Arnell et J.Perss.) Warnst. et Loeske, Verh. Bot. Vereins Prov. Brandenburg 47: 320, 1905 (Loeske 1905). Bas.: *Kantius sphagnicola* Arnell et J.Perss., Rev. Bryol. 29 (2): 26, 1902 (Arnell 1902). [71]

*** *Calypogeia subintegra* (Gottsche, Lindenb. et Nees) Bischl., Candollea 18: 75, 1962 (Bischler 1962a). Bas.: *Calypogeia peruviana* β *subintegra* Gottsche, Lindenb. et Nees, Syn. Hepat. 5: 712, 1847 (Gottsche et al. 1847).

** *Calypogeia subintegra* var. *dussiana* (Steph.) Bischl., Candollea 18: 77, 1962 (Bischler 1962a). Bas.: *Calypogeia dussiana* Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 672 (404), 1908 (Stephani 1908d).

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70 *Calypogeia muelleriana* contains two well separated taxa (Buczkowska 2010, Buczkowska and Bączkiewicz 2011). One corresponds well to the type of the species while the name of the other is unknown.

71 *Calypogeia sphagnicola* is a species complex including at least three genetically and morphologically well separated taxa (Buczkowska et al. 2012b, 2012a). They all need to be compared with types of many existing names in the genus before the correct name can be assigned.

*** *Calypogeia suecica* (Arnell et J.Perss.) Müll.Frib., Beih. Bot. Centralbl. 17 (2): 224, 1904 (Müller 1904). Bas.: *Kantius suecicus* Arnell et J.Perss., Rev. Bryol. 29 (2): 29, 1902 (Arnell 1902).

*** *Calypogeia tenax* (Spruce) Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 664 (396), 1908 (Stephani 1908d). Bas.: *Kantius tenax* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 416, 1885 (Spruce 1885).

** *Calypogeia uncinulatula* Herzog, Hedwigia 67 (6): 250, 1927 (Herzog 1927).

Incertae sedis

*** *Calypogeia aeruginosa* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 107, 1860 [1861] (Mitten 1860c).

* *Calypogeia amazonica* (Spruce) Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 680 (412), 1908 (Stephani 1908d). Bas.: *Kantius amazonicus* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 415, 1885 (Spruce 1885). [72]

** *Calypogeia angusta* Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 663 (395), 1908 (Stephani 1908d).

** *Calypogeia apiculata* (Steph.) Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 668 (400), 1908 (Stephani 1908d). Bas.: *Kantius apiculatus* Steph., Hedwigia 34 (2): 51, 1895 (Stephani 1895c).

** *Calypogeia asakawana* S.Hatt. ex Inoue, J. Jap. Bot. 39 (4): 107, 1964 (Inoue 1964a).

** *Calypogeia ceylanica* S.Hatt. et Mizut., Candollea 23: 288, 1968 (Hattori 1968).

** *Calypogeia contracta* Inoue, Bull. Natl. Sci. Mus. Tokyo, B 1 (4): 139, 1975 (Inoue 1975b).

** *Calypogeia cuspidata* (Steph.) Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 669 (401), 1908 (Stephani 1908d). Bas.: *Kantius cuspidatus* Steph., Bull. Herb. Boissier 5 (10): 846, 1897 (Stephani 1897c).

* *Calypogeia decurrens* (Steph.) Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 675 (407), 1908 (Stephani 1908d). Bas.: *Kantius decurrens* Steph., Hedwigia 34 (2): 52, 1895 (Stephani 1895c).

** *Calypogeia formosana* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 186, 1934 (Horikawa 1934).

** *Calypogeia fujisana* Inoue, Bull. Natl. Sci. Mus. Tokyo, B 1 (4): 135, 1975 (Inoue 1975b).

** *Calypogeia granulata* Inoue, J. Jap. Bot. 43 (10/11): 468, 1968 (Inoue 1968b).

** *Calypogeia japonica* Steph., Sp. Hepat. (Stephani) 6: 448, 1924 (Stephani 1924).

** *Calypogeia khasiana* Ajit P.Singh et V.Nath, Taiwania 52 (4): 320, 2007 (Singh and Nath 2007a).

** *Calypogeia latissima* Steph., Sp. Hepat. (Stephani) 6: 449, 1924 (Stephani 1924).

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72 *Calypogeia amazonica* was treated as conspecific with *Calypogeia miquelii* in Gradstein et al. (1994), but it has been accepted by later authors (e.g. Churchill et al. 2008, Söderström et al. 2013e).

*** *Calypogeia lunata* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 107, 1860 [1861] (Mitten 1860c).
** *Calypogeia marginella* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 106, 1860 [1861] (Mitten 1860c).
** *Calypogeia obovata* R.M.Schust., Phytologia 39 (4): 242, 1978 (Schuster 1978a).
* *Calypogeia steyermarkii* Fulford, Mem. New York Bot. Gard. 11 (3): 305, 1968 (Fulford 1968).
** *Calypogeia tosana* (Steph.) Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 678 (410), 1908 (Stephani 1908d). Bas.: *Kantius tosanus* Steph., Hedwigia 34 (2): 54, 1895 (Stephani 1895c).
** *Calypogeia udarii* Sudipa Das et D.K.Singh, Nelumbo 53: 194, 2011 (Das and Singh 2011).

** ***Eocalypogeia* (R.M.Schust.) R.M.Schust.**, Fragm. Florist. Geobot. 40 (2): 861, 1995 (Schuster 1995a). Bas.: *Metacalypogeia* subg. *Eocalypogeia* R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 107, 1969 (Schuster 1969b).
** *Eocalypogeia quelpaertensis* (S.Hatt. et Inoue) R.M.Schust., Fragm. Florist. Geobot. 40 (2): 861, 1995 (Schuster 1995a). Bas.: *Metacalypogeia quelpaertensis* S.Hatt. et Inoue, J. Hattori Bot. Lab. 25: 129, 1962 (Hattori et al. 1962).
** *Eocalypogeia schusterana* (S.Hatt. et Mizut.) R.M.Schust., Fragm. Florist. Geobot. 40 (2): 861, 1995 (Schuster 1995a). Bas.: *Metacalypogeia schusterana* S.Hatt. et Mizut., Misc. Bryol. Lichenol. 4 (8): 121, 1967 (Hattori and Mizutani 1967).

** ***Metacalypogeia* (S.Hatt.) Inoue**, J. Hattori Bot. Lab. 21: 231, 1959 (Inoue 1959b). Bas.: *Calypogeia* subg. *Metacalypogeia* S.Hatt., J. Hattori Bot. Lab. 18: 83, 1957 (Hattori 1957b).
*** *Metacalypogeia alternifolia* (Nees) Grolle, Österr. Bot. Z. 111 (2/3): 185, 1964 (Grolle 1964f). Bas.: *Mastigobryum alternifolium* Nees, Syn. Hepat. 2: 216, 1845 (Gottsche et al. 1845a).
** *Metacalypogeia cordifolia* (Steph.) Inoue, J. Hattori Bot. Lab. 21: 233, 1959 (Inoue 1959b). Bas.: *Calypogeia cordifolia* Steph., Bull. Herb. Boissier (sér. 2) 8 (9): 661 (393), 1908 (Stephani 1908d).

** ***Mizutania* Furuki et Z.Iwats.**, J. Hattori Bot. Lab. 67: 291, 1989 (Furuki and Iwatsuki 1989).
*** *Mizutania riccardioides* Furuki et Z.Iwats., J. Hattori Bot. Lab. 67: 291, 1989 (Furuki and Iwatsuki 1989).

*** ***Mnioloma* Herzog**, Ann. Bryol. 3: 115, 1930 (Herzog 1930a).

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** *Mnioloma bolivianum* (Fulford) R.M.Schust., Beih. Nova Hedwigia 118: 509, 2000 (Schuster 2000a). Bas.: *Calypogeia boliviana* Fulford, Mem. New York Bot. Gard. 11 (3): 291, 1968 (Fulford 1968).

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*** Endogemmataceae Konstant., Vilnet et A.V.Troitsky

by N.A. Konstantinova

Vilnet et al. (2011) described the monotypic family Endogemmataceae based on molecular evidence after a re-evaluation of Solenostomataceae.

*** ***Endogemma* Konstant., Vilnet et A.V.Troitsky**, Folia Cryptog. Estonica 48: 132, 2011 (Vilnet et al. 2011).
*** *Endogemma caespiticia* (Lindenb.) Konstant., Vilnet et A.V.Troitsky, Folia Cryptog. Estonica 48: 132, 2011 (Vilnet et al. 2011). Bas.: *Jungermannia caespiticia* Lindenb., Syn. hepat. eur: 67, 1829 (Lindenberg 1829).

*** Geocalycaceae H.Klinggr.

Placement of Geocalycaceae in Jungermanniinae follows Shaw et al. (2015).

*** ***Geocalyx* Nees**, Naturgesch. Eur. Leberm. 1: 97, 1833 (Nees 1833c).
*** *Geocalyx caledonicus* Steph., Bull. Herb. Boissier (sér. 2) 8 (3): 205 (265), 1908 (Stephani 1908h).
*** *Geocalyx graveolens* (Schrad.) Nees, Naturgesch. Eur. Leberm. 2: 397, 1836 (Nees 1836). Bas.: *Jungermannia graveolens* Schrad., Syst. Samml. Crypt. Gew. 2: 6, 1797 (Schrader 1797).
** *Geocalyx lancistipulus* (Steph.) S.Hatt., J. Jap. Bot. 28 (8): 234, 1953 (Hattori 1953a). Bas.: *Lophocolea lancistipula* Steph., Sp. Hepat. (Stephani) 6: 281, 1922 (Stephani 1922).
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*** Gymnomitriaceae H.Klinggr.

by J. Váňa

The treatment of the family follows Váňa et al. (2010b) with some modifications. Nardioideae is included following Vilnet et al. (2010) and Váňa et al. (2014c). Some re-arrangements in *Apomarsupella*, *Gymnomitrion* and *Marsupella* were done by Vilnet et al (2010) and Shaw et al. (2015). Further notes on nomenclature and taxonomy can be found in Váňa et al. (2013d). *Herzogobryum* and *Nothogymnomitrion* were removed from the family by Váňa et al. (2013e). The placement of *Acrolophozia*, *Nanomarsupella* and *Paramomitrion* is provisional. Inclusion of *Cryptocoleopsis* follows Shaw et al (2015).

*** ***Acrolophozia*** **R.M.Schust.**, Rev. Bryol. Lichénol. 34 (1/2): 259, 1966 (Schuster 1966b).
*** *Acrolophozia fuegiana* R.M.Schust., Nova Hedwigia 15: 499, 1968 (Schuster 1968b).
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*** *Acrolophozia sulcata* Hässel, J. Bryol. 11 (1): 108, 1980 (Hässel 1980).

** ***Nanomarsupella*** **R.M.Schust. ex A.Hagborg, L.Söderstr. et von Konrat**, Phytotaxa 112 (1): 16, 2013 (Hagborg et al. 2013). Based on: *Marsupella* subg. *Nanomarsupella* R.M.Schust., Phytologia 39 (4): 248, 1978 (Schuster 1978a).
*** *Nanomarsupella xenophylla* (R.M.Schust.) R.M.Schust. ex A.Hagborg, L.Söderstr. et von Konrat, Phytotaxa 112 (1): 16, 2013 (Hagborg et al. 2013). Bas.: *Marsupella xenophylla* R.M.Schust., Phytologia 39 (4): 248, 1978 (Schuster 1978a).

** ***Paramomitrion*** **R.M.Schust.**, J. Hattori Bot. Lab. 80: 134, 1996 (Schuster 1996a).
*** *Paramomitrion paradoxum* R.M.Schust., J. Hattori Bot. Lab. 80: 135, 1996 (Schuster 1996a).

*** Gymnomitrioideae T.Jensen

** ***Cryptocoleopsis*** **Amakawa**, J. Hattori Bot. Lab. 21: 274, 1959 (Amakawa 1959a).
*** *Cryptocoleopsis imbricata* Amakawa, J. Hattori Bot. Lab. 21: 274, 1959 (Amakawa 1959a).

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*** *Gymnomitrion adustum* Nees, Naturgesch. Eur. Leberm. 1: 120, 1833 (Nees 1833c).
*** *Gymnomitrion africanum* (Steph.) Horik., Acta Phytotax. Geobot. 13: 212, 1943 (Horikawa 1943). Bas.: *Acolea africana* Steph., Sp. Hepat. (Stephani) 6: 77, 1917 (Stephani 1917a).
*** *Gymnomitrion alpinum* (Gottsche ex Husn.) Schiffn., Österr. Bot. Z. 53 (7): 280, 1903 (Schiffner 1903a). Bas.: *Sarcocyphos alpinus* Gottsche ex Husn., Hepaticol. gall. 1: 13, 1875 (Husnot 1875).
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*** *Gymnomitrion atrofilum* Váňa, J. Hattori Bot. Lab. 41: 411, 1976 (Váňa 1976b).
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** *Gymnomitrion incompletum* (Gottsche) R.M.Schust. ex Váňa, J. Hattori Bot. Lab. 40: 186, 1976 (Váňa 1976a). Bas.: *Jungermannia incompleta* Gottsche, Linnaea 28 (5): 551, 1856 [1857] (Gottsche 1856).

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** *Gymnomitrion strictum* var. *inaequale* R.M.Schust., J. Hattori Bot. Lab. 80: 118, 1996 (Schuster 1996a).

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*** Nardioideae Váňa

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** *Nardia minutifolia* Furuki, Bryol. Res. 9 (3): 73, 2006 (Furuki 2006b).
** *Nardia nuda* (Lindenb. et Gottsche) Váňa, Folia Geobot. Phytotax. 8 (2): 193, 1973 (Váňa 1973b). Bas.: *Jungermannia nuda* Lindenb. et Gottsche, Syn. Hepat. 5: 668, 1847 (Gottsche et al. 1847).
*** *Nardia poeltii* Váňa, J. Hattori Bot. Lab. 36: 73, 1972 [1973] (Váňa 1972b).
*** *Nardia scalaris* Gray, Nat. Arr. Brit. Pl. 1: 694, 1821 (Gray 1821).
* *Nardia scalaris* var. *botryoidea* (R.M.Schust.) Váňa, Phytotaxa 76 (3): 38, 2013 (Váňa et al. 2013d). Bas.: *Nardia scalaris* subsp. *botryoidea* R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 862, 1969 (Schuster 1969b).
* *Nardia scalaris* var. *harae* (Amakawa) Váňa, Phytotaxa 76 (3): 38, 2013 (Váňa et al. 2013d). Bas.: *Nardia harae* Amakawa, J. Jap. Bot. 32 (2): 38, 1957 (Amakawa 1957c).
*** *Nardia subclavata* (Steph.) Amakawa, J. Jap. Bot. 32 (2): 40, 1957 (Amakawa 1957c). Bas.: *Jungermannia subclavata* Steph., Sp. Hepat. (Stephani) 6: 93, 1917 (Stephani 1917a).
*** *Nardia succulenta* (A.Rich.) Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 519, 1885 (Spruce 1885). Bas.: *Jungermannia succulenta* A.Rich., Nov. Stirp. Pug. 4: 43, 1832 (Lehmann 1832).
*** *Nardia unispiralis* Amakawa, J. Jap. Bot. 32 (6): 167, 1957 (Amakawa 1957a).

** Gyrothyraceae R.M.Schust.

Placement of Gyrothyraceae in Jungermanniinae follows Shaw et al. (2015).

** ***Gyrothyra* M.Howe**, Bull. Torrey Bot. Club 24 (4): 201, 1897 (Howe 1897a).
*** *Gyrothyra underwoodiana* M.Howe, Bull. Torrey Bot. Club 24 (4): 202, 1897 (Howe 1897a).

73 *Nardia kamtschatica* may be conspecific with *Nardia assamica* (Váňa 1976c), but the type specimen could not be studied.

*** Harpanthaceae Arnell

Davis (2004) and Hentschel et al. (2006) resolved *Harpanthus* as an independent lineage which is recognized here as a monogeneric family as originally construed by Arnell (1928).

*** ***Harpanthus* Nees**, Naturgesch. Eur. Leberm. 2: 351, 1836 (Nees 1836).
*** *Harpanthus drummondii* (Taylor) Grolle, Österr. Bot. Z. 112 (3): 274, 1965 (Grolle 1965g). Bas.: *Chiloscyphus drummondii* Taylor, London J. Bot. 5: 283, 1846 (Taylor 1846a).
*** *Harpanthus flotovianus* (Nees) Nees, Naturgesch. Eur. Leberm. 2: 353, 1836 (Nees 1836). Bas.: *Jungermannia flotoviana* Nees, Flora 16 (26): 408, 1833 (Nees 1833b).
*** *Harpanthus scutatus* (F.Weber et D.Mohr) Spruce, Trans. Bot. Soc. Edinburgh 3 (1/4): 209, 1850 (Spruce 1850). Bas.: *Jungermannia scutata* F.Weber et D.Mohr, Bot. Taschenb. (Weber): 408, 1807 (Weber and Mohr 1807).

** Hygrobiellaceae Konstant. et Vilnet

by N. Konstantinova

The family Hygrobiellaceae was validated by Konstantinova et al. (2014a).

*** ***Hygrobiella* Spruce**, Cephalozia: 73, 1882 (Spruce 1882).
** *Hygrobiella intermedia* Bakalin et Vilnet, Pl. Syst. Evol. 300 (10): 2286, 2014 (Bakalin and Vilnet 2014).
*** *Hygrobiella laxifolia* (Hook.) Spruce, Cephalozia: 74, 1882 (Spruce 1882). Bas.: *Jungermannia laxifolia* Hook., Brit. Jungermann.: tab. 59, 1813 (Hooker 1813).
** *Hygrobiella squamosa* Bakalin et Vilnet, Pl. Syst. Evol. 300 (10): 2286, 2014 (Bakalin and Vilnet 2014).

*** Jackiellaceae R.M.Schust.

by J. Váňa

The monogeneric status of *Jackiella* is supported by a molecular study based on three loci by Hendry et al. (2007).

*** ***Jackiella* Schiffn.**, Hep. Fl. Buitenzorg: 211, 1900 (Schiffner 1900a).
** *Jackiella angustifolia* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 296, 1950 (Herzog 1950a).
** *Jackiella ceylanica* Schiffn. ex Steph., Bull. Herb. Boissier (sér. 2) 8 (3): 212 (272), 1908 (Stephani 1908h).

*** *Jackiella curvata* E.A.Hodgs. et Allison, Trans. Roy. Soc. New Zealand 85 (4): 571, 1958 (Hodgson 1958).
*** *Jackiella javanica* Schiffn., Hep. Fl. Buitenzorg: 212, 1900 (Schiffner 1900a).
** *Jackiella javanica* var. *cavifolia* Schiffn., Hep. Fl. Buitenzorg: 213, 1900 (Schiffner 1900a).
** *Jackiella javanica* var. *cordifolia* Schiffn., Hep. Fl. Buitenzorg: 213, 1900 (Schiffner 1900a).
** *Jackiella renifolia* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 70: 218, 1900 [1901] (Schiffner 1900c).
** *Jackiella sinensis* (W.E.Nicholson) Grolle, Österr. Bot. Z. 111 (2/3): 186, 1964 (Grolle 1964f). Bas.: *Aplozia sinensis* W.E.Nicholson, Symb. Sin. 5: 12, 1930 (Nicholson et al. 1930).
** *Jackiella singapurensis* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 70: 218, 1900 [1901] (Schiffner 1900c).
** *Jackiella singapurensis* var. *philippinensis* N.Kitag., Misc. Bryol. Lichenol. 9 (1): 9, 1981 (Kitagawa 1981b).

Excluded from the genus
* *Jackiella unica* Steph., Sp. Hepat. (Stephani) 6: 318, 1922 (Stephani 1922). [74]

*** Jungermanniaceae Rchb.

by J. Váňa

The treatment of Jungermanniaceae follows Shaw et al. (2015). Many old names in *Jungermannia* are still neither synonymized nor transferred and we do not know their value. Some of them may prove to be older names of currently accepted taxa. We list those doubtful names in a separate section below.

** Delavayelloideae Grolle

** ***Delavayella* Steph.**, Hedwigia 33 (1): 4, 1894 (Stephani 1894a).
** *Delavayella serrata* Steph., Mém. Soc. Nat. Sci. Nat. Math. Cherbourg 29: 211, 1894 (Stephani 1894b).
** *Delavayella serrata* var. *purpurea* P.C.Chen, Feddes Repert. Spec. Nov. Regni Veg. 58: 38, 1955 (Chen 1955).

** ***Liochlaena* Nees**, Syn. Hepat. 2: 150, 1845 (Gottsche et al. 1845a).
*** *Liochlaena lanceolata* Nees, Syn. Hepat. 2: 150, 1845 (Gottsche et al. 1845a).

74 *Jackiella unica* was identified as a *Colura* species before the B herbarium burned (Grolle 1966d).

*** *Liochlaena subulata* (A.Evans) Schljakov, Pečen. Mchi Sev. SSSR 4: 71, 1981 (Shliakov 1981). Bas.: *Jungermannia subulata* A.Evans, Trans. Connecticut Acad. Arts 8 (15): 258, 1891 (Evans 1891).

** Jungermannioideae Dumort.

** ***Eremonotus* Lindb. et Kaal. ex Pearson**, Hepat. Br. Isl. 1 (6-15): 200, 1900 (Pearson 1900).

*** *Eremonotus myriocarpus* (Carrington) Lindb. et Kaal. ex Pearson, Hepat. Br. Isl. 1 (6-15): 201, 1900 (Pearson 1900). Bas.: *Jungermannia myriocarpa* Carrington, Hepat. Brit. Exsicc. Fasc. II: no. 96, 1879 (Carrington and Pearson 1879).

*** ***Jungermannia* L.**, Sp. Pl. 1: 1131, 1753 (Linnaeus 1753). [75]

*** *Jungermannia atrovirens* Dumort., Syll. Jungerm. Europ.: 51, 1831 (Dumortier 1831).

*** *Jungermannia borealis* Damsh. et Váňa, Lindbergia 4 (1/2): 5, 1977 (Damsholt and Váňa 1977).

* *Jungermannia erectii* Ajit P.Singh et V.Nath, Hepat. Khasi Jaintia Hills: E. Himal.: 117, 2007 (Singh and Nath 2007b). [76]

*** *Jungermannia exsertifolia* Steph., Sp. Hepat. (Stephani) 6: 86, 1917 (Stephani 1917a).

** *Jungermannia exsertifolia* subsp. *cordifolia* (Dumort.) Váňa, Folia Geobot. Phytotax. 8 (3): 268, 1973 (Váňa 1973c). Bas.: *Aplozia cordifolia* Dumort., Bull. Soc. Roy. Bot. Belgique 13: 59, 1874 (Dumortier 1874).

*** *Jungermannia gollanii* Steph., Sp. Hepat. (Stephani) 6: 86, 1917 (Stephani 1917a).

** *Jungermannia konstantinovae* Bakalin et Vilnet, Arctoa 18: 161, 2009 [2010] (Bakalin and Vilnet 2009).

*** *Jungermannia ovatotrigona* (Steph.) Grolle, Feddes Repert. 82 (1): 90, 1971 (Grolle 1971b). Bas.: *Jamesoniella ovatotrigona* Steph., Biblioth. Bot. 87 (2): 184, 1916 (Stephani 1916a).

*** *Jungermannia polaris* Lindb., Öfvers. Kongl. Vetensk.-Akad. Förh. 23 (10): 560, 1866 [1867] (Lindberg 1866).

*** *Jungermannia pumila* With., Arr. Brit. Pl., ed. 3, 3: 883, 1796 (Withering 1796).

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75 *Jungermannia* was used for almost all leafy liverworts from Linnaeus (1753) and well into the 19th century. Some taxa have neither been transferred nor synonymized. As the names often are very old, they may gain priority over existing names if proven to be a synonym of something. They are listed in the "Names in genera not currently accepted" section below.

76 *Jungermannia erectii* was described on the basis of sterile material and it is not certain if it belongs in *Jungermannia* or *Solenostoma* (Váňa and Long 2009).

Taxa doubtfully belonging to the genus [77]

* *Jungermannia amentacea* Bertol., Mem. Reale Accad. Sci. Ist. Bologna (ser. 2) 1: 19, 1862 (Bertoloni 1862).
* *Jungermannia brasiliensis* Raddi, Critt. Brasil.: 15, 1822 (Raddi 1822). [78]
* *Jungermannia chinensis* Osbeck, Dagb. Ostind. Resa: 221, 1757 (Osbeck 1757). [79]
* *Jungermannia cordata* Vill., Hist. Pl. Dauphiné (Villars) 3: 923, 1789 (Villars 1789).
* *Jungermannia crenulata* Schmidel, Jungerm. Char.: 20, 1760 (Schmidel 1760).
* *Jungermannia creutzeri* Kremer, Monogr. hépat. Moselle: 26, 1837 (Krémer 1837).
* *Jungermannia digitata* C.F.W.Meissn. ex Spreng. Syst. Veg. (ed. 16) [Sprengel] 4 (2): 326, 1827 (Sprengel 1827b).
* *Jungermannia dubioides* H.A.Mill., Phytologia 47 (4): 322, 1981 (Miller 1981). *Nom. nov. pro Jungermannia dubia* Nees, Prodr. Fl. Norfolk.: 5, 1833 (Endlicher 1833), *nom. illeg.*
* *Jungermannia fernandeziana* Mitt., Rep. Challenger, Bot. 1 (3, 1): 85, 1884 (Mitten 1884b).
* *Jungermannia hexagona* Schwägr., Hist. Musc. Hepat. Prodr.: 18, 1814 (Schwägrichen 1814).
* *Jungermannia holandriana* Kremer, Monogr. hépat. Moselle: 25, 1837 (Krémer 1837).
* *Jungermannia incerta* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 344, 1882 (Gottsche 1882). [80]
* *Jungermannia lateriflora* Hampe ex Gottsche, Mexik. Leverm.: 82, 1863 (Gottsche 1863).
* *Jungermannia lescuriana* Austin, Rep. (Annual) Regents Univ. State New York State Cab. Nat. Hist. 19: 67, 1866 (Peck 1866). [81]
* *Jungermannia longiretis* Besch. et Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: clxxxv, 1889 [1890] (Bescherelle and Spruce 1889). [82]
* *Jungermannia mastigophora* Spreng. Neue Entdeck. Pflanzenk. 2: 99, 1821 (Sprengel 1821). [83]
* *Jungermannia michelii* Mérat, Nouv. fl. env. Paris (ed. 2) 1: 219, 1821 (Mérat 1821). [84]
* *Jungermannia minima* Scop., Fl. Carniol. (ed. 2) 2: 350, 1772 (Scopoli 1772).
* *Jungermannia odorata* With., Bot. arr. veg. Gr. Brit. 2: 693, 1776 (Withering 1776).
* *Jungermannia peltata* Schmidel, Jungerm. Char.: 14, 1760 (Schmidel 1760).

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77 *Jungermannia* was used for almost all leafy hepatics from Linnaeus (1753) and well into the 19th century. The following names have not been studied recently and are neither accepted nor synonymized. Many of them may have priority when their identity is determined.

78 *Jungermannia brasiliensis* is a taxon of uncertain status. Costa (2009) could not find any authentic material and did not know what it is.

79 *Jungermannia chinensis* may be conspecific with *Cephalozia connivens* or *Cephalozia bicuspidata*.

80 *Jungermannia incerta* is a doubtful taxon (Grolle 1995). The type specimen was burned in B.

81 *Jungermannia lescuriana* is a *Cephaloziella* species.

82 *Jungermannia longiretis* is an *Isotachis* species.

83 *Jungermannia mastigophora* is probably a *Mastigophora* species.

84 *Jungermannia michelii* is a *Fossombronia* species.

* *Jungermannia quadridigitata* Griff., Not. pl. asiat. 2: 314, 1849 (Griffith 1849). [85]
* *Jungermannia sauteri* De Not. ex Rabenh., Hedwigia 1 (20): 121, 1857 (Rabenhorst 1857).
* *Jungermannia secunda* Hampe ex Gottsche, Mexik. Leverm.: 82, 1863 (Gottsche 1863).
* *Jungermannia stereocaulis* Bory, Voy. Uranie, Bot. 4: 130, 1827 (Gaudichaud 1827). [86]
* *Jungermannia submersa* Kremer, Monogr. hépat. Moselle: 36, 1837 (Krémer 1837).
* *Jungermannia sullivantiana* Austin, Rep. (Annual) Regents Univ. State New York State Cab. Nat. Hist. 19: 66, 1866 (Peck 1866). [87]
* *Jungermannia supina* Hoffm., Deutschl. Fl., Theil 2 (Hoffm.): 86, 1795 [1796] (Hoffmann 1795).
* *Jungermannia tenuis* Ehrh., Beitr. Naturk. (Ehrhart) 4: 45, 1789 (Ehrhart 1789). [88]
* *Jungermannia uncifolia* Steph., Hedwigia 34 (2): 51, 1895 (Stephani 1895c).
* *Jungermannia vernicosa* Cass. ex Mérat, Nouv. fl. env. Paris (ed. 2) 1: 221, 1821 (Mérat 1821).

** Mesoptychioideae R.M.Schust.

*** ***Mesoptychia* (Lindb.) A.Evans**, Ottawa Naturalist 17: 15, 1903 (Evans 1903a). Bas.: *Jungermannia* sect. *Mesoptychia* Lindb., Kongl. Svenska Vetensk.-Akad. Handl. (n.ser.) 23 (5): 39, 1889 (Lindberg and Arnell 1889).
*** *Mesoptychia badensis* (Gottsche ex Rabenh.) L.Söderstr. et Váňa, Phytotaxa 65: 52, 2012 (Váňa et al. 2012b). Bas.: *Jungermannia badensis* Gottsche ex Rabenh., Hepat. Eur., Leberm. 9-10: no. 95, 1859 (Rabenhorst 1859).
*** *Mesoptychia bantriensis* (Hook.) L.Söderstr. et Váňa, Phytotaxa 65: 52, 2012 (Váňa et al. 2012b). Bas.: *Jungermannia bantriensis* Hook., Brit. Jungermann.: tab. 41, 1813 (Hooker 1813).
** *Mesoptychia bantriensis* subsp. *wallfischii* (Ştefănuţ) L.Söderstr. et Váňa, Phytotaxa 65: 52, 2012 (Váňa et al. 2012b). Bas.: *Leiocolea bantriensis* subsp. *wallfischii* Ştefănuţ, Hornwort Liverwort Romania: 21, 2008 (Ştefănuţ 2008).
* *Mesoptychia chichibuensis* (Inoue) L.Söderstr. et Váňa, Phytotaxa 65: 53, 2012 (Váňa et al. 2012b). Bas.: *Lophozia chichibuensis* Inoue, J. Jap. Bot. 36 (2): 41, 1961 (Inoue 1961b).
* *Mesoptychia collaris* (Nees) L.Söderstr. et Váňa, Phytotaxa 65: 53, 2012 (Váňa et al. 2012b). Bas.: *Jungermannia collaris* Nees, Fl. crypt. erlang.: xv, 1817 (Martius 1817).

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85 *Jungermannia quadridigitata* is conspecific with *Kurzia pauciflora* in Schuster (1969b), but that species does not occur in India (Sharma and Srivastava 1993). It is probably some other *Kurzia* species.

86 *Jungermannia stereocaulis* is a doubtful taxon. Engel (1990b) did not find any type specimen and did not know what it is.

87 *Jungermannia sullivantiana* is a *Cephaloziella* species.

88 *Jungermannia tenuis* is a *Lejeunea* species.

* *Mesoptychia fitzgeraldiae* (Paton et A.R.Perry) L.Söderstr. et Váňa, Phytotaxa 65: 53, 2012 (Váňa et al. 2012b). Bas.: *Leiocolea fitzgeraldiae* Paton et A.R.Perry, J. Bryol. 18 (3): 470, 1995 (Paton and Perry 1995).

*** *Mesoptychia gillmanii* (Austin) L.Söderstr. et Váňa, Phytotaxa 65: 53, 2012 (Váňa et al. 2012b). Bas.: *Jungermannia gillmanii* Austin, Bull. Torrey Bot. Club 3 (3): 12, 1872 (Austin 1872).

*** *Mesoptychia heterocolpos* (Thed. ex Hartm.) L.Söderstr. et Váňa, Phytotaxa 65: 53, 2012 (Váňa et al. 2012b). Bas.: *Jungermannia heterocolpos* Thed. ex Hartm., Handb. Skand. fl. (ed. 3): 328, 1838 (Hartman 1838).

** *Mesoptychia heterocolpos* var. *arctica* (S.W.Arnell) L.Söderstr. et Váňa, Phytotaxa 65: 53, 2012 (Váňa et al. 2012b). Bas.: *Leiocolea arctica* S.W.Arnell, Svensk Bot. Tidskr. 44 (2): 374, 1950 (Arnell 1950).

** *Mesoptychia heterocolpos* var. *harpanthoides* (Bryhn et Kaal.) L.Söderstr. et Váňa, Phytotaxa 65: 53, 2012 (Váňa et al. 2012b). Bas.: *Lophozia harpanthoides* Bryhn et Kaal., Rep. Second Norweg. Arctic Exped. 11: 31, 1906 (Bryhn 1906).

*** *Mesoptychia igiana* (S.Hatt.) L.Söderstr. et Váňa, Phytotaxa 65: 54, 2012 (Váňa et al. 2012b). Bas.: *Lophozia igiana* S.Hatt., J. Jap. Bot. 31 (7): 201, 1956 (Hattori 1956a).

* *Mesoptychia mamatkulovii* (Duda) L.Söderstr. et Váňa, Phytotaxa 65: 54, 2012 (Váňa et al. 2012b). Bas.: *Lophozia mamatkulovii* Duda, Trans. Brit. Bryol. Soc. 6 (1): 82, 1970 (Duda 1970).

*** *Mesoptychia mayebarae* (S.Hatt.) L.Söderstr. et Váňa, Phytotaxa 65: 54, 2012 (Váňa et al. 2012b). Bas.: *Cephalozia mayebarae* S.Hatt., J. Hattori Bot. Lab. 3: 37, 1948 [1950] (Hattori 1948a).

*** *Mesoptychia morrisoncola* (Horik.) L.Söderstr. et Váňa, Phytotaxa 65: 54, 2012 (Váňa et al. 2012b). Bas.: *Lophozia morrisoncola* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 150, 1934 (Horikawa 1934).

* *Mesoptychia polymorpha* Stotler, Crand.-Stotl. et Bakalin, Polish Bot. J. 58 (1): 82, 2013 (Crandall-Stotler et al. 2013).

*** *Mesoptychia rutheana* (Limpr.) L.Söderstr. et Váňa, Phytotaxa 65: 54, 2012 (Váňa et al. 2012b). Bas.: *Jungermannia rutheana* Limpr., Jahresber. Schles. Ges. Vaterl. Cult. 61: 207, 1884 (Limpricht 1884).

** *Mesoptychia rutheana* var. *laxa* (Schiffn. ex Burrell) L.Söderstr. et Váňa, Phytotaxa 65: 54, 2012 (Váňa et al. 2012b). Bas.: *Lophozia schultzii* var. *laxa* Schiffn. ex Burrell, J. Bot. 49: 217, 1911 (Burrell 1911).

*** *Mesoptychia sahlbergii* (Lindb. et Arnell) A.Evans, Ottawa Naturalist 17: 15, 1903 (Evans 1903a). Bas.: *Jungermannia sahlbergii* Lindb. et Arnell, Kongl. Svenska Vetensk.-Akad. Handl. (n.ser.) 23 (5): 40, 1889 (Lindberg and Arnell 1889).

*** *Mesoptychia subcrispa* (Herzog) L.Söderstr. et Váňa, Phytotaxa 65: 54, 2012 (Váňa et al. 2012b). Bas.: *Lophozia subcrispa* Herzog, Ann. Naturhist. Mus. Wien 53 (1): 362, 1942 [1943] (Herzog 1942b).

*** *Mesoptychia turbinata* (Raddi) L.Söderstr. et Váňa, Phytotaxa 65: 55, 2012 (Váňa et al. 2012b). Bas.: *Jungermannia turbinata* Raddi, Jungermanniogr. Etrusca: 18, 1818 (Raddi 1818a).
* *Mesoptychia ussuriensis* (Bakalin) L.Söderstr. et Váňa, Phytotaxa 65: 55, 2012 (Váňa et al. 2012b). Bas.: *Leiocolea ussuriensis* Bakalin, Arctoa 17: 103, 2008 [2009] (Bakalin 2008c).

** ***Rivulariella* D.H.Wagner**, Phytoneuron 2013 (10): 2, 2013 (Wagner 2013).
** *Rivulariella gemmipara* (A.Evans) D.H.Wagner, Phytoneuron 2013 (10): 2, 2013 (Wagner 2013). Bas.: *Chiloscyphus gemmiparus* A.Evans, Bryologist 41 (3): 50, 1938 (Evans 1938b).

** Notoscyphaceae Crand.-Stotl., Váňa et Stotler

Shaw et al. (2015) circumscribed Notoscyphaceae as monogeneric based on molecular and morphological evidence.

*** ***Notoscyphus* Mitt.**, Fl. vit.: 407, 1871 [1873] (Mitten 1871).
*** *Notoscyphus lutescens* (Lehm. et Lindenb.) Mitt., Fl. vit.: 407, 1871 [1873] (Mitten 1871). Bas.: *Jungermannia lutescens* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 16, 1832 (Lehmann 1832).

** Saccogynaceae Heeg

Shaw et al. (2015) recognized Saccogynaceae as being monogeneric.

*** ***Saccogyna* Dumort.**, Commentat. Bot. (Dumortier): 113, 1822 (Dumortier 1822) nom. conserv.
* *Saccogyna ligulata* Steph., Bull. Herb. Boissier (sér. 2) 8 (3): 207 (267), 1908 (Stephani 1908h).
** *Saccogyna subacuta* Steph., Sp. Hepat. (Stephani) 6: 316, 1922 (Stephani 1922).
*** *Saccogyna viticulosa* (L.) Dumort., Syll. Jungerm. Europ.: 74, 1831 (Dumortier 1831). Bas.: *Jungermannia viticulosa* L., Sp. Pl. 1: 1131, 1753 (Linnaeus 1753).

Excluded from the genus
* *Saccogyna tridens* Steph., Sp. Hepat. (Stephani) 6: 317, 1922 (Stephani 1922). [89]

89 *Saccogyna tridens* is a *Bazzania* species, but the affinity is unclear and the type specimen was burned in B (Grolle and Piippo 1984).

*** Solenostomataceae Stotler et Crand.-Stotl.

by J. Váňa

Solenostomataceae was first defined by Crandall-Stotler et al. (2009) and refined to the current circumscription in Shaw et al (2015). The placement of *Aponardia* is provisional following Váňa et al. (2012c) and the placement of *Arctoscyphus, Cryptocolea* and *Diplocolea* in the family is also provisional. Taxonomic and nomenclatural notes can also be found in Váňa and Long (2009) and Váňa et al. (2012d, 2013c).

** ***Aponardia* (R.M.Schust.) Váňa**, Phytotaxa 65: 46, 2012 (Váňa et al. 2012c). Bas.: *Nardia* subg. *Aponardia* R.M.Schust., Beih. Nova Hedwigia 119: 360, 2002 (Schuster 2002b).

*** *Aponardia huerlimannii* (Váňa et Grolle) Váňa, Phytotaxa 65: 46, 2012 (Váňa et al. 2012c). Bas.: *Nardia huerlimannii* Váňa et Grolle, Österr. Bot. Z. 118 (3): 233, 1970 (Váňa 1970c).

** ***Arctoscyphus* Hässel**, Lindbergia 16 (4): 133, 1990 [1992] (Hässel 1990a).

** *Arctoscyphus fuegiensis* (C.Massal.) Hässel, Cryptog. Bryol. Lichénol. 17 (3): 164, 1996 (Hässel 1996). Bas.: *Leioscyphus repens* var. *fuegiensis* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 212, 1885 (Massalongo 1885).

** *Arctoscyphus ronsmithii* Hässel, Lindbergia 16 (4): 133, 1990 [1992] (Hässel 1990a).

** ***Cryptocolea* R.M.Schust.**, Amer. Midl. Naturalist 49 (2): 414, 1953 (Schuster 1953).

*** *Cryptocolea imbricata* R.M.Schust., Amer. Midl. Naturalist 49 (2): 417, 1953 (Schuster 1953).

** ***Diplocolea* Amakawa**, J. Jap. Bot. 37 (9): 274, 1962 (Amakawa 1962).

*** *Diplocolea sikkimensis* Amakawa, J. Jap. Bot. 37 (9): 274, 1962 (Amakawa 1962).

*** ***Solenostoma* Mitt.**, J. Proc. Linn. Soc., Bot. 8 (29): 51, 1864 [1865] (Mitten 1864c) nom. conserv. [90]

** **subg. *Eucalyx* (Lindb.) Váňa, Crand.-Stotl. et Stotler**, Syst. Bot. 40 (1): 38, 2015 (Shaw et al. 2015). Bas.: *Nardia* sect. *Eucalyx* Lindb., Acta Soc. Sci. Fenn. 10: 525, 1875 (Lindberg 1875).

*** *Solenostoma bilobum* (S.Hatt. ex Amakawa) Potemkin et Nyushko, Liverworts and Hornworts of Russia 1: 286, 2009 (Potemkin and Sofronova 2009). Bas.: *Plectocolea biloba* S.Hatt. ex Amakawa, J. Jap. Bot. 32 (7): 216, 1957 (Amakawa 1957d).

90 *Solenostoma* subdivisions are following Shaw et al. (2015), but the subgeneric placement of several species is preliminary and only based on morphological characteristics. *Plectocolea* is synonymous with *Solenostoma*, but one taxon has neither been transferred nor synonymized. It is listed in the "Names in genera not currently accepted" section below.

*** *Solenostoma emarginatum* (Amakawa) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 136, 2010 (Váňa et al. 2010a). Bas.: *Plectocolea emarginata* Amakawa, J. Jap. Bot. 33 (11): 340, 1958 (Amakawa 1958b).

*** *Solenostoma flagellatum* (S.Hatt.) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 501, 2009 (Váňa and Long 2009). Bas.: *Plectocolea flagellata* S.Hatt., J. Hattori Bot. Lab. 3: 13, 1948 [1950] (Hattori 1948b).

*** *Solenostoma hokkaidense* (Váňa) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 137, 2010 (Váňa et al. 2010a). Bas.: *Jungermannia hokkaidensis* Váňa, J. Hattori Bot. Lab. 35: 314, 1972 (Váňa 1972a).

*** *Solenostoma obovatum* (Nees) C.Massal., Epat. erb. critt. ital.: 17, 1903 (Massalongo 1903). Bas.: *Jungermannia obovata* Nees, Naturgesch. Eur. Leberm. 1: 332, 1833 (Nees 1833c).

*** *Solenostoma obscurum* (A.Evans) R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 1013, 1969 (Schuster 1969b). Bas.: *Nardia obscura* A.Evans, Rhodora 21 (249): 159, 1919 (Evans 1919a).

*** *Solenostoma schusteranum* (J.D.Godfrey et G.Godfrey) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 137, 2010 (Váňa et al. 2010a). Bas.: *Jungermannia schusterana* J.D.Godfrey et G.Godfrey, J. Hattori Bot. Lab. 46: 109, 1979 (Godfrey and Godfrey 1979).

*** *Solenostoma subtilissimum* (Schiffn.) R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 1027, 1969 (Schuster 1969b). Bas.: *Nardia subtilissima* Schiffn., Ann. K. K. Naturhist. Hofmus. 23: 136, 1909 (Schiffner 1909b).

** **subg. *Metasolenostoma* Váňa, Crand.-Stotl. et Stotler**, Syst. Bot. 40 (1): 38, 2015 (Shaw et al. 2015).

*** *Solenostoma fusiforme* (Steph.) R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 944, 1969 (Schuster 1969b). Bas.: *Nardia fusiformis* Steph., Bull. Herb. Boissier 5 (2): 99, 1897 (Stephani 1897b).

*** *Solenostoma gracillimum* (Sm.) R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 972, 1969 (Schuster 1969b). Bas.: *Jungermannia gracillima* Sm., Engl. Bot. 32: tab. 2238, 1811 (Smith and Sowerby 1811).

*** *Solenostoma handelii* (Schiffn.) Müll.Frib., Beitr. Kryptogamenfl. Schweiz 10 (2): 38, 1947 (Müller 1947). Bas.: *Nardia handelii* Schiffn., Ann. K. K. Naturhist. Hofmus. 23: 135, 1909 (Schiffner 1909b).

** *Solenostoma lignicola* (Schiffn.) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 137, 2010 (Váňa et al. 2010a). Bas.: *Nardia lignicola* Schiffn., Ann. K. K. Naturhist. Hofmus. 23: 137, 1909 (Schiffner 1909b).

*** *Solenostoma limbatifolium* (Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 504, 2009 (Váňa and Long 2009). Bas.: *Jungermannia limbatifolia* Amakawa, J. Hattori Bot. Lab. 31: 112, 1968 (Amakawa 1968b).

** *Solenostoma philippinense* Váňa, Phytotaxa 152 (1): 43, 2013 (Váňa et al. 2013c). Based on: *Solenostoma gracillimum* subsp. *camiguinense* Bakalin, Polish Bot. J. 58 (1): 134, 2013 (Bakalin 2013).

*** *Solenostoma rubrum* (Gottsche) R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 975, 1969 (Schuster 1969b). Bas.: *Jungermannia rubra* Gottsche, Bot. Gaz. 13 (5): 113, 1888 (Underwood 1888).

*** *Solenostoma suborbiculatum* (Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 508, 2009 (Váňa and Long 2009). Bas.: *Jungermannia suborbiculata* Amakawa, J. Hattori Bot. Lab. 31: 112, 1968 (Amakawa 1968b).

** **subg. *Plectocolea* Mitt.**, J. Linn. Soc., Bot. 8 (31): 156, 1864 (Mitten 1864a).

*** *Solenostoma balfourii* (Váňa) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 136, 2010 (Váňa et al. 2010a). Bas.: *Jungermannia balfourii* Váňa, Folia Geobot. Phytotax. 9 (3): 279, 1974 (Váňa 1974a).

*** *Solenostoma borneense* (Amakawa) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 136, 2010 (Váňa et al. 2010a). Bas.: *Jungermannia borneensis* Amakawa, J. Hattori Bot. Lab. 33: 160, 1970 (Amakawa 1970).

*** *Solenostoma callithrix* (Lindenb. et Gottsche) Steph., Bull. Herb. Boissier (sér. 2) 1 (5): 486 (48), 1901 (Stephani 1901a). Bas.: *Jungermannia callithrix* Lindenb. et Gottsche, Syn. Hepat. 5: 673, 1847 (Gottsche et al. 1847).

*** *Solenostoma champawatense* (S.N.Srivast. et Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 496, 2009 (Váňa and Long 2009). Bas.: *Jungermannia champawatensis* S.N.Srivast. et Amakawa, Proc. Natl. Acad. Sci. India, B 61 (2): 205, 1991 (Srivastava and Amakawa 1991).

*** *Solenostoma comatum* (Nees) C.Gao, Fl. Hepat. Chin. Boreali-Orient.: 73, 1981 (Gao and Chang 1981). Bas.: *Jungermannia comata* Nees, Enum. Pl. Crypt. Javae: 78, 1830 (Nees 1830).

*** *Solenostoma comatum* var. *novae-guineae* (Váňa) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 136, 2010 (Váňa et al. 2010a). Bas.: *Jungermannia comata* var. *novae-guineae* Váňa, J. Hattori Bot. Lab. 37: 187, 1973 (Váňa 1973a).

*** *Solenostoma crenuliforme* (Austin) Steph., Bull. Herb. Boissier (sér. 2) 1 (5): 494 (56), 1901 (Stephani 1901a). Bas.: *Jungermannia crenuliformis* Austin, Bull. Torrey Bot. Club 3 (3): 10, 1872 (Austin 1872).

*** *Solenostoma decolor* (Schiffn.) R.M.Schust. ex Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 136, 2010 (Váňa et al. 2010a). Bas.: *Jungermannia decolor* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 10, 1890 (Schiffner 1890).

*** *Solenostoma dusenii* (Steph.) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 136, 2010 (Váňa et al. 2010a). Bas.: *Nardia dusenii* Steph., Hedwigia 30 (5): 209, 1891 (Stephani 1891a).

*** *Solenostoma erectum* (Amakawa) C.Gao, Fl. Hepat. Chin. Boreali-Orient.: 66, 1981 (Gao and Chang 1981). Bas.: *Plectocolea erecta* Amakawa, J. Jap. Bot. 32 (10): 307, 1957 (Amakawa 1957b).

* *Solenostoma flagellalioides* C.Gao, Fl. Hepat. Chin. Boreali-Orient.: 205, 1981 (Gao and Chang 1981).

*** *Solenostoma flavialbicans* (Amakawa et Grolle) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 501, 2009 (Váňa and Long 2009). Bas.: *Jungermannia flavialbicans* Amakawa et Grolle, J. Hattori Bot. Lab. 31: 108, 1968 (Amakawa 1968b).

*** *Solenostoma fossombronioides* (Austin) R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 1027, 1969 (Schuster 1969b). Bas.: *Jungermannia fossombronioides* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 220, 1869 (Austin 1869).

*** *Solenostoma glaucum* (Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 502, 2009 (Váňa and Long 2009). Bas.: *Jungermannia glauca* Amakawa, Fl. E. Himalaya: 511, 1966 (Hattori 1966c).

* *Solenostoma gongshanense* (C.Gao et J.Sun) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 502, 2009 (Váňa and Long 2009). Bas.: *Jungermannia gongshanensis* C.Gao et J.Sun, Bull. Bot. Res., Harbin 27 (2): 140, 2007 (Sun and Duan 2007).

*** *Solenostoma haskarlianum* (Nees) R.M.Schust. ex Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 502, 2009 (Váňa and Long 2009). Bas.: *Alicularia haskarliana* Nees, Syn. Hepat. 1: 12, 1844 (Gottsche et al. 1844).

*** *Solenostoma hattorianum* (Amakawa) Potemkin et Nyushko, Liverworts and Hornworts of Russia 1: 287, 2009 (Potemkin and Sofronova 2009). Bas.: *Plectocolea hattoriana* Amakawa, J. Jap. Bot. 33 (11): 341, 1958 (Amakawa 1958b).

*** *Solenostoma hirticalyx* (Steph.) R.M.Schust. ex Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 137, 2010 (Váňa et al. 2010a). Bas.: *Jungermannia hirticalyx* Steph., Sp. Hepat. (Stephani) 6: 87, 1917 (Stephani 1917a).

*** *Solenostoma horikawanum* (Amakawa) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 137, 2010 (Váňa et al. 2010a). Bas.: *Plectocolea horikawana* Amakawa, J. Jap. Bot. 32 (7): 219, 1957 (Amakawa 1957d).

*** *Solenostoma hyalinum* (Lyell) Mitt., Nat. hist. Azores: 319, 1870 (Mitten 1870). Bas.: *Jungermannia hyalina* Lyell, Brit. Jungermann.: tab. 63, 1814 (Hooker 1814).

*** *Solenostoma infuscum* (Mitt.) Hentschel, Pl. Syst. Evol. 268 (1/4): 152, 2007 (Hentschel et al. 2007a). Bas.: *Plectocolea infusca* Mitt., Trans. Linn. Soc. London, Bot. 3 (3): 196, 1891 (Mitten 1891).

*** *Solenostoma infuscum* var. *ovicalyx* (Steph.) Potemkin et Sofronova, Liverworts and Hornworts of Russia 1: 288, 2009 (Potemkin and Sofronova 2009). Bas.: *Solenostoma ovicalyx* Steph., Sp. Hepat. (Stephani) 6: 82, 1917 (Stephani 1917a).

** *Solenostoma kurilense* (Bakalin) Váňa, Phytotaxa 152 (1): 40, 2013 (Váňa et al. 2013c). Bas.: *Plectocolea flagellata* var. *kurilensis* Bakalin, Arctoa 18: 90, 2009 [2010] (Bakalin et al. 2009b).

* *Solenostoma lixingjiangii* (C.Gao et X.L.Bai) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 504, 2009 (Váňa and Long 2009). Bas.: *Jungermannia lixingjiangii* C.Gao et X.L.Bai, Philipp. Scientist 38: 128, 2001 (Gao and Bai 2001).

*** *Solenostoma marginatum* (S.Hatt.) R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 983, 1969 (Schuster 1969b). Bas.: *Plectocolea marginata* S.Hatt., J. Hattori Bot. Lab. 3: 40, 1948 [1950] (Hattori 1948a).

*** *Solenostoma micranthum* (Mitt.) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 137, 2010 (Váňa et al. 2010a). Bas.: *Plectocolea micrantha* Mitt., Fl. vit.: 405, 1871 [1873] (Mitten 1871).

** *Solenostoma montanum* (Steph.) Váňa, Phytotaxa 65: 44, 2012 (Váňa et al. 2012d). Bas.: *Nardia montana* Steph., Hedwigia 28 (3): 164, 1889 (Stephani 1889d).

* *Solenostoma multicarpum* (C.Gao et J.Sun) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 505, 2009 (Váňa and Long 2009). Bas.: *Jungermannia multicarpa* C.Gao et J.Sun, Bull. Bot. Res., Harbin 27 (2): 139, 2007 (Sun and Duan 2007).

** *Solenostoma nilgiriense* (A.Alam, Ad.Kumar et S.C.Srivast.) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 505, 2009 (Váňa and Long 2009). Bas.: *Jungermannia nilgiriensis* A.Alam, Ad.Kumar et S.C.Srivast., Bull. Bot. Surv. India 49 (1/4): 220, 2007 (Alam et al. 2007).

*** *Solenostoma obliquifolium* (Schiffn.) R.M.Schust. ex Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 137, 2010 (Váňa et al. 2010a). Bas.: *Nardia obliquifolia* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 191, 1898 (Schiffner 1898a).

*** *Solenostoma onraedtii* (Váňa) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 137, 2010 (Váňa et al. 2010a). Bas.: *Jungermannia onraedtii* Váňa, Folia Geobot. Phytotax. 9 (3): 282, 1974 (Váňa 1974a).

* *Solenostoma orbicularifolium* (Piippo ex C.Gao et Bai) Váňa, Phytotaxa 222 (2): 199, 2015 (Söderström et al. 2015d). Bas.: *Jungermannia orbicularifolia* Piippo ex C.Gao et Bai, Philipp. Scientist 38: 129, 2001 (Gao and Bai 2001).

*** *Solenostoma otianum* (S.Hatt.) R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 984, 1969 (Schuster 1969b). Bas.: *Plectocolea otiana* S.Hatt., J. Jap. Bot. 28 (6): 183, 1953 (Hattori 1953b).

*** *Solenostoma ovalifolium* (Amakawa) Váňa, Phytotaxa 152 (1): 40, 2013 (Váňa et al. 2013c). Bas.: *Plectocolea infusca* var. *ovalifolia* Amakawa, J. Jap. Bot. 34 (4): 115, 1959 (Amakawa 1959b).

*** *Solenostoma paroicum* (Schiffn.) R.M.Schust., Amer. Midl. Naturalist 49 (2): 402, 1953 (Schuster 1953). Bas.: *Nardia paroica* Schiffn., Lotos 58: 320, 1910 (Schiffner 1910d).

*** *Solenostoma plagiochilaceum* (Grolle) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 505, 2009 (Váňa and Long 2009). Bas.: *Jungermannia plagiochilacea* Grolle, J. Hattori Bot. Lab. 58: 197, 1985 (Grolle 1985b).

*** *Solenostoma polyrhizoides* (Grolle ex Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 505, 2009 (Váňa and Long 2009). Bas.: *Jungermannia polyrhizoides* Grolle ex Amakawa, J. Hattori Bot. Lab. 29: 262, 1966 (Amakawa 1966).

*** *Solenostoma radicellosum* Mitt., J. Linn. Soc., Bot. 8 (31): 156, 1864 [1865] (Mitten 1864a).

*** *Solenostoma renauldii* (Steph.) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 137, 2010 (Váňa et al. 2010a). Bas.: *Jungermannia renauldii* Steph., Bull. Soc. Roy. Bot. Belgique, Compt. Rend. 30 (2): 201, 1891 [1892] (Stephani 1891b).

*** *Solenostoma rigidulum* (S.Hatt.) R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 983, 1969 (Schuster 1969b). Bas.: *Plectocolea rigidula* S.Hatt., J. Jap. Bot. 27 (2): 53, 1952 (Hattori 1952b).

*** *Solenostoma rosulans* (Steph.) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 507, 2009 (Váňa and Long 2009). Bas.: *Nardia rosulans* Steph., Bull. Herb. Boissier 5 (2): 101, 1897 (Stephani 1897b).

*** *Solenostoma rotundatum* Amakawa, J. Jap. Bot. 31 (2): 50, 1956 (Amakawa 1956).

*** *Solenostoma rubripunctatum* (S.Hatt.) R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 898, 1969 (Schuster 1969b). Bas.: *Plectocolea rubripunctata* S.Hatt., J. Hattori Bot. Lab. 3: 41, 1948 [1950] (Hattori 1948a).

* *Solenostoma rupicola* (Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 507, 2009 (Váňa and Long 2009). Bas.: *Jungermannia rupicola* Amakawa, J. Hattori Bot. Lab. 22: 23, 1960 (Amakawa 1960b). [91]

*** *Solenostoma sikkimense* (Schiffn. ex Steph.) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 508, 2009 (Váňa and Long 2009). Bas.: *Jungermannia sikkimensis* Schiffn. ex Steph., Sp. Hepat. (Stephani) 6: 92, 1917 (Stephani 1917a).

*** *Solenostoma tetragonum* (Lindenb.) R.M.Schust. ex Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 509, 2009 (Váňa and Long 2009). Bas.: *Jungermannia tetragona* Lindenb., Bot. Zeitung (Berlin) 6 (25): 462, 1848 (Meissner 1848).

* *Solenostoma tetragonum* var. *kodaikanalense* A.Alam, D.Sharma et So.Yadav, Phytotaxonomy 12: 70, 2012 (Alam et al. 2012).

*** *Solenostoma torticalyx* (Steph.) C.Gao, Fl. Hepat. Chin. Boreali-Orient.: 69, 1981 (Gao and Chang 1981). Bas.: *Jungermannia torticalyx* Steph., Sp. Hepat. (Stephani) 6: 94, 1917 (Stephani 1917a).

*** *Solenostoma truncatum* (Nees) R.M.Schust. ex Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 509, 2009 (Váňa and Long 2009). Bas.: *Jungermannia truncata* Nees, Enum. Pl. Crypt. Javae: 29, 1830 (Nees 1830).

** *Solenostoma truncatum* var. *setulosum* (Herzog) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 510, 2009 (Váňa and Long 2009). Bas.: *Plectocolea setulosa* Herzog, J. Hattori Bot. Lab. 14: 33, 1955 (Herzog and Noguchi 1955).

*** *Solenostoma tuberculiferum* (Herzog) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 138, 2010 (Váňa et al. 2010a). Bas.: *Aplozia tuberculifera* Herzog, Ann. Bryol. 5: 84, 1932 (Herzog 1932a).

*** *Solenostoma unispire* (Amakawa) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 138, 2010 (Váňa et al. 2010a). Bas.: *Plectocolea unispiris* Amakawa, J. Jap. Bot. 29 (6): 178, 1954 (Amakawa 1954).

*** *Solenostoma virgatum* (Mitt.) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 510, 2009 (Váňa and Long 2009). Bas.: *Plectocolea virgata* Mitt., Trans. Linn. Soc. London, Bot. 3 (3): 197, 1891 (Mitten 1891).

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91 *Solenostoma rupicola* is conspecific with *Solenostoma rosulans* in Váňa (1975a), but accepted by Váňa and Long (2009).

*** *Solenostoma vulcanicola* (Schiffn.) Nyushko ex Potemkin et Sofronova, Liverworts and Hornworts of Russia 1: 289, 2009 (Potemkin and Sofronova 2009). Bas.: *Nardia vulcanicola* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 191, 1898 (Schiffner 1898a).

* *Solenostoma zangmuii* (C.Gao et X.L.Bai) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 510, 2009 (Váňa and Long 2009). Bas.: *Jungermannia zangmuii* C.Gao et X.L.Bai, Philipp. Scientist 38: 135, 2001 (Gao and Bai 2001).

** **subg. *Solenostoma***

*** *Solenostoma amoenum* (Lindenb. et Gottsche) R.M.Schust. ex Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 136, 2010 (Váňa et al. 2010a). Bas.: *Jungermannia amoena* Lindenb. et Gottsche, Syn. Hepat. 5: 674, 1847 (Gottsche et al. 1847).

*** *Solenostoma amplexifolium* (Hampe) Váňa et Schäf.-Verw., Acta Bot. Hung. 51 (3/4): 408, 2009 (Schäfer-Verwimp and Pócs 2009). Bas.: *Plagiochila amplexifolia* Hampe, Nov. Stirp. Pug. 7: 6, 1838 (Lehmann 1838).

** *Solenostoma appalachianum* R.M.Schust. ex Bakalin, Arctoa 23: 127, 2014 (Bakalin 2014). Based on: *Solenostoma appalachianum* R.M.Schust., Rhodora 60 (717): 246, 1958 (Schuster 1958a), *nom. inval.* [92]

*** *Solenostoma appressifolium* (Mitt.) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 494, 2009 (Váňa and Long 2009). Bas.: *Jungermannia appressifolia* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 91, 1860 [1861] (Mitten 1860c). [93]

*** *Solenostoma appressifolium* var. *minor* (Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 495, 2009 (Váňa and Long 2009). Bas.: *Jungermannia clavellata* var. *minor* Amakawa, J. Hattori Bot. Lab. 26: 25, 1963 (Amakawa 1963).

*** *Solenostoma appressifolium* var. *nigricans* (Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 495, 2009 (Váňa and Long 2009). Bas.: *Jungermannia decolyana* var. *nigricans* Amakawa, J. Hattori Bot. Lab. 30: 185, 1967 (Amakawa 1967b).

*** *Solenostoma ariadne* (Taylor) R.M.Schust. ex Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 495, 2009 (Váňa and Long 2009). Bas.: *Jungermannia ariadne* Taylor, Nov. Stirp. Pug. 8: 9, 1844 (Lehmann 1844).

*** *Solenostoma atrobrunneum* (Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 495, 2009 (Váňa and Long 2009). Bas.: *Jungermannia atrobrunnea* Amakawa, J. Hattori Bot. Lab. 30: 192, 1967 (Amakawa 1967b).

*** *Solenostoma atrorevolutum* (Grolle ex Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 496, 2009 (Váňa and Long 2009). Bas.: *Jungermannia atrorevoluta* Grolle ex Amakawa, J. Hattori Bot. Lab. 29: 255, 1966 (Amakawa 1966).

*** *Solenostoma atrovirens* Steph., Bull. Herb. Boissier (sér. 2) 1 (5): 493 (55), 1901 (Stephani 1901a).

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92 *Solenostoma appalachianum* is placed in synonymy with *Solenostoma pyriflorum* by Schuster (1969b) but Shaw et al. (2015) shows that the North American specimens differs from the East Asiatic specimens so named.

93 *Solenostoma appressifolium* seems to be a species complex (Shaw et al. 2015).

*** *Solenostoma baueri* (Schiffn.) Steph., Bull. Herb. Boissier (sér. 2) 1 (5): 495 (57), 1901 (Stephani 1901a). Bas.: *Aplozia baueri* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 195, 1898 (Schiffner 1898a).

*** *Solenostoma bengalense* (Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 496, 2009 (Váňa and Long 2009). Bas.: *Jungermannia bengalensis* Amakawa, J. Hattori Bot. Lab. 31: 112, 1968 (Amakawa 1968b).

** *Solenostoma breviflorum* Kashyap et R.S.Chopra, Liverworts W. Himal. 2: 85, 1932 (Kashyap and Chopra 1932).

*** *Solenostoma caeleste* (Inoue et Váňa) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 136, 2010 (Váňa et al. 2010a). Bas.: *Jungermannia caelestis* Inoue et Váňa, Stud. Cryptog. Papua N. Guinea: 16, 1979 (Inoue 1979b).

* *Solenostoma caoi* (C.Gao et X.L.Bai) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 496, 2009 (Váňa and Long 2009). Bas.: *Jungermannia caoi* C.Gao et X.L.Bai, Philipp. Scientist 38: 152, 2001 (Gao and Bai 2001).

*** *Solenostoma caucasicum* (Váňa) Konstant., Arctoa 1: 123, 1992 (Konstantinova et al. 1992). Bas.: *Jungermannia caucasica* Váňa, Preslia 42: 96, 1970 (Váňa 1970a).

*** *Solenostoma chenianum* (C.Gao, Y.H.Wu et Grolle) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 496, 2009 (Váňa and Long 2009). Bas.: *Jungermannia cheniana* C.Gao, Y.H.Wu et Grolle, Nova Hedwigia 77 (1/2): 190, 2003 (Gao et al. 2003).

*** *Solenostoma clavellatum* Mitt. ex Steph., Bull. Herb. Boissier (sér. 2) 1 (5): 491 (53), 1901 (Stephani 1901a).

*** *Solenostoma confertissimum* (Nees) Schljakov, Novosti Sist. Nizš. Rast. 17: 239, 1980 (Shliakov 1980b). Bas.: *Jungermannia confertissima* Nees, Naturgesch. Eur. Leberm. 1: 291, 1833 (Nees 1833c).

*** *Solenostoma coniflorum* (Schiffn.) Steph., Bull. Herb. Boissier (sér. 2) 1 (5): 497 (59), 1901 (Stephani 1901a). Bas.: *Jungermannia coniflora* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 10, 1890 (Schiffner 1890).

*** *Solenostoma crassulum* (Nees et Mont.) Steph., Bull. Herb. Boissier (sér. 2) 1 (5): 497 (59), 1901 (Stephani 1901a). Bas.: *Jungermannia crassula* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 54, 1836 (Nees and Montagne 1836).

** *Solenostoma cryptogynum* R.M.Schust. ex J.J.Engel, Novon 17 (3): 311, 2007 (Engel 2007). Based on: *Solenostoma cryptogynum* R.M.Schust., Beih. Nova Hedwigia 119: 380, 2002 (Schuster 2002b), *nom. inval.*

*** *Solenostoma cyclops* (S.Hatt.) R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 945, 1969 (Schuster 1969b). Bas.: *Jungermannia cyclops* S.Hatt., J. Hattori Bot. Lab. 3: 5, 1948 [1950] (Hattori 1948b).

*** *Solenostoma diversiclavellatum* (Amakawa et Grolle) R.M.Schust. ex Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 501, 2009 (Váňa and Long 2009). Bas.: *Jungermannia diversiclavellata* Amakawa et Grolle, J. Hattori Bot. Lab. 31: 107, 1968 (Amakawa 1968b).

*** *Solenostoma dulongense* Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 497, 2009 (Váňa and Long 2009).

*** *Solenostoma exsertum* (A.Evans) Steph., Bull. Herb. Boissier (sér. 2) 1 (5): 490 (52), 1901 (Stephani 1901a). Bas.: *Nardia exserta* A.Evans, Trans. Connecticut Acad. Arts 8 (15): 259, 1891 (Evans 1891).

*** *Solenostoma faurieanum* (Beauverd) R.M.Schust., Hepat. Anthocerotae N. Amer. 2: 945, 1969 (Schuster 1969b). Bas.: *Jungermannia faurieana* Beauverd, Sp. Hepat. (Stephani) 6: 571, 1924 (Stephani 1924).

*** *Solenostoma flagellare* (Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 501, 2009 (Váňa and Long 2009). Bas.: *Jungermannia flagellaris* Amakawa, J. Hattori Bot. Lab. 29: 258, 1966 (Amakawa 1966).

*** *Solenostoma flavorevolutum* (Váňa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 501, 2009 (Váňa and Long 2009). Bas.: *Jungermannia flavorevoluta* Váňa, J. Hattori Bot. Lab. 36: 63, 1972 [1973] (Váňa 1972b).

*** *Solenostoma grollei* (D.G.Long et Váňa) K.Feldberg, Hentschel, Bombosch, D.G.Long, Váňa et Heinrichs, Pl. Syst. Evol. 280 (3/4): 244, 2009 (Feldberg et al. 2009). Bas.: *Gottschelia grollei* D.G.Long et Váňa, J. Bryol. 29 (3): 167, 2007 (Long and Váňa 2007).

*** *Solenostoma grosseverrucosum* (Amakawa et S.Hatt.) Váňa, Crand.-Stotl. et Stotler, Syst. Bot. 40 (1): 39, 2015 (Shaw et al. 2015). Bas.: *Horikawaella grosseverrucosa* Amakawa et S.Hatt., Bull. Univ. Mus. Univ. Tokyo 8: 216, 1975 (Hattori 1975e).

*** *Solenostoma heterolimbatum* (Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 503, 2009 (Váňa and Long 2009). Bas.: *Jungermannia heterolimbata* Amakawa, J. Hattori Bot. Lab. 30: 183, 1967 (Amakawa 1967b).

*** *Solenostoma hewsoniae* (Amakawa et Grolle) R.M.Schust. ex Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 136, 2010 (Váňa et al. 2010a). Bas.: *Jungermannia hewsoniae* Amakawa et Grolle, J. Hattori Bot. Lab. 31: 108, 1968 (Amakawa 1968b).

*** *Solenostoma hiugaense* Amakawa, J. Jap. Bot. 31 (2): 47, 1956 (Amakawa 1956).

*** *Solenostoma indrodayanum* (Sushil K.Singh et D.K.Singh) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 503, 2009 (Váňa and Long 2009). Bas.: *Jungermannia indrodayana* Sushil K.Singh et D.K.Singh, Cryptog. Bryol. 28 (2): 103, 2007 (Singh and Singh 2007b).

*** *Solenostoma inundatum* (Hook.f. et Taylor) Mitt. ex Steph., Bull. Herb. Boissier (sér. 2) 1 (5): 490 (52), 1901 (Stephani 1901a). Bas.: *Jungermannia inundata* Hook.f. et Taylor, London J. Bot. 3: 559, 1844 (Hooker and Taylor 1844d).

*** *Solenostoma javanicum* (Schiffn.) Steph., Bull. Herb. Boissier (sér. 2) 1 (5): 494 (56), 1901 (Stephani 1901a). Bas.: *Aplozia javanica* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 193, 1898 (Schiffner 1898a).

** *Solenostoma kanaii* (Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 503, 2009 (Váňa and Long 2009). Bas.: *Jungermannia kanaii* Amakawa, J. Hattori Bot. Lab. 30: 194, 1967 (Amakawa 1967b).

*** *Solenostoma kashyapii* (S.C.Srivast., S.Srivast. et D.Sharma) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 503, 2009 (Váňa and Long 2009). Bas.: *Jungermannia*

kashyapii S.C.Srivast., S.Srivast. et D.Sharma, Lindbergia 28 (3): 131, 2003 (Srivastava et al. 2003).

*** *Solenostoma lanigerum* (Mitt.) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 503, 2009 (Váňa and Long 2009). Bas.: *Jungermannia lanigera* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 91, 1860 [1861] (Mitten 1860c).

*** *Solenostoma macrocarpum* (Schiffn. ex Steph.) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 504, 2009 (Váňa and Long 2009). Bas.: *Jungermannia macrocarpa* Schiffn. ex Steph., Sp. Hepat. (Stephani) 6: 87, 1917 (Stephani 1917a).

*** *Solenostoma mamatkulovii* (Váňa et Zerov) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 137, 2010 (Váňa et al. 2010a). Bas.: *Jungermannia mamatkulovii* Váňa et Zerov, Preslia 49: 181, 1977 (Váňa 1977).

* *Solenostoma microphyllum* C.Gao, Fl. Hepat. Chin. Boreali-Orient.: 206, 1981 (Gao and Chang 1981).

* *Solenostoma microrevolutum* (C.Gao et X.L.Bai) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 505, 2009 (Váňa and Long 2009). Bas.: *Jungermannia microrevoluta* C.Gao et X.L.Bai, Philipp. Scientist 38: 146, 2001 (Gao and Bai 2001).

*** *Solenostoma mildbraedii* (Steph.) R.M.Schust., Beih. Nova Hedwigia 119: 387, 2002 (Schuster 2002b). Bas.: *Jungermannia mildbraedii* Steph., Wiss. Ergebn. Deut. Zentr.-Afr. Exped. (1907-08), Bot. 2: 113, 1911 (Stephani 1911a).

*** *Solenostoma niveum* (Grolle) R.M.Schust. ex Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 137, 2010 (Váňa et al. 2010a). Bas.: *Jungermannia nivea* Grolle, Misc. Bryol. Lichenol. 6 (1): 1, 1971 (Grolle 1971c).

* *Solenostoma novazelandiae* R.M.Schust., Beih. Nova Hedwigia 119: 380, 2002 (Schuster 2002b). [94]

*** *Solenostoma ohbae* (Amakawa) C.Gao, Bryofl. Xizang: 495, 1985 (Li 1985). Bas.: *Jungermannia ohbae* Amakawa, Bull. Univ. Mus. Univ. Tokyo 8: 218, 1975 (Hattori 1975e).

*** *Solenostoma orbiculatum* (Colenso) R.M.Schust., Beih. Nova Hedwigia 119: 380, 2002 (Schuster 2002b). Bas.: *Gymnomitrion orbiculatum* Colenso, Trans. & Proc. New Zealand Inst. 18: 236, 1886 (Colenso 1886b).

*** *Solenostoma parvitextum* (Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 505, 2009 (Váňa and Long 2009). Bas.: *Jungermannia parvitexta* Amakawa, J. Hattori Bot. Lab. 30: 187, 1967 (Amakawa 1967b).

*** *Solenostoma patoniae* (Grolle, D.B.Schill et D.G.Long) K.Feldberg, Hentschel, Bombosch, D.G.Long, Váňa et Heinrichs, Pl. Syst. Evol. 280 (3/4): 244, 2009 (Feldberg et al. 2009). Bas.: *Gottschelia patoniae* Grolle, D.B.Schill et D.G.Long, J. Bryol. 25 (1): 3, 2003 (Grolle et al. 2003).

*** *Solenostoma pocsii* (Váňa) Bakalin, Arctoa 18: 160, 2009 [2010] (Bakalin and Vilnet 2009). Bas.: *Jungermannia pocsii* Váňa, Folia Geobot. Phytotax. 10 (4): 365, 1975 (Váňa 1975b).

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94 *Solenostoma novaezelandiae* is possibly conspecific with *Solenostoma orbiculatum* (Engel and Glenny 2008a).

*** *Solenostoma poeltii* (Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 505, 2009 (Váňa and Long 2009). Bas.: *Jungermannia poeltii* Amakawa, J. Hattori Bot. Lab. 29: 258, 1966 (Amakawa 1966).

*** *Solenostoma pseudocyclops* (Inoue) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 506, 2009 (Váňa and Long 2009). Bas.: *Jungermannia pseudocyclops* Inoue, Bull. Natl. Sci. Mus. Tokyo (n.ser.) 9 (1): 37, 1966 (Inoue 1966a).

** *Solenostoma pseudopyriflorum* Bakalin et Vilnet, Arctoa 18: 159, 2009 [2010] (Bakalin and Vilnet 2009).

*** *Solenostoma purpuratum* (Mitt.) Steph., Bull. Herb. Boissier (sér. 2) 1 (5): 489 (51), 1901 (Stephani 1901a). Bas.: *Jungermannia purpurata* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 91, 1860 [1861] (Mitten 1860c).

*** *Solenostoma pyriflorum* Steph., Sp. Hepat. (Stephani) 6: 83, 1917 (Stephani 1917a). [95]

*** *Solenostoma pyriflorum* var. *gracillimum* (Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 506, 2009 (Váňa and Long 2009). Bas.: *Jungermannia pyriflora* var. *gracillima* Amakawa, Fl. E. Himalaya 2: 228, 1971 (Hattori 1971a).

** *Solenostoma pyriflorum* var. *major* (S.Hatt.) Bakalin, Arctoa 17: 230, 2008 [2009] (Bakalin 2008a). Bas.: *Jungermannia monticola* f. *major* S.Hatt., J. Hattori Bot. Lab. 3: 8, 1948 [1950] (Hattori 1948b).

*** *Solenostoma pyriflorum* var. *minutissimum* (Amakawa) Bakalin, Arctoa 16: 208, 2007 [2008] (Bakalin 2007). Bas.: *Jungermannia pyriflora* var. *minutissima* Amakawa, J. Hattori Bot. Lab. 22: 61, 1960 (Amakawa 1960b). [96]

*** *Solenostoma raujeanum* (Grolle ex Amakawa) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 507, 2009 (Váňa and Long 2009). Bas.: *Jungermannia raujeana* Grolle ex Amakawa, J. Hattori Bot. Lab. 29: 262, 1966 (Amakawa 1966).

*** *Solenostoma riclefii* Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 507, 2009 (Váňa and Long 2009). *Nom. nov. pro Jungermannia grollei* Amakawa, J. Hattori Bot. Lab. 29: 260, 1966 (Amakawa 1966).

*** *Solenostoma sanguinolentum* (Griff.) Steph., Bull. Herb. Boissier (sér. 2) 1 (5): 489 (51), 1901 (Stephani 1901a). Bas.: *Jungermannia sanguinolenta* Griff., Not. pl. asiat. 2: 302, 1849 (Griffith 1849).

*** *Solenostoma schaulianum* (Steph.) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 508, 2009 (Váňa and Long 2009). Bas.: *Jungermannia schauliana* Steph., Sp. Hepat. (Stephani) 6: 90, 1917 (Stephani 1917a).

*** *Solenostoma shimizuanum* (S.Hatt. ex Váňa) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 138, 2010 (Váňa et al. 2010a). Bas.: *Jungermannia shimizuana* S.Hatt. ex Váňa, J. Hattori Bot. Lab. 35: 315, 1972 (Váňa 1972a).

*** *Solenostoma speciosum* (Horik.) Hentschel, K.Feldberg, Bombosch, D.G.Long, Váňa et Heinrichs, Pl. Syst. Evol. 280 (3/4): 244, 2009 (Feldberg et al. 2009). Bas.: *Anastrophyllum speciosum* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 147, 1934 (Horikawa 1934).

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95 *Solenostoma pyriflorum* is a species complex (Shaw et al. 2015).

96 *Solenostoma pyriflorum* var. *minutissimum* was treated as a separate species, *Solenostoma rishiriense* Amakawa by Bakalin and Vilnet (2009).

** *Solenostoma speciosum* subsp. *villosum* (R.M.Schust.) Hentschel, K.Feldberg, Bombosch, D.G.Long, Váňa et Heinrichs, Pl. Syst. Evol. 280 (3/4): 246, 2009 (Feldberg et al. 2009). Bas.: *Scaphophyllum speciosum* subsp. *villosum* R.M.Schust., Bryologist 101 (3): 434, 1998 (Schuster 1998b).

*** *Solenostoma sphaerocarpum* (Hook.) Steph., Bull. Herb. Boissier (sér. 2) 1 (5): 499 (61), 1901 (Stephani 1901a). Bas.: *Jungermannia sphaerocarpa* Hook., Brit. Jungermann.: tab. 74, 1815 (Hooker 1815).

*** *Solenostoma stephanii* (Schiffn.) Steph., Bull. Herb. Boissier (sér. 2) 1 (5): 496 (58), 1901 (Stephani 1901a). Bas.: *Aplozia stephanii* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 195, 1898 (Schiffner 1898a).

*** *Solenostoma stoloniferum* (Steph.) S.W.Arnell, Hepat. South Africa: 316, 1963 (Arnell 1963b). Bas.: *Nardia stolonifera* Steph., Hedwigia 31 (3): 128, 1892 (Stephani 1892d).

*** *Solenostoma strictum* (Schiffn.) Váňa, Hentschel et Heinrichs, Cryptog. Bryol. 31 (2): 138, 2010 (Váňa et al. 2010a). Bas.: *Aplozia stricta* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 194, 1898 (Schiffner 1898a).

*** *Solenostoma subacutum* (Herzog) Váňa, Crand.-Stotl. et Stotler, Syst. Bot. 40 (1): 39, 2015 (Shaw et al. 2015). Bas.: *Anastrophyllum subacutum* Herzog, Ann. Bryol. 12: 75, 1939 (Herzog 1939b).

*** *Solenostoma subrubrum* (Schiffn. ex Steph.) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 508, 2009 (Váňa and Long 2009). Bas.: *Jungermannia subrubra* Schiffn. ex Steph., Sp. Hepat. (Stephani) 6: 93, 1917 (Stephani 1917a).

* *Solenostoma sunii* Bakalin et Vilnet, Bot. Pacifica 3 (2): 15, 2014 (Bakalin et al. 2014).

* *Solenostoma totopapillosum* (E.A.Hodgs.) R.M.Schust., Bryologist 100 (3): 366, 1997 (Schuster 1997a). Bas.: *Jungermannia totopapillosa* E.A.Hodgs., J. Roy. Soc. New Zealand 2 (1): 111, 1972 (Hodgson 1972). [97]

*** *Solenostoma udarii* (S.C.Srivast. et P.Singh) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 510, 2009 (Váňa and Long 2009). Bas.: *Jungermannia udarii* S.C.Srivast. et P.Singh, Recent Stud. Indian Bryoph.: 152, 1995 (Srivastava and Singh 1995).

* *Solenostoma ventroversum* (Grolle) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 510, 2009 (Váňa and Long 2009). Bas.: *Jungermannia ventroversa* Grolle, Khumbu Himal 1 (4): 284, 1966 (Grolle 1966k). [98]

*** *Solenostoma zantenii* (Amakawa) R.M.Schust. ex Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 510, 2009 (Váňa and Long 2009). Bas.: *Jungermannia zantenii* Amakawa, J. Hattori Bot. Lab. 31: 110, 1968 (Amakawa 1968b).

* *Solenostoma zengii* (C.Gao et X.L.Bai) Váňa et D.G.Long, Nova Hedwigia 89 (3/4): 510, 2009 (Váňa and Long 2009). Bas.: *Jungermannia zengii* C.Gao et X.L.Bai, Philipp. Scientist 38: 151, 2001 (Gao and Bai 2001).

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97 *Solenostoma totopapillosum* is possibly conspecific with *Solenostoma inundatum* (Shaw et al. 2015).

98 *Solenostoma ventroversum* is possibly conspecific with *Solenostoma appressifolium*.

*** Southbyaceae Váňa, Crand.-Stotl., Stotler et D.G.Long

by J. Váňa

Southbyaceae has traditionally been placed in Arnelliaceae (e.g. Crandall-Stotler et al. 2009) or kept as a separate family (e.g. Vanden Berghen 1957) that has never been validated. However, it was re-established, rearranged and validated in the study by Váňa et al. (2012e).

*** ***Gongylanthus* Nees**, Naturgesch. Eur. Leberm. 2: 405, 1836 (Nees 1836).
*** *Gongylanthus dusenii* Steph., Bull. Herb. Boissier (sér. 2) 6 (5): 385 (41), 1906 (Stephani 1906a).
*** *Gongylanthus ericetorum* (Raddi) Nees, Naturgesch. Eur. Leberm. 2: 407, 1836 (Nees 1836). Bas.: *Calypogeia ericetorum* Raddi, Jungermanniogr. Etrusca: 31, 1818 (Raddi 1818a).
*** *Gongylanthus granatensis* (Gottsche) Steph., Bull. Herb. Boissier (sér. 2) 6 (5): 385 (41), 1906 (Stephani 1906a). Bas.: *Lindigina granatensis* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 138, 1864 (Gottsche 1864).
*** *Gongylanthus himalayensis* Grolle, Khumbu Himal 1 (4): 285, 1966 (Grolle 1966k).
*** *Gongylanthus javanicus* Grolle, J. Jap. Bot. 40 (7): 206, 1965 (Grolle 1965d).
*** *Gongylanthus liebmanianus* (Lindenb. et Gottsche) Steph., Bull. Herb. Boissier (sér. 2) 6 (5): 388 (44), 1906 (Stephani 1906a). Bas.: *Gymnanthe liebmaniana* Lindenb. et Gottsche, Syn. Hepat. 5: 712, 1847 (Gottsche et al. 1847).
*** *Gongylanthus limbatus* (Herzog) Grolle et Váňa, Folia Geobot. Phytotax. 9 (2): 198, 1974 (Váňa 1974c). Bas.: *Aplozia limbata* Herzog, Beih. Bot. Centralbl. 61B (3): 561, 1942 (Herzog 1942d).
*** *Gongylanthus muelleri* (Gottsche) Steph., Bull. Herb. Boissier (sér. 2) 6 (5): 388 (44), 1906 (Stephani 1906a). Bas.: *Lindigia muelleri* Gottsche, Mexik. Leverm.: 121, 1863 (Gottsche 1863).
** *Gongylanthus oniscoides* (Spruce) Steph., Bull. Herb. Boissier (sér. 2) 6 (5): 386 (42), 1906 (Stephani 1906a). Bas.: *Calypogeia oniscoides* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 448, 1885 (Spruce 1885).
*** *Gongylanthus richardsii* E.W.Jones, Trans. Brit. Bryol. Soc. 4 (4): 650, 1964 (Jones 1964).

*** ***Southbya* Spruce**, Ann. Mag. Nat. Hist. (ser. 2) 3 (18): 501, 1849 (Spruce 1849).
*** *Southbya gollanii* Steph., Bull. Herb. Boissier (sér. 2) 6 (5): 381 (37), 1906 (Stephani 1906a).
*** *Southbya nigrella* (De Not.) Henriq., Bol. Soc. Brot. 4: 244, 1886 [1887] (Henriques 1886). Bas.: *Jungermannia nigrella* De Not., Mem. Reale Accad. Sci. Torino (ser. 2) 1: 315, 1838 (De Notaris 1838).

*** *Southbya organensis* Herzog, Memoranda Soc. Fauna Fl. Fennica 25: 53, 1950 (Herzog 1950c).
*** *Southbya tophacea* (Spruce) Spruce, Ann. Mag. Nat. Hist. (ser. 2) 3 (18): 501, 1849 (Spruce 1849). Bas.: *Jungermannia tophacea* Spruce, Hep. Pyr. Exsic.: no. 23, 1847 (Spruce 1847).

** Stephaniellaceae R.M.Schust.

by J. Váňa

In the absence of molecular data, the phylogenetic affinities of *Stephaniella* and *Stephaniellidium* remain equivocal, but there is no evidence to support their placement in either the Arnelliaceae or Southbyaceae where they have been placed recently. Thus the family as construed by Schuster (2002b) is retained.

*** ***Stephaniella*** **J.B.Jack**, Hedwigia 33 (1): 11, 1894 (Jack 1894).
* *Stephaniella boliviensis* Steph., Biblioth. Bot. 87 (2): 182, 1916 (Stephani 1916a).
*** *Stephaniella hamata* Steph., Bull. Herb. Boissier (sér. 2) 1 (10): 1024 (87), 1901 (Stephani 1901c).
*** *Stephaniella paraphyllina* J.B.Jack, Hedwigia 33 (1): 11, 1894 (Jack 1894).
*** *Stephaniella rostrata* U.Schmitt, Österr. Bot. Z. 115 (2): 124, 1968 (Schmitt and Winkler 1968).
*** *Stephaniella uncifolia* S.Winkl., Österr. Bot. Z. 115 (2): 124, 1968 (Schmitt and Winkler 1968).

** ***Stephaniellidium*** **S.Winkl. ex Grolle**, Acta Bot. Fenn. 121: 38, 1983 (Grolle 1983b). Based on: *Stephaniellidium* S.Winkl., Mitt. Inst. Colombo-Alemán Invest. Ci. 3: 60, 1969 (Winkler 1969).
*** *Stephaniellidium sleumeri* (Müll.Frib.) S.Winkl. ex Grolle, Acta Bot. Fenn. 121: 38, 1983 (Grolle 1983b). Bas.: *Stephaniella sleumeri* Müll.Frib., Rev. Bryol. Lichénol. 20 (1/2): 177, 1951 (Müller 1951b).

*** Trichotemnomataceae R.M.Schust.

*** ***Trichotemnoma*** **R.M.Schust.**, Nova Hedwigia 15: 440, 1968 (Schuster 1968b).
*** *Trichotemnoma corrugatum* (Steph.) R.M.Schust., Nova Hedwigia 15: 440, 1968 (Schuster 1968b). Bas.: *Blepharostoma corrugatum* Steph., Hedwigia 32 (5): 315, 1893 (Stephani 1893d).

Lophocoleineae Schljakov

*** Blepharostomataceae W.Frey et M.Stech

The recognition of Blepharostomataceae follows Frey and Stech (2008) following reconsideration of molecular and morphological data available at that time.

*** ***Blepharostoma* (Dumort.) Dumort.**, Recueil Observ. Jungerm.: 18, 1835 (Dumortier 1835). Bas.: *Jungermannia* sect. *Blepharostoma* Dumort., Syll. Jungerm. Europ.: 65, 1831 (Dumortier 1831).

** *Blepharostoma arachnoideum* M.Howe, Mem. Torrey Bot. Club 7: 140, 1899 (Howe 1899).

** *Blepharostoma indicum* G.Asthana, M.Saxena et Maurya, J. Bryol. 35 (4): 267, 2013 (Asthana et al. 2013).

** *Blepharostoma minor* Horik., Hikobia 1 (2): 104, 1951 [1952] (Horikawa 1951b).

*** *Blepharostoma trichophyllum* (L.) Dumort., Recueil Observ. Jungerm.: 18, 1835 (Dumortier 1835). Bas.: *Jungermannia trichophylla* L., Sp. Pl. 1: 1135, 1753 (Linnaeus 1753).

** *Blepharostoma trichophyllum* subsp. *brevirete* (Bryhn et Kaal.) R.M.Schust., Bull. Natl. Mus. Canada 164: 16, 1959 (Schuster et al. 1959). Bas.: *Blepharostoma trichophyllum* var. *brevirete* Bryhn et Kaal., Rep. Second Norweg. Arctic Exped. 11: 46, 1906 (Bryhn 1906).

*** Brevianthaceae J.J.Engel et R.M.Schust.

by L. Söderström, J. Váňa, R. Stotler, B.J. Crandall-Stotler and J.J. Engel
The treatment of Brevianthaceae follows Söderström et al. (2013b).

*** ***Brevianthus* J.J.Engel et R.M.Schust.**, Phytologia 47 (4): 317, 1981 (Engel and Schuster 1981).

*** *Brevianthus flavus* (Grolle) J.J.Engel et R.M.Schust., Phytologia 47 (4): 318, 1981 (Engel and Schuster 1981). Bas.: *Jackiella flava* Grolle, J. Hattori Bot. Lab. 33: 222, 1970 (Grolle 1970b).

** *Brevianthus flavus* subsp. *crenulatus* J.J.Engel, Nova Hedwigia 93 (3/4): 406, 2011 (Engel 2011).

* *Brevianthus hypocanthidium* M.A.M.Renner et J.J.Engel, PhytoKeys 50: 46, 2015 (Renner et al. 2015).

*** ***Tetracymbaliella* Grolle**, Nova Hedwigia 3 (1): 48, 1961 (Grolle 1961b).

** *Tetracymbaliella comptonii* (Pearson) Grolle, Rev. Bryol. Lichénol. 32 (3/4): 164, 1963 [1964] (Grolle 1963d). Bas.: *Chiloscyphus comptonii* Pearson, J. Linn. Soc., Bot. 46 (305): 23, 1922 (Pearson 1922b).

*** *Tetracymbaliella cymbalifera* (Hook.f. et Taylor) Grolle, Nova Hedwigia 3 (1): 50, 1961 (Grolle 1961b). Bas.: *Jungermannia cymbalifera* Hook.f. et Taylor, Bot. Antarct. Voy. I (Fl. Antarct. 1): 151, 1845 (Taylor and Hooker 1845).

*** *Tetracymbaliella decipiens* (Gottsche) Grolle, Nova Hedwigia 3 (1): 49, 1961 (Grolle 1961b). Bas.: *Chiloscyphus decipiens* Gottsche, Syn. Hepat. 2: 176, 1845 (Gottsche et al. 1845a).
*** *Tetracymbaliella subsimplex* (Austin) J.J.Engel, Phytotaxa 207 (2): 185, 2015 (Engel 2015b). Bas.: *Polyotus subsimplex* Austin, Bull. Torrey Bot. Club 6 (7): 46, 1875 (Austin 1875c).

** Chonecoleaceae R.M.Schust. ex Grolle

** ***Chonecolea* Grolle**, Rev. Bryol. Lichénol. 25 (3/4): 294, 1956 [1957] (Grolle 1956).
** *Chonecolea acutiloba* (Schiffn.) R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 321, 1980 (Schuster 1980c). Bas.: *Clasmatocolea acutiloba* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 63, 1964 (Schiffner and Arnell 1964).
** *Chonecolea andina* Grolle et Váňa, J. Hattori Bot. Lab. 48: 229, 1980 (Váňa 1980).
** *Chonecolea doellingeri* (Nees) Grolle, Rev. Bryol. Lichénol. 25 (3/4): 295, 1956 [1957] (Grolle 1956). Bas.: *Jungermannia doellingeri* Nees, Syn. Hepat. 1: 104, 1844 (Gottsche et al. 1844).
** *Chonecolea ruwenzorensis* E.W.Jones, J. Bryol. 13 (4): 498, 1986 (Jones 1986).
** *Chonecolea schusteri* Udar et Ad.Kumar, Bryologist 85 (3): 315, 1982 (Udar and Kumar 1982a).
** *Chonecolea verae* Potemkin, Proc. int. meeting 90th anniv. Abramova: 165, 2005 (Potemkin 2005).

** Grolleaceae Solari ex R.M.Schust.

** ***Grollea* R.M.Schust.**, Nova Hedwigia 8 (3/4): 288, 1964 (Schuster 1964b).
** *Grollea antheliopsis* R.M.Schust., Nova Hedwigia 8 (3/4): 288, 1964 (Schuster 1964b).

*** Herbertaceae Müll.Frib. ex Fulford et Hatcher

by D. Bell

*** ***Herbertus* Gray**, Nat. Arr. Brit. Pl. 1: 705, 1821 (Gray 1821). [99]
*** *Herbertus aduncus* (Dicks.) Gray, Nat. Arr. Brit. Pl. 1: 705, 1821 (Gray 1821). Bas.: *Jungermannia adunca* Dicks., Fasc. Pl. Crypt. Brit. 3: 12, 1793 (Dickson 1793).

99 *Herbertus* includes *Schisma*, but a few taxa have neither been transferred nor synonymized. They are listed in the "Names in genera not currently accepted" section below.

** *Herbertus arcticus* (Inoue et Steere) Schljakov, Novosti Sist. Nizš. Rast. 19: 209, 1982 (Shliakov 1982). Bas.: *Herbertus sakuraii* subsp. *arcticus* Inoue et Steere, J. Hattori Bot. Lab. 44: 266, 1978 (Steere and Inoue 1978).

** *Herbertus armitanus* (Steph.) H.A.Mill., J. Hattori Bot. Lab. 28: 324, 1965 (Miller 1965). Bas.: *Schisma armitanum* Steph., Sp. Hepat. (Stephani) 4: 28, 1909 (Stephani 1909d).

** *Herbertus asparus* Tixier, Bryophyt. Biblioth. 18: 64, 1979 (Tixier 1979a).

*** *Herbertus bivittatus* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 343, 1885 (Spruce 1885).

** *Herbertus borealis* Crundw., Trans. Brit. Bryol. Soc. 6 (1): 41, 1970 (Crundwell 1970).

** *Herbertus buchii* Juslén, Ann. Bot. Fenn. 43 (6): 416, 2006 (Juslén 2006a).

** *Herbertus ceylanicus* (Steph.) Abeyw., Ceylon J. Sci., Biol. Sci. 2 (1): 43, 1959 (Abeywickrama 1959). Bas.: *Schisma ceylanicum* Steph., Sp. Hepat. (Stephani) 4: 22, 1909 (Stephani 1909d).

** *Herbertus circinatus* (Steph.) H.A.Mill., J. Hattori Bot. Lab. 28: 318, 1965 (Miller 1965). Bas.: *Schisma circinatum* Steph., Sp. Hepat. (Stephani) 4: 25, 1909 (Stephani 1909d).

*** *Herbertus delavayi* (Steph.) Steph., Hedwigia 34 (2): 43, 1895 (Stephani 1895c). Bas.: *Schisma delavayi* Steph., Mém. Soc. Nat. Sci. Nat. Math. Cherbourg 29: 228, 1894 (Stephani 1894b). [100]

*** *Herbertus dicranus* (Gottsche, Lindenb. et Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 397, 1877 (Trevisan 1877). Bas.: *Sendtnera dicrana* Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 239, 1845 (Gottsche et al. 1845a).

** *Herbertus durandii* (Steph.) Herzog, Rev. Bryol. Lichénol. 11 (1): 25, 1938 [1939] (Herzog 1938a). Bas.: *Schisma durandii* Steph., Trans. Linn. Soc. London, Bot. 6 (1): 99, 1901 (Stephani 1901e).

* *Herbertus evittatus* (Steph.) H.A.Mill., J. Hattori Bot. Lab. 28: 327, 1965 (Miller 1965). Bas.: *Schisma evittatum* Steph., Sp. Hepat. (Stephani) 6: 357, 1922 (Stephani 1922).

** *Herbertus gaochienii* X.Fu, Fl. Bryoph. Sin. 9: 38, 2003 (Gao 2003).

** *Herbertus gracilis* (Mont.) Steph., Bull. Herb. Boissier 5 (10): 842, 1897 (Stephani 1897c). Bas.: *Mastigophora gracilis* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 254, 1843 (Montagne 1843).

** *Herbertus guangdongii* P.J.Lin ex Piippo, Bryobrothera 1: 206, 1992 (Lin et al. 1992).

** *Herbertus hawaiiensis* H.A.Mill., J. Hattori Bot. Lab. 28: 317, 1965 (Miller 1965).

** *Herbertus helleri* (Steph.) W.E.Nicholson, Rev. Bryol. Lichénol. 13: 143, 1942 (Nicholson 1942). Bas.: *Schisma helleri* Steph., Sp. Hepat. (Stephani) 4: 29, 1909 (Stephani 1909d).

** *Herbertus herpocladioides* E.B.Scott et H.A.Mill., Bryologist 62 (2): 116, 1959 (Scott and Miller 1959).

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100 *Herbertus delavayi* is a species complex that requires further studies (Bell et al. 2012). It also includes *Herbertus borealis* and may include several, partly cryptic species.

*** *Herbertus hutchinsiae* (Gottsche et Rabenh.) A.Evans, Bull. Torrey Bot. Club 44 (4): 214, 1917 (Evans 1917c). Bas.: *Sendtnera adunca* var. *hutchinsiae* Gottsche et Rabenh., Hepat. Eur., Leberm. 21-22: no. 210, 1862 (Rabenhorst 1862).

*** *Herbertus juniperoideus* (Sw.) Grolle, Rev. Bryol. Lichénol. 30 (1/2): 80, 1961 (Grolle 1961a). Bas.: *Jungermannia juniperoidea* Sw., Prodr. (Swartz): 144, 1788 (Swartz 1788). [101]

*** *Herbertus juniperoideus* subsp. *acanthelius* (Spruce) K.Feldberg et Heinrichs, Bot. J. Linn. Soc. 151: 326, 2006 (Feldberg and Heinrichs 2006). Bas.: *Herbertus acanthelius* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 341, 1885 (Spruce 1885).

*** *Herbertus juniperoideus* subsp. *pensilis* (Taylor) K.Feldberg et Heinrichs, Bot. J. Linn. Soc. 151: 329, 2006 (Feldberg and Heinrichs 2006). Bas.: *Sendtnera pensilis* Taylor, London J. Bot. 5: 372, 1846 (Taylor 1846b).

** *Herbertus kurzii* (Steph.) R.S.Chopra, J. Indian Bot. Soc. 22: 247, 1943 (Chopra 1943). Bas.: *Schisma kurzii* Steph., Sp. Hepat. (Stephani) 4: 24, 1909 (Stephani 1909d).

** *Herbertus leratii* (Steph.) H.A.Mill., J. Hattori Bot. Lab. 28: 327, 1965 (Miller 1965). Bas.: *Schisma leratii* Steph., Sp. Hepat. (Stephani) 6: 360, 1922 (Stephani 1922).

** *Herbertus lonchobasis* H.A.Mill., J. Hattori Bot. Lab. 28: 306, 1965 (Miller 1965).

** *Herbertus longifissus* Steph., Hedwigia 34 (2): 44, 1895 (Stephani 1895c).

** *Herbertus longispinus* J.B.Jack et Steph., Hedwigia 31 (1): 15, 1892 (Jack and Stephani 1892).

** *Herbertus mauritianus* N.G.Hodgetts, J. Bryol. 30 (4): 247, 2008 (Hodgetts 2008).

*** *Herbertus norenus* D.G.Long, D.Bell et H.H.Blom, Molec. Ecol. Res. 12: 44, 2012 (Bell et al. 2012).

** *Herbertus oldfieldianus* (Steph.) Rodway, Tasm. Bryoph.: 72, 1917 (Rodway 1917b). Bas.: *Schisma oldfieldianum* Steph., Sp. Hepat. (Stephani) 4: 20, 1909 (Stephani 1909d).

** *Herbertus pilifer* Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 252, 1893 (Schiffner 1893a).

** *Herbertus pocsii* N.G.Hodgetts, J. Bryol. 30 (4): 249, 2008 (Hodgetts 2008).

** *Herbertus pumilus* Steph., Hedwigia 34 (2): 44, 1895 (Stephani 1895c).

** *Herbertus ramosus* (Steph.) H.A.Mill., J. Hattori Bot. Lab. 28: 314, 1965 (Miller 1965). Bas.: *Schisma ramosum* Steph., Sp. Hepat. (Stephani) 4: 23, 1909 (Stephani 1909d).

** *Herbertus runcinatus* (Taylor) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 397, 1877 (Trevisan 1877). Bas.: *Sendtnera runcinata* Taylor, London J. Bot. 5: 372, 1846 (Taylor 1846b).

*** *Herbertus sendtneri* (Nees) Lindb., Hepat. Scand. Exsicc.: no. 4, 1874 (Lindberg and Lackström 1874). Bas.: *Schisma sendtneri* Nees, Naturgesch. Eur. Leberm. 3: 575, 1838 (Nees 1838b).

** *Herbertus spicatus* N.G.Hodgetts, J. Bryol. 30 (4): 244, 2008 (Hodgetts 2008).

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101 *Herbertus juniperoideus* is here treated with two subspecies, but they may deserve species rank instead.

*** *Herbertus stramineus* (Dumort.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 397, 1877 (Trevisan 1877). Bas.: *Schisma stramineum* Dumort., Syll. Jungerm. Europ.: 77, 1831 (Dumortier 1831).
** *Herbertus streimannii* M.L.So, Syst. Bot. 28 (1): 13, 2003 (So 2003).
*** *Herbertus tenuis* A.Evans, Bull. Torrey Bot. Club 44 (4): 219, 1917 (Evans 1917c).
** *Herbertus udarii* D.Kumar et N.Manocha, Geophytology 29 (1/2): 105, 1999 [2000] (Kumar and Manocha 1999).

Excluded from the genus

* *Herbertus subrotundatus* X.Fu et Y.J.Yi, Acta Phytotax. Sin. 39 (1): 89, 2001 (Yi et al. 2001). [102]

*** ***Triandrophyllum*** **Fulford et Hatcher**, Bryologist 64 (4): 349, 1961 [1962] (Fulford and Hatcher 1961). Based on: *Triandrophyllum* Fulford et Hatcher, Bryologist 61 (4): 277, 1958 [1959] (Fulford and Hatcher 1958).
*** *Triandrophyllum eophyllum* (R.M.Schust.) Gradst., Mem. New York Bot. Gard. 86: 104, 2001 (Gradstein et al. 2001a). Bas.: *Olgantha eophylla* R.M.Schust., Nova Hedwigia 63 (3/4): 535, 1996 (Schuster 1996b).
** *Triandrophyllum fernandeziense* (S.W.Arnell) Grolle ex Fulford et Hatcher, Bryologist 64 (4): 351, 1961 [1962] (Fulford and Hatcher 1961). Bas.: *Acromastigum fernandeziense* S.W.Arnell, Ark. Bot. (n.ser.) 4 (1): 10, 1957 (Arnell 1957b).
** *Triandrophyllum heterophyllum* (Steph.) Grolle, J. Jap. Bot. 39 (8): 238, 1964 (Grolle 1964g). Bas.: *Mastigophora heterophylla* Steph., Sp. Hepat. (Stephani) 6: 367, 1922 (Stephani 1922).
*** *Triandrophyllum subtrifidum* (Hook.f. et Taylor) Fulford et Hatcher, Bryologist 64 (4): 350, 1961 [1962] (Fulford and Hatcher 1961). Bas.: *Jungermannia subtrifida* Hook.f. et Taylor, London J. Bot. 3: 579, 1844 (Hooker and Taylor 1844c).
** *Triandrophyllum subtrifidum* var. *trifidum* (Gottsche) Solari, Bol. Soc. Argent. Bot. 15 (2/3): 201, 1973 (Solari 1973). Bas.: *Sendtnera trifida* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 142, 1864 (Gottsche 1864).
** *Triandrophyllum symmetricum* J.J.Engel, Haussknechtia, Beih. 9: 115, 1999 (Engel 1999b).

*** Lepicoleaceae R.M.Schust.

by M. von Konrat

Lepicoleaceae has conventionally been considered a monogeneric family only containing *Lepicolea* (e.g. Crandall-Stotler et al. 2009). However, we expand Lepicoleaceae here to include the monogeneric family Vetaformaceae. A number of molecular analy-

102 *Herbertus subrotundus* does not belong in *Herbertus* (Juslén 2006a), but it is unclear where it belongs.

ses have shown that *Vetaforma dusenii* is sister to *Lepicolea* (e.g. He-Nygrén et al. 2006, Juslén 2006b) together forming a robust clade.

*** ***Lepicolea* Dumort.**, Recueil Observ. Jungerm.: 20, 1835 (Dumortier 1835).
*** *Lepicolea attenuata* (Mitt.) Steph., J. Linn. Soc., Bot. 29 (201): 276, 1892 (Stephani 1892b). Bas.: *Sendtnera attenuata* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 153, 1854 (Mitten 1854).
*** *Lepicolea magellanica* (Gola) Solari, Lindbergia 9 (2): 86, 1983 (Solari 1983b). Bas.: *Lepicolea scolopendra* var. *magellanica* Gola, Nuovo Giorn. Bot. Ital. (n.ser.) 29 (1/4): 170, 1922 [1923] (Gola 1922).
*** *Lepicolea norrisii* Piippo, Ann. Bot. Fenn. 25 (1): 55, 1988 (Piippo 1988).
*** *Lepicolea ochroleuca* (Spreng.) Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 345, 1885 (Spruce 1885). Bas.: *Jungermannia ochroleuca* Spreng. Syst. Veg. (ed. 16) [Sprengel] 4 (2): 325, 1827 (Sprengel 1827b).
*** *Lepicolea pruinosa* (Taylor) Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 345, 1885 (Spruce 1885). Bas.: *Sendtnera pruinosa* Taylor, London J. Bot. 5: 373, 1846 (Taylor 1846b).
*** *Lepicolea ramentifissa* Herzog, Biblioth. Bot. 88: 30, 1920 [1921] (Herzog 1920).
*** *Lepicolea rara* (Steph.) Grolle, Nova Hedwigia 16: 152, 1968 (Grolle 1968d). Bas.: *Lepidozia rara* Steph., Sp. Hepat. (Stephani) 3: 618, 1909 (Stephani 1909a). [103]
*** *Lepicolea rigida* (De Not.) E.B.Scott, Nova Hedwigia 2: 148, 1960 (Scott 1960). Bas.: *Sendtnera rigida* De Not., Mem. Reale Accad. Sci. Torino (ser. 2) 16: 229, 1857 (De Notaris 1857).
*** *Lepicolea scolopendra* (Hook.) Dumort. ex Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 398, 1877 (Trevisan 1877). Bas.: *Jungermannia scolopendra* Hook., Musci Exot. 1: tab. 40, 1818 (Hooker 1818).
*** *Lepicolea yakusimensis* (S.Hatt.) S.Hatt., J. Hattori Bot. Lab. 10: 42, 1953 (Hattori 1953c). Bas.: *Lepicolea scolopendra* var. *yakusimensis* S.Hatt., J. Hattori Bot. Lab. 2: 9, 1947 [1948] (Hattori 1947b).

*** ***Vetaforma* Fulford et J.Taylor**, Nova Hedwigia 4 (1/2): 81, 1962 (Fulford 1962b).
*** *Vetaforma dusenii* (Steph.) Fulford et J.Taylor, Nova Hedwigia 4 (1/2): 82, 1962 (Fulford 1962b). Bas.: *Lepidozia dusenii* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 6): 52, 1900 (Stephani 1900b).

*** Lepidoziaceae Limpr.

by E.D. Cooper

The classification within Lepidoziaceae is in a state of flux. The treatment provided here follows the interim classification proposed by Cooper (2013) based on recent molecular phylogenetic studies (Heslewood and Brown 2007, Cooper et al. 2011, 2012a, 2012b)

103 *Lepicolea rara* is possibly a species complex and warrants further investigation (Schuster 2000a).

incorporating nomenclatural changes from Cooper et al. (2013). Several higher taxa are unlikely to represent monophyletic units, but the phylogenetic data currently available are insufficient to re-circumscribe the doubtful subfamilies and genera (Cooper 2013). Infrageneric taxa have been retained where phylogenetic data are absent or inconclusive.

** ***Meinungeria* Frank Müll.**, Bryologist 110 (3): 494, 2007 (Müller 2007).
** *Meinungeria mouensis* Frank Müll., Bryologist 110 (3): 494, 2007 (Müller 2007).

*** Bazzanioideae Rodway

*** ***Acromastigum* A.Evans**, Bull. Torrey Bot. Club 27 (3): 103, 1900 (Evans 1900b). [104]

** **subg. *Acromastigum***
*** *Acromastigum caledonicum* (Steph.) Grolle, Österr. Bot. Z. 111 (2/3): 243, 1964 (Grolle 1964h). Bas.: *Acolea caledonica* Steph., Nova Caledonia, Bot. 1: 19, 1914 (Stephani 1914c).
*** *Acromastigum cavifolium* R.M.Schust., J. Hattori Bot. Lab. 26: 257, 1963 (Schuster 1963b).
** *Acromastigum herzogii* Grolle, Österr. Bot. Z. 111 (2/3): 250, 1964 (Grolle 1964h).
*** *Acromastigum homodictyon* (Herzog) Grolle, Österr. Bot. Z. 111 (2/3): 245, 1964 (Grolle 1964h). Bas.: *Acromastigum integrifolium* var. *homodictyon* Herzog, Ark. Bot. (n.ser.) 3 (3): 44, 1953 (Herzog 1953a).
** *Acromastigum integrifolium* (Austin) A.Evans, Bull. Torrey Bot. Club 27 (3): 103, 1900 (Evans 1900b). Bas.: *Mastigobryum integrifolium* Austin, Bot. Bull. (Hanover) 1 (7): 32, 1876 (Austin 1876b).
*** *Acromastigum stellare* N.Kitag., Acta Phytotax. Geobot. 36 (4/6): 109, 1985 (Kitagawa 1985).
** *Acromastigum stenophyllum* R.M.Schust., Nova Hedwigia 15: 465, 1968 (Schuster 1968b).
*** *Acromastigum verticale* (Steph.) E.A.Hodgs., Trans. Roy. Soc. New Zealand 82 (1): 18, 1954 (Hodgson 1954). Bas.: *Bazzania verticalis* Steph., Hedwigia 32 (4): 214, 1893 (Stephani 1893c).

** **subg. *Inaequilatera* (Schiffn.) Grolle**, J. Hattori Bot. Lab. 44: 2, 1978 (Grolle 1978b). Bas.: *Bazzania* sect. *Inaequilaterae* Schiffn., Hepat. (Engl.-Prantl): 101, 1893 (Schiffner 1893b).
*** *Acromastigum adaptatum* Hürl., Bauhinia 7 (4): 263, 1983 (Hürlimann 1983).
*** *Acromastigum anisostomum* (Lehm. et Lindenb.) A.Evans, Ann. Bryol., Suppl. 3: 48, 1934 (Evans 1934). Bas.: *Jungermannia anisostoma* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 57, 1834 (Lehmann 1834).

104 *Acromastigum* is here divided into two subgenera which are supported by recent molecular studies (Heslewood and Brown 2007, Cooper et al. 2011).

** *Acromastigum anisostomum* var. *minutum* E.A.Hodgs., Trans. Roy. Soc. New Zealand, Bot. 3 (4): 71, 1965 (Hodgson 1965).
** *Acromastigum aurescens* A.Evans, Ann. Bryol., Suppl. 3: 45, 1934 (Evans 1934).
** *Acromastigum bancanum* (Sande Lac.) A.Evans, Ann. Bryol., Suppl. 3: 20, 1934 (Evans 1934). Bas.: *Mastigobryum bancanum* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 301, 1864 (Sande Lacoste 1864).
** *Acromastigum brotheri* (Steph.) A.Evans, Ann. Bryol., Suppl. 3: 70, 1934 (Evans 1934). Bas.: *Mastigobryum brotheri* Steph., Sp. Hepat. (Stephani) 3: 536, 1909 (Stephani 1909a).
** *Acromastigum capillare* (Steph.) A.Evans, Ann. Bryol., Suppl. 3: 37, 1934 (Evans 1934). Bas.: *Mastigobryum capillare* Steph., Sp. Hepat. (Stephani) 6: 457, 1924 (Stephani 1924).
*** *Acromastigum colensoanum* (Mitt.) A.Evans ex Reimers, Hedwigia 73 (3/4): 142, 1933 (Reimers 1933). Bas.: *Mastigobryum colensoanum* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 147, 1854 (Mitten 1854).
*** *Acromastigum cunninghamii* (Steph.) A.Evans, Ann. Bryol., Suppl. 3: 106, 1934 (Evans 1934). Bas.: *Bazzania cunninghamii* Steph., Hedwigia 32 (4): 205, 1893 (Stephani 1893c).
** *Acromastigum curtilobum* A.Evans, Ann. Bryol., Suppl. 3: 97, 1934 (Evans 1934).
*** *Acromastigum divaricatum* (Nees) A.Evans ex Reimers, Hedwigia 73 (3/4): 142, 1933 (Reimers 1933). Bas.: *Mastigobryum divaricatum* Nees, Syn. Hepat. 2: 219, 1845 (Gottsche et al. 1845a).
** *Acromastigum echinatiforme* (De Not.) A.Evans, Ann. Bryol., Suppl. 3: 64, 1934 (Evans 1934). Bas.: *Mastigobryum echinatiforme* De Not., Epat. Borneo: 38, 1874 (De Notaris 1874).
* *Acromastigum echinatum* (Gottsche) A.Evans, Ann. Bryol., Suppl. 3: 147, 1934 (Evans 1934). Bas.: *Mastigobryum echinatum* Gottsche, Syn. Hepat. 2: 218, 1845 (Gottsche et al. 1845a). [105]
*** *Acromastigum exiguum* (Steph.) A.Evans, Ann. Bryol., Suppl. 3: 75, 1934 (Evans 1934). Bas.: *Mastigobryum exiguum* Steph., Hedwigia 25 (1): 6, 1886 (Stephani 1886e).
** *Acromastigum exile* (Lindenb.) A.Evans, Ann. Bryol., Suppl. 3: 24, 1934 (Evans 1934). Bas.: *Mastigobryum exile* Lindenb., Syn. Hepat. 2: 217, 1845 (Gottsche et al. 1845a).
*** *Acromastigum filum* (Steph.) A.Evans, Ann. Bryol., Suppl. 3: 31, 1934 (Evans 1934). Bas.: *Bazzania filum* Steph., Hedwigia 32 (4): 206, 1893 (Stephani 1893c).
*** *Acromastigum filum* var. *papillosum* N.Kitag., Acta Phytotax. Geobot. 36 (4/6): 112, 1985 (Kitagawa 1985).
** *Acromastigum fimbriatum* (Steph.) A.Evans, Ann. Bryol., Suppl. 3: 153, 1934 (Evans 1934). Bas.: *Mastigobryum fimbriatum* Steph., Sp. Hepat. (Stephani) 3: 538, 1909 (Stephani 1909a).

105 *Acromastigum echinatum* may be conspecific with *Acromastigum inaequilaterum* since all specimens identified by Piippo et al. (2002) belong there, but she did not see the type specimen.

** *Acromastigum furcatifolium* (Steph.) E.A.Br., Phytotaxa 65: 58, 2012 (Brown et al. 2012). Bas.: *Lepidozia furcatifolia* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 112, 1914 (Stephani and Watts 1914).

*** *Acromastigum inaequilaterum* (Lehm. et Lindenb.) A.Evans, Ann. Bryol., Suppl. 3: 129, 1934 (Evans 1934). Bas.: *Jungermannia inaequilatera* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 56, 1834 (Lehmann 1834).

** *Acromastigum interstisiale* E.A.Br. et M.A.M.Renner, Telopea 17: 268, 2014 (Brown and Renner 2014).

** *Acromastigum laetevirens* (Sande Lac. ex Steph.) A.Evans, Ann. Bryol., Suppl. 3: 94, 1934 (Evans 1934). Bas.: *Mastigobryum laetevirens* Sande Lac. ex Steph., Hedwigia 25 (4): 133, 1886 (Stephani 1886b).

** *Acromastigum laevigatum* A.Evans, Ann. Bryol., Suppl. 3: 101, 1934 (Evans 1934).

** *Acromastigum linganum* (De Not.) A.Evans, Ann. Bryol., Suppl. 3: 118, 1934 (Evans 1934). Bas.: *Mastigobryum linganum* De Not., Epat. Borneo: 37, 1874 (De Notaris 1874).

** *Acromastigum lobuliferum* A.Evans, Ann. Bryol., Suppl. 3: 157, 1934 (Evans 1934).

** *Acromastigum longirete* Grolle, J. Hattori Bot. Lab. 44: 11, 1978 (Grolle 1978b).

*** *Acromastigum mooreanum* (Steph.) E.A.Hodgs., Trans. Roy. Soc. New Zealand 82 (1): 19, 1954 (Hodgson 1954). Bas.: *Bazzania mooreana* Steph., Hedwigia 33 (1): 1, 1894 (Stephani 1894a).

*** *Acromastigum moratii* N.Kitag., Acta Phytotax. Geobot. 36 (4/6): 119, 1985 (Kitagawa 1985).

** *Acromastigum obliquatum* (Mitt.) A.Evans, Ann. Bryol., Suppl. 3: 110, 1934 (Evans 1934). Bas.: *Bazzania obliquata* Mitt., Hedwigia 32 (4): 211, 1893 (Stephani 1893c).

** *Acromastigum tenax* (Steph.) A.Evans, Ann. Bryol., Suppl. 3: 41, 1934 (Evans 1934). Bas.: *Mastigobryum tenax* Steph., Sp. Hepat. (Stephani) 6: 483, 1924 (Stephani 1924).

Incertae sedis

** *Acromastigum fumosum* E.A.Br. et M.A.M.Renner, Telopea 17: 274, 2014 (Brown and Renner 2014).

** *Acromastigum leptophyllum* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 309, 1950 (Herzog 1950a).

*** *Acromastigum marginatum* E.A.Hodgs., Trans. Roy. Soc. New Zealand 82 (1): 22, 1954 (Hodgson 1954).

** *Acromastigum microstictum* A.Evans, Ann. Bryol., Suppl. 3: 115, 1934 (Evans 1934).

** *Acromastigum prismaticale* E.A.Br. et M.A.M.Renner, Telopea 17: 281, 2014 (Brown and Renner 2014).

** *Acromastigum pusillum* N.Kitag., Acta Phytotax. Geobot. 36 (4/6): 116, 1985 (Kitagawa 1985).

** *Acromastigum rigidum* R.M.Schust., Nova Hedwigia 64 (3/4): 617, 1997 (Schuster 1997b).

** *Acromastigum subechinatiforme* Hürl., Bauhinia 7 (4): 266, 1983 (Hürlimann 1983).

*** ***Bazzania* Gray**, Nat. Arr. Brit. Pl. 1: 704, 1821 (Gray 1821) nom. conserv. [106]

*** *Bazzania acanthostipa* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 381, 1885 (Spruce 1885).

*** *Bazzania accreta* (Lehm. et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum accretum* Lehm. et Lindenb., Syn. Hepat. 2: 222, 1845 (Gottsche et al. 1845a).

** *Bazzania acinaciformis* Steph., Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr. 81: 290, 1907 (Stephani 1907a).

** *Bazzania acuminata* (Lindenb. et Gottsche) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum acuminatum* Lindenb. et Gottsche, Syn. Hepat. 5: 719, 1847 (Gottsche et al. 1847).

** *Bazzania acutifolia* (Steph.) Schiffn., Consp. Hepat. Arch. Ind.: 147, 1898 (Schiffner 1898b). Bas.: *Mastigobryum acutifolium* Steph., Hedwigia 24 (5): 214, 1885 (Stephani 1885a).

*** *Bazzania adnexa* (Lehm. et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Jungermannia adnexa* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 58, 1832 (Lehmann 1832).

** *Bazzania adnexa* var. *aucklandica* (Lindenb. et Gottsche) J.J.Engel et G.L.Merr., Bryologist 97 (3): 319, 1994 (Engel and Smith Merrill 1994). Bas.: *Mastigobryum novae-hollandiae* f. *aucklandicum* Lindenb. et Gottsche, Sp. Hepat. (Lindenberg) 8-11: 33, 1851 (Lindenberg and Gottsche 1851b).

*** *Bazzania affinis* (Lindenb. et Gottsche) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 415, 1877 (Trevisan 1877). Bas.: *Mastigobryum affine* Lindenb. et Gottsche, Syn. Hepat. 5: 720, 1847 (Gottsche et al. 1847).

** *Bazzania albifolia* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 195, 1934 (Horikawa 1934).

** *Bazzania ambigua* (Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum ambiguum* Lindenb., Syn. Hepat. 2: 217, 1845 (Gottsche et al. 1845a).

*** *Bazzania amblyphylla* Meagher, Nova Hedwigia 92 (3/4): 487, 2011 (Meagher 2011).

** *Bazzania aneityensis* (Steph.) Tixier, Bull. Mus. Natl. Hist. Nat. (Sér. 3), Bot. 10 (190): 80, 1973 (Tixier 1973d). Bas.: *Mastigobryum aneityense* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 121, 1914 (Stephani and Watts 1914).

** *Bazzania angusta* (Steph.) Herzog, Trans. Brit. Bryol. Soc. 1 (4): 307, 1950 (Herzog 1950a). Bas.: *Mastigobryum angustum* Steph., Sp. Hepat. (Stephani) 6: 453, 1924 (Stephani 1924).

** *Bazzania angustifalcata* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 166, 1955 (Herzog 1955).

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106 *Bazzania* can not be subdivided based on recent molecular studies, so infrageneric taxa are not used here. The genus includes *Mastigobryum*, but several taxa have neither been transferred nor synonymized. They are listed in the "Names in genera not currently accepted" section below.

** *Bazzania angustifolia* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 198, 1934 (Horikawa 1934).

** *Bazzania angustisedens* (Steph.) N.Kitag., J. Hattori Bot. Lab. 36: 445, 1972 [1973] (Kitagawa 1972). Bas.: *Mastigobryum angustisedens* Steph., Bull. Herb. Boissier (sér. 2) 8 (10): 745 (429), 1908 (Stephani 1908c).

** *Bazzania angustistipula* N.Kitag., J. Hattori Bot. Lab. 30: 268, 1967 (Kitagawa 1967a).

*** *Bazzania appendiculata* (Mitt.) S.Hatt., Fl. E. Himalaya: 505, 1966 (Hattori 1966c). Bas.: *Mastigobryum appendiculatum* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 105, 1860 [1861] (Mitten 1860c).

** *Bazzania approximata* Onr., Bull. Jard. Bot. Natl. Belg. 47 (1/2): 139, 1977 (Onraedt 1977).

** *Bazzania arcuata* (Lindenb. et Gottsche) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum arcuatum* Lindenb. et Gottsche, Syn. Hepat. 5: 718, 1847 (Gottsche et al. 1847).

** *Bazzania arcuata* var. *mamillosa* Gradst. et A.R.Benitez, Nova Hedwigia 99 (1/2): 113, 2014 (Gradstein and Benitez 2014).

** *Bazzania armatistipula* (Steph.) Fulford, Ann. Cryptog. Phytopathol. 3: 114, 1946 (Fulford 1946). Bas.: *Mastigobryum armatistipulum* Steph., Bull. Herb. Boissier (sér. 2) 8 (11): 866 (490), 1908 (Stephani 1908a).

** *Bazzania asperrima* Steph., Rev. Bryol. 34 (3): 48, 1907 (Paris 1907).

* *Bazzania asymmetrica* (Steph.) N.Kitag., Bull. Nara Univ. Educ., B 28 (2): 77, 1979 (Kitagawa 1979a). Bas.: *Mastigobryum asymmetricum* Steph., Sp. Hepat. (Stephani) 6: 454, 1924 (Stephani 1924). [107]

** *Bazzania aterrima* (Steph.) N.Kitag., Bull. Nara Univ. Educ., B 26 (2): 77, 1977 (Kitagawa 1977). Bas.: *Mastigobryum aterrimum* Steph., Sp. Hepat. (Stephani) 6: 454, 1924 (Stephani 1924).

*** *Bazzania aurescens* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 374, 1885 (Spruce 1885).

** *Bazzania avia* Meagher, Nova Hedwigia 97 (3/4): 529, 2013 (Meagher 2013).

** *Bazzania azorica* H.Buch et Perss., Bryophyt. Azoren Madeira: 3, 1941 (Buch and Persson 1941).

** *Bazzania baldwinii* Austin, Trans. Connecticut Acad. Arts 8 (15): 255, 1891 (Evans 1891).

** *Bazzania bernieri* (Steph.) Inoue et H.A.Mill., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 8 (2): 142, 1965 (Inoue and Miller 1965). Bas.: *Mastigobryum bernieri* Steph., Bull. Herb. Boissier (sér. 2) 8 (11): 852 (476), 1908 (Stephani 1908a).

*** *Bazzania bescherellei* Steph., Hedwigia 32 (4): 204, 1893 (Stephani 1893c).

** *Bazzania bhutanica* N.Kitag. et Grolle, J. Hattori Bot. Lab. 61: 269, 1986 [1987] (Kitagawa and Grolle 1986).

** *Bazzania bicrenata* N.Kitag., J. Hattori Bot. Lab. 47: 127, 1980 (Kitagawa 1980).

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107 *Bazzania asymmetrica* is conspecific with *Bazzania macgregori*i in Grolle (1968a), but Kitagawa (1979a) kept them separate.

*** *Bazzania bidens* (Gottsche et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 415, 1877 (Trevisan 1877). Bas.: *Mastigobryum bidens* Gottsche et Lindenb., Syn. Hepat. 2: 228, 1845 (Gottsche et al. 1845a).

** *Bazzania bidens* var. *heterodonta* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 372, 1885 (Spruce 1885).

** *Bazzania bidentula* (Steph.) Yasuda, Shokubutsugaku Kakuron: 711, 1911 (Yasuda 1911). Bas.: *Pleuroschisma bidentulum* Steph., Mém. Soc. Nat. Sci. Nat. Math. Cherbourg 29: 222, 1894 (Stephani 1894b).

*** *Bazzania bilobata* N.Kitag., J. Hattori Bot. Lab. 30: 257, 1967 (Kitagawa 1967a).

** *Bazzania borneensis* N.Kitag., J. Hattori Bot. Lab. 37: 263, 1973 (Kitagawa 1973). *Nom. nov. pro Mastigobryum borneense* Steph., Bull. Herb. Boissier (sér. 2) 8 (11): 839 (463), 1908 (Stephani 1908a), *nom. illeg.*

** *Bazzania brasiliensis* (Gottsche et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 415, 1877 (Trevisan 1877). Bas.: *Mastigobryum brasiliense* Gottsche et Lindenb., Syn. Hepat. 2: 227, 1845 (Gottsche et al. 1845a).

** *Bazzania brighamii* (Austin) A.Evans, Trans. Connecticut Acad. Arts 8 (15): 255, 1891 (Evans 1891). Bas.: *Mastigobryum brighamii* Austin, Bull. Torrey Bot. Club 5 (3): 16, 1874 (Austin 1874).

** *Bazzania cadens* N.Kitag., J. Hattori Bot. Lab. 47: 129, 1980 (Kitagawa 1980).

*** *Bazzania calcarata* (Sande Lac.) Schiffn., Consp. Hepat. Arch. Ind.: 149, 1898 (Schiffner 1898b). Bas.: *Mastigobryum calcaratum* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 304, 1864 (Sande Lacoste 1864).

** *Bazzania callida* (Sande Lac. ex Steph.) Abeyw., Ceylon J. Sci., Biol. Sci. 2 (1): 45, 1959 (Abeywickrama 1959). Bas.: *Mastigobryum callidum* Sande Lac. ex Steph., Hedwigia 24 (6): 246, 1885 (Stephani 1885b).

*** *Bazzania canelensis* (Steph.) Fulford, Ann. Cryptog. Phytopathol. 3: 152, 1946 (Fulford 1946). Bas.: *Mastigobryum canelense* Steph., Sp. Hepat. (Stephani) 3: 518, 1909 (Stephani 1909a).

** *Bazzania caudata* (Steph.) Herzog, Trans. Brit. Bryol. Soc. 1 (4): 301, 1950 (Herzog 1950a). Bas.: *Mastigobryum caudatum* Steph., Bull. Herb. Boissier (sér. 2) 8 (12): 947 (497), 1908 (Stephani 1908b).

*** *Bazzania caudistipula* (Steph.) Inoue et H.A.Mill., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 8 (2): 141, 1965 (Inoue and Miller 1965). Bas.: *Mastigobryum caudistipulum* Steph., Bull. Herb. Boissier (sér. 2) 8 (12): 945 (495), 1908 (Stephani 1908b).

** *Bazzania ceylanica* (Mitt.) Steph., Bot. Jahrb. Syst. 23 (1/2, 3): 306, 1896 (Stephani 1896a). Bas.: *Mastigobryum ceylanicum* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 105, 1860 [1861] (Mitten 1860c).

** *Bazzania chilensis* (Steph.) Fulford, Ann. Cryptog. Phytopathol. 3: 51, 1946 (Fulford 1946). Bas.: *Mastigobryum chilense* Steph., Hedwigia 24 (6): 247, 1885 (Stephani 1885b).

*** *Bazzania chimantensis* Fulford, Bryologist 63 (2): 89, 1960 (Fulford 1960).

** *Bazzania cincinnata* (De Not.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum cincinnatum* De Not., Epat. Borneo: 34, 1874 (De Notaris 1874).

*** *Bazzania citharodes* Meagher, Nova Hedwigia 86 (3/4): 481, 2008 (Meagher 2008).

** *Bazzania combinata* (J.B.Jack et Steph.) Steph., Bot. Jahrb. Syst. 23 (1/2, 3): 306, 1896 (Stephani 1896a). Bas.: *Mastigobryum combinatum* J.B.Jack et Steph., Bot. Centralbl. 60 (4): 102, 1894 (Jack and Stephani 1894).

** *Bazzania commutata* (Lindenb. et Gottsche) Schiffn., Consp. Hepat. Arch. Ind.: 149, 1898 (Schiffner 1898b). Bas.: *Mastigobryum commutatum* Lindenb. et Gottsche, Sp. Hepat. (Lindenberg) 8-11: 97, 1851 (Lindenberg and Gottsche 1851b).

* *Bazzania comorensis* Steph., Bull. Soc. Roy. Bot. Belgique, Compt. Rend. 30 (2): 197, 1891 [1892] (Stephani 1891b).

** *Bazzania confertifolia* (Steph.) Herzog, Trans. Brit. Bryol. Soc. 1 (4): 298, 1950 (Herzog 1950a). Bas.: *Mastigobryum confertifolium* Steph., Bull. Herb. Boissier (sér. 2) 8 (11): 858 (482), 1908 (Stephani 1908a).

** *Bazzania conistipula* (Steph.) H.A.Mill., Phytologia 47 (4): 320, 1981 (Miller 1981). Bas.: *Mastigobryum conistipulum* Steph., Sp. Hepat. (Stephani) 6: 458, 1924 (Stephani 1924).

** *Bazzania conophylla* (Sande Lac.) Schiffn., Consp. Hepat. Arch. Ind.: 150, 1898 (Schiffner 1898b). Bas.: *Mastigobryum conophyllum* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 304, 1864 (Sande Lacoste 1864).

** *Bazzania consanguinea* (Hampe et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum consanguineum* Hampe et Lindenb., Linnaea 20 (3): 327, 1847 (Hampe 1847).

** *Bazzania consociata* (Steph.) H.A.Mill., Phytologia 47 (4): 320, 1981 (Miller 1981). Bas.: *Mastigobryum consociatum* Steph., Sp. Hepat. (Stephani) 6: 458, 1924 (Stephani 1924).

* *Bazzania corbieri* (Steph.) Meagher, Nova Hedwigia 86 (3/4): 483, 2008 (Meagher 2008). Bas.: *Mastigobryum corbieri* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 122, 1914 (Stephani and Watts 1914). [108]

** *Bazzania crassidentata* Fulford, Bull. Torrey Bot. Club 86 (5): 338, 1959 (Fulford 1959b).

** *Bazzania crassitexta* Steph., Hedwigia 32 (4): 205, 1893 (Stephani 1893c).

* *Bazzania crenata* (Trevis.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 415, 1877 (Trevisan 1877). Bas.: *Pleuroschisma crenatum* Trevis., Herb. Crypt. Trev. 2: 30, 1853 (Trevisan 1853; non vidi). [109]

** *Bazzania cubensis* (Gottsche ex Steph.) Pagán, Bryologist 42 (2): 38, 1939 (Pagán 1939b). Bas.: *Mastigobryum cubense* Gottsche ex Steph., Hedwigia 24 (6): 248, 1885 (Stephani 1885b).

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108 *Bazzania corbieri* may be conspecific with *Bazzania crenata* (Meagher 2008).

109 *Bazzania crenata* from Europe has neither been recognized in any recent treatment nor synonymized. The name may have priority once the identity is established.

** *Bazzania cucullata* Onr., Bull. Jard. Bot. Natl. Belg. 47 (1/2): 142, 1977 (Onraedt 1977).

*** *Bazzania cuneistipula* (Gottsche et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum cuneistipulum* Gottsche et Lindenb., Syn. Hepat. 2: 225, 1845 (Gottsche et al. 1845a).

* *Bazzania curvidens* Steph., Bull. Soc. Roy. Bot. Belgique, Compt. Rend. 30 (2): 197, 1891 [1892] (Stephani 1891b).

** *Bazzania debilis* N.Kitag., J. Hattori Bot. Lab. 30: 256, 1967 (Kitagawa 1967a).

** *Bazzania deciduifolia* Onr., Bull. Jard. Bot. Natl. Belg. 47 (1/2): 144, 1977 (Onraedt 1977).

*** *Bazzania decrescens* (Lehm. et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Jungermannia decrescens* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 57, 1832 (Lehmann 1832). [110]

** *Bazzania decrescens* var. *dentistipula* Kiaer et Pearson, Forh. Vidensk.-Selsk. Kristiania 1892 (14): 6, 1893 (Pearson 1893).

** *Bazzania decrescens* subsp. *molleri* (Steph.) E.W.Jones, J. Bryol. 8 (3): 303, 1975 (Jones 1975). Bas.: *Mastigobryum molleri* Steph., Bot. Jahrb. Syst. 8 (2): 84, 1886 (Stephani 1886d).

** *Bazzania decrescens* subsp. *pumila* (Mitt.) Pócs, Trop. Bryol. 9: 129, 1994 (Pócs 1994c). Bas.: *Bazzania pumila* Mitt., J. Linn. Soc., Bot. 22 (146): 322, 1886 (Mitten 1886b).

** *Bazzania densa* (Sande Lac.) Schiffn., Consp. Hepat. Arch. Ind.: 151, 1898 (Schiffner 1898b). Bas.: *Mastigobryum densum* Sande Lac., Ned. Kruidk. Arch. 3: 418, 1854 [1855] (Sande Lacoste 1854).

** *Bazzania densa* var. *connata* (Sande Lac.) Schiffn., Consp. Hepat. Arch. Ind.: 151, 1898 (Schiffner 1898b). Bas.: *Mastigobryum densum* β *connatum* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 302, 1864 (Sande Lacoste 1864).

*** *Bazzania denticulata* (Lindenb. et Gottsche) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum denticulatum* Lindenb. et Gottsche, Syn. Hepat. 5: 718, 1847 (Gottsche et al. 1847).

** *Bazzania denticulifera* Mägd., Nova Hedwigia 38: 53, 1983 (Mägdefrau 1983).

** *Bazzania denudata* (Lindenb. et Gottsche) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum denudatum* Lindenb. et Gottsche, Syn. Hepat. 2: 216, 1845 (Gottsche et al. 1845a).

*** *Bazzania deplanchei* (Gottsche) Jovet-Ast, Rev. Bryol. Lichénol. 18 (1/2): 83, 1949 (Jovet-Ast 1949b). Bas.: *Mastigobryum deplanchei* Gottsche, Bull. Herb. Boissier (sér. 2) 8 (12): 955 (505), 1908 (Stephani 1908b).

** *Bazzania deplanchei* var. *filamentosa* Tixier, Cryptog. Bryol. Lichénol. 6 (2): 179, 1985 (Tixier 1985b).

** *Bazzania desciscens* (Steph.) Meijer, Blumea 10 (2): 382, 1960 (Meijer 1960). Bas.: *Mastigobryum desciscens* Steph., Bull. Herb. Boissier (sér. 2) 8 (11): 862 (486), 1908 (Stephani 1908a).

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110 *Bazzania decrescens* is a species complex also including also *Bazzania comorensis*, *Bazzania curvidens* and *Bazzania mascarena* (Grolle 1995).

** *Bazzania didericiana* (Gottsche ex Steph.) Steph., Bull. Herb. Boissier 5 (10): 841, 1897 (Stephani 1897c). Bas.: *Mastigobryum didericianum* Gottsche ex Steph., Hedwigia 24 (6): 249, 1885 (Stephani 1885b).

** *Bazzania diminuta* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 305, 1950 (Herzog 1950a).

* *Bazzania distans* (Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum distans* Nees, Syn. Hepat. 2: 216, 1845 (Gottsche et al. 1845a). [111]

*** *Bazzania diversicuspis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 373, 1885 (Spruce 1885).

** *Bazzania drepanophylla* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 301, 1950 (Herzog 1950a).

** *Bazzania dulitensis* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 299, 1950 (Herzog 1950a).

** *Bazzania dulongensis* L.P.Zhou et Li Zhang, J. Bryol. 34 (1): 22, 2012 (Zhou et al. 2012).

** *Bazzania eggersiana* (Steph.) Pagán, Bryologist 42 (2): 39, 1939 (Pagán 1939b). Bas.: *Mastigobryum eggersianum* Steph., Bull. Herb. Boissier (sér. 2) 8 (11): 844 (468), 1908 (Stephani 1908a).

** *Bazzania elmeri* (Steph.) N.Kitag., J. Hattori Bot. Lab. 36: 446, 1972 [1973] (Kitagawa 1972). Bas.: *Mastigobryum elmeri* Steph., Leafl. Philipp. Bot. 6: 2289, 1914 (Stephani 1914a).

** *Bazzania elongata* Fulford, Bull. Torrey Bot. Club 86 (5): 337, 1959 (Fulford 1959b).

** *Bazzania emarginata* (Steph.) C.M.Cooke, Trans. Connecticut Acad. Arts 12 (1): 17, 1904 (Cooke 1904). Bas.: *Mastigobryum didericianum* var. *emarginatum* Steph., Hedwigia 24 (6): 249, 1885 (Stephani 1885b).

** *Bazzania engelii* Glenny, Fieldiana, Bot. (n.ser.) 47: 176, 2007 (Glenny and Bartlett 2007).

*** *Bazzania erosa* (Reinw., Blume et Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 415, 1877 (Trevisan 1877). Bas.: *Jungermannia erosa* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 230, 1824 [1825] (Reinwardt et al. 1824a).

** *Bazzania erosa* var. *pulopenangensis* (Lindenb. et Gottsche) Schiffn., Consp. Hepat. Arch. Ind.: 157, 1898 (Schiffner 1898b). Bas.: *Mastigobryum erosum* δ *pulopenangense* Lindenb. et Gottsche, Sp. Hepat. (Lindenberg) 8-11: 99, 1851 (Lindenberg and Gottsche 1851b).

*** *Bazzania exempta* J.J.Engel, J. Hattori Bot. Lab. 99: 197, 2006 (Engel 2006c).

*** *Bazzania falcata* (Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 415, 1877 (Trevisan 1877). Bas.: *Mastigobryum falcatum* Lindenb., Syn. Hepat. 2: 231, 1845 (Gottsche et al. 1845a).

** *Bazzania falcifolia* (Steph.) H.A.Mill., Phytologia 47 (4): 320, 1981 (Miller 1981). Bas.: *Mastigobryum falcifolium* Steph., Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr. 88: 33, 1911 (Stephani 1911d).

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111 *Bazzania distans* is probably conspecific with *Bazzania loricata* (Meijer 1960).

* *Bazzania fallax* (Sande Lac.) Schiffn., Consp. Hepat. Arch. Ind.: 158, 1898 (Schiffner 1898b). Bas.: *Mastigobryum fallax* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 304, 1864 (Sande Lacoste 1864).

*** *Bazzania fasciculata* (Steph.) Meagher, Australas. Bryol. Newslett. 46: 6, 2002 (Meagher 2002). Bas.: *Mastigobryum fasciculatum* Steph., Bull. Herb. Boissier (sér. 2) 8 (10): 748 (432), 1908 (Stephani 1908c).

** *Bazzania fauriana* (Steph.) S.Hatt., Bot. Mag. (Tokyo) 59 (693/694): 27, 1946 (Hattori 1946). Bas.: *Mastigobryum faurianum* Steph., Bull. Herb. Boissier (sér. 2) 8 (11): 843 (467), 1908 (Stephani 1908a).

** *Bazzania filiformis* Steph., Hedwigia 28 (2): 131, 1889 (Stephani 1889a).

*** *Bazzania flaccida* (Dumort.) Grolle, Lindbergia 1 (3/4): 200, 1972 [1973] (Grolle 1972b). Bas.: *Pleuroschisma flaccidum* Dumort., Syll. Jungerm. Europ.: 71, 1831 (Dumortier 1831).

** *Bazzania flavescens* (Sande Lac. ex Steph.) Schiffn., Consp. Hepat. Arch. Ind.: 158, 1898 (Schiffner 1898b). Bas.: *Mastigobryum flavescens* Sande Lac. ex Steph., Hedwigia 25 (1): 6, 1886 (Stephani 1886e).

** *Bazzania fleischeri* (Steph.) Abeyw., Ceylon J. Sci., Biol. Sci. 2 (1): 45, 1959 (Abeywickrama 1959). Bas.: *Mastigobryum fleischeri* Steph., Bull. Herb. Boissier (sér. 2) 8 (10): 773 (457), 1908 (Stephani 1908c).

* *Bazzania francana* (Steph.) N.Kitag., J. Hattori Bot. Lab. 36: 446, 1972 [1973] (Kitagawa 1972). Bas.: *Mastigobryum francanum* Steph., Sp. Hepat. (Stephani) 6: 463, 1924 (Stephani 1924).

** *Bazzania friabilis* N.Kitag. et T.Kodama, J. Hattori Bot. Lab. 39: 67, 1975 (Kitagawa and Kodama 1975b).

*** *Bazzania fuhreri* Meagher, Nova Hedwigia 92 (3/4): 488, 2011 (Meagher 2011).

** *Bazzania fuscescens* A.Evans, Pap. Michigan Acad. Sci. 17: 85, 1932 [1933] (Evans 1932b).

*** *Bazzania gamscottii* Meagher, Nova Hedwigia 92 (3/4): 492, 2011 (Meagher 2011).

*** *Bazzania gedeana* (Steph.) Meijer, Blumea 10 (2): 378, 1960 (Meijer 1960). Bas.: *Mastigobryum gedeanum* Steph., Sp. Hepat. (Stephani) 3: 540, 1909 (Stephani 1909a).

*** *Bazzania gracilis* (Hampe et Gottsche) Steph., Hedwigia 27 (11/12): 279, 1888 (Stephani 1888c). Bas.: *Mastigobryum gracile* Hampe et Gottsche, Linnaea 25 (3): 346, 1852 [1853] (Hampe and Gottsche 1852).

** *Bazzania grandiretis* (Steph.) Herzog, Trans. Brit. Bryol. Soc. 1 (4): 298, 1950 (Herzog 1950a). Bas.: *Mastigobryum grandirete* Steph., Bull. Herb. Boissier (sér. 2) 8 (10): 747 (431), 1908 (Stephani 1908c).

** *Bazzania griffithiana* (Steph.) Mizut., J. Hattori Bot. Lab. 30: 82, 1967 (Mizutani 1967). Bas.: *Mastigobryum griffithianum* Steph., Bull. Herb. Boissier (sér. 2) 8 (12): 959 (509), 1908 (Stephani 1908b).

** *Bazzania gunniana* (Steph.) H.A.Mill., Phytologia 47 (4): 320, 1981 (Miller 1981). Bas.: *Mastigobryum gunnianum* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 123, 1914 (Stephani and Watts 1914).

** *Bazzania hainanensis* L.P.Zhou et Li Zhang, J. Bryol. 34 (1): 25, 2012 (Zhou et al. 2012).

** *Bazzania halconiensis* (Steph.) N.Kitag., J. Hattori Bot. Lab. 36: 447, 1972 [1973] (Kitagawa 1972). Bas.: *Mastigobryum halconiense* Steph., Bull. Herb. Boissier (sér. 2) 8 (10): 759 (443), 1908 (Stephani 1908c).

** *Bazzania hamatifolia* (Steph.) H.A.Mill., Phytologia 47 (4): 320, 1981 (Miller 1981). Bas.: *Mastigobryum hamatifolium* Steph., Bull. Herb. Boissier (sér. 2) 8 (11): 862 (486), 1908 (Stephani 1908a).

** *Bazzania harpago* (De Not.) Schiffn., Consp. Hepat. Arch. Ind.: 159, 1898 (Schiffner 1898b). Bas.: *Mastigobryum harpago* De Not., Epat. Borneo: 29, 1874 (De Notaris 1874).

** *Bazzania hebridensis* (Steph.) H.A.Mill., Phytologia 47 (4): 320, 1981 (Miller 1981). Bas.: *Mastigobryum hebridense* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 124, 1914 (Stephani and Watts 1914).

** *Bazzania herminieri* (Gottsche ex Steph.) Pagán, Bryologist 45 (4): 90, 1942 (Pagán 1942b). Bas.: *Mastigobryum herminieri* Gottsche ex Steph., Hedwigia 25 (1): 8, 1886 (Stephani 1886e).

** *Bazzania herzogiana* Meijer, Blumea 10 (2): 371, 1960 (Meijer 1960). *Nom. nov. pro Bazzania remotifolia* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 304, 1950 (Herzog 1950a), *nom. illeg.*

** *Bazzania heterostipa* (Steph.) Fulford, Bull. Torrey Bot. Club 86 (6): 410, 1959 (Fulford 1959a). Bas.: *Mastigobryum heterostipum* Steph., Sp. Hepat. (Stephani) 3: 532, 1909 (Stephani 1909a).

*** *Bazzania himalayana* (Mitt.) Schiffn., Österr. Bot. Z. 49 (4): 132, 1899 (Schiffner 1899b). Bas.: *Mastigobryum himalayanum* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 105, 1860 [1861] (Mitten 1860c).

*** *Bazzania hochstetteri* (Reichardt) E.A.Hodgs., Trans. Roy. Soc. New Zealand 82 (1): 11, 1954 (Hodgson 1954). Bas.: *Mastigobryum hochstetteri* Reichardt, Verh. K.K. Zool.-Bot. Ges. Wien 16: 959, 1866 (Reichardt 1866).

*** *Bazzania hookeri* (Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum hookeri* Lindenb., Syn. Hepat. 2: 226, 1845 (Gottsche et al. 1845a).

** *Bazzania horridula* Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 258, 1893 (Schiffner 1893a).

** *Bazzania inaequabilis* Steph., Trans. Connecticut Acad. Arts 12 (1): 21, 1904 (Cooke 1904).

** *Bazzania inaequitexta* Steph., Hedwigia 32 (4): 208, 1893 (Stephani 1893c).

** *Bazzania incrassata* (Steph.) N.Kitag., J. Hattori Bot. Lab. 36: 448, 1972 [1973] (Kitagawa 1972). Bas.: *Mastigobryum incrassatum* Steph., Sp. Hepat. (Stephani) 6: 469, 1924 (Stephani 1924).

** *Bazzania indica* (Gottsche et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 415, 1877 (Trevisan 1877). Bas.: *Mastigobryum indicum* Gottsche et Lindenb., Syn. Hepat. 2: 230, 1845 (Gottsche et al. 1845a).

** *Bazzania indigenarum* (Steph.) N.Kitag., Bull. Nara Univ. Educ., B 26 (2): 82, 1977 (Kitagawa 1977). Bas.: *Mastigobryum indigenarum* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 124, 1914 (Stephani and Watts 1914).

** *Bazzania insignis* (De Not.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum insigne* De Not., Epat. Borneo: 26, 1874 (De Notaris 1874).

* *Bazzania intermedia* (Gottsche et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 415, 1877 (Trevisan 1877). Bas.: *Mastigobryum intermedium* Gottsche et Lindenb., Sp. Hepat. (Lindenberg) 8-11: 82, 1851 (Lindenberg and Gottsche 1851b).

** *Bazzania intermedia* var. *sarawakiana* (De Not.) Schiffn., Consp. Hepat. Arch. Ind.: 162, 1898 (Schiffner 1898b). Bas.: *Mastigobryum intermedium* var. *sarawakianum* De Not., Epat. Borneo: 32, 1874 (De Notaris 1874).

** *Bazzania involuta* (Mont.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Herpetium involutum* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 253, 1843 (Montagne 1843).

** *Bazzania involuta* var. *submutica* (Lindenb. et Gottsche) J.J.Engel et G.L.Merr., Bryologist 97 (3): 314, 1994 (Engel and Smith Merrill 1994). Bas.: *Mastigobryum novae-hollandiae* γ3 *submuticum* Lindenb. et Gottsche, Sp. Hepat. (Lindenberg) 8-11: 33, 1851 (Lindenberg and Gottsche 1851b).

** *Bazzania involutiformis* (De Not.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum involutiforme* De Not., Epat. Borneo: 28, 1874 (De Notaris 1874).

** *Bazzania irregularis* (Steph.) Schiffn., Consp. Hepat. Arch. Ind.: 163, 1898 (Schiffner 1898b). Bas.: *Mastigobryum irregulare* Steph., Hedwigia 25 (4): 133, 1886 (Stephani 1886b).

*** *Bazzania jamaicensis* (Lehm. et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Herpetium jamaicense* Lehm. et Lindenb., Nov. Stirp. Pug. 7: 7, 1838 (Lehmann 1838).

** *Bazzania japonica* (Sande Lac.) Lindb., Acta Soc. Sci. Fenn. 10: 224, 1872 [1873] (Lindberg 1872b). Bas.: *Mastigobryum japonicum* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 303, 1864 (Sande Lacoste 1864).

** *Bazzania japonica* var. *sumatrana* Herzog, Ann. Naturhist. Mus. Wien 53 (1): 366, 1942 [1943] (Herzog 1942b).

** *Bazzania javanica* (Sande Lac.) Schiffn., Consp. Hepat. Arch. Ind.: 163, 1898 (Schiffner 1898b). Bas.: *Mastigobryum javanicum* Sande Lac., Ned. Kruidk. Arch. 3: 418, 1854 [1855] (Sande Lacoste 1854).

** *Bazzania kernii* Steph., Hedwigia 32 (4): 208, 1893 (Stephani 1893c).

** *Bazzania kokawana* N.Kitag. et T.Kodama, J. Jap. Bot. 50 (1): 11, 1975 (Kitagawa and Kodama 1975a).

** *Bazzania latifolia* Steph., Hedwigia 32 (4): 209, 1893 (Stephani 1893c).

* *Bazzania lehmanniana* (Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum lehmannianum* Lindenb., Syn. Hepat. 2: 223, 1845 (Gottsche et al. 1845a). [112]

** *Bazzania leratii* (Beauverd) H.A.Mill., Phytologia 47 (4): 320, 1981 (Miller 1981). Bas.: *Mastigobryum leratii* Beauverd, Sp. Hepat. (Stephani) 6: 477, 1924 (Stephani 1924).

** *Bazzania lessonii* (Steph.) H.A.Mill., Phytologia 47 (4): 321, 1981 (Miller 1981). Bas.: *Mastigobryum lessonii* Steph., Sp. Hepat. (Stephani) 3: 531, 1909 (Stephani 1909a).

** *Bazzania levieri* (Steph.) N.Kitag., J. Hattori Bot. Lab. 36: 448, 1972 [1973] (Kitagawa 1972). Bas.: *Mastigobryum levieri* Steph., Bull. Herb. Boissier (sér. 2) 8 (12): 944 (494), 1908 (Stephani 1908b).

** *Bazzania liebmaniana* (Lindenb. et Gottsche) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum liebmanianum* Lindenb. et Gottsche, Syn. Hepat. 5: 719, 1847 (Gottsche et al. 1847).

** *Bazzania linearis* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 303, 1950 (Herzog 1950a).

** *Bazzania linguiformis* (Sande Lac.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum linguiforme* Sande Lac., Plagiochila Sandei: 8, 1856 (Sande Lacoste 1856c).

*** *Bazzania longa* (Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 415, 1877 (Trevisan 1877). Bas.: *Jungermannia longa* Nees, Linnaea 6 (4): 623, 1831 (Nees 1831).

** *Bazzania longa* var. *papillata* (Steph.) Fulford, Ann. Cryptog. Phytopathol. 3: 94, 1946 (Fulford 1946). Bas.: *Mastigobryum papillatum* Steph., Sp. Hepat. (Stephani) 3: 526, 1909 (Stephani 1909a).

*** *Bazzania longicaulis* (Sande Lac.) Schiffn., Consp. Hepat. Arch. Ind.: 165, 1898 (Schiffner 1898b). Bas.: *Mastigobryum longicaule* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 303, 1864 (Sande Lacoste 1864).

** *Bazzania longicaulis* var. *latiareata* Herzog, Memoranda Soc. Fauna Fl. Fennica 26: 46, 1950 [1951] (Herzog 1950b).

*** *Bazzania longistipula* (Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 415, 1877 (Trevisan 1877). Bas.: *Mastigobryum longistipulum* Lindenb., Syn. Hepat. 2: 228, 1845 (Gottsche et al. 1845a).

*** *Bazzania loricata* (Reinw., Blume et Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Jungermannia loricata* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 233, 1824 [1825] (Reinwardt et al. 1824a).

** *Bazzania lowii* (Sande Lac. ex Steph.) Schiffn., Consp. Hepat. Arch. Ind.: 166, 1898 (Schiffner 1898b). Bas.: *Mastigobryum lowii* Sande Lac. ex Steph., Hedwigia 25 (5): 204, 1886 (Stephani 1886f).

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112 *Bazzania lehmanniana* is possibly conspecific with *Bazzania arcuata* or *Bazzania longa* (Meagher 2012).

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** *Bazzania macgregorii* Steph., Hedwigia 32 (4): 210, 1893 (Stephani 1893c).

** *Bazzania macrostipula* Fulford, Bull. Torrey Bot. Club 86 (6): 407, 1959 (Fulford 1959a).

** *Bazzania magna* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 197, 1934 (Horikawa 1934).

** *Bazzania magnistipula* N.Kitag., J. Hattori Bot. Lab. 47: 132, 1980 (Kitagawa 1980).

** *Bazzania malaccensis* (Steph.) Tixier, Gard. Bull. Singapore 25 (3): 342, 1971 (Tixier 1971). Bas.: *Mastigobryum malaccense* Steph., Bull. Herb. Boissier (sér. 2) 8 (12): 944 (494), 1908 (Stephani 1908b).

** *Bazzania manillana* (Gottsche ex Steph.) S.Hatt., Bot. Mag. (Tokyo) 64 (755/756): 113, 1951 (Hattori 1951c). Bas.: *Mastigobryum manillanum* Gottsche ex Steph., Hedwigia 25 (5): 204, 1886 (Stephani 1886f).

* *Bazzania marginata* (Steph.) N.Kitag., J. Hattori Bot. Lab. 36: 449, 1972 [1973] (Kitagawa 1972). Bas.: *Mastigobryum marginatum* Steph., Rev. Bryol. 35 (2): 31, 1908 (Stephani 1908l).

** *Bazzania marginella* (Herzog) N.Kitag. et T.Kodama, Bull. Osaka Mus. Nat. Hist. 27: 17, 1973 (Kitagawa and Kodama 1973). Bas.: *Mastigobryum marginellum* Herzog, Ann. Bryol. 5: 91, 1932 (Herzog 1932a).

* *Bazzania mascarena* (Steph.) Herzog, Bot. Not. 100 (4): 334, 1947 (Herzog 1947). Bas.: *Mastigobryum mascarenum* Steph., Hedwigia 25 (5): 205, 1886 (Stephani 1886f).

** *Bazzania mayebarae* S.Hatt., J. Hattori Bot. Lab. 19: 91, 1958 (Hattori and Mizutani 1958).

* *Bazzania menzelii* E.D.Cooper, Phytotaxa 97 (2): 52, 2013 (Cooper et al. 2013). *Nom. nov. pro Acromastigum emarginatum* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 309, 1950 (Herzog 1950a).

** *Bazzania merrillana* (Steph.) Inoue ex Bonner, Index Hepat. 3: 359, 1963 (Bonner 1963). Bas.: *Mastigobryum merrillanum* Steph., Bull. Herb. Boissier (sér. 2) 8 (12): 944 (494), 1908 (Stephani 1908b).

** *Bazzania minuta* (Austin) A.Evans, Trans. Connecticut Acad. Arts 8 (15): 255, 1891 (Evans 1891). Bas.: *Mastigobryum minutum* Austin, Bull. Torrey Bot. Club 5 (3): 17, 1874 (Austin 1874).

** *Bazzania minutidens* (Steph.) Inoue et H.A.Mill., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 8 (2): 142, 1965 (Inoue and Miller 1965). Bas.: *Mastigobryum minutidens* Steph., Sp. Hepat. (Stephani) 6: 474, 1924 (Stephani 1924).

** *Bazzania minutiserra* (Steph.) N.Kitag., Bull. Nara Univ. Educ., B 26 (2): 77, 1977 (Kitagawa 1977). Bas.: *Mastigobryum minutiserrum* Steph., Sp. Hepat. (Stephani) 6: 474, 1924 (Stephani 1924).

** *Bazzania missionum* (Herzog) Jovet-Ast, Rev. Bryol. Lichénol. 20 (1/2): 96, 1951 (Jovet-Ast 1951). Bas.: *Mastigobryum missionum* Herzog, Ann. Bryol. 5: 93, 1932 (Herzog 1932a).

** *Bazzania mittenii* (Steph.) Steph., Hedwigia 28 (2): 132, 1889 (Stephani 1889a). Bas.: *Mastigobryum mittenii* Steph., Hedwigia 25 (6): 245, 1886 (Stephani 1886c).

*** *Bazzania monilinervis* (Lehm. et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Jungermannia monilinervis* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 56, 1832 (Lehmann 1832).

** *Bazzania morokensis* (Steph.) Grolle, J. Hattori Bot. Lab. 31: 1, 1968 (Grolle 1968a). Bas.: *Mastigobryum morokense* Steph., Bull. Herb. Boissier (sér. 2) 8 (10): 765 (449), 1908 (Stephani 1908c).

*** *Bazzania nitida* (F.Weber) Grolle, Rev. Bryol. Lichénol. 29 (3/4): 210, 1960 [1961] (Grolle 1960a). Bas.: *Jungermannia nitida* F.Weber, Hist. Musc. Hepat. Prodr.: 43, 1815 (Weber 1815).

*** *Bazzania novae-zelandiae* (Mitt.) Besch. et C.Massal., Miss. sci. Cape Horn, Bot. 5: 233, 1889 (Bescherelle and Massalongo 1889). Bas.: *Mastigobryum novae-zelandiae* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 148, 1854 (Mitten 1854).

** *Bazzania nudicaulis* A.Evans, Bryologist 26 (6): 62, 1923 [1924] (Evans 1923b).

** *Bazzania nuuanuensis* C.M.Cooke, Trans. Connecticut Acad. Arts 12 (1): 15, 1904 (Cooke 1904).

** *Bazzania obcuneata* (Steph.) H.A.Mill., Phytologia 47 (4): 321, 1981 (Miller 1981). Bas.: *Mastigobryum obcuneatum* Steph., Bull. Herb. Boissier (sér. 2) 8 (11): 863 (487), 1908 (Stephani 1908a).

** *Bazzania obtusata* (Mitt.) Abeyw., Ceylon J. Sci., Biol. Sci. 2 (1): 45, 1959 (Abeywickrama 1959). Bas.: *Mastigobryum obtusatum* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 106, 1860 [1861] (Mitten 1860c).

** *Bazzania okaritana* Meagher et Glenny, J. Bryol. 29 (1): 60, 2007 (Meagher and Glenny 2007).

** *Bazzania orbanii* Pócs, Acta Biol. Pl. Agr. 1: 16, 2010 [2011] (Pócs 2010c).

** *Bazzania ovistipula* (Steph.) Abeyw., Ceylon J. Sci., Biol. Sci. 2 (1): 45, 1959 (Abeywickrama 1959). Bas.: *Mastigobryum ovistipulum* Steph., Bull. Herb. Boissier (sér. 2) 8 (10): 760 (444), 1908 (Stephani 1908c).

** *Bazzania pallidevirens* (Steph.) Fulford, Ann. Cryptog. Phytopathol. 3: 42, 1946 (Fulford 1946). Bas.: *Mastigobryum pallidevirens* Steph., Bull. Herb. Boissier (sér. 2) 8 (11): 849 (473), 1908 (Stephani 1908a).

** *Bazzania papillosa* S.W.Arnell, Svensk Bot. Tidskr. 59 (1): 67, 1965 (Arnell 1965).

** *Bazzania paradoxa* (Sande Lac.) Steph., Bot. Jahrb. Syst. 23 (1/2, 3): 307, 1896 (Stephani 1896a). Bas.: *Mastigobryum paradoxum* Sande Lac., Ned. Kruidk. Arch. 3: 419, 1854 [1855] (Sande Lacoste 1854).

*** *Bazzania parisii* (Steph.) N.Kitag., J. Hattori Bot. Lab. 47: 135, 1980 (Kitagawa 1980). Bas.: *Mastigobryum parisii* Steph., Bull. Herb. Boissier (sér. 2) 8 (10): 769 (453), 1908 (Stephani 1908c).

** *Bazzania parvitexta* Steph., Hedwigia 32 (4): 211, 1893 (Stephani 1893c).

** *Bazzania patens* (Mont.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Herpetium patens* Mont., Ann. Sci. Nat. Bot. (sér. 2) 20: 295, 1844 (Montagne 1844b).

** *Bazzania patentistipa* (Sande Lac.) Schiffn., Consp. Hepat. Arch. Ind.: 168, 1898 (Schiffner 1898b). Bas.: *Mastigobryum patentistipum* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 302, 1864 (Sande Lacoste 1864).

** *Bazzania paucidens* (Steph.) H.A.Mill., Phytologia 47 (4): 321, 1981 (Miller 1981). Bas.: *Mastigobryum paucidens* Steph., Bull. Herb. Boissier (sér. 2) 8 (11): 860 (484), 1908 (Stephani 1908a).

** *Bazzania pearsonii* Steph., Hedwigia 32 (4): 212, 1893 (Stephani 1893c).

*** *Bazzania pectinata* (Lindenb. et Gottsche) Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 259, 1893 (Schiffner 1893a). Bas.: *Mastigobryum pectinatum* Lindenb. et Gottsche, Sp. Hepat. (Lindenberg) 8-11: 84, 1851 (Lindenberg and Gottsche 1851b).

** *Bazzania perfalcata* N.Kitag., J. Hattori Bot. Lab. 47: 135, 1980 (Kitagawa 1980).

** *Bazzania perrotana* E.W.Jones, J. Bryol. 8 (3): 310, 1975 (Jones 1975). *Nom. nov. pro Mastigobryum perrotanum* Steph., Sp. Hepat. (Stephani) 6: 476, 1924 (Stephani 1924), *nom. illeg.*

** *Bazzania peruviana* (Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum peruvianum* Nees, Syn. Hepat. 2: 220, 1845 (Gottsche et al. 1845a).

*** *Bazzania phyllobola* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 372, 1885 (Spruce 1885).

*** *Bazzania placophylla* (Taylor) Grolle, Rev. Bryol. Lichénol. 27 (1/2): 54, 1958 (Grolle 1958). Bas.: *Jungermannia placophylla* Taylor, London J. Bot. 5: 276, 1846 (Taylor 1846a).

** *Bazzania platycnema* (Schwägr. ex Steph.) H.A.Mill., Bryologist 63 (2): 121, 1960 (Miller 1960). Bas.: *Mastigobryum platycnemum* Schwägr. ex Steph., Bull. Herb. Boissier (sér. 2) 8 (10): 776 (460), 1908 (Stephani 1908c).

** *Bazzania pompeana* (Sande Lac.) Mitt., Trans. Linn. Soc. London, Bot. 3 (3): 200, 1891 (Mitten 1891). Bas.: *Mastigobryum pompeanum* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 304, 1864 (Sande Lacoste 1864).

*** *Bazzania praerupta* (Reinw., Blume et Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Jungermannia praerupta* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 229, 1824 [1825] (Reinwardt et al. 1824a).

* *Bazzania praerupta* var. *obliquata* (Nees) Schiffn., Consp. Hepat. Arch. Ind.: 170, 1898 (Schiffner 1898b). Bas.: *Jungermannia obliquata* Nees, Enum. Pl. Crypt. Javae: 62, 1830 (Nees 1830).

** *Bazzania praerupta* var. *thermalis* Schiffn., Arch. Hydrobiol., suppl. 21 (3/4): 396, 1955 (Schiffner 1955).

** *Bazzania pseudovittata* N.Kitag. et T.Kodama, J. Hattori Bot. Lab. 39: 69, 1975 (Kitagawa and Kodama 1975b).
** *Bazzania pusilla* (Mitt.) Steph., Bot. Jahrb. Syst. 23 (1/2, 3): 307, 1896 (Stephani 1896a). Bas.: *Mastigobryum pusillum* Mitt., Fl. vit.: 406, 1871 [1873] (Mitten 1871).
** *Bazzania pycnophylla* (Taylor) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum pycnophyllum* Taylor, London J. Bot. 5: 371, 1846 (Taylor 1846b).
** *Bazzania quadratistipula* H.A.Mill., Phytologia 47 (4): 321, 1981 (Miller 1981). *Nom. nov. pro Mastigobryum quadratum* Steph., Sp. Hepat. (Stephani) 6: 477, 1924 (Stephani 1924), *nom. illeg.*
** *Bazzania rabenhorstii* (Steph.) Abeyw., Ceylon J. Sci., Biol. Sci. 2 (1): 45, 1959 (Abeywickrama 1959). Bas.: *Mastigobryum rabenhorstii* Steph., Bull. Herb. Boissier (sér. 2) 8 (10): 774 (458), 1908 (Stephani 1908c).
** *Bazzania recurva* (Mont.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Herpetium recurvum* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 253, 1843 (Montagne 1843).
* *Bazzania recurva* var. *major* (Sande Lac.) Schiffn., Consp. Hepat. Arch. Ind.: 172, 1898 (Schiffner 1898b). Bas.: *Mastigobryum recurvum* var. *majus* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 304, 1864 (Sande Lacoste 1864).
** *Bazzania reflexa* (Gottsche) Steph., Rev. Bryol. 18 (4): 56, 1891 (Renauld and Cardot 1891). Bas.: *Mastigobryum reflexum* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 347, 1882 (Gottsche 1882).
** *Bazzania reinwardtii* (Sande Lac.) Schiffn., Consp. Hepat. Arch. Ind.: 172, 1898 (Schiffner 1898b). Bas.: *Mastigobryum reinwardtii* Sande Lac., Pl. Ind. Batav. Orient.: 22, 1856 (Sande Lacoste 1856a).
** *Bazzania renistipula* Steph., Hedwigia 32 (4): 212, 1893 (Stephani 1893c).
** *Bazzania revoluta* (Steph.) N.Kitag., J. Hattori Bot. Lab. 36: 450, 1972 [1973] (Kitagawa 1972). Bas.: *Mastigobryum revolutum* Steph., Bull. Herb. Boissier (sér. 2) 8 (12): 961 (511), 1908 (Stephani 1908b).
*** *Bazzania rimosa* Meagher, Nova Hedwigia 86 (3/4): 489, 2008 (Meagher 2008).
** *Bazzania roccatii* Gola, Ann. Bot. (Rome) 6 (2): 273, 1907 (Gola 1907).
*** *Bazzania roraimensis* (Steph.) Fulford, Ann. Cryptog. Phytopathol. 3: 27, 1946 (Fulford 1946). Bas.: *Mastigobryum roraimense* Steph., Trans. Linn. Soc. London, Bot. 6 (1): 97, 1901 (Stephani 1901e).
** *Bazzania sandvicensis* (Gottsche ex Steph.) Steph., Bull. Herb. Boissier 5 (10): 841, 1897 (Stephani 1897c). Bas.: *Mastigobryum sandvicense* Gottsche ex Steph., Hedwigia 25 (5): 207, 1886 (Stephani 1886f).
** *Bazzania sauropoda* Meagher, Austrobaileya 7 (1): 129, 2005 (Meagher 2005a).
*** *Bazzania scalaris* Meagher, Telopea 11 (3): 247, 2006 (Meagher 2006).
*** *Bazzania schlimiana* (Gottsche) Fulford, Bull. Torrey Bot. Club 86 (6): 401, 1959 (Fulford 1959a). Bas.: *Mastigobryum schlimianum* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 140, 1864 (Gottsche 1864).
** *Bazzania schultze-motelii* N.Kitag., J. Hattori Bot. Lab. 47: 138, 1980 (Kitagawa 1980).

** *Bazzania schusterana* N.Kitag., J. Hattori Bot. Lab. 47: 139, 1980 (Kitagawa 1980).

*** *Bazzania schwaneckiana* (Hampe et Gottsche) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum schwaneckianum* Hampe et Gottsche, Linnaea 25 (3): 345, 1852 [1853] (Hampe and Gottsche 1852).

* *Bazzania scutigera* (Nees et Mont.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Herpetium scutigerum* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 9: 44, 1838 (Montagne 1838).

** *Bazzania semicordata* (Lindenb. et Gottsche) Kuntze, Revis. Gen. Pl. 2: 832, 1891 (Kuntze 1891). Bas.: *Mastigobryum semicordatum* Lindenb. et Gottsche, Syn. Hepat. 5: 720, 1847 (Gottsche et al. 1847).

* *Bazzania serpentina* (Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 415, 1877 (Trevisan 1877). Bas.: *Jungermannia serpentina* Nees, Enum. Pl. Crypt. Javae: 62, 1830 (Nees 1830). [113]

** *Bazzania serrapiculata* Inoue et H.A.Mill., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 8 (2): 141, 1965 (Inoue and Miller 1965).

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* *Bazzania sikkimensis* (Steph.) Herzog, Ann. Bryol. 12: 78, 1939 (Herzog 1939b). Bas.: *Mastigobryum sikkimense* Steph., Hedwigia 44 (2): 73, 1905 (Stephani 1905h). [114]

** *Bazzania spinosa* S.Okamura, J. Coll. Sci. Imp. Univ. Tokyo 38 (4): 2, 1916 (Okamura 1916).

** *Bazzania spiralis* (Reinw., Blume et Nees) Meijer, Blumea 10 (2): 381, 1960 (Meijer 1960). Bas.: *Jungermannia spiralis* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 231, 1824 [1825] (Reinwardt et al. 1824a).

** *Bazzania spruceana* Steph., Hedwigia 32 (4): 213, 1893 (Stephani 1893c).

** *Bazzania squarrosa* (Steph.) H.A.Mill., Phytologia 47 (4): 321, 1981 (Miller 1981). Bas.: *Mastigobryum squarrosum* Steph., Bull. Herb. Boissier (sér. 2) 8 (10): 776 (460), 1908 (Stephani 1908c).

*** *Bazzania stolonifera* (Sw.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 415, 1877 (Trevisan 1877). Bas.: *Jungermannia stolonifera* Sw., Prodr. (Swartz): 144, 1788 (Swartz 1788).

* *Bazzania stolonifera* var. *granatensis* (Gottsche) Fulford, Ann. Cryptog. Phytopathol. 3: 51, 1946 (Fulford 1946). Bas.: *Mastigobryum stoloniferum* var. *granatense* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 141, 1864 (Gottsche 1864).

** *Bazzania stresemannii* (Herzog) N.Kitag., Bull. Nara Univ. Educ., B 28 (2): 77, 1979 (Kitagawa 1979a). Bas.: *Mastigobryum stresemannii* Herzog, Beih. Bot. Centralbl. 38 (2): 324, 1921 (Herzog 1921).

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113 *Bazzania serpentina* is possibly conspecific with *Bazzania bidens* (Frahm et al. 1990).

114 *Bazzania sikkimensis* is possibly conspecific with *Bazzania sumbavensis* (Long and Grolle 1990).

** *Bazzania subacuta* (Mitt.) Steph., Bot. Jahrb. Syst. 23 (1/2, 3): 307, 1896 (Stephani 1896a). Bas.: *Mastigobryum subacutum* Mitt., Fl. vit.: 406, 1871 [1873] (Mitten 1871).

** *Bazzania subaequitexta* (Steph.) N.Kitag., Bull. Nara Univ. Educ., B 28 (2): 81, 1979 (Kitagawa 1979a). Bas.: *Mastigobryum subaequitextum* Steph., Bull. Herb. Boissier (sér. 2) 8 (11): 859 (483), 1908 (Stephani 1908a).

** *Bazzania subintegra* (Steph.) L.Söderstr. et A.Hagborg, Phytotaxa 202 (1): 69, 2015 (Söderström et al. 2015c). Bas.: *Mastigobryum subintegrum* Steph., Bull. Herb. Boissier (sér. 2) 8 (10): 775 (459), 1908 (Stephani 1908c).

** *Bazzania sublonga* Fulford, Bull. Torrey Bot. Club 86 (5): 334, 1959 (Fulford 1959b).

** *Bazzania subserrifolia* (Beauverd) H.A.Mill., Phytologia 47 (4): 321, 1981 (Miller 1981). Bas.: *Mastigobryum subserrifolium* Beauverd, Sp. Hepat. (Stephani) 6: 480, 1924 (Stephani 1924).

** *Bazzania subserrulata* A.Evans, Pap. Michigan Acad. Sci. 17: 97, 1932 [1933] (Evans 1932b).

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** *Bazzania succulenta* N.Kitag., J. Hattori Bot. Lab. 47: 141, 1980 (Kitagawa 1980).

** *Bazzania sumatrana* (Sande Lac. ex Steph.) Steph., Hedwigia 32 (4): 209, 1893 (Stephani 1893c). Bas.: *Mastigobryum sumatranum* Sande Lac. ex Steph., Hedwigia 25 (6): 234, 1886 (Stephani 1886c).

* *Bazzania sumbavensis* (Gottsche ex Steph.) Steph., Hedwigia 32 (4): 204, 1893 (Stephani 1893c). Bas.: *Mastigobryum sumbavense* Gottsche ex Steph., Hedwigia 25 (6): 236, 1886 (Stephani 1886c). [115]

*** *Bazzania taleana* (Gottsche) Fulford, Ann. Cryptog. Phytopathol. 3: 54, 1946 (Fulford 1946). Bas.: *Mastigobryum taleanum* Gottsche, Mexik. Leverm.: 131, 1863 (Gottsche 1863).

*** *Bazzania tayloriana* (Mitt.) Kuntze, Revis. Gen. Pl. 2: 832, 1891 (Kuntze 1891). Bas.: *Mastigobryum taylorianum* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 147, 1854 (Mitten 1854).

** *Bazzania temariana* (Steph.) H.A.Mill., Phytologia 47 (4): 321, 1981 (Miller 1981). Bas.: *Mastigobryum temarianum* Steph., Sp. Hepat. (Stephani) 3: 532, 1909 (Stephani 1909a).

*** *Bazzania tessellata* Meagher, Nova Hedwigia 92 (3/4): 492, 2011 (Meagher 2011).

** *Bazzania tiaoloensis* Mizut. et K.C.Chang, J. Hattori Bot. Lab. 60: 432, 1986 (Mizutani and Chang 1986).

*** *Bazzania tricrenata* (Wahlenb.) Lindb., Musci Fenn. Exsic., fasc. 2: [2 (adnot.)], 1872 (Brotherus 1872). Bas.: *Jungermannia tricrenata* Wahlenb., Fl. Carpat. Princ.: 364, 1814 (Wahlenberg 1814).

** *Bazzania tricrenata* var. *fulfordiae* W.S.Hong, Bryologist 91 (4): 331, 1988 (Hong 1988).

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115 *Bazzania sumbavensis* is possibly conspecific with *Bazzania japonica* (Söderström et al. 2010a).

*** *Bazzania tridens* (Reinw., Blume et Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 415, 1877 (Trevisan 1877). Bas.: *Jungermannia tridens* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 228, 1824 [1825] (Reinwardt et al. 1824a).

*** *Bazzania tridens* var. *assamica* (Steph.) Pócs, J. Hattori Bot. Lab. 32: 86, 1969 (Pócs 1969). Bas.: *Mastigobryum assamicum* Steph., Hedwigia 24 (5): 216, 1885 (Stephani 1885a).

** *Bazzania tridens* var. *cornutistipula* (Steph.) Pócs, J. Hattori Bot. Lab. 32: 83, 1969 (Pócs 1969). Bas.: *Mastigobryum cornutistipulum* Steph., Rev. Bryol. 35 (2): 35, 1908 (Stephani 1908l).

*** *Bazzania trilobata* (L.) Gray, Nat. Arr. Brit. Pl. 1: 704, 1821 (Gray 1821). Bas.: *Jungermannia trilobata* L., Sp. Pl. 1: 1133, 1753 (Linnaeus 1753).

** *Bazzania trilobata* var. *depauperata* (Müll.Frib.) Grolle, Lindbergia 1 (3/4): 197, 1972 [1973] (Grolle 1972b). Bas.: *Pleuroschisma trilobatum* var. *depauperatum* Müll.Frib., Lebermoose 2 (18): 266, 1913 (Müller 1913b).

*** *Bazzania uncigera* (Reinw., Blume et Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 415, 1877 (Trevisan 1877). Bas.: *Jungermannia uncigera* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 230, 1824 [1825] (Reinwardt et al. 1824a).

** *Bazzania uncigera* var. *brevifolia* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 301, 1950 (Herzog 1950a).

** *Bazzania uncigera* var. *gibba* (Sande Lac.) Meijer, Blumea 10 (2): 378, 1960 (Meijer 1960). Bas.: *Mastigobryum gibbum* Sande Lac., Plagiochila Sandei: 8, 1856 (Sande Lacoste 1856c).

** *Bazzania undulata* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 306, 1950 (Herzog 1950a).

** *Bazzania vietnamica* Pócs, J. Hattori Bot. Lab. 32: 90, 1969 (Pócs 1969).

** *Bazzania vitiana* Mitt., Hedwigia 32 (4): 214, 1893 (Stephani 1893c).

*** *Bazzania vittata* (Gottsche) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum vittatum* Gottsche, Syn. Hepat. 2: 216, 1845 (Gottsche et al. 1845a).

** *Bazzania vittata* var. *luxurians* (De Not.) Schiffn., Consp. Hepat. Arch. Ind.: 178, 1898 (Schiffner 1898b). Bas.: *Mastigobryum vittatum* var. *luxurians* De Not., Epat. Borneo: 29, 1874 (De Notaris 1874).

** *Bazzania wallichiana* (Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 415, 1877 (Trevisan 1877). Bas.: *Mastigobryum wallichianum* Lindenb., Syn. Hepat. 2: 229, 1845 (Gottsche et al. 1845a). [116]

** *Bazzania watanabei* Inoue, J. Jap. Bot. 34 (9): 269, 1959 (Inoue 1959a).

* *Bazzania wattsiana* (Steph.) Meagher, Australas. Bryol. Newslett. 50: 8, 2005 (Meagher 2005b). Bas.: *Mastigobryum wattsianum* Steph., Bull. Herb. Boissier (sér. 2) 8 (11): 850 (474), 1908 (Stephani 1908a). [117]

116 *Bazzania wallichiana* seems to be a species complex also including *Bazzania francana*, *Bazzania intermedia* and *Bazzania marginata* (Meagher 2010).

117 *Bazzania wattsiana* is possibly conspecific with *Bazzania tridens* (Meagher 2010).

** *Bazzania wiltensii* (Sande Lac. ex Steph.) Schiffn., Consp. Hepat. Arch. Ind.: 180, 1898 (Schiffner 1898b). Bas.: *Mastigobryum wiltensii* Sande Lac. ex Steph., Hedwigia 25 (6): 237, 1886 (Stephani 1886c).
** *Bazzania wooroonooran* Meagher, Nova Hedwigia 100 (3/4): 549, 2015 (Meagher 2015).
** *Bazzania wrightii* (Gottsche ex Steph.) Steph., Hedwigia 27 (11/12): 279, 1888 (Stephani 1888c). Bas.: *Mastigobryum wrightii* Gottsche ex Steph., Hedwigia 25 (6): 237, 1886 (Stephani 1886c).
** *Bazzania yoshinagana* (Steph.) Yasuda, Shokubutsugaku Kakuron: 711, 1911 (Yasuda 1911). Bas.: *Mastigobryum yoshinaganum* Steph., Bull. Herb. Boissier (sér. 2) 8 (11): 866 (490), 1908 (Stephani 1908a).
** *Bazzania zollingeri* (Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 414, 1877 (Trevisan 1877). Bas.: *Mastigobryum zollingeri* Lindenb., Bot. Zeitung (Berlin) 6 (25): 462, 1848 (Meissner 1848).
*** *Bazzania zonulata* Meagher, Nova Hedwigia 86 (3/4): 491, 2008 (Meagher 2008).

* ***Mastigopelma* Mitt.**, Fl. vit.: 406, 1871 [1873] (Mitten 1871). [118]
** *Mastigopelma fragile* (Steph.) N.Kitag., J. Hattori Bot. Lab. 36: 454, 1972 [1973] (Kitagawa 1972). Bas.: *Mastigobryum fragile* Steph., Sp. Hepat. (Stephani) 6: 463, 1924 (Stephani 1924).
** *Mastigopelma pulvinulatum* (De Not.) Grolle, J. Hattori Bot. Lab. 33: 39, 1970 (Grolle 1970c). Bas.: *Mastigobryum pulvinulatum* De Not., Epat. Borneo: 40, 1874 (De Notaris 1874).
** *Mastigopelma simplex* Mitt., Fl. vit.: 406, 1871 [1873] (Mitten 1871).
** *Mastigopelma subfissum* Grolle, J. Hattori Bot. Lab. 33: 36, 1970 (Grolle 1970c).

*** Drucelloideae R.M.Schust.

*** ***Drucella* E.A.Hodgs.**, Trans. Roy. Soc. New Zealand, Bot. 2 (3): 45, 1962 (Hodgson 1962b).
*** *Drucella integristipula* (Steph.) E.A.Hodgs., Trans. Roy. Soc. New Zealand, Bot. 2 (3): 45, 1962 (Hodgson 1962b). Bas.: *Lepidozia integristipula* Steph., Sp. Hepat. (Stephani) 6: 331, 1922 (Stephani 1922).

*** Lembidioideae R.M.Schust.

** ***Dendrolembidium* Herzog**, Ark. Bot. (n.ser.) 1 (13): 497, 1951 (Herzog 1951b).
*** *Dendrolembidium dendroides* (Carrington et Pearson) Herzog, Ark. Bot. (n.ser.) 1 (13): 500, 1951 (Herzog 1951b). Bas.: *Lembidium dendroides* Carrington et Pearson,

118 *Mastigopelma* may be better placed in *Bazzania*, but it is retained here until further studied.

Proc. Linn. Soc. New South Wales (ser. 2) 2 (4): 1047, 1888 (Carrington and Pearson 1888a).

*** *Dendrolembidium tenax* (Grev.) Herzog, Ark. Bot. (n.ser.) 1 (13): 499, 1951 (Herzog 1951b). Bas.: *Jungermannia tenax* Grev., Ann. Lyceum Nat. Hist. New York 1 (2): 277, 1825 (Greville 1825).

** ***Hygrolembidium* R.M.Schust.**, J. Hattori Bot. Lab. 26: 277, 1963 (Schuster 1963b).

*** *Hygrolembidium acrocladum* (Berggr.) R.M.Schust., J. Hattori Bot. Lab. 26: 277, 1963 (Schuster 1963b). Bas.: *Aplozia acroclada* Berggr., New Zealand Hepat.: 9, 1898 (Berggren 1898).

** *Hygrolembidium andinum* (Herzog) R.M.Schust., Nova Hedwigia 10 (1/2): 23, 1965 (Schuster 1965b). Bas.: *Lembidium andinum* Herzog, Rev. Bryol. Lichénol. 23 (1/2): 48, 1954 (Herzog 1954).

*** *Hygrolembidium australe* (Steph.) Grolle, J. Jap. Bot. 41 (8): 229, 1966 (Grolle 1966d). Bas.: *Hygrobiella australis* Steph., Bull. Herb. Boissier (sér. 2) 8 (8): 574 (358), 1908 (Stephani 1908e).

*** *Hygrolembidium boschianum* (Sande Lac.) R.M.Schust., J. Hattori Bot. Lab. 26: 277, 1963 (Schuster 1963b). Bas.: *Jungermannia boschiana* Sande Lac., Ned. Kruidk. Arch. 3: 521, 1855 (Sande Lacoste 1855).

** *Hygrolembidium isophyllum* R.M.Schust., Nova Hedwigia 15: 467, 1968 (Schuster 1968b).

*** *Hygrolembidium rigidum* R.M.Schust. et J.J.Engel, Phytologia 62 (1): 9, 1987 (Schuster and Engel 1987a).

*** *Hygrolembidium triquetrum* J.J.Engel et R.M.Schust., Phytologia 62 (1): 11, 1987 (Schuster and Engel 1987a).

** *Hygrolembidium ventrosum* (Mitt.) Grolle, Marion Prince Edw. Is: 233, 1971 (Grolle 1971d). Bas.: *Lembidium ventrosum* Mitt., J. Linn. Soc., Bot. 15 (82): 69, 1876 (Mitten 1876a).

** ***Isolembidium* R.M.Schust.**, Nova Hedwigia 15: 466, 1968 (Schuster 1968b).

*** *Isolembidium anomalum* (Rodway) Grolle, J. Bryol. 10 (3): 264, 1979 (Grolle 1979b). Bas.: *Lembidium anomalum* Rodway, Tasm. Bryoph.: 70, 1917 (Rodway 1917b).

** *Isolembidium anomalum* var. *cucullatum* (E.A.Hodgs.) J.J.Engel et R.M.Schust., J. Hattori Bot. Lab. 63: 268, 1987 (Schuster and Engel 1987b). Bas.: *Lembidium cucullatum* E.A.Hodgs., Rec. Domin. Mus. 4 (11): 110, 1962 (Hodgson 1962a).

*** ***Kurzia* G.Martens**, Flora 53 (27): 417, 1870 (0).

** **subg. *Kurzia***

*** *Kurzia capillaris* (Sw.) Grolle, Rev. Bryol. Lichénol. 32 (3/4): 173, 1963 [1964] (Grolle 1963b). Bas.: *Jungermannia capillaris* Sw., Prodr. (Swartz): 144, 1788 (Swartz 1788).

*** *Kurzia capillaris* subsp. *capillaris var. verrucosa* (Steph.) Pócs, Proc. Third Meeting Bryol. C. & E. Europe: 111, 1984 (Pócs 1984b). Bas.: *Lepidozia verrucosa* Steph., Hedwigia 24 (4): 167, 1885 (Stephani 1885f).

*** *Kurzia capillaris* subsp. *paramicola* Pócs, Acta Biol. Pl. Agr. 2: 102, 2012 (Pócs 2012a).

*** *Kurzia capillaris* subsp. *stephanii* (Renauld ex Steph.) Pócs, Proc. Third Meeting Bryol. C. & E. Europe: 111, 1984 (Pócs 1984b). Bas.: *Lepidozia stephanii* Renauld ex Steph., Bot. Gaz. 15 (11): 287, 1890 (Stephani 1890c).

*** *Kurzia gonyotricha* (Sande Lac.) Grolle, Rev. Bryol. Lichénol. 32 (3/4): 167, 1963 [1964] (Grolle 1963b). Bas.: *Lepidozia gonyotricha* Sande Lac., Ned. Kruidk. Arch. 3: 521, 1855 (Sande Lacoste 1855).

** *Kurzia nemoides* (Hook.f. et Taylor) Grolle, Rev. Bryol. Lichénol. 32 (3/4): 173, 1963 [1964] (Grolle 1963b). Bas.: *Jungermannia nemoides* Hook.f. et Taylor, London J. Bot. 4: 84, 1845 (Hooker and Taylor 1845).

** **subg. *Micrisophylla* (Fulford) J.J.Engel ex R.M.Schust.**, J. Hattori Bot. Lab. 48: 347, 1980 (Schuster 1980a). Bas.: *Micrisophylla* Fulford, Brittonia 14 (1): 124, 1962 (Fulford 1962a).

** *Kurzia saddlensis* (Besch. et C.Massal.) Grolle, Rev. Bryol. Lichénol. 32 (3/4): 174, 1963 [1964] (Grolle 1963b). Bas.: *Lepidozia saddlensis* Besch. et C.Massal., Bull. Mens. Soc. Linn. Paris 1 (79): 637, 1886 (Bescherelle and Massalongo 1886).

** **subg. *Microlepidozia* (Spruce) R.M.Schust.**, J. Hattori Bot. Lab. 48: 355, 1980 (Schuster 1980a). Bas.: *Lepidozia* subg. *Microlepidozia* Spruce, J. Bot. 14: 165, 1876 (Spruce 1876b).

** *Kurzia calcarata* (Steph.) Grolle, Rev. Bryol. Lichénol. 32 (3/4): 178, 1963 [1964] (Grolle 1963b). Bas.: *Lepidozia calcarata* Steph., Sp. Hepat. (Stephani) 3: 592, 1909 (Stephani 1909a).

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** *Kurzia helophila* R.M.Schust., J. Hattori Bot. Lab. 48: 368, 1980 (Schuster 1980a).

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*** *Kurzia hippurioides* (Hook.f. et Taylor) Grolle, Rev. Bryol. Lichénol. 32 (3/4): 178, 1963 [1964] (Grolle 1963b). Bas.: *Jungermannia hippurioides* Hook.f. et Taylor, London J. Bot. 3: 287 [387], 1844 (Hooker and Taylor 1844a).

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Incertae sedis

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** *Kurzia borneensis* Mizut., J. Hattori Bot. Lab. 38: 377, 1974 (Mizutani 1974).

** *Kurzia brasiliensis* (Steph.) Grolle, Rev. Bryol. Lichénol. 32 (3/4): 174, 1963 [1964] (Grolle 1963b). Bas.: *Psiloclada brasiliensis* Steph., Sp. Hepat. (Stephani) 3: 550, 1909 (Stephani 1909a).

** *Kurzia brevicalycina* (Steph.) Grolle, Rev. Bryol. Lichénol. 32 (3/4): 175, 1963 [1964] (Grolle 1963b). Bas.: *Lepidozia brevicalycina* Steph., Sp. Hepat. (Stephani) 3: 580, 1909 (Stephani 1909a).

* *Kurzia caduciloba* R.M.Schust., Beih. Nova Hedwigia 118: 273, 2000 (Schuster 2000a).

* *Kurzia cucullifolia* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 48: 350, 1980 (Schuster 1980a). Bas.: *Lepidozia cucullifolia* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 6): 51, 1900 (Stephani 1900b). [119]

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*** *Kurzia fragilifolia* R.M.Schust., J. Hattori Bot. Lab. 48: 364, 1980 (Schuster 1980a).

** *Kurzia fragillima* (Herzog) Grolle, Rev. Bryol. Lichénol. 32 (3/4): 174, 1963 [1964] (Grolle 1963b). Bas.: *Lepidozia fragillima* Herzog, Nat. Hist. Juan Fernandez (Botany) 2 (5): 726, 1942 (Herzog 1942a), *nom. illeg*.

** *Kurzia geniculata* Mizut., J. Hattori Bot. Lab. 38: 383, 1974 (Mizutani 1974).

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119 *Kurzia cucullifolia* is of doubtful status (Engel 1978).

** *Kurzia lateconica* (Steph.) Grolle, Rev. Bryol. Lichénol. 32 (3/4): 175, 1963 [1964] (Grolle 1963b). Bas.: *Lepidozia lateconica* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 113, 1914 (Stephani and Watts 1914).
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*** *Kurzia longicaulis* Piippo, Acta Bot. Fenn. 131: 174, 1985 (Piippo 1985b).
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** *Kurzia mauiensis* (H.A.Mill.) H.A.Mill., J. Hattori Bot. Lab. 30: 274, 1967 (Miller 1967). Bas.: *Microlepidozia mauiensis* H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 496, 1963 (Miller 1963).
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*** *Kurzia nivicola* (R.M.Schust.) E.D.Cooper, Phytotaxa 97 (2): 52, 2013 (Cooper et al. 2013). Bas.: *Telaranea nivicola* R.M.Schust., Nova Hedwigia 15: 460, 1968 (Schuster 1968b).
*** *Kurzia pallescens* Grolle, Rev. Bryol. Lichénol. 32 (3/4): 177, 1963 [1964] (Grolle 1963b).
** *Kurzia pallida* Piippo, Acta Bot. Fenn. 131: 178, 1985 (Piippo 1985b).
*** *Kurzia quinquespina* J.J.Engel et G.L.Merr., J. Hattori Bot. Lab. 80: 217, 1996 (Engel and Smith Merrill 1996).
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** *Kurzia sexfida* (Steph.) Grolle, Rev. Bryol. Lichénol. 32 (3/4): 178, 1963 [1964] (Grolle 1963b). Bas.: *Lepidozia sexfida* Steph., Sp. Hepat. (Stephani) 3: 582, 1909 (Stephani 1909a).
** *Kurzia sinensis* K.C.Chang, Bull. Bot. Res., Harbin 4 (3): 83, 1984 (Chang and Gao 1984).
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** *Kurzia tayloriana* (H.A.Mill.) H.A.Mill., J. Hattori Bot. Lab. 30: 274, 1967 (Miller 1967). Bas.: *Microlepidozia tayloriana* H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 497, 1963 (Miller 1963).

** *Kurzia tenerrima* (Mitt.) Grolle, Rev. Bryol. Lichénol. 32 (3/4): 171, 1963 [1964] (Grolle 1963b). Bas.: *Lepidozia tenerrima* Mitt., Sp. Hepat. (Stephani) 3: 607, 1909 (Stephani 1909a).
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*** *Kurzia trilobata* (R.M.Schust.) R.M.Schust., Beih. Nova Hedwigia 118: 270, 2000 (Schuster 2000a). Bas.: *Kurzia quadriseta* var. *trilobata* R.M.Schust., J. Hattori Bot. Lab. 48: 363, 1980 (Schuster 1980a).
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** ***Lembidium* Mitt.**, Handb. N. Zeal. fl. 2: 754, 1867 (Hooker 1867) nom. conserv.
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** ***Megalembidium* R.M.Schust.**, J. Hattori Bot. Lab. 26: 258, 1963 (Schuster 1963b).
*** *Megalembidium insulanum* (W.Martin et E.A.Hodgs.) R.M.Schust., J. Hattori Bot. Lab. 26: 258, 1963 (Schuster 1963b). Bas.: *Lembidium insulanum* W.Martin et E.A.Hodgs., Trans. & Proc. Roy. Soc. New Zealand 78 (4): 497, 1950 (Martin 1950).

** ***Pseudocephalozia* R.M.Schust.**, Nova Hedwigia 10 (1/2): 21, 1965 (Schuster 1965b).

** **sect. *Lobulatae* R.M.Schust.**, J. Hattori Bot. Lab. 36: 371, 1972 (Schuster 1972).
** *Pseudocephalozia cucullata* J.J.Engel et R.M.Schust., J. Hattori Bot. Lab. 38: 694, 1974 (Schuster and Engel 1974).
*** *Pseudocephalozia lobulata* (Herzog) R.M.Schust., J. Hattori Bot. Lab. 36: 371, 1972 [1973] (Schuster 1972). Bas.: *Lembidium lobulatum* Herzog, Arch. Esc. Fárm. Fac. Ci. Méd. Córdoba 7: 24, 1938 (Herzog and Hosseus 1938).
*** *Pseudocephalozia quadriloba* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 36: 371, 1972 [1973] (Schuster 1972). Bas.: *Isotachis quadriloba* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 6): 54, 1900 (Stephani 1900b).

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** *Pseudocephalozia lepidozioides* R.M.Schust., Nova Hedwigia 10 (1/2): 22, 1965 (Schuster 1965b).
** *Pseudocephalozia leptodictyon* R.M.Schust., J. Hattori Bot. Lab. 36: 369, 1972 [1973] (Schuster 1972).
*** *Pseudocephalozia paludicola* R.M.Schust., Nova Hedwigia 10 (1/2): 21, 1965 (Schuster 1965b).

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*** ***Ceramanus* E.D.Cooper**, Phytotaxa 97 (2): 53, 2013 (Cooper et al. 2013).
*** *Ceramanus centipes* (Lindenb. et Gottsche) E.D.Cooper, Phytotaxa 97 (2): 54, 2013 (Cooper et al. 2013). Bas.: *Lepidozia centipes* Lindenb. et Gottsche, Syn. Hepat. 2: 204, 1845 (Gottsche et al. 1845a).
*** *Ceramanus clatritexta* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 54, 2013 (Cooper et al. 2013). Bas.: *Lepidozia clatritexta* Steph., Sp. Hepat. (Stephani) 3: 583, 1909 (Stephani 1909a).
*** *Ceramanus elegans* (Colenso) E.D.Cooper, Phytotaxa 97 (2): 54, 2013 (Cooper et al. 2013). Bas.: *Lepidozia elegans* Colenso, Trans. & Proc. New Zealand Inst. 21: 65, 1889 (Colenso 1889).
*** *Ceramanus grossiseta* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 54, 2013 (Cooper et al. 2013). Bas.: *Lepidozia grossiseta* Steph., Sp. Hepat. (Stephani) 3: 584, 1909 (Stephani 1909a).
*** *Ceramanus perfragilis* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 54, 2013 (Cooper et al. 2013). Bas.: *Telaranea perfragilis* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 72, 2004 (Engel and Smith Merrill 2004).
*** *Ceramanus pruinosa* (Herzog) E.D.Cooper, Phytotaxa 97 (2): 54, 2013 (Cooper et al. 2013). Bas.: *Lepidozia pruinosa* Herzog, Memoranda Soc. Fauna Fl. Fennica 27: 93, 1952 (Herzog 1952c).
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*** ***Lepidozia* (Dumort.) Dumort.**, Recueil Observ. Jungerm.: 19, 1835 (Dumortier 1835) nom. conserv. Bas.: *Pleuroschisma* sect. *Lepidozia* Dumort., Syll. Jungerm. Europ.: 69, 1831 (Dumortier 1831). [120]
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120 *Lepidozia* seems to be a monophyletic genus, but its infrataxonomy still has to be tested using molecular data. Grolle and Piippo (1984) could not study *Lepidozia cordistipula* and *Lepidozia palmicola* since the types were destroyed in B.

** *Lepidozia aequiloba* Steph., Sp. Hepat. (Stephani) 6: 319, 1922 (Stephani 1922).
** *Lepidozia africana* Steph., Sp. Hepat. (Stephani) 6: 320, 1922 (Stephani 1922).
*** *Lepidozia alstonii* Fulford, Mem. New York Bot. Gard. 11 (2): 211, 1966 (Fulford 1966).
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** *Lepidozia andicola* Beauverd, Sp. Hepat. (Stephani) 6: 572, 1924 (Stephani 1924). *Nom. nov. pro Lepidozia appendiculata* Steph., Biblioth. Bot. 87 (2): 225, 1916 (Stephani 1916a), *nom. illeg.*
** *Lepidozia appressifolia* Steph., Sp. Hepat. (Stephani) 3: 583, 1909 (Stephani 1909a).
*** *Lepidozia armata* Steph., Sp. Hepat. (Stephani) 3: 567, 1909 (Stephani 1909a).
** *Lepidozia asymmetrica* Steph., Sp. Hepat. (Stephani) 3: 586, 1909 (Stephani 1909a).
** *Lepidozia auriculata* Mitt., Sp. Hepat. (Stephani) 3: 579, 1909 (Stephani 1909a).
** *Lepidozia australis* (Lehm. et Lindenb.) Mitt., Fl. vit.: 406, 1871 [1873] (Mitten 1871). Bas.: *Jungermannia australis* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 28, 1834 (Lehmann 1834).
** *Lepidozia bidens* J.J.Engel, Fieldiana, Bot. (n.ser.) 42: 79, 2001 (Engel and Schuster 2001).
** *Lepidozia biloba* Herzog, Ann. Bryol. 4: 83, 1931 (Herzog 1931b).
*** *Lepidozia bisbifida* Steph., Sp. Hepat. (Stephani) 3: 593, 1909 (Stephani 1909a).
** *Lepidozia borneensis* Steph., Sp. Hepat. (Stephani) 3: 625, 1909 (Stephani 1909a).
** *Lepidozia bragginsiana* E.D.Cooper et M.A.M.Renner, Phytotaxa 173 (2): 118, 2014 (Cooper and Renner 2014).
* *Lepidozia brasiliensis* Steph., Sp. Hepat. (Stephani) 3: 571, 1909 (Stephani 1909a). [121]
** *Lepidozia brevidentata* Mitt., Fl. vit.: 406, 1871 [1873] (Mitten 1871).
** *Lepidozia brevifolia* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 104, 1860 [1861] (Mitten 1860c).
** *Lepidozia brevifolia* var. *planifolia* Schiffn., Ann. Bryol. 8: 155, 1935 (Verdoorn 1935).
** *Lepidozia brotheri* Steph., Sp. Hepat. (Stephani) 3: 623, 1909 (Stephani 1909a).
** *Lepidozia buffalona* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 111, 1914 (Stephani and Watts 1914).
** *Lepidozia bursifera* S.Hatt. et Grolle, J. Hattori Bot. Lab. 30: 115, 1967 (Grolle 1967b).
** *Lepidozia caespitosa* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 362, 1885 (Spruce 1885).
** *Lepidozia caledonica* Steph., Rev. Bryol. 35 (2): 31, 1908 (Stephani 1908l).
** *Lepidozia caledonica* var. *tenuisecta* Hürl., Bauhinia 8 (2): 109, 1985 (Hürlimann 1985).
* *Lepidozia ceramensis* Herzog, Hedwigia 66 (6): 340, 1926 (Herzog 1926).
** *Lepidozia cherydrion* Hürl., Bauhinia 8 (2): 109, 1985 (Hürlimann 1985).
** *Lepidozia chiloensis* Steph., Sp. Hepat. (Stephani) 6: 322, 1922 (Stephani 1922).

121 *Lepidozia brasiliensis* is conspecific with *Kurzia brasiliensis* in Pócs (1984b), possibly conspecific with *Lepidozia cupressina* in Gradstein and Costa (2003), but it has later been accepted by many authors (e.g. Schäfer-Verwimp and Pócs 2009)

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*** *Lepidozia cladorhiza* (Reinw., Blume et Nees) Nees, Syn. Hepat. 2: 210, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia cladorhiza* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 203, 1824 [1825] (Reinwardt et al. 1824a).
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** *Lepidozia coilophylla* var. *apiculiloba* (Steph.) Fulford, Mem. New York Bot. Gard. 11 (2): 194, 1966 (Fulford 1966). Bas.: *Lepidozia apiculiloba* Steph., Sp. Hepat. (Stephani) 6: 321, 1922 (Stephani 1922).
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** *Lepidozia cordata* Lindenb., Syn. Hepat. 2: 207, 1845 (Gottsche et al. 1845a).
* *Lepidozia cordistipula* Steph., Sp. Hepat. (Stephani) 6: 345, 1922 (Stephani 1922).
** *Lepidozia crassitexta* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 111, 1914 (Stephani and Watts 1914).
*** *Lepidozia cupressina* (Sw.) Lindenb., Syn. Hepat. 2: 207, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia cupressina* Sw., Prodr. (Swartz): 144, 1788 (Swartz 1788).
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* *Lepidozia cupressina* subsp. *pinnata* (Hook.) Pócs, Proc. Third Meeting Bryol. C. & E. Europe: 109, 1984 (Pócs 1984b). Bas.: *Jungermannia reptans* var. *pinnata* Hook., Brit. Jungermann.: tab. 75, 1815 (Hooker 1815).
* *Lepidozia cupressina* subsp. *quinquefida* (Steph.) Pócs, Proc. Third Meeting Bryol. C. & E. Europe: 109, 1984 (Pócs 1984b). Bas.: *Lepidozia quinquefida* Steph., Wiss. Ergebn. Deut. Zentr.-Afr. Exped. (1907-08), Bot. 2: 123, 1911 (Stephani 1911a).
** *Lepidozia decaisnei* Steph., Sp. Hepat. (Stephani) 3: 588, 1909 (Stephani 1909a).
** *Lepidozia dendritica* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 362, 1885 (Spruce 1885).
** *Lepidozia densa* Herzog, Repert. Spec. Nov. Regni Veg. 21 (1/7): 26, 1925 (Herzog 1925a).
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*** *Lepidozia eenii* S.W.Arnell, Svensk Bot. Tidskr. 57 (2): 190, 1963 (Arnell 1963a).
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** *Lepidozia erosa* Steph., Sp. Hepat. (Stephani) 3: 621, 1909 (Stephani 1909a).
** *Lepidozia erronea* Herzog, Nat. Hist. Juan Fernandez (Botany) 2 (5): 725, 1942 (Herzog 1942a). *Nom. nov. pro Lepidozia fernandeziensis* Steph., Sp. Hepat. (Stephani) 6: 326, 1922 (Stephani 1922), *nom. illeg.*

** *Lepidozia everettii* Steph., Sp. Hepat. (Stephani) 3: 622, 1909 (Stephani 1909a).
* *Lepidozia everettii* var. *javensis* Herzog, Ann. Bryol. 5: 78, 1932 (Herzog 1932b).
** *Lepidozia fauriana* Steph., Sp. Hepat. (Stephani) 3: 631, 1909 (Stephani 1909a).
*** *Lepidozia ferdinandi-muelleri* Steph., Sp. Hepat. (Stephani) 3: 614, 1909 (Stephani 1909a).
** *Lepidozia filamentosa* (Lehm. et Lindenb.) Lehm. et Lindenb., Syn. Hepat. 2: 206, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia filamentosa* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 29, 1834 (Lehmann 1834).
** *Lepidozia fistulosa* Mitt., Fl. vit.: 406, 1871 [1873] (Mitten 1871).
** *Lepidozia flexuosa* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 103, 1860 [1861] (Mitten 1860c).
** *Lepidozia fuegiensis* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 63, 1911 (Stephani 1911b).
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* *Lepidozia gedena* Steph., Sp. Hepat. (Stephani) 6: 327, 1922 (Stephani 1922).
*** *Lepidozia glaucescens* J.J.Engel, Fieldiana, Bot. (n.ser.) 42: 101, 2001 (Engel and Schuster 2001).
*** *Lepidozia glaucophylla* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 207, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia glaucophylla* Hook.f. et Taylor, London J. Bot. 3: 580, 1844 (Hooker and Taylor 1844c).
** *Lepidozia grandifolia* Steph., Sp. Hepat. (Stephani) 3: 625, 1909 (Stephani 1909a).
* *Lepidozia griseola* Herzog, Hedwigia 66 (6): 340, 1926 (Herzog 1926).
** *Lepidozia groenlandica* Lehm., Nov. Stirp. Pug. 10: 7, 1857 (Lehmann 1857).
** *Lepidozia gwamii* Piippo, Ann. Bot. Fenn. 21 (4): 311, 1984 (Piippo 1984b).
** *Lepidozia hampeana* Lindenb., Syn. Hepat. 2: 208, 1845 (Gottsche et al. 1845a).
*** *Lepidozia haskarliana* (Gottsche, Lindenb. et Nees) Steph., Sp. Hepat. (Stephani) 3: 614, 1909 (Stephani 1909a). Bas.: *Lepidozia supradecomposita* β *haskarliana* Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 202, 1845 (Gottsche et al. 1845a).
** *Lepidozia hastatistipula* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 113, 1914 (Stephani and Watts 1914).
*** *Lepidozia hirta* Steph., Sp. Hepat. (Stephani) 3: 599, 1909 (Stephani 1909a).
*** *Lepidozia holorhiza* (Reinw., Blume et Nees) Nees, Syn. Hepat. 2: 210, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia holorhiza* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 204, 1824 [1825] (Reinwardt et al. 1824a).
** *Lepidozia holorhiza* var. *laxa* (Nees) Schiffn., Consp. Hepat. Arch. Ind.: 186, 1898 (Schiffner 1898b). Bas.: *Jungermannia holorhiza* β *laxa* Nees, Enum. Pl. Crypt. Javae: 14, 1830 (Nees 1830).
** *Lepidozia inaequalis* (Lehm. et Lindenb.) Lehm. et Lindenb., Syn. Hepat. 2: 209, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia inaequalis* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 1, 1833 (Lehmann 1833).
*** *Lepidozia incurvata* Lindenb., Syn. Hepat. 2: 203, 1845 (Gottsche et al. 1845a).

** *Lepidozia infuscata* Mitt., Fl. vit.: 406, 1871 [1873] (Mitten 1871).
** *Lepidozia integrifolia* Doei, J. Hattori Bot. Lab. 63: 421, 1987 (Doei 1987).
*** *Lepidozia jamaicensis* Steph., Sp. Hepat. (Stephani) 3: 568, 1909 (Stephani 1909a).
** *Lepidozia kashyapii* D.Singh et D.K.Singh, Nova Hedwigia 94 (1/2): 222, 2012 (Singh and Singh 2012).
** *Lepidozia kinabaluensis* Mizut., J. Hattori Bot. Lab. 38: 372, 1974 (Mizutani 1974).
*** *Lepidozia kirkii* Steph., Sp. Hepat. (Stephani) 3: 598, 1909 (Stephani 1909a).
** *Lepidozia lacerifolia* Steph., Sp. Hepat. (Stephani) 6: 332, 1922 (Stephani 1922).
*** *Lepidozia laevifolia* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 208, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia laevifolia* Hook.f. et Taylor, London J. Bot. 3: 285 [385], 1844 (Hooker and Taylor 1844a).
** *Lepidozia laevifolia* var. *acutiloba* J.J.Engel, Fieldiana, Bot. (n.ser.) 42: 61, 2001 (Engel and Schuster 2001).
** *Lepidozia laevifolia* var. *alpina* R.M.Schust. et J.J.Engel, Fieldiana, Bot. (n.ser.) 42: 62, 2001 (Engel and Schuster 2001).
** *Lepidozia lindigiana* Steph., Sp. Hepat. (Stephani) 3: 573, 1909 (Stephani 1909a).
** *Lepidozia loheri* Steph., Sp. Hepat. (Stephani) 3: 621, 1909 (Stephani 1909a).
** *Lepidozia longifolia* Steph., Sp. Hepat. (Stephani) 3: 606, 1909 (Stephani 1909a).
** *Lepidozia loriana* Steph., Sp. Hepat. (Stephani) 6: 333, 1922 (Stephani 1922).
*** *Lepidozia macrocolea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 363, 1885 (Spruce 1885).
* *Lepidozia massartiana* Schiffn. ex Steph., Sp. Hepat. (Stephani) 3: 611, 1909 (Stephani 1909a). Based on: *Lepidozia massartiana* Schiffn., Hedwigia 39 (4): 196, 1900 (Schiffner 1900b), *nom. inval.* [122]
*** *Lepidozia microphylla* (Hook.) Lindenb., Syn. Hepat. 2: 202, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia microphylla* Hook., Musci Exot. 1: tab. 80, 1818 (Hooker 1818).
** *Lepidozia microstipula* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 114, 1914 (Stephani and Watts 1914).
** *Lepidozia minima* Steph., Sp. Hepat. (Stephani) 6: 335, 1922 (Stephani 1922).
* *Lepidozia minor* (Gottsche, Lindenb. et Nees) Solari, Boll. Mus. Civico Storia Nat. Verona 10: 203, 1983 [1985] (Solari and Hässel 1983). Bas.: *Lepidozia truncatella* β *minor* Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 209, 1845 (Gottsche et al. 1845a). [123]
** *Lepidozia miqueliana* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 301, 1864 (Sande Lacoste 1864).
** *Lepidozia montana* Steph., Sp. Hepat. (Stephani) 3: 587, 1909 (Stephani 1909a).
* *Lepidozia newtonii* Steph., Sp. Hepat. (Stephani) 3: 623, 1909 (Stephani 1909a).

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122 *Lepidozia massartiana* has not been studied recently. Stephani (1909a) confused it with *Telaranea cuneifolia* (Söderström et al. 2010a).

123 *Lepidozia minor* may be conspecific with a known taxon. *Lepidozia minor* sensu Solari and Hässel (1983) is probably another taxon perhaps without name.

* *Lepidozia nova* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 115, 1914 (Stephani and Watts 1914).
*** *Lepidozia novae-zelandiae* Steph., Sp. Hepat. (Stephani) 3: 595, 1909 (Stephani 1909a).
** *Lepidozia novae-zelandiae* var. *heterostipa* R.M.Schust., Fieldiana, Bot. (n.ser.) 42: 70, 2001 (Engel and Schuster 2001).
** *Lepidozia novae-zelandiae* var. *minima* R.M.Schust., Fieldiana, Bot. (n.ser.) 42: 71, 2001 (Engel and Schuster 2001).
*** *Lepidozia obtusiloba* Steph., Sp. Hepat. (Stephani) 3: 598, 1909 (Stephani 1909a).
*** *Lepidozia obtusiloba* var. *parvula* J.J.Engel, Fieldiana, Bot. (n.ser.) 42: 48, 2001 (Engel and Schuster 2001).
** *Lepidozia omeiensis* P.C.Chen ex Mizut. et K.C.Chang, J. Hattori Bot. Lab. 60: 421, 1986 (Mizutani and Chang 1986).
*** *Lepidozia ornata* J.J.Engel, Fieldiana, Bot. (n.ser.) 42: 49, 2001 (Engel and Schuster 2001).
* *Lepidozia pallida* Steph., Sp. Hepat. (Stephani) 3: 604, 1909 (Stephani 1909a). [124]
* *Lepidozia palmicola* Steph., Sp. Hepat. (Stephani) 6: 346, 1922 (Stephani 1922).
** *Lepidozia paschalis* Steph., Sp. Hepat. (Stephani) 6: 336, 1922 (Stephani 1922).
*** *Lepidozia patens* Lindenb., Syn. Hepat. 2: 202, 1845 (Gottsche et al. 1845a).
* *Lepidozia paucifolia* Steph., Sp. Hepat. (Stephani) 3: 610, 1909 (Stephani 1909a). [125]
** *Lepidozia paupercula* Steph., Sp. Hepat. (Stephani) 6: 337, 1922 (Stephani 1922).
** *Lepidozia pearsonii* Spruce, J. Bot. 19: 34, 1881 (Spruce 1881b).
*** *Lepidozia pendulina* (Hook.) Lindenb., Syn. Hepat. 2: 208, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia pendulina* Hook., Musci Exot. 1: tab. 60, 1818 (Hooker 1818).
** *Lepidozia peruviensis* Steph., Sp. Hepat. (Stephani) 3: 575, 1909 (Stephani 1909a).
*** *Lepidozia pinnaticruris* Spruce ex Steph., Sp. Hepat. (Stephani) 3: 579, 1909 (Stephani 1909a).
* *Lepidozia plumula* Herzog, Beih. Bot. Centralbl. 38 (2): 331, 1921 (Herzog 1921).
** *Lepidozia portoricensis* Fulford, Mem. New York Bot. Gard. 11 (2): 187, 1966 (Fulford 1966).
*** *Lepidozia procera* Mitt., Bot. antarct. voy. III (Fl. Tasman. 2): 231, 1860 (Mitten 1860b).
* *Lepidozia pseudocupressina* Schiffn., Krit. Bemerk. Eur. Lebermoose 14: 9, 1919 (Schiffner 1919).
*** *Lepidozia pumila* J.J.Engel, Fieldiana, Bot. (n.ser.) 42: 76, 2001 (Engel and Schuster 2001).

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124 *Lepidozia pallida* is possibly *Lepidozia chordulifera* since all specimens cited by Stephani (1911b) and examined by Engel (1978) belong to this species, except the supposed type specimen which does not contain any *Lepidozia* material.

125 *Lepidozia paucifolia* is conspecific with *Lepidozia fauriana* in del Rosario (1977), but Tan and Engel (1986) kept them apart.

*** *Lepidozia quadridens* (Nees) Nees, Syn. Hepat. 2: 209, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia quadridens* Nees, Enum. Pl. Crypt. Javae: 18, 1830 (Nees 1830).
** *Lepidozia quadrifida* Lindenb., Syn. Hepat. 2: 203, 1845 (Gottsche et al. 1845a).
*** *Lepidozia reptans* (L.) Dumort., Recueil Observ. Jungerm.: 19, 1835 (Dumortier 1835). Bas.: *Jungermannia reptans* L., Sp. Pl. 1: 1133, 1753 (Linnaeus 1753).
** *Lepidozia richardsii* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 313, 1950 (Herzog 1950a).
** *Lepidozia rigida* Steph., Sp. Hepat. (Stephani) 6: 340, 1922 (Stephani 1922).
** *Lepidozia robusta* Steph., Mém. Soc. Nat. Sci. Nat. Math. Cherbourg 29: 217, 1894 (Stephani 1894b).
* *Lepidozia rufescens* Steph., Biblioth. Bot. 87 (2): 226, 1916 (Stephani 1916a).
** *Lepidozia sandvicensis* Lindenb., Syn. Hepat. 2: 201, 1845 (Gottsche et al. 1845a).
** *Lepidozia schwabei* Herzog, Rev. Bryol. Lichénol. 23 (1/2): 49, 1954 (Herzog 1954).
** *Lepidozia sellingiana* H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 494, 1963 (Miller 1963).
*** *Lepidozia septemfida* Steph., Sp. Hepat. (Stephani) 3: 588, 1909 (Stephani 1909a).
** *Lepidozia serpens* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 364, 1885 (Spruce 1885).
*** *Lepidozia serrulata* J.J.Engel, J. Hattori Bot. Lab. 96: 273, 2004 (Engel 2004a).
*** *Lepidozia setigera* Steph., Sp. Hepat. (Stephani) 3: 599, 1909 (Stephani 1909a).
** *Lepidozia sikkimensis* Steph., Sp. Hepat. (Stephani) 6: 341, 1922 (Stephani 1922).
*** *Lepidozia spinosissima* (Hook.f. et Taylor) Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 146, 1854 (Mitten 1854). Bas.: *Sendtnera spinosissima* Hook.f. et Taylor, London J. Bot. 5: 373, 1846 (Taylor 1846b).
* *Lepidozia squamifolia* Steph., Sp. Hepat. (Stephani) 6: 341, 1922 (Stephani 1922).
*** *Lepidozia squarrosa* Steph., Sp. Hepat. (Stephani) 3: 573, 1909 (Stephani 1909a).
** *Lepidozia stahlii* Steph., Sp. Hepat. (Stephani) 3: 616, 1909 (Stephani 1909a).
** *Lepidozia stuhlmannii* Steph., Bot. Jahrb. Syst. 20 (3): 308, 1895 (Stephani 1895a).
** *Lepidozia stuhlmannii* var. *carnosa* (Steph.) Pócs, Lidia 4 (1): 22, 1997 (Lye and Pócs 1997). Bas.: *Lepidozia carnosa* Steph., Wiss. Ergebn. Deut. Zentr.-Afr. Exped. (1907-08), Bot. 2: 122, 1911 (Stephani 1911a).
** *Lepidozia stuhlmannii* subsp. *pulvinata* (Steph.) Pócs, Trop. Bryol. 9: 127, 1994 (Pócs 1994c). Bas.: *Lepidozia pulvinata* Steph., Wiss. Ergebn. Deut. Zentr.-Afr. Exped. (1907-08), Bot. 2: 121, 1911 (Stephani 1911a).
** *Lepidozia subdichotoma* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 361, 1885 (Spruce 1885).
** *Lepidozia subintegra* Lindenb., Syn. Hepat. 2: 201, 1845 (Gottsche et al. 1845a).
** *Lepidozia subtransversa* Steph., Bull. Herb. Boissier 5 (2): 95, 1897 (Stephani 1897b).
** *Lepidozia subtrichodes* Steph., Sp. Hepat. (Stephani) 3: 615, 1909 (Stephani 1909a).
** *Lepidozia succida* Mitt., Trans. Linn. Soc. London 23 (1): 57, 1860 (Mitten 1860a).
** *Lepidozia supradecomposita* Lindenb., Syn. Hepat. 2: 202, 1845 (Gottsche et al. 1845a).
* *Lepidozia supradecomposita* var. *falcifolia* Herzog, Mitt. Inst. Allg. Bot. Hamburg 7 (3): 191, 1931 (Herzog 1931a).

** *Lepidozia suyungii* C.Gao et X.L.Bai, J. Hattori Bot. Lab. 92: 192, 2002 (Gao and Bai 2002).
** *Lepidozia terricola* Steph., Sp. Hepat. (Stephani) 3: 585, 1909 (Stephani 1909a).
** *Lepidozia triangulifolia* Steph., Sp. Hepat. (Stephani) 6: 344, 1922 (Stephani 1922).
*** *Lepidozia trichodes* (Reinw., Blume et Nees) Nees, Syn. Hepat. 2: 203, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia trichodes* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 199, 1824 [1825] (Reinwardt et al. 1824a).
* *Lepidozia tricuspidata* Steph., Sp. Hepat. (Stephani) 6: 344, 1922 (Stephani 1922).
** *Lepidozia tunguraguae* Steph., Sp. Hepat. (Stephani) 6: 345, 1922 (Stephani 1922).
** *Lepidozia ubangiensis* Steph., Sp. Hepat. (Stephani) 3: 561, 1909 (Stephani 1909a).
*** *Lepidozia udarii* S.C.Srivast., D.Kumar et D.Sharma, Cryptog. Bryol. Lichénol. 9 (3): 237, 1988 (Srivastava et al. 1988).
*** *Lepidozia ulothrix* (Schwägr.) Lindenb., Syn. Hepat. 2: 210, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia ulothrix* Schwägr., Hist. Musc. Hepat. Prodr.: 21, 1814 (Schwägrichen 1814).
** *Lepidozia vitrea* Steph., Bull. Herb. Boissier 5 (2): 96, 1897 (Stephani 1897b).
** *Lepidozia wattsiana* Steph., Sp. Hepat. (Stephani) 3: 586, 1909 (Stephani 1909a).
** *Lepidozia weymouthiana* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 117, 1914 (Stephani and Watts 1914).

Excluded from the genus

* *Lepidozia hexiloba* Pearson, Ann. Cryptog. Exot. 4 (2): 67, 1931 (Pearson 1931a). [126]
* *Lepidozia parvistipa* Taylor, London J. Bot. 5: 370, 1846 (Taylor 1846b). [127]

*** ***Neolepidozia*** **Fulford et J.Taylor**, Brittonia 11 (2): 81, 1959 (Fulford and Taylor 1959a).
*** *Neolepidozia aubertii* (Jovet-Ast) E.D.Cooper, Phytotaxa 97 (2): 55, 2013 (Cooper et al. 2013). Bas.: *Lepidozia aubertii* Jovet-Ast, Candollea 11: 35, 1947 (Jovet-Ast 1947a).
*** *Neolepidozia autoica* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 55, 2013 (Cooper et al. 2013). Bas.: *Telaranea autoica* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 124, 2004 (Engel and Smith Merrill 2004).
*** *Neolepidozia capilligera* (Schwägr.) Fulford et J.Taylor, Brittonia 11 (2): 84, 1959 (Fulford and Taylor 1959a). Bas.: *Jungermannia capilligera* Schwägr., Hist. Musc. Hepat. Prodr.: 21, 1814 (Schwägrichen 1814).
*** *Neolepidozia consobrina* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 55, 2013 (Cooper et al. 2013). Bas.: *Telaranea consobrina* J.J.Engel et G.L.Merr., Novon 9 (3): 339, 1999 (Engel and Smith Merrill 1999a).

126 *Lepidozia hexiloba* is possibly an *Arachniopsis* or *Telaranea* species (Wigginton and Grolle 1996).
127 *Lepidozia parvistipa* is possibly conspecific with *Ceramanus clatritexta*.

*** *Neolepidozia cuneifolia* (Steph.) Fulford et J.Taylor, Brittonia 11 (2): 85, 1959 (Fulford and Taylor 1959a). Bas.: *Lepidozia cuneifolia* Steph., Sp. Hepat. (Stephani) 3: 618, 1909 (Stephani 1909a).

*** *Neolepidozia disparata* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 55, 2013 (Cooper et al. 2013). Bas.: *Telaranea disparata* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 147, 2004 (Engel and Smith Merrill 2004).

*** *Neolepidozia disticha* (Steph.) Fulford et J.Taylor, Brittonia 11 (2): 85, 1959 (Fulford and Taylor 1959a). Bas.: *Lepidozia disticha* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 62, 1911 (Stephani 1911b).

*** *Neolepidozia gibbsiana* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 55, 2013 (Cooper et al. 2013). Bas.: *Lepidozia gibbsiana* Steph., Sp. Hepat. (Stephani) 6: 328, 1922 (Stephani 1922).

*** *Neolepidozia heterotexta* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 55, 2013 (Cooper et al. 2013). Bas.: *Lepidozia heterotexta* Steph., Sp. Hepat. (Stephani) 6: 329, 1922 (Stephani 1922).

*** *Neolepidozia hodgsoniae* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 55, 2013 (Cooper et al. 2013). Bas.: *Telaranea hodgsoniae* J.J.Engel et G.L.Merr., Phytologia 79 (3): 251, 1995 [1996] (Engel and Smith Merrill 1995).

*** *Neolepidozia longitudinalis* (Herzog) E.D.Cooper, Phytotaxa 97 (2): 56, 2013 (Cooper et al. 2013). Bas.: *Lepidozia longitudinalis* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 312, 1950 (Herzog 1950a).

*** *Neolepidozia mamillosa* (Schiffn.) E.D.Cooper, Phytotaxa 97 (2): 56, 2013 (Cooper et al. 2013). Bas.: *Lepidozia mamillosa* Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 254, 1893 (Schiffner 1893a).

*** *Neolepidozia meridiana* (E.A.Hodgs.) E.D.Cooper, Phytotaxa 97 (2): 56, 2013 (Cooper et al. 2013). Bas.: *Lepidozia meridiana* E.A.Hodgs., Trans. Roy. Soc. New Zealand 83 (4): 611, 1956 (Hodgson 1956).

*** *Neolepidozia oligophylla* (Lehm. et Lindenb.) Fulford et J.Taylor, Brittonia 11 (2): 84, 1959 (Fulford and Taylor 1959a). Bas.: *Jungermannia oligophylla* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 26, 1834 (Lehmann 1834).

*** *Neolepidozia ophiria* (Gottsche) E.D.Cooper, Phytotaxa 97 (2): 56, 2013 (Cooper et al. 2013). Bas.: *Lepidozia ophiria* Gottsche, Sp. Hepat. (Stephani) 3: 611, 1909 (Stephani 1909a).

*** *Neolepidozia palmata* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 56, 2013 (Cooper et al. 2013). Bas.: *Telaranea palmata* J.J.Engel et G.L.Merr., Novon 9 (3): 344, 1999 (Engel and Smith Merrill 1999a).

*** *Neolepidozia paludicola* (E.A.Hodgs.) E.D.Cooper, Phytotaxa 97 (2): 56, 2013 (Cooper et al. 2013). Bas.: *Lepidozia meridiana* var. *paludicola* E.A.Hodgs., Trans. Roy. Soc. New Zealand 83 (4): 611, 1956 (Hodgson 1956).

*** *Neolepidozia papulosa* (Steph.) Fulford et J.Taylor, Brittonia 11 (2): 85, 1959 (Fulford and Taylor 1959a). Bas.: *Lepidozia papulosa* Steph., Sp. Hepat. (Stephani) 3: 609, 1909 (Stephani 1909a).

*** *Neolepidozia parvifolia* (Steph.) Fulford et J.Taylor, Brittonia 11 (2): 85, 1959 (Fulford and Taylor 1959a). Bas.: *Lepidozia parvifolia* Steph., Sp. Hepat. (Stephani) 6: 337, 1922 (Stephani 1922).

*** *Neolepidozia patentissima* (Hook.f. et Taylor) E.D.Cooper, Phytotaxa 97 (2): 56, 2013 (Cooper et al. 2013). Bas.: *Jungermannia patentissima* Hook.f. et Taylor, London J. Bot. 3: 286 [386], 1844 (Hooker and Taylor 1844a).

*** *Neolepidozia patentissima* var. *ampliata* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 56, 2013 (Cooper et al. 2013). Bas.: *Telaranea patentissima* var. *ampliata* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 48, 2004 (Engel and Smith Merrill 2004).

*** *Neolepidozia patentissima* var. *zebrina* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 57, 2013 (Cooper et al. 2013). Bas.: *Telaranea patentissima* var. *zebrina* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 50, 2004 (Engel and Smith Merrill 2004).

*** *Neolepidozia pennata* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 57, 2013 (Cooper et al. 2013). Bas.: *Telaranea pennata* J.J.Engel et G.L.Merr., Phytologia 79 (3): 252, 1995 [1996] (Engel and Smith Merrill 1995).

*** *Neolepidozia planifolia* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 57, 2013 (Cooper et al. 2013). Bas.: *Lepidozia planifolia* Steph., Sp. Hepat. (Stephani) 3: 629, 1909 (Stephani 1909a).

*** *Neolepidozia praenitens* (Lehm. et Lindenb.) E.D.Cooper, Phytotaxa 97 (2): 57, 2013 (Cooper et al. 2013). Bas.: *Jungermannia praenitens* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 27, 1834 (Lehmann 1834).

*** *Neolepidozia praenitens* var. *dentifolia* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 57, 2013 (Cooper et al. 2013). Bas.: *Telaranea praenitens* var. *dentifolia* J.J.Engel et G.L.Merr., Phytologia 79 (3): 253, 1995 [1996] (Engel and Smith Merrill 1995).

*** *Neolepidozia quadristipula* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 57, 2013 (Cooper et al. 2013). Bas.: *Lepidozia quadristipula* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 115, 1914 (Stephani and Watts 1914).

*** *Neolepidozia rectangularis* (R.M.Schust.) E.D.Cooper, Phytotaxa 97 (2): 57, 2013 (Cooper et al. 2013). Bas.: *Telaranea rectangularis* R.M.Schust., Phytologia 39 (4): 241, 1978 (Schuster 1978a).

*** *Neolepidozia seriatitexta* (Steph.) Fulford, Mem. New York Bot. Gard. 11 (2): 215, 1966 (Fulford 1966). Bas.: *Lepidozia seriatitexta* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 6): 53, 1900 (Stephani 1900b).

*** *Neolepidozia tetrapila* (Hook.f. et Taylor) E.D.Cooper, Phytotaxa 97 (2): 57, 2013 (Cooper et al. 2013). Bas.: *Lepidozia tetrapila* Hook.f. et Taylor, London J. Bot. 5: 370, 1846 (Taylor 1846b).

*** *Neolepidozia tetrapila* var. *cancellata* (Colenso) E.D.Cooper, Phytotaxa 97 (2): 57, 2013 (Cooper et al. 2013). Bas.: *Lepidozia cancellata* Colenso, Trans. & Proc. New Zealand Inst. 18: 244, 1886 (Colenso 1886b).

*** *Neolepidozia tetrapila* var. *roseana* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 58, 2013 (Cooper et al. 2013). Bas.: *Lepidozia roseana* Steph., Sp. Hepat. (Stephani) 3: 590, 1909 (Stephani 1909a).

*** *Neolepidozia tridactylis* (Lehm. et Lindenb.) E.D.Cooper, Phytotaxa 97 (2): 58, 2013 (Cooper et al. 2013). Bas.: *Jungermannia tridactylis* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 41, 1832 (Lehmann 1832).

*** *Neolepidozia trifida* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 58, 2013 (Cooper et al. 2013). Bas.: *Lepidozia trifida* Steph., Wiss. Ergebn. Deut. Zentr.-Afr. Exped. (1907-08), Bot. 2: 120, 1911 (Stephani 1911a).

*** *Neolepidozia verruculosa* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 58, 2013 (Cooper et al. 2013). Bas.: *Telaranea verruculosa* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 197, 2004 (Engel and Smith Merrill 2004).

*** *Neolepidozia wallichiana* (Gottsche) Fulford et J.Taylor, Brittonia 11 (2): 84, 1959 (Fulford and Taylor 1959a). Bas.: *Lepidozia wallichiana* Gottsche, Syn. Hepat. 2: 204, 1845 (Gottsche et al. 1845a).

*** ***Tricholepidozia* (R.M.Schust.) E.D.Cooper**, Phytotaxa 97 (2): 58, 2013 (Cooper et al. 2013). Bas.: *Telaranea* subg. *Tricholepidozia* R.M.Schust., J. Hattori Bot. Lab. 26: 256, 1963 (Schuster 1963b).

*** *Tricholepidozia chaetocarpa* (Pearson) E.D.Cooper, Phytotaxa 97 (2): 58, 2013 (Cooper et al. 2013). Bas.: *Lepidozia chaetocarpa* Pearson, J. Linn. Soc., Bot. 46 (305): 27, 1922 (Pearson 1922b).

*** *Tricholepidozia fernandeziensis* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 58, 2013 (Cooper et al. 2013). Bas.: *Lepidozia fernandeziensis* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 63, 1911 (Stephani 1911b).

*** *Tricholepidozia ferruginea* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 58, 2013 (Cooper et al. 2013). Bas.: *Telaranea ferruginea* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 159, 2004 (Engel and Smith Merrill 2004).

*** *Tricholepidozia fissifolia* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 58, 2013 (Cooper et al. 2013). Bas.: *Lepidozia fissifolia* Steph., Sp. Hepat. (Stephani) 3: 610, 1909 (Stephani 1909a).

*** *Tricholepidozia jowettiana* (H.A.Mill.) E.D.Cooper, Phytotaxa 97 (2): 59, 2013 (Cooper et al. 2013). Bas.: *Telaranea jowettiana* H.A.Mill., J. Bryol. 14 (2): 235, 1986 (Miller 1986).

*** *Tricholepidozia kaindina* (Grolle) E.D.Cooper, Phytotaxa 97 (2): 59, 2013 (Cooper et al. 2013). Bas.: *Telaranea kaindina* Grolle, J. Hattori Bot. Lab. 31: 9, 1968 (Grolle 1968a).

*** *Tricholepidozia kogiana* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 59, 2013 (Cooper et al. 2013). Bas.: *Lepidozia kogiana* Steph., Sp. Hepat. (Stephani) 6: 332, 1922 (Stephani 1922).

*** *Tricholepidozia lawesii* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 59, 2013 (Cooper et al. 2013). Bas.: *Lepidozia lawesii* Steph., Hedwigia 28 (4): 264, 1889 (Stephani 1889c).

*** *Tricholepidozia leratii* (Steph.) E.D.Cooper, Phytotaxa 167 (2): 218, 2014 (Cooper et al. 2014). Bas.: *Lepidozia leratii* Steph., Sp. Hepat. (Stephani) 6: 333, 1922 (Stephani 1922).

*** *Tricholepidozia lindenbergii* (Gottsche) E.D.Cooper, Phytotaxa 97 (2): 59, 2013 (Cooper et al. 2013). Bas.: *Lepidozia lindenbergii* Gottsche, Syn. Hepat. 2: 213, 1845 (Gottsche et al. 1845a).

*** *Tricholepidozia lindenbergii* var. *complanata* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 59, 2013 (Cooper et al. 2013). Bas.: *Telaranea lindenbergii* var. *complanata* J.J.Engel et G.L.Merr., Phytologia 79 (3): 252, 1995 [1996] (Engel and Smith Merrill 1995).

*** *Tricholepidozia lindenbergii* var. *mellea* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 59, 2013 (Cooper et al. 2013). Bas.: *Telaranea lindenbergii* var. *mellea* J.J.Engel et G.L.Merr., Phytologia 79 (3): 252, 1995 [1996] (Engel and Smith Merrill 1995).

*** *Tricholepidozia lindenbergii* var. *papillata* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 59, 2013 (Cooper et al. 2013). Bas.: *Telaranea lindenbergii* var. *papillata* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 83, 2004 (Engel and Smith Merrill 2004).

*** *Tricholepidozia marginata* (J.J.Engel et G.L.Merr.) E.D.Cooper, Phytotaxa 97 (2): 59, 2013 (Cooper et al. 2013). Bas.: *Telaranea marginata* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 166, 2004 (Engel and Smith Merrill 2004).

*** *Tricholepidozia martinii* (E.A.Hodgs.) E.D.Cooper, Phytotaxa 97 (2): 59, 2013 (Cooper et al. 2013). Bas.: *Lepidozia martinii* E.A.Hodgs., Trans. Roy. Soc. New Zealand 83 (4): 602, 1956 (Hodgson 1956).

*** *Tricholepidozia melanesica* (H.A.Mill.) E.D.Cooper, Phytotaxa 97 (2): 60, 2013 (Cooper et al. 2013). Bas.: *Telaranea melanesica* H.A.Mill., J. Bryol. 14 (2): 237, 1986 (Miller 1986).

*** *Tricholepidozia neesii* (Lindenb.) E.D.Cooper, Phytotaxa 97 (2): 60, 2013 (Cooper et al. 2013). Bas.: *Lepidozia neesii* Lindenb., Syn. Hepat. 2: 212, 1845 (Gottsche et al. 1845a).

*** *Tricholepidozia octoloba* (Del Ros.) E.D.Cooper, Phytotaxa 97 (2): 60, 2013 (Cooper et al. 2013). Bas.: *Telaranea octoloba* Del Ros., Philipp. J. Sci. 100 (3/4): 239, 1971 (Del Rosario 1971).

*** *Tricholepidozia plumulosa* (Lehm. et Lindenb.) E.D.Cooper, Phytotaxa 97 (2): 60, 2013 (Cooper et al. 2013). Bas.: *Jungermannia plumulosa* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 30, 1834 (Lehmann 1834).

*** *Tricholepidozia pulcherrima* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 60, 2013 (Cooper et al. 2013). Bas.: *Lepidozia pulcherrima* Steph., Sp. Hepat. (Stephani) 3: 600, 1909 (Stephani 1909a).

*** *Tricholepidozia pulcherrima* var. *mooreana* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 60, 2013 (Cooper et al. 2013). Bas.: *Lepidozia mooreana* Steph., Sp. Hepat. (Stephani) 3: 585, 1909 (Stephani 1909a).

*** *Tricholepidozia quadriseta* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 60, 2013 (Cooper et al. 2013). Bas.: *Lepidozia quadriseta* Steph., Sp. Hepat. (Stephani) 3: 582, 1909 (Stephani 1909a).
*** *Tricholepidozia remotifolia* (E.A.Hodgs.) E.D.Cooper, Phytotaxa 97 (2): 60, 2013 (Cooper et al. 2013). Bas.: *Telaranea remotifolia* E.A.Hodgs., Rec. Domin. Mus. 4 (11): 107, 1962 (Hodgson 1962a).
*** *Tricholepidozia semperiana* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 60, 2013 (Cooper et al. 2013). Bas.: *Lepidozia semperiana* Steph., Sp. Hepat. (Stephani) 3: 612, 1909 (Stephani 1909a).
*** *Tricholepidozia tetradactyla* (Hook.f. et Taylor) E.D.Cooper, Phytotaxa 97 (2): 61, 2013 (Cooper et al. 2013). Bas.: *Jungermannia tetradactyla* Hook.f. et Taylor, London J. Bot. 3: 286 [386], 1844 (Hooker and Taylor 1844a).
*** *Tricholepidozia trichocoleoides* (Herzog) E.D.Cooper, Phytotaxa 97 (2): 61, 2013 (Cooper et al. 2013). Bas.: *Lepidozia trichocoleoides* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 314, 1950 (Herzog 1950a).

** Micropterygioideae Grolle

** ***Micropterygium*** **Gottsche, Lindenb. et Nees**, Syn. Hepat. 2: 233, 1845 (Gottsche et al. 1845a).
** *Micropterygium angustistipulum* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 385, 1885 (Spruce 1885).
*** *Micropterygium bialatum* Fulford, Mem. New York Bot. Gard. 11 (2): 268, 1966 (Fulford 1966).
*** *Micropterygium bolivarense* Fulford, Mem. New York Bot. Gard. 11 (2): 263, 1966 (Fulford 1966).
*** *Micropterygium campanense* Spruce, Hedwigia 73 (3/4): 157, 1933 (Reimers 1933).
*** *Micropterygium carinatum* (Grev.) Reimers, Hedwigia 76 (3): 166, 1936 (Reimers 1936). Bas.: *Jungermannia carinata* Grev., Ann. Lyceum Nat. Hist. New York 1 (2): 276, 1825 (Greville 1825).
*** *Micropterygium conchifolium* Reimers, Hedwigia 73 (3/4): 155, 1933 (Reimers 1933).
*** *Micropterygium duidae* Reimers, Hedwigia 73 (3/4): 147, 1933 (Reimers 1933).
** *Micropterygium exalatum* Steph., Sp. Hepat. (Stephani) 3: 547, 1909 (Stephani 1909a).
** *Micropterygium grandistipulum* Steph., Trans. Linn. Soc. London, Bot. 6 (1): 98, 1901 (Stephani 1901e).
** *Micropterygium laeve* H.Rob., Bol. Soc. Venez. Ci. Nat. 32 (132/133): 252, 1976 (Robinson 1976b).
** *Micropterygium lechleri* Reimers, Hedwigia 73 (3/4): 184, 1933 (Reimers 1933).
*** *Micropterygium leiophyllum* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 386, 1885 (Spruce 1885).

** *Micropterygium longicellulatum* Uribe et E.L.Linares, Phytotaxa 213 (3): 297, 2015 (Uribe and Linares 2015).
** *Micropterygium parvistipulum* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 383, 1885 (Spruce 1885).
*** *Micropterygium pterygophyllum* (Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 413, 1877 (Trevisan 1877). Bas.: *Jungermannia pterygophylla* Nees, Fl. Bras. (Martius) 1 (1): 377, 1833 (Nees 1833a).
* *Micropterygium pterygophyllum* var. *lancifolium* Reimers, Hedwigia 73 (3/4): 176, 1933 (Reimers 1933).
** *Micropterygium reimersianum* Herzog, Hedwigia 81 (5/6): 226, 1943 (Herzog 1943b).
*** *Micropterygium steyermarkii* Fulford, Mem. New York Bot. Gard. 11 (2): 270, 1966 (Fulford 1966).
*** *Micropterygium tatei* Reimers, Hedwigia 73 (3/4): 150, 1933 (Reimers 1933).
*** *Micropterygium tenax* (Steph.) Grolle, J. Bryol. 10 (3): 265, 1979 (Grolle 1979b). Bas.: *Harpalejeunea tenax* Steph., Trans. Linn. Soc. London, Bot. 6 (1): 100, 1901 (Stephani 1901e).
*** *Micropterygium trachyphyllum* Reimers, Hedwigia 73 (3/4): 186, 1933 (Reimers 1933). [128]
* *Micropterygium trachyphyllum* var. *brasiliense* Reimers, Hedwigia 73 (3/4): 195, 1933 (Reimers 1933).
* *Micropterygium trachyphyllum* var. *cubense* Reimers, Hedwigia 73 (3/4): 188, 1933 (Reimers 1933).
* *Micropterygium trachyphyllum* var. *guadeloupense* Reimers, Hedwigia 73 (3/4): 190, 1933 (Reimers 1933).
* *Micropterygium trachyphyllum* var. *jamaicense* Reimers, Hedwigia 73 (3/4): 190, 1933 (Reimers 1933).
*** *Micropterygium tumidulum* Fulford, Mem. New York Bot. Gard. 11 (2): 272, 1966 (Fulford 1966).

** ***Mytilopsis* Spruce**, Cephalozia: 90, 1882 (Spruce 1882).
*** *Mytilopsis albifrons* Spruce, Cephalozia: 91, 1882 (Spruce 1882).

** Protocephalozioideae R.M.Schust.

** ***Protocephalozia* (Spruce) K.I.Goebel**, Flora 77 (2): 83, 1893 (Goebel 1893b). Bas.: *Cephalozia* subg. *Protocephalozia* Spruce, Cephalozia: 24, 1882 (Spruce 1882).
*** *Protocephalozia ephemeroides* (Spruce) K.I.Goebel, Flora 77 (2): 83, 1893 (Goebel 1893b). Bas.: *Cephalozia ephemeroides* Spruce, Cephalozia: 24, 1882 (Spruce 1882).

128 *Micropterygium trachyphyllum* was split into several varieties by Reimers (1933), but they do not seem to have been accepted by any later author and Söderström et al. (2011a) were not sure about their status.

*** Zoopsidoideae R.M.Schust.

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*** *Amazoopsis diplopoda* (Pócs) J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 245, 2004 (Engel and Smith Merrill 2004). Bas.: *Arachniopsis diplopoda* Pócs, Proc. Third Meeting Bryol. C. & E. Europe: 114, 1984 (Pócs 1984b).

*** *Amazoopsis dissotricha* (Spruce) J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 247, 2004 (Engel and Smith Merrill 2004). Bas.: *Arachniopsis dissotricha* Spruce, Cephalozia: 86, 1882 (Spruce 1882).

*** *Amazoopsis gracilis* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 246, 2004 (Engel and Smith Merrill 2004).

* ***Hyalolepidozia*** **S.W.Arnell ex Grolle**, Rev. Bryol. Lichénol. 32 (3/4): 179, 1963 [1964] (Grolle 1963b). Based on: *Hyalolepidozia* S.W.Arnell, Bot. Not. 115: 203, 1962 (Arnell 1962a).

** *Hyalolepidozia bicuspidata* (C.Massal.) S.W.Arnell ex Grolle, Rev. Bryol. Lichénol. 32 (3/4): 179, 1963 [1964] (Grolle 1963b). Bas.: *Lepidozia bicuspidata* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 239, 1885 (Massalongo 1885).

* ***Monodactylopsis*** **(R.M.Schust.) R.M.Schust.**, Nova Hedwigia 56 (1/2): 45, 1993 (Schuster 1993a). Bas.: *Arachniopsis* subg. *Monodactylopsis* R.M.Schust., Nova Hedwigia 10 (1/2): 24, 1965 (Schuster 1965b).

** *Monodactylopsis monodactyla* (Spruce) R.M.Schust., Nova Hedwigia 69 (3/4): 523, 1999 (Schuster 1999a). Bas.: *Cephalozia monodactyla* Spruce, Cephalozia: 28, 1882 (Spruce 1882).

** ***Neogrollea*** **E.A.Hodgs.**, Trans. Roy. Soc. New Zealand, Bot. 3 (4): 70, 1965 (Hodgson 1965).

*** *Neogrollea notabilis* E.A.Hodgs., Trans. Roy. Soc. New Zealand, Bot. 3 (4): 70, 1965 (Hodgson 1965).

* ***Odontoseries*** **Fulford**, Mem. New York Bot. Gard. 11 (3): 364, 1968 (Fulford 1968).

* *Odontoseries chimantana* Fulford, Mem. New York Bot. Gard. 11 (3): 366, 1968 (Fulford 1968).

*** ***Paracromastigum*** **Fulford et J.Taylor**, Brittonia 13 (4): 336, 1961 (Fulford and Taylor 1961).

*** *Paracromastigum denticulatum* (Steph.) E.D.Cooper, Phytotaxa 97 (2): 61, 2013 (Cooper et al. 2013). Bas.: *Lembidium denticulatum* Steph., Sp. Hepat. (Stephani) 6: 444, 1924 (Stephani 1924).

*** *Paracromastigum drucei* (R.M.Schust.) R.M.Schust., J. Hattori Bot. Lab. 38: 700, 1974 (Schuster and Engel 1974). Bas.: *Pseudocephalozia drucei* R.M.Schust., Nova Hedwigia 10 (1/2): 22, 1965 (Schuster 1965b).

*** *Paracromastigum dusenii* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 38: 700, 1974 (Schuster and Engel 1974). Bas.: *Alobiella dusenii* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 6): 48, 1900 (Stephani 1900b).

** *Paracromastigum fiordlandiae* R.M.Schust. et J.J.Engel, Brittonia 48 (2): 167, 1996 (Schuster and Engel 1996).

*** *Paracromastigum furcifolium* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 26: 276, 1963 (Schuster 1963b). Bas.: *Cephalozia furcifolia* Steph., Bull. Herb. Boissier (sér. 2) 8 (7): 485 (315), 1908 (Stephani 1908f).

** *Paracromastigum granatense* (Gottsche) R.M.Schust., J. Hattori Bot. Lab. 48: 341, 1980 (Schuster 1980a). Bas.: *Lepidozia granatensis* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 139, 1864 (Gottsche 1864).

** *Paracromastigum longiscyphum* (Taylor) R.M.Schust. et J.J.Engel, Brittonia 48 (2): 167, 1996 (Schuster and Engel 1996). Bas.: *Jungermannia longiscypha* Taylor, London J. Bot. 5: 280, 1846 (Taylor 1846a).

** *Paracromastigum macrostipum* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 26: 276, 1963 (Schuster 1963b). Bas.: *Cephalozia macrostipa* Steph., Hedwigia 32 (5): 315, 1893 (Stephani 1893d).

** *Paracromastigum micromera* (Spruce) R.M.Schust., J. Hattori Bot. Lab. 26: 276, 1963 (Schuster 1963b). Bas.: *Cephalozia micromera* Spruce, Cephalozia: 32, 1882 (Spruce 1882).

** *Paracromastigum microphyllum* (R.M.Schust. ex J.J.Engel) E.D.Cooper, Phytotaxa 97 (2): 61, 2013 (Cooper et al. 2013). Bas.: *Hyalolepidozia microphylla* R.M.Schust. ex J.J.Engel, Novon 17 (3): 310, 2007 (Engel 2007).

*** *Paracromastigum pachyrhizum* (Nees) Fulford, Mem. New York Bot. Gard. 11 (3): 390, 1968 (Fulford 1968). Bas.: *Jungermannia pachyrhiza* Nees, Fl. Bras. (Martius) 1 (1): 339, 1833 (Nees 1833a).

** *Paracromastigum ryszardii* Váňa, Bedn.-Ochyra et Cykowska, Nova Hedwigia 89 (1/2): 122, 2009 (Váňa et al. 2009).

** *Paracromastigum stipulatum* (Herzog) Fulford, Mem. New York Bot. Gard. 11 (3): 390, 1968 (Fulford 1968). Bas.: *Cephalozia stipulata* Herzog, Memoranda Soc. Fauna Fl. Fennica 27: 105, 1952 (Herzog 1952c).

** *Paracromastigum subsimplex* (Steph.) Fulford et J.Taylor, Brittonia 13 (4): 336, 1961 (Fulford and Taylor 1961). Bas.: *Lepidozia subsimplex* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 66, 1911 (Stephani 1911b).

** *Paracromastigum succulentum* (Sim) J.J.Engel et G.L.Merr., Bryologist 104 (1): 151, 2001 (Engel and Smith Merrill 2001). Bas.: *Lepidozia succulenta* Sim, Trans. Roy. Soc. South Africa 15 (1): 90, 1926 (Sim 1926).

** *Paracromastigum tristanianum* (R.M.Schust.) J.J.Engel et R.M.Schust., J. Hattori Bot. Lab. 38: 700, 1974 (Schuster and Engel 1974). Bas.: *Pseudocephalozia tristaniana* R.M.Schust., Nova Hedwigia 10 (1/2): 23, 1965 (Schuster 1965b).

** *Paracromastigum vastilobum* (Steph.) J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 255, 2004 (Engel and Smith Merrill 2004). Bas.: *Lepidozia vastiloba* Steph., Sp. Hepat. (Stephani) 3: 581, 1909 (Stephani 1909a).

** ***Psiloclada* Mitt.**, Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 143, 1854 (Mitten 1854).
*** *Psiloclada clandestina* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 143, 1854 (Mitten 1854).
** *Psiloclada clandestina* subsp. *melanesica* R.M.Schust., J. Hattori Bot. Lab. 48: 411, 1980 (Schuster 1980a).
** *Psiloclada clandestina* subsp. *spinosa* (S.W.Arnell) R.M.Schust., J. Hattori Bot. Lab. 48: 410, 1980 (Schuster 1980a). Bas.: *Lepidozia spinosa* S.W.Arnell, Bot. Not. 107: 427, 1954 (Arnell 1954c).

** ***Pteropsiella* Spruce**, J. Bot. 14: 161, 1876 (Spruce 1876b).
*** *Pteropsiella frondiformis* Spruce, J. Bot. 14: 161, 1876 (Spruce 1876b).
** *Pteropsiella metzgeriiformis* R.M.Schust., Nova Hedwigia 10 (1/2): 25, 1965 (Schuster 1965b).

** ***Telaranea* Spruce ex Schiffn.**, Hepat. (Engl.-Prantl): 103, 1893 (Schiffner 1893b) nom. conserv. Based on: *Telaranea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 365, 1885 (Spruce 1885). [129]

* **sect. *Telaranea***
*** *Telaranea apiahyna* (Steph.) Fulford, Brittonia 15 (1): 71, 1963 (Fulford 1963). Bas.: *Lepidozia apiahyna* Steph., Sp. Hepat. (Stephani) 3: 572, 1909 (Stephani 1909a).
*** *Telaranea bicruris* (Steph.) M.Howe, Bull. Torrey Bot. Club 29 (5): 287, 1902 (Howe 1902). Bas.: *Lepidozia bicruris* Steph., Hedwigia 24 (4): 166, 1885 (Stephani 1885f).
*** *Telaranea blepharostoma* (Steph.) Fulford, Brittonia 15 (1): 73, 1963 (Fulford 1963). Bas.: *Lepidozia blepharostoma* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 17): 22, 1901 (Stephani 1901b).
*** *Telaranea breviseta* (Herzog) J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 131, 2004 (Engel and Smith Merrill 2004). Bas.: *Lepidozia sejuncta* var. *breviseta* Herzog, Nat. Hist. Juan Fernandez (Botany) 2 (5): 723, 1942 (Herzog 1942a).
*** *Telaranea chaetophylla* (Spruce) Schiffn., Hepat. (Engl.-Prantl): 103, 1893 (Schiffner 1893b). Bas.: *Lepidozia chaetophylla* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 365, 1885 (Spruce 1885).
*** *Telaranea europaea* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 150, 2004 (Engel and Smith Merrill 2004).

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129 *Telaranea* is a heterogeneous genus and several segregates are warranted. Additional studies are needed to clarify the relationships of the species retained here (Cooper 2013).

*** *Telaranea fragilis* Mizut., J. Hattori Bot. Lab. 40: 449, 1976 (Mizutani 1976a).
*** *Telaranea granulata* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 103, 2004 (Engel and Smith Merrill 2004).
*** *Telaranea longifolia* (M.Howe) J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 163, 2004 (Engel and Smith Merrill 2004). Bas.: *Telaranea nematodes* var. *longifolia* M.Howe, Bull. Torrey Bot. Club 29 (5): 286, 1902 (Howe 1902).
*** *Telaranea nematodes* (Gottsche ex Austin) M.Howe, Bull. Torrey Bot. Club 29 (5): 284, 1902 (Howe 1902). Bas.: *Cephalozia nematodes* Gottsche ex Austin, Bull. Torrey Bot. Club 6 (52): 302, 1879 (Austin 1879).
*** *Telaranea panchoi* Del Ros., Philipp. J. Sci. 100 (3/4): 238, 1971 (Del Rosario 1971).
*** *Telaranea pellucida* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 179, 2004 (Engel and Smith Merrill 2004).
*** *Telaranea pseudozoopsis* (Herzog) Fulford, Brittonia 15 (1): 71, 1963 (Fulford 1963). Bas.: *Lepidozia pseudozoopsis* Herzog, Nat. Hist. Juan Fernandez (Botany) 2 (5): 723, 1942 (Herzog 1942a).
*** *Telaranea redacta* (Steph.) J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 186, 2004 (Engel and Smith Merrill 2004). Bas.: *Lepidozia redacta* Steph., Wiss. Ergebn. Deut. Zentr.-Afr. Exped. (1907-08), Bot. 2: 119, 1911 (Stephani 1911a).
*** *Telaranea rosarioana* H.A.Mill., J. Bryol. 14 (2): 240, 1986 (Miller 1986).
*** *Telaranea setosa* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 192, 2004 (Engel and Smith Merrill 2004).
*** *Telaranea trisetosa* (Steph.) Grolle, J. Hattori Bot. Lab. 29: 280, 1966 (Grolle 1966g). Bas.: *Lepidozia trisetosa* Steph., Sp. Hepat. (Stephani) 3: 607, 1909 (Stephani 1909a).

* **sect. *Tenuifoliae* (R.M.Schust.) J.J.Engel et G.L.Merr.**, Fieldiana, Bot. (n.ser.) 44: 112, 2004 (Engel and Smith Merrill 2004). Bas.: *Arachniopsis* sect. *Tenuifoliae* R.M.Schust., Beih. Nova Hedwigia 118: 461, 2000 (Schuster 2000a).
*** *Telaranea anomala* R.M.Schust. ex J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 121, 2004 (Engel and Smith Merrill 2004).
** *Telaranea bischleriana* Pócs, Acta Bot. Hung. 48 (1/2): 120, 2006 (Pócs 2006c).
*** *Telaranea coactilis* (Spruce) J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 140, 2004 (Engel and Smith Merrill 2004). Bas.: *Arachniopsis coactilis* Spruce, Cephalozia: 85, 1882 (Spruce 1882).
*** *Telaranea confervoides* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 143, 2004 (Engel and Smith Merrill 2004). Based on: *Arachniopsis pecten* var. *confervoides* R.M.Schust., Beih. Nova Hedwigia 118: 455, 2000 (Schuster 2000a), *nom. inval.*
*** *Telaranea diacantha* (Mont.) J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 145, 2004 (Engel and Smith Merrill 2004). Bas.: *Jungermannia diacantha* Mont., Ann. Sci. Nat. Bot. (sér. 4) 5: 349, 1856 (Montagne 1856c).
*** *Telaranea herzogii* (E.A.Hodgs.) E.A.Hodgs., Rec. Domin. Mus. 4 (11): 106, 1962 (Hodgson 1962a). Bas.: *Lepidozia herzogii* E.A.Hodgs., Trans. & Proc. Roy. Soc. New Zealand 78 (4): 500, 1950 (Martin 1950).

*** *Telaranea inaequalis* R.M.Schust. ex J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 117, 2004 (Engel and Smith Merrill 2004).
** *Telaranea maorensis* Pócs, Acta Bot. Hung. 48 (1/2): 124, 2006 (Pócs 2006c).
*** *Telaranea microstipulata* R.M.Schust., Phytologia 39 (4): 241, 1978 (Schuster 1978a).
*** *Telaranea monocera* (Mitt. ex R.M.Schust. et Grolle) J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 168, 2004 (Engel and Smith Merrill 2004). Bas.: *Arachniopsis monocera* Mitt. ex R.M.Schust. et Grolle, Nova Hedwigia 10 (1/2): 25, 1965 (Schuster 1965b).
*** *Telaranea pecten* (Spruce) J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 178, 2004 (Engel and Smith Merrill 2004). Bas.: *Arachniopsis pecten* Spruce, Cephalozia: 85, 1882 (Spruce 1882).
*** *Telaranea sejuncta* (Ångstr.) S.W.Arnell, Bot. Not. 110 (1): 18, 1957 (Arnell 1957a). Bas.: *Blepharostoma sejunctum* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 33 (7): 78, 1876 [1877] (Ångström 1876).
*** *Telaranea tenuifolia* J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 193, 2004 (Engel and Smith Merrill 2004). Based on: *Arachniopsis tenuifolia* R.M.Schust., Beih. Nova Hedwigia 118: 461, 2000 (Schuster 2000a), *nom. inval.*

Incertae sedis

** *Telaranea azorica* (H.Buch et Perss.) Pócs in Schumacker et Váňa, Identif. keys liverw. hornw. Europe: 160, 2005 (Schumacker and Váňa 2005). Bas.: *Lepidozia azorica* H.Buch et Perss., Bryophyt. Azoren Madeira: 4, 1941 (Buch and Persson 1941).
** *Telaranea indica* (S.C.Srivast. et P.K.Verma) A.E.D.Daniels et P.Daniel, Bull. Bot. Surv. India 49 (1/4): 231, 2007 (Daniels and Daniel 2007). Bas.: *Arachniopsis indica* S.C.Srivast. et P.K.Verma, Natl. Acad. Sci. Lett. 27 (7/8): 270, 2004 [2006] (Srivastava and Verma 2004).
** *Telaranea major* (Herzog) J.J.Engel et G.L.Merr., Fieldiana, Bot. (n.ser.) 44: 165, 2004 (Engel and Smith Merrill 2004). Bas.: *Arachniopsis major* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 294, 1950 (Herzog 1950a).

** ***Zoopsidella* R.M.Schust.**, Nova Hedwigia 10 (1/2): 24, 1965 (Schuster 1965b).
** *Zoopsidella antillana* (Steph.) H.Rob., Bol. Soc. Venez. Ci. Nat. 32 (132/133): 254, 1976 (Robinson 1976b). Bas.: *Zoopsis antillana* Steph., Bull. Herb. Boissier (sér. 2) 8 (4): 268 (282), 1908 (Stephani 1908j).
** *Zoopsidella antillana* subsp. *jamaicensis* R.M.Schust., Nova Hedwigia 69 (1/2): 132, 1999 (Schuster 1999b).
*** *Zoopsidella caledonica* (Steph.) R.M.Schust., Taxon 18 (1): 57, 1969 (Schuster 1969c). Bas.: *Zoopsis caledonica* Steph., Sp. Hepat. (Stephani) 6: 318, 1922 (Stephani 1922).
** *Zoopsidella cynosurandra* (Steph.) R.M.Schust., Nova Hedwigia 10 (1/2): 24, 1965 (Schuster 1965b). Bas.: *Zoopsis cynosurandra* Steph., Bull. Herb. Boissier (sér. 2) 8 (4): 269 (283), 1908 (Stephani 1908j).

*** *Zoopsidella integrifolia* (Spruce) R.M.Schust., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 12 (3): 666, 1969 (Schuster 1969a). Bas.: *Cephalozia integrifolia* Spruce, Cephalozia: 29, 1882 (Spruce 1882).

** *Zoopsidella macella* (Spruce) R.M.Schust., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 12 (3): 666, 1969 (Schuster 1969a). Bas.: *Cephalozia macella* Spruce, Cephalozia: 29, 1882 (Spruce 1882).

*** *Zoopsidella serra* (Spruce) R.M.Schust., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 12 (3): 666, 1969 (Schuster 1969a). Bas.: *Cephalozia serra* Spruce, Cephalozia: 32, 1882 (Spruce 1882).

** ***Zoopsis* Hook.f. ex Gottsche, Lindenb. et Nees**, Syn. Hepat. 4: 473, 1846 (Gottsche et al. 1846).

** **subg. *Eozoopsis* R.M.Schust.**, J. Hattori Bot. Lab. 36: 373, 1972 (Schuster 1972).

*** *Zoopsis leitgebiana* (Carrington et Pearson) Bastow, Pap. & Proc. Roy. Soc. Tasmania 1887: 269, 1888 (Bastow 1888). Bas.: *Cephalozia leitgebiana* Carrington et Pearson, Pap. & Proc. Roy. Soc. Tasmania 1887: 3, 1888 (Carrington and Pearson 1888b).

*** *Zoopsis macrophylla* R.M.Schust., Nova Hedwigia 68 (1/2): 14, 1999 (Schuster 1999d).

** **subg. *Zoopsis***

*** *Zoopsis argentea* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 4: 473, 1846 (Gottsche et al. 1846). Bas.: *Jungermannia argentea* Hook.f. et Taylor, London J. Bot. 3: 400, 1844 (Hooker and Taylor 1844a).

** *Zoopsis argentea* var. *flagelliformis* (Colenso) R.M.Schust., Nova Hedwigia 68 (1/2): 38, 1999 (Schuster 1999d). Bas.: *Zoopsis flagelliformis* Colenso, Trans. & Proc. New Zealand Inst. 18: 250, 1886 (Colenso 1886b).

*** *Zoopsis bicruris* Glenny et E.A.Br., J. Bryol. 28 (4): 332, 2006 (Renner et al. 2006).

** *Zoopsis liukiuensis* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 65, 1931 (Horikawa 1931a).

*** *Zoopsis matawaia* M.A.M.Renner, J. Bryol. 28 (4): 334, 2006 (Renner et al. 2006).

*** *Zoopsis nitida* Glenny, Braggins et R.M.Schust., J. Bryol. 19 (4): 776, 1997 (Glenny et al. 1997).

*** *Zoopsis setulosa* Leitg., Mitt. Naturwiss. Vereins Steiermark 13: 24, 1876 (Leitgeb 1876).

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*** *Zoopsis ceratophylla* (Spruce) Hamlin, Rec. Domin. Mus. 7: 311, 1972 (Hamlin 1972). Bas.: *Cephalozia ceratophylla* Spruce, Cephalozia: 32, 1882 (Spruce 1882).

* *Zoopsis ciliata* Colenso, Trans. & Proc. New Zealand Inst. 20: 253, 1888 (Colenso 1888). [130]
* *Zoopsis martinicensis* Steph., Bull. Herb. Boissier (sér. 2) 8 (4): 268 (282), 1908 (Stephani 1908j).
** *Zoopsis setigera* K.I.Goebel, Flora 77 (2): 93, 1893 (Goebel 1893b).
** *Zoopsis uleana* Steph., Hedwigia 44 (4): 225, 1905 (Stephani 1905a).

*** Lophocoleaceae Vanden Berghen

by B.J. Crandall-Stotler, R. Stotler, J. Váňa, J.J.Engel and L. Söderström

Söderström et al. (2013b) outlined the current status of Lophocoleaceae noting that several taxonomic problems in delimitating genera remain. The placement of several species is also unclear. Nomenclatural and taxonomic notes can be found in Söderström et al. (2013b, 2013f).

** ***Bragginsella* R.M.Schust.**, Bryologist 100 (3): 363, 1997 (Schuster 1997a).
*** *Bragginsella anomala* R.M.Schust., Bryologist 100 (3): 363, 1997 (Schuster 1997a).

*** ***Chiloscyphus* Corda**, Gen. hepat.: 651, 1829 (Corda 1829) nom. conserv.
** *Chiloscyphus kashyapii* A.Srivast. et S.C.Srivast., Indian Geocalyc.: 34, 2002 (Srivastava and Srivastava 2002).
*** *Chiloscyphus pallescens* (Ehrh.) Dumort., Syll. Jungerm. Europ.: 67, 1831 (Dumortier 1831). Bas.: *Jungermannia pallescens* Ehrh., Deutschl. Fl., Theil 2 (Hoffm.): 87, 1795 [1796] (Hoffmann 1795).
* *Chiloscyphus pallescens* var. *fragilis* (Roth) Müll.Frib., Ber. Deutsch. Bot. Ges. 59 (10): 429, 1942 (Müller 1942). Bas.: *Jungermannia fragilis* Roth, Tent. Fl. Germ. 3: 370, 1800 (Roth 1800). [131]
*** *Chiloscyphus polyanthos* (L.) Corda, Gen. hepat.: 651, 1829 (Corda 1829). Bas.: *Jungermannia polyanthos* L., Sp. Pl. 1: 1131, 1753 (Linnaeus 1753).
* *Chiloscyphus polyanthos* var. *rivularis* (Schrad.) Lindb. et Arnell, Kongl. Svenska Vetensk.-Akad. Handl. (n.ser.) 23 (5): 24, 1889 (Lindberg and Arnell 1889). Bas.: *Jungermannia pallescens* var. *rivularis* Schrad., Syst. Samml. Crypt. Gew. 2: 7, 1797 (Schrader 1797). [132]

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130 *Zoopsis ciliata* was not studied by Engel and Glenny (2008a) and they did not know what it may be.
131 *Chiloscyphus pallescens* var. *fragilis* is a problematic taxon sometimes treated as a species, sometimes as conspecific with *Chiloscyphus pallescens*, sometimes as conspecific with *Chiloscyphus polyanthos*.
132 *Chiloscyphus polyanthos* var. *rivularis* is a problematic taxon sometimes treated as a species, sometimes as conspecific with *Chiloscyphus polyanthos*.

Incertae sedis [133]

** *Chiloscyphus acutus* Steph., Sp. Hepat. (Stephani) 6: 302, 1922 (Stephani 1922).
** *Chiloscyphus alpicola* J.J.Engel, Phytotaxa 207 (2): 181, 2015 (Engel 2015b).
** *Chiloscyphus beesleyanus* Pearson, J. Linn. Soc., Bot. 46 (305): 22, 1922 (Pearson 1922b).
* *Chiloscyphus bifidus* Schiffn., Hep. Fl. Buitenzorg: 200, 1900 (Schiffner 1900a). [134]
** *Chiloscyphus breviculus* B.Y.Yang et W.C.Lee, Bot. Bull. Acad. Sin. (n.ser.) 5 (2): 190, 1964 (Yang and Lee 1964).
* *Chiloscyphus brevistipulus* Steph., Sp. Hepat. (Stephani) 6: 303, 1922 (Stephani 1922).
** *Chiloscyphus chinnarensis* Manju, K.P.Rajesh et Madhus., Acta Bot. Hung. 53 (1/2): 152, 2011 (Manju et al. 2011).
** *Chiloscyphus confertifolius* Steph., Sp. Hepat. (Stephani) 6: 304, 1922 (Stephani 1922).
** *Chiloscyphus confertus* Steph., Sp. Hepat. (Stephani) 6: 305, 1922 (Stephani 1922).
** *Chiloscyphus cornutistipulus* Steph., Sp. Hepat. (Stephani) 6: 303, 1922 (Stephani 1922).
* *Chiloscyphus durus* (Steph.) Hässel, Revista Mus. Argent. Ci. Nat. (n.ser.) 1 (2): 122, 1999 (Hässel 1999). Bas.: *Lophocolea dura* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 43, 1911 (Stephani 1911b). [135]
* *Chiloscyphus ernstianus* Steph., Sp. Hepat. (Stephani) 6: 306, 1922 (Stephani 1922).
** *Chiloscyphus etesseanus* Steph., Bull. Herb. Boissier (sér. 2) 7 (10): 845 (217), 1907 (Stephani 1907b).
** *Chiloscyphus francanus* Steph., Sp. Hepat. (Stephani) 6: 306, 1922 (Stephani 1922).
** *Chiloscyphus graeffeanus* Steph., Sp. Hepat. (Stephani) 6: 307, 1922 (Stephani 1922).
** *Chiloscyphus greenwelliae* (H.A.Mill.) H.A.Mill., J. Hattori Bot. Lab. 30: 275, 1967 (Miller 1967). Bas.: *Lophocolea greenwelliae* H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 504, 1963 (Miller 1963).
** *Chiloscyphus hookeri* J.J.Engel, J. Hattori Bot. Lab. 36: 150, 1972 [1973] (Engel 1972).
* *Chiloscyphus hookeri* var. *constantifolius* J.J.Engel, J. Hattori Bot. Lab. 36: 155, 1972 [1973] (Engel 1972).
** *Chiloscyphus integerrimus* Schiffn., Hep. Fl. Buitenzorg: 197, 1900 (Schiffner 1900a).
** *Chiloscyphus kehdingianus* (Steph.) N.Kitag., Hikobia, Suppl. 1: 68, 1981 (Kitagawa 1981a). Bas.: *Lophocolea kehdingiana* Steph., Sp. Hepat. (Stephani) 6: 278, 1922 (Stephani 1922).
** *Chiloscyphus kilauensis* Steph., Sp. Hepat. (Stephani) 6: 309, 1922 (Stephani 1922).
** *Chiloscyphus koeppensis* (Gottsche) Steph., Bull. Herb. Boissier (sér. 2) 8 (2): 139 (255), 1908 (Stephani 1908i). Bas.: *Jungermannia koeppensis* Gottsche, Int. Polarforsch., Deutsch. Exped. 2: 452, 1890 (Gottsche 1890).

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133 *Chiloscyphus* is here treated in a very narrow sense (cf. Söderström et al. 2013b), but a large number of species remain to be assigned to other genera. It is unclear if the taxa included here belong to *Cryptolophocolea*, *Lophocolea* or some other genus in Lophocoleaceae.

134 *Chiloscyphus bifidus* is possibly conspecific with *Heteroscyphus aselliformis* (Schiffner 1900a).

135 *Chiloscyphus durus* is conspecific with *Leptoscyphus expansus* in Grolle (1962a), but it probably belongs to one of its segregates. It was accepted by Hässel (1999).

** *Chiloscyphus laceratus* Steph., Sp. Hepat. (Stephani) 6: 310, 1922 (Stephani 1922).
** *Chiloscyphus lambertonii* H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 506, 1963 (Miller 1963).
** *Chiloscyphus latistipus* Steph., Sp. Hepat. (Stephani) 6: 309, 1922 (Stephani 1922).
** *Chiloscyphus lepervanchei* (Steph.) J.J.Engel et R.M.Schust., Nova Hedwigia 39: 418, 1984 [1985] (Engel and Schuster 1984). Bas.: *Lophocolea lepervanchei* Steph., Bull. Herb. Boissier (sér. 2) 7 (4): 310 (174), 1907 (Stephani 1907d).
** *Chiloscyphus longifissus* Steph., Sp. Hepat. (Stephani) 6: 310, 1922 (Stephani 1922).
** *Chiloscyphus propagulifer* Schiffn., Hep. Fl. Buitenzorg: 208, 1900 (Schiffner 1900a).
** *Chiloscyphus purpureus* Steph., Sp. Hepat. (Stephani) 6: 312, 1922 (Stephani 1922).
** *Chiloscyphus quadricilius* Steph., Sp. Hepat. (Stephani) 6: 312, 1922 (Stephani 1922).
*** *Chiloscyphus quadridentatus* (Spruce) J.J.Engel et R.M.Schust., Nova Hedwigia 39: 422, 1984 [1985] (Engel and Schuster 1984). Bas.: *Lophocolea quadridentata* Spruce, Mem. Torrey Bot. Club 1 (3): 137, 1890 (Spruce 1890).
** *Chiloscyphus rotundifolius* Mitt., Rep. Challenger, Bot. 1 (3, 1): 85, 1884 (Mitten 1884b).
** *Chiloscyphus rotundiphyllus* H.A.Mill., Phytologia 47 (4): 321, 1981 (Miller 1981). *Nom. nov. pro Chiloscyphus rotundifolius* Steph., Sp. Hepat. (Stephani) 6: 313, 1922 (Stephani 1922), *nom. illeg*.
** *Chiloscyphus scaberulus* Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: cc, 1889 [1890] (Spruce 1889).
** *Chiloscyphus septatus* J.J.Engel, Fieldiana, Bot. (n.ser.) 48: 125, 2010 (Engel 2010).
** *Chiloscyphus similis* Steph., Rev. Bryol. 35 (2): 28, 1908 (Stephani 1908l).
** *Chiloscyphus skottsbergianus* H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 508, 1963 (Miller 1963).
** *Chiloscyphus subacuminatus* Herzog, Ark. Bot. (n.ser.) 3 (3): 49, 1953 (Herzog 1953a).
** *Chiloscyphus subsimilis* Steph., Sp. Hepat. (Stephani) 6: 314, 1922 (Stephani 1922).
* *Chiloscyphus tridens* Steph., Sp. Hepat. (Stephani) 6: 315, 1922 (Stephani 1922).
** *Chiloscyphus trigonifolius* Steph., Sp. Hepat. (Stephani) 6: 316, 1922 (Stephani 1922).
* *Chiloscyphus venustulus* Colenso, Trans. & Proc. New Zealand Inst. 21: 60, 1889 (Colenso 1889).

** ***Clasmatocolea* Spruce**, Trans. & Proc. Bot. Soc. Edinburgh 15: 440, 1885 (Spruce 1885). [136]
*** *Clasmatocolea bisexualis* Glenny et J.J.Engel, New Zealand J. Bot. 51 (1): 23, 2013 (Glenny and Engel 2013).
*** *Clasmatocolea crassiretis* (Herzog) Grolle, Nova Acta Leop. (n.ser.) 25 (161): 69, 1962 [1963] (Grolle 1962a). Bas.: *Lophocolea crassiretis* Herzog, Trans. & Proc. Roy. Soc. New Zealand 65 (3): 354, 1936 (Herzog 1936b).
*** *Clasmatocolea ctenophylla* (Schiffn.) Grolle, Rev. Bryol. Lichénol. 29 (1/2): 71, 1960 (Grolle 1960c). Bas.: *Lophocolea ctenophylla* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 12, 1890 (Schiffner 1890).

136 *Clasmatocolea* is here treated without subdivisions although Engel (1980a, 2015) did so.

*** *Clasmatocolea cucullistipula* (Steph.) Grolle, Rev. Bryol. Lichénol. 29 (1/2): 71, 1960 (Grolle 1960c). Bas.: *Lophocolea cucullistipula* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 6): 37, 1900 (Stephani 1900b).

*** *Clasmatocolea fasciculata* (Nees) Grolle, Rev. Bryol. Lichénol. 29 (1/2): 72, 1960 (Grolle 1960c). Bas.: *Jungermannia fasciculata* Nees, Horae Phys. Berol.: 46, 1820 (Nees 1820).

*** *Clasmatocolea fulvella* (Hook.f. et Taylor) Grolle, Rev. Bryol. Lichénol. 29 (1/2): 72, 1960 (Grolle 1960c). Bas.: *Jungermannia fulvella* Hook.f. et Taylor, London J. Bot. 3: 464, 1844 (Hooker and Taylor 1844b).

*** *Clasmatocolea gayana* (Mont.) Grolle, Rev. Bryol. Lichénol. 29 (1/2): 72, 1960 (Grolle 1960c). Bas.: *Jungermannia gayana* Mont., Ann. Sci. Nat. Bot. (sér. 3) 4: 349, 1845 (Montagne 1845b).

*** *Clasmatocolea humilis* (Hook.f. et Taylor) Grolle, Rev. Bryol. Lichénol. 29 (1/2): 72, 1960 (Grolle 1960c). Bas.: *Jungermannia humilis* Hook.f. et Taylor, London J. Bot. 3: 468, 1844 (Hooker and Taylor 1844b).

*** *Clasmatocolea humilis* var. *polymorpha* J.J.Engel, Phytologia 41 (5): 309, 1979 (Engel 1979a).

*** *Clasmatocolea humilis* var. *suspecta* (C.Massal.) J.J.Engel, Phytologia 41 (5): 309, 1979 (Engel 1979a). Bas.: *Lophocolea puccioana* β *suspecta* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 228, 1885 (Massalongo 1885).

*** *Clasmatocolea inflexispina* (Hook.f. et Taylor) J.J.Engel, Bryologist 94 (4): 436, 1991 (Engel 1991b). Bas.: *Jungermannia inflexispina* Hook.f. et Taylor, London J. Bot. 4: 82, 1845 (Hooker and Taylor 1845).

*** *Clasmatocolea marginata* (Steph.) Grolle, Nova Acta Leop. (n.ser.) 25 (161): 73, 1962 [1963] (Grolle 1962a). Bas.: *Leioscyphus marginatus* Steph., Bull. Herb. Boissier (sér. 2) 6 (3): 223 (23), 1906 (Stephani 1906g).

*** *Clasmatocolea minutiretis* J.J.Engel et Grolle, Phytologia 41 (5): 309, 1979 (Engel 1979a).

*** *Clasmatocolea moniliformis* J.J.Engel, Phytologia 41 (5): 310, 1979 (Engel 1979a).

*** *Clasmatocolea navistipula* (Steph.) Grolle, Feddes Repert. 82 (1): 88, 1971 (Grolle 1971b). Bas.: *Lophocolea navistipula* Steph., Bull. Herb. Boissier (sér. 2) 6 (7): 543 (57), 1906 (Stephani 1906f).

*** *Clasmatocolea navistipula* var. *parceramosa* J.J.Engel, Phytologia 41 (5): 311, 1979 (Engel 1979a).

*** *Clasmatocolea notophylla* (Hook.f. et Taylor) Grolle, J. Jap. Bot. 41 (8): 228, 1966 (Grolle 1966d). Bas.: *Jungermannia notophylla* Hook.f. et Taylor, London J. Bot. 3: 376, 1844 (Hooker and Taylor 1844a).

*** *Clasmatocolea obvoluta* (Hook.f. et Taylor) Grolle, Rev. Bryol. Lichénol. 29 (1/2): 72, 1960 (Grolle 1960c). Bas.: *Jungermannia obvoluta* Hook.f. et Taylor, London J. Bot. 4: 80, 1845 (Hooker and Taylor 1845).

*** *Clasmatocolea obvoluta* var. *cookiana* (C.Massal.) J.J.Engel, Phytologia 41 (5): 311, 1979 (Engel 1979a). Bas.: *Lophocolea cookiana* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 224, 1885 (Massalongo 1885).

*** *Clasmatocolea puccioana* (De Not.) Grolle, Rev. Bryol. Lichénol. 29 (1/2): 72, 1960 (Grolle 1960c). Bas.: *Jungermannia puccioana* De Not., Mem. Reale Accad. Sci. Torino (ser. 2) 16: 221, 1857 (De Notaris 1857).

*** *Clasmatocolea rigens* (Hook.f. et Taylor) J.J.Engel, J. Hattori Bot. Lab. 36: 156, 1972 [1973] (Engel 1972). Bas.: *Jungermannia rigens* Hook.f. et Taylor, London J. Bot. 3: 461, 1844 (Hooker and Taylor 1844b).

*** *Clasmatocolea strongylophylla* (Hook.f. et Taylor) Grolle, Rev. Bryol. Lichénol. 29 (1/2): 73, 1960 (Grolle 1960c). Bas.: *Jungermannia strongylophylla* Hook.f. et Taylor, London J. Bot. 3: 370, 1844 (Hooker and Taylor 1844a).

*** *Clasmatocolea trachyopa* (Hook.f. et Taylor) Grolle, Rev. Bryol. Lichénol. 29 (1/2): 73, 1960 (Grolle 1960c). Bas.: *Jungermannia trachyopa* Hook.f. et Taylor, London J. Bot. 3: 471, 1844 (Hooker and Taylor 1844b).

*** *Clasmatocolea vermicularis* (Lehm.) Grolle, Rev. Bryol. Lichénol. 29 (1/2): 78, 1960 (Grolle 1960c). Bas.: *Jungermannia vermicularis* Lehm., Linnaea 4: 361, 1829 (Lehmann 1829).

*** *Clasmatocolea verrucosa* J.J.Engel, Bryologist 83 (2): 220, 1980 (Engel 1980b).

*** ***Conoscyphus* Mitt.**, Fl. vit.: 404, 1871 [1873] (Mitten 1871).

** *Conoscyphus koponenii* Piippo, Mamontov et Potemkin, Acta Bryolichenol. Asiat. 5: 20, 2014 (Piippo et al. 2014).

*** *Conoscyphus trapezioides* (Sande Lac.) Schiffn., Consp. Hepat. Arch. Ind.: 125, 1898 (Schiffner 1898b). Bas.: *Chiloscyphus trapezioides* Sande Lac., Ned. Kruidk. Arch. 3: 417, 1854 [1855] (Sande Lacoste 1854).

*** ***Cryptolophocolea* L.Söderstr., Crand.-Stotl., Stotler et Váňa**, Phytotaxa 97 (2): 39, 2013 (Söderström et al. 2013b). Based on: *Plagiochila* sect. *Connatae* Lindenb., Monogr. hep. gen. Plagiochilae: xxix, 1844 [1843] (Lindenberg 1844).

*** *Cryptolophocolea aculeata* (Mitt.) L.Söderstr., Phytotaxa 112 (1): 21, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus aculeatus* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 140, 1854 (Mitten 1854).

** *Cryptolophocolea chiloscyphoidea* (Lindenb.) L.Söderstr. et Crand.-Stotl., Phytotaxa 112 (1): 18, 2013 (Söderström et al. 2013f). Bas.: *Plagiochila chiloscyphoidea* Lindenb., Nov. Stirp. Pug. 8: 4, 1844 (Lehmann 1844).

*** *Cryptolophocolea ciliolata* (Nees) L.Söderstr., Crand.-Stotl., Stotler et Váňa, Phytotaxa 97 (2): 39, 2013 (Söderström et al. 2013b). Bas.: *Jungermannia ciliolata* Nees, Enum. Pl. Crypt. Javae: 68, 1830 (Nees 1830).

** *Cryptolophocolea compacta* (Mitt.) L.Söderstr., Phytotaxa 112 (1): 19, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea compacta* Mitt., Trans. Linn. Soc. London, Bot. 3 (3): 198, 1891 (Mitten 1891).

*** *Cryptolophocolea connata* (Sw.) L.Söderstr. et Váňa, Phytotaxa 112 (1): 19, 2013 (Söderström et al. 2013f). Bas.: *Jungermannia connata* Sw., Prodr. (Swartz): 143, 1788 (Swartz 1788).

*** *Cryptolophocolea connatifolia* (J.J.Engel) L.Söderstr., Phytotaxa 112 (1): 21, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus connatifolius* J.J.Engel, Phytologia 83 (1): 42, 1997 [1998] (Engel 1997).

*** *Cryptolophocolea costata* (Nees) L.Söderstr., Phytotaxa 112 (1): 19, 2013 (Söderström et al. 2013f). Bas.: *Jungermannia costata* Nees, Enum. Pl. Crypt. Javae: 69, 1830 (Nees 1830).

*** *Cryptolophocolea edentata* (J.J.Engel) L.Söderstr., Phytotaxa 112 (1): 21, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus edentatus* J.J.Engel, Phytologia 83 (1): 43, 1997 [1998] (Engel 1997).

** *Cryptolophocolea explanata* (Mitt.) Váňa et Crand.-Stotl., Phytotaxa 202 (1): 69, 2015 (Söderström et al. 2015c). Bas.: *Lophocolea explanata* Mitt., Fl. vit.: 404, 1871 [1873] (Mitten 1871).

** *Cryptolophocolea fleischeri* (Steph.) L.Söderstr., Phytotaxa 112 (1): 21, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea fleischeri* Steph., Bull. Herb. Boissier (sér. 2) 6 (11): 952 (132), 1906 (Stephani 1906c).

*** *Cryptolophocolea guadalupensis* (Steph.) L.Söderstr. et Váňa, Phytotaxa 112 (1): 19, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea guadalupensis* Steph., Bull. Herb. Boissier (sér. 2) 7 (1): 65 (153), 1907 (Stephani 1907c).

*** *Cryptolophocolea helmsiana* (Steph.) L.Söderstr., Phytotaxa 112 (1): 19, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea helmsiana* Steph., Bull. Herb. Boissier (sér. 2) 6 (9): 794 (94), 1906 (Stephani 1906e).

*** *Cryptolophocolea leucophylla* (Hook.f. et Taylor) L.Söderstr., Phytotaxa 112 (1): 19, 2013 (Söderström et al. 2013f). Bas.: *Jungermannia leucophylla* Hook.f. et Taylor, London J. Bot. 3: 384, 1844 (Hooker and Taylor 1844a).

* *Cryptolophocolea levieri* (Schiffn.) L.Söderstr., Phytotaxa 112 (1): 21, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea levieri* Schiffn., Hep. Fl. Buitenzorg: 182, 1900 (Schiffner 1900a). [137]

* *Cryptolophocolea lilliena* (Steph.) L.Söderstr., Phytotaxa 112 (1): 21, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea lilliena* Steph., Sp. Hepat. (Stephani) 6: 282, 1922 (Stephani 1922). [138]

*** *Cryptolophocolea martiana* (Nees) L.Söderstr., Crand.-Stotl. et Stotler, Phytotaxa 112 (1): 20, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea martiana* Nees, Syn. Hepat. 2: 152, 1845 (Gottsche et al. 1845a).

** *Cryptolophocolea martiana* subsp. *bidentula* (Nees) L.Söderstr., Crand.-Stotl. et Stotler, Phytotaxa 112 (1): 20, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus bidentulus* Nees, Syn. Hepat. 2: 181, 1845 (Gottsche et al. 1845a).

** *Cryptolophocolea martiana* var. *perissodonta* (Spruce) Gradst., Phytoneuron 2015 (22): 1, 2015 (Bernal et al. 2015). Bas.: *Lophocolea martiana* var. *perissodonta* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 432, 1885 (Spruce 1885).

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137 *Cryptolophocolea levieri* is possibly conspecific with *Cryptolophocolea ciliolata* (Söderström et al. 2010a).

138 *Cryptolophocolea lilliena* is possibly conspecific with *Cryptolophocolea martiana* (Wigginton and Grolle 1996).

* *Cryptolophocolea massalongoana* (Schiffn.) L.Söderstr., Phytotaxa 112 (1): 20, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea massalongoana* Schiffn., Hep. Fl. Buitenzorg: 183, 1900 (Schiffner 1900a). [139]

*** *Cryptolophocolea mitteniana* (Colenso) L.Söderstr., Phytotaxa 112 (1): 21, 2013 (Söderström et al. 2013f). Bas.: *Isotachis mitteniana* Colenso, Trans. & Proc. New Zealand Inst. 21: 69, 1889 (Colenso 1889).

*** *Cryptolophocolea mitteniana* var. *obtusa* (J.J.Engel) L.Söderstr., Phytotaxa 112 (1): 21, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus mittenianus* var. *obtusus* J.J.Engel, Phytologia 83 (1): 44, 1997 [1998] (Engel 1997).

*** *Cryptolophocolea mitteniana* var. *symmetrica* (J.J.Engel) L.Söderstr., Phytotaxa 112 (1): 22, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus mittenianus* var. *symmetricus* J.J.Engel, Phytologia 83 (1): 44, 1997 [1998] (Engel 1997).

*** *Cryptolophocolea pallida* (Mitt.) L.Söderstr., Phytotaxa 112 (1): 22, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea pallida* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 135, 1854 (Mitten 1854).

** *Cryptolophocolea pallidovirens* (Hook.f. et Taylor) L.Söderstr., Phytotaxa 112 (1): 20, 2013 (Söderström et al. 2013f). Bas.: *Jungermannia pallidovirens* Hook.f. et Taylor, London J. Bot. 3: 473, 1844 (Hooker and Taylor 1844b).

* *Cryptolophocolea proteus* (Herzog) L.Söderstr., Phytotaxa 112 (1): 22, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea proteus* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 164, 1955 (Herzog 1955).

* *Cryptolophocolea pycnophylla* (Spruce) L.Söderstr., Phytotaxa 112 (1): 22, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea pycnophylla* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 434, 1885 (Spruce 1885).

*** *Cryptolophocolea regularis* (Steph.) L.Söderstr., Phytotaxa 112 (1): 23, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus regularis* Steph., Hedwigia 32 (5): 325, 1893 (Stephani 1893d).

*** *Cryptolophocolea spinifera* (Hook.f. et Taylor) L.Söderstr., Phytotaxa 112 (1): 20, 2013 (Söderström et al. 2013f). Bas.: *Jungermannia spinifera* Hook.f. et Taylor, London J. Bot. 3: 381, 1844 (Hooker and Taylor 1844a).

* *Cryptolophocolea stephanii* (Schiffn.) L.Söderstr., Phytotaxa 112 (1): 23, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea stephanii* Schiffn., Hep. Fl. Buitenzorg: 181, 1900 (Schiffner 1900a). [140]

*** *Cryptolophocolea subopposita* (J.J.Engel) L.Söderstr., Phytotaxa 112 (1): 23, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus suboppositus* J.J.Engel, Phytologia 83 (1): 45, 1997 [1998] (Engel 1997).

* *Cryptolophocolea thermarum* (Schiffn.) L.Söderstr., Phytotaxa 112 (1): 23, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea thermarum* Schiffn., Hep. Fl. Buitenzorg: 180, 1900 (Schiffner 1900a). [141]

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139 *Cryptolophocolea massalongoana* is possibly conspecific with *Cryptolophocolea costata* (Piippo 1985a).

140 *Cryptolophocolea stephanii* is doubtfully distinct from *Cryptolophocolea ciliolata* (Söderström et al. 2010a).

141 *Cryptolophocolea thermarum* is possibly conspecific with *Cryptolophocolea ciliolata* (Söderström et al. 2010a).

*** *Cryptolophocolea trialata* (Gottsche) L.Söderstr., Phytotaxa 112 (1): 23, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea trialata* Gottsche, Linnaea 28 (5): 552, 1856 [1857] (Gottsche 1856).

** *Cryptolophocolea tricorata* (Hässel) Crand.-Stotl. et Stotler, Phytotaxa 112 (1): 23, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus tricoratus* Hässel, Nova Hedwigia 70 (3/4): 456, 2000 (Hässel 2000).

*** *Cryptolophocolea tuberculata* (J.J.Engel) L.Söderstr., Phytotaxa 112 (1): 23, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus tuberculatus* J.J.Engel, Phytologia 83 (1): 45, 1997 [1998] (Engel 1997).

* *Cryptolophocolea whittieriana* (Inoue et H.A.Mill.) L.Söderstr., Phytotaxa 112 (1): 24, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea whittieriana* Inoue et H.A.Mill., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 8 (2): 143, 1965 (Inoue and Miller 1965). [142]

*** ***Deceptifrons* J.J.Engel et Váňa**, Mem. New York Bot. Gard. 105: 54, 2013 (Váňa and Engel 2013).

*** *Deceptifrons plagiochiloides* J.J.Engel et Váňa, Mem. New York Bot. Gard. 105: 54, 2013 (Váňa and Engel 2013).

*** ***Evansianthus* R.M.Schust. et J.J.Engel**, Bryologist 76 (4): 516, 1973 (Schuster and Engel 1973).

*** *Evansianthus georgiensis* (Gottsche) R.M.Schust. et J.J.Engel, Bryologist 76 (4): 518, 1973 (Schuster and Engel 1973). Bas.: *Lophocolea georgiensis* Gottsche, Int. Polarforsch., Deutsch. Exped. 2: 453, 1890 (Gottsche 1890).

*** ***Hepatostolonophora* J.J.Engel et R.M.Schust.**, J. Hattori Bot. Lab. 46: 91, 1979 (Engel 1979b). *Nom. nov. pro Stolonophora* J.J.Engel et R.M.Schust., Fieldiana, Bot. 36 (11): 111, 1975 (Engel and Schuster 1975).

*** *Hepatostolonophora abnormis* (Besch. et C.Massal.) J.J.Engel et R.M.Schust., J. Hattori Bot. Lab. 46: 94, 1979 (Engel 1979b). Bas.: *Leioscyphus abnormis* Besch. et C.Massal., Bull. Mens. Soc. Linn. Paris 1 (79): 629, 1886 (Bescherelle and Massalongo 1886).

** *Hepatostolonophora conica* (Steph.) Hässel, Bol. Soc. Argent. Bot. 22 (1/4): 123, 1983 (Hässel 1983). Bas.: *Plagiochila conica* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 28, 1911 (Stephani 1911b).

*** *Hepatostolonophora paucistipula* (Rodway) J.J.Engel, J. Hattori Bot. Lab. 46: 103, 1979 (Engel 1979b). Bas.: *Lophocolea paucistipula* Rodway, Pap. & Proc. Roy. Soc. Tasmania 1916: 46, 1917 (Rodway 1917a).

*** *Hepatostolonophora rotata* (Hook.f. et Taylor) J.J.Engel, J. Hattori Bot. Lab. 46: 98, 1979 (Engel 1979b). Bas.: *Jungermannia rotata* Hook.f. et Taylor, London J. Bot. 3: 560, 1844 (Hooker and Taylor 1844d).

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142 *Cryptolophocolea whittieriana* is possibly conspecific with *Cryptolophocolea helmsiana* (Hodgson 1967).

*** *Hepatostolonophora rotata* var. *perssonii* (R.M.Schust.) J.J.Engel, J. Hattori Bot. Lab. 46: 103, 1979 (Engel 1979b). Bas.: *Calyptrocolea perssonii* R.M.Schust., Rev. Bryol. Lichénol. 34 (3/4): 699, 1966 [1967] (Schuster 1966a).

*** ***Heteroscyphus* Schiffn.**, Österr. Bot. Z. 60 (5): 171, 1910 (Schiffner 1910a) nom. conserv.

** *Heteroscyphus acutangulus* (Schiffn.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus acutangulus* Schiffn., Hep. Fl. Buitenzorg: 200, 1900 (Schiffner 1900a).

** *Heteroscyphus allodontus* (Hook.f. et Taylor) J.J.Engel et R.M.Schust., Nova Hedwigia 39: 399, 1984 [1985] (Engel and Schuster 1984). Bas.: *Jungermannia allodonta* Hook.f. et Taylor, London J. Bot. 3: 382, 1844 (Hooker and Taylor 1844a).

** *Heteroscyphus amboinensis* (Schiffn.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus endlicherianus* var. *amboinensis* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 15, 1890 (Schiffner 1890).

** *Heteroscyphus ammophilus* (Colenso) R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 248, 1980 (Schuster 1980c). Bas.: *Chiloscyphus ammophilus* Colenso, Trans. & Proc. New Zealand Inst. 21: 59, 1889 (Colenso 1889).

** *Heteroscyphus ammophilus* var. *obtusifolius* J.J.Engel et G.L.Merr., Nova Hedwigia 99 (1/2): 158, 2014 (Engel 2014).

*** *Heteroscyphus argutus* (Reinw., Blume et Nees) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Jungermannia arguta* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 206, 1824 [1825] (Reinwardt et al. 1824a).

** *Heteroscyphus argutus* var. *brevidens* (Schiffn.) Herzog et Nog., J. Hattori Bot. Lab. 14: 40, 1955 (Herzog and Noguchi 1955). Bas.: *Chiloscyphus argutus* var. *brevidens* Schiffn., Hep. Fl. Buitenzorg: 195, 1900 (Schiffner 1900a).

*** *Heteroscyphus aselliformis* (Reinw., Blume et Nees) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Jungermannia aselliformis* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 412, 1824 [1825] (Reinwardt et al. 1824b).

** *Heteroscyphus assurgentifolius* J.J.Engel, Nova Hedwigia 99 (1/2): 158, 2014 (Engel 2014).

** *Heteroscyphus baduinus* (Nees) Schiffn., Österr. Bot. Z. 60 (5): 171, 1910 (Schiffner 1910a). Bas.: *Jungermannia baduina* Nees, Enum. Pl. Crypt. Javae: 26, 1830 (Nees 1830).

** *Heteroscyphus balnetii* (Herzog) Grolle, Acta Bot. Fenn. 125: 68, 1984 (Grolle and Piippo 1984). Bas.: *Chiloscyphus balnetii* Herzog, Ann. Bryol. 5: 89, 1932 (Herzog 1932a).

*** *Heteroscyphus billardierei* (Schwägr.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Jungermannia billardierei* Schwägr., Hist. Musc. Hepat. Prodr.: 19, 1814 (Schwägrichen 1814).

** *Heteroscyphus billardierei* var. *clasmatocoleoides* (J.J.Engel et G.L.Merr.) J.J.Engel, Nova Hedwigia 100 (3/4): 565, 2015 (Engel 2015a). Bas.: *Heteroscyphus circum-*

dentatus var. *clasmatocoleoides* J.J.Engel et G.L.Merr., Polish Bot. J. 58 (1): 95, 2013 (Engel 2013b).

** *Heteroscyphus brassii* (Grolle) Grolle, Acta Bot. Fenn. 125: 68, 1984 (Grolle and Piippo 1984). Bas.: *Chiloscyphus brassii* Grolle, J. Hattori Bot. Lab. 31: 2, 1968 (Grolle 1968a).

* *Heteroscyphus caesius* (Schiffn.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus caesius* Schiffn., Hep. Fl. Buitenzorg: 207, 1900 (Schiffner 1900a). [143]

* *Heteroscyphus caledonicus* (Steph.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus caledonicus* Steph., Bull. Herb. Boissier (sér. 2) 7 (10): 844 (216), 1907 (Stephani 1907b). [144]

** *Heteroscyphus chlorophyllus* (Hook.f. et Taylor) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Jungermannia chlorophylla* Hook.f. et Taylor, London J. Bot. 3: 562, 1844 (Hooker and Taylor 1844d).

** *Heteroscyphus ciliatus* (Steph.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus ciliatus* Steph., Hedwigia 32 (5): 320, 1893 (Stephani 1893d).

*** *Heteroscyphus coalitus* (Hook.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Jungermannia coalita* Hook., Musci Exot. 2: tab. 123, 1820 (Hooker 1820).

** *Heteroscyphus coalitus* var. *simplicifolius* J.J.Engel, Nova Hedwigia 100 (3/4): 572, 2015 (Engel 2015a).

** *Heteroscyphus combinatus* (Nees) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Jungermannia combinata* Nees, Enum. Pl. Crypt. Javae: 22, 1830 (Nees 1830).

*** *Heteroscyphus conjugatus* (Mitt.) J.J.Engel et R.M.Schust., Nova Hedwigia 39: 399, 1984 [1985] (Engel and Schuster 1984). Bas.: *Chiloscyphus conjugatus* Mitt., Bot. antarct. voy. III (Fl. Tasman. 2): 227, 1860 (Mitten 1860b).

*** *Heteroscyphus contortuplicatus* (Nees et Mont.) Grolle, J. Hattori Bot. Lab. 55: 504, 1984 (Grolle 1984a). Bas.: *Jungermannia contortuplicata* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 54, 1836 (Nees and Montagne 1836).

*** *Heteroscyphus cuneistipulus* (Steph.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus cuneistipulus* Steph., Hedwigia 32 (5): 322, 1893 (Stephani 1893d).

** *Heteroscyphus darjeelingensis* A.Srivast. et S.C.Srivast., Indian Geocalyc.: 115, 2002 (Srivastava and Srivastava 2002).

** *Heteroscyphus deceptifrons* J.J.Engel, Nova Hedwigia 99 (1/2): 162, 2014 (Engel 2014).

*** *Heteroscyphus dentammophilus* J.J.Engel et G.L.Merr., Polish Bot. J. 58 (1): 96, 2013 (Engel 2013b).

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143 *Heteroscyphus caesius* is possibly conspecific with *Heteroscyphus splendens* (Söderström et al. 2010a).

144 *Heteroscyphus caledonicus* is possibly conspecific with *Heteroscyphus amboinensis* Miller et al. (1983) with a question mark.

** *Heteroscyphus denticulatus* (Mitt.) Schiffn., Beih. Bot. Centralbl. 29: 106, 1912 (Schiffner 1912c). Bas.: *Chiloscyphus denticulatus* Mitt., Nat. hist. Azores: 320, 1870 (Mitten 1870).

** *Heteroscyphus deplanchei* (Steph.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus deplanchei* Steph., Bull. Herb. Boissier (sér. 2) 7 (8): 693 (203), 1907 (Stephani 1907e).

** *Heteroscyphus diestianus* (Sande Lac.) Piippo, Acta Bot. Fenn. 131: 165, 1985 (Piippo 1985a). Bas.: *Chiloscyphus diestianus* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 296, 1864 (Sande Lacoste 1864).

** *Heteroscyphus divergenticiliatus* (Steph.) Fulford, Mem. New York Bot. Gard. 11 (4): 501, 1976 (Fulford 1976). Bas.: *Lophocolea divergenticiliata* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 6): 38, 1900 (Stephani 1900b).

** *Heteroscyphus dubius* (Gottsche) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus dubius* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 346, 1882 (Gottsche 1882).

*** *Heteroscyphus echinellus* (Lindenb. et Gottsche) J.J.Engel et Xiao L.He, Bryologist 113 (1): 155, 2010 (Engel and He 2010). Bas.: *Lophocolea echinella* Lindenb. et Gottsche, Syn. Hepat. 5: 703, 1847 (Gottsche et al. 1847).

** *Heteroscyphus echinellus* var. *hyalinus* J.J.Engel, Bryologist 113 (1): 161, 2010 (Engel and He 2010).

** *Heteroscyphus elliottii* (Steph.) Pagán, Bryologist 42 (1): 7, 1939 (Pagán 1939a). Bas.: *Chiloscyphus elliottii* Steph., Bull. Herb. Boissier (sér. 2) 8 (1): 55 (231), 1908 (Stephani 1908k).

* *Heteroscyphus elliottii* var. *portoricensis* Fulford, Mem. New York Bot. Gard. 11 (4): 489, 1976 (Fulford 1976).

* *Heteroscyphus falcifolius* (Steph.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus falcifolius* Steph., Bull. Herb. Boissier (sér. 2) 7 (8): 698 (208), 1907 (Stephani 1907e).

*** *Heteroscyphus fissistipus* (Hook.f. et Taylor) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Jungermannia fissistipa* Hook.f. et Taylor, London J. Bot. 3: 384, 1844 (Hooker and Taylor 1844a).

** *Heteroscyphus fissistipus* var. *multispinus* (E.A.Hodgs. et Allison) J.J.Engel, Nova Hedwigia 99 (1/2): 165, 2014 (Engel 2014). Bas.: *Chiloscyphus multispinus* E.A.Hodgs. et Allison, Trans. & Proc. Roy. Soc. New Zealand 73 (1): 37, 1943 (Hodgson 1943).

** *Heteroscyphus fissistipus* var. *repandus* J.J.Engel, Nova Hedwigia 99 (1/2): 165, 2014 (Engel 2014).

** *Heteroscyphus flaccidus* (Mitt.) A.Srivast. et S.C.Srivast., Indian Geocalyc.: 85, 2002 (Srivastava and Srivastava 2002). Bas.: *Lophocolea flaccida* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 99, 1860 [1861] (Mitten 1860c).

** *Heteroscyphus fleischeri* (Steph.) D.G.Long et Rubas., Ceylon J. Sci., Biol. Sci. 43 (1): 26, 2014 (Long and Rubasinghe 2014). Bas.: *Chiloscyphus fleischeri* Steph., Sp. Hepat. (Stephani) 6: 306, 1922 (Stephani 1922).

* *Heteroscyphus fragilicilius* (Schiffn.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus fragilicilius* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 70: 210, 1900 [1901] (Schiffner 1900c).

** *Heteroscyphus furcistipulus* (E.A.Hodgs.) J.J.Engel et R.M.Schust., Nova Hedwigia 39: 400, 1984 [1985] (Engel and Schuster 1984). Bas.: *Chiloscyphus furcistipulus* E.A.Hodgs., Trans. Roy. Soc. New Zealand, Bot. 3 (4): 79, 1965 (Hodgson 1965).

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** *Heteroscyphus grandistipus* (Steph.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus grandistipus* Steph., Bot. Gaz. 15 (11): 283, 1890 (Stephani 1890c).

** *Heteroscyphus gunnianus* (Mitt.) J.J.Engel et R.M.Schust., Nova Hedwigia 39: 400, 1984 [1985] (Engel and Schuster 1984). Bas.: *Chiloscyphus gunnianus* Mitt., Bot. antarct. voy. III (Fl. Tasman. 2): 228, 1860 (Mitten 1860b).

** *Heteroscyphus hastatus* (E.A.Hodgs.) J.J.Engel et R.M.Schust., Nova Hedwigia 39: 400, 1984 [1985] (Engel and Schuster 1984). Bas.: *Chiloscyphus hastatus* E.A.Hodgs., Trans. Roy. Soc. New Zealand, Bot. 3 (11): 181, 1967 (Hodgson 1967).

** *Heteroscyphus hebridensis* (Steph.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus hebridensis* Steph., Hedwigia 32 (5): 323, 1893 (Stephani 1893d).

** *Heteroscyphus heterophyllus* (Steph.) J.J.Engel et R.M.Schust., Nova Hedwigia 39: 400, 1984 [1985] (Engel and Schuster 1984). Bas.: *Chiloscyphus heterophyllus* Steph., Sp. Hepat. (Stephani) 6: 308, 1922 (Stephani 1922).

** *Heteroscyphus hyalinus* (Steph.) A.Srivast. et S.C.Srivast., Indian Geocalyc.: 118, 2002 (Srivastava and Srivastava 2002). Bas.: *Lophocolea hyalina* Steph., Bull. Soc. Roy. Bot. Belgique 38 (1): 46, 1899 (Stephani 1899h).

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** *Heteroscyphus limosus* (Carrington et Pearson) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus limosus* Carrington et Pearson, Pap. & Proc. Roy. Soc. Tasmania 1887: 6, 1888 (Carrington and Pearson 1888b).

** *Heteroscyphus lingulatus* (Colenso) J.J.Engel et R.M.Schust., Nova Hedwigia 39: 400, 1984 [1985] (Engel and Schuster 1984). Bas.: *Chiloscyphus lingulatus* Colenso, Trans. & Proc. New Zealand Inst. 21: 61, 1889 (Colenso 1889).

** *Heteroscyphus lophocoleoides* S.Hatt., Bull. Tokyo Sci. Mus. 11: 45, 1944 (Hattori 1944d).

*** *Heteroscyphus lyallii* (Mitt.) R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 248, 1980 (Schuster 1980c). Bas.: *Chiloscyphus lyallii* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 140, 1854 (Mitten 1854).

*** *Heteroscyphus magellanicus* (Steph.) J.J.Engel et R.M.Schust., Nova Hedwigia 39: 400, 1984 [1985] (Engel and Schuster 1984). Bas.: *Chiloscyphus magellanicus* Steph., Bull. Herb. Boissier (sér. 2) 8 (2): 140 (256), 1908 (Stephani 1908i).

** *Heteroscyphus mamillatus* Piippo, Nova Hedwigia 56 (3/4): 360, 1993 (Piippo 1993a).

** *Heteroscyphus marginatus* (Steph.) Fulford, Mem. New York Bot. Gard. 11 (4): 491, 1976 (Fulford 1976). Bas.: *Lophocolea marginata* Steph., Sp. Hepat. (Stephani) 6: 282, 1922 (Stephani 1922).

*** *Heteroscyphus menziesii* (Mitt.) J.J.Engel, Polish Bot. J. 58 (1): 99, 2013 (Engel 2013b). Bas.: *Chiloscyphus menziesii* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 139, 1854 (Mitten 1854).

** *Heteroscyphus merapiensis* (Steph.) Piippo, Ann. Bot. Fenn. 30 (3): 200, 1993 (Piippo 1993c). Bas.: *Chiloscyphus merapiensis* Steph., Sp. Hepat. (Stephani) 6: 311, 1922 (Stephani 1922).

** *Heteroscyphus miradorensis* (Steph.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus miradorensis* Steph., Bull. Herb. Boissier (sér. 2) 8 (1): 56 (232), 1908 (Stephani 1908k).

*** *Heteroscyphus mononuculus* J.J.Engel, J. Hattori Bot. Lab. 90: 241, 2001 (Engel 2001).

** *Heteroscyphus mononuculus* var. *ammophilopsis* J.J.Engel, Nova Hedwigia 99 (1/2): 166, 2014 (Engel 2014).

** *Heteroscyphus mononuculus* var. *bilobus* J.J.Engel, Nova Hedwigia 99 (1/2): 167, 2014 (Engel 2014).

** *Heteroscyphus montagnei* (Steph.) Fulford, Mem. New York Bot. Gard. 11 (4): 497, 1976 (Fulford 1976). Bas.: *Chiloscyphus montagnei* Steph., Bull. Herb. Boissier (sér. 2) 8 (2): 141 (257), 1908 (Stephani 1908i).

** *Heteroscyphus multifidus* (Steph.) J.J.Engel et R.M.Schust., Nova Hedwigia 39: 400, 1984 [1985] (Engel and Schuster 1984). Bas.: *Chiloscyphus multifidus* Steph., Bull. Herb. Boissier (sér. 2) 8 (2): 132 (248), 1908 (Stephani 1908i).

** *Heteroscyphus multifidus* var. *subintegerrimus* J.J.Engel, Nova Hedwigia 100 (3/4): 562, 2015 (Engel 2015a).

** *Heteroscyphus nadeaudii* (Steph.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus nadeaudii* Steph., Bull. Herb. Boissier (sér. 2) 7 (10): 848 (220), 1907 (Stephani 1907b).

** *Heteroscyphus orbiculatus* A.Srivast. et S.C.Srivast., Indian Geocalyc.: 140, 2002 (Srivastava and Srivastava 2002).

** *Heteroscyphus palniensis* A.Srivast. et S.C.Srivast., Indian Geocalyc.: 130, 2002 (Srivastava and Srivastava 2002).

** *Heteroscyphus pandei* S.C.Srivast. et A.Srivast., Lindbergia 15 (6): 197, 1989 [1991] (Srivastava and Srivastava 1989b).

*** *Heteroscyphus parallelifolius* J.J.Engel, Polish Bot. J. 58 (1): 99, 2013 (Engel 2013b).

** *Heteroscyphus parvulus* (Schiffn.) Schiffn., Österr. Bot. Z. 60 (5): 171, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus parvulus* Schiffn., Hep. Fl. Buitenzorg: 206, 1900 (Schiffner 1900a).

** *Heteroscyphus parvus* A.Srivast. et S.C.Srivast., Indian Geocalyc.: 112, 2002 (Srivastava and Srivastava 2002).

** *Heteroscyphus perfoliatus* (Mont.) Schiffn., Österr. Bot. Z. 60 (5): 171, 1910 (Schiffner 1910a). Bas.: *Lophocolea perfoliata* Mont., Ann. Sci. Nat. Bot. (sér. 2) 18: 12, 1842 (Montagne 1842b).

** *Heteroscyphus pertusus* (Lehm.) Fulford, Mem. New York Bot. Gard. 11 (4): 505, 1976 (Fulford 1976). Bas.: *Chiloscyphus pertusus* Lehm., Nov. Stirp. Pug. 10: 7, 1857 (Lehmann 1857).

*** *Heteroscyphus planiusculus* (Hook.f. et Taylor) J.J.Engel, J. Hattori Bot. Lab. 68: 315, 1990 (Engel 1990a). Bas.: *Jungermannia planiuscula* Hook.f. et Taylor, London J. Bot. 3: 382, 1844 (Hooker and Taylor 1844a).

** *Heteroscyphus planus* (Mitt.) Schiffn., Österr. Bot. Z. 60 (5): 171, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus planus* Mitt., J. Linn. Soc., Bot. 8 (31): 157, 1864 [1865] (Mitten 1864a).

*** *Heteroscyphus polyblepharis* (Spruce) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus polyblepharis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 442, 1885 (Spruce 1885).

*** *Heteroscyphus polychaetus* (Spruce) Hentschel et Heinrichs, Taxon 56 (4): 1139, 2007 (Hentschel et al. 2007c). Bas.: *Lophocolea polychaeta* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 436, 1885 (Spruce 1885).

** *Heteroscyphus polycladus* (Hook.f. et Lév.) R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 248, 1980 (Schuster 1980c). Bas.: *Jungermannia polyclada* Hook.f. et Lév., Choix Pl. Nouv.-Zel.: 8, 1846 (Raoul 1846).

** *Heteroscyphus rectangulatus* (Herzog) Piippo, Ann. Bot. Fenn. 30 (3): 200, 1993 (Piippo 1993c). Bas.: *Chiloscyphus rectangulatus* Herzog, Ann. Naturhist. Mus. Wien 53 (1): 364, 1942 [1943] (Herzog 1942b).

** *Heteroscyphus saccogynoides* Herzog, J. Hattori Bot. Lab. 14: 40, 1955 (Herzog and Noguchi 1955).

** *Heteroscyphus sarawaketanus* Piippo, Acta Bot. Fenn. 131: 143, 1985 (Piippo 1985a).

*** *Heteroscyphus sinuosus* (Hook.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Jungermannia sinuosa* Hook., Musci Exot. 2: tab. 113, 1820 (Hooker 1820).

** *Heteroscyphus spectabilis* (Steph.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus spectabilis* Steph., Hedwigia 30 (5): 205, 1891 (Stephani 1891a).

** *Heteroscyphus spinifer* C.Gao, T.Cao et Y.H.Wu, J. Bryol. 26 (2): 97, 2004 (Gao et al. 2004).

*** *Heteroscyphus splendens* (Lehm. et Lindenb.) Grolle, Acta Bot. Fenn. 125: 68, 1984 (Grolle and Piippo 1984). Bas.: *Jungermannia splendens* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 22, 1832 (Lehmann 1832).

** *Heteroscyphus splendidus* (E.A.Hodgs.) J.J.Engel et R.M.Schust., Nova Hedwigia 39: 400, 1984 [1985] (Engel and Schuster 1984). Bas.: *Chiloscyphus splendidus* E.A.Hodgs., Trans. Roy. Soc. New Zealand, Bot. 3 (11): 180, 1967 (Hodgson 1967).

*** *Heteroscyphus stolonifer* J.J.Engel, Polish Bot. J. 58 (1): 102, 2013 (Engel 2013b).

*** *Heteroscyphus succulentus* (Gottsche) Schiffn., Österr. Bot. Z. 60 (5): 171, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus succulentus* Gottsche, Natuurk. Tijdschr. Ned.-Indië 4: 576, 1853 (Gottsche 1853).

** *Heteroscyphus supinus* (Hook.f. et Taylor) R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 248, 1980 (Schuster 1980c). Bas.: *Chiloscyphus supinus* Hook.f. et Taylor, London J. Bot. 5: 284, 1846 (Taylor 1846a).

** *Heteroscyphus tener* (Steph.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus tener* Steph., Bull. Herb. Boissier (sér. 2) 7 (8): 695 (205), 1907 (Stephani 1907e).

*** *Heteroscyphus thraustus* (Spruce) Fulford, Mem. New York Bot. Gard. 11 (4): 495, 1976 (Fulford 1976). Bas.: *Lophocolea thrausta* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 437, 1885 (Spruce 1885).

** *Heteroscyphus timppae* Piippo, Ann. Bot. Fenn. 29 (3): 246, 1992 (Piippo 1992).

*** *Heteroscyphus triacanthus* (Hook.f. et Lév.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Jungermannia triacantha* Hook.f. et Lév., Choix Pl. Nouv.-Zel.: 8, 1846 (Raoul 1846).

** *Heteroscyphus triacanthus* var. *magnistipulatus* J.J.Engel, Nova Hedwigia 99 (1/2): 167, 2014 (Engel 2014).

** *Heteroscyphus tridentatus* (Sande Lac.) Grolle, Acta Bot. Fenn. 125: 68, 1984 (Grolle and Piippo 1984). Bas.: *Lophocolea tridentata* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 296, 1864 (Sande Lacoste 1864).

** *Heteroscyphus turgidus* (Schiffn.) Schiffn., Österr. Bot. Z. 60 (5): 171, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus turgidus* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 70: 212, 1900 [1901] (Schiffner 1900c).

*** *Heteroscyphus valdiviensis* (Mont.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus valdiviensis* Mont., Ann. Sci. Nat. Bot. (sér. 3) 4: 351, 1845 (Montagne 1845b).

** *Heteroscyphus varians* (Steph.) J.J.Engel, J. Hattori Bot. Lab. 68: 315, 1990 (Engel 1990a). Bas.: *Lophocolea varians* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 119, 1914 (Stephani and Watts 1914).

** *Heteroscyphus wettsteinii* (Schiffn.) Schiffn., Österr. Bot. Z. 60 (5): 172, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus wettsteinii* Schiffn., Hep. Fl. Buitenzorg: 202, 1900 (Schiffner 1900a).

** *Heteroscyphus zollingeri* (Gottsche) Schiffn., Österr. Bot. Z. 60 (5): 171, 1910 (Schiffner 1910a). Bas.: *Chiloscyphus zollingeri* Gottsche, Natuurk. Tijdschr. Ned.-Indië 4: 576, 1853 (Gottsche 1853).

*** ***Lamellocolea* J.J.Engel**, J. Hattori Bot. Lab. 70: 65, 1991 (Engel 1991c).

*** *Lamellocolea granditexta* (Steph.) J.J.Engel, J. Hattori Bot. Lab. 70: 66, 1991 (Engel 1991c). Bas.: *Lophocolea granditexta* Steph., Bull. Herb. Boissier (sér. 2) 6 (10): 881 (106), 1906 (Stephani 1906d).

*** *Lamellocolea integrostia* J.J.Engel et Glenny, Bryologist 114 (1): 23, 2011 (Engel and Glenny 2011).

*** ***Leptophyllopsis* R.M.Schust.**, J. Hattori Bot. Lab. 26: 269, 1963 (Schuster 1963b).

*** *Leptophyllopsis laxa* (Mitt.) R.M.Schust. ex Hamlin, Rec. Domin. Mus. 7: 284, 1972 (Hamlin 1972). Bas.: *Chiloscyphus laxus* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 142, 1854 (Mitten 1854).

*** ***Leptoscyphopsis* R.M.Schust.**, Phytologia 39 (4): 246, 1978 (Schuster 1978a).

*** *Leptoscyphopsis paradoxa* R.M.Schust., Phytologia 39 (4): 246, 1978 (Schuster 1978a).

*** ***Leptoscyphus* Mitt.**, Hooker's J. Bot. Kew Gard. Misc. 3: 358, 1851 (Mitten 1851). [145]

** **subg. *Anomylia* (R.M.Schust.) R.M.Schust.**, Hepat. Anthocerotae N. Amer. 4: 272, 1980 (Schuster 1980c). Bas.: *Anomylia* R.M.Schust., Amer. Midl. Naturalist 62 (1): 51, 1959 (Schuster 1959a).

*** *Leptoscyphus cuneifolius* (Hook.) Mitt., Hooker's J. Bot. Kew Gard. Misc. 3: 358, 1851 (Mitten 1851). Bas.: *Jungermannia cuneifolia* Hook., Brit. Jungermann.: tab. 64, 1814 (Hooker 1814).

145 The subdivision of *Leptoscyphus* follows Vanderpoorten et al. (2010).

** *Leptoscyphus cuneifolius* subsp. *fragilis* (J.B.Jack et Steph.) Grolle, Nova Acta Leop. (n.ser.) 25 (161): 28, 1962 [1963] (Grolle 1962a). Bas.: *Leioscyphus fragilis* J.B.Jack et Steph., Hedwigia 31 (1): 20, 1892 (Jack and Stephani 1892).

** **subg. *Austroleptoscyphus* Vanderp., Schäf.-Verw. et D.G.Long**, Taxon 59 (1): 183, 2010 (Vanderpoorten et al. 2010).

*** *Leptoscyphus antarcticus* (C.Massal.) Solari, Cryptog. Bryol. Lichénol. 7 (3): 219, 1986 (Solari 1986). Bas.: *Leioscyphus antarcticus* C.Massal., Atti Reale Ist. Veneto Sci. Lett. Arti 87 (2): 229, 1928 (Massalongo 1928).

*** *Leptoscyphus australis* (Gottsche, Lindenb. et Nees) R.M.Schust., J. Hattori Bot. Lab. 26: 270, 1963 (Schuster 1963b). Bas.: *Chiloscyphus australis* Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 189, 1845 (Gottsche et al. 1845a).

*** *Leptoscyphus belmoranus* (Steph.) J.J.Engel, J. Hattori Bot. Lab. 74: 33, 1993 (Engel 1993). Bas.: *Lophocolea belmorana* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 117, 1914 (Stephani and Watts 1914).

*** *Leptoscyphus excipulatus* (Steph.) J.J.Engel, J. Hattori Bot. Lab. 74: 33, 1993 (Engel 1993). Bas.: *Lophocolea excipulata* Steph., Bull. Herb. Boissier (sér. 2) 6 (9): 790 (90), 1906 (Stephani 1906e).

*** *Leptoscyphus innovatus* (E.A.Hodgs.) J.J.Engel, J. Hattori Bot. Lab. 74: 33, 1993 (Engel 1993). Bas.: *Lophocolea innovata* E.A.Hodgs., Trans. Roy. Soc. New Zealand 80 (3/4): 347, 1952 [1953] (Hodgson 1952).

*** *Leptoscyphus longistipulus* (Steph.) J.J.Engel, Bryologist 94 (4): 436, 1991 (Engel 1991b). Bas.: *Lophocolea longistipula* Steph., Bull. Herb. Boissier (sér. 2) 6 (10): 884 (109), 1906 (Stephani 1906d).

** **subg. *Leptoscyphus***

** **sect. *Hexagonistipa* Grolle**, Nova Acta Leop. (n.ser.) 25 (161): 46, 1962 (Grolle 1962a).

*** *Leptoscyphus gibbosus* (Taylor) Mitt., Hooker's J. Bot. Kew Gard. Misc. 3: 358, 1851 (Mitten 1851). Bas.: *Chiloscyphus gibbosus* Taylor, London J. Bot. 5: 283, 1846 (Taylor 1846a).

*** *Leptoscyphus gradsteinii* Vanderp., Schäf.-Verw. et D.G.Long, Taxon 59 (1): 182, 2010 (Vanderpoorten et al. 2010).

*** *Leptoscyphus hexagonus* (Nees) Grolle, Nova Acta Leop. (n.ser.) 25 (161): 47, 1962 [1963] (Grolle 1962a). Bas.: *Chiloscyphus hexagonus* Nees, Syn. Hepat. 2: 177, 1845 (Gottsche et al. 1845a).

*** *Leptoscyphus jackii* (Steph.) Grolle, Nova Acta Leop. (n.ser.) 25 (161): 48, 1962 [1963] (Grolle 1962a). Bas.: *Leioscyphus jackii* Steph., Hedwigia 31 (1): 21, 1892 (Jack and Stephani 1892).

*** *Leptoscyphus physocalyx* (Hampe et Gottsche) Gottsche, Bot. Zeitung (Berlin) Beil. 16: 33, 1858 (Gottsche 1858). Bas.: *Jungermannia physocalyx* Hampe et Gottsche, Linnaea 20 (3): 326, 1847 (Hampe 1847).

*** *Leptoscyphus sotiauxii* Vanderp., Schäf.-Verw. et D.G.Long, Taxon 59 (1): 183, 2010 (Vanderpoorten et al. 2010).

** **sect. *Leptoscyphus***

*** *Leptoscyphus aequatus* (Hook.f. et Taylor) Mitt., Hooker's J. Bot. Kew Gard. Misc. 3: 358, 1851 (Mitten 1851). Bas.: *Jungermannia aequata* Hook.f. et Taylor, London J. Bot. 3: 465, 1844 (Hooker and Taylor 1844b).

*** *Leptoscyphus intermedius* Grolle, Nova Acta Leop. (n.ser.) 25 (161): 32, 1962 [1963] (Grolle 1962a).

*** *Leptoscyphus lambinonii* Vanderp., Schäf.-Verw. et D.G.Long, Taxon 59 (1): 179, 2010 (Vanderpoorten et al. 2010).

*** *Leptoscyphus obcordatus* (Spruce) Grolle, Nova Acta Leop. (n.ser.) 25 (161): 33, 1962 [1963] (Grolle 1962a). Bas.: *Leioscyphus obcordatus* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 446, 1885 (Spruce 1885).

*** *Leptoscyphus ovatus* (Spruce) Grolle, Nova Acta Leop. (n.ser.) 25 (161): 45, 1962 [1963] (Grolle 1962a). Bas.: *Leioscyphus ovatus* Spruce, J. Linn. Soc., Bot. 30 (210): 357, 1895 (Gepp 1895b).

*** *Leptoscyphus porphyrius* (Nees) Grolle, Österr. Bot. Z. 117 (1): 3, 1969 (Grolle 1969a). Bas.: *Chiloscyphus porphyrius* Nees, Syn. Hepat. 2: 185, 1845 (Gottsche et al. 1845a).

*** *Leptoscyphus porphyrius* subsp. *azoricus* (H.Buch et Perss.) Vanderp. et Heinrichs, Taxon 59 (1): 181, 2010 (Vanderpoorten et al. 2010). Bas.: *Mylia azorica* H.Buch et Perss., Bryophyt. Azoren Madeira: 7, 1941 (Buch and Persson 1941).

** **subg. *Physoscyphus* Grolle**, Nova Acta Leop. (n.ser.) 25 (161): 51, 1962 (Grolle 1962a).

** **sect. *Homaloscyphus* Grolle**, Nova Acta Leop. (n.ser.) 25 (161): 58, 1962 (Grolle 1962a).

*** *Leptoscyphus chilensis* (De Not.) Hässel, J. Hattori Bot. Lab. 91: 207, 2001 (Hässel 2001). Bas.: *Lophocolea chilensis* De Not., Mem. Reale Accad. Sci. Torino (ser. 2) 16: 222, 1857 (De Notaris 1857).

* *Leptoscyphus difficilis* (Steph.) Fulford, Mem. New York Bot. Gard. 11 (4): 534, 1976 (Fulford 1976). Bas.: *Chiloscyphus difficilis* Steph., Biblioth. Bot. 87 (2): 222, 1916 (Stephani 1916a). [146]

*** *Leptoscyphus diversifolius* (Gottsche) Grolle, Nova Acta Leop. (n.ser.) 25 (161): 58, 1962 [1963] (Grolle 1962a). Bas.: *Lophocolea diversifolia* Gottsche, Syn. Hepat. 2: 166, 1845 (Gottsche et al. 1845a).

*** *Leptoscyphus expansus* (Lehm.) Grolle, Nova Acta Leop. (n.ser.) 25 (161): 60, 1962 [1963] (Grolle 1962a). Bas.: *Jungermannia expansa* Lehm., Linnaea 4: 361, 1829 (Lehmann 1829).

146 *Leptoscyphus difficilis* is conspecific with *Leptoscyphus expansus* in Grolle (1962a), but it was accepted by Vanderpoorten et al. (2010).

*** *Leptoscyphus hedbergii* (S.W.Arnell) R.M.Schust., Amer. Midl. Naturalist 62 (1): 13, 1959 (Schuster 1959a). Bas.: *Mylia hedbergii* S.W.Arnell, Ark. Bot. (n.ser.) 3 (16): 547, 1956 (Arnell 1956e).

* *Leptoscyphus huidobroanus* (Mont.) Gottsche, Bot. Zeitung (Berlin) Beil. 16: 33, 1858 (Gottsche 1858). Bas.: *Chiloscyphus huidobroanus* Mont., Ann. Sci. Nat. Bot. (sér. 3) 4: 352, 1845 (Montagne 1845b). [147]

*** *Leptoscyphus huonicus* Piippo, Acta Bot. Fenn. 131: 152, 1985 (Piippo 1985a).

*** *Leptoscyphus magellanicus* (Gola) Hässel, J. Hattori Bot. Lab. 91: 214, 2001 (Hässel 2001). Bas.: *Lophozia magellanica* Gola, Nuovo Giorn. Bot. Ital. (n.ser.) 29 (1/4): 165, 1922 [1923] (Gola 1922).

** **sect. *Physoscyphus* Grolle**, Nova Acta Leop. (n.ser.) 25 (161): 51, 1962 (Grolle 1962a).

*** *Leptoscyphus amphibolius* (Nees) Grolle, Nova Acta Leop. (n.ser.) 25 (161): 54, 1962 [1963] (Grolle 1962a). Bas.: *Jungermannia amphibolia* Nees, Fl. Bras. (Martius) 1 (1): 334, 1833 (Nees 1833a).

*** *Leptoscyphus infuscatus* (Mitt.) E.W.Jones ex Grolle, Nova Acta Leop. (n.ser.) 25 (161): 52, 1962 [1963] (Grolle 1962a). Bas.: *Leioscyphus infuscatus* Mitt., J. Linn. Soc., Bot. 22 (146): 321, 1886 (Mitten 1886b).

** **subg. *Spinoscyphus* Vanderp., Schäf.-Verw. et D.G.Long**, Taxon 59 (1): 183, 2010 (Vanderpoorten et al. 2010).

*** *Leptoscyphus cleefii* Fulford, Mem. New York Bot. Gard. 11 (4): 534, 1976 (Fulford 1976).

*** *Leptoscyphus spectabilis* (Steph.) Grolle, J. Bryol. 11 (2): 328, 1980 [1981] (Grolle 1980c). Bas.: *Lophocolea spectabilis* Steph., Bull. Herb. Boissier (sér. 2) 7 (4): 302 (166), 1907 (Stephani 1907d).

Incertae sedis

*** *Leptoscyphus autoicus* (J.J.Engel et Gradst.) Vanderp. et Gradst., J. Bryol. 34 (4): 252, 2012 (Vanderpoorten et al. 2012). Bas.: *Physotheca autoica* J.J.Engel et Gradst., Taxon 52 (4): 764, 2003 (Engel and Gradstein 2003).

** *Leptoscyphus beckettianus* (Steph.) R.M.Schust. ex J.J.Engel, Nova Hedwigia 93 (3/4): 402, 2011 (Engel 2011). Bas.: *Chiloscyphus beckettianus* Steph., Bull. Herb. Boissier (sér. 2) 8 (1): 59 (235), 1908 (Stephani 1908k).

** *Leptoscyphus compactus* (Colenso) J.J.Engel, Nova Hedwigia 100 (3/4): 579, 2015 (Engel 2015a). Bas.: *Chiloscyphus compactus* Colenso, Trans. & Proc. New Zealand Inst. 21: 63, 1889 (Colenso 1889).

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147 *Leptoscyphus huidobroanus* is conspecific with *Leptoscyphus expansus* in Váňa and Engel (2013) rejecting the conclusion by Hässel (2001) that it is an independent species, but it was accepted by Vanderpoorten et al. (2010).

** *Leptoscyphus erraticus* (W.Martin et E.A.Hodgs.) J.J.Engel, Nova Hedwigia 99 (1/2): 168, 2014 (Engel 2014). Bas.: *Chiloscyphus erraticus* W.Martin et E.A.Hodgs., Trans. & Proc. Roy. Soc. New Zealand 78 (4): 497, 1950 (Martin 1950).

*** *Leptoscyphus horizontalis* (Hook.) Kühnem., Revista Centro Estud. Doct. Ci. Nat. 1: 176, 1937 (Kühnemann 1937). Bas.: *Jungermannia horizontalis* Hook., Musci Exot. 1: tab. 96, 1818 (Hooker 1818).

** *Leptoscyphus normalis* (Steph.) J.J.Engel, Nova Hedwigia 100 (3/4): 579, 2015 (Engel 2015a). Bas.: *Lophocolea normalis* Steph., Sp. Hepat. (Stephani) 6: 285, 1922 (Stephani 1922).

** *Leptoscyphus physanthus* (Hook.f. et Taylor) J.J.Engel, Nova Hedwigia 99 (1/2): 168, 2014 (Engel 2014). Bas.: *Jungermannia physantha* Hook.f. et Taylor, London J. Bot. 3: 561, 1844 (Hooker and Taylor 1844d).

** *Leptoscyphus subemarginatus* (Hook.f. et Taylor) J.J.Engel, Bryologist 94 (4): 436, 1991 (Engel 1991b). Bas.: *Lophocolea subemarginata* Hook.f. et Taylor, London J. Bot. 5: 367, 1846 (Taylor 1846b).

*** *Leptoscyphus trapezoïdes* (Mont.) L.Söderstr., Phytotaxa 112 (1): 27, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea trapezoïdes* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 251, 1843 (Montagne 1843).

*** ***Lophocolea* (Dumort.) Dumort.**, Recueil Observ. Jungerm.: 17, 1835 (Dumortier 1835). Bas.: *Jungermannia* sect. *Lophocolea* Dumort., Syll. Jungerm. Europ.: 59, 1831 (Dumortier 1831).

*** *Lophocolea aberrans* Lindenb. et Gottsche, Syn. Hepat. 5: 696, 1847 (Gottsche et al. 1847).

*** *Lophocolea aequifolia* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 55, 1836 (Nees and Montagne 1836).

* *Lophocolea angustistipula* Steph., Sp. Hepat. (Stephani) 6: 260, 1922 (Stephani 1922).

*** *Lophocolea anisoloba* (J.J.Engel et Glenny) L.Söderstr., Phytotaxa 112 (1): 25, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus anisolobus* J.J.Engel et Glenny, Bryologist 111 (1): 118, 2008 (Engel and Glenny 2008b).

** *Lophocolea anomala* Steph., Sp. Hepat. (Stephani) 6: 300, 1922 (Stephani 1922).

** *Lophocolea anomoda* (Mont.) Steph., Hedwigia 32 (5): 327, 1893 (Stephani 1893d). Bas.: *Chiloscyphus anomodus* Mont., Ann. Sci. Nat. Bot. (sér. 3) 4: 352, 1845 (Montagne 1845b).

** *Lophocolea apalachicola* R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 195, 1980 (Schuster 1980c).

*** *Lophocolea aperticaulis* (J.J.Engel) L.Söderstr., Phytotaxa 112 (1): 25, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus aperticaulis* J.J.Engel, J. Hattori Bot. Lab. 95: 229, 2004 (Engel 2004b).

** *Lophocolea aphelophylla* (Hässel) Váňa, Phytotaxa 112 (1): 25, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus aphelophyllus* Hässel, J. Hattori Bot. Lab. 98: 123, 2005 (Hässel 2005).

** *Lophocolea apophylla* (Hässel) Váňa, Phytotaxa 112 (1): 25, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus apophyllus* Hässel, J. Hattori Bot. Lab. 98: 126, 2005 (Hässel 2005).
*** *Lophocolea appalachiana* R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 208, 1980 (Schuster 1980c).
** *Lophocolea ascensionis* Steph., Sp. Hepat. (Stephani) 6: 261, 1922 (Stephani 1922).
** *Lophocolea asperrima* Steph., Bull. Herb. Boissier (sér. 2) 6 (11): 949 (129), 1906 (Stephani 1906c).
** *Lophocolea atra* Gola, Nuovo Giorn. Bot. Ital. (n.ser.) 29 (1/4): 167, 1922 [1923] (Gola 1922).
*** *Lophocolea attenuata* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 6): 34, 1900 (Stephani 1900b).
*** *Lophocolea australis* Gottsche, Linnaea 28 (5): 553, 1856 [1857] (Gottsche 1856).
** *Lophocolea autoica* Steph., Sp. Hepat. (Stephani) 6: 262, 1922 (Stephani 1922).
** *Lophocolea baldwinii* Steph., Bull. Herb. Boissier (sér. 2) 6 (11): 950 (130), 1906 (Stephani 1906c).
** *Lophocolea bartlettii* H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 506, 1963 (Miller 1963).
** *Lophocolea bewsii* (Sim) Grolle, Trans. Brit. Bryol. Soc. 3 (4): 588, 1959 (Grolle 1959b). Bas.: *Leptoscyphus bewsii* Sim, Trans. Roy. Soc. South Africa 15 (1): 103, 1926 (Sim 1926).
** *Lophocolea bicuspidata* Steph., Sp. Hepat. (Stephani) 6: 263, 1922 (Stephani 1922).
*** *Lophocolea bidentata* (L.) Dumort., Recueil Observ. Jungerm.: 17, 1835 (Dumortier 1835). Bas.: *Jungermannia bidentata* L., Sp. Pl. 1: 1132, 1753 (Linnaeus 1753). [148]
** *Lophocolea bifidistipula* Steph., Sp. Hepat. (Stephani) 6: 264, 1922 (Stephani 1922).
*** *Lophocolea bispinosa* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 162, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia bispinosa* Hook.f. et Taylor, London J. Bot. 3: 378, 1844 (Hooker and Taylor 1844a).
** *Lophocolea bootanensis* Steph., Sp. Hepat. (Stephani) 6: 265, 1922 (Stephani 1922).
** *Lophocolea boulyana* Steph., Sp. Hepat. (Stephani) 6: 264, 1922 (Stephani 1922).
** *Lophocolea bowiena* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 117, 1914 (Stephani and Watts 1914).
*** *Lophocolea brookwoodiana* Paton et Sheahan, J. Bryol. 28 (3): 163, 2006 (Paton and Sheahan 2006).
** *Lophocolea caespitans* Steph., Bull. Herb. Boissier (sér. 2) 6 (11): 949 (129), 1906 (Stephani 1906c).
*** *Lophocolea calcarea* Steph., Bull. Herb. Boissier (sér. 2) 6 (10): 884 (109), 1906 (Stephani 1906d).
** *Lophocolea caledonica* Steph., Sp. Hepat. (Stephani) 6: 267, 1922 (Stephani 1922).

148 *Lophocolea bidentata* is a species complex as discussed by Váňa and Engel (2013) and it has a complicated nomenclatural history causing many misunderstandings. At least *Lophocolea coadunata* and *Lophocolea humifusa* also belong to the complex.

*** *Lophocolea canaliculata* (Gottsche, Lindenb. et Nees) Steph., Bull. Herb. Boissier (sér. 2) 6 (9): 786 (86), 1906 (Stephani 1906e). Bas.: *Chiloscyphus canaliculatus* Gottsche, Lindenb. et Nees, Syn. Hepat. 5: 710, 1847 (Gottsche et al. 1847).

*** *Lophocolea canaliculata* var. *concava* (J.J.Engel) L.Söderstr., Phytotaxa 112 (1): 26, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus canaliculatus* var. *concavus* J.J.Engel, Fieldiana, Bot. (n.ser.) 48: 107, 2010 (Engel 2010).

** *Lophocolea cervicornis* Steph., Biblioth. Bot. 87 (2): 219, 1916 (Stephani 1916a).

** *Lophocolea ciliifera* Steph., Bull. Herb. Boissier (sér. 2) 6 (8): 660 (76), 1906 (Stephani 1906h).

* *Lophocolea coadunata* (Sw.) Mont., Voy. Amér. Mérid., Bot. 7 (1): 76, 1839 (Montagne 1839b). Bas.: *Jungermannia coadunata* Sw., Fl. Ind. Occid. 3: 1850, 1806 (Swartz 1806). [149]

** *Lophocolea concreta* Mont., Ann. Sci. Nat. Bot. (sér. 3) 4: 350, 1845 (Montagne 1845b).

** *Lophocolea convexula* Mitt., Fl. vit.: 405, 1871 [1873] (Mitten 1871).

** *Lophocolea corticola* Steph., Sp. Hepat. (Stephani) 6: 268, 1922 (Stephani 1922).

*** *Lophocolea decurrens* Herzog, Trans. & Proc. Roy. Soc. New Zealand 65 (3): 352, 1936 (Herzog 1936b).

* *Lophocolea deningeri* Herzog, Beih. Bot. Centralbl. 38 (2): 321, 1921 (Herzog 1921).

** *Lophocolea dentiflora* Steph., Bull. Herb. Boissier (sér. 2) 6 (7): 550 (64), 1906 (Stephani 1906f).

** *Lophocolea difformis* Nees, Syn. Hepat. 2: 166, 1845 (Gottsche et al. 1845a).

** *Lophocolea discedens* (Lehm. et Lindenb.) Lehm. et Lindenb., Syn. Hepat. 2: 167, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia discedens* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 3, 1833 (Lehmann 1833).

* *Lophocolea dusenii* Steph., Cat. Afr. Pl. (Hiern) 2 (2): 314, 1901 (Stephani 1901d).

*** *Lophocolea erosa* (J.J.Engel) L.Söderstr., Phytotaxa 112 (1): 26, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus erosus* J.J.Engel, Phytologia 83 (1): 43, 1997 [1998] (Engel 1997).

*** *Lophocolea excisifolia* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 118, 1914 (Stephani and Watts 1914).

*** *Lophocolea fertilis* (J.J.Engel) L.Söderstr., Phytotaxa 112 (1): 26, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus fertilis* J.J.Engel, Phytologia 83 (1): 43, 1997 [1998] (Engel 1997).

** *Lophocolea flavicans* Steph., Sp. Hepat. (Stephani) 6: 300, 1922 (Stephani 1922).

*** *Lophocolea floribunda* Steph., Bull. Herb. Boissier (sér. 2) 6 (10): 886 (111), 1906 (Stephani 1906d).

** *Lophocolea foliicola* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 428, 1885 (Spruce 1885).

** *Lophocolea fragillima* Steph., Sp. Hepat. (Stephani) 6: 273, 1922 (Stephani 1922).

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149 *Lophocolea coadunata* belongs to the *Lophocolea bidentata* species complex with complicated nomenclature (Váňa and Engel 2013).

*** *Lophocolea fragmentissima* R.M.Schust., Phytologia 39 (4): 245, 1978 (Schuster 1978a).
*** *Lophocolea fragrans* (Moris et De Not.) Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 166, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia fragrans* Moris et De Not., Fl. Caprariae: 177, 1839 (Moris and De Notaris 1839).
** *Lophocolea glaziovii* Steph., Bull. Herb. Boissier (sér. 2) 6 (11): 961 (141), 1906 (Stephani 1906c).
** *Lophocolea gollanii* (Steph.) Váňa, Phytotaxa 112 (1): 26, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus gollanii* Steph., Bull. Herb. Boissier (sér. 2) 7 (10): 837 (209), 1907 (Stephani 1907b).
** *Lophocolea granatensis* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 126, 1864 (Gottsche 1864).
** *Lophocolea griffithiana* Steph., Sp. Hepat. (Stephani) 6: 274, 1922 (Stephani 1922).
** *Lophocolea hahnii* Steph., Bull. Herb. Boissier (sér. 2) 6 (8): 660 (76), 1906 (Stephani 1906h).
** *Lophocolea haskarliana* Gottsche, Syn. Hepat. 2: 153, 1845 (Gottsche et al. 1845a).
*** *Lophocolea hattorii* (J.J.Engel) L.Söderstr., Phytotaxa 112 (1): 26, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus hattorii* J.J.Engel, J. Hattori Bot. Lab. 74: 29, 1993 (Engel 1993).
** *Lophocolea hawaica* Steph., Bull. Herb. Boissier (sér. 2) 6 (11): 945 (125), 1906 (Stephani 1906c).
** *Lophocolea heterodonta* Steph., Sp. Hepat. (Stephani) 6: 275, 1922 (Stephani 1922).
** *Lophocolea heteromorpha* Steph., Sp. Hepat. (Stephani) 6: 275, 1922 (Stephani 1922).
*** *Lophocolea heterophylla* (Schrad.) Dumort., Recueil Observ. Jungerm.: 17, 1835 (Dumortier 1835). Bas.: *Jungermannia heterophylla* Schrad., J. Bot. (Schrader) 5: 66, 1802 [1803] (Schrader 1802).
** *Lophocolea heterophylla* subsp. *cladogyna* R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 223, 1980 (Schuster 1980c).
** *Lophocolea horikawana* S.Hatt., Bull. Tokyo Sci. Mus. 11: 50, 1944 (Hattori 1944d).
** *Lophocolea howeana* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 118, 1914 (Stephani and Watts 1914).
* *Lophocolea humifusa* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 5: 695, 1847 (Gottsche et al. 1847). Bas.: *Jungermannia humifusa* Hook.f. et Taylor, London J. Bot. 3: 472, 1844 (Hooker and Taylor 1844b).
** *Lophocolea humistrata* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 5: 701, 1847 (Gottsche et al. 1847). Bas.: *Jungermannia humistrata* Hook.f. et Taylor, London J. Bot. 4: 82, 1845 (Hooker and Taylor 1845).
** *Lophocolea itoana* Inoue, J. Jap. Bot. 31 (11): 340, 1956 (Inoue 1956).
** *Lophocolea javanica* Schiffn., Hep. Fl. Buitenzorg: 178, 1900 (Schiffner 1900a).
** *Lophocolea koponenii* (Piippo) Váňa, Phytotaxa 112 (1): 26, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus koponenii* Piippo, Ann. Bot. Fenn. 35 (1): 55, 1998 (Piippo 1998).

** *Lophocolea kurzii* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 296, 1864 (Sande Lacoste 1864).
* *Lophocolea kurzii* var. *siamensis* N.Kitag., Acta Phytotax. Geobot. 30 (1/3): 33, 1979 (Kitagawa 1979b).
** *Lophocolea laceristipula* Steph., Sp. Hepat. (Stephani) 6: 281, 1922 (Stephani 1922).
** *Lophocolea latistipula* Steph., Sp. Hepat. (Stephani) 6: 281, 1922 (Stephani 1922).
*** *Lophocolea lauterbachii* Steph., Bull. Herb. Boissier (sér. 2) 6 (11): 938 (118), 1906 (Stephani 1906c).
* *Lophocolea laxissima* Herzog, Ann. Bryol. 5: 77, 1932 (Herzog 1932b).
** *Lophocolea ledermannii* Steph., Sp. Hepat. (Stephani) 6: 300, 1922 (Stephani 1922).
*** *Lophocolea lenta* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 162, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia lenta* Hook.f. et Taylor, London J. Bot. 3: 379, 1844 (Hooker and Taylor 1844a).
*** *Lophocolea leptantha* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 5: 694, 1847 (Gottsche et al. 1847). Bas.: *Jungermannia leptantha* Hook.f. et Taylor, London J. Bot. 3: 471, 1844 (Hooker and Taylor 1844b).
*** *Lophocolea liebmanniana* Gottsche, Mexik. Leverm.: 113, 1863 (Gottsche 1863).
** *Lophocolea lindmannii* Steph., Bull. Herb. Boissier (sér. 2) 6 (11): 960 (140), 1906 (Stephani 1906c).
*** *Lophocolea longiciliata* Herzog, Memoranda Soc. Fauna Fl. Fennica 27: 96, 1952 (Herzog 1952c).
** *Lophocolea lucida* (Spreng.) Mont., Voy. Amér. Mérid., Bot. 7 (2): 78, 1839 (Montagne 1839a). Bas.: *Jungermannia lucida* Spreng. Nov. Stirp. Pug. 5: 2, 1833 (Lehmann 1833).
** *Lophocolea madagascariensis* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 344, 1882 (Gottsche 1882).
** *Lophocolea magna* (Udar et V.Nath) Váňa, Phytotaxa 183 (4): 291, 2014 (Váňa et al. 2014a). Bas.: *Cephaloziella magna* Udar et V.Nath, Geophytology 6 (1): 105, 1976 (Udar and Nath 1976).
*** *Lophocolea mediinfrons* (J.J.Engel et Braggins) L.Söderstr., Phytotaxa 112 (1): 26, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus mediinfrons* J.J.Engel et Braggins, Fieldiana, Bot. (n.ser.) 48: 119, 2010 (Engel 2010).
** *Lophocolea micronesica* Inoue et H.A.Mill., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 11 (1): 4, 1968 (Inoue and Miller 1968).
* *Lophocolea microstipula* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 6): 43, 1900 (Stephani 1900b). [150]
*** *Lophocolea minor* Nees, Naturgesch. Eur. Leberm. 2: 330, 1836 (Nees 1836).
** *Lophocolea minutistipula* Steph., Sp. Hepat. (Stephani) 6: 283, 1922 (Stephani 1922).
* *Lophocolea mollis* (Nees) Nees, Syn. Hepat. 2: 158, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia mollis* Nees, Enum. Pl. Crypt. Javae: 24, 1830 (Nees 1830). [151]

150 *Lophocolea microstipula* is possibly conspecific with *Lophocolea sabuletorum* (Engel 1978), but it was accepted by Hässel and Rubies (2009).

151 *Lophocolea mollis* is possibly conspecific with *Lophocolea difformis* (Grolle 1995).

* *Lophocolea morobeana* Piippo, Acta Bot. Fenn. 131: 160, 1985 (Piippo 1985a). [152]

** *Lophocolea muhavurensis* (S.W.Arnell) S.W.Arnell ex Pócs, Acta Bot. Acad. Sci. Hung. 25 (3/4): 227, 1979 [1980] (Bizot and Pócs 1979). Bas.: *Chiloscyphus muhavurensis* S.W.Arnell, Ark. Bot. (n.ser.) 3 (16): 526, 1956 (Arnell 1956e).

*** *Lophocolea muricata* (Lehm.) Nees, Syn. Hepat. 2: 169, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia muricata* Lehm., Linnaea 4: 363, 1829 (Lehmann 1829).

* *Lophocolea muricata* var. *major* Pearson, Forh. Vidensk.-Selsk. Kristiania 1892 (14): 10, 1893 (Pearson 1893).

** *Lophocolea nakajimae* S.Hatt. et Inoue, J. Hattori Bot. Lab. 21: 221, 1959 (Inoue 1959c).

*** *Lophocolea novae-zeelandiae* (Lehm. et Lindenb.) Nees, Syn. Hepat. 2: 168, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia novae-zeelandiae* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 33, 1834 (Lehmann 1834).

*** *Lophocolea novae-zeelandiae* var. *meridionalis* (Steph.) L.Söderstr., Phytotaxa 112 (1): 26, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea meridionalis* Steph., Bull. Herb. Boissier (sér. 2) 6 (10): 888 (113), 1906 (Stephani 1906d).

** *Lophocolea orbigniana* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 55, 1836 (Nees and Montagne 1836).

** *Lophocolea papulimarginata* H.A.Mill., Phytologia 47 (4): 323, 1981 (Miller 1981). *Nom. nov. pro Lophocolea papulosa* Steph., Sp. Hepat. (Stephani) 6: 286, 1922 (Stephani 1922), *nom. illeg.*

** *Lophocolea parca* (Gottsche) Fulford et Sharp, Mem. New York Bot. Gard. 63: 19, 1990 (Fulford and Sharp 1990). Bas.: *Jungermannia parca* Gottsche, Mexik. Leverm.: 94, 1863 (Gottsche 1863).

** *Lophocolea parva* Steph., Sp. Hepat. (Stephani) 6: 287, 1922 (Stephani 1922).

*** *Lophocolea parvispinea* (J.J.Engel) L.Söderstr., Phytotaxa 112 (1): 26, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus parvispineus* J.J.Engel, Phytologia 83 (1): 44, 1997 [1998] (Engel 1997).

** *Lophocolea parvistipula* Steph., Sp. Hepat. (Stephani) 6: 287, 1922 (Stephani 1922).

*** *Lophocolea patulistipa* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 50, 1911 (Stephani 1911b).

*** *Lophocolea perpusilla* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 163, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia perpusilla* Hook.f. et Taylor, London J. Bot. 3: 380, 1844 (Hooker and Taylor 1844a).

** *Lophocolea piacenzai* (Gola) Váňa, Phytotaxa 112 (1): 26, 2013 (Söderström et al. 2013f). Bas.: *Lophozia piacenzai* Gola, Atti Reale Accad. Sci. Torino, Cl. Sci. Fis. Mat. Nat. 49: 759, 1914 (Gola 1914b).

** *Lophocolea pilistipula* Steph., Sp. Hepat. (Stephani) 6: 288, 1922 (Stephani 1922).

* *Lophocolea pinnatistipula* Steph., Biblioth. Bot. 87 (2): 220, 1916 (Stephani 1916a).

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152 *Lophocolea morobeana* is conspecific with *Chiloscyphus kurzii* in Piippo (1987), but it was accepted as very close to *Chiloscyphus kurzii* by Ariyanti et al. (2009).

** *Lophocolea platensis* C.Massal., Atti Accad. Sci. Med. Nat. Ferrara 80 (3/4): 12, 1906 (Massalongo 1906a).
** *Lophocolea purpurea* Steph., Sp. Hepat. (Stephani) 6: 289, 1922 (Stephani 1922).
** *Lophocolea pusilla* Steph., Sp. Hepat. (Stephani) 6: 290, 1922 (Stephani 1922).
** *Lophocolea randii* S.W.Arnell, Svensk Bot. Tidskr. 47 (3): 420, 1953 (Arnell 1953c).
** *Lophocolea rara* Steph., Sp. Hepat. (Stephani) 6: 290, 1922 (Stephani 1922).
** *Lophocolea rectangularis* Herzog, Rev. Bryol. Lichénol. 23 (1/2): 43, 1954 (Herzog 1954).
** *Lophocolea rectangulata* Mitt., Fl. vit.: 404, 1871 [1873] (Mitten 1871). [153]
*** *Lophocolea rupicola* Steph., Bull. Herb. Boissier (sér. 2) 6 (10): 874 (99), 1906 (Stephani 1906d).
*** *Lophocolea sabuletorum* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 5: 697, 1847 (Gottsche et al. 1847). Bas.: *Jungermannia sabuletorum* Hook.f. et Taylor, London J. Bot. 3: 469, 1844 (Hooker and Taylor 1844b).
** *Lophocolea salacensis* Steph., Bull. Herb. Boissier (sér. 2) 6 (11): 943 (123), 1906 (Stephani 1906c).
** *Lophocolea savesiana* Steph., Bull. Herb. Boissier (sér. 2) 6 (11): 942 (122), 1906 (Stephani 1906c).
*** *Lophocolea semiteres* (Lehm.) Mitt., J. Linn. Soc., Bot. 16 (91): 188, 1877 (Mitten 1877). Bas.: *Jungermannia semiteres* Lehm., Linnaea 4: 363, 1829 (Lehmann 1829). [154]
*** *Lophocolea semiteres* var. *retusa* (J.J.Engel) L.Söderstr., Phytotaxa 112 (1): 27, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus semiteres* var. *retusus* J.J.Engel, Phytologia 83 (1): 44, 1997 [1998] (Engel 1997).
** *Lophocolea serrata* Mitt., St. Helena: 368, 1875 (Mitten 1875).
** *Lophocolea siamensis* Steph., Sp. Hepat. (Stephani) 6: 293, 1922 (Stephani 1922).
** *Lophocolea sikkimensis* (Steph.) Herzog et Grolle, Rev. Bryol. Lichénol. 27 (3/4): 164, 1958 [1959] (Herzog and Grolle 1958). Bas.: *Herpocladium sikkimense* Steph., Sp. Hepat. (Stephani) 6: 349, 1922 (Stephani 1922).
* *Lophocolea silvestris* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 345, 1882 (Gottsche 1882).
** *Lophocolea steetziae* De Not., Epat. Borneo: 20, 1874 (De Notaris 1874).
*** *Lophocolea striatella* (C.Massal.) Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 13, 1890 (Schiffner 1890). Bas.: *Chiloscyphus striatellus* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 232, 1885 (Massalongo 1885).
** *Lophocolea subbidentata* Herzog, Rev. Bryol. Lichénol. 23 (1/2): 43, 1954 (Herzog 1954).
** *Lophocolea subcostata* Steph., Sp. Hepat. (Stephani) 6: 295, 1922 (Stephani 1922).
*** *Lophocolea subporosa* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 137, 1854 (Mitten 1854).

153 *Lophocolea rectangulata* may be a *Cryptolophocolea* species.

154 *Lophocolea semiteres* is a species complex also including *Lophocolea platensis* and *Lophocolea undulata*.

** *Lophocolea subporosa* var. *inflexifolia* (Steph.) L.Söderstr., Phytotaxa 112 (1): 27, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea inflexifolia* Steph., Sp. Hepat. (Stephani) 6: 278, 1922 (Stephani 1922).

** *Lophocolea subviridis* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 5: 699, 1847 (Gottsche et al. 1847). Bas.: *Jungermannia subviridis* Hook.f. et Taylor, London J. Bot. 3: 473, 1844 (Hooker and Taylor 1844b).

** *Lophocolea sumatrana* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 70: 195, 1900 [1901] (Schiffner 1900c).

*** *Lophocolea sylvatica* Mitt., Rep. Challenger, Bot. 1 (3, 1): 84, 1884 (Mitten 1884b).

** *Lophocolea tenera* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 33 (7): 79, 1876 [1877] (Ångström 1876).

** *Lophocolea tenerrima* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 439, 1885 (Spruce 1885).

** *Lophocolea teptepensis* Piippo, Acta Bot. Fenn. 131: 163, 1985 (Piippo 1985a).

*** *Lophocolea textilis* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 5: 696, 1847 (Gottsche et al. 1847). Bas.: *Jungermannia textilis* Hook.f. et Taylor, London J. Bot. 3: 468, 1844 (Hooker and Taylor 1844b).

** *Lophocolea textiloidea* J.J.Engel, Phytologia 41 (5): 311, 1979 (Engel 1979a). *Nom. nov. pro Chiloscyphus lucidus* Mitt., J. Linn. Soc., Bot. 15 (82): 64, 1876 (Mitten 1876a), *nom. illeg.*

*** *Lophocolea trichocoleoides* (Glenny, J.J.Engel et He-Nygrén) L.Söderstr., Phytotaxa 112 (1): 27, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus trichocoleoides* Glenny, J.J.Engel et He-Nygrén, J. Bryol. 31 (2): 100, 2009 (Glenny et al. 2009).

** *Lophocolea tricuspidata* Herzog, Rev. Bryol. Lichénol. 11 (1): 17, 1938 [1939] (Herzog 1938a).

*** *Lophocolea tristaniana* S.W.Arnell, Results Norweg. Sci. Exped. Tristan da Cunha 42: 19, 1958 (Arnell 1958b).

* *Lophocolea undulata* Mont., Ann. Sci. Nat. Bot. (sér. 3) 4: 351, 1845 (Montagne 1845b).

*** *Lophocolea villosa* Mitt., Sp. Hepat. (Stephani) 6: 299, 1922 (Stephani 1922).

** *Lophocolea wacei* (S.W.Arnell ex J.J.Engel et Váňa) Váňa et L.Söderstr., Phytotaxa 112 (1): 27, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus wacei* S.W.Arnell ex J.J.Engel et Váňa, Mem. New York Bot. Gard. 105: 48, 2013 (Váňa and Engel 2013).

*** *Lophocolea wambana* Piippo, Acta Bot. Fenn. 131: 163, 1985 (Piippo 1985a).

** *Lophocolea werthii* (J.J.Engel et R.M.Schust.) Váňa et L.Söderstr., Phytotaxa 112 (1): 27, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus werthii* J.J.Engel et R.M.Schust., Nova Hedwigia 39: 425, 1984 [1985] (Engel and Schuster 1984).

** *Lophocolea widgrenii* Steph., Bull. Herb. Boissier (sér. 2) 7 (1): 66 (154), 1907 (Stephani 1907c). *Nom. nov. pro Lophocolea pallida* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 33 (7): 80, 1876 [1877] (Ångström 1876), *nom. illeg.*

** ***Otoscyphus* J.J.Engel, Bardat et Thouvenot**, Cryptog. Bryol. 33 (3): 280, 2012 (Engel et al. 2012).

*** *Otoscyphus crassicaulis* (Steph.) J.J.Engel, Bardat et Thouvenot, Cryptog. Bryol. 33 (3): 280, 2012 (Engel et al. 2012). Bas.: *Lophocolea crassicaulis* Steph., Sp. Hepat. (Stephani) 6: 268, 1922 (Stephani 1922).

*** ***Pachyglossa*** **Herzog et Grolle**, Rev. Bryol. Lichénol. 27 (3/4): 150, 1958 [1959] (Herzog and Grolle 1958).

*** *Pachyglossa austrigena* (Hook.f. et Taylor) L.Söderstr., Phytotaxa 112 (1): 24, 2013 (Söderström et al. 2013f). Bas.: *Jungermannia austrigena* Hook.f. et Taylor, London J. Bot. 3: 466, 1844 (Hooker and Taylor 1844b).

*** *Pachyglossa austrigena* subsp. *okaritana* (Steph.) L.Söderstr., Phytotaxa 112 (1): 24, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea okaritana* Steph., Bull. Herb. Boissier (sér. 2) 6 (9): 785 (85), 1906 (Stephani 1906e).

*** *Pachyglossa boveana* (C.Massal.) L.Söderstr., Phytotaxa 112 (1): 24, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea boveana* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 225, 1885 (Massalongo 1885).

** *Pachyglossa dissitifolia* Herzog et Grolle, Rev. Bryol. Lichénol. 27 (3/4): 155, 1958 [1959] (Herzog and Grolle 1958).

* *Pachyglossa exilis* (Herzog et Grolle) Hässel et Solari, Transecta botánica de la Patagonia austral: 324, 1985 (Hässel and Solari 1985). Bas.: *Pachyglossa spegazziniana* var. *exilis* Herzog et Grolle, Rev. Bryol. Lichénol. 27 (3/4): 159, 1958 [1959] (Herzog and Grolle 1958). [155]

** *Pachyglossa fissa* (Mitt.) Herzog et Grolle, Rev. Bryol. Lichénol. 28 (3/4): 346, 1959 [1960] (Grolle 1959c). Bas.: *Herpocladium fissum* Mitt., J. Linn. Soc., Bot. 15 (82): 69, 1876 (Mitten 1876a).

*** *Pachyglossa gottscheoides* (Besch. et C.Massal.) L.Söderstr., Phytotaxa 112 (1): 25, 2013 (Söderström et al. 2013f). Bas.: *Lophocolea gottscheoides* Besch. et C.Massal., Bull. Mens. Soc. Linn. Paris 1 (79): 631, 1886 (Bescherelle and Massalongo 1886).

** *Pachyglossa grolleana* Váňa, Cryptog. Bryol. 26 (1): 86, 2005 (Váňa and Gremmen 2005).

** *Pachyglossa otiphylla* (Hook.f. et Taylor) Váňa, Phytotaxa 112 (1): 25, 2013 (Söderström et al. 2013f). Bas.: *Jungermannia otiphylla* Hook.f. et Taylor, London J. Bot. 3: 466, 1844 (Hooker and Taylor 1844b).

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** *Pachyglossa tenacifolia* (Hook.f. et Taylor) Herzog et Grolle, Rev. Bryol. Lichénol. 27 (3/4): 153, 1958 [1959] (Herzog and Grolle 1958). Bas.: *Jungermannia tenacifolia* Hook.f. et Taylor, Bot. Antarct. Voy. I (Fl. Antarct. 1): 152, 1845 (Taylor and Hooker 1845).

** ***Perdusenia*** **Hässel**, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 7 (2): 11, 1989 (Hässel 1989b).

155 *Pachyglossa exilis* may be a *Chiloscyphus* species.

** *Perdusenia rheophila* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 7 (2): 11, 1989 (Hässel 1989b).

** ***Pigafettoa* C.Massal.**, Nuovo Giorn. Bot. Ital. 17 (3): 237, 1885 (Massalongo 1885).
** *Pigafettoa crenulata* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 237, 1885 (Massalongo 1885).

** ***Platycaulis* R.M.Schust.**, Phytologia 39 (4): 245, 1978 (Schuster 1978a).
*** *Platycaulis renifolius* R.M.Schust., Phytologia 39 (4): 245, 1978 (Schuster 1978a).

*** ***Stolonivector* J.J.Engel**, J. Hattori Bot. Lab. 69: 80, 1991 (Engel 1991a).
** *Stolonivector clasmatocoleoides* J.J.Engel, Nova Hedwigia 88 (3/4): 339, 2009 (Engel 2009).
*** *Stolonivector fiordlandiae* (E.A.Hodgs.) J.J.Engel, J. Hattori Bot. Lab. 69: 82, 1991 (Engel 1991a). Bas.: *Lophocolea fiordlandiae* E.A.Hodgs., Trans. Roy. Soc. New Zealand 80 (3/4): 340, 1952 [1953] (Hodgson 1952).
** *Stolonivector fiordlandiae* var. *nodulosus* J.J.Engel, Nova Hedwigia 93 (3/4): 403, 2011 (Engel 2011).
*** *Stolonivector gremmenii* (Váňa) Váňa, Phytotaxa 112 (1): 28, 2013 (Söderström et al. 2013f). Bas.: *Chiloscyphus gremmenii* Váňa, Cryptog. Bryol. 26 (1): 81, 2005 (Váňa and Gremmen 2005).
** *Stolonivector obtusilobus* J.J.Engel, Nova Hedwigia 88 (3/4): 337, 2009 (Engel 2009).
** *Stolonivector waipouensis* J.J.Engel, J. Hattori Bot. Lab. 93: 70, 2003 (Engel 2003).

** ***Xenocephalozia* R.M.Schust.**, Nova Hedwigia 10 (1/2): 25, 1965 (Schuster 1965b).
** *Xenocephalozia navicularis* (Steph.) R.M.Schust., Nova Hedwigia 10 (1/2): 25, 1965 (Schuster 1965b). Bas.: *Lophocolea navicularis* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 6): 43, 1900 (Stephani 1900b).

*** Mastigophoraceae R.M.Schust.

** ***Dendromastigophora* R.M.Schust.**, Mem. New York Bot. Gard. 45: 738, 1987 (Schuster 1987a).
*** *Dendromastigophora flagellifera* (Hook.) R.M.Schust., Mem. New York Bot. Gard. 45: 738, 1987 (Schuster 1987a). Bas.: *Jungermannia flagellifera* Hook., Musci Exot. 1: tab. 59, 1818 (Hooker 1818).

*** ***Mastigophora* Nees**, Naturgesch. Eur. Leberm. 3: 89, 1838 (Nees 1838b) nom. conserv. [156]

156 *Mastigophora* includes (*Mastigophora appendiculata*, *Mastigophora guineensis*, *Mastigophora pyramidana* and *Mastigophora valida*) which Grolle and Piippo (1984) could not study since the types were destroyed in B.

* *Mastigophora appendiculata* Steph., Sp. Hepat. (Stephani) 6: 368, 1922 (Stephani 1922).

* *Mastigophora attenuata* (Taylor) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 416, 1877 (Trevisan 1877). Bas.: *Lepidozia attenuata* Taylor, London J. Bot. 5: 369, 1846 (Taylor 1846b).

** *Mastigophora caledonica* Steph., Rev. Bryol. 35 (2): 31, 1908 (Stephani 1908l).

*** *Mastigophora diclados* (Brid. ex F.Weber) Nees, Naturgesch. Eur. Leberm. 3: 18, 1838 (Nees 1838b). Bas.: *Jungermannia diclados* Brid. ex F.Weber, Hist. Musc. Hepat. Prodr.: 56, 1815 (Weber 1815).

** *Mastigophora diclados* var. *borneensis* (De Not.) Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 251, 1893 (Schiffner 1893a). Bas.: *Sendtnera diclados* var. *borneensis* De Not., Epat. Borneo: 42, 1874 (De Notaris 1874).

** *Mastigophora diclados* var. *ramentifissa* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 315, 1950 (Herzog 1950a).

* *Mastigophora diclados* var. *villosa* Herzog, Ann. Bryol. 5: 82, 1932 (Herzog 1932b).

* *Mastigophora guineensis* Steph., Sp. Hepat. (Stephani) 6: 369, 1923 (Stephani 1923).

* *Mastigophora humillima* (Taylor) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 416, 1877 (Trevisan 1877). Bas.: *Lepidozia humillima* Taylor, London J. Bot. 5: 369, 1846 (Taylor 1846b).

* *Mastigophora pyramidana* Steph., Sp. Hepat. (Stephani) 6: 369, 1923 (Stephani 1923).

** *Mastigophora sepikiana* Piippo, Ann. Bot. Fenn. 23 (1): 2, 1986 (Piippo 1986b).

** *Mastigophora tuberculata* D.H.Mill. et H.A.Mill., J. Hattori Bot. Lab. 75: 181, 1994 (Miller and Miller 1994).

* *Mastigophora valida* Steph., Sp. Hepat. (Stephani) 6: 369, 1923 (Stephani 1923).

** *Mastigophora viridula* (Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 416, 1877 (Trevisan 1877). Bas.: *Jungermannia viridula* Nees, Flora 6 (2): 30, 1823 (Link 1823).

*** *Mastigophora woodsii* (Hook.) Nees, Naturgesch. Eur. Leberm. 3: 95, 1838 (Nees 1838b). Bas.: *Jungermannia woodsii* Hook., Brit. Jungermann.: tab. 66, 1814 (Hooker 1814).

*** Plagiochilaceae Müll.Frib.

by L. Söderström

The placement of *Pedinophyllopsis* in Plagiochilaceae follows He-Nygrén and Piippo (2003). The inclusion of *Pseudolophocolea* in the family follows Söderström et al. (2013b). The subgeneric division of *Plagiochila* follows the review by Söderström et al. (2015b).

** ***Acrochila* R.M.Schust.**, J. Hattori Bot. Lab. 26: 285, 1963 (Schuster 1963b).

*** *Acrochila biserialis* (Lehm. et Lindenb.) Grolle, J. Jap. Bot. 39 (8): 236, 1964 (Grolle 1964g). Bas.: *Plagiochila biserialis* Lehm. et Lindenb., Sp. Hepat. (Lindenberg) 5: 126, 1843 (Lindenberg 1843).
** *Acrochila caledonica* (Steph.) Inoue, J. Jap. Bot. 42 (6): 182, 1967 (Inoue 1967d). Bas.: *Plagiochila caledonica* Steph., Rev. Bryol. 35 (2): 32, 1908 (Stephani 1908l).

** ***Chiastocaulon* Carl**, Flora 126: 58, 1931 (Carl 1931a).
*** *Chiastocaulon dendroides* (Nees) Carl, Flora 126: 59, 1931 (Carl 1931a). Bas.: *Jungermannia dendroides* Nees, Enum. Pl. Crypt. Javae: 77, 1830 (Nees 1830).

** ***Dinckleria* Trevis.**, Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 421, 1877 (Trevisan 1877).
*** *Dinckleria fruticella* (Hook.f. et Taylor) J.J.Engel et Heinrichs, Cryptog. Bryol. 29 (2): 194, 2008 (Engel and Heinrichs 2008). Bas.: *Jungermannia fruticella* Hook.f. et Taylor, London J. Bot. 3: 565, 1844 (Hooker and Taylor 1844d).
*** *Dinckleria pleurata* (Hook.f. et Taylor) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 421, 1877 (Trevisan 1877). Bas.: *Jungermannia pleurata* Hook.f. et Taylor, London J. Bot. 3: 372, 1844 (Hooker and Taylor 1844a).

** ***Pedinophyllopsis* R.M.Schust. et Inoue**, Phytologia 47 (4): 311, 1981 (Schuster and Engel 1981).
** *Pedinophyllopsis abdita* (Sull.) R.M.Schust. et Inoue, Phytologia 47 (4): 311, 1981 (Schuster and Engel 1981). Bas.: *Plagiochila abdita* Sull., Hooker's J. Bot. Kew Gard. Misc. 2: 317, 1850 (Sullivant 1850).

** ***Pedinophyllum* Lindb. ex Nordst.**, Bot. Not. 1874: 156, 1874 (Nordstedt 1874).
*** *Pedinophyllum autoicum* (Steph.) Inoue, Bull. Natl. Sci. Mus. Tokyo (n.ser.) 9 (4): 575, 1966 (Inoue 1966b). Bas.: *Plagiochila autoica* Steph., Sp. Hepat. (Stephani) 6: 126, 1917 (Stephani 1917a).
*** *Pedinophyllum interruptum* (Nees) Kaal., Nyt Mag. Naturvidensk. 33 (1): 190, 1893 (Kaalaas 1893a). Bas.: *Jungermannia interrupta* Nees, Naturgesch. Eur. Leberm. 1: 165, 1833 (Nees 1833c).
*** *Pedinophyllum monoicum* (Steph.) Grolle, Nova Hedwigia 2: 287, 1960 (Grolle 1960b). Bas.: *Plagiochila monoica* Steph., Bull. Herb. Boissier (sér. 2) 3 (4): 331 (315), 1903 (Stephani 1903c).
** *Pedinophyllum truncatum* (Steph.) Inoue, J. Hattori Bot. Lab. 23: 35, 1960 [1961] (Inoue 1960). Bas.: *Clasmatocolea truncata* Steph., Bull. Herb. Boissier 5 (2): 87, 1897 (Stephani 1897b).

*** ***Plagiochila* (Dumort.) Dumort.**, Recueil Observ. Jungerm.: 14, 1835 (Dumortier 1835) nom. conserv. Bas.: *Radula* sect. *Plagiochila* Dumort., Syll. Jungerm. Europ.: 42, 1831 (Dumortier 1831).

*** *Plagiochila heteromalla* (Lehm. et Lindenb.) Lindenb., Sp. Hepat. (Lindenberg) 2-4: 83, 1840 (Lindenberg 1840). Bas.: *Jungermannia heteromalla* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 62, 1834 (Lehmann 1834).

*** **sect. *Adianthoideae* Lindenb.**, Monogr. hep. gen. Plagiochilae: xx, 1844 (Lindenberg 1844).
*** *Plagiochila adianthoides* (Sw.) Lindenb., Sp. Hepat. (Lindenberg) 2-4: 77, 1840 (Lindenberg 1840). Bas.: *Jungermannia adianthoides* Sw., Prodr. (Swartz): 142, 1788 (Swartz 1788).
* *Plagiochila adianthoides* var. *aspergillifera* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 474, 1885 (Spruce 1885).
*** *Plagiochila cristata* (Sw.) Lindenb., Sp. Hepat. (Lindenberg) 1: 33, 1839 (Lindenberg 1839). Bas.: *Jungermannia cristata* Sw., Prodr. (Swartz): 143, 1788 (Swartz 1788).
*** *Plagiochila grandicrista* Steph., Bull. Herb. Boissier (sér. 2) 5 (10): 931 (581), 1905 (Stephani 1905f).
*** *Plagiochila herminieri* Steph., Bull. Herb. Boissier (sér. 2) 5 (8): 748 (547), 1905 (Stephani 1905i).

*** **sect. *Africanae* Heinrichs**, Taxon 54 (2): 319, 2005 (Heinrichs et al. 2005).
*** *Plagiochila barteri* Mitt., J. Linn. Soc., Bot. 22 (146): 320, 1886 (Mitten 1886b).
** *Plagiochila barteri* var. *valida* (Steph.) Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 51 (1/2): 73, 1981 (Vanden Berghen 1981). Bas.: *Plagiochila valida* Steph., Bull. Herb. Boissier (sér. 2) 4 (6): 587 (438), 1904 (Stephani 1904b).
*** *Plagiochila colorans* Steph., Wiss. Ergebn. Deut. Zentr.-Afr. Exped. (1907-08), Bot. 2: 116, 1911 (Stephani 1911a).

*** **sect. *Arrectae* Carl**, Ann. Bryol., Suppl. 2: 52, 1931 (Carl 1931b).
* *Plagiochila arnelliana* Steph., Bull. Herb. Boissier (sér. 2) 2 (10): 861 (230), 1902 (Stephani 1902g). [157]
*** *Plagiochila badia* Mitt., Rep. Challenger, Bot. 1 (3, 1): 84, 1884 (Mitten 1884b).
*** *Plagiochila bidens* Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 8: 322, 1857 (Gottsche 1857).
*** *Plagiochila bifaria* (Sw.) Lindenb., Sp. Hepat. (Lindenberg) 5: 127, 1843 (Lindenberg 1843). Bas.: *Jungermannia bifaria* Sw., Prodr. (Swartz): 145, 1788 (Swartz 1788).
** *Plagiochila bifaria* var. *rosea* (R.M.Schust.) Heinrichs, Org. Divers. Evol. 4 (1/2): 112, 2004 (Heinrichs et al. 2004). Bas.: *Rhodoplagiochila rosea* R.M.Schust., Phytologia 39 (4): 247, 1978 (Schuster 1978a).
*** *Plagiochila chacabucensis* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 27, 1911 (Stephani 1911b).
*** *Plagiochila emeiensis* Grolle et M.L.So, Bryologist 101 (2): 282, 1998 (Grolle and So 1998a).

157 *Plagiochila arnelliana* may be conspecific with *Plagiochila bifaria* (Heinrichs et al. 1998).

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*** *Plagiochila superba* var. *macrotricha* (Spruce) Heinrichs, Bryophyt. Biblioth. 58: 114, 2002 (Heinrichs 2002). Bas.: *Plagiochila macrotricha* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 476, 1885 (Spruce 1885).
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** *Plagiochila circumdentata* var. *carinata* J.J.Engel et G.L.Merr., Nova Hedwigia 91 (3/4): 511, 2010 (Engel and Smith Merrill 2010).
** *Plagiochila circumserrata* Inoue et Grolle, Bull. Natl. Sci. Mus. Tokyo, B 5 (1): 27, 1979 (Inoue 1979c).
** *Plagiochila columbiana* A.Evans, Bot. Gaz. 21 (4): 189, 1896 (Evans 1896).
*** *Plagiochila delavayi* Steph., Mém. Soc. Nat. Sci. Nat. Math. Cherbourg 29: 224, 1894 (Stephani 1894b).
*** *Plagiochila elegans* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 97, 1860 [1861] (Mitten 1860c).
*** *Plagiochila hakkodensis* Steph., Bull. Herb. Boissier 5 (2): 103, 1897 (Stephani 1897b).
** *Plagiochila korthalsiana* Molk., Ned. Kruidk. Arch. 3: 416, 1854 [1855] (Sande Lacoste 1854).
** *Plagiochila loriana* Steph., Bull. Herb. Boissier (sér. 2) 3 (7): 608 (354), 1903 (Stephani 1903e).
** *Plagiochila microdentata* M.L.So, New Zealand J. Bot. 38 (3): 426, 2000 (So 2000b).
** *Plagiochila mundaliensis* Steph., Bull. Herb. Boissier (sér. 2) 3 (6): 536 (340), 1903 (Stephani 1903d).
** *Plagiochila orbicularis* (S.Hatt.) S.Hatt., J. Hattori Bot. Lab. 3: 26, 1948 [1950] (Hattori 1948b). Bas.: *Plagiochila ovalifolia* var. *orbicularis* S.Hatt., Bull. Tokyo Sci. Mus. 11: 61, 1944 (Hattori 1944d).
*** *Plagiochila ovalifolia* Mitt., Trans. Linn. Soc. London, Bot. 3 (3): 193, 1891 (Mitten 1891).
*** *Plagiochila porelloides* (Torr. ex Nees) Lindenb., Sp. Hepat. (Lindenberg) 2-4: 61, 1840 (Lindenberg 1840). Bas.: *Jungermannia porelloides* Torr. ex Nees, Naturgesch. Eur. Leberm. 1: 170, 1833 (Nees 1833c).

** *Plagiochila porelloides* var. *norvegica* (H.H.Blom et Holten) Schumacker et Váňa, Identif. keys liverw. hornw. Europe: 131, 2005 (Schumacker and Váňa 2005). Bas.: *Plagiochila norvegica* H.H.Blom et Holten, Lindbergia 14 (1): 8, 1988 (Blom and Holten 1988).
** *Plagiochila porelloides* var. *subarctica* (Jørg.) Lammes, Fl. Fenn. 6: 54, 1977 (Koponen et al. 1977). Bas.: *Plagiochila asplenioides* var. *subarctica* Jørg., Bergens Mus. Skr. (n.ser.) 16: 173, 1934 (Jørgensen 1934).
** *Plagiochila schofieldiana* Inoue, Bull. Natl. Sci. Mus. Tokyo (n.ser.) 15 (1): 183, 1972 (Inoue 1972c).
*** *Plagiochila secretifolia* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 98, 1860 [1861] (Mitten 1860c).
** *Plagiochila spinosa* M.L.So, New Zealand J. Bot. 38 (3): 428, 2000 (So 2000b).
** *Plagiochila sumatrana* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 70: 183, 1900 [1901] (Schiffner 1900c).
** *Plagiochila taiwanensis* Inoue, Bull. Natl. Sci. Mus. Tokyo, B 8 (4): 136, 1982 (Inoue 1982).
*** *Plagiochila trapezoidea* Lindenb., Sp. Hepat. (Lindenberg) 2-4: 112, 1840 (Lindenberg 1840). *Nom. nov. pro Jungermannia asplenioides* β *australis* Nees, Enum. Pl. Crypt. Javae: 73, 1830 (Nees 1830).
** *Plagiochila uniformis* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 98, 1860 [1861] (Mitten 1860c).

** **sect. *Poeltiae* Inoue**, Bull. Natl. Sci. Mus. Tokyo (n.ser.) 8 (3): 394, 1965 (Inoue 1965a).
*** *Plagiochila biondiana* C.Massal., Hepat. Shen-si: 15, 1897 (Massalongo 1897).
*** *Plagiochila carringtonii* (Balf. ex Carrington) Grolle, Trans. Brit. Bryol. Soc. 4 (4): 656, 1964 (Grolle 1964i). Bas.: *Adelanthus carringtonii* Balf. ex Carrington, Trans. Bot. Soc. Edinburgh 10: 380, 1870 (Carrington 1870).
** *Plagiochila carringtonii* subsp. *lobuchensis* Grolle, Trans. Brit. Bryol. Soc. 4 (4): 660, 1964 (Grolle 1964i).
*** *Plagiochila duthiana* Steph., Bull. Herb. Boissier (sér. 2) 3 (6): 527 (331), 1903 (Stephani 1903d).
** *Plagiochila erlangensis* M.L.So, Haussknechtia, Beih. 9: 350, 1999 (So 1999).
*** *Plagiochila poeltii* Inoue et Grolle, Trans. Brit. Bryol. Soc. 4 (4): 656, 1964 (Grolle 1964i).
*** *Plagiochila recurvata* (W.E.Nicholson) Grolle, Trans. Brit. Bryol. Soc. 4 (4): 654, 1964 (Grolle 1964i). Bas.: *Jamesoniella carringtonii* var. *recurvata* W.E.Nicholson, Symb. Sin. 5: 13, 1930 (Nicholson et al. 1930).
*** *Plagiochila retusa* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 96, 1860 [1861] (Mitten 1860c).
*** *Plagiochila wallichiana* Steph., Bull. Herb. Boissier (sér. 2) 3 (6): 523 (327), 1903 (Stephani 1903d).
** *Plagiochila wangii* Inoue, J. Jap. Bot. 37 (6): 187, 1962 (Inoue 1962c).
** *Plagiochila yulungensis* Piippo, Ann. Bot. Fenn. 34 (4): 283, 1997 (Piippo 1997).

*** **sect. *Rutilantes* Carl**, Ann. Bryol., Suppl. 2: 83, 1931 (Carl 1931b).
*** *Plagiochila bicuspidata* Gottsche, Mexik. Leverm.: 43, 1863 (Gottsche 1863).
** *Plagiochila caduciloba* H.L.Blomq., Bryologist 42 (5): 114, 1939 (Blomquist 1939).
** *Plagiochila chimborazensis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 469, 1885 (Spruce 1885).
* *Plagiochila cuneata* Lindenb. et Gottsche, Syn. Hepat. 5: 632, 1847 (Gottsche et al. 1847). [163]
*** *Plagiochila debilis* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 97, 1860 [1861] (Mitten 1860c).
*** *Plagiochila deflexa* Mont. et Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 6: 192, 1856 (Montagne 1856a).
*** *Plagiochila defolians* Grolle et M.L.So, Syst. Bot. 23 (4): 459, 1998 [1999] (Grolle and So 1998b).
*** *Plagiochila exigua* (Taylor) Taylor, London J. Bot. 5: 264, 1846 (Taylor 1846a). Bas.: *Jungermannia exigua* Taylor, Trans. Bot. Soc. Edinburgh 1: 179, 1844 (Taylor 1844b).
** *Plagiochila fracta* Pócs, Phytotaxa 195 (2): 183, 2015 (Pócs 2015a).
*** *Plagiochila ghatiensis* Steph., Sp. Hepat. (Stephani) 6: 159, 1918 (Stephani 1918).
*** *Plagiochila grossa* Grolle et M.L.So, Syst. Bot. 23 (4): 461, 1998 [1999] (Grolle and So 1998b).
*** *Plagiochila gymnocalycina* (Lehm. et Lindenb.) Mont. et Nees, Voy. Amér. Mérid., Bot. 7 (2): 81, 1839 (Montagne 1839a). Bas.: *Jungermannia gymnocalycina* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 28, 1833 (Lehmann 1833).
** *Plagiochila gymnocalycina* var. *surinamensis* (Molk.) Heinrichs et D.S.Rycroft, J. Hattori Bot. Lab. 100: 139, 2006 (Heinrichs et al. 2006). Bas.: *Plagiochila surinamensis* Molk., Syn. hepat. jav.: 103, 1856 [1857] (Sande Lacoste 1856b).
** *Plagiochila loriloba* Herzog ex Carl, Ann. Bryol., Suppl. 2: 47, 1931 (Carl 1931b).
** *Plagiochila maderensis* Gottsche ex Steph., Bull. Herb. Boissier (sér. 2) 4 (4): 350 (426), 1904 (Stephani 1904e).
** *Plagiochila oresitropha* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 467, 1885 (Spruce 1885).
*** *Plagiochila pectinata* Lindenb., Sp. Hepat. (Lindenberg) 1: 14, 1839 (Lindenberg 1839).
*** *Plagiochila rutilans* Lindenb., Sp. Hepat. (Lindenberg) 2-4: 47, 1840 (Lindenberg 1840).
*** *Plagiochila rutilans* var. *moritziana* (Lindenb. et Gottsche) Heinrichs, Bryologist 105 (2): 197, 2002 (Heinrichs et al. 2002). Bas.: *Plagiochila moritziana* Lindenb. et Gottsche, Linnaea 20 (3): 323, 1847 (Hampe 1847).
*** *Plagiochila rutilans* var. *standleyi* (Herzog ex Carl) Heinrichs et D.S.Rycroft, Bryologist 104 (3): 357, 2001 (Heinrichs et al. 2001). Bas.: *Plagiochila standleyi* Herzog ex Carl, Ann. Bryol., Suppl. 2: 80, 1931 (Carl 1931b).

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163 *Plagiochila cuneata* is conspecific with *Plagiochila bursat*a in Inoue (1980), but accepted by Grolle and Heinrichs (1999).

* *Plagiochila steyermarkii* H.Rob., Bryologist 68 (1): 93, 1965 (Robinson 1965). [164]
*** *Plagiochila trichostoma* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 113, 1864 (Gottsche 1864).

* **sect. *Strombifoliae* Inoue et R.M.Schust.**, J. Hattori Bot. Lab. 34: 130, 1971 (Inoue and Schuster 1971).
** *Plagiochila strombifolia* Taylor, Nov. Stirp. Pug. 8: 5, 1844 (Lehmann 1844).

*** **sect. *Tayloriae* Carl**, Ann. Bryol., Suppl. 2: 140, 1931 (Carl 1931b).
*** *Plagiochila annotina* Lindenb., Sp. Hepat. (Lindenberg) 1: 34, 1839 (Lindenberg 1839).
*** *Plagiochila baylisii* Inoue et R.M.Schust., J. Hattori Bot. Lab. 34: 150, 1971 (Inoue and Schuster 1971).
*** *Plagiochila bazzanioides* J.J.Engel et G.L.Merr., Novon 9 (1): 29, 1999 (Engel and Smith Merrill 1999b).
*** *Plagiochila chenii* Grolle et M.L.So, Syst. Bot. 25 (1): 6, 2000 (Grolle and So 2000).
*** *Plagiochila circinalis* (Lehm. et Lindenb.) Lehm., Sp. Hepat. (Lindenberg) 5: 124, 1843 (Lindenberg 1843). Bas.: *Jungermannia circinalis* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 64, 1832 (Lehmann 1832).
** *Plagiochila circinalis* var. *hemicardia* (Hook.f. et Taylor) J.J.Engel et G.L.Merr., Nova Hedwigia 91 (3/4): 512, 2010 (Engel and Smith Merrill 2010). Bas.: *Jungermannia hemicardia* Hook.f. et Taylor, London J. Bot. 3: 371, 1844 (Hooker and Taylor 1844a).
*** *Plagiochila colensoi* Hook.f. et Taylor, London J. Bot. 5: 269, 1846 (Taylor 1846a).
** *Plagiochila colensoi* var. *quinquespina* (Steph.) J.J.Engel et G.L.Merr., Nova Hedwigia 91 (3/4): 504, 2010 (Engel and Smith Merrill 2010). Bas.: *Plagiochila quinquespina* Steph., Bull. Herb. Boissier (sér. 2) 3 (4): 328 (312), 1903 (Stephani 1903c).
** *Plagiochila corticola* Steph., Mém. Soc. Nat. Sci. Nat. Math. Cherbourg 29: 224, 1894 (Stephani 1894b).
** *Plagiochila fasciculata* Lindenb., Sp. Hepat. (Lindenberg) 1: 7, 1839 (Lindenberg 1839).
*** *Plagiochila fusca* Sande Lac., Ned. Kruidk. Arch. 3: 417, 1854 [1855] (Sande Lacoste 1854).
** *Plagiochila fuscella* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 5: 648, 1847 (Gottsche et al. 1847). Bas.: *Jungermannia fuscella* Hook.f. et Taylor, London J. Bot. 3: 373, 1844 (Hooker and Taylor 1844a).
** *Plagiochila fuscella* var. *novae-zelandiae* (E.A.Hodgs.) J.J.Engel et G.L.Merr., Nova Hedwigia 89 (3/4): 294, 2009 (Engel and Smith Merrill 2009). Bas.: *Plagiochila retrospectans* var. *novae-zelandiae* E.A.Hodgs., Trans. & Proc. Roy. Soc. New Zealand 73 (4): 293, 1944 (Hodgson 1944).

164 *Plagiochila steyermarkii* is conspecific with *Plagiochila aerea* in Inoue in Gradstein and Hekking (1979), but this was rejected by Grolle and Heinrichs (1999).

*** *Plagiochila gracilis* Lindenb. et Gottsche, Syn. Hepat. 5: 632, 1847 (Gottsche et al. 1847).
*** *Plagiochila gymnoclada* Sande Lac., Plagiochila Sandei: 6, 1856 (Sande Lacoste 1856c).
*** *Plagiochila himalayana* Schiffn., Österr. Bot. Z. 49 (4): 131, 1899 (Schiffner 1899b).
** *Plagiochila incurvicolla* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 5: 651, 1847 (Gottsche et al. 1847). Bas.: *Jungermannia incurvicolla* Hook.f. et Taylor, London J. Bot. 3: 564, 1844 (Hooker and Taylor 1844d).
** *Plagiochila incurvicolla* var. *lonchoscypha* (Herzog) J.J.Engel et G.L.Merr., Nova Hedwigia 91 (3/4): 505, 2010 (Engel and Smith Merrill 2010). Bas.: *Plagiochila lonchoscypha* Herzog, Trans. & Proc. Roy. Soc. New Zealand 68 (1): 42, 1938 (Herzog 1938c).
** *Plagiochila microdictyon* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 131, 1854 (Mitten 1854).
** *Plagiochila monospiris* Inoue et Grolle, J. Hattori Bot. Lab. 36: 489, 1972 [1973] (Inoue 1972b).
*** *Plagiochila nitens* Inoue, Willdenowia 18 (2): 561, 1989 (Inoue 1989b).
** *Plagiochila pseudocapillaris* Inoue, Bull. Natl. Sci. Mus. Tokyo (n.ser.) 11 (3): 302, 1968 (Inoue 1968a).
*** *Plagiochila pseudofirma* Herzog, Symb. Sin. 5: 17, 1930 (Nicholson et al. 1930).
** *Plagiochila radiculosa* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 132, 1854 (Mitten 1854).
** *Plagiochila spathulifolia* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 96, 1860 [1861] (Mitten 1860c).
*** *Plagiochila stephensoniana* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 133, 1854 (Mitten 1854).

*** **sect. *Trabeculatae* S.Hatt. ex Inoue**, J. Hattori Bot. Lab. 20: 75, 1958 (Inoue 1958).
** *Plagiochila austinii* A.Evans, Rhodora 16 (184): 68, 1914 (Evans 1914b).
*** *Plagiochila flexuosa* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 94, 1860 [1861] (Mitten 1860c).
** *Plagiochila sullivantii* Gottsche, Bot. Gaz. 21 (4): 191, 1896 (Evans 1896).
** *Plagiochila sullivantii* var. *spinigera* R.M.Schust., Amer. Midl. Naturalist 62 (2): 323, 1959 (Schuster 1959b).
*** *Plagiochila trabeculata* Steph., Bull. Herb. Boissier (sér. 2) 3 (2): 103 (283), 1903 (Stephani 1903b).

*** **sect. *Vagae* Lindenb.**, Monogr. hep. gen. Plagiochilae: xv, 1844 (Lindenberg 1844).
*** *Plagiochila abietina* (Nees) Mont. et Nees, Voy. Amér. Mérid., Bot. 7 (2): 81, 1839 (Montagne 1839a). Bas.: *Jungermannia abietina* Nees, Enum. Pl. Crypt. Javae: 76, 1830 (Nees 1830).
** *Plagiochila abrupta* Lehm. et Lindenb., Sp. Hepat. (Lindenberg) 2-4: 106, 1840 (Lindenberg 1840).

** *Plagiochila aequatorialis* Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 8: 334, 1857 (Gottsche 1857).
*** *Plagiochila africana* Steph., Bull. Herb. Boissier (sér. 2) 2 (12): 973 (263), 1902 (Stephani 1902h).
*** *Plagiochila akiyamae* Inoue, Bull. Natl. Sci. Mus. Tokyo, B 12 (3): 73, 1986 (Inoue 1986).
*** *Plagiochila angusta* Lindenb., Sp. Hepat. (Lindenberg) 5: 148, 1843 (Lindenberg 1843).
*** *Plagiochila angustitexta* Steph., Bull. Herb. Boissier (sér. 2) 2 (12): 977 (267), 1902 (Stephani 1902h).
*** *Plagiochila arbuscula* (Brid. ex Lehm. et Lindenb.) Lindenb., Sp. Hepat. (Lindenberg) 1: 23, 1839 (Lindenberg 1839). Bas.: *Jungermannia arbuscula* Brid. ex Lehm. et Lindenb., Nov. Stirp. Pug. 4: 63, 1832 (Lehmann 1832).
** *Plagiochila arbuscula* var. *rekohuensis* J.J.Engel et G.L.Merr., Nova Hedwigia 91 (3/4): 509, 2010 (Engel and Smith Merrill 2010).
* *Plagiochila aspera* Steph., Sp. Hepat. (Stephani) 6: 125, 1917 (Stephani 1917a). [165]
** *Plagiochila aspleniformis* R.M.Schust., Amer. Midl. Naturalist 63 (1): 51, 1960 (Schuster 1960c).
** *Plagiochila beddomei* Steph., Bull. Herb. Boissier (sér. 2) 3 (10): 876 (361), 1903 (Stephani 1903f).
*** *Plagiochila boivinii* Steph., Bull. Herb. Boissier (sér. 2) 2 (12): 987 (277), 1902 (Stephani 1902h).
*** *Plagiochila bryopteroides* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 499, 1885 (Spruce 1885).
** *Plagiochila contigua* Gottsche, Mexik. Leverm.: 30, 1863 (Gottsche 1863).
*** *Plagiochila corrugata* (Nees) Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 52, 1836 (Nees and Montagne 1836). Bas.: *Jungermannia corrugata* Nees, Fl. Bras. (Martius) 1 (1): 378, 1833 (Nees 1833a).
*** *Plagiochila cuspidata* Steph., Sp. Hepat. (Stephani) 6: 144, 1918 (Stephani 1918).
** *Plagiochila cymata* Inoue et Grolle, Bull. Natl. Sci. Mus. Tokyo, B 1 (3): 95, 1975 (Inoue 1975a).
** *Plagiochila deflexirama* Taylor, London J. Bot. 5: 262, 1846 (Taylor 1846a).
*** *Plagiochila dichotoma* (P.Beauv.) Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 53, 1836 (Nees and Montagne 1836). Bas.: *Carpolepidum dichotomum* P.Beauv., Fl. Oware 1 (3): 23, 1805 (Palisot de Beauvois 1805b).
* *Plagiochila dichotoma* var. *fluitans* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 490, 1885 (Spruce 1885).
*** *Plagiochila dissecta* Steph., Bull. Herb. Boissier (sér. 2) 3 (7): 600 (346), 1903 (Stephani 1903e).

165 *Plagiochila aspera* is conspecific with *Plagiochila trigona* Steph. (=*Plagiochila metcalfii*) in Inoue (1970b), but it was accepted by So (2000a, 2001a).

*** *Plagiochila disticha* (Lehm. et Lindenb.) Lindenb., Sp. Hepat. (Lindenberg) 2-4: 107, 1840 (Lindenberg 1840). Bas.: *Jungermannia disticha* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 64, 1834 (Lehmann 1834).

** *Plagiochila distinctifolia* Lindenb., Sp. Hepat. (Lindenberg) 1: 17, 1839 (Lindenberg 1839).

*** *Plagiochila divergens* Steph., Hedwigia 30 (6): 268, 1891 (Stephani 1891c).

*** *Plagiochila drepanophylla* Sande Lac., Syn. hepat. jav.: 103, 1856 [1857] (Sande Lacoste 1856b).

* *Plagiochila drepanophylla* var. *minor* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 341, 1882 (Gottsche 1882).

*** *Plagiochila effusa* Steph., Bot. Jahrb. Syst. 20 (3): 310, 1895 (Stephani 1895a).

* *Plagiochila effusa* var. *decurrens* Steph., Bot. Jahrb. Syst. 20 (3): 310, 1895 (Stephani 1895a).

*** *Plagiochila ericicola* Steph., Bull. Herb. Boissier (sér. 2) 4 (6): 590 (441), 1904 (Stephani 1904b).

** *Plagiochila exinnovata* Steph., Bull. Herb. Boissier (sér. 2) 3 (7): 600 (346), 1903 (Stephani 1903e).

** *Plagiochila fastigiata* Lindenb. et Gottsche, Syn. Hepat. 5: 657, 1847 (Gottsche et al. 1847).

*** *Plagiochila flabellata* Steph., Bot. Jahrb. Syst. 8 (2): 82, 1886 (Stephani 1886d).

** *Plagiochila floridana* A.Evans, Bot. Gaz. 21 (4): 190, 1896 (Evans 1896).

*** *Plagiochila fordiana* Steph., Bull. Herb. Boissier (sér. 2) 3 (2): 104 (284), 1903 (Stephani 1903b).

** *Plagiochila francana* Steph., Sp. Hepat. (Stephani) 6: 157, 1918 (Stephani 1918).

*** *Plagiochila furcifolia* Mitt., Trans. Linn. Soc. London, Bot. 3 (3): 194, 1891 (Mitten 1891).

*** *Plagiochila fusifera* Taylor, London J. Bot. 5: 268, 1846 (Taylor 1846a).

*** *Plagiochila hampeana* Gottsche, Bot. Zeitung (Berlin) Beil. 16: 38, 1858 (Gottsche 1858).

* *Plagiochila heterospina* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 128, 1914 (Stephani and Watts 1914).

* *Plagiochila heterostipa* Steph., Hedwigia 31 (3): 129, 1892 (Stephani 1892d). [166]

** *Plagiochila incerta* Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 8: 324, 1857 (Gottsche 1857).

*** *Plagiochila indica* Mitt. ex Steph., Bull. Herb. Boissier (sér. 2) 3 (6): 532 (336), 1903 (Stephani 1903d).

** *Plagiochila invisa* (R.M.Schust.) R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 513, 1980 (Schuster 1980c). Bas.: *Plagiochila ludoviciana* var. *invisa* R.M.Schust., Amer. Midl. Naturalist 63 (1): 101, 1960 (Schuster 1960c).

*** *Plagiochila javanica* (Sw.) Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 52, 1836 (Nees and Montagne 1836). Bas.: *Jungermannia javanica* Sw., Meth. Musc.: 35, 1781 (Swartz 1781).

166 *Plagiochila heterostipa* is possibly conspecific with *Plagiochila corymbulosa* (Jones 1962).

*** *Plagiochila junghuhniana* Sande Lac., Ned. Kruidk. Arch. 3: 416, 1854 [1855] (Sande Lacoste 1854).
*** *Plagiochila khasiana* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 95, 1860 [1861] (Mitten 1860c).
** *Plagiochila kiaeri* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 341, 1882 (Gottsche 1882).
** *Plagiochila kiaeri* var. *capensis* (Steph.) M.Wigginton et Grolle, Bryophyt. Biblioth. 50: 182, 1996 (Wigginton and Grolle 1996). Bas.: *Plagiochila capensis* Steph., Bull. Herb. Boissier (sér. 2) 4 (4): 350 (426), 1904 (Stephani 1904e).
** *Plagiochila kiaeri* var. *myriocarpa* (Pearson) Pócs, J. E. Afr. Nat. Hist. 96 (1): 38, 2007 (Pócs and Luke 2007). Bas.: *Plagiochila myriocarpa* Pearson, Ark. Bot. 19 (5): 5, 1924 (Pearson 1924b).
*** *Plagiochila kunmingensis* Piippo, Ann. Bot. Fenn. 34 (4): 281, 1997 (Piippo 1997).
** *Plagiochila kurokawae* Inoue, J. Hattori Bot. Lab. 32: 104, 1969 (Inoue 1969).
*** *Plagiochila laetevirens* Lindenb., Sp. Hepat. (Lindenberg) 2-4: 101, 1840 (Lindenberg 1840).
** *Plagiochila lamellistipula* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 491, 1885 (Spruce 1885).
*** *Plagiochila lastii* Mitt., J. Linn. Soc., Bot. 22 (146): 320, 1886 (Mitten 1886b).
** *Plagiochila latifolia* Steph., Bull. Herb. Boissier (sér. 2) 5 (8): 742 (541), 1905 (Stephani 1905i).
* *Plagiochila loloënsis* Steph., Bull. Herb. Boissier (sér. 2) 4 (2): 166 (418), 1904 (Stephani 1904f). [167]
** *Plagiochila manillana* Mont. et Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 6: 189, 1856 (Montagne 1856a).
** *Plagiochila massalongoana* Schiffn., Hep. Fl. Buitenzorg: 136, 1900 (Schiffner 1900a).
** *Plagiochila mastigophoroides* Inoue, J. Hattori Bot. Lab. 32: 99, 1969 (Inoue 1969).
** *Plagiochila metcalfii* Steph., Bull. Herb. Boissier (sér. 2) 3 (6): 533 (337), 1903 (Stephani 1903d).
** *Plagiochila micropteryx* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 107, 1864 (Gottsche 1864).
** *Plagiochila miradorensis* Gottsche, Mexik. Leverm.: 31, 1863 (Gottsche 1863).
** *Plagiochila miradorensis* var. *convoluta* R.M.Schust., Amer. Midl. Naturalist 63 (1): 113, 1960 (Schuster 1960c).
* *Plagiochila moenkemeyeri* Steph., Bull. Herb. Boissier (sér. 2) 4 (2): 160 (412), 1904 (Stephani 1904f). [168]
*** *Plagiochila montagnei* Nees, Ann. Sci. Nat. Bot. (sér. 2) 5: 53, 1836 (Nees and Montagne 1836).

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167 *Plagiochila loloënsis* is probably an entire-leaved form of *Plagiochila moenkemeyeri* (Wigginton and Grolle 1996).

168 *Plagiochila moenkemeyeri* is possibly conspecific with *Plagiochila winteri* (Jones 1962), but he expressed some doubts on the synonymy.

** *Plagiochila morobensis* Inoue et Piippo, Ann. Bot. Fenn. 26 (2): 203, 1989 (Piippo 1989b).
** *Plagiochila multipinnula* Herzog et S.Hatt., J. Hattori Bot. Lab. 14: 36, 1955 (Herzog and Noguchi 1955).
*** *Plagiochila neckeroidea* Mitt., Trans. Linn. Soc. London 23 (1): 57, 1860 (Mitten 1860a).
*** *Plagiochila nepalensis* Lindenb., Sp. Hepat. (Lindenberg) 2-4: 93, 1840 (Lindenberg 1840).
** *Plagiochila norfolkiensis* Steph., Bull. Herb. Boissier (sér. 2) 3 (10): 877 (362), 1903 (Stephani 1903f).
*** *Plagiochila obtusa* Lindenb., Sp. Hepat. (Lindenberg) 2-4: 42, 1840 (Lindenberg 1840).
* *Plagiochila owaihiensis* Nees et Lindenb., Sp. Hepat. (Lindenberg) 1: 30, 1839 (Lindenberg 1839). [169]
** *Plagiochila pacifica* Mitt., Fl. vit.: 407, 1871 [1873] (Mitten 1871).
** *Plagiochila parallela* Steph., Bull. Herb. Boissier (sér. 2) 2 (8): 686 (223), 1902 (Stephani 1902a).
*** *Plagiochila parvifolia* Lindenb., Sp. Hepat. (Lindenberg) 1: 28, 1839 (Lindenberg 1839).
*** *Plagiochila patentissima* Lindenb., Sp. Hepat. (Lindenberg) 2-4: 64, 1840 (Lindenberg 1840).
*** *Plagiochila patula* (Sw.) Lindenb., Sp. Hepat. (Lindenberg) 1: 21, 1839 (Lindenberg 1839). Bas.: *Jungermannia patula* Sw., Fl. Ind. Occid. 3: 1844, 1806 (Swartz 1806).
** *Plagiochila patula* var. *brevifolia* Gottsche, Mexik. Leverm.: 10, 1863 (Gottsche 1863).
** *Plagiochila paucidens* Steph., Bull. Herb. Boissier (sér. 2) 3 (2): 117 (297), 1903 (Stephani 1903b).
** *Plagiochila pensilis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 497, 1885 (Spruce 1885).
** *Plagiochila peradenyensis* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 70: 172, 1900 [1901] (Schiffner 1900c).
** *Plagiochila perdentata* M.L.So et Grolle, Syst. Bot. 26 (3): 460, 2001 (So and Grolle 2001).
*** *Plagiochila pinniflora* Steph., Hedwigia 30 (5): 212, 1891 (Stephani 1891a).
*** *Plagiochila praemorsa* Steph., Bot. Jahrb. Syst. 8 (2): 92, 1886 (Stephani 1886d).
** *Plagiochila propinqua* Sande Lac., Plagiochila Sandei: 5, 1856 (Sande Lacoste 1856c).
** *Plagiochila purpurascens* Steph., Sp. Hepat. (Stephani) 6: 197, 1921 (Stephani 1921).
*** *Plagiochila raddiana* Lindenb., Sp. Hepat. (Lindenberg) 1: 9, 1839 (Lindenberg 1839).
* *Plagiochila ragazzii* Gola, Ann. Bot. (Rome) 13 (1): 67, 1914 (Gola 1914a).
*** *Plagiochila repanda* (Schwägr.) Lindenb., Sp. Hepat. (Lindenberg) 2-4: 62, 1840 (Lindenberg 1840). Bas.: *Jungermannia repanda* Schwägr., Hist. Musc. Hepat. Prodr.: 26, 1814 (Schwägrichen 1814).

169 *Plagiochila owaihiensis* was considered conspecific with *Plagiochila remyana* by Inoue (1976c), but So (2000a) did not agree.

** *Plagiochila repanda* var. *perrotana* (Steph.) Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 51 (1/2): 65, 1981 (Vanden Berghen 1981). Bas.: *Plagiochila perrotana* Steph., Bull. Herb. Boissier (sér. 2) 4 (6): 586 (437), 1904 (Stephani 1904b).
*** *Plagiochila rodriguezii* Steph., Bot. Gaz. 15 (11): 290, 1890 (Stephani 1890c).
*** *Plagiochila rudolfii* Pócs, Beih. Nova Hedwigia 90: 223, 1988 (Pócs 1988).
*** *Plagiochila salacensis* Gottsche, Natuurk. Tijdschr. Ned.-Indië 4: 576, 1853 (Gottsche 1853).
*** *Plagiochila salvadorica* Steph., Hedwigia 30 (6): 272, 1891 (Stephani 1891c).
** *Plagiochila serrialata* Herzog, Hedwigia 72 (6): 212, 1932 (Herzog 1932c).
*** *Plagiochila shangaica* Steph., Sp. Hepat. (Stephani) 6: 216, 1921 (Stephani 1921).
*** *Plagiochila simplex* (Sw.) Lindenb., Sp. Hepat. (Lindenberg) 2-4: 54, 1840 (Lindenberg 1840). Bas.: *Jungermannia simplex* Sw., Prodr. (Swartz): 143, 1788 (Swartz 1788).
*** *Plagiochila squamulosa* Mitt., J. Proc. Linn. Soc., Bot. 7 (27): 165, 1863 (Mitten 1863).
** *Plagiochila squamulosa* var. *crispulocaudata* (Gottsche) Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 51 (1/2): 74, 1981 (Vanden Berghen 1981). Bas.: *Plagiochila crispulocaudata* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 340, 1882 (Gottsche 1882).
** *Plagiochila squamulosa* var. *sinuosa* (Mitt.) Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 51 (1/2): 75, 1981 (Vanden Berghen 1981). Bas.: *Plagiochila sinuosa* Mitt., J. Linn. Soc., Bot. 22 (146): 319, 1886 (Mitten 1886b).
** *Plagiochila streimannii* Inoue, J. Jap. Bot. 63 (11): 365, 1988 (Inoue 1988c).
*** *Plagiochila strictifolia* Steph., Hedwigia 30 (5): 210, 1891 (Stephani 1891a).
** *Plagiochila subflabellata* Colenso, Trans. & Proc. New Zealand Inst. 21: 51, 1889 (Colenso 1889).
** *Plagiochila subjavanica* M.L.So, Austral. Syst. Bot. 13 (5): 804, 2000 (So 2000a).
*** *Plagiochila subtropica* Steph., Bull. Soc. Roy. Bot. Belgique 38 (1): 46, 1899 (Stephani 1899h).
** *Plagiochila tamariscina* Steph., Bull. Herb. Boissier (sér. 2) 2 (8): 685 (222), 1902 (Stephani 1902a).
** *Plagiochila tecta* Inoue et Grolle, J. Hattori Bot. Lab. 33: 319, 1970 (Inoue 1970a).
*** *Plagiochila terebrans* Nees et Mont., Sp. Hepat. (Lindenberg) 2-4: 98, 1840 (Lindenberg 1840).
*** *Plagiochila teysmannii* Sande Lac., Plagiochila Sandei: 6, 1856 (Sande Lacoste 1856c).
** *Plagiochila thyoides* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 498, 1885 (Spruce 1885).
** *Plagiochila tocarema* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 106, 1864 (Gottsche 1864).
** *Plagiochila ulata* Inoue et Grolle, Bull. Natl. Sci. Mus. Tokyo, B 1 (3): 91, 1975 (Inoue 1975a).
** *Plagiochila undata* Sull., Amer. J. Sci. Arts (ser. 2) 1 (1): 73, 1846 (Gray 1846).
** *Plagiochila undata* subsp. *crispata* (Gottsche) R.M.Schust., Amer. Midl. Naturalist 63 (1): 122, 1960 (Schuster 1960c). Bas.: *Plagiochila crispata* Gottsche, Mexik. Leverm.: 71, 1863 (Gottsche 1863).

** *Plagiochila ungarangana* Sande Lac., Syn. hepat. jav.: 10, 1856 [1857] (Sande Lacoste 1856b).
*** *Plagiochila virginica* A.Evans, Prelim. cat. fl. W. Virginia: 497, 1892 (Evans 1892a).
** *Plagiochila virginica* var. *caroliniana* R.M.Schust., Amer. Midl. Naturalist 63 (1): 15, 1960 (Schuster 1960c).
** *Plagiochila virginica* var. *euryphylla* R.M.Schust., Amer. Midl. Naturalist 63 (1): 21, 1960 (Schuster 1960c).
*** *Plagiochila wightii* Nees, Sp. Hepat. (Lindenberg) 2-4: 43, 1840 (Lindenberg 1840).
** *Plagiochila wilhelmina* Inoue, J. Hattori Bot. Lab. 33: 317, 1970 (Inoue 1970a).

* **sect. *Zanteniae* (Inoue) Inoue**, Gen. Plagiochila SE Asia: 45, 1984 (Inoue 1984b). Bas.: *Plagiochila* subsect. *Zanteniae* Inoue, J. Hattori Bot. Lab. 32: 109, 1969 (Inoue 1969).
** *Plagiochila zantenii* Inoue, J. Hattori Bot. Lab. 32: 107, 1969 (Inoue 1969).

Incertae sedis
* *Plagiochila abscendens* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 104, 1864 (Gottsche 1864).
** *Plagiochila aculeata* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 5: 627, 1847 (Gottsche et al. 1847). Bas.: *Jungermannia aculeata* Hook.f. et Taylor, London J. Bot. 3: 578, 1844 (Hooker and Taylor 1844c).
** *Plagiochila acuta* Steph., Bull. Herb. Boissier (sér. 2) 3 (7): 607 (353), 1903 (Stephani 1903e).
* *Plagiochila albertii* Steph., Biblioth. Bot. 87 (2): 188, 1916 (Stephani 1916a).
* *Plagiochila aliena* Gottsche, Mexik. Leverm.: 22, 1863 (Gottsche 1863). [170]
** *Plagiochila allionii* Steph., Sp. Hepat. (Stephani) 6: 120, 1917 (Stephani 1917a).
* *Plagiochila ambigua* Lindenb. et Hampe, Linnaea 24 (6): 640, 1851 [1852] (Hampe 1851a).
* *Plagiochila ampliata* Steph., Biblioth. Bot. 87 (2): 189, 1916 (Stephani 1916a).
** *Plagiochila andicola* Mont. et Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 6: 187, 1856 (Montagne 1856a).
** *Plagiochila andina* Steph., Sp. Hepat. (Stephani) 6: 121, 1917 (Stephani 1917a).
* *Plagiochila angolensis* Steph., Sp. Hepat. (Stephani) 6: 122, 1917 (Stephani 1917a).
* *Plagiochila angusteoblonga* Steph., Biblioth. Bot. 87 (2): 189, 1916 (Stephani 1916a).
** *Plagiochila angustisedens* Steph., Bull. Herb. Boissier (sér. 2) 5 (8): 743 (542), 1905 (Stephani 1905i).
** *Plagiochila angustispina* Steph., Bull. Herb. Boissier (sér. 2) 2 (8): 671 (208), 1902 (Stephani 1902a).
** *Plagiochila apicalis* Gottsche, Mexik. Leverm.: 29, 1863 (Gottsche 1863).

170 *Plagiochila aliena* is conspecific with *Plagiochila ludoviciana* in Schuster (1960c), but others (e.g. Fulford and Sharp 1990, Heinrichs et al. 1998, Dauphin 2005) recognize it.

** *Plagiochila appalachiana* Inoue, J. Hattori Bot. Lab. 40: 415, 1976 (Inoue 1976b). *Nom. nov. pro Plagiochila yokogurensis* subsp. *fragilifolia* R.M.Schust., J. Hattori Bot. Lab. 18: 18, 1957 (Schuster 1957c).
* *Plagiochila arcta* S.Winkl., Rev. Bryol. Lichénol. 42 (3): 818, 1976 (Winkler 1976).
** *Plagiochila arcuata* Lindenb., Sp. Hepat. (Lindenberg) 2-4: 91, 1840 (Lindenberg 1840).
** *Plagiochila arenacea* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 53, 1964 (Schiffner and Arnell 1964).
* *Plagiochila artsii* Pócs, J. Hattori Bot. Lab. 100: 334, 2006 (Pócs 2006a).
** *Plagiochila atrovirens* Taylor, London J. Bot. 5: 266, 1846 (Taylor 1846a).
** *Plagiochila balansae* Gottsche, Contr. Étude Plagiochila: 149, 1928 (Dugas 1928).
** *Plagiochila baldwinii* Austin, Trans. Connecticut Acad. Arts 8 (15): 257, 1891 (Evans 1891).
* *Plagiochila bamingensis* Steph., Bull. Mus. Natl. Hist. Nat. 18 (2): 117, 1912 (Corbière 1912).
** *Plagiochila bancroftii* Steph., Sp. Hepat. (Stephani) 6: 127, 1917 (Stephani 1917a).
*** *Plagiochila barbadensis* Steph., Bull. Herb. Boissier (sér. 2) 5 (9): 897 (563), 1905 (Stephani 1905g).
* *Plagiochila barbata* Steph., Biblioth. Bot. 87 (2): 190, 1916 (Stephani 1916a).
* *Plagiochila barbeyi* Steph., Biblioth. Bot. 87 (2): 190, 1916 (Stephani 1916a).
* *Plagiochila batava* Steph., Sp. Hepat. (Stephani) 6: 128, 1917 (Stephani 1917a).
* *Plagiochila berggrenii* Steph., Biblioth. Bot. 87 (2): 191, 1916 (Stephani 1916a).
** *Plagiochila beskeana* Steph., Bull. Herb. Boissier (sér. 2) 2 (10): 863 (232), 1902 (Stephani 1902g).
** *Plagiochila bialata* Mitt., Fl. vit.: 407, 1871 [1873] (Mitten 1871).
* *Plagiochila biapiculata* Steph., Bull. Herb. Boissier (sér. 2) 5 (9): 891 (557), 1905 (Stephani 1905g).
* *Plagiochila bicaudata* Steph., Sp. Hepat. (Stephani) 6: 130, 1918 (Stephani 1918).
** *Plagiochila biciliata* Steph., Bull. Herb. Boissier (sér. 2) 3 (6): 529 (333), 1903 (Stephani 1903d).
** *Plagiochila bicornis* Hampe et Gottsche, Linnaea 25 (3): 338, 1852 [1853] (Hampe and Gottsche 1852).
* *Plagiochila bidentula* Steph., Sp. Hepat. (Stephani) 6: 130, 1918 (Stephani 1918).
** *Plagiochila binghamiae* A.Evans, Trans. Connecticut Acad. Arts 18 (5): 304, 1914 (Evans 1914c).
** *Plagiochila binominata* Steph., Sp. Hepat. (Stephani) 6: 131, 1918 (Stephani 1918).
** *Plagiochila bitexta* Dugas, Contr. Étude Plagiochila: 58, 1928 (Dugas 1928).
** *Plagiochila blepharobasis* Herzog, Hedwigia 72 (6): 216, 1932 (Herzog 1932c).
** *Plagiochila bogotensis* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 98, 1864 (Gottsche 1864).
* *Plagiochila boliviana* Spruce, Mem. Torrey Bot. Club 1 (3): 137, 1890 (Spruce 1890).
* *Plagiochila borneensis* Steph., Sp. Hepat. (Stephani) 6: 132, 1918 (Stephani 1918). [171]

171 *Plagiochila borneensis* is a doubtful taxon. No specimen could be found by Inoue (1984b) or So and Grolle (2000a).

** *Plagiochila brassii* Inoue et Grolle, J. Hattori Bot. Lab. 36: 492, 1972 [1973] (Inoue 1972b).
* *Plagiochila brevicalycina* Lindenb. et Gottsche, Linnaea 20 (3): 322, 1847 (Hampe 1847).
** *Plagiochila brunneola* Steph., Bull. Herb. Boissier (sér. 2) 4 (2): 164 (416), 1904 (Stephani 1904f).
*** *Plagiochila bryhnii* Steph., Biblioth. Bot. 87 (2): 192, 1916 (Stephani 1916a).
** *Plagiochila bunburii* Taylor, London J. Bot. 5: 269, 1846 (Taylor 1846a).
* *Plagiochila byssacea* Hampe, Linnaea 20 (3): 326, 1847 (Hampe 1847).
** *Plagiochila caducidentata* R.M.Schust., Phytologia 39 (4): 247, 1978 (Schuster 1978a).
** *Plagiochila caldana* Steph., Bull. Herb. Boissier (sér. 2) 2 (10): 879 (248), 1902 (Stephani 1902g).
** *Plagiochila callaensis* Steph., Sp. Hepat. (Stephani) 6: 136, 1918 (Stephani 1918).
* *Plagiochila camusii* Steph., Biblioth. Bot. 87 (2): 193, 1916 (Stephani 1916a).
* *Plagiochila capillicaulis* Steph., Biblioth. Bot. 87 (2): 193, 1916 (Stephani 1916a).
** *Plagiochila caribbeania* R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 412, 1980 (Schuster 1980c).
* *Plagiochila cava* Steph., Bull. Herb. Boissier (sér. 2) 4 (12): 1213 (501), 1904 (Stephani 1904h).
** *Plagiochila ceylanica* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 98, 1860 [1861] (Mitten 1860c).
** *Plagiochila chacoënsis* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 55 (1): 7, 1952 (Herzog 1952h).
** *Plagiochila chiloënsis* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 6): 27, 1900 (Stephani 1900b).
** *Plagiochila chinantlana* Gottsche, Mexik. Leverm.: 12, 1863 (Gottsche 1863).
* *Plagiochila chiovendae* Gola, Ann. Bot. (Rome) 13 (1): 67, 1914 (Gola 1914a).
* *Plagiochila cinchonae* Steph., Bull. Herb. Boissier (sér. 2) 5 (10): 920 (570), 1905 (Stephani 1905f).
* *Plagiochila circumvoluta* Gerola, Lav. Bot. Ist. Bot. Univ. Padova 12: 475, 1947 (Gerola 1947).
*** *Plagiochila cleefii* Inoue, Stud. Cryptog. S. Peru: 95, 1987 (Inoue 1987c).
* *Plagiochila concava* Nees, Sp. Hepat. (Lindenberg) 2-4: 70, 1840 (Lindenberg 1840).
** *Plagiochila conduplicata* Steph., Sp. Hepat. (Stephani) 6: 139, 1918 (Stephani 1918).
* *Plagiochila conferta* Steph., Sp. Hepat. (Stephani) 6: 139, 1918 (Stephani 1918).
** *Plagiochila confertissima* Steph., Bull. Herb. Boissier (sér. 2) 5 (2): 182 (510), 1905 (Stephani 1905d).
** *Plagiochila connata* Lindenb. et Gottsche, Syn. Hepat. 5: 645, 1847 (Gottsche et al. 1847).
** *Plagiochila contorta* Lindenb. et Hampe, Linnaea 24 (3): 301, 1851 [1852] (Hampe 1851b).
** *Plagiochila convoluta* Steph., Sp. Hepat. (Stephani) 6: 141, 1918 (Stephani 1918).
** *Plagiochila convolutifolia* Steph., Sp. Hepat. (Stephani) 6: 142, 1918 (Stephani 1918).

*** *Plagiochila corymbulosa* Pearson, Forh. Vidensk.-Selsk. Kristiania 1887 (9): 14, 1887 (Pearson 1887b).
** *Plagiochila costariensis* Horik., Acta Phytotax. Geobot. 13: 213, 1943 (Horikawa 1943). *Nom. nov. pro Plagiochila pinnata* Steph., Bull. Herb. Boissier (sér. 2) 5 (8): 749 (548), 1905 (Stephani 1905i), *nom. illeg.*
** *Plagiochila crispabilis* Lindenb., Sp. Hepat. (Lindenberg) 1: 15, 1839 (Lindenberg 1839).
* *Plagiochila crispabilis* var. *minima* Lindenb., Sp. Hepat. (Lindenberg) 5: 155, 1843 (Lindenberg 1843).
** *Plagiochila cristophylla* Steph., Bull. Herb. Boissier (sér. 2) 3 (2): 117 (297), 1903 (Stephani 1903b).
*** *Plagiochila cuatrecasii* H.Rob., Bryologist 70 (1): 47, 1967 (Robinson 1967).
** *Plagiochila cubensis* Steph., Sp. Hepat. (Stephani) 6: 143, 1918 (Stephani 1918).
** *Plagiochila cucullata* Lindenb. et Gottsche, Syn. Hepat. 5: 642, 1847 (Gottsche et al. 1847).
* *Plagiochila cuervina* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 96, 1864 (Gottsche 1864).
** *Plagiochila delapsa* Inoue, Beih. Nova Hedwigia 90: 171, 1988 (Inoue 1988a).
* *Plagiochila delognei* Steph., Biblioth. Bot. 87 (2): 196, 1916 (Stephani 1916a).
** *Plagiochila denigrata* Inoue, Willdenowia 18 (2): 557, 1989 (Inoue 1989b).
** *Plagiochila densa* Herzog, Hedwigia 72 (6): 222, 1932 (Herzog 1932c).
** *Plagiochila densiflora* Herzog, Hedwigia 72 (6): 226, 1932 (Herzog 1932c).
** *Plagiochila densiramosa* Steph., Biblioth. Bot. 87 (2): 196, 1916 (Stephani 1916a).
** *Plagiochila deppeana* Steph., Bull. Herb. Boissier (sér. 2) 5 (9): 886 (552), 1905 (Stephani 1905g).
** *Plagiochila desciscens* Steph., Bull. Herb. Boissier (sér. 2) 2 (10): 867 (236), 1902 (Stephani 1902g).
* *Plagiochila dilatata* Steph., Bull. Herb. Boissier (sér. 2) 5 (9): 887 (553), 1905 (Stephani 1905g).
* *Plagiochila distans* Colenso, Trans. & Proc. New Zealand Inst. 19: 283, 1887 (Colenso 1887). [172]
** *Plagiochila divaricata* Lindenb., Sp. Hepat. (Lindenberg) 5: 147, 1843 (Lindenberg 1843).
* *Plagiochila doerfleri* Steph., Biblioth. Bot. 87 (2): 196, 1916 (Stephani 1916a).
** *Plagiochila dolichoblasta* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 286, 1950 (Herzog 1950a).
** *Plagiochila dussiana* Steph., Symb. Antill. (Urban) 3 (2): 277, 1902 (Stephani 1902e).
** *Plagiochila echinata* R.M.Schust., Amer. Midl. Naturalist 62 (2): 341, 1959 (Schuster 1959b).
** *Plagiochila echinella* Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 8: 332, 1857 (Gottsche 1857).
* *Plagiochila ecuadorensis* Steph., Sp. Hepat. (Stephani) 6: 149, 1918 (Stephani 1918).

172 *Plagiochila distans* is a doubtful taxon. The type specimen could not be found (Hodgson 1944, Hamlin 1972).

* *Plagiochila effuseintricata* Steph., Biblioth. Bot. 87 (2): 197, 1916 (Stephani 1916a).
** *Plagiochila eggersii* Inoue, Bull. Natl. Sci. Mus. Tokyo, B 14 (4): 138, 1988 (Inoue 1988b).
** *Plagiochila ekmanii* S.W.Arnell, Bryologist 59 (4): 274, 1956 (Arnell 1956c).
* *Plagiochila electa* Steph., Bull. Herb. Boissier (sér. 2) 5 (8): 739 (538), 1905 (Stephani 1905i).
* *Plagiochila elegantula* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 161, 1955 (Herzog 1955).
* *Plagiochila emarginatobidentula* Steph., Biblioth. Bot. 87 (2): 197, 1916 (Stephani 1916a).
* *Plagiochila erythraeae* Herzog, Hedwigia 78 (3/4): 224, 1938 (Herzog 1938d).
** *Plagiochila estrellensis* Herzog, Repert. Spec. Nov. Regni Veg. 21 (1/7): 23, 1925 (Herzog 1925a).
** *Plagiochila eurydictyon* Herzog, Hedwigia 72 (6): 207, 1932 (Herzog 1932c).
* *Plagiochila excisa* Steph., Sp. Hepat. (Stephani) 6: 153, 1918 (Stephani 1918).
** *Plagiochila exesa* Lindenb. et Gottsche, Syn. Hepat. 5: 629, 1847 (Gottsche et al. 1847).
* *Plagiochila exilis* Colenso, Trans. & Proc. New Zealand Inst. 19: 282, 1887 (Colenso 1887). [173]
** *Plagiochila expansa* Gottsche, Mexik. Leverm.: 18, 1863 (Gottsche 1863).
** *Plagiochila facallonia* Steph., Bull. Herb. Boissier (sér. 2) 2 (10): 871 (240), 1902 (Stephani 1902g).
* *Plagiochila falcato-oblonga* Steph., Biblioth. Bot. 87 (2): 198, 1916 (Stephani 1916a).
** *Plagiochila fallax* Lindenb. et Hampe, Linnaea 24 (3): 300, 1851 [1852] (Hampe 1851b).
** *Plagiochila faxinensis* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 60, 1964 (Schiffner and Arnell 1964).
** *Plagiochila fendleri* Mont., Ann. Sci. Nat. Bot. (sér. 4) 6: 198, 1856 (Montagne 1856a).
* *Plagiochila filicicola* Steph., Bull. Herb. Boissier (sér. 2) 4 (4): 351 (427), 1904 (Stephani 1904e).
** *Plagiochila fissidentoides* Taylor, London J. Bot. 5: 264, 1846 (Taylor 1846a).
* *Plagiochila flabellifrons* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 488, 1885 (Spruce 1885).
** *Plagiochila flava* Steph., Sp. Hepat. (Stephani) 6: 156, 1918 (Stephani 1918).
** *Plagiochila flavescens* (Gottsche, Lindenb. et Nees) Gottsche, Mexik. Leverm.: 52, 1863 (Gottsche 1863). Bas.: *Plagiochila guilleminiana* β *flavescens* Gottsche, Lindenb. et Nees, Syn. Hepat. 5: 644, 1847 (Gottsche et al. 1847).
* *Plagiochila flavorufescens* Steph., Biblioth. Bot. 87 (2): 199, 1916 (Stephani 1916a).
** *Plagiochila footei* A.Evans, Trans. Connecticut Acad. Arts 18 (5): 306, 1914 (Evans 1914c).
* *Plagiochila formosa* Nees, Contr. Étude Plagiochila: 147, 1928 (Dugas 1928).

173 *Plagiochila exilis* is a doubtful taxon. The type specimen could not be found (Hodgson 1944, Hamlin 1972).

** *Plagiochila fragmentata* R.M.Schust., Phytologia 45 (5): 421, 1980 (Schuster 1980b).
* *Plagiochila frausa* Gottsche, Mexik. Leverm.: 66, 1863 (Gottsche 1863).
* *Plagiochila frausa* var. *boliviana* Spruce, Mem. Torrey Bot. Club 1 (3): 134, 1890 (Spruce 1890).
** *Plagiochila frayjorgensis* Hässel, Bol. Soc. Argent. Bot. 22 (1/4): 103, 1983 (Hässel 1983). *Nom. nov. pro Plagiochila modesta* Herzog, Rev. Bryol. Lichénol. 23 (1/2): 34, 1954 (Herzog 1954), *nom. illeg.*
* *Plagiochila gaffatensis* Gottsche ex Schweinf., Beitr. Fl. Aethiop.: 227, 1866 [1867] (Schweinfurth 1866).
** *Plagiochila gaudichaudii* Mont. et Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 6: 193, 1856 (Montagne 1856a).
** *Plagiochila geniculata* Lindenb., Sp. Hepat. (Lindenberg) 5: 131, 1843 (Lindenberg 1843).
* *Plagiochila geppii* Steph., Biblioth. Bot. 87 (2): 199, 1916 (Stephani 1916a).
** *Plagiochila germana* Gottsche, Mexik. Leverm.: 34, 1863 (Gottsche 1863).
** *Plagiochila germanii* Steph., Bull. Herb. Boissier (sér. 2) 5 (10): 938 (588), 1905 (Stephani 1905f).
* *Plagiochila gibbiflora* Steph., Bull. Herb. Boissier (sér. 2) 4 (6): 590 (441), 1904 (Stephani 1904b).
** *Plagiochila gittinsii* Inoue, Bull. Natl. Sci. Mus. Tokyo, B 3 (4): 139, 1977 (Inoue 1977a).
* *Plagiochila glauca* Carl, Ann. Bryol., Suppl. 2: 129, 1931 (Carl 1931b). [174]
* *Plagiochila gracilicaulis* Spruce, Mem. Torrey Bot. Club 1 (3): 132, 1890 (Spruce 1890).
** *Plagiochila gracillima* Austin, Trans. Connecticut Acad. Arts 8 (15): 256, 1891 (Evans 1891).
* *Plagiochila granatensis* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 111, 1864 (Gottsche 1864).
** *Plagiochila granditexta* Steph., Bull. Herb. Boissier (sér. 2) 4 (2): 165 (417), 1904 (Stephani 1904f).
** *Plagiochila grateloupii* Mont., Ann. Sci. Nat. Bot. (sér. 4) 6: 188, 1856 (Montagne 1856a).
** *Plagiochila guatemalensis* Steph., Sp. Hepat. (Stephani) 6: 163, 1918 (Stephani 1918).
** *Plagiochila guttisquama* Inoue et Grolle, Bull. Natl. Sci. Mus. Tokyo, B 5 (1): 29, 1979 (Inoue 1979c).
** *Plagiochila gymnocalyx* Inoue, Trop. Bryol. 1: 34, 1989 (Gradstein and Florschütz-de Waard 1989).
** *Plagiochila haeseliae* Inoue, Stud. Cryptog. S. Chile: 97, 1984 (Inoue 1984a).
* *Plagiochila hans-meyeri* Steph., Sp. Hepat. (Stephani) 6: 164, 1918 (Stephani 1918).
** *Plagiochila harlingii* S.W.Arnell, Svensk Bot. Tidskr. 56 (2): 346, 1962 (Arnell 1962b).

174 *Plagiochila glauca* is a doubtful taxon. Hässel and Rubies (2009) could not find any type material.

** *Plagiochila haumanii* Herzog, Repert. Spec. Nov. Regni Veg. 41 (14/25): 285, 1937 (Herzog 1937).
** *Plagiochila hawaica* Steph., Bull. Herb. Boissier (sér. 2) 3 (7): 598 (344), 1903 (Stephani 1903e).
** *Plagiochila heteracantha* Steph., Sp. Hepat. (Stephani) 6: 166, 1918 (Stephani 1918).
* *Plagiochila heterofolia* Steph., Biblioth. Bot. 87 (2): 200, 1916 (Stephani 1916a).
* *Plagiochila hieronymii* Steph., Biblioth. Bot. 87 (2): 201, 1916 (Stephani 1916a).
** *Plagiochila hiroshiana* Pócs, J. Hattori Bot. Lab. 100: 335, 2006 (Pócs 2006a).
** *Plagiochila hoehnei* Herzog, Hedwigia 72 (6): 220, 1932 (Herzog 1932c).
* *Plagiochila holstii* Steph., Hedwigia 45 (4): 214, 1906 (Stephani 1906b). *Nom. nov. pro Plagiochila prostrata* Steph., Bull. Herb. Boissier (sér. 2) 4 (2): 168 (420), 1904 (Stephani 1904f), *nom. illeg.*
** *Plagiochila horrida* Gottsche, Mexik. Leverm.: 74, 1863 (Gottsche 1863).
* *Plagiochila huatuscana* Gottsche, Mexik. Leverm.: 24, 1863 (Gottsche 1863).
** *Plagiochila huerlimannii* Inoue, J. Hattori Bot. Lab. 33: 307, 1970 (Inoue 1970b).
* *Plagiochila humboldtiana* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 112, 1864 (Gottsche 1864).
** *Plagiochila hyalina* Lindenb., Syn. Hepat. 5: 640, 1847 (Gottsche et al. 1847).
* *Plagiochila incisa* Dugas, Contr. Étude Plagiochila: 112, 1928 (Dugas 1928).
** *Plagiochila inflata* Steph., Bull. Herb. Boissier (sér. 2) 3 (11): 961 (376), 1903 (Stephani 1903a).
* *Plagiochila informifolia* Steph., Biblioth. Bot. 87 (2): 202, 1916 (Stephani 1916a).
** *Plagiochila infuscata* Mitt., J. Linn. Soc., Bot. 15 (82): 63, 1876 (Mitten 1876a).
* *Plagiochila injasutiensis* S.W.Arnell, Bot. Not. 110: 404, 1957 (Arnell 1957d).
** *Plagiochila inouei* Grolle, J. Bryol. 10 (3): 269, 1979 (Grolle 1979b). *Nom. nov. pro Plagiochila nudiuscula* Inoue, Bull. Natl. Sci. Mus. Tokyo, B 3 (2): 45, 1977 (Inoue 1977c), *nom. illeg.*
** *Plagiochila insularia* Mitt., St. Helena: 366, 1875 (Mitten 1875).
** *Plagiochila intertexta* Hook.f. et Taylor, London J. Bot. 5: 267, 1846 (Taylor 1846a).
* *Plagiochila inuensis* Steph., Biblioth. Bot. 87 (2): 202, 1916 (Stephani 1916a).
** *Plagiochila irregularis* Gottsche, Mexik. Leverm.: 14, 1863 (Gottsche 1863).
** *Plagiochila itatiajensis* Steph., Bull. Herb. Boissier (sér. 2) 2 (10): 874 (243), 1902 (Stephani 1902g).
** *Plagiochila jamaicensis* Lindenb. et Hampe, Linnaea 24 (3): 302, 1851 [1852] (Hampe 1851b).
** *Plagiochila jaramillii* H.Rob., Bryologist 70 (1): 48, 1967 (Robinson 1967).
* *Plagiochila karstenii* Steph., Hedwigia 45 (4): 214, 1906 (Stephani 1906b). *Nom. nov. pro Plagiochila patentispina* Steph., Bull. Herb. Boissier (sér. 2) 4 (1): 28 (400), 1904 (Stephani 1904g), *nom. illeg.* [175]
* *Plagiochila kaulfussiana* Steph., Sp. Hepat. (Stephani) 6: 172, 1918 (Stephani 1918).
** *Plagiochila keckiana* Steph., Bull. Herb. Boissier (sér. 2) 5 (4): 358 (526), 1905 (Stephani 1905j).

175 *Plagiochila karstenii* is possibly conspecific with *Plagiochila bantamensis* (So and Grolle 2000a).

** *Plagiochila kerneriana* S.W.Arnell, Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 60, 1964 (Schiffner and Arnell 1964).
** *Plagiochila koponenii* Inoue et Piippo, Ann. Bot. Fenn. 26 (2): 216, 1989 (Piippo 1989b).
* *Plagiochila lacerifolia* Steph., Biblioth. Bot. 87 (2): 202, 1916 (Stephani 1916a).
* *Plagiochila lachenaudii* Steph., Biblioth. Bot. 87 (2): 202, 1916 (Stephani 1916a).
* *Plagiochila laciniosa* Dugas, Contr. Étude Plagiochila: 68, 1928 (Dugas 1928).
* *Plagiochila laevifolia* Gola, Ann. Bot. (Rome) 6 (2): 273, 1907 (Gola 1907).
** *Plagiochila lansbergii* Gottsche, Mexik. Leverm.: 13, 1863 (Gottsche 1863).
** *Plagiochila latitrigona* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 48, 1964 (Schiffner and Arnell 1964).
* *Plagiochila laxiramea* Steph., Biblioth. Bot. 87 (2): 203, 1916 (Stephani 1916a).
* *Plagiochila lecontei* Steph., Bull. Herb. Boissier (sér. 2) 4 (2): 165 (417), 1904 (Stephani 1904f). [176]
* *Plagiochila ledermanniana* Beauverd, Sp. Hepat. (Stephani) 6: 572, 1924 (Stephani 1924). *Nom. nov. pro Plagiochila cucullifolia* Steph., Sp. Hepat. (Stephani) 6: 243, 1922 (Stephani 1922), *nom. illeg.* [177]
* *Plagiochila ledieui* Steph., Bull. Herb. Boissier (sér. 2) 4 (2): 161 (413), 1904 (Stephani 1904f). [178]
** *Plagiochila lehmanniana* S.W.Arnell, Svensk Bot. Tidskr. 55 (1): 205, 1961 (Arnell 1961).
** *Plagiochila liebmanniana* Lehm. et Lindenb., Sp. Hepat. (Lindenberg) 2-4: 97, 1840 (Lindenberg 1840).
* *Plagiochila lignicola* Spruce, Mem. Torrey Bot. Club 1 (3): 135, 1890 (Spruce 1890).
* *Plagiochila lindaui* Steph., Biblioth. Bot. 87 (2): 204, 1916 (Stephani 1916a).
* *Plagiochila lindigiana* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 105, 1864 (Gottsche 1864).
** *Plagiochila lingua* Steph., Bull. Herb. Boissier (sér. 2) 2 (8): 677 (214), 1902 (Stephani 1902a).
* *Plagiochila longifissa* Steph., Bull. Herb. Boissier (sér. 2) 5 (9): 891 (557), 1905 (Stephani 1905g).
* *Plagiochila lotsyana* Steph., Biblioth. Bot. 87 (2): 205, 1916 (Stephani 1916a).
* *Plagiochila luteola* Steph., Bull. Herb. Boissier (sér. 2) 5 (2): 175 (503), 1905 (Stephani 1905d).
** *Plagiochila lutescens* Steph., Sp. Hepat. (Stephani) 6: 179, 1921 (Stephani 1921).
** *Plagiochila luzonensis* Grolle et M.L.So, Bryologist 102 (1): 69, 1999 (Grolle and So 1999a).

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176 *Plagiochila lecontei* is allied to and perhaps conspecific with *Plagiochila ledieui* and *Plagiochila multiflora* (Jones 1962).

177 *Plagiochila ledermanniana* is a doubtful taxon. The type specimen was burned in B (Piippo 1989b).

178 *Plagiochila ledieui* is allied to and perhaps conspecific with *Plagiochila lecontei* and *Plagiochila multiflora* (Jones 1962).

* *Plagiochila macra* Taylor, London J. Bot. 7: 198, 1848 (Taylor 1848a).
** *Plagiochila macrifolia* Taylor, London J. Bot. 5: 270, 1846 (Taylor 1846a).
* *Plagiochila macrifolia* var. *angustifolia* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 470, 1885 (Spruce 1885).
*** *Plagiochila martiana* (Nees) Lindenb., Sp. Hepat. (Lindenberg) 1: 12, 1839 (Lindenberg 1839). Bas.: *Jungermannia martiana* Nees, Linnaea 6 (4): 617, 1831 (Nees 1831).
* *Plagiochila matanga* Steph., Sp. Hepat. (Stephani) 6: 183, 1921 (Stephani 1921).
** *Plagiochila maunakeana* Steph., Sp. Hepat. (Stephani) 6: 186, 1921 (Stephani 1921).
** *Plagiochila maximiliana* Gottsche, Mexik. Leverm.: 18, 1863 (Gottsche 1863).
** *Plagiochila meghalayensis* K.K.Rawat et S.C.Srivast., Geophytology 35 (1/2): 49, 2005 (Rawat and Srivastava 2005).
** *Plagiochila meridana* Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 8: 328, 1857 (Gottsche 1857).
** *Plagiochila microdonta* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 97, 1860 [1861] (Mitten 1860c).
* *Plagiochila mildbreadiana* Beauverd, Sp. Hepat. (Stephani) 6: 571, 1924 (Stephani 1924). *Nom. nov. pro Plagiochila andongensis* Steph., Sp. Hepat. (Stephani) 6: 122, 1917 (Stephani 1917a), *nom. illeg.*
** *Plagiochila minarum* Herzog, Hedwigia 72 (6): 207, 1932 (Herzog 1932c).
** *Plagiochila minutiretis* Reimers, Repert. Spec. Nov. Regni Veg. 21 (8/20): 264, 1925 (Reimers 1925).
** *Plagiochila miqueliana* Lehm. et Lindenb., Sp. Hepat. (Lindenberg) 2-4: 95, 1840 (Lindenberg 1840).
** *Plagiochila molliuscula* Inoue, Ann. Bot. Fenn. 13 (3): 134, 1976 (Engel 1976a).
** *Plagiochila mollusca* Lehm., Nov. Stirp. Pug. 10: 4, 1857 (Lehmann 1857).
** *Plagiochila moniliformis* R.M.Schust., Phytologia 39 (4): 247, 1978 (Schuster 1978a).
** *Plagiochila muelleriana* Gottsche, Mexik. Leverm.: 38, 1863 (Gottsche 1863).
* *Plagiochila multiflora* Steph., Pflanzenw. Ost-Afrikas C: 64, 1895 (Stephani 1895d). [179]
** *Plagiochila mutila* Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 8: 327, 1857 (Gottsche 1857).
* *Plagiochila naranjoënsis* Steph., Bull. Herb. Boissier (sér. 2) 2 (8): 687 (224), 1902 (Stephani 1902a).
** *Plagiochila neesiana* Lindenb., Sp. Hepat. (Lindenberg) 2-4: 71, 1840 (Lindenberg 1840).
* *Plagiochila neglecta* Steph., Bull. Herb. Boissier (sér. 2) 5 (4): 351 (519), 1905 (Stephani 1905j).
* *Plagiochila negrensis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 466, 1885 (Spruce 1885).
* *Plagiochila negrii* Gola, Ann. Bot. (Rome) 13 (1): 66, 1914 (Gola 1914a).

179 *Plagiochila multiflora* is allied to and perhaps conspecific with *Plagiochila lecontei* and *Plagiochila ledieui* (Jones 1962).

* *Plagiochila nigricaulis* Steph., Biblioth. Bot. 87 (2): 206, 1916 (Stephani 1916a).
* *Plagiochila notha* Steph., Bull. Herb. Boissier (sér. 2) 5 (8): 737 (536), 1905 (Stephani 1905i).
* *Plagiochila nova* Steph., Sp. Hepat. (Stephani) 6: 189, 1921 (Stephani 1921).
** *Plagiochila nudifolia* (Steph.) Grolle, Feddes Repert. 82 (1): 89, 1971 (Grolle 1971b). Bas.: *Jamesoniella nudifolia* Steph., Biblioth. Bot. 87 (2): 184, 1916 (Stephani 1916a).
** *Plagiochila nutans* Steph., Bull. Herb. Boissier (sér. 2) 3 (11): 960 (375), 1903 (Stephani 1903a).
* *Plagiochila obliquetruncata* Steph., Biblioth. Bot. 87 (2): 207, 1916 (Stephani 1916a).
** *Plagiochila oblonga* Inoue, Bull. Natl. Sci. Mus. Tokyo (n.ser.) 8 (3): 398, 1965 (Inoue 1965a).
** *Plagiochila oerstediana* Lindenb. et Hampe, Linnaea 24 (3): 301, 1851 [1852] (Hampe 1851b).
** *Plagiochila olivacea* Steph., Bull. Herb. Boissier (sér. 2) 5 (2): 190 (518), 1905 (Stephani 1905d).
* *Plagiochila ornata* Wilson ex Lindenb., Sp. Hepat. (Lindenberg) 5: 164, 1843 (Lindenberg 1843).
* *Plagiochila ovato-obconica* Steph., Sp. Hepat. (Stephani) 6: 191, 1921 (Stephani 1921).
* *Plagiochila ovifolia* Steph., Sp. Hepat. (Stephani) 6: 191, 1921 (Stephani 1921).
** *Plagiochila palangiensis* S.C.Srivast., K.K.Rawat et P.K.Verma, Natl. Acad. Sci. Lett. 29 (7/8): 267, 2006 (Srivastava et al. 2006).
** *Plagiochila panamensis* Inoue, Bull. Natl. Sci. Mus. Tokyo, B 15 (3): 94, 1989 (Inoue 1989a).
** *Plagiochila paramicola* Herzog, Beih. Bot. Centralbl. 61B (3): 563, 1942 (Herzog 1942d).
* *Plagiochila parvitexta* Steph., Bull. Herb. Boissier (sér. 2) 2 (8): 674 (211), 1902 (Stephani 1902a).
** *Plagiochila parvivittata* Inoue, Bull. Natl. Sci. Mus. Tokyo, B 13 (2): 50, 1987 (Inoue 1987b).
* *Plagiochila parvula* Steph., Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr. 88: 726, 1913 (Stephani 1913b).
* *Plagiochila pastasensis* Steph., Sp. Hepat. (Stephani) 6: 197, 1921 (Stephani 1921).
** *Plagiochila patentispina* Steph., Bull. Herb. Boissier (sér. 2) 2 (10): 877 (246), 1902 (Stephani 1902g).
** *Plagiochila patuloides* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 58, 1964 (Schiffner and Arnell 1964).
** *Plagiochila paucidentata* Mont. et Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 6: 197, 1856 (Montagne 1856a).
** *Plagiochila paupercula* Gottsche, Mexik. Leverm.: 22, 1863 (Gottsche 1863).
* *Plagiochila pearceana* Steph., Bull. Herb. Boissier (sér. 2) 5 (8): 742 (541), 1905 (Stephani 1905i).
** *Plagiochila pellucida* Lindenb. et Gottsche, Linnaea 20 (3): 321, 1847 (Hampe 1847).

** *Plagiochila perrottetiana* Mont. et Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 6: 195, 1856 (Montagne 1856a).
** *Plagiochila perrottetiana* var. *minor* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 101, 1864 (Gottsche 1864).
** *Plagiochila pilifera* Steph., Sp. Hepat. (Stephani) 6: 198, 1921 (Stephani 1921).
** *Plagiochila pinnatidens* Steph., Sp. Hepat. (Stephani) 6: 199, 1921 (Stephani 1921).
** *Plagiochila pittieri* Steph., Bull. Herb. Boissier (sér. 2) 2 (8): 673 (210), 1902 (Stephani 1902a).
** *Plagiochila platyphylla* Herzog, Hedwigia 72 (6): 223, 1932 (Herzog 1932c).
** *Plagiochila polopolensis* Herzog, Hedwigia 67 (6): 261, 1927 (Herzog 1927).
* *Plagiochila prostrata* Steph., Bull. Herb. Boissier (sér. 2) 2 (8): 668 (205), 1902 (Stephani 1902a).
* *Plagiochila pseudopatula* Herzog, Hedwigia 72 (6): 227, 1932 (Herzog 1932c).
** *Plagiochila pseudoradicans* Herzog, Repert. Spec. Nov. Regni Veg. 21 (1/7): 24, 1925 (Herzog 1925a).
** *Plagiochila ptychanthoidea* Steph., Bull. Herb. Boissier (sér. 2) 3 (2): 121 (301), 1903 (Stephani 1903b).
** *Plagiochila pulchella* Steph., Bull. Herb. Boissier (sér. 2) 2 (10): 871 (240), 1902 (Stephani 1902g).
** *Plagiochila pulvinata* Steph., Bull. Herb. Boissier (sér. 2) 3 (6): 526 (330), 1903 (Stephani 1903d).
** *Plagiochila ratkowskiana* Inoue, Brunonia 3 (1): 141, 1980 (Inoue 1980).
** *Plagiochila regeliana* Steph., Bull. Herb. Boissier (sér. 2) 2 (8): 675 (212), 1902 (Stephani 1902a).
** *Plagiochila remyana* Steph., Bull. Herb. Boissier (sér. 2) 3 (11): 963 (378), 1903 (Stephani 1903a).
*** *Plagiochila revolvens* Mitt., Hooker's J. Bot. Kew Gard. Misc. 3: 358, 1851 (Mitten 1851).
** *Plagiochila rigidula* Lindenb. et Gottsche, Linnaea 20 (3): 323, 1847 (Hampe 1847).
** *Plagiochila rosana* Steph., Bull. Herb. Boissier (sér. 2) 5 (9): 892 (558), 1905 (Stephani 1905g).
* *Plagiochila rubricaulis* Steph., Bot. Jahrb. Syst. 20 (3): 311, 1895 (Stephani 1895a).
* *Plagiochila rufifolia* Steph., Biblioth. Bot. 87 (2): 209, 1916 (Stephani 1916a).
** *Plagiochila rufoviridis* Spruce, Mem. Torrey Bot. Club 1 (3): 136, 1890 (Spruce 1890).
* *Plagiochila rusbyi* Spruce, Mem. Torrey Bot. Club 1 (3): 135, 1890 (Spruce 1890).
* *Plagiochila sabensis* Steph., Sp. Hepat. (Stephani) 6: 214, 1921 (Stephani 1921).
** *Plagiochila sachapatensis* Steph., Bull. Herb. Boissier (sér. 2) 2 (8): 679 (216), 1902 (Stephani 1902a).
** *Plagiochila salazariae* Inoue, Bull. Natl. Sci. Mus. Tokyo, B 15 (3): 91, 1989 (Inoue 1989a).
** *Plagiochila saltuensis* Spruce ex Steph., Bull. Herb. Boissier (sér. 2) 5 (10): 927 (577), 1905 (Stephani 1905f).

** *Plagiochila saltuensis* var. *spinosissima* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 163, 1955 (Herzog 1955).
* *Plagiochila samoana* Steph., Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr. 85: 197, 1910 (Stephani 1910a).
** *Plagiochila sarmentosa* (Lehm. et Lindenb.) Lindenb., Sp. Hepat. (Lindenberg) 2-4: 86, 1840 (Lindenberg 1840). Bas.: *Jungermannia sarmentosa* Lehm. et Lindenb., Linnaea 9 (4): 427, 1835 (Lehmann 1835).
* *Plagiochila schiffneri* Steph., Biblioth. Bot. 87 (2): 209, 1916 (Stephani 1916a).
* *Plagiochila schinzei* Steph., Biblioth. Bot. 87 (2): 209, 1916 (Stephani 1916a).
* *Plagiochila schmidtii* Steph., Biblioth. Bot. 87 (2): 209, 1916 (Stephani 1916a).
* *Plagiochila schraderbergii* Steph., Sp. Hepat. (Stephani) 6: 244, 1922 (Stephani 1922). [180]
** *Plagiochila schubertiana* Steph., Sp. Hepat. (Stephani) 6: 208, 1921 (Stephani 1921).
** *Plagiochila schusteri* Inoue et Grolle, J. Hattori Bot. Lab. 33: 326, 1970 (Inoue 1970a).
** *Plagiochila scissifolia* Steph., Bull. Herb. Boissier (sér. 2) 2 (10): 865 (234), 1902 (Stephani 1902g).
* *Plagiochila scotica* Macvicar ex Steph., Sp. Hepat. (Stephani) 6: 209, 1921 (Stephani 1921). [181]
** *Plagiochila semiamplexicaulis* Steph., Bull. Herb. Boissier (sér. 2) 5 (10): 936 (586), 1905 (Stephani 1905f).
** *Plagiochila semiermis* Dugas, Contr. Étude Plagiochila: 66, 1928 (Dugas 1928).
** *Plagiochila silvatica* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 108, 1864 (Gottsche 1864).
* *Plagiochila similis* Steph., Biblioth. Bot. 87 (2): 210, 1916 (Stephani 1916a).
** *Plagiochila sisparensis* Steph., Sp. Hepat. (Stephani) 6: 207, 1921 (Stephani 1921).
* *Plagiochila slateri* Steph., Biblioth. Bot. 87 (2): 211, 1916 (Stephani 1916a).
** *Plagiochila solitaria* Gottsche, Sp. Hepat. (Stephani) 6: 225, 1921 (Stephani 1921).
*** *Plagiochila spinifera* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 30 (5): 113, 1873 (Ångström 1873).
* *Plagiochila sprucei* Steph., Bull. Herb. Boissier (sér. 2) 2 (10): 860 (229), 1902 (Stephani 1902g).
* *Plagiochila staudtiana* Steph., Bull. Herb. Boissier (sér. 2) 4 (4): 352 (428), 1904 (Stephani 1904e).
** *Plagiochila stipata* Steph., Sp. Hepat. (Stephani) 6: 209, 1921 (Stephani 1921).
* *Plagiochila stolzii* Steph., Sp. Hepat. (Stephani) 6: 244, 1922 (Stephani 1922).
** *Plagiochila subcontigua* Herzog, Hedwigia 72 (6): 230, 1932 (Herzog 1932c).
* *Plagiochila subconvoluta* Gottsche, Mexik. Leverm.: 24, 1863 (Gottsche 1863).
* *Plagiochila subdenudata* Steph., Bull. Herb. Boissier (sér. 2) 2 (8): 673 (210), 1902 (Stephani 1902a).

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180 *Plagiochila schraderbergii* is a doubtful taxon. The type specimen was burned in B (Piippo 1989b).

181 *Plagiochila scotica* was described from Europe, but it has neither been recognized in any recent European study nor synonymized.

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** *Plagiochila subfragilis* Inoue, Stud. Cryptog. S. Peru: 98, 1987 (Inoue 1987c).
* *Plagiochila subhyalina* Steph., Biblioth. Bot. 87 (2): 212, 1916 (Stephani 1916a).
** *Plagiochila subligulata* Steph., Sp. Hepat. (Stephani) 6: 224, 1921 (Stephani 1921).
** *Plagiochila sublyallii* M.L.So, New Zealand J. Bot. 39 (1): 109, 2001 (So 2001b).
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** *Plagiochila subundulata* Lindenb., Sp. Hepat. (Lindenberg) 5: 137, 1843 (Lindenberg 1843).
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** *Plagiochila sylvicultrix* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 486, 1885 (Spruce 1885).
* *Plagiochila symmetrica* Steph., Bull. Herb. Boissier (sér. 2) 2 (10): 876 (245), 1902 (Stephani 1902g).
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** *Plagiochila talinayi* S.W.Arnell, Svensk Bot. Tidskr. 50 (2): 312, 1956 (Arnell 1956d).
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* *Plagiochila tenera* Steph., Sp. Hepat. (Stephani) 6: 231, 1921 (Stephani 1921).
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** *Plagiochila thamniopsis* Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: cc, 1889 [1890] (Spruce 1889).
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* *Plagiochila usambarana* Steph., Bull. Herb. Boissier (sér. 2) 2 (12): 980 (270), 1902 (Stephani 1902h).
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* *Plagiochila venezuelana* Steph., Bull. Herb. Boissier (sér. 2) 5 (8): 749 (548), 1905 (Stephani 1905i).
* *Plagiochila ventricosotrigona* Steph., Biblioth. Bot. 87 (2): 214, 1916 (Stephani 1916a).
* *Plagiochila verrucosa* Steph., Bull. Herb. Boissier (sér. 2) 5 (9): 885 (551), 1905 (Stephani 1905g).
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** *Plagiochila viridonigra* (E.A.Hodgs.) Inoue, Bryologist 68 (2): 218, 1965 (Inoue 1965b). Bas.: *Syzygiella viridonigra* E.A.Hodgs., Rec. Domin. Mus. 4 (11): 120, 1962 (Hodgson 1962a).
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** *Plagiochila vittifolia* Steph., Sp. Hepat. (Stephani) 6: 239, 1921 (Stephani 1921).
** *Plagiochila vulcanica* Steph., Bull. Herb. Boissier (sér. 2) 2 (8): 671 (208), 1902 (Stephani 1902a).
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182 *Plagiochila vetustisilva* is a doubtful taxon. The type specimen was burned in B (Piippo 1989b).

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*** *Plagiochila winteri* Steph., Bull. Herb. Boissier (sér. 2) 2 (12): 981 (271), 1902 (Stephani 1902h).
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** *Plagiochilion combinatum* (Mitt.) Inoue, J. Hattori Bot. Lab. 27: 55, 1964 (Inoue 1964b). Bas.: *Plagiochila combinata* Mitt., Fl. vit.: 408, 1871 [1873] (Mitten 1871).
*** *Plagiochilion conjugatum* (Hook.) R.M.Schust., J. Hattori Bot. Lab. 26: 285, 1963 (Schuster 1963b). Bas.: *Jungermannia conjugata* Hook., Musci Exot. 1: tab. 91, 1818 (Hooker 1818).
** *Plagiochilion fimbriatum* (Mitt.) Inoue, J. Hattori Bot. Lab. 27: 57, 1964 (Inoue 1964b). Bas.: *Plagiochila fimbriata* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 97, 1860 [1861] (Mitten 1860c).
** *Plagiochilion giulianettii* (Steph.) Inoue, J. Hattori Bot. Lab. 27: 57, 1964 (Inoue 1964b). Bas.: *Plagiochila giulianettii* Steph., Bull. Herb. Boissier (sér. 2) 4 (1): 30 (402), 1904 (Stephani 1904g).
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** *Plagiochilion theriotanum* (Steph.) Inoue, J. Hattori Bot. Lab. 27: 59, 1964 (Inoue 1964b). Bas.: *Plagiochila theriotana* Steph., Sp. Hepat. (Stephani) 6: 228, 1921 (Stephani 1921).

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** *Pseudolophocolea denticulata* R.M.Schust. et J.J.Engel, Lindbergia 8 (2): 73, 1982 (Schuster and Engel 1982). Based on: *Pseudolophocolea denticulata* R.M.Schust. et J.J.Engel, Phytologia 47 (4): 311, 1981 (Schuster and Engel 1981), *nom. inval.*

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*** Pseudolepicoleaceae Fulford et J.Taylor

by M. von Konrat

Blepharostoma was recognized as an element within Pseudolepicoleaceae by Crandall-Stotler et al. (2009), but we follow the concept of Frey and Stech (2008) with *Blepharostoma* as the single genus in Blepharostomataceae.

*** ***Archeophylla*** **R.M.Schust.**, J. Hattori Bot. Lab. 26: 263, 1963 (Schuster 1963b).
** *Archeophylla paradoxa* R.M.Schust., Trans. Brit. Bryol. Soc. 4 (5): 810, 1965 (Schuster 1965c).
** *Archeophylla pungens* (Herzog) R.M.Schust., Candollea 21 (1): 86, 1966 (Schuster 1966e). Bas.: *Blepharostoma pungens* Herzog, Rev. Bryol. Lichénol. 29 (3/4): 189, 1960 [1961] (Herzog 1960).

*** *Archeophylla schusteri* (E.A.Hodgs. et Allison) R.M.Schust., J. Hattori Bot. Lab. 26: 263, 1963 (Schuster 1963b). Bas.: *Temnoma schusteri* E.A.Hodgs. et Allison, Trans. Roy. Soc. New Zealand, Bot. 1 (12): 147, 1962 (Hodgson and Allison 1962).

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*** *Castanoclobos julaceus* (Hatcher ex J.J.Engel) J.J.Engel et Glenny, Novon 17 (4): 425, 2007 (Engel and Glenny 2007). Bas.: *Leiomitra julacea* Hatcher ex J.J.Engel, Novon 9 (1): 26, 1999 (Engel 1999a).

** ***Chaetocolea*** **Spruce**, Trans. & Proc. Bot. Soc. Edinburgh 15: 346, 1885 (Spruce 1885).

*** *Chaetocolea palmata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 346, 1885 (Spruce 1885).

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*** *Herzogiaria teres* (Steph.) Fulford ex Hässel, Lindbergia 7 (1): 24, 1981 (Hässel 1981). Bas.: *Lepicolea teres* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 17): 26, 1901 (Stephani 1901b).

** ***Isophyllaria*** **E.A.Hodgs. et Allison**, Trans. Roy. Soc. New Zealand, Bot. 3 (4): 68, 1965 (Hodgson 1965).

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** *Pseudolepicolea andoi* (R.M.Schust.) Inoue, Bull. Natl. Sci. Mus. Tokyo, B 4 (3): 94, 1978 (Inoue 1978a). Bas.: *Lophochaete andoi* R.M.Schust., J. Hattori Bot. Lab. 26: 261, 1963 (Schuster 1963b).

** *Pseudolepicolea fryei* (Perss.) Grolle et Ando, Hikobia 3 (3): 180, 1963 (Ando 1963). Bas.: *Lepicolea fryei* Perss., Bryologist 49 (2): 47, 1946 (Persson 1946).

*** *Pseudolepicolea grolleana* (R.M.Schust.) Grolle, Ann. Bot. Fenn. 21 (1): 30, 1984 (Piippo 1984a). Bas.: *Archeochaete grolleana* R.M.Schust., Nova Hedwigia 15: 441, 1968 (Schuster 1968b).

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*** *Pseudolepicolea quadrilaciniata* (Sull.) Fulford et J.Taylor, Nova Hedwigia 1 (3/4): 413, 1959 [1960] (Fulford and Taylor 1959b). Bas.: *Sendtnera quadrilaciniata* Sull., Hooker's J. Bot. Kew Gard. Misc. 2: 317, 1850 (Sullivant 1850).

*** *Pseudolepicolea temnomoides* (R.M.Schust.) Váňa et J.J.Engel, Mem. New York Bot. Gard. 105: 92, 2013 (Váňa and Engel 2013). Bas.: *Archeochaete temnomoides* R.M.Schust., Candollea 21 (1): 129, 1966 (Schuster 1966e).

** *Pseudolepicolea trollii* (Herzog) Grolle et Ando, Hikobia 3 (3): 177, 1963 (Ando 1963). Bas.: *Blepharostoma trollii* Herzog, Ann. Bryol. 12: 80, 1939 (Herzog 1939b).

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*** ***Temnoma* Mitt.**, Handb. N. Zeal. fl. 2: 750, 1867 (Hooker 1867).

*** *Temnoma angustifolium* R.M.Schust., Candollea 21 (2): 279, 1966 [1967] (Schuster 1966c).

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*** *Temnoma quadrifidum* (Mitt.) Mitt. ex E.A.Hodgs. et Allison, Trans. Roy. Soc. New Zealand, Bot. 1 (12): 142, 1962 (Hodgson and Allison 1962). Bas.: *Jungermannia quadrifida* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 128, 1854 (Mitten 1854).

*** *Temnoma quadripartitum* (Hook.) Mitt., J. Linn. Soc., Bot. 15 (82): 68, 1876 (Mitten 1876a). Bas.: *Jungermannia quadripartita* Hook., Musci Exot. 2: tab. 117, 1820 (Hooker 1820).

** *Temnoma quadripartitum* var. *pseudopungens* R.M.Schust., Candollea 21 (2): 312, 1966 [1967] (Schuster 1966c).

** *Temnoma quadripartitum* var. *randii* (S.W.Arnell) R.M.Schust., Candollea 21 (2): 307, 1966 [1967] (Schuster 1966c). Bas.: *Lepidozia randii* S.W.Arnell, Svensk Bot. Tidskr. 47 (3): 417, 1953 (Arnell 1953c).
*** *Temnoma setigerum* (Lindenb.) R.M.Schust., Nova Hedwigia 5: 35, 1963 (Schuster 1963c). Bas.: *Jungermannia setigera* Lindenb., Syn. Hepat. 1: 131, 1844 (Gottsche et al. 1844).
** *Temnoma setigerum* var. *hawaiicum* Inoue, Bull. Natl. Sci. Mus. Tokyo (n.ser.) 17 (3): 228, 1974 (Inoue 1974b).
** *Temnoma townrowii* R.M.Schust., Candollea 21 (2): 351, 1966 [1967] (Schuster 1966c).

*** Trichocoleaceae Nakai

by T. Katagiri

The treatment of Trichocoleaceae follows what was outlined in Katagiri and Deguchi (2012) and Katagiri et al. (2012, 2013). Recent nomenclatural and taxonomic notes can also be found in Katagiri (2013).

*** ***Eotrichocolea* R.M.Schust.**, J. Hattori Bot. Lab. 26: 252, 1963 (Schuster 1963b).
*** *Eotrichocolea furukii* T.Katag., Bryologist 115 (4): 519, 2012 (Katagiri et al. 2012).
*** *Eotrichocolea polyacantha* (Hook.f. et Taylor) R.M.Schust., J. Hattori Bot. Lab. 26: 264, 1963 (Schuster 1963b). Bas.: *Jungermannia polyacantha* Hook.f. et Taylor, London J. Bot. 3: 290 [390], 1844 (Hooker and Taylor 1844a).

*** ***Leiomitra* Lindb.**, Acta Soc. Sci. Fenn. 10: 515, 1875 (Lindberg 1875).

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** *Leiomitra mastigophoroides* R.M.Schust., Phytologia 45 (5): 416, 1980 (Schuster 1980b).

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*** *Leiomitra breviseta* (Steph.) R.M.Schust., Beih. Nova Hedwigia 118: 152, 2000 (Schuster 2000a). Bas.: *Trichocolea breviseta* Steph., Sp. Hepat. (Stephani) 4: 60, 1909 (Stephani 1909d).
*** *Leiomitra capillata* Lindb., Acta Soc. Sci. Fenn. 10: 515, 1875 (Lindberg 1875).
*** *Leiomitra elegans* (Lehm.) Hässel, Novon 12 (4): 465, 2002 (Hässel 2002). Bas.: *Trichocolea elegans* Lehm., Nov. Stirp. Pug. 10: 8, 1857 (Lehmann 1857).
** *Leiomitra elliottii* (Steph.) R.M.Schust., Nova Hedwigia 73 (3/4): 469, 2001 (Schuster 2001b). Bas.: *Trichocolea elliottii* Steph., Sp. Hepat. (Stephani) 4: 55, 1909 (Stephani 1909d).

*** *Leiomitra flaccida* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 349, 1885 (Spruce 1885).
** *Leiomitra hirticaulis* R.M.Schust., Nova Hedwigia 73 (3/4): 472, 2001 (Schuster 2001b).
*** *Leiomitra lanata* (Hook.) R.M.Schust., Phytologia 45 (5): 417, 1980 (Schuster 1980b). Bas.: *Jungermannia lanata* Hook., Musci Exot. 2: tab. 116, 1820 (Hooker 1820).
*** *Leiomitra merrillana* (Steph.) T.Katag., Bryologist 115 (4): 488, 2012 (Katagiri and Deguchi 2012). Bas.: *Trichocolea merrillana* Steph., Sp. Hepat. (Stephani) 6: 374, 1923 (Stephani 1923).
*** *Leiomitra paraphyllina* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 350, 1885 (Spruce 1885).
** *Leiomitra robusta* (Steph.) R.M.Schust., Nova Hedwigia 73 (3/4): 469, 2001 (Schuster 2001b). Bas.: *Trichocolea robusta* Steph., Sp. Hepat. (Stephani) 4: 58, 1909 (Stephani 1909d).
** *Leiomitra smaragdina* Hässel, Novon 12 (4): 467, 2002 (Hässel 2002).
*** *Leiomitra tomentosa* (Sw.) Lindb., Acta Soc. Sci. Fenn. 10: 515, 1875 (Lindberg 1875). Bas.: *Jungermannia tomentosa* Sw., Prodr. (Swartz): 145, 1788 (Swartz 1788).

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*** *Trichocolea hatcheri* E.A.Hodgs., Trans. Roy. Soc. New Zealand, Bot. 3 (4): 69, 1965 (Hodgson 1965).
*** *Trichocolea iriomotensis* T.Katag., Hattoria 4: 6, 2013 (Katagiri et al. 2013).
*** *Trichocolea japonica* T.Katag., Bryologist 114 (4): 744, 2011 (Katagiri et al. 2011).
*** *Trichocolea magna* T.Katag., Hattoria 4: 7, 2013 (Katagiri et al. 2013).
** *Trichocolea minutifolia* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 134, 1914 (Stephani and Watts 1914).
*** *Trichocolea mollissima* (Hook.f. et Taylor) Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 132, 1864 (Gottsche 1864). Bas.: *Jungermannia mollissima* Hook.f. et Taylor, London J. Bot. 3: 290 [390], 1844 (Hooker and Taylor 1844a).

183 *Trichocolea floccosa* is treated as a variety of *Trichocolea flaccida* (=*Leiomitra flaccida* by Schultze-Motel & Menzel (1987).

*** *Trichocolea pluma* (Reinw., Blume et Nees) Mont., Voy. Bonite, Bot. 1: 238, 1846 (Montagne 1846). Bas.: *Jungermannia pluma* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 209, 1824 [1825] (Reinwardt et al. 1824a).
*** *Trichocolea rigida* R.M.Schust., Nova Hedwigia 15: 447, 1968 (Schuster 1968b).
*** *Trichocolea rudimentaris* Steph., Sp. Hepat. (Stephani) 6: 376, 1923 (Stephani 1923).
* *Trichocolea sprucei* Steph., Sp. Hepat. (Stephani) 4: 59, 1909 (Stephani 1909d). *Nom. nov. pro Trichocolea gracillima* Spruce, J. Linn. Soc., Bot. 30 (210): 353, 1895 (Gepp 1895b), *nom. illeg.* [184]
*** *Trichocolea tomentella* (Ehrh.) Dumort., Syll. Jungerm. Europ.: 67, 1831 (Dumortier 1831). Bas.: *Jungermannia tomentella* Ehrh., Hannover. Mag. 21 (18): 277, 1783 (Ehrhart 1783).
** *Trichocolea udarii* D.K.Singh, Bull. Bot. Surv. India 25: 177, 1983 [1985] (Singh 1983a).
** *Trichocolea wattsiana* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 135, 1914 (Stephani and Watts 1914).

Myliineae J.J.Engel et Braggins ex Crand.-Stotl., Váňa, Stotler et J.J.Engel

*** Myliaceae Schljakov

by L. Söderström

Söderström et al. (2015c) outlines the controversy as to the placement of *Mylia anomala* where they advocate recognition at the subgeneric level. It has previously been recognized as a segregate genus, *Leiomylia* J.J.Engel and Braggins (cf. also Shaw et al. 2015).

*** ***Mylia* Gray**, Nat. Arr. Brit. Pl. 1: 693, 1821 (Gray 1821) nom. conserv.

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*** *Mylia anomala* (Hook.) Gray, Nat. Arr. Brit. Pl. 1: 693, 1821 (Gray 1821). Bas.: *Jungermannia anomala* Hook., Brit. Jungermann.: tab. 34, 1813 (Hooker 1813).

** **subg. *Mylia***
*** *Mylia taylorii* (Hook.) Gray, Nat. Arr. Brit. Pl. 1: 693, 1821 (Gray 1821). Bas.: *Jungermannia taylorii* Hook., Brit. Jungermann.: tab. 57, 1813 (Hooker 1813).
*** *Mylia verrucosa* Lindb., Acta Soc. Sci. Fenn. 10: 236, 1872 [1873] (Lindberg 1872b).

184 *Trichocolea sprucei* is suggested to be a variety of *Trichocolea flaccida* (=*Leiomitra flaccida*) in Schultze-Motel & Menzel (1987)

*** *Mylia verrucosa* subsp. *nuda* (Inoue et B.Y.Yang) Potemkin et Kazan., Arctoa 2: 5, 1993 (Potemkin and Kazanovsky 1993). Bas.: *Mylia nuda* Inoue et B.Y.Yang, Taiwania 12 (1): 35, 1966 (Inoue and Yang 1966).

Perssoniellineae R.M.Schust.

*** Schistochilaceae H.Buch

by X. He and D. Glenny

He et al. (2014b) provided an historical account of Schistochilaceae summarizing studies that have showed that the phylogenetic structure of the family does not match units that have resulted from morphologically-based investigations. Further studies are needed until a natural division of the family can be proposed. Thus, we follow the broad concept of He and Glenny (2010) and He and Sun (2013) here, treating Schistochilaceae as comprising a single genus as discussed by He et al. (2014b).

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*** *Schistochila aequiloba* Steph., Sp. Hepat. (Stephani) 4: 80, 1909 (Stephani 1909d).

*** *Schistochila alata* (Lehm.) Schiffn., Hepat. (Engl.-Prantl): 111, 1893 (Schiffner 1893b). Bas.: *Jungermannia alata* Lehm., Linnaea 4: 359, 1829 (Lehmann 1829).

*** *Schistochila aligera* (Nees et Blume) J.B.Jack et Steph., Hedwigia 31 (1): 12, 1892 (Jack and Stephani 1892). Bas.: *Jungermannia aligera* Nees et Blume, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 11: 135, 1823 (Blume and Nees 1823).

* *Schistochila aligera* var. *laxa* (Nees) Schiffn., Consp. Hepat. Arch. Ind.: 212, 1898 (Schiffner 1898b). Bas.: *Jungermannia aligera* γ *laxa* Nees, Enum. Pl. Crypt. Javae: 68, 1830 (Nees 1830).

*** *Schistochila altissima* E.A.Hodgs., Trans. Roy. Soc. New Zealand, Bot. 3 (4): 85, 1965 (Hodgson 1965).

** *Schistochila altissima* subsp. *polystratosa* R.M.Schust. et J.J.Engel, Phytologia 30 (4): 241, 1975 (Schuster and Engel 1975).

*** *Schistochila antara* Grolle, J. Hattori Bot. Lab. 29: 249, 1966 (Grolle 1966h).

*** *Schistochila appendiculata* (Hook.) Dumort. ex Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 392, 1877 (Trevisan 1877). Bas.: *Jungermannia appendiculata* Hook., Musci Exot. 1: tab. 15, 1818 (Hooker 1818).

* *Schistochila baileyana* Steph., Sp. Hepat. (Stephani) 4: 85, 1909 (Stephani 1909d). [185]

*** *Schistochila balfouriana* (Hook.f. et Taylor) Steph., Sp. Hepat. (Stephani) 4: 91, 1909 (Stephani 1909d). Bas.: *Jungermannia balfouriana* Hook.f. et Taylor, London J. Bot. 3: 556, 1844 (Hooker and Taylor 1844d).

185 *Schistochila baileyana* is possibly conspecific with *Schistochila beccariana* (D. Meagher, pers. comm.).

*** *Schistochila beccariana* (De Not.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 392, 1877 (Trevisan 1877). Bas.: *Gottschea beccariana* De Not., Epat. Borneo: 9, 1874 (De Notaris 1874).

*** *Schistochila berggrenii* (J.J.Engel et R.M.Schust.) Xiao L.He et Glenny, Austral. Syst. Bot. 23 (4): 237, 2010 (He and Glenny 2010). Bas.: *Pachyschistochila berggrenii* J.J.Engel et R.M.Schust., J. Hattori Bot. Lab. 58: 476, 1985 (Schuster and Engel 1985).

*** *Schistochila berteroana* (Hook.) Steph., Sp. Hepat. (Stephani) 4: 96, 1909 (Stephani 1909d). Bas.: *Jungermannia berteroana* Hook., Bot. Misc. 2: 148, 1831 (Hooker 1831).

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** *Schistochila brassii* Grolle, J. Hattori Bot. Lab. 31: 5, 1968 (Grolle 1968a).

** *Schistochila caledonica* Steph., Sp. Hepat. (Stephani) 4: 77, 1909 (Stephani 1909d).

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*** *Schistochila ciliata* (Mitt.) Steph., Sp. Hepat. (Stephani) 4: 87, 1909 (Stephani 1909d). Bas.: *Gottschea ciliata* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 151, 1854 (Mitten 1854).

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*** *Schistochila conchophylla* Herzog ex E.A.Hodgs. et Allison, Trans. & Proc. Roy. Soc. New Zealand 71 (3): 191, 1941 (Hodgson 1941).

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*** *Schistochila cunninghamii* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 17): 27, 1901 (Stephani 1901b).
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*** *Schistochila exalata* Herzog, Rev. Bryol. Lichénol. 29 (3/4): 191, 1960 [1961] (Herzog 1960).
** *Schistochila fijiensis* H.Buch et Herzog, Memoranda Soc. Fauna Fl. Fennica 27: 94, 1952 (Herzog 1952c).
*** *Schistochila glaucescens* (Hook.) A.Evans, Rev. Bryol. 32 (4): 60, 1905 (Evans 1905c). Bas.: *Jungermannia glaucescens* Hook., Musci Exot. 1: tab. 39, 1818 (Hooker 1818).
** *Schistochila hattorii* Grolle, J. Hattori Bot. Lab. 29: 247, 1966 (Grolle 1966h).
** *Schistochila integerrima* Steph., Sp. Hepat. (Stephani) 6: 492, 1924 (Stephani 1924).
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*** *Schistochila kirkiana* Steph., Sp. Hepat. (Stephani) 4: 86, 1909 (Stephani 1909d).
*** *Schistochila kunkelii* S.W.Arnell, Ark. Bot. (n.ser.) 4 (1): 12, 1957 (Arnell 1957b).
** *Schistochila lacerata* Steph., Sp. Hepat. (Stephani) 6: 492, 1924 (Stephani 1924).
*** *Schistochila lamellata* (Hook.) Dumort. ex A.Evans, Contr. U.S. Natl. Herb. 1 (5): 141, 1892 (Evans 1892b). Bas.: *Jungermannia lamellata* Hook., Musci Exot. 1: tab. 49, 1818 (Hooker 1818).
*** *Schistochila laminigera* (Hook.f. et Taylor) A.Evans, Contr. U.S. Natl. Herb. 1 (5): 141, 1892 (Evans 1892b). Bas.: *Jungermannia laminigera* Hook.f. et Taylor, London J. Bot. 3: 456, 1844 (Hooker and Taylor 1844b).
*** *Schistochila latiloba* (R.M.Schust. et J.J.Engel) Xiao L.He et Glenny, Austral. Syst. Bot. 23 (4): 237, 2010 (He and Glenny 2010). Bas.: *Pachyschistochila latiloba* R.M.Schust. et J.J.Engel, J. Hattori Bot. Lab. 58: 493, 1985 (Schuster and Engel 1985).
*** *Schistochila lehmanniana* (Lindenb.) Steph., Sp. Hepat. (Stephani) 4: 86, 1909 (Stephani 1909d). Bas.: *Jungermannia lehmanniana* Lindenb., Nov. Stirp. Pug. 4: 60, 1832 (Lehmann 1832).
*** *Schistochila leucophylla* (Lehm. ex Gottsche, Lindenb. et Nees) Steph., Sp. Hepat. (Stephani) 4: 98, 1910 (Stephani 1910b). Bas.: *Gottschea leucophylla* Lehm. ex Gottsche, Lindenb. et Nees, Syn. Hepat. 1: 17, 1844 (Gottsche et al. 1844).
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*** *Schistochila nobilis* (Hook.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 392, 1877 (Trevisan 1877). Bas.: *Jungermannia nobilis* Hook., Musci Exot. 1: tab. 11, 1818 (Hooker 1818).
*** *Schistochila nuda* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 215, 1934 (Horikawa 1934).
*** *Schistochila pachyphylla* (Lehm.) Steph., Sp. Hepat. (Stephani) 4: 99, 1910 (Stephani 1910b). Bas.: *Jungermannia pachyphylla* Lehm., Nov. Stirp. Pug. 6: 61, 1834 (Lehmann 1834).
*** *Schistochila papillifera* R.M.Schust., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 11 (1): 27, 1968 (Schuster 1968a).
*** *Schistochila parvistipula* Rodway, Pap. & Proc. Roy. Soc. Tasmania 1916: 47, 1917 (Rodway 1917a).
*** *Schistochila pellucida* R.M.Schust. et J.J.Engel, J. Hattori Bot. Lab. 58: 286, 1985 (Schuster and Engel 1985).
*** *Schistochila piligera* Steph., Bot. Gaz. 15 (11): 291, 1890 (Stephani 1890c).
*** *Schistochila pinnatifolia* (Hook.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 392, 1877 (Trevisan 1877). Bas.: *Jungermannia pinnatifolia* Hook., Musci Exot. 2: tab. 114, 1820 (Hooker 1820).
*** *Schistochila pluriciliata* R.M.Schust. et J.J.Engel, J. Hattori Bot. Lab. 58: 395, 1985 (Schuster and Engel 1985).
*** *Schistochila pseudociliata* R.M.Schust., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 14 (4): 623, 1971 (Schuster 1971c).
*** *Schistochila quadrifida* A.Evans, Contr. U.S. Natl. Herb. 1 (5): 141, 1892 (Evans 1892b).
** *Schistochila ramentacea* Steph., Sp. Hepat. (Stephani) 6: 494, 1924 (Stephani 1924).
*** *Schistochila reflexa* (Mont.) Steph., Sp. Hepat. (Stephani) 4: 97, 1910 (Stephani 1910b). Bas.: *Gottschea reflexa* Mont., Ann. Sci. Nat. Bot. (sér. 3) 4: 347, 1845 (Montagne 1845b).

*** *Schistochila reflexistipula* J.J.Engel et R.M.Schust., Phytologia 30 (4): 245, 1975 (Schuster and Engel 1975).

*** *Schistochila reinwardtii* (Nees) Schiffn., Consp. Hepat. Arch. Ind.: 218, 1898 (Schiffner 1898b). Bas.: *Jungermannia reinwardtii* Nees, Enum. Pl. Crypt. Javae: 66, 1830 (Nees 1830).

*** *Schistochila repleta* (Hook.f. et Taylor) Steph., Sp. Hepat. (Stephani) 4: 90, 1909 (Stephani 1909d). Bas.: *Jungermannia repleta* Hook.f. et Taylor, London J. Bot. 3: 557, 1844 (Hooker and Taylor 1844d).

** *Schistochila rubriseta* Steph., Sp. Hepat. (Stephani) 4: 78, 1909 (Stephani 1909d).

** *Schistochila schultzei* Steph., Sp. Hepat. (Stephani) 6: 494, 1924 (Stephani 1924).

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*** *Schistochila sciurea* (Nees) Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 251, 1893 (Schiffner 1893a). Bas.: *Jungermannia sciurea* Nees, Enum. Pl. Crypt. Javae: 34, 1830 (Nees 1830).

*** *Schistochila simulans* (C.Massal.) Xiao L.He et Yu Sun, Polish Bot. J. 58 (2): 473, 2013 (He and Sun 2013). Bas.: *Cephalozia simulans* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 236, 1885 (Massalongo 1885).

*** *Schistochila spegazziniana* (C.Massal.) Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 6): 60, 1900 (Stephani 1900b). Bas.: *Gottschea spegazziniana* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 206, 1885 (Massalongo 1885).

*** *Schistochila sphagnoides* (Schwägr.) Lindb. ex Steph., Sp. Hepat. (Stephani) 4: 70, 1909 (Stephani 1909d). Bas.: *Jungermannia sphagnoides* Schwägr., Hist. Musc. Hepat. Prodr.: 23, 1814 (Schwägrichen 1814).

*** *Schistochila splachnophylla* (Hook.f. et Taylor) Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 17): 28, 1901 (Stephani 1901b). Bas.: *Jungermannia splachnophylla* Hook.f. et Taylor, London J. Bot. 3: 455, 1844 (Hooker and Taylor 1844b).

** *Schistochila stratosa* (Mont.) A.Evans, Contr. U.S. Natl. Herb. 1 (5): 141, 1892 (Evans 1892b). Bas.: *Gottschea stratosa* Mont., Ann. Sci. Nat. Bot. (sér. 3) 4: 346, 1845 (Montagne 1845b).

*** *Schistochila subhyalina* R.M.Schust., Phytologia 30 (4): 246, 1975 (Schuster and Engel 1975).

** *Schistochila subhyalina* var. *grandidentata* (J.J.Engel et R.M.Schust.) Xiao L.He et Glenny, Austral. Syst. Bot. 23 (4): 237, 2010 (He and Glenny 2010). Bas.: *Pachyschistochila subhyalina* var. *grandidentata* J.J.Engel et R.M.Schust., J. Hattori Bot. Lab. 58: 507, 1985 (Schuster and Engel 1985).

*** *Schistochila subimmersa* J.J.Engel et R.M.Schust., Phytologia 30 (4): 247, 1975 (Schuster and Engel 1975).

*** *Schistochila succulenta* (J.J.Engel et R.M.Schust.) Xiao L.He et Glenny, Austral. Syst. Bot. 23 (4): 237, 2010 (He and Glenny 2010). Bas.: *Pachyschistochila succulenta* J.J.Engel et R.M.Schust., J. Hattori Bot. Lab. 58: 517, 1985 (Schuster and Engel 1985).

*** *Schistochila tasmanica* Steph., Sp. Hepat. (Stephani) 4: 86, 1909 (Stephani 1909d).
*** *Schistochila trispiralis* R.M.Schust., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 11 (1): 28, 1968 (Schuster 1968a).
*** *Schistochila tuloides* (Hook.f. et Taylor) Steph., Sp. Hepat. (Stephani) 4: 89, 1909 (Stephani 1909d). Bas.: *Jungermannia tuloides* Hook.f. et Taylor, London J. Bot. 3: 558, 1844 (Hooker and Taylor 1844d).
*** *Schistochila undulatifolia* Piippo, Ann. Bot. Fenn. 23 (1): 8, 1986 (Piippo 1986b).
*** *Schistochila virescens* R.M.Schust., Phytologia 30 (4): 248, 1975 (Schuster and Engel 1975).
*** *Schistochila vitreocincta* (Herzog) Xiao L.He et Glenny, Austral. Syst. Bot. 23 (4): 237, 2010 (He and Glenny 2010). Bas.: *Perssoniella vitreocincta* Herzog, Ark. Bot. (n.ser.) 2 (4): 265, 1952 (Herzog 1952g).
** *Schistochila volans* Grolle, J. Hattori Bot. Lab. 29: 244, 1966 (Grolle 1966h).
*** *Schistochila yakushimensis* N.Ohnishi et Deguchi, Bryologist 106 (3): 451, 2003 (Ohnishi and Deguchi 2003).
** *Schistochila zantenii* Grolle, J. Hattori Bot. Lab. 29: 243, 1966 (Grolle 1966h).

Porellales Schljakov
Jubulineae Müll.Frib.

*** Frullaniaceae Lorch

by M. von Konrat, J. Hentschel, J. Uribe, P. Sukkharak, J. Heinrichs, J. Larraín, R. Stotler and L. Zhang

The subgeneric treatment of Frullaniaceae follows Hentschel et al. (2015), which includes a slight departure from formal infrageneric ranks where they apply clades referred to as *Diastaloba* I, II, III, and IV that appear to represent distinct subgenera.

*** ***Frullania* Raddi**, Jungermanniogr. Etrusca: 9, 1818 (Raddi 1818a).
*** **subg. *Chonanthelia* Spruce**, Trans. & Proc. Bot. Soc. Edinburgh 15: 8, 1884 (Spruce 1884).
* *Frullania flammea* Taylor, Trans. & Proc. Bot. Soc. Edinburgh 15: 29, 1884 (Spruce 1884).
*** *Frullania lindmanii* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 23 (III, 2): 19, 1897 (Stephani 1897a).
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** *Frullania spegazzinii* M.E.Reiner, Bol. Soc. Argent. Bot. 25 (3/4): 310, 1988 (Reiner 1988).

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*** *Frullania confertiloba* Steph., Sp. Hepat. (Stephani) 4: 326, 1910 (Stephani 1910b).
*** *Frullania decidua* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 30, 1884 (Spruce 1884).
*** *Frullania ecklonii* (Spreng.) Gottsche, Lindenb. et Nees, Syn. Hepat. 3: 413, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia ecklonii* Spreng. Syst. Veg. (ed. 16) [Sprengel] 4 (2): 324, 1827 (Sprengel 1827b).
* *Frullania ecklonii* var. *robustior* (Gottsche, Lindenb. et Nees) Sim, Trans. Roy. Soc. South Africa 15 (1): 39, 1926 (Sim 1926). Bas.: *Frullania ecklonii* a *robustior* Gottsche, Lindenb. et Nees, Syn. Hepat. 5: 771, 1847 (Gottsche et al. 1847).
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* *Frullania ecklonii* var. *tenerior* (Gottsche, Lindenb. et Nees) Sim, Trans. Roy. Soc. South Africa 15 (1): 39, 1926 (Sim 1926). Bas.: *Frullania ecklonii* b *tenerior* Gottsche, Lindenb. et Nees, Syn. Hepat. 5: 771, 1847 (Gottsche et al. 1847).
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*** *Frullania obscura* (Sw.) Mont., Ann. Sci. Nat. Bot. (sér. 2) 14: 333, 1840 (Montagne 1840a). Bas.: *Jungermannia obscura* Sw., Fl. Ind. Occid. 3: 1869, 1806 (Swartz 1806).
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** *Frullania bonariensis* M.E.Reiner, Bol. Soc. Argent. Bot. 25 (3/4): 313, 1988 (Reiner 1988).
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*** *Frullania tetraptera* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 9: 47, 1838 (Montagne 1838).
** *Frullania trinervis* (Lehm.) Drège, Flora, Beig. 26: 186, 1843 (Drège 1843). Bas.: *Jungermannia trinervis* Lehm., Linnaea 9 (4): 426, 1835 (Lehmann 1835). [186]
*** *Frullania winteri* Steph., Sp. Hepat. (Stephani) 4: 338, 1910 (Stephani 1910b).
*** *Frullania winteri* var. *vanderhammenii* (Haarbrink) Yuzawa, J. Hattori Bot. Lab. 70: 233, 1991 (Yuzawa 1991). Bas.: *Frullania vanderhammenii* Haarbrink, Lindbergia 7 (1): 56, 1981 (Haarbrink 1981).

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186 *Frullania trinervis* is possibly a species complex (Vanden Berghen 1976b).

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** *Frullania akiyamae* S.Hatt., J. Hattori Bot. Lab. 60: 240, 1986 (Hattori 1986b).
** *Frullania apiculata* (Reinw., Blume et Nees) Nees, Syn. Hepat. 3: 452, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia apiculata* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 222, 1824 [1825] (Reinwardt et al. 1824a).
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*** *Frullania armitiana* Steph., Sp. Hepat. (Stephani) 4: 538, 1911 (Stephani 1911e).

** *Frullania armitiana* var. *inflexula* S.Hatt., J. Hattori Bot. Lab. 65: 415, 1988 (Hattori 1988a).
** *Frullania aterrima* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 3: 450, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia aterrima* Hook.f. et Taylor, London J. Bot. 3: 395, 1844 (Hooker and Taylor 1844a).
*** *Frullania attenuata* Steph., Sp. Hepat. (Stephani) 4: 538, 1911 (Stephani 1911e).
*** *Frullania bella* Steph., Sp. Hepat. (Stephani) 4: 643, 1911 (Stephani 1911e).
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*** *Frullania colliculosa* von Konrat, Braggins, Hentschel et Heinrichs, Nova Hedwigia 91 (3/4): 494, 2010 (von Konrat et al. 2010b).
*** *Frullania cordistipula* (Reinw., Blume et Nees) Nees, Voy. Amér. Mérid. 7 (2): 68, 1839 (Montagne 1839a). Bas.: *Jungermannia cordistipula* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 220, 1824 [1825] (Reinwardt et al. 1824a). [188]
** *Frullania cordistipula* var. *dentistipula* S.Hatt., J. Hattori Bot. Lab. 60: 242, 1986 (Hattori 1986b).
* *Frullania cordistipula* var. *mutica* (Gottsche, Lindenb. et Nees) Schiffn., Consp. Hepat. Arch. Ind.: 323, 1898 (Schiffner 1898b). Bas.: *Frullania cordistipula* β *mutica* Gottsche, Lindenb. et Nees, Syn. Hepat. 3: 454, 1845 (Gottsche et al. 1845b).
* *Frullania crenatiloba* Steph., Sp. Hepat. (Stephani) 6: 551, 1924 (Stephani 1924). [189]
*** *Frullania curvistipula* Steph., Sp. Hepat. (Stephani) 4: 548, 1911 (Stephani 1911e).
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** *Frullania curvistipula* var. *lamii* Verd., Ann. Bryol., Suppl. 1: 91, 1930 (Verdoorn 1930c).
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*** *Frullania dentiloba* S.Hatt., J. Jap. Bot. 50 (6): 161, 1975 (Hattori 1975a).
** *Frullania durifolia* Steph., Hedwigia 33 (3): 162, 1894 (Stephani 1894d).
** *Frullania exilis* Taylor, London J. Bot. 5: 405, 1846 (Taylor 1846b).
** *Frullania gabonensis* Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 46 (1/2): 81, 1976 (Vanden Berghen 1976b).
*** *Frullania gracilis* (Reinw., Blume et Nees) Nees, Syn. Hepat. 3: 452, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia gracilis* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 221, 1824 [1825] (Reinwardt et al. 1824a).

187 *Frullania claviloba* is possibly conspecific with *Frullania gracilis* (Söderström et al. 2010a).

188 *Frullania cordistipula* is a species complex also including *Frullania serrata*.

189 *Frullania crenatiloba* is conspecific with *Frullania apiculata* in Verdoorn (1930c), but it was accepted by So and Wang (2006).

* *Frullania gracilis* var. *brevior* (Gottsche, Lindenb. et Nees) Schiffn., Consp. Hepat. Arch. Ind.: 327, 1898 (Schiffner 1898b). Bas.: *Frullania gracilis* β *brevior* Gottsche, Lindenb. et Nees, Syn. Hepat. 3: 453, 1845 (Gottsche et al. 1845b).

** *Frullania gracilis* var. *vittata* S.Hatt., J. Hattori Bot. Lab. 60: 243, 1986 (Hattori 1986b).

** *Frullania gracilis* subsp. *zennoskei* S.Hatt. et Thaithong, J. Hattori Bot. Lab. 44: 183, 1978 (Hattori and Thaithong 1978b).

*** *Frullania hasskarliana* Lindenb., Syn. Hepat. 3: 453, 1845 (Gottsche et al. 1845b).

** *Frullania hasskarliana* var. *gracilis* S.Hatt., J. Hattori Bot. Lab. 60: 243, 1986 (Hattori 1986b).

** *Frullania hasskarliana* var. *parvidentata* S.Hatt., J. Hattori Bot. Lab. 60: 245, 1986 (Hattori 1986b).

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*** *Frullania inconstans* Verd., Ann. Bryol., Suppl. 1: 83, 1930 (Verdoorn 1930c).

** *Frullania inconstans* var. *grossedentata* Kamim. et S.Hatt., J. Hattori Bot. Lab. 37: 530, 1973 (Hattori and Kamimura 1973).

*** *Frullania johnsonii* Steph., Hedwigia 33 (3): 163, 1894 (Stephani 1894d).

** *Frullania macgregorii* Steph., Hedwigia 33 (3): 154, 1894 (Stephani 1894d).

** *Frullania macgregorii* var. *rostellula* (S.Hatt.) S.Hatt., J. Hattori Bot. Lab. 51: 220, 1982 (Hattori 1982d). Bas.: *Frullania reimersii* var. *rostellula* S.Hatt., J. Hattori Bot. Lab. 38: 258, 1974 (Hattori 1974c).

** *Frullania madens* Steph., Sp. Hepat. (Stephani) 6: 553, 1924 (Stephani 1924).

** *Frullania mehrana* S.Hatt., Recent Adv. Bot.: 66, 1976 (Hattori 1976e).

** *Frullania motoyana* Steph., Sp. Hepat. (Stephani) 4: 646, 1911 (Stephani 1911e).

* *Frullania multilacera* Steph., Sp. Hepat. (Stephani) 4: 650, 1911 (Stephani 1911e). [190]

** *Frullania multilacera* subsp. *gracilior* S.Hatt., Mem. New York Bot. Gard. 45: 547, 1987 (Hattori 1987a).

** *Frullania multilacera* var. *lacerissima* S.Hatt., J. Hattori Bot. Lab. 39: 294, 1975 (Hattori 1975d).

** *Frullania multilaceroides* S.Hatt., Mem. New York Bot. Gard. 45: 549, 1987 (Hattori 1987a).

** *Frullania neosheana* S.Hatt., J. Hattori Bot. Lab. 45: 350, 1979 (Hattori 1979b).

** *Frullania papillata* Steph., Sp. Hepat. (Stephani) 4: 615, 1911 (Stephani 1911e).

** *Frullania pulogensis* Steph., Sp. Hepat. (Stephani) 4: 545, 1911 (Stephani 1911e).

*** *Frullania purpurea* Steph., Sp. Hepat. (Stephani) 4: 626, 1911 (Stephani 1911e).

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190 *Frullania multilacera* is possibly conspecific with *Frullania vaga*.

** *Frullania reimersii* Verd., Ann. Bryol., Suppl. 1: 84, 1930 (Verdoorn 1930c).
** *Frullania saepisdentata* S.Hatt. et Streimann, J. Hattori Bot. Lab. 59: 116, 1985 (Hattori and Streimann 1985).
** *Frullania schiffneri* Verd., Ann. Bryol. 2: 150, 1929 (Verdoorn 1929a).
** *Frullania schusterana* S.Hatt., J. Hattori Bot. Lab. 36: 411, 1972 [1973] (Hattori 1972b).
** *Frullania seriatifolia* Steph., Hedwigia 33 (3): 167, 1894 (Stephani 1894d).
** *Frullania serrata* Gottsche, Syn. Hepat. 3: 453, 1845 (Gottsche et al. 1845b).
** *Frullania serrata* var. *ceramensis* S.Hatt., J. Hattori Bot. Lab. 60: 247, 1986 (Hattori 1986b).
** *Frullania serrata* subsp. *grolleana* (S.Hatt.) S.Hatt., J. Hattori Bot. Lab. 51: 225, 1982 (Hattori 1982d). Bas.: *Frullania grolleana* S.Hatt., J. Hattori Bot. Lab. 36: 416, 1972 [1973] (Hattori 1972b).
** *Frullania serrata* var. *hamatispina* (S.Hatt.) S.Hatt., J. Hattori Bot. Lab. 51: 225, 1982 (Hattori 1982d). Bas.: *Frullania serrata* subsp. *hamatispina* S.Hatt., J. Hattori Bot. Lab. 38: 262, 1974 (Hattori 1974c).
** *Frullania serrata* var. *pertenuis* (Nees) Schiffn., Consp. Hepat. Arch. Ind.: 342, 1898 (Schiffner 1898b). Bas.: *Jungermannia cordistipula* γ *pertenuis* Nees, Enum. Pl. Crypt. Javae: 49, 1830 (Nees 1830).
** *Frullania serrata* subsp. *spinistipula* S.Hatt., J. Hattori Bot. Lab. 51: 225, 1982 (Hattori 1982d). *Nom. nov. pro Frullania spinistipula* S.Hatt., J. Hattori Bot. Lab. 36: 413, 1972 [1973] (Hattori 1972b), *nom. illeg*.
** *Frullania setacea* S.Hatt., J. Hattori Bot. Lab. 65: 447, 1988 (Hattori 1988a).
** *Frullania sheana* S.Hatt., J. Hattori Bot. Lab. 45: 356, 1979 (Hattori 1979b).
** *Frullania simmondsii* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 109, 1914 (Stephani and Watts 1914).
*** *Frullania sinuata* Sande Lac., Ned. Kruidk. Arch. 3: 424, 1854 [1855] (Sande Lacoste 1854).
** *Frullania steereana* S.Hatt., Mem. New York Bot. Gard. 45: 553, 1987 (Hattori 1987a).
** *Frullania stipatiloba* Steph., Hedwigia 33 (3): 168, 1894 (Stephani 1894d).
** *Frullania subdentata* Steph., Sp. Hepat. (Stephani) 4: 545, 1911 (Stephani 1911e).
** *Frullania subdentata* var. *latistipula* (S.Hatt.) S.Hatt., J. Hattori Bot. Lab. 51: 228, 1982 (Hattori 1982d). Bas.: *Frullania curvistipula* var. *latistipula* S.Hatt., J. Hattori Bot. Lab. 44: 530, 1978 (Hattori 1978b).
** *Frullania submultilacera* S.Hatt. et Koike, J. Hattori Bot. Lab. 75: 190, 1994 (Koike 1994).
** *Frullania subocellata* S.Hatt., J. Hattori Bot. Lab. 60: 248, 1986 (Hattori 1986b).
*** *Frullania taxodiocola* R.M.Schust., Phytologia 53 (5): 364, 1983 (Schuster 1983b).
*** *Frullania ternatensis* Gottsche, Syn. Hepat. 4: 465, 1846 (Gottsche et al. 1846).
** *Frullania ternatensis* var. *non-appendiculata* S.Hatt., J. Hattori Bot. Lab. 38: 174, 1974 (Hattori 1974a).

*** *Frullania trichodes* Mitt., Bonplandia 10 (2): 19, 1862 (Mitten 1862).
** *Frullania vaga* Mitt., Fl. vit.: 418, 1871 [1873] (Mitten 1871).
*** *Frullania vaginata* (Sw.) Nees, Syn. Hepat. 4: 465, 1846 (Gottsche et al. 1846). Bas.: *Jungermannia vaginata* Sw., Meth. Musc.: 35, 1781 (Swartz 1781).
* *Frullania vaginata* var. *nigricans* (Gottsche, Lindenb. et Nees) Schiffn., Consp. Hepat. Arch. Ind.: 348, 1898 (Schiffner 1898b). Bas.: *Frullania vaginata* β *nigricans* Gottsche, Lindenb. et Nees, Syn. Hepat. 4: 465, 1846 (Gottsche et al. 1846).
* *Frullania van-zantenii* Kamim. et S.Hatt., J. Hattori Bot. Lab. 37: 528, 1973 (Hattori and Kamimura 1973). [191]
** *Frullania venusta* S.Hatt., J. Hattori Bot. Lab. 38: 217, 1974 (Hattori 1974d).
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*** *Frullania vitalii* Yuzawa et S.Hatt., J. Jap. Bot. 63 (1): 30, 1988 (Yuzawa and Hattori 1988a).
** *Frullania vittata* S.Hatt., J. Hattori Bot. Lab. 38: 270, 1974 (Hattori 1974c).
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** *Frullania warnckeana* S.Hatt., J. Hattori Bot. Lab. 38: 213, 1974 (Hattori 1974d).
** *Frullania warnckeana* var. *dentosa* S.Hatt., Misc. Bryol. Lichenol. 7 (8): 162, 1977 (Hattori 1977a).

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*** *Frullania baumannii* S.Hatt., J. Hattori Bot. Lab. 43: 410, 1977 [1978] (Hattori 1977b).
*** *Frullania congesta* Gottsche, Lindenb. et Nees, Syn. Hepat. 3: 451, 1845 (Gottsche et al. 1845b). *Nom. nov. pro Jungermannia congesta* Hook.f. et Taylor, London J. Bot. 3: 396, 1844 (Hooker and Taylor 1844a), *nom. illeg*.
** *Frullania ocellata* S.Hatt. et Kamim., J. Hattori Bot. Lab. 37: 531, 1973 (Hattori and Kamimura 1973).
*** *Frullania ptychantha* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 257, 1843 (Montagne 1843).
*** *Frullania repandistipula* Sande Lac., Ned. Kruidk. Arch. 3: 422, 1854 [1855] (Sande Lacoste 1854).
** *Frullania repandistipula* subsp. *queenslandica* S.Hatt., Mem. New York Bot. Gard. 45: 550, 1987 (Hattori 1987a).
** *Frullania repandistipula* subsp. *spinibractea* S.Hatt., Bull. Natl. Sci. Mus. Tokyo, B 1 (4): 150, 1975 (Hattori 1975f).

grp. Diastaloba III

** *Frullania grossiclava* Steph., Sp. Hepat. (Stephani) 4: 384, 1910 (Stephani 1910b).

191 *Frullania van-zantenii* is possibly conspecific with *Frullania serrata*.

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** *Frullania pusilla* Mitt., Fl. vit.: 417, 1871 [1873] (Mitten 1871).
*** *Frullania pycnantha* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 3: 411, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia pycnantha* Hook.f. et Taylor, London J. Bot. 3: 566, 1844 (Hooker and Taylor 1844d).
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** *Frullania subsquarrosa* S.Hatt., J. Hattori Bot. Lab. 36: 429, 1972 [1973] (Hattori 1972b).

203 *Frullania subpedicellata* is possibly conspecific with *Frullania pedicellata*.

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** *Frullania hamaticoma* Steph., Hedwigia 28 (3): 158, 1889 (Stephani 1889d).
*** *Frullania monocera* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 3: 418, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia monocera* Hook.f. et Taylor, London J. Bot. 4: 89, 1845 (Hooker and Taylor 1845).
** *Frullania monocera* var. *acutiloba* (Mitt.) Hentschel et von Konrat, Phytotaxa 220 (2): 136, 2015 (Hentschel et al. 2015). Bas.: *Frullania acutiloba* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 120, 1860 [1861] (Mitten 1860c).

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*** *Frullania monocera* var. *subhampeana* (E.A.Hodgs.) Hentschel et von Konrat, Phytotaxa 220 (2): 136, 2015 (Hentschel et al. 2015). Bas.: *Frullania subhampeana* E.A.Hodgs., Trans. & Proc. Roy. Soc. New Zealand 77 (3): 370, 1949 (Hodgson 1949).
*** *Frullania monocera* var. *undulata* (Kamim.) Hentschel et von Konrat, Phytotaxa 220 (2): 136, 2015 (Hentschel et al. 2015). Bas.: *Frullania undulata* Kamim., J. Hattori Bot. Lab. 24: 50, 1961 (Kamimura 1961).
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*** *Frullania campanulata* Sande Lac., Ned. Kruidk. Arch. 3: 422, 1854 [1855] (Sande Lacoste 1854).
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*** *Frullania dentata* S.Hatt., J. Hattori Bot. Lab. 38: 231, 1974 (Hattori 1974c).
** *Frullania dentata* var. *secernens* S.Hatt., J. Hattori Bot. Lab. 65: 422, 1988 (Hattori 1988a).
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204 *Frullania baladina* is a species complex also including *Frullania fulfordiae*.

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*** *Frullania glomerata* (Lehm. et Lindenb.) Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 9: 46, 1838 (Montagne 1838). Bas.: *Jungermannia glomerata* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 21, 1833 (Lehmann 1833).
*** *Frullania incumbens* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 162, 1855 (Mitten 1855).
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** *Frullania pentapleura* Taylor, London J. Bot. 5: 402, 1846 (Taylor 1846b).
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* *Frullania solanderiana* Colenso, Trans. & Proc. New Zealand Inst. 21: 75, 1889 (Colenso 1889). [206]
** *Frullania subincumbens* S.Hatt., Bryologist 90 (4): 367, 1987 [1988] (Hattori 1987b).
* *Frullania subtropica* Steph., Sp. Hepat. (Stephani) 4: 416, 1910 (Stephani 1910b).
* *Frullania tjibodensis* S.Hatt. et Thaithong, J. Jap. Bot. 52 (10): 289, 1977 (Hattori and Thaithong 1977). [207]

205 *Frullania fugax* is a species complex possibly including *Frullania baileyana*, *Frullania belmorensis*, *Frullania cataractarum*, *Frullania media* and *Frullania subtropica* (Hattori 1979a).

206 *Frullania solanderiana* is morphologically similar to *Frullania pentapleura* and possibly conspecific.

207 *Frullania tjibodensis* is possibly conspecific with *Frullania campanulata* (Söderström et al. 2010a).

** *Frullania tuyamae* S.Hatt. et Thaithong, J. Jap. Bot. 53 (6): 175, 1978 (Hattori and Thaithong 1978c).

*** **sect. *Frullania***

*** *Frullania appalachiana* R.M.Schust., Phytologia 53 (5): 366, 1983 (Schuster 1983b).

*** *Frullania azorica* Sim-Sim, Sérgio, Mues et Kraut, Cryptog. Bryol. Lichénol. 16 (2): 112, 1995 (Sim-Sim et al. 1995).

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** *Frullania dilatata* subsp. *asiatica* S.Hatt., J. Jap. Bot. 57 (9): 258, 1982 (Hattori 1982b).

*** *Frullania eboracensis* Lehm., Nov. Stirp. Pug. 8: 14, 1844 (Lehmann 1844). [208]

*** *Frullania ericoides* (Nees) Mont., Ann. Sci. Nat. Bot. (sér. 2) 12: 51, 1839 (Montagne 1839c). Bas.: *Jungermannia ericoides* Nees, Fl. Bras. (Martius) 1 (1): 346, 1833 (Nees 1833a). [209]

* *Frullania ericoides* var. *laxa* (Gottsche, Lindenb. et Nees) Schiffn., Consp. Hepat. Arch. Ind.: 324, 1898 (Schiffner 1898b). Bas.: *Frullania squarrosa* γ *laxa* Gottsche, Lindenb. et Nees, Syn. Hepat. 5: 772, 1847 (Gottsche et al. 1847).

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** *Frullania ericoides* var. *verrucosa* (Kamim.) Hentschel et von Konrat, Phytotaxa 220 (2): 134, 2015 (Hentschel et al. 2015). Bas.: *Frullania squarrosa* var. *verrucosa* Kamim., J. Hattori Bot. Lab. 24: 19, 1961 (Kamimura 1961).

*** *Frullania fragilifolia* (Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 3: 437, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia fragilifolia* Taylor, Ann. Mag. Nat. Hist. 12 (76): 172, 1843 (Taylor 1843).

** *Frullania fuegiana* Steph., Sp. Hepat. (Stephani) 4: 428, 1910 (Stephani 1910b).

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** *Frullania koponenii* S.Hatt., Ann. Bot. Fenn. 15 (2): 111, 1978 (Koponen et al. 1978).

*** *Frullania muscicola* Steph., Hedwigia 33 (3): 146, 1894 (Stephani 1894d).

*** *Frullania oakesiana* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 225, 1869 (Austin 1869).

** *Frullania oakesiana* subsp. *takayuensis* (Steph.) R.M.Schust., Hepat. Anthocerotae N. Amer. 5: 195, 1992 (Schuster 1992b). Bas.: *Frullania takayuensis* Steph., Sp. Hepat. (Stephani) 4: 399, 1910 (Stephani 1910b).

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208 *Frullania eboracensis* is a species complex also including *Frullania appalachiana*, *Frullania parvistipula* and *Frullania virginica*.

209 *Frullania ericoides* is enormously variable (Schuster 1992b) and is a species complex with at least two lineages (Hentschel et al. 2009).

*** *Frullania parvistipula* Steph., Sp. Hepat. (Stephani) 4: 397, 1910 (Stephani 1910b).
** *Frullania sabaliana* R.M.Schust., Phytologia 53 (5): 365, 1983 (Schuster 1983b).
** *Frullania semivillosa* Lindenb. et Gottsche, Syn. Hepat. 5: 774, 1847 (Gottsche et al. 1847).
** *Frullania stylifera* (R.M.Schust.) R.M.Schust., Hepat. Anthocerotae N. Amer. 5: 210, 1992 (Schuster 1992b). Bas.: *Frullania inflata* var. *stylifera* R.M.Schust., Phytologia 53 (5): 366, 1983 (Schuster 1983b).
* *Frullania subdilatata* C.Massal., Nuovo Giorn. Bot. Ital. (n.ser.) 13 (4): 349, 1906 (Levier 1906).
*** *Frullania virginica* Lehm., Nov. Stirp. Pug. 8: 19, 1844 (Lehmann 1844).

** **sect. *Irregulares* E.A.Hodgs. ex S.Hatt.**, J. Hattori Bot. Lab. 54: 143, 1983 (Hattori 1983).
* *Frullania astrolabea* Steph., Sp. Hepat. (Stephani) 4: 460, 1910 (Stephani 1910b). [210]
*** *Frullania deplanata* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 161, 1855 (Mitten 1855).
*** *Frullania morobensis* S.Hatt. et Streimann, J. Hattori Bot. Lab. 59: 109, 1985 (Hattori and Streimann 1985).
*** *Frullania patula* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 159, 1854 (Mitten 1854).
*** *Frullania scandens* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 258, 1843 (Montagne 1843).

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*** *Frullania deflexa* Mitt., Bonplandia 10 (2): 19, 1862 (Mitten 1862).
*** *Frullania integristipula* (Nees) Nees, Syn. Hepat. 3: 431, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia integristipula* Nees, Enum. Pl. Crypt. Javae: 54, 1830 (Nees 1830).
** *Frullania integristipula* var. *emarginata* Verd., Ann. Bryol. 2: 153, 1929 (Verdoorn 1929a).
** *Frullania macrophylla* S.Hatt., J. Hattori Bot. Lab. 47: 220, 1980 (Hattori 1980a).
** *Frullania sabahana* S.Hatt., J. Hattori Bot. Lab. 40: 493, 1976 (Hattori 1976d).
** *Frullania sackawana* Steph., Bull. Herb. Boissier 5 (2): 91, 1897 (Stephani 1897b).
** *Frullania sarawakensis* S.Hatt., J. Hattori Bot. Lab. 40: 496, 1976 (Hattori 1976d).
** *Frullania umbonata* Mitt., Sp. Hepat. (Stephani) 4: 579, 1911 (Stephani 1911e).
*** *Frullania utriculata* Steph., Hedwigia 33 (3): 152, 1894 (Stephani 1894d).

*** **sect. *Fallaces* Verd.**, Rev. Bryol. Lichénol. 1: 112, 1928 (Verdoorn 1928a).
* *Frullania fallax* Gottsche, Syn. Hepat. 3: 432, 1845 (Gottsche et al. 1845b).

210 *Frullania astrolabea* is possibly conspecific with *Frullania scandens* (Hattori 1981b).

*** *Frullania intermedia* (Reinw., Blume et Nees) Nees, Syn. Hepat. 3: 434, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia intermedia* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 218, 1824 [1825] (Reinwardt et al. 1824a). [211]

** *Frullania intermedia* subsp. *morokensis* (Steph.) S.Hatt., J. Hattori Bot. Lab. 47: 194, 1980 (Hattori 1980a). Bas.: *Frullania morokensis* Steph., Sp. Hepat. (Stephani) 4: 578, 1911 (Stephani 1911e).

* *Frullania intermedia* var. *non-apiculata* S.Hatt., J. Hattori Bot. Lab. 39: 291, 1975 (Hattori 1975d). [212]

** *Frullania novoguineensis* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 37, 1890 (Schiffner 1890).

** *Frullania regularis* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 38, 1890 (Schiffner 1890).

*** **sect. *Nodulosae* Verd.**, Rev. Bryol. Lichénol. 1: 116, 1928 (Verdoorn 1928a).

* *Frullania brotheri* Steph., Hedwigia 33 (3): 150, 1894 (Stephani 1894d). [213]

** *Frullania hamata* Steph., Sp. Hepat. (Stephani) 4: 582, 1911 (Stephani 1911e).

** *Frullania leeuwenii* Verd., Nova Guinea 14: 545, 1930 (Verdoorn 1930b).

*** *Frullania nodulosa* (Reinw., Blume et Nees) Nees, Syn. Hepat. 3: 433, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia nodulosa* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 217, 1824 [1825] (Reinwardt et al. 1824a).

** **sect. *Remotilobae* Verd.**, Rev. Bryol. Lichénol. 1: 119, 1928 (Verdoorn 1928a).

*** *Frullania heteromorpha* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 38, 1890 (Schiffner 1890).

** *Frullania remotiloba* Steph., Hedwigia 33 (3): 152, 1894 (Stephani 1894d).

* **subg. *Mammillosae* S.Hatt.**, J. Hattori Bot. Lab. 60: 226, 1986 (Hattori 1986e).

** *Frullania huerlimannii* S.Hatt., Bull. Natl. Sci. Mus. Tokyo, B 2 (3): 84, 1976 (Hattori 1976b).

* *Frullania huerlimannii* var. *dioica* S.Hatt., J. Hattori Bot. Lab. 57: 413, 1984 (Hattori 1984a).

** *Frullania involvens* S.Hatt. et Kamim., J. Hattori Bot. Lab. 37: 526, 1973 (Hattori and Kamimura 1973).

** *Frullania iriomotensis* S.Hatt., J. Jap. Bot. 55 (5): 133, 1980 (Hattori 1980c).

** *Frullania mammillosa* S.Hatt., J. Hattori Bot. Lab. 43: 424, 1977 [1978] (Hattori 1977b).

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211 *Frullania intermedia* is a species complex (Hattori 1980a).

212 *Frullania intermedia* var. *non-apiculata* was reduced to a synonym of subsp. *intermedia* by Hattori (1980a), but it was re-instated by Hattori (1985).

213 *Frullania brotheri* is probably just a high-elevation form of *Frullania nodulosa* (Söderström et al. 2010a).

*** *Frullania meijeri* S.Hatt., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 17 (4): 307, 1974 (Hattori 1974b).
** *Frullania notarisii* Steph., Sp. Hepat. (Stephani) 4: 651, 1911 (Stephani 1911e).
** *Frullania papulosa* Steph., Sp. Hepat. (Stephani) 4: 654, 1911 (Stephani 1911e).
** *Frullania rudolfiana* S.Hatt., J. Hattori Bot. Lab. 36: 437, 1972 [1973] (Hattori 1972b).
*** *Frullania thiersiae* S.Hatt., Beih. Nova Hedwigia 90: 156, 1988 (Hattori 1988b).
** *Frullania tixieri* S.Hatt., J. Jap. Bot. 51 (7): 193, 1976 (Hattori 1976a).

*** **subg. *Meteoriopsis* Spruce**, Trans. & Proc. Bot. Soc. Edinburgh 15: 37, 1884 (Spruce 1884).
* *Frullania caldensis* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 33 (7): 89, 1876 [1877] (Ångström 1876).
** *Frullania evoluta* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 122, 1860 [1861] (Mitten 1860c).
*** *Frullania tagawana* (S.Hatt. et Thaithong) S.Hatt., J. Hattori Bot. Lab. 59: 160, 1985 (Hattori and Lin 1985a). Bas.: *Frullania evoluta* var. *tagawana* S.Hatt. et Thaithong, J. Hattori Bot. Lab. 43: 441, 1977 [1978] (Hattori et al. 1977).

*** **sect. *Intumescentes* R.M.Schust.**, Phytologia 57 (5): 370, 1985 (Schuster 1985a).
*** *Frullania aculeata* Taylor, London J. Bot. 5: 407, 1846 (Taylor 1846b).
** *Frullania ambronnii* Steph., Biblioth. Bot. 87 (2): 242, 1916 (Stephani 1916a).
*** *Frullania atrata* (Sw.) Nees ex Mont., Ann. Sci. Nat. Bot. (sér. 2) 12: 51, 1839 (Montagne 1839c). Bas.: *Jungermannia atrata* Sw., Prodr. (Swartz): 144, 1788 (Swartz 1788).
*** *Frullania beyrichiana* (Lehm. et Lindenb.) Lehm. et Lindenb., Syn. Hepat. 3: 460, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia beyrichiana* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 25, 1833 (Lehmann 1833).
*** *Frullania bicornistipula* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 46, 1884 (Spruce 1884).
*** *Frullania brasiliensis* Raddi, Critt. Brasil.: 12, 1822 (Raddi 1822). [214]
** *Frullania brasiliensis* var. *elegantula* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 50, 1884 (Spruce 1884).
* *Frullania breuteliana* Gottsche, Syn. Hepat. 3: 461, 1845 (Gottsche et al. 1845b). [215]
* *Frullania compacta* Gottsche, Sp. Hepat. (Stephani) 4: 493, 1911 (Stephani 1911e). [216]
* *Frullania crenulifolia* J.B.Jack et Steph., Hedwigia 31 (1): 14, 1892 (Jack and Stephani 1892).

214 *Frullania brasiliensis* is a species complex with controversial synonymy (Schuster 1992b, Hentschel et al. 2009).

215 *Frullania breuteliana* is possibly conspecific with *Frullania beyrichiana*.

216 *Frullania compacta* is conspecific with *Frullania brasiliensis* in Stotler (1969), but Schuster (1992b) doubts the correctness of this.

** *Frullania crispiloba* Steph., Hedwigia 33 (3): 156, 1894 (Stephani 1894d).
** *Frullania curviramea* Steph., Sp. Hepat. (Stephani) 4: 684, 1911 (Stephani 1911e).
*** *Frullania ecuadorensis* Steph., Sp. Hepat. (Stephani) 4: 526, 1911 (Stephani 1911e).
** *Frullania formosa* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 46, 1884 (Spruce 1884).
* *Frullania granatensis* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 173 (79), 1864 (Gottsche 1864). [217]
*** *Frullania griffithsiana* Gottsche, Syn. Hepat. 4: 466, 1846 (Gottsche et al. 1846).
* *Frullania guadalupensis* Gottsche, Sp. Hepat. (Stephani) 4: 496, 1911 (Stephani 1911e).
* *Frullania gualaquizana* Steph., Sp. Hepat. (Stephani) 4: 531, 1911 (Stephani 1911e).
** *Frullania hamiflora* Herzog et L.Clark, Bryologist 56 (3): 180, 1953 (Clark and Schultz 1953).
* *Frullania humilis* Spruce, Mem. Torrey Bot. Club 1 (3): 119, 1890 (Spruce 1890).
*** *Frullania intumescens* (Lehm. et Lindenb.) Lehm. et Lindenb., Syn. Hepat. 3: 460, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia intumescens* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 52, 1834 (Lehmann 1834).
* *Frullania laticaulis* Spruce, Mem. Torrey Bot. Club 1 (3): 120, 1890 (Spruce 1890).
*** *Frullania lobatohastata* Steph., Sp. Hepat. (Stephani) 4: 499, 1911 (Stephani 1911e).
* *Frullania longistipula* var. *apiculata* Demaret et Vanden Berghen, Bull. Jard. Bot. État Bruxelles 20 (1): 4, 1950 (Demaret and Vanden Berghen 1950).
*** *Frullania macrocephala* (Lehm. et Lindenb.) Lehm. et Lindenb., Syn. Hepat. 3: 460, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia macrocephala* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 20, 1833 (Lehmann 1833).
** *Frullania madothecoides* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 47, 1884 (Spruce 1884).
** *Frullania meridana* Steph., Sp. Hepat. (Stephani) 4: 500, 1911 (Stephani 1911e).
* *Frullania microcephala* Gottsche, Mexik. Leverm.: 251, 1863 (Gottsche 1863).
*** *Frullania montagnei* Gottsche, Syn. Hepat. 3: 456, 1845 (Gottsche et al. 1845b).
** *Frullania moritziana* Lindenb. et Gottsche, Syn. Hepat. 5: 782, 1847 (Gottsche et al. 1847).
** *Frullania osculatiana* De Not., Mem. Reale Accad. Sci. Torino (ser. 2) 16: 236, 1857 (De Notaris 1857).
*** *Frullania paradoxa* Lehm. et Lindenb., Syn. Hepat. 3: 462, 1845 (Gottsche et al. 1845b).
** *Frullania pearceana* Steph., Sp. Hepat. (Stephani) 4: 515, 1911 (Stephani 1911e).
*** *Frullania pittieri* Steph., Primit. fl. costar.: 113, 1892 [1893] (Stephani 1892e).
** *Frullania rigescens* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 52, 1884 (Spruce 1884).
*** *Frullania setigera* Steph., Hedwigia 33 (3): 159, 1894 (Stephani 1894d).

217 *Frullania granatensis* is possibly conspecific with *Frullania beyrichiana*, but the type specimen was lost in B (Stotler 1969).

** *Frullania speciosa* Herzog, Memoranda Soc. Fauna Fl. Fennica 25: 59, 1950 (Herzog 1950c).
** *Frullania supradecomposita* (Lehm. et Lindenb.) Lehm. et Lindenb., Syn. Hepat. 3: 431, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia supradecomposita* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 23, 1833 (Lehmann 1833).
* *Frullania trianae* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 173, 1864 (Gottsche 1864).
** *Frullania triquetra* Lindenb. et Gottsche, Syn. Hepat. 5: 780, 1847 (Gottsche et al. 1847).
* *Frullania trollii* Herzog, Beih. Bot. Centralbl. 61B (3): 575, 1942 (Herzog 1942d).
*** *Frullania uleana* Steph., Hedwigia 33 (3): 155, 1894 (Stephani 1894d).

** **sect. *Meteoriopsis* Uribe, von Konrat et Hentschel**, Phytotaxa 220 (2): 132, 2015 (Hentschel et al. 2015).
*** *Frullania convoluta* Lindenb. et Hampe, Linnaea 24 (3): 303, 1851 [1852] (Hampe 1851b).
* *Frullania convoluta* var. *ampliata* Herzog, Rev. Bryol. Lichénol. 20 (1/2): 129, 1951 [1952] (Herzog 1951a).
*** *Frullania darwinii* Gradst. et Uribe, Cryptog. Bryol. 25 (4): 296, 2004 (Uribe 2004).
*** *Frullania dulimensis* Uribe, Cryptog. Bryol. 27 (3): 309, 2006 (Uribe 2006).
*** *Frullania grandifolia* Steph., Sp. Hepat. (Stephani) 4: 684, 1911 (Stephani 1911e).
*** *Frullania peruviana* Gottsche, Syn. Hepat. 4: 465, 1846 (Gottsche et al. 1846).
*** *Frullania phalangiflora* Steph., Biblioth. Bot. 87 (2): 247, 1916 (Stephani 1916a).
*** *Frullania weberbaueri* Steph., Sp. Hepat. (Stephani) 4: 510, 1911 (Stephani 1911e).

*** **sect. *Obtusilobae* Verd.**, Ann. Bryol., Suppl. 1: 81, 1930 (Verdoorn 1930c).
** *Frullania angulata* Mitt., J. Proc. Linn. Soc., Bot. 7 (27): 169, 1863 (Mitten 1863).
** *Frullania angulata* var. *laciniata* Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 46 (1/2): 72, 1976 (Vanden Berghen 1976b).
** *Frullania apicalis* Mitt., Philos. Trans. 168: 401, 1879 (Mitten 1879).
** *Frullania apicalis* var. *camerunensis* Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 46 (1/2): 53, 1976 (Vanden Berghen 1976b).
* *Frullania borbonica* Lindenb., Syn. Hepat. 3: 455, 1845 (Gottsche et al. 1845b). [218]
*** *Frullania capensis* Gottsche, Syn. Hepat. 3: 449, 1845 (Gottsche et al. 1845b).
** *Frullania donnellii* Austin, Bull. Torrey Bot. Club 6 (52): 301, 1879 (Austin 1879).
** *Frullania eplicata* Steph., Sp. Hepat. (Stephani) 4: 679, 1911 (Stephani 1911e).
** *Frullania imerinensis* Steph., Sp. Hepat. (Stephani) 4: 484, 1911 (Stephani 1911e).
*** *Frullania kunzei* (Lehm. et Lindenb.) Lehm. et Lindenb., Syn. Hepat. 3: 449, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia kunzei* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 50, 1834 (Lehmann 1834).

218 *Frullania borbonica* is possibly conspecific with *Frullania apicalis* (Vanden Berghen 1976b).

** *Frullania kunzei* var. *maritima* R.M.Schust., Phytotaxa 220 (2): 135, 2015 (Hentschel et al. 2015). Based on: *Frullania kunzei* var. *maritima* R.M.Schust., J. Hattori Bot. Lab. 70: 145, 1991 (Schuster 1991b), *nom. inval.*

** *Frullania longistipula* Steph., Bull. Soc. Roy. Bot. Belgique, Compt. Rend. 30 (2): 199, 1891 [1892] (Stephani 1891b).

*** *Frullania meyeniana* Lindenb., Syn. Hepat. 3: 455, 1845 (Gottsche et al. 1845b).

** *Frullania meyeniana* var. *dioica* S.Hatt., J. Hattori Bot. Lab. 43: 426, 1977 [1978] (Hattori 1977b).

** *Frullania onraedtii* Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 46 (1/2): 60, 1976 (Vanden Berghen 1976b).

** *Frullania papuana* Verd., Ann. Bryol., Suppl. 1: 82, 1930 (Verdoorn 1930c).

*** *Frullania schimperi* Nees, Syn. Hepat. 3: 454, 1845 (Gottsche et al. 1845b). [219]

** *Frullania schimperi* var. *laciniata* Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 46 (1/2): 59, 1976 (Vanden Berghen 1976b).

*** **subg. *Microfrullania* (R.M.Schust.) R.M.Schust.**, Hepat. Anthocerotae N. Amer. 5: 34, 1992 (Schuster 1992b). Bas.: *Neohattoria* subg. *Microfrullania* R.M.Schust., J. Hattori Bot. Lab. 33: 280, 1970 (Schuster 1970a).

*** *Frullania fertilis* De Not., Mem. Reale Accad. Sci. Torino (ser. 2) 16: 235, 1857 (De Notaris 1857).

*** *Frullania knightbridgei* von Konrat et de Lange, PhytoKeys 8: 28, 2012 (von Konrat et al. 2012b).

*** *Frullania magellanica* F.Weber et Nees, Syn. Hepat. 3: 446, 1845 (Gottsche et al. 1845b). *Nom. nov. pro Jungermannia magellanica* Spreng. Ann. Wetterauischen Ges. Gesammte Naturk. 1: 25, 1809 (Sprengel 1809), *nom. illeg.*

** *Frullania magellanica* subsp. *tristaniana* (S.W.Arnell) Váňa et J.J.Engel, Mem. New York Bot. Gard. 105: 59, 2013 (Váňa and Engel 2013). Bas.: *Frullania tristaniana* S.W.Arnell, Results Norweg. Sci. Exped. Tristan da Cunha 42: 9, 1958 (Arnell 1958b).

* *Frullania matafaoica* H.A.Mill., Phytologia 47 (4): 322, 1981 (Miller 1981). *Nom. nov. pro Frullania minutissima* Pearson, Amer. Samoa: 140, 1924 (Pearson 1924a), *nom. illeg.*

*** *Frullania toropuku* von Konrat, de Lange et Larraín, Polish Bot. J. 58 (2): 439, 2013 (von Konrat et al. 2013).

*** **sect. *Amphijubula* (R.M.Schust.) von Konrat, Hentschel, Heinrichs et Braggins**, Bryologist 114 (1): 53, 2011 (von Konrat et al. 2011). Bas.: *Amphijubula* R.M.Schust., J. Hattori Bot. Lab. 33: 298, 1970 (Schuster 1970a).

*** *Frullania lobulata* (Hook.) Hook. et Nees, Syn. Hepat. 3: 445, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia lobulata* Hook., Musci Exot. 2: tab. 119, 1820 (Hooker 1820).

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219 *Frullania schimperi* belongs to a species complex also including *Frullania onraedtii*, *Frullania capensis*, *Frullania apicalis*, *Frullania imerinensis* and *Frullania meyeniana* (Vanden Berghen 1976b).

*** *Frullania microcaulis* Gola, Nuovo Giorn. Bot. Ital. (n.ser.) 29 (1/4): 172, 1922 [1923] (Gola 1922).
*** *Frullania truncatistyla* von Konrat, Hentschel, Heinrichs et Braggins, Bryologist 114 (1): 63, 2011 (von Konrat et al. 2011).

*** **sect. *Microfrullania* (R.M.Schust.) von Konrat et Hentschel**, Phytotaxa 220 (2): 133, 2015 (Hentschel et al. 2015). Bas.: *Neohattoria* sect. *Microfrullania* R.M.Schust., J. Hattori Bot. Lab. 33: 288, 1970 (Schuster 1970a).
*** *Frullania chevalieri* (R.M.Schust.) R.M.Schust., Hepat. Anthocerotae N. Amer. 5: 34, 1992 (Schuster 1992b). Bas.: *Neohattoria chevalieri* R.M.Schust., J. Hattori Bot. Lab. 33: 289, 1970 (Schuster 1970a). [220]
*** *Frullania microscopica* Pearson, J. Linn. Soc., Bot. 46 (305): 33, 1922 (Pearson 1922b).
** *Frullania neocaledonica* J.J.Engel, Novon 9 (3): 344, 1999 (Engel and Smith Merrill 1999a). *Nom. nov. pro Neohattoria caledonica* R.M.Schust., J. Hattori Bot. Lab. 33: 291, 1970 (Schuster 1970a).
*** *Frullania parhamii* (R.M.Schust.) R.M.Schust. ex von Konrat, L.Söderstr. et A.Hagborg, Telopea 13 (3): 407, 2011 (Söderström et al. 2011a). Bas.: *Neohattoria parhamii* R.M.Schust., J. Hattori Bot. Lab. 26: 243, 1963 (Schuster 1963b).

*** **sect. *Regulares* Verd.**, Ann. Bryol., Suppl. 1: 133, 1930 (Verdoorn 1930c).
*** *Frullania junghuhniana* Gottsche, Syn. Hepat. 3: 444, 1845 (Gottsche et al. 1845b). [221]
** *Frullania junghuhniana* var. *bisexualis* S.Hatt., J. Hattori Bot. Lab. 40: 485, 1976 (Hattori 1976d).
** *Frullania junghuhniana* var. *tenella* (Sande Lac.) Grolle et S.Hatt., Misc. Bryol. Lichenol. 9 (6): 123, 1982 (Hattori 1982a). Bas.: *Frullania tenella* Sande Lac., Ned. Kruidk. Arch. 3: 423, 1854 [1855] (Sande Lacoste 1854).
** *Frullania mcveanii* S.Hatt., J. Hattori Bot. Lab. 37: 55, 1973 (Hattori 1973a).
** *Frullania pseudomeyeniana* S.Hatt., J. Hattori Bot. Lab. 60: 231, 1986 (Hattori 1986e).
*** *Frullania rostrata* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 3: 445, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia rostrata* Hook.f. et Taylor, London J. Bot. 4: 87, 1845 (Hooker and Taylor 1845). [222]
** *Frullania scalaris* S.Hatt., J. Hattori Bot. Lab. 43: 432, 1977 [1978] (Hattori 1977b).

** **subg. *Saccophora* Verd.**, Ann. Bryol. 2: 121, 1929 (Verdoorn 1929a).
*** *Frullania gaudichaudii* (Nees et Mont.) Nees et Mont., Syn. Hepat. 3: 435, 1845 (Gottsche et al. 1845b). Bas.: *Jubula gaudichaudii* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 64, 1836 (Nees and Montagne 1836).

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220 *Frullania chevalieri* is a species complex (Hattori 1984a).
221 *Frullania junghuhniana* is a species complex (Hattori 1976b).
222 *Frullania rostrata* is a species complex with several lineages, some of which have been recently described (e.g. von Konrat et al. 2013).

** *Frullania gaudichaudii* var. *ceylanica* (Nees) S.Hatt., J. Hattori Bot. Lab. 47: 104, 1980 (Hattori 1980d). Bas.: *Frullania ceylanica* Nees, Syn. Hepat. 3: 436, 1845 (Gottsche et al. 1845b).
*** *Frullania hedrantha* S.Hatt. et Kamim., J. Hattori Bot. Lab. 37: 519, 1973 (Hattori and Kamimura 1973).
** *Frullania immersa* Steph., Bot. Jahrb. Syst. 23 (1/2, 3): 315, 1896 (Stephani 1896a).
** *Frullania pancheri* Gottsche, Hedwigia 33 (3): 159, 1894 (Stephani 1894d).
** *Frullania papillilobula* S.Hatt., Bull. Natl. Sci. Mus. Tokyo, B 1 (4): 141, 1975 (Hattori 1975f).
** *Frullania sublignosa* Steph., Hedwigia 33 (3): 148, 1894 (Stephani 1894d).

* **subg. *Steerea* (S.Hatt. et Kamim.) R.M.Schust.**, Hepat. Anthocerotae N. Amer. 5: 32, 1992 (Schuster 1992b). Bas.: *Steerea* S.Hatt. et Kamim., J. Hattori Bot. Lab. 34: 429, 1971 (Hattori and Kamimura 1971).
*** *Frullania clemensiana* Verd., Ned. Kruidk. Arch. (ser. 3) 42 (2): 493, 1932 (Verdoorn 1932b).

*** **subg. *Thyopsiella* Spruce**, Trans. & Proc. Bot. Soc. Edinburgh 15: 41, 1884 (Spruce 1884).
*** *Frullania acicularis* Hentschel et von Konrat, Phytotaxa 220 (2): 134, 2015 (Hentschel et al. 2015). *Nom. nov. pro Frullania tamarisci* var. *azorica* J.-P.Frahm, Trop. Bryol. 27: 102, 2006 (Frahm 2006). [223]
** *Frullania alstonii* Verd., Ann. Bryol., Suppl. 1: 76, 1930 (Verdoorn 1930c).
** *Frullania aoshimensis* Horik., Sci. Rep. Tôhoku Imp. Univ., Ser. 4, Biol. 4 (1): 64, 1929 (Horikawa 1929b).
*** *Frullania appendiculata* Steph., Bull. Herb. Boissier 5 (2): 88, 1897 (Stephani 1897b). [224]
*** *Frullania asagrayana* Mont., Ann. Sci. Nat. Bot. (sér. 2) 18: 14, 1842 (Montagne 1842b). [225]
*** *Frullania calcarifera* Steph., Bol. Soc. Brot. 4: 241, 1886 [1887] (Henriques 1886). [226]
*** *Frullania californica* (M.Howe) A.Evans, Trans. Connecticut Acad. Arts 10 (1): 25, 1899 (Evans 1899). Bas.: *Frullania asagrayana* var. *californica* M.Howe, Erythea 2 (6): 98, 1894 (Howe 1894).
*** *Frullania densiloba* Steph. ex A.Evans, Proc. Wash. Acad. Sci. 8: 157, 1906 (Evans 1906b).
*** *Frullania franciscana* M.Howe, Erythea 2 (6): 99, 1894 (Howe 1894).

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223 *Frullania acicularis* was shown to be a species separate from *Frullania tamarisci* (Heinrichs et al. 2010, Vilnet et al. (2014). It may, however, not be the earliest available name.

224 *Frullania appendiculata* was shown by Vilnet et al. (2014) to be a species separate from *Frullania tamarisci*. It may, however, not be the earliest available name.

225 *Frullania asagrayana* consists of two geographically separated clades (Ramaiya et al. 2010).

226 *Frullania calcarifera* was shown to be a species separate from *Frullania tamarisci* by Heinrichs et al. (2010) and Vilnet et al. (2014). It may, however, not be the earliest available name.

** *Frullania iwatsukii* S.Hatt., J. Hattori Bot. Lab. 35: 240, 1972 (Hattori 1972a).
*** *Frullania microphylla* (Gottsche) Pearson, J. Bot. 32: 328, 1894 (Pearson 1894). Bas.: *Frullania tamarisci* var. *microphylla* Gottsche, Hepat. Eur., Leberm. 21-22: no. 109 [209], 1862 (Rabenhorst 1862).
*** *Frullania moniliata* (Reinw., Blume et Nees) Mont., Ann. Sci. Nat. Bot. (sér. 2) 18: 13, 1842 (Montagne 1842b). Bas.: *Jungermannia moniliata* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 224, 1824 [1825] (Reinwardt et al. 1824a). [227]
*** *Frullania nisquallensis* Sull., Mem. Amer. Acad. Arts (n.ser.) 4: 175, 1849 (Sullivant 1849).
*** *Frullania polysticta* Lindenb., Syn. Hepat. 3: 440, 1845 (Gottsche et al. 1845b).
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*** *Frullania sergiae* Sim-Sim, Fontinha, Mues et Lion, Nova Hedwigia 71 (1/2): 186, 2000 (Sim-Sim et al. 2000).
*** *Frullania subarctica* Vilnet, Borovich. et Bakalin, Phytotaxa 173 (1): 67, 2014 (Vilnet et al. 2014). [228]
*** *Frullania tamarisci* (L.) Dumort., Recueil Observ. Jungerm.: 13, 1835 (Dumortier 1835). Bas.: *Jungermannia tamarisci* L., Sp. Pl. 1: 1134, 1753 (Linnaeus 1753).
*** *Frullania teneriffae* (F.Weber) Nees, Naturgesch. Eur. Leberm. 3: 239, 1838 (Nees 1838b). Bas.: *Jungermannia teneriffae* F.Weber, Hist. Musc. Hepat. Prodr.: 23, 1815 (Weber 1815).
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Incertae sedis

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* *Frullania allionii* Steph., Sp. Hepat. (Stephani) 4: 394, 1910 (Stephani 1910b).
* *Frullania alpina* Steph., Sp. Hepat. (Stephani) 4: 533, 1911 (Stephani 1911e).
** *Frullania alternans* Nees, Syn. Hepat. 3: 430, 1845 (Gottsche et al. 1845b).
* *Frullania apertilobula* Gerola, Lav. Bot. Ist. Bot. Univ. Padova 12: 478, 1947 (Gerola 1947).
** *Frullania armata* Herzog et L.Clark, Bryologist 57 (1): 36, 1954 (Clark 1954).

227 *Frullania moniliata* is a species complex (Vilnet et al. 2014).
228 *Frullania subarctica* was shown to be a species separate from the *Frullania tamarisci* complex (Vilnet et al. 2014), but it is maybe not the oldest name.
229 *Frullania affinis* is possibly conspecific with *Frullania ecklonii* (Arnell 1963b).

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*** *Frullania boveana* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 244, 1885 (Massalongo 1885).
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** *Frullania cuneatistipula* Steph., Sp. Hepat. (Stephani) 6: 538, 1924 (Stephani 1924).
* *Frullania cuspiloba* Steph., Sp. Hepat. (Stephani) 4: 394, 1910 (Stephani 1910b).
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*** *Frullania inflata* Gottsche, Syn. Hepat. 3: 424, 1845 (Gottsche et al. 1845b).
** *Frullania inflata* var. *communis* R.M.Schust., Phytologia 57 (5): 372, 1985 (Schuster 1985a).
** *Frullania inflata* var. *dioica* S.Hatt. et Thaithong, J. Hattori Bot. Lab. 44: 185, 1978 (Hattori and Thaithong 1978b).
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* *Frullania larjiana* var. *didyhatii* S.N.Srivast. et M.Rai, Geophytology 41 (1/2): 109, 2011 (Srivastava and Rai 2011).
* *Frullania leana* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 227, 1869 (Austin 1869).
* *Frullania madagascariensis* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 364, 1882 (Gottsche 1882).
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** *Frullania quillotensis* (Nees et Mont.) Nees et Mont., Syn. Hepat. 3: 427, 1845 (Gottsche et al. 1845b). Bas.: *Jubula quillotensis* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 64, 1836 (Nees and Montagne 1836).
** *Frullania reicheana* Steph., Sp. Hepat. (Stephani) 4: 427, 1910 (Stephani 1910b).
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* *Frullania semienana* Gola, Ann. Bot. (Rome) 13 (1): 71, 1914 (Gola 1914a).
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** *Frullania wagneri* Steph., Sp. Hepat. (Stephani) 4: 392, 1910 (Stephani 1910b).

*** Jubulaceae H.Klinggr.

by J. Hentschel and M. von Konrat

The systematic placement of *Neohattoria* herzogii has been contentious since its description six decades ago. It has been interpreted as either a member of the genus *Frullania* or segregated into its own genus, *Neohattoria*, due to morphological similarities with both *Frullania* and *Jubula*. We follow Larrain et al. (2015) that provided molecular evidence supporting the recognition of the genus *Neohattoria* and its inclusion within the Jubulaceae, together with *Jubula* and *Nipponolejeunea.*

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*** *Jubula blepharophylla* Grolle, J. Hattori Bot. Lab. 28: 47, 1965 (Grolle 1965b).
** *Jubula hattorii* Udar et V.Nath, Misc. Bryol. Lichenol. 8 (3): 49, 1978 (Udar and Nath 1978).
** *Jubula hattorii* var. *muthukuzhiana* A.E.D.Daniels et P.Daniel, Bryofl. Southernm. W Ghats: 181, 2013 (Daniels and Daniel 2013).

** *Jubula himalayensis* S.C.Srivast. et D.Sharma, Proc. Indian Acad. Sci. Pl. Sci. 100 (2): 85, 1990 (Srivastava and Sharma 1990).

*** *Jubula hutchinsiae* (Hook.) Dumort., Syll. Jungerm. Europ.: 36, 1831 (Dumortier 1831). Bas.: *Jungermannia hutchinsiae* Hook., Brit. Jungermann.: tab. 1, 1812 (Hooker 1812). [230]

** *Jubula hutchinsiae* subsp. *australiae* Pócs et A.Cairns, Nova Hedwigia 86 (1/2): 232, 2008 (Pócs and Cairns 2008).

** *Jubula hutchinsiae* subsp. *bogotensis* (Steph.) Verd., Ann. Cryptog. Exot. 1 (2): 215, 1928 (Verdoorn 1928b). Bas.: *Jubula bogotensis* Steph., Sp. Hepat. (Stephani) 4: 687, 1911 (Stephani 1911e). [231]

*** *Jubula hutchinsiae* subsp. *caucasica* Konstant. et Vilnet, Arctoa 20: 234, 2011 (Konstantinova and Vilnet 2011).

*** *Jubula hutchinsiae* subsp. *japonica* (Steph.) Horik. et Ando, J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 6: 300, 1954 (Horikawa and Ando 1954). Bas.: *Jubula japonica* Steph., Bull. Herb. Boissier 5 (2): 92, 1897 (Stephani 1897b).

*** *Jubula hutchinsiae* subsp. *javanica* (Steph.) Verd., Ann. Cryptog. Exot. 1 (2): 216, 1928 (Verdoorn 1928b). Bas.: *Jubula javanica* Steph., Sp. Hepat. (Stephani) 4: 688, 1911 (Stephani 1911e). [232]

*** *Jubula hutchinsiae* subsp. *pennsylvanica* (Steph.) Verd., Ann. Cryptog. Exot. 1 (2): 215, 1928 (Verdoorn 1928b). Bas.: *Frullania pennsylvanica* Steph., Hedwigia 22 (10): 147, 1883 (Stephani 1883).

** *Jubula kwangsiensis* C.Gao et K.C.Chang, Bull. Bot. Res., Harbin 4 (3): 89, 1984 (Chang and Gao 1984).

*** ***Neohattoria* Kamim.**, J. Jap. Bot. 37 (7): 218, 1962 (Kamimura 1962). *Nom. nov. pro Hattoria* Kamim., J. Hattori Bot. Lab. 24: 93, 1961 (Kamimura 1961).

*** *Neohattoria herzogii* (S.Hatt.) Kamim., J. Jap. Bot. 37 (7): 218, 1962 (Kamimura 1962). Bas.: *Frullania herzogii* S.Hatt., Feddes Repert. Spec. Nov. Regni Veg. 58: 53, 1955 (Hattori 1955).

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*** *Nipponolejeunea pilifera* (Steph.) S.Hatt., Bull. Tokyo Sci. Mus. 11: 125, 1944 (Hattori 1944d). Bas.: *Pycnolejeunea pilifera* Steph., Sp. Hepat. (Stephani) 5: 624, 1914 (Stephani 1914b).

*** *Nipponolejeunea subalpina* (Horik.) S.Hatt., Bull. Tokyo Sci. Mus. 11: 125, 1944 (Hattori 1944d). Bas.: *Pycnolejeunea subalpina* Horik., J. Jap. Bot. 15: 360, 1939 (Horikawa 1939).

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230 *Jubula hutchinsiae* has subspecies that may be better recognized at the species level.

231 *Jubula hutchinsiae* subsp. *bogotensis* is closely related to subsp. *pennsylvanica* (Pätsch et al. 2010).

232 *Jubula hutchinsiae* subsp. *javanica* includes a cryptic taxon from China (Pätsch et al. 2010).

*** Lejeuneaceae Cavers

by S.R. Gradstein, T. Pócs and R.-L. Zhu with contributions by G. Dauphin (*Ceratolejeunea*), X. He (*Pycnolejeunea*), A.-L. Ilkiu-Borges (*Prionolejeunea*), E. Reiner-Drehwald (*Rectolejeunea, Lejeunea*), A. Sass-Gyarmati (*Lopholejeunea*), A. Schäfer-Verwimp (*Diplasiolejeunea*) and P. Sukkharak (*Thysananthus*)

The subdivision of Lejeuneaceae follows Gradstein (2013c) with updates from Heinrichs et al. (2013, 2014) and Schäfer-Verwimp et al. (2014). Some nomenclatural and taxonomic notes can also be found in Gradstein (2013b), Shu and Zhu (2014), Pócs et al. (2015a, 2015c), Qui et al. (2014) and Söderström et al. (2015a).

*** Lejeuneoideae
*** trib. Brachiolejeuneeae
*** subtrib. Brachiolejeuneinae Gradst.

** ***Acanthocoleus* R.M.Schust.**, Bull. Torrey Bot. Club 97 (6): 339, 1970 [1971] (Schuster 1970b).

*** *Acanthocoleus aberrans* (Lindenb. et Gottsche) Kruijt, Bryophyt. Biblioth. 36: 62, 1988 (Kruijt 1988). Bas.: *Lejeunea aberrans* Lindenb. et Gottsche, Syn. Hepat. 5: 751, 1847 (Gottsche et al. 1847).

*** *Acanthocoleus aberrans* var. *laevis* Gradst., Fl. Neotrop. Monogr. 62: 193, 1994 (Gradstein 1994).

*** *Acanthocoleus chrysophyllus* (Lehm.) Kruijt, Bryophyt. Biblioth. 36: 72, 1988 (Kruijt 1988). Bas.: *Jungermannia chrysophylla* Lehm., Linnaea 9 (4): 423, 1835 (Lehmann 1835).

** *Acanthocoleus elgonensis* Gyarmati et Pócs, Cryptog. Bryol. 35 (2): 120, 2014 (Sass-Gyarmati and Pócs 2014).

*** *Acanthocoleus gilvus* (Gottsche) Kruijt, Bryophyt. Biblioth. 36: 79, 1988 (Kruijt 1988). Bas.: *Lejeunea gilva* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 353, 1882 (Gottsche 1882).

*** *Acanthocoleus javanicus* (Steph.) Kruijt, Bryophyt. Biblioth. 36: 85, 1988 (Kruijt 1988). Bas.: *Dicranolejeunea javanica* Steph., Sp. Hepat. (Stephani) 5: 169, 1912 (Stephani 1912c).

*** *Acanthocoleus juddii* Kruijt, Bryophyt. Biblioth. 36: 93, 1988 (Kruijt 1988).

** *Acanthocoleus madagascariensis* (Steph.) Kruijt, Bryophyt. Biblioth. 36: 98, 1988 (Kruijt 1988). Bas.: *Dicranolejeunea madagascariensis* Steph., Sp. Hepat. (Stephani) 5: 158, 1912 (Stephani 1912c).

*** *Acanthocoleus trigonus* (Nees et Mont.) Gradst., Contr. Univ. Michigan Herb. 18: 101, 1992 (Gradstein 1992b). Bas.: *Lejeunea trigona* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 61, 1836 (Nees and Montagne 1836).

** *Acanthocoleus yoshinaganus* (S.Hatt.) Kruijt, Bryophyt. Biblioth. 36: 105, 1988 (Kruijt 1988). Bas.: *Lopholejeunea subfusca* var. *yoshinagana* S.Hatt., Bot. Mag. (Tokyo) 58 (686): 38, 1944 (Hattori 1944a).

*** ***Blepharolejeunea* S.W.Arnell**, Svensk Bot. Tidskr. 56 (2): 335, 1962 (Arnell 1962b).
*** *Blepharolejeunea chimantaensis* van Slageren et Kruijt, Beih. Nova Hedwigia 80: 126, 1985 (van Slageren and Kruijt 1985).
*** *Blepharolejeunea fuegiana* (Besch. et C.Massal.) Gradst., Beih. Nova Hedwigia 80: 130, 1985 (van Slageren and Kruijt 1985). Bas.: *Lejeunea fuegiana* Besch. et C. Massal., Bull. Mens. Soc. Linn. Paris 1 (79): 638, 1886 (Bescherelle and Massalongo 1886).
*** *Blepharolejeunea incongrua* (Lindenb. et Gottsche) van Slageren et Kruijt, Beih. Nova Hedwigia 80: 133, 1985 (van Slageren and Kruijt 1985). Bas.: *Lejeunea incongrua* Lindenb. et Gottsche, Syn. Hepat. 5: 750, 1847 (Gottsche et al. 1847).
*** *Blepharolejeunea saccata* (Steph.) van Slageren et Kruijt, Beih. Nova Hedwigia 80: 138, 1985 (van Slageren and Kruijt 1985). Bas.: *Dicranolejeunea saccata* Steph., Hedwigia 35 (3): 78, 1896 (Stephani 1896b).
*** *Blepharolejeunea securifolia* (Steph.) R.M.Schust., Phytologia 45 (5): 424, 1980 (Schuster 1980b). Bas.: *Brachiolejeunea securifolia* Steph., Sp. Hepat. (Stephani) 5: 128, 1912 (Stephani 1912c).

*** ***Brachiolejeunea* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 128, 1893 (Schiffner 1893b). Bas.: *Lejeunea* subg. *Brachiolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 129, 1884 (Spruce 1884).
*** *Brachiolejeunea conduplicata* (Steph.) Gradst., Fl. Neotrop. Monogr. 62: 175, 1994 (Gradstein 1994). Bas.: *Archilejeunea conduplicata* Steph., Sp. Hepat. (Stephani) 4: 712, 1911 (Stephani 1911e).
*** *Brachiolejeunea fernandeziana* S.W.Arnell, Ark. Bot. (n.ser.) 4 (1): 18, 1957 (Arnell 1957b).
*** *Brachiolejeunea laxifolia* (Taylor) Schiffn., Hepat. (Engl.-Prantl): 128, 1893 (Schiffner 1893b). Bas.: *Phragmicoma laxifolia* Taylor, London J. Bot. 6: 341, 1847 (Taylor 1847b).
*** *Brachiolejeunea leiboldiana* (Gottsche et Lindenb.) Schiffn., Hedwigia 33 (4): 182, 1894 (Schiffner 1894). Bas.: *Phragmicoma leiboldiana* Gottsche et Lindenb., Syn. Hepat. 2: 296, 1845 (Gottsche et al. 1845a).
*** *Brachiolejeunea phyllorhiza* (Nees) Kruijt et Gradst., Nova Hedwigia 43 (3/4): 299, 1986 (Kruijt and Gradstein 1986). Bas.: *Jungermannia phyllorhiza* Nees, Fl. Bras. (Martius) 1 (1): 348, 1833 (Nees 1833a).
*** *Brachiolejeunea spruceana* (C.Massal.) Schiffn., Hepat. (Engl.-Prantl): 128, 1893 (Schiffner 1893b). Bas.: *Lejeunea spruceana* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 246, 1885 (Massalongo 1885).

*** ***Dicranolejeunea* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 128, 1893 (Schiffner 1893b). Bas.: *Lejeunea* subg. *Dicranolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 138, 1884 (Spruce 1884).

*** *Dicranolejeunea axillaris* (Nees et Mont.) Schiffn., Hepat. (Engl.-Prantl): 128, 1893 (Schiffner 1893b). Bas.: *Lejeunea axillaris* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 59, 1836 (Nees and Montagne 1836).

* *Dicranolejeunea bovonei* Gola, Nuovo Giorn. Bot. Ital. (n.ser.) 27 (2/4): 248, 1920 (Gola 1920).

*** ***Lindigianthus* Kruijt et Gradst.**, Beih. Nova Hedwigia 80: 165, 1985 (Kruijt and Gradstein 1985).

*** *Lindigianthus cipaconeus* (Gottsche) Kruijt et Gradst., Beih. Nova Hedwigia 80: 166, 1985 (Kruijt and Gradstein 1985). Bas.: *Lejeunea cipaconea* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 150, 1864 (Gottsche 1864).

*** ***Odontolejeunea* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 127, 1893 (Schiffner 1893b). Bas.: *Lejeunea* subg. *Odontolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 142, 1884 (Spruce 1884).

*** *Odontolejeunea decemdentata* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 175, 1912 (Stephani 1912c). Bas.: *Lejeunea decemdentata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 148, 1884 (Spruce 1884).

*** *Odontolejeunea lunulata* (F.Weber) Schiffn., Hepat. (Engl.-Prantl): 128, 1893 (Schiffner 1893b). Bas.: *Jungermannia lunulata* F.Weber, Hist. Musc. Hepat. Prodr.: 33, 1815 (Weber 1815).

*** *Odontolejeunea rhomalea* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 176, 1912 (Stephani 1912c). Bas.: *Lejeunea rhomalea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 147, 1884 (Spruce 1884).

*** subtrib. Stictolejeuneinae Gradst.

*** ***Neurolejeunea* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 131, 1893 (Schiffner 1893b). Bas.: *Lejeunea* subg. *Neurolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 84, 1884 (Spruce 1884).

*** *Neurolejeunea breutelii* (Gottsche) A.Evans, Bull. Torrey Bot. Club 34 (1): 13, 1907 (Evans 1907b). Bas.: *Lejeunea breutelii* Gottsche, Syn. Hepat. 3: 324, 1845 (Gottsche et al. 1845b).

** *Neurolejeunea breutelii* var. *africana* Pócs, Herzogia 28 (1): 63, 2015 (Pócs et al. 2015b).

*** *Neurolejeunea catenulata* (Nees) Schiffn., Hepat. (Engl.-Prantl): 131, 1893 (Schiffner 1893b). Bas.: *Lejeunea catenulata* Nees, Syn. Hepat. 3: 323, 1845 (Gottsche et al. 1845b).

*** *Neurolejeunea sastreana* Gradst., Bryologist 92 (3): 345, 1989 (Gradstein 1989).

*** *Neurolejeunea seminervis* (Spruce) Schiffn., Hepat. (Engl.-Prantl): 131, 1893 (Schiffner 1893b). Bas.: *Lejeunea seminervis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 84, 1884 (Spruce 1884).

*** ***Stictolejeunea* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 131, 1893 (Schiffner 1893b). Bas.: *Lejeunea* subg. *Stictolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 81, 1884 (Spruce 1884).

*** **subg. *Leptostictolejeunea* R.M.Schust.**, Phytologia 56 (2): 70, 1984 (Schuster 1984).
*** *Stictolejeunea balfourii* (Mitt.) E.W.Jones, J. Bryol. 9 (1): 50, 1976 (Jones 1976). Bas.: *Lejeunea balfourii* Mitt., Philos. Trans. 168: 398, 1879 (Mitten 1879).
*** *Stictolejeunea balfourii* var. *bekkeri* Gradst., Beih. Nova Hedwigia 80: 214, 1985 (Gradstein 1985b).
*** *Stictolejeunea iwatsukii* Mizut., J. Hattori Bot. Lab. 44: 134, 1978 (Mizutani 1978).

*** **subg. *Stictolejeunea***
*** *Stictolejeunea squamata* (Willd.) Schiffn., Hepat. (Engl.-Prantl): 131, 1893 (Schiffner 1893b). Bas.: *Jungermannia squamata* Willd. ex F.Weber, Hist. Musc. Hepat. Prodr.: 33, 1815 (Weber 1815).

*** trib. Lejeuneeae Dumort.

** ***Dactylophorella* R.M.Schust.**, Phytologia 45 (5): 427, 1980 (Schuster 1980b).
*** *Dactylophorella muricata* (Gottsche) R.M.Schust., Phytologia 45 (5): 427, 1980 (Schuster 1980b). Bas.: *Lejeunea muricata* Gottsche, Syn. Hepat. 3: 348, 1845 (Gottsche et al. 1845b).

*** ***Metalejeunea* Grolle**, Bryophyt. Biblioth. 48: 17, 1995 (Grolle 1995).
** *Metalejeunea crassitexta* (J.B.Jack et Steph.) Pócs, Telopea 13 (3): 456, 2011 (Pócs et al. 2011). Bas.: *Microlejeunea crassitexta* J.B.Jack et Steph., Bot. Centralbl. 60 (4): 106, 1894 (Jack and Stephani 1894).
*** *Metalejeunea cucullata* (Reinw., Blume et Nees) Grolle, Bryophyt. Biblioth. 48: 100, 1995 (Grolle 1995). Bas.: *Jungermannia cucullata* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 227, 1824 [1825] (Reinwardt et al. 1824a).
*** *Metalejeunea winkleri* R.L.Zhu et Grolle, Nova Hedwigia 74 (3/4): 498, 2002 (Zhu and Grolle 2002).

*** ***Pictolejeunea* Grolle**, Feddes Repert. 88 (4): 248, 1977 (Grolle 1977b).
*** *Pictolejeunea levis* Grolle et M.E.Reiner, J. Bryol. 27 (3): 281, 2005 (Grolle and Reiner-Drehwald 2005).

*** *Pictolejeunea mizutanii* Grolle, Feddes Repert. 88 (4): 255, 1977 (Grolle 1977b). *Nom. nov. pro Cheilolejeunea picta* Mizut., J. Hattori Bot. Lab. 33: 226, 1970 (Mizutani 1970).
** *Pictolejeunea piconii* Pócs, Acta Bot. Hung. 49 (1/2): 110, 2007 (Pócs 2007).
*** *Pictolejeunea picta* (Steph.) Grolle, Feddes Repert. 88 (4): 252, 1977 (Grolle 1977b). Bas.: *Prionolejeunea picta* Steph., Sp. Hepat. (Stephani) 5: 223, 1913 (Stephani 1913a).
*** *Pictolejeunea reginae* Ilk.-Borg., Brittonia 54 (4): 318, 2002 [2003] (Ilkiu-Borges 2002).
*** *Pictolejeunea sprucei* Grolle, Feddes Repert. 88 (4): 249, 1977 (Grolle 1977b).

** subtrib. Ceratolejeuneinae Gradst.

*** ***Ceratolejeunea* (Spruce) J.B.Jack et Steph.**, Hedwigia 31 (1): 16, 1892 (Jack and Stephani 1892). Bas.: *Lejeunea* subg. *Ceratolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 198, 1884 (Spruce 1884). [233]

*** **subg. *Ceratolejeunea***
*** *Ceratolejeunea andringitrae* Pócs, Polish Bot. J. 56 (2): 144, 2011 (Pócs 2011c).
** *Ceratolejeunea atlantica* Alvarenga et Ilk.-Borg., Nova Hedwigia 86 (1/2): 238, 2008 (Ilkiu-Borges and Alvarenga 2008).
** *Ceratolejeunea belangeriana* (Gottsche) Steph., Sp. Hepat. (Stephani) 5: 396, 1913 (Stephani 1913a). Bas.: *Lejeunea belangeriana* Gottsche, Syn. Hepat. 3: 398, 1845 (Gottsche et al. 1845b).
** *Ceratolejeunea beninensis* E.W.Jones et Vanden Berghen, Bull. Jard. Bot. État Bruxelles 21 (1/2): 63, 1951 (Vanden Berghen 1951b).
*** *Ceratolejeunea brevinervis* (Spruce) A.Evans, Bull. Torrey Bot. Club 32 (6): 282, 1905 (Evans 1905a). Bas.: *Lejeunea brevinervis* Spruce, J. Linn. Soc., Bot. 30 (210): 342, 1895 (Gepp 1895b).
*** *Ceratolejeunea ceratantha* (Nees et Mont.) Schiffn., Bot. Jahrb. Syst. 23 (5): 582, 1897 (Schiffner 1897). Bas.: *Lejeunea ceratantha* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 14: 335, 1840 (Montagne 1840a).
** *Ceratolejeunea coalita* (Ångstr.) Steph., Sp. Hepat. (Stephani) 5: 402, 1913 (Stephani 1913a). Bas.: *Lejeunea coalita* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 30 (5): 135, 1873 (Ångström 1873).
*** *Ceratolejeunea coarina* (Gottsche) Schiffn., Hepat. (Engl.-Prantl): 125, 1893 (Schiffner 1893b). Bas.: *Lejeunea coarina* Gottsche, Syn. Hepat. 3: 395, 1845 (Gottsche et al. 1845b).

233 The treatment of *Ceratolejeunea* follows Dauphin (2003) except that his subg. *Caduciloba* becomes subg. *Ceratolejeunea* and his subg. *Ceratolejeunea* becomes subg. *Ceratophora* as a consequence of the introduction of ICN Art. 41.4 (cf. Söderström et al. 2015a).

*** *Ceratolejeunea confusa* R.M.Schust., J. Elisha Mitchell Sci. Soc. 72 (2): 313, 1956 (Schuster 1956a).

*** *Ceratolejeunea cornuta* (Lindenb.) Steph., Pflanzenw. Ost-Afrikas C: 65, 1895 (Stephani 1895d). Bas.: *Jungermannia cornuta* Lindenb., Syn. hepat. eur: 23, 1829 (Lindenberg 1829).

*** *Ceratolejeunea cubensis* (Mont.) Schiffn., Hepat. (Engl.-Prantl): 125, 1893 (Schiffner 1893b). Bas.: *Lejeunea cubensis* Mont., Hist. Phys. Cuba, Bot., Pl. Cell.: 481, 1842 (Montagne 1842a).

*** *Ceratolejeunea dentistipula* Steph., Sp. Hepat. (Stephani) 5: 407, 1913 (Stephani 1913a).

*** *Ceratolejeunea fallax* (Lehm. et Lindenb.) Bonner, Candollea 14: 189, 1953 (Bonner 1953a). Bas.: *Jungermannia fallax* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 17, 1833 (Lehmann 1833).

*** *Ceratolejeunea filaria* (Taylor) Steph., Sp. Hepat. (Stephani) 5: 412, 1913 (Stephani 1913a). Bas.: *Lejeunea filaria* Taylor, Nov. Stirp. Pug. 8: 28, 1844 (Lehmann 1844).

** *Ceratolejeunea floribunda* Steph., Sp. Hepat. (Stephani) 5: 412, 1913 (Stephani 1913a).

*** *Ceratolejeunea guianensis* (Nees et Mont.) Steph., Sp. Hepat. (Stephani) 5: 416, 1913 (Stephani 1913a). Bas.: *Lejeunea guianensis* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 14: 335, 1840 (Montagne 1840a).

* *Ceratolejeunea karstenii* Steph., Sp. Hepat. (Stephani) 5: 420, 1913 (Stephani 1913a).

* *Ceratolejeunea kuerschneri* Eb.Fisch. et Vanderp., Beih. Nova Hedwigia 138: 87, 2010 (Fischer and Vanderpoorten 2010). [234]

*** *Ceratolejeunea laetefusca* (Austin) R.M.Schust., J. Elisha Mitchell Sci. Soc. 72 (2): 306, 1956 (Schuster 1956a). Bas.: *Lejeunea laetefusca* Austin, Bot. Bull. (Hanover) 1 (8): 36, 1876 (Austin 1876a).

* *Ceratolejeunea ledermannii* Steph., Sp. Hepat. (Stephani) 6: 399, 1923 (Stephani 1923).

*** *Ceratolejeunea malleigera* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 422, 1913 (Stephani 1913a). Bas.: *Lejeunea malleigera* Spruce, Mem. Torrey Bot. Club 1 (3): 123, 1890 (Spruce 1890).

** *Ceratolejeunea maranhensis* Silva Brito et Ilk.-Borg., Nova Hedwigia 95 (3/4): 424, 2012 (Brito and Ilkiu-Borges 2012).

** *Ceratolejeunea minor* Mizut., J. Hattori Bot. Lab. 49: 311, 1981 (Mizutani 1981).

*** *Ceratolejeunea minuta* G.Dauphin, Fl. Neotrop. Monogr. 90: 66, 2003 (Dauphin 2003).

** *Ceratolejeunea moniliata* Herzog, Mitt. Inst. Allg. Bot. Hamburg 7 (3): 205, 1931 (Herzog 1931a).

** *Ceratolejeunea oculata* (Gottsche) Steph., Bull. Herb. Boissier 5 (10): 842, 1897 (Stephani 1897c). Bas.: *Lejeunea oculata* Gottsche, Syn. Hepat. 3: 357, 1845 (Gottsche et al. 1845b).

*** *Ceratolejeunea oxygonia* Steph., Sp. Hepat. (Stephani) 5: 429, 1913 (Stephani 1913a).

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234 *Ceratolejeunea kuerschneri* is very similar to *Ceratolejeunea papuliflora* and may be conspecific with it.

*** *Ceratolejeunea papuliflora* Steph., Sp. Hepat. (Stephani) 5: 430, 1913 (Stephani 1913a).
*** *Ceratolejeunea patentissima* (Hampe et Gottsche) A.Evans, Bull. Torrey Bot. Club 32 (6): 286, 1905 (Evans 1905a). Bas.: *Lejeunea patentissima* Hampe et Gottsche, Linnaea 25 (3): 355, 1852 [1853] (Hampe and Gottsche 1852).
*** *Ceratolejeunea pungens* Steph., Sp. Hepat. (Stephani) 5: 434, 1913 (Stephani 1913a).
*** *Ceratolejeunea rubiginosa* Steph., Hedwigia 34 (5): 237, 1895 (Stephani 1895b).
*** *Ceratolejeunea saroltae* Pócs, Polish Bot. J. 56 (2): 150, 2011 (Pócs 2011c).
* *Ceratolejeunea sinensis* P.C.Chen et P.C.Wu, Acta Phytotax. Sin. 9 (3): 232, 1964 (Chen and Wu 1964). [235]
** *Ceratolejeunea singapurensis* (Lindenb.) Schiffn., Consp. Hepat. Arch. Ind.: 273, 1898 (Schiffner 1898b). Bas.: *Lejeunea singapurensis* Lindenb., Syn. Hepat. 3: 397, 1845 (Gottsche et al. 1845b).
*** *Ceratolejeunea spinosa* (Gottsche) Steph., Hedwigia 34 (5): 238, 1895 (Stephani 1895b). Bas.: *Lejeunea spinosa* Gottsche, Syn. Hepat. 3: 402, 1845 (Gottsche et al. 1845b).
*** *Ceratolejeunea temnantha* (Spruce) M.E.Reiner, Cryptog. Bryol. 32 (2): 95, 2011 (Reiner-Drehwald 2011). Bas.: *Lejeunea temnantha* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 250, 1884 (Spruce 1884).
*** *Ceratolejeunea umbonata* Steph., Sp. Hepat. (Stephani) 5: 446, 1913 (Stephani 1913a).
** *Ceratolejeunea vitiensis* Steph., Sp. Hepat. (Stephani) 5: 448, 1913 (Stephani 1913a).
** *Ceratolejeunea zenkeri* Steph., Sp. Hepat. (Stephani) 5: 449, 1914 (Stephani 1914b).

*** **subg. *Ceratophora* R.M.Schust.**, J. Elisha Mitchell Sci. Soc. 72 (2): 294, 1956 (Schuster 1956a).
*** *Ceratolejeunea desciscens* (Sande Lac.) Schiffn., Hepat. (Engl.-Prantl): 126, 1893 (Schiffner 1893b). Bas.: *Lejeunea desciscens* Sande Lac., Syn. hepat. jav.: 107, 1856 [1857] (Sande Lacoste 1856b).
*** *Ceratolejeunea globulifera* Herzog, Rev. Bryol. Lichénol. 13: 23, 1942 (Herzog 1942e).
*** *Ceratolejeunea grandiloba* J.B.Jack et Steph., Hedwigia 31 (1): 16, 1892 (Jack and Stephani 1892).
** *Ceratolejeunea grandiloba* subsp. *inflata* (Mizut.) Gradst., Phytotaxa 81 (1): 5, 2013 (Gradstein 2013d). Bas.: *Ceratolejeunea inflata* Mizut., J. Hattori Bot. Lab. 49: 313, 1981 (Mizutani 1981).
*** *Ceratolejeunea szyszylowiczii* (Loitl.) Steph., Sp. Hepat. (Stephani) 5: 443, 1913 (Stephani 1913a). Bas.: *Lejeunea szyszylowiczii* Loitl., Diagn. pl. nov.: 19, 1894 (Loitlesberger 1894).

Incertae sedis
** *Ceratolejeunea aliena* Herzog, Trans. Brit. Bryol. Soc. 2 (1): 71, 1952 (Herzog 1952a).

235 *Ceratolejeunea sinensis* may be conspecific with *Drepanolejeunea erecta* (Zhu et al. 2005).

*** ***Luteolejeunea* Piippo**, Acta Bot. Fenn. 132: 56, 1986 (Piippo 1986a).
*** *Luteolejeunea herzogii* (Buchloh) Piippo, Acta Bot. Fenn. 132: 57, 1986 (Piippo 1986a). Bas.: *Stictolejeunea herzogii* Buchloh, Nova Hedwigia 3 (4): 515, 1961 (Buchloh 1961).

*** ***Otigoniolejeunea* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 125, 1893 (Schiffner 1893b). Bas.: *Lejeunea* subg. *Otigoniolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 226, 1884 (Spruce 1884).
* *Otigoniolejeunea crenulata* Steph., Sp. Hepat. (Stephani) 6: 408, 1923 (Stephani 1923). [236]
*** *Otigoniolejeunea huctumalcensis* (Lindenb. et Gottsche) Y.M.Wei, R.L.Zhu et Gradst., Phytotaxa 162 (4): 237, 2014 (Wei et al. 2014). Bas.: *Lejeunea huctumalcensis* Lindenb. et Gottsche, Syn. Hepat. 5: 762, 1847 (Gottsche et al. 1847).
* *Otigoniolejeunea ledermannii* Steph., Sp. Hepat. (Stephani) 6: 409, 1923 (Stephani 1923). [237]
*** *Otigoniolejeunea portoricensis* (Hampe et Gottsche) Y.M.Wei, R.L.Zhu et Gradst., Phytotaxa 162 (4): 237, 2014 (Wei et al. 2014). Bas.: *Lejeunea portoricensis* Hampe et Gottsche, Linnaea 25 (3): 352, 1852 [1853] (Hampe and Gottsche 1852).

** subtrib. Cheilolejeuneinae Gradst.

* ***Aureolejeunea* R.M.Schust.**, Phytologia 39 (6): 428, 1978 (Schuster 1978b). [238]
*** *Aureolejeunea aurifera* R.M.Schust., Phytologia 39 (6): 429, 1978 (Schuster 1978b).
*** *Aureolejeunea lumae* (Herzog) van Slageren, Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 544: 121, 1985 (van Slageren 1985). Bas.: *Brachiolejeunea lumae* Herzog, Beih. Bot. Centralbl. 60B (1/2): 15, 1939 (Herzog 1939c).
*** *Aureolejeunea paramicola* (Herzog) R.M.Schust., Phytologia 61 (7): 446, 1987 (Schuster 1987c). Bas.: *Brachiolejeunea paramicola* Herzog, Hedwigia 74 (2): 95, 1934 (Herzog 1934a).
*** *Aureolejeunea quinquecarinata* R.M.Schust., Phytologia 39 (6): 429, 1978 (Schuster 1978b).
*** *Aureolejeunea tonduzana* (Steph.) Gradst., Phytotaxa 76 (3): 46, 2013 (Gradstein 2013a). Bas.: *Archilejeunea tonduzana* Steph., Sp. Hepat. (Stephani) 4: 721, 1911 (Stephani 1911e).

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236 *Otigoniolejeunea crenulata* is a doubtful taxon. The type specimen was burned in B and it is unclear where the taxon belongs (Grolle and Piippo (1984).

237 *Otigoniolejeunea ledermannii* is a doubtful taxon. The type specimen was burned in B and it is unclear where the taxon belongs (Grolle and Piippo (1984).

238 *Aureolejeunea* is nested in *Cheilolejeunea* (Ye et al. 2011, Gradstein 2013a, Ye et al. 2015). A formal transfer of the genus and its species to *Cheilolejeunea* is found in Ye et al. (2015).

*** ***Cheilolejeunea* (Spruce) Steph.**, Bot. Gaz. 15 (11): 284, 1890 (Stephani 1890c). Bas.: *Lejeunea* subg. *Cheilolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 251, 1884 (Spruce 1884). [239]

** *Cheilolejeunea sandvicensis* (Prantl) Steph., Bull. Herb. Boissier 5 (10): 842, 1897 (Stephani 1897c). Bas.: *Lejeunea sandvicensis* Prantl, Hedwigia 29: xvii, 1890 (Prantl 1890).

** **subg. *Cheilolejeunea***

*** *Cheilolejeunea acanthina* (Spruce) Gradst. et Ilk.-Borg., Mem. New York Bot. Gard. 76 (4): 62, 2009 (Gradstein and Ilkiu-Borges 2009). Bas.: *Lejeunea acanthina* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 182, 1884 (Spruce 1884).

*** *Cheilolejeunea adnata* (Kunze ex Lehm.) Grolle, J. Bryol. 9 (4): 529, 1977 [1978] (Grolle 1977a). Bas.: *Jungermannia adnata* Kunze ex Lehm., Nov. Stirp. Pug. 6: 46, 1834 (Lehmann 1834).

** *Cheilolejeunea adnata* var. *autoica* Gradst. et Ilk.-Borg., Mem. New York Bot. Gard. 76 (4): 64, 2009 (Gradstein and Ilkiu-Borges 2009).

** *Cheilolejeunea albovirens* (Hook.f. et Taylor) E.A.Hodgs., Rec. Domin. Mus. 4 (11): 127, 1962 (Hodgson 1962a). Bas.: *Jungermannia albovirens* Hook.f. et Taylor, London J. Bot. 3: 397, 1844 (Hooker and Taylor 1844a).

*** *Cheilolejeunea aneogyna* (Spruce) A.Evans, Trans. Connecticut Acad. Arts 10 (8): 440, 1900 (Evans 1900a). Bas.: *Lejeunea aneogyna* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 254, 1884 (Spruce 1884).

** *Cheilolejeunea ascensionis* (Hook.f. et Taylor) Grolle, Haussknechtia 4: 45, 1988 (Grolle 1988a). Bas.: *Jungermannia ascensionis* Hook.f. et Taylor, London J. Bot. 4: 91, 1845 (Hooker and Taylor 1845).

*** *Cheilolejeunea asperiflora* (Spruce) Gradst. et Ilk.-Borg., Mem. New York Bot. Gard. 76 (4): 62, 2009 (Gradstein and Ilkiu-Borges 2009). Bas.: *Lejeunea asperiflora* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 183, 1884 (Spruce 1884).

** *Cheilolejeunea australis* Solari, Comun. Mus. Argent. Ci. Nat. "Bernardino Rivadavia," Ci. Bot. 2 (11): 70, 1981 (Solari 1981).

** *Cheilolejeunea baumannii* Hürl., Bauhinia 11 (3): 160, 1995 (Hürlimann 1995).

*** *Cheilolejeunea beyrichii* (Lindenb.) M.E.Reiner, Nova Hedwigia 83 (3/4): 474, 2006 (Reiner-Drehwald 2006). Bas.: *Lejeunea beyrichii* Lindenb., Syn. Hepat. 3: 371, 1845 (Gottsche et al. 1845b).

** *Cheilolejeunea boninensis* Mizut., J. Hattori Bot. Lab. 51: 153, 1982 (Mizutani 1982).

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239 *Cheilolejeunea* is here organized into subgenera that are maintained for practical purposes. They may not be natural lineages. An improved infrageneric classification based on molecular analysis is in preparation (Ye et al. 2015). The genus includes *Euosmolejeunea*, *Strepsilejeunea* and *Trachylejeunea*, but several taxa have neither been transferred nor synonymized. They are listed under "Names in genera not currently accepted" below.

*** *Cheilolejeunea caducifolia* (Gradst. et Schäf.-Verw.) W.Ye et R.L.Zhu, J. Bryol. 32 (4): 280, 2010 (Ye and Zhu 2010). Bas.: *Leucolejeunea caducifolia* Gradst. et Schäf.-Verw., J. Hattori Bot. Lab. 74: 64, 1993 (Gradstein et al. 1993).

** *Cheilolejeunea camerunensis* S.W.Arnell, Svensk Bot. Tidskr. 52 (1): 63, 1958 (Arnell 1958a).

** *Cheilolejeunea celebensis* (Steph.) Mizut., J. Hattori Bot. Lab. 36: 157, 1972 [1973] (Mizutani 1972a). Bas.: *Trachylejeunea celebensis* Steph., Sp. Hepat. (Stephani) 5: 312, 1913 (Stephani 1913a).

** *Cheilolejeunea chenii* R.L.Zhu et M.L.So, Taxon 48 (4): 663, 1999 (Zhu et al. 1999). *Nom. nov. pro Neurolejeunea fukiensis* P.C.Chen et P.C.Wu, Acta Phytotax. Sin. 9 (3): 227, 1964 (Chen and Wu 1964).

*** *Cheilolejeunea clypeata* (Schwein.) W.Ye et R.L.Zhu, J. Bryol. 32 (4): 280, 2010 (Ye and Zhu 2010). Bas.: *Jungermannia clypeata* Schwein., Spec. Fl. Amer. Crypt.: 12, 1821 (Schweinitz 1821).

** *Cheilolejeunea compressa* (Herzog) Grolle, Bryophyt. Biblioth. 48: 38, 1995 (Grolle 1995). Bas.: *Strepsilejeunea compressa* Herzog, Bot. Not. 100 (4): 325, 1947 (Herzog 1947).

*** *Cheilolejeunea conchifolia* (A.Evans) W.Ye et R.L.Zhu, J. Bryol. 32 (4): 280, 2010 (Ye and Zhu 2010). Bas.: *Archilejeunea conchifolia* A.Evans, Mem. Torrey Bot. Club 8 (2): 128, 1902 (Evans 1902a).

*** *Cheilolejeunea cordigera* (Steph.) Grolle, J. Bryol. 9 (4): 530, 1977 [1978] (Grolle 1977a). Bas.: *Hygrolejeunea cordigera* Steph., Hedwigia 35 (3): 100, 1896 (Stephani 1896b).

** *Cheilolejeunea coronalis* (Gottsche) R.M.Schust., Phytologia 45 (5): 431, 1980 (Schuster 1980b). Bas.: *Lejeunea coronalis* Gottsche, Syn. Hepat. 3: 361, 1845 (Gottsche et al. 1845b).

* *Cheilolejeunea curvatilobula* (Herzog) Grolle, J. Bryol. 21 (1): 41, 1999 (Grolle and Reiner-Drehwald 1999). Bas.: *Harpalejeunea curvatilobula* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 184, 1955 (Herzog 1955).

*** *Cheilolejeunea decursiva* (Sande Lac.) R.M.Schust., Beih. Nova Hedwigia 9: 112, 1963 (Schuster 1963a). Bas.: *Lejeunea decursiva* Sande Lac., Ned. Kruidk. Arch. 3: 522, 1855 (Sande Lacoste 1855).

*** *Cheilolejeunea discoidea* (Lehm. et Lindenb.) R.M.Schust. et Kachroo, J. Linn. Soc., Bot. 56 (368): 509, 1961 (Kachroo and Schuster 1961). Bas.: *Jungermannia discoidea* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 47, 1834 (Lehmann 1834).

** *Cheilolejeunea diversifolia* Augier, Ann. Fac. Sci. Univ. Féd. Cameroun 11: 66, 1972 (Augier 1972).

** *Cheilolejeunea ecarinata* Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 54 (1/2): 11, 1984 (Vanden Berghen 1984b).

** *Cheilolejeunea erostrata* R.M.Schust., Phytologia 39 (6): 427, 1978 (Schuster 1978b).

*** *Cheilolejeunea exinnovata* E.W.Jones, J. Bryol. 12 (1): 37, 1982 (Jones 1982).

*** *Cheilolejeunea fragrantissima* (Spruce) R.M.Schust., Phytologia 45 (5): 431, 1980 (Schuster 1980b). Bas.: *Lejeunea fragrantissima* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 243, 1884 (Spruce 1884).

* *Cheilolejeunea fukiensis* (P.C.Chen et P.C.Wu) Piippo, J. Hattori Bot. Lab. 68: 133, 1990 (Piippo 1990). Bas.: *Euosmolejeunea fukiensis* P.C.Chen et P.C.Wu, Acta Phytotax. Sin. 9 (3): 232, 1964 (Chen and Wu 1964). [240]

* *Cheilolejeunea galliotii* Steph., Sp. Hepat. (Stephani) 5: 656, 1914 (Stephani 1914b).

** *Cheilolejeunea germanii* (Besch. et Spruce) Grolle, Acta Bot. Fenn. 125: 64, 1984 (Grolle and Piippo 1984). Bas.: *Lejeunea germanii* Besch. et Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: clxxxvii, 1889 [1890] (Bescherelle and Spruce 1889).

** *Cheilolejeunea ghatensis* G.Asthana, S.C.Srivast. et A.K.Asthana, Lindbergia 20 (2/3): 132, 1995 [1996] (Asthana et al. 1995).

*** *Cheilolejeunea gradsteinii* (Grolle et Piippo) W.Ye et R.L.Zhu, J. Bryol. 32 (4): 280, 2010 (Ye and Zhu 2010). Bas.: *Leucolejeunea gradsteinii* Grolle et Piippo, Ann. Bot. Fenn. 27 (2): 122, 1990 (Grolle and Piippo 1990).

** *Cheilolejeunea grandibracteata* Steph., Sp. Hepat. (Stephani) 5: 657, 1914 (Stephani 1914b).

** *Cheilolejeunea hamlinii* Grolle, Wiss. Z. Friedrich-Schiller-Univ. Jena, Math.-Naturwiss. Reihe 31 (2): 212, 1982 (Grolle 1982). *Nom. nov. pro Strepsilejeunea curnowii* Steph., Hedwigia 35 (3): 129, 1896 (Stephani 1896b).

** *Cheilolejeunea hawaica* Steph., Bull. Herb. Boissier 5 (10): 847, 1897 (Stephani 1897c).

* *Cheilolejeunea herzogiana* Steph., Biblioth. Bot. 87 (2): 267, 1916 (Stephani 1916a).

** *Cheilolejeunea implexicaulis* (Hook.f. et Taylor) R.M.Schust., J. Hattori Bot. Lab. 26: 245, 1963 (Schuster 1963b). Bas.: *Jungermannia implexicaulis* Hook.f. et Taylor, London J. Bot. 3: 397, 1844 (Hooker and Taylor 1844a).

*** *Cheilolejeunea insecta* Grolle et Gradst., Taxon 50 (4): 1071, 2001 [2002] (Grolle et al. 2001).

** *Cheilolejeunea insignis* Jovet-Ast et Tixier, Rev. Bryol. Lichénol. 31 (1/2): 25, 1962 (Jovet-Ast and Tixier 1962).

** *Cheilolejeunea intricata* (Steph.) J.J.Engel, Bryologist 79 (4): 514, 1976 [1977] (Engel 1976b). Bas.: *Harpalejeunea intricata* Steph., Sp. Hepat. (Stephani) 5: 269, 1913 (Stephani 1913a).

** *Cheilolejeunea invaginata* R.M.Schust., Phytologia 39 (6): 427, 1978 (Schuster 1978b).

** *Cheilolejeunea jamaicensis* Steph., Hedwigia 34 (5): 241, 1895 (Stephani 1895b).

** *Cheilolejeunea japonica* (Horik.) W.Ye et R.L.Zhu, J. Bryol. 32 (4): 280, 2010 (Ye and Zhu 2010). Bas.: *Archilejeunea japonica* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 84, 1932 (Horikawa 1932a).

** *Cheilolejeunea kitagawae* W.Ye et R.L.Zhu, J. Bryol. 32 (4): 280, 2010 (Ye and Zhu 2010). *Nom. nov. pro Leucolejeunea paroica* N.Kitag., Acta Phytotax. Geobot. 18 (7): 190, 1960 (Kitagawa 1960a).

*** *Cheilolejeunea lacerata* C.J.Bastos et Gradst., J. Bryol. 28 (2): 133, 2006 (Bastos and Gradstein 2006).

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240 *Cheilolejeunea fukiensis* may be conspecific with *Lejeunea flava* (Zhu and So 2001), but they did not see the type specimen.

** *Cheilolejeunea larsenii* Mizut., Dansk Bot. Ark. 27 (1): 95, 1969 (Hattori and Mizutani 1969).

* *Cheilolejeunea laurentii* Steph., Sp. Hepat. (Stephani) 5: 647, 1914 (Stephani 1914b). [241]

** *Cheilolejeunea leptophylla* (Ångstr.) Steph., Sp. Hepat. (Stephani) 5: 657, 1914 (Stephani 1914b). Bas.: *Lejeunea leptophylla* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 33 (7): 86, 1876 [1877] (Ångström 1876).

* *Cheilolejeunea longiflora* (Taylor) R.M.Schust., Phytologia 45 (5): 431, 1980 (Schuster 1980b). Bas.: *Lejeunea longiflora* Taylor, London J. Bot. 5: 396, 1846 (Taylor 1846b). [242]

** *Cheilolejeunea longispina* (Herzog) R.M.Schust., Beih. Nova Hedwigia 9: 111, 1963 (Schuster 1963a). Bas.: *Harpalejeunea longispina* Herzog, Rev. Bryol. Lichénol. 23 (1/2): 61, 1954 (Herzog 1954).

** *Cheilolejeunea loriana* (Steph.) W.Ye et R.L.Zhu, J. Bryol. 32 (4): 280, 2010 (Ye and Zhu 2010). Bas.: *Symbiezidium lorianum* Steph., Sp. Hepat. (Stephani) 5: 106, 1912 (Stephani 1912c).

** *Cheilolejeunea ludoviciae* Steph., Sp. Hepat. (Stephani) 5: 668, 1914 (Stephani 1914b).

** *Cheilolejeunea lurida* (Lindenb.) Steph., Sp. Hepat. (Stephani) 5: 658, 1914 (Stephani 1914b). Bas.: *Lejeunea lurida* Lindenb., Syn. Hepat. 3: 379, 1845 (Gottsche et al. 1845b).

** *Cheilolejeunea macroloba* (Herzog) Grolle, Wiss. Z. Friedrich-Schiller-Univ. Jena, Math.-Naturwiss. Reihe 31 (2): 212, 1982 (Grolle 1982). Bas.: *Strepsilejeunea macroloba* Herzog, Nat. Hist. Juan Fernandez (Botany) 2 (5): 742, 1942 (Herzog 1942a).

*** *Cheilolejeunea malaccensis* (G.Hoffm.) Xiao L.He, Ann. Bot. Fenn. 33 (1): 59, 1996 (He 1996b). Bas.: *Pycnolejeunea malaccensis* G.Hoffm., Ann. Bryol. 8: 118, 1935 (Hoffman 1935).

** *Cheilolejeunea mammifera* R.M.Schust., Phytologia 45 (5): 429, 1980 (Schuster 1980b).

*** *Cheilolejeunea mariana* (Gottsche) B.M.Thiers et Gradst., Mem. New York Bot. Gard. 52: 75, 1989 (Thiers and Gradstein 1989). Bas.: *Lejeunea mariana* Gottsche, Syn. Hepat. 3: 337, 1845 (Gottsche et al. 1845b).

** *Cheilolejeunea mexicana* Steph., Sp. Hepat. (Stephani) 6: 417, 1923 (Stephani 1923).

* *Cheilolejeunea micholitzii* (Steph.) R.M.Schust. et Kachroo, J. Linn. Soc., Bot. 56 (368): 509, 1961 (Kachroo and Schuster 1961). Bas.: *Pycnolejeunea micholitzii* Steph., Sp. Hepat. (Stephani) 5: 627, 1914 (Stephani 1914b). [243]

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241 *Cheilolejeunea laurentii* is not a *Cheilolejeunea* species (Jones 1954b, Wigginton and Grolle 1996). We do not know where to refer it.

242 *Cheilolejeunea longiflora* is possibly conspecific with *Cheilolejeunea trifaria* (Gradstein and Costa 2003).

243 *Cheilolejeunea micholitzii* is conspecific with *Cheilolejeunea longidens* in Thiers (1992b), but accepted by Hürlimann (1995).

** *Cheilolejeunea microscypha* (Hook.f. et Taylor) M.Wigginton, J. Bryol. 34 (4): 269, 2012 (Wigginton 2012). Bas.: *Jungermannia microscypha* Hook.f. et Taylor, London J. Bot. 4: 90, 1845 (Hooker and Taylor 1845).

*** *Cheilolejeunea mizutanii* W.Ye et R.L.Zhu, J. Bryol. 32 (4): 281, 2010 (Ye and Zhu 2010). *Nom. nov. pro Hygrolejeunea decurrens* Steph., Hedwigia 35 (3): 101, 1896 (Stephani 1896b).

*** *Cheilolejeunea neblinensis* Ilk.-Borg. et Gradst., Nova Hedwigia 87 (3/4): 522, 2008 (Ilkiu-Borges and Gradstein 2008).

** *Cheilolejeunea nietneri* (Steph.) Mizut., J. Hattori Bot. Lab. 37: 191, 1973 (Mizutani 1973). Bas.: *Harpalejeunea nietneri* Steph., Sp. Hepat. (Stephani) 6: 392, 1923 (Stephani 1923).

*** *Cheilolejeunea norisiae* G.Dauphin et Gradst., J. Bryol. 25 (4): 259, 2003 (Dauphin and Gradstein 2003).

** *Cheilolejeunea novaezelandiae* R.M.Schust., Phytologia 56 (7): 459, 1985 (Schuster 1985c).

*** *Cheilolejeunea obcordata* Herzog, Mitt. Inst. Allg. Bot. Hamburg 7 (3): 209, 1931 (Herzog 1931a).

** *Cheilolejeunea obtruncata* (Mont.) Solari, J. Hattori Bot. Lab. 54: 539, 1983 (Solari 1983a). Bas.: *Lejeunea obtruncata* Mont., Ann. Sci. Nat. Bot. (sér. 3) 4: 354, 1845 (Montagne 1845b).

** *Cheilolejeunea obtusa* (Herzog) Solari, J. Hattori Bot. Lab. 54: 537, 1983 (Solari 1983a). Bas.: *Harpalejeunea obtusa* Herzog, Rev. Bryol. Lichénol. 29 (3/4): 193, 1960 [1961] (Herzog 1960).

** *Cheilolejeunea obtusifolia* (Steph.) S.Hatt., J. Hattori Bot. Lab. 18: 116, 1957 (Hattori 1957a). Bas.: *Harpalejeunea obtusifolia* Steph., Sp. Hepat. (Stephani) 5: 265, 1913 (Stephani 1913a).

** *Cheilolejeunea occlusa* (Herzog) T.Kodama et N.Kitag., Bull. Osaka Mus. Nat. Hist. 28: 40, 1974 (Kitagawa and Kodama 1974). Bas.: *Strepsilejeunea occlusa* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 320, 1950 (Herzog 1950a).

** *Cheilolejeunea orientalis* (Gottsche) Mizut., J. Hattori Bot. Lab. 35: 399, 1972 (Mizutani 1972b). Bas.: *Lejeunea orientalis* Gottsche, Syn. Hepat. 3: 371, 1845 (Gottsche et al. 1845b).

** *Cheilolejeunea ovistipula* Steph., Hedwigia 34 (5): 244, 1895 (Stephani 1895b).

** *Cheilolejeunea panurensis* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 660, 1914 (Stephani 1914b). Bas.: *Lejeunea panurensis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 255, 1884 (Spruce 1884).

** *Cheilolejeunea papillata* Solari, Comun. Mus. Argent. Ci. Nat. "Bernardino Rivadavia," Ci. Bot. 2 (11): 72, 1981 (Solari 1981).

** *Cheilolejeunea paroica* Mizut., J. Hattori Bot. Lab. 46: 364, 1979 (Mizutani 1979b).

** *Cheilolejeunea piriflora* Schiffn., Bot. Jahrb. Syst. 23 (5): 592, 1897 (Schiffner 1897). Based on: *Lejeunea piriflora* Gottsche ex Pol., J. Bot. 15: 227, 1877 (Polakowski 1877), *nom. inval.*

*** *Cheilolejeunea polystachya* (Spruce) Gradst. et Ilk.-Borg., Mem. New York Bot. Gard. 76 (4): 62, 2009 (Gradstein and Ilkiu-Borges 2009). Bas.: *Lejeunea polystachya* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 250, 1884 (Spruce 1884).

** *Cheilolejeunea renneri* (G.Hoffm.) Xiao L.He, Ann. Bot. Fenn. 33 (1): 62, 1996 (He 1996b). Bas.: *Pycnolejeunea renneri* G.Hoffm., Ann. Bryol. 8: 117, 1935 (Hoffman 1935).

*** *Cheilolejeunea rotundistipula* (Lindenb. ex Lehm.) Malombe, Acta Bot. Hung. 51 (3/4): 322, 2009 (Malombe 2009). Bas.: *Jungermannia rotundistipula* Lindenb. ex Lehm., Linnaea 4: 360, 1829 (Lehmann 1829).

** *Cheilolejeunea rufescens* (Lindenb.) Grolle, Wiss. Z. Friedrich-Schiller-Univ. Jena, Math.-Naturwiss. Reihe 31 (2): 212, 1982 (Grolle 1982). Bas.: *Lejeunea rufescens* Lindenb., Syn. Hepat. 3: 366, 1845 (Gottsche et al. 1845b).

** *Cheilolejeunea stenoschiza* (Ångstr.) A.Evans, Trans. Connecticut Acad. Arts 10 (8): 436, 1900 (Evans 1900a). Bas.: *Lejeunea stenoschiza* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 29 (4): 26, 1872 (Ångström 1872).

** *Cheilolejeunea subcrenulata* (Spruce) R.M.Schust., Phytologia 45 (5): 431, 1980 (Schuster 1980b). Bas.: *Lejeunea subcrenulata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 245, 1884 (Spruce 1884).

* *Cheilolejeunea suborbicularis* (Herzog) H.A.Mill., Bonner et Bischl., Nova Hedwigia 4: 559, 1962 [1963] (Miller et al. 1962). Bas.: *Microlejeunea suborbicularis* Herzog, Memoranda Soc. Fauna Fl. Fennica 26: 65, 1950 [1951] (Herzog 1950b).

*** *Cheilolejeunea suprema* (Grolle et Piippo) W.Ye et R.L.Zhu, J. Bryol. 32 (4): 281, 2010 (Ye and Zhu 2010). Bas.: *Leucolejeunea suprema* Grolle et Piippo, Ann. Bot. Fenn. 27 (2): 123, 1990 (Grolle and Piippo 1990).

** *Cheilolejeunea surrepens* (Mitt.) E.W.Jones, J. Bryol. 9 (1): 49, 1976 (Jones 1976). Bas.: *Lejeunea surrepens* Mitt., Philos. Trans. 168: 399, 1879 (Mitten 1879).

*** *Cheilolejeunea turgida* (Mitt.) W.Ye et R.L.Zhu, J. Bryol. 32 (4): 281, 2010 (Ye and Zhu 2010). Bas.: *Lejeunea turgida* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 110, 1860 [1861] (Mitten 1860c).

* *Cheilolejeunea ulugurica* Malombe, Eb.Fisch. et Pócs, Acta Biol. Pl. Agr. 1: 24, 2010 [2011] (Malombe et al. 2010). [244]

*** *Cheilolejeunea unciloba* (Lindenb.) Malombe, Acta Bot. Hung. 51 (3/4): 325, 2009 (Malombe 2009). Bas.: *Lejeunea unciloba* Lindenb., Syn. Hepat. 3: 331, 1845 (Gottsche et al. 1845b).

** *Cheilolejeunea upoluensis* S.W.Arnell, Svensk Bot. Tidskr. 50 (3): 516, 1956 (Arnell 1956a).

** *Cheilolejeunea valenciae* (Steph.) Xiao L.He, Ann. Bot. Fenn. 33 (1): 55, 1996 (He 1996a). Bas.: *Pycnolejeunea valenciae* Steph., Sp. Hepat. (Stephani) 5: 605, 1914 (Stephani 1914b).

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244 *Cheilolejeunea ulugurica* is possibly conspecific with *Cheilolejeunea chenii* (Ye et al. 2013a).

** *Cheilolejeunea virescens* (Lehm. et Lindenb.) Steph., Sp. Hepat. (Stephani) 5: 662, 1914 (Stephani 1914b). Bas.: *Lejeunea virescens* Lehm. et Lindenb., Nov. Stirp. Pug. 7: 21, 1838 (Lehmann 1838).

* *Cheilolejeunea viridis* Steph., Sp. Hepat. (Stephani) 5: 673, 1914 (Stephani 1914b).

** *Cheilolejeunea warnstorffii* (Steph.) Solari, Darwiniana 20 (3/4): 387, 1976 (Solari 1976). Bas.: *Strepsilejeunea warnstorffii* Steph., Hedwigia 35 (3): 131, 1896 (Stephani 1896b).

* *Cheilolejeunea wrightii* Steph., Sp. Hepat. (Stephani) 5: 662, 1914 (Stephani 1914b).

*** *Cheilolejeunea xanthocarpa* (Lehm. et Lindenb.) Malombe, Acta Bot. Hung. 51 (3/4): 326, 2009 (Malombe 2009). Bas.: *Jungermannia xanthocarpa* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 8, 1833 (Lehmann 1833).

** *Cheilolejeunea xanthophylla* (Lindenb.) Steph., Sp. Hepat. (Stephani) 5: 663, 1914 (Stephani 1914b). Bas.: *Lejeunea xanthophylla* Lindenb., Syn. Hepat. 3: 370, 1845 (Gottsche et al. 1845b).

** **subg. *Euosmolejeunea* (Spruce) Kachroo**, Ceylon J. Sci., Biol. Sci. 8 (1): 6, 1968 (Kachroo 1968). Bas.: *Lejeunea* subg. *Euosmolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 241, 1884 (Spruce 1884).

** *Cheilolejeunea aciculifera* R.M.Schust., Phytologia 45 (5): 428, 1980 (Schuster 1980b).

** *Cheilolejeunea acutangula* (Nees) Grolle, J. Hattori Bot. Lab. 45: 173, 1979 (Grolle 1979c). Bas.: *Jungermannia acutangula* Nees, Fl. Bras. (Martius) 1 (1): 357, 1833 (Nees 1833a).

*** *Cheilolejeunea asperrima* (Steph.) Grolle, J. Hattori Bot. Lab. 58: 197, 1985 (Grolle 1985b). Bas.: *Taxilejeunea asperrima* Steph., Biblioth. Bot. 87 (2): 259, 1916 (Stephani 1916a).

** *Cheilolejeunea birmensis* (Steph.) Mizut., J. Hattori Bot. Lab. 27: 139, 1964 (Mizutani 1964a). Bas.: *Strepsilejeunea birmensis* Steph., Sp. Hepat. (Stephani) 5: 286, 1913 (Stephani 1913a).

** *Cheilolejeunea campbelliensis* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 26: 245, 1963 (Schuster 1963b). Bas.: *Strepsilejeunea campbelliensis* Steph., Hedwigia 35 (3): 128, 1896 (Stephani 1896b).

** *Cheilolejeunea cedercreutzii* (H.Buch et Perss.) Grolle, Feddes Repert. 87 (3/4): 188, 1976 (Grolle 1976a). Bas.: *Euosmolejeunea cedercreutzii* H.Buch et Perss., Bryophyt. Azoren Madeira: 9, 1941 (Buch and Persson 1941).

** *Cheilolejeunea choachina* (Gottsche) Gradst., Mem. New York Bot. Gard. 84: 69, 1999 (Gradstein 1999). Bas.: *Lejeunea choachina* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 156, 1864 (Gottsche 1864).

*** *Cheilolejeunea clausa* (Nees et Mont.) R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 863, 1980 (Schuster 1980c). Bas.: *Lejeunea clausa* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 14: 337, 1840 (Montagne 1840a).

** *Cheilolejeunea clavata* Mizut., J. Hattori Bot. Lab. 46: 361, 1979 (Mizutani 1979b).

*** *Cheilolejeunea comans* (Spruce) R.M.Schust., Phytologia 45 (5): 431, 1980 (Schuster 1980b). Bas.: *Lejeunea comans* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 246, 1884 (Spruce 1884).

** *Cheilolejeunea convexa* (S.W.Arnell) S.W.Arnell, Hepat. South Africa: 209, 1963 (Arnell 1963b). Bas.: *Lejeunea convexa* S.W.Arnell, Bot. Not. 106: 272, 1953 (Arnell 1953b).

** *Cheilolejeunea cookiensis* (Steph.) R.M.Schust. et Kachroo, J. Linn. Soc., Bot. 56 (368): 509, 1961 (Kachroo and Schuster 1961). Bas.: *Pycnolejeunea cookiensis* Steph., Sp. Hepat. (Stephani) 5: 617, 1914 (Stephani 1914b).

** *Cheilolejeunea cordistipula* (Steph.) Grolle ex E.W.Jones, J. Bryol. 13 (3): 395, 1985 (Jones 1985). Bas.: *Strepsilejeunea cordistipula* Steph., Sp. Hepat. (Stephani) 5: 276, 1913 (Stephani 1913a).

** *Cheilolejeunea fischeri* Malombe, Acta Bot. Hung. 51 (3/4): 319, 2009 (Malombe 2009).

** *Cheilolejeunea gaoi* R.L.Zhu, M.L.So et Grolle, Bryologist 103 (3): 499, 2000 (Zhu et al. 2000).

** *Cheilolejeunea hallingii* B.M.Thiers, Brittonia 44 (2): 160, 1992 (Thiers 1992a).

*** *Cheilolejeunea inflexa* (Hampe) Grolle, J. Hattori Bot. Lab. 45: 174, 1979 (Grolle 1979c). Bas.: *Lejeunea inflexa* Hampe, Nov. Stirp. Pug. 7: 22, 1838 (Lehmann 1838).

*** *Cheilolejeunea intertexta* (Lindenb.) Steph., Bull. Herb. Boissier 5 (2): 79, 1897 (Stephani 1897b). Bas.: *Lejeunea intertexta* Lindenb., Syn. Hepat. 3: 379, 1845 (Gottsche et al. 1845b).

*** *Cheilolejeunea krakakammae* (Lindenb.) R.M.Schust., Beih. Nova Hedwigia 9: 112, 1963 (Schuster 1963a). Bas.: *Lejeunea krakakammae* Lindenb., Syn. Hepat. 3: 353, 1845 (Gottsche et al. 1845b).

*** *Cheilolejeunea laciniata* D.F.Peralta et M.E.Reiner, Bryologist 116 (1): 54, 2013 (Peralta and Reiner-Drehwald 2013).

*** *Cheilolejeunea laevicalyx* (J.B.Jack et Steph.) Grolle, J. Hattori Bot. Lab. 65: 403, 1988 (Grolle 1988c). Bas.: *Strepsilejeunea laevicalyx* J.B.Jack et Steph., Sp. Hepat. (Stephani) 5: 283, 1913 (Stephani 1913a).

** *Cheilolejeunea laeviuscula* (Mitt.) Steph., Sp. Hepat. (Stephani) 5: 668, 1914 (Stephani 1914b). Bas.: *Lejeunea laeviuscula* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 114, 1860 [1861] (Mitten 1860c).

*** *Cheilolejeunea lindenbergii* (Gottsche) Mizut., J. Hattori Bot. Lab. 33: 226, 1970 (Mizutani 1970). Bas.: *Lejeunea lindenbergii* Gottsche, Syn. Hepat. 3: 336, 1845 (Gottsche et al. 1845b).

** *Cheilolejeunea mimosa* (Hook.f. et Taylor) R.M.Schust., J. Hattori Bot. Lab. 26: 245, 1963 (Schuster 1963b). Bas.: *Jungermannia mimosa* Hook.f. et Taylor, London J. Bot. 3: 398, 1844 (Hooker and Taylor 1844a).

** *Cheilolejeunea nana* R.M.Schust., Phytologia 39 (6): 426, 1978 (Schuster 1978b).

** *Cheilolejeunea ngongensis* Malombe et Pócs, Acta Bot. Hung. 51 (3/4): 317, 2009 (Malombe 2009).

** *Cheilolejeunea nipponica* (S.Hatt.) S.Hatt., Misc. Bryol. Lichenol. 1 (14): 1, 1957 (Hattori 1957c). Bas.: *Strepsilejeunea nipponica* S.Hatt., Bull. Tokyo Sci. Mus. 11: 134, 1944 (Hattori 1944d).

*** *Cheilolejeunea omphalogastria* Pócs, Trop. Bryol. 9: 131, 1994 (Pócs 1994b).
*** *Cheilolejeunea oncophylla* (Ångstr.) Grolle et M.E.Reiner, J. Bryol. 19 (4): 781, 1997 (Grolle and Reiner-Drehwald 1997). Bas.: *Lejeunea oncophylla* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 33 (7): 86, 1876 [1877] (Ångström 1876).
** *Cheilolejeunea ornata* C.J.Bastos, J. Bryol. 33 (1): 86, 2011 (Bastos 2011).
** *Cheilolejeunea osumiensis* (S.Hatt.) Mizut., Misc. Bryol. Lichenol. 8 (7): 148, 1980 (Mizutani 1980). Bas.: *Euosmolejeunea osumiensis* S.Hatt., Bull. Tokyo Sci. Mus. 11: 105, 1944 (Hattori 1944d).
** *Cheilolejeunea pluriplicata* (Pearson) R.M.Schust., Phytologia 45 (5): 430, 1980 (Schuster 1980b). Bas.: *Lejeunea pluriplicata* Pearson, Forh. Vidensk.-Selsk. Kristiania 1887 (9): 5, 1887 (Pearson 1887b).
** *Cheilolejeunea pocsii* E.W.Jones, J. Bryol. 15 (1): 156, 1988 (Jones 1988).
** *Cheilolejeunea polyantha* A.Evans, Mem. Torrey Bot. Club 8 (2): 141, 1902 (Evans 1902a).
** *Cheilolejeunea polyantha* var. *caduciloba* R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 887, 1980 (Schuster 1980c).
*** *Cheilolejeunea revoluta* (Herzog) Gradst. et Grolle, J. Hattori Bot. Lab. 74: 59, 1993 (Gradstein et al. 1993). Bas.: *Pycnolejeunea revoluta* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 193, 1955 (Herzog 1955).
*** *Cheilolejeunea rigidula* (Nees ex Mont.) R.M.Schust., Castanea 36 (2): 102, 1971 (Schuster 1971a). Bas.: *Lejeunea rigidula* Nees ex Mont., Ann. Sci. Nat. Bot. (sér. 2) 14: 336, 1840 (Montagne 1840a).
** *Cheilolejeunea ruwenzorensis* (S.W.Arnell) R.M.Schust., Beih. Nova Hedwigia 9: 112, 1963 (Schuster 1963a). Bas.: *Euosmolejeunea ruwenzorensis* S.W.Arnell, Ark. Bot. (n.ser.) 3 (16): 529, 1956 (Arnell 1956e).
** *Cheilolejeunea ryukyuensis* Mizut., J. Hattori Bot. Lab. 51: 162, 1982 (Mizutani 1982).
** *Cheilolejeunea subopaca* (Mitt.) Mizut., J. Hattori Bot. Lab. 26: 183, 1963 (Mizutani 1963). Bas.: *Lejeunea subopaca* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 116, 1860 [1861] (Mitten 1860c).
*** *Cheilolejeunea trifaria* (Reinw., Blume et Nees) Mizut., J. Hattori Bot. Lab. 27: 132, 1964 (Mizutani 1964b). Bas.: *Jungermannia trifaria* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 226, 1824 [1825] (Reinwardt et al. 1824a).
* *Cheilolejeunea udarii* G.Asthana, S.C.Srivast. et A.K.Asthana, Lindbergia 20 (2/3): 142, 1995 [1996] (Asthana et al. 1995). [245]
** *Cheilolejeunea usambarana* (Steph.) Grolle, J. Hattori Bot. Lab. 46: 344, 1979 (Grolle 1979d). Bas.: *Strepsilejeunea usambarana* Steph., Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr. 88: 731, 1913 (Stephani 1913b).
** *Cheilolejeunea verrucosa* Steph., Sp. Hepat. (Stephani) 5: 673, 1914 (Stephani 1914b).

245 *Cheilolejeunea udarii* is possibly conspecific with *Cheilolejeunea krakakammae* (Zhu 2006a).

** **subg. *Renilejeunea* R.M.Schust.**, Beih. Nova Hedwigia 9: 112, 1963 (Schuster 1963a).
*** *Cheilolejeunea montagnei* (Gottsche ex Mont.) R.M.Schust., Beih. Nova Hedwigia 9: 112, 1963 (Schuster 1963a). Bas.: *Lejeunea montagnei* Gottsche ex Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 261, 1843 (Montagne 1843).

** **subg. *Xenolejeunea* Kachroo et R.M.Schust.**, J. Linn. Soc., Bot. 56 (368): 496, 1961 (Kachroo and Schuster 1961).
** *Cheilolejeunea ceylanica* (Gottsche) R.M.Schust. et Kachroo, J. Linn. Soc., Bot. 56 (368): 509, 1961 (Kachroo and Schuster 1961). Bas.: *Lejeunea ceylanica* Gottsche, Syn. Hepat. 3: 359, 1845 (Gottsche et al. 1845b).
** *Cheilolejeunea eximia* (Jovet-Ast et Tixier) R.L.Zhu et M.L.So, Beih. Nova Hedwigia 121: 114, 2001 (Zhu and So 2001). Bas.: *Pycnolejeunea eximia* Jovet-Ast et Tixier, Rev. Bryol. Lichénol. 31 (1/2): 31, 1962 (Jovet-Ast and Tixier 1962).
*** *Cheilolejeunea falsinervis* (Sande Lac.) R.M.Schust. et Kachroo, J. Linn. Soc., Bot. 56 (368): 509, 1961 (Kachroo and Schuster 1961). Bas.: *Lejeunea falsinervis* Sande Lac., Ned. Kruidk. Arch. 3: 421, 1854 [1855] (Sande Lacoste 1854).
** *Cheilolejeunea gardneri* (Mitt.) Mizut., J. Hattori Bot. Lab. 26: 181, 1963 (Mizutani 1963). Bas.: *Lejeunea gardneri* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 115, 1860 [1861] (Mitten 1860c).
** *Cheilolejeunea gigantea* (Steph.) R.M.Schust. et Kachroo, J. Linn. Soc., Bot. 56 (368): 509, 1961 (Kachroo and Schuster 1961). Bas.: *Pycnolejeunea gigantea* Steph., Hedwigia 35 (3): 125, 1896 (Stephani 1896b).
** *Cheilolejeunea huerlimannii* Tixier, Misc. Bryol. Lichenol. 9 (9): 184, 1983 (Tixier 1983b).
** *Cheilolejeunea hyalomarginata* R.L.Zhu et Frank Müll., Bryologist 115 (2): 218, 2012 (Zhu and Müller 2012).
*** *Cheilolejeunea incisa* (Gottsche) R.M.Schust. et Kachroo, J. Linn. Soc., Bot. 56 (368): 509, 1961 (Kachroo and Schuster 1961). Bas.: *Lejeunea incisa* Gottsche, Syn. Hepat. 3: 360, 1845 (Gottsche et al. 1845b).
** *Cheilolejeunea incisa* var. *teretiflora* B.M.Thiers, J. Hattori Bot. Lab. 82: 321, 1997 (Thiers 1997a).
** *Cheilolejeunea longidens* (Steph.) R.M.Schust. et Kachroo, J. Linn. Soc., Bot. 56 (368): 509, 1961 (Kachroo and Schuster 1961). Bas.: *Pycnolejeunea longidens* Steph., Sp. Hepat. (Stephani) 5: 634, 1914 (Stephani 1914b).
** *Cheilolejeunea meyeniana* (Nees, Lindenb. et Gottsche) R.M.Schust. et Kachroo, J. Linn. Soc., Bot. 56 (368): 509, 1961 (Kachroo and Schuster 1961). Bas.: *Lejeunea meyeniana* Nees, Lindenb. et Gottsche, Observ. bot.: 472, 1843 (Gottsche et al. 1843).
** *Cheilolejeunea obtusilobula* (S.Hatt.) S.Hatt., Misc. Bryol. Lichenol. 1 (14): 2, 1957 (Hattori 1957c). Bas.: *Pycnolejeunea obtusilobula* S.Hatt., J. Hattori Bot. Lab. 3: 44, 1948 [1950] (Hattori 1948a).
** *Cheilolejeunea parvidens* B.M.Thiers, J. Hattori Bot. Lab. 82: 323, 1997 (Thiers 1997a).

** *Cheilolejeunea streimannii* Pócs et Ninh, Acta Bot. Hung. 47 (1/2): 162, 2005 (Pócs and Ninh 2005).

*** *Cheilolejeunea trapezia* (Nees) Kachroo et R.M.Schust., J. Linn. Soc., Bot. 56 (368): 509, 1961 (Kachroo and Schuster 1961). Bas.: *Jungermannia trapezia* Nees, Enum. Pl. Crypt. Javae: 41, 1830 (Nees 1830).

** *Cheilolejeunea ventricosa* (Schiffn. ex P.Syd.) Xiao L.He, Acta Bot. Fenn. 163: 60, 1999 (He 1999). Bas.: *Pycnolejeunea ventricosa* Schiffn. ex P.Syd., Just's Bot. Jahresber. 19: 246, 1894 (Sydow 1894).

*** *Cheilolejeunea vittata* (Steph. ex G.Hoffm.) R.M.Schust. et Kachroo, J. Linn. Soc., Bot. 56 (368): 509, 1961 (Kachroo and Schuster 1961). Bas.: *Pycnolejeunea vittata* Steph. ex G.Hoffm., Ann. Bryol. 8: 115, 1935 (Hoffman 1935).

Incertae sedis

** *Cheilolejeunea gottscheana* C.J.Bastos, J. Bryol. 34 (4): 316, 2012 (Bastos 2012b). *Nom. nov. pro Strepsilejeunea lindenbergii* Steph., Hedwigia 35 (3): 130, 1896 (Stephani 1896b).

* *Cheilolejeunea heteroclada* (Spruce) Schiffn., Hepat. (Engl.-Prantl): 124, 1893 (Schiffner 1893b). Bas.: *Lejeunea heteroclada* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 256, 1884 (Spruce 1884). [246]

** *Cheilolejeunea minutilobula* Amakawa, J. Jap. Bot. 35 (12): 365, 1960 (Amakawa 1960a).

** *Cheilolejeunea norrisii* (Grolle) M.A.M.Renner, Bryologist 115 (4): 550, 2012 (Renner 2012). Bas.: *Lejeunea norrisii* Grolle, Wiss. Z. Friedrich-Schiller-Univ. Jena, Math.-Naturwiss. Reihe 31 (2): 215, 1982 (Grolle 1982).

** *Cheilolejeunea oscilla* M.A.M.Renner, Bryologist 115 (4): 551, 2012 (Renner 2012).

** *Cheilolejeunea papulosa* Schiffn., Hepat. (Engl.-Prantl): 124, 1893 (Schiffner 1893b). *Nom. nov. pro Lejeunea papulosa* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 258, 1884 (Spruce 1884), *nom. illeg.*

*** *Cheilolejeunea riparia* (Steph.) M.E.Reiner, Nova Hedwigia 95 (3/4): 467, 2012 (Reiner-Drehwald and Grolle 2012). Bas.: *Potamolejeunea riparia* Steph., Sp. Hepat. (Stephani) 5: 639, 1914 (Stephani 1914b).

*** *Cheilolejeunea rotalis* (Hook.f. et Taylor) M.Wigginton, J. Bryol. 34 (4): 270, 2012 (Wigginton 2012). Bas.: *Jungermannia rotalis* Hook.f. et Taylor, London J. Bot. 4: 89, 1845 (Hooker and Taylor 1845).

** *Cheilolejeunea tenerrima* (Steph.) C.J.Bastos, J. Bryol. 34 (4): 317, 2012 (Bastos 2012b). Bas.: *Strepsilejeunea tenerrima* Steph., Sp. Hepat. (Stephani) 5: 286, 1913 (Stephani 1913a).

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246 *Cheilolejeunea heteroclada* was considered conspecific with *Cheilolejeunea aneogyna* by X.-L. He (in Gradstein and Costa 2003), but it was tentatively accepted by Reiner-Drehwald and Grolle (2012). *Lejeunea heteroclada* var. *subandina* Spruce may be a different taxon (cf. Reiner-Drehwald & Grolle 2012).

** *Cheilolejeunea urubuensis* (Zartman et I.L.Ackerman) R.L.Zhu et Y.M.Wei, Phytotaxa 152 (1): 50, 2013 (Wei et al. 2013). Bas.: *Vitalianthus urubuensis* Zartman et I.L.Ackerman, Bryologist 105 (2): 267, 2002 (Zartman and Ackerman 2002).

* **Cyrtolejeunea A.Evans**, Bull. Torrey Bot. Club 30 (10): 553, 1903 (Evans 1903c).
*** *Cyrtolejeunea holostipa* (Spruce) A.Evans, Bull. Torrey Bot. Club. 30 (10): 553, 1903 (Evans 1903c). Bas.: *Lejeunea holostipa* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 171 (Spruce 1884).

** ***Cystolejeunea* A.Evans,** Bull. Torrey Bot. Club 33 (1): 16, 1906) (Evans 1906a)
*** *Cystolejeunea lineata* (Lehm. et Lindenb.) A.Evans, Bull. Torrey Bot. Club. 33 (1): 17, 1906 (Evans 1906a). Bas.: *Jungermannia lineata* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 53, 1832 (Lehmann 1832).

* ***Omphalanthus* Lindenb. et Nees**, Syn. Hepat. 2: 303, 1845 (Gottsche et al. 1845a). [247]
** *Omphalanthus baracoensis* Mustelier, M.E.Reiner et Gradst., J. Bryol. 29 (2): 95, 2007 (Reiner-Drehwald et al. 2007).
*** *Omphalanthus filiformis* (Sw.) Nees, Syn. Hepat. 2: 304, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia filiformis* Sw., Prodr. (Swartz): 144, 1788 (Swartz 1788).
** *Omphalanthus filiformis* var. *platycoleus* (Herzog) Gradst., Phytotaxa 76 (3): 46, 2013 (Gradstein 2013a). Bas.: *Omphalanthus platycoleus* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 171, 1955 (Herzog 1955).
** *Omphalanthus filiformis* var. *wallisii* (Prantl) Gradst., Phytotaxa 76 (3): 46, 2013 (Gradstein 2013a). Bas.: *Lejeunea wallisii* Prantl, Hedwigia 31: xvii, 1892 (Prantl 1892).
** *Omphalanthus huanucensis* (Gottsche) Gradst., Beih. Nova Hedwigia 80: 109, 1985 (Gradstein and Buskes 1985). Bas.: *Lejeunea huanucensis* Gottsche, Syn. Hepat. 3: 335, 1845 (Gottsche et al. 1845b).
*** *Omphalanthus jackii* (Prantl) Gradst., Proc. Kon. Ned. Akad. Wetensch. C 80: 410, 1977 (Gradstein et al. 1977). Bas.: *Lejeunea jackii* Prantl, Hedwigia 31: xvii, 1892 (Prantl 1892).
*** *Omphalanthus ovalis* (Lindenb. et Gottsche) Gradst., Proc. Kon. Ned. Akad. Wetensch. C 80: 411, 1977 (Gradstein et al. 1977). Bas.: *Lejeunea ovalis* Lindenb. et Gottsche, Syn. Hepat. 5: 754, 1847 (Gottsche et al. 1847).
*** *Omphalanthus roccatii* (Gola) R.M.Schust., Beih. Nova Hedwigia 9: 96, 1963 (Schuster 1963a). Bas.: *Acrolejeunea roccatii* Gola, Ann. Bot. (Rome) 6 (2): 275, 1907 (Gola 1907).

247 *Omphalanthus* is nested in *Cheilolejeunea* (Wilson et al. 2007, Ye et al. 2011, Gradstein 2013a). A formal transfer of the genus and its species to *Cheilolejeunea* is found in Ye et al. (2015).

*** subtrib. Cololejeuneinae Gradst.

** ***Aphanotropis*** **Herzog**, Trans. Brit. Bryol. Soc. 2 (1): 63, 1952 (Herzog 1952b).
*** *Aphanotropis saxicola* Herzog, Trans. Brit. Bryol. Soc. 2 (1): 63, 1952 (Herzog 1952b).

** ***Calatholejeunea*** **K.I.Goebel**, Ann. Jard. Bot. Buitenzorg 39: 8, 1928 (Goebel 1928).
*** *Calatholejeunea lamii* Mizut., J. Hattori Bot. Lab. 56: 334, 1984 (Mizutani 1984a).
*** *Calatholejeunea paradoxa* (Schiffn.) K.I.Goebel, Ann. Jard. Bot. Buitenzorg 39: 8, 1928 (Goebel 1928). Bas.: *Lejeunea paradoxa* Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 243, 1893 (Schiffner 1893a).

*** ***Cololejeunea*** **(Spruce) Steph.**, Hedwigia 30 (5): 208, 1891 (Stephani 1891a). Bas.: *Lejeunea* subg. *Cololejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 291, 1884 (Spruce 1884). [248]
** *Cololejeunea micrandroecia* (Spruce) M.Menzel, Willdenowia 14: 492, 1984 [1985] (Menzel 1984). Bas.: *Lejeunea micrandroecia* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 298, 1884 (Spruce 1884).

* **subg.** ***Aphanolejeunea*** **(A.Evans) Pócs**, Phytotaxa 202 (1): 64, 2015 (Pócs et al. 2015c). Bas.: *Aphanolejeunea* A.Evans, Bull. Torrey Bot. Club 38 (6): 272, 1911 (Evans 1911).
*** *Cololejeunea berneckerae* Pócs, Polish Bot. J. 54 (1): 4, 2009 (Pócs and Bernecker 2009). *Nom. nov. pro Aphanolejeunea pocsii* Bern.-Lück., Nova Hedwigia 66 (1/2): 168, 1998 (Bernecker-Lücking 1998).
*** *Cololejeunea cingens* (Herzog) Bernecker et Pócs, Polish Bot. J. 54 (1): 4, 2009 (Pócs and Bernecker 2009). Bas.: *Aphanolejeunea cingens* Herzog, Svensk Bot. Tidskr. 46 (1): 104, 1952 (Herzog 1952e).
*** *Cololejeunea cornutissima* (R.M.Schust.) Stotler et Crand.-Stotl., Bryologist 80 (3): 411, 1977 (Stotler and Crandall-Stotler 1977). Bas.: *Aphanolejeunea cornutissima* R.M.Schust., Bryologist 59 (3): 217, 1956 (Schuster 1956c).
*** *Cololejeunea costaricensis* (Bern.-Lück.) Bernecker et Pócs, Polish Bot. J. 54 (1): 5, 2009 (Pócs and Bernecker 2009). Bas.: *Aphanolejeunea costaricensis* Bern.-Lück., Nova Hedwigia 66 (1/2): 164, 1998 (Bernecker-Lücking 1998).
*** *Cololejeunea cubensis* Pócs, Polish Bot. J. 54 (1): 5, 2009 (Pócs and Bernecker 2009). *Nom. nov. pro Aphanolejeunea evansii* Herzog, Beih. Bot. Centralbl. 61B (3): 583, 1942 (Herzog 1942d).

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248 *Cololejeunea* is here organized into subgenera that are not supported by the molecular study of Yu et al. (2013). They are referred to following the traditional use (e.g. as in Pócs et al. 2014). *Leptocolea* and *Physocolea* also belong here, but a few taxa have neither been transferred nor synonymized. They are listed in the "Names in genera not currently accepted" section below.

*** *Cololejeunea gracilis* (Jovet-Ast) Pócs, Cryptog. Bryol. 29 (3): 233, 2008 (Dauphin et al. 2008). Bas.: *Aphanolejeunea gracilis* Jovet-Ast, Rev. Bryol. Lichénol. 16 (1/2): 21, 1947 [1948] (Jovet-Ast 1947b).

** *Cololejeunea gracilis* var. *linearifolia* (R.M.Schust.) Pócs, Acta Bot. Hung. 56 (1/2): 189, 2014 (Pócs et al. 2014). Bas.: *Aphanolejeunea gracilis* var. *linearifolia* R.M.Schust., Phytologia 45 (5): 434, 1980 (Schuster 1980b).

*** *Cololejeunea grossepapillosa* (Horik.) N.Kitag., Hikobia, Suppl. 1: 68, 1981 (Kitagawa 1981a). Bas.: *Aphanolejeunea grossepapillosa* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 92, 1932 (Horikawa 1932a).

** *Cololejeunea iwatsukiana* (Pócs) Pócs, Polish Bot. J. 54 (1): 6, 2009 (Pócs and Bernecker 2009). Bas.: *Aphanolejeunea iwatsukiana* Pócs, Hikobia 11: 457, 1994 (Pócs 1994d).

*** *Cololejeunea jovetastiana* (Pócs) Pócs, Polish Bot. J. 54 (1): 6, 2009 (Pócs and Bernecker 2009). Bas.: *Aphanolejeunea jovetastiana* Pócs, Cryptog. Bryol. Lichénol. 5 (3): 251, 1984 (Pócs 1984a).

** *Cololejeunea lisowskii* (Pócs) Pócs, Polish Bot. J. 54 (1): 6, 2009 (Pócs and Bernecker 2009). Bas.: *Aphanolejeunea lisowskii* Pócs, Cryptog. Bryol. Lichénol. 5 (3): 259, 1984 (Pócs 1984a).

*** *Cololejeunea madeirensis* Schiffn., Hedwigia 41 (5): 279, 1902 (Schiffner 1902).

*** *Cololejeunea microscopica* (Taylor) Schiffn., Hepat. (Engl.-Prantl): 122, 1893 (Schiffner 1893b). Bas.: *Jungermannia microscopica* Taylor, Mackay, Fl. Hibern. 2: 59, 1836 (Taylor 1836a).

*** *Cololejeunea microscopica* var. *africana* (Pócs) Pócs et Bernecker, Cryptog. Bryol. 29 (3): 234, 2008 (Dauphin et al. 2008). Bas.: *Aphanolejeunea exigua* var. *africana* Pócs, Cryptog. Bryol. Lichénol. 5 (3): 247, 1984 (Pócs 1984a).

*** *Cololejeunea microscopica* var. *exigua* (A.Evans) Pócs, Mem. New York Bot. Gard. 76 (4): 73, 2009 (Gradstein and Ilkiu-Borges 2009). Bas.: *Aphanolejeunea exigua* A.Evans, Bull. Torrey Bot. Club 38 (6): 273, 1911 (Evans 1911).

*** *Cololejeunea minuscula* Pócs, Polish Bot. J. 54 (1): 7, 2009 (Pócs and Bernecker 2009). *Nom. nov. pro Aphanolejeunea minuta* R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 1310, 1980 (Schuster 1980c).

** *Cololejeunea moramangae* Tixier, Bull. Acad. Malgache (n.ser) 55 (1/2): 241, 1977 [1979] (Tixier 1977a).

*** *Cololejeunea norrisii* (Pócs) Pócs, Polish Bot. J. 54 (1): 7, 2009 (Pócs and Bernecker 2009). Bas.: *Aphanolejeunea norrisii* Pócs, Acta Bot. Fenn. 165: 95, 1999 (Pócs and Piippo 1999).

*** *Cololejeunea papillosa* (K.I.Goebel) Mizut., J. Hattori Bot. Lab. 29: 156, 1966 (Mizutani 1966). Bas.: *Physocolea papillosa* K.I.Goebel, Ann. Jard. Bot. Buitenzorg 39: 41, 1928 (Goebel 1928).

*** *Cololejeunea sicifolia* (Gottsche ex A.Evans) Pócs et Bernecker, Polish Bot. J. 54 (1): 8, 2009 (Pócs and Bernecker 2009). Bas.: *Aphanolejeunea sicifolia* Gottsche ex A.Evans, Bull. Torrey Bot. Club 38 (6): 277, 1911 (Evans 1911).

*** *Cololejeunea sicifolia* subsp. *jamaicensis* (R.M.Schust.) Bernecker et Pócs, Polish Bot. J. 54 (1): 8, 2009 (Pócs and Bernecker 2009). Bas.: *Aphanolejeunea jamaicensis* R.M.Schust., Phytologia 45 (5): 434, 1980 (Schuster 1980b).
*** *Cololejeunea sintenisii* (Steph.) Pócs, Cryptog. Bryol. 29 (3): 235, 2008 (Dauphin et al. 2008). Bas.: *Aphanolejeunea sintenisii* Steph., Sp. Hepat. (Stephani) 5: 861, 1916 (Stephani 1916b).
*** *Cololejeunea subsphaeroidea* (R.M.Schust.) Pócs, Cryptog. Bryol. 29 (3): 235, 2008 (Dauphin et al. 2008). Bas.: *Aphanolejeunea subsphaeroidea* R.M.Schust., Phytologia 39 (6): 431, 1978 (Schuster 1978b).
** *Cololejeunea thiersiae* (Pócs) Pócs, Polish Bot. J. 54 (1): 9, 2009 (Pócs and Bernecker 2009). Bas.: *Aphanolejeunea thiersiae* Pócs, Hikobia 11: 459, 1994 (Pócs 1994d).
** *Cololejeunea veillonii* Tixier, Nova Hedwigia 31: 757, 1979 (Tixier 1979b).
*** *Cololejeunea winkleri* (M.I.Morales et A.Lücking) Pócs, Mem. New York Bot. Gard. 76 (4): 78, 2009 (Gradstein and Ilkiu-Borges 2009). Bas.: *Aphanolejeunea winkleri* M.I.Morales et A.Lücking, Nova Hedwigia 60 (1/2): 120, 1995 (Morales and Lücking 1995).

* **subg. *Austrocololejeunea* Tixier**, Nova Hedwigia 31: 776, 1979 (Tixier 1979b).
** *Cololejeunea australis* Tixier, Nova Hedwigia 31: 781, 1979 (Tixier 1979b).
** *Cololejeunea caledonica* Gottsche, Hedwigia 34 (5): 246, 1895 (Stephani 1895b).
** *Cololejeunea sophiana* Tixier, Bot. Not. 128: 428, 1975 [1976] (Tixier 1975a).
** *Cololejeunea virotana* Tixier, Nova Hedwigia 31: 777, 1979 (Tixier 1979b).

* **subg. *Chlorocolea* R.M.Schust.**, Beih. Nova Hedwigia 9: 178, 1963 (Schuster 1963a).
*** *Cololejeunea ceratilobula* (P.C.Chen) R.M.Schust., Beih. Nova Hedwigia 9: 179, 1963 (Schuster 1963a). Bas.: *Leptocolea ceratilobula* P.C.Chen, Feddes Repert. Spec. Nov. Regni Veg. 58: 49, 1955 (Chen 1955).
*** *Cololejeunea desciscens* Steph., Hedwigia 34 (5): 248, 1895 (Stephani 1895b).
*** *Cololejeunea linopteroides* H.Rob., Bryologist 67 (4): 457, 1964 (Robinson 1964).
* *Cololejeunea rotundilobula* (P.C.Wu et P.J.Lin) Piippo, J. Hattori Bot. Lab. 68: 134, 1990 (Piippo 1990). Bas.: *Pedinolejeunea rotundilobula* P.C.Wu et P.J.Lin, Acta Phytotax. Sin. 16 (2): 69, 1978 (Wu and Lin 1978). [249]
*** *Cololejeunea sigmoidea* Jovet-Ast et Tixier, Rev. Bryol. Lichénol. 31 (1/2): 27, 1962 (Jovet-Ast and Tixier 1962).
** *Cololejeunea sigmoidea* var. *dubia* Tixier, Bryophyt. Biblioth. 27: 114, 1985 (Tixier 1985a).
*** *Cololejeunea standleyi* Herzog, Rev. Bryol. Lichénol. 20 (1/2): 172, 1951 [1952] (Herzog 1951a).

249 *Cololejeunea rotundilobula* is possibly conspecific with *Cololejeunea sigmoidea* (Pócs et al. 2013).

*** *Cololejeunea stylilobula* Tixier, Phytotaxa 202 (1): 65, 2015 (Pócs et al. 2015c). Based on: *Cololejeunea stylilobula* Tixier, Bryophyt. Biblioth. 27: 119, 1985 (Tixier 1985a), *nom. inval.*

*** *Cololejeunea zangii* R.L.Zhu et M.L.So, Syst. Bot. 24 (4): 501, 1999 [2000] (Zhu and So 1999b).

*** **subg. *Chlorolejeunea* Benedix**, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 81, 1953 (Benedix 1953). [250]

** *Cololejeunea lacinulata* Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 82, 1953 (Benedix 1953).

*** *Cololejeunea madothecoides* (Steph.) Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 81, 1953 (Benedix 1953). Bas.: *Physocolea madothecoides* Steph., Sp. Hepat. (Stephani) 5: 898, 1916 (Stephani 1916b).

** *Cololejeunea ombrophila* Tixier, Nat. Hist. Bull. Siam Soc. 23 (4): 550, 1970 (Tixier 1970a).

*** *Cololejeunea stotleriana* Gradst., Ilk.-Borg. et Vanderp., Bryologist 114 (1): 13, 2011 (Gradstein et al. 2011).

*** **subg. *Chondriolejeunea* Benedix**, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 75, 1953 (Benedix 1953). [251]

*** *Cololejeunea chinii* Tixier, Nat. Hist. Bull. Siam Soc. 24 (3/4): 445, 1973 (Tixier 1973b).

*** *Cololejeunea pseudostipulata* Schiffn. ex P.Syd., Just's Bot. Jahresber. 19: 246, 1894 (Sydow 1894). Based on: *Cololejeunea pseudostipulata* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 33, 1890 (Schiffner 1890), *nom. inval.*

*** *Cololejeunea shimizui* N.Kitag., Acta Phytotax. Geobot. 23 (5/6): 185, 1969 (Kitagawa 1969b).

*** *Cololejeunea shimizui* var. *phangngana* N.Kitag., Acta Phytotax. Geobot. 23 (5/6): 187, 1969 (Kitagawa 1969b).

*** **subg. *Cololejeunea***, [252]

** *Cololejeunea albodentata* P.C.Chen et P.C.Wu, Acta Phytotax. Sin. 9 (3): 252, 1964 (Chen and Wu 1964).

** *Cololejeunea armata* Tixier, Gard. Bull. Singapore 26 (1): 149, 1972 (Tixier 1972b).

*** *Cololejeunea bhutanica* Grolle et Mizut., J. Bryol. 15 (2): 281, 1989 (Grolle 1989e).

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250 *Cololejeunea* subg. *Chlorolejeunea* forms a separate clade in Yu et al. (2013) with three sequenced species (*Cololejeunea ceratilobula*, *Cololejeunea madothecoides* (the type) and *Cololejeunea raduliloba*).

251 *Cololejeunea* subg. *Chondriolejeunea* is supported by Yu et al. (2013) who included *Cololejeunea chinii*, *Cololejeunea pseudostipulata* (the type, not sequenced) and *Cololejeunea shimizui*.

252 Subg. *Cololejeunea* includes subg. *Aphanolejeunea* in the phylogeny by Yu et al. (2013).

** *Cololejeunea biddlecomiae* (Austin) A.Evans, Mem. Torrey Bot. Club 8 (2): 168, 1902 (Evans 1902a). Bas.: *Lejeunea biddlecomiae* Austin, List. Canad. Hepat.: 5, 1890 (Pearson 1890).

* *Cololejeunea caihuaella* But et P.C.Wu, Hepat. Fl. Hong Kong: 132, 2009 (Wu and But 2009).

*** *Cololejeunea calcarea* (Lib.) Steph., Bot. Gaz. 17 (6): 171, 1892 (Stephani 1892f). Bas.: *Lejeunea calcarea* Lib., Ann. Gen. Sci. Phys. 6: 373, 1820 (Libert 1820).

** *Cololejeunea capuronii* Tixier, Bull. Acad. Malgache (n.ser) 55 (1/2): 241, 1977 [1979] (Tixier 1977a).

** *Cololejeunea dinghuiana* R.L.Zhu et Y.F.Wang, J. E. China Norm. Univ., Nat. Sci. Ed. 2: 91, 1992 (Zhu and Wang 1992).

** *Cololejeunea dolichodonta* Tixier, Bryophyt. Biblioth. 27: 215, 1985 (Tixier 1985a).

*** *Cololejeunea dozyana* (Sande Lac.) Schiffn., Hedwigia 39 (4): 199, 1900 (Schiffner 1900b). Bas.: *Lejeunea dozyana* Sande Lac., Ned. Kruidk. Arch. 3: 522, 1855 (Sande Lacoste 1855).

*** *Cololejeunea elegans* Steph., Hedwigia 30 (5): 208, 1891 (Stephani 1891a).

** *Cololejeunea falcidentata* R.M.Schust., Nova Hedwigia 15: 507, 1968 (Schuster 1968b).

** *Cololejeunea filidens* Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 49, 1953 (Benedix 1953).

* *Cololejeunea frahmii* Tixier, Trop. Bryol. 11: 63, 1995 (Tixier 1995b). [253]

*** *Cololejeunea grolleana* Pócs, J. Hattori Bot. Lab. 48: 312, 1980 (Pócs 1980b).

*** *Cololejeunea haskarliana* (Lehm.) Schiffn., Consp. Hepat. Arch. Ind.: 244, 1898 (Schiffner 1898b). Bas.: *Lejeunea haskarliana* Lehm., Nov. Stirp. Pug. 8: 26, 1844 (Lehmann 1844).

*** *Cololejeunea hyalina* G.Asthana et S.C.Srivast., Bryophyt. Biblioth. 60: 25, 2003 (Asthana and Srivastava 2003).

* *Cololejeunea kahuziensis* Tixier, Trop. Bryol. 11: 63, 1995 (Tixier 1995b). [254]

*** *Cololejeunea karnatakensis* G.Asthana et S.C.Srivast., Bryophyt. Biblioth. 60: 26, 2003 (Asthana and Srivastava 2003).

** *Cololejeunea kodamae* Kamim., Feddes Repert. Spec. Nov. Regni Veg. 58: 55, 1955 (Kamimura 1955).

*** *Cololejeunea kolombangarae* Pócs, Acta Bryolichenol. Asiat. 4: 67, 2011 (Pócs and Piippo 2011).

** *Cololejeunea kolombangarae* subsp. *sepikensis* Pócs, Acta Bryolichenol. Asiat. 4: 68, 2011 (Pócs and Piippo 2011).

*** *Cololejeunea konratii* Pócs, Acta Bot. Hung. 54 (1/2): 156, 2012 (Pócs 2012b).

*** *Cololejeunea kuciana* Pócs et Schäf.-Verw., Polish Bot. J. 57 (1): 51, 2012 (Pócs and Schäfer-Verwimp 2012).

*** *Cololejeunea longiana* Grolle et Mizut., J. Bryol. 15 (2): 284, 1989 (Grolle 1989e).

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253 *Cololejeunea frahmii* is probably only a depauperate form of *Cololejeunea elegans* or *Cololejeunea zenkeri*.

254 *Cololejeunea kahuziensis* is probably only a depauperate form of *Cololejeunea elegans* or *Cololejeunea zenkeri*.

*** *Cololejeunea macounii* (Spruce) A.Evans, Mem. Torrey Bot. Club 8 (2): 171, 1902 (Evans 1902a). Bas.: *Lejeunea macounii* Spruce, Bull. Torrey Bot. Club 17 (10): 259, 1890 (Underwood 1890).

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255 *Cololejeunea drepanolejeuneoides* may based on its description be close to *Cololejeunea angustiflora* and especially to *Cololejeunea inflectens*, forming a natural group.

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** *Cololejeunea comptonii* (Pearson) H.A.Mill., Phytologia 47 (4): 321, 1981 (Miller 1981). Bas.: *Leptocolea comptonii* Pearson, J. Linn. Soc., Bot. 46 (305): 40, 1922 (Pearson 1922b).

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** *Cololejeunea decliviloba* Steph., Hedwigia 34 (5): 247, 1895 (Stephani 1895b).

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* *Cololejeunea dentilobula* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 26: 241, 1963 (Schuster 1963b). Bas.: *Physocolea dentilobula* Steph., Sp. Hepat. (Stephani) 5: 892, 1916 (Stephani 1916b). [258]

*** *Cololejeunea dianae* M.Wigginton, J. Bryol. 28 (4): 364, 2006 (Wigginton 2006).

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256 *Cololejeunea chamlongiana* is possibly conspecific with *Cololejeunea papuliflora*.

257 *Cololejeunea crenulata* is possibly conspecific with *Cololejeunea angustiflora* judging from the protologue.

258 *Cololejeunea dentilobula* is possibly conspecific with *Cololejeunea decliviloba* judging from Stephani's Icones (unpublished).

** *Cololejeunea dilatata* (Steph.) Mizut., J. Hattori Bot. Lab. 28: 113, 1965 (Mizutani 1965). Bas.: *Leptocolea dilatata* Steph., Sp. Hepat. (Stephani) 5: 850, 1916 (Stephani 1916b).

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*** *Cololejeunea hildebrandii* (Austin) Steph., Bull. Herb. Boissier 5 (10): 842, 1897 (Stephani 1897c). Bas.: *Lejeunea hildebrandii* Austin, Bot. Bull. (Hanover) 1 (8): 35, 1876 (Austin 1876a).

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259 *Cololejeunea effusa* may be conspecific with *Cololejeunea trichomanis*.

260 *Cololejeunea fleischeri* is near to or conspecific with *Cololejeunea bidentula*.

261 *Cololejeunea fredericii* is possibly conspecific with *Cololejeunea polyantha*.

*** *Cololejeunea horikawana* (S.Hatt.) Mizut., J. Hattori Bot. Lab. 24: 254, 1961 (Mizutani 1961). Bas.: *Leptocolea horikawana* S.Hatt., J. Jap. Bot. 18 (11): 653, 1942 (Hattori 1942).

*** *Cololejeunea huerlimannii* Tixier, Nova Hedwigia 31: 773, 1979 (Tixier 1979b).

** *Cololejeunea inflexifolia* R.M.Schust., Phytologia 56 (7): 458, 1985 (Schuster 1985c).

*** *Cololejeunea iradieri* M.Infante et Heras, Trop. Bryol. 17: 14, 1999 (Infante and Heras 1999).

** *Cololejeunea irianensis* Tixier, Bull. Jard. Bot. Natl. Belg. 59 (3/4): 440, 1989 (Tixier 1989).

*** *Cololejeunea johannis-winkleri* (Herzog) R.L.Zhu, Nova Hedwigia 79 (3/4): 528, 2004 (Zhu et al. 2004). Bas.: *Leptocolea johannis-winkleri* Herzog, Mitt. Inst. Allg. Bot. Hamburg 7 (3): 214, 1931 (Herzog 1931a).

** *Cololejeunea kegelii* Steph., Hedwigia 34 (5): 249, 1895 (Stephani 1895b).

** *Cololejeunea khanii* Tixier, Dacca Univ. Stud., B 15: 9, 1967 (Tixier 1967).

* *Cololejeunea kohkongensis* Tixier, Bryophyt. Biblioth. 27: 302, 1985 (Tixier 1985a). [262]

*** *Cololejeunea lichenyae* R.D.Porley, N.G.Hodgetts et M.Wigginton, J. Bryol. 29 (1): 7, 2007 (Wigginton et al. 2007).

* *Cololejeunea lobulilineata* Tixier, Trop. Bryol. 11: 42, 1995 (Tixier 1995b). [263]

*** *Cololejeunea longifolia* (Mitt.) Benedix ex Mizut., J. Hattori Bot. Lab. 26: 184, 1963 (Mizutani 1963). Bas.: *Lejeunea longifolia* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 117, 1860 [1861] (Mitten 1860c).

*** *Cololejeunea magna* (Tixier) M.Infante et Heras, Trop. Bryol. 17: 17, 1999 (Infante and Heras 1999). Bas.: *Cololejeunea harrisii* var. *magna* Tixier, Trop. Bryol. 11: 56, 1995 (Tixier 1995b).

** *Cololejeunea magnifica* Pócs, Acta Bryolichenol. Asiat. 4: 88, 2011 (Pócs and Piippo 2011).

** *Cololejeunea magnilobula* (Horik.) S.Hatt., Bull. Tokyo Sci. Mus. 11: 99, 1944 (Hattori 1944d). Bas.: *Physocolea magnilobula* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 288, 1934 (Horikawa 1934).

* *Cololejeunea micronesica* H.A.Mill. et Bonner, Beih. Nova Hedwigia 11: 63, 1963 (Miller et al. 1963). [264]

** *Cololejeunea mooreaensis* Tixier, Bauhinia 8 (4): 226, 1987 (Hürlimann 1987).

* *Cololejeunea ninguana* Tixier, Nova Hedwigia 31: 776, 1979 (Tixier 1979b). [265]

** *Cololejeunea obcordata* (Austin) A.Evans, Trans. Connecticut Acad. Arts 10 (8): 448, 1900 (Evans 1900a). Bas.: *Lejeunea obcordata* Austin, Bot. Bull. (Hanover) 1 (8): 36, 1876 (Austin 1876a).

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262 *Cololejeunea kohkongensis* may be conspecific with *Cololejeunea plagiophylla*.

263 *Cololejeunea lobulilineata* seems to be a depauperate form of some other species, maybe *Cololejeunea obtusifolia*.

264 *Cololejeunea micronesica* is possibly conspecific with *Cololejeunea cookei fide* Schuster (1980c, 1983a).

265 *Cololejeunea ninguana* is possibly conspecific with *Cololejeunea decliviloba* (Yu et al. 2013).

*** *Cololejeunea obliqua* (Nees et Mont.) Schiffn., Bot. Jahrb. Syst. 23 (5): 586, 1897 (Schiffner 1897). Bas.: *Lejeunea obliqua* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 264, 1843 (Montagne 1843).

* *Cololejeunea oblongiperianthia* (P.C.Wu et J.S.Lou) Piippo, J. Hattori Bot. Lab. 68: 134, 1990 (Piippo 1990). Bas.: *Leptocolea oblongiperianthia* P.C.Wu et J.S.Lou, Acta Phytotax. Sin. 16 (4): 109, 1978 (Wu and Lou 1978). [266]

** *Cololejeunea oleana* Sim, Trans. Roy. Soc. South Africa 15 (1): 49, 1926 (Sim 1926).

** *Cololejeunea ovalifolia* A.Evans, Trans. Connecticut Acad. Arts 10 (8): 450, 1900 (Evans 1900a).

** *Cololejeunea panchoana* Tixier, Ann. Fac. Sci. Univ. Phnom Penh 3: 183, 1970 (Tixier 1970b).

*** *Cololejeunea paniensis* (Tixier) Grolle, J. Bryol. 8 (4): 485, 1975 (Grolle 1975d). Bas.: *Jovetastella paniensis* Tixier, Rev. Bryol. Lichénol. 39 (4): 662, 1973 [1974] (Tixier 1973c).

** *Cololejeunea papuliflora* Steph., Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr. 85: 199, 1910 (Stephani 1910a).

** *Cololejeunea pentagona* (Mitt.) Steph., Bot. Jahrb. Syst. 23 (1/2, 3): 309, 1896 (Stephani 1896a). Bas.: *Lejeunea pentagona* Mitt., Fl. vit.: 416, 1871 [1873] (Mitten 1871).

*** *Cololejeunea plagiochiliana* Tixier, Bot. Not. 128: 428, 1975 [1976] (Tixier 1975a).

** *Cololejeunea planiuscula* Tixier, Cryptog. Bryol. Lichénol. 16 (3): 229, 1995 (Tixier 1995a). Based on: *Cololejeunea planiuscula* Tixier, Candollea 46 (2): 289, 1991 (Tixier 1991), *nom. inval.*

*** *Cololejeunea pseudoserrata* Tixier, Nova Hedwigia 31: 770, 1979 (Tixier 1979b).

* *Cololejeunea pteroporum* Tixier, Bryophyt. Biblioth. 27: 271, 1985 (Tixier 1985a). [267]

** *Cololejeunea pulchella* (Mitt.) R.M.Schust., J. Hattori Bot. Lab. 26: 241, 1963 (Schuster 1963b). Bas.: *Lejeunea pulchella* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 157, 1854 (Mitten 1854).

** *Cololejeunea pulchella* var. *stylifera* R.M.Schust., Phytologia 56 (7): 458, 1985 (Schuster 1985c).

*** *Cololejeunea quadridentata* (S.Hatt.) Grolle, Acta Bot. Fenn. 125: 65, 1984 (Grolle and Piippo 1984). Bas.: *Leptocolea quadridentata* S.Hatt., Bot. Mag. (Tokyo) 64 (755/756): 117, 1951 (Hattori 1951c).

** *Cololejeunea retusula* (Mitt.) H.A.Mill., Phytologia 47 (4): 322, 1981 (Miller 1981). Bas.: *Lejeunea retusula* Mitt., Fl. vit.: 416, 1871 [1873] (Mitten 1871).

** *Cololejeunea salgadoi* Onr., Bull. Jard. Bot. Natl. Belg. 59 (3/4): 433, 1989 (Onraedt 1989).

*** *Cololejeunea sanctae-helenae* M.Wigginton, J. Bryol. 28 (4): 366, 2006 (Wigginton 2006).

** *Cololejeunea serrulata* Steph., Hedwigia 34 (5): 252, 1895 (Stephani 1895b).

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266 *Cololejeunea oblongiperianthia* is possibly conspecific with *Cololejeunea trichomanis* (Zhu and So 2001).

267 *Cololejeunea pteroporum* is possibly conspecific with *Cololejeunea spathulifolia*.

*** *Cololejeunea setiloba* A.Evans, Bryologist 16 (4): 51, 1913 (Evans 1913).
*** *Cololejeunea siangensis* G.Asthana et S.C.Srivast., Bryophyt. Biblioth. 60: 57, 2003 (Asthana and Srivastava 2003).
*** *Cololejeunea skottsbergii* Herzog, Nat. Hist. Juan Fernandez (Botany) 2 (5): 749, 1942 (Herzog 1942a).
*** *Cololejeunea societatis* Tixier, Bauhinia 8 (4): 230, 1987 (Hürlimann 1987).
* *Cololejeunea spathulifolia* (Steph.) H.A.Mill., Phytologia 47 (4): 322, 1981 (Miller 1981). Bas.: *Leptocolea spathulifolia* Steph., Sp. Hepat. (Stephani) 5: 855, 1916 (Stephani 1916b). [268]
** *Cololejeunea spruceana* Tixier, Cryptog. Bryol. Lichénol. 16 (3): 229, 1995 (Tixier 1995a). Based on: *Cololejeunea spruceana* Tixier, Candollea 46 (2): 286, 1991 (Tixier 1991), *nom. inval.*
** *Cololejeunea stenophylla* Herzog, Bot. Not. 100 (4): 330, 1947 (Herzog 1947).
*** *Cololejeunea streimannii* Pócs, Acta Bryolichenol. Asiat. 4: 96, 2011 (Pócs and Piippo 2011).
** *Cololejeunea streimannii* subsp. *solomonensis* Pócs, Acta Bryolichenol. Asiat. 4: 96, 2011 (Pócs and Piippo 2011).
*** *Cololejeunea subalpina* Pócs, Acta Bryolichenol. Asiat. 4: 98, 2011 (Pócs and Piippo 2011).
** *Cololejeunea subcristata* A.Evans, Bryologist 20 (2): 24, 1917 (Evans 1917b).
* *Cololejeunea takamakae* Tixier, Bryophyt. Biblioth. 27: 319, 1985 (Tixier 1985a). [269]
*** *Cololejeunea tanzaniae* Pócs, J. Hattori Bot. Lab. 48: 312, 1980 (Pócs 1980b).
** *Cololejeunea tenuiparietata* Tixier, Trop. Bryol. 11: 56, 1995 (Tixier 1995b).
** *Cololejeunea teurnoumensis* Tixier, Ann. Fac. Sci. Univ. Phnom Penh 3: 183, 1970 (Tixier 1970b).
*** *Cololejeunea timoi* Pócs, Acta Bryolichenol. Asiat. 4: 98, 2011 (Pócs and Piippo 2011).
** *Cololejeunea touwii* Pócs, Acta Bryolichenol. Asiat. 4: 101, 2011 (Pócs and Piippo 2011).
*** *Cololejeunea tranninhiana* Tixier, Ann. Hist.-Nat. Mus. Natl. Hung. 66: 97, 1974 (Tixier 1974).
*** *Cololejeunea trichomanis* (Gottsche) Besch., Rev. Bryol. 19 (1): 14, 1892 (Bescherelle 1892). Bas.: *Lejeunea trichomanis* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 362, 1882 (Gottsche 1882).
* *Cololejeunea tuksapiana* Tixier, Ann. Fac. Sci. Univ. Phnom Penh 3: 186, 1970 (Tixier 1970b). [270]
** *Cololejeunea vulcania* Tixier, Ann. Fac. Sci. Univ. Phnom Penh 3: 181, 1970 (Tixier 1970b).
*** *Cololejeunea yoshinagana* (S.Hatt.) Mizut., J. Hattori Bot. Lab. 24: 250, 1961 (Mizutani 1961). Bas.: *Leptocolea yoshinagana* S.Hatt., Bull. Tokyo Sci. Mus. 11: 115, 1944 (Hattori 1944d).

268 *Cololejeunea spathulifolia* is possibly conspecific with *Cololejeunea obliqua* (Pócs and Piippo 2011).
269 *Cololejeunea takamakae* is possibly conspecific with *Cololejeunea angustiflora.*
270 *Cololejeunea tuksapiana* is possibly conspecific with *Cololejeunea aequalis*.

* **subg. *Metzgeriopsis* (K.I.Goebel) Pócs**, Acta Bryolichenol. Asiat. 4: 106, 2011 (Pócs and Piippo 2011). Bas.: *Metzgeriopsis* K.I.Goebel, Ann. Jard. Bot. Buitenzorg 7 (1): 54, 1888 (Goebel 1888).

*** *Cololejeunea metzgeriopsis* (K.I.Goebel) Gradst., R.Wilson, Ilk.-Borg. et Heinrichs, Bot. J. Linn. Soc. 151 (3): 306, 2006 (Gradstein et al. 2006). Bas.: *Lejeunea metzgeriopsis* K.I.Goebel, Flora 72 (1): 2, 1889 (Goebel 1889).

*** **subg. *Pedinolejeunea* Benedix ex Mizut.**, J. Hattori Bot. Lab. 24: 240, 1961 (Mizutani 1961).

** *Cololejeunea abnormis* Mizut., J. Hattori Bot. Lab. 33: 260, 1970 (Mizutani 1970).

*** *Cololejeunea adhaesiva* (Mitt.) R.M.Schust., Beih. Nova Hedwigia 9: 177, 1963 (Schuster 1963a). Bas.: *Lejeunea adhaesiva* Mitt., J. Linn. Soc., Bot. 22 (146): 325, 1886 (Mitten 1886b).

** *Cololejeunea adnata* Tixier, Bull. Acad. Malgache (n.ser) 55 (1/2): 194, 1977 [1979] (Tixier 1977a).

*** *Cololejeunea africana* (Steph.) R.M.Schust., Beih. Nova Hedwigia 9: 173, 1963 (Schuster 1963a). Bas.: *Physocolea africana* Steph., Sp. Hepat. (Stephani) 5: 867, 1916 (Stephani 1916b).

** *Cololejeunea ambeliensis* Tixier, Bryophyt. Biblioth. 27: 142, 1985 (Tixier 1985a).

** *Cololejeunea amieuensis* Tixier, Nova Hedwigia 31: 748, 1979 (Tixier 1979b).

** *Cololejeunea andapania* Tixier, Bull. Acad. Malgache (n.ser) 55 (1/2): 178, 1977 [1979] (Tixier 1977a).

*** *Cololejeunea angulata* (Steph.) Mizut., J. Hattori Bot. Lab. 28: 108, 1965 (Mizutani 1965). Bas.: *Leptocolea angulata* Steph., Sp. Hepat. (Stephani) 5: 847, 1916 (Stephani 1916b).

*** *Cololejeunea ankaiana* Tixier, Bryophyt. Biblioth. 27: 62, 1985 (Tixier 1985a).

** *Cololejeunea attilana* Pócs, Magyar Bot. Kut. Ezredf. Tanul. Borhidi: 186, 2002 (Pócs 2002a).

*** *Cololejeunea auriculata* (E.W.Jones) R.M.Schust., Beih. Nova Hedwigia 9: 177, 1963 (Schuster 1963a). Bas.: *Leptocolea auriculata* E.W.Jones, Trans. Brit. Bryol. Soc. 2 (2): 152, 1953 (Jones 1953b).

** *Cololejeunea autoica* (Steph.) Grolle, Bryophyt. Biblioth. 48: 43, 1995 (Grolle 1995). Bas.: *Physocolea autoica* Steph., Sp. Hepat. (Stephani) 5: 867, 1916 (Stephani 1916b).

*** *Cololejeunea bekkeri* Tixier, Cryptog. Bryol. Lichénol. 16 (3): 229, 1995 (Tixier 1995a). Based on: *Cololejeunea bekkeri* Tixier, Candollea 46 (2): 269, 1991 (Tixier 1991), *nom. inval.*

*** *Cololejeunea bischleriana* Tixier, Bradea 3 (6): 36, 1980 (Tixier 1980a).

** *Cololejeunea bolovenensis* Tixier, Nat. Hist. Bull. Siam Soc. 24 (3/4): 442, 1973 (Tixier 1973b).

*** *Cololejeunea borbonica* Tixier, Bull. Acad. Malgache (n.ser) 55 (1/2): 188, 1977 [1979] (Tixier 1977a).

* *Cololejeunea brunelii* Tixier, Dacca Univ. Stud., B 15: 10, 1967 (Tixier 1967). [271]

*** *Cololejeunea cardiocarpa* (Mont.) A.Evans, Mem. Torrey Bot. Club 8 (2): 172, 1902 (Evans 1902a). Bas.: *Lejeunea cardiocarpa* Mont., Hist. Phys. Cuba, Bot., Pl. Cell.: 476, 1842 (Montagne 1842a).

* *Cololejeunea chittagongensis* Tixier, Bryophyt. Biblioth. 27: 97, 1985 (Tixier 1985a). [272]

*** *Cololejeunea cocoscola* Tixier, Cryptog. Bryol. Lichénol. 14 (3): 353, 1993 (Tixier 1993).

** *Cololejeunea cremersii* Tixier, Cryptog. Bryol. Lichénol. 16 (3): 229, 1995 (Tixier 1995a). Based on: *Cololejeunea cremersii* Tixier, Candollea 46 (2): 271, 1991 (Tixier 1991), *nom. inval.*

** *Cololejeunea cristata* (Steph.) R.M.Schust., Beih. Nova Hedwigia 9: 173, 1963 (Schuster 1963a). Bas.: *Physocolea cristata* Steph., Sp. Hepat. (Stephani) 5: 869, 1916 (Stephani 1916b).

** *Cololejeunea cuneata* (Lehm. et Lindenb.) Herzog, Bot. Not. 100 (4): 320, 1947 (Herzog 1947). Bas.: *Jungermannia cuneata* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 56, 1832 (Lehmann 1832).

* *Cololejeunea deroinii* Tixier, Cryptog. Bryol. Lichénol. 14 (3): 355, 1993 (Tixier 1993).

* *Cololejeunea deslooveri* Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 47 (1/2): 227, 1977 (Vanden Berghen 1977). [273]

* *Cololejeunea dzumacensis* Tixier, Nova Hedwigia 31: 754, 1979 (Tixier 1979b). [274]

*** *Cololejeunea ecuadoriensis* Pócs, Acta Bot. Hung. 44 (3/4): 372, 2002 (Pócs 2002b).

* *Cololejeunea epiphylla* G.Asthana et A.Shukla, Cryptog. Bryol. 31 (3): 218, 2010 (Asthana and Shukla 2010). [275]

** *Cololejeunea fissilobula* Herzog, Trans. Brit. Bryol. Soc. 1 (4): 323, 1950 (Herzog 1950a).

** *Cololejeunea florencei* Tixier, Cryptog. Bryol. Lichénol. 14 (3): 355, 1993 (Tixier 1993).

** *Cololejeunea foliicola* S.C.Srivast. et G.Srivast., Proc. Indian Acad. Sci. Pl. Sci. 99 (2): 86, 1989 (Srivastava and Srivastava 1989a).

** *Cololejeunea fructumarginata* Tixier, Bryophyt. Biblioth. 27: 58, 1985 (Tixier 1985a).

*** *Cololejeunea furcilobulata* (Berrie et E.W.Jones) R.M.Schust., Beih. Nova Hedwigia 9: 178, 1963 (Schuster 1963a). Bas.: *Leptocolea furcilobulata* Berrie et E.W.Jones, Trans. Brit. Bryol. Soc. 2 (3): 417, 1954 (Jones 1954c).

*** *Cololejeunea geissleriana* Tixier, Bradea 3 (6): 37, 1980 (Tixier 1980a).

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271 *Cololejeunea brunelii* is conspecific with *Cololejeunea madothecoides* in Tixier (1985a), but it belongs to the *Cololejeunea raduliloba*, *Cololejeunea furcilobulata*, *Cololejeunea paucimarginata* species complex.

272 *Cololejeunea chittagongensis* is probably conspecific with *Cololejeunea schwabei*.

273 *Cololejeunea deslooveri* is possibly conspecific with *Cololejeunea cristata*.

274 *Cololejeunea dzumacensis* is possibly conspecific with *Cololejeunea lanciloba*, but the type specimen has not been localized.

275 *Cololejeunea epiphylla* is closely related to *Cololejeunea chittagongensis* and *Cololejeunea schwabei*.

** *Cololejeunea georgiana* Tixier, Bryophyt. Biblioth. 27: 145, 1985 (Tixier 1985a).
*** *Cololejeunea guadelupensis* Tixier, Cryptog. Bryol. Lichénol. 16 (3): 229, 1995 (Tixier 1995a). Based on: *Cololejeunea guadelupensis* Tixier, Candollea 46 (2): 276, 1991 (Tixier 1991), *nom. inval.*
*** *Cololejeunea hebridensis* Tixier, Bot. Not. 128: 425, 1975 [1976] (Tixier 1975a).
*** *Cololejeunea hinidumae* Onr., Acta Bot. Acad. Sci. Hung. 25 (1/2): 109, 1979 (Onraedt 1979).
* *Cololejeunea hoabinhiana* Tixier, Ann. Hist.-Nat. Mus. Natl. Hung. 66: 91, 1974 (Tixier 1974). [276]
** *Cololejeunea hoeana* Tixier, Bryophyt. Biblioth. 27: 56, 1985 (Tixier 1985a).
** *Cololejeunea hungii* Tixier, Ann. Hist.-Nat. Mus. Natl. Hung. 66: 91, 1974 (Tixier 1974).
*** *Cololejeunea indosinica* Tixier, Bryophyt. Biblioth. 27: 63, 1985 (Tixier 1985a).
** *Cololejeunea inoueana* Mizut., J. Hattori Bot. Lab. 57: 440, 1984 (Mizutani 1984c).
** *Cololejeunea japonica* (Schiffn.) Mizut., J. Hattori Bot. Lab. 24: 241, 1961 (Mizutani 1961). Bas.: *Leptocolea japonica* Schiffn., Ann. Bryol. 2: 92, 1929 (Schiffner 1929).
*** *Cololejeunea jonesii* Pócs, Acta Bot. Acad. Sci. Hung. 21 (3/4): 361, 1975 (Pócs 1975).
*** *Cololejeunea kapingaensis* H.A.Mill., Bryologist 59 (3): 170, 1956 (Miller 1956).
** *Cololejeunea kiriromensis* Tixier, Bryophyt. Biblioth. 27: 147, 1985 (Tixier 1985a).
*** *Cololejeunea kulenensis* Tixier, Bryophyt. Biblioth. 27: 71, 1985 (Tixier 1985a). *Nom. nov. pro Leptocolea verdoornii* Herzog, Ann. Bryol. 5: 97, 1932 (Herzog 1932a).
** *Cololejeunea laevigata* (Mitt.) R.M.Schust., J. Hattori Bot. Lab. 26: 241, 1963 (Schuster 1963b). Bas.: *Lejeunea laevigata* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 157, 1854 (Mitten 1854).
*** *Cololejeunea lanciloba* Steph., Hedwigia 34 (5): 250, 1895 (Stephani 1895b).
*** *Cololejeunea latilobula* (Herzog) Tixier, Bryophyt. Biblioth. 27: 156, 1985 (Tixier 1985a). Bas.: *Leptocolea latilobula* Herzog, Symb. Sin. 5: 54, 1930 (Nicholson et al. 1930).
*** *Cololejeunea latistyla* R.L.Zhu, Hikobia 11: 544, 1994 (Zhu et al. 1994).
*** *Cololejeunea leloutrei* (E.W.Jones) R.M.Schust., Beih. Nova Hedwigia 9: 173, 1963 (Schuster 1963a). Bas.: *Leptocolea leloutrei* E.W.Jones, Trans. Brit. Bryol. Soc. 2 (2): 146, 1953 (Jones 1953b).
** *Cololejeunea leloutrei* var. *microlobulata* Tixier, Bryophyt. Biblioth. 27: 78, 1985 (Tixier 1985a).
** *Cololejeunea leloutrei* var. *ulugurica* Pócs ex Tixier, Bryophyt. Biblioth. 27: 74, 1985 (Tixier 1985a).
*** *Cololejeunea lemuriana* Tixier, Bull. Acad. Malgache (n.ser) 55 (1/2): 191, 1977 [1979] (Tixier 1977a).
** *Cololejeunea littoralis* Tixier, Bryophyt. Biblioth. 27: 163, 1985 (Tixier 1985a).

276 *Cololejeunea hoabinhiana* is possibly conspecific with *Cololejeunea lanciloba*.

** *Cololejeunea longistylis* A.Evans, Trans. Connecticut Acad. Arts 10 (8): 453, 1900 (Evans 1900a).

*** *Cololejeunea magnistyla* (Horik.) Mizut., J. Hattori Bot. Lab. 24: 243, 1961 (Mizutani 1961). Bas.: *Leptocolea magnistyla* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 131, 1932 (Horikawa 1932c).

* *Cololejeunea malaccensis* Tixier, Bryophyt. Biblioth. 27: 42, 1985 (Tixier 1985a). [277]

** *Cololejeunea malayana* Tixier, Bryophyt. Biblioth. 27: 154, 1985 (Tixier 1985a).

*** *Cololejeunea marginata* (Lehm. et Lindenb.) Pearson, Forh. Vidensk.-Selsk. Kristiania 1892 (8): 9, 1892 (Pearson 1892). Bas.: *Jungermannia marginata* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 11, 1833 (Lehmann 1833).

* *Cololejeunea maritima* Tixier, Nova Hedwigia 31: 752, 1979 (Tixier 1979b).

*** *Cololejeunea minutilobula* Herzog, Rev. Bryol. Lichénol. 20 (1/2): 171, 1951 [1952] (Herzog 1951a).

*** *Cololejeunea nigerica* (E.W.Jones) R.M.Schust., Beih. Nova Hedwigia 9: 177, 1963 (Schuster 1963a). Bas.: *Leptocolea nigerica* E.W.Jones, Trans. Brit. Bryol. Soc. 2 (2): 150, 1953 (Jones 1953b).

** *Cololejeunea occidentalis* (E.W.Jones) Vanden Berghen, Rev. Bryol. Lichénol. 44 (4): 449, 1978 (Vanden Berghen 1978). Bas.: *Leptocolea cristata* var. *occidentalis* E.W.Jones, Trans. Brit. Bryol. Soc. 2 (2): 149, 1953 (Jones 1953b).

** *Cololejeunea onraedtii* Tixier, Bull. Acad. Malgache (n.ser) 55 (1/2): 202, 1977 [1979] (Tixier 1977a).

*** *Cololejeunea pacifica* Pócs, Acta Bot. Hung. 54 (1/2): 158, 2012 (Pócs 2012b).

** *Cololejeunea panamensis* G.Dauphin et Pócs, Trop. Bryol. 27: 76, 2006 (Dauphin et al. 2006).

*** *Cololejeunea paucimarginata* Tixier, Bryophyt. Biblioth. 27: 100, 1985 (Tixier 1985a).

** *Cololejeunea perakensis* Tixier, Bryophyt. Biblioth. 27: 95, 1985 (Tixier 1985a).

*** *Cololejeunea plagiophylla* Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 73, 1953 (Benedix 1953).

*** *Cololejeunea planissima* (Mitt.) Abeyw., Ceylon J. Sci., Biol. Sci. 2 (1): 73, 1959 (Abeywickrama 1959). Bas.: *Lejeunea planissima* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 117, 1860 [1861] (Mitten 1860c).

** *Cololejeunea planissima* var. *chagosensis* Pócs, J. Bryol. 28 (1): 14, 2006 (Seaward et al. 2006).

** *Cololejeunea praeruptorum* Tixier, Bull. Acad. Malgache (n.ser) 55 (1/2): 205, 1977 [1979] (Tixier 1977a).

** *Cololejeunea producta* (Mitt.) S.Hatt., Fl. E. Himalaya: 533, 1966 (Hattori 1966c). Bas.: *Lejeunea producta* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 117, 1860 [1861] (Mitten 1860c).

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277 *Cololejeunea malaccensis* may be conspecific with *Cololejeunea stylosa*.

* *Cololejeunea punctata* (Gottsche) Pearson, Forh. Vidensk.-Selsk. Kristiania 1892 (14): 9, 1893 (Pearson 1893). Bas.: *Lejeunea punctata* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 361, 1882 (Gottsche 1882). [278]

*** *Cololejeunea raduliloba* Steph., Hedwigia 34 (5): 251, 1895 (Stephani 1895b).

* *Cololejeunea reineckeana* Steph., Bot. Jahrb. Syst. 23 (1/2, 3): 309, 1896 (Stephani 1896a).

** *Cololejeunea saltuum* Tixier, Bull. Acad. Malgache (n.ser) 55 (1/2): 188, 1977 [1979] (Tixier 1977a).

** *Cololejeunea sambiroana* Tixier, Bryologist 82 (4): 608, 1979 (Tixier 1979d).

*** *Cololejeunea saroltae* Pócs, Acta Bot. Hung. 54 (1/2): 160, 2012 (Pócs 2012b).

*** *Cololejeunea schusteri* Pócs, Acta Bot. Hung. 44 (3/4): 376, 2002 (Pócs 2002b).

** *Cololejeunea schwabei* Herzog, J. Hattori Bot. Lab. 14: 54, 1955 (Herzog and Noguchi 1955).

*** *Cololejeunea selangorensis* Tixier, Bryophyt. Biblioth. 27: 166, 1985 (Tixier 1985a).

*** *Cololejeunea shibiensis* Mizut., J. Hattori Bot. Lab. 57: 437, 1984 (Mizutani 1984c).

*** *Cololejeunea smitinandii* Tixier, Bryophyt. Biblioth. 27: 131, 1985 (Tixier 1985a). Based on: *Cololejeunea smitinandii* Tixier, Nat. Hist. Bull. Siam Soc. 24 (3/4): 439, 1973 (Tixier 1973b), *nom. inval.*

** *Cololejeunea stoniana* Tixier, Bot. Not. 128: 429, 1975 [1976] (Tixier 1975a).

*** *Cololejeunea stylosa* Steph., Trans. Connecticut Acad. Arts 10 (8): 454, 1900 (Evans 1900a). Based on: *Cololejeunea stylosa* Steph., Hedwigia 27 (11/12): 289, 1888 (Stephani 1888c), *nom. inval.*

*** *Cololejeunea subcardiocarpa* Tixier, Bradea 3 (6): 39, 1980 (Tixier 1980a).

** *Cololejeunea subinflata* Tixier, Bull. Acad. Malgache (n.ser) 55 (1/2): 182, 1977 [1979] (Tixier 1977a).

*** *Cololejeunea submarginata* Tixier, Bradea 3 (6): 40, 1980 (Tixier 1980a).

** *Cololejeunea subminutilobula* Mizut., J. Hattori Bot. Lab. 24: 282, 1961 (Mizutani 1961). *Nom. nov. pro Leptocolea minutilobula* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 16, 1931 (Horikawa 1931b).

** *Cololejeunea subscariosa* (Spruce) Pócs, Acta Bot. Hung. 56 (1/2): 197, 2014 (Pócs et al. 2014). Bas.: *Lejeunea subscariosa* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 300, 1884 (Spruce 1884).

** *Cololejeunea subtriapiculata* Tixier, Nova Hedwigia 31: 744, 1979 (Tixier 1979b).

*** *Cololejeunea succinea* Tixier, Bull. Acad. Malgache (n.ser) 55 (1/2): 194, 1977 [1979] (Tixier 1977a).

*** *Cololejeunea surinamensis* Tixier, Bradea 3 (6): 42, 1980 (Tixier 1980a).

** *Cololejeunea tahitensis* Tixier, Cryptog. Bryol. Lichénol. 14 (3): 359, 1993 (Tixier 1993).

** *Cololejeunea tamatavensis* Tixier, Bull. Acad. Malgache (n.ser) 55 (1/2): 191, 1977 [1979] (Tixier 1977a).

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278 *Cololejeunea punctata* is a doubtful taxon. The type specimen has been destroyed and the identity is unclear (Grolle 1995).

* *Cololejeunea taprobanea* Tixier, Bryophyt. Biblioth. 27: 158, 1985 (Tixier 1985a).
* *Cololejeunea thailandensis* Tixier, Nat. Hist. Bull. Siam Soc. 24 (3/4): 441, 1973 (Tixier 1973b).
** *Cololejeunea triapiculata* (Herzog) Tixier, Gard. Bull. Singapore 25 (3): 344, 1971 (Tixier 1971). Bas.: *Leptocolea triapiculata* Herzog, Ann. Bryol. 5: 95, 1932 (Herzog 1932a).
* *Cololejeunea tribracteata* Tixier, Trop. Bryol. 11: 46, 1995 (Tixier 1995b). [279]
* *Cololejeunea tridentata* Tixier, Bryophyt. Biblioth. 27: 83, 1985 (Tixier 1985a).
* *Cololejeunea uchimae* Amakawa, J. Jap. Bot. 33 (5): 142, 1958 (Amakawa 1958a). [280]
*** *Cololejeunea verwimpii* Tixier, Cryptog. Bryol. Lichénol. 16 (3): 230, 1995 (Tixier 1995a).
*** *Cololejeunea vidaliana* Tixier, Nat. Hist. Bull. Siam Soc. 24 (3/4): 444, 1973 (Tixier 1973b).
** *Cololejeunea vietnamensis* Tixier, Bryophyt. Biblioth. 27: 127, 1985 (Tixier 1985a).
** *Cololejeunea vitaliana* Tixier, Cryptog. Bryol. Lichénol. 16 (3): 230, 1995 (Tixier 1995a).
*** *Cololejeunea yakusimensis* (S.Hatt.) Mizut., J. Hattori Bot. Lab. 57: 430, 1984 (Mizutani 1984c). Bas.: *Leptocolea lanciloba* var. *yakusimensis* S.Hatt., J. Jap. Bot. 18 (11): 655, 1942 (Hattori 1942).

* **subg. *Protocolea* R.M.Schust.**, Beih. Nova Hedwigia 9: 171, 1963 (Schuster 1963a).
** *Cololejeunea chuahiana* Pócs, Polish Bot. J. 47 (1): 11, 2002 (Pócs 2002c). [281]
** *Cololejeunea dauphinii* R.L.Zhu, J. Bryol. 28 (3): 277, 2006 (Zhu 2006b). *Nom. nov. pro Cololejeunea tixieri* M.I.Morales et G.Dauphin, Trop. Bryol. 14: 133, 1998 (Morales and Dauphin 1998), *nom. illeg.* [282]
** *Cololejeunea disciflora* Tixier, Bryologist 82 (4): 604, 1979 (Tixier 1979d). [283]

*** **subg. *Taeniolejeunea* (Zwickel) Benedix**, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 21, 1953 (Benedix 1953). Bas.: *Taeniolejeunea* Zwickel, Ann. Bryol. 6: 106, 1933 (Zwickel 1933).
* *Cololejeunea amoena* Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 25, 1953 (Benedix 1953). [284]
*** *Cololejeunea appressa* (A.Evans) Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 31, 1953 (Benedix 1953). Bas.: *Leptocolea appressa* A.Evans, Bull. Torrey Bot. Club 39 (12): 606, 1912 [1913] (Evans 1912d).

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279 *Cololejeunea tribracteata* is possibly conspecific with *Cololejeunea africana*.
280 *Cololejeunea uchimae* is conspecific with *Cololejeunea raduliloba* in Mizutani (1961), but it is accepted in recent Japanese checklists.
281 *Cololejeunea chuahiana* is probably a *Myriocoleopsis species* (Yu et al. 2014).
282 *Cololejeunea dauphinii* is probably a *Myriocoleopsis* species (Yu et al. 2014).
283 *Cololejeunea disciflora* is probably a *Myriocoleopsis* species (Yu et al. 2014).
284 *Cololejeunea amoena* is possibly conspecific with *Cololejeunea floccosa* (Söderström et al. 2010a).

* *Cololejeunea bachmaensis* Tixier, Rev. Bryol. Lichénol. 36 (3/4): 560, 1969 [1970] (Tixier 1969).

* *Cololejeunea bontocensis* Tixier, Rev. Bryol. Lichénol. 36 (3/4): 583, 1969 [1970] (Tixier 1969). [285]

* *Cololejeunea crassipapillata* Tixier, Rev. Bryol. Lichénol. 36 (3/4): 565, 1969 [1970] (Tixier 1969).

** *Cololejeunea eustacei* Pócs, J. Bryol. 29 (2): 83, 2007 (Müller and Pócs 2007).

*** *Cololejeunea falcata* (Horik.) Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 29, 1953 (Benedix 1953). Bas.: *Physocolea falcata* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 22, 1931 (Horikawa 1931b).

** *Cololejeunea falcata* var. *madecassa* Tixier, Bryologist 82 (4): 606, 1979 (Tixier 1979d).

* *Cololejeunea flavida* P.C.Wu et J.S.Lou, Acta Phytotax. Sin. 16 (4): 103, 1978 (Wu and Lou 1978). [286]

** *Cololejeunea flavovittata* Pócs, Acta Bryolichenol. Asiat. 4: 120, 2011 (Pócs and Piippo 2011).

*** *Cololejeunea floccosa* (Lehm. et Lindenb.) Schiffn., Consp. Hepat. Arch. Ind.: 243, 1898 (Schiffner 1898b). Bas.: *Jungermannia floccosa* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 26, 1833 (Lehmann 1833).

* *Cololejeunea floccosa* var. *amoenoides* Tixier, Cryptog. Bryol. Lichénol. 2 (1): 59, 1981 (Tixier 1981).

** *Cololejeunea floccosa* var. *angustibracteata* Tixier, Cryptog. Bryol. Lichénol. 2 (1): 65, 1981 (Tixier 1981).

** *Cololejeunea floccosa* var. *aurita* Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 24, 1953 (Benedix 1953).

** *Cololejeunea floccosa* var. *conivens* Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 24, 1953 (Benedix 1953).

* *Cololejeunea floccosa* var. *ocellata* Tixier, Cryptog. Bryol. Lichénol. 2 (1): 69, 1981 (Tixier 1981).

** *Cololejeunea floccosa* var. *plicata* Tixier, Cryptog. Bryol. Lichénol. 2 (1): 65, 1981 (Tixier 1981).

** *Cololejeunea floccosa* var. *trivittata* Tixier, Cryptog. Bryol. Lichénol. 2 (1): 62, 1981 (Tixier 1981).

** *Cololejeunea gresicola* Tixier, Rev. Bryol. Lichénol. 36 (3/4): 569, 1969 [1970] (Tixier 1969).

** *Cololejeunea gynophthalma* Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 32, 1953 (Benedix 1953).

*** *Cololejeunea inflata* Steph., Hedwigia 34 (5): 249, 1895 (Stephani 1895b).

** *Cololejeunea khiavensis* Tixier, Rev. Bryol. Lichénol. 36 (3/4): 557, 1969 [1970] (Tixier 1969).

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285 *Cololejeunea bontocensis* is possibly conspecific with *Cololejeunea pseudostephanii*.

286 *Cololejeunea flavida* may be conspecific with *Cololejeunea peraffinis* (Zhu and So 2001).

** *Cololejeunea koratensis* Tixier, Rev. Bryol. Lichénol. 36 (3/4): 585, 1969 [1970] (Tixier 1969).
* *Cololejeunea manlinensis* Tixier, Rev. Bryol. Lichénol. 36 (3/4): 563, 1969 [1970] (Tixier 1969).
** *Cololejeunea maquilingensis* Tixier, Rev. Bryol. Lichénol. 36 (3/4): 579, 1969 [1970] (Tixier 1969).
** *Cololejeunea mutabilis* Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 27, 1953 (Benedix 1953).
** *Cololejeunea nakajimae* S.Hatt., J. Hattori Bot. Lab. 10: 57, 1953 (Hattori and Kodama 1953).
*** *Cololejeunea ocellata* (Horik.) Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 38, 1953 (Benedix 1953). Bas.: *Leptocolea ocellata* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 86, 1932 (Horikawa 1932a).
*** *Cololejeunea ocelloides* (Horik.) Mizut., J. Hattori Bot. Lab. 24: 277, 1961 (Mizutani 1961). Bas.: *Leptocolea ocelloides* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 280, 1934 (Horikawa 1934).
*** *Cololejeunea peraffinis* (Schiffn.) Schiffn., Consp. Hepat. Arch. Ind.: 245, 1898 (Schiffner 1898b). Bas.: *Lejeunea peraffinis* Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 242, 1893 (Schiffner 1893a).
* *Cololejeunea peraffinis* var. *ciconiae* Tixier, Bull. Jard. Bot. Natl. Belg. 59 (3/4): 444, 1989 (Tixier 1989).
** *Cololejeunea peraffinis* var. *elegans* Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 35, 1953 (Benedix 1953).
** *Cololejeunea peraffinis* var. *serrulata* Schiffn. ex Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 35, 1953 (Benedix 1953).
* *Cololejeunea polisiana* Tixier, Rev. Bryol. Lichénol. 36 (3/4): 550, 1969 [1970] (Tixier 1969). [287]
*** *Cololejeunea pseudofloccosa* (Horik.) Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 36, 1953 (Benedix 1953). Bas.: *Leptocolea pseudofloccosa* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 87, 1932 (Horikawa 1932a).
*** *Cololejeunea pseudostephanii* Tixier, Rev. Bryol. Lichénol. 36 (3/4): 571, 1969 [1970] (Tixier 1969).
** *Cololejeunea setosa* Mizut., J. Hattori Bot. Lab. 29: 163, 1966 (Mizutani 1966).
*** *Cololejeunea sharpii* Mizut., J. Hattori Bot. Lab. 39: 258, 1975 (Mizutani 1975).
*** *Cololejeunea siamensis* Steph., Bot. Tidsskr. 24 (3): 279, 1902 (Stephani 1902b).
*** *Cololejeunea sphaerodonta* Mizut., J. Hattori Bot. Lab. 29: 165, 1966 (Mizutani 1966).
*** *Cololejeunea stephanii* Schiffn. ex Benedix, Feddes Repert. Spec. Nov. Regni Veg. Beih. 134: 40, 1953 (Benedix 1953).
** *Cololejeunea subfloccosa* Mizut., J. Hattori Bot. Lab. 57: 168, 1984 (Mizutani 1984b).
** *Cololejeunea subocelloides* Mizut., J. Hattori Bot. Lab. 57: 163, 1984 (Mizutani 1984b).

287 *Cololejeunea polisiana* may be conspecific with *Cololejeunea peraffinis*.

* *Cololejeunea tamdaoensis* Tixier, Rev. Bryol. Lichénol. 36 (3/4): 567, 1969 [1970] (Tixier 1969).

** *Cololejeunea verdoornii* (S.Hatt.) S.Hatt., J. Hattori Bot. Lab. 17: 75, 1956 [1957] (Hattori 1956b). Bas.: *Taeniolejeunea verdoornii* S.Hatt., J. Jap. Bot. 17: 459, 1941 (Hattori 1941).

** *Cololejeunea yipii* R.L.Zhu, Beih. Nova Hedwigia 121: 346, 2001 (Zhu and So 2001).

** *Cololejeunea zantenorum* Pócs, Acta Bryolichenol. Asiat. 4: 127, 2011 (Pócs and Piippo 2011).

Incertae sedis

** *Cololejeunea conchifolia* (Gottsche) Gradst., J. Hattori Bot. Lab. 45: 109, 1979 (Gradstein and Hekking 1979). Bas.: *Lejeunea conchifolia* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 163, 1864 (Gottsche 1864). [288]

** *Cololejeunea dankiaensis* Tixier, Phytotaxa 220 (2): 199, 2015 (Söderström et al. 2015d). Based on: *Cololejeunea dankiaensis* Tixier, Rev. Bryol. Lichénol. 36 (3/4): 581, 1969 [1970] (Tixier 1969), *nom. inval.*

** *Cololejeunea ensifera* Tixier, Phytotaxa 220 (2): 199, 2015 (Söderström et al. 2015d). Based on: *Cololejeunea ensifera* Tixier, Rev. Bryol. Lichénol. 36 (3/4): 562, 1969 [1970] (Tixier 1969), *nom. inval.*

** *Cololejeunea hamata* Steph., Hedwigia 34 (5): 248, 1895 (Stephani 1895b).

** *Cololejeunea herzogii* K.I.Goebel, Biblioth. Bot. 87 (2): 269, 1916 (Stephani 1916a).

** *Cololejeunea jamesii* (Austin) M.E.Reiner et Pócs, Phytotaxa 208 (1): 98, 2015 (Pócs et al. 2015a). Bas.: *Lejeunea jamesii* Austin, Bull. Torrey Bot. Club 6 (30): 158, 1877 (Austin 1877).

** *Cololejeunea sublatistyla* Jian Wang bis et R.L.Zhu, Phytotaxa 161 (2): 165, 2014 (Wang et al. 2014a).

** *Cololejeunea tixieri* Onr., Bull. Jard. Bot. Natl. Belg. 59 (3/4): 436, 1989 (Onraedt 1989).

* *Cololejeunea variifolia* (Mitt.) Steph., Bot. Jahrb. Syst. 23 (1/2, 3): 309, 1896 (Stephani 1896a). Bas.: *Lejeunea variifolia* Mitt., Fl. vit.: 415, 1871 [1873] (Mitten 1871).

*** ***Colura* (Dumort.) Dumort.**, Recueil Observ. Jungerm.: 12, 1835 (Dumortier 1835). Bas.: *Lejeunea* sect. *Colura* Dumort., Syll. Jungerm. Europ.: 32, 1831 (Dumortier 1831).

** **subg. *Colura***

** **sect. *Colura***

*** *Colura berghenii* Jovet-Ast, Rev. Bryol. Lichénol. 22 (2/3): 245, 1953 [1954] (Jovet-Ast 1953).

288 *Cololejeunea conchifolia* is probably a *Myriocoleopsis* species (Yu et al. 2014).

*** *Colura calyptrifolia* (Hook.) Dumort., Recueil Observ. Jungerm.: 12, 1835 (Dumortier 1835). Bas.: *Jungermannia calyptrifolia* Hook., Brit. Jungermann.: tab. 43, 1813 (Hooker 1813).
*** *Colura hedbergiana* Pócs, J. Bryol. 14 (3): 499, 1987 (Jones and Pócs 1987).
*** *Colura humbertii* Jovet-Ast, Rev. Bryol. Lichénol. 22 (2/3): 251, 1953 [1954] (Jovet-Ast 1953).
*** *Colura irrorata* (Spruce) Heinrichs, Y.Yu, Schäf.-Verw. et Pócs, Phytotaxa 66: 58, 2012 (Heinrichs et al. 2012c). Bas.: *Myriocolea irrorata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 305, 1884 (Spruce 1884).
** *Colura junghuhniana* (Prantl) Steph., Sp. Hepat. (Stephani) 5: 938, 1916 (Stephani 1916b). Bas.: *Lejeunea junghuhniana* Prantl, Hedwigia 29: xvi, 1890 (Prantl 1890).
** *Colura medusa* J.Eggers et Pócs, Chenia 11: 22, 2013 (Pócs 2013).
** *Colura mizutanii* Pócs, Chenia 11: 22, 2013 (Pócs 2013).
*** *Colura rhynchophora* Jovet-Ast, Rev. Bryol. Lichénol. 17 (1/4): 27, 1948 [1949] (Jovet-Ast 1948).
*** *Colura tenuicornis* (A.Evans) Steph., Sp. Hepat. (Stephani) 5: 942, 1916 (Stephani 1916b), *nom. conserv*. Bas.: *Colurolejeunea tenuicornis* A.Evans, Trans. Connecticut Acad. Arts 10 (8): 455, 1900 (Evans 1900a).

** **sect. *Gamolepis* Jovet-Ast**, Cryptog. Bryol. Lichénol. 4 (3): 207, 1983 (Jovet-Ast 1983).
*** *Colura cristata* Jovet-Ast, Rev. Bryol. Lichénol. 22 (2/3): 291, 1953 [1954] (Jovet-Ast 1953).
*** *Colura greig-smithii* Jovet-Ast, Rev. Bryol. Lichénol. 22 (2/3): 293, 1953 [1954] (Jovet-Ast 1953).
*** *Colura inflata* K.I.Goebel, Ann. Jard. Bot. Buitenzorg 39: 11, 1928 (Goebel 1928).
*** *Colura jovet-astiae* Grolle, J. Hattori Bot. Lab. 28: 44, 1965 (Grolle 1965b). *Nom. nov. pro Colura undulata* Jovet-Ast, Rev. Bryol. Lichénol. 30 (1/2): 7, 1961 (Jovet-Ast 1961), *nom. illeg*.
*** *Colura meijeri* Jovet-Ast, Rev. Bryol. Lichénol. 22 (2/3): 290, 1953 [1954] (Jovet-Ast 1953).
*** *Colura obvoluta* Jovet-Ast, Cryptog. Bryol. Lichénol. 4 (3): 207, 1983 (Jovet-Ast 1983).
*** *Colura ornata* K.I.Goebel, Ann. Jard. Bot. Buitenzorg 9 (1): 26, 1890 [1891] (Goebel 1890).
*** *Colura palawanensis* Jovet-Ast, Rev. Bryol. Lichénol. 22 (2/3): 305, 1953 [1954] (Jovet-Ast 1953).
*** *Colura valida* Jovet-Ast, Rev. Bryol. Lichénol. 30 (1/2): 6, 1961 (Jovet-Ast 1961).
*** *Colura verdoornii* Herzog et Jovet-Ast, Rev. Bryol. Lichénol. 22 (2/3): 288, 1953 [1954] (Jovet-Ast 1953).

** **sect. *Harmophyllum* Grolle**, J. Hattori Bot. Lab. 28: 44, 1965 (Grolle 1965b).
*** *Colura andoi* Gradst. et Jovet-Ast, Hikobia 9: 355, 1986 (Gradstein 1986).

*** *Colura ari* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 936, 1916 (Stephani 1916b). Bas.: *Colurolejeunea ari* Steph., Hedwigia 35 (3): 73, 1896 (Stephani 1896b).
*** *Colura australiensis* Jovet-Ast, Rev. Bryol. Lichénol. 22 (2/3): 260, 1953 [1954] (Jovet-Ast 1953).
*** *Colura brevistyla* Herzog, Beih. Bot. Centralbl. 38 (2): 331, 1921 (Herzog 1921).
*** *Colura calderae* Pócs, J. Bryol. 29 (2): 84, 2007 (Müller and Pócs 2007).
*** *Colura clementis* Grolle, J. Hattori Bot. Lab. 28: 45, 1965 (Grolle 1965b).
*** *Colura conica* (Sande Lac.) K.I.Goebel, Ann. Jard. Bot. Buitenzorg 39: 3, 1928 (Goebel 1928). Bas.: *Lejeunea conica* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 311, 1864 (Sande Lacoste 1864).
*** *Colura corynophora* (Nees, Lindenb. et Gottsche) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 402, 1877 (Trevisan 1877). Bas.: *Lejeunea corynophora* Nees, Lindenb. et Gottsche, Observ. bot.: 474, 1843 (Gottsche et al. 1843).
*** *Colura crenulata* Grolle, J. Hattori Bot. Lab. 28: 46, 1965 (Grolle 1965b).
*** *Colura crispiloba* Jovet-Ast, Cryptog. Bryol. Lichénol. 4 (3): 205, 1983 (Jovet-Ast 1983).
** *Colura cylindrica* Herzog, Svensk Bot. Tidskr. 46 (1): 106, 1952 (Herzog 1952e).
*** *Colura cymbalifera* Herzog et Jovet-Ast, Rev. Bryol. Lichénol. 22 (2/3): 268, 1953 [1954] (Jovet-Ast 1953).
*** *Colura digitalis* (Mitt.) Steph., Sp. Hepat. (Stephani) 5: 931, 1916 (Stephani 1916b). Bas.: *Lejeunea digitalis* Mitt., J. Linn. Soc., Bot. 22 (146): 325, 1886 (Mitten 1886b).
** *Colura digitalis* var. *mucronata* Pócs, Fragm. Florist. Geobot. 40 (1): 263, 1995 (Pócs 1995).
*** *Colura dusenii* Steph., Sp. Hepat. (Stephani) 5: 931, 1916 (Stephani 1916b). Based on: *Colurolejeunea dusenii* Steph., Hedwigia 31 (4): 168, 1892 (Stephani 1892g).
*** *Colura fastigiata* Jovet-Ast, Rev. Bryol. Lichénol. 27 (1/2): 28, 1958 (Jovet-Ast 1958).
*** *Colura fistulosa* Jovet-Ast, Cryptog. Bryol. Lichénol. 4 (3): 211, 1983 (Jovet-Ast 1983).
*** *Colura hattoriana* Pócs, J. Hattori Bot. Lab. 74: 47, 1993 (Pócs 1993).
*** *Colura heimii* Jovet-Ast, Rev. Bryol. Lichénol. 22 (2/3): 275, 1953 [1954] (Jovet-Ast 1953).
*** *Colura hemisphaerica* Jovet-Ast, Rev. Bryol. Lichénol. 22 (2/3): 267, 1953 [1954] (Jovet-Ast 1953).
*** *Colura herzogii* Jovet-Ast, Rev. Bryol. Lichénol. 22 (2/3): 261, 1953 [1954] (Jovet-Ast 1953).
*** *Colura inuii* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 68, 1931 (Horikawa 1931a).
** *Colura koponenii* Pócs, Chenia 11: 29, 2013 (Pócs 2013).
** *Colura mauritiana* Pócs, Cryptog. Bryol. Lichénol. 18 (3): 196, 1997 (Pócs 1997a).
*** *Colura maxima* Jovet-Ast, Rev. Bryol. Lichénol. 22 (2/3): 284, 1953 [1954] (Jovet-Ast 1953).
*** *Colura mosenii* Steph., Sp. Hepat. (Stephani) 5: 940, 1916 (Stephani 1916b).
** *Colura norrisii* Pócs, Chenia 11: 29, 2013 (Pócs 2013).

*** *Colura obesa* Jovet-Ast, Rev. Bryol. Lichénol. 22 (2/3): 273, 1953 [1954] (Jovet-Ast 1953).
*** *Colura pallida* Steph., Sp. Hepat. (Stephani) 5: 941, 1916 (Stephani 1916b).
*** *Colura pluridentata* Jovet-Ast, Rev. Bryol. Lichénol. 22 (2/3): 265, 1953 [1954] (Jovet-Ast 1953).
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*** *Colura tixieri* Jovet-Ast, Rev. Bryol. Lichénol. 30 (1/2): 9, 1961 (Jovet-Ast 1961).
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*** *Diplasiolejeunea erostrata* Schäf.-Verw., Cryptog. Bryol. 25 (1): 3, 2004 (Schäfer-Verwimp 2004).
* *Diplasiolejeunea guadalupensis* Steph., Sp. Hepat. (Stephani) 5: 924, 1916 (Stephani 1916b). [290]
* *Diplasiolejeunea heimii* Jovet-Ast, Rev. Bryol. Lichénol. 29 (1/2): 39, 1960 (Jovet-Ast 1960). [291]
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* *Diplasiolejeunea montecristensis* S.Winkl., Rev. Bryol. Lichénol. 35 (1/4): 321, 1967 [1968] (Winkler 1967). [292]
*** *Diplasiolejeunea papilionacea* R.M.Schust., Phytologia 39 (6): 431, 1978 (Schuster 1978b).
*** *Diplasiolejeunea pauckertii* (Nees) Steph., Sp. Hepat. (Stephani) 5: 924, 1916 (Stephani 1916b). Bas.: *Lejeunea pauckertii* Nees, Syn. Hepat. 3: 392, 1845 (Gottsche et al. 1845b).
*** *Diplasiolejeunea pluridentata* Schäf.-Verw., Haussknechtia 8: 71, 2001 (Schäfer-Verwimp 2001b).
*** *Diplasiolejeunea replicata* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 926, 1916 (Stephani 1916b). Bas.: *Lejeunea replicata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 302, 1884 (Spruce 1884).
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*** *Diplasiolejeunea runssorensis* Steph., Bot. Jahrb. Syst. 20 (3): 318, 1895 (Stephani 1895a).
*** *Diplasiolejeunea unidentata* (Lehm. et Lindenb.) Schiffn., Bot. Jahrb. Syst. 23 (5): 583, 1897 (Schiffner 1897). Bas.: *Jungermannia unidentata* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 48, 1834 (Lehmann 1834).

** **subg. *Diplasiolejeunea***
*** *Diplasiolejeunea armatiloba* Steph., Hedwigia 35 (3): 80, 1896 (Stephani 1896b).

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290 *Diplasiolejeunea guadalupensis* is a poorly known taxon with some similarities to the *Diplasiolejeunea replicata* species complex (Schäfer-Verwimp and Reiner-Drehwald 2009).

291 *Diplasiolejeunea heimii* is possibly conspecific with *Diplasiolejeunea replicata* (Schäfer-Verwimp and Pócs 2009).

292 *Diplasiolejeunea montecristensis* is possibly conspecific with *Diplasiolejeunea replicata*.

293 *Diplasiolejeunea rudolphiana* and *Diplasiolejeunea unidentata* are genetically very close and may be conspecific (Dong et al. 2012).

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* *Diplasiolejeunea glaziovii* Tixier, Bryophyt. Biblioth. 27: 397, 1985 (Tixier 1985a). [294]
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*** *Diplasiolejeunea pellucida* (C.F.W.Meissn. ex Spreng.) Schiffn., Hepat. (Engl.-Prantl): 121, 1893 (Schiffner 1893b). Bas.: *Jungermannia pellucida* C.F.W.Meissn. ex Spreng. Syst. Veg. (ed. 16) [Sprengel] 4 (2): 325, 1827 (Sprengel 1827b).
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*** *Diplasiolejeunea andringitrae* Schäf.-Verw., Cryptog. Bryol. 27 (4): 447, 2006 (Pócs and Schäfer-Verwimp 2006).
*** *Diplasiolejeunea cornuta* Steph., Sp. Hepat. (Stephani) 5: 918, 1916 (Stephani 1916b).
*** *Diplasiolejeunea jovet-astiae* Grolle, Feddes Repert. 73 (2): 84, 1966 (Grolle 1966b).
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*** *Diplasiolejeunea ornata* Pócs et Schäf.-Verw., Cryptog. Bryol. 27 (4): 440, 2006 (Pócs and Schäfer-Verwimp 2006).

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*** *Diplasiolejeunea pusilla* Grolle, Feddes Repert. 86 (1/2): 79, 1975 (Grolle 1975a).
*** *Diplasiolejeunea ranomafanae* Pócs, Cryptog. Bryol. 27 (4): 444, 2006 (Pócs and Schäfer-Verwimp 2006).
*** *Diplasiolejeunea villaumei* Steph., Sp. Hepat. (Stephani) 5: 921, 1916 (Stephani 1916b).
*** *Diplasiolejeunea zakiae* Tixier, Lindbergia 4 (1/2): 123, 1977 (Tixier 1977b).

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** *Diplasiolejeunea auriculata* Tixier, Rev. Bryol. Lichénol. 45 (2): 210, 1979 (Tixier 1979c).
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** *Diplasiolejeunea columbica* Tixier, Cryptog. Bryol. Lichénol. 4 (3): 233, 1983 (Tixier 1983a).
* *Diplasiolejeunea comorensis* Tixier, Rev. Bryol. Lichénol. 45 (2): 213, 1979 (Tixier 1979c).
** *Diplasiolejeunea cyanguguensis* Tixier, Trop. Bryol. 11: 67, 1995 (Tixier 1995b).
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** *Diplasiolejeunea ensifera* Tixier, Rev. Bryol. Lichénol. 45 (2): 215, 1979 (Tixier 1979c).
* *Diplasiolejeunea evansii* Tixier, Bryophyt. Biblioth. 27: 360, 1985 (Tixier 1985a). [295]
** *Diplasiolejeunea gradsteinii* Tixier, Trop. Bryol. 11: 67, 1995 (Tixier 1995b).
*** *Diplasiolejeunea grandirostrata* Schäf.-Verw., Cryptog. Bryol. 25 (1): 7, 2004 (Schäfer-Verwimp 2004).
*** *Diplasiolejeunea grolleana* Reyes Montoya, Acta Bot. Acad. Sci. Hung. 28 (1/2): 175, 1982 [1983] (Reyes 1982).
** *Diplasiolejeunea hamata* Tixier, Rev. Bryol. Lichénol. 45 (2): 217, 1979 (Tixier 1979c).
** *Diplasiolejeunea insignis* Tixier, Lindbergia 4 (1/2): 120, 1977 (Tixier 1977b).
* *Diplasiolejeunea integerrima* Tixier, Rev. Bryol. Lichénol. 45 (2): 219, 1979 (Tixier 1979c). [296]
*** *Diplasiolejeunea lanceolata* Grolle, Beitr. Phytotax. 15: 107, 1992 (Grolle 1992a).

295 *Diplasiolejeunea evansii* is a doubtful taxon and the type specimen could not be found in PC (Schäfer-Verwimp 2004).

296 *Diplasiolejeunea integerrima* is a juvenile *Acrolejeunea* species, but the type is too poor to allow identification (Grolle 1995).

*** *Diplasiolejeunea latipuensis* Tixier, Cryptog. Bryol. Lichénol. 16 (3): 230, 1995 (Tixier 1995a). Based on: *Diplasiolejeunea latipuensis* Tixier, Candollea 46 (2): 294, 1991 (Tixier 1991), *nom. inval.*
** *Diplasiolejeunea lemuriana* Tixier, Lindbergia 4 (1/2): 120, 1977 (Tixier 1977b).
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*** *Haplolejeunea cucullata* (Steph.) Grolle, J. Hattori Bot. Lab. 45: 176, 1979 (Grolle 1979c). Bas.: *Cheilolejeunea cucullata* Steph., Sp. Hepat. (Stephani) 5: 644, 1914 (Stephani 1914b).
** *Haplolejeunea sticta* Grolle, J. Hattori Bot. Lab. 39: 205, 1975 (Grolle 1975b).

** ***Macrocolura* R.M.Schust.**, J. Hattori Bot. Lab. 75: 233, 1994 (Schuster 1994).
*** *Macrocolura sagittistipula* (Spruce) R.M.Schust., J. Hattori Bot. Lab. 75: 233, 1994 (Schuster 1994). Bas.: *Lejeunea sagittistipula* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 304, 1884 (Spruce 1884).

*** ***Myriocoleopsis* Schiffn.**, Hedwigia 81 (5/6): 234, 1944 (Schiffner 1944).
*** *Myriocoleopsis fluviatilis* (Steph.) M.E.Reiner et Gradst., J. Bryol. 19 (3): 639, 1997 (Reiner-Drehwald and Gradstein 1997). Bas.: *Cololejeunea fluviatilis* Steph., Hedwigia 34 (5): 248, 1895 (Stephani 1895b).
*** *Myriocoleopsis gymnocolea* (Spruce) M.E.Reiner et Gradst., J. Bryol. 19 (3): 640, 1997 (Reiner-Drehwald and Gradstein 1997). Bas.: *Lejeunea gymnocolea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 296, 1884 (Spruce 1884).
*** *Myriocoleopsis minutissima* (Sm.) R.L.Zhu, Y.Yu et Pócs, Phytotaxa 183 (4): 293, 2014 (Yu et al. 2014). Bas.: *Jungermannia minutissima* Sm., Engl. Bot. 23: tab. 1633, 1806 (Smith and Sowerby 1806).
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** *Nephelolejeunea carcharias* M.A.M.Renner, Syst. Bot. 34 (4): 621, 2009 (Renner et al. 2009).
*** *Nephelolejeunea conchophylla* Grolle, J. Hattori Bot. Lab. 48: 164, 1980 (Grolle 1980a).
** *Nephelolejeunea fragilis* (R.M.Schust.) L.Söderstr. et A.Hagborg, Phytotaxa 202 (1): 65, 2015 (Pócs et al. 2015c). Bas.: *Cololejeunea fragilis* R.M.Schust., Phytologia 56 (7): 458, 1985 (Schuster 1985c).
*** *Nephelolejeunea hamata* Grolle, J. Hattori Bot. Lab. 48: 167, 1980 (Grolle 1980a).
*** *Nephelolejeunea hispida* R.M.Schust. ex L.Söderstr. et A.Hagborg, Phytotaxa 202 (1): 66, 2015 (Pócs et al. 2015c). Based on: *Austrolejeunea hispida* R.M.Schust., Phytologia 47 (4): 305, 1981 (Schuster 1981a), *nom. inval.*
*** *Nephelolejeunea jarmaniana* Grolle ex L.Söderstr. et A.Hagborg, Phytotaxa 202 (1): 66, 2015 (Pócs et al. 2015c). Based on: *Austrolejeunea jarmaniana* Grolle, Nova Hedwigia 55 (1/2): 112, 1992 (Grolle 1992b), *nom. inval.*
*** *Nephelolejeunea nudipes* (Hook.f. et Taylor) L.Söderstr. et A.Hagborg, Phytotaxa 202 (1): 66, 2015 (Pócs et al. 2015c). Bas.: *Jungermannia nudipes* Hook.f. et Taylor, London J. Bot. 3: 568, 1844 (Hooker and Taylor 1844d).
** *Nephelolejeunea occidentalis* Pócs ex L.Söderstr. et A.Hagborg, Phytotaxa 202 (1): 66, 2015 (Pócs et al. 2015c). Based on: *Austrolejeunea occidentalis* Pócs, J. Hattori Bot. Lab. 99: 187, 2006 (Pócs 2006d), *nom. inval.*
*** *Nephelolejeunea papillosa* Glenny, New Zealand J. Bot. 34 (2): 195, 1996 (Glenny 1996).
*** *Nephelolejeunea radulifolia* (C.Massal.) L.Söderstr. et A.Hagborg, Phytotaxa 202 (1): 66, 2015 (Pócs et al. 2015c). Bas.: *Lejeunea radulifolia* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 248, 1885 (Massalongo 1885).
** *Nephelolejeunea secunda* M.A.M.Renner ex L.Söderstr. et A.Hagborg, Phytotaxa 202 (1): 66, 2015 (Pócs et al. 2015c). Based on: *Austrolejeunea secunda* M.A.M.Renner, Bryologist 113 (4): 782, 2010 (Renner 2010), *nom. inval.*
*** *Nephelolejeunea talinayi* (S.W.Arnell) Grolle, J. Hattori Bot. Lab. 37: 253, 1973 (Grolle 1973b). Bas.: *Harpalejeunea talinayi* S.W.Arnell, Svensk Bot. Tidskr. 50 (2): 309, 1956 (Arnell 1956d).

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*** *Schusterolejeunea inundata* (Spruce) Grolle, J. Bryol. 11 (1): 105, 1980 (Grolle 1980b). Bas.: *Lejeunea inundata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 278, 1884 (Spruce 1884).

** ***Siphonolejeunea*** **Herzog**, Nat. Hist. Juan Fernandez (Botany) 2 (5): 744, 1942 (Herzog 1942a).
** *Siphonolejeunea elegantissima* (Steph.) Grolle, J. Hattori Bot. Lab. 41: 405, 1976 (Grolle 1976b). Bas.: *Trachylejeunea elegantissima* Steph., Hedwigia 28 (4): 262, 1889 (Stephani 1889c).
** *Siphonolejeunea neesii* (Mont.) Bischl., Nova Hedwigia 17: 338, 1969 (Bischler 1969). Bas.: *Lejeunea neesii* Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 62, 1836 (Nees and Montagne 1836).
*** *Siphonolejeunea schiffneri* (Schiffn.) Herzog, Svensk Bot. Tidskr. 42 (3): 230, 1948 (Herzog 1948). Bas.: *Pycnolejeunea schiffneri* Schiffn., Consp. Hepat. Arch. Ind.: 260, 1898 (Schiffner 1898b).

** ***Tuyamaella*** **S.Hatt.**, J. Hattori Bot. Lab. 5: 60, 1951 (Hattori 1951d).
** *Tuyamaella angulistipa* (Steph.) R.M.Schust. et Kachroo, J. Linn. Soc., Bot. 56 (368): 508, 1961 (Kachroo and Schuster 1961). Bas.: *Pycnolejeunea angulistipa* Steph., Hedwigia 35 (3): 123, 1896 (Stephani 1896b).
** *Tuyamaella borneensis* Tixier, Rev. Bryol. Lichénol. 39 (2): 241, 1973 (Tixier 1973a).
** *Tuyamaella hattorii* Tixier, Rev. Bryol. Lichénol. 31 (3/4): 188, 1962 [1963] (Tixier 1962).
** *Tuyamaella jackii* (Steph.) Tixier, Rev. Bryol. Lichénol. 39 (2): 235, 1973 (Tixier 1973a). Bas.: *Pycnolejeunea jackii* Steph., Sp. Hepat. (Stephani) 5: 611, 1914 (Stephani 1914b).
*** *Tuyamaella molischii* (Schiffn.) S.Hatt., J. Hattori Bot. Lab. 5: 62, 1951 (Hattori 1951d). Bas.: *Pycnolejeunea molischii* Schiffn., Ann. Bryol. 2: 97, 1929 (Schiffner 1929).
** *Tuyamaella molischii* var. *brevistipa* P.C.Wu et P.J.Lin, Acta Phytotax. Sin. 16 (2): 65, 1978 (Wu and Lin 1978).
** *Tuyamaella molischii* var. *taiwanensis* R.L.Zhu et M.L.So, Nova Hedwigia 70 (1/2): 190, 2000 (Zhu and So 2000).
** *Tuyamaella serratistipa* S.Hatt., Bot. Mag. (Tokyo) 64 (755/756): 118, 1951 (Hattori 1951c).

** subtrib. Cyclolejeuneinae Gradst.

*** ***Bromeliophila*** **R.M.Schust.**, J. Hattori Bot. Lab. 75: 226, 1994 (Schuster 1994).
*** *Bromeliophila helenae* Gradst., Cryptog. Bryol. Lichénol. 18 (3): 218, 1997 (Gradstein 1997).

*** *Bromeliophila natans* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 75: 226, 1994 (Schuster 1994). Bas.: *Peltolejeunea natans* Steph., Hedwigia 44 (4): 228, 1905 (Stephani 1905a).

*** ***Cyclolejeunea* A.Evans**, Bull. Torrey Bot. Club 31 (4): 193, 1904 (Evans 1904a).
*** *Cyclolejeunea accedens* (Gottsche) A.Evans, Bull. Torrey Bot. Club 31 (4): 201, 1904 (Evans 1904a). Bas.: *Lejeunea accedens* Gottsche, Syn. Hepat. 3: 339, 1845 (Gottsche et al. 1845b).
*** *Cyclolejeunea chitonia* (Taylor) A.Evans, Bull. Torrey Bot. Club 31 (4): 194, 1904 (Evans 1904a). Bas.: *Lejeunea chitonia* Taylor, Nov. Stirp. Pug. 8: 27, 1844 (Lehmann 1844).
*** *Cyclolejeunea convexistipa* (Lehm. et Lindenb.) A.Evans, Bull. Torrey Bot. Club 31 (4): 198, 1904 (Evans 1904a). Bas.: *Jungermannia convexistipa* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 43, 1834 (Lehmann 1834).
* *Cyclolejeunea ecuadorensis* Steph., Sp. Hepat. (Stephani) 5: 194, 1913 (Stephani 1913a).
*** *Cyclolejeunea foliorum* (Nees) Grolle, J. Hattori Bot. Lab. 65: 403, 1988 (Grolle 1988c). Bas.: *Lejeunea foliorum* Nees, Syn. Hepat. 3: 326, 1845 (Gottsche et al. 1845b).
* *Cyclolejeunea integerrima* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 195, 1913 (Stephani 1913a). Bas.: *Odontolejeunea integerrima* Steph., Hedwigia 44 (4): 227, 1905 (Stephani 1905a).
*** *Cyclolejeunea luteola* (Spruce) Grolle, Wiss. Z. Friedrich-Schiller-Univ. Jena, Math.-Naturwiss. Reihe 33: 761, 1984 (Grolle 1984b). Bas.: *Lejeunea luteola* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 205, 1884 (Spruce 1884).
*** *Cyclolejeunea peruviana* (Lehm. et Lindenb.) A.Evans, Bull. Torrey Bot. Club 31 (4): 196, 1904 (Evans 1904a). Bas.: *Jungermannia peruviana* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 18, 1833 (Lehmann 1833).
* *Cyclolejeunea spectabilis* Steph., Sp. Hepat. (Stephani) 5: 193, 1913 (Stephani 1913a).

*** ***Prionolejeunea* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 127, 1893 (Schiffner 1893b). Bas.: *Lejeunea* subg. *Prionolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 152, 1884 (Spruce 1884).
*** *Prionolejeunea aemula* (Gottsche) A.Evans, Bull. Torrey Bot. Club 31 (4): 219, 1904 (Evans 1904a). Bas.: *Lejeunea aemula* Gottsche, Syn. Hepat. 3: 338, 1845 (Gottsche et al. 1845b).
*** *Prionolejeunea ampliretis* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 178, 1955 (Herzog 1955).
*** *Prionolejeunea arguta* (Nees) Steph., Sp. Hepat. (Stephani) 5: 204, 1913 (Stephani 1913a). Bas.: *Lejeunea arguta* Nees, Syn. Hepat. 3: 338, 1845 (Gottsche et al. 1845b).
*** *Prionolejeunea decora* (Taylor) Steph., Sp. Hepat. (Stephani) 5: 207, 1913 (Stephani 1913a). Bas.: *Lejeunea decora* Taylor, London J. Bot. 5: 393, 1846 (Taylor 1846b).
*** *Prionolejeunea denticulata* (F.Weber) Schiffn., Hepat. (Engl.-Prantl): 127, 1893 (Schiffner 1893b). Bas.: *Jungermannia denticulata* F.Weber, Hist. Musc. Hepat. Prodr.: 30, 1815 (Weber 1815).

*** *Prionolejeunea diversitexta* (Hampe et Gottsche) Steph., Sp. Hepat. (Stephani) 5: 209, 1913 (Stephani 1913a). Bas.: *Lejeunea diversitexta* Hampe et Gottsche, Linnaea 25 (3): 357, 1852 [1853] (Hampe and Gottsche 1852).

*** *Prionolejeunea exauriculata* A.Evans, Bull. Torrey Bot. Club 31 (4): 223, 1904 (Evans 1904a).

*** *Prionolejeunea galliotii* Steph., Sp. Hepat. (Stephani) 6: 388, 1923 (Stephani 1923).

*** *Prionolejeunea grata* (Gottsche) Schiffn., Hepat. (Engl.-Prantl): 127, 1893 (Schiffner 1893b). Bas.: *Lejeunea grata* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 359, 1882 (Gottsche 1882).

*** *Prionolejeunea grollei* Ilk.-Borg. et Schäf.-Verw., Cryptog. Bryol. 26 (1): 29, 2005 (Ilkiu-Borges and Schäfer-Verwimp 2005).

*** *Prionolejeunea guadalupensis* (Lindenb.) Steph., Sp. Hepat. (Stephani) 5: 211, 1913 (Stephani 1913a). Bas.: *Lejeunea guadalupensis* Lindenb., Syn. Hepat. 3: 340, 1845 (Gottsche et al. 1845b).

*** *Prionolejeunea limpida* Herzog, Hedwigia 67 (6): 252, 1927 (Herzog 1927).

*** *Prionolejeunea magnistipula* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 176, 1955 (Herzog 1955).

*** *Prionolejeunea meissneri* (Gottsche) Steph., Sp. Hepat. (Stephani) 5: 212, 1913 (Stephani 1913a). Bas.: *Lejeunea meissneri* Gottsche, Syn. Hepat. 3: 340, 1845 (Gottsche et al. 1845b).

*** *Prionolejeunea mucronata* (Sande Lac.) Steph., Hedwigia 35 (3): 119, 1896 (Stephani 1896b). Bas.: *Lejeunea mucronata* Sande Lac., Syn. hepat. jav.: 106, 1856 [1857] (Sande Lacoste 1856b).

*** *Prionolejeunea muricatoserrulata* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 223, 1913 (Stephani 1913a). Bas.: *Lejeunea muricatoserrulata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 155, 1884 (Spruce 1884).

*** *Prionolejeunea principensis* Vanden Berghen, Rev. Bryol. Lichénol. 29 (1/2): 65, 1960 (Vanden Berghen 1960a).

*** *Prionolejeunea recurvula* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 224, 1913 (Stephani 1913a). Bas.: *Lejeunea recurvula* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 155, 1884 (Spruce 1884).

*** *Prionolejeunea scaberula* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 214, 1913 (Stephani 1913a). Bas.: *Lejeunea scaberula* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 159, 1884 (Spruce 1884).

*** *Prionolejeunea schlimiana* (Gottsche) Steph., Sp. Hepat. (Stephani) 5: 214, 1913 (Stephani 1913a). Bas.: *Lejeunea schlimiana* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 154, 1864 (Gottsche 1864).

*** *Prionolejeunea trachyodes* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 215, 1913 (Stephani 1913a). Bas.: *Lejeunea trachyodes* Spruce, J. Linn. Soc., Bot. 30 (210): 338, 1895 (Gepp 1895b).

Excluded from the genus

* *Prionolejeunea corbisieri* Pearson, Natuurw. Tijdschr. 4 (5/6): 128, 1922 (Pearson 1922a). [297]

* *Prionolejeunea maculata* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 180, 1955 (Herzog 1955). [298]

** subtrib. Drepanolejeuneinae Gradst.

** ***Capillolejeunea* S.W.Arnell**, Svensk Bot. Tidskr. 59 (1): 69, 1965 (Arnell 1965).

** *Capillolejeunea geisslerae* (Pócs) R.L.Zhu, Qiong He, Y.M.Wei et Pócs, Phytotaxa 175 (3): 167, 2014 (He et al. 2014a). Bas.: *Drepanolejeunea geisslerae* Pócs, Candollea 56 (1): 70, 2001 (Pócs 2001).

** *Capillolejeunea mascarena* S.W.Arnell, Svensk Bot. Tidskr. 59 (1): 69, 1965 (Arnell 1965).

*** ***Drepanolejeunea* (Spruce) Steph.**, Hedwigia 30 (5): 209, 1891 (Stephani 1891a). Bas.: *Lejeunea* subg. *Drepanolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 186, 1884 (Spruce 1884).

** **subg. *Acantholejeunea* R.M.Schust.**, Beih. Nova Hedwigia 9: 115, 1963 (Schuster 1963a).

** *Drepanolejeunea dentistipula* Steph., Sp. Hepat. (Stephani) 5: 343, 1913 (Stephani 1913a).

** *Drepanolejeunea spinistipula* Herzog, Svensk Bot. Tidskr. 42 (3): 238, 1948 (Herzog 1948).

*** **subg. *Drepanolejeunea***

*** *Drepanolejeunea aculeata* Bischl., Rev. Bryol. Lichénol. 33 (1/2): 68, 1964 (Bischler 1964).

** *Drepanolejeunea anderssonii* (Ångstr.) A.Evans, Trans. Connecticut Acad. Arts 10 (8): 429, 1900 (Evans 1900a). Bas.: *Lejeunea anderssonii* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 29 (4): 24, 1872 (Ångström 1872).

*** *Drepanolejeunea andina* Herzog, Svensk Bot. Tidskr. 51 (1): 196, 1957 (Herzog 1957a).

*** *Drepanolejeunea angustifolia* (Mitt.) Grolle, J. Jap. Bot. 40 (7): 206, 1965 (Grolle 1965d). Bas.: *Lejeunea angustifolia* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 116, 1860 [1861] (Mitten 1860c).

*** *Drepanolejeunea ankasica* E.W.Jones, Bull. Brit. Mus. (Nat. Hist.), Bot. 11 (3): 245, 1983 (Jones and Harrington 1983).

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297 *Prionolejeunea corbisieri* is a *Cheilolejeunea* species (Ilkiu-Borges 2006).

298 *Prionolejeunea maculata* is a *Cyclolejeunea* species (Ilkiu-Borges 2006).

*** *Drepanolejeunea anoplantha* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 325, 1913 (Stephani 1913a). Bas.: *Lejeunea anoplantha* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 189, 1884 (Spruce 1884).

*** *Drepanolejeunea appalachiana* R.M.Schust., J. Elisha Mitchell Sci. Soc. 83 (4): 219, 1967 (Schuster 1967a).

*** *Drepanolejeunea araucariae* Steph., Hedwigia 35 (3): 80, 1896 (Stephani 1896b).

** *Drepanolejeunea araucariae* var. *chilensis* Herzog, Acta Horti Gotob. 15: 161, 1943 (Herzog 1943a).

** *Drepanolejeunea aucklandica* Steph., Sp. Hepat. (Stephani) 5: 358, 1913 (Stephani 1913a).

*** *Drepanolejeunea aurita* Bischl., Rev. Bryol. Lichénol. 33 (1/2): 146, 1964 (Bischler 1964).

** *Drepanolejeunea bakeri* Herzog, Ann. Bryol. 3: 148, 1930 (Herzog 1930b).

*** *Drepanolejeunea bidens* (Prantl) A.Evans, Bull. Torrey Bot. Club 30 (1): 29, 1903 (Evans 1903b). Bas.: *Lejeunea bidens* Prantl, Hedwigia 29: xiv, 1890 (Prantl 1890).

*** *Drepanolejeunea biocellata* A.Evans, Bull. Torrey Bot. Club 30 (1): 22, 1903 (Evans 1903b).

** *Drepanolejeunea blumei* Steph., Hedwigia 35 (3): 81, 1896 (Stephani 1896b).

** *Drepanolejeunea brunnea* Mizut., J. Hattori Bot. Lab. 33: 231, 1970 (Mizutani 1970).

** *Drepanolejeunea caledonica* Steph., Sp. Hepat. (Stephani) 5: 342, 1913 (Stephani 1913a).

*** *Drepanolejeunea campanulata* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 328, 1913 (Stephani 1913a). Bas.: *Lejeunea campanulata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 192, 1884 (Spruce 1884).

** *Drepanolejeunea canceroides* H.A.Mill. et Bonner, Beih. Nova Hedwigia 11: 53, 1963 (Miller et al. 1963).

** *Drepanolejeunea capulata* (Taylor) J.B.Jack et Steph., Hedwigia 31 (1): 13, 1892 (Jack and Stephani 1892). Bas.: *Lejeunea capulata* Taylor, London J. Bot. 5: 394, 1846 (Taylor 1846b).

** *Drepanolejeunea capulata* var. *flagellifera* S.W.Arnell, Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 100, 1964 (Schiffner and Arnell 1964).

** *Drepanolejeunea ciliata* Mizut., J. Hattori Bot. Lab. 33: 232, 1970 (Mizutani 1970).

*** *Drepanolejeunea crassiretis* A.Evans, Bull. Torrey Bot. Club 30 (1): 25, 1903 (Evans 1903b).

*** *Drepanolejeunea crucianella* (Taylor) A.Evans, Bull. Torrey Bot. Club 30 (1): 33, 1903 (Evans 1903b). Bas.: *Lejeunea crucianella* Taylor, London J. Bot. 5: 393, 1846 (Taylor 1846b).

*** *Drepanolejeunea cultrella* (Mitt.) Steph., Sp. Hepat. (Stephani) 5: 324, 1913 (Stephani 1913a). Bas.: *Lejeunea cultrella* Mitt., J. Proc. Linn. Soc., Bot. 7 (27): 168, 1863 (Mitten 1863).

** *Drepanolejeunea cutervoensis* (Loitl.) Grolle, J. Hattori Bot. Lab. 69: 186, 1991 (Grolle 1991). Bas.: *Lejeunea cutervoensis* Loitl., Diagn. pl. nov.: 21, 1894 (Loitlesberger 1894).

** *Drepanolejeunea decurviloba* Steph., Sp. Hepat. (Stephani) 6: 397, 1923 (Stephani 1923).

* *Drepanolejeunea deslooveri* Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 47 (1/2): 210, 1977 (Vanden Berghen 1977). [299]

* *Drepanolejeunea dissitifolia* A.Evans, Bull. Torrey Bot. Club 30 (1): 28, 1903 (Evans 1903b).

** *Drepanolejeunea elegans* Herzog, Ann. Bryol. 9: 128, 1936 [1937] (Herzog 1936a).

** *Drepanolejeunea erecta* (Steph.) Mizut., J. Hattori Bot. Lab. 40: 442, 1976 (Mizutani 1976b). Bas.: *Leptolejeunea erecta* Steph., Bull. Soc. Roy. Bot. Belgique 38 (1): 44, 1899 (Stephani 1899h).

** *Drepanolejeunea evansii* Bischl. ex L.Söderstr., A.Hagborg et von Konrat, Phytotaxa 65: 47, 2012 (Söderström et al. 2012c). Based on: *Drepanolejeunea evansii* Bischl., Rev. Bryol. Lichénol. 33 (1/2): 75, 1964 (Bischler 1964), *nom. inval.*

*** *Drepanolejeunea fragilis* Bischl. ex L.Söderstr., A.Hagborg et von Konrat, Phytotaxa 65: 47, 2012 (Söderström et al. 2012c). Based on: *Drepanolejeunea fragilis* Bischl., Rev. Bryol. Lichénol. 33 (1/2): 123, 1964 (Bischler 1964), *nom. inval.*

** *Drepanolejeunea fulfordiae* L.Söderstr., Phytotaxa 208 (1): 98, 2015 (Pócs et al. 2015a). *Nom. nov. pro Drepanolejeunea papillosa* Fulford, Mem. New York Bot. Gard. 23: 843, 1972 (Fulford 1972), *nom. illeg.*

*** *Drepanolejeunea granatensis* (Prantl) Bischl., Rev. Bryol. Lichénol. 33 (1/2): 150, 1964 (Bischler 1964). Bas.: *Lejeunea granatensis* Prantl, Hedwigia 31: xvi, 1892 (Prantl 1892).

** *Drepanolejeunea grandis* Herzog, Ann. Bryol. 12: 113, 1939 (Herzog 1939a).

*** *Drepanolejeunea grollei* M.E.Reiner et Schäf.-Verw., Candollea 51 (2): 475, 1996 (Reiner-Drehwald and Schäfer-Verwimp 1996).

** *Drepanolejeunea grossidens* Steph., Sp. Hepat. (Stephani) 5: 358, 1913 (Stephani 1913a). Based on: *Drepanolejeunea grossidens* Steph., Hedwigia 28 (3): 168, 1889 (Stephani 1889d), *nom. inval.*

*** *Drepanolejeunea hamatifolia* (Hook.) Schiffn., Hepat. (Engl.-Prantl): 126, 1893 (Schiffner 1893b). Bas.: *Jungermannia hamatifolia* Hook., Brit. Jungermann.: tab. 51, 1813 (Hooker 1813).

** *Drepanolejeunea hamulata* Steph., Sp. Hepat. (Stephani) 5: 331, 1913 (Stephani 1913a).

*** *Drepanolejeunea helenae* Pócs, Cryptog. Bryol. Lichénol. 18 (3): 198, 1997 (Pócs 1997a).

** *Drepanolejeunea herzogii* R.L.Zhu et M.L.So, Beih. Nova Hedwigia 121: 181, 2001 (Zhu and So 2001). *Nom. nov. pro Strepsilejeunea ocellata* Herzog, Memoranda Soc. Fauna Fl. Fennica 26: 57, 1950 [1951] (Herzog 1950b).

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299 *Drepanolejeunea deslooveri* was treated as conspecific with *Drepanolejeunea hamatifolia* by Tixier (1995b) and accepted uncritically as such by Wigginton and Grolle (1996) and Wigginton (2002). However, no published supporting evidence for the synonymy has been found, and it was therefore reinstated pending further studies (Wigginton 2009).

*** *Drepanolejeunea inchoata* (C.F.W.Meissn.) Steph., Primit. fl. costar.: 115, 1892 [1893] (Stephani 1892e). Bas.: *Jungermannia inchoata* C.F.W.Meissn., Nov. Stirp. Pug. 5: 19, 1833 (Lehmann 1833).

** *Drepanolejeunea inchoata* var. *palmicola* Pócs, Acta Bot. Hung. 51 (3/4): 381, 2009 (Schäfer-Verwimp and Pócs 2009).

** *Drepanolejeunea inchoata* var. *roraimae* (Steph. ex Zwickel) Bischl., Rev. Bryol. Lichénol. 33 (1/2): 48, 1964 (Bischler 1964). Bas.: *Drepanolejeunea roraimae* Steph. ex Zwickel, Ann. Bryol. 6: 121, 1933 (Zwickel 1933).

*** *Drepanolejeunea infundibulata* (Spruce) A.Evans, Bull. Torrey Bot. Club 30 (1): 35, 1903 (Evans 1903b). Bas.: *Lejeunea infundibulata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 191, 1884 (Spruce 1884).

*** *Drepanolejeunea integribracteata* Bischl., Rev. Bryol. Lichénol. 33 (1/2): 142, 1964 (Bischler 1964).

** *Drepanolejeunea laevis* (Mitt.) Steph., Sp. Hepat. (Stephani) 5: 357, 1913 (Stephani 1913a). Bas.: *Lejeunea laevis* Mitt., Fl. vit.: 416, 1871 [1873] (Mitten 1871).

* *Drepanolejeunea lancifolia* (Gottsche) J.B.Jack et Steph., Hedwigia 31 (1): 13, 1892 (Jack and Stephani 1892). Bas.: *Lejeunea lancifolia* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 155, 1864 (Gottsche 1864). [300]

*** *Drepanolejeunea lichenicola* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 335, 1913 (Stephani 1913a). Bas.: *Lejeunea lichenicola* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 191, 1884 (Spruce 1884).

** *Drepanolejeunea longii* Grolle et R.L.Zhu, Ann. Bot. Fenn. 36 (2): 115, 1999 (Grolle and Zhu 1999).

** *Drepanolejeunea macrodonta* (Mitt.) Steph., Sp. Hepat. (Stephani) 5: 357, 1913 (Stephani 1913a). Bas.: *Lejeunea macrodonta* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 116, 1860 [1861] (Mitten 1860c).

** *Drepanolejeunea mawtmiana* Ajit P.Singh et V.Nath, Hepat. Khasi Jaintia Hills: E. Himal.: 251, 2007 (Singh and Nath 2007b).

** *Drepanolejeunea microcarpa* Pearson, J. Linn. Soc., Bot. 46 (305): 36, 1922 (Pearson 1922b).

** *Drepanolejeunea moluccensis* Herzog, Ann. Bryol. 7: 88, 1934 (Herzog 1934b).

*** *Drepanolejeunea mosenii* (Steph.) Bischl., Rev. Bryol. Lichénol. 35 (1/4): 118, 1967 [1968] (Bischler 1967). Bas.: *Leptolejeunea mosenii* Steph., Sp. Hepat. (Stephani) 5: 372, 1913 (Stephani 1913a).

* *Drepanolejeunea obliqua* Steph., Hedwigia 35 (3): 82, 1896 (Stephani 1896b). [301]

** *Drepanolejeunea obtriangulata* T.Kodama, J. Hattori Bot. Lab. 41: 381, 1976 (Kodama 1976).

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300 *Drepanolejeunea lancifolia* resembles *Drepanolejeunea bidens* and *Drepanolejeunea araucariae*, but the type material has not been found (Bischler 1964).

301 *Drepanolejeunea obliqua* is possibly conspecific with *Drepanolejeunea ternatensis* (Söderström et al. 2010a).

** *Drepanolejeunea obtusifolia* T.Yamag., J. Jap. Bot. 59 (11): 332, 1984 (Yamaguchi 1984).

*** *Drepanolejeunea orthophylla* (Nees et Mont.) Bischl., Rev. Bryol. Lichénol. 35 (1/4): 102, 1967 [1968] (Bischler 1967). Bas.: *Lejeunea orthophylla* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 265, 1843 (Montagne 1843).

*** *Drepanolejeunea palmifolia* (Nees) Schiffn., Hepat. (Engl.-Prantl): 126, 1893 (Schiffner 1893b). Bas.: *Jungermannia palmifolia* Nees, Fl. Bras. (Martius) 1 (1): 366, 1833 (Nees 1833a).

*** *Drepanolejeunea pentadactyla* (Mont.) Steph., Sp. Hepat. (Stephani) 5: 357, 1913 (Stephani 1913a). Bas.: *Lejeunea pentadactyla* Mont., Ann. Sci. Nat. Bot. (sér. 3) 10: 113, 1848 (Montagne 1848).

** *Drepanolejeunea perissodonta* (Spruce) Bischl., Rev. Bryol. Lichénol. 33 (1/2): 73, 1964 (Bischler 1964). Bas.: *Lejeunea inchoata* var. *perissodonta* Spruce, J. Linn. Soc., Bot. 30 (210): 340, 1895 (Gepp 1895b).

*** *Drepanolejeunea physifolia* (Gottsche) Pearson, Forh. Vidensk.-Selsk. Kristiania 1892 (8): 8, 1892 (Pearson 1892). Bas.: *Lejeunea physifolia* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 357, 1882 (Gottsche 1882).

** *Drepanolejeunea pinnatiloba* Schiffn., Bot. Jahrb. Syst. 23 (5): 591, 1897 (Schiffner 1897).

** *Drepanolejeunea pleiodictya* Herzog, Ann. Bryol. 7: 89, 1934 (Herzog 1934b).

** *Drepanolejeunea propagulifera* Herzog, Mitt. Inst. Allg. Bot. Hamburg 7 (3): 204, 1931 (Herzog 1931a).

** *Drepanolejeunea pseudoneura* (A.Evans) Grolle, J. Hattori Bot. Lab. 65: 405, 1988 (Grolle 1988c). Bas.: *Harpalejeunea pseudoneura* A.Evans, Trans. Connecticut Acad. Arts 10 (8): 427, 1900 (Evans 1900a).

** *Drepanolejeunea pterocalyx* (Herzog) Bischl., Rev. Bryol. Lichénol. 35 (1/4): 114, 1967 [1968] (Bischler 1967). Bas.: *Leptolejeunea pterocalyx* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 187, 1955 (Herzog 1955).

** *Drepanolejeunea pungens* Bischl., Rev. Bryol. Lichénol. 33 (1/2): 104, 1964 (Bischler 1964).

** *Drepanolejeunea ramentiflora* Steph., Sp. Hepat. (Stephani) 5: 338, 1913 (Stephani 1913a).

* *Drepanolejeunea ruandensis* Vanden Berghen, Bull. Soc. Roy. Bot. Belgique 93: 63, 1961 (Vanden Berghen 1961). [302]

*** *Drepanolejeunea senticosa* Bischl., Rev. Bryol. Lichénol. 33 (1/2): 96, 1964 (Bischler 1964).

** *Drepanolejeunea sikkimensis* (Udar et U.S.Awasthi) Grolle, J. Hattori Bot. Lab. 55: 503, 1984 (Grolle 1984a). Bas.: *Leptolejeunea sikkimensis* Udar et U.S.Awasthi, Misc. Bryol. Lichenol. 8 (6): 115, 1979 (Udar and Awasthi 1979).

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302 *Drepanolejeunea ruandensis* is conspecific with *Drepanolejeunea cultrella* in Vanden Berghen (1972a), but it was accepted by Tixier (1995b) and Wigginton and Grolle (1996).

** *Drepanolejeunea spinosa* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 185, 1955 (Herzog 1955).
** *Drepanolejeunea spinosocornuta* Steph., Sp. Hepat. (Stephani) 5: 351, 1913 (Stephani 1913a).
* *Drepanolejeunea subdissitifolia* Herzog, Memoranda Soc. Fauna Fl. Fennica 25: 65, 1950 (Herzog 1950c).
** *Drepanolejeunea submuricata* R.M.Schust., Phytotaxa 208 (1): 98, 2015 (Pócs et al. 2015a). Based on: *Drepanolejeunea submuricata* R.M.Schust., Nova Hedwigia 62 (1/2): 34, 1996 (Schuster 1996c), *nom. inval.*
** *Drepanolejeunea subquadrata* (Mitt.) Steph., Bot. Jahrb. Syst. 23 (1/2, 3): 311, 1896 (Stephani 1896a). Bas.: *Lejeunea subquadrata* Mitt., Fl. vit.: 416, 1871 [1873] (Mitten 1871).
** *Drepanolejeunea subvittata* (Herzog) Grolle, J. Hattori Bot. Lab. 69: 186, 1991 (Grolle 1991). Bas.: *Harpalejeunea subvittata* Herzog, Svensk Bot. Tidskr. 51 (1): 195, 1957 (Herzog 1957a).
* *Drepanolejeunea tenax* K.I.Goebel, Ann. Jard. Bot. Buitenzorg 39: 15, 1928 (Goebel 1928).
** *Drepanolejeunea tenera* K.I.Goebel, Ann. Jard. Bot. Buitenzorg 39: 20, 1928 (Goebel 1928). [303]
* *Drepanolejeunea tenera* var. *litoceras* Herzog, Ann. Bryol. 7: 85, 1934 (Herzog 1934b).
*** *Drepanolejeunea ternatensis* (Gottsche) Schiffn., Hepat. (Engl.-Prantl): 126, 1893 (Schiffner 1893b). Bas.: *Lejeunea ternatensis* Gottsche, Syn. Hepat. 3: 346, 1845 (Gottsche et al. 1845b).
** *Drepanolejeunea teysmannii* (Gottsche) Steph., Hedwigia 35 (3): 84, 1896 (Stephani 1896b). Bas.: *Lejeunea teysmannii* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 360, 1882 (Gottsche 1882).
** *Drepanolejeunea tridactyla* (Gottsche) Steph., Sp. Hepat. (Stephani) 5: 354, 1913 (Stephani 1913a). Bas.: *Lejeunea tridactyla* Gottsche, Syn. Hepat. 3: 347, 1845 (Gottsche et al. 1845b).
*** *Drepanolejeunea trigonophylla* Steph., Hedwigia 35 (3): 85, 1896 (Stephani 1896b).
** *Drepanolejeunea tristaniana* S.W.Arnell, Results Norweg. Sci. Exped. Tristan da Cunha 42: 7, 1958 (Arnell 1958b).
** *Drepanolejeunea tuyamae* S.Hatt., Bot. Mag. (Tokyo) 64 (755/756): 116, 1951 (Hattori 1951c).
** *Drepanolejeunea ualanensis* Inoue et H.A.Mill., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 8 (2): 148, 1965 (Inoue and Miller 1965).
** *Drepanolejeunea ungulata* (Steph.) Grolle, J. Hattori Bot. Lab. 69: 187, 1991 (Grolle 1991). Bas.: *Harpalejeunea ungulata* Steph., Sp. Hepat. (Stephani) 5: 264, 1913 (Stephani 1913a).

303 *Drepanolejeunea tenera* is possibly conspecific with *Drepanolejeunea pentadactyla* (Söderström et al. 2010a).

** *Drepanolejeunea urceolata* R.M.Schust., Phytologia 39 (6): 427, 1978 (Schuster 1978b).
** *Drepanolejeunea valiae* Jovet-Ast, Rev. Bryol. Lichénol. 18 (1/2): 38, 1949 (Jovet-Ast 1949a).
** *Drepanolejeunea vandenberghenii* Buchb. et Eb.Fisch., J. Bryol. 26 (4): 273, 2004 (Buchbender and Fischer 2004).
*** *Drepanolejeunea vesiculosa* (Mitt.) Steph., Sp. Hepat. (Stephani) 5: 356, 1913 (Stephani 1913a). Bas.: *Lejeunea vesiculosa* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 116, 1860 [1861] (Mitten 1860c).
** *Drepanolejeunea yulensis* Steph., Sp. Hepat. (Stephani) 5: 356, 1913 (Stephani 1913a).

*** **subg. *Kolpolejeunea* Grolle**, J. Hattori Bot. Lab. 40: 193, 1976 (Grolle 1976c).
*** *Drepanolejeunea intermedia* Zwickel, Ann. Bryol. 6: 119, 1933 (Zwickel 1933).
*** *Drepanolejeunea lyrata* Grolle, J. Hattori Bot. Lab. 40: 199, 1976 (Grolle 1976c).
*** *Drepanolejeunea madagascariensis* (Steph.) Grolle, Lindbergia 2 (3/4): 232, 1974 (Grolle and Onraedt 1974). Bas.: *Leptolejeunea madagascariensis* Steph., Sp. Hepat. (Stephani) 5: 363, 1913 (Stephani 1913a).
*** *Drepanolejeunea pocsii* Grolle, J. Hattori Bot. Lab. 40: 209, 1976 (Grolle 1976c).
** *Drepanolejeunea symoensii* Vanden Berghen et Grolle, J. Hattori Bot. Lab. 49: 86, 1981 (Grolle 1981). Based on: *Leptolejeunea symoensii* Vanden Berghen, Bull. Soc. Roy. Bot. Belgique 93: 58, 1961 (Vanden Berghen 1961), *nom. inval.*
** *Drepanolejeunea symoensii* var. *minor* Tixier, Trop. Bryol. 11: 25, 1995 (Tixier 1995b).
*** *Drepanolejeunea trematodes* (Nees) Bischl., Rev. Bryol. Lichénol. 35 (1/4): 125, 1967 [1968] (Bischler 1967). Bas.: *Lejeunea trematodes* Nees, Ann. Sci. Nat. Bot. (sér. 2) 5: 63, 1836 (Nees and Montagne 1836).

** **subg. *Pristolejeunea* Grolle**, J. Hattori Bot. Lab. 40: 193, 1976 (Grolle 1976c).
** *Drepanolejeunea actinogyna* Inuthai, R.L.Zhu et Chantanaorr., Bryologist 117 (2): 165, 2014 (Inuthai et al. 2014).
*** *Drepanolejeunea fissicornua* Steph., Sp. Hepat. (Stephani) 5: 344, 1913 (Stephani 1913a).
* *Drepanolejeunea hampeana* Steph., Sp. Hepat. (Stephani) 5: 345, 1913 (Stephani 1913a). *Nom. nov. pro Drepanolejeunea hampeana* Steph., Hedwigia 29 (2): 70, 1890 (Stephani 1890b), *nom. inval.*
** *Drepanolejeunea laciniata* Qiong He et R.L.Zhu, Cryptog. Bryol. 33 (3): 292, 2012 (He et al. 2012a).
*** *Drepanolejeunea levicornua* Steph., Sp. Hepat. (Stephani) 5: 347, 1913 (Stephani 1913a).
* *Drepanolejeunea longicornua* (Herzog) Mizut., J. Hattori Bot. Lab. 68: 368, 1990 (Mizutani 1990). Bas.: *Drepanolejeunea levicornua* var. *longicornua* Herzog, Ann. Bryol. 3: 142, 1930 (Herzog 1930b).
* *Drepanolejeunea nymanii* Steph., Sp. Hepat. (Stephani) 5: 348, 1913 (Stephani 1913a).

** *Drepanolejeunea pulla* (Mitt.) Grolle, J. Hattori Bot. Lab. 46: 349, 1979 (Grolle 1979d). Bas.: *Lejeunea pulla* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 116, 1860 [1861] (Mitten 1860c).

* *Drepanolejeunea serricalyx* Herzog, Ann. Bryol. 9: 126, 1936 [1937] (Herzog 1936a).

*** *Drepanolejeunea thwaitesiana* (Mitt.) Steph., Sp. Hepat. (Stephani) 5: 350, 1913 (Stephani 1913a). Bas.: *Lejeunea thwaitesiana* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 117, 1860 [1861] (Mitten 1860c). [304]

** *Drepanolejeunea thwaitesiana* var. *zhengii* R.L.Zhu, Beih. Nova Hedwigia 121: 197, 2001 (Zhu and So 2001).

*** *Drepanolejeunea tricornua* Herzog, Ann. Bryol. 9: 124, 1936 [1937] (Herzog 1936a).

*** **subg. *Rhaphidolejeunea* (Herzog) Grolle et R.L.Zhu**, Nova Hedwigia 70 (3/4): 376, 2000 (Grolle and Zhu 2000). Bas.: *Rhaphidolejeunea* Herzog, Mitth. Thüring. Bot. Vereins 50: 104, 1943 (Herzog 1943c).

** *Drepanolejeunea bidoupensis* Pócs, Cryptog. Bryol. 34 (3): 293, 2013 (Pócs et al. 2013).

*** *Drepanolejeunea bischlerae* (Grolle) Grolle et R.L.Zhu, Nova Hedwigia 70 (3/4): 391, 2000 (Grolle and Zhu 2000). Bas.: *Rhaphidolejeunea bischlerae* Grolle, J. Hattori Bot. Lab. 38: 653, 1974 (Grolle 1974b).

*** *Drepanolejeunea commutata* Grolle et R.L.Zhu, Nova Hedwigia 70 (3/4): 377, 2000 (Grolle and Zhu 2000).

*** *Drepanolejeunea cyclops* (Sande Lac.) Grolle et R.L.Zhu, Nova Hedwigia 70 (3/4): 391, 2000 (Grolle and Zhu 2000). Bas.: *Lejeunea cyclops* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 310, 1864 (Sande Lacoste 1864).

*** *Drepanolejeunea fleischeri* (Steph.) Grolle et R.L.Zhu, Nova Hedwigia 70 (3/4): 379, 2000 (Grolle and Zhu 2000). Bas.: *Leptolejeunea fleischeri* Steph., Sp. Hepat. (Stephani) 5: 382, 1913 (Stephani 1913a).

** *Drepanolejeunea foliicola* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 85, 1932 (Horikawa 1932a).

** *Drepanolejeunea longicruris* (Steph.) Grolle et R.L.Zhu, Nova Hedwigia 70 (3/4): 392, 2000 (Grolle and Zhu 2000). Bas.: *Leptolejeunea longicruris* Steph., Hedwigia 35 (3): 106, 1896 (Stephani 1896b).

*** *Drepanolejeunea polyrhiza* (Nees) Grolle et R.L.Zhu, Nova Hedwigia 70 (3/4): 392, 2000 (Grolle and Zhu 2000). Bas.: *Lejeunea polyrhiza* Nees, Syn. Hepat. 3: 403, 1845 (Gottsche et al. 1845b).

*** *Drepanolejeunea siamensis* (Bischl.) Grolle et R.L.Zhu, Nova Hedwigia 70 (3/4): 393, 2000 (Grolle and Zhu 2000). Bas.: *Rhaphidolejeunea siamensis* Bischl., Rev. Bryol. Lichénol. 36 (1/2): 86, 1968 [1969] (Bischler 1968).

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304 *Drepanolejeunea thwaitesiana* is a species complex also including *Drepanolejeunea hampeana*, *Drepanolejeunea longicornua*, *Drepanolejeunea nymannii* and *Drepanolejeunea serricalyx*.

*** *Drepanolejeunea spicata* (Steph.) Grolle et R.L.Zhu, Nova Hedwigia 70 (3/4): 384, 2000 (Grolle and Zhu 2000). Bas.: *Leptolejeunea spicata* Steph., Hedwigia 35 (3): 108, 1896 (Stephani 1896b).

*** *Drepanolejeunea tibetana* (P.C.Wu et J.S.Lou) Grolle et R.L.Zhu, Nova Hedwigia 70 (3/4): 386, 2000 (Grolle and Zhu 2000). Bas.: *Rhaphidolejeunea tibetana* P.C.Wu et J.S.Lou, Acta Phytotax. Sin. 16 (4): 102, 1978 (Wu and Lou 1978).

*** *Drepanolejeunea yunnanensis* (P.C.Chen) Grolle et R.L.Zhu, Nova Hedwigia 70 (3/4): 388, 2000 (Grolle and Zhu 2000). Bas.: *Rhaphidolejeunea yunnanensis* P.C.Chen, Feddes Repert. Spec. Nov. Regni Veg. 58: 44, 1955 (Chen 1955).

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*** *Drepanolejeunea dactylophora* (Nees, Lindenb. et Gottsche) J.B.Jack et Steph., Hedwigia 31 (1): 12, 1892 (Jack and Stephani 1892). Bas.: *Lejeunea dactylophora* Nees, Lindenb. et Gottsche, Observ. bot.: 473, 1843 (Gottsche et al. 1843).

*** *Drepanolejeunea dactylophora* var. *submuricata* Herzog, Ann. Bryol. 4: 92, 1931 (Herzog 1931b).

* *Drepanolejeunea devendrae* Sushil K.Singh et M.Dey, Nelumbo 54: 20, 2012 (Singh and Dey 2012).

* *Drepanolejeunea integerrima* Herzog, Rev. Bryol. Lichénol. 20 (1/2): 146, 1951 [1952] (Herzog 1951a). [305]

** ***Vitalianthus* R.M.Schust. et Giancotti**, Nova Hedwigia 57 (3/4): 447, 1993 (Schuster and Giancotti 1993).

*** *Vitalianthus bischlerianus* (K.C.Pôrto et Grolle) R.M.Schust. et Giancotti, Nova Hedwigia 57 (3/4): 448, 1993 (Schuster and Giancotti 1993). Bas.: *Drepanolejeunea bischleriana* K.C.Pôrto et Grolle, Cryptog. Bryol. Lichénol. 8 (4): 301, 1987 (Pôrto and Grolle 1987).

** *Vitalianthus guangxianus* R.L.Zhu, Qiong He et Y.M.Wei, J. Bryol. 34 (1): 32, 2012 (He et al. 2012b).

** subtrib. Echinolejeuneinae Gradst.

*** ***Anoplolejeunea* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 131, 1893 (Schiffner 1893b). Bas.: *Lejeunea* subg. *Anoplolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 129, 1884 (Spruce 1884).

*** *Anoplolejeunea conferta* (C.F.W.Meissn. ex Spreng.) A.Evans, Bull. Torrey Bot. Club 35 (4): 175, 1908 (Evans 1908a). Bas.: *Jungermannia conferta* C.F.W.Meissn. ex Spreng. Syst. Veg. (ed. 16) [Sprengel] 4 (2): 325, 1827 (Sprengel 1827b).

305 *Drepanolejeunea integerrima* is a *Leptolejeunea* species (Bischler 1964), but it is probably a synonym since she did not transfer it.

*** ***Echinolejeunea* R.M.Schust.**, Beih. Nova Hedwigia 9: 187, 1963 (Schuster 1963a).
*** *Echinolejeunea papillata* (Mitt.) R.M.Schust. ex Hamlin, Rec. Domin. Mus. 7: 260, 1972 (Hamlin 1972). Bas.: *Lejeunea papillata* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 158, 1854 (Mitten 1854).

** ***Kymatolejeunea* Grolle**, Wiss. Z. Friedrich-Schiller-Univ. Jena, Math.-Naturwiss. Reihe 32 (6): 1005, 1984 (Grolle 1984c).
*** *Kymatolejeunea bartlettii* Grolle, Wiss. Z. Friedrich-Schiller-Univ. Jena, Math.-Naturwiss. Reihe 32 (6): 1005, 1984 (Grolle 1984c).

** subtrib. Leiolejeuneinae Schäf.-Verw. et Heinrichs

** ***Leiolejeunea* A.Evans**, Bull. Torrey Bot. Club 35 (8): 377, 1908 (Evans 1908b).
*** *Leiolejeunea grandiflora* A.Evans, Bull. Torrey Bot. Club 35 (8): 378, 1908 (Evans 1908b).

*** subtrib. Lejeuneinae Gradst.

*** ***Harpalejeunea* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 126, 1893 (Schiffner 1893b). Bas.: *Lejeunea* subg. *Harpalejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 164, 1884 (Spruce 1884).

** **subg. *Cleefiolejeunea* Grolle et M.E.Reiner**, J. Bryol. 21 (1): 33, 1999 (Grolle and Reiner-Drehwald 1999).
*** *Harpalejeunea grandis* Grolle et M.E.Reiner, J. Bryol. 21 (1): 32, 1999 (Grolle and Reiner-Drehwald 1999).

** **subg. *Harpalejeunea***
* *Harpalejeunea acuta* S.Winkl., Rev. Bryol. Lichénol. 42 (3): 812, 1976 (Winkler 1976). [306]
*** *Harpalejeunea ancistrodes* (Spruce) Schiffn., Hepat. (Engl.-Prantl): 127, 1893 (Schiffner 1893b). Bas.: *Lejeunea ancistrodes* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 169, 1884 (Spruce 1884).
** *Harpalejeunea buenaventurae* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 183, 1955 (Herzog 1955).
*** *Harpalejeunea cinchonae* (Nees) Schiffn., Hepat. (Engl.-Prantl): 127, 1893 (Schiffner 1893b). Bas.: *Lejeunea cinchonae* Nees, Syn. Hepat. 3: 342, 1845 (Gottsche et al. 1845b).

306 *Harpalejeunea acuta* is possibly conspecific with *Harpalejeunea cinchonae* (Grolle and Reiner-Drehwald 1999).

** *Harpalejeunea cinchonae* var. *strigulosa* Herzog, Svensk Bot. Tidskr. 51 (1): 192, 1957 (Herzog 1957a).

** *Harpalejeunea decurvicuspis* (Besch. et C.Massal.) P.Syd., Just's Bot. Jahresber. 19: 246, 1894 (Sydow 1894). Bas.: *Lejeunea decurvicuspis* Besch. et C.Massal., Bull. Mens. Soc. Linn. Paris 1 (79): 639, 1886 (Bescherelle and Massalongo 1886).

** *Harpalejeunea emarginata* Jovet-Ast, Rev. Bryol. Lichénol. 16 (1/2): 38, 1947 [1948] (Jovet-Ast 1947b).

** *Harpalejeunea exocellata* Herzog, Rev. Bryol. Lichénol. 20 (1/2): 144, 1951 [1952] (Herzog 1951a).

** *Harpalejeunea grandistipula* R.M.Schust., J. Hattori Bot. Lab. 87: 290, 1999 (Schuster 1999c).

*** *Harpalejeunea harpaphylla* (Herzog) Bischl., Rev. Bryol. Lichénol. 33 (1/2): 164, 1964 (Bischler 1964). Bas.: *Drepanolejeunea harpaphylla* Herzog, Svensk Bot. Tidskr. 46 (1): 93, 1952 (Herzog 1952e).

** *Harpalejeunea herzogii* Jovet-Ast, Feddes Repert. Spec. Nov. Regni Veg. 58: 19, 1955 (Jovet-Ast 1955).

** *Harpalejeunea longibracteata* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 254, 1913 (Stephani 1913a). Bas.: *Lejeunea longibracteata* Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: cciii, 1889 [1890] (Spruce 1889).

** *Harpalejeunea marginalis* (Hook.f. et Taylor) Steph., Sp. Hepat. (Stephani) 5: 271, 1913 (Stephani 1913a). Bas.: *Jungermannia marginalis* Hook.f. et Taylor, London J. Bot. 4: 91, 1845 (Hooker and Taylor 1845).

*** *Harpalejeunea molleri* (Steph.) Grolle, Taxon 38 (1): 89, 1989 (Grolle 1989c). Bas.: *Lejeunea molleri* Steph., Hedwigia 26 (1): 3, 1887 (Stephani 1887).

** *Harpalejeunea molleri* subsp. *integra* (R.M.Schust.) Damsh., Ill. Fl. Nord. Liverw. Hornw.: 615, 2002 (Damsholt 2002). Bas.: *Harpalejeunea ovata* subsp. *integra* R.M.Schust., J. Elisha Mitchell Sci. Soc. 83 (4): 199, 1967 (Schuster 1967a).

*** *Harpalejeunea oxyphylla* (Nees et Mont.) Steph., Sp. Hepat. (Stephani) 5: 255, 1913 (Stephani 1913a). Bas.: *Lejeunea oxyphylla* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 264, 1843 (Montagne 1843).

*** *Harpalejeunea parasitica* (Hook.f. et Taylor) Steph., Sp. Hepat. (Stephani) 5: 268, 1913 (Stephani 1913a). Bas.: *Jungermannia parasitica* Hook.f. et Taylor, London J. Bot. 3: 477, 1844 (Hooker and Taylor 1844b).

** *Harpalejeunea pinaundensis* Grolle, J. Hattori Bot. Lab. 46: 44, 1979 (Grolle 1979a).

** *Harpalejeunea reflexula* A.Evans, Bull. Torrey Bot. Club 35 (8): 375, 1908 (Evans 1908b).

** *Harpalejeunea scabra* Gradst. et Schäf.-Verw., Cryptog. Bryol. 32 (2): 102, 2011 (Gradstein and Schäfer-Verwimp 2011).

*** *Harpalejeunea schiffneri* S.W.Arnell, Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 102, 1964 (Schiffner and Arnell 1964).

* *Harpalejeunea solitaria* (Gottsche) Steph., Sp. Hepat. (Stephani) 5: 246, 1913 (Stephani 1913a). Bas.: *Lejeunea solitaria* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 356, 1882 (Gottsche 1882).

*** *Harpalejeunea stricta* (Lindenb. et Gottsche) Steph., Sp. Hepat. (Stephani) 5: 259, 1913 (Stephani 1913a). Bas.: *Lejeunea stricta* Lindenb. et Gottsche, Syn. Hepat. 5: 756, 1847 (Gottsche et al. 1847).

** *Harpalejeunea subacuta* A.Evans, Bull. Torrey Bot. Club 30 (10): 547, 1903 (Evans 1903c).

* *Harpalejeunea tenuicuspis* (Spruce) Schiffn., Hepat. (Engl.-Prantl): 127, 1893 (Schiffner 1893b). Bas.: *Lejeunea tenuicuspis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 170, 1884 (Spruce 1884). [307]

*** *Harpalejeunea tridens* (Besch. et Spruce) Steph., Sp. Hepat. (Stephani) 5: 263, 1913 (Stephani 1913a). Bas.: *Lejeunea tridens* Besch. et Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: clxxxi, 1889 [1890] (Bescherelle and Spruce 1889).

** *Harpalejeunea uncinata* Steph., Hedwigia 35 (3): 97, 1896 (Stephani 1896b).

* *Harpalejeunea uncinata* var. *setulosa* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 183, 1955 (Herzog 1955).

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* *Harpalejeunea grossearmata* Steph., Biblioth. Bot. 87 (2): 256, 1916 (Stephani 1916a). [308]

* *Harpalejeunea renneri* Herzog, Memoranda Soc. Fauna Fl. Fennica 26: 54, 1950 [1951] (Herzog 1950b). [309]

* *Harpalejeunea spruceana* Steph., Biblioth. Bot. 87 (2): 257, 1916 (Stephani 1916a). [310]

* *Harpalejeunea vitrea* Herzog, Memoranda Soc. Fauna Fl. Fennica 27: 94, 1952 (Herzog 1952c). [311]

** ***Hattoriolejeunea* Mizut.**, J. Hattori Bot. Lab. 61: 303, 1986 [1987] (Mizutani 1986b).

** *Hattoriolejeunea akiyamae* Mizut., J. Hattori Bot. Lab. 61: 303, 1986 [1987] (Mizutani 1986b).

*** ***Lejeunea* Lib.**, Ann. Gen. Sci. Phys. 6: 373, 1820 (Libert 1820) nom. conserv. [312]

307 *Harpalejeunea tenuicuspis* is possibly conspecific with *Harpalejeunea oxyphylla* (Gradstein and Costa 2003, Grolle and Reiner-Drehwald 1999).

308 *Harpalejeunea grossearmata* is a *Lejeunea* species (Grolle and Reiner-Drehwald 1999). It was treated as a doubtful taxon by Gradstein et al. (2003).

309 *Harpalejeunea renneri* is a *Lejeunea* species and most likely conspecific with something (Grolle and Reiner-Drehwald 1999).

310 *Harpalejeunea spruceana* is a *Lejeunea* species (non *Lejeunea spruceana* C.Massal. 1885) (Grolle and Reiner-Drehwald 1999). It was treated as a doubtful taxon by Gradstein et al. (2003).

311 *Harpalejeunea vitrea* is a *Lejeunea* species (non *Lejeunea vitrea* Nees, Lindenb. et Gottsche 1843) (Grolle and Reiner-Drehwald 1999).

312 *Lejeunea* is a large genus and its infrageneric classification, which has not been studied in a rigorous manner, needs investigation although Heinrichs et al. (2013) showed two main clades on molecular grounds, provisionally named *Lejeunea* subg. *Lejeunea* and *Lejeunea* subg. *Crossotolejeunea*. However, their morphology is not yet understood. The subgenera listed here are recently accepted ones. *Crossotolejeunea*, *Eulejeunea*, *Hygrolejeunea* and *Taxilejeunea* also belong here, but several taxa have neither

** *Lejeunea tunquiniensis* M.E.Reiner et Drehwald, Nova Hedwigia 100 (3/4): 584, 2015 (Reiner-Drehwald 2015).

** **subg. *Lejeunea***

*** *Lejeunea abyssinica* (Gola) Cufod., Phyton (Horn) 4: 75, 1952 (Cufodontis 1952). Bas.: *Eulejeunea abyssinica* Gola, Ann. Bot. (Rome) 13 (1): 70, 1914 (Gola 1914a).

*** *Lejeunea acanthogona* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 177, 1884 (Spruce 1884).

** *Lejeunea acuminata* (Lehm. et Lindenb.) Lehm., Nov. Stirp. Pug. 7: 22, 1838 (Lehmann 1838). Bas.: *Jungermannia acuminata* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 49, 1834 (Lehmann 1834).

** *Lejeunea acuta* Mitt., J. Proc. Linn. Soc., Bot. 7 (27): 167, 1863 (Mitten 1863).

** *Lejeunea acutata* (Steph.) Solari, J. Hattori Bot. Lab. 54: 541, 1983 (Solari 1983a). Bas.: *Strepsilejeunea acutata* Steph., Hedwigia 35 (3): 127, 1896 (Stephani 1896b).

*** *Lejeunea adpressa* Nees, Repert. Pharm. 76: 45, 1842 (von Flotow et al. 1842). [313]

*** *Lejeunea aethiopica* E.W.Jones, J. Bryol. 13 (3): 387, 1985 (Jones 1985).

** *Lejeunea alaskana* (R.M.Schust. et Steere) Inoue et Steere, J. Hattori Bot. Lab. 44: 330, 1978 (Steere and Inoue 1978). Bas.: *Hygrolejeunea alaskana* R.M.Schust. et Steere, Bull. Torrey Bot. Club 85 (3): 190, 1958 (Schuster and Steere 1958).

*** *Lejeunea alata* Gottsche, Syn. Hepat. 3: 406, 1845 (Gottsche et al. 1845b).

** *Lejeunea alata* var. *patriciae* Pócs, Candollea 56 (1): 72, 2001 (Pócs 2001).

*** *Lejeunea albescens* (Steph.) Mizut., J. Hattori Bot. Lab. 33: 245, 1970 (Mizutani 1970). Bas.: *Taxilejeunea albescens* Steph., Hedwigia 35 (3): 132, 1896 (Stephani 1896b).

* *Lejeunea albiflora* Colenso, Trans. & Proc. New Zealand Inst. 21: 72, 1889 (Colenso 1889).

** *Lejeunea aloba* Sande Lac., Plagiochila Sandei: 10, 1856 (Sande Lacoste 1856c).

** *Lejeunea alobifolia* H.A.Mill., Phytologia 47 (4): 323, 1981 (Miller 1981). *Nom. nov. pro Lejeunea aloba* Steph., Sp. Hepat. (Stephani) 5: 767, 1915 (Stephani 1915b), *nom. illeg.*

** *Lejeunea amaniensis* E.W.Jones, J. Bryol. 13 (3): 392, 1985 (Jones 1985).

** *Lejeunea ambigua* Lindenb. et Gottsche, Syn. Hepat. 5: 764, 1847 (Gottsche et al. 1847).

* *Lejeunea amentulifera* Steph., Sp. Hepat. (Stephani) 5: 707, 1915 (Stephani 1915b).

** *Lejeunea androgyna* R.M.Schust., Phytologia 45 (5): 432, 1980 (Schuster 1980b).

* *Lejeunea angulifolia* Mitt., Philos. Trans. 168: 400, 1879 (Mitten 1879). [314]

*** *Lejeunea angusta* (Lehm. et Lindenb.) Mont., Hist. Phys. Cuba, Bot., Pl. Cell.: 469, 1842 (Montagne 1842a). Bas.: *Jungermannia angusta* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 52, 1832 (Lehmann 1832).

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been transferred nor synonymized. They are listed in the "Names in genera not currently accepted" section below.

313 *Lejeunea adpressa* from South America is very similar to the palaeotropical *Lejeunea anisophylla*. The two taxa probably represent a single pantropical species (possibly with two subspecies).

314 *Lejeunea angulifolia* may be conspecific with *Lejeunea cocoes* (Pócs 2011a).

** *Lejeunea anisophylla* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 263, 1843 (Montagne 1843).
*** *Lejeunea anomala* Lindenb. et Gottsche, Linnaea 24 (6): 636, 1851 [1852] (Lindenberg and Gottsche 1851a).
* *Lejeunea antillana* Steph., Hedwigia 27 (11/12): 281, 1888 (Stephani 1888c).
** *Lejeunea aphanes* Spruce, J. Bot. 19: 36, 1881 (Spruce 1881b).
*** *Lejeunea apiculata* Sande Lac., Ned. Kruidk. Arch. 3: 421, 1854 [1855] (Sande Lacoste 1854).
** *Lejeunea aquatica* Horik., Sci. Rep. Tôhoku Imp. Univ., Ser. 4, Biol. 5 (4): 643, 1929 [1930] (Horikawa 1929c).
** *Lejeunea aquatica* var. *apiculata* S.Hatt., Bull. Tokyo Sci. Mus. 11: 108, 1944 (Hattori 1944d).
** *Lejeunea armitii* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 768, 1915 (Stephani 1915b). Bas.: *Eulejeunea armitii* Steph., Hedwigia 28 (3): 169, 1889 (Stephani 1889d).
* *Lejeunea asperifolia* Steph., Sp. Hepat. (Stephani) 5: 708, 1915 (Stephani 1915b).
*** *Lejeunea asperrima* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 160, 1884 (Spruce 1884).
** *Lejeunea asperula* (Steph.) Mizut., J. Hattori Bot. Lab. 33: 236, 1970 (Mizutani 1970). Bas.: *Taxilejeunea asperula* Steph., Sp. Hepat. (Stephani) 5: 499, 1914 (Stephani 1914b).
** *Lejeunea asprella* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 175, 1884 (Spruce 1884).
* *Lejeunea atheatostipa* Spruce, J. Bot. 33: 83, 1895 (Gepp 1895a).
** *Lejeunea barbata* (Herzog) R.L.Zhu et M.J.Lai, Ann. Bot. Fenn. 48 (5): 376, 2011 (Wang et al. 2011). Bas.: *Rectolejeunea barbata* Herzog, J. Hattori Bot. Lab. 14: 49, 1955 (Herzog and Noguchi 1955).
*** *Lejeunea bermudiana* (A.Evans) R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 1105, 1980 (Schuster 1980c). Bas.: *Crossotolejeunea bermudiana* A.Evans, Bull. Torrey Bot. Club 33 (3): 132, 1906 (Evans 1906c).
** *Lejeunea bidentula* Herzog, Symb. Sin. 5: 51, 1930 (Nicholson et al. 1930).
** *Lejeunea biformis* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 162 (68), 1864 (Gottsche 1864).
** *Lejeunea blepharogona* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 178, 1884 (Spruce 1884).
** *Lejeunea blomquistii* R.M.Schust., J. Elisha Mitchell Sci. Soc. 78 (1): 64, 1962 (Schuster 1962b).
*** *Lejeunea boliviensis* (Steph.) R.L.Zhu et M.E.Reiner, Bryologist 107 (2): 237, 2004 (Zhu and Reiner-Drehwald 2004). Bas.: *Strepsilejeunea boliviensis* Steph., Biblioth. Bot. 87 (2): 257, 1916 (Stephani 1916a).
** *Lejeunea boryana* Mont., Ann. Sci. Nat. Bot. (sér. 2) 9: 47, 1838 (Montagne 1838).
** *Lejeunea brenanii* E.W.Jones, J. Bryol. 10 (4): 391, 1979 (Jones 1979).
*** *Lejeunea calcicola* R.M.Schust., J. Elisha Mitchell Sci. Soc. 73 (2): 404, 1957 (Schuster 1957d).

** *Lejeunea calcicola* var. *mexicana* R.M.Schust., J. Elisha Mitchell Sci. Soc. 73 (2): 408, 1957 (Schuster 1957d).
** *Lejeunea canariensis* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 802, 1915 (Stephani 1915b). Bas.: *Eulejeunea canariensis* Steph., Mém. Soc. Bot. France 7: 42, 1907 (Pitard and Corbière 1907).
*** *Lejeunea cancellata* Nees et Mont., Hist. Phys. Cuba, Bot., Pl. Cell.: 472, 1842 (Montagne 1842a).
** *Lejeunea cantabrigiensis* E.W.Jones, J. Bryol. 15 (4): 669, 1989 (Jones 1989).
*** *Lejeunea capensis* Gottsche, Syn. Hepat. 3: 374, 1845 (Gottsche et al. 1845b).
* *Lejeunea caroliniana* Austin, Bot. Bull. (Hanover) 1 (8): 36, 1876 (Austin 1876a). [315]
*** *Lejeunea catinulifera* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 233, 1884 (Spruce 1884).
*** *Lejeunea caulicalyx* (Steph.) M.E.Reiner et Goda, J. Hattori Bot. Lab. 89: 13, 2000 (Reiner-Drehwald and Goda 2000). Bas.: *Crossotolejeunea caulicalyx* Steph., Sp. Hepat. (Stephani) 5: 237, 1913 (Stephani 1913a).
*** *Lejeunea cavifolia* (Ehrh.) Lindb., Revis. crit. icon.: 43, 1871 (Lindberg 1871). Bas.: *Jungermannia cavifolia* Ehrh., Beitr. Naturk. (Ehrhart) 4: 45, 1789 (Ehrhart 1789).
** *Lejeunea caviloba* (Steph.) Besch., J. Bot. (Morot) 12: 140, 1898 (Bescherelle 1898). Bas.: *Eulejeunea caviloba* Steph., Hedwigia 35 (3): 86, 1896 (Stephani 1896b).
*** *Lejeunea cerina* (Lehm. et Lindenb.) Lehm. et Lindenb., Syn. Hepat. 3: 391, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia cerina* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 16, 1833 (Lehmann 1833).
** *Lejeunea chaishanensis* S.H.Lin, Yushania 9: 7, 1992 (Lin and Yang 1992).
** *Lejeunea cladogyna* A.Evans, Amer. J. Bot. 5 (3): 134, 1918 (Evans 1918).
** *Lejeunea clavata* Lindenb., Syn. Hepat. 3: 379, 1845 (Gottsche et al. 1845b).
** *Lejeunea claviformis* Lindenb. ex Steph., Sp. Hepat. (Stephani) 5: 727, 1915 (Stephani 1915b).
** *Lejeunea cochleata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 273, 1884 (Spruce 1884).
** *Lejeunea cocoes* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 114, 1860 [1861] (Mitten 1860c).
*** *Lejeunea colensoana* (Steph.) M.A.M.Renner, Austral. Syst. Bot. 23 (6): 455, 2010 (Renner et al. 2010b). Bas.: *Taxilejeunea colensoana* Steph., Hedwigia 35 (3): 132, 1896 (Stephani 1896b).
** *Lejeunea compacta* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 771, 1915 (Stephani 1915b). Bas.: *Eulejeunea compacta* Steph., Bull. Herb. Boissier 5 (2): 93, 1897 (Stephani 1897b).
** *Lejeunea concinnula* Spruce et Steph., J. Bot. 25: 39, 1887 (Spruce 1887a).
** *Lejeunea connatistipula* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 772, 1915 (Stephani 1915b). Bas.: *Eulejeunea connatistipula* Steph., Hedwigia 35 (3): 87, 1896 (Stephani 1896b).

315 *Lejeunea caroliniana* was poorly described and the type specimen so poor that Evans (1902a) could not identify it.

** *Lejeunea contracta* Mizut., J. Hattori Bot. Lab. 33: 248, 1970 (Mizutani 1970).
** *Lejeunea controversa* Gottsche, Hepat. Eur., Leberm. 56-57: no 556, 1873 (Gottsche and Rabenhorst 1873b).
** *Lejeunea convexiloba* M.L.So et R.L.Zhu, Bryologist 101 (1): 137, 1998 (So and Zhu 1998).
** *Lejeunea corcovadae* (Steph.) Bischl., Nova Hedwigia 5 (1/2): 406, 1963 (Bischler et al. 1963). Bas.: *Microlejeunea corcovadae* Steph., Sp. Hepat. (Stephani) 5: 820, 1915 (Stephani 1915b).
** *Lejeunea cordiflora* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 283, 1884 (Spruce 1884).
** *Lejeunea corralensis* A.Evans, Ann. Bryol. 3: 86, 1930 (Evans 1930b).
*** *Lejeunea corynantha* Spruce, J. Linn. Soc., Bot. 30 (210): 344, 1895 (Gepp 1895b).
** *Lejeunea crassiretis* Mitt., Fl. vit.: 414, 1871 [1873] (Mitten 1871).
*** *Lejeunea cristulata* (Steph.) M.E.Reiner et Goda, J. Hattori Bot. Lab. 89: 21, 2000 (Reiner-Drehwald and Goda 2000). Bas.: *Crossotolejeunea cristulata* Steph., Hedwigia 35 (3): 75, 1896 (Stephani 1896b).
*** *Lejeunea cristuliflora* (Steph.) M.E.Reiner et Goda, J. Hattori Bot. Lab. 89: 19, 2000 (Reiner-Drehwald and Goda 2000). Bas.: *Crossotolejeunea cristuliflora* Steph., Sp. Hepat. (Stephani) 5: 231, 1913 (Stephani 1913a).
** *Lejeunea cuspidistipula* (Steph.) Steph. ex Watts, Proc. Linn. Soc. New South Wales (ser. 2) 27 (108): 493, 1903 (Watts 1903). Bas.: *Eulejeunea cuspidistipula* Steph., Hedwigia 35 (3): 88, 1896 (Stephani 1896b).
** *Lejeunea cyanomontana* R.M.Schust., Phytologia 45 (5): 432, 1980 (Schuster 1980b).
** *Lejeunea cyanophora* R.M.Schust., J. Hattori Bot. Lab. 26: 246, 1963 (Schuster 1963b).
** *Lejeunea cyathearum* E.W.Jones, J. Bryol. 8 (1): 86, 1974 (Jones 1974).
*** *Lejeunea cyathophora* Mitt., Hooker's J. Bot. Kew Gard. Misc. 3: 359, 1851 (Mitten 1851).
** *Lejeunea denticalyx* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 794, 1915 (Stephani 1915b). Bas.: *Eulejeunea denticalyx* Steph., Hedwigia 28 (3): 169, 1889 (Stephani 1889d).
** *Lejeunea denticuspis* (Steph.) Mizut., J. Hattori Bot. Lab. 36: 160, 1972 [1973] (Mizutani 1972a). Bas.: *Strepsilejeunea denticuspis* Steph., Hedwigia 35 (3): 129, 1896 (Stephani 1896b).
** *Lejeunea denudata* (Pearson) J.J.Engel, Bryologist 78 (3): 361, 1975 (Engel 1975). Bas.: *Eulejeunea denudata* Pearson, J. Linn. Soc., Bot. 46 (305): 39, 1922 (Pearson 1922b).
*** *Lejeunea deplanata* Nees, Syn. Hepat. 3: 368, 1845 (Gottsche et al. 1845b).
** *Lejeunea deplanata* var. *cuspidata* (Steph.) M.E.Reiner, Nova Hedwigia 91 (3/4): 529, 2010 (Reiner-Drehwald 2010). Bas.: *Pycnolejeunea cuspidata* Steph., Sp. Hepat. (Stephani) 5: 605, 1914 (Stephani 1914b).
** *Lejeunea diaphana* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 168, 1884 (Spruce 1884).

** *Lejeunea dimorpha* T.Kodama, J. Hattori Bot. Lab. 41: 384, 1976 (Kodama 1976).
** *Lejeunea dipterocarpa* E.W.Jones, J. Bryol. 7 (1): 44, 1972 (Jones 1972).
*** *Lejeunea discreta* Lindenb., Syn. Hepat. 3: 361, 1845 (Gottsche et al. 1845b).
* *Lejeunea disjecta* Spruce, J. Linn. Soc., Bot. 30 (210): 347, 1895 (Gepp 1895b).
** *Lejeunea diversicuspis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 176, 1884 (Spruce 1884).
** *Lejeunea drummondii* Taylor, London J. Bot. 5: 400, 1846 (Taylor 1846b).
** *Lejeunea ecarinata* (Steph.) J.M.Coult., Barnes et Arthur, Bot. Gaz. 15 (12): 349, 1890 (Coulter et al. 1890). Bas.: *Eulejeunea ecarinata* Steph., Bot. Gaz. 15 (11): 283, 1890 (Stephani 1890c).
** *Lejeunea eckloniana* Lindenb., Syn. Hepat. 3: 381, 1845 (Gottsche et al. 1845b).
** *Lejeunea eifrigii* Mizut., J. Hattori Bot. Lab. 33: 244, 1970 (Mizutani 1970). *Nom. nov. pro Taxilejeunea acutiloba* Eifrig, Monogr. Stud. Indomal. Art. *Taxilejeunea*: 94, 1937 (Eifrig 1937).
* *Lejeunea elongella* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 161, 1864 (Gottsche 1864).
*** *Lejeunea erostrata* M.E.Reiner et Goda, J. Hattori Bot. Lab. 89: 25, 2000 (Reiner-Drehwald and Goda 2000). *Nom. nov. pro Crossotolejeunea parva* Steph., Sp. Hepat. (Stephani) 5: 241, 1913 (Stephani 1913a).
*** *Lejeunea exilis* (Reinw., Blume et Nees) Grolle, J. Hattori Bot. Lab. 46: 353, 1979 (Grolle 1979d). Bas.: *Jungermannia exilis* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 227, 1824 [1825] (Reinwardt et al. 1824a).
** *Lejeunea exilis* var. *abnormis* (Herzog) G.E.Lee, Polish Bot. J. 58 (1): 61, 2013 (Lee and Gradstein 2013). Bas.: *Byssolejeunea abnormis* Herzog, Hedwigia 80 (1/2): 84, 1941 (Herzog 1941b).
** *Lejeunea fernandeziana* S.W.Arnell, Ark. Bot. (n.ser.) 4 (1): 16, 1957 (Arnell 1957b).
** *Lejeunea firma* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 112, 1860 [1861] (Mitten 1860c).
** *Lejeunea fissistipula* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 775, 1915 (Stephani 1915b). Bas.: *Eulejeunea fissistipula* Steph., Hedwigia 35 (3): 88, 1896 (Stephani 1896b).
** *Lejeunea flagellaris* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 273, 1884 (Spruce 1884).
*** *Lejeunea flava* (Sw.) Nees, Naturgesch. Eur. Leberm. 3: 277, 1838 (Nees 1838b). Bas.: *Jungermannia flava* Sw., Prodr. (Swartz): 144, 1788 (Swartz 1788). [316]
** *Lejeunea flava* subsp. *moorei* (Lindb.) R.M.Schust., J. Elisha Mitchell Sci. Soc. 73 (1): 161, 1957 (Schuster 1957a). Bas.: *Lejeunea moorei* Lindb., Acta Soc. Sci. Fenn. 10: 487, 1875 (Lindberg 1875).
** *Lejeunea flava* subsp. *orientalis* R.M.Schust., J. Elisha Mitchell Sci. Soc. 73 (1): 161, 1957 (Schuster 1957a).

316 *Lejeunea flava* is a species complex also including *Lejeunea grossecristata*.

** *Lejeunea flava* var. *pellucida* Lindenb. et Gottsche, Linnaea 24 (6): 634, 1851 [1852] (Lindenberg and Gottsche 1851a).
** *Lejeunea flava* subsp. *tabularis* (Spreng.) S.W.Arnell, Hepat. South Africa: 199, 1963 (Arnell 1963b). Bas.: *Jungermannia tabularis* Spreng. Syst. Veg. (ed. 16) [Sprengel] 4 (2): 325, 1827 (Sprengel 1827b).
*** *Lejeunea flavovirens* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 30 (5): 144, 1873 (Ångström 1873).
** *Lejeunea fleischeri* (Steph.) Mizut., J. Hattori Bot. Lab. 33: 238, 1970 (Mizutani 1970). Bas.: *Hygrolejeunea fleischeri* Steph., Sp. Hepat. (Stephani) 5: 560, 1914 (Stephani 1914b).
** *Lejeunea floridana* A.Evans, Bull. Torrey Bot. Club 32 (4): 185, 1905 (Evans 1905b).
*** *Lejeunea fulfordiae* (Jovet-Ast) R.L.Zhu, Syst. Bot. 33 (4): 617, 2008 (Zhu and Cheng 2008). Bas.: *Amblyolejeunea fulfordiae* Jovet-Ast, Rev. Bryol. Lichénol. 17 (1/4): 25, 1948 [1949] (Jovet-Ast 1948).
** *Lejeunea fusagasugana* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 158, 1864 (Gottsche 1864).
** *Lejeunea galeata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 172, 1884 (Spruce 1884).
** *Lejeunea gayana* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 157, 1864 (Gottsche 1864).
** *Lejeunea gibbiloba* (Steph.) H.A.Mill., Phytologia 47 (4): 323, 1981 (Miller 1981). Bas.: *Eulejeunea gibbiloba* Steph., Sp. Hepat. (Stephani) 6: 418, 1923 (Stephani 1923).
*** *Lejeunea glaucescens* Gottsche, Syn. Hepat. 3: 378, 1845 (Gottsche et al. 1845b).
** *Lejeunea glaucescens* var. *acrogyna* R.M.Schust., J. Elisha Mitchell Sci. Soc. 73 (2): 400, 1957 (Schuster 1957d).
* *Lejeunea glaucescens* var. *obsoleta* R.M.Schust., J. Elisha Mitchell Sci. Soc. 73 (2): 395, 1957 (Schuster 1957d).
** *Lejeunea globosiflora* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 795, 1915 (Stephani 1915b). Bas.: *Eulejeunea globosiflora* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 6): 65, 1900 (Stephani 1900b).
** *Lejeunea gomphocalyx* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 174, 1884 (Spruce 1884).
** *Lejeunea gracilicaulis* Spruce, Mem. Torrey Bot. Club 1 (3): 126, 1890 (Spruce 1890).
** *Lejeunea gracilipes* (Taylor) Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 213, 1884 (Spruce 1884). Bas.: *Omphalanthus gracilipes* Taylor, London J. Bot. 5: 385, 1846 (Taylor 1846b).
** *Lejeunea gracilis* Steph., Sp. Hepat. (Stephani) 5: 777, 1915 (Stephani 1915b).
** *Lejeunea gradsteiniana* Pócs, Acta Biol. Pl. Agr. 1: 55, 2010 [2011] (Pócs 2010d). *Nom. nov. pro Ceratolejeunea aberrans* Steph., Sp. Hepat. (Stephani) 6: 399, 1923 (Stephani 1923).
** *Lejeunea gradsteinii* G.E.Lee, Damanhuri et Latiff, Acta Biol. Pl. Agr. 1: 29, 2010 [2011] (Lee et al. 2010).
* *Lejeunea grossecristata* (Steph.) E.W.Jones, Trans. Brit. Bryol. Soc. 5 (3): 556, 1968 (Jones 1968). Bas.: *Hygrolejeunea grossecristata* Steph., Hedwigia 35 (3): 102, 1896 (Stephani 1896b).

*** *Lejeunea grossiretis* (Steph.) M.E.Reiner et Goda, J. Hattori Bot. Lab. 89: 27, 2000 (Reiner-Drehwald and Goda 2000). Bas.: *Crossotolejeunea grossiretis* Steph., Hedwigia 35 (3): 75, 1896 (Stephani 1896b).

** *Lejeunea grossistipula* Steph., Sp. Hepat. (Stephani) 5: 739, 1915 (Stephani 1915b).

*** *Lejeunea grossitexta* (Steph.) M.E.Reiner et Goda, J. Hattori Bot. Lab. 89: 29, 2000 (Reiner-Drehwald and Goda 2000). Bas.: *Crossotolejeunea grossitexta* Steph., Sp. Hepat. (Stephani) 5: 240, 1913 (Stephani 1913a).

* *Lejeunea grossiuscula* Gottsche ex Steph., Sp. Hepat. (Stephani) 5: 739, 1915 (Stephani 1915b).

** *Lejeunea hahnii* Solari, J. Hattori Bot. Lab. 54: 543, 1983 (Solari 1983a). *Nom. nov. pro Microlejeunea grandistipula* Steph., Hedwigia 35 (3): 114, 1896 (Stephani 1896b).

* *Lejeunea haitica* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 263, 1843 (Montagne 1843).

** *Lejeunea hawaikiana* M.A.M.Renner et de Lange, New Zealand J. Bot. 49 (3): 431, 2011 (Renner and de Lange 2011). *Nom. nov. pro Stenolejeunea acuminata* R.M.Schust., J. Hattori Bot. Lab. 89: 156, 2000 (Schuster 2000b).

** *Lejeunea helenae* Pearson, Forh. Vidensk.-Selsk. Kristiania 1886 (3): 6, 1886 (Pearson 1886).

** *Lejeunea helmsiana* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 796, 1915 (Stephani 1915b). Bas.: *Eulejeunea helmsiana* Steph., Hedwigia 35 (3): 89, 1896 (Stephani 1896b).

*** *Lejeunea hepaticola* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 714, 1915 (Stephani 1915b). Bas.: *Eulejeunea hepaticola* Steph., Hedwigia 27 (2): 60, 1888 (Stephani 1888a).

** *Lejeunea hibernica* Bischl., H.A.Mill. et Bonner ex Grolle, Lindbergia 3 (1/2): 48, 1975 [1976] (Grolle 1975c). Based on: *Lejeunea hibernica* Bischl., H.A.Mill. et Bonner, Nova Hedwigia 3 (4): 455, 1961 [1962] (Bischler et al. 1961), *nom. inval.*

** *Lejeunea hodgsoniana* Grolle ex R.J.Lewington, Bever. et M.A.M.Renner, PhytoKeys 29: 2, 2013 (Lewington et al. 2013).

** *Lejeunea howeana* Grolle, Wiss. Z. Friedrich-Schiller-Univ. Jena, Math.-Naturwiss. Reihe 31 (2): 219, 1982 (Grolle 1982). *Nom. nov. pro Cheilolejeunea wattsiana* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 102, 1914 (Stephani and Watts 1914).

** *Lejeunea hui* R.L.Zhu, Beih. Nova Hedwigia 121: 134, 2001 (Zhu and So 2001).

** *Lejeunea humefacta* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 275, 1884 (Spruce 1884).

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** *Lejeunea increscens* Spruce, Mem. Torrey Bot. Club 1 (3): 124, 1890 (Spruce 1890).

* *Lejeunea inflatiloba* (Steph.) H.A.Mill., Bonner et Bischl., Nova Hedwigia 14 (1): 67, 1967 (Miller et al. 1967). Bas.: *Microlejeunea inflatiloba* Steph., Sp. Hepat. (Stephani) 6: 422, 1923 (Stephani 1923).

*** *Lejeunea inflexiloba* Prantl, Hedwigia 31: xvi, 1892 (Prantl 1892). Based on: *Crossotolejeunea inflexiloba* J.B.Jack et Steph., Hedwigia 31 (1): 16, 1892 (Jack and Stephani 1892), *nom. inval.*

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* *Lejeunea kilimandjarensis* Steph., Sp. Hepat. (Stephani) 5: 716, 1915 (Stephani 1915b).

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** *Lejeunea latilobula* (Herzog) R.L.Zhu et M.L.So, J. Bryol. 24 (2): 168, 2002 (Zhu and So 2002). Bas.: *Taxilejeunea latilobula* Herzog, Symb. Sin. 5: 50, 1930 (Nicholson et al. 1930).

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* *Lejeunea leratii* (Steph.) Mizut., J. Hattori Bot. Lab. 33: 243, 1970 (Mizutani 1970). Bas.: *Hygrolejeunea leratii* Steph., Sp. Hepat. (Stephani) 5: 562, 1914 (Stephani 1914b). [318]

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317 *Lejeunea lamacerina* forms a North American and a Macaronesian/European clade and the separation of two subspecies are justified if not treating them at species level (Heinrichs et al. 2013).

318 *Lejeunea leratii* is probably distinct from *Lejeunea mimula* (Lee 2013).

** *Lejeunea leucosis* Besch. et Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: clxxxviii, 1889 [1890] (Bescherelle and Spruce 1889).
* *Lejeunea litoralis* Steph., Sp. Hepat. (Stephani) 5: 778, 1915 (Stephani 1915b).
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** *Lejeunea longicollis* S.W.Arnell, Results Norweg. Sci. Exped. Tristan da Cunha 42: 12, 1958 (Arnell 1958b).
** *Lejeunea longilobula* Pócs, Beih. Nova Hedwigia 138: 112, 2010 (Pócs 2010b). *Nom. nov. pro Lejeunea halei* subsp. *africana* Pócs, J. Bryol. 29 (2): 89, 2007 (Müller and Pócs 2007).
** *Lejeunea lowriana* Steph., Sp. Hepat. (Stephani) 5: 779, 1915 (Stephani 1915b).
*** *Lejeunea lumbricoides* (Nees) Nees, Syn. Hepat. 3: 342, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia lumbricoides* Nees, Enum. Pl. Crypt. Javae: 40, 1830 (Nees 1830).
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** *Lejeunea lyratiflora* Prantl, Hedwigia 31: xvi, 1892 (Prantl 1892). Based on: *Hygrolejeunea lyratiflora* Steph., Hedwigia 31 (4): 169, 1892 (Stephani 1892g), *nom. inval.*
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** *Lejeunea massalongoana* (Schiffn. ex P.Syd.) Solari, J. Hattori Bot. Lab. 54: 542, 1983 (Solari 1983a).Bas.: *Harpalejeunea massalongoana* Schiffn. ex P.Syd., Just's Bot. Jahresber. 19: 246, 1894 (Sydow 1894).
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*** *Lejeunea mimula* Hürl., Bauhinia 11 (1): 12, 1993 (Hürlimann 1993). *Nom. nov. pro Hygrolejeunea luteola* Steph., Sp. Hepat. (Stephani) 5: 553, 1914 (Stephani 1914b).
*** *Lejeunea minutiloba* A.Evans, Bull. Torrey Bot. Club 44 (11): 525, 1917 (Evans 1917d).
** *Lejeunea minutiloba* var. *heterogyna* R.M.Schust., J. Elisha Mitchell Sci. Soc. 73 (2): 425, 1957 (Schuster 1957d).
** *Lejeunea mizutanii* Grolle, J. Hattori Bot. Lab. 45: 178, 1979 (Grolle 1979c). *Nom. nov. pro Cheilolejeunea zollingeri* Steph., Hedwigia 34 (5): 245, 1895 (Stephani 1895b).
** *Lejeunea molkenboeriana* Sande Lac., Ned. Kruidk. Arch. 3: 421, 1854 [1855] (Sande Lacoste 1854).

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*** *Lejeunea multidentata* M.E.Reiner et Mustelier, J. Bryol. 26 (2): 103, 2004 (Reiner-Drehwald and Mustelier 2004).
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** *Lejeunea nepalensis* Steph., Sp. Hepat. (Stephani) 5: 780, 1915 (Stephani 1915b).
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** *Lejeunea otiana* S.Hatt., Bot. Mag. (Tokyo) 65 (763/764): 15, 1952 (Hattori 1952a).

319 *Lejeunea obscura* is possibly conspecific with *Lejeunea aloba* (Söderström et al. 2010a).

** *Lejeunea ovalifolia* Steph., Sp. Hepat. (Stephani) 5: 751, 1915 (Stephani 1915b).
** *Lejeunea pacifica* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 262, 1843 (Montagne 1843).
** *Lejeunea pallescens* Mitt., Hooker's J. Bot. Kew Gard. Misc. 3: 360, 1851 (Mitten 1851).
** *Lejeunea pallida* Lindenb. et Gottsche, Syn. Hepat. 5: 762, 1847 (Gottsche et al. 1847).
* *Lejeunea pallidissima* Gola, Nuovo Giorn. Bot. Ital. (n.ser.) 27 (2/4): 247, 1920 (Gola 1920). [320]
*** *Lejeunea papilionacea* Prantl, Hedwigia 31: xvii, 1892 (Prantl 1892). Based on: *Hygrolejeunea papilionacea* Steph., Hedwigia 31 (4): 169, 1892 (Stephani 1892g), *nom. inval.*
* *Lejeunea paratropa* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 176, 1884 (Spruce 1884). [321]
** *Lejeunea patagonica* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 797, 1915 (Stephani 1915b). Bas.: *Eulejeunea patagonica* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 26 (III, 6): 66, 1900 (Stephani 1900b).
** *Lejeunea patens* Lindb., Acta Soc. Sci. Fenn. 10: 482, 1875 (Lindberg 1875).
*** *Lejeunea patersonii* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 784, 1915 (Stephani 1915b). Bas.: *Eulejeunea patersonii* Steph., Hedwigia 35 (3): 92, 1896 (Stephani 1896b).
*** *Lejeunea patriciae* Schäf.-Verw., Candollea 56 (1): 64, 2001 (Schäfer-Verwimp 2001a). *Nom. nov. pro Lejeunea pilifera* Tixier, Gard. Bull. Singapore 25 (3): 351, 1971 (Tixier 1971), *nom. illeg.*
*** *Lejeunea paucidentata* (Steph.) Grolle, J. Hattori Bot. Lab. 69: 191, 1991 (Grolle 1991). Bas.: *Crossotolejeunea paucidentata* Steph., Hedwigia 35 (3): 76, 1896 (Stephani 1896b).
*** *Lejeunea pectinella* Mizut., J. Hattori Bot. Lab. 33: 239, 1970 (Mizutani 1970).
** *Lejeunea perigonialis* Gottsche, Mexik. Leverm.: 223, 1863 (Gottsche 1863).
*** *Lejeunea perpapillosa* M.E.Reiner et K.C.Pôrto, Nova Hedwigia 85 (3/4): 542, 2007 (Reiner-Drehwald and Pôrto 2007).
* *Lejeunea pertusa* (Corda ex Nees et Mont.) Gottsche, Lindenb. et Nees, Syn. Hepat. 3: 407, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia pertusa* Corda ex Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 63, 1836 (Nees and Montagne 1836).
*** *Lejeunea phyllobola* Nees et Mont., Hist. Phys. Cuba, Bot., Pl. Cell.: 471, 1842 (Montagne 1842a).
* *Lejeunea phyllobola* var. *turgidula* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 259, 1884 (Spruce 1884).
*** *Lejeunea planiloba* A.Evans, Proc. Wash. Acad. Sci. 8: 147, 1906 (Evans 1906b).
** *Lejeunea polilloensis* Steph., Sp. Hepat. (Stephani) 5: 786, 1915 (Stephani 1915b).
** *Lejeunea praetervisa* Steph., Sp. Hepat. (Stephani) 5: 752, 1915 (Stephani 1915b).

320 *Lejeunea pallidissima* is possibly conspecific with *Lejeunea flavovirens* (Vanden Berghen 1972b).

321 *Lejeunea paratropa* is closely related to or perhaps conspecific with *Lejeunea raddiana* Lindenb. (Grolle and Reiner-Drehwald 1999).

** *Lejeunea primordialis* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 3: 375, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia primordialis* Hook.f. et Taylor, London J. Bot. 4: 92, 1845 (Hooker and Taylor 1845).

** *Lejeunea princeps* (Steph.) Mizut., J. Hattori Bot. Lab. 34: 454, 1971 (Mizutani 1971a). Bas.: *Hygrolejeunea princeps* Steph., Sp. Hepat. (Stephani) 5: 568, 1914 (Stephani 1914b).

** *Lejeunea procumbens* Mitt., Fl. vit.: 413, 1871 [1873] (Mitten 1871).

** *Lejeunea propagulifera* Gradst., Phytotaxa 9: 54, 2010 (Söderström et al. 2010a). *Nom. nov. pro Trachylejeunea schiffneri* Herzog, Svensk Bot. Tidskr. 42 (3): 239, 1948 (Herzog 1948).

** *Lejeunea pteridis* Besch. et Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: clxxxvii, 1889 [1890] (Bescherelle and Spruce 1889).

*** *Lejeunea ptosimophylla* C.Massal., Nuovo Giorn. Bot. Ital. 13 (2): 123, 1881 (Massalongo 1881).

*** *Lejeunea puiggariana* Steph., Sp. Hepat. (Stephani) 5: 754, 1915 (Stephani 1915b).

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*** *Lejeunea pulvinata* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 61, 1836 (Nees and Montagne 1836). *Nom. nov. pro Jungermannia pulvinata* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 15, 1833 (Lehmann 1833), *nom. illeg*.

*** *Lejeunea raddiana* Lindenb., Syn. Hepat. 3: 342, 1845 (Gottsche et al. 1845b).

** *Lejeunea radicans* Lindenb. et Gottsche, Syn. Hepat. 5: 766, 1847 (Gottsche et al. 1847).

** *Lejeunea ramosissima* Steph., Bot. Jahrb. Syst. 8 (2): 88, 1886 (Stephani 1886d).

** *Lejeunea rara* Steph., Sp. Hepat. (Stephani) 5: 798, 1915 (Stephani 1915b). [322]

* *Lejeunea ravenelii* Austin, Bot. Bull. (Hanover) 1 (8): 35, 1876 (Austin 1876a). [323]

** *Lejeunea recurva* M.E.Reiner, Polish Bot. J. 58 (2): 423, 2013 (Reiner-Drehwald et al. 2013). *Nom. nov. pro Hygrolejeunea herzogii* Steph., Biblioth. Bot. 87 (2): 265, 1916 (Stephani 1916a), *nom. illeg*.

*** *Lejeunea reflexistipula* (Lehm. et Lindenb.) Lehm. et Lindenb., Syn. Hepat. 3: 335, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia reflexistipula* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 10, 1833 (Lehmann 1833).

** *Lejeunea reflexistipula* var. *costaricensis* (Steph.) M.E.Reiner, Nova Hedwigia 81 (3/4): 408, 2005 (Reiner-Drehwald 2005a). Bas.: *Hygrolejeunea costaricensis* Steph., Hedwigia 35 (3): 100, 1896 (Stephani 1896b).

*** *Lejeunea reinerae* Ilk.-Borg., Nova Hedwigia 80 (1/2): 61, 2005 (Ilkiu-Borges 2005). *Nom. nov. pro Echinocolea herzogii* Mizut. et Grolle, Bot. Mag. (Tokyo) 77 (915): 333, 1964 (Grolle 1964d).

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322 *Lejeunea rara* is the valid name for *Lejeunea sinclairii* Spruce (1884) hom. illeg. (non Mitten 1862 = *Thysananthus fruticosus*), but Scott and Bradshaw (1985) confused the taxa and considered them conspecific. Grolle (1982) accepted Spruce's taxon without commenting on any homonym problem.

323 *Lejeunea ravenelii* was poorly described and the type specimen so poor that Evans (1902a) could not identify it.

** *Lejeunea resupinata* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 757, 1915 (Stephani 1915b). Bas.: *Eulejeunea resupinata* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 23 (III, 2): 22, 1897 (Stephani 1897a).

** *Lejeunea reticulata* Herzog, Nat. Hist. Juan Fernandez (Botany) 2 (5): 747, 1942 (Herzog 1942a).

*** *Lejeunea rhigophila* M.A.M.Renner, Austral. Syst. Bot. 23 (6): 453, 2010 (Renner et al. 2010b).

** *Lejeunea rhodesiae* (Sim) R.M.Schust., J. Hattori Bot. Lab. 25: 71, 1962 (Schuster 1962a). Bas.: *Stylolejeunea rhodesiae* Sim, Trans. Roy. Soc. South Africa 15 (1): 68, 1926 (Sim 1926).

*** *Lejeunea rionegrensis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 579, 1885 (Spruce 1885). *Nom. nov. pro Lejeunea implexa* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 240, 1884 (Spruce 1884), *nom. inval.*

** *Lejeunea riparia* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 113, 1860 [1861] (Mitten 1860c).

* *Lejeunea rothii* (Schwägr.) Gottsche, Lindenb. et Nees, Syn. Hepat. 3: 407, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia rothii* Schwägr., Hist. Musc. Hepat. Prodr.: 17, 1814 (Schwägrichen 1814).

*** *Lejeunea rotundifolia* Mitt., Hooker's J. Bot. Kew Gard. Misc. 3: 359, 1851 (Mitten 1851).

** *Lejeunea sanctae-helenae* M.Wigginton, J. Bryol. 29 (1): 12, 2007 (Wigginton 2007).

** *Lejeunea schusteri* Grolle, Haussknechtia 8: 60, 2001 (Grolle 2001). *Nom. nov. pro Rectolejeunea denudata* R.M.Schust., J. Hattori Bot. Lab. 89: 143, 2000 (Schuster 2000c).

** *Lejeunea semiscabrida* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 154 (60), 1864 (Gottsche 1864).

** *Lejeunea semperi* Steph., Sp. Hepat. (Stephani) 5: 788, 1915 (Stephani 1915b).

** *Lejeunea seriata* Lindenb. et Gottsche, Syn. Hepat. 5: 762, 1847 (Gottsche et al. 1847).

** *Lejeunea sessiliflora* (Steph.) Grolle, Wiss. Z. Friedrich-Schiller-Univ. Jena, Math.-Naturwiss. Reihe 37: 171, 1988 (Grolle 1988b). Bas.: *Macrolejeunea sessiliflora* Steph., Sp. Hepat. (Stephani) 5: 512, 1914 (Stephani 1914b).

** *Lejeunea setacea* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 719, 1914 (Stephani 1914b). Bas.: *Eulejeunea setacea* Steph., Bull. Mus. Natl. Hist. Nat. 18 (2): 120, 1912 (Corbière 1912).

** *Lejeunea setiloba* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 281, 1884 (Spruce 1884).

** *Lejeunea sharpii* (R.M.Schust.) R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 991, 1980 (Schuster 1980c). Bas.: *Taxilejeunea sharpii* R.M.Schust., J. Elisha Mitchell Sci. Soc. 81 (1): 41, 1965 (Schuster 1965a).

** *Lejeunea siccata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 284, 1884 (Spruce 1884).

** *Lejeunea silvatica* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 159 (65), 1864 (Gottsche 1864).

** *Lejeunea smaragdina* Besch. et Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: clxxxii, 1889 [1890] (Bescherelle and Spruce 1889).

*** *Lejeunea soae* R.L.Zhu, Y.M.Wei, L.Söderstr., A.Hagborg et von Konrat, Phytotaxa 81 (1): 1, 2013 (Zhu et al. 2013). *Nom. nov. pro Trachylejeunea chinensis* Herzog, Symb. Sin. 5: 49, 1930 (Nicholson et al. 1930).

** *Lejeunea solanicola* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 280, 1884 (Spruce 1884).

*** *Lejeunea sordida* (Nees) Nees, Naturgesch. Eur. Leberm. 3: 278, 1838 (Nees 1838b). Bas.: *Jungermannia sordida* Nees, Enum. Pl. Crypt. Javae: 41, 1830 (Nees 1830).

*** *Lejeunea spiniloba* Lindenb. et Gottsche, Syn. Hepat. 5: 770, 1847 (Gottsche et al. 1847).

** *Lejeunea spinuliflora* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 177, 1884 (Spruce 1884).

** *Lejeunea sporadica* Besch. et Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: clxxx, 1889 [1890] (Bescherelle and Spruce 1889).

* *Lejeunea squarrosa* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 719, 1915 (Stephani 1915b). Bas.: *Eulejeunea squarrosa* Steph., Bot. Jahrb. Syst. 20 (3): 317, 1895 (Stephani 1895a).

** *Lejeunea squarrosula* (Herzog) Solari, J. Hattori Bot. Lab. 54: 543, 1983 (Solari 1983a). Bas.: *Strepsilejeunea squarrosula* Herzog, Nat. Hist. Juan Fernandez (Botany) 2 (5): 741, 1942 (Herzog 1942a).

* *Lejeunea stephaniana* Mizut., J. Hattori Bot. Lab. 27: 143, 1964 (Mizutani 1964a). *Nom. nov. pro Strepsilejeunea heterophylla* Steph., Sp. Hepat. (Stephani) 6: 395, 1923 (Stephani 1923). [324]

** *Lejeunea stevensiana* (Steph.) Mizut., J. Hattori Bot. Lab. 34: 452, 1971 (Mizutani 1971a). Bas.: *Taxilejeunea stevensiana* Steph., Hedwigia 35 (3): 136, 1896 (Stephani 1896b).

** *Lejeunea subacuta* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 113, 1860 [1861] (Mitten 1860c).

* *Lejeunea subaquatica* Schiffn., Arch. Hydrobiol., suppl. 21 (3/4): 397, 1955 (Schiffner 1955).

* *Lejeunea subbifida* Steph. ex Duss, Enum. musc. Antilles franç., Hép.: 10, 1903 (Duss 1903). *Nom. nov. pro Odontolejeunea subbifida* Steph., Symb. Antill. (Urban) 3 (2): 277, 1902 (Stephani 1902e), *nom. illeg.*

** *Lejeunea subigiensis* (Steph.) Steph., Hedwigia 35 (3): 94, 1896 (Stephani 1896b). Bas.: *Eulejeunea subigiensis* Steph., Hedwigia 35 (3): 94, 1896 (Stephani 1896b).

** *Lejeunea subrufula* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 289, 1884 (Spruce 1884).

** *Lejeunea subsessilis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 282, 1884 (Spruce 1884).

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324 *Lejeunea stephaniana* is doubtfully distinct from *Lejeunea discreta* (Söderström et al. 2010a).

*** *Lejeunea subspathulata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 173, 1884 (Spruce 1884).
** *Lejeunea succulenta* Herzog, Rev. Bryol. Lichénol. 20 (1/2): 171, 1951 [1952] (Herzog 1951a).
** *Lejeunea suffruticola* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 279, 1884 (Spruce 1884).
** *Lejeunea syoshii* Inoue, Bull. Natl. Sci. Mus. Tokyo, B 3 (4): 143, 1977 (Inoue 1977b).
*** *Lejeunea talamancensis* M.E.Reiner et Schäf.-Verw., Nova Hedwigia 87 (3/4): 414, 2008 (Reiner-Drehwald and Schäfer-Verwimp 2008).
*** *Lejeunea tamasii* M.E.Reiner, N.Salazar et C.Chung, Polish Bot. J. 58 (2): 420, 2013 (Reiner-Drehwald et al. 2013).
** *Lejeunea tamaspocsii* G.E.Lee, Polish Bot. J. 58 (1): 66, 2013 (Lee and Gradstein 2013).
*** *Lejeunea tapajosensis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 223, 1884 (Spruce 1884).
** *Lejeunea tarapotensis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 282, 1884 (Spruce 1884).
** *Lejeunea tenella* Taylor, London J. Bot. 5: 398, 1846 (Taylor 1846b).
** *Lejeunea thallophora* (Eifrig) Gradst., Phytotaxa 9: 54, 2010 (Söderström et al. 2010a). Bas.: *Taxilejeunea thallophora* Eifrig, Monogr. Stud. Indomal. Art. *Taxilejeunea*: 99, 1937 (Eifrig 1937).
*** *Lejeunea tonduzana* (Steph.) M.E.Reiner, Polish Bot. J. 58 (2): 421, 2013 (Reiner-Drehwald et al. 2013). Bas.: *Hygrolejeunea tonduzana* Steph., Hedwigia 35 (3): 105, 1896 (Stephani 1896b).
** *Lejeunea trachygona* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 175, 1884 (Spruce 1884).
*** *Lejeunea trinitensis* Lindenb., Syn. Hepat. 3: 381, 1845 (Gottsche et al. 1845b).
** *Lejeunea trukensis* H.A.Mill. et Bonner, Beih. Nova Hedwigia 11: 56, 1963 (Miller et al. 1963).
** *Lejeunea tuberculosa* Steph., Sp. Hepat. (Stephani) 5: 790, 1915 (Stephani 1915b).
** *Lejeunea tumida* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 157, 1854 (Mitten 1854).
** *Lejeunea uleana* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 765, 1915 (Stephani 1915b). Bas.: *Eulejeunea uleana* Steph., Hedwigia 35 (3): 94, 1896 (Stephani 1896b).
*** *Lejeunea umbilicata* (Nees) Nees, Observ. bot.: 472, 1843 (Gottsche et al. 1843). Bas.: *Jungermannia umbilicata* Nees, Enum. Pl. Crypt. Javae: 42, 1830 (Nees 1830).
** *Lejeunea utriculata* (Steph.) Mizut., J. Hattori Bot. Lab. 33: 242, 1970 (Mizutani 1970). Bas.: *Pycnolejeunea utriculata* Steph., Hedwigia 35 (3): 126, 1896 (Stephani 1896b).
** *Lejeunea vesicata* Mitt., Fl. vit.: 415, 1871 [1873] (Mitten 1871).
*** *Lejeunea villaumei* (Steph.) Grolle, J. Bryol. 9 (4): 536, 1977 [1978] (Grolle 1977a). Bas.: *Otigoniolejeunea villaumei* Steph., Sp. Hepat. (Stephani) 5: 516, 1914 (Stephani 1914b).
** *Lejeunea vojtkoi* Pócs, Beih. Nova Hedwigia 138: 107, 2010 (Pócs 2010b).
** *Lejeunea vulgariformis* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 355, 1882 (Gottsche 1882).

** *Lejeunea wattsiana* (Steph.) H.A.Mill., Bonner et Bischl., Nova Hedwigia 14 (1): 66, 1967 (Miller et al. 1967). Bas.: *Microlejeunea wattsiana* Steph., Sp. Hepat. (Stephani) 5: 834, 1916 (Stephani 1916b).
* *Lejeunea wichurae* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 792, 1915 (Stephani 1915b). Bas.: *Eulejeunea wichurae* Steph., Hedwigia 35 (3): 94, 1896 (Stephani 1896b).
** *Lejeunea wightii* Lindenb., Syn. Hepat. 3: 379, 1845 (Gottsche et al. 1845b).
*** *Lejeunea xiphophylla* (Herzog) M.E.Reiner, Nova Hedwigia 87 (3/4): 409, 2008 (Reiner-Drehwald and Schäfer-Verwimp 2008). Bas.: *Taxilejeunea xiphophylla* Herzog, Svensk Bot. Tidskr. 46 (1): 99, 1952 (Herzog 1952e).

** **subg. *Nanolejeunea* R.M.Schust.**, Hepat. Anthocerotae N. Amer. 4: 1092, 1980 (Schuster 1980c).
** *Lejeunea curviloba* Steph., Sp. Hepat. (Stephani) 5: 774, 1915 (Stephani 1915b).
*** *Lejeunea laetevirens* Nees et Mont., Hist. Phys. Cuba, Bot., Pl. Cell.: 469, 1842 (Montagne 1842a).
** *Lejeunea pallidevirens* S.Hatt., J. Hattori Bot. Lab. 12: 80, 1954 (Hattori 1954). *Nom. nov. pro Microlejeunea rotundistipula* var. *pallida* S.Hatt., J. Hattori Bot. Lab. 5: 53, 1951 (Hattori 1951d).
** *Lejeunea parva* (S.Hatt.) Mizut., Misc. Bryol. Lichenol. 5 (10/12): 178, 1971 (Mizutani 1971b). Bas.: *Microlejeunea rotundistipula* f. *parva* S.Hatt., Bull. Tokyo Sci. Mus. 11: 123, 1944 (Hattori 1944d).
*** *Lejeunea prionoides* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 238, 1884 (Spruce 1884).
*** *Lejeunea ramulosa* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 274, 1884 (Spruce 1884).

*** **subg. *Neopotamolejeunea* (M.E.Reiner) Gradst. et M.E.Reiner**, Syst. Bot. 32 (3): 487, 2007 (Gradstein and Reiner-Drehwald 2007). Bas.: *Neopotamolejeunea* M.E.Reiner, Nova Hedwigia 71 (3/4): 449, 2000 (Reiner-Drehwald 2000).
** *Lejeunea juruana* Gradst. et M.E.Reiner, Syst. Bot. 32 (3): 488, 2007 (Gradstein and Reiner-Drehwald 2007). *Nom. nov. pro Potamolejeunea uleana* Steph., Sp. Hepat. (Stephani) 5: 641, 1914 (Stephani 1914b).
*** *Lejeunea polyantha* Mont., Ann. Sci. Nat. Bot. (sér. 4) 5: 350, 1856 (Montagne 1856c).
** *Lejeunea tenera* (Sw.) Gottsche, Lindenb. et Nees, Syn. Hepat. 3: 406, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia tenera* Sw., Prodr. (Swartz): 143, 1788 (Swartz 1788).
*** *Lejeunea topoensis* Gradst. et M.E.Reiner, Syst. Bot. 32 (3): 488, 2007 (Gradstein and Reiner-Drehwald 2007).

** **subg. *Papillolejeunea* (Pócs) R.M.Schust.**, J. Hattori Bot. Lab. 85: 84, 1998 (Schuster 1998a). Bas.: *Papillolejeunea* Pócs, Trop. Bryol. 13: 2, 1997 (Pócs 1997b).
** *Lejeunea balazsii* (Pócs) R.M.Schust., J. Hattori Bot. Lab. 85: 84, 1998 (Schuster 1998a). Bas.: *Papillolejeunea balazsii* Pócs, Trop. Bryol. 13: 3, 1997 (Pócs 1997b).

** *Lejeunea candida* (Pócs) R.M.Schust., J. Hattori Bot. Lab. 85: 84, 1998 (Schuster 1998a). Bas.: *Papillolejeunea candida* Pócs, Trop. Bryol. 13: 8, 1997 (Pócs 1997b).
** *Lejeunea falcata* (Pócs et J.Eggers) Pócs, Phytotaxa 208 (1): 99, 2015 (Pócs et al. 2015a). Bas.: *Papillolejeunea falcata* Pócs et J.Eggers, Bryobrothera 5: 163, 1999 (Pócs and Eggers 1999).
** *Lejeunea koponenii* (Pócs et J.Eggers) Pócs, Phytotaxa 208 (1): 99, 2015 (Pócs et al. 2015a). Bas.: *Papillolejeunea koponenii* Pócs et J.Eggers, Bryobrothera 5: 159, 1999 (Pócs and Eggers 1999).
** *Lejeunea papuana* (Pócs) R.M.Schust., J. Hattori Bot. Lab. 85: 84, 1998 (Schuster 1998a). Bas.: *Papillolejeunea papuana* Pócs, Trop. Bryol. 13: 14, 1997 (Pócs 1997b).
** *Lejeunea touwii* (Pócs) R.M.Schust., J. Hattori Bot. Lab. 85: 84, 1998 (Schuster 1998a). Bas.: *Papillolejeunea touwii* Pócs, Trop. Bryol. 13: 11, 1997 (Pócs 1997b).

Incertae sedis

* *Lejeunea apiahyna* (Steph.) Sushil K.Singh, Phytotaxa 96 (1): 63, 2013 (Singh 2013). Bas.: *Otigoniolejeunea apiahyna* Steph., Sp. Hepat. (Stephani) 5: 514, 1914 (Stephani 1914b).
* *Lejeunea aptycta* Gottsche, Syn. Hepat. 3: 369, 1845 (Gottsche et al. 1845b).
** *Lejeunea asthenica* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 222, 1884 (Spruce 1884).
* *Lejeunea bethanica* Gottsche, Syn. Hepat. 3: 381, 1845 (Gottsche et al. 1945b)
** *Lejeunea bombonasensis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 222, 1884 (Spruce 1884).
** *Lejeunea bornmuelleri* (Steph.) M.E.Reiner, Nova Hedwigia 95 (3/4): 471, 2012 (Reiner-Drehwald and Grolle 2012). Bas.: *Rectolejeunea bornmuelleri* Steph., Sp. Hepat. (Stephani) 5: 682, 1914 (Stephani 1914b).
** *Lejeunea caracensis* Lindenb., Syn. Hepat. 3: 355, 1845 (Gottsche et al. 1845b).
** *Lejeunea caripensis* Lindenb. et Gottsche, Syn. Hepat. 5: 758, 1847 (Gottsche et al. 1847).
** *Lejeunea chamissonis* Lindenb., Syn. Hepat. 3: 378, 1845 (Gottsche et al. 1845b).
** *Lejeunea chimborazensis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 215, 1884 (Spruce 1884).
*** *Lejeunea combuensis* O.S.Moura, Ilk.-Borg. et M.E.Reiner, Nova Hedwigia 95 (1/2): 198, 2012 (Moura et al. 2012).
** *Lejeunea concava* Lindenb. et Gottsche, Syn. Hepat. 5: 759, 1847 (Gottsche et al. 1847).
*** *Lejeunea conformis* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 260, 1843 (Montagne 1843).
** *Lejeunea cordistipula* Lindenb. et Gottsche, Syn. Hepat. 5: 758, 1847 (Gottsche et al. 1847).
** *Lejeunea cyrtotis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 229, 1884 (Spruce 1884).
*** *Lejeunea debilis* (Lehm. et Lindenb.) Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 60, 1836 (Nees and Montagne 1836). Bas.: *Jungermannia debilis* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 51, 1832 (Lehmann 1832).

** *Lejeunea devendrae* (Sushil K.Singh) P.K.Verma et K.K.Rawat, J. Bryol. 36 (2): 161, 2014 (Verma and Rawat 2014). Bas.: *Rectolejeunea devendrae* Sushil K.Singh, Indian J. Forest. 34 (3): 341, 2011 (Singh 2011).

** *Lejeunea dictyocalyx* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 218, 1884 (Spruce 1884).

** *Lejeunea dipterota* (Eifrig) G.E.Lee, Polish Bot. J. 58 (1): 61, 2013 (Lee and Gradstein 2013). Bas.: *Taxilejeunea dipterota* Eifrig, Monogr. Stud. Indomal. Art. *Taxilejeunea*: 96, 1937 (Eifrig 1937).

*** *Lejeunea drehwaldii* Heinrichs et Schäf.-Verw., Phytotaxa 69: 14, 2012 (Heinrichs et al. 2012b). *Nom. nov. pro Sphaerolejeunea umbilicata* Herzog, Ann. Bryol. 11: 88, 1938 (Herzog 1938b).

** *Lejeunea duncaniae* (Sim) M.E.Reiner, Phytotaxa 208 (1): 98, 2015 (Pócs et al. 2015a). Bas.: *Stylolejeunea duncaniae* Sim, Trans. Roy. Soc. South Africa 15 (1): 68, 1926 (Sim 1926).

** *Lejeunea edentata* L.Söderstr., Phytotaxa 208 (1): 98, 2015 (Pócs et al. 2015a). *Nom. nov. pro Cyclolejeunea marginata* R.M.Schust., Phytologia 39 (6): 430, 1978 (Schuster 1978b).

* *Lejeunea emarginuliflora* Gottsche ex Steph., Sp. Hepat. (Stephani) 5: 734, 1915 (Stephani 1915b). [325]

* *Lejeunea epibrya* Taylor, London J. Bot. 7: 199, 1848 (Taylor 1848a).

** *Lejeunea estrellamontana* M.A.M.Renner et Pócs, Phytotaxa 81 (1): 9, 2013 (Renner et al. 2013d). *Nom. nov. pro Stenolejeunea fissistipula* R.M.Schust., J. Hattori Bot. Lab. 89: 167, 2000 (Schuster 2000b).

* *Lejeunea fawcettiae* D.J.Carr, Proc. Roy. Soc. Victoria 117 (2): 325, 2005 (Carr 2005). Based on: *Lejeunea fawcettiae* D.J.Carr, Proc. Roy. Soc. Victoria 116 (2): 229, 2004 (Carr 2004), *nom. inval.*

** *Lejeunea flaccida* Lindenb. et Gottsche, Syn. Hepat. 5: 758, 1847 (Gottsche et al. 1847).

** *Lejeunea flavida* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 113, 1860 [1861] (Mitten 1860c).

** *Lejeunea florida* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 221, 1884 (Spruce 1884).

** *Lejeunea fulva* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 237, 1884 (Spruce 1884).

** *Lejeunea gottscheana* Lindenb., Syn. Hepat. 3: 382, 1845 (Gottsche et al. 1845b).

** *Lejeunea graminicolor* Spruce, J. Linn. Soc., Bot. 30 (210): 343, 1895 (Gepp 1895b).

*** *Lejeunea grolleana* (Bernecker) R.L.Zhu et W.Ye, J. Syst. Evol. 51 (4): 472, 2013 (Ye et al. 2013b). Bas.: *Oryzolejeunea grolleana* Bernecker, Haussknechtia, Beih. 9: 37, 1999 (Bernecker-Lücking 1999).

*** *Lejeunea herminieri* (Steph.) R.L.Zhu, Phytotaxa 208 (1): 99, 2015 (Pócs et al. 2015a). Bas.: *Archilejeunea herminieri* Steph., Sp. Hepat. (Stephani) 4: 714, 1911 (Stephani 1911e).

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325 *Lejeunea emarginuliflora* is a *Lejeunea* (subg. *Heterolejeunea*) species (Reiner-Drehwald and Grolle 2012).

** *Lejeunea heterocheila* Taylor, London J. Bot. 5: 394, 1846 (Taylor 1846b).
* *Lejeunea hygrophila* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 157, 1864 (Gottsche 1864).
** *Lejeunea laevicalyx* Gottsche, Mexik. Leverm.: 221, 1863 (Gottsche 1863).
* *Lejeunea laxa* (Nees) Lindenb., Syn. Hepat. 3: 378, 1845 (Gottsche et al. 1845b). Bas.: *Jungermannia thymifolia* δ *laxa* Nees, Enum. Pl. Crypt. Javae: 43, 1830 (Nees 1830).
** *Lejeunea leiantha* Spruce, J. Linn. Soc., Bot. 30 (210): 345, 1895 (Gepp 1895b).
** *Lejeunea leptoscypha* Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: ccv, 1889 [1890] (Spruce 1889).
*** *Lejeunea lusoria* (Lindenb. et Gottsche) Steph., Hedwigia 29 (3): 141, 1890 (Stephani 1890d). Bas.: *Omphalanthus lusorius* Lindenb. et Gottsche, Syn. Hepat. 5: 747, 1847 (Gottsche et al. 1847).
** *Lejeunea luzonensis* (Steph.) R.L.Zhu et M.J.Lai, Ann. Bot. Fenn. 48 (5): 376, 2011 (Wang et al. 2011). Bas.: *Taxilejeunea luzonensis* Steph., Hedwigia 35 (3): 134, 1896 (Stephani 1896b).
** *Lejeunea macrorhyncha* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 220, 1884 (Spruce 1884).
** *Lejeunea malangensis* (Herzog) R.L.Zhu et Y.M.Wei, J. Bryol. 34 (4): 319, 2012 (Zhu and Wei 2012). Bas.: *Trachylejeunea malangensis* Herzog, Mitt. Inst. Allg. Bot. Hamburg 7 (3): 203, 1931 (Herzog 1931a).
** *Lejeunea marasmodes* Spruce, Mem. Torrey Bot. Club 1 (3): 125, 1890 (Spruce 1890).
** *Lejeunea morobensis* (Grolle) M.A.M.Renner et Pócs, Phytotaxa 81 (1): 9, 2013 (Renner et al. 2013d). Bas.: *Stenolejeunea morobensis* Grolle, J. Hattori Bot. Lab. 29: 76, 1966 (Grolle 1966e).
** *Lejeunea novoguineensis* Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 238, 1893 (Schiffner 1893a).
*** *Lejeunea obtusangula* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 221, 1884 (Spruce 1884).
* *Lejeunea oerstediana* Lindenb. et Hampe, Linnaea 24 (6): 641, 1851 [1852] (Hampe 1851a). [326]
** *Lejeunea paraensis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 224, 1884 (Spruce 1884).
** *Lejeunea parviloba* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 33 (7): 87, 1876 [1877] (Ångström 1876).
* *Lejeunea pfleidereri* Sushil K.Singh, Phytotaxa 96 (1): 63, 2013 (Singh 2013). *Nom. nov. pro Otigoniolejeunea indica* Steph., Sp. Hepat. (Stephani) 6: 408, 1923 (Stephani 1923).
* *Lejeunea prominula* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 157, 1864 (Gottsche 1864).

326 *Lejeunea oerstediana* is a poorly known taxon often placed in *Euosmolejeunea* (=*Cheilolejeunea*). We can not tell where it belongs until the type specimen is re-studied (Söderström et al. 2011a).

*** *Lejeunea pterigonia* (Lehm. et Lindenb.) Mont., Ann. Sci. Nat. Bot. (sér. 2) 14: 337, 1840 (Montagne 1840a). Bas.: *Jungermannia pterigonia* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 44, 1834 (Lehmann 1834).

** *Lejeunea quinqueumbonata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 230, 1884 (Spruce 1884).

** *Lejeunea quinqueumbonata* var. *rotundata* (Herzog) Sushil K.Singh, Phytotaxa 96 (1): 64, 2013 (Singh 2013). Bas.: *Otigoniolejeunea quinqueumbonata* var. *rotundata* Herzog, Rev. Bryol. Lichénol. 20 (1/2): 154, 1951 [1952] (Herzog 1951a).

** *Lejeunea remotifolia* Hampe ex Steph., Sp. Hepat. (Stephani) 5: 756, 1915 (Stephani 1915b).

*** *Lejeunea ruthii* (A.Evans) R.M.Schust., J. Hattori Bot. Lab. 25: 23, 1962 (Schuster 1962a). Bas.: *Microlejeunea ruthii* A.Evans, Mem. Torrey Bot. Club 8 (2): 161, 1902 (Evans 1902a).

** *Lejeunea ruthii* var. *alata* R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 1063, 1980 (Schuster 1980c).

** *Lejeunea sikorae* (Steph.) Steph., Bull. Soc. Roy. Bot. Belgique, Mém. 32: 120, 1893 [1894] (Renauld and Cardot 1893). Bas.: *Taxilejeunea sikorae* Steph., Bull. Soc. Roy. Bot. Belgique, Compt. Rend. 32 (2): 34, 1893 [1894] (Stephani 1893e).

** *Lejeunea srivastavae* P.K.Verma et K.K.Rawat, Taiwania 58 (1): 8, 2013 (Verma and Rawat 2013).

** *Lejeunea stenodentata* M.A.M.Renner et Pócs, Phytotaxa 81 (1): 8, 2013 (Renner et al. 2013d). *Nom. nov. pro Drepanolejeunea dentata* Steph., Hedwigia 35 (3): 82, 1896 (Stephani 1896b).

*** *Lejeunea subelobata* Carrington et Pearson, Proc. Linn. Soc. New South Wales (ser. 2) 2 (4): 1039, 1888 (Carrington and Pearson 1888a).

** *Lejeunea subolivacea* Mizut., J. Hattori Bot. Lab. 28: 121, 1965 (Mizutani 1965). *Nom. nov. pro Eulejeunea olivacea* Steph., Hedwigia 29 (2): 85, 1890 (Stephani 1890b).

** *Lejeunea subplana* (Steph.) C.J.Bastos, J. Bryol. 36 (3): 249, 2014 (Bastos 2014). Bas.: *Trachylejeunea subplana* Steph., Sp. Hepat. (Stephani) 5: 310, 1913 (Stephani 1913a).

*** *Lejeunea sulphurea* (Lehm. et Lindenb.) Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 217, 1884 (Spruce 1884). Bas.: *Jungermannia sulphurea* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 14, 1833 (Lehmann 1833).

** *Lejeunea terricola* Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: cxci, 1889 [1890] (Spruce 1889).

** *Lejeunea urbanii* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 766, 1915 (Stephani 1915b). Bas.: *Eulejeunea urbanii* Steph., Hedwigia 27 (11/12): 301, 1888 (Stephani 1888b).

** *Lejeunea venezuelana* (R.M.Schust.) R.L.Zhu et W.Ye, J. Syst. Evol. 51 (4): 473, 2013 (Ye et al. 2013b). Bas.: *Cyrtolejeunea venezuelana* R.M.Schust., Phytologia 39 (6): 426, 1978 (Schuster 1978b).

** *Lejeunea viridis* R.M.Schust. ex L.Söderstr. et A.Hagborg, Phytotaxa 208 (1): 99, 2015 (Pócs et al. 2015a). Based on: *Prionocolea viridissima* R.M.Schust., J. Hattori Bot. Lab. 75: 215, 1994 (Schuster 1994), *nom. inval.*

* *Lejeunea zacuapana* (Steph.) Prantl, Hedwigia 29: xviii, 1890 (Prantl 1890). Bas.: *Eulejeunea zacuapana* Steph., Hedwigia 29 (2): 87, 1890 (Stephani 1890b).

Excluded from the genus

* *Lejeunea elegans* Gottsche, Syn. Hepat. 3: 364, 1845 (Gottsche et al. 1845b). [327]

* *Lejeunea hieronymii* Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: cciii, 1889 [1890] (Spruce 1889). [328]

* *Lejeunea proboscidea* Gottsche, Mexik. Leverm.: 225, 1863 (Gottsche 1863). [329]

* *Lejeunea scabriflora* Loitl., Diagn. pl. nov.: 22, 1894 (Szyszylowicz 1894). [330]

* *Lejeunea trochantha* Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: cxcii, 1889 [1890] (Spruce 1889). [331]

** ***Microlejeunea* (Spruce) Steph.**, Hedwigia 27 (2): 61, 1888 (Stephani 1888a). Bas.: *Lejeunea* subg. *Microlejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 286, 1884 (Spruce 1884).

*** *Microlejeunea acutifolia* Steph., Hedwigia 35 (3): 113, 1896 (Stephani 1896b).

** *Microlejeunea africana* Steph., Hedwigia 27 (2): 61, 1888 (Stephani 1888a).

** *Microlejeunea aligera* (Mitt.) Steph., Sp. Hepat. (Stephani) 5: 827, 1915 (Stephani 1915b). Bas.: *Lejeunea aligera* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 113, 1860 [1861] (Mitten 1860c).

** *Microlejeunea ankasica* E.W.Jones, J. Bryol. 10 (4): 394, 1979 (Jones 1979).

** *Microlejeunea aphanella* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 816, 1915 (Stephani 1915b). Bas.: *Lejeunea aphanella* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 290, 1884 (Spruce 1884).

** *Microlejeunea atsuana* Steph., Hedwigia 35 (3): 113, 1896 (Stephani 1896b).

** *Microlejeunea bischlerae* (B.M.Thiers) B.M.Thiers, Phytotaxa 65: 59, 2012 (Thiers et al. 2012). Bas.: *Lejeunea bischlerae* B.M.Thiers, Cryptog. Bryol. Lichénol. 18 (3): 223, 1997 (Thiers 1997b).

*** *Microlejeunea bullata* (Taylor) Steph., Hedwigia 29 (2): 90, 1890 (Stephani 1890b). Bas.: *Lejeunea bullata* Taylor, London J. Bot. 5: 398, 1846 (Taylor 1846b).

* *Microlejeunea byssoides* (Gottsche) Pearson, Forh. Vidensk.-Selsk. Kristiania 1892 (8): 9, 1892 (Pearson 1892). Bas.: *Lejeunea byssoides* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 358, 1882 (Gottsche 1882).

** *Microlejeunea capillaris* (Gottsche) Steph., Sp. Hepat. (Stephani) 5: 819, 1915 (Stephani 1915b). Bas.: *Lejeunea capillaris* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 163, 1864 (Gottsche 1864).

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327 *Lejeunea elegans* is a *Cheilolejeunea* species (Reiner-Drehwald 2006).

328 *Lejeunea hieronymii* is a *Cheilolejeunea* species of uncertain status.

329 *Lejeunea proboscidea* is a *Drepanolejeunea* species, but Bischler (1964) did not place it to any species.

330 *Lejeunea scabriflora* was rejected from *Dicranolejeunea* by Kruijt (1988), but he did not refer it to any other genus.

331 *Lejeunea trochantha* is a *Cheilolejeunea* species (Reiner-Drehwald 2006).

** *Microlejeunea cochlearifolia* Steph., Hedwigia 27 (3/4): 113, 1888 (Stephani 1888d). [332]
** *Microlejeunea colombiana* Bischl., Nova Hedwigia 5 (1/2): 373, 1963 (Bischler et al. 1963).
** *Microlejeunea constricta* (Grolle) Grolle, J. Bryol. 21 (1): 41, 1999 (Grolle and Reiner-Drehwald 1999). Bas.: *Harpalejeunea constricta* Grolle, Nova Hedwigia 16: 150, 1968 (Grolle 1968d).
** *Microlejeunea crenulifolia* (Gottsche) Steph., Hedwigia 35 (3): 114, 1896 (Stephani 1896b). Bas.: *Lejeunea crenulifolia* Gottsche, Mexik. Leverm.: 227, 1863 (Gottsche 1863).
*** *Microlejeunea cystifera* Herzog, Memoranda Soc. Fauna Fl. Fennica 25: 68, 1950 (Herzog 1950c).
** *Microlejeunea dispar* Jovet-Ast, Rev. Bryol. Lichénol. 27 (3/4): 191, 1959 (Jovet-Ast 1959).
*** *Microlejeunea epiphylla* Bischl., Nova Hedwigia 5 (1/2): 378, 1963 (Bischler et al. 1963).
*** *Microlejeunea filicuspis* (Steph.) Heinrichs, Schäf.-Verw., Pócs et S.Dong, Phytotaxa 85 (2): 52, 2013 (Dong et al. 2013). Bas.: *Drepanolejeunea filicuspis* Steph., Sp. Hepat. (Stephani) 5: 344, 1913 (Stephani 1913a).
*** *Microlejeunea fischeri* (Tixier) Heinrichs, Schäf.-Verw., Pócs et S.Dong, Phytotaxa 85 (2): 52, 2013 (Dong et al. 2013). Bas.: *Harpalejeunea fischeri* Tixier, Trop. Bryol. 11: 29, 1995 (Tixier 1995b).
** *Microlejeunea fissistipula* Steph., Sp. Hepat. (Stephani) 5: 810, 1915 (Stephani 1915b).
*** *Microlejeunea globosa* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 821, 1915 (Stephani 1915b). Bas.: *Lejeunea globosa* Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: cxciii, 1889 [1890] (Spruce 1889).
** *Microlejeunea herzogiana* Steph., Biblioth. Bot. 87 (2): 266, 1916 (Stephani 1916a).
** *Microlejeunea indica* (Udar et U.S.Awasthi) Y.M.Wei et R.L.Zhu, Phytotaxa 97 (2): 63, 2013 (Wei and Zhu 2013b). Bas.: *Lejeunea indica* Udar et U.S.Awasthi, Cryptog. Bryol. Lichénol. 2 (3): 345, 1981 (Udar and Awasthi 1981).
** *Microlejeunea inflata* Steph., Sp. Hepat. (Stephani) 5: 811, 1915 (Stephani 1915b).
** *Microlejeunea kinabaluensis* (Mizut.) Grolle, J. Bryol. 21 (1): 42, 1999 (Grolle and Reiner-Drehwald 1999). Bas.: *Harpalejeunea kinabaluensis* Mizut., J. Hattori Bot. Lab. 37: 200, 1973 (Mizutani 1973).
*** *Microlejeunea latitans* (Hook.f. et Taylor) Heinrichs, Schäf.-Verw., Pócs et S.Dong, Phytotaxa 85 (2): 52, 2013 (Dong et al. 2013). Bas.: *Jungermannia latitans* Hook.f. et Taylor, London J. Bot. 3: 399, 1844 (Hooker and Taylor 1844a).
** *Microlejeunea lunulatiloba* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 27, 1931 (Horikawa 1931b). [333]
* *Microlejeunea magnilobula* Gola, Ann. Bot. (Rome) 6 (2): 274, 1907 (Gola 1907).

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332 *Microlejeunea cochlearifolia* is conspecific with *Microlejeunea kamerunensis* in Jones (1969), but he used the younger name *Microlejeunea kamerunensis* Steph. 1915.

333 *Microlejeunea lunulatiloba* is conspecific with *Microlejeunea ulicina* in Schuster (1962a), but that is not followed by many recent authors.

** *Microlejeunea mammillosa* (Mizut.) Grolle, J. Bryol. 21 (1): 42, 1999 (Grolle and Reiner-Drehwald 1999). Bas.: *Harpalejeunea mammillosa* Mizut., J. Hattori Bot. Lab. 37: 192, 1973 (Mizutani 1973).

** *Microlejeunea minutissima* (Mizut.) Grolle, J. Bryol. 21 (1): 42, 1999 (Grolle and Reiner-Drehwald 1999). Bas.: *Harpalejeunea minutissima* Mizut., J. Hattori Bot. Lab. 37: 202, 1973 (Mizutani 1973).

* *Microlejeunea minutistipula* Steph., Wiss. Ergebn. Deut. Zentr.-Afr. Exped. (1907–08), Bot. 2: 131, 1911 (Stephani 1911a). [334]

*** *Microlejeunea moniliata* (Mizut.) R.L.Zhu et Y.M.Wei, Cryptog. Bryol. 34 (3): 308, 2013 (Wei and Zhu 2013a). Bas.: *Lejeunea moniliata* Mizut., J. Hattori Bot. Lab. 46: 357, 1979 (Mizutani 1979b).

* *Microlejeunea nepalensis* Steph., Sp. Hepat. (Stephani) 5: 832, 1915 (Stephani 1915b).

** *Microlejeunea nyandaruensis* Pócs, Polish Bot. J. 47 (1): 14, 2002 (Pócs 2002c).

** *Microlejeunea oblongistipula* (Gottsche) Pearson, Forh. Vidensk.-Selsk. Kristiania 1892 (8): 9, 1892 (Pearson 1892). Bas.: *Lejeunea oblongistipula* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 357, 1882 (Gottsche 1882).

** *Microlejeunea ocellata* (Herzog) Grolle, Haussknechtia 8: 60, 2001 (Grolle 2001). Bas.: *Rectolejeunea ocellata* Herzog, Trans. & Proc. Roy. Soc. New Zealand 77 (2): 255, 1949 (Herzog 1949a).

* *Microlejeunea ovistipula* Steph., Wiss. Ergebn. Deut. Zentr.-Afr. Exped. (1907-08), Bot. 2: 131, 1911 (Stephani 1911a). [335]

** *Microlejeunea papulosa* (Gottsche) Pearson, Forh. Vidensk.-Selsk. Kristiania 1892 (8): 9, 1892 (Pearson 1892). Bas.: *Lejeunea papulosa* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 358, 1882 (Gottsche 1882).

** *Microlejeunea perpusilla* (Spruce) Steph., Hedwigia 35 (3): 113, 1896 (Stephani 1896b). Bas.: *Lejeunea perpusilla* Spruce, J. Bot. 19: 36, 1881 (Spruce 1881b).

** *Microlejeunea punctiformis* (Taylor) Steph., Hedwigia 29 (2): 90, 1890 (Stephani 1890b). Bas.: *Lejeunea punctiformis* Taylor, London J. Bot. 5: 398, 1846 (Taylor 1846b). [336]

** *Microlejeunea pyriformis* (Lindenb. et Gottsche) Steph., Sp. Hepat. (Stephani) 5: 824, 1915 (Stephani 1915b). Bas.: *Lejeunea pyriformis* Lindenb. et Gottsche, Syn. Hepat. 5: 767, 1847 (Gottsche et al. 1847).

** *Microlejeunea spinosa* (Mizut.) Grolle, J. Bryol. 21 (1): 43, 1999 (Grolle and Reiner-Drehwald 1999). Bas.: *Harpalejeunea spinosa* Mizut., J. Hattori Bot. Lab. 37: 196, 1973 (Mizutani 1973).

*** *Microlejeunea squarrosa* (Steph.) Heinrichs, Schäf.-Verw., Pócs et S.Dong, Phytotaxa 85 (2): 51, 2013 (Dong et al. 2013). Bas.: *Strepsilejeunea squarrosa* Steph., Hedwigia 35 (3): 130, 1896 (Stephani 1896b).

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334 *Microlejeunea minutistipula* is probably either *Microlejeunea cochlearifolia* or *Microlejeunea africana* (Jones 1969).

335 *Microlejeunea ovistipula* is possibly conspecific with *Lejeunea hepaticola* (Jones (1985, Wigginton and Grolle 1996).

336 *Microlejeunea punctiformis* was treated as conspecific with *Microlejeunea ulicina* by Long and Grolle (1990), Fang et al. (1998) and Piippo (1990), but Zhu and So (2001) showed that it merits distinction.

** *Microlejeunea strasbergii* Bardat et Ah-Peng, Bryologist 114 (4): 669, 2011 (Ah-Peng and Bardat 2011).
*** *Microlejeunea subulistipa* Steph., Hedwigia 35 (3): 115, 1896 (Stephani 1896b).
* *Microlejeunea szechuanensis* P.C.Chen, Feddes Repert. Spec. Nov. Regni Veg. 58: 46, 1955 (Chen 1955). [337]
** *Microlejeunea udarii* P.K.Verma et S.C.Srivast., J. Bombay Nat. Hist. Soc. 108 (2): 122, 2011 [2012] (Verma and Srivastava 2011).
*** *Microlejeunea ulicina* (Taylor) Steph., Hedwigia 29 (2): 88, 1890 (Stephani 1890b). Bas.: *Jungermannia ulicina* Taylor, Trans. Bot. Soc. Edinburgh 1 (1/4): 115, 1844 (Taylor 1844a).
* *Microlejeunea usambarensis* Steph., Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr. 88: 730, 1913 (Stephani 1913b).
** *Microlejeunea valenciana* Steph., Sp. Hepat. (Stephani) 5: 815, 1915 (Stephani 1915b).
* *Microlejeunea victoriensis* D.J.Carr, Proc. Roy. Soc. Victoria 117 (2): 322, 2005 (Carr 2005).
*** *Microlejeunea wallichiana* (Lehm.) R.L.Zhu et Y.M.Wei, Cryptog. Bryol. 34 (3): 308, 2013 (Wei and Zhu 2013a). Bas.: *Jungermannia wallichiana* Lehm., Nov. Stirp. Pug. 3: 5, 1831 (Lehmann 1831).

* ***Taxilejeunea* (Spruce) Steph.**, Hedwigia 28 (4): 262, 1889 (Stephani 1889c) nom. rejic. Bas.: *Lejeunea* subg. *Taxilejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 212, 1884 (Spruce 1884).
** *Taxilejeunea acutifolia* (Steph.) Steph., Sp. Hepat. (Stephani) 5: 481, 1914 (Stephani 1914b). Bas.: *Dicranolejeunea acutifolia* Steph., Hedwigia 35 (3): 76, 1896 (Stephani 1896b).
** *Taxilejeunea antillana* Steph., Sp. Hepat. (Stephani) 5: 482, 1914 (Stephani 1914b).
** *Taxilejeunea apiculata* (Gottsche) J.B.Jack et Steph., Hedwigia 31 (1): 13, 1892 (Jack and Stephani 1892). Bas.: *Omphalanthus apiculatus* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 149, 1864 (Gottsche 1864).
** *Taxilejeunea argentina* Steph., Sp. Hepat. (Stephani) 5: 482, 1914 (Stephani 1914b).
** *Taxilejeunea arsenii* Steph., Sp. Hepat. (Stephani) 6: 400, 1923 (Stephani 1923).
** *Taxilejeunea auriculata* Steph., Sp. Hepat. (Stephani) 5: 459, 1914 (Stephani 1914b).
** *Taxilejeunea berteroana* Steph., Sp. Hepat. (Stephani) 5: 483, 1914 (Stephani 1914b).
** *Taxilejeunea beyrichiana* Steph., Sp. Hepat. (Stephani) 5: 460, 1914 (Stephani 1914b).
** *Taxilejeunea biapiculata* Steph., Sp. Hepat. (Stephani) 5: 460, 1914 (Stephani 1914b).
* *Taxilejeunea boliviana* Steph., Biblioth. Bot. 87 (2): 260, 1916 (Stephani 1916a).
** *Taxilejeunea brasiliensis* Steph., Hedwigia 35 (3): 132, 1896 (Stephani 1896b).
** *Taxilejeunea coilantha* Herzog, Rev. Bryol. Lichénol. 20 (1/2): 159, 1951 [1952] (Herzog 1951a).

337 *Microlejeunea szechuanensis* may be conspecific with *Microlejeunea punctiformis*.

* *Taxilejeunea compressiuscula* Steph., Sp. Hepat. (Stephani) 5: 501, 1914 (Stephani 1914b).
* *Taxilejeunea convoluta* Herzog, Biblioth. Bot. 88: 31, 1920 [1921] (Herzog 1920).
* *Taxilejeunea cuervi* (Gottsche) Steph., Sp. Hepat. (Stephani) 5: 486, 1914 (Stephani 1914b). Bas.: *Omphalanthus cuervi* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 147, 1864 (Gottsche 1864).
* *Taxilejeunea cuneistipula* Steph., Sp. Hepat. (Stephani) 6: 401, 1923 (Stephani 1923).
* *Taxilejeunea cuspidata* Steph., Biblioth. Bot. 87 (2): 260, 1916 (Stephani 1916a).
** *Taxilejeunea decurrens* Steph., Sp. Hepat. (Stephani) 5: 487, 1914 (Stephani 1914b).
** *Taxilejeunea deflexa* Steph., Sp. Hepat. (Stephani) 5: 502, 1914 (Stephani 1914b).
** *Taxilejeunea densiflora* A.Evans, Bull. Torrey Bot. Club 48 (4): 121, 1921 (Evans 1921b).
** *Taxilejeunea diaphana* (Lehm.) Steph., Sp. Hepat. (Stephani) 5: 463, 1914 (Stephani 1914b). Bas.: *Omphalanthus diaphanus* Lehm., Nov. Stirp. Pug. 10: 12, 1857 (Lehmann 1857).
* *Taxilejeunea dissitifolia* Steph., Symb. Antill. 2: 472, 1901 (Stephani 1901f).
** *Taxilejeunea eggersiana* Schiffn., Bot. Jahrb. Syst. 23 (5): 579, 1897 (Schiffner 1897). Based on: *Taxilejeunea eggersiana* Steph., Hedwigia 27 (11/12): 285, 1888 (Stephani 1888c), *nom. inval.*
* *Taxilejeunea elobulata* Sim, Trans. Roy. Soc. South Africa 15 (1): 66, 1926 (Sim 1926).
** *Taxilejeunea fissistipula* Steph., Sp. Hepat. (Stephani) 5: 488, 1914 (Stephani 1914b).
** *Taxilejeunea foliicola* Steph., Sp. Hepat. (Stephani) 5: 466, 1914 (Stephani 1914b).
** *Taxilejeunea furcicornuta* Grolle, J. Bryol. 8 (1): 93, 1974 (Grolle 1974a).
** *Taxilejeunea fuscorufa* Steph., Hedwigia 35 (3): 133, 1896 (Stephani 1896b).
** *Taxilejeunea galapagensis* Onr., Misc. Bryol. Lichenol. 9 (6): 117, 1982 (Onraedt 1982).
* *Taxilejeunea ghatensis* P.K.Verma et S.C.Srivast., Proc. Natl. Acad. Sci. India, B 77 (2): 211, 2007 (Verma and Srivastava 2007).
* *Taxilejeunea giulianettii* Steph., Sp. Hepat. (Stephani) 5: 502, 1914 (Stephani 1914b).
** *Taxilejeunea gomphocalyx* Herzog, Beih. Bot. Centralbl. 61B (3): 580, 1942 (Herzog 1942d).
* *Taxilejeunea grandifolia* Steph., Biblioth. Bot. 87 (2): 261, 1916 (Stephani 1916a).
* *Taxilejeunea grandistipula* Steph., Sp. Hepat. (Stephani) 5: 504, 1914 (Stephani 1914b).
* *Taxilejeunea hamatifolia* Steph., Biblioth. Bot. 87 (2): 261, 1916 (Stephani 1916a).
** *Taxilejeunea himalayensis* Herzog, Ann. Bryol. 12: 86, 1939 (Herzog 1939b).
* *Taxilejeunea immersa* Eifrig, Monogr. Stud. Indomal. Art. *Taxilejeunea*: 96, 1937 (Eifrig 1937).
** *Taxilejeunea irregularis* Steph., Sp. Hepat. (Stephani) 5: 490, 1914 (Stephani 1914b).
** *Taxilejeunea jamaicensis* A.Evans, Bull. Torrey Bot. Club 48 (4): 117, 1921 (Evans 1921b).
** *Taxilejeunea jeringii* Steph., Hedwigia 35 (3): 134, 1896 (Stephani 1896b).
** *Taxilejeunea killipii* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 190, 1955 (Herzog 1955).

* *Taxilejeunea laevis* (Gottsche) Steph., Hedwigia 44 (4): 229, 1905 (Stephani 1905a). Bas.: *Omphalanthus laevis* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 148, 1864 (Gottsche 1864).
* *Taxilejeunea langiana* Pearson, Ann. Bryol. 4: 102, 1931 (Pearson 1931b).
** *Taxilejeunea lindbergiana* Steph., Sp. Hepat. (Stephani) 5: 491, 1914 (Stephani 1914b).
** *Taxilejeunea linguifolia* Steph., Sp. Hepat. (Stephani) 5: 471, 1914 (Stephani 1914b).
* *Taxilejeunea maxima* Steph., Sp. Hepat. (Stephani) 5: 473, 1914 (Stephani 1914b).
** *Taxilejeunea mexicana* Steph., Sp. Hepat. (Stephani) 6: 402, 1923 (Stephani 1923).
* *Taxilejeunea microstipula* Steph., Sp. Hepat. (Stephani) 5: 493, 1914 (Stephani 1914b).
* *Taxilejeunea mucronata* Steph., Sp. Hepat. (Stephani) 5: 473, 1914 (Stephani 1914b).
** *Taxilejeunea multiflora* Steph., Hedwigia 35 (3): 135, 1896 (Stephani 1896b).
* *Taxilejeunea muscicola* Steph., Biblioth. Bot. 87 (2): 263, 1916 (Stephani 1916a).
* *Taxilejeunea nilgiriensis* P.K.Verma et S.C.Srivast., Proc. Natl. Acad. Sci. India, B 77 (2): 207, 2007 (Verma and Srivastava 2007).
** *Taxilejeunea nymannii* Steph., Sp. Hepat. (Stephani) 5: 507, 1914 (Stephani 1914b).
** *Taxilejeunea obtusifolia* Steph., Sp. Hepat. (Stephani) 5: 474, 1914 (Stephani 1914b).
** *Taxilejeunea papuliflora* Steph., Sp. Hepat. (Stephani) 5: 494, 1914 (Stephani 1914b).
** *Taxilejeunea parvibracteata* Steph., Hedwigia 35 (3): 136, 1896 (Stephani 1896b).
** *Taxilejeunea parvistipula* Steph., Sp. Hepat. (Stephani) 6: 403, 1923 (Stephani 1923).
* *Taxilejeunea paucidens* Steph., Biblioth. Bot. 87 (2): 263, 1916 (Stephani 1916a).
* *Taxilejeunea pendula* Steph., Biblioth. Bot. 87 (2): 263, 1916 (Stephani 1916a).
* *Taxilejeunea peruviana* Steph., Sp. Hepat. (Stephani) 5: 475, 1914 (Stephani 1914b).
** *Taxilejeunea planilobula* Herzog, Rev. Bryol. Lichénol. 20 (1/2): 160, 1951 [1952] (Herzog 1951a).
** *Taxilejeunea pulchriflora* Pearson, Ark. Bot. 19 (5): 15, 1924 (Pearson 1924b).
* *Taxilejeunea pusilla* Steph., Biblioth. Bot. 87 (2): 264, 1916 (Stephani 1916a).
** *Taxilejeunea renistipula* (Lindenb.) Steph., Hedwigia 29 (3): 142, 1890 (Stephani 1890d). Bas.: *Omphalanthus renistipulus* Lindenb., Syn. Hepat. 3: 308, 1845 (Gottsche et al. 1845b).
* *Taxilejeunea rufescens* Steph., Biblioth. Bot. 87 (2): 264, 1916 (Stephani 1916a).
*** *Taxilejeunea serpillifolioides* (Raddi) D.P.Costa, J. Bryol. 31 (4): 230, 2009 (Costa 2009). Bas.: *Jungermannia serpillifolioides* Raddi, Critt. Brasil.: 17, 1822 (Raddi 1822).
** *Taxilejeunea setchellii* Pearson, Amer. Samoa: 146, 1924 (Pearson 1924a).
** *Taxilejeunea speciosa* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 188, 1955 (Herzog 1955).
* *Taxilejeunea splendida* Eifrig, Monogr. Stud. Indomal. Art. *Taxilejeunea*: 88, 1937 (Eifrig 1937).
** *Taxilejeunea stephanii* Eifrig, Monogr. Stud. Indomal. Art. *Taxilejeunea*: 90, 1937 (Eifrig 1937). *Nom. nov. pro Hygrolejeunea nymanii* Steph., Sp. Hepat. (Stephani) 5: 564, 1914 (Stephani 1914b).
** *Taxilejeunea steyermarkii* H.Rob., Phytologia 34 (1): 67, 1976 (Robinson 1976a).
** *Taxilejeunea surinamensis* (Lindenb. et Gottsche) Steph., Hedwigia 29 (3): 142, 1890 (Stephani 1890d). Bas.: *Omphalanthus surinamensis* Lindenb. et Gottsche, Linnaea 24 (6): 628, 1851 [1852] (Lindenberg and Gottsche 1851a).

* *Taxilejeunea suringarii* Steph., Sp. Hepat. (Stephani) 5: 479, 1914 (Stephani 1914b).
** *Taxilejeunea tenerrima* Steph., Sp. Hepat. (Stephani) 6: 406, 1923 (Stephani 1923).
** *Taxilejeunea tenuiplica* Steph., Sp. Hepat. (Stephani) 5: 480, 1914 (Stephani 1914b).
* *Taxilejeunea tjibodensis* (Steph.) Eifrig, Monogr. Stud. Indomal. Art. *Taxilejeunea*: 91, 1937 (Eifrig 1937). Bas.: *Hygrolejeunea tjibodensis* Steph., Sp. Hepat. (Stephani) 5: 571, 1914 (Stephani 1914b).
** *Taxilejeunea tonduzana* Steph., Sp. Hepat. (Stephani) 5: 498, 1914 (Stephani 1914b).
* *Taxilejeunea uleana* Steph., Hedwigia 35 (3): 136, 1896 (Stephani 1896b).
* *Taxilejeunea umbonata* Steph., Sp. Hepat. (Stephani) 5: 481, 1914 (Stephani 1914b).
* *Taxilejeunea urbanii* Steph., Symb. Antill. (Urban) 3 (2): 278, 1902 (Stephani 1902e).
** *Taxilejeunea vallis-gratiae* Steph., Hedwigia 35 (3): 137, 1896 (Stephani 1896b).

** subtrib. Lepidolejeuneinae Gradst.

*** ***Lepidolejeunea* R.M.Schust.**, Beih. Nova Hedwigia 9: 139, 1963 (Schuster 1963a). [338]

** **subg. *Kingiolejeunea* (H.Rob.) R.M.Schust.**, Phytologia 45 (5): 425, 1980 (Schuster 1980b). Bas.: *Kingiolejeunea* H.Rob., Bryologist 70 (1): 53, 1967 (Robinson 1967).
** *Lepidolejeunea auriculata* Schäf.-Verw. et Heinrichs, Taxon 64 (2): 224, 2015 (Heinrichs et al. 2015).
*** *Lepidolejeunea cordifissa* (Taylor) M.E.Reiner, Nova Hedwigia 83 (3/4): 478, 2006 (Reiner-Drehwald 2006). Bas.: *Lejeunea cordifissa* Taylor, London J. Bot. 5: 395, 1846 (Taylor 1846b).
*** *Lepidolejeunea grossepapulosa* (Steph.) Piippo, Acta Bot. Fenn. 132: 49, 1986 (Piippo 1986a). Bas.: *Prionolejeunea grossepapulosa* Steph., Sp. Hepat. (Stephani) 5: 220, 1913 (Stephani 1913a).
*** *Lepidolejeunea involuta* (Gottsche) Grolle, J. Hattori Bot. Lab. 55: 504, 1984 (Grolle 1984a). Bas.: *Lejeunea involuta* Gottsche, Syn. Hepat. 3: 350, 1845 (Gottsche et al. 1845b).

** **subg. *Lepidolejeunea***
*** *Lepidolejeunea bidentula* (Steph.) R.M.Schust., Phytologia 45 (5): 425, 1980 (Schuster 1980b). Bas.: *Pycnolejeunea bidentula* Steph., Bot. Centralbl. 60 (4): 107, 1894 (Jack and Stephani 1894).
*** *Lepidolejeunea bidentula* var. *novae-caledoniae* Piippo, Acta Bot. Fenn. 132: 26, 1986 (Piippo 1986a).
*** *Lepidolejeunea falcata* (Herzog) R.M.Schust., Beih. Nova Hedwigia 9: 139, 1963 (Schuster 1963a). Bas.: *Hygrolejeunea falcata* Herzog, Ark. Bot. (n.ser.) 3 (3): 57, 1953 (Herzog 1953a).

338 *Lepidolejeunea* includes *Kingiolejeunea*, but one taxon has neither been transferred nor synonymized. It is listed in the "Names in genera not currently accepted" section below.

*** *Lepidolejeunea graeffei* (J.B.Jack et Steph.) R.M.Schust., Phytologia 45 (5): 425, 1980 (Schuster 1980b). Bas.: *Archilejeunea graeffei* J.B.Jack et Steph., Bot. Centralbl. 60 (4): 104, 1894 (Jack and Stephani 1894).

*** *Lepidolejeunea integristipula* (J.B.Jack et Steph.) R.M.Schust., Phytologia 45 (5): 425, 1980 (Schuster 1980b). Bas.: *Pycnolejeunea integristipula* J.B.Jack et Steph., Bot. Centralbl. 60 (4): 107, 1894 (Jack and Stephani 1894).

** **subg. *Perilejeunea* (Kachroo et R.M.Schust.) R.M.Schust.**, Phytologia 45 (5): 424, 1980 (Schuster 1980b). Bas.: *Pycnolejeunea* subg. *Perilejeunea* Kachroo et R.M.Schust., J. Linn. Soc., Bot. 56 (368): 493, 1961 (Kachroo and Schuster 1961).

** *Lepidolejeunea cuspidata* (Gottsche) Heinrichs et Schäf.-Verw., Taxon 64 (2): 224, 2015 (Heinrichs et al. 2015). Bas.: *Lejeunea cuspidata* Gottsche, Syn. Hepat. 3: 351, 1845 (Gottsche et al. 1845b).

*** *Lepidolejeunea delessertii* (Nees et Mont.) Grolle, J. Hattori Bot. Lab. 55: 505, 1984 (Grolle 1984a). Bas.: *Lejeunea delessertii* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 260, 1843 (Montagne 1843).

*** *Lepidolejeunea eluta* (Nees) R.M.Schust., Beih. Nova Hedwigia 9: 139, 1963 (Schuster 1963a). Bas.: *Jungermannia eluta* Nees, Fl. Bras. (Martius) 1 (1): 362, 1833 (Nees 1833a).

*** *Lepidolejeunea serrulata* (Steph.) Grolle, J. Hattori Bot. Lab. 55: 505, 1984 (Grolle 1984a). Bas.: *Trachylejeunea serrulata* Steph., Sp. Hepat. (Stephani) 5: 300, 1913 (Stephani 1913a).

*** *Lepidolejeunea sullivantii* (Gottsche) M.E.Reiner, Nova Hedwigia 83 (3/4): 479, 2006 (Reiner-Drehwald 2006). Bas.: *Lejeunea sullivantii* Gottsche, Mexik. Leverm.: 196, 1863 (Gottsche 1863).

Incertae sedis

*** *Lepidolejeunea borneensis* (Steph.) R.M.Schust., Phytologia 45 (5): 425, 1980 (Schuster 1980b). Bas.: *Hygrolejeunea borneensis* Steph., Sp. Hepat. (Stephani) 5: 557, 1914 (Stephani 1914b).

*** *Lepidolejeunea longilobula* (Amakawa) Xiao L.He, Acta Bot. Fenn. 163: 59, 1999 (He 1999). Bas.: *Pycnolejeunea longilobula* Amakawa, J. Jap. Bot. 40 (10): 307, 1965 (Amakawa 1965).

*** ***Otolejeunea* Grolle et Tixier**, Nova Hedwigia 32: 609, 1980 (Tixier 1980b).

*** **subg. *Allorgella* (Tixier) Grolle**, Haussknechtia 2: 53, 1985 (Grolle 1985a). Bas.: *Allorgella* Tixier, Nova Hedwigia 32: 612, 1980 (Tixier 1980b).

*** *Otolejeunea australiensis* B.M.Thiers, Brittonia 44 (2): 162, 1992 (Thiers 1992a).

*** *Otolejeunea hoana* (Tixier) Grolle, Haussknechtia 2: 54, 1985 [1986] (Grolle 1985a). Bas.: *Allorgella hoana* Tixier, Nova Hedwigia 32: 615, 1980 (Tixier 1980b).

*** *Otolejeunea rabenorii* Tixier, Nova Hedwigia 46 (3/4): 376, 1988 (Tixier 1988).

*** *Otolejeunea schmidii* (Tixier) Grolle, Haussknechtia 2: 54, 1985 [1986] (Grolle 1985a). Bas.: *Allorgella schmidii* Tixier, Nova Hedwigia 32: 613, 1980 (Tixier 1980b).

*** *Otolejeunea schnellii* (Tixier) R.L.Zhu et M.L.So, Ann. Bot. Fenn. 34 (4): 287, 1997 (Zhu and So 1997a). Bas.: *Allorgella schnellii* Tixier, Cryptog. Bryol. Lichenol. 16 (3): 230, 1995 (Tixier 1995a).
*** *Otolejeunea semperiana* (Steph.) Grolle, Haussknechtia 2: 53, 1985 [1986] (Grolle 1985a). Bas.: *Prionolejeunea semperiana* Steph., Sp. Hepat. (Stephani) 5: 227, 1913 (Stephani 1913a).
** *Otolejeunea subana* Pocs, Acta Acad. Ped. Agr., Sect. Biol. 25: 50, 2004 (Pocs 2004).
*** *Otolejeunea zantenii* Grolle, Haussknechtia 2: 54, 1985 [1986] (Grolle 1985a).

*** **subg. *Otolejeunea***
*** *Otolejeunea moniliata* Grolle, Nova Hedwigia 32: 609, 1980 (Tixier 1980b). World checklist of hornworts and liverworts 353

*** **subg. *Phoxolejeunea* Grolle**, Haussknechtia 2: 49, 1985 (Grolle 1985a).
** *Otolejeunea philippinensis* R.L.Zhu et M.L.So, Syst. Bot. 23 (2): 231, 1998 (Zhu and So 1998).
*** *Otolejeunea streimannii* Grolle, Haussknechtia 2: 49, 1985 [1986] (Grolle 1985a).

*** ***Rectolejeunea* A.Evans**, Bull. Torrey Bot. Club 33 (1): 8, 1906 (Evans 1906a).
* *Rectolejeunea colombiana* R.M.Schust., J. Hattori Bot. Lab. 89: 146, 2000 (Schuster 2000c).
*** *Rectolejeunea emarginuliflora* (Schiffn.) A.Evans, Bull. Torrey Bot. Club 33 (1): 14, 1906 (Evans 1906a). Bas.: *Cheilolejeunea emarginuliflora* Schiffn., Bot. Jahrb. Syst. 23 (5): 585, 1897 (Schiffner 1897).
*** *Rectolejeunea flagelliformis* A.Evans, Bull. Torrey Bot. Club 33 (1): 9, 1906 (Evans 1906a).
* *Rectolejeunea flagelliformis* subsp. *hamata* R.M.Schust., J. Hattori Bot. Lab. 89: 137, 2000 (Schuster 2000c).
*** *Rectolejeunea queenslandica* (B.M.Thiers) Xiao L.He, Ann. Bot. Fenn. 34 (2): 129, 1997 (He 1997). Bas.: *Lepidolejeunea queenslandica* B.M.Thiers, Mem. New York Bot. Gard. 45: 556, 1987 (Thiers 1987a).
** *Rectolejeunea truncatilobula* C.J.Bastos, J. Bryol. 34 (2): 144, 2012 (Bastos 2012a).
*** *Rectolejeunea versifolia* (Schiffn.) L.Söderstr. et A.Hagborg, Phytotaxa 220 (2): 188, 2015 (Söderström et al. 2015a). Bas.: *Cheilolejeunea versifolia* Schiffn., Bot. Jahrb. Syst. 23 (5): 597, 1897 (Schiffner 1897).

Excluded from the genus
* *Rectolejeunea lindenbergii* Steph., Sp. Hepat. (Stephani) 5: 689, 1914 (Stephani 1914b). [339]

339 *Rectolejeunea lindenbergii* is a *Lejeunea* species (Reiner-Drehwald and Grolle 2012; non *Lejeunea lindenbergii* Gottsche). However, it may be conspecific with something else.

* *Rectolejeunea lindigiana* Steph., Sp. Hepat. (Stephani) 5: 690, 1914 (Stephani 1914b). [340]

* *Rectolejeunea pachyderma* R.M.Schust., J. Hattori Bot. Lab. 89: 148, 2000 (Schuster 2000c). [341]

** subtrib. Leptolejeuneinae Heinrichs et Schäf.-Verw.

*** ***Leptolejeunea* (Spruce) Steph.**, Hedwigia 30 (6): 270, 1891 (Stephani 1891c). Bas.: *Lejeunea* subg. *Leptolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 193, 1884 (Spruce 1884).

*** *Leptolejeunea amphiophthalma* Zwickel, Ann. Bryol. 6: 117, 1933 (Zwickel 1933).

** *Leptolejeunea apiculata* (Horik.) S.Hatt., J. Hattori Bot. Lab. 5: 46, 1951 (Hattori 1951d). Bas.: *Drepanolejeunea apiculata* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 266, 1934 (Horikawa 1934).

** *Leptolejeunea arunachalensis* Sudipa Das et D.K.Singh, J. Jap. Bot. 83 (6): 343, 2008 (Das and Singh 2008).

*** *Leptolejeunea astroidea* (Mitt.) Steph., Sp. Hepat. (Stephani) 5: 363, 1913 (Stephani 1913a). Bas.: *Lejeunea astroidea* Mitt., Trans. Linn. Soc. London 23 (1): 58, 1860 (Mitten 1860a).

** *Leptolejeunea australis* Steph., Sp. Hepat. (Stephani) 5: 389, 1913 (Stephani 1913a). Based on: *Leptolejeunea australis* Steph., Hedwigia 28 (3): 173, 1889 (Stephani 1889d), *nom. inval.*

** *Leptolejeunea balansae* Steph., Hedwigia 35 (3): 105, 1896 (Stephani 1896b).

* *Leptolejeunea borneensis* Herzog, Flora 135: 394, 1942 (Herzog 1942c). [342]

** *Leptolejeunea brasiliensis* Bischl., Nova Hedwigia 17: 301, 1969 (Bischler 1969).

* *Leptolejeunea convexistipa* Bischl., Nova Hedwigia 17: 325, 1969 (Bischler 1969).

* *Leptolejeunea curvatifolia* Steph., Sp. Hepat. (Stephani) 6: 398, 1923 (Stephani 1923). [343]

** *Leptolejeunea denticulata* Steph., Sp. Hepat. (Stephani) 5: 389, 1913 (Stephani 1913a). Based on: *Leptolejeunea denticulata* Steph., Hedwigia 28 (3): 174, 1889 (Stephani 1889d), *nom. inval.*

** *Leptolejeunea dentistipula* Steph., Sp. Hepat. (Stephani) 5: 379, 1913 (Stephani 1913a).

** *Leptolejeunea diversilobulata* Bischl., Nova Hedwigia 17: 313, 1969 (Bischler 1969).

** *Leptolejeunea dolabriformis* Pearson, J. Linn. Soc., Bot. 46 (305): 37, 1922 (Pearson 1922b).

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340 *Rectolejeunea lindigiana* is a *Lejeunea* species of doubtful status (Reiner-Drehwald and Grolle 2012).

341 *Rectolejeunea pachyderma* is a *Lejeunea* species of doubtful status (Reiner-Drehwald and Grolle 2012).

342 *Leptolejeunea borneensis* may be conspecific with *Leptolejeunea vitrea*.

343 *Leptolejeunea curvatifolia* is possibly conspecific with *Drepanolejeunea thwaitesiana*, but the type specimen was burned in B and the identity can not be ascertained (Grolle and Piippo 1984).

*** *Leptolejeunea elliptica* (Lehm. et Lindenb.) Besch., Rev. Bryol. 19 (1): 14, 1892 (Bescherelle 1892). Bas.: *Jungermannia elliptica* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 13, 1833 (Lehmann 1833).

* *Leptolejeunea emarginata* (Horik.) S.Hatt., J. Hattori Bot. Lab. 5: 46, 1951 (Hattori 1951d). Bas.: *Drepanolejeunea emarginata* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 267, 1934 (Horikawa 1934). [344]

*** *Leptolejeunea epiphylla* (Mitt.) Steph., Sp. Hepat. (Stephani) 5: 380, 1913 (Stephani 1913a). Bas.: *Lejeunea epiphylla* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 118, 1860 [1861] (Mitten 1860c).

*** *Leptolejeunea exocellata* (Spruce) A.Evans, Bull. Torrey Bot. Club 29 (8): 498, 1902 (Evans 1902c). Bas.: *Lejeunea exocellata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 195, 1884 (Spruce 1884).

** *Leptolejeunea foliicola* Steph., Hedwigia 35 (3): 106, 1896 (Stephani 1896b).

** *Leptolejeunea integristipula* Steph., Sp. Hepat. (Stephani) 6: 398, 1923 (Stephani 1923).

* *Leptolejeunea jamaicensis* R.M.Schust., J. Elisha Mitchell Sci. Soc. 83 (4): 229, 1967 (Schuster 1967a).

** *Leptolejeunea lancifolia* Steph., Sp. Hepat. (Stephani) 5: 382, 1913 (Stephani 1913a). *Nom. nov. pro Lejeunea lancifolia* Mitt., Fl. vit.: 415, 1871 [1873] (Mitten 1871), *nom. illeg.*

** *Leptolejeunea latifolia* Herzog, Memoranda Soc. Fauna Fl. Fennica 26: 58, 1950 [1951] (Herzog 1950b).

** *Leptolejeunea lepinii* Steph., Sp. Hepat. (Stephani) 5: 383, 1913 (Stephani 1913a).

** *Leptolejeunea ligulata* Herzog, Flora 135: 429, 1942 (Herzog 1942c).

*** *Leptolejeunea maculata* (Mitt.) Schiffn., Consp. Hepat. Arch. Ind.: 275, 1898 (Schiffner 1898b). Bas.: *Lejeunea maculata* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 118, 1860 [1861] (Mitten 1860c).

* *Leptolejeunea massartiana* Schiffn. ex Herzog, Flora 135: 421, 1942 (Herzog 1942c). [345]

** *Leptolejeunea micronesica* Inoue et H.A.Mill., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 8 (2): 149, 1965 (Inoue and Miller 1965).

** *Leptolejeunea minima* Herzog, Memoranda Soc. Fauna Fl. Fennica 26: 60, 1950 [1951] (Herzog 1950b).

** *Leptolejeunea mirikana* M.Dey et D.K.Singh, Taiwania 55 (4): 355, 2010 (Dey and Singh 2010).

*** *Leptolejeunea moniliata* Steph., Sp. Hepat. (Stephani) 5: 371, 1913 (Stephani 1913a).

*** *Leptolejeunea obfuscata* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 373, 1913 (Stephani 1913a). Bas.: *Lejeunea obfuscata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 579, 1885 (Spruce 1885).

* *Leptolejeunea punctata* Herzog, Flora 135: 432, 1942 (Herzog 1942c).

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344 *Leptolejeunea emarginata* is possibly conspecific with *Leptolejeunea apiculata* (Zhu and So 2001).

345 *Leptolejeunea massartiana* is very possibly conspecific with *Leptolejeunea elliptica* judging from the original description and illustration (Söderström et al. 2010a).

*** *Leptolejeunea radicosa* (Nees ex Mont.) Grolle, J. Hattori Bot. Lab. 45: 178, 1979 (Grolle 1979c). Bas.: *Lejeunea radicosa* Nees ex Mont., Hist. Phys. Cuba, Bot., Pl. Cell.: 475, 1842 (Montagne 1842a).

* *Leptolejeunea renneri* Herzog, Flora 135: 422, 1942 (Herzog 1942c).

* *Leptolejeunea revoluta* P.C.Chen, Feddes Repert. Spec. Nov. Regni Veg. 58: 44, 1955 (Chen 1955). [346]

** *Leptolejeunea rosulans* Steph., Sp. Hepat. (Stephani) 5: 390, 1913 (Stephani 1913a). Based on: *Leptolejeunea rosulans* Steph., Hedwigia 28 (3): 174, 1889 (Stephani 1889d), *nom. inval.*

** *Leptolejeunea serratifolia* Schiffn., Bot. Jahrb. Syst. 23 (5): 594, 1897 (Schiffner 1897).

** *Leptolejeunea serrulata* Herzog, Flora 135: 426, 1942 (Herzog 1942c).

** *Leptolejeunea spinistipula* (Mizut.) Xiao L.He, Ann. Bot. Fenn. 34 (2): 127, 1997 (He 1997). Bas.: *Pycnolejeunea spinistipula* Mizut., J. Hattori Bot. Lab. 33: 255, 1970 (Mizutani 1970).

** *Leptolejeunea subdentata* Schiffn. ex Herzog, Flora 135: 403, 1942 (Herzog 1942c).

*** *Leptolejeunea subrotundifolia* Herzog, Flora 135: 424, 1942 (Herzog 1942c).

*** *Leptolejeunea tridentata* Bischl., Nova Hedwigia 17: 335, 1969 (Bischler 1969).

* *Leptolejeunea trigonostipa* (Spruce) Steph., Sp. Hepat. (Stephani) 5: 376, 1913 (Stephani 1913a). Bas.: *Lejeunea trigonostipa* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 197, 1884 (Spruce 1884).

** *Leptolejeunea tripuncta* (Mitt.) Steph., Sp. Hepat. (Stephani) 5: 388, 1913 (Stephani 1913a). Bas.: *Lejeunea tripuncta* Mitt., Fl. vit.: 415, 1871 [1873] (Mitten 1871).

** *Leptolejeunea truncatifolia* Steph., Sp. Hepat. (Stephani) 5: 388, 1913 (Stephani 1913a).

* *Leptolejeunea udarii* M.Dey et D.K.Singh, Taiwania 55 (4): 359, 2010 (Dey and Singh 2010). [347]

*** *Leptolejeunea vitrea* (Nees) Schiffn., Hepat. (Engl.-Prantl): 126, 1893 (Schiffner 1893b). Bas.: *Jungermannia vitrea* Nees, Enum. Pl. Crypt. Javae: 56, 1830 (Nees 1830).

** subtrib. Pycnolejeuneinae Heinrichs et Schäf.Verw.

** ***Pycnolejeunea*** **(Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 124, 1893 (Schiffner 1893b). Bas.: *Lejeunea* subg. *Pycnolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 246, 1884 (Spruce 1884).

* *Pycnolejeunea anotomensis* Tixier, Bull. Soc. Hist. Nat. Afrique N. 63: 10, 1972 (Tixier 1972a). [348]

** *Pycnolejeunea borneensis* Steph., Sp. Hepat. (Stephani) 5: 632, 1914 (Stephani 1914b).

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346 *Leptolejeunea revoluta* may be conspecific with *Leptolejeunea elliptica* (Zhu and So 2001).

347 *Leptolejeunea udarii* is possibly conspecific with *Leptolejeunea latifolia* (He et al. 2013).

348 *Pycnolejeunea anotomensis* is a *Cheilolejeunea* species.

* *Pycnolejeunea cavistipula* (Steph.) Mizut., J. Hattori Bot. Lab. 36: 161, 1972 [1973] (Mizutani 1972a). Bas.: *Strepsilejeunea cavistipula* Steph., Hedwigia 35 (3): 128, 1896 (Stephani 1896b). [349]

* *Pycnolejeunea connivens* Schiffn. ex P.Syd., Just's Bot. Jahresber. 19: 246, 1894 (Sydow 1894). Based on: *Pycnolejeunea connivens* Gottsche ex Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 32, 1890 (Schiffner 1890), *nom. inval.*

*** *Pycnolejeunea contigua* (Nees) Grolle, J. Hattori Bot. Lab. 45: 179, 1979 (Grolle 1979c). Bas.: *Jungermannia contigua* Nees, Fl. Bras. (Martius) 1 (1): 360, 1833 (Nees 1833a).

* *Pycnolejeunea convexifolia* (Mitt.) Steph., Sp. Hepat. (Stephani) 5: 636, 1914 (Stephani 1914b). Bas.: *Lejeunea convexifolia* Mitt., Fl. vit.: 416, 1871 [1873] (Mitten 1871). [350]

*** *Pycnolejeunea decurviloba* Steph., Hedwigia 35 (3): 125, 1896 (Stephani 1896b).

*** *Pycnolejeunea densistipula* (Lehm. et Lindenb.) Steph., Sp. Hepat. (Stephani) 5: 602, 1914 (Stephani 1914b). Bas.: *Lejeunea densistipula* Lehm. et Lindenb., Nov. Stirp. Pug. 7: 20, 1838 (Lehmann 1838).

** *Pycnolejeunea gradsteinii* Ilk.-Borg., Bol. Inst. Bot. (São Paulo) 21 (1): 1, 2011 (Ilkiu-Borges 2011).

** *Pycnolejeunea grandiocellata* Steph., Bot. Tidsskr. 24 (3): 279, 1902 (Stephani 1902b).

* *Pycnolejeunea grossiloba* Steph., Sp. Hepat. (Stephani) 5: 629, 1914 (Stephani 1914b). [351]

*** *Pycnolejeunea macroloba* (Nees et Mont.) Schiffn., Hepat. (Engl.-Prantl): 124, 1893 (Schiffner 1893b). Bas.: *Lejeunea macroloba* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 260, 1843 (Montagne 1843).

*** *Pycnolejeunea monophthalma* (R.M.Schust.) Xiao L.He, Acta Bot. Fenn. 163: 52, 1999 (He 1999). Bas.: *Trachylejeunea monophthalma* R.M.Schust., Bull. Torrey Bot. Club 97 (6): 345, 1970 [1971] (Schuster 1970b).

** *Pycnolejeunea novae-caledoniae* (Steph.) Horik., Acta Phytotax. Geobot. 13: 214, 1943 (Horikawa 1943). Bas.: *Archilejeunea novae-caledoniae* Steph., Sp. Hepat. (Stephani) 4: 729, 1911 (Stephani 1911e).

* *Pycnolejeunea palmicola* Steph., Sp. Hepat. (Stephani) 6: 413, 1923 (Stephani 1923). [352]

*** *Pycnolejeunea papillosa* Xiao L.He, Acta Bot. Fenn. 163: 55, 1999 (He 1999).

** *Pycnolejeunea porrectilobula* C.J.Bastos et O.Yano, Nova Hedwigia 74 (3/4): 440, 2002 (Bastos and Yano 2002).

** *Pycnolejeunea retusa* R.M.Schust., J. Hattori Bot. Lab. 100: 402, 2006 (Schuster 2006).

* *Pycnolejeunea schlimiana* Steph., Sp. Hepat. (Stephani) 5: 615, 1914 (Stephani 1914b). [353]

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349 *Pycnolejeunea cavistipula* is possibly a *Cheilolejeunea* species.

350 *Pycnolejeunea convexifolia* is possibly conspecific with *Cheilolejeunea imbricata*.

351 *Pycnolejeunea grossiloba* is a *Cheilolejeunea* species, but its taxonomic status is unclear (Grolle and Piippo 1984).

352 *Pycnolejeunea palmicola* is not a *Pycnolejeunea* species.

353 *Pycnolejeunea schlimiana* is not a *Pycnolejeunea* species.

*** *Pycnolejeunea schwaneckei* (Steph.) Schiffn. ex P.Syd., Just's Bot. Jahresber. 19: 246, 1894 (Sydow 1894). Bas.: *Lejeunea schwaneckei* Steph., Hedwigia 27 (11/12): 290, 1888 (Stephani 1888c).

** *Pycnolejeunea sphaeroides* (Sande Lac.) J.B.Jack et Steph., Bot. Centralbl. 60 (4): 107, 1894 (Jack and Stephani 1894). Bas.: *Lejeunea sphaeroides* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 309, 1864 (Sande Lacoste 1864).

** subtrib. Xylolejeuneinae Heinrichs et Schäf.Verw.

*** ***Xylolejeunea* Xiao L.He et Grolle**, Ann. Bot. Fenn. 38 (1): 27, 2001 (He and Grolle 2001).

*** *Xylolejeunea aquarius* (Spruce) Xiao L.He et Grolle, Ann. Bot. Fenn. 38 (1): 29, 2001 (He and Grolle 2001). Bas.: *Lejeunea aquarius* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 185, 1884 (Spruce 1884).

*** *Xylolejeunea crenata* (Nees et Mont.) Xiao L.He et Grolle, Ann. Bot. Fenn. 38 (1): 36, 2001 (He and Grolle 2001). Bas.: *Lejeunea crenata* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 9: 48, 1838 (Montagne 1838).

*** *Xylolejeunea grolleana* (Pócs) Xiao L.He et Grolle, Ann. Bot. Fenn. 38 (1): 32, 2001 (He and Grolle 2001). Bas.: *Trachylejeunea grolleana* Pócs, Haussknechtia, Beih. 9: 285, 1999 (Pócs 1999).

*** *Xylolejeunea muricella* Xiao L.He et Grolle, Ann. Bot. Fenn. 38 (1): 34, 2001 (He and Grolle 2001).

** trib. Symbiezidieae Gradst.

*** ***Symbiezidium* Trevis.**, Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 402, 1877 (Trevisan 1877).

*** *Symbiezidium barbiflorum* (Lindenb. et Gottsche) A.Evans, Bull. Torrey Bot. Club 34 (11): 540, 1907 [1908] (Evans 1907a). Bas.: *Lejeunea barbiflora* Lindenb. et Gottsche, Linnaea 24 (6): 630, 1851 [1852] (Lindenberg and Gottsche 1851a).

*** *Symbiezidium dentatum* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 175, 1955 (Herzog 1955).

*** *Symbiezidium madagascariense* Steph., Sp. Hepat. (Stephani) 5: 99, 1912 (Stephani 1912c).

*** *Symbiezidium transversale* (Sw.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 403, 1877 (Trevisan 1877). Bas.: *Jungermannia transversalis* Sw., Prodr. (Swartz): 144, 1788 (Swartz 1788).

*** *Symbiezidium transversale* var. *hookerianum* (Gottsche, Lindenb. et Nees) Gradst. et J.Beek, Beih. Nova Hedwigia 80: 237, 1985 (Gradstein and van Beek 1985). Bas.: *Lejeunea transversalis* β *hookeriana* Gottsche, Lindenb. et Nees, Syn. Hepat. 3: 311, 1845 (Gottsche et al. 1845b).

*** Ptychanthoideae Mizut.

*** ***Acrolejeunea* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 128, 1893 (Schiffner 1893b) nom. conserv. Bas.: *Lejeunea* subg. *Acrolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 115, 1884 (Spruce 1884).

*** *Acrolejeunea sandvicensis* (Gottsche) Steph., Bot. Jahrb. Syst. 23 (1/2, 3): 312, 1896 (Stephani 1896a). Bas.: *Phragmicoma sandvicensis* Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 8: 344, 1857 (Gottsche 1857).

** **sect. *Acrolejeunea***

*** *Acrolejeunea emergens* (Mitt.) Steph., Pflanzenw. Ost-Afrikas C: 65, 1895 (Stephani 1895d). Bas.: *Phragmicoma emergens* Mitt., Philos. Trans. 168: 397, 1879 (Mitten 1879).

*** *Acrolejeunea emergens* var. *confertissima* (Steph.) Gradst., Bryophyt. Biblioth. 4: 76, 1975 (Gradstein 1975). Bas.: *Acrolejeunea confertissima* Steph., Hedwigia 31 (4): 165, 1892 (Stephani 1892g).

*** *Acrolejeunea heterophylla* (A.Evans) Grolle et Gradst., J. Hattori Bot. Lab. 38: 332, 1974 (Gradstein 1974a). Bas.: *Ptychocoleus heterophyllus* A.Evans, Amer. J. Bot. 5 (3): 144, 1918 (Evans 1918).

*** *Acrolejeunea torulosa* (Lehm. et Lindenb.) Schiffn., Hepat. (Engl.-Prantl): 128, 1893 (Schiffner 1893b). Bas.: *Jungermannia torulosa* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 41, 1834 (Lehmann 1834).

** **sect. *Minores* (Verd.) L.Söderstr. et A.Hagborg**, Bryophyte Diversity Evol. 36 (1): 41, 2014 (Wang et al. 2014b). Bas.: *Ptychocoleus* sect. *Minores* Verd., Ann. Bryol., Suppl. 4: 132, 1934 (Verdoorn 1934a).

*** *Acrolejeunea arcuata* (Nees) Grolle et Gradst., J. Hattori Bot. Lab. 38: 332, 1974 (Gradstein 1974a). Bas.: *Jungermannia arcuata* Nees, Enum. Pl. Crypt. Javae: 38, 1830 (Nees 1830).

** *Acrolejeunea arcuata* subsp. *gradsteinii* M.A.M.Renner, Phytotaxa 83 (1): 42, 2013 (Renner 2013).

*** *Acrolejeunea fertilis* (Reinw., Blume et Nees) Schiffn., Hepat. (Engl.-Prantl): 128, 1893 (Schiffner 1893b). Bas.: *Jungermannia fertilis* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 211, 1824 [1825] (Reinwardt et al. 1824a).

*** *Acrolejeunea parvula* (Mizut.) Gradst., Bryophyt. Biblioth. 4: 115, 1975 (Gradstein 1975). Bas.: *Ptychocoleus parvulus* Mizut., Dansk Bot. Ark. 27 (1): 97, 1969 (Hattori and Mizutani 1969).

*** *Acrolejeunea pycnoclada* (Taylor) Schiffn., Hepat. (Engl.-Prantl): 128, 1893 (Schiffner 1893b). Bas.: *Ptychanthus pycnocladus* Taylor, London J. Bot. 5: 385, 1846 (Taylor 1846b).

*** *Acrolejeunea pycnoclada* subsp. *latistipula* Gradst., Bryophyt. Biblioth. 4: 113, 1975 (Gradstein 1975).

*** *Acrolejeunea tjibodensis* (Verd.) Grolle et Gradst., J. Hattori Bot. Lab. 38: 333, 1974 (Gradstein 1974a). Bas.: *Ptychocoleus tjibodensis* Verd., Recueil Trav. Bot. Neerl. 30: 227, 1933 (Verdoorn 1933b).

** **sect. *Pusillae* Gradst.**, Bryophyt. Biblioth. 4: 59, 1975 (Gradstein 1975).
*** *Acrolejeunea pusilla* (Steph.) Grolle et Gradst., J. Hattori Bot. Lab. 38: 332, 1974 (Gradstein 1974a). Bas.: *Archilejeunea pusilla* Steph., Sp. Hepat. (Stephani) 4: 731, 1911 (Stephani 1911e).
*** *Acrolejeunea sikkimensis* (Mizut.) Gradst., Bryophyt. Biblioth. 4: 83, 1975 (Gradstein 1975). Bas.: *Ptychocoleus sikkimensis* Mizut., Fl. E. Himalaya: 532, 1966 (Hattori 1966c).

** **sect. *Recurvatae* Jian Wang bis et Gradst.**, Bryophyte Diversity Evol. 36 (1): 39, 2014 (Wang et al. 2014b).
*** *Acrolejeunea recurvata* Gradst., Bryophyt. Biblioth. 4: 79, 1975 (Gradstein 1975).

** **sect. *Regulares* (Verd.) Gradst.**, Bryophyt. Biblioth. 4: 63, 1975 (Gradstein 1975). Bas.: *Ptychocoleus* sect. *Regulares* Verd., Ann. Bryol., Suppl. 4: 143, 1934 (Verdoorn 1934a).
*** *Acrolejeunea allisonii* Gradst., Bryophyt. Biblioth. 4: 103, 1975 (Gradstein 1975).
*** *Acrolejeunea aulacophora* (Mont.) Steph., Bot. Jahrb. Syst. 20 (3): 317, 1895 (Stephani 1895a). Bas.: *Phragmicoma aulacophora* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 259, 1843 (Montagne 1843).
*** *Acrolejeunea mollis* (Hook.f. et Taylor) Schiffn., Hedwigia 33 (4): 178, 1894 (Schiffner 1894). Bas.: *Ptychanthus mollis* Hook.f. et Taylor, London J. Bot. 5: 384, 1846 (Taylor 1846b).
*** *Acrolejeunea securifolia* (Nees) Steph., Hedwigia 34 (2): 59, 1895 (Stephani 1895c). Bas.: *Jungermannia securifolia* Nees, Prodr. Fl. Norfolk.: 5, 1833 (Endlicher 1833).
*** *Acrolejeunea securifolia* subsp. *caledonica* (Steph.) Gradst., Bryophyt. Biblioth. 4: 100, 1975 (Gradstein 1975). Bas.: *Ptychocoleus caledonicus* Steph., Sp. Hepat. (Stephani) 5: 39, 1912 (Stephani 1912c).
*** *Acrolejeunea securifolia* subsp. *hartmannii* (Steph.) Gradst., Bryophyt. Biblioth. 4: 99, 1975 (Gradstein 1975). Bas.: *Ptychocoleus hartmannii* Steph., Sp. Hepat. (Stephani) 5: 44, 1912 (Stephani 1912c).
*** *Acrolejeunea securifolia* subsp. *pallida* (Ångstr.) Gradst., Bryophyt. Biblioth. 4: 101, 1975 (Gradstein 1975). Bas.: *Phragmicoma pallida* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 30 (5): 132, 1873 (Ångström 1873).

** **sect. *Trocholejeunea* (Schiffn.) Jian Wang bis et Gradst.**, Bryophyte Diversity Evol. 36 (1): 38, 2014 (Wang et al. 2014b). Bas.: *Trocholejeunea* Schiffn., Ann. Bryol. 5: 160, 1932 (Dixon et al. 1932).

*** *Acrolejeunea crassicaulis* (Steph.) Jian Wang bis et Gradst., Bryophyte Diversity Evol. 36 (1): 38, 2014 (Wang et al. 2014b). Bas.: *Hygrolejeunea crassicaulis* Steph., Sp. Hepat. (Stephani) 5: 550, 1914 (Stephani 1914b).

*** *Acrolejeunea infuscata* (Mitt.) Jian Wang bis et Gradst., Bryophyte Diversity Evol. 36 (1): 38, 2014 (Wang et al. 2014b). Bas.: *Lejeunea infuscata* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 111, 1860 [1861] (Mitten 1860c).

** *Acrolejeunea meghalayensis* (Ajit P.Singh et V.Nath) Jian Wang bis et Gradst., Bryophyte Diversity Evol. 36 (1): 39, 2014 (Wang et al. 2014b). Bas.: *Trocholejeunea meghalayensis* Ajit P.Singh et V.Nath, J. Jap. Bot. 83 (1): 2, 2008 (Singh and Nath 2008).

** *Acrolejeunea sinensis* (Jian Wang bis, R.L.Zhu et Gradst.) Jian Wang bis et Gradst., Bryophyte Diversity Evol. 36 (1): 39, 2014 (Wang et al. 2014b). Bas.: *Trocholejeunea sinensis* Jian Wang bis, R.L.Zhu et Gradst., Phytotaxa 174 (5): 296, 2014 (Wang et al. 2014c).

Excluded from the genus

* *Acrolejeunea abnormis* (Gottsche) Pearson, Forh. Vidensk.-Selsk. Kristiania 1892 (8): 4, 1892 (Pearson 1892). Bas.: *Phragmicoma abnormis* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 352, 1882 (Gottsche 1882). [354]

* *Acrolejeunea comptonii* Pearson, J. Linn. Soc., Bot. 46 (305): 33, 1922 (Pearson 1922b). [355]

* *Acrolejeunea inflexa* (Gottsche) Pearson, Forh. Vidensk.-Selsk. Kristiania 1892 (8): 4, 1892 (Pearson 1892). Bas.: *Phragmicoma inflexa* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 351, 1882 (Gottsche 1882). [356]

*** ***Archilejeunea* (Spruce) Steph.**, Hedwigia 27 (3/4): 113, 1888 (Stephani 1888d). Bas.: *Lejeunea* subg. *Archilejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 88, 1884 (Spruce 1884). [357]

*** *Archilejeunea abbreviata* (Mitt.) Vanden Berghen, Rev. Bryol. Lichénol. 20 (1/2): 117, 1951 (Vanden Berghen 1951c). Bas.: *Lejeunea abbreviata* Mitt., J. Proc. Linn. Soc., Bot. 7 (27): 167, 1863 (Mitten 1863).

** *Archilejeunea africana* Steph., Sp. Hepat. (Stephani) 4: 705, 1911 (Stephani 1911e).

** *Archilejeunea alata* Steph., Bull. Soc. Roy. Bot. Belgique, Compt. Rend. 32 (2): 33, 1893 [1894] (Stephani 1893e).

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354 *Acrolejeunea abnormis* was excluded from *Acrolejeunea* by Gradstein (1975), but the type specimen was not localized.

355 *Acrolejeunea comptonii* is a *Mastigolejeunea* species (Gradstein 1975). The type specimen has not been localized.

356 *Acrolejeunea inflexa* was excluded from *Acrolejeunea* by Gradstein (1975), but the type specimen was not localized.

357 *Archilejeunea* is polyphyletic and several nomenclatural and taxonomic will be proposed (Shi et al. 2015a).

** *Archilejeunea amakawana* Inoue, J. Jap. Bot. 41 (1): 16, 1966 (Inoue 1966d). *Nom. nov. pro Archilejeunea falcata* Amakawa, J. Jap. Bot. 39 (5): 137, 1964 (Amakawa 1964b), *nom. illeg*.

*** *Archilejeunea auberiana* (Mont.) Steph., Hedwigia 29 (3): 134, 1890 (Stephani 1890d). Bas.: *Lejeunea auberiana* Mont., Hist. Phys. Cuba, Bot., Pl. Cell.: 483, 1842 (Montagne 1842a).

*** *Archilejeunea autoica* Vanden Berghen, Rev. Bryol. Lichénol. 20 (1/2): 119, 1951 (Vanden Bergen 1951b).

*** *Archilejeunea badia* (Spruce) Steph., Sp. Hepat. (Stephani) 4: 711, 1911 (Stephani 1911e). Bas.: *Lejeunea badia* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 92, 1884 (Spruce 1884).

* *Archilejeunea bilabiata* (Mitt.) Steph., Sp. Hepat. (Stephani) 4: 723, 1911 (Stephani 1911e). Bas.: *Phragmicoma bilabiata* Mitt., Fl. vit.: 412, 1871 [1873] (Mitten 1871). [358]

*** *Archilejeunea bischleriana* Gradst., Fl. Neotrop. Monogr. 62: 62, 1994 (Gradstein 1994).

** *Archilejeunea bongardii* Steph., Hedwigia 29 (1): 20, 1890 (Stephani 1890a).

** *Archilejeunea brachyantha* J.B.Jack et Steph., Bot. Centralbl. 60 (4): 104, 1894 (Jack and Stephani 1894).

** *Archilejeunea brevilobula* Steph., Sp. Hepat. (Stephani) 4: 706, 1911 (Stephani 1911e).

*** *Archilejeunea crispistipula* (Spruce) Steph., Sp. Hepat. (Stephani) 4: 712, 1911 (Stephani 1911e). Bas.: *Lejeunea crispistipula* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 93, 1884 (Spruce 1884).

* *Archilejeunea eberhardtii* Steph., Sp. Hepat. (Stephani) 4: 725, 1911 (Stephani 1911e).

** *Archilejeunea elobulata* Steph., Sp. Hepat. (Stephani) 4: 707, 1911 (Stephani 1911e).

** *Archilejeunea gradsteinii* X.Q.Shi et R.L.Zhu, Nova Hedwigia 100 (3/4): 592, 2015 (Shi and Zhu 2015).

** *Archilejeunea incrassata* Steph., Rev. Bryol. 35 (2): 30, 1908 (Stephani 1908l).

** *Archilejeunea jonesii* Vanden Berghen, Rev. Bryol. Lichénol. 20 (1/2): 116, 1951 (Vanden Berghen 1951c).

*** *Archilejeunea juliformis* (Nees) Gradst., Bryophyt. Biblioth. 4: 127, 1975 (Gradstein 1975). Bas.: *Jungermannia juliformis* Nees, Fl. Bras. (Martius) 1 (1): 351, 1833 (Nees 1833a).

*** *Archilejeunea kiushiana* (Horik.) Verd., Ann. Bryol., Suppl. 4: 46, 1934 (Verdoorn 1934a). Bas.: *Lopholejeunea kiushiana* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 129, 1932 (Horikawa 1932c).

*** *Archilejeunea ludoviciana* (De Not.) P.Geissler et Gradst., J. Hattori Bot. Lab. 75: 202, 1994 (Geissler and Gradstein 1994). Bas.: *Phragmicoma ludoviciana* De Not., Nov. Stirp. Pug. 10: 11, 1857 (Lehmann 1857).

*** *Archilejeunea ludoviciana* subsp. *porelloides* (Spruce) Gradst., Fl. Neotrop. Monogr. 62: 58, 1994 (Gradstein 1994). Bas.: *Lejeunea porelloides* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 90, 1884 (Spruce 1884).

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358 *Archilejeunea bilabiata* is a doubtful taxon, the type specimen could not be found (Geissler and Gradstein 1994).

** *Archilejeunea nebeliana* Gradst. et Schäf.-Verw., Cryptog. Bryol. 33 (2): 108, 2012 (Gradstein and Schäfer-Verwimp 2012).
*** *Archilejeunea olivacea* (Hook.f. et Taylor) Steph., Hedwigia 29 (3): 134, 1890 (Stephani 1890d). Bas.: *Jungermannia olivacea* Hook.f. et Taylor, London J. Bot. 3: 568, 1844 (Hooker and Taylor 1844d).
*** *Archilejeunea parviflora* (Nees) Steph., Hedwigia 29 (3): 134, 1890 (Stephani 1890d). Bas.: *Jungermannia parviflora* Nees, Fl. Bras. (Martius) 1 (1): 353, 1833 (Nees 1833a).
** *Archilejeunea planifolia* (Horik.) Mizut., J. Hattori Bot. Lab. 73: 175, 1993 (Mizutani 1993). Bas.: *Leucolejeunea planifolia* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 199, 1933 (Horikawa 1933). [359]
*** *Archilejeunea planiuscula* (Mitt.) Steph., Sp. Hepat. (Stephani) 4: 731, 1911 (Stephani 1911e). Bas.: *Lejeunea planiuscula* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 111, 1860 [1861] (Mitten 1860c).

Excluded from the genus
* *Archilejeunea negrensis* Steph., Sp. Hepat. (Stephani) 4: 716, 1911 (Stephani 1911e). [360]
* *Archilejeunea ovata* Herzog, Rev. Bryol. Lichénol. 20 (1/2): 130, 1951 [1952] (Herzog 1951a). [361]

*** ***Bryopteris* (Nees) Lindenb.**, Syn. Hepat. 2: 284, 1845 (Gottsche et al. 1845a). Bas.: *Frullania* subg. *Bryopteris* Nees, Naturgesch. Eur. Leberm. 3: 211, 1838 (Nees 1838b).
*** *Bryopteris diffusa* (Sw.) Nees, Syn. Hepat. 2: 286, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia diffusa* Sw., Prodr. (Swartz): 144, 1788 (Swartz 1788).
*** *Bryopteris filicina* (Sw.) Nees, Syn. Hepat. 2: 284, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia filicina* Sw., Prodr. (Swartz): 145, 1788 (Swartz 1788).
* *Bryopteris fissiloba* Steph., Sp. Hepat. (Stephani) 6: 568, 1924 (Stephani 1924). [362]
*** *Bryopteris gaudichaudii* Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 8: 340, 1857 (Gottsche 1857).

*** ***Caudalejeunea* Schiffn.**, Hepat. (Engl.-Prantl): 129, 1893 (Schiffner 1893b).

** **subg. *Acaudalejeunea* R.M.Schust.**, Hepat. Anthocerotae N. Amer. 4: 779, 1980 (Schuster 1980c).
*** *Caudalejeunea grolleana* Gradst., Acta Bot. Neerl. 23 (3): 334, 1974 (Gradstein 1974b).

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359 *Archilejeunea planifolia* is conspecific with *Archilejeunea kiushiana* in Hattori (1952c) and Gradstein and Geissler (1997), but it is a separate species in Mizutani (1993).

360 *Archilejeunea negrensis* is probably not an *Archilejeunea* species, but the type specimen is too poor to permit identification (Gradstein and Buskes 1985).

361 *Archilejeunea ovata* is conspecific with *Lopholejeunea nigricans* or *Lopholejeunea subfusca* (Gradstein 1994).

362 *Bryopteris fissiloba* is probably conspecific with *Bryopteris diffusa* (Gradstein and Costa 2003). It was not accepted by Hartmann et al. (2006).

** **subg. *Caudalejeunea***

** *Caudalejeunea africana* (Steph.) Schiffn., Hepat. (Engl.-Prantl): 129, 1893 (Schiffner 1893b). Bas.: *Thysananthus africanus* Steph., Bot. Jahrb. Syst. 8 (2): 93, 1886 (Stephani 1886d).

*** *Caudalejeunea hanningtonii* (Mitt.) Schiffn., Hepat. (Engl.-Prantl): 129, 1893 (Schiffner 1893b). Bas.: *Lejeunea hanningtonii* Mitt., J. Linn. Soc., Bot. 22 (146): 324, 1886 (Mitten 1886b).

** *Caudalejeunea katangensis* Vanden Berghen, Explor. Hydrobiol. Lac Bangweolo Luapula: 94, 1972 (Vanden Berghen 1972b).

*** *Caudalejeunea lehmanniana* (Gottsche) A.Evans, Bull. Torrey Bot. Club 34 (11): 554, 1907 [1908] (Evans 1907a). Bas.: *Lejeunea lehmanniana* Gottsche, Syn. Hepat. 3: 325, 1845 (Gottsche et al. 1845b).

** *Caudalejeunea lewallei* Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 42 (4): 434, 1972 (Vanden Berghen 1972a).

** **subg. *Vermilejeunea* R.M.Schust.**, Hepat. Anthocerotae N. Amer. 4: 778, 1980 (Schuster 1980c).

*** *Caudalejeunea cristiloba* (Steph.) Gradst., Acta Bot. Neerl. 23 (3): 340, 1974 (Gradstein 1974b). Bas.: *Acrolejeunea cristiloba* Steph., Hedwigia 34 (2): 56, 1895 (Stephani 1895c).

*** *Caudalejeunea cristiloba* subsp. *samoana* (Steph.) Gradst., Acta Bot. Neerl. 23 (3): 343, 1974 (Gradstein 1974b). Bas.: *Caudalejeunea samoana* Steph., Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr. 81: 296, 1907 (Stephani 1907a).

** *Caudalejeunea dusenii* Steph., Sp. Hepat. (Stephani) 5: 11, 1912 (Stephani 1912c).

*** *Caudalejeunea reniloba* (Gottsche) Steph., Sp. Hepat. (Stephani) 5: 16, 1912 (Stephani 1912c). Bas.: *Phragmicoma reniloba* Gottsche, Syn. Hepat. 2: 301, 1845 (Gottsche et al. 1845a).

** *Caudalejeunea yangambiensis* (Vanden Berghen) E.W.Jones, Trans. Brit. Bryol. Soc. 3 (2): 192, 1957 (Jones 1957b). Bas.: *Ptychocoleus yangambiensis* Vanden Berghen, Bull. Soc. Roy. Bot. Belgique 84: 61, 1951 (Vanden Berghen 1951a).

Incertae sedis

** *Caudalejeunea acutifolia* Gerola, Lav. Bot. Ist. Bot. Univ. Padova 12: 478, 1947 (Gerola 1947).

* *Caudalejeunea mauritiana* Horik., Acta Phytotax. Geobot. 13: 214, 1943 (Horikawa 1943). *Nom. nov. pro Dicranolejeunea africana* Steph., Sp. Hepat. (Stephani) 5: 158, 1912 (Stephani 1912c).

** *Caudalejeunea streimannii* Gyarmati, Trop. Bryol. 22: 129, 2002 (Sass-Gyarmati 2002).

** *Caudalejeunea tridentata* R.L.Zhu, Y.M.Wei et Qiong He, Bryologist 114 (3): 469, 2011 (Zhu et al. 2011).

** ***Cephalantholejeunea* R.M.Schust.**, Hepat. Anthocerotae N. Amer. 4: 798, 1980 (Schuster 1980c).
*** *Cephalantholejeunea temnanthoides* (R.M.Schust.) R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 807, 1980 (Schuster 1980c). Bas.: *Potamolejeunea temnanthoides* R.M.Schust., Beih. Nova Hedwigia 9: 123, 1963 (Schuster 1963a).

** ***Cephalolejeunea* Mizut.**, J. Hattori Bot. Lab. 46: 359, 1979 (Mizutani 1979b).
*** *Cephalolejeunea parvilobula* Mizut., J. Hattori Bot. Lab. 46: 359, 1979 (Mizutani 1979b).

*** ***Frullanoides* Raddi**, Critt. Brasil.: 13, 1822 (Raddi 1822).
*** *Frullanoides bahamensis* (A.Evans) van Slageren, Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 544: 81, 1985 (van Slageren 1985). Bas.: *Brachiolejeunea bahamensis* A.Evans, Bull. Torrey Bot. Club 35 (8): 383, 1908 (Evans 1908b).
*** *Frullanoides corticalis* (Lehm. et Lindenb.) van Slageren, Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 544: 84, 1985 (van Slageren 1985). Bas.: *Jungermannia corticalis* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 50, 1832 (Lehmann 1832).
*** *Frullanoides densifolia* Raddi, Critt. Brasil.: 14, 1822 (Raddi 1822).
*** *Frullanoides densifolia* subsp. *grandidentata* (L.Clark) van Slageren, Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 544: 95, 1985 (van Slageren 1985). Bas.: *Brachiolejeunea grandidentata* L.Clark, Proc. Calif. Acad. Sci. (ser. 4) 27 (18): 595, 1953 (Clark 1953).
*** *Frullanoides laciniatiflora* (Loitl.) van Slageren, Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 544: 100, 1985 (van Slageren 1985). Bas.: *Lejeunea laciniatiflora* Loitl., Diagn. pl. nov.: 19, 1894 (Loitlesberger 1894).
*** *Frullanoides liebmaniana* (Lindenb. et Gottsche) van Slageren, Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 544: 102, 1985 (van Slageren 1985). Bas.: *Phragmicoma liebmaniana* Lindenb. et Gottsche, Syn. Hepat. 5: 744, 1847 (Gottsche et al. 1847).
*** *Frullanoides mexicana* van Slageren, Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 544: 106, 1985 (van Slageren 1985).
*** *Frullanoides tristis* (Steph.) van Slageren, Meded. Bot. Mus. Herb. Rijks Univ. Utrecht 544: 110, 1985 (van Slageren 1985). Bas.: *Brachiolejeunea tristis* Steph., Sp. Hepat. (Stephani) 5: 112, 1912 (Stephani 1912c).

*** ***Fulfordianthus* Gradst.**, Bryologist 95 (1): 44, 1992 (Gradstein 1992a).
*** *Fulfordianthus evansii* (Fulford) Gradst., Bryologist 95 (1): 46, 1992 (Gradstein 1992a). Bas.: *Thysananthus evansii* Fulford, Bull. Torrey Bot. Club 68 (1): 34, 1941 (Fulford 1941).
*** *Fulfordianthus pterobryoides* (Spruce) Gradst., Bryologist 95 (1): 44, 1992 (Gradstein 1992a). Bas.: *Lejeunea pterobryoides* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 109, 1884 (Spruce 1884).

*** ***Lopholejeunea* (Spruce) Steph.**, Bot. Gaz. 15 (11): 285, 1890 (Stephani 1890c) nom. rejic. Bas.: *Lejeunea* subg. *Lopholejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 119, 1884 (Spruce 1884).

** **subg. *Lopholejeunea***
** *Lopholejeunea borbonica* Steph., Hedwigia 35 (3): 109, 1896 (Stephani 1896b).
** *Lopholejeunea jonesii* Vanden Berghen, Bull. Jard. Bot. État Bruxelles 20 (2): 178, 1950 (Vanden Berghen 1950).
** *Lopholejeunea laciniata* E.W.Jones, Trans. Brit. Bryol. Soc. 3 (2): 194, 1957 (Jones 1957b).
** *Lopholejeunea minima* Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 54 (3/4): 437, 1984 (Vanden Berghen 1984a).
* *Lopholejeunea obtusilacera* Herzog, Bull. Jard. Bot. État Bruxelles 20 (2): 172, 1950 (Vanden Berghen 1950).
* *Lopholejeunea paramultilacera* Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 54 (3/4): 435, 1984 (Vanden Berghen 1984a).
* *Lopholejeunea quinquecarinata* Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 54 (3/4): 408, 1984 (Vanden Berghen 1984a).
** *Lopholejeunea renistipula* (Mitt.) Steph., Sp. Hepat. (Stephani) 5: 94, 1912 (Stephani 1912c). Bas.: *Phragmicoma renistipula* Mitt., Fl. vit.: 413, 1871 [1873] (Mitten 1871).
** *Lopholejeunea revoluta* E.W.Jones, Trans. Brit. Bryol. Soc. 3 (2): 207, 1957 (Jones 1957b).

** **sect. *Eulophae* Verd.**, Ann. Bryol., Suppl. 4: 87, 1934 (Verdoorn 1934a).
*** *Lopholejeunea applanata* (Reinw., Blume et Nees) Schiffn., Hepat. (Engl.-Prantl): 129, 1893 (Schiffner 1893b). Bas.: *Jungermannia applanata* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 210, 1824 [1825] (Reinwardt et al. 1824a).
*** *Lopholejeunea borneensis* (Steph.) Verd., Ann. Bryol., Suppl. 4: 83, 1934 (Verdoorn 1934a). Bas.: *Mastigolejeunea borneensis* Steph., Sp. Hepat. (Stephani) 4: 777, 1912 (Stephani 1912b).
*** *Lopholejeunea erugata* B.M.Thiers, Brittonia 36 (2): 174, 1984 (Thiers 1984). *Nom. nov. pro Ptychocoleus inermis* Steph., Sp. Hepat. (Stephani) 5: 27, 1912 (Stephani 1912c).
*** *Lopholejeunea eulopha* (Taylor) Schiffn., Hepat. (Engl.-Prantl): 129, 1893 (Schiffner 1893b). Bas.: *Lejeunea eulopha* Taylor, London J. Bot. 5: 391, 1846 (Taylor 1846b).
*** *Lopholejeunea evansiana* Verd., Nova Guinea 18: 4, 1934 (Verdoorn 1934d).
*** *Lopholejeunea grollei* R.L.Zhu et Gradst., Monogr. Syst. Bot. Missouri Bot. Gard. 74: 36, 2005 (Zhu and Gradstein 2005).
*** *Lopholejeunea herzogiana* Verd., Recueil Trav. Bot. Neerl. 30: 217, 1933 (Verdoorn 1933b).

*** *Lopholejeunea hispidissima* Steph., Sp. Hepat. (Stephani) 5: 80, 1912 (Stephani 1912c).
*** *Lopholejeunea loheri* Steph., Sp. Hepat. (Stephani) 5: 77, 1912 (Stephani 1912c).
*** *Lopholejeunea minuta* R.L.Zhu et Gradst., Nova Hedwigia 78 (3/4): 436, 2004 (Zhu and Gradstein 2004).
*** *Lopholejeunea nigricans* (Lindenb.) Schiffn., Consp. Hepat. Arch. Ind.: 293, 1898 (Schiffner 1898b). Bas.: *Lejeunea nigricans* Lindenb., Syn. Hepat. 3: 316, 1845 (Gottsche et al. 1845b).
*** *Lopholejeunea plicatiscypha* (Hook.f. et Taylor) Steph., Sp. Hepat. (Stephani) 5: 96, 1912 (Stephani 1912c). Bas.: *Phragmicoma plicatiscypha* Hook.f. et Taylor, London J. Bot. 5: 386, 1846 (Taylor 1846b).
* *Lopholejeunea proxima* Steph., Sp. Hepat. (Stephani) 5: 89, 1912 (Stephani 1912c). [363]
*** *Lopholejeunea streimannii* B.M.Thiers et Gradst., Mem. New York Bot. Gard. 52: 37, 1989 (Thiers and Gradstein 1989).
** *Lopholejeunea vojtkoana* Gyarmati, Nova Hedwigia 87 (3/4): 480, 2008 (Sass-Gyarmati 2008).

** **sect. *Lopholejeunea***
*** *Lopholejeunea ceylanica* Steph., Sp. Hepat. (Stephani) 5: 86, 1912 (Stephani 1912c).
*** *Lopholejeunea horticola* Schiffn., Ann. Bryol. 6: 133, 1933 (Herzog et al. 1933).
*** *Lopholejeunea latilobula* Verd., Nova Guinea 18: 4, 1934 (Verdoorn 1934d).
*** *Lopholejeunea magna* Mizut., J. Hattori Bot. Lab. 32: 131, 1969 (Mizutani 1969).
*** *Lopholejeunea recurvata* Mizut., J. Hattori Bot. Lab. 46: 369, 1979 (Mizutani 1979b).
*** *Lopholejeunea soae* R.L.Zhu et Gradst., Monogr. Syst. Bot. Missouri Bot. Gard. 74: 69, 2005 (Zhu and Gradstein 2005).
*** *Lopholejeunea subfusca* (Nees) Schiffn., Bot. Jahrb. Syst. 23 (5): 593, 1897 (Schiffner 1897). Bas.: *Jungermannia subfusca* Nees, Enum. Pl. Crypt. Javae: 36, 1830 (Nees 1830).
** *Lopholejeunea subfusca* var. *elongata* Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 54 (3/4): 445, 1984 (Vanden Berghen 1984a).
*** *Lopholejeunea wiltensii* Steph., Hedwigia 35 (3): 112, 1896 (Stephani 1896b).
* *Lopholejeunea yapensis* Steph., Sp. Hepat. (Stephani) 5: 81, 1912 (Stephani 1912c). [364]
*** *Lopholejeunea zollingeri* (Steph.) Schiffn., Consp. Hepat. Arch. Ind.: 296, 1898 (Schiffner 1898b). Bas.: *Lejeunea zollingeri* Steph., Hedwigia 29 (1): 14, 1890 (Stephani 1890a).

** **subg. *Pholianthus* B.M.Thiers et Gradst.**, Mem. New York Bot. Gard. 52: 25, 1989 (Thiers and Gradstein 1989).
*** *Lopholejeunea colensoi* Steph., Sp. Hepat. (Stephani) 5: 97, 1912 (Stephani 1912c).
*** *Lopholejeunea pocsii* Gyarmati, Cryptog. Bryol. 26 (4): 404, 2005 (Sass-Gyarmati 2005).

363 *Lopholejeunea proxima* is possibly conspecific with *Lopholejeunea nigricans* (Zhu and Gradstein 2005).
364 L*opholejeunea yapensis* is possibly conspecific with *Lopholejeunea subfusca* (Mizutani 1985).

** **subg. *Pteryganthus* B.M.Thiers**, Brittonia 35 (1): 85, 1983 (Thiers 1983).
** *Lopholejeunea grandicrista* Steph., Bull. Soc. Roy. Bot. Belgique, Compt. Rend. 32 (2): 34, 1893 [1894] (Stephani 1893e).
*** *Lopholejeunea leioptera* Gyarmati, Candollea 56 (1): 80, 2001 (Sass-Gyarmati 2001).
** *Lopholejeunea onraedtii* Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 54 (3/4): 452, 1984 (Vanden Berghen 1984a).
** *Lopholejeunea sphaerophora* (Lehm. et Lindenb.) Steph., Sp. Hepat. (Stephani) 5: 68, 1912 (Stephani 1912c). Bas.: *Jungermannia sphaerophora* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 9, 1833 (Lehmann 1833).
* *Lopholejeunea tixieriana* Vanden Berghen, Bull. Jard. Bot. Natl. Belg. 54 (3/4): 454, 1984 (Vanden Berghen 1984a).
** *Lopholejeunea utriculata* Steph., Sp. Hepat. (Stephani) 5: 69, 1912 (Stephani 1912c).

Incertae sedis
** *Lopholejeunea lepidoscypha* Kiaer et Pearson, Forh. Vidensk.-Selsk. Kristiania 1892 (8): 5, 1892 (Pearson 1892).
* *Lopholejeunea multilacera* Steph., Bot. Gaz. 15 (11): 285, 1890 (Stephani 1890c).
** *Lopholejeunea udarii* M.Dey et D.K.Singh, Nelumbo 53: 197, 2011 (Dey and Singh 2011).

Excluded from the genus
* *Lopholejeunea aberrantia* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 256, 1934 (Horikawa 1934). [365]
* *Lopholejeunea vietnamica* Tixier, Ann. Hist.-Nat. Mus. Natl. Hung. 66: 99, 1974 (Tixier 1974). [366]

*** ***Marchesinia* Gray**, Nat. Arr. Brit. Pl. 1: 689, 1821 (Gray 1821) nom. conserv.

*** **subg. *Marchesinia***
*** *Marchesinia mackaii* (Hook.) Gray, Nat. Arr. Brit. Pl. 1: 689, 1821 (Gray 1821). Bas.: *Jungermannia mackaii* Hook., Brit. Jungermann.: tab. 53, 1813 (Hooker 1813).

*** **subg. *Marchesiniopsis* R.M.Schust.**, J. Hattori Bot. Lab. 72: 358, 1992 (Schuster 1992a).
*** *Marchesinia bongardiana* (Lehm. et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 405, 1877 (Trevisan 1877). Bas.: *Lejeunea bongardiana* Lehm. et Lindenb., Nov. Stirp. Pug. 7: 18, 1838 (Lehmann 1838).

365 *Lopholejeunea aberrantia* is probably an *Archilejeunea* species, but the type specimen in HIRO is destroyed (Zhu and Gradstein 2005).

366 *Lopholejeunea vietnamica* is probably an *Archilejeunea* species (Zhu and Gradstein 2005). The type specimen was not found in PC.

*** *Marchesinia brachiata* (Sw.) Schiffn., Hepat. (Engl.-Prantl): 128, 1893 (Schiffner 1893b). Bas.: *Jungermannia brachiata* Sw., Prodr. (Swartz): 144, 1788 (Swartz 1788).

*** *Marchesinia deslooveri* Vanden Berghen, Rev. Bryol. Lichénol. 42 (4): 926, 1976 (Vanden Berghen 1976a).

*** *Marchesinia excavata* (Mitt.) Schiffn., Hepat. (Engl.-Prantl): 128, 1893 (Schiffner 1893b). Bas.: *Lejeunea excavata* Mitt., Trans. Linn. Soc. London 23 (1): 58, 1860 (Mitten 1860a).

*** *Marchesinia languida* (Nees et Mont.) Steph., Sp. Hepat. (Stephani) 5: 149, 1912 (Stephani 1912c). Bas.: *Lejeunea languida* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 59, 1836 (Nees and Montagne 1836).

*** *Marchesinia nobilis* (Gottsche) X.Q.Shi, R.L.Zhu et Gradst., Phytotaxa 195 (3): 249, 2015 (Shi et al. 2015b). Bas.: *Lejeunea nobilis* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 353, 1882 (Gottsche 1882).

*** *Marchesinia robusta* (Mitt.) Schiffn., Hepat. (Engl.-Prantl): 128, 1893 (Schiffner 1893b). Bas.: *Lejeunea robusta* Mitt., Hooker's J. Bot. Kew Gard. Misc. 3: 359, 1851 (Mitten 1851).

** ***Mastigolejeunea* (Spruce) Steph.**, Hedwigia 30 (5): 206, 1891 (Stephani 1891a). Bas.: *Lejeunea* subg. *Mastigolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 100, 1884 (Spruce 1884).

*** *Mastigolejeunea auriculata* (Wilson et Hook.) Steph., Bot. Gaz. 17 (6): 171, 1892 (Stephani 1892f). Bas.: *Jungermannia auriculata* Wilson et Hook., Musci Amer., S. States: no. 170, 1841 (Wilson 1841; non vidi).

** *Mastigolejeunea auriculata* var. *rhodesica* (Vanden Berghen) Sukkharak et Gradst., Nova Hedwigia 99 (3/4): 297, 2014 (Sukkharak and Gradstein 2014). Bas.: *Brachiolejeunea rhodesica* Vanden Berghen, Bull. Jard. Bot. État Bruxelles 21 (1/2): 94, 1951 (Vanden Berghen 1951d).

*** *Mastigolejeunea calcarata* (Steph.) Verd., Blumea 1 (1): 230, 1934 (Verdoorn 1934b). Bas.: *Archilejeunea calcarata* Steph., Sp. Hepat. (Stephani) 4: 724, 1911 (Stephani 1911e).

*** *Mastigolejeunea florea* (Mitt.) Paris, Rev. Bryol. 33 (3): 42, 1906 (Paris 1906b). Bas.: *Phragmicoma florea* Mitt., J. Linn. Soc., Bot. 22 (146): 323, 1886 (Mitten 1886b).

*** *Mastigolejeunea frauenfeldii* (Reichardt) Verd., Blumea 1 (1): 230, 1934 (Verdoorn 1934b). Bas.: *Thysananthus frauenfeldii* Reichardt, Verh. K.K. Zool.-Bot. Ges. Wien 16: 958, 1866 (Reichardt 1866).

** *Mastigolejeunea gradsteinii* Sukkharak, J. Bryol. 36 (1): 56, 2014 (Sukkharak 2014).

*** *Mastigolejeunea humilis* (Gottsche) Schiffn., Hepat. (Engl.-Prantl): 129, 1893 (Schiffner 1893b). Bas.: *Phragmicoma humilis* Gottsche, Syn. Hepat. 2: 299, 1845 (Gottsche et al. 1845a). [367]

*** *Mastigolejeunea indica* Steph., Sp. Hepat. (Stephani) 4: 776, 1912 (Stephani 1912b).

*** *Mastigolejeunea innovans* (Spruce) Steph., Sp. Hepat. (Stephani) 4: 765, 1912 (Stephani 1912b). Bas.: *Lejeunea innovans* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 103, 1884 (Spruce 1884).

*** *Mastigolejeunea ligulata* (Lehm. et Lindenb.) Schiffn., Hepat. (Engl.-Prantl): 129, 1893 (Schiffner 1893b). Bas.: *Jungermannia ligulata* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 39, 1834 (Lehmann 1834).

*** *Mastigolejeunea nigra* Steph., Hedwigia 30 (5): 206, 1891 (Stephani 1891a).

*** *Mastigolejeunea plicatiflora* (Spruce) Steph., Sp. Hepat. (Stephani) 4: 766, 1912 (Stephani 1912b). Bas.: *Lejeunea plicatiflora* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 104, 1884 (Spruce 1884).

*** *Mastigolejeunea recondita* (Steph.) Mizut., J. Hattori Bot. Lab. 32: 134, 1969 (Mizutani 1969). Bas.: *Ptycholejeunea recondita* Steph., Hedwigia 35 (3): 122, 1896 (Stephani 1896b).

*** *Mastigolejeunea repleta* (Taylor) A.Evans, Mem. Torrey Bot. Club 8 (2): 131, 1902 (Evans 1902a). Bas.: *Lejeunea repleta* Taylor, London J. Bot. 5: 392, 1846 (Taylor 1846b).

*** *Mastigolejeunea truncata* Mizut., J. Hattori Bot. Lab. 61: 292, 1986 [1987] (Mizutani 1986c).

** *Mastigolejeunea turgida* Steph., Hedwigia 31 (4): 170, 1892 (Stephani 1892g).

*** *Mastigolejeunea virens* (Ångstr.) Steph., Sp. Hepat. (Stephani) 4: 776, 1912 (Stephani 1912b), *nom. conserv*. Bas.: *Thysananthus virens* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 30 (5): 131, 1873 (Ångström 1873).

** ***Phaeolejeunea* Mizut.**, J. Hattori Bot. Lab. 31: 130, 1968 (Mizutani 1968).

*** *Phaeolejeunea amicorum* (Hürl.) Pócs, Fieldiana, Bot. (n.ser.) 47: 140, 2008 (Pócs 2008b). Bas.: *Phaeolejeunea etesseana* subsp. *amicorum* Hürl., Bauhinia 9 (4): 263, 1991 (Hürlimann 1991).

** *Phaeolejeunea etesseana* (Steph.) Mizut., J. Hattori Bot. Lab. 31: 133, 1968 (Mizutani 1968). Bas.: *Brachiolejeunea etesseana* Steph., Sp. Hepat. (Stephani) 5: 133, 1912 (Stephani 1912c).

** *Phaeolejeunea inermis* (Steph.) Mizut., J. Hattori Bot. Lab. 31: 134, 1968 (Mizutani 1968). Bas.: *Lopholejeunea inermis* Steph., Sp. Hepat. (Stephani) 5: 92, 1912 (Stephani 1912c).

*** *Phaeolejeunea latistipula* (Schiffn. ex P.Syd.) Mizut., J. Hattori Bot. Lab. 31: 131, 1968 (Mizutani 1968). Bas.: *Hygrolejeunea latistipula* Schiffn. ex P.Syd., Just's Bot. Jahresber. 19: 246, 1894 (Sydow 1894).

367 *Mastigolejeunea humilis* has been treated as conspecific with *Mastigolejeunea auriculata* by many recent authors, but it merits recognition based on molecular and morphological evidence (Sukkharak et al. 2011).

*** ***Ptychanthus* Nees**, Naturgesch. Eur. Leberm. 3: 211, 1838 (Nees 1838b).

** *Ptychanthus africanus* Steph., Wiss. Ergebn. Deut. Zentr.-Afr. Exped. (1907-08), Bot. 2: 131, 1911 (Stephani 1911a).

* *Ptychanthus stephensonianus* (Mitt.) Steph., Sp. Hepat. (Stephani) 4: 754, 1912 (Stephani 1912b). Bas.: *Lejeunea stephensoniana* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 155, 1854 (Mitten 1854). [368]

*** *Ptychanthus striatus* (Lehm. et Lindenb.) Nees, Naturgesch. Eur. Leberm. 3: 212, 1838 (Nees 1838b). Bas.: *Jungermannia striata* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 16, 1832 (Lehmann 1832).

** *Ptychanthus striatus* var. *intermedius* (Gottsche) Verd., Ann. Bryol., Suppl. 4: 122, 1934 (Verdoorn 1934a). Bas.: *Ptychanthus intermedius* Gottsche, Natuurk. Tijdschr. Ned.-Indië 4: 576, 1853 (Gottsche 1853).

*** ***Schiffneriolejeunea* Verd.**, Ann. Bryol. 6: 89, 1933 (Verdoorn 1933a).

** **sect. *Pappeanae* R.M.Schust. ex Gradst. et Vanden Berghen**, Beih. Nova Hedwigia 80: 174, 1985 (Gradstein and Vanden Berghen 1985). Based on: *Phragmilejeunea* R.M.Schust., J. Hattori Bot. Lab. 11: 27, 1954 (Schuster and Hattori 1954).

*** *Schiffneriolejeunea fragilis* Gradst. et E.W.Jones, J. Bryol. 12 (1): 45, 1982 (Jones 1982).

*** *Schiffneriolejeunea madagascariensis* (Steph.) Gradst., J. Hattori Bot. Lab. 38: 333, 1974 (Gradstein 1974a). Bas.: *Ptychocoleus madagascariensis* Steph., Sp. Hepat. (Stephani) 5: 27, 1912 (Stephani 1912c).

*** *Schiffneriolejeunea pappeana* var. *bidentata* Gradst. et Vanden Berghen, Beih. Nova Hedwigia 80: 182, 1985 (Gradstein and Vanden Berghen 1985).

*** *Schiffneriolejeunea pappeana* var. *integra* Gradst. et Vanden Berghen, Beih. Nova Hedwigia 80: 182, 1985 (Gradstein and Vanden Berghen 1985).

*** *Schiffneriolejeunea parviloba* (Steph.) Gradst., J. Hattori Bot. Lab. 38: 335, 1974 (Gradstein 1974a). Bas.: *Acrolejeunea parviloba* Steph., Bot. Gaz. 15 (11): 286, 1890 (Stephani 1890c).

*** *Schiffneriolejeunea pappeana* (Nees) Gradst., J. Hattori Bot. Lab. 38: 335, 1974 (Gradstein 1974a). Bas.: *Phragmicoma pappeana* Nees, Syn. Hepat. 2: 296, 1845 (Gottsche et al. 1845a).

** **sect. *Schiffneriolejeunea***, Occas. Pap. Farlow Herb. Cryptog. Bot. 16: 72, 1981 (Gradstein and Terken 1981).

*** *Schiffneriolejeunea altimontana* Vanden Berghen, Rev. Bryol. Lichénol. 42 (4): 923, 1976 (Vanden Berghen 1976a).

*** *Schiffneriolejeunea amazonica* Gradst., Beih. Nova Hedwigia 80: 25, 1985 (Gradstein 1985a).

368 *Ptychanthus stephensonianus* was tentatively treated as a separate species by Thiers and Gradstein (1989). Further work on the infraspecific variation of *Ptychanthus striatus* is needed to determine the correct status.

*** *Schiffneriolejeunea cumingiana* (Mont.) Gradst., J. Hattori Bot. Lab. 38: 333, 1974 (Gradstein 1974a). Bas.: *Phragmicoma cumingiana* Mont., London J. Bot. 4: 7, 1845 (Montagne 1845a).

*** *Schiffneriolejeunea ferruginea* (Steph.) Gradst., J. Hattori Bot. Lab. 38: 333, 1974 (Gradstein 1974a). Bas.: *Acrolejeunea ferruginea* Steph., Hedwigia 34 (2): 57, 1895 (Stephani 1895c).

*** *Schiffneriolejeunea occulta* (Steph.) Gradst., J. Hattori Bot. Lab. 38: 333, 1974 (Gradstein 1974a). Bas.: *Ptychocoleus occultus* Steph., Sp. Hepat. (Stephani) 5: 25, 1912 (Stephani 1912c).

*** *Schiffneriolejeunea omphalanthoides* Verd., Ann. Bryol. 6: 91, 1933 (Verdoorn 1933c).

*** *Schiffneriolejeunea tumida* (Nees) Gradst., J. Hattori Bot. Lab. 38: 335, 1974 (Gradstein 1974a). Bas.: *Ptychanthus tumidus* Nees, Naturgesch. Eur. Leberm. 3: 213, 1838 (Nees 1838b).

*** *Schiffneriolejeunea tumida* var. *haskarliana* (Gottsche) Gradst. et Terken, Occas. Pap. Farlow Herb. Cryptog. Bot. 16: 77, 1981 (Gradstein and Terken 1981). Bas.: *Phragmicoma haskarliana* Gottsche, Syn. Hepat. 2: 299, 1845 (Gottsche et al. 1845a).

*** *Schiffneriolejeunea nymannii* (Steph.) Gradst. et Terken, Occas. Pap. Farlow Herb. Cryptog. Bot. 16: 79, 1981 (Gradstein and Terken 1981). Bas.: *Archilejeunea nymannii* Steph., Sp. Hepat. (Stephani) 4: 730, 1911 (Stephani 1911e).

*** *Schiffneriolejeunea polycarpa* (Nees) Gradst., J. Hattori Bot. Lab. 38: 335, 1974 (Gradstein 1974a). Bas.: *Jungermannia polycarpa* Nees, Fl. Bras. (Martius) 1 (1): 350, 1833 (Nees 1833a).

*** *Schiffneriolejeunea pulopenangensis* (Gottsche) Gradst., J. Hattori Bot. Lab. 38: 335, 1974 (Gradstein 1974a). Bas.: *Phragmicoma pulopenangensis* Gottsche, Syn. Hepat. 2: 299, 1845 (Gottsche et al. 1845a).

** ***Spruceanthus* Verd.**, Ann. Bryol., Suppl. 4: 151, 1934 (Verdoorn 1934a).

*** *Spruceanthus macrostipulus* (Steph.) Gradst., Trop. Bryol. 4: 13, 1991 (Gradstein 1991). Bas.: *Mastigolejeunea macrostipula* Steph., Sp. Hepat. (Stephani) 4: 767, 1912 (Stephani 1912b).

** *Spruceanthus mamillilobulus* (Herzog) Verd., Hepat. Select. Crit. 9: no. 447, 1936 (Verdoorn 1936; non vidi). Bas.: *Ptychanthus mamillilobulus* Herzog, Symb. Sin. 5: 44, 1930 (Nicholson et al. 1930).

*** *Spruceanthus pluriplicatus* (Steph.) Gradst., Schriftenreihe Mensch, Kultur Umwelt z. Bergl. W Neug. 7: 14, 1981 (Hiepko and Schultze-Motel 1981). Bas.: *Brachiolejeunea pluriplicata* Steph., Sp. Hepat. (Stephani) 5: 135, 1912 (Stephani 1912c).

*** *Spruceanthus polymorphus* (Sande Lac.) Verd., Ann. Bryol., Suppl. 4: 155, 1934 (Verdoorn 1934a). Bas.: *Phragmicoma polymorpha* Sande Lac., Ned. Kruidk. Arch. 3: 420, 1854 [1855] (Sande Lacoste 1854).

*** *Spruceanthus semirepandus* (Nees) Verd., Ann. Bryol., Suppl. 4: 153, 1934 (Verdoorn 1934a). Bas.: *Jungermannia semirepanda* Nees, Enum. Pl. Crypt. Javae: 39, 1830 (Nees 1830).

*** *Spruceanthus sulcatus* (Nees) Gradst., Beih. Nova Hedwigia 80: 26, 1985 (Gradstein 1985a). Bas.: *Jungermannia sulcata* Nees, Enum. Pl. Crypt. Javae: 36, 1830 (Nees 1830).
*** *Spruceanthus theobromae* (Spruce) Gradst., Beih. Nova Hedwigia 80: 26, 1985 (Gradstein 1985a). Bas.: *Lejeunea theobromae* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 99, 1884 (Spruce 1884).
*** *Spruceanthus thozetianus* (Gottsche et F.Muell.) B.M.Thiers et Gradst., Mem. New York Bot. Gard. 52: 62, 1989 (Thiers and Gradstein 1989). Bas.: *Phragmicoma thozetiana* Gottsche et F.Muell., Fragm. (Mueller): 63, 1880 (Gottsche 1880).

*** ***Thysananthus* Lindenb.**, Nov. Stirp. Pug. 8: 24, 1844 (Lehmann 1844).

** **sect. *Thysananthus***

** **subsect. *Anguiformes* Sukkharak**, Phytotaxa 193 (1): 37, 2015 (Sukkharak 2015).
*** *Thysananthus anguiformis* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 289, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia anguiformis* Hook.f. et Taylor, London J. Bot. 3: 567, 1844 (Hooker and Taylor 1844d).
*** *Thysananthus pancheri* (Steph.) Hürl., Bauhinia 9 (2): 167, 1989 (Hürlimann 1989). Bas.: *Mastigolejeunea pancheri* Steph., Sp. Hepat. (Stephani) 4: 771, 1912 (Stephani 1912b).

** **subsect. *Thysananthus***
*** *Thysananthus aculeatus* Herzog, Ann. Bryol. 4: 89, 1931 (Herzog 1931b).
*** *Thysananthus amazonicus* (Spruce) Schiffn., Hepat. (Engl.-Prantl): 130, 1893 (Schiffner 1893b). Bas.: *Lejeunea amazonica* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 106, 1884 (Spruce 1884).
*** *Thysananthus appendiculatus* Steph., Sp. Hepat. (Stephani) 4: 794, 1912 (Stephani 1912b).
** *Thysananthus ciliaris* (Sande Lac.) Sukkharak, Nova Hedwigia 99 (3/4): 339, 2014 (Sukkharak and Gradstein 2014). Bas.: *Phragmicoma ciliaris* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 307, 1864 (Sande Lacoste 1864).
*** *Thysananthus comosus* Lindenb., Nov. Stirp. Pug. 8: 25, 1844 (Lehmann 1844).
*** *Thysananthus convolutus* Lindenb., Syn. Hepat. 2: 288, 1845 (Gottsche et al. 1845a).
** *Thysananthus convolutus* var. *laceratus* (Steph.) Sukkharak, Phytotaxa 193 (1): 30, 2015 (Sukkharak 2015). Bas.: *Thysananthus laceratus* Steph., Sp. Hepat. (Stephani) 4: 796, 1912 (Stephani 1912b).
*** *Thysananthus discretus* Sukkharak et Gradst., Cryptog. Bryol. 31 (2): 113, 2010 (Sukkharak and Gradstein 2010).
*** *Thysananthus gottschei* (J.B.Jack et Steph.) Steph., Sp. Hepat. (Stephani) 4: 787, 1912 (Stephani 1912b). Bas.: *Thysanolejeunea gottschei* J.B.Jack et Steph., Hedwigia 31 (1): 20, 1892 (Jack and Stephani 1892).
** *Thysananthus gottschei* var. *continuus* Sukkharak, Phytotaxa 193 (1): 33, 2015 (Sukkharak 2015).

*** *Thysananthus spathulistipus* (Reinw., Blume et Nees) Lindenb., Syn. Hepat. 2: 287, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia spathulistipa* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 212, 1824 [1825] (Reinwardt et al. 1824a).

** **sect. *Vittatae* Verd.**, Ann. Bryol., Suppl. 4: 182, 1934 (Verdoorn 1934a).

** **subsect. *Sandeanthus* (B.M.Thiers et Gradst.) Sukkharak**, Phytotaxa 193 (1): 43, 2015 (Sukkharak 2015). Bas.: *Thysananthus* subg. *Sandeanthus* B.M.Thiers et Gradst., Mem. New York Bot. Gard. 52: 66, 1989 (Thiers and Gradstein 1989).

*** *Thysananthus mollis* Steph., Sp. Hepat. (Stephani) 4: 798, 1912 (Stephani 1912b).

*** *Thysananthus montanus* Gradst., Xiao L.He et Piippo, Acta Bot. Fenn. 174: 77, 2002 (Gradstein et al. 2002).

*** *Thysananthus retusus* (Reinw., Blume et Nees) B.M.Thiers et Gradst., Mem. New York Bot. Gard. 52: 67, 1989 (Thiers and Gradstein 1989). Bas.: *Jungermannia retusa* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 214, 1824 [1825] (Reinwardt et al. 1824a).

** *Thysananthus retusus* subsp. *sellingii* (Herzog) Sukkharak, Phytotaxa 193 (1): 47, 2015 (Sukkharak 2015). Bas.: *Mastigolejeunea sellingii* Herzog, Ark. Bot. (n.ser.) 3 (3): 60, 1953 (Herzog 1953a).

** **subsect. *Vittatae* (Verd.) Sukkharak**, Phytotaxa 193 (1): 40, 2015 (Sukkharak 2015). Bas.: *Thysananthus* sect. *Vittatae* Verd., Ann. Bryol., Suppl. 4: 182, 1934 (Verdoorn 1934a).

*** *Thysananthus fruticosus* (Lindenb. et Gottsche) Schiffn., Hepat. (Engl.-Prantl): 130, 1893 (Schiffner 1893b). Bas.: *Bryopteris fruticosa* Lindenb. et Gottsche, Syn. Hepat. 5: 737, 1847 (Gottsche et al. 1847).

** ***Tuzibeanthus* S.Hatt.**, Biosphaera 1 (1): 7, 1947 (Hattori 1947a).

*** *Tuzibeanthus chinensis* (Steph.) Mizut., J. Hattori Bot. Lab. 24: 151, 1961 (Mizutani 1961). Bas.: *Ptychanthus chinensis* Steph., Sp. Hepat. (Stephani) 4: 744, 1911 (Stephani 1911e).

** ***Verdoornianthus* Gradst.**, Bryologist 80 (4): 607, 1977 [1978] (Gradstein 1977).

*** *Verdoornianthus griffinii* Gradst., Bryologist 80 (4): 609, 1977 [1978] (Gradstein 1977).

*** *Verdoornianthus marsupiifolius* (Spruce) Gradst., Bryologist 80 (4): 609, 1977 [1978] (Gradstein 1977). Bas.: *Lejeunea marsupiifolia* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 118, 1884 (Spruce 1884).

Porellineae R.M.Schust.

*** Goebeliellaceae Verd.

by M. von Konrat and M.A.M. Renner

*** ***Goebeliella* Steph.**, Hedwigia 51 (1): 61, 1911 (Stephani 1911c).
*** *Goebeliella cornigera* (Mitt.) Steph., Hedwigia 51 (1): 62, 1911 (Stephani 1911c). Bas.: *Frullania cornigera* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 163, 1855 (Mitten 1855).

*** Lepidolaenaceae Nakai

by M. von Konrat

The generic composition of Lepidolaenaceae follows Crandall-Stotler et al. (2009), except that the genus *Jubulopsis* was reduced to a synonym of *Lepidolaena* by von Konrat et al. (2012a).

*** ***Gackstroemia* Trevis.**, Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 397, 1877 (Trevisan 1877).

** **subg. *Gackstroemia***
** *Gackstroemia ljungneri* (Herzog) Grolle, J. Hattori Bot. Lab. 30: 17, 1967 (Grolle 1967a). Bas.: *Lepidolaena ljungneri* Herzog, Ark. Bot. 29A (21): 6, 1940 (Herzog 1940).
*** *Gackstroemia magellanica* (Lam.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 397, 1877 (Trevisan 1877). Bas.: *Jungermannia magellanica* Lam., Encycl. (Lamarck) 3 (1): 284, 1789 (Lamarck 1789).
*** *Gackstroemia novae-zelandiae* R.M.Schust. et J.J.Engel, Phytotaxa 118 (1): 10, 2013 (Engel 2013a).
*** *Gackstroemia weindorferi* (Herzog) Grolle, J. Hattori Bot. Lab. 30: 20, 1967 (Grolle 1967a). Bas.: *Lepidolaena weindorferi* Herzog, Ann. Bryol. 6: 103, 1933 (Verdoorn 1933a).

** **subg. *Hariotiella* (Besch. et C.Massal. ex Schiffn.) Grolle**, J. Hattori Bot. Lab. 30: 12, 1967 (Grolle 1967a). Bas.: *Lepidolaena* subg. *Hariotiella* Besch. et C.Massal. ex Schiffn., Hepat. (Engl.-Prantl): 110, 1893 (Schiffner 1893b).
*** *Gackstroemia hariotiana* (Besch. et C.Massal.) Grolle, J. Hattori Bot. Lab. 30: 12, 1967 (Grolle 1967a). Bas.: *Polyotus hariotianus* Besch. et C.Massal., Bull. Mens. Soc. Linn. Paris 1 (79): 639, 1886 (Bescherelle and Massalongo 1886).

*** *Gackstroemia patagonica* (Steph.) Grolle, J. Hattori Bot. Lab. 30: 14, 1967 (Grolle 1967a). Bas.: *Lepidolaena patagonica* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 76, 1911 (Stephani 1911b).

** *Gackstroemia schwabei* (Herzog) Grolle, J. Hattori Bot. Lab. 30: 16, 1967 (Grolle 1967a). Bas.: *Lepidolaena schwabei* Herzog, Rev. Bryol. Lichénol. 29 (3/4): 191, 1960 [1961] (Herzog 1960).

Incertae sedis

*** *Gackstroemia alpina* R.M.Schust., J. Hattori Bot. Lab. 36: 349, 1972 [1973] (Schuster 1972).

*** ***Lepidogyna* R.M.Schust.**, Phytologia 45 (5): 419, 1980 (Schuster 1980b).

*** *Lepidogyna hodgsoniae* (Grolle) R.M.Schust., Phytologia 45 (5): 419, 1980 (Schuster 1980b). Bas.: *Lepidolaena hodgsoniae* Grolle, J. Hattori Bot. Lab. 30: 29, 1967 (Grolle 1967a).

*** *Lepidogyna menziesii* (Hook.) R.M.Schust., Phytologia 45 (5): 419, 1980 (Schuster 1980b). Bas.: *Jungermannia menziesii* Hook., Musci Exot. 2: tab. 118, 1820 (Hooker 1820).

*** ***Lepidolaena* Dumort.**, Recueil Observ. Jungerm.: 13, 1835 (Dumortier 1835). [369]

*** *Lepidolaena berggrenii* E.A.Hodgs., Trans. Roy. Soc. New Zealand 87 (3/4): 205, 1959 (Hodgson 1959).

** *Lepidolaena brachyclada* (Lehm.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 393, 1877 (Trevisan 1877). Bas.: *Frullania brachyclada* Lehm., Nov. Stirp. Pug. 8: 21, 1844 (Lehmann 1844).

*** *Lepidolaena clavigera* (Hook.) Dumort. ex Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 393, 1877 (Trevisan 1877). Bas.: *Jungermannia clavigera* Hook., Musci Exot. 1: tab. 70, 1818 (Hooker 1818).

*** *Lepidolaena novae-zelandiae* (E.A.Hodgs. et S.W.Arnell) von Konrat, L.Söderstr. et A.Hagborg, Phytotaxa 65: 51, 2012 (von Konrat et al. 2012a). Bas.: *Jubula novae-zelandiae* E.A.Hodgs. et S.W.Arnell, Trans. Roy. Soc. New Zealand, Bot. 3 (4): 90, 1965 (Hodgson 1965).

*** *Lepidolaena palpebrifolia* (Hook.) Dumort. ex Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 393, 1877 (Trevisan 1877). Bas.: *Jungermannia palpebrifolia* Hook., Musci Exot. 1: tab. 71, 1818 (Hooker 1818).

*** *Lepidolaena reticulata* (Hook.f. et Taylor) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 393, 1877 (Trevisan 1877). Bas.: *Jungermannia reticulata* Hook.f. et Taylor, London J. Bot. 3: 395, 1844 (Hooker and Taylor 1844a).

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369 *Lepidolaena* includes *Polyotus*, but a few taxa have neither been transferred nor synonymized. They are listed in the "Names in genera not currently accepted" section below.

*** *Lepidolaena taylorii* (Gottsche) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 393, 1877 (Trevisan 1877). Bas.: *Polyotus taylorii* Gottsche, Syn. Hepat. 2: 246, 1845 (Gottsche et al. 1845a).

*** Porellaceae Cavers *nom. conserv.*

*** ***Ascidiota* C.Massal.**, Nuovo Giorn. Bot. Ital. (n.ser.) 5 (2): 256, 1898 (Massalongo 1898).

*** *Ascidiota blepharophylla* C.Massal., Nuovo Giorn. Bot. Ital. (n.ser.) 5 (2): 257, 1898 (Massalongo 1898).

** *Ascidiota blepharophylla* subsp. *alaskana* Steere et R.M.Schust., Bull. Torrey Bot. Club 87 (3): 213, 1960 (Steere and Schuster 1960).

*** ***Porella* L.**, Sp. Pl. 1: 1106, 1753 (Linnaeus 1753).

** *Porella abyssinica* (Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 407, 1877 (Trevisan 1877). Bas.: *Madotheca abyssinica* Nees, Syn. Hepat. 2: 281, 1845 (Gottsche et al. 1845a).

** *Porella abyssinica* var. *hoehnelii* (Steph.) Pócs, Fragm. Florist. Geobot. 39 (1): 229, 1994 (Pócs 1994a). Bas.: *Porella hoehnelii* Steph., Hedwigia 30 (6): 266, 1891 (Stephani 1891c).

** *Porella acutifolia* (Lehm. et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 408, 1877 (Trevisan 1877). Bas.: *Madotheca acutifolia* Lehm. et Lindenb., Nov. Stirp. Pug. 7: 8, 1838 (Lehmann 1838).

** *Porella acutifolia* var. *hattoriana* (Pócs) S.Hatt., Misc. Bryol. Lichenol. 8 (4): 79, 1979 (Hattori 1979c). Bas.: *Porella plumosa* var. *hattoriana* Pócs, J. Hattori Bot. Lab. 31: 82, 1968 (Pócs 1968).

* *Porella acutifolia* var. *linguifolia* (Steph.) M.L.So, Syst. Bot. 27 (1): 5, 2002 (So 2002a). Bas.: *Madotheca linguifolia* Steph., Sp. Hepat. (Stephani) 4: 291, 1910 (Stephani 1910b). [370]

** *Porella acutifolia* subsp. *tosana* (Steph.) S.Hatt., J. Hattori Bot. Lab. 44: 100, 1978 (Hattori 1978a). Bas.: *Madotheca tosana* Steph., Bull. Herb. Boissier 5 (2): 97, 1897 (Stephani 1897b).

* *Porella andica* (Gottsche) Hässel, Beih. Nova Hedwigia 134: 452, 2009 (Hässel and Rubies 2009). Bas.: *Madotheca andica* Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 8: 339, 1857 (Gottsche 1857). [371]

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370 *Porella acutifolia* var. *linguifolia* was accepted by So (2002a), but it is conspecific with *Plagiochila viridissima* in Hattori (1976f, 1986d). This synonymy is doubtful and further study is necessary to clarify the status.

371 *Madotheca andica* was transferred to *Porella* by Hässel (in Hässel and Rubies 2009), but she did not study the type specimen. It may be conspecific with *Plagiochila subsquarrosa*.

*** *Porella arboris-vitae* (With.) Grolle, Trans. Brit. Bryol. Soc. 5 (4): 770, 1969 (Grolle 1969b). Bas.: *Jungermannia arboris-vitae* With., Bot. arr. veg. Gr. Brit. 2: 697, 1776 (Withering 1776).

** *Porella arboris-vitae* subsp. *nitidula* (C.Massal.) S.Hatt., J. Hattori Bot. Lab. 40: 123, 1976 (Hattori 1976f). Bas.: *Madotheca nitidula* C.Massal., Bull. Soc. Bot. Ital. 1906: 141, 1906 (Massalongo 1906b).

** *Porella baueri* (Schiffn.) C.E.O.Jensen, Danmarks mosser: 240, 1915 (Jensen 1915). Bas.: *Madotheca baueri* Schiffn., Sitzungsber. deutsch. naturwiss.-med. Vereins Böhmen "Lotos" Prag 48: 346, 1900 (Schiffner 1900d).

** *Porella bolanderi* (Austin) Pearson, List. Canad. Hepat.: 7, 1890 (Pearson 1890). Bas.: *Madotheca bolanderi* Austin, Bull. Torrey Bot. Club 3 (3): 14, 1872 (Austin 1872).

** *Porella borellii* (Gola) Parihar, Univ. Allahabad Stud., Bot. 1961-2: 15, 1962 (Parihar 1962). Bas.: *Madotheca borellii* Gola, Atti Reale Accad. Sci. Torino, Cl. Sci. Fis. Mat. Nat. 49: 760, 1914 (Gola 1914b).

*** *Porella brachiata* (Taylor) Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 334, 1885 (Spruce 1885). Bas.: *Madotheca brachiata* Taylor, London J. Bot. 6: 341, 1847 (Taylor 1847b).

*** *Porella brasiliensis* (Raddi) Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 246, 1893 (Schiffner 1893a). Bas.: *Schulthesia brasiliensis* Raddi, Critt. Brasil.: 10, 1822 (Raddi 1822).

* *Porella brasiliensis* var. *ciliata* (Gottsche, Lindenb. et Nees) Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 246, 1893 (Schiffner 1893a). Bas.: *Madotheca brasiliensis* β *ciliata* Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 271, 1845 (Gottsche et al. 1845a).

* *Porella brasiliensis* var. *laevior* (Gottsche, Lindenb. et Nees) Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 246, 1893 (Schiffner 1893a). Bas.: *Madotheca brasiliensis* α *laevior* Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 271, 1845 (Gottsche et al. 1845a).

** *Porella caespitans* (Steph.) S.Hatt., J. Hattori Bot. Lab. 33: 50, 1970 (Hattori 1970). Bas.: *Madotheca caespitans* Steph., Mém. Soc. Nat. Sci. Nat. Math. Cherbourg 29: 218, 1894 (Stephani 1894b). [372]

** *Porella caespitans* var. *cordifolia* (Steph.) S.Hatt. ex T.Katag. et T.Yamag., Bryol. Res. 10 (5): 133, 2011 (Katagiri and Yamaguchi 2011). Bas.: *Madotheca cordifolia* Steph., Sp. Hepat. (Stephani) 4: 315, 1910 (Stephani 1910b).

** *Porella caespitans* subsp. *latior* (S.Hatt.) S.Hatt., J. Hattori Bot. Lab. 40: 127, 1976 (Hattori 1976f). Bas.: *Porella acutifolia* subsp. *latior* S.Hatt., J. Hattori Bot. Lab. 32: 325, 1969 (Hattori 1969).

** *Porella caespitans* var. *nipponica* S.Hatt., J. Hattori Bot. Lab. 33: 57, 1970 (Hattori 1970).

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372 *Porella caespitans* was resolved as polyphyletic in the phylogeny of Hentschel et al. (2007b), suggesting that the species is a complex deserving further study.

** *Porella caespitans* var. *reflexigastria* (Pócs) S.Hatt., J. Hattori Bot. Lab. 40: 127, 1976 (Hattori 1976f). Bas.: *Porella reflexigastria* Pócs, J. Hattori Bot. Lab. 31: 71, 1968 (Pócs 1968).

** *Porella campylophylla* (Lehm. et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 408, 1877 (Trevisan 1877). Bas.: *Jungermannia campylophylla* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 40, 1834 (Lehmann 1834).

** *Porella campylophylla* subsp. *lancistipula* (Steph.) S.Hatt., J. Hattori Bot. Lab. 44: 102, 1978 (Hattori 1978a). Bas.: *Madotheca lancistipula* Steph., Sp. Hepat. (Stephani) 6: 524, 1924 (Stephani 1924).

** *Porella campylophylla* var. *ligulifera* (Taylor) S.Hatt., J. Hattori Bot. Lab. 32: 333, 1969 (Hattori 1969). Bas.: *Madotheca ligulifera* Taylor, Nov. Stirp. Pug. 8: 10, 1844 (Lehmann 1844).

** *Porella campylophylla* var. *tixieri* (Pócs) S.Hatt., J. Hattori Bot. Lab. 40: 128, 1976 (Hattori 1976f). Bas.: *Porella plumosa* var. *tixieri* Pócs, J. Hattori Bot. Lab. 31: 82, 1968 (Pócs 1968).

** *Porella canariensis* (F.Weber) Underw., Rep. (Annual) Missouri Bot. Gard. 8: 186, 1897 (Trelease 1897). Bas.: *Jungermannia platyphylla* var. *canariensis* F.Weber, Hist. Musc. Hepat. Prodr.: 16, 1815 (Weber 1815).

* *Porella capehorniensis* Swails, Nova Hedwigia 19: 244, 1970 (Swails 1970). [373]

** *Porella capensis* (Gottsche) Mitt., J. Linn. Soc., Bot. 22 (146): 323, 1886 (Mitten 1886b). Bas.: *Madotheca capensis* Gottsche, Syn. Hepat. 2: 270, 1845 (Gottsche et al. 1845a).

* *Porella caucasica* Steph., Bot. Centralbl. 50 (3): 71, 1892 (Stephani 1892a).

** *Porella chenii* S.Hatt., J. Hattori Bot. Lab. 30: 129, 1967 (Hattori 1967).

*** *Porella chilensis* (Lehm. et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 407, 1877 (Trevisan 1877). Bas.: *Jungermannia chilensis* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 36, 1834 (Lehmann 1834).

* *Porella chilensis* var. *antucensis* (Gottsche) Hässel, Beih. Nova Hedwigia 134: 452, 2009 (Hässel and Rubies 2009). Bas.: *Madotheca chilensis* β *antucensis* Gottsche, Ann. Sci. Nat. Bot. (sér. 4) 8: 340, 1857 (Gottsche 1857).

** *Porella chilensis* var. *fernandeziensis* (Herzog) Swails, Nova Hedwigia 19: 236, 1970 (Swails 1970). Bas.: *Madotheca chilensis* f. *fernandeziensis* Herzog, Nat. Hist. Juan Fernandez (Botany) 2 (5): 736, 1942 (Herzog 1942a).

** *Porella chilensis* var. *microloba* (Herzog) Swails, Nova Hedwigia 19: 236, 1970 (Swails 1970). Bas.: *Madotheca chilensis* f. *microloba* Herzog, Nat. Hist. Juan Fernandez (Botany) 2 (5): 736, 1942 (Herzog 1942a).

** *Porella chinensis* (Steph.) S.Hatt., J. Hattori Bot. Lab. 30: 131, 1967 (Hattori 1967). Bas.: *Madotheca chinensis* Steph., Mém. Soc. Nat. Sci. Nat. Math. Cherbourg 29: 218, 1894 (Stephani 1894b).

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373 *Porella capehorniensis* may be conspecific with *Plagiochila setigera* and the type specimen is probably not from South America (Hässel and Rubies 2009).

** *Porella chinensis* var. *crispata* Udar et Shaheen, Misc. Bryol. Lichenol. 9 (4): 74, 1982 (Udar and Shaheen 1982).
** *Porella chinensis* var. *decurrens* (Steph.) S.Hatt., J. Hattori Bot. Lab. 44: 102, 1978 (Hattori 1978a). Bas.: *Madotheca decurrens* Steph., Sp. Hepat. (Stephani) 4: 289, 1910 (Stephani 1910b).
** *Porella chinensis* var. *hattorii* Udar et Shaheen, Misc. Bryol. Lichenol. 9 (7): 146, 1983 (Udar and Shaheen 1983a).
** *Porella chinensis* var. *irregularis* (Steph.) S.Hatt., J. Hattori Bot. Lab. 39: 270, 1975 (Hattori 1975c). Bas.: *Madotheca irregularis* Steph., Sp. Hepat. (Stephani) 4: 304, 1910 (Stephani 1910b).
** *Porella circinnata* Lindb., Not. Sällsk. Fauna Fl. Fenn. Förh. 13: 355, 1874 (Lindberg 1874a).
*** *Porella cordaeana* (Huebener) Moore, Proc. Roy. Irish Acad. (ser. 2) 2: 618, 1877 (Moore 1877). Bas.: *Jungermannia cordaeana* Huebener, Hepaticol. germ.: 291, 1834 (Hübener 1834).
** *Porella cranfordii* Steph., Hedwigia 28 (4): 270, 1889 (Stephani 1889c).
*** *Porella crispata* (Hook.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 407, 1877 (Trevisan 1877). Bas.: *Jungermannia crispata* Hook., Pl. crypt. (Hooker): tab. 4b, 1816 (Hooker 1816b).
** *Porella cucullistipula* Steph., Bull. Soc. Roy. Bot. Belgique, Compt. Rend. 32 (2): 38, 1893 [1894] (Stephani 1893e).
** *Porella densifolia* (Steph.) S.Hatt., J. Jap. Bot. 20: 109, 1944 (Hattori 1944c). Bas.: *Madotheca densifolia* Steph., Mém. Soc. Nat. Sci. Nat. Math. Cherbourg 29: 219, 1894 (Stephani 1894b). [374]
** *Porella densifolia* subsp. *andamana* S.Hatt., J. Hattori Bot. Lab. 32: 346, 1969 (Hattori 1969).
** *Porella densifolia* subsp. *appendiculata* (Steph.) S.Hatt., J. Hattori Bot. Lab. 32: 343, 1969 (Hattori 1969). Bas.: *Madotheca appendiculata* Steph., Sp. Hepat. (Stephani) 4: 301, 1910 (Stephani 1910b).
** *Porella densifolia* var. *oviloba* (Steph.) N.Kitag., Acta Phytotax. Geobot. 19 (2/3): 64, 1962 (Kitagawa 1962b). Bas.: *Madotheca oviloba* Steph., Sp. Hepat. (Stephani) 4: 312, 1910 (Stephani 1910b).
** *Porella densifolia* var. *paraphyllina* (P.C.Chen) Pócs, J. Hattori Bot. Lab. 31: 84, 1968 (Pócs 1968). Bas.: *Madotheca paraphyllina* P.C.Chen, Feddes Repert. Spec. Nov. Regni Veg. 58: 42, 1955 (Chen 1955).
** *Porella densifolia* var. *pilosa* S.Hatt. et K.C.Chang, Bull. Bot. Res., Harbin 8 (2): 44, 1988 (Chang 1988).
** *Porella densifolia* var. *robusta* (Steph.) S.Hatt., J. Hattori Bot. Lab. 32: 343, 1969 (Hattori 1969). Bas.: *Madotheca robusta* Steph., Sp. Hepat. (Stephani) 4: 313, 1910 (Stephani 1910b).

374 *Porella densifolia* was resolved as paraphyletic in the phylogeny of Hentschel et al. (2007b), suggesting that the species is a complex deserving further study.

*** *Porella elegantula* (Mont.) E.A.Hodgs., Svensk Bot. Tidskr. 42 (3): 277, 1948 (Hodgson and Sainsbury 1948). Bas.: *Madotheca elegantula* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 255, 1843 (Montagne 1843).

** *Porella faurieri* (Steph.) S.Hatt., J. Jap. Bot. 20: 109, 1944 (Hattori 1944c). Bas.: *Madotheca faurieri* Steph., Sp. Hepat. (Stephani) 4: 315, 1910 (Stephani 1910b).

** *Porella fengii* P.C.Chen et S.Hatt., J. Hattori Bot. Lab. 30: 133, 1967 (Hattori 1967).

** *Porella geheebii* (Steph.) S.Hatt., Bot. Mag. (Tokyo) 64 (755/756): 114, 1951 (Hattori 1951c). Bas.: *Madotheca geheebii* Steph., Sp. Hepat. (Stephani) 4: 290, 1910 (Stephani 1910b).

** *Porella gracillima* Mitt., Trans. Linn. Soc. London, Bot. 3 (3): 202, 1891 (Mitten 1891).

** *Porella grandifolia* (Steph.) S.Hatt., J. Hattori Bot. Lab. 30: 136, 1967 (Hattori 1967). Bas.: *Madotheca grandifolia* Steph., Sp. Hepat. (Stephani) 4: 289, 1910 (Stephani 1910b).

** *Porella grandiloba* Lindb., Acta Soc. Sci. Fenn. 10: 234, 1872 [1873] (Lindberg 1872b).

** *Porella grollei* S.Hatt., J. Hattori Bot. Lab. 34: 411, 1971 (Hattori 1971b).

** *Porella handelii* S.Hatt., J. Hattori Bot. Lab. 33: 65, 1970 (Hattori 1970).

** *Porella hattorii* Udar et Shaheen, Lindbergia 9 (1): 70, 1983 (Udar and Shaheen 1983b).

** *Porella hoeana* S.Hatt., Misc. Bryol. Lichenol. 7 (5): 86, 1976 (Hattori 1976c).

* *Porella imbricata* Lour., Fl. Cochinch. 2: 683, 1790 (Loureiro 1790).

** *Porella inaequalis* (Gottsche) Perss., Arch. Soc. Zool. Bot. Fenn. "Vanamo", suppl. 9: 225, 1955 (Persson 1955). Bas.: *Madotheca inaequalis* Gottsche, Sp. Hepat. (Stephani) 4: 251, 1910 (Stephani 1910b).

** *Porella japonica* (Sande Lac.) Mitt., Trans. Linn. Soc. London, Bot. 3 (3): 202, 1891 (Mitten 1891). Bas.: *Madotheca japonica* Sande Lac., Syn. hepat. jav.: 105, 1856 [1857] (Sande Lacoste 1856b).

** *Porella japonica* subsp. *appalachiana* R.M.Schust., Hepat. Anthocerotae N. Amer. 4: 682, 1980 (Schuster 1980c).

** *Porella japonica* var. *densespinosa* S.Hatt. et M.X.Zhang, J. Jap. Bot. 60 (11): 324, 1985 (Hattori and Zhang 1985).

** *Porella javanica* (Gottsche) Inoue, J. Hattori Bot. Lab. 30: 60, 1967 (Inoue 1967a). Bas.: *Madotheca javanica* Gottsche, Sp. Hepat. (Stephani) 4: 290, 1910 (Stephani 1910b).

** *Porella latifolia* J.S.Lou et Q.Li, Acta Phytotax. Sin. 25 (6): 482, 1987 (Lou 1987).

*** *Porella leiboldii* (Lehm.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 407, 1877 (Trevisan 1877). Bas.: *Madotheca leiboldii* Lehm., Nov. Stirp. Pug. 8: 11, 1844 (Lehmann 1844).

** *Porella longifolia* (Steph.) S.Hatt., J. Hattori Bot. Lab. 32: 351, 1969 (Hattori 1969). Bas.: *Madotheca longifolia* Steph., Sp. Hepat. (Stephani) 4: 305, 1910 (Stephani 1910b).

** *Porella madagascariensis* (Nees et Mont.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 407, 1877 (Trevisan 1877). Bas.: *Lejeunea madagascariensis* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 57, 1836 (Nees and Montagne 1836).

* *Porella maxima* (Steph.) M.L.So, Syst. Bot. 27 (1): 11, 2002 (So 2002a). Bas.: *Madotheca maxima* Steph., Sp. Hepat. (Stephani) 4: 291, 1910 (Stephani 1910b). [375]

*** *Porella mexicana* (Hampe ex Gottsche, Lindenb. et Nees) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 407, 1877 (Trevisan 1877). Bas.: *Madotheca mexicana* Hampe ex Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 273, 1845 (Gottsche et al. 1845a).

** *Porella montantii* (Steph.) E.W.Jones, Trans. Brit. Bryol. Soc. 4 (3): 460, 1963 (Jones 1963). Bas.: *Madotheca montantii* Steph., Sp. Hepat. (Stephani) 4: 259, 1910 (Stephani 1910b).

*** *Porella navicularis* (Lehm. et Lindenb.) Pfeiff., Fl. Niederhessen 2: 234, 1855 (Pfeiffer 1855). Bas.: *Jungermannia navicularis* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 38, 1834 (Lehmann 1834).

** *Porella nitens* (Steph.) S.Hatt., Fl. E. Himalaya: 525, 1966 (Hattori 1966c). Bas.: *Madotheca nitens* Steph., Mém. Soc. Nat. Sci. Nat. Math. Cherbourg 29: 220, 1894 (Stephani 1894b).

** *Porella oblongifolia* S.Hatt., J. Jap. Bot. 19 (7): 200, 1943 (Hattori 1943c). [376]

*** *Porella obtusata* (Taylor) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 407, 1877 (Trevisan 1877). Bas.: *Madotheca obtusata* Taylor, London J. Bot. 5: 380, 1846 (Taylor 1846b).

** *Porella obtusata* var. *macroloba* (Steph.) S.Hatt. et M.X.Zhang, J. Jap. Bot. 60 (11): 325, 1985 (Hattori and Zhang 1985). Bas.: *Madotheca macroloba* Steph., Sp. Hepat. (Stephani) 4: 292, 1910 (Stephani 1910b).

** *Porella obtusiloba* S.Hatt., J. Hattori Bot. Lab. 33: 69, 1970 (Hattori 1970).

** *Porella perrottetiana* (Mont.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 408, 1877 (Trevisan 1877). Bas.: *Madotheca perrottetiana* Mont., Ann. Sci. Nat. Bot. (sér. 2) 18: 15, 1842 (Montagne 1842b).

** *Porella perrottetiana* var. *angustifolia* Pócs, J. Hattori Bot. Lab. 31: 75, 1968 (Pócs 1968).

** *Porella perrottetiana* var. *ciliatodentata* (P.C.Chen et P.C.Wu) S.Hatt., J. Hattori Bot. Lab. 30: 144, 1967 (Hattori 1967). Bas.: *Porella ciliatodentata* P.C.Chen et P.C.Wu, Obs. fl. Hwangs.: 8, 1965 (Chen and Wu 1965).

** *Porella perrottetiana* var. *triciliata* (Steph.) Pócs, J. Hattori Bot. Lab. 31: 75, 1968 (Pócs 1968). Bas.: *Madotheca triciliata* Steph., Sp. Hepat. (Stephani) 4: 308, 1910 (Stephani 1910b).

*** *Porella pinnata* L., Sp. Pl. 1: 1106, 1753 (Linnaeus 1753).

** *Porella planifolia* J.S.Lou, Coll. Pap. Quing-Zang Huang-Den 1: 277, 1983 (Lou and Wang 1983).

*** *Porella platyphylla* (L.) Pfeiff., Fl. Niederhessen 2: 234, 1855 (Pfeiffer 1855). Bas.: *Jungermannia platyphylla* L., Sp. Pl. 1: 1134, 1753 (Linnaeus 1753).

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375 *Porella maxima* was accepted by So (2002a), but it was treated as conspecific with *Porella viridissima* in Hattori (1976f, 1986d). This synonymy is doubtful and further study is necessary to clarify the status.

376 *Porella oblongifolia* is closely related to *Porella densifolia* (Hentschel et al. 2007b).

*** *Porella platyphylloidea* (Schwein.) Lindb., Morgonbladet (Helsinki) 1876 (287, 10 Dec.): 1, 1876 (Lindberg 1876c). Bas.: *Jungermannia platyphylloidea* Schwein., Spec. Fl. Amer. Crypt.: 9, 1821 (Schweinitz 1821).

** *Porella plicata* J.S.Lou, Acta Phytotax. Sin. 18 (1): 119, 1980 (Lou and Wu 1980).

** *Porella plumosa* (Mitt.) Parihar, Univ. Allahabad Stud., Bot. 1961-2: 17, 1962 (Parihar 1962). Bas.: *Madotheca plumosa* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 108, 1860 [1861] (Mitten 1860c).

** *Porella prolixa* (Gottsche) E.W.Jones, Trans. Brit. Bryol. Soc. 4 (3): 460, 1963 (Jones 1963). Bas.: *Madotheca prolixa* Gottsche, Sp. Hepat. (Stephani) 4: 260, 1910 (Stephani 1910b).

** *Porella pulcherrima* Herzog et S.Hatt., Bull. Natl. Sci. Mus. Tokyo, B 12 (1): 34, 1986 (Hattori 1986a).

*** *Porella reflexa* (Lehm. et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 408, 1877 (Trevisan 1877). Bas.: *Jungermannia reflexa* Lehm. et Lindenb., Nov. Stirp. Pug. 5: 5, 1833 (Lehmann 1833).

** *Porella revoluta* (Lehm. et Lindenb.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 407, 1877 (Trevisan 1877). Bas.: *Jungermannia revoluta* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 18, 1832 (Lehmann 1832).

** *Porella revoluta* var. *propinqua* (C.Massal.) S.Hatt., J. Hattori Bot. Lab. 30: 148, 1967 (Hattori 1967). Bas.: *Madotheca propinqua* C.Massal., Hepat. Shen-si: 27, 1897 (Massalongo 1897).

** *Porella roellii* Steph., Bot. Centralbl. 45: 203, 1891 (Röll 1891).

*** *Porella saccata* M.L.So, New Zealand J. Bot. 43 (1): 302, 2005 (So 2005b).

** *Porella sichuanensis* S.Hatt. et K.C.Chang, Bull. Bot. Res., Harbin 8 (2): 43, 1988 (Chang 1988).

** *Porella spinulosa* (Steph.) S.Hatt., J. Hattori Bot. Lab. 33: 74, 1970 (Hattori 1970). Bas.: *Madotheca spinulosa* Steph., Sp. Hepat. (Stephani) 6: 529, 1924 (Stephani 1924).

*** *Porella squamulifera* (Taylor) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 407, 1877 (Trevisan 1877). Bas.: *Madotheca squamulifera* Taylor, London J. Bot. 5: 378, 1846 (Taylor 1846b).

** *Porella stephaniana* (C.Massal.) S.Hatt., J. Hattori Bot. Lab. 5: 81, 1951 (Hattori 1951b). Bas.: *Madotheca stephaniana* C.Massal., Hepat. Shen-si: 23, 1897 (Massalongo 1897). [377]

** *Porella subdentata* (Mitt.) Steph., Hedwigia 30 (5): 203, 1891 (Stephani 1891a). Bas.: *Madotheca subdentata* Mitt., J. Proc. Linn. Soc., Bot. 7 (27): 167, 1863 (Mitten 1863).

** *Porella subdentata* var. *camerunensis* E.W.Jones, Trans. Brit. Bryol. Soc. 4 (3): 456, 1963 (Jones 1963).

** *Porella subobtusa* (Steph.) S.Hatt., J. Jap. Bot. 20: 111, 1944 (Hattori 1944c). Bas.: *Madotheca subobtusa* Steph., Sp. Hepat. (Stephani) 4: 311, 1910 (Stephani 1910b).

** *Porella subparaphyllina* J.S.Lou, Acta Phytotax. Sin. 25 (6): 483, 1987 (Lou 1987).

377 *Porella stephaniana* is closely related to *Porella densifolia* (Hentschel et al. 2007b).

*** *Porella subsquarrosa* (Nees et Mont.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 407, 1877 (Trevisan 1877). Bas.: *Lejeunea subsquarrosa* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 57, 1836 (Nees and Montagne 1836).

*** *Porella swailsii* Grolle, J. Bryol. 10 (3): 270, 1979 (Grolle 1979b). *Nom. nov. pro Madotheca apiculata* Herzog, Feddes Repert. Spec. Nov. Regni Veg. 57 (1/2): 197, 1955 (Herzog 1955).

*** *Porella swartziana* (F.Weber) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 407, 1877 (Trevisan 1877). Bas.: *Jungermannia swartziana* F.Weber, Hist. Musc. Hepat. Prodr.: 18, 1815 (Weber 1815).

** *Porella triquetra* (Steph.) E.W.Jones, Trans. Brit. Bryol. Soc. 4 (3): 454, 1963 (Jones 1963). Bas.: *Madotheca triquetra* Steph., Bot. Jahrb. Syst. 20 (3): 321, 1895 (Stephani 1895a).

** *Porella truncata* J.S.Lou, Acta Phytotax. Sin. 18 (1): 119, 1980 (Lou and Wu 1980).

** *Porella ulophylla* (Steph.) S.Hatt., Bull. Tokyo Sci. Mus. 11: 92, 1944 (Hattori 1944d). Bas.: *Madotheca ulophylla* Steph., Bull. Herb. Boissier 5 (2): 97, 1897 (Stephani 1897b).

** *Porella undatorevoluta* J.S.Lou, Acta Phytotax. Sin. 25 (6): 485, 1987 (Lou 1987).

** *Porella urceolata* S.Hatt., J. Hattori Bot. Lab. 33: 66, 1970 (Hattori 1970).

** *Porella urogea* (C.Massal.) S.Hatt., J. Hattori Bot. Lab. 32: 349, 1969 (Hattori 1969). Bas.: *Madotheca urogea* C.Massal., Hepat. Shen-si: 28, 1897 (Massalongo 1897).

** *Porella vallis-gratiae* (Gottsche) E.W.Jones, Trans. Brit. Bryol. Soc. 4 (3): 450, 1963 (Jones 1963). Bas.: *Madotheca vallis-gratiae* Gottsche, Sp. Hepat. (Stephani) 4: 261, 1910 (Stephani 1910b).

** *Porella variabilis* (Kashyap et R.S.Chopra) Parihar, Univ. Allahabad Stud., Bot. 1961-2: 17, 1962 (Parihar 1962). Bas.: *Madotheca variabilis* Kashyap et R.S.Chopra, Liverworts W. Himal. 2: 33, 1932 (Kashyap and Chopra 1932).

** *Porella vernicosa* Lindb., Acta Soc. Sci. Fenn. 10: 223, 1872 [1873] (Lindberg 1872b).

** *Porella viridissima* (Mitt.) Grolle, J. Hattori Bot. Lab. 36: 83, 1972 [1973] (Grolle and Schultze-Motel 1972). Bas.: *Madotheca viridissima* Mitt., Fl. vit.: 411, 1871 [1873] (Mitten 1871).

** *Porella wataugensis* (Sull.) Underw. ex M.Howe, Bull. Torrey Bot. Club 24 (11): 519, 1897 (Howe 1897b). Bas.: *Madotheca wataugensis* Sull., Musc. Hepat. U.S.: 700, 1856 (Sullivant 1856).

Radulineae R.M.Schust.

*** Radulaceae Müll.Frib.

by M.A.M. Renner

The treatment of Radulaceae follows Devos et al. (2011). Taxonomic and nomenclatural notes can also be found in Renner et al. (2013b, 2014).

*** ***Radula* Dumort.**, Commentat. Bot. (Dumortier): 112, 1822 (Dumortier 1822) nom. conserv.

*** **subg. *Amentuloradula* Devos, M.A.M.Renner, Gradst., A.J.Shaw et Vanderp.**, Taxon 60 (6): 1630, 2011 (Devos et al. 2011).
*** *Radula amentulosa* Mitt., Bonplandia 9 (24): 367, 1861 (Mitten 1861).
*** *Radula aneurismalis* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 262, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia aneurismalis* Hook.f. et Taylor, London J. Bot. 4: 86, 1845 (Hooker and Taylor 1845).
** *Radula ceylanica* K.Yamada, J. Jap. Bot. 50 (12): 373, 1975 (Yamada 1975b).
*** *Radula fissifolia* Steph., Sp. Hepat. (Stephani) 6: 507, 1924 (Stephani 1924).
*** *Radula formosa* (C.F.W.Meissn. ex Spreng.) Nees, Syn. Hepat. 2: 258, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia formosa* C.F.W.Meissn. ex Spreng. Syst. Veg. (ed. 16) [Sprengel] 4 (2): 325, 1827 (Sprengel 1827b).
*** *Radula helix* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 260, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia helix* Hook.f. et Taylor, London J. Bot. 3: 475, 1844 (Hooker and Taylor 1844b).
*** *Radula hicksiae* K.Yamada, Cryptog. Bryol. Lichénol. 5 (1/2): 191, 1984 (Yamada 1984a).
*** *Radula iwatsukii* K.Yamada, J. Hattori Bot. Lab. 45: 275, 1979 (Yamada 1979b).
** *Radula morobeana* K.Yamada et Piippo, Ann. Bot. Fenn. 26 (4): 358, 1989 (Yamada and Piippo 1989).
** *Radula multiamentula* E.A.Hodgs., Rec. Domin. Mus. 4 (11): 122, 1962 (Hodgson 1962a).
*** *Radula ornata* E.A.Br. et Pócs, Telopea 9 (3): 436, 2001 (Brown and Pócs 2001).
*** *Radula physoloba* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 255, 1843 (Montagne 1843).
*** *Radula pseudoscripta* M.A.M.Renner, New Zealand J. Bot. 44 (3): 340, 2006 (Renner 2006).
** *Radula queenslandica* K.Yamada, J. Hattori Bot. Lab. 62: 192, 1987 (Yamada 1987).
*** *Radula scariosa* Mitt., Bonplandia 9 (24): 367, 1861 (Mitten 1861).
*** *Radula splendida* M.A.M.Renner et Devos, Nova Hedwigia 90 (1/2): 113, 2010 (Renner et al. 2010a).
* *Radula squarrosa* K.Yamada, J. Jap. Bot. 65 (1): 1, 1990 (Yamada 1990). [378]
*** *Radula thiersiae* K.Yamada, J. Hattori Bot. Lab. 62: 198, 1987 (Yamada 1987).
*** *Radula uvifera* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 258, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia uvifera* Hook.f. et Taylor, London J. Bot. 3: 292 [392], 1844 (Hooker and Taylor 1844a).
* *Radula vagans* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 85, 1911 (Stephani 1911b).
** *Radula verrucosa* K.Yamada, J. Hattori Bot. Lab. 45: 277, 1979 (Yamada 1979b).

378 *Radula squarrosa* is probably conspecific with *Radula morobeana*.

*** **subg. *Cladoradula* Spruce**, Trans. & Proc. Bot. Soc. Edinburgh 15: 315, 1885 (Spruce 1885).
** *Radula auriculata* Steph., Bull. Herb. Boissier 5 (2): 105, 1897 (Stephani 1897b).
* *Radula bipinnata* Mitt., J. Proc. Linn. Soc., Bot. 7 (27): 166, 1863 (Mitten 1863). [379]
*** *Radula boryana* (F.Weber) Nees ex Mont., Ann. Sci. Nat. Bot. (sér. 2) 18: 13, 1842 (Montagne 1842b). Bas.: *Jungermannia boryana* F.Weber, Hist. Musc. Hepat. Prodr.: 58, 1815 (Weber 1815).
*** *Radula campanigera* Mont., London J. Bot. 3: 634, 1844 (Montagne 1844a).
*** *Radula campanigera* subsp. *obiensis* (S.Hatt.) K.Yamada, J. Hattori Bot. Lab. 45: 309, 1979 (Yamada 1979b). Bas.: *Radula obiensis* S.Hatt., Bull. Tokyo Sci. Mus. 11: 83, 1944 (Hattori 1944d).
** *Radula chinensis* Steph., Nuovo Giorn. Bot. Ital. (n.ser.) 13 (4): 355, 1906 (Levier 1906).
*** *Radula gottscheana* Taylor, London J. Bot. 5: 374, 1846 (Taylor 1846b).
*** *Radula perrottetii* Gottsche, Hedwigia 23 (10): 154, 1884 (Stephani 1884a).
** *Radula tenax* Lindb., Acta Soc. Sci. Fenn. 10: 492, 1875 (Lindberg 1875).

*** **subg. *Dactyloradula* Devos, M.A.M.Renner, Gradst., A.J.Shaw et Vanderp.**, Taxon 60 (6): 1630, 2011 (Devos et al. 2011).
*** *Radula brunnea* Steph., Sp. Hepat. (Stephani) 4: 232, 1910 (Stephani 1910b).

*** **subg. *Metaradula* R.M.Schust.**, Phytologia 56 (2): 69, 1984 (Schuster 1984).
** *Radula acuminata* Steph., Sp. Hepat. (Stephani) 4: 230, 1910 (Stephani 1910b). [380]
** *Radula aguirrei* R.M.Schust., Phytotaxa 202 (1): 70, 2015 (Söderström et al. 2015c). Based on: *Radula aguirrei* R.M.Schust., J. Hattori Bot. Lab. 70: 56, 1991 (Schuster 1991a), *nom. inval.*
** *Radula anisotoma* M.A.M.Renner, PhytoKeys 27: 30, 2013 (Renner et al. 2013a).
*** *Radula assamica* Steph., Hedwigia 23 (10): 151, 1884 (Stephani 1884a).
*** *Radula australiana* K.Yamada, J. Hattori Bot. Lab. 51: 323, 1982 (Yamada 1982a).
*** *Radula buccinifera* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 261, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia buccinifera* Hook.f. et Taylor, London J. Bot. 3: 580, 1844 (Hooker and Taylor 1844c).
*** *Radula demissa* M.A.M.Renner, PhytoKeys 27: 53, 2013 (Renner et al. 2013a).
** *Radula evansii* Castle, Ann. Bryol. 11: 37, 1938 (Castle 1938).
** *Radula flaccida* Lindenb. et Gottsche, Syn. Hepat. 5: 726, 1847 (Gottsche et al. 1847).
** *Radula flaccida* var. *brachycalyx* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 321, 1885 (Spruce 1885).
*** *Radula forficata* M.A.M.Renner, Austral. Syst. Bot. 26 (4): 307, 2013 (Renner et al. 2013c).
** *Radula grevilleana* Taylor, Ann. Mag. Nat. Hist. 20 (135): 380, 1847 (Taylor 1847a).

379 *Radula bipinnata* is distinct from *Radula boryana* according to molecular evidence (Devos et al. 2011).
380 *Radula acuminata* may be conspecific with *Radula tjibodensis*.

*** *Radula imposita* M.A.M.Renner, PhytoKeys 27: 65, 2013 (Renner et al. 2013a).
** *Radula jovetiana* K.Yamada, Cryptog. Bryol. Lichénol. 5 (1/2): 193, 1984 (Yamada 1984a).
** *Radula kilgourii* M.A.M.Renner, Austral. Syst. Bot. 26 (4): 313, 2013 (Renner et al. 2013c).
** *Radula loriana* Castle, J. Hattori Bot. Lab. 21: 6, 1959 (Castle 1959).
*** *Radula mammosa* Spruce, Mem. Torrey Bot. Club 1 (3): 127, 1890 (Spruce 1890).
*** *Radula mittenii* Steph., Hedwigia 23 (10): 148, 1884 (Stephani 1884a).
*** *Radula myriopoda* M.A.M.Renner, Austral. Syst. Bot. 26 (4): 323, 2013 (Renner et al. 2013c).
*** *Radula notabilis* M.A.M.Renner, PhytoKeys 27: 77, 2013 (Renner et al. 2013a).
** *Radula nymannii* Steph., Sp. Hepat. (Stephani) 4: 229, 1910 (Stephani 1910b).
** *Radula protensa* Lindenb., Bot. Zeitung (Berlin) 6 (25): 462, 1848 (Meissner 1848).
** *Radula protensa* var. *erectilobula* Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 247, 1893 (Schiffner 1893a).
** *Radula pseudoflaccida* E.W.Jones, J. Bryol. 9 (4): 501, 1977 [1978] (Jones 1977).
** *Radula psychosis* M.A.M.Renner, Austral. Syst. Bot. 26 (4): 328, 2013 (Renner et al. 2013c).
*** *Radula ratkowskiana* K.Yamada, J. Jap. Bot. 59 (3): 94, 1984 (Yamada 1984b).
*** *Radula robinsonii* Steph., Sp. Hepat. (Stephani) 4: 214, 1910 (Stephani 1910b).
** *Radula stenocalyx* Mont., Ann. Sci. Nat. Bot. (sér. 4) 3 (5): 315, 1855 (Montagne 1855).
*** *Radula strangulata* Hook.f. et Taylor, London J. Bot. 5: 377, 1846 (Taylor 1846b).
* *Radula tjibodensis* K.I.Goebel, Ann. Jard. Bot. Buitenzorg 7 (1): 53, 1888 (Goebel 1888). [381]
*** *Radula ventricosa* Steph., Sp. Hepat. (Stephani) 4: 187, 1910 (Stephani 1910b).
*** *Radula yanoella* R.M.Schust., Phytologia 56 (2): 72, 1984 (Schuster 1984).

*** **subg. *Odontoradula* K.Yamada**, J. Hattori Bot. Lab. 45: 209, 1979 (Yamada 1979b).
** *Radula acuta* Mitt., Fl. vit.: 410, 1871 [1873] (Mitten 1871).
** *Radula allisonii* Castle, Rev. Bryol. Lichénol. 31 (3/4): 148, 1962 [1963] (Castle 1962).
** *Radula amoena* Herzog, Mitt. Inst. Allg. Bot. Hamburg 7 (3): 192, 1931 (Herzog 1931a).
** *Radula anceps* Sande Lac., Ned. Kruidk. Arch. 3: 419, 1854 [1855] (Sande Lacoste 1854).
* *Radula crenulata* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 21, 1890 (Schiffner 1890). [382]
*** *Radula cuspidata* Steph., Sp. Hepat. (Stephani) 4: 156, 1910 (Stephani 1910b).
*** *Radula decora* Gottsche, Hedwigia 23 (10): 145, 1884 (Stephani 1884a).

381 *Radula tjibodensis* is a doubtful taxon. The type specimen has not been found.

382 *Radula crenulata* is conspecific with *Radula acuta* in So (2006) and possibly conspecific with *Radula apiculata* in Yamada and Piippo (1989), but differs morphologically from both and needs to be further studied.

** *Radula emarginata* K.Yamada et Piippo, Ann. Bot. Fenn. 26 (4): 352, 1989 (Yamada and Piippo 1989).
** *Radula kojana* Steph., Bull. Herb. Boissier 5 (2): 105, 1897 (Stephani 1897b).
*** *Radula lacerata* Steph., Rev. Bryol. 35 (2): 33, 1908 (Stephani 1908l).
*** *Radula novae-hollandiae* Hampe, Nov. Stirp. Pug. 7: 24, 1838 (Lehmann 1838).
*** *Radula ocellata* K.Yamada, J. Hattori Bot. Lab. 45: 209, 1979 (Yamada 1979b).
*** *Radula plicata* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 154, 1854 (Mitten 1854).
** *Radula pugioniformis* M.A.M.Renner, PhytoKeys 27: 84, 2013 (Renner et al. 2013a).
*** *Radula pulchella* Mitt., Hedwigia 23 (10): 149, 1884 (Stephani 1884a).
*** *Radula retroflexa* Taylor, London J. Bot. 5: 378, 1846 (Taylor 1846b).
*** *Radula tasmanica* Steph., Sp. Hepat. (Stephani) 4: 212, 1910 (Stephani 1910b).
*** *Radula weymouthiana* Steph., Sp. Hepat. (Stephani) 4: 190, 1910 (Stephani 1910b).

*** **subg. *Radula***
*** *Radula acutiloba* Steph., Hedwigia 28 (4): 271, 1889 (Stephani 1889c). [383]
** *Radula appressa* Mitt., Philos. Trans. 168: 397, 1879 (Mitten 1879).
*** *Radula aquilegia* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 260, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia aquilegia* Hook.f. et Taylor, London J. Bot. 3: 291 [391], 1844 (Hooker and Taylor 1844a).
** *Radula australis* Austin, Bot. Bull. (Hanover) 1 (7): 32, 1876 (Austin 1876b).
** *Radula borneensis* Steph., Sp. Hepat. (Stephani) 4: 209, 1910 (Stephani 1910b).
** *Radula caduca* K.Yamada, J. Hattori Bot. Lab. 45: 225, 1979 (Yamada 1979b).
*** *Radula carringtonii* J.B.Jack, Flora 64 (25): 385, 1881 (Jack 1881).
*** *Radula complanata* (L.) Dumort., Syll. Jungerm. Europ.: 38, 1831 (Dumortier 1831). Bas.: *Jungermannia complanata* L., Sp. Pl. 1: 1133, 1753 (Linnaeus 1753).
** *Radula constricta* Steph., Sp. Hepat. (Stephani) 6: 506, 1924 (Stephani 1924).
** *Radula evelynae* K.Yamada, J. Jap. Bot. 50 (4): 115, 1975 (Yamada 1975a).
** *Radula fendleri* Gottsche, Hedwigia 23 (10): 146, 1884 (Stephani 1884a). [384]
*** *Radula grandis* Steph., J. Linn. Soc., Bot. 29 (201): 271, 1892 (Stephani 1892b).
** *Radula japonica* Gottsche, Hedwigia 23 (10): 152, 1884 (Stephani 1884a).
** *Radula javanica* Gottsche, Syn. Hepat. 2: 257, 1845 (Gottsche et al. 1845a).
*** *Radula jonesii* Bouman, Dirkse et K.Yamada, J. Bryol. 15 (1): 161, 1988 (Bouman et al. 1988).
*** *Radula lindenbergiana* Gottsche ex C.Hartm., Handb. Skand. fl. (ed.9): 98, 1864 (Hartman 1864).
** *Radula madagascariensis* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 349, 1882 (Gottsche 1882).
** *Radula marojezica* E.W.Jones, J. Bryol. 17 (2): 307, 1992 (Jones 1992).

383 *Radula acutiloba* is tentatively placed in subg. *Radula*. The specimen labelled *Radula acutiloba* in Devos et al. (2011) was misidentified and should be *Radula australiana*.

384 *Radula fendleri* may be conspecific with *Radula madagascariensis*.

* *Radula multiflora* Gottsche ex Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 20, 1890 (Schiffner 1890). [385]
** *Radula novoguineensis* K.Yamada et Piippo, Ann. Bot. Fenn. 26 (4): 360, 1989 (Yamada and Piippo 1989).
** *Radula obconica* Sull., Manual (Gray): 688, 1848 (Gray 1848).
** *Radula obtusiloba* Steph., Bull. Herb. Boissier 5 (2): 105, 1897 (Stephani 1897b).
** *Radula obtusiloba* subsp. *polyclada* (A.Evans) S.Hatt., J. Hattori Bot. Lab. 29: 275, 1966 (Hattori 1966d). Bas.: *Radula polyclada* A.Evans, Bull. Torrey Bot. Club 41 (12): 607, 1914 [1915] (Evans 1914a).
* *Radula oceania* Castle, Rev. Bryol. Lichénol. 33 (3/4): 390, 1965 (Castle 1965). [386]
** *Radula oreopsis* M.A.M.Renner, Telopea 17: 123, 2014 (Renner 2014).
** *Radula portoricensis* Steph., Hedwigia 27 (11/12): 298, 1888 (Stephani 1888c).
*** *Radula prolifera* Arnell, Ark. Bot. 13 (2): 12, 1913 (Arnell 1913).
*** *Radula quadrata* Gottsche, Syn. Hepat. 2: 255, 1845 (Gottsche et al. 1845a).
*** *Radula reflexa* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 255, 1843 (Montagne 1843).
** *Radula sharpii* K.Yamada, J. Jap. Bot. 60 (9): 260, 1985 (Yamada 1985a).
** *Radula sumatrana* Steph., Sp. Hepat. (Stephani) 4: 204, 1910 (Stephani 1910b).
** *Radula tokiensis* Steph., Hedwigia 23 (10): 150, 1884 (Stephani 1884a).
*** *Radula van-zantenii* K.Yamada, J. Hattori Bot. Lab. 45: 260, 1979 (Yamada 1979b).
** *Radula varilobula* Castle, J. Hattori Bot. Lab. 21: 19, 1959 (Castle 1959).
*** *Radula wichurae* Steph., Sp. Hepat. (Stephani) 4: 168, 1910 (Stephani 1910b).

*** **subg. *Volutoradula* Devos, M.A.M.Renner, Gradst., A.J.Shaw et Vanderp.**, Taxon 60 (6): 1629, 2011 (Devos et al. 2011).
** *Radula ankefinensis* Gottsche, Hedwigia 23 (10): 152, 1884 (Stephani 1884a).
** *Radula antilleana* Castle, J. Hattori Bot. Lab. 21: 48, 1959 (Castle 1959).
** *Radula comorensis* Steph., Hedwigia 23 (9): 132, 1884 (Stephani 1884c).
** *Radula cubensis* K.Yamada, J. Hattori Bot. Lab. 54: 241, 1983 (Yamada 1983).
** *Radula diversifolia* Steph., Sp. Hepat. (Stephani) 4: 212, 1910 (Stephani 1910b).
*** *Radula eggersii* K.Yamada, J. Hattori Bot. Lab. 82: 339, 1997 (Yamada 1997).
** *Radula episcia* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 318, 1885 (Spruce 1885).
** *Radula floridana* Castle, Rev. Bryol. Lichénol. 36 (1/2): 1, 1968 [1969] (Castle 1968).
** *Radula fulvifolia* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 261, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia fulvifolia* Hook.f. et Taylor, London J. Bot. 4: 85, 1845 (Hooker and Taylor 1845).
*** *Radula hastata* Steph., Sp. Hepat. (Stephani) 4: 163, 1910 (Stephani 1910b).
* *Radula holstiana* Steph., Bot. Jahrb. Syst. 20 (3): 320, 1895 (Stephani 1895a).

385 *Radula multiflora* is similar to, and may be conspecific with *Radula reflexa*, but it was accepted by Renner and de Lange (2009).

386 *Radula oceania* was considered conspecific with *Radula javanica* by So (2006), but molecular data does not support it (Renner 2014).

*** *Radula holtii* Spruce, J. Bot. 25: 209, 1887 (Spruce 1887b).
** *Radula husnotii* Castle, J. Hattori Bot. Lab. 21: 45, 1959 (Castle 1959).
** *Radula inflexa* Gottsche, Hedwigia 23 (10): 148, 1884 (Stephani 1884a).
** *Radula kegelii* Gottsche ex Steph., Hedwigia 23 (10): 152, 1884 (Stephani 1884a).
** *Radula macroloba* Steph., Bull. Soc. Roy. Bot. Belgique 31: 121, 1892 (Stephani 1892c).
** *Radula mazarunensis* K.Yamada, Trop. Bryol. 1: 38, 1989 (Gradstein and Florschütz-de Waard 1989).
** *Radula mexicana* Lindenb. et Gottsche, Mexik. Leverm.: 150, 1863 (Gottsche 1863).
** *Radula microloba* Gottsche, Syn. Hepat. 2: 259, 1845 (Gottsche et al. 1845a).
** *Radula neotropica* Castle, J. Hattori Bot. Lab. 21: 31, 1959 (Castle 1959).
*** *Radula nudicaulis* Steph., Sp. Hepat. (Stephani) 4: 174, 1910 (Stephani 1910b).
* *Radula nudicaulis* var. *delicatula* P.Allorge et V.Allorge, Rev. Bryol. Lichénol. 19 (1/2): 106, 1950 (Allorge and Allorge 1950).
** *Radula pocsii* K.Yamada, J. Hattori Bot. Lab. 54: 245, 1983 (Yamada 1983).
** *Radula recubans* Taylor, London J. Bot. 5: 376, 1846 (Taylor 1846b).
** *Radula saccatiloba* Steph., Hedwigia 23 (8): 129, 1884 (Stephani 1884b).
** *Radula schaefer-verwimpii* K.Yamada, J. Jap. Bot. 65 (1): 3, 1990 (Yamada 1990).
** *Radula schofieldiana* K.Yamada, J. Hattori Bot. Lab. 82: 337, 1997 (Yamada 1997).
** *Radula stipatiflora* Steph., Sp. Hepat. (Stephani) 4: 159, 1910 (Stephani 1910b).
** *Radula striata* Mitt., Hedwigia 23 (10): 155, 1884 (Stephani 1884a).
** *Radula subinflata* Lindenb. et Gottsche, Syn. Hepat. 5: 724, 1847 (Gottsche et al. 1847).
** *Radula sullivantii* Austin, Hepat. bor.-amer.: 22, 1873 (Austin 1873).
** *Radula tenera* Mitt., Hedwigia 23 (10): 149, 1884 (Stephani 1884a).
*** *Radula voluta* Taylor, Syn. Hepat. 2: 255, 1845 (Gottsche et al. 1845a).

Incertae sedis

*** *Radula acutangula* Steph., Bull. Herb. Boissier 5 (10): 848, 1897 (Stephani 1897c).
** *Radula angulata* Steph., Hedwigia 23 (8): 114, 1884 (Stephani 1884b).
** *Radula bogotensis* Steph., Hedwigia 23 (8): 115, 1884 (Stephani 1884b).
*** *Radula bolanderi* Gottsche, Hedwigia 23 (10): 145, 1884 (Stephani 1884a).
** *Radula boninensis* Furuki et K.Yamada, J. Jap. Bot. 61 (10): 312, 1986 (Furuki and Yamada 1986).
** *Radula brasilica* K.Yamada, J. Hattori Bot. Lab. 74: 35, 1993 (Yamada 1993).
** *Radula caespitosa* Steph., Hedwigia 27 (3/4): 107, 1888 (Stephani 1888d).
** *Radula campanulata* Lindenb. et Gottsche, Syn. Hepat. 2: 256, 1845 (Gottsche et al. 1845a).
** *Radula castlei* Grolle, Bryologist 73 (4): 662, 1970 (Grolle 1970a).
*** *Radula cavifolia* Hampe ex Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 259, 1845 (Gottsche et al. 1845a).
** *Radula cochabambaensis* K.Yamada, J. Hattori Bot. Lab. 74: 37, 1993 (Yamada 1993).
** *Radula conferta* Lindenb. et Gottsche, Syn. Hepat. 5: 729, 1847 (Gottsche et al. 1847).
*** *Radula cordata* Mitt., Fl. vit.: 410, 1871 [1873] (Mitten 1871).

** *Radula costaricensis* Gottsche, J. Bot. 15: 226, 1877 (Polakowski 1877).
*** *Radula curvilobula* M.L.So, J. Hattori Bot. Lab. 98: 176, 2005 (So 2005a).
* *Radula decurrens* Mitt., Fl. vit.: 410, 1871 [1873] (Mitten 1871). [387]
** *Radula densifolia* Castle, Rev. Bryol. Lichénol. 33 (3/4): 385, 1965 (Castle 1965).
** *Radula diaphana* K.I.Goebel, Organogr. Pfl., ed. 2, 2 (1): 677, 1915 (Goebel 1915).
** *Radula dolabrata* K.Yamada, J. Jap. Bot. 60 (9): 257, 1985 (Yamada 1985a).
** *Radula elliottii* Castle, J. Hattori Bot. Lab. 21: 12, 1959 (Castle 1959).
** *Radula falcata* Steph., Hedwigia 23 (8): 115, 1884 (Stephani 1884b).
** *Radula fauriana* Steph., Sp. Hepat. (Stephani) 4: 207, 1910 (Stephani 1910b).
** *Radula fernandezana* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 84, 1911 (Stephani 1911b).
** *Radula flavifolia* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 259, 1845 (Gottsche et al. 1845a). Bas.: *Jungermannia flavifolia* Hook.f. et Taylor, London J. Bot. 3: 476, 1844 (Hooker and Taylor 1844b).
** *Radula fujitae* Furuki, Bryol. Res. 9 (5): 143, 2007 (Furuki 2007).
** *Radula galapagona* Steph., Sp. Hepat. (Stephani) 4: 176, 1910 (Stephani 1910b).
** *Radula gedena* Gottsche, Hedwigia 23 (10): 146, 1884 (Stephani 1884a).
** *Radula gracilis* Mitt., Hedwigia 23 (10): 147, 1884 (Stephani 1884a).
** *Radula gradsteinii* K.Yamada, Trop. Bryol. 1: 37, 1989 (Gradstein and Florschütz-de Waard 1989).
** *Radula grandifolia* Steph., Sp. Hepat. (Stephani) 4: 184, 1910 (Stephani 1910b).
** *Radula grollei* K.Yamada et Piippo, Ann. Bot. Fenn. 26 (4): 379, 1989 (Yamada and Piippo 1989).
** *Radula guyanensis* K.Yamada, Trop. Bryol. 1: 38, 1989 (Gradstein and Florschütz-de Waard 1989).
** *Radula hattorii* K.Yamada, J. Jap. Bot. 60 (9): 259, 1985 (Yamada 1985a).
*** *Radula hawaiica* M.L.So, J. Hattori Bot. Lab. 98: 177, 2005 (So 2005a).
* *Radula hedingeri* K.I.Goebel, Ann. Jard. Bot. Buitenzorg 7 (1): 51, 1888 (Goebel 1888).
*** *Radula inouei* K.Yamada, J. Hattori Bot. Lab. 45: 262, 1979 (Yamada 1979b).
*** *Radula involvens* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 325, 1885 (Spruce 1885).
*** *Radula iwatsukiana* K.Yamada, J. Hattori Bot. Lab. 58: 114, 1985 (Yamada 1985b).
*** *Radula jamaicensis* Pearson, Ann. Bryol. 4: 103, 1931 (Pearson 1931b).
** *Radula jamesonii* Taylor, London J. Bot. 5: 375, 1846 (Taylor 1846b).
** *Radula kinabaluensis* K.Yamada, Misc. Bryol. Lichenol. 6 (6): 97, 1973 (Yamada 1973b).
*** *Radula kitagawae* K.Yamada, J. Hattori Bot. Lab. 58: 116, 1985 (Yamada 1985b).
** *Radula koponenii* K.Yamada et Piippo, Ann. Bot. Fenn. 26 (4): 364, 1989 (Yamada and Piippo 1989).
** *Radula kurzii* Steph., Hedwigia 23 (10): 153, 1884 (Stephani 1884a).
** *Radula laxiramea* Steph., Sp. Hepat. (Stephani) 4: 178, 1910 (Stephani 1910b).

387 *Radula decurrens* may be conspecific with *Radula reflexa*.

** *Radula leiboldii* Steph., Hedwigia 23 (8): 116, 1884 (Stephani 1884b).
** *Radula lewisii* K.Yamada, J. Hattori Bot. Lab. 74: 39, 1993 (Yamada 1993).
*** *Radula ligula* Steph., Sp. Hepat. (Stephani) 4: 228, 1910 (Stephani 1910b).
*** *Radula lingulata* Gottsche, Syn. Hepat. 2: 260, 1845 (Gottsche et al. 1845a).
** *Radula longiloba* K.Yamada, J. Hattori Bot. Lab. 54: 243, 1983 (Yamada 1983).
* *Radula longispica* Steph., Sp. Hepat. (Stephani) 4: 183, 1910 (Stephani 1910b). [388]
*** *Radula marginata* Gottsche, Lindenb. et Nees, Syn. Hepat. 2: 261, 1845 (Gottsche et al. 1845a). *Nom. nov. pro Jungermannia marginata* Hook.f. et Taylor, London J. Bot. 3: 566, 1844 (Hooker and Taylor 1844a), *nom. illeg.*
*** *Radula mauiensis* M.L.So, J. Hattori Bot. Lab. 98: 178, 2005 (So 2005a).
** *Radula microlobula* Castle, J. Hattori Bot. Lab. 21: 35, 1959 (Castle 1959).
** *Radula minutilobula* K.Yamada et Piippo, Ann. Bot. Fenn. 26 (4): 377, 1989 (Yamada and Piippo 1989).
** *Radula mizutanii* K.Yamada, J. Jap. Bot. 48 (5): 134, 1973 (Yamada 1973a).
*** *Radula nigra* Pearson, J. Linn. Soc., Bot. 46 (305): 31, 1922 (Pearson 1922b).
** *Radula nilgiriensis* Udar et D.Kumar, J. Indian Bot. Soc. 61: 177, 1982 (Udar and Kumar 1982b).
** *Radula norrisii* K.Yamada et Piippo, Ann. Bot. Fenn. 26 (4): 374, 1989 (Yamada and Piippo 1989).
** *Radula novivrieseana* K.Yamada, J. Hattori Bot. Lab. 51: 326, 1982 (Yamada 1982a).
*** *Radula novocaledonica* Hürl. et K.Yamada, J. Jap. Bot. 54 (8): 238, 1979 (Hürlimann and Yamada 1979).
*** *Radula novocaledoniensis* K.Yamada, J. Hattori Bot. Lab. 58: 120, 1985 (Yamada 1985b).
** *Radula obovata* Castle, J. Hattori Bot. Lab. 21: 16, 1959 (Castle 1959).
** *Radula obscura* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 107, 1860 [1861] (Mitten 1860c).
** *Radula okamurana* Steph., Sp. Hepat. (Stephani) 4: 209, 1910 (Stephani 1910b).
** *Radula onraedtii* K.Yamada, Misc. Bryol. Lichenol. 8 (6): 113, 1979 (Yamada 1979a).
** *Radula opaciuscula* (Spruce) Castle, J. Hattori Bot. Lab. 21: 22, 1959 (Castle 1959). Bas.: *Radula episcia* var. *opaciuscula* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 319, 1885 (Spruce 1885).
** *Radula ovalilobula* K.Yamada, J. Hattori Bot. Lab. 45: 257, 1979 (Yamada 1979b).
** *Radula oyamensis* Steph., Hedwigia 23 (10): 149, 1884 (Stephani 1884a).
* *Radula paganii* Castle, J. Hattori Bot. Lab. 21: 33, 1959 (Castle 1959). [389]
*** *Radula pallens* (Sw.) Nees ex Mont., Voy. Amér. Mérid. 7 (2): 71, 1839 (Montagne 1839a). Bas.: *Jungermannia pallens* Sw., Prodr. (Swartz): 143, 1788 (Swartz 1788).
*** *Radula pandei* Udar et Dh.Kumar, Lindbergia 9 (2): 133, 1983 (Udar and Kumar 1983b).

388 *Radula longispica* may be conspecific with *Radula javanica*.
389 *Radula paganii* is doubtfully distinct from *Radula neotropica*.

** *Radula patens* K.Yamada, Cryptog. Bryol. Lichénol. 5 (1/2): 197, 1984 (Yamada 1984a).
** *Radula peruviana* K.Yamada, Beih. Nova Hedwigia 88: 79, 1987 (Schultze-Motel and Menzel 1987).
** *Radula philippinensis* K.Yamada, J. Hattori Bot. Lab. 45: 299, 1979 (Yamada 1979b).
* *Radula pinnulata* Mitt., Fl. vit.: 410, 1871 [1873] (Mitten 1871). [390]
** *Radula pseudostachya* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 319, 1885 (Spruce 1885).
** *Radula punctata* Steph., Hedwigia 23 (8): 135, 1884 (Stephani 1884b).
** *Radula pusilla* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 320, 1885 (Spruce 1885).
*** *Radula rhombiloba* Steph., Sp. Hepat. (Stephani) 4: 204, 1910 (Stephani 1910b).
* *Radula rupicola* K.Yamada, J. Hattori Bot. Lab. 58: 124, 1985 (Yamada 1985b). [391]
** *Radula santacruziana* K.Yamada et Gradst., Trop. Bryol. 4: 67, 1991 (Yamada and Gradstein 1991).
** *Radula silvestris* Gottsche, Abh. Naturwiss. Vereins Bremen 7: 349, 1882 (Gottsche 1882).
** *Radula sinskeana* K.Yamada, J. Hattori Bot. Lab. 74: 41, 1993 (Yamada 1993).
** *Radula sinuata* Gottsche ex Steph., Sp. Hepat. (Stephani) 4: 161, 1910 (Stephani 1910b).
* *Radula socorana* Gerola, Lav. Bot. Ist. Bot. Univ. Padova 12: 475, 1947 (Gerola 1947).
** *Radula sonsonensis* Steph., Sp. Hepat. (Stephani) 4: 201, 1910 (Stephani 1910b).
** *Radula stellatogemmipara* C.Gao et Y.H.Wu, Nova Hedwigia 80 (1/2): 239, 2005 (Gao and Wu 2005).
** *Radula subsimplex* Steph., Hedwigia 23 (8): 130, 1884 (Stephani 1884b).
** *Radula subsquarrosa* S.W.Arnell, Ark. Bot. (n.ser.) 4 (1): 15, 1957 (Arnell 1957b).
** *Radula tabularis* Steph., Hedwigia 23 (9): 131, 1884 (Stephani 1884c).
** *Radula taylorii* Steph., Hedwigia 23 (9): 133, 1884 (Stephani 1884c).
** *Radula tectiloba* Steph., Hedwigia 27 (11/12): 298, 1888 (Stephani 1888c).
** *Radula tenuis* K.Yamada, J. Hattori Bot. Lab. 54: 247, 1983 (Yamada 1983).
** *Radula underwoodii* Castle, J. Hattori Bot. Lab. 21: 37, 1959 (Castle 1959).
** *Radula venezuelensis* K.Yamada, Misc. Bryol. Lichenol. 9 (6): 122, 1982 (Yamada 1982b).
*** *Radula vieillardii* Gottsche, Hedwigia 23 (10): 150, 1884 (Stephani 1884a).
** *Radula visianica* C.Massal., Ann. Bot. (Rome) 1 (4): 298, 1904 (Massalongo 1904).
** *Radula vrieseana* Sande Lac., Ann. Mus. Bot. Lugduno-Batavi 1: 305, 1864 (Sande Lacoste 1864).
** *Radula wrightii* Castle, J. Hattori Bot. Lab. 21: 15, 1959 (Castle 1959).

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390 *Radula pinnulata* was accepted by Yamada (1979b) and, indirectly through comparison with *Radula norrisii*, by Yamada and Piippo (1989). It is conspecific with *Radula javanica* according to So (2006).

391 *Radula rupicola* may be conspecific with *Radula vieillardii* (So 2006).

** *Radula xalapensis* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 56, 1836 (Nees and Montagne 1836).

Ptilidiales Schljakov

** Herzogianthaceae Stotler et Crand.-Stotl.

** ***Herzogianthus* R.M.Schust.**, J. Hattori Bot. Lab. 23: 71, 1960 [1961] (Schuster 1960b).
* *Herzogianthus sanguineus* R.M.Schust., Phytologia 56 (7): 457, 1985 (Schuster 1985c). [392]
*** *Herzogianthus vaginatus* (Herzog) R.M.Schust., J. Hattori Bot. Lab. 23: 71, 1960 [1961] (Schuster 1960b). Bas.: *Blepharostoma vaginatum* Herzog, Trans. & Proc. Roy. Soc. New Zealand 65 (3): 355, 1936 (Herzog 1936b).

** Neotrichocoleaceae Inoue

** ***Neotrichocolea* S.Hatt.**, J. Hattori Bot. Lab. 2: 9, 1947 [1948] (Hattori 1947b).
** *Neotrichocolea bissetii* (Mitt.) S.Hatt., J. Hattori Bot. Lab. 2: 10, 1947 [1948] (Hattori 1947b). Bas.: *Mastigophora bissetii* Mitt., Trans. Linn. Soc. London, Bot. 3 (3): 200, 1891 (Mitten 1891).

** ***Trichocoleopsis* S.Okamura**, Bot. Mag. (Tokyo) 25 (293): 159, 1911 (Okamura 1911).
** *Trichocoleopsis sacculata* (Mitt.) S.Okamura, Bot. Mag. (Tokyo) 25 (293): 159, 1911 (Okamura 1911). Bas.: *Blepharozia sacculata* Mitt., Trans. Linn. Soc. London, Bot. 3 (3): 200, 1891 (Mitten 1891).

*** Ptilidiaceae H.Klinggr.

by L. Söderström

Ptilidiaceae was recently studied molecularly by Kreier et al. (2010) showing the occurrence of a possibly undescribed cryptic species from the Himalayas.

*** ***Ptilidium* Nees**, Naturgesch. Eur. Leberm. 1: 95, 1833 (Nees 1833c).
*** *Ptilidium californicum* (Austin) Pearson, List. Canad. Hepat.: 7, 1890 (Pearson 1890). Bas.: *Lepidozia californica* Austin, Bull. Torrey Bot. Club 6 (3): 19, 1875 (Austin 1875b).

392 *Herzogianthus sanguineus* is possibly conspecific with *Herzogianthus vaginatus*.

*** *Ptilidium ciliare* (L.) Hampe, Prod. fl. hercyn.: 76, 1836 (Hampe 1836). Bas.: *Jungermannia ciliaris* L., Sp. Pl. 1: 1134, 1753 (Linnaeus 1753).
*** *Ptilidium pulcherrimum* (Weber) Vain., Meddel. Soc. Fauna Fl. Fenn. 3: 88, 1878 (Vainio 1878). Bas.: *Jungermannia pulcherrima* Weber, Spic. Fl. Goett.: 150, 1778 (Weber 1778).

Metzgeriidae Barthol.-Began
Metzgeriales Chalaud

*** Aneuraceae H.Klinggr.

by M. Nebel

A molecular phylogeny of Aneuraceae was recently published by Preussing et al. (2010). Their study revealed Verdoorniaceae to be nested within Aneuraceae and *Cryptothallus* within *Aneura* (see also Wickett and Goffinet 2008). Nomenclatural and taxonomic notes can also be found in Söderström et al. (2010a), Söderström et al. (2012a) and Nebel et al. (2013).

*** ***Aneura* Dumort.**, Commentat. Bot. (Dumortier): 115, 1822 (Dumortier 1822). [393]
* *Aneura amboinensis* Steph., Bull. Herb. Boissier 7 (9): 678 (219), 1899 (Stephani 1899e).
* *Aneura augustae* Steph., Sp. Hepat. (Stephani) 6: 430, 1923 (Stephani 1923).
* *Aneura biflora* Colenso, Trans. & Proc. New Zealand Inst. 17: 262, 1885 (Colenso 1885).
*** *Aneura blasioides* (Horik.) Furuki, J. Hattori Bot. Lab. 70: 311, 1991 (Furuki 1991). Bas.: *Riccardia blasioides* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 197, 1933 (Horikawa 1933).
** *Aneura brasiliensis* (Ångstr.) Steph., Hedwigia 32 (3): 137, 1893 (Stephani 1893b). Bas.: *Pseudoneura brasiliensis* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 33 (7): 91, 1876 [1877] (Ångström 1876).
* *Aneura brevissima* Steph., Sp. Hepat. (Stephani) 6: 21, 1917 (Stephani 1917a).
** *Aneura cerebrata* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 94 (2): 185, 1970 (Hewson 1970b).
*** *Aneura crateriformis* Furuki et D.G.Long, J. Bryol. 18 (2): 281, 1994 (Furuki and Long 1994).

393 *Aneura includes* also *Acrostolia* and *Pseudoneura*, but a few taxa have never been transferred nor synonymized. They are listed in the section "Names in genera not currently accepted" below. The types of *Aneura augustae*, *Aneura hunsteinii*, *Aneura latemultifida*, *Aneura ledermannii*, *Aneura subledermannii* and *Aneura subtenerrima* were destroyed in B and their identity is doubtful (Grolle and Piippo 1984).

* *Aneura crinita* C.Massal., Bull. Soc. Bot. Ital. 1917 (8/9): 81, 1917 (Massalongo 1917). [394]

** *Aneura crumii* L.Söderstr., A.Hagborg et von Konrat, Phytotaxa 65: 43, 2012 (Söderström et al. 2012a). *Nom. nov. pro Cryptothallus hirsutus* H.A.Crum, Bryologist 99 (4): 438, 1996 (Crum and Bruce 1996).

* *Aneura densa* Steph., Sp. Hepat. (Stephani) 6: 24, 1917 (Stephani 1917a).

* *Aneura denticulata* Mitt. ex Thurn, Timehri 5: 222, 1886 (Thurn 1886). [395]

** *Aneura eachamensis* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 94 (2): 184, 1970 (Hewson 1970b).

** *Aneura erronea* Steph., Sp. Hepat. (Stephani) 6: 20, 1917 (Stephani 1917a).

** *Aneura eskuchei* Hässel, Veröff. Geobot. Inst. ETH Stiftung Rübel Zürich 91: 294, 1986 (Hässel 1986b).

** *Aneura gemmifera* Furuki, J. Hattori Bot. Lab. 70: 309, 1991 (Furuki 1991).

* *Aneura giangena* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 94 (2): 190, 1970 (Hewson 1970b).

** *Aneura gibbsiana* Steph., Sp. Hepat. (Stephani) 6: 28, 1917 (Stephani 1917a).

** *Aneura glaucescens* Steph., Sp. Hepat. (Stephani) 6: 28, 1917 (Stephani 1917a).

* *Aneura goebeliana* Steph., Sp. Hepat. (Stephani) 6: 28, 1917 (Stephani 1917a).

*** *Aneura hirsuta* Furuki, J. Hattori Bot. Lab. 70: 317, 1991 (Furuki 1991).

* *Aneura hunsteinii* Steph., Sp. Hepat. (Stephani) 6: 431, 1923 (Stephani 1923).

** *Aneura imbricata* Colenso, Trans. & Proc. New Zealand Inst. 16: 359, 1884 (Colenso 1884).

** *Aneura kaguaensis* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 94 (2): 190, 1970 (Hewson 1970b).

** *Aneura keniae* Gola, Mem. Reale Accad. Sci. Torino (ser. 2) 65 (1): 3, 1916 (Gola 1916).

* *Aneura latemultifida* Steph., Sp. Hepat. (Stephani) 6: 431, 1923 (Stephani 1923).

** *Aneura latissima* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 544, 1885 (Spruce 1885).

* *Aneura ledermannii* Steph., Sp. Hepat. (Stephani) 6: 431, 1923 (Stephani 1923).

** *Aneura macrostachya* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 550, 1885 (Spruce 1885).

*** *Aneura marianensis* Furuki, Bryologist 97 (1): 87, 1994 (Furuki 1994b).

*** *Aneura maxima* (Schiffn.) Steph., Bull. Herb. Boissier 7 (10): 760 (270), 1899 (Stephani 1899f). Bas.: *Riccardia maxima* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 177, 1898 (Schiffner 1898a).

*** *Aneura mirabilis* (Malmb.) Wickett et Goffinet, Bot. J. Linn. Soc. 156 (1): 11, 2008 (Wickett and Goffinet 2008). Bas.: *Cryptothallus mirabilis* Malmb., Ann. Bryol. 6: 122, 1933 (von Malmborg 1933).

** *Aneura novaecaledoniae* R.M.Schust., Phytologia 56 (7): 451, 1985 (Schuster 1985c).

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394 *Aneura crinita* (type from Europe) has neither been recognized in any recent European treatment nor synonymized.

395 *Aneura denticulata* is possibly conspecific with *Riccardia ciliolata* (Hässel 2006b).

*** *Aneura novaguineensis* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 94 (2): 189, 1970 (Hewson 1970b).
* *Aneura nymannii* Steph., Sp. Hepat. (Stephani) 6: 35, 1917 (Stephani 1917a).
** *Aneura pellucida* Colenso, Trans. & Proc. New Zealand Inst. 18: 252, 1886 (Colenso 1886b).
*** *Aneura pinguis* (L.) Dumort., Syll. Jungerm. Europ.: 86, 1831 (Dumortier 1831). Bas.: *Jungermannia pinguis* L., Sp. Pl. 1: 1136, 1753 (Linnaeus 1753).
** *Aneura polyantha* Colenso, Trans. & Proc. New Zealand Inst. 17: 262, 1885 (Colenso 1885).
** *Aneura punctata* Colenso, Trans. & Proc. New Zealand Inst. 18: 254, 1886 (Colenso 1886b).
** *Aneura rodwayi* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 94 (2): 188, 1970 (Hewson 1970b).
* *Aneura roraimensis* Steph., Trans. Linn. Soc. London, Bot. 6 (1): 94, 1901 (Stephani 1901e).
** *Aneura rotangicola* Steph., Sp. Hepat. (Stephani) 6: 432, 1923 (Stephani 1923).
* *Aneura serrulata* Gottsche ex Steph., Sp. Hepat. (Stephani) 6: 42, 1917 (Stephani 1917a).
** *Aneura sharpii* Inoue et N.G.Mill., Bull. Natl. Sci. Mus. Tokyo, B 11 (3): 96, 1985 (Inoue and Miller 1985). [396]
* *Aneura singalangana* (Schiffn.) Steph., Bull. Herb. Boissier 7 (10): 751 (261), 1899 (Stephani 1899f). Bas.: *Riccardia singalangana* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 174, 1898 (Schiffner 1898a). [397]
** *Aneura subcanaliculata* R.M.Schust., J. Hattori Bot. Lab. 67: 60, 1989 (Schuster 1989).
* *Aneura subledermannii* Steph., Sp. Hepat. (Stephani) 6: 432, 1923 (Stephani 1923).
* *Aneura subtenerrima* Steph., Sp. Hepat. (Stephani) 6: 432, 1923 (Stephani 1923).
* *Aneura vincentina* Steph., Sp. Hepat. (Stephani) 6: 45, 1917 (Stephani 1917a).

** ***Lobatiriccardia* (Mizut. et S.Hatt.) Furuki**, J. Hattori Bot. Lab. 70: 319, 1991 (Furuki 1991). Bas.: *Riccardia* subg. *Lobatiriccardia* Mizut. et S.Hatt., J. Hattori Bot. Lab. 18: 38, 1957 (Mizutani and Hattori 1957).
*** *Lobatiriccardia alterniloba* (Hook.f. et Taylor) Furuki, J. Hattori Bot. Lab. 70: 319, 1991 (Furuki 1991). Bas.: *Jungermannia alterniloba* Hook.f. et Taylor, London J. Bot. 3: 572, 1844 (Hooker and Taylor 1844d).
** *Lobatiriccardia alterniloba* var. *gigantea* (Steph.) Nebel, Phytotaxa 81 (1): 10, 2013 (Nebel et al. 2013). Bas.: *Aneura gigantea* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 95, 1914 (Stephani and Watts 1914).
** *Lobatiriccardia alterniloba* var. *robusta* (Rodway) Nebel, Phytotaxa 81 (1): 10, 2013 (Nebel et al. 2013). Bas.: *Aneura alterniloba* f. *robusta* Rodway, Tasm. Bryoph.: 12, 1917 (Rodway 1917b).

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396 *Aneura sharpii* is conspecific with *Aneura maxima* in Schuster (1992b), but the taxa are not the same (D.G. Long, pers. comm.).

397 *Aneura singalangana* may be a form of *Riccardia subexalata* (Stephani 1899f).

*** *Lobatiriccardia athertonensis* (Hewson) Furuki, J. Hattori Bot. Lab. 70: 319, 1991 (Furuki 1991). Bas.: *Aneura athertonensis* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 94 (2): 188, 1970 (Hewson 1970b).

*** *Lobatiriccardia coronopus* (De Not.) Furuki, J. Hattori Bot. Lab. 100: 90, 2006 (Furuki 2006a). Bas.: *Aneura coronopus* De Not., Hedwigia 32 (1): 19, 1893 (Stephani 1893a).

** *Lobatiriccardia coronopus* subsp. *australis* (R.M.Schust.) Nebel, Preussing, Schäf.-Verw. et D.Quandt, Taxon 59 (5): 1434, 2010 (Preussing et al. 2010). Bas.: *Aneura lobata* subsp. *australis* R.M.Schust., Phytologia 56 (7): 451, 1985 (Schuster 1985c).

** *Lobatiriccardia oberwinkleri* Nebel, Preussing, Schäf.-Verw. et D.Quandt, Taxon 59 (5): 1435, 2010 (Preussing et al. 2010).

** *Lobatiriccardia subaquatica* (R.M.Schust.) Nebel, Phytotaxa 81 (1): 10, 2013 (Nebel et al. 2013). Bas.: *Aneura subaquatica* R.M.Schust., Phytologia 56 (7): 450, 1985 (Schuster 1985c).

** *Lobatiriccardia verdoornioides* Nebel, Preussing, Schäf.-Verw. et D.Quandt, Taxon 59 (5): 1437, 2010 (Preussing et al. 2010).

*** *Lobatiriccardia yakusimensis* (S.Hatt.) Furuki, J. Hattori Bot. Lab. 70: 321, 1991 (Furuki 1991). Bas.: *Riccardia lobata* var. *yakusimensis* S.Hatt., J. Hattori Bot. Lab. 6: 10, 1951 [1952] (Hattori 1951a).

*** *Lobatiriccardia yunnanensis* Furuki et D.G.Long, J. Bryol. 29 (3): 161, 2007 (Furuki and Long 2007).

*** ***Riccardia* Gray**, Nat. Arr. Brit. Pl. 1: 679, 1821 (Gray 1821) nom. conserv. [398]

** *Riccardia pectinata* var. *fasciculata* (Steph.) Hürl., Bauhinia 5 (4): 208, 1976 (Hürlimann 1976). Bas.: *Aneura fasciculata* Steph., Sp. Hepat. (Stephani) 6: 25, 1917 (Stephani 1917a).

** **subg. *Arceoneura* Hässel**, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 204, 1972 (Hässel 1972a).

** *Riccardia marionensis* R.M.Schust., J. Hattori Bot. Lab. 67: 65, 1989 (Schuster 1989).

*** *Riccardia prehensilis* (Hook.f. et Taylor) C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 255, 1885 (Massalongo 1885). Bas.: *Jungermannia prehensilis* Hook.f. et Taylor, London J. Bot. 3: 480, 1844 (Hooker and Taylor 1844b).

** **subg. *Corioneura* Furuki**, J. Hattori Bot. Lab. 70: 394, 1991 (Furuki 1991).

** *Riccardia argentolimbata* Hewson et Grolle, J. Hattori Bot. Lab. 29: 70, 1966 (Grolle 1966i).

*** *Riccardia hattorii* Furuki, J. Hattori Bot. Lab. 75: 257, 1994 (Furuki 1994a).

** **subg. *Hyaloneura* R.M.Schust.**, Phytologia 56 (7): 452, 1985 (Schuster 1985c).

398 *Riccardia* includes *Acrostolia*, but a few taxa have neither been transferred nor synonymized. They are listed under "Names in genera not currently accepted" below.

* *Riccardia albomarginata* (Steph.) Schiffn., Consp. Hepat. Arch. Ind.: 53, 1898 (Schiffner 1898b). Bas.: *Aneura albomarginata* Steph., Hedwigia 32 (1): 18, 1893 (Stephani 1893a). [399]

** *Riccardia canaliculata* (Nees) Kuntze, Revis. Gen. Pl. 2: 838, 1891 (Kuntze 1891). Bas.: *Jungermannia canaliculata* Nees, Enum. Pl. Crypt. Javae: 10, 1830 (Nees 1830).

** *Riccardia pindensis* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 87, 1970 (Hewson 1970a).

** **subg. *Lophoneura* Hässel**, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 218, 1972 (Hässel 1972a).

** *Riccardia fuegiensis* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 255, 1885 (Massalongo 1885).

** **subg. *Neoneura* Furuki**, J. Hattori Bot. Lab. 70: 385, 1991 (Furuki 1991).

*** *Riccardia spongiosa* Furuki, J. Hattori Bot. Lab. 70: 385, 1991 (Furuki 1991).

** **subg. *Phycaneura* R.M.Schust.**, J. Hattori Bot. Lab. 26: 294, 1963 (Schuster 1963b).

** *Riccardia aequicellularis* (Steph.) Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 79, 1970 (Hewson 1970a). Bas.: *Aneura aequicellularis* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 95, 1914 (Stephani and Watts 1914).

** *Riccardia asperulata* R.M.Schust., J. Hattori Bot. Lab. 27: 209, 1964 (Schuster 1964a).

** **subg. *Riccardia***

*** *Riccardia aeruginosa* Furuki, J. Hattori Bot. Lab. 70: 345, 1991 (Furuki 1991).

*** *Riccardia arcuata* Furuki, J. Hattori Bot. Lab. 70: 361, 1991 (Furuki 1991).

*** *Riccardia chamedryfolia* (With.) Grolle, Trans. Brit. Bryol. Soc. 5 (4): 772, 1969 (Grolle 1969b). Bas.: *Jungermannia chamedryfolia* With., Bot. arr. veg. Gr. Brit. 2: 699, 1776 (Withering 1776).

*** *Riccardia cochleata* (Hook.f. et Taylor) Kuntze, Revis. Gen. Pl. 2: 838, 1891 (Kuntze 1891). Bas.: *Riccia cochleata* Hook.f. et Taylor, London J. Bot. 4: 96, 1845 (Hooker and Taylor 1845).

*** *Riccardia eriocaula* (Hook.) C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 256, 1885 (Massalongo 1885). Bas.: *Jungermannia eriocaula* Hook., Musci Exot. 1: tab. 72, 1818 (Hooker 1818).

*** *Riccardia flavovirens* Furuki, J. Hattori Bot. Lab. 70: 333, 1991 (Furuki 1991).

*** *Riccardia fruticosa* (Steph.) Furuki, Nat. Hist. Res. 5 (1): 1, 1998 (Furuki 1998). Bas.: *Aneura fruticosa* Steph., Sp. Hepat. (Stephani) 6: 27, 1917 (Stephani 1917a).

*** *Riccardia glauca* Furuki, J. Hattori Bot. Lab. 70: 352, 1991 (Furuki 1991).

** *Riccardia kodamae* Mizut. et S.Hatt., J. Hattori Bot. Lab. 18: 57, 1957 (Mizutani and Hattori 1957).

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399 *Riccardia albomarginata* is possibly conspecific with *Riccardia canaliculata* (Söderström et al. 2010a).

*** *Riccardia latifrons* (Lindb.) Lindb., Acta Soc. Sci. Fenn. 10: 513, 1875 (Lindberg 1875). Bas.: *Aneura latifrons* Lindb., Bot. Not. 26: 62, 1873 (Anonymous 1873).

** *Riccardia latifrons* subsp. *arctica* R.M.Schust. et Damsh., J. Hattori Bot. Lab. 62: 303, 1987 (Schuster 1987d).

** *Riccardia latifrons* var. *miyakeana* (Schiffn.) Furuki, J. Hattori Bot. Lab. 70: 375, 1991 (Furuki 1991). Bas.: *Riccardia miyakeana* Schiffn., Österr. Bot. Z. 49 (11): 388, 1899 (Schiffner 1899c).

** *Riccardia nagasakiensis* (Steph.) S.Hatt., Bull. Tokyo Sci. Mus. 11: 164, 1944 (Hattori 1944d). Bas.: *Aneura nagasakiensis* Steph., Sp. Hepat. (Stephani) 6: 34, 1917 (Stephani 1917a).

*** *Riccardia palmata* (Hedw.) Carruth., J. Bot. 3: 302, 1865 (Carruthers 1865). Bas.: *Jungermannia palmata* Hedw., Theoria generat.: 87, 1784 (Hedwig 1784), *nom. conserv.*

** *Riccardia planiflora* (Steph.) S.Hatt., Bull. Tokyo Sci. Mus. 11: 164, 1944 (Hattori 1944d). Bas.: *Aneura planiflora* Steph., Sp. Hepat. (Stephani) 6: 38, 1917 (Stephani 1917a).

** *Riccardia planiflora* var. *aequatorialis* Furuki, Nat. Hist. Res. 4 (2): 77, 1997 (Furuki 1997).

** *Riccardia pseudodendroceros* R.M.Schust., Phytologia 56 (7): 452, 1985 (Schuster 1985c).

*** *Riccardia pumila* Furuki, J. Hattori Bot. Lab. 70: 361, 1991 (Furuki 1991).

** *Riccardia pusilla* Grolle, J. Jap. Bot. 41 (8): 231, 1966 (Grolle 1966d). *Nom. nov. pro Riccardia nana* Mizut. et S.Hatt., J. Hattori Bot. Lab. 18: 53, 1957 (Mizutani and Hattori 1957), *nom. illeg.*

*** *Riccardia subalpina* Furuki, J. Hattori Bot. Lab. 70: 367, 1991 (Furuki 1991).

** *Riccardia tamariscina* (Steph.) Schiffn., Consp. Hepat. Arch. Ind.: 58, 1898 (Schiffner 1898b). Bas.: *Aneura tamariscina* Steph., Hedwigia 32 (1): 27, 1893 (Stephani 1893a).

*** *Riccardia vitrea* Furuki, J. Hattori Bot. Lab. 70: 327, 1991 (Furuki 1991).

** **sect. *Alcicornia* Hässel**, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 17, 1972 (Hässel 1972a).

** *Riccardia alcicornis* (Hook.f. et Taylor) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 431, 1877 (Trevisan 1877). Bas.: *Jungermannia alcicornis* Hook.f. et Taylor, London J. Bot. 3: 479, 1844 (Hooker and Taylor 1844b).

** *Riccardia conimitra* (Steph.) A.Evans, Trans. Connecticut Acad. Arts 25 (2): 156, 1921 (Evans 1921a). Bas.: *Aneura conimitra* Steph., Bull. Herb. Boissier 7 (10): 749 (259), 1899 (Stephani 1899f).

** *Riccardia corralensis* (Steph.) A.Evans, Trans. Connecticut Acad. Arts 25 (2): 143, 1921 (Evans 1921a). Bas.: *Aneura corralensis* Steph., Bull. Herb. Boissier 7 (10): 742 (252), 1899 (Stephani 1899f).

*** *Riccardia furtiva* E.A.Br. et Braggins, J. Hattori Bot. Lab. 66: 35, 1989 (Brown and Braggins 1989).

** *Riccardia fuscobrunnea* (Steph.) A.Evans, Trans. Connecticut Acad. Arts 25 (2): 152, 1921 (Evans 1921a). Bas.: *Aneura fuscobrunnea* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 7, 1911 (Stephani 1911b).
** *Riccardia longioleata* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 30, 1972 (Hässel 1972a).
*** *Riccardia multicorpora* E.A.Br., J. Hattori Bot. Lab. 66: 40, 1989 (Brown and Braggins 1989).
* *Riccardia umida* E.A.Br., J. Hattori Bot. Lab. 66: 38, 1989 (Brown and Braggins 1989).

** **sect. *Crassantia* Hässel**, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 41, 1972 (Hässel 1972a).
*** *Riccardia aequitexta* (Steph.) E.A.Br., J. Hattori Bot. Lab. 66: 78, 1989 (Brown and Braggins 1989). Bas.: *Aneura aequitexta* Steph., J. Linn. Soc., Bot. 29 (201): 263, 1892 (Stephani 1892b).
*** *Riccardia alba* (Colenso) E.A.Br., J. Hattori Bot. Lab. 66: 66, 1989 (Brown and Braggins 1989). Bas.: *Aneura alba* Colenso, Trans. & Proc. New Zealand Inst. 16: 357, 1884 (Colenso 1884).
** *Riccardia amnicola* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 92, 1972 (Hässel 1972a).
** *Riccardia bipinnatifida* (Colenso) Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 93, 1970 (Hewson 1970a). Bas.: *Aneura bipinnatifida* Colenso, Trans. & Proc. New Zealand Inst. 16: 358, 1884 (Colenso 1884).
** *Riccardia calva* (Schiffn.) A.Evans, Trans. Connecticut Acad. Arts 25 (2): 134, 1921 (Evans 1921a). Bas.: *Aneura calva* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 42, 1890 (Schiffner 1890).
*** *Riccardia colensoi* (Steph.) W.Martin, Trans. & Proc. Roy. Soc. New Zealand 78 (4): 499, 1950 (Martin 1950). Bas.: *Aneura colensoi* Steph., J. Linn. Soc., Bot. 29 (201): 264, 1892 (Stephani 1892b).
*** *Riccardia crassa* (Schwägr.) C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 254, 1885 (Massalongo 1885). Bas.: *Jungermannia crassa* Schwägr., Hist. Musc. Hepat. Prodr.: 31, 1814 (Schwägrichen 1814).
** *Riccardia crassicrispa* (Steph.) A.Evans, Trans. Connecticut Acad. Arts 25 (2): 194, 1921 (Evans 1921a). Bas.: *Aneura crassicrispa* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 6, 1911 (Stephani 1911b).
** *Riccardia diderma* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 56, 1972 (Hässel 1972a).
** *Riccardia diversiflora* A.Evans, Trans. Connecticut Acad. Arts 25 (2): 167, 1921 (Evans 1921a).
** *Riccardia diversiflora* subsp. *paucigyna* R.M.Schust., J. Hattori Bot. Lab. 67: 97, 1989 (Schuster 1989).
** *Riccardia duriuscula* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 82, 1972 (Hässel 1972a).

** *Riccardia falsifloribunda* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 119, 1972 (Hässel 1972a).
** *Riccardia floribunda* (Steph.) A.Evans, Trans. Connecticut Acad. Arts 25 (2): 182, 1921 (Evans 1921a). Bas.: *Aneura floribunda* Steph., Bull. Herb. Boissier 7 (10): 749 (259), 1899 (Stephani 1899f).
** *Riccardia fluvigena* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 73, 1972 (Hässel 1972a).
** *Riccardia georgiensis* (Steph.) Hässel, Lindbergia 1 (1/2): 80, 1971 [1972] (Grolle 1971a). Bas.: *Aneura georgiensis* Steph., Wiss. Ergebn. Schwed. Südpolar-Exped. [1901–1903] 4 (1): 2, 1905 (Stephani 1905e).
** *Riccardia georgiensis* subsp. *sympodea* R.M.Schust., J. Hattori Bot. Lab. 67: 83, 1989 (Schuster 1989).
*** *Riccardia graeffei* (Steph.) Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 118, 1970 (Hewson 1970a). Bas.: *Aneura graeffei* Steph., Hedwigia 32 (1): 21, 1893 (Stephani 1893a).
*** *Riccardia marginata* (Colenso) Pearson, Univ. Calif. Publ. Bot. 10 (4): 309, 1923 (Pearson 1923). Bas.: *Aneura marginata* Colenso, Trans. & Proc. New Zealand Inst. 18: 253, 1886 (Colenso 1886b).
*** *Riccardia marginata* var. *pacifica* Furuki, J. Hattori Bot. Lab. 70: 380, 1991 (Furuki 1991).
** *Riccardia mycophora* A.Evans, Trans. Connecticut Acad. Arts 25 (2): 175, 1921 (Evans 1921a).
** *Riccardia negeri* (Steph.) A.Evans, Trans. Connecticut Acad. Arts 25 (2): 172, 1921 (Evans 1921a). Bas.: *Aneura negeri* Steph., Bull. Herb. Boissier 7 (10): 747 (257), 1899 (Stephani 1899f).
** *Riccardia nitida* (Colenso) E.A.Hodgs., Trans. Roy. Soc. New Zealand, Bot. 3 (4): 92, 1965 (Hodgson 1965). Bas.: *Aneura nitida* Colenso, Trans. & Proc. New Zealand Inst. 18: 253, 1886 (Colenso 1886b).
** *Riccardia papillosa* (C.Massal. et Steph.) Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 60, 1972 (Hässel 1972a). Bas.: *Aneura papillosa* C.Massal. et Steph., Atti Reale Ist. Veneto Sci. Lett. Arti 87 (2): 241, 1928 (Massalongo 1928).
** *Riccardia regularis* (Steph.) Kühnem., Revista Centro Estud. Doct. Ci. Nat. 1: 171, 1937 (Kühnemann 1937). Bas.: *Aneura regularis* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 9, 1911 (Stephani 1911b).
** *Riccardia rivularis* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 52, 1972 (Hässel 1972a).
** *Riccardia saxicola* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 137, 1972 (Hässel 1972a).
** *Riccardia spectabilis* (Steph.) A.Evans, Trans. Connecticut Acad. Arts 25 (2): 140, 1921 (Evans 1921a). Bas.: *Aneura spectabilis* Steph., Bull. Herb. Boissier 7 (10): 746 (256), 1899 (Stephani 1899f).

** *Riccardia spegazziniana* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 254, 1885 (Massalongo 1885).
** *Riccardia tenax* (Steph.) A.Evans, Trans. Connecticut Acad. Arts 25 (2): 186, 1921 (Evans 1921a). Bas.: *Aneura tenax* Steph., Bull. Herb. Boissier 7 (10): 755 (265), 1899 (Stephani 1899f).
** *Riccardia tenerrima* (Steph.) A.Evans, Trans. Connecticut Acad. Arts 25 (2): 164, 1921 (Evans 1921a). Bas.: *Aneura tenerrima* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 9, 1911 (Stephani 1911b).
** *Riccardia theliophora* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 96, 1972 (Hässel 1972a).

** **sect. *Pallidevirida* Hässel**, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 142, 1972 (Hässel 1972a).
** *Riccardia granulata* (Steph.) A.Evans, Trans. Connecticut Acad. Arts 25 (2): 192, 1921 (Evans 1921a). Bas.: *Aneura granulata* Steph., Hedwigia 32 (1): 21, 1893 (Stephani 1893a).
** *Riccardia intercellula* E.A.Br., J. Hattori Bot. Lab. 66: 58, 1989 (Brown and Braggins 1989).
** *Riccardia opuntiiformis* S.W.Arnell, Arch. Soc. Zool. Bot. Fenn. "Vanamo" 9: 52, 1954 (Arnell 1954b).
** *Riccardia pallidevirens* (Steph.) A.Evans, Trans. Connecticut Acad. Arts 25 (2): 189, 1921 (Evans 1921a). Bas.: *Aneura pallidevirens* Steph., Bull. Herb. Boissier 7 (10): 762 (272), 1899 (Stephani 1899f).
*** *Riccardia pennata* E.A.Br., J. Hattori Bot. Lab. 66: 53, 1989 (Brown and Braggins 1989).
*** *Riccardia perspicua* E.A.Br., J. Hattori Bot. Lab. 66: 55, 1989 (Brown and Braggins 1989).
** *Riccardia xylophila* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 156, 1972 (Hässel 1972a).

** **sect. *Riccardia***
*** *Riccardia australis* (Lehm.) Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 110, 1970 (Hewson 1970a). Bas.: *Sarcomitrium australe* Lehm., Nov. Stirp. Pug. 10: 19, 1857 (Lehmann 1857).
** *Riccardia autoica* (Steph.) A.Evans, Trans. Connecticut Acad. Arts 25 (2): 159, 1921 (Evans 1921a). Bas.: *Aneura autoica* Steph., Bull. Herb. Boissier 7 (9): 691 (232), 1899 (Stephani 1899e).
** *Riccardia breviala* E.A.Br., J. Hattori Bot. Lab. 66: 46, 1989 (Brown and Braggins 1989).
** *Riccardia breviramosa* (Steph.) A.Evans, Nat. Hist. Juan Fernandez (Botany) 2 (20): 559, 1930 (Evans 1930a). Bas.: *Aneura breviramosa* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 6, 1911 (Stephani 1911b).

** *Riccardia filicina* (Colenso) E.A.Hodgs., Rec. Domin. Mus. 4 (11): 129, 1962 (Hodgson 1962a). Bas.: *Aneura filicina* Colenso, Trans. & Proc. New Zealand Inst. 16: 358, 1884 (Colenso 1884).

** *Riccardia leptostachya* A.Evans, Nat. Hist. Juan Fernandez (Botany) 2 (20): 570, 1930 (Evans 1930a).

** *Riccardia lobulata* (Colenso) E.A.Hodgs., Trans. Roy. Soc. New Zealand, Bot. 3 (4): 92, 1965 (Hodgson 1965). Bas.: *Zoopsis lobulata* Colenso, Trans. & Proc. New Zealand Inst. 18: 250, 1886 (Colenso 1886b).

** *Riccardia mejlandii* S.W.Arnell, Results Norweg. Sci. Exped. Tristan da Cunha 42: 30, 1958 (Arnell 1958b).

*** *Riccardia multifida* (L.) Gray, Nat. Arr. Brit. Pl. 1: 684, 1821 (Gray 1821). Bas.: *Jungermannia multifida* L., Sp. Pl. 1: 1136, 1753 (Linnaeus 1753).

*** *Riccardia multifida* subsp. *decrescens* (Steph.) Furuki, J. Hattori Bot. Lab. 70: 341, 1991 (Furuki 1991). Bas.: *Aneura decrescens* Steph., Bull. Herb. Boissier 7 (9): 686 (227), 1899 (Stephani 1899e).

** *Riccardia multifida* subsp. *synoica* R.M.Schust., J. Hattori Bot. Lab. 62: 319, 1987 (Schuster 1987d).

** *Riccardia multioleata* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 195, 1972 (Hässel 1972a).

*** *Riccardia papulosa* (Steph.) E.A.Br., J. Hattori Bot. Lab. 66: 49, 1989 (Brown and Braggins 1989). Bas.: *Aneura papulosa* Steph., Hedwigia 32 (1): 25, 1893 (Stephani 1893a).

** *Riccardia patens* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 165, 1972 (Hässel 1972a).

** *Riccardia polyclada* (Mitt.) Hässel, Bryologist 109 (1): 34, 2006 (Hässel 2006b). Bas.: *Aneura polyclada* Mitt., Trans. Linn. Soc. London, Bot. 2 (13): 297, 1887 (Mitten 1887).

** *Riccardia statensis* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 177, 1972 (Hässel 1972a).

** *Riccardia thaxteri* A.Evans, Trans. Connecticut Acad. Arts 25 (2): 126, 1921 (Evans 1921a).

** *Riccardia tristaniana* S.W.Arnell, Results Norweg. Sci. Exped. Tristan da Cunha 42: 31, 1958 (Arnell 1958b).

** **subg. *Spinella* (Schiffn.) Hässel**, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 214, 1972 (Hässel 1972a). Bas.: *Spinella* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 41, 1890 (Schiffner 1890).

** *Riccardia spinulifera* C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 254, 1885 (Massalongo 1885).

** **subg. *Thornoneura* Furuki**, J. Hattori Bot. Lab. 70: 382, 1991 (Furuki 1991).

* *Riccardia baumannii* Hürl., Bauhinia 5 (4): 203, 1976 (Hürlimann 1976). [400]

** *Riccardia deguchii* Furuki et K.T.Yong, Hikobia 16 (3): 285, 2013 (Furuki et al. 2013).

*** *Riccardia grossitexta* (Steph.) Furuki, J. Hattori Bot. Lab. 70: 382, 1991 (Furuki 1991). Bas.: *Aneura grossitexta* Steph., Sp. Hepat. (Stephani) 6: 29, 1917 (Stephani 1917a).

** *Riccardia inconspicua* (Steph.) Reeb et Bardat, Cryptog. Bryol. 35 (1): 61, 2014 (Reeb and Bardat 2014). Bas.: *Aneura inconspicua* Steph., Hedwigia 32 (1): 23, 1893 (Stephani 1893a).

** **subg. *Trichothallia* Hässel**, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 224, 1972 (Hässel 1972a).

** *Riccardia hyalitricha* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 4 (1): 225, 1972 (Hässel 1972a).

Incertae sedis

** *Riccardia aberrans* (Steph.) Gradst., J. Hattori Bot. Lab. 45: 129, 1979 (Gradstein and Hekking 1979). Bas.: *Aneura aberrans* Steph., Hedwigia 32 (1): 18, 1893 (Stephani 1893a).

** *Riccardia agumana* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 82, 1970 (Hewson 1970a).

** *Riccardia algoides* (Taylor) Meenks, J. Hattori Bot. Lab. 62: 168, 1987 (Meenks 1987). Bas.: *Metzgeria algoides* Taylor, London J. Bot. 5: 410, 1846 (Taylor 1846b).

*** *Riccardia amazonica* (Spruce) Schiffn. ex Gradst. et Hekking, J. Hattori Bot. Lab. 45: 129, 1979 (Gradstein and Hekking 1979). Bas.: *Aneura amazonica* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 545, 1885 (Spruce 1885).

*** *Riccardia andina* (Spruce) Herzog, Svensk Bot. Tidskr. 46 (1): 65, 1952 (Herzog 1952e). Bas.: *Aneura andina* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 548, 1885 (Spruce 1885).

** *Riccardia angustata* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 126, 1934 (Horikawa 1934).

** *Riccardia angustealata* (Steph.) Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 111, 1970 (Hewson 1970a). Bas.: *Aneura angustealata* Steph., Sp. Hepat. (Stephani) 6: 20, 1917 (Stephani 1917a).

** *Riccardia angustissima* (Steph.) H.A.Mill., Phytologia 47 (4): 323, 1981 (Miller 1981). Bas.: *Aneura angustissima* Steph., Sp. Hepat. (Stephani) 6: 20, 1917 (Stephani 1917a).

** *Riccardia aspera* (Steph.) Grolle, J. Hattori Bot. Lab. 30: 117, 1967 (Grolle 1967b). Bas.: *Aneura aspera* Steph., Sp. Hepat. (Stephani) 6: 21, 1917 (Stephani 1917a).

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400 *Riccardia baumannii* is possibly conspecific with *Riccardia grossitexta* or *Riccardia tenuicostata* (Furuki 1991, Söderström et al. 2010a).

* *Riccardia baldwinii* (Steph.) H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 527, 1963 (Miller 1963). Bas.: *Aneura baldwinii* Steph., Bull. Herb. Boissier 7 (10): 743 (253), 1899 (Stephani 1899f). [401]

** *Riccardia barbiflora* (Steph.) Piippo, J. Hattori Bot. Lab. 68: 134, 1990 (Piippo 1990). Bas.: *Aneura barbiflora* Steph., Mém. Soc. Nat. Sci. Nat. Math. Cherbourg 29: 209, 1894 (Stephani 1894b).

** *Riccardia bogotensis* (Gottsche) Pagán, Bryologist 42 (1): 6, 1939 (Pagán 1939a). Bas.: *Pseudoneura bogotensis* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 184, 1864 (Gottsche 1864).

** *Riccardia boliviensis* (Steph.) Meenks, J. Hattori Bot. Lab. 62: 170, 1987 (Meenks 1987). Bas.: *Aneura boliviensis* Steph., Biblioth. Bot. 87 (2): 176, 1916 (Stephani 1916a).

** *Riccardia bongeriana* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 101, 1970 (Hewson 1970a).

** *Riccardia brunnea* (Steph.) S.Hatt., Bull. Tokyo Sci. Mus. 11: 164, 1944 (Hattori 1944d). Bas.: *Aneura brunnea* Steph., Sp. Hepat. (Stephani) 6: 21, 1917 (Stephani 1917a).

** *Riccardia calcarea* (Steph.) Meenks, J. Hattori Bot. Lab. 62: 170, 1987 (Meenks 1987). Bas.: *Aneura calcarea* Steph., Bull. Herb. Boissier 7 (10): 756 (266), 1899 (Stephani 1899f).

** *Riccardia capillacea* (Steph.) Meenks et C.De Jong, Cryptog. Bryol. Lichénol. 6 (1): 6, 1985 (Meenks and de Jong 1985). Bas.: *Aneura capillacea* Steph., Biblioth. Bot. 87 (2): 174, 1916 (Stephani 1916a).

** *Riccardia capillacea* var. *dentata* Meenks, J. Hattori Bot. Lab. 62: 170, 1987 (Meenks 1987).

** *Riccardia cardotii* (Steph.) Pandé et S.C.Srivast., Biol. Mem. 1 (1/2): 131, 1976 (Srivastava and Udar 1976). Bas.: *Aneura cardotii* Steph., Bull. Soc. Roy. Bot. Belgique, Mém. 41 (1): 118, 1904 [1905] (Stephani 1904d).

** *Riccardia cataractarum* (Spruce) Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 18, 1964 (Schiffner and Arnell 1964). Bas.: *Aneura cataractarum* Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: cxcv, 1889 [1890] (Spruce 1889).

*** *Riccardia cervicornis* (Spruce) Herzog ex Gradst. et Hekking, J. Hattori Bot. Lab. 45: 129, 1979 (Gradstein and Hekking 1979). Bas.: *Aneura cervicornis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 550, 1885 (Spruce 1885).

** *Riccardia changbaishanensis* C.Gao, Fl. Hepat. Chin. Boreali-Orient.: 209, 1981 (Gao and Chang 1981).

** *Riccardia chinensis* C.Gao, Fl. Hepat. Chin. Boreali-Orient.: 209, 1981 (Gao and Chang 1981).

** *Riccardia ciliolata* (Spruce) Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 1: 198, 1933 (Horikawa 1933). Bas.: *Aneura ciliolata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 547, 1885 (Spruce 1885).

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401 *Riccardia baldwinii* is possibly conspecific with *Riccardia flaccida* (Miller et al. 1983).

** *Riccardia columbica* (Steph.) Hässel ex Gradst. et Hekking, J. Hattori Bot. Lab. 45: 130, 1979 (Gradstein and Hekking 1979). Bas.: *Aneura columbica* Steph., Sp. Hepat. (Stephani) 6: 22, 1917 (Stephani 1917a).

** *Riccardia comata* (Steph.) H.A.Mill., Phytologia 47 (4): 323, 1981 (Miller 1981). Bas.: *Aneura comata* Steph., Sp. Hepat. (Stephani) 6: 22, 1917 (Stephani 1917a).

** *Riccardia compacta* (Steph.) S.W.Arnell, Bot. Not. 105: 141, 1952 (Arnell 1952b). Bas.: *Aneura compacta* Steph., Hedwigia 32 (1): 19, 1893 (Stephani 1893a).

** *Riccardia comptonii* (Pearson) H.A.Mill., Phytologia 47 (4): 323, 1981 (Miller 1981). Bas.: *Aneura comptonii* Pearson, J. Linn. Soc., Bot. 46 (305): 17, 1922 (Pearson 1922b).

** *Riccardia costata* (Steph.) Hürl., Bauhinia 5 (4): 206, 1976 (Hürlimann 1976). Bas.: *Aneura costata* Steph., Sp. Hepat. (Stephani) 6: 23, 1917 (Stephani 1917a).

*** *Riccardia crassicaulis* (Steph.) Meenks et C.De Jong, Cryptog. Bryol. Lichénol. 6 (1): 8, 1985 (Meenks and de Jong 1985). Bas.: *Aneura crassicaulis* Steph., Biblioth. Bot. 87 (2): 174, 1916 (Stephani 1916a).

** *Riccardia crassiretis* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 173, 1898 (Schiffner 1898a).

** *Riccardia crenulata* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 173, 1898 (Schiffner 1898a).

** *Riccardia crenuliformis* R.M.Schust., J. Hattori Bot. Lab. 67: 72, 1989 (Schuster 1989).

* *Riccardia decolyana* Schiffn., J. Indian Bot. Soc. 38 (4): 538, 1959 [1960] (Schiffner et al. 1959). [402]

** *Riccardia densiramea* (Steph.) S.Hatt., Bull. Tokyo Sci. Mus. 11: 164, 1944 (Hattori 1944d). Bas.: *Aneura densiramea* Steph., Sp. Hepat. (Stephani) 6: 24, 1917 (Stephani 1917a).

** *Riccardia devexa* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 12, 1964 (Schiffner and Arnell 1964).

** *Riccardia diablotina* (Spruce) Pagán, Bryologist 45 (4): 80, 1942 (Pagán 1942b). Bas.: *Aneura diablotina* Spruce, J. Linn. Soc., Bot. 30 (210): 366, 1895 (Gepp 1895b).

*** *Riccardia digitiloba* (Spruce) Pagán, Bryologist 42 (1): 6, 1939 (Pagán 1939a). Bas.: *Aneura digitiloba* Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: cci, 1889 [1890] (Spruce 1889).

** *Riccardia dilatata* (Spruce) Schäf.-Verw. et Pócs, Cryptog. Bryol. 31 (4): 389, 2010 (Schäfer-Verwimp 2010). Bas.: *Aneura dilatata* Spruce, J. Linn. Soc., Bot. 30 (210): 368, 1895 (Gepp 1895b).

* *Riccardia diminuta* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 170, 1898 (Schiffner 1898a). [403]

* *Riccardia diminuta* var. *thermarum* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 172, 1898 (Schiffner 1898a).

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402 *Riccardia decolyana* is possibly conspecific with *Riccardia multifida* (Srivastava and Udar 1976).

403 *Riccardia diminuta* is possibly conspecific with *Riccardia elata* (Söderström et al. 2010a).

** *Riccardia distans* (Spruce) Pagán, Bryologist 45 (4): 80, 1942 (Pagán 1942b). Bas.: *Aneura distans* Spruce, J. Linn. Soc., Bot. 30 (210): 367, 1895 (Gepp 1895b).

** *Riccardia elata* (Steph.) Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 169, 1898 (Schiffner 1898a). Bas.: *Aneura elata* Steph., Hedwigia 32 (1): 19, 1893 (Stephani 1893a).

* *Riccardia elata* var. *flaccida* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 170, 1898 (Schiffner 1898a).

* *Riccardia elata* var. *intercedens* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 170, 1898 (Schiffner 1898a).

** *Riccardia elegans* (Steph.) Hürl., Bauhinia 5 (4): 196, 1976 (Hürlimann 1976). Bas.: *Aneura elegans* Steph., Sp. Hepat. (Stephani) 6: 25, 1917 (Stephani 1917a).

** *Riccardia elisabethae* Thouvenot et Reeb, Telopea 17: 229, 2014 (Thouvenot and Reeb 2014).

*** *Riccardia emarginata* (Steph.) K.G.Hell, Bol. Fac. Filos. Univ. São Paulo, Bot. 25: 100, 1969 (Hell 1969). Bas.: *Aneura emarginata* Steph., Hedwigia 32 (1): 20, 1893 (Stephani 1893a).

** *Riccardia erosa* (Steph.) E.W.Jones, Trans. Brit. Bryol. Soc. 3 (1): 83, 1956 (Jones 1956). Bas.: *Aneura erosa* Steph., Hedwigia 30 (6): 269, 1891 (Stephani 1891c).

** *Riccardia fastigiata* (Lehm.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 431, 1877 (Trevisan 1877). Bas.: *Jungermannia fastigiata* Lehm., Linnaea 4: 370, 1829 (Lehmann 1829).

** *Riccardia fendleri* (Steph.) Pagán, Bryologist 45 (4): 80, 1942 (Pagán 1942b). Bas.: *Aneura fendleri* Steph., Hedwigia 32 (1): 20, 1893 (Stephani 1893a).

** *Riccardia flaccida* (Steph.) S.Hatt., Bull. Tokyo Sci. Mus. 11: 164, 1944 (Hattori 1944d). Bas.: *Aneura flaccida* Steph., Sp. Hepat. (Stephani) 6: 26, 1917 (Stephani 1917a).

** *Riccardia flaccidissima* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 167, 1898 (Schiffner 1898a).

** *Riccardia flagellaris* (A.Gepp) H.A.Mill., Phytologia 47 (4): 323, 1981 (Miller 1981). Bas.: *Aneura flagellaris* A.Gepp, J. Linn. Soc., Bot. 39 (270): 194, 1909 (Gibbs 1909).

** *Riccardia flagellifrons* C.Gao, Fl. Hepat. Chin. Boreali-Orient.: 209, 1981 (Gao and Chang 1981).

** *Riccardia fleischeri* (Steph.) H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 527, 1963 (Miller 1963). Bas.: *Aneura fleischeri* Steph., Sp. Hepat. (Stephani) 6: 26, 1917 (Stephani 1917a).

** *Riccardia foliacea* Meenks et C.De Jong, Cryptog. Bryol. Lichénol. 6 (1): 8, 1985 (Meenks and de Jong 1985).

** *Riccardia formosensis* (Steph.) Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 125, 1934 (Horikawa 1934). Bas.: *Aneura formosensis* Steph., Sp. Hepat. (Stephani) 6: 27, 1917 (Stephani 1917a).

*** *Riccardia fucoidea* (Sw.) C.Massal., Nuovo Giorn. Bot. Ital. 17 (3): 256, 1885 (Massalongo 1885). Bas.: *Jungermannia fucoidea* Sw., Prodr. (Swartz): 145, 1788 (Swartz 1788).

** *Riccardia geniana* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 76, 1970 (Hewson 1970a).

*** *Riccardia glaziovii* (Spruce) Meenks, J. Hattori Bot. Lab. 62: 173, 1987 (Meenks 1987). Bas.: *Aneura glaziovii* Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: cci, 1889 [1890] (Spruce 1889).

** *Riccardia gogolensis* (Steph.) Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 102, 1970 (Hewson 1970a). Bas.: *Aneura gogolensis* Steph., Bull. Herb. Boissier 7 (9): 689 (230), 1899 (Stephani 1899e).

** *Riccardia gracilis* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 26: 295, 1963 (Schuster 1963b). Bas.: *Aneura gracilis* Steph., Bull. Herb. Boissier 7 (10): 752 (262), 1899 (Stephani 1899f).

** *Riccardia grandiflora* (Steph.) H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 528, 1963 (Miller 1963). Bas.: *Aneura grandiflora* Steph., Sp. Hepat. (Stephani) 6: 29, 1917 (Stephani 1917a).

*** *Riccardia grollei* Furuki, Haussknechtia, Beih. 9: 139, 1999 (Furuki 1999).

** *Riccardia grossidens* (Steph.) Pagán, Bryologist 45 (4): 80, 1942 (Pagán 1942b). Bas.: *Aneura grossidens* Steph., Hedwigia 32 (1): 23, 1893 (Stephani 1893a).

** *Riccardia gunniana* (Steph.) H.A.Mill., Phytologia 47 (4): 323, 1981 (Miller 1981). Bas.: *Aneura gunniana* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 96, 1914 (Stephani and Watts 1914).

** *Riccardia hamatiflora* (Steph.) H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 526, 1963 (Miller 1963). Bas.: *Aneura hamatiflora* Steph., Bull. Herb. Boissier 5 (10): 844, 1897 (Stephani 1897c).

*** *Riccardia hans-meyeri* (Steph.) Meenks et C.De Jong, Cryptog. Bryol. Lichénol. 6 (1): 12, 1985 (Meenks and de Jong 1985). Bas.: *Aneura hans-meyeri* Steph., Sp. Hepat. (Stephani) 6: 29, 1917 (Stephani 1917a).

** *Riccardia hans-meyeri* var. *dentata* Meenks, J. Hattori Bot. Lab. 62: 173, 1987 (Meenks 1987).

** *Riccardia hawaica* (Steph.) H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 528, 1963 (Miller 1963). Bas.: *Aneura hawaica* Steph., Sp. Hepat. (Stephani) 6: 30, 1917 (Stephani 1917a).

** *Riccardia hebridensis* (Steph.) H.A.Mill., Phytologia 47 (4): 323, 1981 (Miller 1981). Bas.: *Aneura hebridensis* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 96, 1914 (Stephani and Watts 1914).

** *Riccardia herzogiana* (Steph.) Meenks et C.De Jong, Cryptog. Bryol. Lichénol. 6 (1): 12, 1985 (Meenks and de Jong 1985). Bas.: *Aneura herzogiana* Steph., Biblioth. Bot. 87 (2): 175, 1916 (Stephani 1916a).

** *Riccardia heteroclada* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 175, 1898 (Schiffner 1898a).

* *Riccardia hirtiflora* (Steph.) Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 19, 1964 (Schiffner and Arnell 1964). Bas.: *Aneura hirtiflora* Steph., Arch. Mus. Nac. Rio de Janeiro 13: 116, 1905 (Stephani 1905c). [404]

404 *Riccardia hirtiflora* is possibly conspecific with *Riccardia emarginata* (Gradstein and Costa 2003).

** *Riccardia humilis* (Gottsche) O.Yano, J. Hattori Bot. Lab. 56: 530, 1984 (Yano 1984). Bas.: *Pseudoneura humilis* Gottsche, Mexik. Leverm.: 260, 1863 (Gottsche 1863).
** *Riccardia hyalina* (Steph.) H.A.Mill., Phytologia 47 (4): 324, 1981 (Miller 1981). Bas.: *Aneura hyalina* Steph., Sp. Hepat. (Stephani) 6: 31, 1917 (Stephani 1917a).
** *Riccardia hydra* Hürl., Bauhinia 5 (4): 210, 1976 (Hürlimann 1976).
** *Riccardia hymenophylloides* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 175, 1898 (Schiffner 1898a).
* *Riccardia hymenophylloides* var. *flaccida* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 176, 1898 (Schiffner 1898a).
*** *Riccardia hymenophytoides* (Spruce) Meenks, Beih. Nova Hedwigia 88: 101, 1987 (Schultze-Motel and Menzel 1987). Bas.: *Aneura hymenophytoides* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 549, 1885 (Spruce 1885).
** *Riccardia hypipamensis* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 97, 1970 (Hewson 1970a).
** *Riccardia ibana* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 78, 1970 (Hewson 1970a).
*** *Riccardia incurvata* Lindb., Helsingf. Dagbl. 1878 (315, 18 Nov.): 2, 1878 (Lindberg 1878).
** *Riccardia innovans* (Steph.) Pagán, Bryologist 45 (4): 80, 1942 (Pagán 1942b). Bas.: *Aneura innovans* Steph., Symb. Antill. 2: 470, 1901 (Stephani 1901f).
** *Riccardia insularis* Schiffn., Deutsche Südpolar-Exped. 1901-1903, 8 (bot.) 1: 66, 1906 (Schiffner 1906a).
** *Riccardia intricata* (Steph.) H.A.Mill., Phytologia 47 (4): 324, 1981 (Miller 1981). Bas.: *Aneura intricata* Steph., Bot. Jahrb. Syst. 23 (1/2, 3): 301, 1896 (Stephani 1896a).
** *Riccardia jackii* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 165, 1898 (Schiffner 1898a).
* *Riccardia jackii* var. *densa* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 165, 1898 (Schiffner 1898a).
** *Riccardia judithae* Meenks et C.De Jong, Cryptog. Bryol. Lichénol. 6 (1): 12, 1985 (Meenks and de Jong 1985).
*** *Riccardia jugata* R.M.Schust., J. Hattori Bot. Lab. 62: 305, 1987 (Schuster 1987d).
* *Riccardia karstenii* (Steph.) Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 177, 1898 (Schiffner 1898a). Bas.: *Aneura karstenii* Steph., Hedwigia 32 (1): 23, 1893 (Stephani 1893a).
** *Riccardia laticostata* (Spruce) Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 12, 1964 (Schiffner and Arnell 1964). Bas.: *Aneura laticostata* Spruce, J. Linn. Soc., Bot. 30 (210): 367, 1895 (Gepp 1895b).
** *Riccardia latifrondoides* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 168, 1898 (Schiffner 1898a).
** *Riccardia lepidomitra* (Spruce) Gradst., J. Hattori Bot. Lab. 45: 130, 1979 (Gradstein and Hekking 1979). Bas.: *Aneura lepidomitra* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 549, 1885 (Spruce 1885).

** *Riccardia leptophylla* (Spruce) Herzog, Svensk Bot. Tidskr. 46 (1): 65, 1952 (Herzog 1952e). Bas.: *Aneura leptophylla* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 544, 1885 (Spruce 1885).

** *Riccardia leptothallus* R.M.Schust., J. Hattori Bot. Lab. 67: 87, 1989 (Schuster 1989).

** *Riccardia levieri* Schiffn., Österr. Bot. Z. 49 (4): 130, 1899 (Schiffner 1899b).

** *Riccardia lichenoides* (Steph.) H.A.Mill., Phytologia 47 (4): 324, 1981 (Miller 1981). Bas.: *Aneura lichenoides* Steph., Bot. Jahrb. Syst. 23 (1/2, 3): 301, 1896 (Stephani 1896a).

** *Riccardia ligulata* (Steph.) Pócs et Schäf.-Verw., Cryptog. Bryol. 31 (4): 390, 2010 (Schäfer-Verwimp 2010). Bas.: *Aneura ligulata* Steph., Sp. Hepat. (Stephani) 6: 32, 1917 (Stephani 1917a).

** *Riccardia lilliena* (Steph.) H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 527, 1963 (Miller 1963). Bas.: *Aneura lilliena* Steph., Sp. Hepat. (Stephani) 6: 33, 1917 (Stephani 1917a).

** *Riccardia limbata* (Steph.) E.W.Jones, Trans. Brit. Bryol. Soc. 3 (1): 79, 1956 (Jones 1956). Bas.: *Aneura limbata* Steph., Hedwigia 30 (5): 203, 1891 (Stephani 1891a).

** *Riccardia loefgrenii* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 14, 1964 (Schiffner and Arnell 1964).

** *Riccardia longiflora* (Steph.) Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 88, 1970 (Hewson 1970a). Bas.: *Aneura longiflora* Steph., Bull. Herb. Boissier 7 (10): 746 (256), 1899 (Stephani 1899f).

** *Riccardia longispica* (Steph.) Pearson, Forh. Vidensk.-Selsk. Kristiania 1892 (14): 4, 1893 (Pearson 1893). Bas.: *Aneura longispica* Steph., Bot. Gaz. 15 (11): 281, 1890 (Stephani 1890c).

** *Riccardia loriana* (Steph.) H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 528, 1963 (Miller 1963). Bas.: *Aneura loriana* Steph., Bull. Herb. Boissier 7 (10): 733 (243), 1899 (Stephani 1899f).

** *Riccardia macdonaldiana* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 93, 1970 (Hewson 1970a).

** *Riccardia macrantha* (Pearson) H.A.Mill., Phytologia 47 (4): 324, 1981 (Miller 1981). Bas.: *Aneura macrantha* Pearson, J. Linn. Soc., Bot. 46 (305): 17, 1922 (Pearson 1922b).

*** *Riccardia magnicellularis* Furuki, J. Hattori Bot. Lab. 100: 93, 2006 (Furuki 2006a).

*** *Riccardia metzgeriiformis* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 26: 295, 1963 (Schuster 1963b). Bas.: *Aneura metzgeriiformis* Steph., Bull. Herb. Boissier 7 (10): 753 (263), 1899 (Stephani 1899f).

** *Riccardia microscopica* (Nees) Kuntze, Revis. Gen. Pl. 2: 838, 1891 (Kuntze 1891). Bas.: *Aneura microscopica* Nees, Syn. Hepat. 4: 500, 1846 (Gottsche et al. 1846).

** *Riccardia minuta* (Steph.) W.Martin, Trans. & Proc. Roy. Soc. New Zealand 78 (4): 499, 1950 (Martin 1950). Bas.: *Aneura minuta* Steph., Sp. Hepat. (Stephani) 6: 34, 1917 (Stephani 1917a).

* *Riccardia multifidoides* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 166, 1898 (Schiffner 1898a). [405]

** *Riccardia multispica* (Steph.) S.Hatt., Bull. Tokyo Sci. Mus. 11: 164, 1944 (Hattori 1944d). Bas.: *Aneura multispica* Steph., Sp. Hepat. (Stephani) 6: 34, 1917 (Stephani 1917a).

** *Riccardia nadeaudii* (Steph.) Hürl., Bauhinia 5 (4): 201, 1976 (Hürlimann 1976). Bas.: *Aneura nadeaudii* Steph., Bull. Herb. Boissier 7 (10): 750 (260), 1899 (Stephani 1899f).

** *Riccardia newellana* (Steph.) H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 528, 1963 (Miller 1963). Bas.: *Aneura newellana* Steph., Sp. Hepat. (Stephani) 6: 35, 1917 (Stephani 1917a).

** *Riccardia nigra* (Steph.) H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 527, 1963 (Miller 1963). Bas.: *Aneura nigra* Steph., Sp. Hepat. (Stephani) 6: 35, 1917 (Stephani 1917a).

** *Riccardia nobilis* (Steph.) Schiffn., Consp. Hepat. Arch. Ind.: 56, 1898 (Schiffner 1898b). Bas.: *Aneura nobilis* Steph., Hedwigia 32 (1): 24, 1893 (Stephani 1893a).

** *Riccardia novo-amstelodamensis* Schiffn., Deutsche Südpolar-Exped. 1901-1903, 8 (bot.) 1: 65, 1906 (Schiffner 1906a).

** *Riccardia nudiflora* (Steph.) Grolle, Bryophyt. Biblioth. 48: 130, 1995 (Grolle 1995). Bas.: *Aneura nudiflora* Steph., Bot. Gaz. 15 (11): 282, 1890 (Stephani 1890c).

** *Riccardia obtusa* S.W.Arnell, Bot. Not. 105: 142, 1952 (Arnell 1952b).

** *Riccardia obtusifrons* (Steph.) H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 527, 1963 (Miller 1963). Bas.: *Aneura obtusifrons* Steph., Sp. Hepat. (Stephani) 6: 36, 1917 (Stephani 1917a).

** *Riccardia omkaliensis* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 97, 1970 (Hewson 1970a).

*** *Riccardia pallida* (Spruce) Meenks et C.De Jong, Cryptog. Bryol. Lichénol. 6 (1): 15, 1985 (Meenks and de Jong 1985). Bas.: *Aneura pallida* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 547, 1885 (Spruce 1885).

** *Riccardia palmatifida* (Steph.) H.A.Mill., Phytologia 47 (4): 324, 1981 (Miller 1981). Bas.: *Aneura palmatifida* Steph., Sp. Hepat. (Stephani) 6: 36, 1917 (Stephani 1917a).

* *Riccardia palmatiformis* Schiffn., J. Indian Bot. Soc. 38 (4): 538, 1959 [1960] (Schiffner et al. 1959). [406]

** *Riccardia papillata* (Gottsche) Hässel ex Gradst. et Hekking, J. Hattori Bot. Lab. 45: 130, 1979 (Gradstein and Hekking 1979). Bas.: *Pseudoneura papillata* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 185, 1864 (Gottsche 1864).

** *Riccardia paramorum* Meenks, J. Hattori Bot. Lab. 62: 176, 1987 (Meenks 1987).

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405 *Riccardia multifidoides* is conspecific with *Riccardia multifida* in Meijer (1959), but that was not based on examination of type material (Söderström et al. 2010a).

406 *Riccardia palmatiformis* was treated as a doubtful taxon with some affinity with *Riccardia levieri* by Srivastava and Udar (1976).

*** *Riccardia parasitans* (Steph.) Meenks et C.De Jong, Cryptog. Bryol. Lichénol. 6 (1): 17, 1985 (Meenks and de Jong 1985). Bas.: *Aneura parasitans* Steph., Biblioth. Bot. 87 (2): 175, 1916 (Stephani 1916a).

** *Riccardia parvula* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 172, 1898 (Schiffner 1898a).

** *Riccardia pauciramea* (Steph.) H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 527, 1963 (Miller 1963). Bas.: *Aneura pauciramea* Steph., Bull. Herb. Boissier 5 (10): 845, 1897 (Stephani 1897c).

** *Riccardia paulensis* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 16, 1964 (Schiffner and Arnell 1964).

** *Riccardia pectinata* (Austin) H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 526, 1963 (Miller 1963). Bas.: *Aneura pectinata* Austin, Bull. Torrey Bot. Club 5 (3): 15, 1874 (Austin 1874).

** *Riccardia pellucida* Piippo, J. Hattori Bot. Lab. 68: 134, 1990 (Piippo 1990). *Nom. nov. pro Aneura pellucida* Steph., Sp. Hepat. (Stephani) 6: 37, 1917 (Stephani 1917a), *nom. illeg.*

** *Riccardia pembaiensis* (Steph.) Hürl., Bauhinia 5 (4): 205, 1976 (Hürlimann 1976). Bas.: *Aneura pembaiensis* Steph., Sp. Hepat. (Stephani) 6: 37, 1917 (Stephani 1917a).

** *Riccardia pengagensis* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 108, 1970 (Hewson 1970a).

** *Riccardia perssonii* S.C.Srivast. et Udar, Lindbergia 4 (1/2): 127, 1977 (Srivastava and Udar 1977).

*** *Riccardia philippinensis* Furuki, J. Hattori Bot. Lab. 100: 94, 2006 (Furuki 2006a).

** *Riccardia phleganiana* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 80, 1970 (Hewson 1970a).

** *Riccardia plana* (Steph.) Hürl., Bauhinia 5 (4): 205, 1976 (Hürlimann 1976). Bas.: *Aneura plana* Steph., Sp. Hepat. (Stephani) 6: 38, 1917 (Stephani 1917a).

* *Riccardia plana* var. *minor* (Pearson) Hürl. ex H.A.Mill., H.Whittier et B.Whittier, Bryophyt. Biblioth. 25: 303, 1983 (Miller et al. 1983). Bas.: *Aneura plana* var. *minor* Pearson, J. Linn. Soc., Bot. 46 (305): 16, 1922 (Pearson 1922b).

** *Riccardia planifrons* (Spruce) Pagán, Bryologist 45 (4): 80, 1942 (Pagán 1942b). Bas.: *Aneura planifrons* Spruce, J. Linn. Soc., Bot. 30 (210): 368, 1895 (Gepp 1895b).

*** *Riccardia plumiformis* (Spruce) Hässel ex Meenks, Beih. Nova Hedwigia 88: 101, 1987 (Schultze-Motel and Menzel 1987). Bas.: *Aneura plumiformis* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 548, 1885 (Spruce 1885).

** *Riccardia plumosa* (Mitt.) E.O.Campb., J. Roy. Soc. New Zealand 1 (1): 24, 1971 (Campbell 1971). Bas.: *Sarcomitrium plumosum* Mitt., Bonplandia 10 (2): 19, 1862 (Mitten 1862).

*** *Riccardia poeppigiana* (Lehm. et Lindenb.) Hässel ex Meenks et C.De Jong, Cryptog. Bryol. Lichénol. 6 (1): 17, 1985 (Meenks and de Jong 1985). Bas.: *Jungermannia poeppigiana* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 23, 1834 (Lehmann 1834).

** *Riccardia porcina* (Hewson) L.Söderstr., Phytotaxa 202 (1): 70, 2015 (Söderström et al. 2015c). Bas.: *Riccardia bliklika* var. *porcina* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 84, 1970 (Hewson 1970a).

** *Riccardia portoricensis* (Steph.) Pagán, Bryologist 42 (1): 7, 1939 (Pagán 1939a). Bas.: *Aneura portoricensis* Steph., Bull. Herb. Boissier 7 (10): 739 (249), 1899 (Stephani 1899f).

** *Riccardia punahuina* (Steph.) H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 526, 1963 (Miller 1963). Bas.: *Aneura punahuina* Steph., Sp. Hepat. (Stephani) 6: 39, 1917 (Stephani 1917a).

** *Riccardia ramosissima* (Steph.) Grolle, Bryophyt. Biblioth. 48: 130, 1995 (Grolle 1995). Bas.: *Aneura ramosissima* Steph., Bull. Soc. Roy. Bot. Belgique, Compt. Rend. 30 (2): 196, 1891 [1892] (Stephani 1891b).

** *Riccardia regina* Meenks et C.De Jong, Cryptog. Bryol. Lichénol. 6 (1): 17, 1985 (Meenks and de Jong 1985).

*** *Riccardia regnellii* (Ångstr.) K.G.Hell, Bol. Fac. Filos. Univ. São Paulo, Bot. 25: 110, 1969 (Hell 1969). Bas.: *Pseudoneura regnellii* Ångstr., Öfvers. Kongl. Vetensk.-Akad. Förh. 33 (7): 90, 1876 [1877] (Ångström 1876).

** *Riccardia reyesiana* Meenks, Acta Bot. Hung. 32 (1/4): 207, 1986 (Meenks 1986).

** *Riccardia riccioides* Pearson, Univ. Calif. Publ. Bot. 10 (4): 310, 1923 (Pearson 1923).

* *Riccardia rigida* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 172, 1898 (Schiffner 1898a).

** *Riccardia robbinsii* Hewson et Grolle, J. Hattori Bot. Lab. 29: 72, 1966 (Grolle 1966i).

** *Riccardia robusta* (Steph.) H.A.Mill., Phytologia 47 (4): 324, 1981 (Miller 1981). Bas.: *Aneura robusta* Steph., Sp. Hepat. (Stephani) 6: 40, 1917 (Stephani 1917a).

** *Riccardia rockii* (Steph.) H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 527, 1963 (Miller 1963). Bas.: *Aneura rockii* Steph., Sp. Hepat. (Stephani) 6: 41, 1917 (Stephani 1917a).

** *Riccardia rupicola* (Steph.) Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 99, 1970 (Hewson 1970a). Bas.: *Aneura rupicola* Steph., Sp. Hepat. (Stephani) 6: 41, 1917 (Stephani 1917a).

** *Riccardia russellii* R.M.Schust., J. Hattori Bot. Lab. 67: 93, 1989 (Schuster 1989).

** *Riccardia saccatiflora* (Steph.) S.W.Arnell, Bot. Not. 105: 144, 1952 (Arnell 1952b). Bas.: *Aneura saccatiflora* Steph., Bot. Gaz. 15 (11): 282, 1890 (Stephani 1890c).

** *Riccardia santapaui* Udar et S.C.Srivast., Rev. Bryol. Lichénol. 39 (1): 155, 1973 (Udar and Srivastava 1973).

*** *Riccardia schwaneckei* (Steph.) Pagán, Bryologist 42 (1): 7, 1939 (Pagán 1939a). Bas.: *Aneura schwaneckei* Steph., Hedwigia 27 (11/12): 278, 1888 (Stephani 1888c).

** *Riccardia singapurensis* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 165, 1898 (Schiffner 1898a).

** *Riccardia smaragdina* Meenks et C.De Jong, Cryptog. Bryol. Lichénol. 6 (1): 20, 1985 (Meenks and de Jong 1985).

*** *Riccardia sprucei* (Steph.) Meenks et C.De Jong, Cryptog. Bryol. Lichénol. 6 (1): 22, 1985 (Meenks and de Jong 1985). Bas.: *Aneura sprucei* Steph., Bull. Herb. Boissier 5 (10): 844, 1897 (Stephani 1897c).

** *Riccardia squamifera* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 19, 1964 (Schiffner and Arnell 1964).

* *Riccardia stipatiflora* (Steph.) Pagán, Bryologist 45 (4): 81, 1942 (Pagán 1942b). Bas.: *Aneura stipatiflora* Steph., Hedwigia 32 (1): 27, 1893 (Stephani 1893a).

** *Riccardia stricta* R.M.Schust., J. Hattori Bot. Lab. 62: 326, 1987 (Schuster 1987d).

** *Riccardia subantarctica* Grolle et L.Söderstr., Phytotaxa 202 (1): 70, 2015 (Söderström et al. 2015c). *Nom. nov. pro Riccardia pauciramea* R.M.Schust., J. Hattori Bot. Lab. 67: 102, 1989 (Schuster 1989), *nom. illeg.*

** *Riccardia subexalata* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 163, 1898 (Schiffner 1898a).

* *Riccardia subexalata* var. *procera* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 164, 1898 (Schiffner 1898a).

* *Riccardia submersa* (Hook.f. et Taylor) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 431, 1877 (Trevisan 1877). Bas.: *Jungermannia multifida* var. *submersa* Hook.f. et Taylor, London J. Bot. 4: 94, 1845 (Hooker and Taylor 1845).

** *Riccardia submultifida* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 128, 1934 (Horikawa 1934).

** *Riccardia subpalmata* (Steph.) Hürl., Bauhinia 5 (4): 194, 1976 (Hürlimann 1976). Bas.: *Aneura subpalmata* Steph., Sp. Hepat. (Stephani) 6: 43, 1917 (Stephani 1917a).

** *Riccardia subsimplex* (Steph.) Pagán, Bryologist 45 (4): 81, 1942 (Pagán 1942b). Bas.: *Aneura subsimplex* Steph., Hedwigia 32 (1): 27, 1893 (Stephani 1893a).

** *Riccardia sumatrana* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 173, 1898 (Schiffner 1898a).

** *Riccardia tahitensis* (Steph.) Hürl., Bauhinia 5 (4): 201, 1976 (Hürlimann 1976). Bas.: *Aneura tahitensis* Steph., Bull. Herb. Boissier 7 (10): 728 (238), 1899 (Stephani 1899f).

* *Riccardia tenella* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 95, 1970 (Hewson 1970a).

*** *Riccardia tenuicula* (Spruce) Meenks, Beih. Nova Hedwigia 88: 101, 1987 (Schultze-Motel and Menzel 1987). Bas.: *Aneura tenuicula* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 545, 1885 (Spruce 1885).

** *Riccardia tenuis* (Steph.) Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 172, 1898 (Schiffner 1898a). Bas.: *Aneura tenuis* Steph., Hedwigia 32 (1): 28, 1893 (Stephani 1893a).

* *Riccardia tjibodensis* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 165, 1898 (Schiffner 1898a).

*** *Riccardia trichomanoides* (Spruce) Hässel ex Meenks, Beih. Nova Hedwigia 88: 101, 1987 (Schultze-Motel and Menzel 1987). Bas.: *Aneura trichomanoides* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 547, 1885 (Spruce 1885).

** *Riccardia trukensis* H.A.Mill. et Bonner, Beih. Nova Hedwigia 11: 70, 1963 (Miller et al. 1963).

** *Riccardia tumbareriensis* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 87, 1970 (Hewson 1970a).

** *Riccardia upoluna* (Steph.) Grolle, J. Hattori Bot. Lab. 36: 77, 1972 [1973] (Grolle and Schultze-Motel 1972). Bas.: *Aneura upoluna* Steph., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 91: 165, 1915 (Stephani 1915a).
** *Riccardia valida* (Steph.) J.J.Engel, Bryologist 78 (3): 362, 1975 (Engel 1975). Bas.: *Aneura valida* Steph., Sp. Hepat. (Stephani) 6: 44, 1917 (Stephani 1917a).
** *Riccardia venosa* (Steph.) Hürl., Bauhinia 5 (4): 208, 1976 (Hürlimann 1976). Bas.: *Aneura venosa* Steph., Sp. Hepat. (Stephani) 6: 45, 1917 (Stephani 1917a).
* *Riccardia villosa* (Steph.) Pandé et S.C.Srivast., Biol. Mem. 1 (1/2): 129, 1976 (Srivastava and Udar 1976). Bas.: *Aneura villosa* Steph., Sp. Hepat. (Stephani) 6: 45, 1917 (Stephani 1917a).
** *Riccardia virens* (Steph.) Hürl., Bauhinia 5 (4): 209, 1976 (Hürlimann 1976). Bas.: *Aneura virens* Steph., Sp. Hepat. (Stephani) 6: 45, 1917 (Stephani 1917a).
** *Riccardia virgata* (Gottsche) Pagán, Bryologist 42 (1): 7, 1939 (Pagán 1939a). Bas.: *Aneura virgata* Gottsche, Hedwigia 27 (11/12): 277, 1888 (Stephani 1888c).
** *Riccardia wallisii* (Steph.) Gradst., J. Hattori Bot. Lab. 45: 130, 1979 (Gradstein and Hekking 1979). Bas.: *Aneura wallisii* Steph., Hedwigia 32 (1): 28, 1893 (Stephani 1893a).
** *Riccardia wettsteinii* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 162, 1898 (Schiffner 1898a).
* *Riccardia wettsteinii* var. *angustilimbia* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 163, 1898 (Schiffner 1898a).
* *Riccardia wettsteinii* var. *crassa* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 163, 1898 (Schiffner 1898a).
* *Riccardia wettsteinii* var. *procera* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 162, 1898 (Schiffner 1898a).
* *Riccardia wettsteinii* var. *tenuiretis* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 162, 1898 (Schiffner 1898a).
** *Riccardia womersleyana* Hewson, Proc. Linn. Soc. New South Wales (ser. 2) 95 (1): 98, 1970 (Hewson 1970a).

** ***Verdoornia* R.M.Schust.**, J. Hattori Bot. Lab. 26: 291, 1963 (Schuster 1963b).
*** *Verdoornia succulenta* R.M.Schust., J. Hattori Bot. Lab. 26: 291, 1963 (Schuster 1963b).

*** Metzgeriaceae H.Klinggr.

by D. P. Costa

The treatment of Metzgeriaceae follows what was outlined in Hewson (1982), Kuwahara (1986), Crandall-Stotler and Stotler (2000), and Costa (2008).

*** ***Metzgeria* Raddi**, Jungermanniogr. Etrusca: 34, 1818 (Raddi 1818a). [407]
*** *Metzgeria acuminata* Steph., Bull. Herb. Boissier 7 (12): 934 (282), 1899 (Stephani 1899g).
*** *Metzgeria adscendens* Steph. ex K.I.Goebel, Flora 77: 427, 1893 (Goebel 1893a).
*** *Metzgeria agnewiae* Kuwah., Bryologist 76 (4): 569, 1973 (Kuwahara 1973b). [408]
*** *Metzgeria albinea* Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: cci, 1889 [1890] (Spruce 1889).
*** *Metzgeria albinea* var. *aberrans* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 27, 1964 (Schiffner and Arnell 1964).
*** *Metzgeria albinea* var. *angusta* (Steph.) D.P.Costa et Gradst., Bryologist 103 (4): 757, 2000 [2001] (Costa and Gradstein 2000). Bas.: *Metzgeria angusta* Steph., Bull. Herb. Boissier 7 (12): 944 (292), 1899 (Stephani 1899g).
*** *Metzgeria allionii* Steph., Sp. Hepat. (Stephani) 6: 47, 1917 (Stephani 1917a).
*** *Metzgeria alpina* R.M.Schust. et J.J.Engel, Brittonia 40 (2): 203, 1988 (Engel and Schuster 1988).
*** *Metzgeria americana* Masuzaki, Hikobia 15 (4): 441, 2010 (Masuzaki et al. 2010a).
*** *Metzgeria attenuata* Steph., Biblioth. Bot. 87 (2): 177, 1916 (Stephani 1916a).
*** *Metzgeria aurantiaca* Steph., Bull. Herb. Boissier 7 (12): 938 (286), 1899 (Stephani 1899g).
*** *Metzgeria auriculata* Grolle et Kuwah., Bryophyt. Biblioth. 28: 194, 1986 (Kuwahara 1986).
*** *Metzgeria bahiensis* Schiffn., Österr. Bot. Z. 61 (7/8): 262, 1911 (Schiffner 1911).
*** *Metzgeria bartlettii* Kuwah., Mem. New York Bot. Gard. 45: 561, 1987 (Kuwahara 1987).
*** *Metzgeria bischlerae* Kuwah., J. Hattori Bot. Lab. 40: 264, 1976 (Kuwahara 1976a).
*** *Metzgeria bracteata* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 553, 1885 (Spruce 1885).
*** *Metzgeria brasiliensis* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 22, 1964 (Schiffner and Arnell 1964).
*** *Metzgeria chilensis* Steph., Bull. Herb. Boissier 7 (12): 937 (285), 1899 (Stephani 1899g).
*** *Metzgeria ciliata* Raddi, Critt. Brasil.: 17, 1822 (Raddi 1822). [409]
*** *Metzgeria claviflora* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 556, 1885 (Spruce 1885).

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407 *Metzgeria* was divided into many subdivisions proposed by Kuwahara in a series of publications, but they are artificial and not accepted here.

408 *Metzgeria* agnewiae is conspecific with *Metzgeria consanguinea* in So (2004), but it was accepted by Costa (2008).

409 *Metzgeria ciliata* is conspecific with *Metzgeria furcata* in Grolle (2002) and with *Metzgeria dichotoma* in Gradstein and Costa (2003), but it was accepted by Costa (2008).

*** *Metzgeria cleefii* Kuwah., Proc. Kon. Ned. Akad. Wetensch. C 85 (3): 360, 1982 (Kuwahara 1982).
** *Metzgeria comata* Steph., Bull. Herb. Boissier 7 (12): 939 (287), 1899 (Stephani 1899g).
*** *Metzgeria conjugata* Lindb., Acta Soc. Sci. Fenn. 10: 495, 1875 (Lindberg 1875). [410]
*** *Metzgeria consanguinea* Schiffn., Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 60 (2): 271, 1893 (Schiffner 1893a).
*** *Metzgeria convoluta* Steph., Bull. Herb. Boissier 7 (12): 940 (288), 1899 (Stephani 1899g).
** *Metzgeria coorgensis* S.C.Srivast. et S.Srivast., Phytotaxonomy 4: 81, 2004 (Srivastava and Srivastava 2004).
** *Metzgeria corralensis* Steph., Bull. Herb. Boissier 7 (12): 933 (281), 1899 (Stephani 1899g).
*** *Metzgeria crassipilis* (Lindb.) A.Evans, Rhodora 11 (130): 188, 1909 (Evans 1909). Bas.: *Metzgeria furcata* subsp. *crassipilis* Lindb., Acta Soc. Fauna Fl. Fenn. 1 (2): 42, 1877 (Lindberg 1877b).
*** *Metzgeria cratoneura* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 24, 1964 (Schiffner and Arnell 1964).
*** *Metzgeria cylindra* Kuwah., Bryologist 81 (3): 405, 1978 (Kuwahara 1978).
** *Metzgeria decrescens* Steph., Bull. Herb. Boissier 7 (12): 932 (280), 1899 (Stephani 1899g).
*** *Metzgeria dichotoma* (Sw.) Nees, Syn. Hepat. 4: 504, 1846 (Gottsche et al. 1846). Bas.: *Jungermannia dichotoma* Sw., Prodr. (Swartz): 145, 1788 (Swartz 1788).
** *Metzgeria divaricata* A.Evans, Proc. Amer. Acad. Arts 58 (7): 288, 1923 (Evans 1923a).
*** *Metzgeria dorsipara* (Herzog) Kuwah., J. Hattori Bot. Lab. 40: 269, 1976 (Kuwahara 1976a). Bas.: *Metzgeria violacea* var. *dorsipara* Herzog, Svensk Bot. Tidskr. 51 (1): 187, 1957 (Herzog 1957a).
*** *Metzgeria duricosta* Steph., Sp. Hepat. (Stephani) 6: 50, 1917 (Stephani 1917a).
** *Metzgeria engelii* Kuwah., Hikobia 8 (3/4): 275, 1980 (Kuwahara 1980a).
** *Metzgeria epiphylla* A.Evans, Proc. Amer. Acad. Arts 58 (7): 303, 1923 (Evans 1923a).
*** *Metzgeria filicina* Mitt., Hooker's J. Bot. Kew Gard. Misc. 3: 361, 1851 (Mitten 1851).
** *Metzgeria flavovirens* Colenso, Trans. & Proc. New Zealand Inst. 21: 79, 1889 (Colenso 1889).
* *Metzgeria foliicola* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 181, 1898 (Schiffner 1898a). [411]
*** *Metzgeria francana* Steph., Sp. Hepat. (Stephani) 6: 51, 1917 (Stephani 1917a).

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410 *Metzgeria conjugata* is a complex taxon. Fuselier et al. (2009) demonstrated the occurrence of two clearly separated lineages, a northern North American lineage (possibly corresponding to *Metzgeria conjugata* s.str.) and a southern North American and European lineage (possibly corresponding to *Metzgeria simplex*).

411 *Metzgeria foliicola* is conspecific with *Metzgeria albinea* in Kuwahara (1986), but it was accepted by So (2002c).

** *Metzgeria frontipilis* Lindb., Acta Soc. Fauna Fl. Fenn. 1 (2): 14, 1877 (Lindberg 1877b).
*** *Metzgeria fruticola* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 554, 1885 (Spruce 1885).
*** *Metzgeria furcata* (L.) Corda, Gen. hepat.: 654, 1829 (Corda 1829). Bas.: *Jungermannia furcata* L., Sp. Pl. 1: 1136, 1753 (Linnaeus 1753). [412]
* *Metzgeria furcata* var. *expansa* Douin, Rev. Bryol. 30 (3): 47, 1903 (Douin 1903).
* *Metzgeria furcata* var. *pacifica* Brinkm., Bryologist 34 (2): 15, 1931 (Brinkman 1931).
*** *Metzgeria grandiflora* A.Evans, Torreya 16 (3): 68, 1916 (Evans 1916).
** *Metzgeria hasselii* Kuwah., J. Hattori Bot. Lab. 40: 509, 1976 (Kuwahara 1976c).
** *Metzgeria hebridensis* Steph., Sp. Hepat. (Stephani) 6: 51, 1917 (Stephani 1917a).
*** *Metzgeria hegewaldii* Kuwah., Nova Hedwigia 34: 784, 1981 (Kuwahara 1981).
*** *Metzgeria herminieri* Schiffn., Österr. Bot. Z. 61 (7/8): 261, 1911 (Schiffner 1911).
* *Metzgeria heteroramea* Steph., Biblioth. Bot. 87 (2): 178, 1916 (Stephani 1916a).
** *Metzgeria imberbis* J.B.Jack et Steph., Hedwigia 34 (6): 316, 1895 (Jack and Stephani 1895).
*** *Metzgeria inflata* Steph., Bull. Herb. Boissier 7 (12): 936 (284), 1899 (Stephani 1899g).
*** *Metzgeria jamesonii* Kuwah., Bryophyt. Biblioth. 28: 157, 1986 (Kuwahara 1986).
** *Metzgeria kanaii* Kuwah., Fl. E. Himalaya 2: 240, 1971 (Hattori 1971a).
*** *Metzgeria kinabaluensis* Masuzaki, Hikobia 16 (1): 59, 2011 (Masuzaki 2011). Based on: *Apometzgeria pubescens* var. *kinabaluensis* Kuwah., J. Hattori Bot. Lab. 28: 166, 1965 (Kuwahara 1965), *nom. inval.*
** *Metzgeria kuwaharae* Piippo, Acta Bot. Fenn. 143: 8, 1991 (Piippo 1991).
** *Metzgeria laciniata* Kuwah., Bryologist 81 (3): 406, 1978 (Kuwahara 1978).
*** *Metzgeria lechleri* Steph., Bull. Herb. Boissier 7 (12): 942 (290), 1899 (Stephani 1899g).
*** *Metzgeria leptoneura* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 555, 1885 (Spruce 1885).
** *Metzgeria leptoneura* var. *breviseta* (Schiffn.) O.Yano, J. Hattori Bot. Lab. 56: 532, 1984 (Yano 1984). Bas.: *Metzgeria hamata* var. *breviseta* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 27, 1964 (Schiffner and Arnell 1964).
** *Metzgeria leptoneura* var. *polychaeta* R.M.Schust., Phytotaxa 202 (1): 70, 2015 (Söderström et al. 2015c). Based on: *Metzgeria leptoneura* var. *polychaeta* R.M.Schust., J. Hattori Bot. Lab. 70: 150, 1991 (Schuster 1991b), *nom. inval.*
*** *Metzgeria liebmaniana* Lindenb. et Gottsche, Syn. Hepat. 4: 505, 1846 (Gottsche et al. 1846).
*** *Metzgeria lindbergii* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 182, 1898 (Schiffner 1898a).
** *Metzgeria litoralis* J.J.Engel et Kuwah., Bryologist 76 (2): 293, 1973 (Engel and Kuwahara 1973).

412 *Metzgeria furcata* includes several cryptic species as demonstrated by Fuselier et al. (2009).

*** *Metzgeria longitexta* Steph., Bull. Herb. Boissier 7 (12): 940 (288), 1899 (Stephani 1899g).
** *Metzgeria macrospora* Kuwah., J. Hattori Bot. Lab. 32: 17, 1969 (Kuwahara 1969a).
** *Metzgeria macveanii* Kuwah., Rev. Bryol. Lichénol. 36 (3/4): 539, 1969 [1970] (Kuwahara 1969b).
*** *Metzgeria maegdefraui* Kuwah., Hikobia 8 (3/4): 269, 1980 (Kuwahara 1980b).
** *Metzgeria magellanica* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 43, 1890 (Schiffner 1890).
*** *Metzgeria metaensis* Kuwah., Proc. Kon. Ned. Akad. Wetensch. C 85 (3): 375, 1982 (Kuwahara 1982).
*** *Metzgeria mexicana* Steph., Sp. Hepat. (Stephani) 6: 55, 1917 (Stephani 1917a).[413]
** *Metzgeria monoica* Kuwah. et J.J.Engel, Hikobia 8 (3/4): 284, 1980 (Kuwahara 1980a).
*** *Metzgeria myriopoda* Lindb., Acta Soc. Fauna Fl. Fenn. 1 (2): 22, 1877 (Lindberg 1877b).
*** *Metzgeria neotropica* Kuwah., Nova Hedwigia 34: 779, 1981 (Kuwahara 1981).
*** *Metzgeria nudifrons* Steph., Hedwigia 31 (3): 126, 1892 (Stephani 1892d).
*** *Metzgeria parviinvolucrata* Kuwah., Nova Hedwigia 34: 774, 1981 (Kuwahara 1981).
** *Metzgeria patagonica* Steph., Bull. Herb. Boissier 7 (12): 940 (288), 1899 (Stephani 1899g).
*** *Metzgeria polytricha* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 553, 1885 (Spruce 1885).
*** *Metzgeria procera* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 166, 1855 (Mitten 1855).
*** *Metzgeria psilocraspeda* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 25, 1964 (Schiffner and Arnell 1964).
*** *Metzgeria pubescens* (Schrank) Raddi, Jungermanniogr. Etrusca: 35, 1818 (Raddi 1818a). Bas.: *Jungermannia pubescens* Schrank, Prim. Fl. Salisb.: 231, 1792 (Schrank 1792).
*** *Metzgeria pulvinata* Steph., Biblioth. Bot. 87 (2): 179, 1916 (Stephani 1916a).
** *Metzgeria quadrifaria* Steph., Bull. Herb. Boissier 7 (12): 953 (301), 1899 (Stephani 1899g).
** *Metzgeria raoi* S.C.Srivast. et S.Srivast., Phytotaxonomy 4: 83, 2004 (Srivastava and Srivastava 2004).
** *Metzgeria rigida* Lindb., Acta Soc. Fauna Fl. Fenn. 1 (2): 43, 1877 (Lindberg 1877b).
** *Metzgeria robinsonii* Steph., Sp. Hepat. (Stephani) 6: 60, 1917 (Stephani 1917a).

413 *Metzgeria mexicana* is conspecific with *Metzgeria subundulata* in Schuster (1992b), but it was accepted by Costa (2008).

** *Metzgeria roivainenii* Kuwah., J. Hattori Bot. Lab. 40: 516, 1976 (Kuwahara 1976c).
*** *Metzgeria rufula* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 555, 1885 (Spruce 1885).
** *Metzgeria saccata* Mitt., J. Linn. Soc., Bot. 22 (145): 241, 1886 (Mitten 1886a).
** *Metzgeria saxbyi* Pearson, Ann. Cryptog. Exot. 4 (2): 70, 1931 (Pearson 1931a).
** *Metzgeria scobina* Mitt., J. Linn. Soc., Bot. 22 (145): 243, 1886 (Mitten 1886a).
*** *Metzgeria scyphigera* A.Evans, Trans. Connecticut Acad. Arts 18 (5): 299, 1914 (Evans 1914c).
*** *Metzgeria senjoana* Masuzaki, Hikobia 15 (4): 445, 2010 (Masuzaki et al. 2010a).
** *Metzgeria setigera* R.M.Schust. ex Crand.-Stotl. et L.Söderstr., Phytotaxa 202 (1): 69, 2015 (Söderström et al. 2015c). Based on: *Metzgeria furcata* var. *setigera* R.M.Schust., J. Hattori Bot. Lab. 70: 149, 1991 (Schuster 1991b), *nom. inval.*
** *Metzgeria sikkimensis* S.C.Srivast. et K.K.Rawat, Geophytology 31 (1/2): 71, 2001 [2003] (Srivastava and Rawat 2001).
* *Metzgeria simplex* Lorb. ex Müll.Frib., Hedwigia 80 (1/2): 115, 1941 (Müller 1941).
*** *Metzgeria sinuata* Loitl., Diagn. pl. nov.: 25, 1894 (Loitlesberger 1894).
** *Metzgeria sparrei* Kuwah., Hikobia 8 (3/4): 278, 1980 (Kuwahara 1980a).
*** *Metzgeria spindleri* Steph., Biblioth. Bot. 87 (2): 179, 1916 (Stephani 1916a).
*** *Metzgeria subaneura* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 22, 1964 (Schiffner and Arnell 1964).
** *Metzgeria submarginata* M.L.So, New Zealand J. Bot. 40 (2): 201, 2002 (So 2002b).
** *Metzgeria subundulata* (Lindb.) Kuwah., Bryologist 86 (3): 276, 1983 [1984] (Kuwahara 1983). Bas.: *Metzgeria furcata* subsp. *subundulata* Lindb., Acta Soc. Fauna Fl. Fenn. 1 (2): 42, 1877 (Lindberg 1877b).
** *Metzgeria temperata* Kuwah., J. Hattori Bot. Lab. 40: 219, 1976 (Kuwahara 1976b).
*** *Metzgeria uncigera* A.Evans, Ann. Bot. (Oxford) 24 (2): 276, 1910 (Evans 1910).
*** *Metzgeria undulata* Kuwah., Nova Hedwigia 34: 792, 1981 (Kuwahara 1981).
*** *Metzgeria violacea* (Ach.) Dumort., Recueil Observ. Jungerm.: 26, 1835 (Dumortier 1835). Bas.: *Jungermannia violacea* Ach., Beitr. Naturk. (Weber & Mohr) 1: 77, 1805 (Acharius 1805).

** ***Steereella* Kuwah.**, Amer. J. Bot. 60 (6): 602, 1973 (Kuwahara 1973a).
*** *Steereella lilliana* (Steph.) Kuwah., Bryophyt. Biblioth. 28: 179, 1986 (Kuwahara 1986). Bas.: *Metzgeria lilliana* Steph., Sp. Hepat. (Stephani) 6: 53, 1917 (Stephani 1917a).
*** *Steereella linearis* (Sw.) Kuwah., Amer. J. Bot. 60 (6): 604, 1973 (Kuwahara 1973a). Bas.: *Jungermannia linearis* Sw., Prodr. (Swartz): 145, 1788 (Swartz 1788).

** ***Vandiemenia* Hewson**, J. Hattori Bot. Lab. 52: 163, 1982 (Hewson 1982).
** *Vandiemenia ratkowskiana* Hewson, J. Hattori Bot. Lab. 52: 163, 1982 (Hewson 1982).

Pleuroziales Schljakov

*** Pleuroziaceae Müll.Frib.

by B. Thiers

*** ***Pleurozia* Dumort.**, Recueil Observ. Jungerm.: 15, 1835 (Dumortier 1835).

** **subg. *Constantifolia* B.M.Thiers**, Bryologist 96 (4): 526, 1993 (Thiers 1993).
*** *Pleurozia conchifolia* (Hook. et Arn.) Austin, Bull. Torrey Bot. Club 5 (3): 16, 1874 (Austin 1874). Bas.: *Jungermannia conchifolia* Hook. et Arn., Bot. Beechey Voy. 3: 110, 1832 (Hooker and Arnott 1832).
** *Pleurozia conchifolia* var. *papillosa* B.M.Thiers, Bryologist 96 (4): 528, 1993 (Thiers 1993).
*** *Pleurozia purpurea* Lindb., Acta Soc. Fauna Fl. Fenn. 1 (2): 27, 1877 (Lindberg 1877b). Based on: *Jungermannia purpurea* Lightf., Fl. Scot. 2: 778, 1777 (Lightfoot 1777), *nom. illeg*.

** **subg. *Diversifolia* B.M.Thiers**, Bryologist 96 (4): 531, 1993 (Thiers 1993).
*** *Pleurozia acinosa* (Mitt.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 412, 1877 (Trevisan 1877). Bas.: *Physiotium acinosum* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 102, 1860 [1861] (Mitten 1860c).
*** *Pleurozia articulata* (Lindb.) Lindb. et Lackström, Hepat. Scand. Exsicc.: 5 (adnot.), 1874 (Lindberg and Lackström 1874). Bas.: *Physiotium articulatum* Lindb., Öfvers. Förh. Finska Vetensk.-Soc. 12 (2): 78, 1870 (Lindberg 1870).
*** *Pleurozia caledonica* (Gottsche) Steph., Rev. Bryol. 33 (2): 29 (Paris 1906a). Bas.: *Physiotium caledonicum* Gottsche, Hedwigia 25 (2/3): 81, 1886 (Jack 1886).
*** *Pleurozia curiosa* B.M.Thiers, Bryologist 96 (4): 537, 1993 (Thiers 1993).
*** *Pleurozia heterophylla* Steph. ex Fulford, Mem. New York Bot. Gard. 23: 842, 1972 (Fulford 1972).
*** *Pleurozia johannis-winkleri* Herzog, Mitt. Inst. Allg. Bot. Hamburg 7 (3): 195, 1931 (Herzog 1931a).
*** *Pleurozia paradoxa* (J.B.Jack) Schiffn., Hepat. (Engl.-Prantl): 115, 1893 (Schiffner 1893b). Bas.: *Physiotium paradoxum* J.B.Jack, Hedwigia 25 (2/3): 85, 1886 (Jack 1886).
*** *Pleurozia subinflata* (Austin) Austin, Bull. Torrey Bot. Club 5 (3): 16, 1874 (Austin 1874). Bas.: *Physiotium subinflatum* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 224, 1869 (Austin 1869).

** **subg. *Pleurozia***
*** *Pleurozia gigantea* (F.Weber) Lindb., Hepat. Scand. Exsicc.: no. 5, 1874 (Lindberg and Lackström 1874). Bas.: *Jungermannia gigantea* F.Weber, Hist. Musc. Hepat. Prodr.: 57, 1815 (Weber 1815).

Incertae sedis

** *Pleurozia pocsii* Frank Müll., Polish Bot. J. 58 (1): 50, 2013 (Müller 2013).

Pelliidae He-Nygrén, Juslén, Ahonen, Glenny et Piippo
Fossombroniales Schljakov
Calyculariineae He-Nygrén, Juslén, Ahonen, Glenny et Piippo

*** Calyculariaceae He-Nygrén, Juslén, Ahonen, Glenny et Piippo

*** ***Calycularia* Mitt.**, J. Proc. Linn. Soc., Bot. 5 (18): 122, 1860 [1861] (Mitten 1860c).
*** *Calycularia crispula* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 122, 1860 [1861] (Mitten 1860c).
*** *Calycularia laxa* Lindb. et Arnell, Kongl. Svenska Vetensk.-Akad. Handl. (n.ser.) 23 (5): 66, 1889 (Lindberg and Arnell 1889).

Fossombroniineae R.M.Schust. ex Stotler et Crand.-Stotl.

** Allisoniaceae Schljakov

*** ***Allisonia* Herzog**, Hedwigia 80 (1/2): 77, 1941 (Herzog 1941a).
*** *Allisonia cockaynei* (K.I.Goebel) R.M.Schust., J. Hattori Bot. Lab. 26: 294, 1963 (Schuster 1963b). Bas.: *Moerckia cockaynei* K.I.Goebel, Flora 96: 190, 1906 (Goebel 1906).

*** Fossombroniaceae Hazsl. *nom. conserv.*

by R. Stotler, B. J. Crandall-Stotler and D. C. Cargill

*** ***Fossombronia* Raddi**, Jungermanniogr. Etrusca: 29, 1818 (Raddi 1818a).
*** *Fossombronia alaskana* Steere et Inoue, Bryologist 77 (1): 66, 1974 (Steere and Inoue 1974).
*** *Fossombronia alata* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 56: 340, 1984 (Scott and Pike 1984).
*** *Fossombronia altilamellosa* G.A.M.Scott et D.C.Pike, Fl. Austral. Suppl. 21: 114, 2003 (McCarthy 2003). Based on: *Fossombronia altilamellosa* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 62: 367, 1987 (Scott and Pike 1987), *nom. inval.*
*** *Fossombronia angulifolia* Perold, Bothalia 28 (2): 159, 1998 (Perold 1998b).
*** *Fossombronia angulosa* (Dicks.) Raddi, Jungermanniogr. Etrusca: 29, 1818 (Raddi 1818a). Bas.: *Jungermannia angulosa* Dicks., Fasc. Pl. Crypt. Brit. 1: 7, 1785 (Dickson 1785).

** *Fossombronia areolata* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 62: 368, 1987 (Scott and Pike 1987).
** *Fossombronia auricolor* G.A.M.Scott et D.C.Pike, Fl. Austral. Suppl. 21: 114, 2003 (McCarthy 2003). Based on: *Fossombronia auricolor* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 62: 370, 1987 (Scott and Pike 1987), *nom. inval.*
*** *Fossombronia australis* Mitt., J. Linn. Soc., Bot. 15 (82): 73, 1876 (Mitten 1876a).
*** *Fossombronia caespitiformis* (Raddi) De Not. ex Rabenh., Hepat. Eur., Leberm. 13-14: no. 123, 1860 [1861] (Rabenhorst 1860). Bas.: *Fossombronia angulosa* var. *caespitiformis* Raddi, Jungermanniogr. Etrusca: 30, 1818 (Raddi 1818a).
*** *Fossombronia caespitiformis* subsp. *multispira* (Schiffn.) J.R.Bray et Cargill, Bryologist 106 (1): 131, 2003 (Stotler et al. 2003). Bas.: *Fossombronia caespitiformis* var. *multispira* Schiffn., Österr. Bot. Z. 67 (4/5): 152, 1918 (Schiffner 1918).
*** *Fossombronia caledonica* Steph., Sp. Hepat. (Stephani) 6: 71, 1917 (Stephani 1917a).
*** *Fossombronia cederbergensis* Perold, Bothalia 28 (1): 1, 1998 (Perold 1998c).
*** *Fossombronia cerebriformis* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 56: 343, 1984 (Scott and Pike 1984).
*** *Fossombronia crassifolia* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 527, 1885 (Spruce 1885).
*** *Fossombronia crispa* Nees, Syn. Hepat. 4: 469, 1846 (Gottsche et al. 1846).
* *Fossombronia crispula* (Brot.) R.M.Schust., Hepat. Anthocerotae N. Amer. 5: 383, 1992 (Schuster 1992b). Bas.: *Jungermannia crispula* Brot., Fl. lusit. 2: 422, 1804 [1805] (Brotero 1804). [414]
*** *Fossombronia cristula* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 228, 1869 (Austin 1869).
*** *Fossombronia cultriformis* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 62: 371, 1987 (Scott and Pike 1987).
*** *Fossombronia densa* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 62: 372, 1987 (Scott and Pike 1987).
*** *Fossombronia densilamellata* S.W.Arnell, Bot. Not. 105: 317, 1952 (Arnell 1952a).
*** *Fossombronia echinata* Macvicar, Rev. Bryol. 38 (4): 73, 1911 (Macvicar 1911).
*** *Fossombronia elsieae* Perold, Bothalia 29 (1): 25, 1999 (Perold 1999c).
*** *Fossombronia fernandeziensis* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n. ser.) 46 (9): 15, 1911 (Stephani 1911b).
*** *Fossombronia fimbriata* Paton, J. Bryol. 8 (1): 1, 1974 (Paton 1974).
*** *Fossombronia fleischeri* Osterwald ex Loeske, Verh. Bot. Vereins Prov. Brandenburg 70: 125, 1928 (Loeske 1928).
*** *Fossombronia foveolata* Lindb., Helsingf. Dagbl. 1873 (353, 28 Dec): 2, 1873 (Lindberg 1873b).
** *Fossombronia fuhreri* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 62: 374, 1987 (Scott and Pike 1987).

414 *Fossombronia crispula* is based on the description most likely *Fossombronia pusilla*, but no material has been found.

*** *Fossombronia gemmifera* Perold, Bothalia 27 (1): 19, 1997 (Perold 1997a).
*** *Fossombronia glenii* Perold, Bothalia 27 (1): 20, 1997 (Perold 1997a).
** *Fossombronia grandis* Steph., Mém. Herb. Boissier 16: 29 (383), 1900 (Stephani 1900a).
* *Fossombronia gregaria* Colenso, Trans. & Proc. New Zealand Inst. 20: 252, 1888 (Colenso 1888). [415]
* *Fossombronia grossepapillata* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 105, 1914 (Stephani and Watts 1914). [416]
*** *Fossombronia hamatohirta* Steph., Hedwigia 33 (1): 8, 1894 (Stephani 1894a).
** *Fossombronia hewsoniae* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 62: 375, 1987 (Scott and Pike 1987).
*** *Fossombronia himalayensis* Kashyap, New Phytol. 14 (1): 4, 1915 (Kashyap 1915).
*** *Fossombronia hyalorhiza* Perold, Bothalia 29 (1): 83, 1999 (Perold 1999d).
*** *Fossombronia incurva* Lindb., Helsingf. Dagbl. 1873 (273, 7 Oct): 2, 1873 (Lindberg 1873c).
*** *Fossombronia indica* Steph., Sp. Hepat. (Stephani) 6: 73, 1917 (Stephani 1917a).
* *Fossombronia integerrima* Steph., Mém. Herb. Boissier 16: 40 (394), 1900 (Stephani 1900a). [417]
* *Fossombronia integrifolia* Steph., Sp. Hepat. (Stephani) 6: 73, 1917 (Stephani 1917a). [418]
*** *Fossombronia intestinalis* Taylor, London J. Bot. 5: 408, 1846 (Taylor 1846b).
*** *Fossombronia japonica* Schiffn., Österr. Bot. Z. 49 (11): 389, 1899 (Schiffner 1899c).
** *Fossombronia laciniata* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 62: 375, 1987 (Scott and Pike 1987).
*** *Fossombronia lamellata* Steph., Hedwigia 33 (1): 9, 1894 (Stephani 1894a).
*** *Fossombronia leucoxantha* (Lehm.) Lehm. et Lindenb., Syn. Hepat. 4: 469, 1846 (Gottsche et al. 1846). Bas.: *Jungermannia leucoxantha* Lehm., Linnaea 4: 368, 1829 (Lehmann 1829).
*** *Fossombronia longiseta* (Austin) Austin, Hepat. bor.-amer.: 30, 1873 (Austin 1873). Bas.: *Androcryphia longiseta* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 228, 1869 (Austin 1869).
*** *Fossombronia lophoclada* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 529, 1885 (Spruce 1885).
** *Fossombronia lophoscypha* Hässel, Beih. Nova Hedwigia 131: 16, 2007 (Hässel and Villagrán 2007).
*** *Fossombronia luetzelburgiana* K.I.Goebel, Flora 105: 55, 1912 (Goebel 1912).
*** *Fossombronia macrocalyx* Steph., Sp. Hepat. (Stephani) 6: 74, 1917 (Stephani 1917a).

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415 *Fossombronia gregaria* is possibly conspecific with *Fossombronia australis* (Scott and Pike 1988b).

416 *Fossombronia grossepapillata* may be conspecific with *Fossombronia papillata*, but the type specimen is too immature to allow determination (Scott and Pike 1984).

417 *Fossombronia integerrima* is possibly conspecific with *Fossombronia australis*.

418 *Fossombronia integrifolia* is possibly conspecific with *Fossombronia foveolata* (Scott and Pike 1984).

* *Fossombronia macrophylla* Colenso, Trans. & Proc. New Zealand Inst. 18: 285, 1886 (Colenso 1886a).

** *Fossombronia magnaspora* G.A.M.Scott et D.C.Pike, Fl. Austral. Suppl. 21: 114, 2003 (McCarthy 2003). Based on: *Fossombronia magnaspora* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 62: 377, 1987 (Scott and Pike 1987), *nom. inval.*

*** *Fossombronia marindae* Perold, Bothalia 29 (1): 86, 1999 (Perold 1999d).

** *Fossombronia maritima* (Paton) Paton, J. Bryol. 18 (2): 367, 1994 (Paton 1994). Bas.: *Fossombronia pusilla* var. *maritima* Paton, J. Bryol. 7 (3): 244, 1973 (Paton 1973).

*** *Fossombronia marshii* J.R.Bray et Stotler, Phytologia 92 (2): 230, 2010 (Stotler et al. 2010).

** *Fossombronia microlamellata* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 56: 347, 1984 (Scott and Pike 1984).

*** *Fossombronia mittenii* Tind., J. Bot. 36: 44, 1898 (Tindall 1898).

*** *Fossombronia montaguensis* S.W.Arnell, Bot. Not. 105: 316, 1952 (Arnell 1952a).

*** *Fossombronia monticola* Perold, Bothalia 29 (1): 87, 1999 (Perold 1999d).

*** *Fossombronia mylioides* Inoue, J. Hattori Bot. Lab. 37: 296, 1973 (Inoue 1973).

* *Fossombronia nigricaulis* Colenso, Trans. & Proc. New Zealand Inst. 18: 248, 1886 (Colenso 1886b). [419]

** *Fossombronia nyikaensis* Perold, Bothalia 31 (1): 48, 2001 (Perold 2001c).

*** *Fossombronia papillata* Steph., Hedwigia 28 (3): 157, 1889 (Stephani 1889d).

*** *Fossombronia paranapanemae* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 34, 1964 (Schiffner and Arnell 1964).

*** *Fossombronia peruviana* Gottsche et Hampe, Linnaea 27 (5): 555, 1854 (Hampe 1854).

*** *Fossombronia porphyrorhiza* (Nees) Prosk., Bryologist 58 (3): 197, 1955 (Proskauer 1955). Bas.: *Jungermannia porphyrorhiza* Nees, Fl. Bras. (Martius) 1 (1): 343, 1833 (Nees 1833a).

** *Fossombronia pulvinata* Steph., Wiss. Ergebn. Deut. Zentr.-Afr. Exped. (1907-08), Bot. 2: 113, 1911 (Stephani 1911a).

*** *Fossombronia punctata* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 56: 341, 1984 (Scott and Pike 1984).

*** *Fossombronia purpureospora* G.A.M.Scott et D.C.Pike, Fl. Austral. Suppl. 21: 114, 2003 (McCarthy 2003). Based on: *Fossombronia purpureospora* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 62: 379, 1987 (Scott and Pike 1987), *nom. inval.*

*** *Fossombronia pusilla* (L.) Nees, Naturgesch. Eur. Leberm. 3: 319, 1838 (Nees 1838b). Bas.: *Jungermannia pusilla* L., Sp. Pl. 1: 1136, 1753 (Linnaeus 1753).

*** *Fossombronia renateae* Perold, Bothalia 29 (1): 77, 1999 (Perold 1999b).

*** *Fossombronia reticulata* Steph., Hedwigia 33 (1): 9, 1894 (Stephani 1894a).

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419 *Fossombronia nigricaulis* is possibly conspecific with *Fossombronia australis* (Scott and Pike 1984).

* *Fossombronia rosulata* Colenso, Trans. & Proc. New Zealand Inst. 18: 248, 1886 (Colenso 1886b).

** *Fossombronia rudis* G.A.M.Scott et D.C.Pike, Beih. Nova Hedwigia 90: 110, 1988 (Scott and Pike 1988a).

*** *Fossombronia ruminata* Cargill, Phytotaxa 65: 45, 2012 (Cargill et al. 2012). *Nom. nov. pro Fossombronia maritima* G.A.M.Scott et D.C.Pike, Fl. Austral. Suppl. 21: 114, 2003 (McCarthy 2003), *nom. illeg.*

** *Fossombronia rupestris* G.A.M.Scott et D.C.Pike, Fl. Austral. Suppl. 21: 114, 2003 (McCarthy 2003). Based on: *Fossombronia rupestris* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 62: 381, 1987 (Scott and Pike 1987), *nom. inval.*

*** *Fossombronia rwandaensis* Perold, Bothalia 28 (1): 45, 1998 (Perold 1998a).

*** *Fossombronia scrobiculata* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 56: 341, 1984 (Scott and Pike 1984).

*** *Fossombronia spinifolia* Steph., Mém. Herb. Boissier 16: 35 (389), 1900 (Stephani 1900a).

* *Fossombronia spinosa* Perold, Bothalia 29 (1): 29, 1999 (Perold 1999c).

*** *Fossombronia stephanii* Schiffn. ex Steph., Mém. Herb. Boissier 16: 27 (381), 1900 (Stephani 1900a).

*** *Fossombronia straussiana* Perold, Bothalia 27 (1): 24, 1997 (Perold 1997a).

* *Fossombronia subsaccata* Steph., Sp. Hepat. (Stephani) 6: 75, 1917 (Stephani 1917a). [420]

*** *Fossombronia swaziensis* Perold, Bothalia 28 (2): 162, 1998 (Perold 1998b).

** *Fossombronia tesselata* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 62: 382, 1987 (Scott and Pike 1987).

*** *Fossombronia texana* Lindb., Acta Soc. Sci. Fenn. 10: 533, 1875 (Lindberg 1875).

*** *Fossombronia truncata* G.A.M.Scott et D.C.Pike, Fl. Austral. Suppl. 21: 114, 2003 (McCarthy 2003). Based on: *Fossombronia truncata* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 62: 383, 1987 (Scott and Pike 1987), *nom. inval.*

*** *Fossombronia tumida* Mitt., J. Linn. Soc., Bot. 16 (91): 193, 1877 (Mitten 1877).

** *Fossombronia valparaisiana* Hässel, Beih. Nova Hedwigia 131: 14, 2007 (Hässel and Villagrán 2007).

** *Fossombronia vermiculata* G.A.M.Scott et D.C.Pike, J. Hattori Bot. Lab. 56: 345, 1984 (Scott and Pike 1984).

*** *Fossombronia wattsii* Steph., Sp. Hepat. (Stephani) 6: 75, 1917 (Stephani 1917a).

*** *Fossombronia wondraczekii* (Corda) Dumort. ex Lindb., Helsingf. Dagbl. 1873 (273, 7 Oct): 2, 1873 (Lindberg 1873c). Bas.: *Jungermannia wondraczekii* Corda, Deutschl. Fl. (Sturm), Abt. 2, Cryptog.: 30, 1830 (Corda 1830).

*** *Fossombronia wrightii* Austin, Bot. Bull. (Hanover) 1 (8): 36, 1876 (Austin 1876a).

** *Fossombronia zuurbergensis* Perold, Bothalia 31 (1): 25, 2001 (Perold 2001b).

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420 *Fossombronia subsaccata* has a sterile and unidentifiable type specimen (Scott and Pike 1988b).

*** Petalophyllaceae Stotler et Crand.-Stotl.

by R. Stotler and B.J. Crandall-Stotler

*** ***Petalophyllum* Nees et Gottsche**, Nov. Stirp. Pug. 8: 29, 1844 (Lehmann 1844).
*** *Petalophyllum americanum* C.H.Ford et Crand.-Stotl., Novon 12 (3): 335, 2002 (Crandall-Stotler et al. 2002).
*** *Petalophyllum hodgsoniae* C.H.Ford et Crand.-Stotl., Novon 12 (3): 336, 2002 (Crandall-Stotler et al. 2002).
*** *Petalophyllum indicum* Kashyap, J. Indian Bot. Soc. 7: 14, 1928 (Kashyap 1928).
*** *Petalophyllum preissii* Gottsche, Nov. Stirp. Pug. 8: 30, 1844 (Lehmann 1844).
*** *Petalophyllum ralfsii* (Wilson) Nees et Gottsche, Nov. Stirp. Pug. 8: 30, 1844 (Lehmann 1844). Bas.: *Jungermannia ralfsii* Wilson, Suppl. Engl. Bot. 4: tab. 2874, 1849 (Borrer et al. 1849).

*** ***Sewardiella* Kashyap**, New Phytol. 14 (1): 5, 1915 (Kashyap 1915).
*** *Sewardiella tuberifera* Kashyap, New Phytol. 14 (1): 5, 1915 (Kashyap 1915).
Makinoiineae He-Nygrén, Juslén, Ahonen, Glenny et Piippo

*** Makinoaceae Nakai

by R. Stotler and B.J. Crandall-Stotler

*** ***Makinoa* Miyake**, Bot. Mag. (Tokyo) 13 (144): 23, 1899 (Miyake 1899).
*** *Makinoa crispata* (Steph.) Miyake, Bot. Mag. (Tokyo) 13 (144): 23, 1899 (Miyake 1899). Bas.: *Pellia crispata* Steph., Bull. Herb. Boissier 5 (2): 103, 1897 (Stephani 1897b).

Pallaviciniales W.Frey et M.Stech
Pallaviciniineae R.M.Schust.

*** Hymenophytaceae R.M.Schust.

by R. Stotler and B.J. Crandall-Stotler

*** ***Hymenophyton* Dumort.**, Recueil Observ. Jungerm.: 25, 1835 (Dumortier 1835).
*** *Hymenophyton flabellatum* (Labill.) Dumort. ex Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 430, 1877 (Trevisan 1877). Bas.: *Jungermannia flabellata* Labill., Nov. Holl. Pl. 2: 109, 1806 (Labillardière 1806).
*** *Hymenophyton leptopodum* (Hook.f. et Taylor) A.Evans, Trans. Connecticut Acad. Arts 8 (16): 274, 1893 (Evans 1893). Bas.: *Jungermannia leptopoda* Hook.f. et Taylor, London J. Bot. 3: 571, 1844 (Hooker and Taylor 1844d).

*** *Hymenophyton pedicellatum* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n. ser.) 46 (9): 11, 1911 (Stephani 1911b).

*** Moerckiaceae K.I.Goebel ex Stotler et Crand.-Stotl.

by B.J. Crandall-Stotler and R. Stotler

Mamontov et al. (2015) showed that the family Moerckiaceae is heterogeneous and they moved *Hattorianthus* and *Moerckia flotoviana* to their new family Cordaeaceae. However, the type of Moerckiaceae (*Moerckia hibernica*) was not included in the study and only provisionally left in *Moerckia*. We prefer to follow Crandall-Stotler & Stotler (2007) until *M. hibernica* is further studied.

*** ***Hattorianthus* R.M.Schust. et Inoue**, Bull. Natl. Sci. Mus. Tokyo, B 1 (3): 103, 1975 (Schuster and Inoue 1975).
*** *Hattorianthus erimonus* (Steph.) R.M.Schust. et Inoue, Bull. Natl. Sci. Mus. Tokyo, B 1 (3): 106, 1975 (Schuster and Inoue 1975). Bas.: *Pallavicinia erimona* Steph., Bull. Herb. Boissier 5 (2): 102, 1897 (Stephani 1897b).

*** ***Moerckia* Gottsche**, Hepat. Eur., Leberm. 13-14: no. 121, 1860 [1861] (Rabenhorst 1860).
*** *Moerckia blyttii* (Mørch) Brockm., Arch. Vereins Freunde Naturgesch. Mecklenburg 17: 190, 1863 (Brockmüller 1863). Bas.: *Jungermannia blyttii* Mørch, Fl. Danica 12: 6, 1830 (Hornemann 1830).
*** *Moerckia flotoviana* (Nees) Schiffn., Österr. Bot. Z. 51 (2): 43, 1901 (Schiffner 1901). Bas.: *Cordaea flotoviana* Nees, Flora 16 (26): 405, 1833 (Nees 1833b).
*** *Moerckia hibernica* (Hook.) Gottsche, Hepat. Eur., Leberm. 13-14: no. 121, 1860 [1861] (Rabenhorst 1860). Bas.: *Jungermannia hibernica* Hook., Brit. Jungermann.: tab. 78, 1816 (Hooker 1816a).

*** Pallaviciniaceae Mig.

by R. Stotler and B.J. Crandall-Stotler

** Pallavicinioideae Mig. ex Grolle

*** ***Jensenia* Lindb.**, Not. Sällsk. Fauna Fl. Fenn. Förh. 9: 13, 1868 (Lindberg 1868a).
*** *Jensenia connivens* (Colenso) Grolle, Rev. Bryol. Lichénol. 33 (1/2): 228, 1964 [1965] (Grolle 1964j). Bas.: *Symphyogyna connivens* Colenso, Trans. & Proc. New Zealand Inst. 20: 254, 1888 (Colenso 1888).

* *Jensenia crassifrons* (Steph.) S.Schuette et Stotler, J. Hattori Bot. Lab. 97: 300, 2005 (Schuette and Stotler 2005). Bas.: *Pallavicinia crassifrons* Steph., Mém. Herb. Boissier 11: 21 (325), 1900 (Stephani 1900c). [421]

*** *Jensenia decipiens* (Mitt.) Grolle, Rev. Bryol. Lichénol. 33 (1/2): 228, 1964 [1965] (Grolle 1964j). Bas.: *Steetzia decipiens* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 123, 1860 [1861] (Mitten 1860c).

*** *Jensenia difformis* (Nees) Grolle, Rev. Bryol. Lichénol. 33 (1/2): 228, 1964 [1965] (Grolle 1964j). Bas.: *Jungermannia difformis* Nees, Fl. Bras. (Martius) 1 (1): 329, 1833 (Nees 1833a).

*** *Jensenia florschuetzii* Gronde, Proc. Kon. Ned. Akad. Wetensch. C 83 (3): 273, 1980 (Van der Gronde 1980).

*** *Jensenia spinosa* (Lindenb. et Gottsche) Grolle, Acta Bot. Fenn. 133: 65, 1986 (Grolle and Piippo 1986). Bas.: *Symphyogyna spinosa* Lindenb. et Gottsche, Syn. Hepat. 5: 786, 1847 (Gottsche et al. 1847).

*** *Jensenia wallisii* (J.B.Jack et Steph.) Grolle, Rev. Bryol. Lichénol. 33 (1/2): 228, 1964 [1965] (Grolle 1964j). Bas.: *Pallavicinia wallisii* J.B.Jack et Steph., Hedwigia 31 (1): 23, 1892 (Jack and Stephani 1892).

*** ***Pallavicinia* Gray**, Nat. Arr. Brit. Pl. 1: 775, 1821 (Gray 1821) nom. conserv.

*** *Pallavicinia ambigua* (Mitt.) Steph., Mém. Herb. Boissier 11: 8 (312), 1900 (Stephani 1900a). Bas.: *Steetzia ambigua* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 123, 1860 [1861] (Mitten 1860c).

** *Pallavicinia baldwinii* (Austin) A.Evans, Trans. Connecticut Acad. Arts 8 (15): 259, 1891 (Evans 1891). Bas.: *Steetzia baldwinii* Austin, Bull. Torrey Bot. Club 6 (52): 303, 1879 (Austin 1879).

* *Pallavicinia bipinnata* Steph., Sp. Hepat. (Stephani) 6: 62, 1917 (Stephani 1917a).

** *Pallavicinia camisassai* Gola, Mem. Reale Accad. Sci. Torino (ser. 2) 65 (1): 4, 1916 (Gola 1916).

** *Pallavicinia cylindrica* (Austin) A.Evans, Trans. Connecticut Acad. Arts 8 (15): 259, 1891 (Evans 1891). Bas.: *Steetzia cylindrica* Austin, Bull. Torrey Bot. Club 5 (3): 17, 1874 (Austin 1874).

** *Pallavicinia himalayensis* Schiffn., Mém. Herb. Boissier 11: 13 (317), 1900 (Stephani 1900c).

*** *Pallavicinia indica* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 183, 1898 (Schiffner 1898a).

*** *Pallavicinia levieri* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 184, 1898 (Schiffner 1898a).

*** *Pallavicinia lyellii* (Hook.) Gray, Nat. Arr. Brit. Pl. 1: 775, 1821 (Gray 1821). Bas.: *Jungermannia lyellii* Hook., Brit. Jungermann.: tab. 77, 1816 (Hooker 1816a).

** *Pallavicinia pilifera* Steph., Hedwigia 30 (6): 271, 1891 (Stephani 1891c).

** *Pallavicinia purpurea* Steph., Sp. Hepat. (Stephani) 6: 64, 1917 (Stephani 1917a).

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421 *Jensenia crassifrons* is possibly conspecific with *Jensenia difformis*.

** *Pallavicinia ridleyi* Steph., Sp. Hepat. (Stephani) 6: 64, 1917 (Stephani 1917a).
*** *Pallavicinia rubristipa* Schiffn., Österr. Bot. Z. 56 (1): 24, 1906 (Schiffner 1906b).
*** *Pallavicinia subciliata* (Austin) Steph., Mém. Herb. Boissier 11: 9 (313), 1900 (Stephani 1900c). Bas.: *Steetzia subciliata* Austin, Bull. Torrey Bot. Club 6 (52): 303, 1879 (Austin 1879).
*** *Pallavicinia xiphoides* (Hook.f. et Taylor) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 427, 1877 (Trevisan 1877). Bas.: *Jungermannia xiphoides* Hook.f. et Taylor, London J. Bot. 3: 569, 1844 (Hooker and Taylor 1844d).

*** ***Podomitrium* Mitt.**, Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 164, 1855 (Mitten 1855).
*** *Podomitrium malaccense* (Steph.) Campb., Amer. J. Bot. 2 (5): 199, 1915 (Campbell 1915). Bas.: *Hymenophyton malaccense* Steph., Hedwigia 34 (2): 46, 1895 (Stephani 1895c).
*** *Podomitrium marginatum* (Steph.) Hürl., Bauhinia 4 (1): 78, 1968 [1969] (Hürlimann 1968). Bas.: *Hymenophyton marginatum* Steph., Sp. Hepat. (Stephani) 6: 61, 1917 (Stephani 1917a).
*** *Podomitrium phyllanthus* (Hook.) Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 164, 1855 (Mitten 1855). Bas.: *Jungermannia phyllanthus* Hook., Musci Exot. 1: tab. 95, 1818 (Hooker 1818).

** Symphyogynoideae R.M.Schust. ex Grolle

** ***Greeneothallus* Hässel**, J. Bryol. 11 (1): 115, 1980 (Hässel 1980).
*** *Greeneothallus gemmiparus* Hässel, J. Bryol. 11 (1): 115, 1980 (Hässel 1980).

*** ***Seppeltia* Grolle**, J. Hattori Bot. Lab. 60: 276, 1986 (Grolle and Seppelt 1986).
*** *Seppeltia succuba* Grolle, J. Hattori Bot. Lab. 60: 276, 1986 (Grolle and Seppelt 1986).

*** ***Symphyogyna* Nees et Mont.**, Ann. Sci. Nat. Bot. (sér. 2) 5: 66, 1836 (Nees and Montagne 1836).
*** *Symphyogyna apiculispina* Steph., Biblioth. Bot. 87 (2): 180, 1916 (Stephani 1916a).
*** *Symphyogyna aspera* Steph. ex F.A.McCormick, Bot. Gaz. 58 (5): 403, 1914 (McCormick 1914).
** *Symphyogyna atronervia* Taylor, London J. Bot. 5: 409, 1846 (Taylor 1846b).
** *Symphyogyna bogotensis* Steph., Mém. Herb. Boissier 11: 42 (346), 1900 (Stephani 1900c). Based on: *Symphyogyna hymenophyllum* var. *bogotensis* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 181, 1864 (Gottsche 1864), *nom. inval.*
* *Symphyogyna boliviensis* Steph., Biblioth. Bot. 87 (2): 180, 1916 (Stephani 1916a).
*** *Symphyogyna brasiliensis* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 67, 1836 (Nees and Montagne 1836). *Nom. nov. pro Jungermannia brasiliensis* Nees, Enum. Pl. Crypt. Javae: 11, 1830 (Nees 1830), *nom. illeg.*
** *Symphyogyna brasiliensis* var. *angustior* (Gottsche, Lindenb. et Nees) Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 183, 1864 (Gottsche 1864). Bas.: *Symphyogyna brasiliensis*

β *angustior* Gottsche, Lindenb. et Nees, Syn. Hepat. 4: 484, 1846 (Gottsche et al. 1846).

** *Symphyogyna brasiliensis* var. *subsinuata* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 32, 1964 (Schiffner and Arnell 1964).

*** *Symphyogyna brongniartii* Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 265, 1843 (Montagne 1843).

*** *Symphyogyna circinata* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 69, 1836 (Nees and Montagne 1836).

*** *Symphyogyna digitisquama* Steph., Mém. Herb. Boissier 11: 31 (335), 1900 (Stephani 1900c).

** *Symphyogyna fuscovirens* A.Evans, Trans. Connecticut Acad. Arts 28 (6): 320, 1927 (Evans 1927).

*** *Symphyogyna hochstetteri* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 68, 1836 (Nees and Montagne 1836).

*** *Symphyogyna hymenophyllum* (Hook.) Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 5: 68, 1836 (Nees and Montagne 1836). Bas.: *Jungermannia hymenophyllum* Hook., Musci Exot. 1: tab. 14, 1818 (Hooker 1818).

** *Symphyogyna hymenophyllum* var. *heterogenum* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 536, 1885 (Spruce 1885).

** *Symphyogyna ignambiensis* Hürl., Bauhinia 4 (1): 79, 1968 [1969] (Hürlimann 1968).

** *Symphyogyna interrupta* Carrington et Pearson, Proc. Linn. Soc. New South Wales (ser. 2) 2 (4): 1053, 1888 (Carrington and Pearson 1888a).

** *Symphyogyna irregularis* Steph., Mém. Herb. Boissier 11: 29 (333), 1900 (Stephani 1900c).

** *Symphyogyna lacerosquama* Steph., Sp. Hepat. (Stephani) 6: 67, 1917 (Stephani 1917a).

*** *Symphyogyna leptothelia* Taylor, London J. Bot. 5: 408, 1846 (Taylor 1846b).

** *Symphyogyna lindmanii* A.Evans, Trans. Connecticut Acad. Arts 28 (6): 316, 1927 (Evans 1927).

*** *Symphyogyna luetzelburgii* Herzog, Repert. Spec. Nov. Regni Veg. 21 (1/7): 22, 1925 (Herzog 1925a).

*** *Symphyogyna marginata* Steph., Mém. Herb. Boissier 11: 30 (334), 1900 (Stephani 1900c).

*** *Symphyogyna mexicana* Steph., Rev. Bryol. 36 (6): 140, 1909 (Stephani 1909b).

** *Symphyogyna multiflora* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 133, 1914 (Stephani and Watts 1914).

* *Symphyogyna paucidens* Steph., Kungl. Svenska Vetensk.-Akad. Handl. (n.ser.) 46 (9): 13, 1911 (Stephani 1911b). [422]

*** *Symphyogyna podophylla* (Thunb.) Nees et Mont., Flora 29 (9): 135, 1846 (Krauss 1846). Bas.: *Jungermannia podophylla* Thunb., Prodr. Pl. Cap. 2: 174, 1800 (Thunberg 1800).

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422 *Symphyogyna paucidens* is a doubtful taxon. Hässel and Rubies (2009) could not find the type specimen.

* *Symphyogyna purpureolimbata* E.A.Hodgs., Trans. Roy. Soc. New Zealand, Bot. 3 (4): 95, 1965 (Hodgson 1965).
*** *Symphyogyna rectidens* Grolle, Acta Bot. Fenn. 133: 68, 1986 (Grolle and Piippo 1986).
** *Symphyogyna rhodina* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees, Syn. Hepat. 4: 487, 1846 (Gottsche et al. 1846). Bas.: *Jungermannia rhodina* Hook.f. et Taylor, London J. Bot. 4: 93, 1845 (Hooker and Taylor 1845).
*** *Symphyogyna rubescens* Steph., Mém. Herb. Boissier 11: 29 (333), 1900 (Stephani 1900c).
*** *Symphyogyna rubritincta* A.Evans, Trans. Connecticut Acad. Arts 27 (1): 38, 1925 (Evans 1925).
** *Symphyogyna semi-involucrata* Austin, Bull. Torrey Bot. Club 5 (3): 15, 1874 (Austin 1874).
** *Symphyogyna similis* Grolle, Acta Bot. Fenn. 133: 70, 1986 (Grolle and Piippo 1986).
*** *Symphyogyna sinuata* (Sw.) Nees et Mont., Voy. Amér. Mérid., Bot. 7 (1): 61, 1839 (Montagne 1839b). Bas.: *Jungermannia sinuata* Sw., Prodr. (Swartz): 145, 1788 (Swartz 1788).
*** *Symphyogyna subsimplex* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 166, 1855 (Mitten 1855).
*** *Symphyogyna tenuinervis* (Hook.f. et Taylor) Grolle, J. Hattori Bot. Lab. 61: 253, 1986 [1987] (Grolle 1986a). Bas.: *Jungermannia tenuinervis* Hook.f. et Taylor, London J. Bot. 3: 570, 1844 (Hooker and Taylor 1844d).
*** *Symphyogyna trivittata* Spruce, J. Linn. Soc., Bot. 30 (210): 365, 1895 (Gepp 1895b).
* *Symphyogyna ulvoides* (Reinw., Blume et Nees) Nees, Syn. Hepat. 4: 487, 1846 (Gottsche et al. 1846). Bas.: *Jungermannia ulvoides* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 196, 1824 [1825] (Reinwardt et al. 1824a). [423]
*** *Symphyogyna undulata* Colenso, Trans. & Proc. New Zealand Inst. 16: 356, 1884 (Colenso 1884).
** *Symphyogyna volkensii* Steph., Mém. Herb. Boissier 11: 35 (339), 1900 (Stephani 1900c).

** ***Symphyogynopsis* Grolle**, Acta Bot. Fenn. 133: 72, 1986 (Grolle and Piippo 1986).
*** *Symphyogynopsis gottscheana* (Mont. et Nees) Grolle, J. Hattori Bot. Lab. 63: 441, 1987 (Grolle 1987). Bas.: *Symphyogyna gottscheana* Mont. et Nees, Syn. Hepat. 4: 484, 1846 (Gottsche et al. 1846).

** ***Xenothallus* R.M.Schust.**, J. Hattori Bot. Lab. 26: 293, 1963 (Schuster 1963b).
*** *Xenothallus vulcanicola* R.M.Schust., J. Hattori Bot. Lab. 26: 293, 1963 (Schuster 1963b).

423 *Symphyogyna ulvoides* is probably a filmy fern (Schiffner 1900a), but he did not see any type material.

** Sandeothallaceae R.M.Schust.

** ***Sandeothallus* R.M.Schust.**, Nova Hedwigia 36: 10, 1982 (Schuster 1982).
** *Sandeothallus japonicus* (Inoue) Crand.-Stotl. et Stotler, Beih. Nova Hedwigia 131: 58, 2007 (Crandall-Stotler and Stotler 2007). Bas.: *Moerckia japonica* Inoue, Bull. Natl. Sci. Mus. Tokyo, B 11 (1): 8, 1985 (Inoue 1985).
** *Sandeothallus radiculosus* (Schiffn.) R.M.Schust., Nova Hedwigia 36: 11, 1982 (Schuster 1982). Bas.: *Moerckia radiculosa* Schiffn., Österr. Bot. Z. 51 (2): 48, 1901 (Schiffner 1901).

Phyllothalliineae R.M.Schust.

*** Phyllothalliaceae E.A.Hodgs. ex T.Katag.

*** ***Phyllothallia* E.A.Hodgs.**, Trans. Roy. Soc. New Zealand, Bot. 2 (19): 247, 1964 (Hodgson 1964).
*** *Phyllothallia fuegiana* R.M.Schust., Trans. Brit. Bryol. Soc. 5 (2): 284, 1967 (Schuster 1967d).
*** *Phyllothallia nivicola* E.A.Hodgs., Trans. Roy. Soc. New Zealand, Bot. 2 (19): 247, 1964 (Hodgson 1964).

Pelliales He-Nygrén, Juslén, Ahonen, Glenny et Piippo

*** Noterocladaceae W.Frey et M.Stech

Frey and Stech (2005a) proposed Noterocladaceae as a monogeneric family based on molecular and morphological evidence, which was later corroborated by Crandall-Stotler et al. (2010).

*** ***Noteroclada* Taylor ex Hook.f. et Wilson**, London J. Bot. 3: 166, 1844 (Hooker and Wilson 1844).
*** *Noteroclada confluens* Taylor, London J. Bot. 3: 166, 1844 (Hooker and Wilson 1844).

Excluded from the genus
* *Noteroclada longiuscula* Colenso, Trans. & Proc. New Zealand Inst. 19: 299, 1887 (Colenso 1887). [424]

424 *Noteroclada longiuscula* is neither a *Noteroclada* nor a *Fossombronia* species. The type specimen could not be found (Crandall-Stotler et al. 2010).

*** Pelliaceae H.Klinggr.

Frey and Stech (2005b) recognized Pelliaceae as a monogeneric family, which was later supported by Crandall-Stotler et al. (2010).

** ***Pellia*** **Raddi**, Jungermanniogr. Etrusca: 38, 1818 (Raddi 1818a) nom. conserv.

*** **subg. *Apopellia* Grolle**, J. Bryol. 12 (3): 427, 1983 (Grolle 1983a).
** *Pellia alpicola* R.M.Schust. ex L.Söderstr., A.Hagborg et von Konrat, Phytotaxa 76 (3): 39, 2013 (Söderström et al. 2013d). Based on: *Pellia endiviifolia* subsp. *alpicola* R.M.Schust., J. Hattori Bot. Lab. 70: 145, 1991 (Schuster 1991b), *nom. inval.*
*** *Pellia endiviifolia* (Dicks.) Dumort., Recueil Observ. Jungerm.: 27, 1835 (Dumortier 1835). Bas.: *Jungermannia endiviifolia* Dicks., Fasc. Pl. Crypt. Brit. 4: 19, 1801 (Dickson 1801).
** *Pellia megaspora* R.M.Schust., J. Bryol. 11 (3): 419, 1981 (Schuster 1981b).

*** **subg. *Pellia***
** *Pellia appalachiana* R.M.Schust., Phytotaxa 76 (3): 39, 2013 (Söderström et al. 2013d). Based on: *Pellia appalachiana* R.M.Schust., J. Hattori Bot. Lab. 70: 145, 1991 (Schuster 1991b), *nom. inval.*
*** *Pellia epiphylla* (L.) Corda, Gen. hepat.: 654, 1829 (Corda 1829). Bas.: *Jungermannia epiphylla* L., Sp. Pl. 1: 1135, 1753 (Linnaeus 1753).
** *Pellia epiphylla* subsp. *borealis* (Lorb.) Messe, Bull. Soc. Roy. Bot. Belgique 114 (1): 13, 1981 (Messe 1981). Bas.: *Pellia borealis* Lorb., Jahrb. Wiss. Bot. 80: 697, 1934 (Lorbeer 1934).
*** *Pellia neesiana* (Gottsche) Limpr., Hedwigia 15 (2): 18, 1876 (Limpricht 1876). Bas.: *Pellia epiphylla* f. *neesiana* Gottsche, Hedwigia 6 (5): 69, 1867 (Gottsche 1867).

Incertae sedis
* *Pellia cordaeana* Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 433, 1877 (Trevisan 1877).
* *Pellia crispa* P.Kumm., Führer Leberm.: 60, 1875 (Kummer 1875).
* *Pellia gottscheana* Kreh, Nova Acta Acad. Caes. Leop.-Carol. German. Nat. Cur. 90 (4): 237, 1909 (Kreh 1909).
* *Pellia longifolia* P.Kumm., Führer Leberm.: 60, 1875 (Kummer 1875).
* *Pellia undulata* P.Kumm., Führer Leberm.: 60, 1875 (Kummer 1875).

MARCHANTIOPSIDA Cronquist, Takht. et W.Zimm.
Blasiidae He-Nygrén, Juslén, Ahonen, Glenny et Piippo
Blasiales Stotler et Crand.-Stotl.

*** Blasiaceae H.Klinggr.

by L. Söderström

*** ***Blasia* L.**, Sp. Pl. 1: 1138, 1753 (Linnaeus 1753).
*** *Blasia pusilla* L., Sp. Pl. 1: 1138, 1753 (Linnaeus 1753).

*** ***Cavicularia* Steph.**, Bull. Herb. Boissier 5 (2): 87, 1897 (Stephani 1897b).
*** *Cavicularia densa* Steph., Bull. Herb. Boissier 5 (2): 87, 1897 (Stephani 1897b).

Marchantiidae Engl.
Lunulariales H.Klinggr.

*** Lunulariaceae H.Klinggr.

by D.G. Long

*** ***Lunularia* Adans.**, Fam. Pl. (Adanson) 2: 15, 1763 (Adanson 1763).
*** *Lunularia cruciata* (L.) Dumort. ex Lindb., Not. Sällsk. Fauna Fl. Fenn. Förh. 9: 298, 1868 (Lindberg 1868b). Bas.: *Marchantia cruciata* L., Sp. Pl. 1: 1137, 1753 (Linnaeus 1753).
* *Lunularia cruciata* subsp. *thaxteri* (A.Evans et Herzog) R.M.Schust., Hepat. Anthocerotae N. Amer. 6: 91, 1992 (Schuster 1992d). Bas.: *Lunularia thaxteri* A.Evans et Herzog, Arch. Esc. Fárm. Fac. Ci. Méd. Córdoba 7: 5, 1938 (Herzog and Hosseus 1938). [425]

Marchantiales Limpr.

*** Aytoniaceae Cavers

by D.G. Long

The genera of Aytoniaceae follow the treatment of Bischler-Causse et al. (2005) with the exception of *Asterella* and *Mannia* which were re-defined by Schill et al. (2010).

425 *Lunularia cruciata* subsp. *thaxteri* was synonymized with subsp. *cruciata* by Boisselier-Dubayle et al. (1995), but their subsp. *thaxteri* specimen was identified with some doubt and originated far from the known range.

*** ***Asterella* P.Beauv.**, Dict. Sci. Nat. [F. Cuvier] 3: 257, 1805 (Palisot de Beauvois 1805a) nom. conserv. [426]

** **subg. *Asterella***

** **sect. *Asterella***

*** *Asterella tenella* (L.) P.Beauv., Dict. Sci. Nat. [F. Cuvier] 3: 258, 1805 (Palisot de Beauvois 1805a). Bas.: *Marchantia tenella* L., Sp. Pl. 1: 1137, 1753 (Linnaeus 1753).

** **sect. *Brachyblepharis* (Nees) D.G.Long**, J. Bryol. 22 (2): 113, 2000 (Grolle and Long 2000). Bas.: *Fimbraria* subg. *Brachyblepharis* Nees, Syn. Hepat. 4: 569, 1846 (Gottsche et al. 1846).

*** *Asterella abyssinica* (Gottsche) Grolle, Explor. Hydrobiol. Lac Bangweolo Luapula: 170, 1972 (Vanden Berghen 1972b). Bas.: *Fimbraria abyssinica* Gottsche, Syn. Hepat. 4: 569, 1846 (Gottsche et al. 1846).

*** *Asterella africana* (Mont.) Underw. ex A.Evans, Contr. U.S. Natl. Herb. 20: 250, 1920 (Evans 1920). Bas.: *Fimbraria africana* Mont., Hist. Nat. Îles Canaries 3 (2): 61, 1840 (Montagne 1840b).

*** *Asterella blumeana* (Nees) Kachroo, J. Gauhati India Univ. 3: 130, 1952 (Kachroo 1952). Bas.: *Fimbraria blumeana* Nees, Syn. Hepat. 4: 564, 1846 (Gottsche et al. 1846).

*** *Asterella chilensis* (Nees et Mont.) A.Evans, Bull. Torrey Bot. Club 46 (12): 469, 1919 (Evans 1919b). Bas.: *Fimbraria chilensis* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 9: 41, 1838 (Montagne 1838).

*** *Asterella cruciata* (Steph.) Horik., Hikobia 1 (2): 79, 1951 (Horikawa 1951c). Bas.: *Fimbraria cruciata* Steph., Sp. Hepat. (Stephani) 6: 12, 1917 (Stephani 1917a).

*** *Asterella dissoluta* (Steph.) Grolle, Wiss. Z. Friedrich-Schiller-Univ. Jena, Math.-Naturwiss. Reihe 38 (2): 237, 1989 (Grolle 1989b). Bas.: *Fimbraria dissoluta* Steph., Pflanzenw. Ost-Afrikas C: 62, 1895 (Stephani 1895d).

*** *Asterella dominicensis* S.W.Arnell, Bryologist 61 (2): 140, 1958 (Arnell 1958c).

*** *Asterella khasyana* (Griff.) Grolle, Khumbu Himal 1 (4): 267, 1966 (Grolle 1966k). Bas.: *Octokepos khasyanus* Griff., Not. pl. asiat. 2: 343, 1849 (Griffith 1849).

*** *Asterella leptophylla* (Mont.) Grolle, Feddes Repert. 87 (3/4): 246, 1976 (Grolle 1976a). Bas.: *Fimbraria leptophylla* Mont., Ann. Sci. Nat. Bot. (sér. 2) 18: 16, 1842 (Montagne 1842b).

*** *Asterella limbata* D.G.Long et Grolle, J. Bryol. 18 (2): 287, 1994 (Long and Grolle 1994).

** *Asterella shimizuana* Inoue, Bull. Natl. Sci. Mus. Tokyo (n.ser.) 10 (3): 361, 1967 (Inoue 1967b). [427]

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426 *Asterella* includes *Fimbraria* and *Hypenantron*, but a few taxa have neither been transferred nor synonymized. They are listed in the "Names in genera not currently accepted" section below.

427 *Asterella shimizuana* is conspecific with *Asterella khasyana* in Grolle and Piippo (1984), but it was accepted by Long (2006).

*** *Asterella tenera* (Mitt.) R.M.Schust., J. Hattori Bot. Lab. 26: 298, 1963 (Schuster 1963b). Bas.: *Fimbraria tenera* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 170, 1855 (Mitten 1855).

* *Asterella tenerrima* (Steph.) H.A.Mill., Phytologia 47 (4): 320, 1981 (Miller 1981). Bas.: *Fimbraria tenerrima* Steph., Sp. Hepat. (Stephani) 6: 17, 1917 (Stephani 1917a). [428]

*** *Asterella venosa* (Lehm. et Lindenb.) A.Evans, Contr. U.S. Natl. Herb. 20: 286, 1920 (Evans 1920). Bas.: *Fimbraria venosa* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 29, 1832 (Lehmann 1832).

** **subg. *Phragmoblepharis* Grolle**, Feddes Repert. 87 (3/4): 246, 1976 (Grolle 1976a).

*** *Asterella australis* (Hook.f. et Taylor) Verd., Ann. Bryol. 5: 126, 1932 (Verdoorn 1932c). Bas.: *Fimbraria australis* Hook.f. et Taylor, London J. Bot. 3: 573, 1844 (Hooker and Taylor 1844d).

*** *Asterella bachmannii* (Steph.) S.W.Arnell, Hepat. South Africa: 62, 1963 (Arnell 1963b). Bas.: *Fimbraria bachmannii* Steph., Hedwigia 33 (1): 7, 1894 (Stephani 1894a).

*** *Asterella bolanderi* (Austin) Underw., Bot. Gaz. 20 (2): 61, 1895 (Underwood 1895). Bas.: *Fimbraria bolanderi* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 230, 1869 (Austin 1869).

* *Asterella caucasica* (Steph.) H.Buch, A.Evans et Verd., Ann. Bryol. 10: 8, 1937 [1938] (Buch et al. 1937). Bas.: *Fimbraria caucasica* Steph., Bull. Herb. Boissier 7 (3): 206 (132), 1899 (Stephani 1899b). [429]

*** *Asterella conocephala* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 26: 298, 1963 (Schuster 1963b). Bas.: *Fimbraria conocephala* Steph., Bull. Herb. Boissier 7 (3): 205 (131), 1899 (Stephani 1899b).

** *Asterella coronata* (Steph.) H.A.Mill., Phytologia 47 (4): 319, 1981 (Miller 1981). Bas.: *Fimbraria coronata* Steph., Sp. Hepat. (Stephani) 6: 12, 1917 (Stephani 1917a).

** *Asterella dioica* (Steph.) H.A.Mill., Phytologia 47 (4): 319, 1981 (Miller 1981). Bas.: *Fimbraria dioica* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 104, 1914 (Stephani and Watts 1914).

* *Asterella dognyensis* H.A.Mill., Phytologia 47 (4): 319, 1981 (Miller 1981). *Nom. nov. pro Fimbraria umbonata* Steph., Sp. Hepat. (Stephani) 6: 17, 1917 (Stephani 1917a), *nom. illeg.* [430]

*** *Asterella drummondii* (Taylor) R.M.Schust. ex D.G.Long, J. Bryol. 21 (1): 76, 1999 (Long 1999b). Bas.: *Fimbraria drummondii* Taylor, London J. Bot. 5: 412, 1846 (Taylor 1846b).

*** *Asterella echinella* (Gottsche) Underw., Bot. Gaz. 20 (2): 62, 1895 (Underwood 1895). Bas.: *Fimbraria echinella* Gottsche, Mexik. Leverm.: 271, 1863 (Gottsche 1863).

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428 *Asterella tenerrima* is probably conspecific with *Asterella tenera*.

429 *Asterella caucasica* is probably conspecific with *Asterella whiteleggeana* (Grolle 1975c, Scott and Bradshaw 1985).

430 *Asterella dognyensis* is possibly conspecific with *Asterella heteroflora*.

*** *Asterella elegans* (Spreng.) Trevis., Rendiconti Reale Ist. Lombardo Sci. (ser. 2) 7: 785, 1874 (Trevisan 1874). Bas.: *Fimbraria elegans* Spreng. Syst. Veg. (ed. 16) [Sprengel] 4 (1): 235, 1827 (Sprengel 1827a).

*** *Asterella heteroflora* (Steph.) H.A.Mill., Phytologia 47 (4): 320, 1981 (Miller 1981). Bas.: *Fimbraria heteroflora* Steph., Sp. Hepat. (Stephani) 6: 14, 1917 (Stephani 1917a).

*** *Asterella innovans* (Austin) H.A.Mill., Ark. Bot. (n.ser.) 5 (2): 529, 1963 (Miller 1963). Bas.: *Marchantia innovans* Austin, Bull. Torrey Bot. Club 5 (3): 14, 1874 (Austin 1874).

*** *Asterella lateralis* M.Howe, Bull. Torrey Bot. Club 25 (4): 189, 1898 (Howe 1898b).

*** *Asterella lindenbergiana* (Corda ex Nees) Lindb. ex Arnell, Lebermoosstud. nördl. Norwegen: 2, 1892 (Arnell 1892). Bas.: *Fimbraria lindenbergiana* Corda ex Nees, Naturgesch. Eur. Leberm. 4: 266, 1838 (Nees 1838a).

*** *Asterella linearis* (Steph.) M.Howe, Bull. Torrey Bot. Club 25 (4): 191, 1898 (Howe 1898b). Bas.: *Fimbraria linearis* Steph., Bot. Jahrb. Syst. 20 (3): 302, 1895 (Stephani 1895a).

*** *Asterella longebarbata* (Steph.) H.A.Mill., Phytologia 47 (4): 320, 1981 (Miller 1981). Bas.: *Fimbraria longebarbata* Steph., Hedwigia 28 (3): 156, 1889 (Stephani 1889d).

*** *Asterella macropoda* (Spruce) A.Evans, Bull. Torrey Bot. Club 46 (12): 472, 1919 (Evans 1919b). Bas.: *Fimbraria macropoda* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 564, 1885 (Spruce 1885).

*** *Asterella marginata* (Nees) S.W.Arnell, Hepat. South Africa: 63, 1963 (Arnell 1963b). Bas.: *Fimbraria marginata* Nees, Horae Phys. Berol.: 44, 1820 (Nees 1820).

** *Asterella muelleri* (Gottsche) R.M.Schust., J. Hattori Bot. Lab. 26: 298, 1963 (Schuster 1963b). Bas.: *Fimbraria muelleri* Gottsche, Bull. Herb. Boissier 7 (3): 203 (129), 1899 (Stephani 1899b).

*** *Asterella multiflora* (Steph.) Kachroo, J. Hattori Bot. Lab. 19: 3, 1958 (Kachroo 1958). Bas.: *Fimbraria multiflora* Steph., Bull. Herb. Boissier 7 (3): 198 (124), 1899 (Stephani 1899b).

*** *Asterella mussuriensis* (Kashyap) Verd., Ann. Bryol. 8: 156, 1935 (Verdoorn 1935). Bas.: *Fimbraria mussuriensis* Kashyap, J. Bombay Nat. Hist. Soc. 24 (2): 345, 1916 (Kashyap 1916).

*** *Asterella mussuriensis* subsp. *crassa* (Shimizu et S.Hatt.) D.G.Long, Lindbergia 26 (1): 44, 2001 (Long 2001). Bas.: *Asterella crassa* Shimizu et S.Hatt., J. Hattori Bot. Lab. 8: 48, 1952 (Shimizu and Hattori 1952).

*** *Asterella pappii* (Gola) Grolle, Feddes Repert. 87 (3/4): 246, 1976 (Grolle 1976a). Bas.: *Fimbraria pappii* Gola, Ann. Bot. (Rome) 13 (1): 65, 1914 (Gola 1914a).

*** *Asterella persica* (Steph.) M.Howe, Bull. Torrey Bot. Club 25 (4): 191, 1898 (Howe 1898b). Bas.: *Fimbraria persica* Steph., Hedwigia 33 (1): 7, 1894 (Stephani 1894a).

* *Asterella preussii* (Schiffn.) M.Howe, Bull. Torrey Bot. Club 25 (4): 191, 1898 (Howe 1898b). Bas.: *Fimbraria preussii* Schiffn., Bot. Jahrb. Syst. 20 (3): 303, 1895 (Stephani 1895a). [431]

** *Asterella setisquama* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 26: 298, 1963 (Schuster 1963b). Bas.: *Fimbraria setisquama* Steph., Hedwigia 28 (3): 156, 1889 (Stephani 1889d).

*** *Asterella syngenesica* (Bory) Grolle, Lindbergia 2 (3/4): 230, 1974 (Grolle and Onraedt 1974). Bas.: *Marchantia syngenesica* Bory, Voy. îles Afrique 2: 95, 1804 (Bory 1804).

** *Asterella tasmanica* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 26: 298, 1963 (Schuster 1963b). Bas.: *Fimbraria tasmanica* Steph., Bull. Herb. Boissier 7 (3): 206 (132), 1899 (Stephani 1899b).

*** *Asterella versicolor* A.Evans, Contr. U.S. Natl. Herb. 20: 307, 1920 (Evans 1920).

*** *Asterella vulcanica* (Schiffn.) Kachroo et Bapna, J. Indian Bot. Soc. 56 (1): 75, 1977 (Kachroo et al. 1977). Bas.: *Hypenantron vulcanicum* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 155, 1898 (Schiffner 1898a).

*** *Asterella whiteleggeana* (Steph.) R.M.Schust., J. Hattori Bot. Lab. 26: 298, 1963 (Schuster 1963b). Bas.: *Fimbraria whiteleggeana* Steph., Hedwigia 28 (3): 155, 1889 (Stephani 1889d).

*** *Asterella wilmsii* (Steph.) S.W.Arnell, Hepat. South Africa: 62, 1963 (Arnell 1963b). Bas.: *Fimbraria wilmsii* Steph., Hedwigia 31 (3): 122, 1892 (Stephani 1892d).

** **subg. *Saccatae* (Grolle) D.G.Long**, J. Bryol. 22 (2): 113, 2000 (Grolle and Long 2000). Bas.: *Asterella* subg. *Phragmoblepharis* sect. *Saccatae* Grolle, Feddes Repert. 87 (3/4): 346, 1976 (Grolle 1976a).

*** *Asterella alpina* (Steph.) D.G.Long, J. Hattori Bot. Lab. 93: 9, 2003 (Gradstein et al. 2003). Bas.: *Fimbraria alpina* Steph., Bull. Herb. Boissier 7 (3): 211 (137), 1899 (Stephani 1899b).

*** *Asterella grollei* D.G.Long, Bryologist 102 (2): 169, 1999 (Long 1999a).

*** *Asterella muscicola* (Steph.) S.W.Arnell, Mitt. Bot. Staatssamml. München 2 (16): 263, 1957 (Arnell 1957c). Bas.: *Fimbraria muscicola* Steph., Hedwigia 31 (3): 121, 1892 (Stephani 1892d).

*** *Asterella palmeri* (Austin) Underw., Bot. Gaz. 20 (2): 63, 1895 (Underwood 1895). Bas.: *Fimbraria palmeri* Austin, Bull. Torrey Bot. Club 6 (7): 47, 1875 (Austin 1875c).

*** *Asterella pringlei* Underw., Bot. Gaz. 20 (2): 64, 1895 (Underwood 1895).

*** *Asterella rugosa* A.Evans, Contr. U.S. Natl. Herb. 20: 289, 1920 (Evans 1920).

*** *Asterella saccata* (Wahlenb.) A.Evans, Contr. U.S. Natl. Herb. 20: 276, 1920 (Evans 1920). Bas.: *Marchantia saccata* Wahlenb., Mag. Neuesten Entdeck. Gesammten Naturk. Ges. Naturf. Freunde Berlin 5: 296, 1811 (Wahlenberg 1811).

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431 *Asterella preussii* was provisionally placed in synonymy with *Asterella bachmannii* (Wigginton and Grolle 1996).

** **subg. *Wallichianae* D.G.Long**, Lindbergia 26 (1): 43, 2001 (Long 2001).

** **sect. *Californicae* D.G.Long**, J. Hattori Bot. Lab. 97: 257, 2005 (Long 2005).
*** *Asterella californica* (Hampe ex Austin) Underw., Bot. Gaz. 20 (2): 60, 1895 (Underwood 1895). Bas.: *Fimbraria californica* Hampe ex Austin, Hepat. bor.-amer.: 33, 1873 (Austin 1873).

** **sect. *Wallichianae* D.G.Long**, Phytotaxa 173 (1): 87, 2014 (Long et al. 2014).
*** *Asterella wallichiana* (Lehm. et Lindenb.) Grolle, Khumbu Himal 1 (4): 262, 1966 (Grolle 1966k). Bas.: *Fimbraria wallichiana* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 4, 1832 (Lehmann 1832).

** ***Cryptomitrium* Austin ex Underw.**, Bull. Illinois State Lab. Nat. Hist. 2 (1): 36, 1884 (Underwood 1884).
*** *Cryptomitrium himalayense* Kashyap, New Phytol. 14 (1): 2, 1915 (Kashyap 1915).
*** *Cryptomitrium oreades* Perold, Bothalia 24 (2): 149, 1994 (Perold 1994).
*** *Cryptomitrium tenerum* (Hook.) Austin ex Underw., Bull. Illinois State Lab. Nat. Hist. 2 (1): 36, 1884 (Underwood 1884). Bas.: *Marchantia tenera* Hook., Syn. Pl. (Kunth) 1: 45, 1822 (Kunth 1822).

*** ***Mannia* Corda**, Gen. hepat.: 646, 1829 (Corda 1829) nom. conserv.

** **subg. *Mannia***
*** *Mannia androgyna* (L.) A.Evans, Chron. Bot. 4: 224, 1938 (Evans 1938a). Bas.: *Marchantia androgyna* L., Sp. Pl. 1: 1138, 1753 (Linnaeus 1753).
*** *Mannia californica* (Gottsche) L.C.Wheeler, Bryologist 37 (5): 88, 1934 [1935] (Wheeler 1934). Bas.: *Grimaldia californica* Underw., Bot. Gaz. 13 (5): 114, 1888 (Underwood 1888).
*** *Mannia controversa* (Meyl.) D.B.Schill, Edinburgh J. Bot. 65 (1): 36, 2008 (Schill et al. 2008). Bas.: *Grimaldia controversa* Meyl., Beitr. Kryptogamenfl. Schweiz 6 (4): 87, 1924 (Meylan 1924).
*** *Mannia controversa* subsp. *asiatica* D.B.Schill et D.G.Long, Edinburgh J. Bot. 65 (1): 45, 2008 (Schill et al. 2008).
*** *Mannia fragrans* (Balb.) Frye et L.Clark, Univ. Wash. Publ. Biol. 6 (1): 62, 1937 (Frye and Clark 1937). Bas.: *Marchantia fragrans* Balb., Mem. Acad. Sci. Turin, Sci. Phys. 15: 76, 1804 (Balbis 1804).
** *Mannia fragrans* subsp. *orientalis* R.M.Schust., Hepat. Anthocerotae N. Amer. 6: 201, 1992 (Schuster 1992d). *Nom. nov. pro Mannia barbifrons* Shimizu et S.Hatt., J. Hattori Bot. Lab. 10: 49, 1953 (Shimizu and Hattori 1953b).
* *Mannia perssonii* Udar et V.Chandra, Canad. J. Bot. 43 (1): 150, 1965 (Udar and Chandra 1965). [432]

432 *Mannia perssonii* is possibly conspecific with *Mannia sibirica*.

*** *Mannia sibirica* (Müll.Frib.) Frye et L.Clark, Univ. Wash. Publ. Biol. 6 (1): 66, 1937 (Frye and Clark 1937). Bas.: *Grimaldia pilosa* var. *sibirica* Müll.Frib., Lebermoose 1 (5): 265, 1907 (Müller 1907a).

** **subg. *Neesiella* (Schiffn.) D.B.Schill et D.G.Long**, Bryologist 113 (1): 175, 2010 (Schill et al. 2010). Bas.: *Neesiella* Schiffn., Hepat. (Engl.-Prantl): 32, 1893 (Schiffner 1893b).

*** *Mannia gracilis* (F.Weber) D.B.Schill et D.G.Long, Bryologist 113 (1): 173, 2010 (Schill et al. 2010). Bas.: *Marchantia gracilis* F.Weber, Hist. Musc. Hepat. Prodr.: 105, 1815 (Weber 1815).

* *Mannia hegewaldii* Bischl., Fl. Neotrop. Monogr. 97: 184, 2005 (Bischler-Causse et al. 2005). [433]

*** *Mannia pilosa* (Hornem.) Frye et L.Clark, Univ. Wash. Publ. Biol. 6 (1): 64, 1937 (Frye and Clark 1937). Bas.: *Marchantia pilosa* Hornem., Fl. Danica 8 (24): 7, tab. 1426, 1810 (Hornemann 1810).

*** *Mannia triandra* (Scop.) Grolle, J. Bryol. 8 (4): 487, 1975 (Grolle 1975d). Bas.: *Marchantia triandra* Scop., Fl. Carniol. (ed. 2) 2: 354, 1772 (Scopoli 1772).

Incertae sedis

* *Mannia paradoxa* R.M.Schust., Phytologia 57 (6): 410, 1985 (Schuster 1985b). [434]

*** ***Plagiochasma* Lehm.**, Nov. Stirp. Pug. 4: 13, 1832 (Lehmann 1832) nom. conserv.

* *Plagiochasma megacarpon* (Griff.) Steph., Bull. Herb. Boissier 6 (10): 789 (86), 1898 (Stephani 1898c). Bas.: *Antrocephalus megacarpon* Griff., Not. pl. asiat. 2: 338, 1849 (Griffith 1849). [435]

** **subg. *Micropylum* Bischl.**, Rev. Bryol. Lichénol. 43 (1): 103, 1977 (Bischler 1977).

*** *Plagiochasma rupestre* (J.R.Forst. et G.Forst.) Steph., Bull. Herb. Boissier 6 (10): 783 (80), 1898 (Stephani 1898c). Bas.: *Aytonia rupestris* J.R.Forst. et G.Forst., Char. gen. pl., ed. 2: 148, 1776 (Forster and Forster 1776).

*** *Plagiochasma rupestre* var. *volkii* Bischl., Rev. Bryol. Lichénol. 44 (3): 289, 1978 (Bischler 1978).

** **subg. *Plagiochasma***

*** *Plagiochasma appendiculatum* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 14, 1832 (Lehmann 1832).

*** *Plagiochasma argentinicum* Bischl., Rev. Bryol. Lichénol. 45 (3): 301, 1979 (Bischler 1979a).

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433 *Mannia hegewaldii* is possibly conspecific with *Mannia triandra*.

434 *Mannia paradoxa* is possibly a *Reboulia* species.

435 *Plagiochasma megacarpon* may not be a *Plagiochasma* species. Bischler (1979b) could not find any specimen and did not know where to refer it.

*** *Plagiochasma beccarianum* Steph., Bull. Herb. Boissier 6 (10): 781 (78), 1898 (Stephani 1898c).
*** *Plagiochasma cordatum* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 13, 1832 (Lehmann 1832).
*** *Plagiochasma crenulatum* Gottsche, Mexik. Leverm.: 266, 1863 (Gottsche 1863).
*** *Plagiochasma cuneatum* A.Evans, Amer. J. Bot. 19 (7): 627, 1932 (Evans 1932a).
*** *Plagiochasma eximium* (Schiffn.) Steph., Bull. Herb. Boissier 6 (10): 781 (78), 1898 (Stephani 1898c). Bas.: *Aytonia eximia* Schiffn., Bot. Jahrb. Syst. 20 (3): 300, 1895 (Stephani 1895a).
*** *Plagiochasma intermedium* Lindenb. et Gottsche, Syn. Hepat. 4: 513, 1846 (Gottsche et al. 1846).
*** *Plagiochasma jamaicense* (Haynes) A.Evans, Bull. Torrey Bot. Club 42 (5): 292, 1915 (Evans 1915). Bas.: *Aytonia jamaicensis* Haynes, Bull. Torrey Bot. Club 34 (2): 58, 1907 (Haynes 1907).
*** *Plagiochasma japonicum* (Steph.) C.Massal., Hepat. Shen-si: 47, 1897 (Massalongo 1897). Bas.: *Aytonia japonica* Steph., Bull. Herb. Boissier 5 (2): 84, 1897 (Stephani 1897b).
*** *Plagiochasma landii* A.Evans, Bull. Torrey Bot. Club 42 (5): 298, 1915 (Evans 1915).
*** *Plagiochasma microcephalum* (Steph.) Steph., Bull. Herb. Boissier 6 (10): 781 (78), 1898 (Stephani 1898c). Bas.: *Aytonia microcephala* Steph., Bot. Jahrb. Syst. 20 (3): 301, 1895 (Stephani 1895a).
*** *Plagiochasma microcephalum* var. *tunesicum* Bischl., Rev. Bryol. Lichénol. 44 (3): 247, 1978 (Bischler 1978).
*** *Plagiochasma muenchianum* Steph., Sp. Hepat. (Stephani) 6: 9, 1917 (Stephani 1917a).
*** *Plagiochasma pterospermum* C.Massal., Hepat. Shen-si: 46, 1897 (Massalongo 1897).
*** *Plagiochasma wrightii* Sull., Musc. Hepat. U.S.: 688, 1856 (Sullivant 1856).

Incertae sedis

** *Plagiochasma udarii* A.Alam et S.C.Srivast., Indian J. Forest. 32 (4): 631, 2009 (Alam and Srivastava 2009).

*** ***Reboulia* Raddi**, Opusc. Sci. 2 (6): 357, 1818 (Raddi 1818b) nom. conserv.
*** *Reboulia hemisphaerica* (L.) Raddi, Opusc. Sci. 2 (6): 357, 1818 (Raddi 1818b). Bas.: *Marchantia hemisphaerica* L., Sp. Pl. 1: 1138, 1753 (Linnaeus 1753).
** *Reboulia hemisphaerica* subsp. *acrogyna* (R.M.Schust.) R.M.Schust., Hepat. Anthocerotae N. Amer. 6: 168, 1992 (Schuster 1992d). Bas.: *Asterella bolanderi* subsp. *acrogyna* R.M.Schust., Phytologia 57 (6): 410, 1985 (Schuster 1985b).
** *Reboulia hemisphaerica* subsp. *australis* R.M.Schust., Phytologia 56 (7): 460, 1985 (Schuster 1985c).
** *Reboulia hemisphaerica* subsp. *dioica* R.M.Schust., Phytologia 56 (7): 462, 1985 (Schuster 1985c).
** *Reboulia hemisphaerica* var. *fissisquama* Herzog, Symb. Sin. 5: 5, 1930 (Nicholson et al. 1930).

** *Reboulia hemisphaerica* subsp. *orientalis* R.M.Schust., Phytologia 56 (7): 461, 1985 (Schuster 1985c).
** *Reboulia hemisphaerica* var. *turkestanica* C.E.O.Jensen ex Herzog, Symb. Sin. 5: 5, 1930 (Nicholson et al. 1930).

*** Cleveaceae Cavers

by D.G. Long

The genera of Cleveaceae were re-defined by Rubasinghe et al. (2011a) based on molecular evidence.

*** ***Athalamia* Falc.**, Ann. Mag. Nat. Hist. (ser. 2) 1 (5): 375, 1848 (Anonymous 1848).
* *Athalamia dioica* Kashyap, J. Bombay Nat. Hist. Soc. 24 (2): 348, 1916 (Kashyap 1916).
*** *Athalamia pinguis* Falc., Ann. Mag. Nat. Hist. (ser. 2) 1 (5): 375, 1848 (Anonymous 1848).
* *Athalamia pulcherrima* (Steph.) S.Hatt., J. Hattori Bot. Lab. 12: 54, 1954 (Shimizu and Hattori 1954). Bas.: *Clevea pulcherrima* Steph., Bot. Jahrb. Syst. 20 (3): 303, 1895 (Stephani 1895a).

*** ***Clevea* Lindb.**, Not. Sällsk. Fauna Fl. Fenn. Förh. 9: 289, 1868 (Lindberg 1868b).
*** *Clevea hyalina* (Sommerf.) Lindb., Not. Sällsk. Fauna Fl. Fenn. Förh. 9: 291, 1868 (Lindberg 1868b). Bas.: *Marchantia hyalina* Sommerf., Mag. Naturvidensk. 11 (2): 234, 1833 (Sommerfeldt 1833).
* *Clevea hyalina* var. *californica* M.Howe, Mem. Torrey Bot. Club 7: 38, 1899 (Howe 1899).
* *Clevea pedicellata* (Griff.) Lindb., Acta Soc. Fauna Fl. Fenn. 2 (3): 11, 1882 (Lindberg 1882). Bas.: *Plagiochasma pedicellatum* Griff., Not. pl. asiat. 2: 331, 1849 (Griffith 1849).
*** *Clevea pusilla* (Steph.) Rubas. et D.G.Long, J. Bryol. 33 (2): 167, 2011 (Rubasinghe et al. 2011b). Bas.: *Gollaniella pusilla* Steph., Hedwigia 44 (2): 74, 1905 (Stephani 1905h).
*** *Clevea spathysii* (Lindenb.) Müll.Frib., Hedwigia 79 (1/2): 75, 1940 (Müller 1940). Bas.: *Marchantia spathysii* Lindenb., Syn. hepat. eur: 104, 1829 (Lindenberg 1829).

*** ***Peltolepis* Lindb.**, Morgonbladet (Helsinki) 1876 (106, 9 May): 1, 1876 (Elfving 1876).
** *Peltolepis japonica* (Shimizu et S.Hatt.) S.Hatt., J. Hattori Bot. Lab. 14: 103, 1955 (Shimizu and Hattori 1955). Bas.: *Peltolepis quadrata* var. *japonica* Shimizu et S.Hatt., J. Hattori Bot. Lab. 12: 69, 1954 (Shimizu and Hattori 1954).
*** *Peltolepis quadrata* (Saut.) Müll.Frib., Hedwigia 79 (1/2): 74, 1940 (Müller 1940). Bas.: *Sauteria quadrata* Saut., Flora 43 (22): 351, 1860 (Sauter 1860).

*** ***Sauteria* Nees**, Naturgesch. Eur. Leberm. 4: 139, 1838 (Nees 1838a).

** **sect. *Sauchia* (Kashyap) R.M.Schust.**, Phytologia 57 (6): 411, 1985 (Schuster 1985b). Bas.: *Sauchia* Kashyap, J. Bombay Nat. Hist. Soc. 24 (2): 347, 1916 (Kashyap 1916).

* *Sauteria japonica* (Shimizu et S.Hatt.) S.Hatt., J. Hattori Bot. Lab. 12: 62, 1954 (Shimizu and Hattori 1954). Bas.: *Sauchia japonica* Shimizu et S.Hatt., J. Hattori Bot. Lab. 9: 32, 1953 (Shimizu and Hattori 1953a). [436]

*** *Sauteria spongiosa* (Kashyap) S.Hatt., J. Hattori Bot. Lab. 12: 62, 1954 (Shimizu and Hattori 1954). Bas.: *Sauchia spongiosa* Kashyap, J. Bombay Nat. Hist. Soc. 24 (2): 347, 1916 (Kashyap 1916).

** **sect. *Sauteria***

*** *Sauteria alpina* (Nees) Nees, Naturgesch. Eur. Leberm. 4: 143, 1838 (Nees 1838a). Bas.: *Lunularia alpina* Nees, Flora 13 (25): 399, 1830 (Nees and Bischoff 1830).

* *Sauteria inflata* C.Gao et K.C.Chang, Acta Bot. Yunnan. 3 (4): 389, 1981 (Gao et al. 1981). [437]

Incertae sedis

* *Sauteria chilensis* (Lindenb.) Grolle, J. Hattori Bot. Lab. 58: 200, 1985 (Grolle 1985b). Bas.: *Grimaldia chilensis* Lindenb., Voy. Amér. Mérid. 7 (2): 53, 1839 (Montagne 1839a).

* *Sauteria crassipes* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 229, 1869 (Austin 1869).

* *Sauteria nyikaensis* Perold, Bothalia 33 (2): 167, 2003 (Perold 2003).

*** Conocephalaceae Müll.Frib. ex Grolle

by D.G. Long

*** ***Conocephalum* Hill**, Gener. Nat. Hist. 2 Hist. pl. (ed. 2): 118, 1773 (Hill 1773) nom. conserv.

** **subg. *Conocephalum***

*** *Conocephalum conicum* (L.) Dumort., Commentat. Bot. (Dumortier): 115, 1822 (Dumortier 1822). Bas.: *Marchantia conica* L., Sp. Pl. 1: 1138, 1753 (Linnaeus 1753).

*** *Conocephalum salebrosum* Szweyk., Buczk. et Odrzyk., Pl. Syst. Evol. 253 (1/4): 146, 2005 (Szweykowski et al. 2005).

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436 *Sauteria japonica* is possibly conspecific with *Sauteria spongiosa*.

437 *Sauteria inflata* is possibly conspecific with *Sauteria alpina* (Schuster 1992d).

** **subg. *Sandea* (Lindb.) Inoue**, Ill. Jap. Hep. 2: 192, 1976 (Inoue 1976a). Bas.: *Sandea* Lindb., Acta Soc. Fauna Fl. Fenn. 2 (5): 3, 1884 (Lindberg 1884).

*** *Conocephalum japonicum* (Thunb.) Grolle, J. Hattori Bot. Lab. 55: 501, 1984 (Grolle 1984a). Bas.: *Lichen japonicus* Thunb., Fl. Jap. (Thunberg): 344, 1784 (Thunberg 1784).

** Corsiniaceae Engl.

by D.G. Long

** Corsinioideae Schiffn.

*** ***Corsinia* Raddi**, Opusc. Sci. 2 (6): 354, 1818 (Raddi 1818b).

*** *Corsinia coriandrina* (Spreng.) Lindb., Hepaticol. Utveckl.: 30, 1877 (Lindberg 1877c). Bas.: *Riccia coriandrina* Spreng. Anleit. Kenntn. Gew. 3: 320, 1804 (Sprengel 1804).

*** Cronisioideae R.M.Schust.

*** ***Cronisia* Berk.**, Introd. crypt. bot.: 434, 1857 (Berkeley 1857).

*** *Cronisia fimbriata* (Nees) Whittem. et Bischl., Cryptog. Bryol. 22 (3): 170, 2001 (Bischler and Whittemore 2001). Bas.: *Riccia fimbriata* Nees, Fl. Bras. (Martius) 1 (1): 301, 1833 (Nees 1833a).

*** *Cronisia weddellii* (Mont.) Grolle, J. Bryol. 9 (4): 532, 1977 [1978] (Grolle 1977a). Bas.: *Boschia weddellii* Mont., Ann. Sci. Nat. Bot. (sér. 4) 5: 352, 1856 (Montagne 1856c).

*** Cyathodiaceae Stotler et Crand.-Stotl.

by D.G. Long

*** ***Cyathodium* Kunze**, Nov. Stirp. Pug. 6: 17, 1834 (Lehmann 1834).

*** *Cyathodium aureonitens* (Griff.) Mitten, J. Linn. Soc., Bot. 22 (146): 327 (Mitten 1886b). Bas.: *Synhymenium aureonitens* Griff., Not. pl. asiat. 2: 344, 1849 (Griffith 1849).

*** *Cyathodium bischlerianum* N.Salazar, Bryologist 104 (1): 141, 2001 (Salazar 2001).

*** *Cyathodium cavernarum* Kunze, Nov. Stirp. Pug. 6: 18, 1834 (Lehmann 1834).

** *Cyathodium denticulatum* Udar et S.C.Srivast., Geophytology 1 (2): 166, 1971 (Udar and Srivastava 1971).

*** *Cyathodium foetidissimum* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 154, 1898 (Schiffner 1898a).
*** *Cyathodium indicum* Udar et D.K.Singh, J. Bryol. 10 (2): 139, 1978 [1979] (Udar and Singh 1978).
*** *Cyathodium mehranum* D.K.Singh, Misc. Bryol. Lichenol. 9 (8): 173, 1983 (Singh 1983b).
*** *Cyathodium smaragdinum* Schiffn., Ann. Jard. Bot. Buitenzorg, suppl. 3: 480, 1910 (Schiffner 1910c).
*** *Cyathodium spruceanum* Prosk., Bryologist 54 (4): 243, 1951 [1952] (Proskauer 1951b).
* *Cyathodium spurium* (Dicks.) Lindb. ex Braithw., J. Bot. 16: 55, 1878 (Braithwaite 1878). Bas.: *Riccia spuria* Dicks., Fasc. Pl. Crypt. Brit. 4: 20, 1801 (Dickson 1801). [438]
*** *Cyathodium steerei* Hässel, Rev. Bryol. Lichénol. 30 (3/4): 223, 1961 (Hässel 1961).
*** *Cyathodium tuberculatum* Udar et D.K.Singh, Bryologist 79 (2): 235, 1976 (Udar and Singh 1976).
*** *Cyathodium tuberosum* Kashyap, New Phytol. 13 (6/7): 210, 1914 (Kashyap 1914a).

*** Dumortieraceae D.G.Long

by D.G. Long

*** ***Dumortiera* Nees**, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 410, 1824 [1825] (Reinwardt et al. 1824b).
*** *Dumortiera hirsuta* (Sw.) Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 410, 1824 [1825] (Reinwardt et al. 1824b). Bas.: *Marchantia hirsuta* Sw., Prodr. (Swartz): 145, 1788 (Swartz 1788). [439]
* *Dumortiera hirsuta* subsp. *nepalensis* (Taylor) R.M.Schust., Hepat. Anthocerotae N. Amer. 6: 386, 1992 (Schuster 1992d). Bas.: *Hygrophila nepalensis* Taylor, Trans. Linn. Soc. London 17 (3): 392, 1836 (Taylor 1836b).
* *Dumortiera hirsuta* subsp. *tatunoi* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 6: 38, 1951 (Horikawa 1951a).

*** Exormothecaceae Müll.Frib. ex Grolle

by D.G. Long

*** ***Aitchisoniella* Kashyap**, New Phytol. 13 (6/7): 219, 1914 (Kashyap 1914a).

438 *Cyathodium spurium* may be conspecific with *Cyathodium cavernarum* (Braithwaite 1878). The type specimen is from Scotland, but it is probably mislabelled as no *Cyathodium* is known from boreal Europe.
439 *Dumortiera hirsuta* is a species complex (Forrest et al. 2011).

*** *Aitchisoniella himalayensis* Kashyap, New Phytol. 13 (6/7): 219, 1914 (Kashyap 1914a).

*** ***Exormotheca* Mitt.**, Nat. hist. Azores: 325, 1870 (Mitten 1870).

** **subg. *Corbierella* (Douin et Trab.) Schiffn.**, Hedwigia 81 (1/2): 71, 1942 (Schiffner 1942). Bas.: *Corbierella* Douin et Trab., Rev. Gén. Bot. 31: 326, 1919 (Douin and Trabut 1919).
*** *Exormotheca bischlerae* Furuki et Higuchi, Cryptog. Bryol. 27 (1): 98, 2006 (Furuki and Higuchi 2006).
*** *Exormotheca holstii* Steph., Bull. Herb. Boissier 7 (3): 219 (145), 1899 (Stephani 1899b).
*** *Exormotheca welwitschii* Steph., Bull. Herb. Boissier 7 (3): 220 (146), 1899 (Stephani 1899b).

** **subg. *Exormotheca***
*** *Exormotheca pustulosa* Mitt., Nat. hist. Azores: 326, 1870 (Mitten 1870).

Incertae sedis
*** *Exormotheca bulbigena* Bornefeld, O.H.Volk et R.Wolf, Bothalia 26 (2): 159, 1996 (Bornefeld et al. 1996).
*** *Exormotheca ceylonensis* Meijer, J. Hattori Bot. Lab. 16: 72, 1956 (Meijer 1956).
* *Exormotheca gollanii* Steph., Sp. Hepat. (Stephani) 6: 18, 1917 (Stephani 1917a).
*** *Exormotheca tuberifera* Kashyap, New Phytol. 13 (9): 309, 1914 (Kashyap 1914b).

*** ***Stephensoniella* Kashyap**, New Phytol. 13 (9): 312, 1914 (Kashyap 1914b).
*** *Stephensoniella brevipedunculata* Kashyap, New Phytol. 13 (9): 312, 1914 (Kashyap 1914b).

*** Marchantiaceae Lindl.

by D.G. Long

The treatment of Marchantiaceae is mainly following Bischler (1984, 1989b) and Bischler-Causse (1993).

** Bucegioideae R.M.Schust.

*** ***Bucegia* Radian**, Bull. Herb. Inst. Bot. Bucarest 3-4: 3, 1903 (Radian 1903).
*** *Bucegia romanica* Radian, Bull. Herb. Inst. Bot. Bucarest 3-4: 4, 1903 (Radian 1903).

** Marchantioideae Schiffn.

*** ***Marchantia* L.**, Sp. Pl. 1: 1137, 1753 (Linnaeus 1753).

** **subg. *Chlamidium* (Corda) Bischl.**, Cryptog. Bryol. Lichénol. 3 (4): 362, 1982 (Bischler 1982). Bas.: *Chlamidium* Corda, Gen. hepat.: 647, 1829 (Corda 1829).
*** *Marchantia breviloba* A.Evans, Trans. Connecticut Acad. Arts 21 (3): 265, 1917 (Evans 1917a).
*** *Marchantia inflexa* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 9: 43, 1838 (Montagne 1838).

** **sect. *Chlamidium* (Corda) Nees**, Naturgesch. Eur. Leberm. 4: 101, 1838 (Nees 1838a). Bas.: *Chlamidium* Corda, Gen. hepat.: 647, 1829 (Corda 1829).
*** *Marchantia chenopoda* L., Sp. Pl. 1: 1137, 1753 (Linnaeus 1753).
*** *Marchantia crenata* Austin, Bull. Torrey Bot. Club 5 (3): 14, 1874 (Austin 1874).
*** *Marchantia foliacea* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 168, 1855 (Mitten 1855).
*** *Marchantia formosana* Horik., J. Sci. Hiroshima Univ., Ser. B, Div. 2, Bot. 2: 121, 1934 (Horikawa 1934).
*** *Marchantia globosa* Brid., Hist. Musc. Hepat. Prodr.: 102, 1815 (Weber 1815).
*** *Marchantia hexaptera* Reichardt, Verh. K.K. Zool.-Bot. Ges. Wien 16: 957, 1866 (Reichardt 1866).
*** *Marchantia linearis* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 8, 1832 (Lehmann 1832).
*** *Marchantia miqueliana* Lehm., Nov. Stirp. Pug. 10: 20, 1857 (Lehmann 1857).
*** *Marchantia novoguineensis* Bischl., Bryophyt. Biblioth. 38: 130, 1989 (Bischler 1989b).
*** *Marchantia pappeana* Lehm., Nov. Stirp. Pug. 10: 21, 1857 (Lehmann 1857).
** *Marchantia pappeana* subsp. *robusta* (Steph.) Bischl., Bryophyt. Biblioth. 45: 91, 1993 (Bischler-Causse 1993). Bas.: *Marchantia robusta* Steph., Candollea 14: 111, 1953 (Bonner 1953b).
*** *Marchantia pileata* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 169, 1855 (Mitten 1855).
*** *Marchantia pinnata* Steph., Candollea 14: 109, 1953 (Bonner 1953b).
*** *Marchantia rubribarba* Steph., Bull. Herb. Boissier 7 (5): 400 (172), 1899 (Stephani 1899c).
*** *Marchantia vitiensis* Steph., Bull. Herb. Boissier 7 (7): 520 (182), 1899 (Stephani 1899d).

** **sect. *Paleaceae* Bischl.**, Bryophyt. Biblioth. 38: 90, 1989 (Bischler 1989b).
*** *Marchantia paleacea* Bertol., Opusc. Sci. 1: 242, 1817 (Bertoloni 1817).
*** *Marchantia paleacea* subsp. *diptera* (Nees et Mont.) Inoue, J. Jap. Bot. 64 (7): 194, 1989 (Inoue 1989c). Bas.: *Marchantia diptera* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 19: 243, 1843 (Montagne 1843).

** **sect. *Papillatae* Bischl.**, Cryptog. Bryol. Lichénol. 10 (1): 69, 1989 (Bischler 1989a).
*** *Marchantia debilis* K.I.Goebel, Organogr. Pfl., ed. 2, 2 (1): 901, 1915 (Goebel 1915).
*** *Marchantia emarginata* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 192, 1824 [1825] (Reinwardt et al. 1824a).
*** *Marchantia emarginata* subsp. *lecordiana* (Steph.) Bischl., Cryptog. Bryol. Lichénol. 10 (1): 78, 1989 (Bischler 1989a). Bas.: *Marchantia lecordiana* Steph., Bull. Herb. Boissier 7 (7): 525 (187), 1899 (Stephani 1899d).
*** *Marchantia emarginata* subsp. *tosana* (Steph.) Bischl., Cryptog. Bryol. Lichénol. 10 (1): 77, 1989 (Bischler 1989a). Bas.: *Marchantia tosana* Steph., Bull. Herb. Boissier 5 (2): 99, 1897 (Stephani 1897b).
*** *Marchantia papillata* Raddi, Critt. Brasil.: 20, 1822 (Raddi 1822).
*** *Marchantia papillata* subsp. *grossibarba* (Steph.) Bischl., Cryptog. Bryol. Lichénol. 10 (1): 78, 1989 (Bischler 1989a). Bas.: *Marchantia grossibarba* Steph., Mém. Soc. Nat. Sci. Nat. Math. Cherbourg 29: 221, 1894 (Stephani 1894b).

** **subg. *Marchantia***
*** *Marchantia plicata* Nees et Mont., Ann. Sci. Nat. Bot. (sér. 2) 9: 43, 1838 (Montagne 1838).

** **sect. *Berteroanae* R.M.Schust.**, Hepat. Anthocerotae N. Amer. 6: 310, 1992 (Schuster 1992d).
*** *Marchantia berteroana* Lehm. et Lindenb., Nov. Stirp. Pug. 6: 21, 1834 (Lehmann 1834).

** **sect. *Marchantia***
*** *Marchantia polymorpha* L., Sp. Pl. 1: 1137, 1753 (Linnaeus 1753).
*** *Marchantia polymorpha* subsp. *montivagans* Bischl. et Boissel.-Dub., J. Bryol. 16 (3): 364, 1991 (Bischler-Causse and Boisselier-Dubayle 1991).
*** *Marchantia polymorpha* subsp. *ruderalis* Bischl. et Boissel.-Dub., J. Bryol. 16 (3): 364, 1991 (Bischler-Causse and Boisselier-Dubayle 1991).

** **subg. *Protomarchantia* R.M.Schust.**, Phytologia 57 (6): 410, 1985 (Schuster 1985b).

** **sect. *Protomarchantia* (R.M.Schust.) L.Söderstr.**, Phytotaxa 202 (1): 69, 2015 (Söderström et al. 2015c). Bas.: *Marchantia* subg. *Protomarchantia* R.M.Schust., Phytologia 57 (6): 410, 1985 (Schuster 1985b).
*** *Marchantia acaulis* Steph., Bull. Herb. Boissier 7 (7): 533 (195), 1899 (Stephani 1899d).
*** *Marchantia antiqua* Steph., Candollea 14: 103, 1953 (Bonner 1953b).
*** *Marchantia carrii* Bischl., Bryophyt. Biblioth. 38: 256, 1989 (Bischler 1989b).
*** *Marchantia geminata* Reinw., Blume et Nees, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 12 (1): 194, 1824 [1825] (Reinwardt et al. 1824a).

*** *Marchantia hartlessiana* Steph., Candollea 14: 107, 1953 (Bonner 1953b).
*** *Marchantia macropora* Mitt., Bot. antarct. voy. II (Fl. Nov.-Zel. 2): 169, 1855 (Mitten 1855).
*** *Marchantia philippinensis* Bischl., Bryophyt. Biblioth. 38: 245, 1989 (Bischler 1989b).
*** *Marchantia solomonensis* Bischl., Bryophyt. Biblioth. 38: 281, 1989 (Bischler 1989b).
*** *Marchantia streimannii* Bischl., Bryophyt. Biblioth. 38: 250, 1989 (Bischler 1989b).
*** *Marchantia subintegra* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 125, 1860 [1861] (Mitten 1860c).
*** *Marchantia treubii* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 160, 1898 (Schiffner 1898a).
*** *Marchantia wallisii* J.B.Jack et Steph., Bull. Herb. Boissier 7 (7): 520 (182), 1899 (Stephani 1899d).

** **sect. *Subgeminatae* Bischl.**, Bryophyt. Biblioth. 38: 219, 1989 (Bischler 1989b).
*** *Marchantia subgeminata* Steph., Bull. Herb. Boissier 7 (7): 530 (192), 1899 (Stephani 1899d).

Incertae sedis

* *Marchantia assamica* Griff., Not. pl. asiat. 2: 327, 1849 (Griffith 1849). [440]
* *Marchantia balboi* Gola, Mem. Reale Accad. Sci. Torino (ser. 2) 65 (1): 2, 1916 (Gola 1916). [441]
* *Marchantia balboi* var. *acutisquamata* Gerola, Lav. Bot. Ist. Bot. Univ. Padova 12: 472, 1947 (Gerola 1947). [442]
* *Marchantia cagnii* Gola, Ann. Bot. (Rome) 6 (2): 271, 1907 (Gola 1907). [443]
* *Marchantia cengiana* Gerola, Lav. Bot. Ist. Bot. Univ. Padova 12: 473, 1947 (Gerola 1947). [444]
* *Marchantia friedrichsthaliana* Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 438, 1877 (Trevisan 1877).
* *Marchantia keniae* Gola, Mem. Reale Accad. Sci. Torino (ser. 2) 65 (1): 3, 1916 (Gola 1916). [445]
* *Marchantia papyracea* Gola, Ann. Bot. (Rome) 6 (2): 271, 1907 (Gola 1907). [446]

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440 *Marchantia assamica* is a doubtful taxon. Bischler (1989b) could not find the type specimen.
441 *Marchantia balboi* is a doubtful taxon. Bischler-Causse (1993) could not find the type specimen.
442 *Marchantia balboi* var. *acutisquamata* is a doubtful taxon, Bischler-Causse (1993) could not find the type specimen and did not know what it is.
443 *Marchantia cagnii* is a doubtful taxon. Bischler-Causse (1993) could not find the type specimen, but the description points to *Marchantia paleacea*.
444 *Marchantia cengiana* is a doubtful taxon. Bischler-Causse (1993) could not find the type specimen, but the description points to *Marchantia pappeana.*
445 *Marchantia keniae* is a doubtful taxon. Bischler-Causse (1993) could not find the type specimen, but the description points to *Marchantia pappeana.*
446 *Marchantia papyracea* is a doubtful taxon. Bischler-Causse (1993) could not find the type specimen, but the description points to *Marchantia pappeana.*

* *Marchantia quadriloba* Steph., Candollea 14: 110, 1953 (Bonner 1953b).
* *Marchantia sellae* Gola, Ann. Bot. (Rome) 6 (2): 271, 1907 (Gola 1907). [447]
** *Marchantia stoloniscyphulus* (C.Gao et K.C.Chang) Piippo, J. Hattori Bot. Lab. 68: 134, 1990 (Piippo 1990). Bas.: *Marchantiopsis stoloniscyphulus* C.Gao et K.C.Chang, Bull. Bot. Res., Harbin 2 (4): 114, 1982 (Gao and Chang 1982).
* *Marchantia trilocularis* Roth, Tent. Fl. Germ. 1: 487, 1788 (Roth 1788). [448]
* *Marchantia tusui* Gola, Mem. Reale Accad. Sci. Torino (ser. 2) 65 (1): 3, 1916 (Gola 1916). [449]

** ***Preissia* Corda**, Gen. hepat.: 647, 1829 (Corda 1829).
*** *Preissia quadrata* (Scop.) Nees, Naturgesch. Eur. Leberm. 4: 135, 1838 (Nees 1838a). Bas.: *Marchantia quadrata* Scop., Fl. Carniol. (ed. 2) 2: 355, 1772 (Scopoli 1772).
** *Preissia quadrata* subsp. *hyperborea* R.M.Schust., Phytologia 57 (6): 410, 1985 (Schuster 1985b).

*** Monocleaceae A.B.Frank

by D.G. Long

*** ***Monoclea* Hook.**, Musci Exot. 2: tab. clxxiv, 1820 (Hooker 1820).
*** *Monoclea forsteri* Hook., Musci Exot. 2: tab. clxxiv, 1820 (Hooker 1820).
*** *Monoclea gottschei* Lindb., Rev. Bryol. 13 (6): 102, 1886 (Lindberg 1886).
*** *Monoclea gottschei* subsp. *elongata* Gradst. et Mues, Pl. Syst. Evol. 180 (1/2): 133, 1992 (Gradstein et al. 1992).

*** Monosoleniaceae Inoue

by D.G.Long

*** ***Monosolenium* Griff.**, Not. pl. asiat. 2: 341, 1849 (Griffith 1849).
*** *Monosolenium tenerum* Griff., Not. pl. asiat. 2: 341, 1849 (Griffith 1849).

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447 *Marchantia sellae* is a doubtful taxon. Bischler-Causse (1993) could not find the type specimen, but the description points to *Marchantia pappeana* or *Marchantia paleacea.*

448 *Marchantia trilocularis* is a doubtful taxon which Bischler-Causse (1993) could not place. The name may have priority once its identity is determined.

449 *Marchantia tusui* is a doubtful taxon. Bischler-Causse (1993) could not find the type specimen, but the description points to *Marchantia pappeana.*

*** Oxymitraceae Müll.Frib. ex Grolle

by D.G. Long

*** ***Oxymitra* Bisch. ex Lindenb.**, Syn. hepat. eur: 124, 1829 (Lindenberg 1829).
*** *Oxymitra cristata* Garside, Bothalia 23 (2): 211, 1993 (Perold 1993). Based on: *Oxymitra cristata* Garside, J. S. African Bot. 24: 83, 1958 (Garside 1958), *nom. inval.*
*** *Oxymitra incrassata* (Brot.) Sérgio et Sim-Sim, J. Bryol. 15 (4): 662, 1989 (Sérgio and Sim-Sim 1989). Bas.: *Riccia incrassata* Brot., Fl. lusit. 2: 428, 1804 [1805] (Brotero 1804).

*** Ricciaceae Rchb.

by R. Stotler, B.J. Crandall-Stotler and D.C. Cargill

** ***Riccia* L.**, Sp. Pl. 1: 1138, 1753 (Linnaeus 1753) nom. conserv.

** **subg. *Chartaceae* Perold**, Bothalia 16 (1): 29, 1986 (Volk and Perold 1986c).
*** *Riccia schelpei* O.H.Volk et Perold, Bothalia 16 (1): 29, 1986 (Volk and Perold 1986c).

** **subg. *Leptoriccia* R.M.Schust.**, Phytologia 56 (2): 72, 1984 (Schuster 1984).
*** *Riccia membranacea* Gottsche et Lindenb., Syn. Hepat. 4: 608, 1846 (Gottsche et al. 1846).

** **subg. *Riccia***
*** *Riccia albida* Sull. ex Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 231, 1869 (Austin 1869).
*** *Riccia albopunctata* Jovet-Ast, Cryptog. Bryol. Lichénol. 12 (3): 237, 1991 (Jovet-Ast 1991).
*** *Riccia australis* Steph., Bull. Herb. Boissier 6 (4): 337 (29), 1898 (Stephani 1898a).
*** *Riccia boliviensis* Jovet-Ast, Cryptog. Bryol. Lichénol. 12 (3): 242, 1991 (Jovet-Ast 1991).
*** *Riccia brasiliensis* Schiffn., Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr. 111: 6, 1964 (Schiffner and Arnell 1964).
*** *Riccia breutelii* Hampe, Bull. Herb. Boissier 6 (4): 325 (17), 1898 (Stephani 1898a).
*** *Riccia brittonii* M.Howe, Ann. Missouri Bot. Gard. 2 (1/2): 50, 1915 (Britton 1915).
* *Riccia chudoana* Steph., Sp. Hepat. (Stephani) 6: 1, 1917 (Stephani 1917a).
*** *Riccia coracina* Jovet-Ast, Cryptog. Bryol. 24 (3): 212, 2003 (Jovet-Ast 2003).
*** *Riccia corrugata* Jovet-Ast, Cryptog. Bryol. 21 (4): 308, 2000 (Jovet-Ast 2000).
*** *Riccia crassivenia* Jovet-Ast, Cryptog. Bryol. 21 (4): 312, 2000 (Jovet-Ast 2000).
*** *Riccia cubensis* S.W.Arnell, Bryologist 61 (2): 142, 1958 (Arnell 1958c).

*** *Riccia discolor* Lehm. et Lindenb., Nov. Stirp. Pug. 4: 1, 1832 (Lehmann 1832).
*** *Riccia ekmanii* S.W.Arnell, Bryologist 61 (2): 143, 1958 (Arnell 1958c).
*** *Riccia elliottii* Steph., Bull. Herb. Boissier 6 (4): 324 (16), 1898 (Stephani 1898a).
*** *Riccia enyae* Jovet-Ast, Cryptog. Bryol. Lichénol. 12 (3): 230, 1991 (Jovet-Ast 1991).
*** *Riccia erythrocarpa* Jovet-Ast, Cryptog. Bryol. Lichénol. 12 (3): 257, 1991 (Jovet-Ast 1991).
*** *Riccia fruchartii* Steph., Bull. Herb. Boissier 6 (4): 330 (22), 1898 (Stephani 1898a).
*** *Riccia gangetica* Ahmad ex L.Söderstr., A.Hagborg et von Konrat, Phytotaxa 65: 57, 2012 (Söderström et al. 2012f). Based on: *Riccia gangetica* Ahmad, Curr. Sci. 11 (11): 433, 1942 (Ahmad 1942), *nom. inval.*
*** *Riccia grandis* Nees, Fl. Bras. (Martius) 1 (1): 300, 1833 (Nees 1833a).
*** *Riccia helenae* Jovet-Ast, J. Hattori Bot. Lab. 74: 96, 1993 (Jovet-Ast 1993a).
** *Riccia hirta* (Austin) Underw., Bot. Gaz. 19 (7): 274, 1894 (Underwood 1894). Bas.: *Riccia arvensis* var. *hirta* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 232, 1869 (Austin 1869).
*** *Riccia horrida* Jovet-Ast, Cryptog. Bryol. Lichénol. 12 (3): 226, 1991 (Jovet-Ast 1991).
*** *Riccia hortorum* Bory, Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 18 (1): 435, 1836 [1837] (Lindenberg 1836).
*** *Riccia howellii* M.Howe, Proc. Calif. Acad. Sci. (ser. 4) 21 (17): 202, 1934 (Howe 1934).
* *Riccia ianthina* Jovet-Ast, Rev. Bryol. Lichénol. 44 (4): 418, 1978 (Jovet-Ast 1978). [450]
*** *Riccia inflexa* Taylor, London J. Bot. 5: 417, 1846 (Taylor 1846b).
*** *Riccia iodocheila* M.Howe, Proc. Calif. Acad. Sci. (ser. 4) 21 (17): 200, 1934 (Howe 1934).
*** *Riccia lanceolata* Steph., Hedwigia 27 (3/4): 110, 1888 (Stephani 1888d).
*** *Riccia lindmanii* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 23 (III, 2): 29, 1897 (Stephani 1897a).
** *Riccia macallisteri* M.Howe, Bryologist 20 (3): 35, 1917 (Howe 1917).
*** *Riccia macrospora* Steph., Bull. Herb. Boissier 6 (4): 328 (20), 1898 (Stephani 1898a).
** *Riccia mamillata* Trab. ex Steph., Rev. Bryol. 16 (5): 65, 1889 (Stephani 1889b).
*** *Riccia mauryana* Steph., Bull. Herb. Boissier 6 (4): 327 (19), 1898 (Stephani 1898a).
*** *Riccia olgensis* Na-Thalang, Brunonia 3 (1): 100, 1980 (Na-Thalang 1980).
*** *Riccia planobiconvexa* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 23 (III, 2): 29, 1897 (Stephani 1897a).
*** *Riccia ridleyi* A.Gepp, J. Linn. Soc., Bot. 27 (181): 74, 1890 (Gepp 1890).
*** *Riccia sanguineisporis* Jovet-Ast, Cryptog. Bryol. Lichénol. 12 (3): 253, 1991 (Jovet-Ast 1991).
*** *Riccia squamata* Nees, Fl. Bras. (Martius) 1 (1): 302, 1833 (Nees 1833a).

450 *Riccia ianthina* seems identical to glabrous phases of *Riccia atromarginata* (Schuster 1992d). It is related to *Riccia iodocheila* and *Riccia violacea* (Bischler-Causse et al. 2005), but it is only known from the type specimen.

*** *Riccia subdepilata* Jovet-Ast, Cryptog. Bryol. Lichénol. 12 (3): 228, 1991 (Jovet-Ast 1991).
*** *Riccia subplana* Steph., Symb. Antill. (Urban) 3 (2): 275, 1902 (Stephani 1902e).
*** *Riccia taeniiformis* Jovet-Ast, Cryptog. Bryol. Lichénol. 12 (3): 270, 1991 (Jovet-Ast 1991).
*** *Riccia viannae* Jovet-Ast, Cryptog. Bryol. Lichénol. 12 (3): 261, 1991 (Jovet-Ast 1991).
*** *Riccia vitalii* Jovet-Ast, Mem. New York Bot. Gard. 45: 285, 1987 (Jovet-Ast 1987).
*** *Riccia weinionis* Steph., Bull. Herb. Boissier 6 (4): 326 (18), 1898 (Stephani 1898a).

** **sect. *Pilifer* O.H.Volk**, Mitt. Bot. Staatssamml. München 19: 455, 1983 (Volk 1983).
*** *Riccia alatospora* O.H.Volk et Perold, Bothalia 15 (3/4): 534, 1985 (Volk and Perold 1985).
*** *Riccia albomarginata* Bisch. ex C.Krauss, Flora 29 (9): 135, 1846 (Krauss 1846).
*** *Riccia albovestita* O.H.Volk, Mitt. Bot. Staatssamml. München 17: 245, 1981 (Volk 1981).
*** *Riccia ampullacea* Perold, Bothalia 20 (2): 168, 1990 (Perold 1990e).
*** *Riccia concava* Bisch. ex C.Krauss, Flora 29 (9): 135, 1846 (Krauss 1846).
*** *Riccia elongata* Perold, Bothalia 20 (2): 167, 1990 (Perold 1990e).
*** *Riccia furfuracea* Perold, Bothalia 20 (2): 176, 1990 (Perold 1990b).
*** *Riccia hantamensis* Perold, Bothalia 19 (2): 157, 1989 (Perold 1989b).
*** *Riccia hirsuta* O.H.Volk et Perold, Bothalia 16 (2): 187, 1986 (Volk and Perold 1986a).
*** *Riccia namaquensis* Perold, Bothalia 20 (2): 180, 1990 (Perold 1990b).
*** *Riccia parvoareolata* O.H.Volk et Perold, Bothalia 15 (1/2): 117, 1984 (Volk and Perold 1984).
*** *Riccia pulveracea* Perold, Bothalia 20 (2): 185, 1990 (Perold 1990c).
*** *Riccia radicosa* Pearson, Natuurw. Tijdschr. 4 (5/6): 142, 1922 (Pearson 1922a).
*** *Riccia simii* Perold, Bothalia 20 (1): 36, 1990 (Perold 1990a).
*** *Riccia trachyglossa* Perold, Bothalia 20 (2): 172, 1990 (Perold 1990e).
*** *Riccia villosa* Steph., Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr. 88: 724, 1913 (Stephani 1913b).
*** *Riccia vitrea* Perold, Bothalia 20 (2): 178, 1990 (Perold 1990b).

** **sect. *Riccia***
*** *Riccia albolimbata* S.W.Arnell, Mitt. Bot. Staatssamml. München 2 (16): 264, 1957 (Arnell 1957c).
*** *Riccia alboporosa* Perold, Bothalia 19 (1): 12, 1989 (Perold 1989c).
*** *Riccia albornata* O.H.Volk et Perold, Bothalia 18 (2): 160, 1988 (Volk et al. 1988).
*** *Riccia angolensis* Steph., Bull. Herb. Boissier 6 (4): 323 (15), 1898 (Stephani 1898a).
*** *Riccia argenteolimbata* O.H.Volk et Perold, Bothalia 18 (2): 155, 1988 (Volk et al. 1988).
** *Riccia atlantica* Sérgio et Perold, J. Bryol. 17 (1): 127, 1992 (Sérgio and Perold 1992).
*** *Riccia atromarginata* Levier, Nuovo Giorn. Bot. Ital. 21 (2): 291, 1889 (Martelli 1889).

** *Riccia atromarginata* var. *jovet-astiae* Rauh et Buchloh, Rev. Bryol. Lichénol. 30 (1/2): 77, 1961 (Rauh and Buchloh 1961).
*** *Riccia atropurpurea* Sim, Trans. Roy. Soc. South Africa 15 (1): 11, 1926 (Sim 1926).
*** *Riccia beyrichiana* Hampe, Nov. Stirp. Pug. 7: 1, 1838 (Lehmann 1838).
*** *Riccia bicarinata* Lindb., Rev. Bryol. 4 (3): 41, 1877 (Lindberg 1877d).
*** *Riccia bicolorata* Perold, Bothalia 20 (2): 188, 1990 (Perold 1990c).
*** *Riccia bifurca* Hoffm., Deutschl. Fl., Theil 2 (Hoffm.): 95, 1795 [1796] (Hoffmann 1795).
*** *Riccia billardierei* Mont. et Nees, Syn. Hepat. 4: 602, 1846 (Gottsche et al. 1846).
*** *Riccia breidleri* Jur. ex Steph., Hedwigia 24 (1): 6, 1885 (Stephani 1885e).
*** *Riccia californica* Austin, Bull. Torrey Bot. Club 6 (7): 46, 1875 (Austin 1875c).
*** *Riccia campbelliana* M.Howe, Mem. Torrey Bot. Club 7: 26, 1899 (Howe 1899).
*** *Riccia ciliata* Hoffm., Deutschl. Fl., Theil 2 (Hoffm.): 95, 1795 [1796] (Hoffmann 1795).
*** *Riccia ciliifera* Link, Syn. hepat. eur: 119, 1829 (Lindenberg 1829).
* *Riccia congoana* Steph., Bull. Herb. Boissier 6 (4): 328 (20), 1898 (Stephani 1898a). [451]
*** *Riccia crinita* Taylor, London J. Bot. 5: 415, 1846 (Taylor 1846b).
*** *Riccia crozalsii* Levier, Rev. Bryol. 29 (4): 73, 1902 (Levier 1902).
* *Riccia crustata* Trab., Bull. Soc. Hist. Nat. Afrique N. 7: 87, 1916 (Trabut 1916). [452]
** *Riccia dictyospora* M.Howe, Bull. Torrey Bot. Club 28 (3): 163, 1901 (Howe 1901a).
*** *Riccia glauca* L., Sp. Pl. 1: 1139, 1753 (Linnaeus 1753).
** *Riccia glauca* var. *ciliaris* Warnst., Verh. Bot. Vereins Prov. Brandenburg 27 (1): 87, 1886 (Warnstorf 1886).
** *Riccia gothica* Damsh. et Hallingb., Lindbergia 12 (2/3): 100, 1986 [1987] (Damsholt and Hallingbäck 1986).
*** *Riccia gougetiana* Durieu et Mont., Ann. Sci. Nat. Bot. (sér. 3) 11: 35, 1849 (Montagne 1849).
** *Riccia gougetiana* var. *armatissima* Levier ex Müll.Frib., Lebermoose 1 (3): 161, 1907 (Müller 1907b).
*** *Riccia lamellosa* Raddi, Opusc. Sci. 2 (6): 351, 1818 (Raddi 1818b).
*** *Riccia ligula* Steph., Bull. Herb. Boissier 6 (4): 315 (7), 1898 (Stephani 1898a).
*** *Riccia limbata* Bisch. ex C.Krauss, Flora 29 (9): 135, 1846 (Krauss 1846).
*** *Riccia macrocarpa* Levier, Bull. Soc. Bot. Ital. 1894: 114, 1894 (Levier 1894).
*** *Riccia mammifera* O.H.Volk et Perold, Bothalia 16 (2): 176, 1986 (Volk and Perold 1986b).
*** *Riccia melitensis* C.Massal., Bull. Soc. Bot. Ital. 1913 (2/3): 52, 1913 (Massalongo 1913).
*** *Riccia michelii* Raddi, Opusc. Sci. 2 (6): 352, 1818 (Raddi 1818b).
*** *Riccia microciliata* O.H.Volk et Perold, Bothalia 16 (2): 173, 1986 (Volk and Perold 1986b).

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451 *Riccia congoana* is possibly conspecific with *Riccia billardierei* (Perold 1989a).

452 *Riccia crustata* may be conspecific with *Riccia albida* (Jovet-Ast 1986).

*** *Riccia montana* Perold, Bothalia 19 (1): 9, 1989 (Perold 1989c).
*** *Riccia natalensis* Sim, Trans. Roy. Soc. South Africa 15 (1): 9, 1926 (Sim 1926).
*** *Riccia nigrella* DC., Fl. Franç. (DC. & Lamarck), 5 (6): 193, 1815 (De Candolle and Lamarck 1815).
*** *Riccia okahandjana* S.W.Arnell, Mitt. Bot. Staatssamml. München 2 (16): 268, 1957 (Arnell 1957c).
** *Riccia ozarkiana* McGregor, Bryologist 63 (1): 30, 1960 (McGregor 1960).
*** *Riccia papillosa* Moris, Stirp. Sard. Elench.: 18, 1829 (Moris 1829).
*** *Riccia pottsiana* Sim, Trans. Roy. Soc. South Africa 15 (1): 10, 1926 (Sim 1926).
*** *Riccia rosea* O.H.Volk et Perold, Bothalia 16 (2): 181, 1986 (Volk and Perold 1986d).
* *Riccia runssorensis* Steph., Bull. Herb. Boissier 6 (4): 330 (22), 1898 (Stephani 1898a). [453]
*** *Riccia sommieri* Levier, Isola Giglio: 119, 1900 (Bottini et al. 1900).
*** *Riccia sorocarpa* Bisch., Bem. Leberm.: 145, 1835 (Bischoff 1835).
** *Riccia sorocarpa* var. *heegii* Schiffn., Hedwigia 53 (1/2): 36, 1912 (Schiffner 1912a).
*** *Riccia subbifurca* Warnst. ex Croz., Rev. Bryol. 30 (4): 62, 1903 (Crozals 1903b).
** *Riccia tenella* D.L.Jacobs, Bryologist 52 (4): 168, 1949 [1950] (Jacobs 1949).
*** *Riccia trabutiana* Steph., Rev. Bryol. 16 (5): 65, 1889 (Stephani 1889b).
*** *Riccia violacea* M.Howe, Ann. Missouri Bot. Gard. 2 (1/2): 51, 1915 (Britton 1915).
*** *Riccia violacea* var. *laevis* Jovet-Ast, Cryptog. Bryol. Lichénol. 10 (2): 100, 1989 (Jovet-Ast 1989).
*** *Riccia warnstorfii* Limpr. ex Warnst., Verh. Bot. Vereins Prov. Brandenburg 27 (1): 85, 1886 (Warnstorf 1886).

** **subg. *Ricciella* (A.Braun) Boulay**, Musc. France 2: 198, 1904 (Boulay 1904). Bas.: *Ricciella* A.Braun, Flora 4 (2): 756, 1821 (Braun 1821).
*** *Riccia cancellata* Taylor, London J. Bot. 5: 414, 1846 (Taylor 1846b).
*** *Riccia cincta* Jovet-Ast, Cryptog. Bryol. 21 (4): 303, 2000 (Jovet-Ast 2000).
*** *Riccia cruciata* Kashyap, J. Bombay Nat. Hist. Soc. 24 (2): 349, 1916 (Kashyap 1916).
*** *Riccia eburnea* Jovet-Ast, Cryptog. Bryol. 21 (4): 300, 2000 (Jovet-Ast 2000).
*** *Riccia hasskarliana* Steph., Bull. Herb. Boissier 6 (5): 374 (49), 1898 (Stephani 1898b).
*** *Riccia junghuhniana* Nees et Lindenb., Syn. Hepat. 4: 609, 1846 (Gottsche et al. 1846).
** *Riccia junghuhniana* var. *simplex* Schiffn., Hep. Fl. Buitenzorg: 14, 1900 (Schiffner 1900a).
*** *Riccia mangalorica* Ahmad ex Jovet-Ast, Cryptog. Bryol. 24 (3): 223, 2003 (Jovet-Ast 2003). Based on: *Riccia mangalorica* Ahmad, Curr. Sci. 11 (11): 433, 1942 (Ahmad 1942), *nom. inval.*
*** *Riccia multifida* (Steph.) Steph., Bull. Herb. Boissier 6 (5): 365 (40), 1898 (Stephani 1898b). Bas.: *Ricciella multifida* Steph., Hedwigia 28 (4): 273, 1889 (Stephani 1889c).

453 *Riccia runssorensis* is possibly conspecific with *Riccia macrospora* (Seppelt 1998).

** *Riccia polycarpa* (Trab.) Jelenc, Bull. Trimestriel Geogr. Archeol. Oran 73 (228): 88, 1950 (Jelenc 1950). Bas.: *Ricciella polycarpa* Trab., Mém. Soc. Hist. Nat. Afrique N. 3: 36, 1933 (Maire 1933).
*** *Riccia porosa* Taylor, London J. Bot. 5: 416, 1846 (Taylor 1846b).
*** *Riccia pullulans* Jovet-Ast, Cryptog. Bryol. Lichénol. 18 (3): 183, 1997 (Jovet-Ast 1997).

** **sect. *Ricciella* (A.Braun) Bisch.**, Bem. Leberm.: 160, 1835 (Bischoff 1835). Bas.: *Ricciella* A.Braun, Flora 4 (2): 756, 1821 (Braun 1821).
* *Riccia bahiensis* Steph., Bull. Herb. Boissier 6 (5): 375 (50), 1898 (Stephani 1898b). [454]
*** *Riccia canaliculata* Hoffm., Deutschl. Fl., Theil 2 (Hoffm.): 96, 1795 [1796] (Hoffmann 1795).
*** *Riccia chiapasensis* Jovet-Ast, Cryptog. Bryol. Lichénol. 14 (3): 235, 1993 (Jovet-Ast 1993b).
*** *Riccia crassifrons* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 570, 1885 (Spruce 1885).
*** *Riccia duplex* Lorb. ex Müll.Frib., Hedwigia 80 (1/2): 100, 1941 (Müller 1941).
** *Riccia duplex* var. *megaspora* Na-Thalang, Brunonia 3 (1): 128, 1980 (Na-Thalang 1980).
*** *Riccia dussiana* Steph., Symb. Antill. (Urban) 3 (2): 275, 1902 (Stephani 1902e).
*** *Riccia fluitans* L., Sp. Pl. 1: 1139, 1753 (Linnaeus 1753).
*** *Riccia frostii* Austin, Bull. Torrey Bot. Club 6 (3): 17, 1875 (Austin 1875b).
* *Riccia frostii* var. *crystallinoides* Schiffn., Ann. K. K. Naturhist. Hofmus. 27: 503, 1913 (Schiffner 1913).
*** *Riccia geissleriana* Jovet-Ast, Cryptog. Bryol. Lichénol. 14 (3): 236, 1993 (Jovet-Ast 1993b).
*** *Riccia hegewaldiana* Jovet-Ast, Cryptog. Bryol. Lichénol. 14 (3): 238, 1993 (Jovet-Ast 1993b).
*** *Riccia huebeneriana* Lindenb., Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 18 (1): 504d, 1836 [1837] (Lindenberg 1836).
* *Riccia huebeneriana* subsp. *sullivantii* (Austin) R.M.Schust., Hepat. Anthocerotae N. Amer. 6: 457, 1992 (Schuster 1992d). Bas.: *Riccia sullivantii* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 233, 1869 (Austin 1869).
*** *Riccia jovet-astiae* E.Vianna, Bol. Inst. Bioci. Univ. Fed. Rio Grande do Sul 38: 165, 1985 (Vianna 1985).
*** *Riccia limicola* Jovet-Ast, Rev. Bryol. Lichénol. 44 (4): 422, 1978 (Jovet-Ast 1978).
*** *Riccia paraguayensis* Spruce, Bull. Soc. Bot. France (Congr. Bot.) 36: cxcvi, 1889 [1890] (Spruce 1889).
*** *Riccia paranaensis* Hässel, Opera Lilloana 7: 228, 1962 [1963] (Hässel 1962). [455]
*** *Riccia perennis* Steph., Bull. Herb. Boissier 6 (5): 372 (47), 1898 (Stephani 1898b).

454 *Riccia bahiensis* is conspecific with *Riccia cavernosa* in Jovet-Ast (1965), but it was accepted by Bischler-Causse et al. (2005). It is only known from the type specimen.

455 *Riccia paranaensis* may be conspecific with *Riccia huebeneriana* (Schuster 1992d), but it was accepted by Hässel and Rubies (2009).

*** *Riccia purpurascens* Lehm., Linnaea 4: 371, 1829 (Lehmann 1829).
** *Riccia rhenana* Lorb. ex Müll.Frib., Hedwigia 80 (1/2): 94, 1941 (Müller 1941).
** *Riccia rhenana* var. *violacea* M.F.Boiko, Chornom. Bot. J. 7: 93, 2011 (Boiko 2011).
*** *Riccia stricta* (Lindenb.) Perold, Bothalia 20 (2): 197, 1990 (Perold 1990d). Bas.: *Riccia fluitans* var. *stricta* Lindenb., Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 18 (1): 444, 1836 [1837] (Lindenberg 1836).

** **sect. *Spongodes* Nees**, Naturgesch. Eur. Leberm. 4: 391, 1838 (Nees 1838a).
*** *Riccia bullosa* Link, Syn. hepat. eur: 119, 1829 (Lindenberg 1829).
*** *Riccia cavernosa* Hoffm., Deutschl. Fl., Theil 2 (Hoffm.): 95, 1795 [1796] (Hoffmann 1795).
*** *Riccia crystallina* L., Sp. Pl. 1: 1138, 1753 (Linnaeus 1753).
*** *Riccia cupulifera* A.V.Duthie, Trans. Roy. Soc. South Africa 24 (2): 116, 1936 (Duthie and Garside 1936).
*** *Riccia garsidei* Sim, Trans. Roy. Soc. South Africa 15 (1): 13, 1926 (Sim 1926).
*** *Riccia moenkemeyeri* Steph., Bot. Jahrb. Syst. 8 (2): 95, 1886 (Stephani 1886d).
*** *Riccia rubricollis* Garside et A.V.Duthie ex Perold, Bothalia 21 (1): 51, 1991 (Perold 1991a).
*** *Riccia volkii* S.W.Arnell, Mitt. Bot. Staatssamml. München 2 (16): 271, 1957 (Arnell 1957c).
*** *Riccia vulcanicola* Eb.Fisch., Trop. Bryol. 8: 70, 1993 (Fischer 1993).

** **subg. *Thallocarpus* (Lindb.) Jovet-Ast**, Cryptog. Bryol. Lichénol. 14 (3): 220, 1993 (Jovet-Ast 1993b). Bas.: *Thallocarpus* Lindb., Not. Sällsk. Fauna Fl. Fenn. Förh. 13: 377, 1874 (Lindberg 1874a).
*** *Riccia curtisii* (Austin) Austin, Bull. Torrey Bot. Club 6 (52): 305, 1879 (Austin 1879). Bas.: *Cryptocarpus curtisii* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 231, 1869 (Austin 1869).
** *Riccia leptothallus* R.M.Schust., J. Hattori Bot. Lab. 71: 271, 1992 (Schuster 1992c).
*** *Riccia perssonii* Sultan Khan, Svensk Bot. Tidskr. 49 (3): 433, 1955 (Kahn 1955).

** **subg. *Triseriata* Jovet-Ast**, Cryptog. Bryol. Lichénol. 17 (2): 132, 1996 (Jovet-Ast 1996).
*** *Riccia singularis* Jovet-Ast, Cryptog. Bryol. Lichénol. 17 (2): 127, 1996 (Jovet-Ast 1996).

Incertae sedis
** *Riccia abuensis* Bapna, Trans. Brit. Bryol. Soc. 4 (2): 249, 1962 (Bapna 1962).
** *Riccia acutisulca* Steph., Sp. Hepat. (Stephani) 6: 1, 1917 (Stephani 1917a).
* *Riccia amboinensis* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 44, 1890 (Schiffner 1890).
** *Riccia aravalliensis* Pandé et Udar, J. Indian Bot. Soc. 36 (3): 249, 1957 (Pandé and Udar 1957).

* *Riccia arnellii* Sultan Khan, Bryologist 60 (1): 29, 1957 (Khan 1957).
** *Riccia asprella* Carrington et Pearson, Proc. Linn. Soc. New South Wales (ser. 2) 2 (4): 1059, 1888 (Carrington and Pearson 1888a).
* *Riccia asservanda* De Not. ex Lamothe, Rech. Anat. Taxinom. Gamét. Marchantiales: 138, 1919 (Lamothe 1919).
** *Riccia attenuata* Pandé, Proc. Natl. Inst. Sci. India B 25 (2): 92, 1959 (Pandé and Udar 1959).
* *Riccia balansae* Steph., Bull. Herb. Boissier 6 (5): 370 (45), 1898 (Stephani 1898b).
* *Riccia bialbistrata* Hässel, Opera Lilloana 7: 243, 1962 [1963] (Hässel 1962). [456]
** *Riccia biokoensis* Perold, Nova Hedwigia 64 (1/2): 244, 1997 (Perold 1997b).
** *Riccia blackii* Na-Thalang, Brunonia 3 (1): 81, 1980 (Na-Thalang 1980).
*** *Riccia caroliniana* Na-Thalang, Brunonia 3 (1): 72, 1980 (Na-Thalang 1980).
** *Riccia cartilaginosa* Steph., Hedwigia 28 (4): 272, 1889 (Stephani 1889c).
* *Riccia chartacea* K.I.Goebel, Organogr. Pfl., ed. 2, 2 (1): 630, 1915 (Goebel 1915).
** *Riccia chinensis* Herzog, Symb. Sin. 5: 1, 1930 (Nicholson et al. 1930).
** *Riccia collata* Na-Thalang, Brunonia 3 (1): 122, 1980 (Na-Thalang 1980).
** *Riccia compacta* Garside, Trans. Roy. Soc. South Africa 27 (1): 17, 1939 (Duthie and Garside 1939).
** *Riccia convexa* Steph., Sp. Hepat. (Stephani) 6: 2, 1917 (Stephani 1917a).
* *Riccia coronata* Sim, Trans. Roy. Soc. South Africa 15 (1): 9, 1926 (Sim 1926). [457]
** *Riccia crassa* Steph., Bull. Herb. Boissier 6 (5): 376 (51), 1898 (Stephani 1898b).
** *Riccia crenatodentata* O.H.Volk, Nova Hedwigia 46 (1/2): 27, 1988 (Volk 1988).
** *Riccia delavayi* Steph., Bull. Herb. Boissier 6 (5): 367 (42), 1898 (Stephani 1898b).
** *Riccia deserticola* Steph., Bull. Herb. Boissier 6 (5): 373 (48), 1898 (Stephani 1898b).
*** *Riccia erubescens* Perold, J. Bryol. 16 (3): 371, 1991 (Perold 1991b).
** *Riccia esulcata* Steph., Sp. Hepat. (Stephani) 6: 2, 1917 (Stephani 1917a).
** *Riccia fertilissima* Steph., Sp. Hepat. (Stephani) 6: 2, 1917 (Stephani 1917a).
* *Riccia gemmifera* O.H.Volk, Nova Hedwigia 39: 131, 1984 (Volk 1984). [458]
** *Riccia grollei* Udar, Curr. Sci. 34 (4): 126, 1965 (Udar 1965). *Nom. nov. pro Riccia tuberculata* Pandé et Udar, Proc. Natl. Inst. Sci. India B 24 (2): 83, 1958 (Pandé and Udar 1958), *nom. illeg*.
** *Riccia handelii* Schiffn., Symb. sin. 2: 81, 1937 (Schiffner 1937).
** *Riccia hawaiiensis* Hürl., Phytologia 61 (5): 339, 1986 (Hürlimann 1986).
** *Riccia indica* Udar et A.Gupta, Proc. V Indian Geophytol. Conf., Special Publ.: 307, 1984 (Udar and Gupta 1984).
** *Riccia indira-gandhiensis* Dabhade et A.Hasan, J. Bombay Nat. Hist. Soc. 83 (2): 400, 1986 (Dabhade and Hasan 1986).

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456 *Riccia bialbistrata* is a doubtful taxon closely related to *Riccia lindmanii* (Bischler-Causse et al. 2005).

457 *Riccia coronata* is only known from the type specimen, which could not be traced. The description is very brief and it is suspected that it refers to smaller plants of *Riccia natalensis* (Perold 1999a).

458 *Riccia gemmifera* is possibly conspecific with *Riccia atropurpurea* (Perold 1999a).

* *Riccia intermedia* Roum., Mém. Soc. Arts Sci. Carcassonne 5: 198, 1888 (Roumeguère 1888). [459]

** *Riccia jodhpurensis* Bapna, Bot. Not. 114 (2): 181, 1961 (Bapna 1961).

** *Riccia kirinensis* C.Gao et K.C.Chang, Acta Phytotax. Sin. 16 (4): 117, 1978 (Gao and Chang 1978).

*** *Riccia laxisquamata* (Steph.) Steph., Bull. Herb. Boissier 6 (5): 371 (46), 1898 (Stephani 1898b). Bas.: *Ricciella laxisquamata* Steph., Bot. Jahrb. Syst. 20 (3): 299, 1895 (Stephani 1895a).

** *Riccia liaoningensis* C.Gao et K.C.Chang, Acta Phytotax. Sin. 16 (4): 113, 1978 (Gao and Chang 1978).

** *Riccia linearis* (Schiffn.) Steph., Bull. Herb. Boissier 6 (5): 371 (46), 1898 (Stephani 1898b). Bas.: *Ricciella linearis* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 43, 1890 (Schiffner 1890).

** *Riccia luticola* Na-Thalang, Brunonia 3 (1): 123, 1980 (Na-Thalang 1980).

** *Riccia mamrensis* Perold, Cryptog. Bryol. 26 (1): 68, 2005 (Perold 2005).

* *Riccia marginata* Lindb., Meddel. Soc. Fauna Fl. Fenn. 1: 106, 1876 [1877] (Lindberg 1876b). [460]

** *Riccia melanospora* Kashyap, Liverworts W. Himal. 1: 94, 1929 (Kashyap 1929).

** *Riccia miyakeana* Schiffn., Österr. Bot. Z. 49 (11): 386, 1899 (Schiffner 1899c).

** *Riccia muscicola* Steph., Hedwigia 24 (1): 4, 1885 (Stephani 1885e).

*** *Riccia nigerica* E.W.Jones, Trans. Brit. Bryol. Soc. 3 (2): 225, 1957 (Jones 1957a).

* *Riccia nigrescens* Mont., Voy. Amér. Mérid., Bot. 7 (1): 15, 1839 (Montagne 1839b). [461]

** *Riccia nipponica* S.Hatt., J. Hattori Bot. Lab. 9: 38, 1953 (Shimizu and Hattori 1953a).

** *Riccia novo-hannoverana* Schiffn., Leberm., Forschungsr. Gazelle 4 (4): 44, 1890 (Schiffner 1890).

** *Riccia numeensis* Steph., Bull. Herb. Boissier 6 (4): 343 (35), 1898 (Stephani 1898a).

* *Riccia obtusa* Meijer, J. Hattori Bot. Lab. 20: 113, 1958 (Meijer 1958). [462]

*** *Riccia oerstediana* Lindenb. et Hampe, Linnaea 24 (3): 304, 1851 [1852] (Hampe 1851b).

** *Riccia pandei* Udar, J. Indian Bot. Soc. 38 (1): 149, 1959 (Udar 1959).

*** *Riccia papillispora* Steph., Bull. Herb. Boissier 6 (4): 334 (26), 1898 (Stephani 1898a).

** *Riccia papulosa* (Steph.) Steph., Bull. Herb. Boissier 6 (5): 377 (52), 1898 (Stephani 1898b). Bas.: *Ricciella papulosa* Steph., Hedwigia 28 (4): 273, 1889 (Stephani 1889c).

** *Riccia papulosa* var. *variabilis* Na-Thalang, Brunonia 3 (1): 112, 1980 (Na-Thalang 1980).

** *Riccia pathankotensis* Kashyap, J. Bombay Nat. Hist. Soc. 24 (2): 349, 1916 (Kashyap 1916).

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459 *Riccia intermedia* (type from France) has neither been recognized in any recent treatment nor synonymized. The name may have priority once its identity is determined.

460 *Riccia marginata* is possibly conspecific with *Riccia beyrichiana* (Potemkin and Ahti 2012).

461 *Riccia nigrescens* is an *Anthoceros* species (Hässel and Rubies 2009).

462 *Riccia obtusa* may be conspecific with *Riccia gangetica* (Söderström et al. 2010a).

* *Riccia perthiana* Steph. ex K.I.Goebel, Organogr. Pfl., ed. 2, 2 (1): 630, 1915 (Goebel 1915).
* *Riccia prominens* Meijer, J. Hattori Bot. Lab. 20: 111, 1958 (Meijer 1958). [463]
** *Riccia pseudofluitans* C.Gao et K.C.Chang, Acta Phytotax. Sin. 16 (4): 116, 1978 (Gao and Chang 1978).
** *Riccia pubescens* S.Hatt., Nat. Sci. Mus. 14 (6): 141, 1943 (Hattori 1943a).
*** *Riccia radiata* Perold, Bothalia 34 (1): 23, 2004 (Perold 2004).
** *Riccia rechingeri* Steph., Akad. Wiss. Wien, Math.-Naturwiss. Kl., Denkschr. 81: 288, 1907 (Stephani 1907a).
* *Riccia reticulatula* Udar, Bull. Bot. Soc. Univ. Saugar 13: 49, 1961 (Udar 1961).
** *Riccia rorida* Na-Thalang, Brunonia 3 (1): 101, 1980 (Na-Thalang 1980).
* *Riccia saharensis* Steph. ex Jovet-Ast, Rev. Bryol. Lichénol. 26 (1/2): 62, 1957 (Gillett and Jovet-Ast 1957). [464]
** *Riccia satoi* S.Hatt., Bot. Mag. (Tokyo) 62 (733/734): 109, 1949 (Hattori 1949).
* *Riccia schroederi* Steph., 52 (5): 304, 1912 (Stephani 1912a).
*** *Riccia schweinfurthii* Steph., Bull. Herb. Boissier 6 (4): 339 (31), 1898 (Stephani 1898a).
** *Riccia sibayenii* Perold, Bothalia 31 (1): 151, 2001 (Perold 2001a).
*** *Riccia somaliensis* Perold, J. Bryol. 16 (3): 367, 1991 (Perold 1991b).
** *Riccia spongiosula* Na-Thalang, Brunonia 3 (1): 113, 1980 (Na-Thalang 1980).
* *Riccia subtilis* (Steph.) Steph., Bull. Herb. Boissier 6 (5): 364 (39), 1898 (Stephani 1898b). Bas.: *Ricciella subtilis* Steph., Bih. Kongl. Svenska Vetensk.-Akad. Handl. 23 (III, 2): 31, 1897 (Stephani 1897a).
** *Riccia sumatrana* Meijer, J. Hattori Bot. Lab. 20: 114, 1958 (Meijer 1958).
*** *Riccia symoensii* Vanden Berghen, Explor. Hydrobiol. Lac Bangweolo Luapula: 191, 1972 (Vanden Berghen 1972b).
** *Riccia tasmanica* Steph. ex Rodway, Tasm. Bryoph.: 4, 1917 (Rodway 1917b).
*** *Riccia tomentosa* O.H.Volk et Perold, Bothalia 20 (1): 25, 1990 (Volk and Perold 1990).
** *Riccia treubiana* Steph., Bull. Herb. Boissier 6 (4): 323 (15), 1898 (Stephani 1898a).
* *Riccia treubiana* var. *subrubescens* Schiffn., Hep. Fl. Buitenzorg: 16, 1900 (Schiffner 1900a).
* *Riccia triangularis* Steph., Bull. Mus. Natl. Hist. Nat. 18 (2): 116, 1912 (Corbière 1912).
* *Riccia tuberculata* Poir., Encycl. (Lamarck) 6: 199, 1804 (Lamarck and Poiret 1804). [465]
** *Riccia udarii* Kanwal, J. Indian Bot. Soc. 58 (3): 282, 1979 (Kanwal 1979).
* *Riccia velenovskyi* Kavina, Arch. Přír. Výzk. Čech 16 (2): 75, 1915 (Kavina 1915). [466]

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463 *Riccia prominens* may be conspecific with *Riccia junghuhniana* (Söderström et al. 2010a).

464 *Riccia saharensis* is possibly conspecific with *Riccia argenteolimbata* (Perold 1995).

465 *Riccia tuberculata* (type from France) has neither been recognized in any recent European treatment nor synonymized. The name may have priority once its identity is determined.

466 *Riccia velenovskyi* (type from Czech Republic) has neither been recognized in any recent European treatment nor synonymized. The name may have priority once its identity is determined.

** *Riccia velimalaiana* A.E.D.Daniels et P.Daniel, Bull. Bot. Surv. India 44 (1/4): 139, 2002 [2003] (Daniels and Daniel 2002).
** *Riccia victoriensis* Steph., Bull. Herb. Boissier 6 (5): 370, 1898 (Stephani 1898b).
** *Riccia weymouthiana* Steph. ex Rodway, Tasm. Bryoph.: 5, 1917 (Rodway 1917b).
** *Riccia wichurae* Steph., Bull. Herb. Boissier 6 (4): 330 (22), 1898 (Stephani 1898a).

** ***Ricciocarpos* Corda**, Gen. hepat.: 651, 1829 (Corda 1829).
*** *Ricciocarpos natans* (L.) Corda, Gen. hepat.: 651, 1829 (Corda 1829). Bas.: *Riccia natans* L., Syst. Nat., ed. 10., 2: 1339, 1759 (Linnaeus 1759).

*** Targioniaceae Dumort.

by D.G. Long

*** ***Targionia* L.**, Sp. Pl. 1: 1136, 1753 (Linnaeus 1753).

** **subg. *Prototargionia* R.M.Schust.**, Hepat. Anthocerotae N. Amer. 6: 69, 1992 (Schuster 1992d).
** *Targionia stellaris* (Müll.Frib.) Hässel, Opera Lilloana 7: 74, 1962 [1963] (Hässel 1962). Bas.: *Grimaldia stellaris* Müll.Frib., Feddes Repert. Spec. Nov. Regni Veg. 58: 61, 1955 (Müller 1955).

** **subg. *Targionia***
*** *Targionia hypophylla* L., Sp. Pl. 1: 1136, 1753 (Linnaeus 1753).
** *Targionia hypophylla* subsp. *linealis* W.Frey et Kürschner, Nova Hedwigia 57 (1/2): 127, 1993 (Frey and Kürschner 1993).
** *Targionia lorbeeriana* Müll.Frib., Hedwigia 79 (1/2): 78, 1940 (Müller 1940).

Incertae sedis
* *Targionia dioica* Schiffn., Denkschr. Kaiserl. Akad. Wiss., Math.-Naturwiss. Kl. 67: 154, 1898 (Schiffner 1898a). [467]
* *Targionia elongata* Bisch., Syn. Hepat. 4: 576, 1846 (Gottsche et al. 1846).
* *Targionia fiorii* Gola, Ann. Bot. (Rome) 13 (1): 62, 1914 (Gola 1914a).
* *Targionia formosica* Horik., J. Jap. Bot. 11: 499, 1935 (Horikawa 1935).
* *Targionia indica* Udar et A.Gupta, Geophytology 13 (1): 83, 1983 (Udar and Gupta 1983).

467 *Targionia dioica* is probably conspecific with *Targionia hypophylla* (Söderström et al. 2010a).

*** Wiesnerellaceae Inoue

by D.G.Long

*** ***Wiesnerella*** **Schiffn.**, Österr. Bot. Z. 46 (3): 86, 1896 (Schiffner 1896b).
*** *Wiesnerella denudata* (Mitt.) Steph., Bull. Herb. Boissier 7 (5): 382 (154), 1899 (Stephani 1899c). Bas.: *Dumortiera denudata* Mitt., J. Proc. Linn. Soc., Bot. 5 (18): 125, 1860 [1861] (Mitten 1860c).
* *Wiesnerella fasciaria* C.Gao et K.C.Chang, Acta Bot. Yunnan. 3 (4): 391, 1981 (Gao et al. 1981).

Neohodgsoniales D.G.Long

*** Neohodgsoniaceae D.G.Long

by D.G. Long

*** ***Neohodgsonia*** **Perss.**, Bot. Not. 107 (1): 40, 1954 (Persson 1954). *Nom. nov. pro Hodgsonia* Perss., Hodgsonia Leafl. Stockholm: 1, 1953 (Persson 1953).
*** *Neohodgsonia mirabilis* (Perss.) Perss., Bot. Not. 107 (1): 40, 1954 (Persson 1954). Bas.: *Hodgsonia mirabilis* Perss., Hodgsonia Leafl. Stockholm: 1, 1953 (Persson 1953).

Sphaerocarpales Cavers

*** Monocarpaceae D.J.Carr ex Schelpe

by D.G. Long

*** ***Monocarpus*** **D.J.Carr**, Austral. J. Bot. 4 (2): 176, 1956 (Carr 1956).
*** *Monocarpus sphaerocarpus* D.J.Carr, Austral. J. Bot. 4 (2): 176, 1956 (Carr 1956).

*** Riellaceae Engl.

by J. G. Segarra-Moragues and F. Puche

*** ***Austroriella*** **Cargill et J.Milne**, Polish Bot. J. 58 (1): 72, 2013 (Cargill and Milne 2013).
*** *Austroriella salta* J.Milne et Cargill, Polish Bot. J. 58 (1): 72, 2013 (Cargill and Milne 2013).

*** ***Riella* Mont.**, Ann. Sci. Nat. Bot. (sér. 3) 18: 11, 1852 (Montagne 1852).

*** **subg. *Riella***

*** *Riella alatospora* Wigglesw., J. Linn. Soc., Bot. 51 (339): 317, 1937 (Wigglesworth 1937).

*** *Riella americana* M.Howe et Underw., Bull. Torrey Bot. Club 30 (4): 218, 1903 (Howe and Underwood 1903).

* *Riella battandieri* Trab., Rev. Bryol. 13 (3): 35, 1886 (Trabut 1886).

*** *Riella bialata* Trab., Rev. Bryol. 35 (4): 96, 1908 (Trabut 1908).

*** *Riella capensis* Cavers, Rev. Bryol. 30 (5): 81, 1903 (Cavers 1903).

*** *Riella choconensis* Hässel, Symp. Biol. Hung. 35: 341, 1987 (Hässel 1987).

* *Riella cyrenaica* Maire, Bull. Soc. Hist. Nat. Afrique N. 30 (5): 312, 1939 (Maire and Weiler 1939).

*** *Riella echinospora* Wigglesw., J. Linn. Soc., Bot. 51 (339): 321, 1937 (Wigglesworth 1937).

* *Riella gallica* Balansa ex Trab., Rev. Gén. Bot. 3 (35): 450, 1891 (Trabut 1891).

*** *Riella halophila* Banwell, Trans. Brit. Bryol. Soc. 1 (5): 475, 1951 (Banwell 1951).

*** *Riella helicophylla* (Bory et Mont.) Mont., Ann. Sci. Nat. Bot. (sér. 3) 18: 12, 1852 (Montagne 1852). Bas.: *Duriaea helicophylla* Bory et Mont., Ann. Sci. Nat. Bot. (sér. 3) 1: 229, 1844 (Bory and Montagne 1844).

* *Riella helicophylla* var. *macrocarpa* P.Allorge, Sched. Br. Iber. (ser. 2): 4, 1929 (Allorge 1929).

* *Riella indica* Steph. ex Kashyap, J. Bombay Nat. Hist. Soc. 25 (2): 279, 1917 (Kashyap 1917).

*** *Riella notarisii* (Mont.) Mont., Ann. Sci. Nat. Bot. (sér. 3) 18: 12, 1852 (Montagne 1852). Bas.: *Sphaerocarpos notarisii* Mont., Ann. Sci. Nat. Bot. (sér. 2) 9: 39, 1838 (Montagne 1838). [468]

** *Riella numidica* Trab., Bull. Soc. Hist. Nat. Afrique N. 25 (9): 391, 1934 [1935] (Trabut 1934).

*** *Riella pampae* Hässel, Revista Mus. Argent. Ci. Nat., Bernardino Rivadavia Inst. Nac. Invest. Ci. Nat. Bot. 5 (9): 207, 1979 (Hässel 1979).

*** *Riella parisii* Gottsche, Hepat. Eur., Leberm. 38-39: no. 375, 1867 (Gottsche and Rabenhorst 1867).

*** *Riella purpureospora* Wigglesw., J. Linn. Soc., Bot. 51 (339): 312, 1937 (Wigglesworth 1937).

* *Riella reuteri* Mont., Ann. Sci. Nat. Bot. (sér. 3) 18: 12, 1852 (Montagne 1852).

* *Riella sersuensis* Trab., Bull. Soc. Hist. Nat. Afrique N. 25 (9): 392, 1934 [1935] (Trabut 1934).

** *Riella spiculata* J.Taylor, Kew Bull. 9 (1): 45, 1954 (Taylor 1954).

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468 *Riella notarisii* is a species complex with poorly defined taxonomic boundaries including *Riella battandieri*, *Riella cyrenaica*, *Riella gallica*, *Riella indica*, *Riella reuteri* and *Riella sersuensis*.

*** *Riella trigonospora* Segarra et Puche, S. African J. Bot. 94: 175, 2014 (Segarra-Moragues and Puche 2014).
*** *Riella undulata* Hässel, Symp. Biol. Hung. 35: 341, 1987 (Hässel 1987).

*** **subg. *Trabutiella* Porsild**, Bot. Tidsskr. 24 (3): 327, 1902 (Porsild 1902).
*** *Riella affinis* M.Howe et Underw., Bull. Torrey Bot. Club 30 (4): 221, 1903 (Howe and Underwood 1903).
*** *Riella cossoniana* Trab., Atlas fl. Alger 1: 6, 1886 (Battandier and Trabut 1886).
*** *Riella echinata* (Müll.Frib.) Segarra, Puche et Sabovlj., Phytotaxa 159 (3): 165, 2014 (Segarra-Moragues et al. 2014). Bas.: *Riella cossoniana* var. *echinata* Müll. Frib., Rev. Bryol. Lichénol. 22 (3/4): 132, 1953 [1954] (Müller 1953).
*** *Riella gamundiae* Hässel, Rev. Bryol. Lichénol. 38 (3/4): 580, 1972 [1973] (Hässel 1972b).
*** *Riella heliospora* Segarra, Puche et Sabovlj., Syst. Bot. 37 (2): 315, 2012 (Segarra-Moragues et al. 2012).
*** *Riella mediterranea* Segarra, Puche, Sabovlj., M.Infante et Heras, Phytotaxa 159 (3): 170, 2014 (Segarra-Moragues et al. 2014).

*** Sphaerocarpaceae Heeg

by D. Long

*** ***Geothallus* Campb.**, Bot. Gaz. 21 (1): 13, 1896 (Campbell 1896).
*** *Geothallus tuberosus* Campb., Bot. Gaz. 21 (1): 13, 1896 (Campbell 1896).

*** ***Sphaerocarpos* Boehm.**, Def. gen. pl., ed. 3: 501, 1760 (Ludwig 1760).

** **subg. *Austrosphaerocarpos* R.M.Schust.**, Hepat. Anthocerotae N. Amer. 5: 813, 1992 (Schuster 1992b).
*** *Sphaerocarpos stipitatus* Bisch. ex Lindenb., Nova Acta Phys.-Med. Acad. Caes. Leop.-Carol. Nat. Cur. 18 (1): 504i, 1836 [1837] (Lindenberg 1836).

** **subg. *Sphaerocarpos***
*** *Sphaerocarpos michelii* Bellardi, App. fl. pedem.: 52, 1792 (Bellardi 1792).
** *Sphaerocarpos texanus* Austin, Bull. Torrey Bot. Club 6 (30): 158, 1877 (Austin 1877).

Incertae sedis
*** *Sphaerocarpos cristatus* M.Howe, Mem. Torrey Bot. Club 7: 66, 1899 (Howe 1899).
*** *Sphaerocarpos donnellii* Austin, Bull. Torrey Bot. Club 6 (30): 157, 1877 (Austin 1877).
*** *Sphaerocarpos drewiae* Wigglesw., Univ. Calif. Publ. Bot. 16 (3): 129, 1929 (Wigglesworth 1929).

*** *Sphaerocarpos europaeus* Lorb., Jahrb. Wiss. Bot. 80: 665, 1934 (Lorbeer 1934). [469]
*** *Sphaerocarpos hians* Haynes, Bull. Torrey Bot. Club 37 (5): 225, 1910 (Haynes 1910).
** *Sphaerocarpos muccilloi* E.Vianna, Lindbergia 7 (1): 58, 1981 (Vianna 1981).

Names in genera not currently accepted

The following taxa in unsupported genera are all poorly understood. We list them here rather than making new combinations for names we do not know the status of.

***Acrostolia* Dumort.**, Recueil Observ. Jungerm.: 26, 1835 (Dumortier 1835). [470]
* *Acrostolia alata* (Gottsche et Rabenh.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 431, 1877 (Trevisan 1877). Bas.: *Pseudoneura alata* Gottsche et Rabenh., Hepat. Eur., Leberm. 56-57: no. 560, 1873 (Gottsche and Rabenhorst 1873b).
* *Acrostolia brevifolia* (Gottsche et Rabenh.) Trevis., Mem. Reale Ist. Lombardo Sci. (Ser. 3), C. Sci. Mat. 4 (13): 431, 1877 (Trevisan 1877). Bas.: *Pseudoneura brevifolia* Gottsche et Rabenh., Hepat. Eur., Leberm. 56-57: no. 560, 1873 (Gottsche and Rabenhorst 1873b).

***Aphanolejeunea* A.Evans**, Bull. Torrey Bot. Club 38 (6): 272, 1911 (Evans 1911).
* *Aphanolejeunea lancifera* R.M.Schust., Phytologia 45 (5): 434, 1980 (Schuster 1980b). [471]
* *Aphanolejeunea minima* Tixier, Ann. Fac. Sci. Yaoundé 20: 7, 1975 (Tixier 1975b). [472]

***Aspiromitus* Steph.**, Sp. Hepat. (Stephani) 5: 957, 1916 (Stephani 1916b). [473]
* *Aspiromitus asper* Schiffn., Arch. Hydrobiol., suppl. 21 (3/4): 402, 1955 (Schiffner 1955).
* *Aspiromitus bullosus* Schiffn., Arch. Hydrobiol., suppl. 21 (3/4): 403, 1955 (Schiffner 1955).
* *Aspiromitus crenatifrons* Steph., Sp. Hepat. (Stephani) 5: 968, 1916 (Stephani 1916b).
* *Aspiromitus lobatus* Schiffn., Arch. Hydrobiol., suppl. 21 (3/4): 405, 1955 (Schiffner 1955).
* *Aspiromitus squamulosus* Schiffn., Arch. Hydrobiol., suppl. 21 (3/4): 407, 1955 (Schiffner 1955).

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469 *Sphaerocarpos europaeus* is clearly distinct from *Sphaerocarpos texanus* (Bell et al. 2013).
470 *Acrostolia* is congeneric with *Riccardia*, but a few taxa have neither been transferred nor synonymized.
471 *Aphanolejeunea lancifera* is a *Drepanolejeunea* species (Pócs et al. 2014).
472 *Aphanolejeunea minima* seems to be close to *Cololejeunea gracilis* based on the drawing in the original description, but the type specimen (not available for study) seems to be very fragmentary, having only reduced leaves, so its identity is uncertain (Pócs and Bernecker 2009).
473 *Aspiromitus* is congeneric with *Anthoceros*, but some taxa have neither been transferred nor synonymized.

***Crossotolejeunea* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 127, 1893 (Schiffner 1893b). Bas.: *Lejeunea* subg. *Crossotolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 161, 1884 (Spruce 1884). [474]

* *Crossotolejeunea curvifolia* Steph., Hedwigia 35 (3): 75, 1896 (Stephani 1896b). [475]

***Eulejeunea* Steph.**, Hedwigia 27 (2): 60, 1888 (Stephani 1888a). [476]

* *Eulejeunea setulosa* Steph., Sp. Hepat. (Stephani) 6: 421, 1923 (Stephani 1923).

* *Eulejeunea subpililoba* Steph., Sp. Hepat. (Stephani) 6: 420, 1923 (Stephani 1923). [477]

***Euosmolejeunea* (Spruce) Steph.**, Hedwigia 28 (3): 170, 1889 (Stephani 1889d). Bas.: *Lejeunea* subg. *Euosmolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 241, 1884 (Spruce 1884). [478]

* *Euosmolejeunea parvistipula* (Lindenb. et Gottsche) Steph., Hedwigia 29 (1): 80, 1890 (Stephani 1890a). Bas.: *Lejeunea parvistipula* Lindenb. et Gottsche, Syn. Hepat. 5: 761, 1847 (Gottsche et al. 1847).

* *Euosmolejeunea tenerrima* (Nees) Steph., Sp. Hepat. (Stephani) 5: 589, 1914 (Stephani 1914b). Bas.: *Jungermannia sordida* var. *tenerrima* Nees, Fl. Bras. (Martius) 1 (1): 363, 1833 (Nees 1833a). [479]

***Fimbraria* Nees**, Horae Phys. Berol.: 44, 1820 (Nees 1820) nom. illeg. [480]

* *Fimbraria gigantea* Steph., Bull. Herb. Boissier 7 (2): 93 (106), 1899 (Stephani 1899a). [481]

* *Fimbraria incrassata* Steph., Bull. Herb. Boissier 7 (2): 87 (100), 1899 (Stephani 1899a). [482]

* *Fimbraria kamerunensis* Steph., Sp. Hepat. (Stephani) 6: 14, 1917 (Stephani 1917a). [483]

* *Fimbraria pirottae* Gola, Ann. Bot. (Rome) 13 (1): 64, 1914 (Gola 1914a).

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474 *Crossotolejeunea* is congeneric with *Lejeunea*, but one taxon has neither been transferred nor synonymized.

475 *Crossotolejeunea curvifolia* has doubtful status, the type specimen could not be found in G (Reiner-Drehwald and Goda 2000).

476 *Eulejeunea* is congeneric with *Lejeunea* subg. *Lejeunea*, but a few taxa have neither been transferred nor synonymized.

477 *Eulejeunea subpililoba* is morphologically similar to *Lejeunea spiniloba*.

478 *Euosmolejeunea* is here treated as a subgenus of *Cheilolejeunea*, but a few taxa have neither been transferred nor synonymized.

479 *Euosmolejeunea tenerrima* is a doubtful taxon described with three syntypes, two from Brazil and one from Java. The Java material is probably not the same species as the material from Brazil.

480 *Fimbraria* is congeneric with *Asterella*, but the following taxa have neither been transferred nor synonymized, and their status is doubtful.

481 *Fimbraria gigantea* belongs to *Asterella* subg. *Asterella* sect. *Brachyblepharis*.

482 *Fimbraria incrassata* was provisionally placed in synonymy with *Asterella abyssinica* (Wigginton and Grolle 1996), and was listed as an unassigned *Asterella* species by Wigginton (2009).

483 *Fimbraria kamerunensis* was provisionally placed in synonymy with *Asterella abyssinica* (Wigginton and Grolle 1996), and was listed as an unassigned *Asterella* species by Wigginton (2009).

***Hygrolejeunea* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 124, 1893 (Schiffner 1893b). Bas.: *Lejeunea* subg. *Hygrolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 230, 1884 (Spruce 1884). [484]

* *Hygrolejeunea cubensis* Steph., Sp. Hepat. (Stephani) 5: 533, 1914 (Stephani 1914b).

* *Hygrolejeunea harpaphylla* Steph., Sp. Hepat. (Stephani) 5: 552, 1914 (Stephani 1914b).

* *Hygrolejeunea pacifica* Steph., Sp. Hepat. (Stephani) 6: 411, 1923 (Stephani 1923).

* *Hygrolejeunea parvicalycina* Steph., Hedwigia 35 (3): 103, 1896 (Stephani 1896b).

* *Hygrolejeunea parvistipula* Steph., Sp. Hepat. (Stephani) 5: 568, 1914 (Stephani 1914b).

* *Hygrolejeunea patellirostris* Steph., Hedwigia 35 (3): 103, 1896 (Stephani 1896b). [485]

* *Hygrolejeunea staudtiana* Steph., Sp. Hepat. (Stephani) 5: 528, 1914 (Stephani 1914b). [486]

***Hypenantron* Corda**, Gen. hepat.: 648, 1829 (Corda 1829). [487]

* *Hypenantron brachypus* Steph. ex Lamothe, Rech. Anat. Taxinom. Gamét. Marchantiales: 107, 1919 (Lamothe 1919).

* *Hypenantron brasiliense* Steph. ex Lamothe, Rech. Anat. Taxinom. Gamét. Marchantiales: 104, 1919 (Lamothe 1919).

***Jamesoniella* (Spruce) Carrington**, Cat. Brit. Moss. Hepat.: 25, 1881 (Carrington 1881). Bas.: *Jungermannia* subg. *Jamesoniella* Spruce, J. Bot. 14: 230, 1876 (Spruce 1876a). [488]

* *Jamesoniella convoluta* Steph., Sp. Hepat. (Stephani) 6: 433, 1924 (Stephani 1924).

***Kingiolejeunea* H.Rob.**, Bryologist 70 (1): 53, 1967 (Robinson 1967). [489]

* *Kingiolejeunea guayanensis* H.Rob., Bol. Soc. Venez. Ci. Nat. 32 (132/133): 259, 1976 (Robinson 1976b).

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484 *Hygrolejeunea* is congeneric with *Lejeunea*, but some taxa have neither been transferred nor synonymized.

485 *Hygrolejeunea patellirostris* is conspecific with *Lejeunea acuta* in Tixier (1995b) and Wigginton and Grolle (1996), but it was kept as an unassigned *Lejeunea* species by Wigginton (2009).

486 *Hygrolejeunea staudtiana* is likely to be either *Lejeunea brenanii* or *Lejeunea isophylla* (Wigginton and Grolle 1996). It was kept as an unassigned *Lejeunea* species by Wigginton (2009).

487 *Hypenantron* is congeneric with *Asterella*, but a few taxa have neither been transferred nor synonymized.

488 *Jamesoniella* is congeneric with *Syzygiella* (Feldberg et al. 2010a), but one taxon has neither been transferred nor synonymized. The holotype was burned in B (Grolle 1971b) and it is not clear where it belongs.

489 *Kingiolejeunea* is congeneric with *Lepidolejeunea*, but one taxon has neither been transferred nor synonymized.

***Leptocolea* (Spruce) A.Evans**, Bull. Torrey Bot. Club 38 (6): 261, 1911 (Evans 1911). Bas.: *Lejeunea* sect. *Leptocolea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 294, 1884 (Spruce 1884). [490]

* *Leptocolea sumatrana* Herzog, Ann. Bryol. 5: 96, 1932 (Herzog 1932a). [491]

***Mastigobryum* (Nees) Lindenb. et Gottsche**, Syn. Hepat. 2: 214, 1845 (Gottsche et al. 1845a) nom. illeg. Bas.: *Herpetium* sect. *Mastigobryum* Nees, Naturgesch. Eur. Leberm. 3: 43, 1838 (Nees 1838b). [492]

* *Mastigobryum aberrans* Steph., Sp. Hepat. (Stephani) 6: 486, 1924 (Stephani 1924).

* *Mastigobryum asperum* Steph., J. & Proc. Roy. Soc. New South Wales 48 (1/2): 121, 1914 (Stephani and Watts 1914).

* *Mastigobryum deningeri* Herzog, Beih. Bot. Centralbl. 38 (2): 322, 1921 (Herzog 1921).

* *Mastigobryum karstenii* Steph., Bull. Herb. Boissier (sér. 2) 8 (12): 952 (502), 1908 (Stephani 1908b).

* *Mastigobryum ledermannii* Steph., Sp. Hepat. (Stephani) 6: 486, 1924 (Stephani 1924).

* *Mastigobryum londbergii* Steph., Sp. Hepat. (Stephani) 6: 487, 1924 (Stephani 1924).

* *Mastigobryum longifolium* Steph., Sp. Hepat. (Stephani) 6: 487, 1924 (Stephani 1924).

* *Mastigobryum minutitextum* Steph., Sp. Hepat. (Stephani) 6: 487, 1924 (Stephani 1924).

* *Mastigobryum multidens* Steph., Sp. Hepat. (Stephani) 6: 487, 1924 (Stephani 1924).

* *Mastigobryum muscicola* Steph., Sp. Hepat. (Stephani) 6: 486, 1924 (Stephani 1924).

* *Mastigobryum nigricans* Herzog, Beih. Bot. Centralbl. 38 (2): 322, 1921 (Herzog 1921).

* *Mastigobryum nipuranum* Steph., Sp. Hepat. (Stephani) 6: 485, 1924 (Stephani 1924).

* *Mastigobryum palmicola* Steph., Sp. Hepat. (Stephani) 6: 488, 1924 (Stephani 1924).

* *Mastigobryum rajanum* Herzog, Mitt. Inst. Allg. Bot. Hamburg 7 (3): 190, 1931 (Herzog 1931a).

* *Mastigobryum ribehanum* Steph., Sp. Hepat. (Stephani) 6: 488, 1924 (Stephani 1924).

* *Mastigobryum ruficaule* Beauverd, Sp. Hepat. (Stephani) 6: 485, 1924 (Stephani 1924).

* *Mastigobryum schraderbergii* Steph., Sp. Hepat. (Stephani) 6: 489, 1924 (Stephani 1924).

* *Mastigobryum squamulistipum* Steph., Sp. Hepat. (Stephani) 6: 480, 1924 (Stephani 1924).

* *Mastigobryum subhyalinum* Steph., Sp. Hepat. (Stephani) 6: 482, 1924 (Stephani 1924).

* *Mastigobryum venezuelanum* Molk., Syn. hepat. jav.: 104, 1856 [1857] (Sande Lacoste 1856b).

* *Mastigobryum vermiculare* Herzog, Hedwigia 66 (6): 339, 1926 (Herzog 1926).

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490 *Leptocolea* is congeneric with *Cololejeunea*, but one taxon has neither been transferred nor synonymized.

491 *Leptocolea sumatrana* is possibly conspecific with *Cololejeunea equialbi*.

492 *Mastigobryum* is congeneric with *Bazzania*, but many species have not been studied recently and thus not transferred. It is possible that some prove to be older names of existing taxa when their identities are known. Grolle and Piippo (1984) could not study *Mastigobryum ledermannii*, *Mastigobryum londbergii* and *Mastigobryum longifolium* since the types were destroyed in B.

***Nemoursia* Mérat**, Ann. Agric. Franç. (ser. 4) 2 (7): 10, 1840 (Mérat 1840).

* *Nemoursia tuberculata* Mérat, Ann. Agric. Franç. (ser. 4) 2 (7): 10, 1840 (Mérat 1840). [493]

***Physocolea* (Spruce) Steph.**, Sp. Hepat. (Stephani) 5: 863, 1916 (Stephani 1916b). Bas.: *Lejeunea* sect. *Physocolea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 292, 1884 (Spruce 1884). [494]

* *Physocolea tambillensis* (Loitl.) Steph., Sp. Hepat. (Stephani) 5: 885, 1916 (Stephani 1916b). Bas.: *Lejeunea tambillensis* Loitl., Diagn. pl. nov.: 20, 1894 (Loitlesberger 1894). [495]

***Plectocolea* (Mitt.) Mitt.**, Fl. vit.: 405, 1871 [1873] (Mitten 1871). Bas.: *Solenostoma* subg. *Plectocolea* Mitt., J. Linn. Soc., Bot. 8 (31): 156, 1864 [1865] (Mitten 1864a). [496]

* *Plectocolea subamoena* S.Winkl., Rev. Bryol. Lichénol. 42 (3): 821, 1976 (Winkler 1976). [497]

***Polyotus* Gottsche**, Syn. Hepat. 2: 244, 1845 (Gottsche et al. 1845a) nom. illeg. [498]

* *Polyotus peckianus* Austin, Proc. Acad. Nat. Sci. Philadelphia 21: 224, 1869 (Austin 1869).

***Schisma* Dumort.**, Commentat. Bot. (Dumortier): 114, 1822 (Dumortier 1822) nom. illeg. [499]

* *Schisma orizabense* (Gottsche) Steph., Sp. Hepat. (Stephani) 4: 19, 1909 (Stephani 1909d). Bas.: *Sendtnera orizabensis* Gottsche, Mexik. Leverm.: 139, 1863 (Gottsche 1863).

* *Schisma uleanum* Steph., Hedwigia 44 (4): 225, 1905 (Stephani 1905a).

***Strepsilejeunea* (Spruce) Schiffn.**, Hepat. (Engl.-Prantl): 127, 1893 (Schiffner 1893b). Bas.: *Lejeunea* sect. *Strepsilejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 168, 1884 (Spruce 1884). [500]

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493 *Nemoursia tuberculata* is a *Conocephalum* species.

494 *Physocolea* is congeneric with *Cololejeunea*, but one taxon has neither been transferred nor synonymized.

495 *Physocolea tambillensis* is possibly conspecific with *Myriocoleopsis minutissima*.

496 *Plectocolea* is now regarded a subgenus of *Solenostoma*, but one taxon has neither been transferred nor synonymized.

497 *Plectocolea subamoena* is probably conspecific with *Solenostoma amoena*.

498 *Polyotus* is a superfluous name for *Lepidolaena*, but a few taxa have neither been transferred nor synonymized.

499 *Schisma* is congeneric with *Herbertus*, but a few taxa have neither been transferred nor synonymized.

500 *Strepsilejeunea* is congeneric with *Cheilolejeunea*, but some taxa have neither been transferred nor synonymized.

* *Strepsilejeunea apollinea* (Gottsche) Steph., Sp. Hepat. (Stephani) 5: 291, 1913 (Stephani 1913a). Bas.: *Lejeunea apollinea* Gottsche, Fragm. (Mueller): 64, 1880 (Gottsche 1880).
* *Strepsilejeunea durelii* Schiffn., Österr. Bot. Z. 49 (6): 206, 1899 (Schiffner 1899a).
* *Strepsilejeunea hamatifolia* Steph., Sp. Hepat. (Stephani) 6: 396, 1923 (Stephani 1923).
* *Strepsilejeunea lanceolata* (Gottsche) Steph., Sp. Hepat. (Stephani) 5: 283, 1913 (Stephani 1913a). Bas.: *Lejeunea lanceolata* Gottsche, Syn. Hepat. 3: 353, 1845 (Gottsche et al. 1845b).
* *Strepsilejeunea muscicola* Herzog, Hedwigia 74 (2): 96, 1934 (Herzog 1934a).
* *Strepsilejeunea novae-guineae* Steph., Sp. Hepat. (Stephani) 6: 397, 1923 (Stephani 1923).
* *Strepsilejeunea obtusistipula* Steph., Biblioth. Bot. 87 (2): 258, 1916 (Stephani 1916a).
* *Strepsilejeunea papulifolia* Steph., Biblioth. Bot. 87 (2): 259, 1916 (Stephani 1916a).
* *Strepsilejeunea pectiniformis* (Gottsche) Steph., Sp. Hepat. (Stephani) 5: 285, 1913 (Stephani 1913a). Bas.: *Lejeunea pectiniformis* Gottsche, Ann. Sci. Nat. Bot. (sér. 5) 1: 156, 1864 (Gottsche 1864).
* *Strepsilejeunea renistipula* Steph., Sp. Hepat. (Stephani) 5: 289, 1913 (Stephani 1913a).
* *Strepsilejeunea vatovae* Gerola, Lav. Bot. Ist. Bot. Univ. Padova 12: 479, 1947 (Gerola 1947).

***Thysanolejeunea* (Spruce) Steph.**, Hedwigia 31 (1): 20, 1892 (Jack and Stephani 1892). Bas.: *Lejeunea* subg. *Thysanolejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 105, 1885 (Spruce 1885).
* *Thysanolejeunea africana* Sim, Trans. Roy. Soc. South Africa 15 (1): 50, 1926 (Sim 1926). [501]

***Trachylejeunea* (Spruce) Steph.**, Hedwigia 28 (4): 262, 1889 (Stephani 1889c) nom. rejic. Bas.: *Lejeunea* subg. *Trachylejeunea* Spruce, Trans. & Proc. Bot. Soc. Edinburgh 15: 180, 1884 (Spruce 1884).
* *Trachylejeunea conifera* Steph., Sp. Hepat. (Stephani) 5: 302, 1913 (Stephani 1913a).
* *Trachylejeunea cristuliflora* Steph., Hedwigia 35 (3): 137, 1896 (Stephani 1896b).
* *Trachylejeunea englishii* Steph., Bull. Misc. Inform. Kew 1899 (151/152): 126, 1899 (MacGregor 1899). [502]
* *Trachylejeunea jamaicensis* Pearson, Ann. Bryol. 4: 98, 1931 (Pearson 1931b).
* *Trachylejeunea kusaiensis* Inoue et H.A.Mill., Bull. Natl. Sci. Mus. Tokyo (n.ser.) 8 (2): 147, 1965 (Inoue and Miller 1965).

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501 *Thysanolejeunea africana* may be conspecific with *Caudalejeunea africana*.

502 *Trachylejeunea englishii* is not a *Trachylejeunea* species (see Zhu and So 1999a). The status needs further study.

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