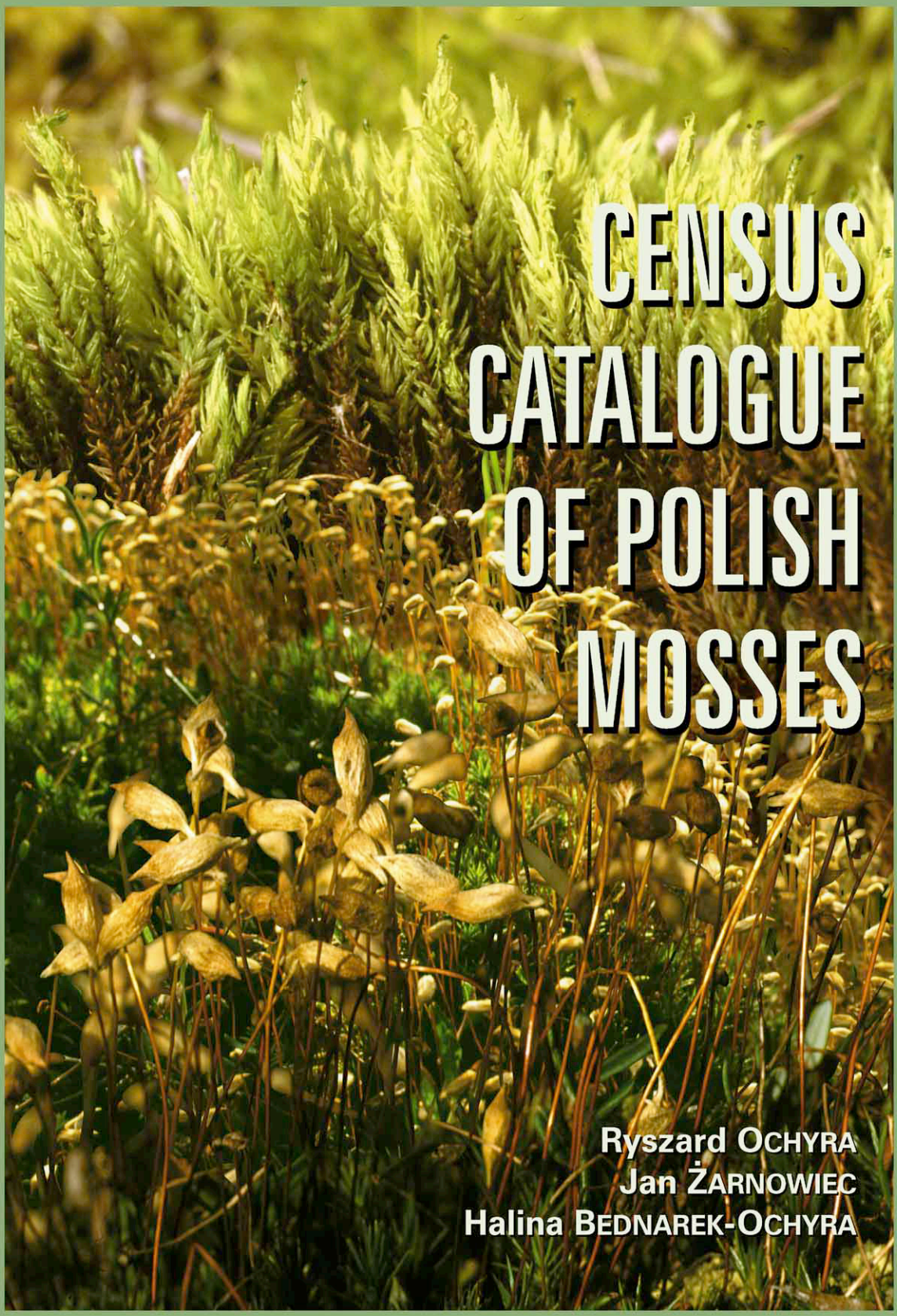

CENSUS CATALOGUE OF POLISH MOSSES

Ryszard Ochyra
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KATALOG MCHÓW POLSKI

Bucklandiella affinis (F.Weber & D.Mohr) Bednarek-Ochyra & Ochyra

CENSUS CATALOGUE OF POLISH MOSSES

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Polish Academy of Sciences, Institute of Botany

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Dedicated to
Professor Dr Kazimierz Karczmarz
on the occasion of his 70th birthday
in appreciation of his oustanding
contributions to our knowledge
of bryophytes in Poland

Table of contents

1 INTRODUCTION

The only comprehensive catalogue of the mosses of Poland was published exactly a quarter of a century ago by Ochyra & Szmajda (1978). It comprised 651 species and 133 varieties disposed in 178 genera and 47 families. This catalogue served as a basis for a list of the moss species which were to be mapped in Poland. It was published, with some slight modifications, in the first fascicle of the serial publication "Atlas of the geographical distribution of spore-plants in Poland. Series V. Mosses (Musci)" and comprised 661 species (Ochyra & Szmajda 1983*a*). In 1992 this list was again augmented with an additional 16 species which had either been newly discovered in the country or reinstated from oblivion as a result of taxonomic studies (Ochyra *et al*. 1992*a*). Thus, it has been generally accepted that the moss flora of Poland consisted of 677 species.

In the past two decades there has been remarkable progress in taxonomic, nomenclatural and phytogeographical studies and many changes relating to the European moss flora have been published. Therefore the increasing interest in floristic and ecological studies of Polish mosses, aimed especially at preservation of their biodiversity, has stimulated work on a revised and updated catalogue of these plants. Since the publication of the last catalogue of Polish mosses, a number of species have been added and some should be deleted from the flora. Because the relevant data have been widely scattered in the literature and not always easily accessible, we do feel that it is appropriate to publish a revised list at the present time, especially because much reconsideration of generic and familial limits is taking place.

Thus, the present work is an attempt to meet the long felt need for a standard work on the nomenclature and distribution of Polish mosses. The publication of the catalogue is also justified by the fact that modern checklists or catalogues of mosses are in practice available for almost all adjacent countries in Central Europe, including Germany (Duell & Meinunger 1989; Duell 1994*a*, *b*; Koperski *et al*. 2000), Austria (Grims 1999), the Czech Republic (Váňa 1997, 1998; Kučera & Váňa 2003), Slovakia (Kubinská & Janovicová 1996, 1998), Romania (Mohan 1998), the Ukraine (Virchenko 2000, 2001), Lithuania (Jukonienė 2002), Estonia (Ingerpuu *et al*. 1994), Sweden (Söderström *et al*. 1992; Söderström & Hedenäs 1994), and Norway (Frisvoll *et al*. 1995). In addition, a checklist of the mosses of the former Soviet Union has been published (Ignatov & Afonina 1992), and a somewhat older but still very useful catalogue of Finnish mosses is available (Koponen *et al*. 1977). It is worth mentioning that modern checklists of mosses are available for most

Western and Southern European countries, including the British Isles (Blockeel & Long 1998), Holland (Dirkse *et al*. 1999), Luxembourg (Werner 1993), Belgium (Sotiaux & Venderpoorten 2001), Spain (Casas 1991), Italy (Cortini Pedrotti 2001), Bulgaria (Ganeva & Duell 1999), the former Yugoslavia (Pavletic *et al*. 1999), the Federal Republic of Yugoslavia (Serbia and Montenegro) (Sabovljević & Stevanović 1999), and Greece (Duell 1995). Finally, a checklist for the whole of Europe was compiled more than two decades ago (Corley *et al*. 1982) which was subsequently updated (Corley & Crundwell 1991).

The present catalogue contains 700 species, eight subspecies and 87 varieties, placed in 207 genera, belonging to 55 families. Forms are not included, although in some species critical taxonomic studies have confirmed their validity and usefulness. In contrast to the former treatment of Polish mosses, we have relegated many varieties to synonymy as we believe a good many of them are mere habitat modifications which do not merit taxonomic recognition or for which suitable studies confirming their status are not available. Also, exotic species which have incidentally been introduced in greenhouses (Rusińska *et al*. 1996; Galera & Ratyńska 1999) have been ignored.

With a few exceptions, we studied the voucher collections upon which the Polish records of the taxa concerned are based. Special attention has been paid to locate old records made by German bryologists such as J. Milde, K. G. Limpricht, H. von Klinggräff, C. Warnstorf and F. Koppe in the Sudetes, Silesia, West Pomerania and East Prussia. Locating these specimens was not always an easy task since they are scattered in various herbaria throughout Europe, but certainly the bryological herbaria in the Hungarian Natural History Museum in Budapest (BP) and in the Natural History Museum of Wrocław University (WRSL) are the prime sources of collections of K. G. Limpricht and J. Milde. Also, the herbaria at B, HAL, JE, POZG, TOR, STU, S and W are important for tracing many voucher collections. These specimens are mostly revised for another major bryological project in Poland, namely "Atlas of the geographical distribution of mosses in Poland", which was started in the early 1980s (Ochyra & Szmajda 1981, 1982) and of which by 1994 nine fascicles had been published. After a ten year break this project has now been resurrected and subsequent fascicles are under preparation.

The intent of the present catalogue is multifaceted. Of greatest urgency is the provision for the user of a listing of genera and species, including subspecies and varieties, of the moss taxa which have ever been reported from Poland. A list of all the synonyms which have ever been used in the botanical literature relating to mosses in the present territory of Poland and excluded taxa also appear in the catalogue. The next goal is to provide the correct orthography and author citation for all taxa recognized in the work and to present their systematic arrangement following the modern standards of moss classification. Finally, for the first time, the Polish nomenclature of mosses has been reviewed and set in order. Accordingly, the present catalogue consists of ten sections and subsections and most of them begin with explanatory remarks. Therefore some important issues are not discussed in this introduction but can be found in appropriate places in the text. The catalogue differs markedly from similar treatments in having especially strongly developed taxonomic and nomenclatural parts. Although it is often stated that floras and checklists are not good places to introduce new classifications and/or taxonomic and nomenclatural novelties, we

decided to depart from this convention and to present here a number of new taxonomic and classificational concepts. During our years of work on mosses we have accumulated many and various observations relating to the taxonomy and nomenclature of European mosses, a good number of which for a variety reasons have never been published or are presented in large treatments awaiting publication. Because it is uncertain when they will eventually be published, we thought that it might be of wider interest to make them available to the bryological community now, since in many cases errors which have persisted in the literature are herewith corrected. All new concepts are extensively discussed and appropriately referenced in the "Annotations" section. Detailed presentation of particular issues is omitted from this introduction, these being fully discussed at the beginning of each section.

Acknowledgements. We are grateful to the Directors and Curators of the herbaria cited in the text for loaning the specimens. Special thanks are due to Professors Werner Greuter (Berlin), James L. Reveal (Montrose, Colorado) and Gerry Moore (New York) for valuable discussion on the nomenclature of suprageneric moss taxa. Gea Zijlstra (Utrecht) and Riclef Grolle (Jena) always offered us their expertise in resolving difficult nomenclatural questions. We are also greatly indebted to Mrs Hanna Miłowska, M.Sc., the librarian in the Institute of Botany of the Polish Academy of Sciences in Kraków, for assistance with locating some old and not easily accessible Polish books. Thanks are due to Mr Arthur Copping (Roydon, Diss, UK) for checking the English, and to Mary and Amy Blackbourne of Roydon who transmitted to him emailed parts of the manuscript.

2 SYSTEMATIC ARRANGEMENT OF TAXA

The classification of mosses has undergone major modifications over the past two centuries since the time when J. Hedwig and S. E. Bridel laid down the foundations of modern muscology (Vitt 2000) and it will certainly continue to be subjected to revisions with the wider application of molecular techniques in the phylogenetic and taxonomic studies of mosses (e.g., Capesius & Stech 1997; Cox & Hedderson 1999; Tsubota *et al*. 1999, 2002; Buck *et al.* 2000*a*, *b*; Cox *et al*. 2000; De Luna *et al*. 2000; La Farge *et al*. 2000, 2002; Newton *et al*. 2000; Shaw 2000; Shaw & Goffinet 2000). At present the general tendency is to give higher ranks to different lineages within the traditionally defined Musci. Until recently in the classifications only the single class Bryopsida has been recognized. This has subsequently been subdivided into seven subclasses, Sphagnidae, Andreaeidae and Bryidae (Walther 1983; Vitt 1984), Tetraphididae, Polytrichidae and Buxbaumiidae (Crosby 1980) and Archidiidae (Schofield 1985).

By the end of the 20th century, two "new generation" classifications of the mosses were proposed on the basis of significant recent research of the peristomial characters, supported by molecular data which, though far from complete, provide sound evidence of separate origins and lines of evolution of the main groups of "bryophytes". Vitt *et al.* (1998) divided the Bryophyta into four classes, namely Sphagnopsida, Andreaeopsida, Polytrichopsida and Bryopsida, whereas Buck & Goffinet (2000) developed this classification further and recognized two additional monotypic classes, Takakiopsida and Andreaeobryopsida, for the highly isolated and bizarre moss genera *Takakia* and *Andreaeobryum*, respectively.

Most recently, Crum (2001) segregated Takakiopsida and Sphagnopsida into separate divisions, Takakiophyta and Sphagnophyta, parallel to Bryophyta, Hepatophyta and Anthocerotophyta, leaving the Bryophyta composed of two classes, Bryopsida or true mosses with six subclasses (i.e. Bryidae, Buxbaumiidae, Tetraphididae, Polytrichidae, Dawsoniidae and Archidiidae) and Andreaeopsida or lantern mosses with two orders (i.e. Andreaeales and Andreaeobryales).

The systematic arrangement presented in this catalogue reflects our current state of understanding of moss diversity and is based primarily on morphology. It is derived from that of the latest systems of Vitt *et al*. (1998) and Buck & Goffinet (2000), with some modifications and changes resulting from our own ideas of evolution and phylogeny. Special attention has been paid to the correct nomenclature of higher taxa. In contrast to the

hepatics (Marchantiophyta) for which the nomenclature of suprafamilial taxa is quite well established (Shlyakov 1972; Stotler & Crandal-Stotler 1977; Schuster 1984; Crandal-Stotler & Stotler 2000), this field has remained almost totally neglected among the mosses (Bryophyta). It has proved that many names of higher moss taxa have never been validly published, although they have been commonly used in the literature. Therefore Latin diagnoses and other nomenclatural notes that are relevant to the classification are appended as annotations. Validation of all names is based upon a thorough and careful search of the relevant taxonomic literature and all cases are discussed in detail. The nomenclature of families is largely based on the "Dictionary of mosses" by Crosby & Magill (1981).

The classes and subclasses are designated sequentially by capital letters and a combination of letters and Arabic numerals, respectively, whereas orders and families are numbered consecutively by Roman numerals which are combined with capital letters in the case of suborders and subfamilies. The genera are numbered consecutively by Arabic numerals and only species and infraspecific taxa remain unnumbered. In this catalogue each scientific name of classes, orders, families and genera is followed by the Polish name.

The division of genera into subgenera and/or sections is somewhat arbitrary and inconsistencies will be evident. It is primarily based on well-founded taxonomic studies or, in a few cases, new sections have been distinguished on the basis of our research.

Author citations are given in full but the authorities are restricted to authors directly responsible for descriptions or combinations. All 'in' citations are omitted because they belong to bibliographical data and are provided in detail in the third section of the catalogue. The abbreviations of authors' names strictly follows Brummitt & Powell (1992).

Division **BRYOPHYTA** Schimp.[1] — Mchy

Class A. **Sphagnopsida** (Engl.) Ochyra[2] — Torfowce

Subclass A1. **Sphagnidae** Engl.[3]

Order I. **Sphagnales** Limpr. — Torfowce

I. **Sphagnaceae** Dumort. — Torfowcowate

1. Sphagnum L.[4] — Torfowiec

Subg. *Sphagnum*

Sect. *Sphagnum*

Sphagnum affine Renauld & Cardot[5] — Torfowiec pokrewny

Sphagnum papillosum Lindb. — Torfowiec brodawkowaty

Sphagnum palustre L. — Torfowiec błotny

Sphagnum centrale C.E.O.Jensen[6] — Torfowiec środkowy

Sphagnum magellanicum Brid. — Torfowiec magellański

Subg. *Rigida* (Lindb.) A. Eddy

Sect. *Rigida* (Lindb.) Limpr.[7]
Sphagnum compactum Lam. & DC. — Torfowiec szorstki
Subg. *Isocladus* (Lindb.) Braithw.
Sect. *Squarrosa* (Russow) Schimp.[8]
Sphagnum squarrosum Crome — Torfowiec nastroszony
Sphagnum teres (Schimp.) Ångstr. — Torfowiec obły
Sect. *Polyclada* (C.E.O.Jensen) Warnst.
Sphagnum wulfianum Girg.[9] — Torfowiec Wulfa
Sect. *Acutifolia* Wilson
Sphagnum fimbriatum Wilson — Torfowiec frędzlowany
Sphagnum girgensohnii Russow — Torfowiec Girgensohna
Sphagnum russowii Warnst. — Torfowiec Russowa
Sphagnum quinquefarium (Braithw.) Warnst. — Torfowiec pięciorzędowy
Sphagnum warnstorfii Russow — Torfowiec Warnstorfa
Sphagnum capillifolium (Ehrh.) Hedw.[10] — Torfowiec ostrolistny
var. *capillifolium*
var. *tenerum* (Sull. & Lesq. *ex* Sull.) H.A.Crum
Sphagnum rubellum Wilson — Torfowiec czerwonawy
Sphagnum fuscum (Schimp.) H.Klinggr. — Torfowiec brunatny
Sphagnum subfulvum Sjörs[11] — Torfowiec płowy
Sphagnum subnitens Russow & Warnst. — Torfowiec pierzasty
Sphagnum molle Sull.[12] — Torfowiec miękki
Sect. *Subsecunda* (Lindb.) Schimp.[13]
Sphagnum platyphyllum (Braithw.) Warnst. — Torfowiec wklęsłolistny
Sphagnum denticulatum Brid.[14] — Torfowiec ząbkowany
Sphagnum contortum Schultz — Torfowiec skręcony
Sphagnum subsecundum Nees — Torfowiec jednoboczny
Sphagnum inundatum Russow[15] — Torfowiec zanurzony
Sect. *Cuspidata* (Lindb.) Schimp.[16]
Sphagnum tenellum (Brid.) Pers. *ex* Brid. — Torfowiec cieniutki
Sphagnum cuspidatum Ehrh. *ex* Hoffm. — Torfowiec szpiczastolistny
var. *cuspidatum*
var. *serrulatum* (Schlieph.) Schlieph.
Sphagnum majus (Russow) C.E.O.Jensen — Torfowiec Dusena
Sphagnum jensenii H.Lindb. — Torfowiec Jensena
Sphagnum balticum (Russow) C.E.O.Jensen — Torfowiec bałtycki
Sphagnum fallax (H.Klinggr.) H.Klinggr. — Torfowiec kończysty
Sphagnum angustifolium (C.E.O.Jensen *ex* Russow) C.E.O.Jensen — Torfowiec wąskolistny
Sphagnum flexuosum Dozy & Molk. — Torfowiec pogięty
Sphagnum obtusum Warnst. — Torfowiec tępolistny
Sphagnum riparium Ångstr. — Torfowiec okazały
Sphagnum lindbergii Schimp.[17] — Torfowiec Lindberga

Class B. **Andreaeopsida** (Limpr.) Rothm.[18] — Naleźliny

Subclass B1. **Andreaeidae** Engl.[3]

Order II. **Andreaeales** Limpr.[19] — Naleźlinowce

II. **Andreaeaceae** Dumort.[20] — Naleźlinowate
2. *Andreaea* Hedw.[21] — Naleźlina
Subg. *Andreaea*
Sect. *Andreaea*
Andreaea rupestris Hedw. — Naleźlina skalna
var. *rupestris*
var. *papillosa* (Lindb.) Podp.
var. *alpestris* (Thed.) Sharp
Sect. *Nerviae* Cardot *ex* G.Roth
Andreaea rothii F.Weber & D.Mohr — Naleźlina Rotha
subsp. *rothii*
subsp. *falcata* (Schimp.) Lindb.[22]
Andreaea frigida Huebener — Naleźlina zimna
Andreaea crassinervia Bruch — Naleźlina grubożebrowa
Andreaea blyttii Schimp. — Naleźlina Blytta
Subg. *Chasmocalyx* (Lindb. *ex* Braithw.) Broth.
Sect. *Chasmocalyx* Lindb. *ex* Braithw.
Andreaea nivalis Hook.[23] — Naleźlina śnieżna

Class C. **Polytrichopsida** Vitt, Goffinet & Hedd. *ex* Ochyra, Żarnowiec & Bednarek-Ochyra[24] — Płonniki

Subclass C1. **Polytrichidae** (W.Frey) Ochyra[25]

Order III. **Polytrichales** M.Fleisch. — Płonnikowce

III. **Polytrichaceae** Schwägr. — Płonnikowate
3. *Atrichum* P.Beauv.[26] — Żurawiec
Atrichum tenellum (Röhl.) Bruch & Schimp. — Żurawiec maleńki
Atrichum angustatum (Brid.) Bruch & Schimp. — Żurawiec wąskolistny
Atrichum undulatum (Hedw.) P.Beauv. — Żurawiec falisty
Atrichum flavisetum Mitt.[27] — Żurawiec Haussknechta
4. *Oligotrichum* Lam. & DC.[28] — Skąpowłosek
Oligotrichum hercynicum (Hedw.) Lam. & DC. — Skąpowłosek hercyński
5. *Pogonatum* P.Beauv.[29] — Płonniczek
Sect. *Pogonatum*

Pogonatum aloides (Hedw.) P.Beauv. — Płonniczek aloesowaty
var. *aloides*
var. *minimum* (Crome) Molendo
Pogonatum nanum (Schreb. *ex* Hedw.) P.Beauv. — Płonniczek karłowaty
var. *nanum*
var. *longisetum* Hampe *ex* Bruch & Schimp.[30]
Sect. *Dendroidea* Schimp.
Pogonatum urnigerum (Hedw.) P.Beauv. — Płonniczek słoikowy
6. *Polytrichastrum* G.L.Sm.[31] — Złotowłos
Sect. *Polytrichastrum*
Polytrichastrum alpinum (Hedw.) G.L.Sm. — Złotowłos alpejski
Sect. *Sexangularia* (Bruch & Schimp.) G.L.Sm.
Polytrichastrum longisetum (Brid.) G.L.Sm. — Złotowłos wysmukły
Polytrichastrum formosum (Hedw.) G.L.Sm. — Złotowłos strojny
Polytrichastrum pallidisetum (Funck) G.L.Sm. — Złotowłos blady
Polytrichastrum sexangulare (Brid.) G.L.Sm. — Złotowłos górski
7. *Polytrichum* Hedw. — Płonnik
Sect. *Polytrichum*
Polytrichum commune Hedw.[32] — Płonnik pospolity
var. *commune*
var. *perigoniale* (Michx.) Hampe
Sect. *Juniperina* I.Hagen[33]
Polytrichum piliferum Hedw. — Płonnik włosisty
Polytrichum juniperinum Hedw. — Płonnik jałowcowaty
Polytrichum strictum Menzies *ex* Brid. — Płonnik cienki

Subclass C2. **Tetraphidiidae** (M.Fleisch.) Ochyra[24, 34]

Order IV. **Tetraphidales** M.Fleisch. — Czterozębowce

IV. **Tetraphidaceae** Schimp. — Czterozębowate
8. *Tetraphis* Hedw. — Czteroząb
Tetraphis pellucida Hedw. — Czteroząb przezroczysty
9. *Tetrodontium* Schwägr. — Czterozębek
Tetrodontium brownianum (Dicks.) Schwägr. — Czterozębek Browna
Tetrodontium repandum (Funck) Schwägr. — Czterozębek zadarty

Subclass C3. **Buxbaumiidae** (M.Fleisch.) Ochyra[24, 35]

Order V. **Buxbaumiales** M.Fleisch. — Bezlistowce

V. **Buxbaumiaceae** Schimp. — Bezlistowate
10. *Buxbaumia* Hedw. — Bezlist

Buxbaumia aphylla Hedw. — Bezlist zwyczajny
Buxbaumia viridis (Moug. *ex* Lam. & DC.) Brid. *ex* Moug. & Nestl.[36] — Bezlist okrywowy

Class D. **Bryopsida** (Limpr.) Rothm.[37] — Prątniki

Subclass D1. **Archidiidae** Engl.[37, 38]

Order VI. **Archidiales** Limpr. — Pierwomszakowce

VI. **Archidiaceae** Schimp. — Pierwomszakowate
11. *Archidium* Brid. — Pierwomszak
Archidium alternifolium (Dicks. *ex* Hedw.) Mitt. — Pierwomszak naprzemianlistny

Subclass D2. **Diphysciidae** (M.Fleisch.) Ochyra[37, 39]

Order VII. **Diphysciales** M.Fleisch. — Koimkowce

VII. **Diphysciaceae** M.Fleisch. — Koimkowate
12. *Diphyscium* D.Mohr — Koimek
Diphyscium foliosum (Hedw.) D.Mohr[40] — Koimek bezłodygowy

Subclass D3. **Funariidae** (W.Frey) Ochyra[37, 41]

Order VIII. **Funariales** M.Fleisch. — Skrętkowce

Suborder VIIIA. **Funariineae** M.Fleisch.

VIII. **Funariaceae** Schwägr. — Skrętkowate
13. *Physcomitrella* Bruch & Schimp. — Czareczka
Physcomitrella patens (Hedw.) Bruch & Schimp. — Czareczka otwarta
Physcomitrella hampei Limpr.[42] — Czareczka mieszańcowa
14. *Physcomitrium* (Brid.) Brid. — Czarecznik
Physcomitrium acuminatum Bruch & Schimp. — Czarecznik zaostrzony
Physcomitrium pyriforme (Hedw.) Bruch & Schimp. — Czarecznik gruszkowaty
Physcomitrium eurystomum Sendtn. — Czarecznik szerokootworowy
Physcomitrium sphaericum (C.F.Ludw. *ex* Schkuhr) Brid. — Czarecznik jajowaty
15. *Pyramidula* Brid. — Bezrąbek
Pyramidula tetragona (Brid.) Brid. — Bezrąbek czterokanciasty
16. *Funaria* Hedw.[43] — Skrętek
Funaria hygrometrica Hedw. — Skrętek wilgociomierczy
Funaria muhlenbergii Turner — Skrętek wapienny

Funaria hybrida R.Ruthe *ex* Limpr.[44] — Skrętek mieszańcowy
Funaria microstoma Bruch *ex* Schimp. — Skrętek wąskootworowy
17. *Entosthodon* Schwägr. — Gruszecznik
Entosthodon fascicularis (Hedw.) Müll.Hal. — Gruszecznik wiązkowy
Entosthodon obtusus (Hedw.) Lindb.[45] — Gruszecznik tępolistny
IX. **Disceliaceae** Schimp.[46] — Osadniczkowate
18. *Discelium* Brid. — Osadniczek
Discelium nudum (Dicks.) Brid.[47] — Osadniczek goły

Suborder VIIIB. **Catoscopiineae** Ochyra[48]

X. **Catoscopiaceae** (Boulay) Broth. — Czarnogłowate
19. *Catoscopium* Brid. — Czarnogłów
Catoscopium nigitrum (Hedw.) Brid.[49] — Czarnogłów czarniawy

Subclass D4. **Timmiidae** Ochyra[37, 50]

Order IX. **Timmiales** (M.Fleisch.) Ochyra[51] — Trzęślikowce

XI. **Timmiaceae** Schimp. — Trzęślikowate
20. *Timmia* Hedw.[52] — Trzęślik
Sect. *Timmia*
Timmia megapolitana Hedw.[53] — Trzęślik meklemburski
Timmia bavarica Hessl.[54] — Trzęślik bawarski
Sect. *Norvegicae* Brassard
Timmia norvegica J.E.Zetterst.[55] — Trzęślik norweski
Sect. *Timmiaurea* Brassard
Timmia austriaca Hedw.[56] — Trzęślik austriacki

Subclass D5. **Encalyptidae** Vitt, Goffinet & Hedd. *ex* Ochyra, Żarnowiec & Bednarek-Ochyra[37, 57]

Order X. **Encalyptales** Dixon — Opończykowce

XII. **Encalyptaceae** Schimp. — Opończykowate
21. *Encalypta* Hedw.[58] — Opończyk
Sect. *Encalypta*
Encalypta affinis R.Hedw. — Opończyk szyjkowaty
Encalypta ciliata Hedw. — Opończyk orzęsiony
Encalypta microstoma Bals.-Criv. & De Not.[59] — Opończyk wąskootworowy
Sect. *Pyromitrium* Wallr. *ex* Hampe
Encalypta alpina Sm. — Opończyk alpejski

Sect. *Rhabdotheca* Müll.Hall.
Encalypta vulgaris Hedw. — Opończyk szczypcowy
Encalypta rhaptocarpa Schwägr. — Opończyk bruzdowany
Sect. *Streptotheca* (Kindb.) Broth.
Encalypta streptocarpa Hedw. — Opończyk krętozarodniowy

Subclass D6. **Dicranidae** (W.Frey) Ochyra[37, 60]

Order XI. **Dicranales** H.Philib. *ex* M.Fleisch. — Widłozębowce

Subroder XIA. **Fissidentineae** (M.Fleisch.) Ochyra[61]

XIII. **Fissidentaceae** Schimp. — Skrzydlikowate
22. *Fissidens* Hedw. — Skrzydlik
Subg. *Fissidens*
Sect. *Fissidens*[62]
Fissidens crassipes Wilson *ex* Bruch & Schimp. — Skrzydlik tęgoszczecinowy
Fissidens bryoides Hedw.[63] — Skrzydlik prątnikowy
Fissidens gymnandrus Büse[63] — Skrzydlik nagi
Fissidens incurvus Starke *ex* Röhl.[63] — Skrzydlik zagięty
var. *incurvus*
var. *tamarindifolius* (Turner) Braithw.
Fissidens viridulus (Sw. *ex* anon.) Wahlenb.[63] — Skrzydlik zielonkawy
Fissidens arnoldii R.Ruthe[63] — Skrzydlik Arnolda
Fissidens pusillus (Wilson) Milde — Skrzydlik drobny
Fissidens gracilifolius Brugg.-Nann. & Nyholm[64] — Skrzydlik smukłolistny
Fissidens exilis Hedw. — Skrzydlik chudy
Sect. *Serridium* Müll.Hal.
Fissidens osmundoides Hedw. — Skrzydlik długoszowaty
Fissidens taxifolius Hedw. — Skrzydlik cisolistny
Fissidens dubius P.Beauv.[65] — Skrzydlik grzebieniasty
var. *dubius*
var. *mucronatus* (Breidl. *ex* Limpr.) Karttunen, Hedenäs & Söderström[66]
Fissidens adianthoides Hedw. — Skrzydlik paprociowaty
Subg. *Octodiceras* (Brid.) Broth.[67]
Fissidens fontanus (Bach.Pyl.) Steud.[68] — Skrzydlik studziennik

Subroder XIB. **Dicranineae** M.Fleisch.

XIV. **Ditrichaceae** Limpr. — Pędzlikowate
XIVA. **Ditrichoideae**
23. *Ditrichum* Timm *ex* Hampe[69] — Pędzlik
Ditrichum flexicaule (Schwägr.) Hampe — Pędzlik pogięty
Ditrichum gracile (Mitt.) Kuntze[70] — Pędzlik smukły

Ditrichum heteromallum (Hedw.) E.Britton — Pędzlik jednostronny
Ditrichum zonatum (Brid.) Kindb. — Pędzlik pasiasty
Ditrichum pusillum (Hedw.) Hampe — Pędzlik drobny
Ditrichum lineare (Sw.) Lindb. — Pędzlik pochwiasty
Ditrichum pallidum (Hedw.) Hampe — Pędzlik blady
24. *Trichodon* Schimp. — Krętozął
Trichodon cylindricus (Hedw.) Schimp. — Krętozął cienkolistny
25. *Cleistocarpidium* Ochyra & Bednarek-Ochyra[71] — Smętnowieczek
Cleistocarpidium palustre (Bruch & Schimp.) Ochyra & Bednarek-Ochyra[72] — Smętnowieczek błotny
26. *Pleuridium* Rabenh. — Karczyk
Pleuridium acuminatum Lindb. — Karczyk zaostrzony
Pleuridium subulatum (Hedw.) Rabenh. — Karczyk szydlasty
27. *Pseudephemerum* (Lindb.) I.Hagen[73] — Nibyjętniczek
Pseudephemerum nitidum (Hedw.) Loeske[74] — Nibyjętniczek błyszczący
XIVB. **Ceratodontoideae** Broth.
28. *Ceratodon* Brid. — Zęboróg
Ceratodon purpureus (Hedw.) Brid. — Zęboróg czerwonawy
29. *Saelania* Lindb. — Selania
Saelania glaucescens (Hedw.) Broth. — Selania niebieskawa
XIVC. **Distichioideae** Broth.
30. *Distichium* Bruch & Schimp. — Dwurzędek
Distichium capillaceum (Hedw.) Bruch & Schimp.[75] — Dwurzędek włoskowaty
Distichium inclinatum (Hedw.) Bruch & Schimp.[76] — Dwurzędek nachylony
XV. **Bruchiaceae** Schimp. — Bruchiowate
31. *Trematodon* Michx. — Bruzdozął
Trematodon ambiguus (Hedw.) Hornsch.[77] — Bruzdozął pospolity
XVI. **Dicranaceae** Schimp.[78] — Widłozębowate
XVIA. **Dicranoideae**
32. *Dicranum* Hedw.[79] — Widłozął
Subg. *Dicranum*
Sect. *Dicranum*
Dicranum polysetum Sw. *ex* anon. — Widłozął kędzierzawy
Dicranum bonjeanii De Not. — Widłozął błotny
Dicranum scoparium Hedw. — Widłozął miotłowy
Dicranum majus Sm.[80] — Widłozął okazały
Sect. *Spuria* Bruch & Schimp.
Dicranum spurium Hedw. — Widłozął zdrożny
Dicranum undulatum Schrad. *ex* Brid.[81] — Widłozął Bergera
Dicranum acutifolium (Lindb. & Arnell) C.E.O.Jensen — Widłozął ostrolistny
Sect. *Fuscescentiformia* (Kindb.) Ochyra[82]
Dicranum fuscescens Sm.[80] — Widłozął ciemny
Dicranum flexicaule Brid.[83] — Widłozął krzywołodyżkowy

Sect. *Convolutifolia* (Kindb.) Ochyra[84]
Dicranum muehlenbeckii Bruch & Schimp. — Widłoząb Muehlenbecka
var. *muehlenbeckii*
var. *cirrhatum* (Schimp.) Lindb.
Dicranum spadiceum J.E.Zetterst. — Widłoząb kasztanowaty
Sect. *Elongata* I.Hagen
Dicranum sendtneri Limpr.[85] — Widłoząb sudecki
Dicranum elongatum Schleich. *ex* Schwägr. — Widłoząb długi
Dicranum groenlandicum Brid. — Widłoząb grenlandzki
Subg. *Crassidicranum* Limpr.
Sect. *Crassinervia* G.Roth
Dicranum fulvum Hook. — Widłoząb płowy
Dicranum viride (Sull. & Lesq.) Lindb. — Widłoząb zielony
33. *Orthodicranum* (Bruch & Schimp.) Loeske — Prostoząbek
Orthodicranum montanum (Hedw.) Loeske — Prostoząbek górski
Orthodicranum flagellare (Hedw.) Loeske — Prostoząbek wiciowaty
Orthodicranum tauricum (Sapjegin) Smirnova[86] — Prostoząbek taurydzki
34. *Kiaeria* I.Hagen — Kieria
Kiaeria falcata (Hedw.) I.Hagen — Kieria sierpowata
Kiaeria blyttii (Bruch & Schimp.) Broth. — Kieria Blytta
Kiaeria starkei (F.Weber & D.Mohr) I.Hagen — Kieria górska
35. *Arctoa* Bruch & Schimp. — Ściślik
Arctoa fulvella (Dicks.) Bruch & Schimp. — Ściślik ciemnożółty
36. *Paraleucobryum* (Limpr.) Loeske[87] — Nibybielistka
Paraleucobryum longifolium (Ehrh. *ex* Hedw.) Loeske — Nibybielistka długolistna
var. *longifolium*
var. *subalpinum* (Milde) Casares-Gil
Paraleucobryum enerve (Thed.) Loeske — Nibybielistka beznerwowa
Paraleucobryum sauteri (Bruch & Schimp.) Loeske — Nibybielistka Sautera

XVIB. **Dicranelloideae** Lindb.
37. *Dicranella* (Müll.Hal.) Schimp.[88] — Widłozębek
Sect. *Anisothecium* (Kindb.) Ochyra[89]
Dicranella humilis R.Ruthe — Widłozębek niski
Dicranella rufescens (Dicks.) Schimp.[90] — Widłozębek rudawy
Dicranella varia (Hedw.) Schimp. — Widłozębek zmienny
Dicranella staphylina H.Whitehouse[91] — Widłozębek rozmnóżkowy
Dicranella schreberiana (Hedw.) Dixon[92] — Widłozębek Schrebera
Dicranella grevilleana (Brid.) Schimp. — Widłozębek guzkowaty
Dicranella crispa (Hedw.) Schimp. — Widłozębek nastroszony
Sect. *Dicranella*
Dicranella cerviculata (Hedw.) Schimp. — Widłozębek szyjkowaty
Dicranella heteromalla (Hedw.) Schimp. — Widłozębek włoskowy

Dicranella subulata (Hedw.) Schimp. — Widłozą bek szydlasty
var. *subulata*
var. *curvata* (Hedw.) Rabenh.

XVIC. **Campylopoideae** (Limpr.) Ochyra

38. *Campylopus* Brid. — Krzywoszczeć
Campylopus subulatus Schimp. *ex* Milde[93] — Krzywoszczeć krótkolistna
Campylopus schimperi Milde[94] — Krzywoszczeć Schimpera
Campylopus fragilis (Brid.) Bruch & Schimp. — Krzywoszczeć krucha
Campylopus pyriformis (Schultz) Brid. — Krzywoszczeć torfowa
Campylopus flexuosus (Hedw.) Brid. — Krzywoszczeć pogięta
Campylopus introflexus (Hedw.) Brid.[95] — Krzywoszczeć przywłoka

39. *Dicranodontium* Bruch & Schimp.[96] — Zwiesiniec
Dicranodontium uncinatum (Harv.) A.Jaeger — Zwiesiniec haczykowaty
Dicranodontium asperulum (Mitt.) Broth. — Zwiesiniec szorstki
Dicranodontium denudatum (Brid.) E.Britton[97] — Zwiesiniec długodzióbkowy

XVID. **Oncophoroideae** Lindb.

40. *Rhabdoweisia* Bruch & Schimp.[98] — Potłumeczek
Rhabdoweisia crispata (Dicks.) Lindb.[99] — Potłumeczek kędzierzawy
Rhabdoweisia fugax (Hedw.) Bruch & Schimp. — Potłumeczek nietrwały

41. *Cynodontium* Schimp. — Różnoząb
Cynodontium strumiferum (Hedw.) Lindb. — Różnoząb guzkowaty
Cynodontium polycarpon (Hedw.) Schimp. — Różnoząb wieloowocowy
Cynodontium tenellum (Schimp.) Limpr. — Różnoząb delikatny
Cynodontium gracilescens (F.Weber & D.Mohr) Schimp. — Różnoząb smukły
Cynodontium fallax Limpr. — Różnoząb zwodniczy
Cynodontium bruntonii (Sm.) Bruch & Schimp. — Różnoząb Bruntona

42. *Cnestrum* I.Hagen — Skrobak
Cnestrum alpestre (Huebener) Nyholm *ex* Mogensen — Skrobak alpejski
Cnestrum schistii (Gunnerus *ex* F.Weber & D.Mohr) I.Hagen[100] — Skrobak rozłupany

43. *Oncophorus* (Brid.) Brid.[101] — Guzkowiec
Oncophorus virens (Hedw.) Brid. — Guzkowiec zielony
Oncophorus wahlenbergii Brid. — Guzkowiec Wahlenberga

44. *Dichodontium* Schimp.[102] — Dwurożek
Dichodontium pellucidum (Hedw.) Schimp. — Dwurożek przeświecający
Dichodontium flavescens (Dicks.) Lindb.[103] — Dwurożek żółtawy

45. *Diobelonella* Ochyra[104] — Krokiewka
Diobelonella palustris (Dicks.) Ochyra — Krokiewka bagienna

XVIE. **Amphidioideae** Ochyra[105]

46. *Amphidium* Schimp.[106] — Wzdętek
Amphidium lapponicum (Hedw.) Schimp.[107] — Wzdętek lapponski
Amphidium mougeotii (Schimp.) Schimp.[108] — Wzdętek Mougeota

Subroder XIC. **Leucobryineae** M.Fleisch.

XVII. **Leucobryaceae** Schimp. — Bielistkowate
47. *Leucobryum* Hampe — Bielistka
Leucobryum glaucum (Hedw.) Ångstr. — Bielistka siwa
Leucobryum juniperoideum (Brid.) Müll.Hal.[109] — Bielistka jałowcowata

Suborder XID. **Schistostegineae** (M.Fleisch.) Ochyra[110]

XVIII. **Schistostegaceae** Schimp. — Świetlankowate
48. *Schistostega* D.Mohr — Świetlanka
Schistostega pennata (Hedw.) F.Weber & D.Mohr[111] — Świetlanka długoszowata

Order XII. **Grimmiales** M.Fleisch.[112] — Strzechwowce

XIX. **Seligeriaceae** Schimp.[113] — Drobniaczkowate
XIXA. **Seligerioideae**
49. *Seligeria* Bruch & Schimp.[114] — Drobniaczek
Subg. *Seligeria*
Sect. *Seligeria*
Seligeria pusilla (Hedw.) Bruch & Schimp.[115] — Drobniaczek pospolity
Seligeria acutifolia Lindb. — Drobniaczek ostrolistny
Subg. *Anodus* (Bruch & Schimp.) Boulay
Sect. *Anodus* (Bruch & Schimp.) Ochyra & L.Gos[116]
Seligeria donniana (Sm.) Müll.Hal. — Drobniaczek bezząb
Sect. *Calcareae* Ochyra & L.Gos[117]
Seligeria calcarea (Hedw.) Bruch & Schimp.[118] — Drobniaczek wapienny
Subg. *Cyrtoseligeria* Vitt
Sect. *Recurvatae* Korcz.
Seligeria campylopoda Kindb.[119] — Drobniaczek łukowaty
Seligeria recurvata (Hedw.) Bruch & Schimp. — Drobniaczek odgięty
Subg. *Megalosporia* Vitt
Sect. *Trifariae* T.Schauer
Seligeria patula (Lindb.) I.Hagen[120] — Drobniaczek rozłożysty
var. *patula*
var. *alpestris* (T.Schauer) L.Gos & Ochyra[121]
Seligeria trifaria (Brid.) Lindb.[122] — Drobniaczek trójrzędowy
50. *Blindia* Bruch & Schimp. — Blindia
Blindia acuta (Hedw.) Bruch & Schimp. — Blindia ostra
51. *Brachydontium* Fürnr. — Krótkozął
Brachydontium trichodes (F.Weber) Milde[123] — Krótkozął skalny
XIXB. **Dicranoweisioideae** I.Hagen[124]
52. *Dicranoweisia* Milde[125] — Kędzierzawiec
Dicranoweisia cirrata (Hedw.) Lindb. — Kędzierzawiec wąsaty

53. *Hymenoloma* Dusén[126] — Przeponka
Hymenoloma crispulum (Hedw.) Ochyra — Przeponka kędzierzawa
Hymenoloma compactum (Schwägr.) Ochyra — Przeponka zbita

XX. **Ptychomitriaceae** Schimp. **—** Bruzdoczepkowate
54. *Campylostelium* Bruch & Schimp. — Krzywotek
Campylostelium saxicola (F.Weber & D.Mohr) Bruch & Schimp.[127] — Krzywotek skalnik

XXI. **Grimmiaceae** Arn.[128] — Strzechwowate
XXIA. **Grimmioideae**
55. *Coscinodon* Spreng. — Siatkozą b
Coscinodon cribrosus (Hedw.) Spruce — Siatkozą b darniowy
56. *Grimmia* Hedw.[129] — Strzechwa
Grimmia crinita Brid. — Strzechwa włosista
Grimmia anodon Bruch & Schimp. — Strzechwa bezząb
57. *Dryptodon* Brid.[130] — Strzechwowiec
Sect. *Dryptodon*
Dryptodon patens (Hedw.) Brid.[131] — Strzechwowiec otwarty
Dryptodon anomalus (Hampe *ex* Schimp.) Loeske[132] — Strzechwowiec odrębny
Dryptodon hartmanii (Schimp.) Limpr. — Strzechwowiec Hartmana
Sect. *Pulvinati* (Bruch & Schimp.) Ochyra & Żarnowiec[133]
Dryptodon pulvinatus (Hedw.) Brid. — Strzechwowiec poduszkowy
Dryptodon orbicularis (Bruch *ex* Wilson) Ochyra & Żarnowiec — Strzechwowiec okrągły
Sect. *Trichophylli* (Bruch & Schimp.) Ochyra & Żarnowiec[134]
Dryptodon trichophyllus (Grev.) Brid. — Strzechwowiec włosowaty
Dryptodon muehlenbeckii (Schimp.) Loeske — Strzechwowiec cienki
Dryptodon funalis (Schwägr.) Brid. — Strzechwowiec skrętolistny
Dryptodon decipiens (Schultz) Loeske — Strzechwowiec zwodniczy
Dryptodon incurvus (Hornsch.) Brid.[135] — Strzechwowiec wyniosły
Dryptodon contortus (Wahlenb.) Brid.[135] — Strzechwowiec kędzierzawy
Sect. *Elongati* Ochyra & Żarnowiec[136]
Dryptodon elongatus (Kaulf.) Hartm. — Strzechwowiec długi
Sect. *Torquati* (I.Hagen) Ochyra & Żarnowiec[137]
Dryptodon torquatus (Drumm.) Brid. — Strzechwowiec spiralny
58. *Orthogrimmia* (Schimp.) Ochyra & Żarnowiec[138] — Strzechewka
Sect. *Orthogrimmia*
Orthogrimmia donniana (Sm.) Ochyra & Żarnowiec — Strzechewka Donna
Sect. *Montanae* (I.Hagen) Ochyra & Żarnowiec
Orthogrimmia alpestris (Schleich *ex* F.Weber & D.Mohr) Ochyra & Żarnowiec — Strzechewka alpejska
Orthogrimmia caespiticia (Brid.) Ochyra & Żarnowiec — Strzechewka darniowa
Orthogrimmia montana (Bruch & Schimp.) Ochyra & Żarnowiec — Strzechewka górska

Orthogrimmia sessitana (De Not.) Ochyra & Żarnowiec[139] — Strzechewka bruzdowana

59. *Guembelia* Hampe[140] — Litonerw

Guembelia ovalis (Hedw.) Müll.Hal. — Litonerw jajowaty

Guembelia laevigata (Brid.) Ochyra & Żarnowiec — Litonerw gładki

Guembelia longirostris (Hook.) Ochyra & Żarnowiec[141] — Litonerw długodzióbkowy

Guembelia tergestina (Tomm. *ex* Bruch & Schimp.) Buyss.[142] — Litonerw grzbietowy

60. *Hydrogrimmia* (I.Hagen) Loeske — Strumieniowiec

Hydrogrimmia mollis (Schimp.) Loeske[143] — Strumieniowiec wiotki

61. *Schistidium* Bruch & Schimp.[144] — Rozłupek

Subg. *Canalicularia* Ochyra[145]

Schistidium agassizii Sull. & Lesq.[146] — Rozłupek alpejski

Subg. *Apocarpa* Vilh.[147]

Sect. *Apocarpiformia* (Kindb.) Ochyra[148]

Schistidium apocarpum (Hedw.) Bruch & Schimp. — Rozłupek nierodzajny

Schistidium flexipile (Lindb. *ex* Broth.) G. Roth[149] — Rozłupek pogięty

Schistidium trichodon (Brid.) Poelt — Rozłupek włoskoząb

var. *trichodon*[150]

var. *nutans* H.H.Blom[151]

Schistidium lancifolium (Kindb.) H.H.Blom[152] — Rozłupek lancetowaty

Schistidium confusum H.H.Blom[153] — Rozłupek mylny

Schistidium papillosum Culm.[154] — Rozłupek brodawkowany

Schistidium pruinosum (Wilson *ex* Schimp.) G.Roth[155] — Rozłupek oszroniony

Sect. *Robusta* Ochyra[156]

Schistidium dupretii (Thér.) W.A.Weber[157] — Rozłupek zaniedbany

Schistidium robustum (Nees & Hornsch.) H.H.Blom[158] — Rozłupek tęgi

Sect. *Conferta* (Vilh.) Ochyra[159]

Schistidium confertum (Funck) Bruch & Schimp.[160] — Rozłupek zbity

Schistidium flaccidum (De Not.) Ochyra[161] — Rozłupek wiotki

Sect. *Atrofusca* Ochyra[162]

Schistidium atrofuscum (Schimp.) Limpr.[163] — Rozłupek czarniawy

Schistidium brunnescens Limpr.[164] — Rozłupek brunatny

subsp. *brunnescens*

subsp. *griseum* (Nees & Hornsch.) H.H.Blom[165]

Schistidium crassipilum H.H.Blom[166] — Rozłupek grubowłosy

Schistidium elegantulum H.H.Blom[167] — Rozłupek wytworny

Schistidium helveticum (Schkuhr) Deguchi[168] — Rozłupek szwajcarski

Sect. *Rivularia* Ochyra[169]

Schistidium rivulare (Brid.) Podp. — Rozłupek strumieniowy

XXIB. **Racomitrioideae** Ochyra & Bednarek-Ochyra[170]

62. *Racomitrium* Brid.[171] — Skalniczek

Racomitrium lanuginosum (Hedw.) Brid.[172] — Skalniczek wełnisty

63. *Niphotrichum* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra[173] — Szroniak

Sect. *Niphotrichum*

Niphotrichum canescens (Hedw.) Bednarek-Ochyra & Ochyra — Szroniak siwy

Sect. *Elongata* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra

Niphotrichum ericoides (Brid.) Bednarek-Ochyra & Ochyra — Szroniak wrzosowy

Niphotrichum elongatum (Ehrh. ex Frisvoll) Bednarek-Ochyra & Ochyra[174] — Szroniak wydłużony

64. *Codriophorus* P.Beauv.[175] — Tępolistka

Sect. *Codriophorus*

Codriophorus acicularis (Hedw.) P. Beauv.[176] — Tępolistka językowata

Codriophorus aquaticus (Brid. *ex* Schrad.) Bednarek-Ochyra & Ochyra[177] — Tępolistka wodna

Sect. *Fascicularia* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra

Codriophorus fascicularis (Hedw.) Bednarek-Ochyra & Ochyra[178] — Tępolistka rózgowata

65. *Bucklandiella* Roiv.[179] — Skalnik

Sect. *Marginatae* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra

Bucklandiella microcarpa (Hedw.) Bednarek-Ochyra & Ochyra[180] — Skalnik drobny

Sect. *Laevifoliae* (Kindb.) Bednarek-Ochyra & Ochyra

Bucklandiella affinis (F.Weber & D.Mohr) Bednarek-Ochyra & Ochyra[181] — Skalnik pokrewny

Bucklandiella heterosticha (Hedw.) Bednarek-Ochyra & Ochyra[182] — Skalnik jednoboczny

Bucklandiella obtusa (Brid.) Bednarek-Ochyra & Ochyra[183] — Skalnik tępy

Bucklandiella macounii (Kindb.) Bednarek-Ochyra & Ochyra[184] — Skalnik alpejski

subsp. *macounii*

subsp. *alpinum* (E.Lawton) Bednarek-Ochyra & Ochyra[185]

Sect. *Sudeticae* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra

Bucklandiella sudetica (Funck) Bednarek-Ochyra & Ochyra[186] — Skalnik sudecki

Order XIII. **Pottiales** M.Fleisch.[187] — Płoniwowce

XXII. **Ephemeraceae** Schimp.[188] — Jętniczkowate

66. *Ephemerum* Hampe. — Jętniczek

Ephemerum recurvifolium (Dicks.) Boulay — Jętniczek odgiętolistny

Ephemerum cohaerens (Hedw.) Hampe — Jętniczek zbity

Ephemerum serratum (Schreb. *ex* Hedw.) Hampe — Jętniczek piłkowany

var. *serratum*

var. *angustifolium* (Bruch & Schimp.) Bruch & Schimp.

var. *rutheanum* (Schimp.) Jur.

XXIII. **Pottiaceae** Schimp.[189] — Płoniwowate
XXIIIA. **Trichostomoideae** (Limpr.) Broth.[190]
67. *Eucladium* Bruch & Schimp. — Gałęziak
Eucladium verticillatum (Hedw. *ex* Brid.) Bruch & Schimp.[191] — Gałęziak prząślik
68. *Trichostomum* Bruch[192] — Zębowłos
Subg. *Crispuliformia* (Kindb.) R.H.Zander
Trichostomum crispulum Bruch — Zębowłos kędzierzawy
var. *crispulum*
var. *brevifolium* (Sendtn. *ex* Müll.Hal.) Bruch & Schimp.
Subg. *Oxystegus* (Lindb. *ex* Limpr.) Ochyra[193]
Trichostomum tenuirostre (Hook. & Taylor) Lindb. — Zębowłos cylindryczny
69. *Pleurochaete* Lindb. — Boczeń
Pleurochaete squarrosa (Brid.) Lindb.[194] — Boczeń nastroszony
70. *Tortella* (Lindb.) Limpr. — Kędzierzawka
Tortella densa (Lorentz & Molendo) Crundwell & Nyholm — Kędzierzawka gęsta
Tortella fragilis (Hook. & Wilson) Limpr. — Kędzierzawka krucha
Tortella tortuosa (Hedw.) Limpr. — Kędzierzawka pospolita
Tortella flavovirens (Bruch) Broth. — Kędzierzawka żółtozielona
Tortella inclinata (R.Hedw.) Limpr. — Kędzierzawka nachylona
XXIIIB. **Merceyoideae** Broth.
71. *Bryoerythrophyllum* P.C.Chen — Krasnolist
Bryoerythrophyllum recurvirostrum (Hedw.) P.C.Chen — Krasnolist krzywodzióbek
var. *recurvirostrum*
var. *dentatum* (Schimp.) H.A.Crum, Steere & L.E.Anderson
Bryoerythrophyllum ferruginascens (Stirt.) Giacom.[195] — Krasnolist rdzawy
72. *Pseudocrossidium* R.S.Williams[196] — Frędzlik
Pseudocrossidium revolutum (Brid.) R.H.Zander — Frędzlik ślimakowaty
Pseudocrossidium hornschuchianum (Schultz) R.H.Zander — Frędzlik gliniasty
73. *Hymenostylium* Brid. — Długowieczek
Hymenostylium recurvirostrum (Hedw.) Dixon — Długowieczek krzywy
74. *Leptodontium* (Müll.Hal.) Hampe *ex* Lindb. — Cienkoząb
Leptodontium styriacum (Jur.) Limpr.[197] — Cienkoząb styryjski
75. *Anoectangium* Schwägr. — Rozdziorek
Anoectangium aestivum (Hedw.) Mitt. — Rozdziorek letni
76. *Gyroweisia* Schimp. — Krągłolistka
Gyroweisia tenuis (Schreb. *ex* Hedw.) Schimp. — Krągłolistka cienka
77. *Barbula* Hedw.[198] — Zwojek
Sect. *Barbula*
Barbula unguiculata Hedw. — Zwojek sztyletowaty
Sect. *Convolutae* (Bruch & Schimp.) Schimp.[199]
Barbula convoluta Hedw. — Zwojek skręcony
Barbula crocea (Brid.) F.Weber & D.Mohr — Zwojek błotny
Barbula enderesii Garov. — Zwojek żółty

78. *Gymnostomum* Nees & Hornsch. — Nagosz
Gymnostomum aeruginosum Sm. — Nagosz rdzawy
Gymnostomum calcareum Nees & Hornsch.[200] — Nagosz wapienny
79. *Didymodon* Hedw.[201] — Paroząb
Sect. *Didymodon*
Didymodon acutus (Brid.) K.Saito — Paroząb ostry
Didymodon luridus Hornsch. — Paroząb śniady
Didymodon cordatus Jur. — Paroząb sercowaty
Didymodon rigidulus Hedw. — Paroząb sztywny
Sect. *Vinealis* (Steere) R.H.Zander
Didymodon vinealis (Brid.) R.H.Zander — Paroząb winnicowy
Didymodon insulanus (De Not.) M.O.Hill[202] — Paroząb wyspowy
Didymodon sinuosus (Mitt.) Delogne[203] — Paroząb fałdowany
Didymodon asperifolius (Mitt.) H.A.Crum, Steere & L.E.Anderson — Paroząb szorstkolistny
Sect. *Fallaces* (De Not.) R.H.Zander
Didymodon tophaceus (Brid.) Lisa — Paroząb tufowy
Didymodon spadiceus (Mitt.) Limpr. — Paroząb kasztanowaty
Didymodon fallax (Hedw.) R.H.Zander — Paroząb mylny
var. *fallax*
var. *brevifolius* (Dicks.) Ochyra[204]
Didymodon ferrugineus (Schimp. *ex* Besch.) M.O.Hill[205] — Paroząb rdzawy
Didymodon giganteus (Funck) Jur.[206] — Paroząb olbrzymi

XXIIIC. **Pottioideae**

80. *Molendoa* Lindb. — Molendoa
Molendoa hornschuchiana (Hook.) Lindb. *ex* Limpr.[207] — Molendoa Hornschucha
Molendoa sendtneriana (Bruch & Schimp.) Limpr.[208] — Molendoa Sendtnera
81. *Weissia* Hedw.[209] — Potłumek
Subg. *Weissia*
Weissia controversa Hedw. — Potłumek zielonawy
var. *controversa*
var. *wimmeriana* (Sendtn.) Blockeel & A.J.E.Sm.[210]
Weissia fallax Sehlm. — Potłumek zwodniczy
Weissia rutilans (Hedw.) Lindb. — Potłumek czerwonawy
Subg. *Astomum* (Hampe) Kindb. *ex* K.Saito[82, 211]
Weissia longifolia Mitt. — Potłumek trwałowieczek
Subg. *Hymenostomum* (R.Br.) Kindb. *ex* K.Saito[82, 212]
Weissia brachycarpa (Nees & Hornsch.) Jur.[213] — Potłumek przeponiec
Weissia rostellata (Brid.) Lindb. — Potłumek dzióbkowaty
Weissia squarrosa (Nees & Hornsch.) Müll.Hal. — Potłumek nastroszony
Weissia condensa (Voit) Lindb. — Potłumek zbity
82. *Stegonia* Venturi — Stegonia
Stegonia latifolia (Schwägr.) Venturi *ex* Broth. — Stegonia szerokolistna

83. *Pterygoneurum* Jur. — Listewkowiec
    Pterygoneurum ovatum (Hedw.) Dixon — Listewkowiec jajowaty
    Pterygoneurum subsessile (Brid.) Jur. — Listewkowiec siedzący
84. *Aloina* Kindb. — Soczeniczek
    Aloina brevirostris (Hook. & Grev.) Kindb. — Soczeniczek krótkodzióbkowy
    Aloina rigida (Hedw.) Limpr. — Soczeniczek gwiazdkowaty
    Aloina aloides (Koch *ex* Schultz) Kindb. — Soczeniczek aloesowaty
    Aloina ambigua (Bruch & Schimp.) Limpr. — Soczeniczek wrzosolistny
85. *Tortula* Hedw.[214] — Brodek
    Sect. *Tortula*
    Tortula eurhyphylla R.H.Zander[215] — Brodek wstęgozą b
    Tortula muralis Hedw. — Brodek murowy
        var. *muralis*
        var. *aestiva* Brid. *ex* Hedw.
    Tortula obtusifolia (Schwägr.) Mathieu — Brodek tępolistny
    Tortula subulata Hedw. — Brodek szydłowaty
        var. *subulata*
        var. *angustata* (Schimp.) Limpr.
    Sect. *Cuneifoliae* (Schimp.) Ochyra[216]
    Tortula acaulon (With.) R.H.Zander[217] — Brodek bezłodygowy
    Tortula cernua (Huebener) Lindb. — Brodek zwisły
    Tortula lanceola R.H.Zander[218] — Brodek lancetowaty
    Tortula mucronifolia Schwägr. — Brodek szpiczasty
    Tortula randii (Kenn.) R.H.Zander[219] — Brodek Randa
    Tortula truncata (Hedw.) Mitt. — Brodek ucięty
    Tortula modica R.H.Zander[220] — Brodek zwyczajny
86. *Protobryum* J.Guerra & Cano[221] — Praprątnik
    Protobryum bryoides (Dicks.) J.Guerra & Cano — Praprątnik Mildego
87. *Microbryum* Schimp.[222] — Prątniczek
    Microbryum curvicolle (Hedw.) R.H.Zander — Prątniczek krzywoszyjkowy
    Microbryum davallianum (Sm.) R.H.Zander — Prątniczek maleńki
    Microbryum floerkeanum (F.Weber & D.Mohr) Schimp. — Prątniczek kasztanowaty
    Microbryum starkeanum (Hedw.) R.H.Zander — Prątniczek tępodzióbkowy
88. *Hennediella* Paris[223] — Zrosłowieczek
    Hennediella heimii (Hedw.) R.H.Zander[224] — Zrosłowieczek solniskowy
89. *Acaulon* Müll.Hal. — Kulczak
    Acaulon muticum (Schreb. *ex* Hedw.) Müll.Hal. — Kulczak obcięty
    Acaulon triquetrum (Spruce) Müll.Hal. — Kulczak bezłodyż
90. *Syntrichia* Brid.[225] — Pędzliczek
    Sect. *Syntrichia*
    Syntrichia sinensis (Müll.Hal.) Ochyra — Pędzliczek chiński
    Syntrichia latifolia (Bruch *ex* Hartm.) Huebener — Pędzliczek szerokolistny
    Syntrichia laevipila Brid. — Pędzliczek gładkowłoskowy

Syntrichia virescens (De Not.) Ochyra[226] — Pędzliczek zielonawy
Syntrichia ruralis (Hedw.) F.Weber & D.Mohr — Pędzliczek wiejski
Syntrichia calcicola J.J.Amann — Pędzliczek wapienny
Syntrichia ruraliformis (Besch.) Cardot — Pędzliczek piaskowy
Syntrichia montana Nees[227] — Pędzliczek górski
Syntrichia norvegica F.Weber — Pędzliczek norweski
Sect. *Collotortula* R.H.Zander
Syntrichia papillosa (Wilson) Jur. — Pędzliczek brodawkowaty
91. *Hilpertia* R.H.Zander[228] — Ślimakobrzeżek
Hilpertia velenovskyi (Schiffn.) R.H.Zander[229] — Ślimakobrzeżek lessowy
XXIV. **Cinclidotaceae** Schimp. — Nurzypląsowate
92. *Cinclidotus* P.Beauv.[230] — Nurzypląs
Cinclidotus fontinaloides (Hedw.) P.Beauv. — Nurzypląs lancetowaty
Cinclidotus riparius (Host *ex* Brid.) Arn. — Nurzypląs czarniawy

Subclass D7. **Orthotrichidae** (Dixon) Ochyra[37, 231]

Order XIV. **Orthotrichales** Dixon — Szurpkowce

XXV. **Orthotrichaceae** Arn. — Szurpkowate
XXVA. **Orthotrichoideae**
93. *Orthotrichum* Hedw.[232] — Szurpek
Subg. *Orthotrichum*
Orthotrichum anomalum Hedw. — Szurpek odrębny
Orthotrichum cupulatum Hoffm. *ex* Brid. — Szurpek miseczkowaty
Orthotrichum urnigerum Myrin — Szurpek słoikowaty
Subg. *Pulchella* (Schimp.) Vitt
Sect. *Pulchella* Schimp.
Orthotrichum pulchellum Brunt. — Szurpek śliczny
Orthotrichum scanicum Grönvall — Szurpek szwedzki
Sect. *Diaphana* Venturi
Orthotrichum pumilum Sw. *ex* anon.[233] — Szurpek wysmukły
Orthotrichum diaphanum Schrad. *ex* Brid. — Szurpek przezroczysty
Orthotrichum stramineum Hornsch. *ex* Brid. — Szurpek żółtoczepcowy
Orthotrichum patens Bruch *ex* Brid. — Szurpek otwarty
Orthotrichum microcarpum De Not. — Szurpek drobny
Orthotrichum rogeri Brid. — Szurpek Rogera
Orthotrichum tenellum Bruch *ex* Brid. — Szurpek delikatny
Orthotrichum pallens Bruch *ex* Brid. — Szurpek blady
Subg. *Phaneroporum* Delogne
Orthotrichum rupestre Schleich. *ex* Schwägr. — Szurpek skalny
Subg. *Gymnoporus* (Lindb. *ex* Braithw.) Limpr.
Sect. *Leiocarpa* Molendo

Orthotrichum lyellii Hook. & Taylor — Szurpek porosły
Orthotrichum striatum Hedw. — Szurpek pręgowany
Sect. *Affinia* Schimp.
Orthotrichum speciosum Nees — Szurpek kosmaty
Orthotrichum affine Schrad. *ex* Brid. — Szurpek powinowaty
Subg. *Orthophyllum* Delogne
Orthotrichum gymnostomum Bruch *ex* Brid. — Szurpek bezzębny
Orthotrichum obtusifolium Brid. — Szurpek tępolistny
94. *Ulota* D.Mohr — Nastroszek
Ulota coarctata (P.Beauv.) Hamm. — Nastroszek długoszypułkowy
Ulota rehmannii Jur. — Nastroszek Rehmanna
Ulota drummondii (Hook. & Grev.) Brid. — Nastroszek Drummonda
Ulota crispa (Hedw.) Brid. — Nastroszek kędzierzawy
Ulota bruchii Hornsch. *ex* Brid.[234] — Nastroszek Brucha
Ulota hutchinsiae (Sm.) Hamm. — Nastroszek amerykański
Ulota phyllantha Brid.[235] — Nastroszek morski
XXVB. ***Zygodontoideae*** Broth.
95. *Zygodon* Hook. & Taylor — Zrostniczek
Zygodon gracilis Wilson[236] — Zrostniczek wysmukły
Zygodon viridissimus (Dicks.) Brid. — Zrostniczek zielony
Zygodon dentatus (Limpr.) Karttunen — Zrostniczek ząbkowany
Zygodon rupestris Schimp. *ex* Lorentz[237] — Zrostniczek skalny

Order XV. **Hedwigiales** Ochyra[238] — Hedwigiowce

XXVI. **Hedwigiaceae** Schimp. — Hedwigiowate
96. *Hedwigia* P.Beauv. — Hedwigia
Hedwigia ciliata (Hedw.) P.Beauv.[239] — Hedwigia rzęsowata
var. *ciliata*
var. *leucophaea* Bruch & Schimp.
Hedwigia stellata Hedenäs[240] — Hedwigia gwiazdkowata

Subclass D8. **Bryidae** Engl.[37]

Order XVI. **Splachnales** (M.Fleisch.) Ochyra[241] — Podsadnikowce

XXVII. **Splachnaceae** Grev. & Arn. — Podsadnikowate
XXVIIA. **Splachnoideae**
97. *Tetraplodon* Bruch & Schimp. — Czterozębiec
Tetraplodon angustatus (Hedw.) Bruch & Schimp.[242] — Czterozębiec wąski
Tetraplodon mnioides (Sw. *ex* Hedw.) Bruch & Schimp.[243] — Czterozębiec merzykowaty
98. *Splachnum* Hedw. — Podsadnik

Splachnum ampullaceum Hedw.[244] — Podsadnik pęcherzykowaty
Splachnum sphaericum Hedw.[245] — Podsadnik kulisty
XXVIIB. **Taylorioideae** Broth.
99. *Tayloria* Hook. — Długoszyj
Tayloria serrata (Hedw.) Bruch & Schimp.[246] — Długoszyj piłkowany
Tayloria tenuis (Dicks.) Schimp.[247] — Długoszyj cienki
Tayloria acuminata Hornsch.[248] — Długoszyj zaostrzony
Tayloria splachnoides (Schleich. *ex* Schwägr.) Hook.[249] — Długoszyj podsadnikowy
Tayloria froelichiana (Hedw.) Mitt. *ex* Broth.[250] — Długoszyj eliptyczny
Tayloria lingulata (Dicks.) Lindb.[251] — Długoszyj językowaty
XXVIII. **Meesiaceae** Schimp.[252] — Parzęchlinowate
XXVIIIA. **Meesioideae**
100. *Meesia* Hedw. — Parzęchlin
Meesia uliginosa Hedw.[253] — Parzęchlin trzęsawiskowy
Meesia hexasticha (Funck) Bruch[254] — Parzęchlin sześciorzędowy
Meesia longiseta Hedw.[255] — Parzęchlin długoszczecinowy
Meesia triquetra (L. *ex* Jolycl.) Ångstr.[256] — Parzęchlin trójrzędowy
XXVIIIB. **Paludelloideae** Lindb.[257]
101. *Paludella* Brid. — Mszar
Paludella squarrosa (Hedw.) Brid.[258] — Mszar krokiewkowaty
XXVIIIC. **Amblyodontoideae** (Schimp.) Matteri & Ochyra
102. *Amblyodon* P.Beauv. — Tępozą b
Amblyodon dealbatus (Sw. *ex* Hedw.) P. Beauv.[259] — Tępozą b białawy
XXVIIID. **Leptobryoideae** Ochyra[260]
103. *Leptobryum* (Bruch & Schimp.) Wilson — Zgliszczyn
Leptobryum pyriforme (Hedw.) Wilson — Zgliszczyn gruszkowaty

Order XVII. **Bryales** Limpr. — Prątnikowce

Suborder XVIIA. **Bryineae** M.Fleisch.

XXIX. **Bryaceae** Schwägr. — Prątnikowate
104. *Plagiobryum* Lindb. — Krzywoprątnik
Plagiobryum demissum (Hook.) Lindb. — Krzywoprątnik słaby
Plagiobryum zieri (Dicks. *ex* Hedw.) Lindb. — Krzywoprątnik baźkowaty
105. *Pohlia* Hedw.[261] — Borześlad
Subg. *Pohlia*
Pohlia longicollis (Hedw.) Lindb. — Borześlad długoszyjkowy
Pohlia elongata Hedw. — Borześlad długoszczecinowy
Pohlia obtusifolia (Vill. *ex* Brid.) L.F.Koch — Borześlad tępolistny
Pohlia nutans (Hedw.) Lindb. — Borześlad zwisły
subsp. *nutans*
subsp. *schmperi* (Müll.Hal.) Nyholm

Pohlia sphagnicola (Bruch & Schimp.) Broth. — Borześlad torfowy
Pohlia cruda (Hedw.) Lindb. — Borześlad świeży
Subg. *Mniobryum* (Bruch & Schimp. *ex* Limpr.) Ochyra[262]
Sect. *Cacodon* Lindb. *ex* Broth.[263]
Pohlia lescuriana (Sull.) Ochi — Borześlad ładny
Pohlia lutescens (Limpr.) H.Lindb. — Borześlad żółtawy
Pohlia ludwigii (Spreng. *ex* Schwägr.) Broth. — Borześlad mierzoprątnik
Pohlia filum (Schimp.) Mårtensson — Borześlad niteczka
Pohlia annotina (Hedw.) Lindb. — Borześlad roczny
Pohlia drummondii (Müll.Hal.) A.L.Andrews[264] — Borześlad zmienny
Pohlia andalusica (Höhn.) Broth.[265] — Borześlad andaluzyjski
Pohlia bulbifera (Warnst.) Warnst.[266] — Borześlad bulwkowaty
Pohlia camptotrachela (Renauld & Cardot) Broth.[267] — Borześlad krzywoszyjkowy
Pohlia proligera (Kindb.) Lindb. *ex* Broth.[268] — Borześlad rozmnóżkowy
Sect. *Apalodictyon* (Müll.Hal.) Ochyra[269]
Pohlia wahlenbergii (F.Weber & D.Mohr) A.L.Andrews — Borześlad białawy
var. *wahlenbergii*
var. *glacialis* (Brid.) E.F.Warb.
Pohlia melanodon (Brid.) A.J.Shaw[270] — Borześlad cielisty
106. *Anomobryum* Schimp. — Różnoprątnik
Anomobryum julaceum (Schrad *ex* P.Gaertn., B.Mey. & Scherb.) Schimp. — Różnoprątnik baźkowaty
107. *Bryum* Hedw.[271] — Prątnik
Sect. *Bryum*
Bryum argenteum Hedw. — Prątnik srebrzysty
Sect. *Amblyophyllum* Müll.Hal.[272]
Bryum cyclophyllum (Schwägr.) Bruch & Schimp. — Prątnik okrągłolistny
Bryum weigelii Spreng. — Prątnik zbiegający
Bryum marratii Wilson — Prątnik nadmorski
Bryum calophyllum R.Br. — Prątnik nadobny
Sect. *Doliolidium* (Müll.Hal.) Müll.Hal.
Bryum bicolor Dicks.[273] — Prątnik dwubarwny
Sect. *Alpiniformia* (Kindb.) Sim[274]
Bryum ruderale Crundwell & Nyholm[275] — Prątnik ruderalny
Bryum violaceum Crundwell & Nyholm[275] — Prątnik fiołkowaty
Bryum klinggraeffii Schimp.[275] — Prątnik Klinggraeffa
Bryum tenuisetum Limpr.[275] — Prątnik cienkoszczecinowy
Bryum subapiculatum Hampe[275, 276] — Prątnik purpurowy
Bryum bornholmense (Wink.) R.Ruthe[275, 277] — Prątnik bornholmski
Bryum rubens Mitt.[275] — Prątnik czerwonawy
Bryum muehlenbeckii Bruch & Schimp. — Prątnik krótkolistny
Bryum alpinum Huds. *ex* With. — Prątnik alpejski

Bryum mildeanum Jur. — Prątnik Mildego
Sect. *Cladodium* (Brid.) Husn.
Bryum caespiticium Hedw. — Prątnik darniowy
var. *caespiticium*
var. *imbricatum* Bruch & Schimp.
Bryum badium (Bruch *ex* Brid.) Schimp. — Prątnik brunatny
Bryum funckii Schwägr. — Prątnik bladozielony
Bryum creberrimum Taylor — Prątnik zbity
Bryum pseudotriquetrum (Hedw.) P.Gaertn., B.Mey. & Scherb.[278] — Prątnik nabrzmiały
var. *pseudotriquetrum*
var. *bimum* (Schreb.) Lilj.
Bryum subneodamense Kindb.[279] — Prątnik jajowaty
Bryum neodamense Itzigs. — Prątnik brandenburski
Bryum schleicheri Schwägr. — Prątnik źródliskowy
Bryum turbinatum (Hedw.) Turner — Prątnik kręgielkowaty
Bryum pallens Sw. *ex* anon. — Prątnik blady
var. *pallens*
var. *alpinum* (Bruch & Schimp.) Podp.
Bryum pallescens Schleich. *ex* Schwägr. — Prątnik żółknący
Bryum uliginosum (Brid.) Bruch & Schimp.[280] — Prątnik bagienny
Bryum algovicum Sendtn. *ex* Müll.Hal. — Prątnik bawarski
Bryum salinum I.Hagen *ex* Limpr.[281] — Prątnik solniskowy
Bryum knowltonii Barnes — Prątnik jeziorny
Bryum amblyodon Müll.Hal.[282] — Prątnik nachylony
Bryum intermedium (Brid.) Blandow — Prątnik pośredni
Bryum longisetum Blandow *ex* Schwägr. — Prątnik długoszczecinowy
Bryum mamillatum Lindb. — Prątnik brodawkowaty
Bryum warneum (Röhl.) Brid. — Prątnik meklemburski
Bryum arcticum (R.Br.) Bruch & Schimp. — Prątnik arktyczny
108. *Rhodobryum* (Schimp.) Limpr. — Różyczkoprątnik
Rhodobryum ontariense (Kindb.) Kindb.[283] — Różyczkoprątnik kanadyjski
Rhodobryum roseum (Hedw.) Limpr.[284] — Różyczkoprątnik pospolity
109. *Rosulabryum* J.R.Spence[285] — Rozetnik
Rosulabryum capillare (Hedw.) J.R.Spence[286] — Rozetnik włoskowy
Rosulabryum elegans (Nees) Ochyra[287] — Rozetnik ozdobny
Rosulabryum laevifilum (Syed) Ochyra[288] — Rozetnik rozmnóżkowy
XXX. **Orthodontiaceae** (Broth.) Goffinet — Prostozębowate
110. *Orthodontium* Schwägr. — Prostozął
Orthodontium lineare Schwägr.[289] — Prostozął równowąski

Suborder XVIIB. **Bartramiineae** M.Fleisch.

XXXI. **Aulacomniaceae** Schimp. — Próchniczkowate
111. *Aulacomnium* Schwägr. — Próchniczek
Aulacomnium palustre (Hedw.) Schwägr. — Próchniczek błotny
var. *palustre*
var. *imbricatum* Bruch & Schimp.
Aulacomnium turgidum (Wahlenb.) Schwägr. — Próchniczek obły
Aulacomnium androgynum (Hedw.) Schwägr. — Próchniczek obupłciowy
XXXII. **Bartramiaceae** Schwägr.[290] — Szmotłochowate
XXXIIA. **Bartramioideae**
112. *Bartramia* Hedw. — Szmotłoch
Sect. *Bartramia*
Bartramia halleriana Hedw.[291] — Szmotłoch norweski
Bartramia pomiformis Hedw.[292] — Szmotłoch jabłkowaty
var. *pomiformis*
var. *elongata* Turner
Sect. *Pyridium* Müll.Hal.[293]
Bartramia ithyphylla Brid.[294] — Szmotłoch prostolistny
var. *ithyphylla*
var. *strigosa* (Wahlenb.) C.Hartm.
113. *Plagiopus* Brid. — Płaskodziur
Plagiopus oederiana (Sw.) Limpr.[295] — Płaskodziur trójkątny
XXXIIB. **Conostomoideae** D.G.Griffin & W.R.Buck
114. *Conostomum* Sw. *ex* F.Weber & D.Mohr[296] — Stożkoząb
Conostomum tetragonum (Hedw.) Lindb.[297] — Stożkoząb czterokątny
XXXIIC. **Breutelioideae** D.G.Griffin & W.R.Buck
115. *Philonotis* Brid. — Bagniak
Sect. *Philonotis*
Philonotis caespitosa Jur. — Bagniak darniowy
Philonotis fontana (Hedw.) Brid. — Bagniak zdrojowy
Philonotis tomentella Molendo — Bagniak kutnerowaty
Philonotis seriata Mitt. — Bagniak spiralny
Philonotis calcarea (Bruch & Schimp.) Schimp. — Bagniak wapienny
Sect. *Homomorphae* (Kindb.) Ochyra[298]
Philonotis marchica (Hedw.) Brid. — Bagniak długokończysty
Philonotis arnellii Husn. — Bagniak włosowaty

Suborder XVIIC. **Rhizogoniineae** M.Fleisch.

XXXIII. **Cinclidiaceae** Kindb.[299] — Drabinowcowate
116. *Cinclidium* Sw.[300] — Drabinowiec
Cinclidium stygium Sw.[301] — Drabinowiec mroczny

117. *Cyrtomnium* Holmen[302] — Łukomerzyk

Cyrtomnium hymenophylloides (Huebener) T.J.Kop.[303] — Łukomerzyk błoniastolistny

118. *Rhizomnium* (Mitt. *ex* Broth.) T.J.Kop.[304] — Krągłolist

Rhizomnium punctatum (Hedw.) T.J.Kop. — Krągłolist macierzankowy

Rhizomnium magnifolium (Horik.) T.J.Kop.[305] — Krągłolist olbrzymi

Rhizomnium pseudopunctatum (Bruch & Schimp.) T.J.Kop.[306] — Krągłolist porowany

XXXIV. **Plagiomniaceae** T.J.Kop.[307] — Płaskomerzykowate

119. *Plagiomnium* T.J.Kop.[308] — Płaskomerzyk

Sect. *Plagiomnium*

Plagiomnium drummondii (Bruch & Schimp.) T.J.Kop. — Płaskomerzyk orzęsiony

Plagiomnium cuspidatum (Hedw.) T.J.Kop. — Płaskomerzyk kończysty

Sect. *Rosulata* (Kindb.) T.J.Kop.[309]

Plagiomnium affine (Blandow *ex* Funck) T.J.Kop.[310] — Płaskomerzyk pokrewny

Plagiomnium elatum (Bruch & Schimp.) T.J.Kop.[310] — Płaskomerzyk oskrzydlony

Plagiomnium medium (Bruch & Schimp.) T.J.Kop. — Płaskomerzyk średni

Plagiomnium ellipticum (Brid.) T.J.Kop.[311] — Płaskomerzyk eliptyczny

Sect. *Undulata* (Kindb.) T.J.Kop.

Plagiomnium undulatum (Hedw.) T.J.Kop. — Płaskomerzyk falisty

Sect. *Rostrata* (Kindb.) T.J.Kop.

Plagiomnium rostratum (Schrad.) T.J.Kop. — Płaskomerzyk dzióbkowaty

120. *Pseudobryum* (Kindb.) T.J.Kop.[312] — Nibyprątnik

Pseudobryum cinclidioides (Huebener) T.J.Kop.[313] — Nibyprątnik torfowy

XXXV. **Mniaceae** Schwägr.[314] — Merzykowate

121. *Mnium* Hedw.[315] — Merzyk

Sect. *Mnium*

Mnium hornum Hedw. — Merzyk groblowy

Sect. *Spinosa* (Kindb.) T.J.Kop.

Mnium spinosum (Voit) Schwägr. — Merzyk ciernisty

Mnium spinulosum Bruch & Schimp. — Merzyk drobnociernisty

Mnium thomsonii Schimp.[316] — Merzyk prostodzióbkowy

Sect. *Laevinervia* P.C.Chen *ex* X.J.Li & M.Zang[317]

Mnium lycopodioides Schwägr.[318] — Merzyk widłakowaty

Mnium marginatum (Dicks.) P.Beauv.[319] — Merzyk obrzeżony

Sect. *Stellariformia* (Kindb.) T.J.Kop.[320]

Mnium stellare Reichard *ex* Hedw. — Merzyk gwiazdkowaty

Subclass D9. **Hypnidae** W.R.Buck, Goffinet & A.J.Shaw[321]

Order XVIII. **Hypnales** (M.Fleisch.) W.R.Buck & Vitt[322] — Rokietowce

Suborder XVIIIA. **Climaciineae** (M.Fleisch.) W.R.Buck & Vitt

XXXVI. **Climaciaceae** Kindb. — Drabikowate
- 122. *Climacium* F.Weber & D.Mohr — Drabik
  - *Climacium dendroides* (Hedw.) F.Weber & D.Mohr — Drabik drzewkowaty

Suborder XVIIIB. **Fontinalineae** M.Fleisch.

XXXVII. **Fontinalaceae** Schimp. **—** Zdrojkowate
- 123. *Dichelyma* Myrin — Moczara
  - *Dichelyma falcatum* (Hedw.) Myrin — Moczara sierpowata
  - *Dichelyma capillaceum* (Dicks.) Myrin[323] — Moczara włoskowata
- 124. *Fontinalis* Hedw.[324] — Zdrojek
  - Sect. *Fontinalis*
    - *Fontinalis antipyretica* Hedw.[325] — Zdrojek pospolity
      - var. *antipyretica*
      - var. *gigantea* (Sull.) Sull.
      - var. *gracilis* (Lindb.) Schimp.
  - Sect. *Lepidophyllae* Cardot
    - *Fontinalis squamosa* Hedw. — Zdrojek łuseczkowaty
    - *Fontinalis dalecarlica* Schimp. — Zdrojek szwedzki
  - Sect. *Malacophyllae* Cardot
    - *Fontinalis hypnoides* Hartm. — Zdrojek rokietowaty

Suborder XVIIIC. **Leucodontineae** M.Fleisch.

XXXVIII. **Leucodontaceae** Schimp. — Białozębowate
- 125. *Antitrichia* Brid. — Jeżolist
  - *Antitrichia curtipendula* (Timm *ex* Hedw.) Brid. — Jeżolist zwyczajny
- 126. *Leucodon* Schwägr. — Białoząb
  - *Leucodon sciuroides* (Hedw.) Schwägr. — Białoząb pospolity

XXXIX. **Anomodontaceae** Kindb. — Zwiślikowate
- 127. *Anomodon* Hook. & Taylor[326] — Zwiślik
  - Subg. *Anomodon*
    - *Anomodon viticulosus* (Hedw.) Hook. & Taylor — Zwiślik wiciowy
    - *Anomodon rugelii* (Müll.Hal.) Keissl. — Zwiślik krótkokończysty
  - Subg. *Pseudanomodon* (Limpr.) Ochyra[327]
    - *Anomodon longifolius* (Schleich. *ex* Brid.) Hartm. — Zwiślik długolistny
    - *Anomodon attenuatus* (Hedw.) Huebener — Zwiślik maczugowaty

Suborder XVIIID. **Neckerineae** M.Fleisch.

XL. **Neckeraceae** Schimp. — Miecherowate
128. *Neckera* Hedw. — Miechera
Sect. *Neckera*
Neckera pennata Hedw. — Miechera pierzasta
Neckera crispa Hedw.[328] — Miechera kędzierzawa
Neckera pumila Hedw. — Miechera wysmukła
Sect. *Leiophyllum* (Müll.Hal.) Braithw.
Neckera complanata (Hedw.) Huebener[329] — Miechera spłaszczona
Neckera besseri (Lobarz.) Jur.[330] — Miechera Bessera
129. *Homalia* (Brid.) Bruch. & Schimp.[331] — Gładysz
Homalia trichomanoides (Hedw.) Schimp. — Gładysz paprociowaty
XLI. **Thamnobryaceae** Margad. & During[332] — Krzewikowate
130. *Thamnobryum* Nieuwl. — Krzewik
Thamnobryum alopecurum (Hedw.) Gangulee[333] — Krzewik źródliskowy
XLII. **Echinodiaceae** Broth.[334] — Kolczastolistne
131. *Isothecium* Brid.[335] — Myszeniec
Isothecium alopecuroides (Lam. *ex* Dubois) Isov.[336] — Myszeniec baźkowiec
Isothecium myosuroides Brid.[337] — Myszeniec mniejszy

Suborder XVIIIE. **Leskeineae** M.Fleisch.

XLIII. **Pterigynandraceae** Schimp.[338] — Międzylistowate
132. *Myurella* Schimp.[339] — Myszogonek
Myurella julacea (Schwägr.) Schimp.[340] — Myszogonek kotkowaty
var. *julacea*
var. *ciliata* (Chał.) Ochyra & Bednarek-Ochyra[341]
Myurella tenerrima (Brid.) Lindb.[342] — Myszogonek delikatny
133. *Pterigynandrum* Hedw.[343] — Międzylist
Pterigynandrum filiforme Hedw. — Międzylist nitkowaty
134. *Heterocladium* Schimp. — Różnolist
Heterocladium heteropterum (Brid.) Schimp.[344] — Różnolist biczykowaty
Heterocladium dimorphum (Brid.) Schimp.[345] — Różnolist dwoistolistny
XLIV. **Leskeaceae** Schimp. — Drągstowate
135. *Leskea* Hedw. — Drąst
Leskea polycarpa Hedw. — Drąst wielozarodniowy
136. *Leskeella* (Limpr.) Loeske — Drągstewka
Leskella nervosa (Brid.) Loeske — Drągstewka długożeberkowa
137. *Pseudoleskeella* Kindb. — Łańcuszkowiec
Pseudoleskeella catenulata (Brid. *ex* Schrad.) Kindb. — Łańcuszkowiec wapieniolubny
138. *Pseudoleskea* Schimp. — Drągstewnik
Pseudoleskea patens (Lindb.) Kindb. — Drągstewnik otwarty

Pseudoleskea incurvata (Hedw.) Loeske — Drągstewnik czarnozielony
Pseudoleskea radicosa (Mitt.) Macoun & Kindb. — Drągstewnik korzeniowy
139. *Orthotheciella* (Müll.Hal.) Ochyra[346] — Złudka
Orthotheciella varia (Hedw.) Ochyra — Złudka wielopostaciowa
140. *Lescuraea* Schimp. — Drągstewniczek
Lescuraea mutabilis (Brid.) Lindb. *ex* I.Hagen — Drągstewniczek zmienny
Lescuraea saxicola (Schimp.) Molendo — Drągstewniczek skalny
141. *Ptychodium* Schimp.[347] — Bruzdowiec
Ptychodium plicatum (Schleich. *ex* F.Weber & D.Mohr) Schimp. — Bruzdowiec fałdowany
142. *Haplocladium* Müll.Hal.[348] — Łodyżkowiec
Haplocladium microphyllum (Hedw.) Broth.[349] — Łodyżkowiec drobnolistny
XLV. **Thuidiaceae** Schimp.[350] — Tujowcowate
143. *Thuidium* Schimp. — Tujowiec
Thuidium tamariscinum (Hedw.) Schimp. — Tujowiec tamaryszkowaty
Thuidium delicatulum (Hedw.) Schimp.[351] — Tujowiec delikatny
Thuidium philibertii Limpr. — Tujowiec włoskolistny
Thuidium recognitum (Hedw.) Lindb. — Tujowiec szerokolistny
144. *Cyrto-hypnum* Hampe & Lorentz[352] — Tujnik
Cyrto-hypnum minutulum (Hedw.) W.R.Buck & H.A.Crum — Tujnik maleńki
145. *Abietinella* Müll.Hal. — Jodłówka
Abietinella abietina (Hedw.) M.Fleisch. — Jodłówka pospolita
Abietinella hystricosa (Mitt.) Broth.[353] — Jodłówka najeżona
XLVI. **Helodiaceae** (M.Fleisch.) Ochyra[354] — Błotniszkowate
146. *Helodium* Warnst. — Błotniszek
Helodium blandowii (F.Weber & D.Mohr) Warnst.[355] — Błotniszek wełnisty
147. *Palustriella* Ochyra[356] — Źródliskowiec
Palustriella commutata (Hedw.) Ochyra — Źródliskowiec zmienny
var. *commutata*
var. *falcata* (Brid.) Ochyra[357]
var. *fluctuans* (Schimp.) Ochyra
var. *sulcata* (Lindb.) Ochyra
Palustriella decipiens (De Not.) Ochyra — Źródliskowiec tujowaty
XLVII. **Hylocomiaceae** (Broth.) M.Fleisch.[358] — Gajnikowate
XLVIIA. **Hylocomioideae**
148. *Loeskeobryum* Broth. — Gajniczek
Loeskeobryum brevirostre (Brid.) M.Fleisch. *ex* Broth.[359] — Gajniczek krótkodzióbkowy
149. *Hylocomium* Schimp.[360] — Gajnik
Hylocomium splendens (Hedw.) Schimp. — Gajnik lśniący
150. *Hylocomiastrum* M.Fleisch. *ex* Broth. — Leśniak
Hylocomiastrum pyrenaicum (Spruce) M.Fleisch. *ex* Broth.[361] — Leśniak pirenejski

Hylocomiastrum umbratum (Ehrh. *ex* Hedw.) M.Fleisch. *ex* Broth.[362] — Leśniak cienisty

XLVIIB. **Pleurozioideae** Ando, Seki, N.Nishim. & Higuchi[363]

151. *Pleurozium* Mitt. — Rokietnik

Pleurozium schreberi (Willd. *ex* Brid.) Mitt. — Rokietnik pospolity

152. *Rhytidiadelphus* (Limpr.) Warnst. — Fałdownik

Rhytidiadelphus loreus (Hedw.) Warnst.[364] — Fałdownik rzemienny

Rhytidiadelphus squarrosus (Hedw.) Warnst. — Fałdownik nastroszony

Rhytidiadelphus subpinnatus (Lindb.) T.J.Kop.[365] — Fałdownik wyłysiały

Rhytidiadelphus triquetrus (Hedw.) Warnst. — Fałdownik szeleszczący

XLVIII. **Rhytidiaceae** Broth.— Fałdźcowate

153. *Rhytidium* (Sull.) Kindb. — Fałdziec

Rhytidium rugosum (Ehrh. *ex* Hedw.) Kindb.[366] — Fałdziec pomarszczony

XLIX. **Cratoneuraceae** Mönk. — Żebrowcowate

154. *Cratoneuron* (Sull.) Spruce[367] — Żebrowiec

Cratoneuron filicinum (Hedw.) Spruce — Żebrowiec paprociowaty

155. *Callialaria* Ochyra[368] — Skrzydłosz

Callialaria curvicaulis (Jur.) Ochyra[369] — Skrzydłosz zgięty

L. **Brachytheciaceae** Schimp.[370] — Krótkoszowate

LA. **Homalothecioideae** Ignatov & Huttunen

156. *Homalothecium* Schimp.[371] — Namurnik

Homalothecium lutescens (Hedw.) H.Rob. — Namurnik żółtawy

Homalothecium philippeanum (Spruce) Schimp.[372] — Namurnik górski

Homalothecium sericeum (Hedw.) Schimp. — Namurnik jedwabisty

157. *Brachytheciastrum* Ignatov & Huttunen[373] — Krótkoszek

Brachytheciastrum velutinum (Hedw.) Ignatov & Huttunen[374] — Krótkoszek aksamitny

var. *velutinum*

var. *salicinum* (Schimp.) Ochyra & Żarnowiec

var. *vagans* (Milde) Ochyra & Żarnowiec

Brachytheciastrum vanekii (Šmarda) Ochyra & Żarnowiec[375] — Krótkoszek tatrzański

Brachytheciastrum trachypodium (Brid.) Ignatov & Huttunen — Krótkoszek chropowaty

Brachytheciastrum collinum (Schleich. *ex* Müll.Hal.) Ignatov & Huttunen[376] — Krótkoszek pagórkowy

158. *Eurhynchiastrum* Ignatov & Huttunen[377] — Ostrowiek

Eurhynchiastrum pulchellum (Hedw.) Ignatov & Huttunen[378] — Ostrowiek szorstki

var. *pulchellum*

var. *praecox* (Sw. *ex* Hedw.) Ochyra & Żarnowiec

LB. **Brachythecioideae**

159. *Kindbergia* Ochyra[379] — Kindbergia

Kindbergia praelonga (Hedw.) Ochyra — Kindbergia długogałęzista

160. *Brachythecium* Schimp.[380] — Krótkosz
Sect. *Brachythecium*
Brachythecium mildeanum (Schimp.) Schimp. — Krótkosz Mildego
Brachythecium rutabulum (Hedw.) Schimp.[381] — Krótkosz pospolity
Brachythecium rivulare Schimp.[381] — Krótkosz strumieniowy
Brachythecium campestre (Müll.Hal.) Schimp.[382] — Krótkosz równinny
Sect. *Albicantia* Nyholm *ex* Ochyra[383]
Brachythecium albicans (Hedw.) Schimp. — Krótkosz wyblakły
Sect. *Salebrosa* (Limpr.) Broth.
Brachythecium glareosum (Bruch. *ex* Spruce) Schimp. — Krótkosz żwirowy
Brachythecium turgidum (Hartm.) Kindb. — Krótkosz obły
Brachythecium salebrosum (Hoffm. *ex* F.Weber & D.Mohr) Schimp.[384] — Krótkosz rowowy
Brachythecium capillaceum (F.Weber & D.Mohr) Giacom. — Krótkosz włosowaty
Sect. *Pseudocamptothecium* Szafran *ex* Ochyra, Żarnowiec & Bednarek-Ochyra[385]
Brachythecium geheebii Milde[386] — Krótkosz namurnikowy
Sect. *Pseudocirriphylum* Ignatov[387]
Brachythecium cirrosum (Schwägr.) Schimp. — Krótkosz górski
Brachythecium tommasinii (Sendtn. ex Boulay) Ignatov & Huttunen[388] — Krótkosz wapienny
161. *Sciuro-hypnum* Hampe[389] — Wiewiórecznik
Sciuro-hypnum starkei (Brid.) Ignatov & Huttunen[390] — Wiewiórecznik sudecki
Sciuro-hypnum oedipodium (Mitt.) Ignatov & Huttunen[391] — Wiewiórecznik mały
Sciuro-hypnum glaciale (Schimp.) Ignatov & Huttunen — Wiewiórecznik lodowy
Sciuro-hypnum reflexum (Starke) Ignatov & Huttunen — Wiewiórecznik odgięty
Sciuro-hypnum plumosum (Hedw.) Ignatov & Huttunen[392] — Wiewiórecznik piórkowaty
Sciuro-hypnum populeum (Hedw.) Ignatov & Huttunen — Wiewiórecznik osinowy
Sciuro-hypnum flotowianum (Sendtn.) Ignatov & Huttunen[393] — Wiewiórecznik aksamitny
Sciuro-hypnum ornellanum (Molendo) Ignatov & Huttunen[394] — Wiewiórecznik zdobny

LC. **Rhynchostegielloideae** Ignatov & Huttunen
162. *Cirriphyllum* Grout[395] — Szydłosz
Cirriphyllum piliferum (Hedw.) Grout — Szydłosz włoskowy
Cirriphyllum crassinervium (Taylor) Loeske & M.Fleisch.[396] — Szydłosz grubożeberkowy
Cirriphyllum tenuicaule (Spruce) Wijk & Margad.[397] — Szydłosz cienki
163. *Oxyrrhynchium* (Schimp.) Warnst.[398] — Dzióbek
Oxyrrhynchium hians (Hedw.) Loeske[399] — Dzióbek rozwarty

var. *hians*
var. *rigidum* (Boulay) Ochyra & Żarnowiec[400]
Oxyrrhynchium schleicheri (R.Hedw.) Röll — Dzióbek Schleichera
Oxyrrhynchium speciosum (Brid.) Warnst. — Dzióbek okazały
164. *Rhynchostegiella* (Schimp.) Limpr.[401] — Ostrószek
Rhynchostegiella tenella (Dicks.) Limpr. — Ostrószek delikatny
Rhynchostegiella teneriffae (Mont.) Dirkse & Bouman[402] — Ostrószek kanaryjski
LD. **Rhynchostegioideae** Ignatov & Huttunen
165. *Platyhypnidium* M.Fleisch.[403] — Brzeżnik
Platyhypnidium riparioides (Hedw.) Dixon — Brzeżnik strumieniowy
166. *Rhynchostegium* Schimp. — Ostrosz
Rhynchostegium murale (Hedw.) Schimp. — Ostrosz murowy
Rhynchostegium confertum (Dicks.) Schimp.[404] — Ostrosz gęstolistny
Rhynchostegium megapolitanum (Blandow *ex* F.Weber & D.Mohr) Schimp.[405] — Ostrosz meklemburski
167. *Pseudoscleropodium* (Limpr.) M.Fleisch. *ex* Broth. — Brodawkowiec
Pseudoscleropodium purum (Hedw.) M.Fleisch. *ex* Broth. — Brodawkowiec czysty
168. *Eurhynchium* Schimp. — Dzióbkowiec
Eurhynchium striatum (Schreb. *ex* Hedw.) Schimp.[406] — Dzióbkowiec bruzdowany
Eurhynchium angustirete (Broth.) T.J.Kop.[407] — Dzióbkowiec Zetterstedta
169. *Plasteurhynchium* M.Fleisch. *ex* Broth. — Dziobatka
Plasteurhynchium striatulum (Spruce) M.Fleisch. *ex* Broth. — Dziobatka prążkowana

Suborder XVIIIF. **Hypnineae** M.Fleisch.

LI. **Entodontaceae** Kindb.[408] — Rokietniczkowate
170. *Entodon* Müll.Hal. — Rokietniczek
Entodon concinnus (De Not.) Paris — Rokietniczek strojny
LII. **Plagiotheciaceae** (Broth.) M.Fleisch.[409] — Dwustronkowate
171. *Plagiothecium* Schimp.[410] — Dwustronek
Sect. *Plagiothecium*
Plagiothecium denticulatum (Hedw.) Schimp. — Dwustronek ząbkowany
var. *denticulatum*
var. *obtusifolium* (Turner) Moore
Plagiothecium ruthei Limpr. — Dwustronek Ruthego
Sect. *Piloscia* (Berk.) Ochyra[411]
Plagiothecium latebricola Schimp. — Dwustronek niedostępny
Sect. *Leptophyllum* Jedl.
Plagiothecium curvifolium Schlieph. *ex* Limpr. — Dwustronek zgiętolistny
Plagiothecium laetum Schimp. — Dwustronek jasny

Sect. *Rostriphyllum* Jedl.
Plagiothecium platyphyllum Mönk. — Dwustronek szerokolistny
Sect. *Orthophyllum* Jedl.
Plagiothecium cavifolium (Brid.) Z.Iwats.[412] — Dwustronek wklęsłolistny
Plagiothecium succulentum (Wilson) Lindb. — Dwustronek soczysty
Plagiothecium nemorale (Mitt.) A.Jaeger — Dwustronek leśny

LIII. **Amblystegiaceae** Kindb.[413] — Krzywoszyjowate
LIIIA. **Amblystegioideae**
172. *Amblystegium* Schimp. — Krzywoszyj
Amblystegium juratzkanum Schimp. — Krzywoszyj Juratzki
Amblystegium serpens (Hedw.) Schimp. — Krzywoszyj rozesłany
Amblystegium radicale (P. Beauv.) Schimp.[414] — Krzywoszyj korzeniowy
173. *Serpoleskea* (Limpr.) Loeske[415] — Nitecznik
Serpoleskea subtilis (Hedw.) Loeske — Nitecznik delikatny
Serpoleskea confervoides (Brid.) Loeske[416] — Nitecznik glonowaty
174. *Hygroamblystegium* Loeske — Wodnokrzywoszyj
Hygroamblystegium fluviatile (Hedw.) Loeske — Wodnokrzywoszyj rzeczny
Hygroamblystegium tenax (Hedw.) Jenn. — Wodnokrzywoszyj zanurzony
175. *Leptodictyum* (Schimp.) Warnst. — Tęposz
Leptodictyum humile (P.Beauv.) Ochyra[417] — Tęposz niski
Leptodictyum riparium (Hedw.) Warnst. — Tęposz nadbrzeżny
LIIIB. **Calliergonoideae** Kanda
176. *Straminergon* Hedenäs[418] — Słomiaczek
Straminergon stramineum (Dicks. *ex* Brid.) Hedenäs — Słomiaczek złotawy
177. *Calliergon* (Sull.) Kindb.[419] — Mokradłosz
Calliergon cordifolium (Hedw.) Kindb. — Mokradłosz sercowaty
Calliergon giganteum (Schimp.) Kindb. — Mokradłosz olbrzymi
Calliergon megalophyllum Mikut.[420] — Mokradłosz wielkolistny
Calliergon richardsonii (Mitt.) Kindb.[421] — Mokradłosz Richardsona
178. *Scorpidium* (Schimp.) Limpr.[422] — Skorpionowiec
Scorpidium scorpioides (Hedw.) Limpr.[423] — Skorpionowiec brunatnawy
179. *Tomentypnum* Loeske[424] — Błyszcze
Tomentypnum nitens (Hedw.) Loeske[425] — Błyszcze włoskowate
LIIIC. **Drepanocladoideae** Kanda
180. *Drepanocladus* (Müll.Hal.) G.Roth[426] — Sierpowiec
Sect. *Drepanocladus*[427]
Drepanocladus capillifolius (Warnst.) Warnst.[428] — Sierpowiec włosolistny
Drepanocladus polycarpos (Blandow *ex* Voit) Warnst. — Sierpowiec wielozarodniowy
Drepanocladus aduncus (Hedw.) Warnst. — Sierpowiec zakrzywiony
Drepanocladus stagnatus Żarnowiec[429] — Sierpowiec jeziorny

Sect. *Sendtneri* (G.Roth) Ochyra & Żarnowiec[430]
Drepanocladus sendtneri (Schimp. *ex* H.Müll.) Warnst.[431] — Sierpowiec moczarowy
Drepanocladus sordidus (Müll.Hal.) Hedenäs[432] — Sierpowiec brudny
181. *Pseudocalliergon* (Limpr.) Loeske[426, 433] — Bagiennik
Sect. *Pseudocalliergon*
Pseudocalliergon turgescens (T.Jensen) Loeske[434] — Bagiennik obły
Pseudocalliergon trifarium (F.Weber & D.Mohr) Loeske[435] — Bagiennik żmijowaty
Sect. *Turgidi* (Smirnova) Ochyra[436]
Pseudocalliergon lycopodioides (Brid.) Hedenäs[437] — Bagiennik widłakowaty
182. *Limprichtia* Loeske[426] — Limprichtia
Limprichtia cossonii (Schimp.) L.E.Anderson, H.A.Crum & W.R.Buck[438] — Limprichtia pośrednia
Limprichtia revolvens (Sw. *ex* anon.) Loeske — Limprichtia długokończysta
183. *Hamatocaulis* Hedenäs[439] — Haczykowiec
Hamatocaulis vernicosus (Mitt.) Hedenäs — Haczykowiec błyszczący
184. *Warnstorfia* Loeske[426, 440] — Warnstorfia
Subg. *Warnstorfia*
Warnstorfia fluitans (Hedw.) Loeske — Warnstorfia pływająca
Warnstorfia pseudostraminea (Müll.Hal.) Tuom. & T.J.Kop.[441] — Warnstorfia prostolistna
Warnstorfia exannulata (Schimp.) Loeske — Warnstorfia bezpierścieniowa
var. *exannulata*
var. *nigricans* (Brid.) Ochyra[442]
Warnstorfia trichophylla (Warnst.) Tuom. & T.J.Kop. — Warnstorfia włoskolistna
Subg. *Sarmentypnum* (Tuom. & T.J.Kop.) Ochyra[443]
Warnstorfia sarmentosa (Wahlenb.) Hedenäs — Warnstorfia sznurecznik
185. *Sanionia* Loeske[426, 444] — Sanionia
Sanionia uncinata (Hedw.) Loeske — Sanionia haczykowata
LIIID. **Campylioideae** Kanda
186. *Anacamptodon* Brid.[445] — Krzywozęb
Anacamptodon splachnoides (Froel. *ex* Brid.) Brid.[446] — Krzywozęb podsadnikowy
187. *Campylium* (Sull.) Mitt.[447] — Złocieniec
Campylium stellatum (Hedw.) Lange & C.E.O.Jensen — Złocieniec gwiazdkowaty
var. *stellatum*
var. *protensum* (Brid.) Bryhn[448]
Campylium polygamum (Schimp.) Lange & C.E.O.Jensen[449] — Złocieniec mieszanopłciowy
188. *Campyliadelphus* (Kindb.) R.S.Chopra[450] — Złotnik
Campyliadelphus chrysophyllus (Brid.) R.S.Chopra — Złotnik suchy
Campyliadelphus elodes (Lindb.) Kanda — Złotnik bagienny

189. *Campylidium* (Kindb.) Ochyra[451] — Krzywolistek
Campylidium calcareum (Crundwell & Nyholm) Ochyra[452] — Krzywolistek wapienny
Campylidium sommerfeltii (Myrin) Ochyra[452] — Krzywolistek maleńki

LIIIE. **Hygrohypnoideae** Kanda[453]
190. *Hygrohypnum* Lindb.[454] — Moczarnik
Sect. *Hygrohypnum*
Hygrohypnum luridum (Hedw.) Jenn. — Moczarnik błotny
var. *luridum*
var. *subsphaericarpon* (Schleich. *ex* Brid.) C.E.O.Jensen *ex* Podp.
Hygrohypnum polare (Lindb.) Loeske — Moczarnik polarny
Hygrohypnum styriacum (Limpr.) Broth. — Moczarnik styryjski
Hygrohypnum eugyrium (Schimp.) Broth. — Moczarnik wygięty
Hygrohypnum ochraceum (Turner *ex* Wilson) Loeske — Moczarnik jasnobrązowy
Sect. *Dilatata* Szafran *ex* Ochyra[455]
Hygrohypnum smithii (Sw.) Broth. — Moczarnik arktyczny
Hygrohypnum cochlearifolium (Venturi) Broth. — Moczarnik wklęsłolistny
Hygrohypnum norvegicum (Schimp.) J.J.Amann — Moczarnik norweski
Hygrohypnum duriusculum (De Not.) D.W.Jamieson[456] — Moczarnik twardy
Hygrohypnum alpinum (Lindb.) Loeske[457] — Moczarnik alpejski
Hygrohypnum molle (Hedw.) Loeske — Moczarnik miękki

LIV. **Hypnaceae** Schimp.[458] — Rokietowate
LIVA. **Pylaisioideae** M.Fleisch.
191. *Pylaisia* Schimp.[459] — Korowiec
Pylaisia polyantha (Hedw.) Schimp. — Korowiec wielozarodniowy
192. *Platygyrium* Schimp. — Sznureczniak
Platygyrium repens (Brid.) Schimp. — Sznureczniak pełzający

LIVB. **Hypnoideae**
193. *Buckiella* Ireland[460] — Płaszczeniec
Buckiella undulata (Hedw.) Ireland[461] — Płaszczeniec marszczony
194. *Hypnum* Hedw.[462] — Rokiet
Sect. *Hypnum*
Hypnum vaucheri Lesq. — Rokiet Vauchera
Hypnum cupressiforme Hedw.[463] — Rokiet cyprysowy
var. *cupressiforme*
var. *filiforme* Brid.
var. *resupinatum* (Taylor) Schimp.[464]
var. *subjulaceum* Molendo
var. *lacunosum* Brid.[465]
Hypnum andoi A.J.E.Sm.[466] — Rokiet brodawkowaty
Hypnum jutlandicum Holmen & E.Warncke[467] — Rokiet duński
Hypnum imponens Hedw. — Rokiet leżący

Sect. *Revolutohypnum* Mönk.
Hypnum recurvatum (Lindb. & Arnell) Kindb. — Rokiet wyniosły
Hypnum pallescens (Hedw.) P.Beauv. — Rokiet pełzający
Hypnum sauteri Schimp. — Rokiet Sautera
Sect. *Bambergeri* Ando
Hypnum bambergeri Schimp. — Rokiet Bambergera
Sect. *Pratensia* Schimp.
Hypnum lindbergii Mitt.[468] — Rokiet krzywolistny
Hypnum pratense W.D.J.Koch *ex* Spruce[469] — Rokiet łąkowy
Sect. *Pseudostereodon* (Broth.) Ando
Hypnum procerrimum Molendo[470] — Rokiet rozłożysty
Sect. *Hamulosa* Schimp.
Hypnum callichroum Brid. — Rokiet gładki
Hypnum hamulosum Schimp. — Rokiet haczykowaty
Sect. *Fertilia* Ando
Hypnum fertile Sendtn. — Rokiet płodny

195. *Ptilium* De Not. — Piórosz
Ptilium crista-castrensis (Hedw.) De Not. — Piórosz pierzasty
196. *Homomallium* (Schimp.) Loeske — Nibyrokiet
Homomallium incurvatum (Schrad. *ex* Brid.) Loeske — Nibyrokiet skalny
197. *Callicladium* H.A.Crum[471] — Gałązkowiec
Callicladium haldanianum (Grev.) H.A.Crum — Gałązkowiec różnolistny
198. *Calliergonella* Loeske[472] — Mokradłoszka
Calliergonella cuspidata (Hedw.) Loeske — Mokradłoszka zaostrzona
199. *Herzogiella* Broth.[473] — Łukowiec
Herzogiella seligeri (Brid.) Z.Iwats. — Łukowiec śląski
Herzogiella striatella (Brid.) Z.Iwats.[474] — Łukowiec prążkowany
200. *Isopterygiopsis* Z.Iwats.[475] — Skrzydlanka
Isopterygiopsis muelleriana (Schimp.) Z.Iwats.[476] — Skrzydlanka błyszcząca
Isopterygiopsis pulchella (Hedw.) Z.Iwats.[477] — Skrzydlanka śliczna
201. *Orthothecium* Schimp.[478] — Miedziówka
Orthothecium intricatum (Hartm.) Schimp.[479] — Miedziówka poplątana
Orthothecium rufescens (Dicks. *ex* Brid.) Schimp. — Miedziówka brunatnawa
Orthothecium chryseon (Schwägr.) Schimp. — Miedziówka złocista
202. *Platydictya* Berk.[480] — Krzywoszyjek
Platydictya jungermannioides (Brid.) H.A.Crum[481] — Krzywoszyjek meszkowaty
203. *Taxiphyllum* M.Fleisch. — Cisolist
Taxiphyllum densifolium (Lindb. *ex* Broth.) Reimers[482] — Cisolist gęstolistny
Taxiphyllum wissgrillii (Garov.) Wijk & Margad.[483] — Cisolist pochylony
204. *Pseudotaxiphyllum* Z.Iwats.[484] — Lśniątka
Pseudotaxiphyllum elegans (Brid.) Z.Iwats. — Lśniątka wytworna

LIVC. **Ctenidioideae** M.Fleisch.

205. *Ctenidium* (Schimp.) Mitt.[485] — Grzebieniowiec

Ctenidium molluscum (Hedw.) Mitt.[486] — Grzebieniowiec piórkowaty

206. *Campylophyllum* (Schimp.) M.Fleisch.[451, 487] — Gwiazdówka

Campylophyllum halleri (Sw. *ex* Hedw.) M.Fleisch. — Gwiazdówka Hallera

Order XIX. **Hookeriales** M.Fleisch. — Płaskoliściowce

LV. **Hookeriaceae** Schimp. — Płaskoliściowate

207. *Hookeria* Sm. — Płaskolist

Hookeria lucens (Hedw.) Sm.[488] — Płaskolist lśniący

3 CATALOGUE OF TAXON NAMES WITH BIBLIOGRAPHICAL DATA

This section provides detailed bibliographical data for each taxon name which is accepted in the present catalogue, from division to variety. It is divided into two subsections. The first contains a catalogue of supraspecific taxa arranged in systematic order, whereas the second consists of a list of species and infraspecific taxa arranged in alphabetical order. For each taxon name detailed bibliographical data are given and in every case we checked with the original source. Generic and specific names conserved under the *International Code of Botanical Nomenclature* are indicated with *nom. cons*. and *nom. spec. cons*., respectively. The titles of the journals and books in which the names of moss taxa were published are consistently abbreviated according to the system proposed by Crosby (1999, 2003).

3A. Systematic catalogue of supraspecific taxon names

Division **Bryophyta** Schimp. *in* Zitt., Handb. Palaeont. Abt. 2 (Palaeophyt.): 1. 1879 [‘Stamm Bryophyta’].

Class **Sphagnopsida** (Engl.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 94. 2003.

Subclass **Sphagnidae** Engl., Syllabus Grosse Ausg.: 47. 1892 [‘Unterklasse Sphagnales’].

Order **Sphagnales** Limpr. *in* Cohn, Krypt.-Fl. Schlesien 1(1): 218. 1876 [‘Ordnung Sphagnaceae’].

Family **Sphagnaceae** Dumort., Anal. Fam. Pl.: 68. 1829 [‘Fam. Sphagnideae’].

Genus **Sphagnum** L., Sp. Pl.. 2: 1106. 1753.

Subgenus **Sphagnum**

Section **Sphagnum**

Subgenus **Rigida** (Lindb.) A.Eddy, Bull. Brit. Mus. Nat. Hist. 5: 431. 1977.

Section **Rigida** (Lindb.) Limpr., Laubm. Deutschl. 1: 116. 1885.

Subgenus **Isocladus** (Lindb.) Braithw., Monthly Microscop. J. 14: 48. 1875.

Section **Squarrosa** (Russow) Schimp., Syn. Musc. Eur. Ed. 2, 2: 835. 1876.

Section **Polyclada** (C.E.O.Jensen) Warnst., Bot. Gaz. 15: 225. 1890.

Section **Acutifolia** Wilson, Bryol. Brit.: 20. 1855.

Section **Subsecunda** (Lindb.) Schimp., Syn. Musc. Eur. Ed. 2, 2: 843. 1876.
Section **Cuspidata** (Lindb.) Schimp., Syn. Musc. Eur. Ed. 2, 2: 829. 1876.
Class **Andreaeopsida** (Limpr.) Rothm., Feddes Repert. 54: 261. 1951.
Subclass **Andreaeidae** Engl., Syllabus Grosse Ausg.: 47. 1892 [‘Unterklasse Andreaeales’].
Order **Andreaeales** Limpr. *in* Cohn, Krypt.-Fl. Schlesien 1(1): 217. 1876 [‘Ordnung Andreaeaceae’].
Family **Andreaeaceae** Dumort., Anal. Fam. Pl.: 68. 1829 [‘Fam. Andreaeideae’].
Genus **Andreaea** Hedw., Sp. Musc. Frond.: 47. 1801.
Subgenus **Andreaea**
Section **Andreaea**
Section **Nerviae** Cardot *ex* G.Roth, Aussereur. Laubm. 1(1): 6, 71. 1910.
Subgenus **Chasmocalyx** (Lindb. *ex* Braithw.) Broth. *in* Engl. & Prantl, Nat. Pflanzenfam. 1(3): 268. 1901.
Section **Chasmocalyx** Lindb. *ex* Braithw., Brit. Moss Fl. 1: 15. 1880.
Class **Polytrichopsida** Vitt, Goffinet & Hedd. *ex* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 97. 2003.
Subclass **Polytrichidae** (W.Frey) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 97. 2003.
Order **Polytrichales** M.Fleisch., Hedwigia 61: 400. 1920.
Family **Polytrichaceae** Schwägr. *in* Willd., Sp. Pl. Ed. 4, 5(2): 1. 1830 [‘Familia Polytrichii’].
Genus **Atrichum** P.Beauv., Mag. Encycl. 5: 329. 1804, *nom. cons.*
Genus **Oligotrichum** Lam. & DC., Fl. Franç. Ed. 3, 2: 491. 1805, *nom. cons*.
Genus **Pogonatum** P.Beauv., Mag. Enc. 5: 329. 1804.
Section **Pogonatum**
Section **Dendroidea** Schimp., Coroll. Bryol. Eur.: 90. 1856.
Genus **Polytrichastrum** G.L.Sm., Mem. New York Bot. Gard. 21(3): 35. 1971.
Section **Polytrichastrum**
Section **Sexangularia** (Bruch & Schimp.) G.L.Sm., Mem. New York Bot. Gard. 21(3): 35. 1971.
Genus **Polytrichum** Hedw., Sp. Musc. Frond.: 88. 1801.
Section **Polytrichum**
Section **Juniperina** I.Hagen, K. Norsk. Vid. Selsk. Skrift. 1913(1): 65. 1914.
Subclass **Tetraphidiidae** (M.Fleisch.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 98. 2003.
Order **Tetraphidales** M.Fleisch., Hedwigia 61: 394. 1920.
Family **Tetraphidaceae** Schimp., Coroll. Bryol. Eur.: 37. 1856.
Genus **Tetraphis** Hedw., Sp. Musc. Frond.: 45. 1801.
Genus **Tetrodontium** Schwägr., Sp. Musc. Frond. Suppl. 2(1): 102. 1824.
Subclass **Buxbaumiidae** (M.Fleisch.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 98. 2003.
Order **Buxbaumiales** M.Fleisch., Hedwigia 61: 399. 1920.

Family **Buxbaumiaceae** Schwägr. *in* Willd., Sp. Pl. Ed. 4, 5(2): 23. 1830 [‘Familia Buxbaumiae’].

Genus **Buxbaumia** Hedw., Sp. Musc. Frond.: 166. 1801.

Class **Bryopsida** (Limpr.) Rothm., Feddes Repert. 54: 261. 1951.

Subclass **Archidiidae** Engl., Syllabus Grosse Ausg.: 47. 1892 [‘Unterklasse Archidiales’].

Order **Archidiales** Limpr., Laubm. Deutschl. 1: 153. 1885 [‘Ordnung Archidiaceae’].

Family **Archidiaceae** Schimp., Coroll. Bryol. Eur.: 5. 1856.

Genus **Archidium** Brid., Bryol. Univ. 1: 747. 1826.

Subclass **Diphysciidae** (M.Fleisch.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 100. 2003.

Order **Diphysciales** M.Fleisch., Musci Fl. Buitenzorg 3: xv. 1908 [‘Reihe Diphysciidae’].

Family **Diphysciaceae** M.Fleisch. *in* Engl., Syllabus Ed. 8: 86. 1919.

Genus **Diphyscium** D.Mohr, Obs. Bot.: 34. 1803.

Subclass **Funariidae** (W.Frey) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 100. 2003.

Order **Funariales** M.Fleisch., Musci Fl. Buitenzorg 2: xii, 381. 1904 [“Reihe Funaroideae”].

Suborder **Funariineae** M.Fleisch., Musci Fl. Buitenzorg 2: 467. 1904 [“Unterreihe Funaroideae”].

Family **Funariaceae** Schwägr. *in* Willd., Sp. Pl. Ed. 4, 5(2): 43. 1830 [‘Familia Funariae’].

Genus **Physcomitrella** Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 1: 13. 1849 [Fasc. 42 Mon.: 1].

Genus **Physcomitrium** (Brid.) Brid., Bryol. Univ. 2: 815. 1827.

Genus **Pyramidula** Brid., Muscol. Recent. Suppl. 4: 20. 1819.

Genus **Funaria** Hedw., Sp. Musc. Frond.: 172. 1801.

Genus **Entosthodon** Schwägr., Sp. Musc. Frond. Suppl. 2(1): 44. 1823.

Family **Disceliaceae** Schimp., Coroll. Bryol. Eur.: 59. 1856.

Genus **Discelium** Brid., Bryol. Univ. 1: 365. 1826.

Suborder **Catoscopiineae** Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 101. 2003.

Family **Catoscopiaceae** (Boulay) Broth. *in* Engl. & Prantl, Nat. Pflanzenfam. 1(3): 629. 1904.

Genus **Catoscopium** Brid., Bryol. Univ. 1: 368. 1826.

Subclass **Timmiidae** Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 102. 2003.

Order **Timmiales** (M.Fleisch.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 102. 2003.

Family **Timmiaceae** Schimp., Coroll. Bryol. Eur.: 87. 1856.

Genus **Timmia** Hedw., Sp. Musc. Frond.: 176. 1801, *nom. cons.*

Section **Timmia**

Section **Norvegicae** Brassard, Lindbergia 5: 40. 1979.

Section **Timmiaurea** Brassard, Lindbergia 5: 40. 1979.

Subclass **Encalyptidae** Vitt, Goffinet & Hedd. *ex* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 103. 2003.
Order **Encalyptales** Dixon *in* Verd., Man. Bryol.: 409. 1932.
Family **Encalyptaceae** Schimp., Coroll. Bryol. Eur.: 38. 1856
Genus **Encalypta** Hedw., Sp. Musc. Frond.: 60. 1801.
Section **Encalypta**
Section **Pyromitrium** Wallr. *ex* Hampe, Linnaea 37: 513. 1872.
Section **Rhabdotheca** Müll.Hall., Syn. Musc. Frond. 1: 519. 1849.
Section **Streptotheca** (Kindb.) Broth. *in* Engl. & Prantl, Nat. Pflanzenfam. 1(3): 438. 1902.
Subclass **Dicranidae** (W.Frey) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 104. 2003.
Order **Dicranales** H.Philib. *ex* M.Fleisch., Musci Fl. Buitenzorg 1: xxvi, 11–12. 1904 ['Reihe Dicranoidae'].
Suborder **Fissidentineae** (M.Fleisch.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 104. 2003.
Family **Fissidentaceae** Schimp., Coroll. Bryol. Eur.: 20. 1856.
Genus **Fissidens** Hedw., Sp. Musc. Frond.: 152. 1801.
Subgenus **Fissidens**
Section **Fissidens**
Section **Serridium** Müll.Hal., Gen. Musc. Frond.: 67. 1901.
Subgenus **Octodiceras** (Brid.) Broth. *in* Engl. & Prantl, Nat. Pflanzenfam. 1(3): 361. 1901.
Suborder **Dicranineae** M.Fleisch., Hedwigia 61: 392. 1920.
Family **Ditrichaceae** Limpr., Laubm. Deutschl. 1: 482. 1887, *nom. cons*.
Subfamily **Ditrichoideae**
Genus **Ditrichum** Timm *ex* Hampe, Flora 50: 181. 1867, *nom. cons.*
Genus **Trichodon** Schimp., Coroll. Bryol. Eur.: 36. 1856.
Genus **Cleistocarpidium** Ochyra & Bednarek-Ochyra, Fragm. Florist. Geobot. 41: 1035. 1996.
Genus **Pleuridium** Rabenh., Deutschl. Krypt.-Fl. 2(3): 79. 1848, *nom. cons.*
Genus **Pseudephemerum** (Lindb.) I.Hagen, K. Norsk. Vid. Selsk. Skrift. 1910(1): 45. 1910.
Subfamily **Ceratodontoideae** Broth. *in* Engl., Nat. Pflanzenfam. Ed. 2, 10: 156, 162. 1924.
Genus **Ceratodon** Brid., Bryol. Univ. 1: 480. 1826.
Genus **Saelania** Lindb., Utkast Eur. Bladmoss.: 35. 1878.
Subfamily **Distichioideae** Broth. *in* Engl., Nat. Pflanzenfam. Ed. 2, 10: 156, 164. 1924.
Genus **Distichium** Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 2: 153. 1846 [Fasc. 29–30 Mon.: 1], *nom. cons.*
Family **Bruchiaceae** Schimp., Coroll. Bryol. Eur.: 6. 1856.
Genus **Trematodon** Michx., Fl. Bor. Amer. 2: 289. 1803.

Family **Dicranaceae** Schimp., Coroll. Bryol. Eur.: 11. 1856.
Subfamily **Dicranoideae**
Genus **Dicranum** Hedw., Sp. Musc. Frond.: 126. 1801.
Subgenus **Dicranum**
Section **Dicranum**
Section **Spuria** Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 1: 116. 1847 [Fasc. 37–40 Mon.: 12].
Section **Fuscescentiformia** (Kindb.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 106. 2003.
Section **Convolutifolia** Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 107. 2003.
Section **Elongata** I.Hagen, K. Norsk. Vid. Selsk. Skrift. 1914(1): 140. 1915.
Subgenus **Crassidicranum** Limpr., Laubm. Deutschl. 1: 334, 370. 1886.
Section **Crassinervia** G.Roth, Eur. Laubm. 1: 237. 1904.
Genus **Orthodicranum** (Bruch & Schimp.) Loeske, Stud. Morph. Syst. Laubm.: 85. 1910.
Genus **Kiaeria** I.Hagen, K. Norsk. Vid. Selsk. Skrift. 1914(1): 109. 1915.
Genus **Arctoa** Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 1: 153. 1846 [Fasc. 33–36 Mon.: 1].
Genus **Paraleucobryum** (Limpr.) Loeske, Allg. Bot. Zeitschr. 13: 167. 1907.
Subfamily **Dicranelloideae** Lindb., Utkast Eur. Bladmoss.: 33. 1878 ['Underfamilje Dicranelleae'].
Genus **Dicranella** (Müll.Hal.) Schimp., Coroll. Bryol. Eur.: 13. 1856, *nom. cons*.
Section **Anisothecium** (Kindb.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 108. 2003.
Section **Dicranella**
Subfamily **Campylopoideae** (Limpr.) Ochyra, Cryptog. Bryol. 23: 347. 2002.
Genus **Campylopus** Brid., Muscol. Recent. Suppl. 4: 71. 1819.
Genus **Dicranodontium** Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 1: 159. 1847 [Fasc. 41 Mon.: 1].
Subfamily **Oncophoroideae** Lindb., Utkast Eur. Bladmoss.: 34. 1878 ['Underfamilje Oncophoreae'].
Genus **Rhabdoweisia** Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. **1**: 97. 1846 [Fasc. 33–36 Mon.: 1].
Genus **Cynodontium** Schimp., Coroll. Bryol. Eur.: 12. 1856, *nom. cons.*
Genus **Cnestrum** I.Hagen., K. Norsk. Vid. Selsk. Skrift. 1914(1): 23. 1915.
Genus **Oncophorus** (Brid.) Brid., Bryol. Univ. 1: 389. 1826.
Genus **Dichodontium** Schimp., Coroll. Bryol. Eur.: 12. 1856.
Genus **Diobelonella** Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 110. 2003.
Subfamily **Amphidioideae** Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 110. 2003.
Genus **Amphidium** Schimp., Coroll. Bryol. Eur.: 39. 1856, *nom. cons.*

Suborder **Leucobryineae** M.Fleisch., Hedwigia 61: 392. 1920.
Family **Leucobryaceae** Schimp., Coroll. Bryol. Eur.: 19. 1856.
Genus **Leucobryum** Hampe, Linnaea 13: 42. 1839.
Suborder **Schistostegineae** (M.Fleisch.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 111. 2003.
Family **Schistostegaceae** Schimp., Coroll. Bryol. Eur.: 54. 1856.
Genus **Schistostega** D.Mohr, Observ. Bot.: 26. 1803.
Order **Grimmiales** M.Fleisch., Musci Fl. Buitenzorg 1: 370. 1904 [‘Reihe Grimmioideae’].
Family **Seligeriaceae** Schimp., Coroll. Bryol. Eur.: 22. 1856.
Subfamily **Seligerioideae**
Genus **Seligeria** Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 2: 7. 1846 [Fasc. 33–36 Mon.: 1].
Subgenus **Seligeria**
Section **Seligeria**
Subgenus **Anodus** (Bruch & Schimp.) Boulay, Muscin. Franc.: 539. 1884.
Section **Anodus** (Bruch & Schimp.) Ochyra & L.Gos *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 112. 2003.
Section **Calcareae** Ochyra & L.Gos *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 112. 2003.
Subgenus **Cyrtoseligeria** Vitt, Lindbergia 3: 253. 1976.
Section **Recurvatae** Korcz., Bot. Mat. Otd. Spor. Rast. 13: 282. 1960.
Subgenus **Megalosporia** Vitt, Lindbergia 3: 266. 1976.
Section **Trifariae** T.Schauer, Nova Hedwigia 14: 321. 1967.
Genus **Blindia** Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 2: 17. 1846 [Fasc. 33–36 Mon.: 1].
Genus **Brachydontium** Fürnr., Flora 10(2) Erg.: 37. 1827.
Subfamily **Dicranoweisioideae** I.Hagen, K. Norsk. Videnskab. Selsk. Skrift. 1914(1): 6. 1915.
Genus **Dicranoweisia** Milde, Bryol. Siles.: 48. 1869.
Genus **Hymenoloma** Dusén, Ark. Bot. 4(1): 19. 1905.
Family **Ptychomitriaceae** Schimp., Syn. Musc. Eur.: 241. 1860 [‘Fam. Ptychomitrieae’].
Genus **Campylostelium** Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. **2**: 25. 1846 [Fasc. 29–30 Mon.: 1].
Family **Grimmiaceae** Arn., Disp. Méth. Mousses: 19. 1825 [‘Ordre Grimmoideae’].
Subfamily **Grimmioideae**
Genus **Coscinodon** Spreng., Einl. Stud. Krypt. Gew.: 281. 1804.
Genus **Grimmia** Hedw., Sp. Musc. Frond.: 75. 1801.
Genus **Dryptodon** Brid., Bryol. Univ. 1: 192. 1826.
Section **Dryptodon**
Section **Pulvinati** (Bruch & Schimp.) Ochyra & Żarnowiec *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 124. 2003.

Section **Trichophylli** (Bruch & Schimp.) Ochyra & Żarnowiec *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 124. 2003.

Section **Elongati** Ochyra & Żarnowiec *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 124. 2003.

Section **Torquati** (I.Hagen) Ochyra & Żarnowiec *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 125. 2003.

Genus **Orthogrimmia** (Schimp.) Ochyra & Żarnowiec *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 118. 2003.

Section **Orthogrimmia**

Section **Montanae** (I.Hagen) Ochyra & Żarnowiec *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 125. 2003.

Genus **Guembelia** Hampe, Bot. Zeitung (Berlin) 4: 124. 1846.

Genus **Hydrogrimmia** (I.Hagen) Loeske, Stud. Morph. Syst. Laubm.: 108. 1910.

Genus **Schistidium** Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 3: 93. 1845 [Fasc. 25–28 Mon.: 1], *nom. cons*.

Subgenus **Canalicularia** Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 130. 2003.

Subgenus **Apocarpa** Vilh., Acta Bot. Bohem. 1: 45. 1922 [‘Apocarpae’].

Section **Apocarpiformia** (Kindb.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 131. 2003.

Section **Robusta** Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 132. 2003.

Section **Conferta** (Vilh.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 132. 2003.

Section **Atrofusca** Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 133. 2003.

Section **Rivularia** Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 135. 2003.

Subfamily **Racomitrioideae** Ochyra & Bednarek-Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 135. 2003.

Genus **Racomitrium** Brid., Muscol. Recent. Suppl. 4: 78. 1819.

Genus **Niphotrichum** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 137. 2003.

Section **Niphotrichum**

Section **Elongata** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 138. 2003.

Genus **Codriophorus** P.Beauv., Mém. Soc. Linn. Paris 1: 445. 1822.

Section **Codriophorus**

Section **Fascicularia** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 140. 2003.

Genus **Bucklandiella** Roiv., Ann. Bot. Fenn. 9: 116. 1972.

Section **Marginatae** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 143. 2003.

Section **Laevifoliae** (Kindb.) Bednarek-Ochyra & Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 142. 2003.

Section **Sudeticae** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 143. 2003.

Order **Pottiales** M.Fleisch., Hedwigia 61: 392. 1920.

Family **Ephemeraceae** Schimp., Coroll. Bryol. Eur.: 3. 1856.

Genus **Ephemerum** Hampe, Flora 20: 285. 1837, *nom. cons.*

Family **Pottiaceae** Schimp., Coroll. Bryol. Eur.: 24. 1856, *nom. cons*.

Subfamily **Trichostomoideae** (Limpr.) Broth. *in* Engl. & Prantl, Nat. Pflanzenfam. 1(3): 381. 1902 [‘Trichostomeae’].

Genus **Eucladium** Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 1: 93. 1846 [Fasc. 33–36 Mon.: 1].

Genus **Trichostomum** Bruch, Flora 12: 393. 1829, *nom. cons.*

Subgenus **Crispuliformia** (Kindb.) R.H.Zander, Bull. Buffalo Soc. Nat. Sci. 32: 90. 1993 [‘Crispuliformes’].

Subgenus **Oxystegus** (Lindb. *ex* Limpr.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 150. 2003.

Genus **Pleurochaete** Lindb., Öfvers. Förh. Kongl. Svenska Vetensk.-Akad. 21: 253. 1864.

Genus **Tortella** (Lindb.) Limpr., Laubm. Deutschl. 1: 599. 1888, *nom. cons.*

Subfamily **Merceyoideae** Broth. *in* Engl., Nat. Pflanzenfam. Ed. 2, 10: 246. 1924.

Genus **Bryoerythrophyllum** P.C.Chen, Hedwigia 80: 4, 250. 1941.

Genus **Pseudocrossidium** R.S.Williams, Bull. Torrey Bot. Club 42: 396. 1915.

Genus **Hymenostylium** Brid., Bryol. Univ. 2: 81. 1827.

Genus **Leptodontium** (Müll.Hal.) Hampe *ex* Lindb., Öfvers. Förh. Kongl. Svenska Vetensk-Akad. 21: 227. 1865.

Genus **Anoectangium** Schwägr., Sp. Musc. Frond. Suppl. 1(1): 33. 1811, *nom. cons.*

Genus **Gyroweisia** Schimp., Syn. Musc. Eur. Ed. 2, 2: 38. 1876, *nom. cons.*

Genus **Barbula** Hedw., Sp. Musc. Frond.: 115. 1801, *nom. cons.*

Section **Barbula**

Section **Convolutae** (Bruch & Schimp.) Schimp., Syn. Musc. Eur.: 174. 1860.

Genus **Gymnostomum** Nees & Hornsch., Bryol. Germ. 1: 153. 1823, *nom. cons.*

Genus **Didymodon** Hedw., Sp. Musc. Frond.: 104. 1801.

Section **Didymodon**

Section **Vineales** (Steere) R.H.Zander, Phytologia 41: 24. 1978.

Section **Fallaces** (De Not.) R.H.Zander, Phytologia 44: 209. 1979.

Subfamily **Pottioideae**

Genus **Molendoa** Lindb., Utkast. Eur. Bladmoss.: 29. 1878.

Genus **Weissia** Hedw., Sp. Musc. Frond.: 64. 1801.

Subgenus **Weissia**
Subgenus **Astomum** (Hampe) Kindb. *ex* K.Saito, J. Hattori Bot. Lab. 39: 418. 1975.
Subgenus **Hymenostomum** (R.Br.) Kindb. *ex* K.Saito, J. Hattori Bot. Lab. 39: 421. 1975.
Genus **Stegonia** Venturi, Rev. Bryol. 10: 96. 1883.
Genus **Pterygoneurum** Jur., Laubmfl. Oest. Ungarn: 95. 1882 ['Pterigoneurum'], *nom. cons.*
Genus **Aloina** Kindb., Bih. K. Svensk. Vet. Ak. Handl. 6(19): 22. 1882, *nom. cons*.
Genus **Tortula** Hedw., Sp. Musc. Frond.: 122. 1801, *nom. cons.*
Section **Tortula**
Section **Cuneifoliae** (Schimp.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 153. 2003.
Genus **Protobryum** J.Guerra & Cano, J. Bryol. 22: 94. 2000.
Genus **Microbryum** Schimp., Syn. Musc. Eur.: 10. 1860.
Genus **Hennediella** Paris, Ind. Bryol.: 557. 1896.
Genus **Acaulon** Müll.Hal., Bot. Zeitung (Berlin) 5: 99. 1847.
Genus **Syntrichia** Brid., J. Bot. (Schrader) 1(2): 299. 1801.
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Section **Collotortula** R.H.Zander, Bull. Buffalo Soc. Nat. Sci. 32: 264. 1992.
Genus **Hilpertia** R.H.Zander, Phytologia 65: 427. 1989.
Family **Cinclidotaceae** Schimp., Syn. Musc. Eur.: 193. 1860 ['Fam. Cinclidoteae'].
Genus **Cinclidotus** P.Beauv., Mag. Enc. 5: 319. 1804 ['Cicclidotus'], *nom. cons*.
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Order **Orthotrichales** Dixon *in* Verd., Man. Bryol.: 409. 1932.
Family **Orthotrichaceae** Arn., Disp. Méth. Mousses: 13. 1825.
Subfamily **Orthotrichoideae**
Genus **Orthotrichum** Hedw., Sp. Musc. Frond.: 162. 1801.
Subgenus **Orthotrichum**
Subgenus **Pulchella** (Schimp.) Vitt, Nova Hedwigia 21: 709. 1972.
Section **Pulchella** Schimp., Syn. Musc. Eur. Ed. 2, 2: 334. 1876.
Section **Diaphana** Venturi *in* Husn., Musc. Gall.: 193. 1887.
Subgenus **Phaneroporum** Delogne, Ann. Soc. Belg. Micr. 9: 31. 1885.
Subgenus **Gymnoporus** (Lindb. *ex* Braithw.) Limpr., Laubm. Deutschl. 2: 82. 1890.
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Section **Affinia** Schimp., Syn. Musc. Eur. Ed. 2, 2: 321. 1876.
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Genus **Ulota** D.Mohr, Ann. Bot. 2: 540. 1806.
Subfamily **Zygodontoideae** Broth. *in* Engl. & Prantl, Nat. Pflanzenfam. 1(3): 456. 1902.

Genus **Zygodon** Hook. & Taylor, Musc. Brit.: 70. 1818.
Order **Hedwigiales** Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 155. 2003.
Family **Hedwigiaceae** Schimp., Coroll. Bryol. Eur.: 52. 1856.
Genus **Hedwigia** P.Beauv., Mag. Enc. 5: 304. 1804, *nom. cons.*
Subclass **Bryidae** Engl., Syllabus Grosse Ausg.: 47. 1892 [‘Unterklasse Bryales’].
Order **Splachnales** (M.Fleisch.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 156. 2003.
Family **Splachnaceae** Grev. & Arn., Tent. Meth. Musc.: 95. 1826 [‘Order Splachnoideae’].
Subfamily **Splachnoideae**
Genus **Tetraplodon** Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 3: 211. 1844 [Fasc. 23–24 Mon.: 1].
Genus **Splachnum** Hedw., Sp. Musc. Frond.: 51. 1801.
Subfamily **Taylorioideae** Broth. *in* Engl., Nat. Pflanzenfam. Ed. 2, 10: 336. 1924.
Genus **Tayloria** Hook., Jour. Sci. Arts 2: 144. 1816.
Family **Meesiaceae** Schimp., Coroll. Bryol. Eur.: 82. 1856.
Subfamily **Meesioideae**
Genus **Meesia** Hedw., Sp. Musc. Frond.: 173. 1801, *nom. cons.*
Subfamily **Paludelloideae** Lindb., Utkast Eur. Bladmoss.: 18. 1878 [‘Underfamilje Paludelleae’].
Genus **Paludella** Brid., Sp. Musc. Frond.: 3: 72. 1817.
Subfamily **Amblyodontoideae** (Schimp.) Matteri & Ochyra, Hausknechtia Beih. 9: 229. 1999.
Genus **Amblyodon** P.Beauv., Mag. Encycl. 5: 323. 1804, *nom. cons*.
Subfamily **Leptobryoideae** Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 158. 2003.
Genus **Leptobryum** (Bruch & Schimp.) Wilson, Bryol. Brit.: 219. 1855.
Order **Bryales** Limpr. *in* Cohn, Krypt.-Fl. Schlesien 1(1): 55. 1876 [‘Ordnung Bryineae’].
Suborder **Bryineae** M.Fleisch., Hedwigia 61: 395. 1920 [‘Unterreihe Bryineae’].
Family **Bryaceae** Schwägr. *in* Willd., Sp. Pl. ed. 4, 5(2): 47. 1830 [‘Familia Bryi’].
Genus **Plagiobryum** Lindb., Öfvers. Förh.Kongl. Svenska Vetensk.-Akad. 19: 606. 1863.
Genus **Pohlia** Hedw., Sp. Musc. Frond.: 171. 1801.
Subgenus **Pohlia**
Subgenus **Mniobryum** (Bruch & Schimp. *ex* Limpr.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 158. 2003.
Section **Cacodon** Lindb. *ex* Broth. *in* Engl. & Prantl, Nat. Pflanzenfam. 1(3): 547. 1903.
Section **Apalodictyon** (Müll.Hal.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 159. 2003.
Genus **Anomobryum** Schimp., Syn. Musc. Eur.: 382. 1860.
Genus **Bryum** Hedw., Sp. Musc. Frond.: 178. 1801.

Section **Bryum**
Section **Amblyophyllum** Müll.Hal., Syn. Musc. Frond. 1: 286. 1848.
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Section **Cladodium** (Brid.) Husn., Fl. Mouss. N. Ouest Ed. 2: 106. 1882.
Genus **Rhodobryum** (Schimp.) Limpr., Laubm. Deutschl. 2: 444. 1892, *nom. cons*.
Genus **Rosulabryum** J.R.Spence, Bryologist 99: 222. 1996.
Family **Orthodontiaceae** (Broth.) Goffinet *in* A.J.Shaw & Goffinet, Bryoph. Biol.: 104. 2000.
Genus **Orthodontium** Schwägr., Sp. Musc. Frond. Suppl. 2(2): 123. 1827.
Suborder **Bartramiineae** M.Fleisch., Hedwigia 61: 395. 1920 [‘Unterreihe Bartramiineae’].
Family **Aulacomniaceae** Schimp., Syn. Musc. Eur.: 411. 1860 [‘Fam. Aulacomnieae’].
Genus **Aulacomnium** Schwägr., Sp. Musc. Frond. Suppl. 3(1): *pl. 215*. 1827 [‘Aulacomnion’], *nom. cons.*
Family **Bartramiaceae** Schwägr. *in* Willd., Sp. Pl. Ed. 4, 5(2): 90. 1830 [‘Familia Bartramiae’].
Subfamily **Bartramioideae**
Genus **Bartramia** Hedw., Sp. Musc. Frond.: 164. 1801, *nom. cons.*
Section **Bartramia**
Section **Pyridium** Müll.Hal., Linnaea 38: 597. 1874.
Genus **Plagiopus** Brid., Bryol. Univ. 1: 596. 1826.
Subfamily **Conostomoideae** D.G.Griffin & W.R.Buck, Bryologist 92: 372. 1989.
Genus **Conostomum** Sw. *ex* F.Weber & D.Mohr, Naturh. Reise Schwed.: 122. 1804.
Subfamily **Breutelioideae** D.G.Griffin & W.R.Buck, Bryologist 92: 373. 1989.
Genus **Philonotis** Brid., Bryol. Univ. 2: 15. 1827.
Section **Philonotis**
Section **Homomorphae** (Kindb.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 165. 2003.
Suborder **Rhizogoniineae** M.Fleisch., Hedwigia 61: 395. 1920 [‘Unterreihe Rhizogoniineae’].
Family **Cinclidiaceae** Kindb., Gen. Eur. Northamer. Bryin.: 12. 1897.
Genus **Cinclidium** Sw., J. Bot. (Schrader) 1801(1): 25. 1803.
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Genus **Rhizomnium** (Mitt. *ex* Broth.) T.J.Kop., Ann. Bot. Fenn. 5: 142. 1968.
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Genus **Pseudobryum** (Kindb.) T.J.Kop., Ann. Bot. Fenn. 5: 147. 1968.
Family **Mniaceae** Schwägr. *in* Willd., Sp. Pl. Ed. 4, 5(2): 25. 1830 [‘Familia Mnii’].
Genus **Mnium** Hedw., Sp. Musc. Frond.: 188. 1801, *nom. cons.*
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Section **Spinosa** (Kindb.) T.J.Kop., Ann. Bot. Fennici 5: 141. 1968.
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Order **Hypnales** (M.Fleisch.) W.R.Buck & Vitt, Taxon 35: 33. 1986.
Suborder **Climaciineae** (M.Fleisch.) W.R.Buck & Vitt, Taxon 35: 34. 1986.
Family **Climaciaceae** Kindb., Gen. Eur. Northamer. Bryin.: 7. 1897.
Genus **Climacium** F.Weber & D.Mohr, Naturh. Reise Schwed.: 96. 1804.
Suborder **Fontinalineae** M.Fleisch., Hedwigia 61: 396. 1920 [‘Unterreihe Fontinalineae’].
Family **Fontinalaceae** Schimp., Coroll. Bryol. Eur.: 96. 1856.
Genus **Dichelyma** Myrin, K. Svensk. Vet. Ak. Handl. 1832: 273. 1833.
Genus **Fontinalis** Hedw., Sp. Musc. Frond.: 298. 1801.
Section **Fontinalis**
Section **Lepidophyllae** Cardot, Rev. Bryol. 18: 82. 1891.
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Suborder **Leucodontineae** M.Fleisch., Hedwigia 61: 397. 1920 [‘Unterreihe Leucodontineae’].
Family **Leucodontaceae** Schimp., Coroll. Bryol. Eur.: 108. 1856.
Genus **Antitrichia** Brid., Muscol. Recent. Suppl. 4: 136. 1819.
Genus **Leucodon** Schwägr., Sp. Musc. Frond. Suppl. 1(2): 1. 1816.
Family **Anomodontaceae** Kindb., Gen. Eur. Northamer. Bryin.: 6. 1897.
Genus **Anomodon** Hook. & Taylor, Musc. Brit.: 79. 1818.
Subgenus **Anomodon**
Subgenus **Pseudanomodon** (Limpr.) Ochyra *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 167. 2003.
Suborder **Neckerineae** M.Fleisch., Hedwigia 61: 397. 1920 [‘Unterreihe Neckerineae’].
Family **Neckeraceae** Schimp., Coroll. Bryol. Eur.: 99. 1856.
Genus **Neckera** Hedw., Sp. Musc. Frond.: 200. 1801, *nom. cons.*
Section **Neckera**
Section **Leiophyllum** (Müll.Hal.) Braithw., Brit. Moss Fl. 3: 201. 1905.
Genus **Homalia** Brid., Bryol. Univ. 1: 226. 1826 [‘Omalia’], *nom. cons*.
Family **Thamnobryaceae** Margad. & During, Bekn. Fl. Nederl. Blad. Leverm.: 443. 1982.
Genus **Thamnobryum** Nieuwl., Amer. Mid. Nat. 5: 50. 1917.
Family **Echinodiaceae** Broth. *in* Engl. & Prantl, Nat. Pflanzenfam. 1(3): 1216. 1909.
Genus **Isothecium** Brid., Bryol. Univ. 2: 355, *pl. 10, f. 7*. 1827.

Suborder **Leskeineae** M.Fleisch., Hedwigia 61: 398. 1920 [‘Unterreihe Leskeineae’].
Family **Pterigynandraceae** Schimp., Syn. Musc. Eur. Ed. 2, 1: cxiii. 1876 [‘Fam. Pterigynandreae’].
Genus **Myurella** Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 6: 39. 1853 [Fasc. 52–54 Mon.: 1].
Genus **Pterigynandrum** Hedw., Sp. Musc. Frond.: 80. 1801.
Genus **Heterocladium** Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 5: 151. 1852 [Fasc. 49–51 Mon.: 1].
Family **Leskeaceae** Schimp., Coroll. Bryol. Eur.: 109. 1856.
Genus **Leskea** Hedw., Sp. Musc. Frond.: 211. 1801.
Genus **Leskeella** (Limpr.) Loeske, Moosfl. Harz.: 255. 1903.
Genus **Pseudoleskeella** Kindb., Gen. Eur. N. Am. Bryin.: 20. 1897.
Genus **Pseudoleskea** Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 5: 147. 1852 [Fasc. 49–51 Mon.: 1].
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Genus **Lescuraea** Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 5: 101. 1851 [Fasc. 46–47 Mon.: 1].
Genus **Ptychodium** Schimp., Syn. Musc. Eur.: 527. 1860.
Genus **Haplocladium** Müll.Hal., Hedwigia 38: 149. 1899.
Family **Thuidiaceae** Schimp., Syn. Musc. Eur.: 493. 1860 [‘Fam. Thuidieae’].
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3b. Alphabetical catalogue of species and infraspecific taxon names

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var. ***imbricatum*** Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 4: 217. 1841 [Fasc. 10 Mon.: 9].
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var. ***salicinum*** (Schimp.) Ochyra & Żarnowiec *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 172. 2003.
var. ***vagans*** (Milde) Ochyra & Żarnowiec *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Mosses: 172. 2003.
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Weissia brachycarpa (Nees & Hornsch.) Jur., Laubm.-Fl. Oesterr.-Ung.: 9. 1882.
Weissia condensa (Voit) Lindb., Öfvers. Förh. Kongl. Svenska Vetensk.-Akad. 21: 230. 1864.
Weissia controversa Hedw., Sp. Musc. Frond.: 67. 1801
var. ***controversa***
var. ***wimmeriana*** (Sendtn.) Blockeel & A.J.E.Sm., J. Bryol. 20: 67. 1998.

Weissia fallax Sehlm., Flora 2: 639. 1818.
Weissia longifolia Mitt., Ann. Mag. Nat. Hist. Ser. 2, 8: 317. 1851.
Weissia rostellata (Brid.) Lindb., Öfvers. Förh. Kongl. Svenska Vetensk.-Akad. 21: 230. 1864.
Weissia rutilans (Hedw.) Lindb., Öfvers. Förh. Kongl. Svenska Vetensk.-Akad. 20: 417. 1863.
Weissia squarrosa (Nees & Hornsch.) Müll.Hal., Syn. Musc. Frond. 1: 663. 1849.

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Zygodon dentatus (Limpr.) Karttunen, Ann. Bot. Fenn. 21: 346. 1984.
Zygodon gracilis Wilson, Edinburgh New Philos. J. 13: 332. 1861.
Zygodon rupestris Schimp. *ex* Lorentz, Bryol. Notizb.: 32. 1865.
Zygodon viridissimus (Dicks.) Brid., Bryol. Univ. 1: 592. 1826.

4 EXCLUDED TAXA

In total, 25 taxa have been definitely excluded from the Polish moss flora, comprasing 23 species and two varieties. All excluded taxa are listed below in alphabetical order and the reasons for their exclusion are provided in consecutively numbered annotations directly following the annotations to the "Systematic arrangement of taxa" section. They are all presented in the fifth chapter of the catalogue. In most cases the excluded taxa have been erroneously reported from Poland either because of the misdetermination of voucher collections or nomenclatural confusion. For some moss taxa reported from Poland no voucher collections could be located and examined and until they are available for study the taxa concerned are deleted from the moss flora of Poland.

Bartramia ithyphylla var. ***breviseta*** (Lindb.) Kindb.[489]
Bartramia subulata Bruch & Schimp.[490]
Bryum boreale (F.Weber & D.Mohr) Funck[491]
Bryum veronense De Not.[492]

Ceratodon purpureus var. ***rotundifolius*** Berggr.[493]
Cinclidium arcticum (Bruch & Schimp.) Schimp.[494]
Cinclidotus aquaticus (Hedw.) Bruch & Schimp.[495]

Dicranella howei Renauld & Cardot[496]
Didymodon montanus (Mitt.) Broth.[497]
Dryptodon piliferus (P.Beauv.) Ochyra & Żarnowiec[498]

Fontinalis howellii Renauld & Cardot[499]

Myurella sibirica (Müll.Hal.) Reimers[500]

Pseudoleskeella tectorum (Brid.) Kindb.[501]

Rhynchostegiella curviseta (Brid.) Limpr.[502]
Rhynchostegiella teesdalei (Schimp.) Limpr.[503]

Schistidium strictum (Turner) Loeske ex Mårtensson[504]
Schistidium tenerrimum (Nees & Hornsch.) G.Roth[505]
Scleropodium touretii (Brid.) L.F.Koch[506]
Seligeria austriaca T.Schauer[507]

Seligeria brevifolia (Lindb.) Lindb.[508]
Sphagnum aongstroemii C.Hartm.[509]
Sphagnum austinii Sull.[510]
Sphagnum pulchrum (Braithw.) Warnst.[511]

Warnstorfia procera (Renauld & Arnell) Tuom.[512]

Zygodon conoideus (Dicks.) Hook. & Taylor[513]

5 ANNOTATIONS

[1] It is generally accepted (e.g., Cronquist *et al.* 1966; Parihar 1973; Puri 1985) that recognition of the division Bryophyta should be ascribed to Braun (1864). In the introduction to Ascherson's *Flora der Provinz Brandenburg* the author used the term Bryophyta for "cryptogamae cellulares" sensu Brongniart (1824) to include algae, lichens, stoneworts, liverworts and mosses. He designated this group as "Stufe" which is, unfortunately, a non-orthodox term which cannot be considered eligible to stand as a formal hierarchical rank. It best translates as "level" (Greuter, personal communication of 7 May 2002). Schimper (1879) seems to be the first author to introduce Bryophyta in the modern sense of phylum or division. He distinguished the "Stamm" Bryophyta as comprising a single class, Muscineae, with three major orders of land plants called bryophytes, namely Musci (mosses), Hepaticae (liverworts) and Anthocerotae (hornworts). "Stamm" is the standard German equivalent of the rank-denoting term phylum, as is the case with "Reich" (=*regnum* or kingdom), "Abteilung" (=*divisio* or division), "Klasse" (=*classis* or class), "Ordnung" (=*ordo* or order), "Familie"(=*familia* or family) and each of them may be represented by "sub"-ranks taking the prefix "Unter-" (Rothmaler 1948; Greuter, personal communication of 7 May 2002). These rank-denoting terms are enshrined in botanical tradition and spelled out in former German translations of the Code itself (Art. 3.1) (e.g., Voss *et al*. 1983).

[2] Rothmaler (1951) was the first to recognize the Sphagnopsida as a class in its own right. He considered it as one of five classes of the Anthocerophyta, a division he conceived as an equivalent of the Bryophyta sensu Eichler (1883). He provided no description of this new class and considered the Sphagnopsida to be a new name for the *Sphagna* of Lindberg (1879). Alas, the latter author also gave no diagnosis of this taxon or a reference to such, so the name Sphagnopsida Rothm. has to be considered an invalidly published *nomen nudum*. Although the class Sphagnopsida has continued to be recognized in the last few decades (e.g., Hill 1978; Eddy, 1979; Crum & Anderson 1981; Walther 1983; Crum 1984; Duell 1984; Daniels & Eddy 1985) and now appears to be generally accepted, this name does not seem ever to be validly published. Accordingly, it is validated here by elevation of the subclass Sphagnidae sensu Engler (1892*a*, *b*) to class rank.

Sphagnopsida (Engl.) Ochyra, *stat. et comb. nov.*

Basionym: Klasse Musci Unterklasse Sphagnidae Engl., Syllabus Grosse Ausg.: 47. 1892 ['Unterklasse Sphagnales'].

[3] Although it is widely accepted that the four subclasses of Musci, namely Sphagnidae, Andreaeidae, Archidiidae and Bryidae were recognized by A. Engler in 1893 in the classification of the Embryophyta zoidiogama (Archegoniatae) published along with the treatment of the Hepaticae in *Die Natürlichen Pflanzenfamilien*, he actually described them a year earlier in two versions of the first edition of his *Syllabus der Pflanzenfamilien* (Engler 1892*a*, *b*).

[4] The subgeneric and sectional divisions of *Sphagnum* follow, respectively, Eddy (1977*a*, 1985) and Isoviita (1966).

[5] For the taxonomy of the *Sphagnum imbricatum* complex see Flatberg (1984, 1986). He recognized three subspecies within *S. imbricatum* Hornsch. *ex* Russow, namely subsp. *imbricatum*, subsp. *austinii* (Sull.) Flatberg and subsp. *affine* (Renauld & Cardot) Flatberg. Of these, only the last two subspecies are known to occur in Europe, whereas the type subspecies is a temperate east Asiatic taxon. Andrus (1987) segregated *S. imbricatum* into four species and this concept has gained wide acceptance in Europe (e.g., Corley & Crundwell 1991; Váňa 1997, 1998; Blockeel & Long 1998; Bouman 2002) and is also accepted in the present catalogue.

[6] The taxonomy and geographical distribution of *Sphagnum centrale* in Poland were discussed by Melosik (1996).

[7] The correct name of the section which accommodates *Sphagnum compactum* and *S. strictum* has been a source of confusion. Isoviita (1966) used for it the name sect. *Rigida* and ascribed it to "(Lindb.) Schlieph." or, alternatively, to Limpricht (1885). On the other hand, Wijk *et al*. (1967) considered Lindberg (1862) to be the author of this section, although, following the usual practice in the *Index muscorum*, they adopted the most probable rank of a subdivision of *Sphagnum*. Lindberg (1862) introduced *Rigida* as an unranked taxon, *Sphagna rigida*, within *Sphagnum* B. [unranked] *Heterophylla* which cannot be considered as a section according to Article 35.3 of the current Code (Greuter *et al*. 2000). According to Isoviita (1966) the unranked taxon *Rigida* was validated as a section by Schliephacke (1865). However, this is incorrect as well because this author actually referred to Lindberg's (1862) work but gave no definite rank to his *Sphagna rigida* and considered it as a "Gruppe". The same is also true for the status of this taxon in the treatments of Russow (1865, 1877) and Klinggräff (1872). It was only Limpricht (1885) who explicitly described section *Sphagna rigida* whose binary combination must be altered to the proper form sect. *Rigida* following Art. 21.4 of the Code (Greuter *et al*. 2000). He provided a short description of it and albeit he gave no reference to Lindberg's (1862) work, the authority of sect. *Rigida* has to be '(Lindb.) Limpr.' under Art. 33.2 of the current Code (Greuter *et al*. 2000).

[8] Russow (1865) recognized the unranked group *Squarrosa* within *Sphagnum* I. [unranked] *Cuspidata* to accommodate *S. squarrosum* and *S. teres*. Wijk *et al*. (1967) interpreted this group as a subsection but this is inadmissible according to Art. 35.5 of the Code (Greuter *et al*. 2000). Schimper (1876) described sect. *Sphagna squarrosa* (i.e. sect. *Squarrosa*) and although he gave no reference to Russow's (1865) work, this sectional name has to be cited as sect. *Squarrosa* (Russow) Schimp. under Art. 33.2 of the Code (Greuter *et al*. 2000)**.**

[9] For distribution of *Sphagnum wulfianum* in Poland see Sobotka (1975) and Karczmarz & Kornijów (1981). Recently, this species was found in the Kashubian Lakeland in West Pomerania (Herbichowa 2001).

[10] Flatberg (1983) lectotypified *Sphagnum capillifolium* by a Dillenian specimen and proposed to adopt it as the correct name for a species long known as *S. nemoreum* Scop. a name which should be rejected as a *nomen dubium*.

[11] *Sphagnum subfulvum* has recently been discovered for the first time in Poland in the Tuchola Forest National Park in West Pomerania (Melosik 1997; Lisowski *et al*. 2000).

[12] The distribution of *Sphagnum molle* in Poland has been reviewed by Melosik (1992).

[13] Lindberg (1862) recognized the unranked group *Subsecunda* within *Sphagnum* B. [unranked] *Heterophylla* to accommodate *S. subsecundum*, *S. rubellum* and *S. tenellum*. Wijk *et al*. (1967) interpreted this group, with some reservation, as a section but this is inadmissible according to Art. 35.5 of the Code (Greuter *et al*. 2000). Schimper (1876) described sect. *Sphagna subsecunda* (i.e. sect. *Subsecunda*) and although he gave no reference to Lindberg's (1862) work, this sectional name has to be cited as sect. *Subsecunda* (Lindb.) Schimp. under Art. 33.2 of the Code (Greuter *et al*. 2000).

[14] *Sphagnum denticulatum* is an earlier name for *S. auriculatum* Schimp. (Dirkse & Isoviita 1986).

[15] *Sphagnum inundatum* has often been associated by various authors either with *S. subsecundum* or *S. denticulatum* (e.g., Hill 1975, 1978; Eddy 1977*b*; Crum 1984; Daniels & Eddy 1985). Here, it is treated as a distinct species, although apparent intermediates between it and the aforementioned species may exist. The taxonomy of species in this complex is very intricate because of the remarkable genetic variability and morphological plasticity of plants (Krzakowa & Melosik 2000; Krzakowa 2001) and possibly detailed molecular and genetic investigations will prove helpful in clarifying it (Melosik, personal communication).

[16] Lindberg (1862) distinguished the unranked group *Cuspidata* within *Sphagnum* B. [unranked] *Heterophylla* for a group of unrelated species, namely *S. cuspidatum*, *S. lindbergii*, *S. recurvum*, *S. fimbriatum*, *S. acutifolium*, *S. squarrosum* and *S. teres*. Wijk *et al*. (1967) interpreted this group, with some reservation, as a section but this cannot be accepted according to Art. 35.5 of the Code (Greuter *et al*. 2000). Schimper (1876) described

sect. *Sphagna cuspidata* (i.e. sect. *Cuspidata*) but gave no reference to Lindberg's (1862) work, so this sectional name must be cited as sect. *Cuspidata* (Lindb.) Schimp. under Art. 33.2 of the Code (Greuter *et al*. 2000).

[17] For distribution of *Sphagnum lindbergii* in Poland see Bednarek-Ochyra *et al*. (1990*a*).

[18] Rothmaler (1951) seems to be the first author to have validly published the name Andreaeopsida by reference to the order Andreaeales ['Ordnung Andreaeaceae'] of Limpricht (1890). In fact, that part of volume 1 of Limpricht's *Die Laubmoose Deutschlands, Oesterreich und der Schweiz* containing the description of the Andreaeales was published in 1885, whereas 1890 was the year in which the whole volume was completed.

The Andreaeopsida is interpreted here as a class consisting of four genera placed in two separate orders, Andreaeales and Andreaeobryales, the latter consisting of a single genus *Andreaeobryum* with a single species, *A. macrosporum*, widely distributed but sporadic in the mountains in north-west North America from Alaska to northern British Columbia (Steere 1978; Murray 1987*a*, 1988*a*). Buck & Goffinet (2000) placed the latter in the separate class Andreaebryopsida but it is doubtful whether the differences in the ecological preferences, sexuality, capsule shape and presence of a seta are sufficient to maintain Andreaebryopsida as a class separate from the Andreaeopsida. It is more reasonable to retain *Andreaeobryum* in its relationship with *Andreaea* as do, for example, Schofield (1985), Murray (1988*a*) and Crum (2001) and here only the placement of both genera in two separate subclasses within the Andreaeopsida, namely Andreaeidae and Andreaeobryopsidae, is suggested.

Andreaeopsida subclassis **Andreaeobryidae** (B.M. Murray) Ochyra, *stat. et comb. nov.*

Basionym: Andreaeopsida order Andreaeobryales B.M. Murray, Nova Hedwigia 90: 299. 1988.

[19] Murray (1988*a*) ascribed the authorship of the order Andreaeales to Milde (1869*a*). Indeed, this author used "Ordo Andreaeaceae" but according to the current Code (Art. 18.2) (Greuter *et al*. 2000) the term "ordo" has to be interpreted as family. In fact, Limpricht (1876) was the first to describe "Ordnung Andreaeales" which has to be interpreted as order (see Annotation 1).

[20] Andreaeaceae is interpreted here as a family consisting of three genera, namely the pancontinental *Andreaea* Hedw. and two South American monotypic endemics, *Acroschisma* (Hook.f. & Wilson) Lindl. and *Bicosta* Ochyra. The last genus was originally described by Cardot (1911) as *Neuroloma* Cardot to accommodate a single species, *N. fuegiana* Cardot, from Tierra del Fuego. Because this generic name is a later homonym, the following nomenclatural changes are proposed:

Bicosta Ochyra, *nom. nov.*

Typonym: *Neuroloma* Cardot, Rev. Bryol. 38: 50. 1911, *hom. illeg.* (non *Neuroloma* Andrz. *ex* DC., Prodr. 1: 156. 1824). — TYPE: *Bicosta fuegiana* (Cardot) Ochyra, *comb. nov.* (Basionym: *Neuroloma fuegiana* Cardot., Rev. Bryol. 38: 50, *f. a–j.* 1911).

[21] The treatment of the species of *Andreaea* is largely based on the accounts by Murray (1987*b*, 1988*b*).

[22] A few specimens of *Andreaea rothii* subsp. *falcata* are known from the Giant Mountains (=Karkonosze) in the Sudetes, for example, from Krucze Skały in the valley of Płomnica (*Flora Silesiaca Exsiccata* No. 1078, KRAM), Wielki Śnieżny Kocioł (*Fudali 277/2001*, KRAM) and the summit of Mt. Śnieżka (*Musci Europaei et Americani Exsiccati* No. 2251, KRAM).

[23] *Andreaea nivalis* has recently been recorded for the first time in the Giant Mountains in the Sudetes by Fudali and Kučera (2002) who also reviewed its current distribution in Poland.

[24] According to recent molecular data (Vitt *et al*. 1998) all mosses with a single nematodontous peristome, as well as the buxbaumiaceous mosses with a complex double peristome, are closely related and constitute a separate lineage of mosses which deserves to be recognised as a separate class. This concept has subsequently been accepted by Buck & Goffinet (2000) in their latest classification of mosses. Unfortunately, neither Vitt *et al*. (1998) nor Buck & Goffinet (2000) provided the Latin description of this class and here the Polytrichopsida are formally described as a new class.

Polytrichopsida Vitt, Goffinet & Hedd. *ex* Ochyra, Żarnowiec & Bednarek-Ochyra, *class. nov.*

Polytrichopsida Vitt, Goffinet & Hedd. *in* Bates, Ashton & Duckett, Bryol. Twenty-First Cent.: 119. 1998, *nom. nud.*

Polytrichopsida W.R.Buck & Goffinet *in* A.J.Shaw & Goffinet, Bryoph. Biol.: 96. 2000, *nom. inval. descr. angl.*

Plantae habitu et magnitudine quam maxime diversae, caulibus ducto centrali praeditis, foliis costatis. Peristomii dentes rarissime nulli vel duplices, frequentissime simplices nematodonteique, solidi, triquetro-pyramidati vel linguliformes, e cellulis pachydermicis elongato-prosenchymaticis vel sursum semilunaribus compositi.

Mosses belonging within the Polytrichopsida show great structural diversity, both in gametophytes and sporophytes, which is distinctly reflected in three major evolutionary lines.

Consequently, three subclasses are recognised here to accommodate members of these lineages, namely Buxbaumiidae, Tetraphidiidae and Polytrichidae. It is possible that the monotypic, highly isolated, gymnostomous genus *Oedipodium* also represents a separate lineage which merits recognition into a separate subclass. These subclasses have already been distinguished as separate taxa within the class Musci or Bryopsida in earlier classifications proposed, for example, by Crosby (1980), Walther (1983) and Schofield (1985). Although the names of these subclasses have been widely used in the bryological literature, they have never been validly published.

[25] Polytrichopsida subclassis **Polytrichidae** (W.Frey) Ochyra, *stat. et comb. nov.*

Basionym: Bryidae superordo Polytrichanae W.Frey *in* W.Frey, Hurka & Oberw., Beitr. Biol. Nied. Pflanz.: 132. 1977.

[26] For a taxonomic survey of the genus *Atrichum* see Nyholm (1971).

[27] The concept of *Atrichum flavisetum* follows Smith (1976) who considered *Atrichum haussknechtii* Jur. & Milde to be conspecific with the Himalayan this species.

[28] The generic name *Oligotrichum* as established by Lamarck & Candolle (1805) was illegitimate under Art. 52 of the Code (Greuter *et al*. 2000) because it included binomials which coincided with the original elements of the earlier name *Catharinea* Ehr. *ex* F.Weber & D.Mohr. The proposal for conserving this name was approved by the Committee for Bryophyta (Zijlstra 1998) and since the inception of the Saint Louis Code (Greuter *et al*. 2000) *Oligotrichum* is placed on the list of conserved generic names with the conserved type *O. hercynicum*.

[29] The large genus *Pogonatum* comprises some 50–60 species distributed worldwide. This name was lectotypified by Smith (1971) with *P. aloides* (Hedw.) P.Beauv. and the sectional classification of the genus is adopted from this author.

[30] *Pogonatum nanum* var. *longisetum* was reported from the Wielkopolska region in western Poland by Lisowski (1956*a*).

[31] *Polytrichastrum* is a small genus of about 13 species widely distributed in the Northern and Southern Hemispheres. It was segregated from the traditionally understood *Polytrichum* (Smith 1971) and characterized by the terete or bluntly 4–6-angled capsule without a differentiated hypophysis, the smooth and not pitted exothecial cells, the leiodont peristome teeth, the epiphragm thick and entire or with marginal tooth-like processes, and relatively large, warty spores. The infrageneric classification of the genus is adopted from Smith (1971).

[32] On the basis of cultivation studies Schriebl (1991) recognized within the *Polytrichum commune* group four species including, among others, *P. perigoniale* Michx. and *P. uliginosum* (Wallr.) Schriebl. Populations corresponding to the latter taxon are quite widespread and common in Poland but they do not deserve taxonomic recognition because they appear to be only environmental modifications associated with wet habitats.

[33] Smith (1971) accepted sect. *Juniperifolia* for this taxon and ascribed this name to Bridel (1806) following the suggestion of Wijk *et al*. (1967). Unfortunately, *Juniperifolia* Brid. is an unranked taxon and cannot be adopted as a sectional name. Accordingly, the correct name for this group is sect. *Juniperina* which was validly published by Hagen (1914).

[34] Polytrichopsida subclassis **Tetraphidiidae** (M.Fleisch.) Ochyra, *stat. et comb. nov.*

Basionym: Bryales subordo Tetraphidiineae M.Fleisch., Musci Fl. Buitenzorg 3: xvi. 1908 [‘Unterordnung Tetraphidineae’].

[35] Polytrichopsida subclassis **Buxbaumiidae** (M.Fleisch.) Ochyra, *stat. et comb. nov.*

Basionym: Bryales subordo Buxbaumiineae M.Fleisch., Musci Fl. Buitenzorg 3: xvi. 1908 [‘Unterordnung Buxbaumiineae’].

[36] For distribution of *Buxbaumia viridis* in Poland see Szmajda *et al*. (1991*j*).

[37] The class Bryopsida includes the vast majority (*ca* 97–98%) of all known moss species which are commonly called the true mosses. The name of this class should be credited to Rothmaler (1951) who elevated the order Bryales ['Bryineae'] of Limpricht (1890) to class rank. It is worth noting that Bold (1957) established the class Mnionopsida for the true mosses but this name is invalid because of the lack of a Latin diagnosis. In the early classifications the groups with haplolepidous peristomes preceded those with diplolepidous peristomes. However, Crosby (1980) and Vitt (1981) suggested that the haplolepidous peristome may be derived from the diplolepidous type because the main trend of evolution in the sporophyte has been reduction and simplification. Acceptance of this concept implies that diplolepidous groups should come first in the classification scheme, and such a sequence of higher taxa can be seen in the systems proposed by Vitt (1982, 1984) and Vitt *et al*. (1998). In their latest original classification scheme of the Bryopsida Buck & Goffinet (2000) largely followed Crosby's (1980) suggestion, but they placed the diplolepidous subclass Bryidae at the end of the sequence, thus retaining some ideas from the Fleischer-Brotherus system. They subdivided the Bryopsida into four subclasses, Diphysciidae, Funariidae, Dicranidae and Bryidae, and this sequence of higher taxa is also adopted in the present treatment. However, because of the essential peculiarities in the peristome structure in the genera *Timmia*, *Encalypta* and *Orthotrichum* and their allies, two subclasses (Timmiidae, Encalyptidae and Orthotrichidae) are recognized here following the suggestion of Vitt *et al*. (1998). Also, a separate subclass is retained for the highly isolated genus *Archidium*.

[38] Since the early days of modern bryology, *Archidium* has been considered a taxonomically isolated moss. It has usually been treated as a separate group along with *Sphagnum* and *Andreaea* (for example, in *Musci frondosi spuri* of Hampe 1837, *Diarrhomitria* of Hampe 1847 and *Bryinae anomalae* of Schimper 1876) which was contrasted with all the remaining mosses. Limpricht (1890) placed it in the separate order, 'Ordnung Archidiaceae', equivalent to the orders Sphagnales, Andreaeales and Bryales, and Engler (1892*a*, *b*) promoted these 'Ordnungen' to subclasses. Although in the structure of the gametophyte, *Archidium* resembles the subclass Bryidae, sporophytically it is fundamentally different in lacking a true seta and columella and in possessing a unique ontogeny of the tissues of the capsule (Snider 1975). Hence recognition of a separate subclass for this moss seems fully justified and is actually accepted in the recent classifications of Schofield (1985) and Crum (2001).

[39] The interrelationships of *Diphyscium* and the two related genera *Muscoflorschuetzia* and *Theriotia* are still uncertain because the genus has a haplolepidous peristome (Shaw *et al*. 1987) and is gametophytically similar to some members of the Pottiaceae and Encalyptaceae, but some molecular data confirm its affinity to *Buxbaumia* (Vitt *et al*. 1998) with which it has been traditionally associated. Until the taxonomic position of *Diphyscium* is fully clarified, the most sensible solution seems to be recognition of a separate subclass to accommodate it. Buck & Goffinet (2000) described the subclass Diphysciidae but they

failed to provide a Latin description and hence this name is validated here by elevation of the order Diphysciales to subclass rank.

Bryopsida subclassis **Diphysciidae** (M.Fleisch.) Ochyra, *stat. et comb. nov.*

Basionym: Bryales ordo Diphysciales M.Fleisch., Musci Fl. Buitenzorg 3: xv. 1908 ['Reihe Diphysciidae'].

Diphysciidae W.R.Buck & Goffinet *in* A.J.Shaw & Goffinet, Bryoph. Biol.: 97. 2000, *nom. inval. descr. angl.*

[40] For distribution of *Diphyscium foliosum* in Poland see Ochyra *et al*. (1990*j*).

[41] Bryopsida subclassis **Funariidae** (W.Frey) Ochyra, *stat. et comb. nov.*

Basionym: Bryidae superordo Funarianae W.Frey *in* W.Frey, Hurka & Oberw., Beitr. Biol. Nied. Pflanz.: 134. 1977.

Funariidae Vitt, Goffinet & Hedd. *in* Bates, Ashton & Duckett, Bryol. Twenty-First Cent.: 119. 1998 ['Funaridae'], *nom. nud.*

Funariidae W.R.Buck & Goffinet *in* A.J.Shaw & Goffinet, Bryoph. Biol.: 97. 2000, *nom. inval. descr. angl.*

The subclass Funariidae is primarily characterized by its peristomial characters which make it a very distinctive taxon. Although the peristome is very variable in this group, sometimes being absent, single and rudimentary, or some taxa being cleistocarpous, when well-developed it is typically diplolepidous and double and represents a *Funaria*-type which has often been interpreted as the most primitive among extant mosses (Vitt 1981, 1982). It clearly follows a 4:2:4 pattern with symmetric divisions in the IPL. It consists of 16 exostome teeth which are papillose on the outer surface in the upper and median parts and sometimes cohere in pairs or tetrads. The teeth are often united at the tips by a small perforated epiphragm and are often spirally twisted in an anticlockwise direction. They lie opposite the endostome segments, but are not fused with each other. The endostome lacks a basal membrane and cilia. Although Buck & Goffinet (2000) placed three orders in the Funariidae, namely Encalyptales, Timmiales and Funariales, this subclass is interpreted here in the strict sense to encompass only the single order Funariales.

[42] *Physcomitrella hampei* is a critical species which is generally considered to be a hybrid between *Physcomitrella patens* and various species of *Physcomitrium* including *Ph. sphaericum*, *Ph. eurystomum*, *Ph. pyriforme* (Györffy 1907; Loeske 1914–1929). In the original description of this taxon Limpricht (1887) cited two Polish collections from Wrocław in Lower Silesia and Mieszkowice in West Pomerania.

[43] The separation of *Funaria* from *Entosthodon* follows Fife (1985).

[44] *Funaria hybrida* is considered to be of hybrid origin between *Entosthodon fasciculari*s and *Funaria hygrometrica*. In the original description, Limpricht (1891) cited the specimen collected by R. Ruthe in Mieszkowice in West Pomerania and later it was discovered also in the Lublin Upland in eastern Poland (Karczmarz 1966). For a detailed taxonomic account of this species see Karczmarz (1968).

[45] According to Duell (1985, 1994*a*) *Entosthodon obtusus* was collected in West Pomerania by F. Hintze.

[46] The peristome structure of *Discelium nudum*, the only member of the monotypic family Disceliaceae, has been the subject of varying interpretation. Shaw & Allen (1985), on the basis of a detailed analysis of SEM micrographs, considered the peristome of *Discelium* as double, with well-developed exostome teeth and a thin membranaceous endostome. It can be described by the peristomial formula 4:**2(-4)**:4, although only the outer and primary peristomial layers actually contribute wall material to the mature peristome and therefore the formula for the numbers of cells comprising the mature peristome is 4: **2(-4)**. They stated that the most appropriate placement of *Discelium* was in the Funariales and this conclusion is also supported by molecular data (Goffinet *et al*. 2001). Ignatov & Ignatova (2003) placed the Disceliaceae in a separate order but it does not seem necessary to countenance such a high-ranked taxon for *Discelium* because it shares with many members of the Funariaceae the leaf areolation and highly reduced gametophores associated with the ephemeral life cycles of the plants. Therefore both the Funariaceae and Disceliaceae are here placed within the suborder Funariineae of the order Funariales.

[47] Until the early 1990s *Discelium nudum* was known only from a single station in Chorzów in Upper Silesia which had been discovered in the mid-nineteenth century (Müller 1858). Because the species had not been rediscovered in this locality since, nor had it been found elsewhere in Poland, it was considered to be extinct in the country (Ochyra 1986*a*, 1992*a*). However, in the early 1990s *D. nudum* was recorded at some localities in Katowice in Upper Silesia (Stebel 1997*a*; Fojcik & Stebel 1999, 2001) as well as in the western part of Kotlina Oświęcimska (Stebel & Ochyra, unpublished), so the species has to be reinstated in Poland.

[48] The family Catoscopiaceae, comprising only the monotypic genus *Catoscopium*, has traditionally been placed near the Bartramiaceae and Griffin & Buck (1989) even united the two families. However, Akiyama & Nishimura (1993) found that *Catoscopium* has dormant branch primordia and is of *Bryum*-type in branch development. In contrast, all members of the Bartramiaceae have dormant branch buds and are of *Climacium*-type in their branch development. This basic difference in the manner of branch development has serious phylogenetic implications and molecular data indicate that *Catoscopium* is related to the group of mosses with opposite exostome teeth and endostome segments (*Funaria*-type) and occupies an unclear position, otherwise closer to the Timmiales (Goffinet *et al*. 2001). Ignatov & Ignatova (2003) placed the Catoscopiaceae in the separate order Catoscopiales, close to the Disceliales and Funariales. On the basis of the differences in the morphology of the gametophores and the peristome structure (Shaw 1985*a*), the Catoscopiaceae is here placed in a separate suborder of the Funariales.

Funariales M.Fleisch. suborder **Catoscopiineae** Ochyra, *subord. nov*.

Plantae graciles dense caespitantes, foliis erecto-patentibus, lanceolatis, acute acuminatis, solide costatis, minute hexagono-quadrato areolatis, dentibus externis peristomii brevibus, irregularibus, internis plus minus conspicuis, oppositibus vestigialibus.

[49] For distribution of *Catoscopium nigritum* in Poland see Ochyra *et al*. (1992*c*).

[50] *Timmia* is an oligotypic sole genus of the Timmiaceae occurring almost exclusively in the Northern Hemisphere. It has a wealth of unusual distinctive features generally not found in similar combination elsewhere in the mosses which are indicative of its phylogenetic isolation. Species of this genus have a polytrichoid aspect including the differentiation of the leaves into a basal clasping sheath and a spreading limb as well as the presence of 1–4 leaf traces which, however, are false because they penetrate only into the stem cortex and do not extend to the central strand (Hébant 1977). Moreover, *Timmia* has a unique endostome structure which consists of a high basal membrane giving rise to 64 morphologically similar filaments which replace the segment/cilia complex commonly found in the bryoid or hypnoid diplolepidous peristomes. All peculiarities of the gametophyte and sporophyte structure of *Timmia* are discussed at length by Allen (1998). Traditionally, *Timmia* was placed as a separate suborder in the Bryales, but molecular data indicate its surprising placement near the funarioid mosses (Vitt *et al*. 1998). The array of distinctive characters warrants the recognition of a separate subclass for this otherwise primitive moss as suggested by Vitt *et al*. (1998).

Bryopsida subclassis **Timmiidae** Ochyra, *subclass*. *nov*.

Plantae ex habitu muscis polytrichoideis simillimae, foliis unistratosis, profunde mamillosis. Peristomium duplex; exostomii dentes basis confluentes, late lineari-lanceolati, densissime articulati, linea serpentina dorsali vix conspicua, intus trabeculati, apicem versus valde rugulosi, lutescentes, siccitate e medio geniculato-inflexi; endostomii dentes membrana basilari hyalina, tenuis, obsolete 16-carinata, alte producta, reti anguste transversima rectangulo, in cilia numerosa (circiter 64) filiformia nodosa valde appendiculata producta.

[51] Bryopsida ordo **Timmiales** (M.Fleisch.) Ochyra, *stat*. *et comb*. *nov*.

Basionym: Eubryales subordo Timmiineae M.Fleisch., Hedwigia 61: 396. 1920 [‘Untereihe Timmiineae’].

Timmiales Vitt, Goffinet & Hedd. *in* Bates, Ashton & Duckett, Bryol. Twenty-First Cent.: 119. 1998, *nom. nud.*

[52] For the infrageneric classification of *Timmia* see Brassard (1979, 1980, 1984).

[53] For distribution of *Timmia megapolitana* in Poland see Bednarek-Ochyra *et al*. (1994*a*).

[54] For distribution of *Timmia bavarica* in Poland see Bednarek-Ochyra *et al*. (1994*c*).

[55] For distribution of *Timmia norvegica* in Poland see Bednarek-Ochyra *et al*. (1994*b*).

[56] For distribution of *Timmia austriaca* in Poland see Bednarek-Ochyra *et al*. (1994*d*).

[57] The Encalyptidae is here formally recognized as a separate subclass of the Bryopsida following the suggestion of Vitt *et al*. (1998). Although it is a small group, it has long received special interest in phylogenetic speculations on mosses because the peristome

of the main genus, *Encalypta*, shows extraordinary variation unknown in any other moss genus. Apart from some gymnostomous species, there are others with single and double peristomes and, additionally, in some species that generally have gymnostomous capsules there are rare populations with a vestigial peristome. The isolated phylogenetical position of the "extinguisher" mosses (named after their large campanulate-cylindrical calyptra, resembling a candle-snuffer) is primarily associated with an array of peculiarities in the structure of the peristome. According to Philibert (1889) *Encalypta* contains nematodontous, haplolepidous and diplolepidous peristomes. Therefore many former authors considered this genus to be a living remnant of an ancient group ancestral to both arthrodontous and nematodontous mosses and Fleischer (1904*a*) distinguished a separate group, Heterolepidae, equivalent to Haplolepidae and Diplolepidae, to accommodate it. However, recent detailed studies on the peristome in *Encalypta* (Horton 1982; Edwards 1984; Vitt 1984) clearly showed that all species in this genus are arthrodontous and at least some of them have a complex diplolepidous, opposite and often flanged peristome.

Bryopsida subclassis **Encalyptidae** Vitt, Goffinet & Hedd. *ex* Ochyra, Żarnowiec & Bednarek-Ochyra, *subclass*. *nov*.

Timmiidae Vitt, Goffinet & Hedd. *in* Bates, Ashton & Duckett, Bryol. Twenty-First Cent.: 119. 1998, *nom. nud.*

Plantae terricolae vel rupicolae, acrocarpicae, foliis e cellulis superne minutis, valde chlorophyllosis, papillis majusculis pluripartitis dense tectis. Calyptra maxima, cylindrico-extinctoriaeformis, laevissima, in rostrum rectum subclavatum producta. Peristomium varium, nullum, simplex vel duplex, aut si duplex nunc processibus internis dentibus exostomii oppositis, frequenter perfecte coalitis, dentibus exostomii linea longitudinali notatis.

[58] The infrageneric classification of *Encalypta* follows Horton (1983).

[59] Two specimens of *Encalypta microstoma* were discovered by J. Kučera during a revision of herbarium specimens in BRNM. They were collected in August 1945 by J. Šmarda in Mały Śnieżny Kocioł in the Polish part of the Giant Mountains (=Karkonosze) and misnamed as *Encalypta alpina* Sm. (Kučera & Fudali 2003).

[60] The subclass Dicranidae is a monophyletic group which is primarily characterized by a single haplolepidous peristome. The exostome and endostome components in this type of peristome are opposite. The exostome is typically absent, but sometimes it is present as a very reduced, vestigial or rudimentary structure called a preperistome or prostome which is situated outside, and generally adhering to, the base of the main peristome teeth. The Dicranidae comprises exclusively acrocarpous or cladocarpous mosses which exhibit considerable variation in their gametophytes but consistently lack paraphyllia and pseudoparaphyllia. This is a very large and markedly diverse group consisting of nearly 4000 species, i.e. about one third of all known moss species, which are classified into 25 families and nearly 220 genera. It is accepted here as comprising only three large orders, Dicranales, Grimmiales and Pottiales. Recognition of this subclass was suggested by Vitt *et al*. (1998) but they failed to provide a description. Likewise, Buck and Goffinet (2000) gave only a brief diagnosis in English, thus invalidly publishing the name Dicranidae.

This name is validated here by elevation of the superorder Dicrananae of Frey (1967) to subclass rank.

Bryopsida subclassis **Dicranidae** (W.Frey) Ochyra, *stat. et comb. nov*.

Basionym: Bryidae superordo Dicrananae W.Frey *in* W.Frey, Hurka & Oberw., Beitr. Biol. Nied. Pflanz.: 132. 1977.

Dicranidae Vitt, Goffinet & Hedd. *in* Bates, Ashton & Duckett, Bryol. Twenty-First Cent.: 119. 1998 ['Funaridae'], *nom. nud.*

Dicranidae W.R.Buck & Goffinet *in* A.J.Shaw & Goffinet, Bryoph. Biol.: 98. 2000, *nom. inval. descr. angl.*

[61] Despite considerable variations (Allen 1980; Bruggeman-Nannenga & Berendsen 1988), the peristome in *Fissidens* is of *Dicranum*-type and on account of the essential identity of the peristomes the Fissidentales is merged with the Dicranales. The genus *Fissidens* itself is distinguished by an unusual leaf structure. The leaves are equitant and each is composed of a ventral, boat-shaped proximal portion composed of two vaginant laminae and an undivided distal ventral lamina; dorsally there is an undivided dorsal lamina. In addition the leaves are implanted in two rows and complanate. On account of this unusual morphology of the plants, the genus *Fissidens* and its allies are recognized as a separate suborder of the Dicranales.

Dicranales subordo **Fissidentineae** (M.Fleisch.) Ochyra, *stat. et comb. nov*.

Basionym: Bryidae ordo Fissidentales M.Fleisch., Hedwigia 61: 399. 1920.

[62] The concept of the type section of *Fissidens* follows Bruggemann-Nannenga (1978) who amalgamated with it the sections *Aloma*, *Pachyfissidens*, *Bryoideum* and *Semilimbidium*.

[63] The concept of the *Fissidens bryoides* complex is largely adopted from Corley (1980) and Bruggeman-Nannenga and Nyholm (1987).

[64] For the nomenclature of *Fissidens gracillifolius* see Bruggeman-Nannenga & Nyholm (1987). This species is closely related to *F. pusillus* but is easily separated by its narrower leaves with longer and sharper leaf points. In addition, it is predominantly associated with moist calcareous rocks and only occasionally grows on sandstone.

[65] Karttunen (1987) found that *Fissidens dubius* is the correct name for *F. cristatus*.

[66] For the nomenclature of *Fissidens dubius* var. *mucronatus* see Söderström *et al*. (1992) and Ochyra (1993*a*) and for its distribution in Poland see Brylska (1991).

[67] *Fissidens* subg. *Octodiceras* has often been considered as a genus in its own right, but here the treatment of *Octodiceras* as a subgenus follows Pursell (1987).

[68] The Polish distribution of *Fissidens fontanus* has been reviewed by Bednarek-Ochyra *et al*. (1996).

[69] *Ditrichum* has a quite complicated nomenclatural history and since the Brussels Botanical Congress of 1910 it has been placed on the list of conserved generic names (Magill 1993). It is conserved against four older names including three used for moss genera (*Diaphanophyllum* Lindb., *Aschistodon* Mont. and *Lophiodon* Hook.f. & Wilson) and since the inception of the Saint Louis Code (Greuter *et al*. 2000) the fifth name *Trichodon* was added to the list of generic names rejected in favour of *Ditrichum*.

[70] Allen (1994) placed *Ditrichum crispatissimum* into synonymy with *D. gracile*. For the differences between this species and *D. flexicaule* see Frisvoll (1985).

[71] Ochyra & Bednarek-Ochyra (1996) found that the generic name *Sporledera* as interpreted by European bryologists to accommodate the single species *S. palustris* (Bruch & Schimp.) Schimp. cannot be used because *Sporledera* is congeneric with *Bruchia* Schwägr. and proposed *Cleistocarpidium* as a replacement.

[72] The distribution of *Cleistocarpidium palustre* in Poland has been reviewed by Bednarek-Ochyra & Ochyra (1996).

[73] The familial placement of the genus *Pseudephemerum* follows Smith (1978) and Matsui & Iwatsuki (1990).

[74] The author citation for *Pseudephemerum nitidum* follows Ochyra (1995*a*).

[75] For distribution of *Distichium capillaceum* in Poland see Ochyra *et al*. (1988*k*).

[76] For distribution of *Distichium inclinatum* in Poland see Ochyra *et al*. (1988*l*).

[77] For the occrrrence of *Trematodon ambiguus* in Poland see Karczmarz (1976), Ochyra *et al*. (1988*m*) and Stebel & Ochyra (1997).

[78] The nomenclature and taxonomic concept of subfamilies of the Dicranaceae follow Ochyra (2002).

[79] The sectional classification of *Dicranum* follows Nyholm (1987).

[80] The authorship of *Dicranum majus* and *D. fuscescens* has often been ascribed to Turner (1804). However, Greene (1957) presented evidence that Turner's *Muscologia hibernica* had been published later than Smith's (1804) *Flora britannica* in which both species had also been described and, accordingly, both *D. majus* and *D. fuscescens* should be attributed to Smith (1804), not Turner (1804), as pointed out by Crundwell (1970).

[81] The complex nomenclatural history of *Dicranum undulatum* Schrad. *ex* Brid. and the sources of its confusion have been discussed in detail by Isoviita (1984). This name was published by Bridel (1801) and has evident priority over *D. udulatum* Ehrh. *ex* F.Weber & D.Mohr (Weber & Mohr 1803) which is a synonym of *D. polysetum*. Following the suggestion of some authors (e.g., Shlyakov 1968; Margadant 1972; Isoviita 1984), *D. undulatum* Schrad. *ex* Brid. has mostly been rejected by European authors in

favour of *D. bergeri* Blandow or *D. affine* Funck (e.g., Corley *et al*. 1981; Duell 1984; Blockeel & Long 1998; Váňa 1997). On the other hand, the name *D. undulatum* is in common use in North America (e.g., Crum & Anderson 1981; Anderson *et* al. 1990; Bellolio-Trucco & Ireland 1990) and in Japan (Noguchi 1987; Iwatsuki 1991). Because until now no formal proposal for rejection of *D. undulatum* Schrad. *ex* Brid. has been made, there are no reasons why this name could not be in current use if it is the oldest one for this widespread species. Moreover, in LE there exists a specimen which may be used for lectotypification of *D. undulatum* Schrad. *ex* Brid. which evidently represents a portion of the original specimen of Schrader (1794). It is labelled as follows: "Dicranum Schraderi Web. et Mohr ex herb. Schrader ex Hercynia". It should be noted that *D. schraderi* is an illegitimate name which was proposed by Wahlenberg (1806) and Weber & Mohr (1807) as a replacement of *D. undulatum* Schrad. *ex* Brid.

[82] Koponen (1968*a*) pointed out that the rank of infrageneric names in Kindberg (1897, 1898) is unclear. According to Art. 35.3 of the current Code (Greuter *et al*. 2000), they may serve as basionyms for subsequent combinations or replaced synonyms for nomina nova in definite ranks. *Fuscescentiformia* was published by Kindberg (1898) as one of six unranked subdivisions of *Dicranum* VII. *Eu-Dicranum*. This unranked name is here validated as a sectional name of *Dicranum*. It is worth noting that Nyholm (1953) introduced the name *Fuscescentia* for this section but due to the lack of a Latin diagnosis it was invalidly published.

Dicranum sectio ***Fuscescentiformia*** (Kindb.) Ochyra, *stat. et comb. nov*.

Basionym: *Dicranum* VII [unranked] *Eu-Dicranum* 5 [unranked] *Fuscescentiformia* Kindb., Eur. N. Am. Bryin. 2: 187. 1898. — Type: *Dicranum fuscescens* Sm.

Dicranum sectio *Fuscescentia* Nyholm, Bot. Not. 1953: 299. 1953, *nom. inval. descr. suec. et angl*., ***syn. nov.***

It is important to seize the opportunity afforded here to clarify the confusion concerning problem of the effective publication date of Kindberg's *Species of European and Northamerican Bryineae (mosses) synoptically described*. This is a typical Kindbergian work with multiple title pages bearing different dates. It has been generally accepted that part 1 of this work, comprising pleurocarpous mosses, and part 2 containing acrocarpous mosses, were published in 1896 and 1897 respectively (e.g., Steere & Crum 1977). However, according to TL-2, part 1 was published in 1897 and part 2 in 1898, dates based on the listing of this work in *Naturae novitates*, a bibliography of newly published works in natural history (Stafleu & Cowan 1979). These latter dates are accepted here and additional evidence which may confirm them is the publication of a review of both parts by Bauer (1898) in Vol. 75, No. 1 of *Botanisches Centralblatt* which appeared on 23 June 1898.

[83] The treatment of *Dicranum flexicaule* as a species follows Nyholm (1987). The Polish records are in need of revision.

[84] Nyholm (1987) proposed sect. *Muehlenbeckia* for the group of species centred around *Dicranum muehlenbeckii* but this name was invalidly published owing to the lack of

a Latin description. Here, the unranked group *Convolutifolia* of Kindberg (1898) is raised to section to accommodate the same group of species.

Dicranum sectio ***Convolutifolia*** (Kindb.) Ochyra, *stat. et comb. nov*.

Basionym: *Dicranum* VII. [unranked] *Eu-Dicranum* 6. [unranked] *Convolutifolia* Kindb., Eur. N. Am. Bryin. 2: 187. 1898. — LECTOTYPE (selected here): *Dicranum muehlenbeckii* Bruch & Schimp.

Dicranum sectio *Muehlenbeckia* W.L.Peterson *ex* Nyholm, Ill. Fl. Nord. Mosses 1: 53. 1987, *nom. illeg. descr. angl.*, ***syn. nov.***

[85] In Poland *Dicranum sendtneri* is known only from the Góry Stołowe Range in the Sudetes (Szmajda 1979). The taxonomic status of this species, which additionally is known only from the Czech Republic (Váňa 1997) and Switzerland (Urmi 1987), is unclear and needs clarification. Some authors consider it to be either conspecific with *D. elongatum* (e.g., Corley *et al*. 1981; Duell 1984) or a subspecies of this species (e.g., Podpěra 1954; Pilous & Duda 1960).

[86] For distribution of *Orthodicranum tauricum* in Poland see Bocheński (1986).

[87] The treatment of the genus *Paraleucobryum* follows Müller & Frahm (1987).

[88] *Dicranella* is interpreted here in the broader sense to include *Anisothecium* which is sometimes recognized as a separate genus. Allen (1994) stated that *Anisothecium* is characterized by the combination of three features, namely the presence of stomata, the exannulate capsules and the presence of the low basal membrane of the peristome. Of these, only the first character is consistently lacking in *Dicranella* s.str. but its value seems to be overemphasized and in other well-defined genera, for example *Seligeria*, *Blindia* or *Dicranoweisia*, both character states are frequent. Because the other two character states are also present in various species of *Dicranella* s.str., in practice *Anisothecium* could be based upon a single sporophyte character of doubtful value. Hence the separation of *Anisothecium* seems to be unnatural and, additionally, this name is illegitimate under Art. 6.4 of the current Code (Greuter *et al*. 2000). It was superfluous when published because the genus comprised the lectotype species of *Dicranella* (*D. varia*). Nyholm (1987) recognized two sections within *Dicranella*, namely type section *Dicranella* and sect. *Pseudodicranella* Nyholm, but the latter name was invalidly published because of the lack of a Latin description. The recognition of these sections was based upon the former lectotypification of the generic name *Dicranella* with *D. varia* (Schimper 1860). Because now *Dicranella* is a conserved name with the conserved type *D. heteromalla* (Margadant & Geissler 1995; Greuter *et al*. 2000), the nomenclature of the sections has to be changed accordingly. The type section consists of *Dicranella heteromalla* and allied species, whereas sect. *Dicranella* sensu Nyholm (1987) comprises species traditionally placed in *Anisothecium*.

[89] As stated above, the generic name *Anisothecium* is illegitimate but it was validated by Kindberg (1898) as an unranked taxon within *Dicranella*. It is here elevated to the

rank of section and *Dicranella schreberi* (=*D. schreberiana*) is chosen as the lectotype of this name.

Dicranella (Müll.Hal.) Schimp. sectio ***Anisothecium*** (Kindb.) Ochyra, *comb. nov*.

Basionym: *Dicranella* (Müll.Hal.) Schimp. I. [unranked] *Anisothecium* Kindb., Eur. N. Am. Bryin. 2: 206. 1898. — LECTOTYPE (selected here): *Dicranella schreberi* Schimp. [=*Dicranella schreberiana* (Hedw.) Dixon].

[90] Karttunen (1988) found that the pre-Hedwigian *Bryum rufescens* of Dickson (1793) was validated by Dickson (1801), not by Withering (1801) as commonly accepted. Dickson's (1801) index to *Plantarum cryptogamicarum Britanniae* was published on 4 October 1801, whereas Withering's (1801) "Systematic arrangement of British plants" did not appear until December 1801 (Sayre 1959; Stafleu & Cowan 1976, 1988).

[91] *Dicranella staphylina* was discovered for the first time in Poland by Ochyra (1986*b*).

[92] The authorship of the name *Dicranella schreberiana* is often attributed either to 'Schimp.' (e.g., Crum 1973; Ireland 1982) or 'Hilf. *ex* Crum & Anderson' (e.g., Noguchi 1987; Anderson *et al*. 1990; Iwatsuki 1991; Gao *et al*. 1999). Neither of these is correct. Schimper (1856) made the combination *Dicranella schreberi* (Bruch & Schimp.) Schimp. which was based on *Dicranum schreberi* of Bruch *et al*. (1847). This specific name is illegitimate because the species included the type of the earlier name *Dicranum schreberianum* of Hedwig (1801). Also, the combination *Dicranella schreberiana* introduced by Crum & Anderson (1981), who validated the name suggested by Hilferty (1959), was superfluous because this combination had already been validly published by Dixon (1933). The latter author admittedly proposed simultaneously two alternative combinations based on the Hedwigian *Dicranum schreberianum*, namely *Dicranella schreberiania* and *Anisothecium schreberianum*, but, because they were effected before 1 January 1953, both are valid according to Art. 34.2 of the Code (Greuter *et al*. 2000).

[93] For the correct author citation of *Campylopus subulatus* see Ochyra & Bednarek-Ochyra (2002).

[94] For the correct author citation of *Campylopus schimperi* see Ochyra & Bednarek-Ochyra (2002).

[95] *Campylopus introflexus* is an austral moss which was discovered in England in 1941 and in Ireland in 1942 and since then has spread throughout the British Isles (Richards 1963; Richards & Smith 1975; Corley 1992). In the early 1950s it invaded mainland Europe and it has subsequently spread eastwards (Frahm 1972; Ochyra 1983*a*). In Poland it was discovered for the first time in the late 1980s in West Pomerania and Wielkopolska (Lisowski & Urbański 1989) and subsequently it has been recorded at many sites in the western part of the country (Fudali 1992). It is still spreading eastwards, extending to Upper Silesia (Stebel 1997*b*), the Carpathians (Stebel 1995) and Kotlina Sandomierska in eastern Poland

(Fojcik & Gumieniak 1999) as well as to Kaliningrad Province in Russia (Razgulyaeva *et al*. 2001).

[96] The treatment of the genus *Dicranodontium* follows Frahm (1997).

[97] Milde (1869*a*, 1870) recognized several varieties within *Dicranodontium denudatum* in the Sudetes including var. *fulgidum* Milde, var. *montanum* Milde, var. *subalpinum* Milde (all under *Dicranodontium longirostre* (F.Weber & D.Mohr) Bruch & Schimp.). Unfortunately, the taxonomic status of these varieties was not discussed by Frahm (1997) in his worldwide revision of *Dicranodontium*.

[98] For a taxonomic revision of the genus *Rhabdweisia* see Frahm *et al*. (2000*a*).

[99] For the correct author citation for *Rhabdoweisia crispata* see Karttunen (1988).

[100] Karttunen (1989) proposed conserving the specific name *Grimmia schistii* Gunnerus *ex* F.Weber & D.Mohr with the conserved type because typification of this name with the specimen to which Weber & Mohr (1803) originally referred when validating the pre-Hedwigian name *Bryum schistii* of Gunnerus (1772) could make it synonymous with *Kiaeria blyttii*. This proposal was approved and in the Tokyo Code (Greuter *et al*. 1994) *Grimmia schistii* is placed on the list of *Nomina specifica conservanda*.

[101] For a taxonomic revision of the genus *Oncophorus* see Frahm *et al*. (1998*b*).

[102] For a taxonomic revision of the genus *Dichodontium* see Frahm *et al*. (1998*a*).

[103] For the correct author citation for *Dichodontium flavescens* see Karttunen (1988). This species was reported from the Giant Mountains in the Sudetes by Limpricht (1890).

[104] *Dicranella palustris* (Dicks.) Crundwell *ex* E.F.Warb. is at a glance distinct from all congeners in its robust appearance and squarrose leaves which are decurrent and end in a broad, often rounded and cucullate apex. This morphological distinctness from other *Dicranella* species has additionally been supported by molecular data by Stech (1999*b*) who at the same time indicated the close affinity of this species with *Dichodontium* and made the seemingly appropriate transfer of *D. palustris* to this genus as *Dichodontium palustre* (Dicks.) Stech. *Dichodontium* is a small genus consisting of only two species, the pan-Holarctic *D. pellucidum* (Hedw.) Schimp. and *D. olympicum* Renauld & Cardot which is a western North American endemic. Frahm *et al*. (1998*a*) placed in this genus also *D. brasiliense* Broth. but this species is in fact *Chrysoblastella chilensis* (Mont.) Reimers (Sollman 1999; Ochyra 1999*a*). The genus is defined by the distal laminal cells which are short, mostly subquadrate, thick-walled and coarsely conic-papillose or mamillose. Additionally, the leaf margins are irregularly dentate above and the costa is composed in cross-section of a median row of large guide cells which separate the dorsal and ventral stereid bands. These features are entirely lacking in *Dicranella palustris*, in which the distal laminal cells are prosenchymatous, thin-walled and entirely smooth, the leaf margins are entire to bluntly crenulate and the costa is very weak and narrow and lacks the ventral

stereid band. Thus, the transfer of *Dicranella palustris* to *Dichodontium* introduces only a discordant element to this genus and makes it difficult to characterize on morphological grounds. Therefore the recognition of a separate genus to accommodate *D. palustris* appears to be the most sensible solution. A candidate for the name of this genus could be *Diobelon* Hampe. This name was introduced by Hampe (1871) who combined with it no fewer than eight specific names (Hampe 1873). However, it is illegitimate because Hampe provided no description of the taxon but simply placed *Dichodontium* in synonymy. Hence, the new genus *Diobelonella* is described to accommodate *Dicranella palustris*.

Diobelonella Ochyra, *gen. nov.*

Hoc genus Dichodontio affinis videtur sed cellulis laminae prosenchymaticis laevissimisque parietibus tenuissimis et marginibus foliorum integerrimis vel obtuse crenulatis recedit. — TYPE: *Diobelonella palustris* (Dicks.) Ochyra, *comb. nov.* (Basionym: *Bryum palustre* Dicks., Fasc. Pl. Crypt. Brit. 4: 11. 1801).

Diobelonella is here considered to be a monotypic genus but its relationships still require further study. There are two Asiatic species, *Dicranella rotundata* Broth. and *D. mollicula* (Mitt.) A.Jaeger, known from China and the Himalayan region respectively (Takaki 1968), and the New Guinean *D. papua-papustris* D.H.Norris & T.J.Kop. (Norris & Koponen 1990) which are superficially similar to *Diobelonella palustris* and additionally share with it smooth laminal cells, but differ in having markedly serrate leaf margins. The taxonomic position of these species needs detailed investigations and possibly they belong also within *Diobelonella*.

[105] The relationships of *Amphidium* have been a moot question and subject of eternal controversy since the earliest times, markedly aggravated by the lack of a peristome. Some authors (e.g., Schimper 1856; Crum & Anderson 1981; Magill 1998) welded *Amphidium* more firmly to the Orthotrichaceae, especially to *Zygodon*, on account of the similarity of leaves, calyptra, antheridial buds and, particularly, the shape and development of the young capsules (Lewinsky 1976). On the other hand, the costal anatomy, leaf areolation and general plant habit indicate an alliance of *Amphidium* with the dicranaceous mosses, especially with *Rhabdoweisia*, and, accordingly, many authors placed it in the Dicranaceae (e.g., Hagen 1915; Brotherus 1924; Malta 1926). The placement of *Amphidium* in the Dicranaceae has been strongly supported by molecular data (Stech 1999*a*), although these indicate that the genus is unrelated to *Rhabdoweisia* as has often been suggested (Anderson & Crum 1959). Because *Amphidium* seems to be a discordant element in either subfamily of the Dicranaceae, the most practical solution seems to be to establish the separate subfamily Amphidioideae to accommodate it.

Dicranaceae subfamilia **Amphidioideae** Ochyra, *subfam. nov.*

Plantae saxosae in pulvinos tumescentes haud raro majusculi congesti, foliis mollibus, sicca crispatis vel torquatis, apicem versus minute rotundato areolatis, opacis, valde chrlorophyllosis, distincte papillosis, basi e cellulis laxis, hexagono-rectangulis echlorophyllosis compositis. Capsula brevi-pedicellata, gymnostoma, sicca deoperculata urceolata, profunde sulcata. — TYPUS: *Amphidium* Schimp.

[106] For a taxonomic revision of the genus *Amphidium* see Frahm *et al*. (2000*b*).

[107] For distribution of *Amphidium lapponicum* in Poland see Ochyra & Szmajda (1983*e*).

[108] For distribution of *Amphidium mougeotii* in Poland see Ochyra & Szmajda (1983*f*).

[109] In Poland *Leucobryum juniperoideum* is known only from the Góry Stołowe Range in the Sudetes (Szmajda 1979). The specimens reported by Żmuda (1912*a*) from Puszcza Niepołomicka east of Kraków in Kotlina Sandomierska are actually *L. glaucum*.

[110] Because of the gymnostomous nature of the capsules, the affinities of the monotypic genus *Schistostega* which is placed in the separate family Schistostegaceae are uncertain. It has often been placed in the separate order Schistostegales which was classified in the proximity of the dicranaceous (e.g., Crum & Anderson 1981) or funariaceous (e.g., Fleischer 1920; Brotherus 1924) mosses. Buck & Goffinet (2000) placed the Schistostegaceae in the Dicranales. If the peculiar features of the gametophyte are considered, this highly isolated and bizarre moss certainly deserves to be recognized in a separate suborder of the Dicranales. Accordingly the order Schistostegales described by Fleischer (1920) is here reduced to suborder.

Dicranales subordo **Schistostegineae** (M.Fleisch.) Ochyra, *stat. et comb. nov.*

Basionym: Bryidae ordo Schistostegales M.Fleisch., Hedwigia 61: 394. 1920.

[111] For distribution of *Schistostega pennata* in Poland see Ochyra *et al*. (1988*n*).

[112] The original concept of the Grimmiales, as outlined by Fleischer (1904*a*) who placed in it two families, Grimmiaceae and Seligeriaceae, is accepted here. The order is diagnosed by its haplolepidous peristome and the fundamental difference of the peristome type in the Grimmiales in comparison to that of the dicranoid type lies in the outer face of each tooth which is more strongly developed and trabeculate than the inner face, or at least both faces may be equally thickened. Additionally, the teeth may be smooth or variously ornamented, papillose or coarsely granulose on both faces and a prostome is often present. Edwards (1979) recognized the seligerioid peristome type and interpreted it as diplolepidous prompting Crosby (1980) to recognize the separate order Seligeriales to accommodate *Seligeria* and its allies. However, the seligerioid peristome represents nothing more than a reversal of the dicranoid type with the dorsal, not ventral, side distinctly trabeculate, although sometimes the dorsal trabeculation is indistinct or missing. Therefore taxa belonging to the Seligeriaceae are included in the Grimmiales following suggestions of Fleischer (1904*a*) and Walther (1983).

[113] Here, the expanded concept of the Seligeriaceae presented by Ochyra (1993*b*) is accepted. He transferred to this family two genera traditionally associated with the Dicranaceae, *Dicranoweisia* and *Holodontium*, because they also have seligerioid peristomes. The distant relationship of *Dicranoweisia* to the type subfamily of the Dicranaceae

has been confirmed by molecular data (Stech 1999*c*). Considering the differences in the costal anatomy as well as in the ornamentation of the peristome teeth, Ochyra (1993*b*, 1994*a*) subdivided the Seligeriaceae into two subfamilies. The Seligerioideae comprises genera with homogeneous costal anatomy and peristome teeth smooth on the outer surface, namely *Seligeria* (incl. *Trochobryum*), *Blindia* and *Brachydontium*. The second subfamily, Dicranoweisioideae, consists of genera with heterogeneous costal elements, teeth coarsely granulose to papillose on the outer surface and often with longitudinal ridges on the laminal cells.

[114] The subgeneric classification of *Seligeria* follows Vitt (1976) whereas the sectional subdivision is adopted from the unpublished revision of *Seligeria* in Europe (Gos 1994). Some new sectional names are validated here.

[115] For distribution of *Seligeria pusilla* in Poland see Ochyra *et al*. (1985*a*).

[116] ***Seligeria*** sectio ***Anodus*** (Bruch & Schimp.) Ochyra & L.Gos, *stat. et comb. nov.*

Basionym: *Anodus* Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 2: 3. 1846 [Fasc. 33–36 Mon.: 1].

[117] ***Seligeria*** sectio ***Calcareae*** Ochyra & L.Gos, *sect*. *nov*.

Folia ovato-lanceolata, e basi ovali et oblonga, concava, anguste linealia, marginibus basin versus crenulatis vel parce obtusiuscula serrulatis, apicem versus parce crenulata vel subintegerrima; costa planiuscula basin versus suberaniola, apicem versus validiore totam partem subulae occupante; cellulae laminae superiore breviter rectangulares, quadratae vel oblatae. Capsula ochyrostoma, in pedicello crassiore major, solidor, truncato-ovata, collo tumidulo. — TYPE: *Seligeria calcarea* (Hedw.) Bruch & Schimp. (*Weissia calcarea* Hedw.).

[118] For distribution of *Seligeria calcarea* in Poland see Kuc (1958*a*), Ochyra (1984*a*), Ochyra *et al*. (1985*d*, 1999*a*).

[119] *Seligeria campylopoda* was discovered for the first time in Poland by Smirnova (1965) and Szafran (1970). For its distribution in Poland see Ochyra (1984*a*) and Ochyra *et al*. (1985*b*).

[120] *Seligeria patula* is known from a number of localities in the Pieniny Klippen Belt and the Tatras in the Western Carpathians. It was reported, among others, by Ochyra & Szmajda (1978) as *Seligeria alpestris* and Ochyra (1984*a*) as *S. austriaca*. For the correct author citation of *S. patula* see (Ochyra 1994*b*, 1996*a*).

[121] *Seligeria alpestris* was described by Schauer (1967) as a species in its own right but Nyholm (1987) considered it conspecific with *S. patula*. Gos (1994) considered *S. alpestris* to be closely related to *S. patula* but otherwise distinct taxon which deserved taxonomic recognition. It differs from typical expressions of *S. patula* in its larger spores, (16–)17–20(–22) µm in diameter (versus 14.5–17.0) and needle-like ensiform leaves, densely set, imbricate, closely appressed to the stem and very distinctly 3-ranked (versus ensiform

or from a short ovate-lanceolate base long acuminate, distantly set, erect-spreading and indistinctly trifarious). *S. alpestris* is here reduced to a variety of *S. patula*.

Seligeria patula (Lindb.) I.Hagen var. ***alpestris*** (T.Schauer) L.Gos & Ochyra, *stat. et comb. nov.*

Basionym: *Seligeria alpestris* T.Schauer, Nova Hedwigia 14: 321, *pl. 101 f. 13–19*. 1967. — TYPE: Flora exsicc. Bavarica Bryophyta Nr. 480. Algäu, in saxis calcareis ripae Starzlach prope Rohrmoos, 1000 m, leg. Familler [HOLOTYPE: M!; ISOTYPES: GZU!, KRAM!].

[122] For distribution of *Seligeria trifaria* in Poland Ochyra *et al*. (1985*c*).

[123] Occasionally, the authorship of *Brachydontium trichodes* is incorrectly attributed to '(F.Weber) Fürnr.' (e.g., Wijk *et al*. 1959). Fürnrohr (1827) provided a detailed discussion of the relationship of *Weissia trichodes* and established a new genus to accommodate this species, but he failed to make its formal transfer to the newly erected genus. Actually, the combination *Brachydontium trichodes* was made by Milde (1869*a*).

[124] The taxonomic concept and nomenclature of the subfamily Dicranoweisioideae follows Ochyra (1993*b*, 1994*a*, 2003*a*).

[125] As traditionally understood, *Dicranoweisia* is a heterogeneous taxon comprising at least two distinct groups of species which deserve separate generic status. The Holarctic *Dicranoweisia cirrata* and the African *D. africana* Dixon are evidently discordant elements in the genus possessing, among other things, their entirely smooth laminal cells lacking longitudinal cuticular ridges, strongly and broadly recurved bistratose leaf margins, undifferentiated perichaetial leaves as well as a compound, deciduous annulus and multicellular brood-bodies in the axils and on the costae of the upper leaves. On the other hand, several species belonging to the *D. crispula* complex present quite opposite characters and constitute a separate genus. Unfortunately, for strictly nomenclatural reasons the generic name *Dicranoweisia* has to be retained for the genus comprising only *D. cirrata* and *D. africana*. When establishing this genus, Milde (1869*a*) placed both *D. cirrata* and *D. crispula* in it but neither was indicated as the type. For a long time *D. crispula* was considered to be a lectotype of *Dicranoweisia* (Wijk *et al.* 1962; Farr *et al.* 1979) and this lectotypification was ascribed to Kindberg (1882). However, this choice had to be superseded because *D. crispula* was a typical "residue lectotype" and such lectotypification was in conflict with Art. 7.11 of the current Code (Greuter *et al.* 2000). Therefore the lectotypification of *Dicranoweisia* with *D. cirrata* proposed by Williams (1913) is now accepted (Greuter *et al*. 1993).

[126] Species of the *Dicranowieisa crispula* complex which are here considered as a separate genus, for which the oldest available name is *Hymenoloma*, are easily recognized by the combination of the following characters: (*1*) entirely unistratose to occasionally bistratose laminal cells which are seemingly papillose when viewed in transverse section due to numerous cuticular lamellae densely covering both surfaces of the leaf and making them appear rugged; (*2*) plane to distally incurved leaf margins; (*3*) markedly differentiated perichaetial leaves; and (*4*) the lack of an annulus which may only occasionally be indistinct

and persistent. The name *Hymenoloma* was used for a monotypic genus described by Dusén (1905) from western Patagonia which was considered to be closely related to *Dicranoweisia*, the only distinctive difference being the presence of a prominent prostome. Reimers (1936) discussed the status of *Hymenoloma* in detail and merged it with *Dicranoweisia*, transferring its only species, *H. nordenskjoeldii*, to this genus. Cardot (1908) established the monotypic austral genus *Verrucidens*, typified by the Fuegian *V. turpis* and consisting of six species distributed in southern South America and on Subantarctic islands (Reimers 1936; Ochyra & Matteri 1996). *Verrucidens* was subsequently merged with *Hymenoloma* by Cardot & Brotherus (1923) who transferred its generitype to this genus. This taxonomic conclusion was inferentially confirmed by Ochyra (1999*b*) who found that *Verrucidens* shared all the diagnostic features of *Dicranoweisia* and therefore considered the two genera to be congeneric. The resurrection of *Hymenoloma* as a genus in its own right necessitates the following nomenclatural changes.

Hymenoloma alpinum (Mitt.) Ochyra, *comb. nov.*

Basionym: *Holomitrium alpinum* Mitt., J. Proc. Linn. Soc. Bot.1: 25. 1859.

Hymenoloma antarcticum (Müll.Hal.) Ochyra, *comb. nov.*

Basionym: *Blindia antarctica* Müll.Hal., Syn. Musc. Frond. 1: 344. 1848.

Hymenoloma austrocrispulum (Müll.Hal.) Ochyra, *comb. nov.*

Basionym: *Blindia austrocrispula* Müll.Hal., Flora 68: 404. 1885 [‘austro-crispula’].

Hymenoloma brevifolium (Dixon & Herzog) Ochyra, *comb. nov*.

Basionym: *Dicranoweisia brevifolia* Dixon & Herzog *in* Herzog, Repert. Spec. Nov. Regni Veg. Beih. 108: 6. *t. 1, f. a–c*. 1938.

Hymenoloma brevipes (Müll.Hal.) Ochyra, *comb. nov.*

Basionym: *Blindia brevipes* Müll.Hal. *in* Neum., Int. Polarforsch. Deutsch. Exped. 2: 300. 1889.

Hymenoloma brevisetum (Cardot) Ochyra, *comb. nov.*

Basionym: *Dicranoweisia breviseta* Cardot, Bull. Herb. Boissier Sér. 2, 5: 998. 1905.

Hymenoloma compactum (Schwägr.) Ochyra, *comb. nov.*

Basionym: *Weisia compacta* Schwägr., Sp. Musc. Frond. Suppl. 1(1): 74. 1811.

Hymenoloma conterminum (Renauld & Cardot) Ochyra, *comb. nov.*

Basionym: *Dicranoweisia contermina* Renauld & Cardot *in* Holz., Contr. U. S. Natl. Herb. 3: 269. 1895.

Hymenoloma crispulum (Hedw.) Ochyra, *comb. nov.*

Basionym: *Weissia crispula* Hedw., Sp. Musc. Frond.: 68, *t. 12, f. 1–6*. 1801.

Hymenoloma dryptodontoides (Müll.Hal.) Ochyra, *comb. nov.*

Basionym: *Blindia dryptodontoides* Müll.Hal., Bot. Jahrb. Syst. 5: 79. 1883.

Hymenoloma funiculipes (Cardot & Broth.) Ochyra, *comb. nov.*

Basionym: *Dicranoweisia funiculipes* Cardot & Broth., Kongl. Svenska Vetensk. Akad. Handl. 63(10): 9, *t. 1, f. 8*. 1923.

Hymenoloma grimmiaceum (Müll.Hal.) Ochyra, *comb. nov.*

Basionym: *Blindia grimmiacea* Müll.Hal. *in* Neum., Int. Polarforsch. Deutsch. Exped. 2: 299. 1889.

Hymenoloma immersum (Broth.) Ochyra, *comb. nov.*

Basionym: *Dicranoweisia immersa* Broth. *in* Dryg., Deutsche Südpolar-Exoed. 1901–1903, 8: 86, *t. 7, f. 2*. 1906.

Hymenoloma indicum (Wilson.) Ochyra, *comb. nov.*

Basionym: *Weissia indica* Wilson *in* Mitt. & Wilson, Hooker's J. Bot. Kew Gard. Misc. 9: 291. 1857.

Hymenoloma insulare (Mitt.) Ochyra, *comb. nov.*

Basionym: *Grimmia insularis* Mitt., J. Linn. Soc. Bot. 15: 73. 1876.

Hymenoloma intermedium (J.J.Amann) Ochyra, *comb. nov.*

Basionym: *Dicranoweisia intermedia* J.J.Amann, Fl. Mouss. Suisse 2: 372. 1918.

Hymenoloma jugelliferum (Dusén) Ochyra, *comb. nov.*

Basionym: *Dicranoweisia jugellifera* Dusén, Ark. Bot. 4(1): 17, *t. 5, f. 1–15*. 1905.

Hymenoloma macrosporum (Reimers) Ochyra, *comb. nov.*

Basionym: *Verrucidens macrosporus* Reimers, Notizbl. Bot. Gart. Berlin-Dahlem 13: 48. 1936.

Hymenoloma subinclinatum (Müll.Hal.) Ochyra, *comb. nov.*

Basionym: *Blindia subinclinata* Müll.Hal. *in* Neum., Int. Polarforsch. Deutsch. Exped. 2: 300. 1889.

Hymenoloma subtortifolium (Broth.) Ochyra, *comb. nov.*

Basionym: *Blindia subtortifolia* Broth. *in* Dryg., Deutsche Südpolar-Exoed. 1901–1903, 8: 85, *t. 7, f. 1*. 1906.

Hymenoloma tortifolium (Hook.f. & Wilson) Ochyra, *comb. nov.*

Basionym: *Weissia tortifolia* Hook.f. & Wilson, London J. Bot. 3: 540. 1844.

[127] *Campylostelium saxicola* displays remarkable differences in its peristome structure and in Poland, as elsewhere in Europe, two distinct tooth morphologies may be observed. In most handbooks and floras (e.g., Bruch *et al*. 1846; Limpricht 1890) the teeth are described and illustrated as being deeply and often irregularly divided into two filiform prongs. On the other hand, some populations have undivided teeth and such plants were illustrated, for example, by Maier (1998, fig. 3f–g). Noguchi (1950) described *C. saxicola* var. *brachycarpum* from Japan which is primarily diagnosed by its undivided and loosely

arranged peristome teeth. This variety has recently been elevated to species rank by Iwatsuki *et al*. (1999) who, additionally, reported it from Illinois in the eastern United States. When revising North American collections of *Campylostelium*, W.R. Buck studied also some European collections and discovered that *C. brachycarpum* occurs also in Poland (Buck, personal communication of 18 April 2000). He found additionally that the American plants of this species had a more obtuse leaf apex than would appear to be the case in European material. Upon examining a number of additional specimens of *C. saxicola* from Poland we found some in the Carpathians and Sudetes which had undivided peristome teeth. This feature is also clearly seen on the drawing of Maier (1998) which is based upon a specimen from the Silesian Beskid in the Polish Western Carpathians. Nonetheless, for several reasons we are reluctant to put *C. brachycarpum* in the list of Polish mosses until a thorough revision of European material is done. Firstly, *C. saxicola* (*Dicranum saxicola*) has to be typified, although it is necessary to state that Weber & Mohr (1807) in the original description emphasized that the peristome teeth are "... vix infra medium bifidi, cruribus inflexis", so this statement seems to confirm the correctness of the common interpretation of this species. Secondly, Schwägrichen (1811) described a new species, *Grimmia geniculata*, from material collected from Poland and Germany, which was soon considered to be conspecific with *C. saxicola* (Bridel 1826). The original description of *G. geniculata* was accompanied by a good coloured plate with illustrations which clearly indicated undivided peristome teeth in this species. Thirdly, it is necessary to examine variability in the shape of the peristome teeth in European populations, although preliminary observations show that undivided peristome teeth occur consistently within a single capsule, but plants with both types of peristome may occur in mixed stands. Finally, it is very likely that European populations with undivided peristome teeth represent a taxon different from *C. brachycarpum*. In the latter, the teeth are rodlike and loosely arranged, whereas in European plants the teeth are densely arranged and gradually taper from a broad triangular base into a long filiform point. Additional support for this assumption may be the different leaf apex shape in the Asian and American *C. brachycarpum* and the European *C. "geniculatum"*.

[128] The subfamilial classification of the Grimmiaceae is still unresolved and in considerable flux. In the first edition of the Musci in *Die Natürlichen Pflanzenfamilien* Brotherus (1902) divided the family into three subfamilies, Scoulerioideae, Grimmioideae and Ptychomitrioideae, but in the second edition of the Musci in this series (Brotherus 1924) the last subfamily was excluded from the Grimmiaceae and elevated to family rank and placed in the remote order Isobryales (Brotherus 1925). The initial concept of Brotherus (1902) was resurrected by Churchill (1981) but, for a change, he excluded the Scoulerioideae which he considered to be a fimily in its own right. In addition, he recognized a new subfamily Coscinodointoideae for several small genera, namely *Coscinodon*, *Jaffueliobryum*, *Cosconodontella* and *Aligrimmia*, and transferred *Racomitrium* to the Ptychomitrioideae. In the present treatment the family is divided into two subfamilies, Grimmioideae and Racomitrioideae, which correspond well to the two different peristome morphologies represented, at one extreme, by a *Schistidium* type peristome and at

the other, by a *Racomitrium* type. Following traditional usage, *Coscinodon* is retained in the type subfamily. The only diagnostic character of the subfamily Coscinodontoideae as defined by Churchill (1981) is the plicate calyptra. All gametophyte characters considered to be diagnostic for this subfamily *Coscinodon* and its allies share with *Grimmia*, so the subfamily itself seems to be weakly founded.

[129] As presently understood, *Grimmia* is an unnatural and polyphyletic taxon consisting of several distinct groups which are well-defined by sporophyte and gametophyte characters. They have been variously considered by bryologists, mostly as subgenera (Schimper 1856; Limpricht 1890; Brotherus 1902, 1924; Hagen 1909; Loeske 1913; Jones 1933), sections (Nyholm 1956, 1998) or unranked groups (Loeske 1930). The best known and commonly accepted infrageneric classification of *Grimmia* was presented by Hagen (1909) who subsequently based it largely on the system of Schimper (1856). Hagen's (1909) classification has become widely known thanks to Brotherus (1924) who popularized it in the second edition of the Musci in the *Die natürlichen Pflanzenfamilien* series. In this system *Grimmia* was subdivided into seven subgenera, namely subg. *Litoneurum* I.Hagen, subg. *Guembelia* (Hampe) Schimp., subg. *Hydrogrimmia* I.Hagen, subg. *Rhabdogrimmia* Limpr., subg. *Schistidium* (Brid.) Schimp., subg. *Gasterogrimmia* Schimp. and subg. *Streptocolea* I.Hagen. At least two of them, *Hydrogrimmia* and *Schistidium*, have been recognized as genera in their own right and these have gained wide acceptance in modern bryology (e.g., Mårtensson 1956; Savicz-Ljubitskaya & Smirnova 1970; Koponen *et al*. 1977; Ochyra & Szmajda 1978; Deguchi 1978; Corley *et al*. 1981; Churchill 1981; Duell 1984; Greven 1995; Blom 1996; Ignatov & Ignatova 2003). The remaining subgenera also represent monophyletic assemblages which deserve separate generic status as strongly argued, among others, by Churchill (1981), Cao & Vitt (1986) and Muñoz (1998*a*). Strictly speaking, other subgenera of *Grimmia* were also given generic status by Buysson (1883) who split the genus into four, namely *Schistidium*, *Gasterogrimmia*, *Eugrimmia* and *Guembelia*. This concept has been totally forgotten but these genera correspond well to the aforementioned subgenera in the system of Hagen (1909). *Eugrimmia* is a rough equivalent of subg. *Rhabdogrimmia* but for strictly nomenclatural reasons only it must be considered an illegitimate name according to Art. 7.4 of the Code (Greuter *et al*. 2000) and is a taxonomic synonym of *Grimmia*.

In the present treatment, *Grimmia*, in the traditional circumscription of Hagen (1909) and Brotherus (1924), is split into seven genera, although it is very likely that further studies will provide evidence that some species or small groups of species may also deserve separate generic status. Actually, five of these have already been described as separate genera and have been in use during various historical periods. Here they are simply resurrected from oblivion. Consequently, only two new generic names have to be introduced to accommodate species placed by Hagen (1909) and Brotherus (1924) in subg. *Guembelia* and subg. *Streptocolea*. Muñoz (1998*a*) pointed out that for strictly nomenclatural reasons subg. *Guembelia* should correctly be called subg. *Orthogrimmia* Schimp. because subg. *Guembelia*, which is based on the generic name *Guembelia* Hampe, is lectotypified with *Grimmia elliptica* Funck (=*G. ovalis*) which belongs to a different subgenus called *Litoneurum* by Hagen (1909) and Brotherus (1924).

Orthogrimmia (Schimp.) Ochyra & Żarnowiec, *stat. et comb. nov*.

Basionym: *Grimmia* Hedw. subg. *Orthogrimmia* Schimp., Coroll. Bryol. Eur.: 48. 1856. — LECTOTYPE (*see* Muñoz 1998*a*: p. 375): *Orthogrimmia donniana* (Sm.) Ochyra & Żarnowiec (*Grimmia donniana* Sm.).

Many authors have stressed the isolated taxonomic position of *Grimmia atrata* Hoppe & Hornsch. and have usually placed it in the separate genus *Dryptodon* (e.g., Limpricht 1890; Roth 1904; Loeske 1930; Jensen 1939; Podpěra 1954; Savicz-Ljubitskaya & Smirnova 1970) or in a subgenus of *Grimmia* (Hagen 1909; Brotherus 1924), while Vilhelm (1923) established for it the separate subgenus *Atratodryptodon* within *Dryptodon*. Alas, for strictly nomenclatural reasons, *Dryptodon* cannot serve as a home for this species because this generic name is lectotypified with *Dryptodon patens* (Hedw.) Brid. (Ochyra *et al*. 1988*u*) and is used as a generic name for the group of species belonging to subg. *Rhabdogrimmia* sensu Hagen (1909). Therefore, following the suggestion of Mårtensson (1956), subg. *Streptocolea* is raised here to genus rank to accommodate *Grimmia atrata*. *Streptocolea* is at once distinct by a combination of unique characters including the sinistrorse vaginula, the differentiated alar cells forming a bistratose, often hyaline group and the peculiar shape of the annulus with its paradental uniseriate cell row at the insertion of the peristome (see Maier 2002, *f. 3.23*). In addition, the leaves are lanceolate-lingulate, muticous, obtuse, keeled above and canaliculate below, and the costa is semi-elliptic in transverse section.

Streptocolea (I.Hagen) Ochyra & Żarnowiec, *stat. et comb. nov*.

Basionym: *Grimmia* Hedw. subgenus *Streptocolea* I.Hagen, K. Norsk. Vid. Selsk. Skrift. 1909(5): 6, 69. 1909. — TYPE: *Streptocolea atrata* (Miel. *ex* Hornsch.) Ochyra & Żarnowiec, *comb. nov*. (Basionym: *Grimmia atrata* Miel. *ex* Hornsch., Flora 2: 85. 1819).

It is worth noting that *Streptocolea atrata* has not yet been recorded from Poland, but its discovery in the country is probable, especially in the Giant Mountains (=Karkonosze) in the Sudetes where it grows on the Czech side of Mt Śnieżka (Vilhelm 1923; Pilous & Duda 1960).

All genera segregated from the all-encompassing genus *Grimmia* may be recognized using the following key.

1. Capsules immersed, strongly asymmetric and gibbous at base; setae curved, eccentrically attached to the capsule ..... *Grimmia*
1. Capsules immersed, emergent or exserted, symmetric; seta straight, flexuose or arcuate, centrally attached to the capsule 2
   2. Capsules always immersed, systylious (except for *Schistidium trichodon*); calyptrae small, not reaching the capsule mouth..... *Schistidium*
   2. Capsules emergent to exserted, rarely immersed, with persistent columella; calyptrae larger, reaching beyond the capsule mouth 3
3. Alar cells differentiated, bistratose, often hyaline; vaginula spirally twisted; annulus with a single row of paradental cells with characteristic incrassate stalks..... *Streptocolea*
3. Alar cells not differentiated, unistratose; vaginula not twisted; paradental cells of annulus lacking..... 4

4. Leaf margins recurved on one or both sides; setae arcuate or flexuose, occasionally short and straight; capsules striate-ribbed to rugose-plicate..... *Dryptodon*
4. Leaf margins plane to incurved; setae straight, rarely curved; capsules smooth..... 5
5. Leaves canaliculate to carinate; costa strong, semi-terete, prominent dorsally, sharply delimited from the laminal cells ..... *Orthogrimmia*
5. Leaves concave; costa weak or strong but indistinctly demarcated from the laminal cells..... 6
6. Leaves soft, broadly ovate, rounded-obtuse and often cucullate at the apex; costa narrow, distinct, subpercurrent, semi-rounded and weakly convex dorsally ..... *Hydrogrimmia*
6. Leaves rigid, ovate to ovate-lanceolate, acute to acuminate, not cucullate; costa broad but indistinct, percurrent, semi-elliptic, not prominent dorsally ..... *Guembelia*

Serving as a catch-all genus, *Grimmia* was a very large and notoriously difficult one. Although well over 1300 taxa were ascribed names within this genus, about five hundred of them referred to taxa which do not belong to it in its present circumscription. Yet, until recently, over 800 taxa had been retained in this genus (Wijk *et al*. 1962, 1969). *Grimmia* has been a focus of special interest of bryologists in the last decade and as a result of careful taxonomic assessment many taxa have been transferred to other genera, mostly *Schistidium* (Ochyra 1998*a*; Ochyra & Muñoz 2000) and a great number of taxon names have been reduced to synonymy. The total number of species in *Grimmia* is still difficult to evaluate. Muñoz & Pando (2000) in their world synopsis of *Grimmia* recognized 71 species, whereas Greven (2003) in his worldwide taxonomic treatment of this genus distinguished 93 species including nine new to science. This remarkable difference in the number of species is mostly a result of different interpretations of some species.

The generic name *Grimmia* is lectotypified by *G. plagiopodia* (Mårtensson 1956). Consequently, as a result of splitting into the aforementioned segregates, *Grimmia* has become a small, oligotypic genus characterized by cygneous and asymmetrically attached setae and asymmetric capsules due to the ventricose base on one side. This group corresponds to subg. *Gasterogrimmia* of Bruch *et al*. (1845), Schimper (1856), Hagen (1909) and Brotherus (1924) and genus *Gasterogrimmia* of Buysson (1883), but both names are illegitimate because they include the lectotype-species of the generic name *Grimmia*. It consists of only eight species, namely *G. plagiopodia*, *G. anodon*, *G. crinita* Hedw., *G. americana* E. B. Bartram, *G. poecilostoma* Cardot & Sebille, *G. incrassicapsulis* B.G.Bell, *G. pitardii* Corb. and *G. trinervis* R.S.Williams, although it is worth noting that the taxonomic placement of the last two species is debatable and some authors place them respectively in the genera *Campylostelium* (Maier 1998) and *Coscinodon* (Hastings 1996). It appears useful at this point to recommend to users two important publications dealing with *Grimmia* s.lato, namely lectotypifications of Central European *Grimmia* species (Geissler & Maier 1995) and a key to European *Grimmia* species (Maier & Geissler 1995).

Grimmia Hedw., Sp. Musc. Frond.: 75. 1801. — LECTOTYPE (*fide* Mårtensson 1956: pp. 106–107): *Grimmia plagiopodia* Hedw.

Grimmia Hedw. subg. *Gasterogrimmia* Schimp., Coroll. Bryol. Eur.: 46. 1856. – *Grimmia* sectio *Gasterogimmia* (Schimp.) Braithw., London J. Bot. 10: 195. 1872. – *Gasterogrimmia* (Schimp.)

Buyss., Feuille Jeunes Naturalistes 13: 63. 1883. – *Grimmia* Hedw. subsectio *Gasterogrimmia* (Schimp.) G.N.Jones *in* Grout, Moss Fl. N. Amer. 2: 5, 22. 1933, *nom. illeg. incl. lectotyp. gen.*

Eugrimmia Buyss., Feuille Jeunes Naturalistes 13: 64. 1883, *nom. illeg.*: Art. 7.4.

Grimmia Hedw. subgenus *Gastrogrimmia* I.Hagen, K. Norsk. Vid. Selsk. Skrift. 1909(5): 6, 68. 1909, *orthogr. pro* Gasterogrimmia.

Grimmia Hedw. sectio *Gastro-Grimmia* Podp., Consp. Musc. Eur.: 274. 1954, *orthogr. pro* Gasterogrimmia.

Usmania Laz., Dopov. Akad. Nauk Ukrainsk. RSR 11: 1039. 1970. — HOLOTYPE: *Usmania campylopoda* Laz. (=*Grimmia pitardii* Corb.)

[130] *Dryptodon* is the largest segregate of the genus *Grimmia* which is primarily characterized by variously curved setae; symmetric, mostly ribbed and exserted capsules; canaliculate to strongly keeled leaves with margins recurved to varying degrees and semi-terete to reniform and distinctly differentiated costae which are strongly projected on the dorsal side. However, this combination of characters does not occur in all species of the genus which also contains species with straight setae and smooth capsules, for example, *D. elongatus* and *D. lesherae*, placed here on account of their recurved leaf margins. There are also some species with very short, straight setae resulting in immersed capsules, for instance *D. molestus* and *D. pseudanodon* which, however, have recurved and plane leaf margins, respectively, but otherwise appear to be closely related taxa. These species certainly need further studies which should throw more light on their relationships.

Dryptodon was established as a separate genus by Bridel (1826–1827) who initially placed in it some 17 species but in the supplement to Vol. 1 of *Bryologia universa* (which is bound with Vol. 1 but published in 1827) he refined the concept of this genus when removing from it *D. fontinaloides* (Hook.) Brid. which was transferred to the newly described genus *Hydropogon*. At the same time he added some eight species to the genus. Bridel (1826–1827) subsequently divided the genus into two groups, *Curviseti* and *Rectiseti*, which were not formally described, although one may easily assume that they refer to groups of species with curved and straigt setae. The vast majority of species placed originally in *Dryptodon* truly belonged to *Grimmia* subg. *Rhabdogrimmia* sensu Hagen (1909) and only relatively few species were representatives of modern genera such as *Racomitrium*, *Campylostelium* and *Cynodontium*. Nonetheless, the generic name *Dryptodon* has been variously interpreted by bryologists, mostly because for a long time it was not lectotypified. Quite often it served as a home for *Grimmia atrata* (e.g., Limpricht 1890; Roth 1904; Loeske 1930; Jensen 1939; Podpěra 1954; Savicz-Ljubitskaya & Smirnova 1970), although nomenclaturally this was inadmissible because Bridel (1826–1827) did not place this species in the original concept of *Dryptodon* and retained it in *Grimmia*. The other frequent option has been the consideration of *Dryptodon* as a monotypic genus for *D. patens* (e.g., Ochyra & Szmajda 1978; Corley *et al*. 1981; Duell 1984; Ignatov & Afonina 1992) and this interpretation was corroborated by formal lectotypification of the generic name with this species (Ochyra *et al*. 1998*u*). Because there has been a considerable divergence of opinion about the relationship of *D. patens* (for a review see Deguchi 1978), *Dryptodon* as thus understood was considered to be an intermediate genus between *Grimmia* and *Racomitrium* (Crundwell 1971). However, it appears that the *Racomitrium*-like characters

of *D. patens* including the presence of a basal membrane on the peristome, deeply divided peristome teeth and general appearance of the plants can also be traced easily in *Grimmia* s.lato, so their diagnostic value is doubtful. Deguchi (1978) stated that *D. patens* has nodulose walls of the epidermal cells of the vaginula and this would be a strong indicator of an affinity of the species to *Racomitrium*. However, the epidermal cells of the vaginula are thick- but straight-walled and never sinuose-walled like those in species of *Racomitrium* s.lato, so this character also does not provide a strong argument for the unique position of this species. One of the most peculiar features of *D. patens* which is often stressed is the presence of wings on the dorsal surface of the costa. However, weakly winged costae can also be observed in some phenotypes of *Grimmia hartmanii* (Loeske 1930; Bednarek-Ochyra 1996) with which *D. patens* seems to be most closely related. They also share ribbed capsules, curved setae and divided peristome teeth. Therefore, we do not see any reasons why many species originally placed in *Dryptodon* by Bridel (1826–1827) with curved setae and ribbed capsules could not be placed in a single genus.

As presently understood *Dryptodon* is a large genus of about 45 species distributed worldwide. Interestingly, the majority of European species were given names under this generic name and only a small number of exotic species have to be transferred to *Dryptodon*. The infrageneric classification of *Dryptodon* needs careful study and here the traditional classification of this group which accommodates only European species is tentatively accepted. *Grimmia* subg. *Rhabdogrimmia* is formally lectotypified with *G. pulvinata* and is considered synonymous with *Dryptodon*. It is worth noting that the other generic name candidate for this group is *Trigonodictyon* Dixon & P.de la Varde which was used for a monotypic genus from India (Potier de la Varde 1928), comprising a single species, *T. indicum*, which proved to be a *Grimmia* of subg. *Rhabdogrimmia* (Greven & Koponen 1996; Goffinet & Greven 2000).

Dryptodon Brid., Bryol. Univ. 1: 191. 1826. — LECTOTYPE (*fide* Ochyra *et al*. 1988: p. 246).

Grimmia subgenus *Rhabdogrimmia* Limpr., Laubm. Deutschl. 1: 759. 1889, ***syn. nov.*** – LECTOTYPE (selected here): *Grimmia pulvinata* (Hedw.) Sm.

Trigonodictyon Dixon & P.de la Varde in P.de la Varde, Ann. Crypt. Exot. 1: 40. 1928, ***syn. nov.*** — TYPE: *Trigonodictyon indicum* Dixon & P.de la Varde.

Dryptodon arcuatifolius (Kindb.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia arcuatifolia* Kindb., Bull. Torrey Bot. Club 16: 93. 1889.

Dryptodon austrofunalis (Müll.Hal.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia austrofunalis* Müll.Hal., Hedwigia 37: 165. 1898.

Dryptodon bicolor (Herzog) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia bicolor* Herzog, Beih. Bot. Centralbl. 26(2): 66. 1909.

Dryptodon brachydictyon (Cardot) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Racomitrium patens* (Hedw.) Huebener var. *brachydictyon* Cardot, Bull. Herb. Boissier Sér. 2, 8: 333. 1908.

Dryptodon capillatus (De Not.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia capillata* De Not., Mem. Reale Accad. Sci. Torino 39: 248. 1836.

Dryptodon curvisetus (Bouman) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia curviseta* Bouman, J. Bryol. 16: 379. *f. 1.* 1991.

Dryptodon dissimulatus (E.Maier) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia dissimulata* E.Maier, Candollea 56: 282, *f. 1.1–23 & 5.1–3.* 1991.

Dryptodon fuscoluteus (Hook.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia fuscolutea* Hook., Musci Exot. 1: *t. 63*. 1818.

Dryptodon handelii (Broth.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia handelii* Broth., Akad. Wiss. Wien Sitzungsber., Math.-Naturwiss. Kl., Abt. 1, 133: 567. 1924.

Dryptodon herzogii (Broth.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia herzogii* Broth. *in* Herzog, Biblioth. Bot. 87: 55. 1916.

Dryptodon humilis (Mitt.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia humilis* Mitt., J. Linn. Soc. Bot. 12: 100. 1869.

Dryptodon indicus (Dixon & P.de la Varde) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Trigonodictyon indicum* Dixon & P.de la Varde, Ann. Cryptog. Exot. 1: 40. *f. 3*. 1928.

Dryptodon leibergii (Paris) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia leibergii* Paris, Index Bryol.: 528. 1896.

Dryptodon lesherae (Greven) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia lesherae* Greven, Grimmias World: 130. *f. 43*. 2003.

Dryptodon macrotheca (Mitt.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia macrotheca* Mitt., J. Proc. Linn. Soc. Bot. Suppl. 1: 44. 1859.

Dryptodon mauiensis (Greven) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia mauiense* Greven, Grimmias World: 148, *f. 52*. 2003.

Dryptodon maunakeaensis (Greven) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia maunakeaense* Greven, Grimmias World: 150, *f. 53*. 2003.

Dryptodon meridionalis (Müll.Hal.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia trichophylla* Grev. var. *meridionalis* Müll.Hal., Syn. Musc. Frond. 1: 785. 1849.

Dryptodon molestus (J.Muñoz) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia molesta* J.Muñoz, Ann. Missouri Bot. Gard. 86: 15. *f.* 24. 1999.

Dryptodon navicularis (Herzog) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia navicularis* Herzog, Beih. Bot. Centralbl. 26(2): 65. 1909.

Dryptodon nepalensis (Mitt.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia nepalensis* Mitt., J. Proc. Linn. Soc. Bot. Suppl. 1: 46. 1859.

Dryptodon nutans (Bruch) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia nutans* Bruch, Flora 12: 390. 8. 1829.

Dryptodon ochyrianus (J.Muñoz) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia ochyriana* J.Muñoz, Nova Hedwigia 66: 235, *f. 1–11*. 1998.

Dryptodon olneyi (Sull.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia olneyi* Sull., Mus. Hep. U.S. (reprint): 37. 1856 (X).

Dryptodon orbicularis (Bruch *ex* Wilson) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia orbicularis* Bruch *ex* Wilson, Engl. Bot. Suppl. 4: *pl. 2888*. 1844.

Dryptodon percarinarus (Dixon & Sakurai) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Didymodon percarinatus* Dixon & Sakurai *in* Sakurai, Bot. Mag. (Tokyo) 50: 516. 1936.

Dryptodon piliferus (P.Beauv.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia pilifera* P.Beauv., Prodr. Aethéogam.: 58. 1805.

Dryptodon pseudoanodon (Deguchi) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia pseudoanodon* Deguchi *in* Inoue, Stud. Cryptog. S. Peru: 29, *pl. 11*. 1987 [‘pseudo-anodon’].

Dryptodon pullus (Cardot) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia pulla* Cardot, Rev. Bryol. 36: 106. 1909.

Dryptodon reduncus (Mitt.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia redunca* Wilson *ex* Mitt., J. Proc. Linn. Soc. Bot. Suppl. 1: 43. 1859.

Dryptodon tortuosus (Hook.f. & Wilson) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia tortuosa* Hook.f. & Wilson, London J. Bot. 3: 540. 1844.

[131] For distribution of *Dryptodon patens* in Poland see Ochyra *et al*. (1990*b*).

[132] So far, *Dryptodon anomalus* is known only from the Gorce Range in the Western Carpathians (Lisowski & Kornaś 1966).

[133] ***Dryptodon*** Brid. sectio ***Pulvinati*** (Bruch & Schimp.) Ochyra & Żarnowiec, *comb. nov*.

Basionym: *Grimmia* Hedw. sectio *Pulvinati* Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 3: 113. 1845 [Fasc. 25–28 Mon.: 11]. — TYPE: *Dryptodon pulvinatus* (Hedw.) Brid. (*Fissidens pulvinarus* Hedw.).

[134] ***Dryptodon*** Brid. sectio ***Trichophylli*** (Bruch & Schimp.) Ochyra & Żarnowiec, *comb. nov*.

Basionym: *Grimmia* Hedw. sectio *Trichophylli* Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 3: 116. 1845 [Fasc. 25–28 Mon.: 14]. — TYPE: *Dryptodon trichophyllus* (Grev.) Brid. (*Grimmia trichophylla* Grev.).

[135] It is very unfortunate and misleading that the epithet *incurvus* was used for two closely related but definitely distinct species. Schwägrichen (1811) described *Grimmia incurva* and this name refers to a widespread montane moss with strongly crisped leaves. Eight years later, Hornschuch (1819) described *Trichostomum incurvum* which also belongs to *Grimmia* in the modern sense. Hence, the transfer of the latter species to *Grimmia* required a change of epithet because *incurvus* had already been taken up in Schwägrichen's (1811) species name. Therefore Balsamo & De Notaris (1838) introduced *Grimmia elatior* as a replacement for *Trichostomum incurvum* within the genus *Grimmia*. When establishing the genus *Dryptodon*, Bridel (1826) transferred to it *Trichostomum incurvum* of Hornschuch (1819), i.e. *Grimmia elatior* in the modern sense, but he retained *Grimmia incurva* of Schwägrichen (1811) in its original generic placement. At the same time Bridel (1826) transferred to *Dryptodon* another distinct species *Dicranum contortum* of Wahlenberg (1814). The status of this species long remained uncertain and Bruch *et al*. (1845) considered it tentatively to be conspecific with *Grimmia uncinata* Kaulf. However, Müller (1849) showed that *Dicranum contortum* was identical to *Grimmia incurva* and the conspecificity of these species has subsequently been accepted beyond doubt (Muñoz & Pando 2000). Consequently, upon its transfer to *Dryptodon* the species which had been widely known as *Grimmia elatior* has to be named *Dryptodon incurvus*, whereas the species commonly known as *Grimmia incurva* must be called *Dryptodon contortus*.

[136] *Grimmia elongata* occupies an isolated position within *Dryptodon* and differs from other congeners in, amongst others, its straight setae and smooth capsules. However, it has a markedly protruding, semi-terete costa on the dorsal surface and recurved leaf margins and these characters support its placement in *Dryptodon*. Several extra-European species showing a similar set of characters are also here placed in *Dryptodon*, for instance *D. piliferus*, *D. molestus* and *D. tortuosus* from Latin America (Muñoz 1999) and *D. lesherae* and *D. maunakeaensis* from California and the Hawaiian Islands (Greven 2003), but their relationships still need critical study. Therefore the separate section *Elongati* is here preliminarily established to contain these discordant elements.

Dryptodon Brid. sectio ***Elongati*** Ochyra & Żarnowiec, *sect. nov.*

Folia lanceolata, rigidula, inferiora mutica, superiora pilo brevissimo instructa, canaliculato-concava, apicem versus margine leniter incrassato ad medium recurva, costis distinctis, in sectione

transversali semi-teretibus, dorso fortiter convexis. Capsula minutula, ovalis, in pedicello stricto longius exserta. — TYPE: *Dryptodon elongatus* (Kaulf.) Hartm.

[137] ***Dryptodon*** Brid. sectio ***Torquati*** (I.Hagen) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia* Hedw. sectio *Torquatae* I.Hagen, K. Norsk. Vid. Selsk. Skrift. 1909(5): 50. 1909.

[138] The treatment of the genus *Orthogrimmia* follows a worldwide revision by Muñoz (1998*a* as *Grimmia* subg. *Orthogrimmia*). The genus is characterized by straight or only occasionally curved setae, symmetric and smooth capsules, canaliculate to strongly carinate leaves with plane, erect to incurved margins (only very seldom narrowly recurved) and sharply delimited costae which are semi-terete in transverse section and project prominently on the dorsal surface. *Orthogrimmia* corresponds to *Grimmia* subg. *Guembelia* sensu Hagen (1909), but the latter name has to be used for another subgenus of *Grimmia* because Pfeiffer (1874) lectotypified *Guembelia* with *Grimmia elliptica* Funck. This name is a synonym of *Grimmia ovalis* (Hedw.) Lindb. which belongs to *Grimmia* subg. *Litoneurum* sensu Hagen (1909). Hence, the oldest available name for this group is *Grimmia* subg. *Orthogrimmia* which was introduced by Schimper (1856).

Orthogrimmia is a small genus of 14 species which are distributed worldwide, but most species are restricted to the Northern Hemisphere. The genus is subdivided into two sections, the type section which comprises species with a simple and persistent peristome and sect. *Montanae* containing species with a compound and revoluble peristome.

Orthogrimmia (Schimp.) Ochyra & Żarnowiec *in* Ochyra, Żarnowiec & Bednarek-Ochyra, Cens. Cat. Polish Moss.: 118. 2003.

Orthogrimmia sectio ***Montanae*** (I.Hagen) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia* Hedw. sectio *Montanae* I.Hagen, K. Norsk. Vid. Selsk. Skrift. 1909(5): 16. 1909.

Orthogrimmia alpestris (Schleich *ex* F.Weber & D.Mohr) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Trichostomum pulvinatum* (Hedw.) F.Weber & D.Mohr var. *alpestre* F.Weber & D.Mohr, Bot. Taschenb.: 110. 1807.

Orthogrimmia arenaria (Hampe) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia arenaria* Hampe, Linnaea 10: 405. 1836.

Orthogrimmia argyrotricha (Müll.Hal.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia argyrotricha* Müll.Hal., Flora 73: 485. 1890.

Orthogrimmia asperitricha (Dixon & Sainsbury) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia asperitricha* Dixon & Sainsbury *in* Sainsbury, Trans. Roy. Soc. New Zealand 75: 173. 1945.

Orthogrimmia caespiticia (Brid.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Campylopus caespiticius* Brid., Muscol. Recent. Suppl. 4: 77. 1819.

Orthogrimmia donniana (Sm.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia donniana* Sm., Engl. Bot. 18: *pl. 1259*. 1804.

Orthogrimmia grisea (Cardot) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia grisea* Cardot, Bull. Herb. Boissier Sér. 2, 6: 7. 1906.

Orthogrimmia mariniana (Sayre) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia mariniana* Sayre, Bryologist 58: 323, *f. 1*. 1955.

Orthogrimmia montana (Bruch & Schimp.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia montana* Bruch & Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 3: 128, *pl. 250*. 1845 [Fasc. 25–28. Mon.: 26, *pl. 14*].

Orthogrimmia nivalis (Kindb.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia nivalis* Kindb., Bull. Torrey Bot. Club 17: 271. 1890.

Orthogrimmia sessitana (De Not.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia sessitana* De Not., Atti Reale Univ. Genova 1: 704. 1869.

Orthogrimmia shastai (Greven) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia shastai* Greven, Grimmias World: 208, *f. 82*. 2003.

Orthogrimmia triformis (Carestia & De Not.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia triformis* Carestia & De Not., Cronac. Briol. Ital. 1: 16. 1866.

Orthogrimmia ungeri (Jur.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia ungeri* Jur., Ins. Cypern: 169. 1865.

[139] Muñoz (1998*a*, 1999) and Ochyra (1998*a*) used the name *Grimmia reflexidens* for this species which was described from Chilean material (Müller 1849). However, after detailed analysis of the type material of this species, Maier (2002) pointed out correctly that it represented a *Coscinodon*, not *Grimmia*. She also demonstrated that *Guembelia lamellosa* Müll.Hal., another potential candidate as a name for this species was in fact *Grimmia alpestris*. Hence, the oldest available name for the species remains *Grimmia sessitana*.

[140] *Guembelia* was recognized relatively early as a separate genus by E. Hampe (Müller 1846) who placed in it eight species all belonging to subgenera of *Grimmia* sensu Hagen (1909). Of these, only one species was given a name under *Guembelia*, namely *G. elliptica* which was selected as lectotype of this generic name (Pfeiffer 1874). The genus was subsequently adopted by Müller (1849) who placed in it ten species and later this author expanded the concept of *Guembelia* and added to it additional species, amongst others, species of the genus *Cinclidotus* (Müller 1851), thus making it a very unnatural assemblage of species. Schimper (1856) reduced *Guembelia* to a subgenus of *Grimmia*

and in this form the name has existed in the minds of bryologists, especially after Hagen (1909) and Brotherus (1924) approved it. However, it should be stressed that the two latter authors used this name incorrectly because, for strictly nomenclatural reasons, the name should be applied to subg. *Litoneurum*, whereas subg. *Guembelia* in the sense of these authors should be called subg. *Orthogrimmia* (see annotation No. 138). *Guembelia* is a distinct genus which is diagnosed by strongly concave leaves with plane, erect to incurved margins, poorly differentiated, semi-elliptic costae, straight setae and smooth capsules. It is a cosmopolitan genus, consisting of about 18 species.

Guembelia Hampe *in* Müll.Hal., Bot. Zeitung (Berlin) 4: 124. 1846 [‘Gümbelia’].

Grimmia Hedw. subg. *Guembelia* (Hampe) Schimp., Coroll. Bryol. Eur.: 46. 1856. – *Grimmia* Hedw. sectio *Guembelia* (Hampe) Mitt., J. Linn. Soc. Bot. 12: 96, 101. 1869. — LECTOTYPE (*fide* Pfeiffer 1874: pp. 1511): *Guembelia elliptica* (Funck) Hampe (*Grimmia elliptica* Funck) [=*Guembelia ovalis* (Hedw.) Müll.Hal.].

Grimmia subgenus *Litoneurum* I.Hagen, K. Norsk. Vid. Selsk. Skrift. 1909(5): 6, 10. 1909. – *Grimmia* Hedw. subsectio *Litoneurum* (I.Hagen) G.N.Jones *in* Grout, Moss Fl. N. Amer. 2: 5, 24. 1933. – *Grimmia* Hedw. sectio *Litoneurum* (I.Hagen) Nyholm, Ill. Fl. Nord. Mosses 4: 335. 1998, ***syn. nov.*** — LECTOTYPE (selected here): *Grimmia commutata* Huebener, *nom. illeg*. [=*Grimmia ovalis* (Hedw.) Lindb.].

Guembelia bernoullii (Müll.Hal.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia bernoullii* Müll.Hal., Bull. Herb. Boissier 5: 2000. 1897.

Guembelia crassifolia (Broth.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia crassifolia* Broth., Acta Soc. Fauna Fl. Fenn. 19(12): 84. 1892.

Guembelia hamulosa (Lesq.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia hamulosa* Lesq., Mem. Calif. Acad. Sci. 1: 14. 1868.

Guembelia involucrata (Cardot) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia involucrata* Cardot, Rev. Bryol. 36: 105. 1909.

Guembelia khasiana (Mitt.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia khasiana* Mitt., J. Linn. Soc. Bot. Suppl. 1: 45. 1859.

Guembelia kidderi (James) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia kidderi* James, Bull. Torrey Bot. Club 6: 54. 1875.

Guembelia laevigata (Brid.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Campylopus laevigatus* Brid., Muscol. Recent. Suppl. 4: 76. 1819.

Guembelia limprichtii (Kern) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia limprichtii* Kern, Rev. Bryol. 24: 56. 1897.

Guembelia longirostris (Hook.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia longirostris* Hook., Musci Exot. 1: *pl. 62*. 1818.

Guembelia macroperichaetialis (Greven) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia macroperichaetialis* Greven, Bryologist 101: 101, *f. 1*. 1998.

Guembelia mammosa (C.H.Gao & T.Cao) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia mammosa* C.H.Gao & T.Cao, Acta Bot. Yunnan. 3: 394. *f.* 4: 1–9. 1981.

Guembelia nevadensis (Greven) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia nevadensis* Greven, Bryologist 105: 273, *f. 1*. 2002.

Guembelia obtusolinealis (Müll.Hal.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia obtusolinealis* Müll.Hal., Flora 73: 484. 1890.

Guembelia serrana (J.Muñoz, Shevock & D.R.Toren) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia serrana* J.Muñoz, Shevock & D.R.Toren, J. Bryol. 24: 143. 2002.

Guembelia stenobasis (Dixon) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia stenobasis* Dixon *in* Christoph., Results Norweg. Sci. Exped. Tristan da Cunha 48: 23. 1960.

Guembelia teretinervis (Limpr.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia teretinervis* Limpr., Jahresber. Schles. Ges. Vaterl. Cult. 61: 216. 1884.

Guembelia unicolor (Hook.) Buyss., Feuille Jeunes Naturalistes 13: 63. 1883.

Guembelia wilsonii (Greven) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Grimmia wilsonii* Greven, J. Bryol. 20: 398, *f. 1*. 1998.

[141] The treatment of *Guembelia longirostris* follows Muñoz (1998*b*).

[142] For the taxonomy and geographical distribution of *Guembelia tergestina* see Nowak & Poelt (1979). The species is characterized, amongst other things, by short setae and symmetric capsules which are deeply immersed in the enlarged perichaetial leaves. In this character it resembles very much species of *Schistidium* and this prompted Żmuda (1912*b*) to describe some plants from the Tatras as *Schistidium sphaericum* (Schimp.) G.Roth var. *carpaticum* Żmuda. This variety was subsequently raised to species rank (Żmuda 1915*a*, *b*). However, in this taxon the columella is persistent in the capsule after dehiscence, whereas in *Schistidium* it usually falls off attached to the operculum. Bremer (1981) suggested an affinity of this taxon with *Grimmia anodon* but the symmetric capsule and straight seta immediately preclude such a relationship. *S. sphaericum* var. *carpaticum* represents a typical expression of *Guembelia tergestina* and, accordingly, the following new synonymy is proposed.

Guembelia tergestina (Tomm. *ex* Bruch & Schimp.) Buyss.

Schistidium sphaericum (Schimp.) G.Roth var. *carpaticum* Żmuda, Kosmos (Lvov) 37: 664. 1912. – *Schistidium carpaticum* (Żmuda) Żmuda, Rozpr. Wydz. Mat.-Przyr. Akad. Umiejętn. (Kraków) Ser. B, 55: 150. 1915 and Bull. Acad. Sci. Cracovie Cl. Sci. Math. Natur. Sér. B: Sci. Nat. 1915:

122. 1915. – *Schistidium apocarpum* (Hedw.) Bruch & Schimp. var. *carpaticum* (Żmuda) Podp., Consp. Musc. Eur.: 270. 1954. – *Schistidium pulvinatum* (Hedw.) Brid. var. *carpaticum* (Żmuda) Ochyra & Szmajda, Fragm. Florist. Geobot. 24: 142. 1978. — TYPE: [Poland] Tatry Zachodnie: Turnia Eljasza nad Miętusią dol.; na ścianach wapiennych wystawionych na południe ["Western Tatras. Turnia Eljasza over Miętusia Valley; on south facing calcareous walls"]. 2.VIII.1912. Zb. A. Żmuda [LECTOTYPE (selected here): KRAM!; ISOTYPES: distributed in *Bryotheca Polonica* Part 3 as No. 111 – BM, FH, PC (see Sayre 1971)], ***syn. nov.***

[143] For distribution of *Hydrogrimmia mollis* in Poland see Bednarek-Ochyra *et al*. (1990*b*).

[144] *Schistidium* has had a chequered nomenclatural and taxonomic history. Although it was established relatively early (Bridel 1819), it did not gain wide acceptance and its species have usually been placed in the then all-embransing genus *Grimmia*. In addition, it proved that its generitype, *Schistidium pulvinatum* (Hedw.) Brid., was conspecific with *Grimmia anodon* (Ochyra 1989*a*). Consequently, this name was proposed for conservation (Ochyra & Isoviita 1989) and in the Tokyo Code (Greuter *et al*. 1994) *Schistidium* is a *nomen conservandum* with a conserved type *S. maritimum* (Turner) Bruch & Schimp. The genus is still poorly known taxonomically and till now about 130 species have been described in or transferred to this genus (Wijk *et al*. 1967, 1969; Crosby *et al*. 1992; Blom 1996; Ochyra 1998*a*; Ochyra & Muñoz 2000). The genus needs a modern global taxonomic revision because the only available treatment of *Schistidium* (Bremer 1980*a*, *b*, 1981) presents an unreliable concept of *S. apocarpum* since the author of this revision has lumped with this species numerous distinct European exotic species which certainly deserve separate specific status (Blom 1996).

The infrageneric classification of *Schistidium* is in practice non-existent. Vilhelm (1922) divided the genus into two subgenera and Blom (1996) recognized five informal groups and three subgroups in *Schistidium*. Here, a preliminary classification of the genus is proposed. The genus is divided into three subgenera and six sections but doubtless future investigations should yield more data to enable a refinement of this tentative system. These taxa can be distinguished in the following key:

1. Costa anatomy differentiated into a central row of large guide cells separating dorsal and ventral stereid bands ..... subg. *Schistidium*

1. Costa anatomy undifferentiated 2

2. Leaf margins plane, erect to incurved; leaves concave to broadly canaliculate, occasionally nearly flat ..... subg. *Canalicularia*

2. Leaf margins recurved to varying distances; leaves sharply keeled to narrowly canaliculate (subg. *Apocarpa*) 3

3. Plants dioicous; plants very slender, julaceous; leaves very small, 0.75–1.35 mm long ..... sect. *Tenera*

3. Plants monoicous; plants slender to robust, never julaceous; leaves larger 4

4. Spores granulose to verrucose, mostly very large, (13–)15–25 μm in diameter; capsules subglobose ..... sect. *Rivularia*

4. Spores smooth to finely papillose, less often granulose, small, 8–13(–18) μm in diameter 5

5. Basal marginal cells ±hyaline, with strongly incrassate transverse walls, forming a rectangular alar group or a border ..... sect. *Conferta*
5. Basal marginal cells undifferentiated..... 6
6. Leaf margin plane to recurved for 3/4–4/5 of the leaf length ..... sect. *Atrofusca*
6. Leaf margin recurved to the apex or hair-point 7
7. Exothecial cells predominantly transversely elongate or isodiametric in mid-urn; peristome teeth strongly curved, oblique..... sect. *Apocarpiformia*
7. Exothecial cells predominantly oblong in mid-urn; peristome teeth not or slightly curved, not oblique ..... sect. *Robusta*

Of the above-listed subgenera and sections, only the type subgenus and sect. *Tenera* are not represented in the Polish bryoflora. The former is a monotypic taxon which consists only of *Schistidium maritimum*, a halophilous moss which is widespread on the northern rocky coasts of the Baltic (Söderström 1998) but is absent from the sandy southern coast of this sea. The nearest locality of this species was reported from the Kaliningrad Province of Russia (Dietzow 1938).

Sect. *Tenera* is also a monotypic taxon comprising only *S. tenerum*, a widely distributed Arctic species which was placed in the separate group *Tenera* by Blom (1996, 1998). Here, it is validated as a section.

Schistidium Bruch & Schimp. sectio ***Tenera*** Ochyra, *sect. nov.*

Plantae dioicae, gracillimae, caulibus julaceis ductis centralibus praeditis, foliis minutis, 0.75–1.3 mm longis, marginibus versus 1/3–3/4 longitudini folii recurvis, capsulis manutis, ovoideis vel cyathiformibus, dentibus peristomii valde perforatis vel cribrosibus. — TYPE: *Schistidium tenerum* (J.E.Zetterst.) Nyholm.

[145] *Schistidium* subg. *Canalicularia* is a small but distinct and clearly delimited group consisting of nine species which are known to occur in all continents. For a taxonomic account of this group and a key to species see Ochyra (2003*b*).

Schistidium Bruch & Schimp. subgenus ***Canalicularia*** Ochyra, *subg. nov*.

Plantae pleurumque aquaticae foliis concavis vel late canaliculatis, rarissime planis, marginibus planis, erectis vel incurvis, cellulis laminae in toto folio fere homogeneis rotundatisque, parietibus crassis, costic in sectione transversali plano-convexis, semi-ellipticis vel semi-teretibus, dorso infirme prominentibus. — TYPE: *Schistidium falcatum* (Hook.f. & Wilson) B.Bremer.

[146] *Schistidium agassizii* has long been known as *S. alpicola* (Sw. *ex* Hedw.) Limpr. which was based upon the Hedwigian *Grimmia alpicola*. Bremer (1980*c*) proposed rejecting this name in favour of the much more recent *S. agassizii* because *S. alpicola* was often misinterpreted and confused with *S. rivulare*. It is curious that the author of this proposal did not personally examine the type specimens of the taxa in question.This should be an implicit condition for consideration of any proposal for conserving or rejecting botanical names! This author stated only that she had learned of the existence of the type material of *Grimmia alpicola* in the personal herbarium of J. Hedwig in Geneva (G) (Bremer 1980*c*) and that of *Grimmia rivularis* in the personal herbarium of S. Bridel

in Berlin (B) (Bremer 1980*a*) from Deguchi's (1978, 1979) publications. Initially, the Committee for Bryophyta left the case undecided because of the divergent opinions of its members (Zijlstra 1990) and later the proposal was rejected (Zijlstra 1993) on the grounds, amongst others, that a neotypification of *G. alpicola* would be necessary. This outcome was very strange and the reasons leading to it difficult to understand because, when the proposal had been prepared and discussed, there existed a description of the type accompanied by excellent and very accurate drawings of the holotype of *G. alpicola* of which *Schistidium agassizii* was univocally considered to be a synonym (Deguchi 1979). In addition, Deguchi (1978) lectotypified *G. rivularis* and presented a plate with very accurate illustrations of the various details of this species, based admittedly on a different specimen, but corresponding perfectly to the Bridelian holotype (Ochyra, personal observation). Despite the univocal clarification of the identities of the type specimens in question, this unfortunate proposal was reconsidered by the Committee for Bryophyta in the 1990s and, regrettably, *Grimmia alpicola* was recommended for rejection (Zijlstra 1998). This recommendation was subsequently approved and in the Saint Louis Code the species was placed on the list of "Nomina utique rejicienda" (Greuter *et al*. 2000). It was a very unfortunate decision because if this practice and line of argument were to become generally accepted it would be necessary to reject many early moss names which had often been misinterpreted and misapplied. For example, the name *Schistidium apocarpum*, as presently understood (Bremer 1980*b*; Blom 1996), represents a taxon which, in the past, had usually been called in the past *S. apocarpum* var. *gracile* (Schleich. *ex* Röhl.) Bruch & Schimp. or *S. gracile* (Schleich. *ex* Röhl.) Limpr., a name which correctly equates with *S. trichodon*. On the other hand, plants identified as the type variety of this species now mostly represent *S. crassipilum* for which it was necessary to coin a new name (Blom 1996).

[147] Species of *Schistidium* subg. *Apocarpa* represent what has often been designated the *Schistidium apocarpum* complex. It was thoroughly revised for Scandinavia by Blom (1996) who presented a completely new taxonomic concept of this group, described a number of new species and resurrected many from oblivion. During his work the author studied some collections from KRAM and consequently reported a number of species from Poland in his monograph.

[148] ***Schistidium*** Bruch & Schimp. sectio ***Apocarpiformia*** (Kindb.) Ochyra, *stat. et comb. nov.*

Basionym: *Grimmia* Hedw. V [unranked] *Schistidium* Bruch & Schimp. 2. [unranked] *Apocarpaeformes* Kindb., Eur. N. Am. Bryin. 2: 233. 1898. — TYPE: *Grimmia apocarpa* Hedw. [=*Schistidium apocarpum* (Hedw.) Bruch & Schimp.].

[149] *Schistidium flexipile* is an arctic-alpine and amphi-atlantic species which was reported from a single collection in Central Europe on the basis of a specimen collected in 1865 by Wichura in Śnieżny Kocioł in the Giant Mountains in the Sudetes and deposited in S (Blom 1996).

[150] The type variety of *Schistidium trichodon* is known from the Tatras (Ochyra & Bednarek-Ochyra 1990*a*) and the Western Bieszczady in the Eastern Carpathians (Blom 1996).

[151] *Schistidium trichodon* var. *nutans* is known from the Tatras and Pieniny as well as from Masuria in the northern lowlands (Blom 1996).

[152] *Schistidium lancifolium* is a pan-Holarctic boreal-montane species which has been recorded in the Sudetes and Pieniny (Blom 1996).

[153] *Schistidium confusum* is a relatively rare, boreal-montane species known only from Europe which has been recorded from various localities in the Western Carpathians and the Kraków-Częstochowa Upland (Blom 1996).

[154] *Schistidium papillosum* is a widespread, pan-Holarctic species which is probably frequent in the mountains of southern Poland and so far it has been recorded in the Giant Mountains and the Silesian Beskid (Blom 1996).

[155] *Schistidium pruinosum* is a relatively rare, European, boreal-montane species which was reported by Blom (1996) from "Hasel by Jauer" [=Leszczyna near Jawor] on the basis of a specimen deposited in S which, according to this author, was collected by Hedwig. The name of the collector has probably been erroneously deciphered because J. Hedwig never collected in Lower Silesia. It almost certainly refers to Carl Ludwig who collected intensively in this region in the early 1800s and collected a number of specimens in the Sudetes and adjacent terrotories which were described by J. Hedwig, S.E. Bridel, Ch. Schwägrichen, F. Weber, D. Mohr and others.

[156] ***Schistidium*** Bruch & Schimp. sectio ***Robusta*** Ochyra, *sect. nov.*

Folia unistratosa, laevissima, marginibus usque ad apicem recurvis, cellulis in medio et in parte superiori elongatis sinuosisque. Capsulae obloidi-cylindrici, cellulis exothecii oblongis vel rectangularibus, parietibus longitudinalibus crassis et dentibus peristomii patentibus vel recurvis, strictis. — TYPE: *Schistidium robustum* (Nees & Hornsch.) H.H.Blom.

[157] *Schistidium dupretii* is a boreal-temperate, predominantly montane species widespread in Fennoscandia and Central Europe and bicentric in North America, with some scattered stations in mainland Asia and Japan (Blom 1996). In Poland, it seems to be frequent and Blom (1996) reported it from Pieniny, the Kraków-Częstochowa Upland, Kotlina Oświęcimska and Masuria.

[158] *Schistidium robustum* is a boreal-montane, Euro-American species, known in Poland from the Tatra and Pieniny Mountains (Blom 1996).

[159] ***Schistidium*** Bruch & Schimp. sectio ***Conferta*** (Vilh.) Ochyra, *stat. et comb. nov.*

Basionym: *Schistidium* Bruch & Schimp. subgenus *Conferta* Vilh., Acta Bot. Bohem. 1: 53. 1922 ['Confertae']. — TYPE: *Schistidium confertum* (Funck) Bruch & Schimp.

[160] Blom (1996) cited two specimens of *Schistidium confertum* from Lower Silesia.

[161] The taxonomic treatment of *Schistidium flaccidum* follows Ochyra (1989*a*). So far, it has been recorded from only two localities in Poland, namely Leszczyna by Jawor in Lower Silesia (Limpricht 1876) and from Mt. Giewont in the Tatras (Chałubiński 1882, 1886; Ochyra & Cisło 1999). Actually, the Tatra specimen represents *S. atrofuscum* (see Annotation No. 163).

[162] ***Schistidium*** Bruch & Schimp. sectio ***Atrofusca*** Ochyra, *sect. nov.*

Folia marginibus usque ad 3/4–4/5 longitudini laminae recurvis, cellulis in medio et in parte superioriisodiametricis, paruietibus strictis, superne irregulariter bistratosis, pilis hyalinis crassis teretibusque praedita. — TYPE: *Schistidium atrofuscum* (Schimp.) Limpr.

[163] *Schistidium atrofuscum* has been recorded from several stations in the Pieniny Mountains (Szafran 1952; Ochyra 1984*b*) but these records were based on misidentifications. The species is known only from Mt Giewont in the Tatras from where it was reported by Chałubiński (1882, 1886) as *Grimmia sphaerica* (=*Schistidium flaccidum*). Limpricht (1889) pointed out that actually this specimen was *Schistidium atrofuscum* and recognized it as a separate form, fo. *decipiens*. This form represents in fact a typical expression of *S. atrofuscum* which certainly does not deserve taxonomic recognition. Therefore, fo. *decipiens* is here reduced to synonymy with *S. atrofuscum*.

Schistidium atrofuscum (Schimp.) Limpr.

Schistidium atrofuscum (Schimp.) Limpr. fo. *decipiens* Limpr., Laubm. Deutschl. 1: 714. 1889 — TYPE: von trockenen Kalkfelsen am Gipfel des Giewont 1800 m in der Tatra [HOLOTYPE: "Musci Tatrenses. Grimmia sphaerica S. Giewont szczyt l. Dr. Chałubiński 4–ix–1882" – ZAMU!; ISOTYPE: KRAM!], ***syn. nov.***

[164] *Schistidium brunnescens* is a Central European and Mediterranean species which seems to be very rare in Poland and a few specimens are known only from the Pieniny Mountains.

[165] Blom (1996) reported *Schistidium brunnescens* subsp. *griseum* from a single collection from exposed calcareous rocks near Wąwóz Homole in the Małe Pieniny Range.

[166] Apart from *Schistidium apocarpum*, *S. crassipilum* seems to be the most frequent species of the genus in Europe, ranging from the Atlantic to the Caucasus and exhibiting a distinct oceanic tendency in distribution (Blom 1996). Blom (1996) reported it from Małopolska Upland in southern Poland, but certainly it is frequent elsewhere in areas with base rich rocks.

[167] *Schistidium elegantulum* is primarily a Eurasian species with a single highly disjunct station in Mexico (Blom 1996). It is a temperate species which is widely scattered in Europe from the British Isles to the Caucasus. Blom (1996) reported it from the Pieniny Mountains, Kotlina Oświęcimska and Puszcza Romincka in the northern lowlands.

[168] *Schistidium helveticum* is better known as *S. singarense*, a name which has only recently been resurrected from oblivion by Blom (1996) who applied it to the species widely distributed in the Mediterranean and the Near East, extending to Central Europe and south-west Norway. As with many early names in the genus, there has been great confusion with regard to the proper interpretation of *Grimmia helvetica* which is a basionym of *Schistidium helveticum*. This species was described by Schkuhr (1811) on the basis of a specimen collected in Switzerland by Schleicher. Bridel (1819, 1826) reduced it to a variety of *Grimmia alpicola* (=*Schistidium agassizii*) and Nees *et al*. (1827) considered it to be a variety of *G. apocarpa* (=*Schistidium apocarpum*). The species was not mentioned in *Bryologia europaea* by Bruch *et al*. (1845), while Müller (1849) reduced *G. helvetica* to synonymy with *G. apocarpa* var. *rivularis* (Brid.) Nees & Hornsch., and Limpricht (1889) considered it as a synonym of *Schistidium alpicola*. At last, Deguchi (1979) lectotypified *G. helvetica* and showed that it correctly belongs within *Schistidium*. He provided a detailed description of the species accompanied by excellent illustrations of taxonomically important features and, most importantly, he clearly showed that *Schistidium helveticum* is distinct from both *S. alpicola* and *S. rivulare* and the differences were summarized in a key to these three species. It is hard to imagine how such a confusing taxonomic problem could be presented more accurately and clearly. Alas, the authors of a checklist of European mosses (Corley *et al*. 1981) completely misunderstood the conclusion of Deguchi's (1979) study and quite erroneously stated that "Deguchi used the name *S. helveticum* for *S. alpicola* and *S. alpicola* for *S. agassizii*"! Bremer (1980*a*) extended this confusion by ignoring the taxonomic conclusions of Deguchi's (1979) work. In contrast to Deguchi's (1979) study which had been based on the soundest foundations possible, including a detailed study of all relevant type collections, Bremer (1980*a*) (not having examined any type collections of species names concerned) stated that *Grimmia helvetica* was a synonym of *Schistidium rivulare*. Her conclusion was based merely on speculations taken from descriptions, opinions of other authors and interpretation of illustrations which, as is usual in early bryological works, are rather inaccurate. Blom (1996) could not locate the lectotype specimen of *Grimmia helvetica* at LAU but he examined the specimen in the Bridel herbarium at B for which there are strong indications that is part of the original collection used by Schkuhr (1811) for description of this species. At the same time Blom (1996) stated that this specimen was quite similar to Schkuhr's (1811) illustration and it represented a small specimen of what he called *Schistidium singarense*. Having examined the specimen of *Grimmia helvetica* in the Bridel herbarium as well as all syntypes of *G. singarensis* and many non-type specimens of the latter, we can confirm Blom's (1996) conclusion. At the same time, we do not see any reasons why the name *Schistidium helveticum* could not be used for this species instead of the much more recent *S. singarense*. It is necessary to add that both names have been neglected for a long time and are not in use, so a change of name at this stage is not particularly harmful. Quite the opposite, in this way moss nomenclature is stablized, especially if the use of the name is well-founded. Therefore, *Schistidium singarense* is here formally synonymized with *S. helveticum*.

Schistidium helveticum (Schkuhr) Deguchi

Grimmia helvetica Schkuhr, Deutschl. Krypt. Gew. 2(2): 48, *pl. 21, f. a–f helvetica.* 1811. – *G. alpicola* Hedw. var. *helvetica* (Schkuhr) Brid., Mant. Musc.: 33. 1819. – *G. apocarpa* Hedw. var. *helvetica* (Schkuhr) Nees & Hornsch. *in* Nees, Hornsch. & Sturm, Bryol. Germ. 2(1): 106. 1827. — TYPE: in Helvetiae [LECTOTYPE (*fide* Deguchi 1978: p. 434): LAU, *non vidi*; ISOTYPE: "Gr alpicola v. operculo brevirostro helvetica Grimmia obtusa Schkuhr 1806" – B-BRID!].

Grimmia singarensis Schiffn., Ann. K.K. Naturhist. Hofmus. 27: 487. 1913. – *Schistidium singarense* (Schiffn.) Laz., Žurn. Inst. Bot. Wseukrajinsk. Akad. Nauk 26–27: 205. 1938. – *S. apocarpum* (Hedw.) Bruch & Schimp. subsp. *singarense* (Schiffn.) Podp., Consp. Musc. Eur.: 270. 1954. — TYPE: Ad rupes calcareos montium Dschebel Sindschar in Mesopotamia septentrionali, 600–1200 m. Ober der Stadt Sindschar (Nr. 1429) und in der Schlucht El Magharad oberhalb Der Asi, c. sp. (Nr. 1532), 9./VI.1910; auf einem Hügel bei Dscheddale, c. sp. 10./VI.1910 (Nr. 1538) [LECTOTYPE (*fide* Blom 1996: p. 244): No. 1532 – S, *non vidi*; ISOLECTOTYPE: W!; syntypes: (1) No. 1429 – W!; (2) No. 1538 – W!), ***syn. nov.***

Up till now, *Schistidium helveticum* had not been reported from Poland. However, the specimen collected on calcareous rocks in the Western Tatras on the SW slope of Zawrat Kasprowy at an elevation of 1525 m (*Lisowski 97152*, KRAM) belongs to this species and is here reported for the first time from the country.

[169] ***Schistidium*** Bruch & Schimp. sectio ***Rivularia*** Ochyra, *sect. nov.*

Plantae monoicae, parvae vel magnae, caulibus gracilibus vel robustis, fasciculo centrali magno praeditis. Folia late ovata, oblonga vel triangularia, concava, acute vel obtusiuscule carinata, marginibus recurvis, in parte superiori saepe denticulatis. Costa valida, percurrens, in sectione transversali dorso fortiter convexa, semi-teres, 3–6-stratosa. Capsula brevis et lata, subsphaerica vel cyathiformis, cellulis exothecii cum parietibus crassis, dentibus peristomii longis latisque. Sporae magnae, papillosae vel verrucosae, (13–)15–25 µm latae. — TYPE: *Schistidium rivulare* (Brid.) Podp.

[170] Grimmiaceae Arn. subfamilia **Racomitrioideae** Ochyra & Bednarek-Ochyra, *subfam. nov.*

Plantae dioicae, acro- vel cladocarpicae, irregulariter ramosae, ramulis lateralibus pluries divisae, caulibus e ductu centrali nullo, cellulis laminae frequentissime sinuoso-linearibus, angustissimis, laevibus vel diverse papillosis. Calyptra e basi conico-metraeformi lobata, in subulam rectam asperam nigricantem producta. Peristomii dentes membrana basilari humili vel alto suffulti, elongati, profunde irregulariter ad medium vel infra bi- vel trifidi, vel tota longitudine in crura duo subaequalia filiformia nodosa soluti. — TYPE: *Racomitrium* Brid.

This subfamily is diagnosed by a *Racomitrium* type peristome, the thick, sinuose-walled epidermal cells of the vaginula, the consistent lack of a central strand in the stem and the presence of a preperistome. Although there is remarkable variation in the structure of the peristome in this subfamily, in its typical form the teeth are linear, divided nearly to the base into two filiform, somewhat paired segments, have a distinct , usually low basal membrane and often prostome and are equally thickened and less prominently trabeculate on both dorsal and ventral sides. *Racomitrium* s.lato has sometimes been associated with *Ptychomitrium* and *Campylostelium* and placed in the subfamily *Ptychomitrioideae* in the Grimmiaceae (Brotherus 1902; Churchill 1981). Despite their overall morphological simi-

latity these genera seem to be only remotely related and we prefer to keep *Racomitrium* and its allied genera apart. *Racomitrium* species are well-characterized by their consistently sinuose-nodulose leaf cell walls and smooth calyptrae, and the plants are cladocarpous. By contrast, in *Ptychomitrium* the leaf cells are straight or only weakly sinuose, the calyptrae deeply plicate and the plants acrocarpous. In addition, the preperistome is lacking, the peristome teeth lack trabeculae and have a characteristic air gap at the base of the teeth (Edwards 1979). Moreover, the plants are cryptoicous because the male branches are small and arise from the base of vaginula inside the perichaetial leaf circle (Deguchi 1977).

[171] Bednarek-Ochyra (1995) presented an infrageneric classification of *Racomitrium* which was largely based on the peristome structure, the shape of the perichaetial leaves and the papillosity of the laminal cells. The genus was divided into four subgenera, namely subg. *Racomitrium*, subg. *Cataracta* Vilh., subg. *Niphotrichum* Bednarek-Ochyra and subg. *Ellipticodryptodon* (Vilh.) Bednarek-Ochyra & Ochyra. They corresponded well to the four unranked groups recognized within this genus by Kindberg (1898), namely *Lanuginosa*, *Papillosa*, *Canescentia* and *Laevifolia*, respectively, which were subsequently given the status of sections by Noguchi (1974). A revisionary study of *Racomitrium* has progressed to the point whereby the genus in its present circumscription is a heterogeneous taxon which should be split into four genera, *Racomitrium* s.str., *Codriophorus* P.Beauv., *Niphotrichum* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra and *Bucklandiella* Roiv. They are considered to be distinctive taxa through various combinations of unique or otherwise presumably advanced characteristics for the Grimmiaceae, such as presence of pellucid alar cells, variously papillose laminal cells, papillosity of seta and calyptra, torsion of seta, shape of peristome teeth, anatomy of costa, and shape of hair-point. The segregates of the former large and artificial genus *Racomitrium* are natural and well-established taxa which are easily distinguished from one another. They can be separated in the following key:

1. Laminal cells smooth or pseudopapillose; peristome teeth short, irregularly divided at the middle, rarely lower, into 2–3 irregular prongs..... *Bucklandiella*
1. Laminal cells papillose; papillae tall and conical, placed over the lumina or large and flat, placed over the longitudinal walls; peristome teeth long, split at least at the middle into 2(–3) filiform, ± regular segments 2
   2. Laminal cells with tall, conical papillae placed over the lumina; alar cells hyaline or yellowish-hyaline, thin-walled forming prominent, decurrent auricles ..... *Niphotrichum*
   2. Laminal cells with large, flat papillae placed over the longitudinal walls; alar cells indistinct or distinct, brown to yellowish-orange, never hyaline.....3
3. Hyaline hair-point always present, usually very long, strongly papillose eroso-dentate, long decurrent down the leaf margins; seta strongly papillose. sinistrorse when dry; peristome teeth very long, divided at the base into 2 filiform segments; costa percurrent, never branched; capsule slightly ventricose at base; calyptra smooth or minutely roughened ..... *Racomitrium*
3. Hyaline hair-point absent or smooth to denticulate, never papillose and decurrent; seta smooth, dextrorse when dry (in *C. fascicularis* only once twisted to the right immediately below the capsule and below twisted to the left); peristome teeth shorter, divided at the middle or sometimes at the base into 2–3 irregular or regular branches; costa ending well below the apex, often branched and spurred distally; calyptra distinctly verrucose to papillose..... *Codriophorus*

Racomitrium s.lato was a large genus and Wijk *et al*. (1967, 1969) listed under this name over 200 species and nearly the same number of various infraspecific taxa, but effectively they accepted only 81 species. This number obviously did not reflect the real number of species and subsequent taxonomic studies of some complexes in this genus (e.g., Frisvoll 1983, 1988) yielded some new species or reinstated species which once had been "sunk" as a result of careless research. The best example of the latter case is provided by Clifford (1955) who lumped many austral species with *Racomitrium crispulum* (Hook.f. & Wilson) Hook.f. & Wilson. These actually represented distinct species as subsequent investigations convincingly showed (e.g., Roivainen 1955*a*; Bell 1974; Deguchi 1984). In her world synopsis of *Racomitrium*, Bednarek-Ochyra (1995) accepted 61 species in this genus but since then several additional new species have been described (e.g., Buck 1997; Ochyra & Bednarek-Ochyra 1999*a*; Bednarek-Ochyra 1999, 2000; Bednarek-Ochyra & Ochyra 2000, 2003). Thus, one may assume that the real taxon number of taxa in *Racomitrium* s.lato is approximately 80 species.

The nomenclature of the infraspecific taxa or segregates of *Racomitrium* is obviously heavily affected by typification of this name. Until the mid-1990s *R. canescens* was commonly accepted as lectotype and this lectotypification was made by Pfeiffer (1874). However, a much earlier and long overlooked lectotypification of *Racomitrium* was made by Schimper (1860) who designated *R. lanuginosum* as lectotype. This lectotypification was quite unfortunate because *Racomitrium* s.str. is the smallest segregate of this genus, consisting of only three species, namely *R. lanuginosum* (Hedw.) Brid. with two subspecies, subsp. *lanuginosum* and subsp. *geronticum* (Müll.Hal.) Vitt & Marsh, *R. pruinosum* (Wilson) Müll.Hal. and the recently described *R. patagonicum* Bednarek-Ochyra & Ochyra (Bednarek-Ochyra & Ochyra 2003). *Racomitrium* s.str. is a very distinct genus which is characterized by the following combination of characteristics: strongly papillose setae twisted to the left; long hyaline, strongly papillose hair-points which are long decurrent down the leaf margins and eroso-dentate; large flat papillae with small secondary papillulae densely covering the longitudinal cell walls and almost the whole lumina, except for a narrow slit in the middle; very long peristome teeth divided to the base into 2(–3) filiform branches and slightly ventricose capsules.

Racomitrium Brid., Mant. Musc.: 78. 1819. — LECTOTYPE (*fide* Schimper 1860: p. 730): *Racomitrium lanuginosum* (Hedw.) Brid. (*Trichostomum lanuginosum* Hedw.).

Racomitrium Brid. 1 [unranked] *Lanuginosa* Kindb., Eur. N. Am. Bryin. 2: 235. 1898. – *Racomitrium* Brid. sectio *Lanuginosa* (Kindb.) Nog., J. Hattori Bot. Lab. 38: 346. 1974. — TYPE: *Racomitrium hypnoides* Lindb. [=*R. lanuginosum* (Hedw.) Brid.].

Rhacomitrium Brid. *in* Lorentz, Bryol. Notizb.: 94. 1864, *orthogr. pro Racomitrium* Brid.

[172] For distribution *Racomitrium lanuginosum* in Poland see Ochyra *et al*. (1990*f*) and Bednarek-Ochyra (1995).

[173] ***Niphotrichum*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *stat. et comb. nov.*

Basionym: *Racomitrium* Brid. subgenus *Niphotrichum* Bednarek-Ochyra, Fragm. Florist. Geobot. Ser. Polonica 2: 70. 1995. — TYPE: *Niphotrichum canescens* (Hedw.) Bednarek-Ochyra & Ochyra (*Trichostomum canescens* Hedw.).

Niphotrichum sectio ***Elongata*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. sectio *Elongata* Bednarek-Ochyra, Fragm. Flor. Geobot. Ser. Polonica 2: 94. 1995.

Niphotrichum subsectio ***Ericoides*** (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. subsectio *Ericoides* Frisvoll, Gunneria 41: 58. 1983.

Niphotrichum subsectio ***Japonica*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. subsectio *Japonica* Bednarek-Ochyra, Fragm. Flor. Geobot. Ser. Polonica 2: 63. 1995.

Niphotrichum subsectio ***Minima*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. subsectio *Minima* Bednarek-Ochyra, Fragm. Flor. Geobot. Ser. Polonica 2: 63. 1995.

Niphotrichum barbuloides (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium barbuloides* Cardot, Bull. Herb. Boissier Sér. 2, 8: 336. 1908.

Niphotrichum canescens (Hedw.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Trichostomum canescens* Hedw., Sp. Musc. Frond.: 111. 1801.

Niphotrichum canescens subsp. ***latifolium*** (C.E.O.Jensen) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium canescens* (Hedw.) Brid. [var.] β *latifolium* C.E.O.Jensen *in* Lange & C.E.O.Jensen, Meddel. Grønland 3(2): 345. 1887.

Niphotrichum elongatum (Ehrh. *ex* Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium elongatum* Ehrh. *ex* Frisvoll, Gunneria 41: 74, *f. 1A, 2E, 5–6, 9B, 10A, 12A, 16c, 18a, c-d, 20B, 23, 26, 38b:1, 3–6, 45C, 50*. 1983.

Niphotrichum ericoides (Brid.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Trichostomum ericoides* Brid., J. Bot. (Schrader) 1800(1[2]): 290. 1801.

Niphotrichum japonicum (Dozy & Molk.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium japonicum* Dozy & Molk., Musci Frond. Ined. Archip. Ind. 5: 130. 41. 1847.

Niphotrichum muticum (Kindb.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium brevipes* Kindb. var. *muticum* Kindb. *in* Macoun, Bull. Torrey Bot. Club 17: 272. 1890.

Niphotrichum panschii (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia panschii* Müll.Hal., Zweite Deutsche Nordpolarfahrt 1869–1870, 2(I), Bot.: 72. 1873.

Niphotrichum pygmaeum (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium pygmaeum* Frisvoll, Gunneria 41: 83, *f. 14a, 16g, 18b, 27–29*. 1983.

Niphotrichum comprises species of the *Racomitrium canescens* group which was taxonomically revised by Frisvoll (1983). It is diagnosed by the following set of features: strongly papillose laminal cells with tall conical papillae situated over the lumina; very long peristome teeth regularly cleft to the base into 2–3 filiform segments; and angular cells hyaline or yellowish-hyaline, thin-walled, forming convex and often decurrent auricles. Moreover, species of this genus possess massive, papillose and denticulate hair-points; costae spurred or branched at the tip, ending at mid-leaf or well below the leaf apex; triangular, elliptic or broadly ovate-lanceolate leaves; innermost perichaetial leaves hyaline, sheathing and pilose; setae smooth, sinistrorse on drying; operculum with a beak as long as the urn or longer; and capsules plicate when dry. *Niphotrichum* is a small genus of eight species which belong within two sections and three subsections. The treatment of the genus in Poland follows Bednarek-Ochyra (1995).

[174] *Niphotrichum elongatum* was recorded for the first time in Poland by Frisvoll (1983) from two sites in the Carpathians. Bednarek-Ochyra (1995) presented its distribution map in Poland and found it to be frequent in the southern part of the country, especially the Carpathians, and relatively widespread in West Pomerania.

[175] The genus *Codriophorus* is primarily recognized by the presence of large, flat papillae distributed over the longitudinal cell walls and covering a major part of the lumina. In this respect it resembles *Racomitrium* in which, however, the papillae are covered by secondary papillulae on their surface. In addition, the calyptra in *Codriophorus* is densely papillose, the costa falls well short of the leaf apex, the innermost perichaetial leaves are epilose and the seta is dextrorse (with the exception of *C. fascicularis* in which the seta is only once twisted to the right immediately below the capsule and further down is twisted to the left). Also, in the majority of species, hair-points are lacking and, if present, they are smooth or weakly denticulate and non-decurrent. The genus *Codriophorus* corresponds to *Racomitrium* subg. *Cataracta* of Vilhelm (1926) or the unranked group or sect. *Papillosa* of Kindberg (1898) and Noguchi (1974). This genus was described by Palisot de Beauvois (1822) and its history presented by Bednarek-Ochyra *et al*. (2001).

Codriophorus is a relatively small genus in which Bednarek-Ochyra (1995) placed 12 species which she divided into four sections and five subsections. During the course of the ongoing worldwide taxonomic revision of this group, she described three additional new species, two reinstated as good and three removed and transferred to *Bucklandiella*. A detailed taxonomic account of Polish species has been presented by Bednarek-Ochyra (1995) under *Racomitrium* subg. *Cataracta*.

Codriophorus P.Beauv., Mém. Soc. Linn. Paris 1: 445. 1822. — LECTOTYPE (*fide* Bednarek-Ochyra *et al*. 2001: p. 109): *Codriophorus acicularis* (Hedw.) P.Beauv. (*Trichostomum aciculare* Hedw.).

Racomitrium Brid. subgenus *Cataracta* Vilh., Věstn. Král. Ceské Společn. Nauk Tř. Mat.-Přír. 1925(5): 31. 1926 [‘Cataractae’], ***syn. nov.*** — LECTOTYPE (*fide* Bednarek-Ochyra 1995: p. 127): *Racomitrium aquaticum* (Brid. *ex* Schrad.) Brid.

Codriophorus P.Beauv. sectio ***Chrysei*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. sectio *Chrysea* Bednarek-Ochyra, Fragm. Flor. Geobot. Ser. Polonica 2: 64. 1995.

Codriophorus sectio ***Fascicularia*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. sectio *Fascicularia* Bednarek-Ochyra, Fragm. Flor. Geobot. Ser. Polonica 2: 130. 1995.

Codriophorus sectio ***Piliferi*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. sectio *Pilifera* Bednarek-Ochyra, Fragm. Flor. Geobot. Ser. Polonica 2: 64. 1995.

Codriophorus subsectio ***Andicola*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. subsectio *Andicola* Bednarek-Ochyra, Fragm. Flor. Geobot. Ser. Polonica 2: 64. 1995.

Codriophorus subsectio ***Hydrophilus*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. subsectio *Hydrophilus* Bednarek-Ochyra, Fragm. Florist. Geobot. Ser. Polonica 2: 157. 1995 [‘Hydrophilum’].

Codriophorus aduncoides (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov*.

Basionym: *Racomitrium aduncoides* Bednarek-Ochyra, Fragm. Flor. Geobot. 44: 278, *f. 1–3*. 1999.

Codriophorus anomodontoides (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium anomodontoides* Cardot, Bull. Herb. Boissier Sér. 2, 8: 335. 1908.

Codriophorus aquaticus (Brid. *ex* Schrad.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Trichostomum aquaticum* Brid. *ex* Schrad., J. Bot. (Schrader) 1801(1): 196. 1803.

Codriophorus brevisetus (Lindb.) Bednarek-Ochyra & Ochyra, *comb. nov*.

Basionym: *Racomitrium brevisetum* Lindb., Acta Soc. Sci. Fenn. 10: 244. 1872.

Codriophorus carinatus (Cardot)) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium carinatum* Cardot, Bull. Herb. Boissier Sér. 2, 8: 335. 1908.

Codriophorus depressus (Lesq.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium depressum* Lesq., Mem. Calif. Acad. Sci. Ac. Sc. 1: 14. 1868.

Codriophorus dichelymoides (Herzog) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium dichelymoides* Herzog, Hedwigia 74: 103, *f. 9.* 1934.

Codriophorus fascicularis (Hedw.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Trichostomum fasciculare* Hedw., Sp. Musc. Frond.: 110. 1801.

Codriophorus hespericus (Sérgio, J.Muñoz & Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov*.

Basionym: *Racomitrium hespericum* Sérgio, J.Muñoz & Ochyra, Bryologist 98: 112. *f. 1–25.* 1995.

Codriophorus laevigatus (A.Jaeger) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium laevigatum* A.Jaeger, Ber. Thätigk. St. Gallischen Naturwiss. Ges. 1872–1873: 95. 1874.

Codriophorus mollis (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium molle* Cardot, Bull. Herb. Boissier Sér. 2, 8: 333. 1908.

Codriophorus norrisii (Bednarek-Ochyra & Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium norrisii* Bednarek-Ochyra & Ochyra, Ann. Bot. Fennici 37: 236. 2000.

Codriophorus papeetense (Besch.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium papeetense* Besch., Ann. Sci. Nat. Bot. Sér. 7, 20: 25. 1894.

Codriophorus ryszardii (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium ryszardii* Bednarek-Ochyra, Cryptogamie Bryol. 21: 276, *f. 1–3*. 2000.

Codriophorus varius (Mitt.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia varia* Mitt., J. Proc. Linn. Soc. Bot. 8: 21. 1864.

[176] For typification of the early name *Dicranum aciculare*, the basionym of *Codriophorus acicularis*, see Bednarek-Ochyra & Ochyra (1994) and for distribution of this species in Poland see Ochyra *et al*. (1990*c*) and Bednarek-Ochyra (1995).

[177] For distribution of *Codriophorus aquaticus* in Poland see Ochyra *et al*. (1990*d*) and Bednarek-Ochyra (1995).

[178] For distribution of *Codriophorus fascicularis* in Poland see Ochyra *et al*. (1990*e*) and Bednarek-Ochyra (1995).

[179] *Bucklandiella* is the largest and taxonomically most difficult segregate of the former genus *Racomitrium*. Despite many taxonomic difficulties at species level, the genus is a clearly outlined and easily recognized taxon. In contrast to the other three segregates, *Bucklandiella* comprises taxa with smooth laminal cells. They may eventually be pseudo-

papillose due to many longitudinal cuticular thickenings which give the leaf cells a papillose appearance in transverse section. The smooth laminal cells are coupled with relatively short, lanceolate or triangular peristome teeth which are irregularly divided in the upper half into 2–3 or occasionally 4 branches, or sometimes they are only irregularly perforate along the median line or, in some cases, the teeth remain undivided. Additionally, the following combination of characters is characteristic of this genus: narrowly lanceolate to ovate-triangular leaves; unbranched, percurrent costa, hair-point, if present, smooth, denticulate or spinulose but never papillose; leaf margins 1–2(–4)-stratose in one to several rows; seta always smooth, dextrorse when dry and and smooth calyptra.

Bucklandiella is the only available name for this genus, which at infrageneric level in *Racomitrium* was called subg. *Ellipticodryptodon* (Vilh.) Bednarek-Ochyra or sect. *Laevifolia* (Kindb.) Nog. The name was originally used for a monotypic genus from the Fuegian region, *Bucklandia bartramii* Roiv. (Roivainen 1955*b*), which proved to be a later homonym of at least three identical names and accordingly Roivainen (1972) renamed it *Bucklandiella*. Robinson (1974) showed that this species actually belongs to the group of *Racomitrium* species with a broad costa, and subsequent studies (Deguchi 1987; Ochyra *et al*. 1988*u*) confirmed this taxonomic conclusion as correct. *Bucklandiella bartramii* along with two other species, *B. lamprocarpa* and *B. elliptica*, constitutes an isolated group within the genus characterized by large, roughly papillose spores, 18–32 μm wide, but otherwise exhibits all the typical features of the remaining species. *Bucklandiella* comprises about 50 species distributed worldwide, but only part of the Holarctic species belonging to sect. *Laevifolia* have been revised taxonomically (Frisvoll 1988). A large austral complex centred around *B. crispula* badly needs critical taxonomic assessment, so the real number of species cannot be definitely established at the present time.

Bucklandiella Roiv., Ann. Bot. Fenn. 9: 116. 1972. — TYPE: *Bucklandiella bartramii* (Roiv.) Roiv. (*Bucklandia bartramii* Roiv.).

Bucklandia Roiv., Arch. Soc. Zool. Bot. Fenn. "Vanamo" 9: 98. 1955, *hom. illeg*. [non *Bucklandia* Sternb. 1825; nec Brongn. 1828; nec R. Br. *ex* Griff. 1836]. — TYPE: *Bucklandia bartramii* Roiv. [=*Bucklandiella bartramii* (Roiv.) Roiv.].

Dryptodon Brid. subgenus *Ellipticodryptodon* Vilh., Acta Bot. Bohem. 2: 53. 1923. – *Racomitrium* Brid. sectio *Ellipticodryptodon* (Vilh.) Ochyra, Sérgio & Schumacker, Bull. Jard. Bot. Nat. Belg. 58: 246. 1988. – *Racomitrium* subgenus *Ellipticodryptodon* (Vilh.) Bednarek-Ochyra & Ochyra, Fragm. Florist. Geobot. 39: 362. 1994, ***syn. nov.*** — TYPE: *Dryptodon ellipticus* Turner [*Bucklandiella elliptica* (Turner) Bednarek-Ochyra & Ochyra].

Racomitrium Brid. subgenus *Microcarpa* Vilh., Věstn. Král. Ceské Společn. Nauk Tř. Mat.-Přír. 1925(5): 22. 1926 ['Microcarpae'], ***syn. nov.*** — TYPE: *Racomitrium microcarpon* (Hedw.) Brid. [*Bucklandiella microcarpa* (Hedw.) Bednarek-Ochyra & Ochyra].

Bucklandiella Roiv. sectio ***Emersae*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. sectio *Emersa* Bednarek-Ochyra, Fragm. Florist. Geobot. Ser. Polonica 2: 65. 1995.

Bucklandiella Roiv. sectio ***Laevifoliae*** (Kindb.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. sectio *Laevifolia* Kindb., Eur. N. Amer. Bryin. 2: 235. 1898.

Bucklandiella Roiv. sectio ***Lawtoniae*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. sectio *Lawtonia* Bednarek-Ochyra, Fragm. Florist. Geobot. Ser. Polonica 2: 65. 1995.

Bucklandiella Roiv. sectio ***Marginatae*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. sectio *Marginata* Bednarek-Ochyra, Fragm. Florist. Geobot. Ser. Polonica 2: 175. 1995.

Bucklandiella Roiv. sectio ***Ptychophyllae*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. sectio *Ptychophylla* Bednarek-Ochyra, Fragm. Florist. Geobot. Ser. Polonica 2: 65. 1995.

Bucklandiella Roiv. sectio ***Subsecundae*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. sectio *Subsecunda* Bednarek-Ochyra, Fragm. Florist. Geobot. Ser. Polonica 2: 65. 1995.

Bucklandiella Roiv. sectio ***Sudeticae*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. sectio *Sudetica* Bednarek-Ochyra, Fragm. Florist. Geobot. Ser. Polonica 2: 221. 1995.

Bucklandiella Roiv. subsectio ***Cucullaria*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. subsectio *Cucullaria* Bednarek-Ochyra, Fragm. Florist. Geobot. Ser. Polonica 2: 64. 1995.

Bucklandiella subsectio ***Diaphanae*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. subsectio *Diaphana* Bednarek-Ochyra & Ochyra, Fragm. Florist. Geobot. 41: 982. 1996.

Bucklandiella subsectio ***Grimmiaeformes*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. subsectio *Grimmiiformia* Bednarek-Ochyra, Fragm. Florist. Geobot. Ser. Polonica 2: 64. 1995.

Bucklandiella subsectio ***Horridae*** (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium* Brid. subsectio *Horrida* Bednarek-Ochyra & Ochyra, Fragm. Florist. Geobot. 41: 982. 1996.

Bucklandiella affinis (F.Weber & D.Mohr) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Trichostomum affine* Schleich. *ex* F.Weber & D.Mohr, Bot. Taschenb.: 127. 1807.

Bucklandiella afoninae (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium afoninae* Frisvoll, J. Bryol. 15: 275. *f.* 1–2. 1988.

Bucklandiella albipilifera (C.H.Gao & T.Cao) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium albipiliferum* C.H.Gao & T.Cao *in* C.H.Gao, M.Zhang & T.Cao, Acta Bot. Yunnan. 3: 396, *f. 5: 9–17*. 1981.

Bucklandiella albipilifera var. ***lorifolia*** (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium capillifolium* Frisvoll var. *lorifolium* Frisvoll, Gunneria 59: 176. 1988.

Bucklandiella angustifolia (Broth.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium angustifolium* Broth. *in* Hand.-Mazzetti, Symb. Sin. 4: 46. 1929.

Bucklandiella brevipes (Kindb.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium brevipes* Kindb. *in* Macoun, Bull. Torrey Bot. Club 17: 272. 1890.

Bucklandiella compactula (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia compactula* Müll.Hal., Hedwigia 37: 167. 1898.

Bucklandiella crispipila (Taylor) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Trichostomum crispipilum* Taylor, London J. Bot. 5: 47. 1846.

Bucklandiella crispula (Hook.f. & Wilson) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Didimodon crispulus* Hook.f. & Wilson, Fl. Antarct. 1: 124, 57 *f. 9*. 1844.

Bucklandiella cucullata (Broth.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium cucullatum* Broth., Symb. Sin. 4: 47. 1929.

Bucklandiella cucullatifolia (Hampe) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium cucullatifolium* Hampe, Linnaea 32: 143. 1863.

Bucklandiella cylindropyxis (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia cylindropyxis* Müll.Hal., Hedwigia 37: 166. 1898.

Bucklandiella decurrens (Dixon) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium decurrens* Dixon *in* Christoph., Results Norweg. Sci. Exped. Tristan da Cunha 48: 26. 1960.

Bucklandiella defoliata (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia defoliata* Müll.Hal., Bot. Jahrb. Syst. 5: 81. 1883.

Bucklandiella didyma (Mont.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia didyma* Mont., Ann. Sci. Nat. Bot. Sér. 3, 4: 122. 1845.

Bucklandiella elliptica (Turner) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Dicranum ellipticum* Turner, Muscol. Hibern. Spic. 76. 6 *f.* 2. 1804.

Bucklandiella emersa (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia emersa* Müll.Hal., Bot. Zeitung (Berlin) 9: 562. 1851.

Bucklandiella fuscescens (Wilson) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium fuscescens* Wilson *in* Mitt. & Wilson, Hooker's J. Bot. Kew Gard. Misc. 9: 324. 1857.

Bucklandiella fuscolutea (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium fuscolutea* Cardot, Bull. Mus. Hist. Nat. (Paris) 22: 339. 1916.

Bucklandiella gracillima (Dixon) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium gracillimum* Dixon *in* Christoph., Results Norweg. Sci. Exped. Tristan da Cunha 48: 26. 1960.

Bucklandiella grimmioides (Herzog) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium grimmioides* Herzog, Darwiniana 11: 218. 1957.

Bucklandiella heterosticha (Hedw.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Trichostomum heterostichum* Hedw. Spec. Musc. 109. 1801.

Bucklandiella heterostichoides (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium heterostichoides* Cardot, Bull. Herb. Boissier Sér. 2, 5: 1004. 1905.

Bucklandiella himalayana (Mitt.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia himalayana* Mitt., J. Proc. Linn. Soc. Bot. Suppl. 1: 45. 1859.

Bucklandiella joseph-hookeri (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium joseph-hookeri* Frisvoll, Gunneria 59: 197. 1988.

Bucklandiella laeta (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium laetum* Besch. & Cardot, Bull. Herb. Boissier Sér. 2, 8: 335. 1908.

Bucklandiella lamprocarpa (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia lamprocarpa* Müll.Hal., Syn. Musc. Frond. 1: 802. 1849.

Bucklandiella lawtonae (Ireland) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium lawtonae* Ireland, Bryologist 73: 707, *f. 1–12*. 1970.

Bucklandiella lepervanchei (Besch.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium lepervanchei* Besch., Ann. Sci. Nat. Bot. Sér. 6, 9: 351. 1880.

Bucklandiella lusitanica (Ochyra & Sérgio) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium lusitanicum* Ochyra & Sérgio, Fragm. Florist. Geobot. 37: 262, *f. 1–4*. 1992.

Bucklandiella macounii (Kindb.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium macounii* Kindb. *in* Macoun, Bull. Torrey Bot. Club 16: 93. 1889.

Bucklandiella macounii subsp. ***alpinum*** (E.Lawton) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium sudeticum* (Funck) Bruch & Schimp. fo. *alpinum* E.Lawton, Moss Fl. Pacific Northw.: 147, 77 *f. 5–8*. 1971.

Bucklandiella membranacea (Mitt.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia membranacea* Mitt., J. Linn. Soc., Bot. 15: 61. 1876.

Bucklandiella microcarpa (Hedw.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Trichostomum microcarpon* Hedw., Sp. Musc. Frond.: 112, 23 *f. 8–12.*1801.

Bucklandiella microcarpa fo. ***afoninae*** (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium microcarpon* (Hedw.) Brid. fo. *afoninae* Frisvoll, Gunneria 59: 155. 1988.

Bucklandiella minuta (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia minuta* Müll.Hal., Bot. Jahrb. Syst. 5: 81. 1883.

Bucklandiella nitidula (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium nitidulum* Cardot, Bull. Herb. Boissier Sér. 2, 8: 335. 1908.

Bucklandiella obesa (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium obesum* Frisvoll, Gunneria 59: 117. 1988.

Bucklandiella obtusa (Brid.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Trichostomum obtusum* Brid., J. Bot. (Schrader) 1800(2): 290. 1801.

Bucklandiella obtusa fo. ***trichophora*** (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium obtusum* fo. *trichophorum* Frisvoll, Frisvoll, Gunneria 59: 126, *f. 31a–k*. 1988.

Bucklandiella occidentalis (Renauld & Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium heterostichum* var. *occidentale* Renauld & Cardot, Bot. Gaz. 15: 41. 1890.

Bucklandiella ochracea (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia ochracea* Müll.Hal., Bot. Jahrb. Syst. 5: 81. 1883.

Bucklandiella orthotrichacea (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia orthotrichacea* Müll.Hal., Bot. Jahrb. Syst. 5: 81. 1883.

Bucklandiella pachydictyon (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium pachydictyon* Cardot, Wiss. Erg. Schwed. Südpolar-Exp. 4(8): 113, *f. 22*. 1908.

Bucklandiella pacifica (Ireland & J.R.Spence) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium pacificum* Ireland & J.R.Spence, Canad. J. Bot. 65: 859, *f. 1–10*. 1987.

Bucklandiella procumbens (Mitt.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia procumbens* Mitt., Trans. Proc. Roy. Soc. Victoria 19: 56. 1882.

Bucklandiella ptychophylla (Mitt.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia ptychophylla* Mitt. *in* Lindsay, Trans. Bot. Soc. Edinburgh 8: 280. 1866.

Bucklandiella rupestris (Mitt.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Dryptodon rupestris* Hook.f. & Wilson, London J. Bot. 3: 544. 1844.

Bucklandiella seychellara (Besch.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium seychellarum* Besch., Ann. Sci. Nat. Bot. Sér. 6, 9: 352. 1880.

Bucklandiella striatipila (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium striatipilum* Cardot, Bull. Herb. Boissier Sér. 2, 5: 1004. 1905.

Bucklandiella suborthotrichacea (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Grimmia suborthotrichacea* Müll.Hal., Bot. Jahrb. Syst. 5: 81. 1883.

Bucklandiella subsecunda (Hook. & Grev.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Trichostomum subsecundum* Hook. & Grev., Icon. Pl. 1: 17, *f. 5*. 1836.

Bucklandiella subulifolia (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium subulifolium* Cardot, Wiss. Erg. Schwed. Südpolar-Exp. 4(8): 155. 23. 1908.

Bucklandiella sudetica (Funck) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Trichostomum sudeticum* Funck, Deutschl. Moose 26. 1820.

Bucklandiella sudetica fo. ***kindbergii*** (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium sudeticum* (Funck) Bruch & Schimp. fo. *kindbergii* Frisvoll, Gunneria 59: 80, *f. 16*. 1988.

Bucklandiella sudetica fo. ***terricola*** (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium sudeticum* (Funck) Bruch & Schimp. fo. *terricola* Frisvoll, Gunneria 59: 83, *f. 17*. 1988.

Bucklandiella venusta (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium venustum* Frisvoll, Gunneria 59: 135. 1988.

Bucklandiella verrucosa (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium verrucosum* Frisvoll, Gunneria 59: 159. 1988.

Bucklandiella verrucosa var. ***emodensis*** (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium verrucosum* Frisvoll var. *emodense* Frisvoll, Gunneria 59: 162. 1988.

Bucklandiella valdon-smithii (Ochyra & Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov*

Basionym: *Racomitrium valdon-smithii* Ochyra & Bednarek-Ochyra, Fragm. Florist. Geobot. 44: 211, *f. 1*. 1999.

Bucklandiella visnadiae (W.R.Buck) Bednarek-Ochyra & Ochyra, *comb. nov*

Basionym: *Racomitrium visnadiae* W.R.Buck, Brittonia 49: 463, *f. 1–7*. 1999.

Bucklandiella vulcanicola (Frisvoll & Deguchi) Bednarek-Ochyra & Ochyra, *comb. nov.*

Basionym: *Racomitrium vulcanicola* Frisvoll & Deguchi, Gunneria 59: 167. 1988.

[180] For adetailed ecological and distributional account of *Bucklandiella microcarpa* in Poland see Bednarek-Ochyra *et al*. (1990*e*) and Bednarek-Ochyra (1995).

[181] For a detailed ecological and distributional account of *Bucklandiella affinis* in Poland see Bednarek-Ochyra *et al*. (1990*d*) and Bednarek-Ochyra (1995).

[182] For a detailed ecological and distributional account of *Bucklandiella heterosticha* in Poland see Bednarek-Ochyra *et al*. (1990*c*) and Bednarek-Ochyra (1995).

[183] *Bucklandiella obtusa* is the rarest species of the genus in Poland. It was first recorded from Bolesławiec in Lower Silesia by Frisvoll (1988) and later only two additional specimens from West Pomerania were discovered (Bednarek-Ochyra *et al*. 1990*h*; Bednarek-Ochyra 1995).

[184] *Bucklandiella macounii* has long been neglected and only Frisvoll (1988) defined it and established its presence for the first time in Europe. The type variety of *Racomitrium macounii* is exceedingly rare in Poland and so far only one collection has been made in the Giant Mountains and two in the High Tatras (Bednarek-Ochyra *et al*. 1990*j*; Bednarek-Ochyra 1995).

[185] *Bucklandiella macounii* subsp. *alpinum* is an altimontane moss in Poland, much more widespread than the type subspecies in the Giant Mountains and the Tatras (Bednarek-Ochyra *et al*. 1990*k*; Bednarek-Ochyra 1995).

[186] *Bucklandiella sudetica* is a widespread montane species occurring also in relictual stations on erratic blocks in West Pomerania and in the Góry Świętokrzyskie (=Holy Cross Mountains) (Bednarek-Ochyra *et al*. 1990*i*; Bednarek-Ochyra 1995). In Poland it is mostly represented by typical phenotypes and only occasionally some populations from West

Pomerania, the Sudetes and the High Tatras represent fo. *kindbergii* (Frisvoll) Bednarek-Ochyra & Ochyra (Bednarek-Ochyra 1995).

[187] The order Pottiales was established by Fleischer (1920) and it has gained general acceptance in all moss classification systems (e.g., Brotherus 1924; Dixon 1932; Reimers 1954; Walther 1983; Vitt 1984). However, it is not the oldest name for this order. Fleischer (1904*a*) introduced two ordinal names, Trichostomales [Reihe Trichostomoideae] and Hyophilales [Reihe Hyophiloideae] which clearly antedate the Pottiales. Nonetheless, the last name is retained here following Art. 11.9 of the current Code (Greuter *et al*. 2000) which says that the principle of priority is not mandatory for names of taxa above the rank of family. However, Recommendation 16B in the Code does suggests that in choosing typified names for taxa above the rank of family authors should generally follow the principle of priority. Because the Pottiales is very firmly rooted in the bryological literature it would be quite confusing to replace it by the less well-known Trichostomales.

[188] The family Ephemeraceae has traditionally been placed in the Funariales but the cleistocarpous capsules and markedly reduced gametophores have considerably hampered evaluation of the affinities of these ephemeral mosses belonging to the genera *Ephemerum*, *Micromitrium* and *Nanomitriopsis* which consitute the family Ephemeraceae. In the present placement of the family Buck & Goffinet (2000) are followed which is based on the results of molecular data (Goffinet & Cox 2000; Goffinet *et al*. 2001). To some extent this transfer of the Ephemeraceae to the Pottiales is supported by similarities in the development of sporophytes in *Ephemerum* and *Acaulon* (Yip & Rushing 1999).

[189] The circumscription and infrafamilial classification of the Pottiaceae proposed by Zander (1993) is adopted here.

[190] Zander (1993) cited '(BSG) Limpr. *in* Broth.' as the authorities of the Trichostomoideae but this cannot be accepted. The authors of the basionym refer in fact to Schimper (1860) who established the family Trichostomaceae. Subsequently, Limpricht (1888) recognized the Trichostomeae it as an unranked subdivision of the Pottiaceae making no reference to Schimper's (1860, 1876) familial name. It was only Brotherus (1902) who recognized as one of four subfamilies of the Pottiaceae. Because he gave an indirect reference to Limpricht's (1888) arrangement of the European genera, it may be considered as elevating the unranked Trichostomeae to the rank of subfamily and accordingly its authorities should be cited as '(Limpr.) Broth.'.

[191] We provisionally accept '(Hedw. *ex* Brid.) Bruch & Schimp.' as the authorities of *Eucladium verticillatum*, but the problem of the basionym of this name needs careful study. It is commonly accepted that *Weissia verticillata* is the basionym of *E. verticillatum*. According to the compilers of the *Index muscorum* (Wijk *et al*. 1969), *Weissia verticillata* was validated by Bridel (1801). He provided no description of this taxon, giving only a reference to Hedwig, without specifying the work of this author. *W. verticillata* is certainly missing from Hedwig's (1801) "Species muscorum frondosorum", his major work which was selected as the starting point of moss nomenclature (*Sphagnum* excepted). This

bionomial also seems to be absent from his other major pre-1801 works, including *Fundamentum historiae naturalis muscorum* (Hedwig 1782), *Theoria generationis et fructificationis* (Hedwig 1784) and *Descriptio et adumbratio microscopico-analytica muscorum frondosorum* (1785–1797). Unfortunately, it has not so far been possible to check all the published works of Hedwig (Wissemann 2000). If a search through Hedwig's remaining works were to reveal that he never used the name *Weissia verticillata*, then the current basionym of *Eucladium verticillatum* cannot be accepted. In fact, this species was first described by Linnaeus (1753) who gave a direct reference to the *Bryum pilosum verticillatum* of Dillenius (1741, *pl. 47 f. 35*). The identity of this species with *Eucladium verticillatum* was confirmed by Lindberg (1883*a*; De Sloover 1995). If it is the case that *Weissia verticillata* cannot be traced in any of Hedwig's works, the basic issue would be who was the first to validate the Linnaean *Bryum verticillatum*. It seems that it was done by Withering (1801) who accepted *Bryum verticillatum*, giving a direct reference to Dillenius (1741) and inferentially to Linnaeus (1753). In such a situation the correct authorities for *Eucladium verticillatum* are '(L. *ex* With.) Bruch & Schimp.' and the basionym of this name is *Bryum verticillatum* L. *ex* With., Syst. Arr. Brit. Pl. Ed. 4, 3: 804. 1801 (26 XII).

[192] The concept of the genus *Trichostomum* adopted here follows Zander (1993).

[193] Following the compilers of the *Index muscorum* (Wijk *et al*. 1969), Zander (1993) ascribed subgenus *Oxystegus* to Limpricht (1888) who actually provided the description of *Oxystegus* but failed to indicate the rank of this taxon. He admittedly gave a reference to Lindberg's (1864) work in which the name *Oxystegus* was introduced as one of eight subdivisions of *Trichostomum*, but due to the lack of a description it is a typical *nomen nudum*. Furthermore, the rank of this subdivision was not indicated. So, the subgeneric name has to be validated.

Trichostomum Bruch subgenus ***Oxystegus*** (Lindb. *ex* Limpr.) Ochyra, *stat. et comb. nov.*

Basionym: *Trichostomum* Bruch A. [unranked] *Oxystegus* Lindb. *ex* Limpr., Laubm. Deutschl. 1: 569. 1888. — TYPE: *Trichostomum cylindricum* (Bruch) Müll.Hal., *hom. illeg*. [=*T. tenuirostre* (Hook. & Taylor) Lindb.]

[194] For distribution of *Pleurochaete squarrosa* in Poland see Ochyra & Szmajda (1983*c*).

[195] In Poland, *Bryoerythrophyllum ferruginascens* is known only from a single locality in Oświęcim in Kotlina Oświęcimska (Karczmarz & Żarnowiec 1989*a*).

[196] The concept of the genus *Pseudocrossidium* adopted here follows Zander (1979, 1993).

[197] *Leptodontium styriacum* was reported for the first time from Poland and the Carpathians by Lisowski (1956*b*) who found it in the Bieszczady Zachodnie Range in the Polish Eastern Carpathians. Szafran (1957) and Lisowski (1957) questioned the correctness of the determination of this plant and suggested it represented in fact *Zygodon den-*

tatus. This material was distributed by Lisowski (1956*c*) in his *Bryotheca polonica* as No. 259 and it truly belongs to *Leptodontium styriacum* (see also Duell 1992).

[198] The taxonomic concept of *Barbula* and its infrageneric classification are adopted from Zander (1979).

[199] According to Wijk *et al*. (1959) and Zander (1993) *Convolutae* was recognized as a section of the genus *Barbula* by Bruch & Schimper (1842). However, in this publication *Convolutae* is described as an unranked "Untergruppe" of the unnamed Sect. 1 of *Barbula*. It was validated as a section by Schimper (1860) under Art. 33.2 of the current Code (Greuter *et al*. 2000).

[200] In the taxonomic revision of the tribe Pleuroweisieae in Central America Zander (1977) reduced *Gymnostomum calcareum* to synonymy with *G. aeruginosum*. However, in Europe they remain very distinct and are easily separated from each other. *G. calcareum* differs from other species of the genus in its small size and bright green coloration, and small forms of *G. aeruginosum* may be distinguished by the leaves neatly curled when dry, the larger apical cells and the wider costa with dorsal and ventral stereid bands in transverse section. Because *G. calcareum* is based on the European type, the synonymization of this name with *G. aeruginosum* is doubtful and needs reconsideration.

[201] For the taxonomic concept and infrageneric classification of the genus *Didymodon* accepted here and the relevant nomenclature see Zander (1978, 1993). An illustrated key by Kučera (2000) is helpful for determination of Central European species of this genus.

[202] *Didymodon insulanus* is better known as *Barbula cylindrica* (Taylor) Schimp. *ex* Boulay but in *Didymodon* the oldest available name for it is *D. insulanus* based on *Tortula insulana* De Not. (Hill 1981). This is because the epithet *cylindricus* is preoccupied by *D. cylindricus* (Hedw.) Wahlenb., a name which refers to the well-known species *Trichodon cylindricus* (Hedw.) Schimp.

[203] *Didymodon sinuosus* is a very rare species in Poland which is known only from the Bieszczady Zachodnie Range in the Eastern Carpathians (Lisowski 1956*b*).

[204] For the combination *Didymodon fallax* var. *brevifolius* see Ochyra (1984*b*), although the basionym of this varietal name should be corrected. When the combination was made, it was commonly accepted that the *Bryum brevifolium* of Dickson (1790) was validated by Withering (1801). However, Karttunen (1988) has shown that all the pre-1801 names proposed by Dickson (1785, 1790, 1793) were validated by Dickson (1801) himself in the index to in his *Fasciculi plantarum cryptogamicarum Britanniae*. This discovery does not invalidate this combination under Art. 33.4 of the current Code (Greuter *et al*. 2000), but the citation of the basionym should be corrected as follows: *Bryum brevifolium* Dicks., Fasc. Pl. Crypt. Brit. 4 Index: 1. 1801 (X).

[205] *Didymodon ferrugineus* is the oldest available name for the species which under *Barbula* is well-known as *B. reflexa* (Brid.) Brid. (Hill 1981).

[206] The inclusion of the genus *Geheebia* in *Didymodon* follows Juratzka (1882), Limpricht (1888) and Zander (1978, 1993). For the distribution of *D. giganteus* in Poland see Ochyra *et al*. (1990*a*).

[207] The conspecificity of *Molendoa tenuinervis* with *M. hornschuchiana* adopted here follows Zander (1977) and Geissler (1985).

[208] Geissler (1985) considered *Molendoa sendtneriana* to be synonymous with *Molendoa hornschuchiana* (both species treated under *Anoectangium*) but this idea has not gained wide acceptance and *M. sendtneriana* is still recognized as a species in its own right (e.g., Iwatsuki 1991; Ignatov & Afonina 1992; Menzel 1992; Sollman 1998; Allen 2002; Ignatov & Ignatova 2003).

[209] The broad concept of the genus *Weissia* to include the traditional genera *Astomum* and *Hymenostomum* adopted here follows, among others, Hilpert (1933), Chen (1941), Crundwell & Nyholm (1972), Saito (1975), Smith (1978), Stoneburner (1985), and Zander (1993). These genera are here treated as subgenera following the concept of Saito (1975). For the synonymy of these subgenera see Zander (1993).

[210] Blockeel & Smith (1998) pointed out that *Weissia wimmeriana* differs from the common *W. controversa* only in the paroicous as opposed to autoicous inflorescences and deserves only varietal status.

[211] Zander (1993) ascribed the reduction of *Astomum* to subgeneric status within *Weissia* to Kindberg (1898). Indeed, this author considered *Astomum* as an infrageneric taxon but did not indicate its definite rank. Saito (1975) seems to be the first author to validate *Astomum* as a subgenus within *Weissia*.

[212] As with *Weissia* subg. *Astomum* Zander (1993) considered Kindberg (1898) as the author of the combination of *Hymenostomum* as a subgenus within *Weissia*. Again, it was only Saito (1975) who validated this nomenclatural change.

[213] For the nomenclature of *Weissia brachycarpa* see Hill (1981).

[214] Zander (1993) proposed the expanded concept of *Tortula* adopted here. This author amalgamated the genera *Desmatodon*, *Phascum* and *Pottia* with *Tortula*. The first generic name is synonymous with *Tortula* sect. *Tortula*, whereas the last two names are synonyms of sect. *Cuneifoliae*. These two sections encompass all European taxa of *Tortula* with just a few exotic species being placed in two additional small sections, sect. *Schizophascum* and sect. *Hyophilopsis*.

[215] *Tortula eurhyphylla* is well-known under the familiar name *Desmatodon latifolius* which is the lectotype of the generic name *Desmatodon*. Because the epithet *latifolia* is blocked in *Tortula* at least three times, among others, by *T. latifolia* Bruch *ex* Hartm., Zander (1993) proposed the new name *T. euryphylla* for this species within this genus.

[216] Zander (1993) considered *Pottia* (Ehrh. *ex* Rchb.) Fürnr. to be congeneric with

Tortula and reduced it to a section within the latter genus. Following the compilers of the *Index muscorum* (Wijk *et al*. 1969) he accepted the name *Pottia* for this section and gave '(Ehrh. *ex* Rchb.) Kindb.' as the authorities of this sectional name. Ascribing this combination to Kindberg (1883) is inadmissible because, in his work, the infrageneric taxa are designated 'Abtheilungen' and under Art. 35.3 of the current Code (Greuter *et al*. 2000) they cannot be interpreted as sections. Additionally, *Pottia* was originally described by Reichenbach (1828) as a subgenus of *Gymnostomum* (Brizicky 1969), not as a section as interpreted in the *Index muscorum*. In this situation subg. *Pottia* does not seem to be the oldest available name for this group in the rank of section. According to Wijk *et al*. (1959) the oldest sectional name should be *Barbula* sect. *Cuneifoliae* Bruch & Schimp. but this is an incorrect interpretation. Bruch & Schimper (1842) divided the genus *Barbula* into two sections for which no names were proposed. The first section comprised all but one species of the genus and was subdivided into 'Untergruppen' which were named after the the type species ['Bei den Untergruppen haben wir immer gut bekannte Art als Grundform angenommen...']. One such group was 'Untergruppe *Cuneifoliae*' which was based on *B. cuneifolia* and in no way can it be designated a section. The compilers of the "Index muscorum' stated subsequently that the 'section' *Cuneifoliae* was transferred as a section to the genus *Tortula* by Spruce (1849). Unfortunately, this author also did not designate a rank for this taxon. It was only Schimper (1856) who univocally designated *Cuneifoliae* as a section of *Barbula*, so correctly the name of this section should be cited as *Barbula* sect. *Cuneifoliae* Schimp. This is evidently the oldest available name for the group comprising species of the former genus *Pottia* and the application of this name under *Tortula* necessitates the following nomenclatural change.

Tortula Hedw. sectio ***Cuneifoliae*** (Schimp.) Ochyra, *comb. nov*.

Basionym: *Barbula* Hedw. sectio *Cuneifoliae* Schimp., Coroll. Bryol. Eur.: 33. 1856. — TYPE: *Tortula cuneifolia* (Dicks.) Turner (*Bryum cuneifolium* Dicks.).

[217] *Tortula acaulon* is much better known under the familiar name *Phascum cuspidatum* Schreb. *ex* Hedw. but the epithet *cuspidata* is not available for this species in *Tortula* on account of its being used twice for different species.

[218] *Tortula lanceola* is widely known as *Pottia lanceolata* (Hedw.) Müll.Hal. but the epithet *lanceolata* for this species is blocked in *Tortula* by *T. lanceolata* (Hedw.) P.Beauv. which is a taxonomic synonym of *Barbula unguiculata*.

[219] *Tortula randii* has been discovered only once in Poland in 1931 near Białogard (*Germ.* Belgard) by F. Hintze (Duell & Meinunger 1989; see also Crundwell & Nyholm 1963).

[220] Under *Pottia* this species is known as *P. intermedia* (Turner) Fürnr. but the epithet *intermedia* cannot be used in *Tortula* as it is antedated by *T. intermedia* (Brid.) De Not., a name which refers to the species here called *Syntrichia montana*.

[221] Limpricht (1885) recognized the monotypic genus *Mildeella* to accommodate *Pottia bryoides* (Dicks.) Mitt. This genus has not gained wide acceptance because, among others,

its name was illegitimate as a younger homonym. Guerra & Cano (2000) reinstated this genus and proposed *Protobryum* as a replacement for *Mildeella*. Zander (1993) considered this species as a member of *Tortula* in which it was called *T. protobryoides* since the epithet *bryoides* had already been used in this genus.

[222] For the concept of the genus *Microbryum* adopted here and the relevant nomenclature see Zander (1993).

[223] The concept of the genus *Hennediella* accepted here follows Zander (1993).

[224] For the occurrence of *Hennediella heimii* in Poland see Karczmarz (1961*a*).

[225] For the concept of the genus *Syntrichia* adopted here and the relevant nomenclature see Zander (1993).

[226] For the nomenclature of *Syntrichia virescens* see Ochyra (1992*b*, 1994*c*, *d*).

[227] There has been much confusion with regard to the nomenclature of this species both when considered as a member of *Syntrichia* and of *Tortula*. The species was originally recognized as *Syntrichia montana* by Nees ab Esenbeck (Raab 1819) and seven years later Bridel (1826) described *S. intermedia* and considered *S. montana* as a synonym of *S. laevipila*. However, Milde (1869*b*), having examined the original material of *S. montana*, stated that it was identical to *S. intermedia*. This conclusion was approved by the compilers of the *Index muscorum* but for unknown reasons they gave priority to Bridel's species name. No less has been the confusion with the nomenclature of this species in *Tortula*. This problem was discussed in detail by Ochyra (1994*d*) who pointed out that the correct name for the species under this generic name was *T. crinita* (De Not.) De Not. because the combination *T. intermedia* based on Bridel's *Syntrichia intermedia* was correctly made only by Berkeley (1863). Wijk *et al*. (1969) introduced serious confusion because they ascribed the combination *S. intermedia* to '(Brid.) De Not.' and overlooked the fact that De Notaris (1838) had described a different species, *Tortula intermedia*, which was based on a completely different type. Unfortunately, this confusion has been replicated in the literature (e.g., Smith 1978. Corley *et al*. 1981; Duell 1984).

[228] The concept of the genus *Hilpertia* accepted here follows Zander (1989, 1993).

[229] For the occurrence of *Hilpertia velenovskyi* in Poland see Wacławska (1958), Kuc (1960) and Ochyra & Szmajda (1983*b*).

[230] The original spelling of the generic name *Cinclidotus* which was used by Palisot de Beauvois (1805) was *Cicclidotus*. It was subsequently corrected by Hooker & Taylor (1818) and since then the corrected form has generally been taken on in the bryological literature. This spelling was proposed for conserving (Margadant & Geissler 1995) and it was accepted by the Committee for the Bryophyta (Zijlstra 1998), and in the Saint Louis Code (Greuter *et al*. 2000) *Cinclidotus* is placed in the list of conserved generic names.

[231] Following the suggestion of Vitt *et al*. (1998) two orders, Orthotrichales and Hed-

wigiales, are recognized as the separate subclass Orthotrichidae. This name was invalidly published by these authors as a *nomen nudum*.

Orthotrichidae (Dixon) Ochyra, *stat. et comb. nov*.

Basionym: Diplolepideae ordo Orthotrichales Dixon *in* Verd., Man. Bryol.: 409. 1932.

Orthotrichidae Vitt, Goffinet & Hedd. *in* Bates, Ashton & Duckett, Bryol. Twenty-First Cent.: 119. 1998, *nom. nud.*

[232] For the concept of the genus *Orthotrichum* adopted here and the relevant nomenclature of the infrageneric taxa see Lewinsky (1993). An illustrated key to the European species of this genus (Lewinsky 1995) is recommended for determination of the Polish species.

[233] The treatment of *Orthotrichum schimperi* Hammar as a synonym of *O. pumilum* follows Lewinsky (1993).

[234] The treatment of *Ulota bruchii* as a species in its own right follows Rosman-Hartog & Touw (1987) and Smith & Proctor (1993).

[235] For the occurrence of *Ulota phyllantha* in Poland see Ochyra & Bednarek-Ochyra (1991*a*) and Ochyra *et al*. (1992*k*).

[236] *Zygodon gracilis* is an exceedingly rare species in Poland, known only from the Western Tatras (Lisowski 1962).

[237] *Zygodon rupestris* is better known under the name *Z. baumgartneri* but Karttunen (1984) showed that *Z. rupestris* is the correct name for this species. It is here reported for the first time from Poland on the basis of a specimen collected on 12 November 1897 by F. Hintze on the bark of an oak tree in Sośnica (*Germ*. Herzberg) in West Pomerania. The specimen is preserved in KRAM and is a duplicate obtained through the courtesy of Professor Ruprecht Duell, Duisburg, Germany.

[238] On morphological grounds De Luna (1995) pointed out that the Hedwigiaceae are closely related to the Orthotrichales. Consequently, some subsequent authors (e.g., Vitt *et al*. 1998; Hedenäs 1998*a*; Buck & Goffinet 2000) recognized the separate order Hedwigiales to accommodate *Hedwigia* and its allies. Because the order name was published either as a *nomen nudum* or *nomen illegitimum* without a Latin diagnosis, Hedwigiales is validated here.

Hedwigiales Ochyra, *ord. nov*.

Hedwigiales Vitt, Goffinet & Hedd. *in* Bates, Ashton & Duckett, Bryol. Twenty-First Cent.: 119. 1998, *nom. nud.*

Hedwigiales Hedenäs *in* Nyholm, Ill. Fl. Nord. Mosses 4: 368. 1998; W.R.Buck & Goffinet *in* A.J.Shaw & Goffinet, Bryoph. Biol.: 104. 2000, *nom. inval. descr. angl.*

Plantae autoicae, caulibus dichotome vel vage ramosis, foliis latiusculis, ecostatis, plus minus evidenter papillosis, concavis, cellulis superne quadratis et rectangulis erosis, media infima basi lineari-elongatis, omnibus distincte seriatis. Calyptra minuta, conico-mitrata, nuda vel pilosa, vel

cucullata, Longirostris, nuda. Capsula perichaetio distincto immersa, emersa vel alte exserta, globosa, elliptica vel fusiformis, laevis, collo instructa, operculo lato convexo vel angusto obliquirostri, peristomio nullo.

[239] Hedenäs (1994) revised the *Hedwigia ciliata* complex in Fennoscandia and found that this complex actually comprised two species, *H. ciliata* and *H. stellata*, the latter having been described as new. Ochyra *et al*. (1988*o*) reviewed the distribution of *Hedwigia ciliata* in Poland but in the context of the new taxonomic concept of this complex, the available distribution map is out of date and the Polish material of *Hedwigia* needs critical revision. In order to facilitate Polish bryologists' recognition of *Hedwigia* species the following key is given:

1. Mid-leaf cells with 1(–2) papillae; leaf apices pointed, rarely bifid, tending to be recurved or reflexed on drying, especially in the upper parts of sterile shoots.....*H. stellata*
1. Mid-leaf cells with 1–4(–5) papillae, commonly with 2 or more papillae; leaf apices mostly truncate and crowned with 2–5 papillae, erect to spreading when dry or following the leaf curvature ..... *H. ciliata*

[240] Erzberger (1996) studied the distribution of *Hedwigia stellata* in Europe and found that the species shows affinities to an oceanic climate and is widespread in the Mediterranean and in Western and Central Europe. He reported two localities of the species from Lower Silesia and West Pomerania.

[241] The Splachnaceae was traditionally associated with the Funariaceae and both were placed in the order Funariales but in two separate suborders (Fleischer 1920, 1923; Brotherus 1924; Dixon 1932; Walther 1983). On the basis of molecular data Vitt *et al*. (1998) indicated that this family is unrelated to the funariaceous mosses and provisionally established a separate subclass for it. Accepted here is the position of the splachnaceous mosses in the Bryidae suggested by Buck & Goffinet (2000) who placed them in a separate order. The name of this order is here validated.

Splachnales (M.Fleisch.) Ochyra, *stat. et comb. nov.*

Basionym: Eubryales subordo Splachnineae M.Fleisch., Hedwigia **61**: 394. 1920 ['Untereihe Splachnineae'].

Splachnales Vitt, Goffinet & Hedd. *in* Bates, Ashton & Duckett, Bryol. Twenty-First Cent.: 119. 1998, *nom. nud.*

Splachnales W.R.Buck & Goffinet *in* A.J.Shaw & Goffinet, Bryoph. Biol.: 103. 2000, *nom. inval. descr. angl.*

[242] For distribution of *Tetraplodon angustatus* in Poland see Szmajda *et al*. (1991*f*).

[243] For distribution of *Tetraplodon mnioides* in Poland see Szmajda *et al*. (1991*g*).

[244] For distribution of *Splachnum ampullaceum* in Poland see Szmajda *et al*. (1991*h*).

[245] For distribution of *Splachnum sphericum* in Poland see Szmajda *et al*. (1991*i*).

[246] For distribution of *Tayloria serrata* in Poland see Szmajda *et al*. (1991*a*). In that treatment this species was considered in a broader sense to include *T. tenuis* as its variety and if the latter is recognized as a separate species the distribution map needs to be revised.

[247] *Tayloria tenuis* is similar in leaf shape and overall appearance of the plants to *T. serrata* but differs in its straight or only weakly recurved leaf apex (versus a reflexed one in *T. serrata*), narrower capsule and longer exothecial cells of the hypophysis (the opposite situation in *T. serrata*), exserted columella after dehiscence (vs not so in *T. serrata*) and absence of rhizoidal gemmae which are frequently produced in *T. serrata*. For the correct author citation of this species name see Karttunen (1988).

[248] For distribution of *Tayloria acuminata* in Poland see Szmajda *et al*. (1991*b*).

[249] For distribution of *Tayloria splachnoides* in Poland see Szmajda *et al*. (1991*c*).

[250] For distribution of *Tayloria froelichiana* in Poland see Szmajda *et al*. (1991*d*).

[251] For distribution of *Tayloria lingulata* in Poland see Szmajda *et al*. (1991*e*).

[252] The infrafamilial classification of the Meesiaceae adopted here follows Matteri & Ochyra (1999).

[253] For distribution of *Meesia uliginosa* in Poland see Ochyra *et al*. (1988*b*).

[254] For distribution of *Meesia hexasticha* in Poland see Ochyra *et al*. (1988*c*).

[255] For distribution of *Meesia longiseta* in Poland see Ochyra *et al*. (1988*d*).

[256] The nomenclature and authorship of *Meesia triquetra* follow Ochyra & Lamy (2001). For distribution of *Meesia triquetra* in Poland see Ochyra *et al*. (1988*e*).

[257] Matteri & Ochyra (1999) reduced the family Paludellaceae De Not. to the rank of subfamily but this was redundant because actually the subfamily Paludelloideae had already been described by Lindberg (1878).

[258] For distribution of *Paludella squarrosa* in Poland see Ochyra *et al*. (1988*a*).

[259] The authorship of the binomial *Amblyodon dealbatus* is often ascribed to 'Bruch & Schimper' in *Bryologia europaea* (Bruch *et al*. 1841). Actually, this name was validly published first by Palisot de Beauvois (1804). For distribution of *A. dealbatus* in Poland see Ochyra *et al*. (1992*b*).

[260] Traditionally, *Leptobryum* has been firmly associated with the Bryaceae with which it shares a perfect bryoid peristome, although it is quite discordant in the family if the gametophyte characters are considered. Molecular data clearly showed that this genus exhibits greater affinity to the Meesiaceae than the Bryaceae (Newton *et al*. 2000; Cox *et al*. 2000) and accordingly it was transferred to the former family (Buck & Goffinet 2000; Ignatov & Ignatova 2003). The relationship based on molecular data is also confirmed by

some morphological characters, especially the peculiar shape of the axillary hairs. They are composed of enlarged, club-shaped, hyaline or only slightly pigmented apical cells and 3–4 small and short, strongly pigmented basal cells, the uppermost of them being intensively raspberry red or violet (Zolotov & Ignatov 2001). This form of axillary hair is typical of the Meesiaceae. *Leptobryum* differs markedly from other members of the Meesiaceae in the morphology of the leaves and leaf areolation but considerable variation in gametophyte morphology is usual in this family and lends support to its division into three subfamilies. The peculiar morphology and anatomy of the leaves in *Leptobryum* is coupled with the presence of a perfect bryoid peristome with well-developed, appendiculate cilia arranged in threes (Shaw 1985*b*), other members of the Meesiaceae having variously reduced peristome teeth and mostly no or rudimentary cilia. Therefore recognition of a separate subfamily for *Leptobryum* seems to be fully justified and emphasizes the morphiological diversity of the Meesiaceae.

Meesiaceae subfamilia **Leptobryoideae** Ochyra, *subfam. nov.*

Plantae graciles, foliis angustis, lanceolato-subulatis, nitidis, lineari-rhomboideo vel hexagono areolatis, pellucidis, costis latis. Capsula inclinata vel pendula, longicolla, leptoderma, nitida, operculo mamillari. Peristomium duplex, bryoideum, ciliis processibus interjectis ad articulationes longe appendiculatis. — TYPE: *Leptobryum* (Bruch & Schimp.) Wilson.

[261] The infrageneric classification of *Pohlia* adopted here follows Shaw (1984). A useful treatment of this genus for North America was presented by Shaw (1982).

[262] Shaw (1984) used the name *Cacodon* for this subgenus and ascribed it to Lindberg (1882). Indeed, when describing a new species of *Pohlia* from Sweden, *P. erecta*, Lindberg (1882, 1883*b*) twice used this name as a subdivision of *Pohlia*, but neither its rank nor description were given. Thus, *Cacodon* is a *nomen nudum* in both publications. It was only Brotherus (1903) who validated *Cacodon* as a section of *Pohlia*. A few years earlier, Shaw (1981*a*) had considered this group as *Pohlia* subg. *Mniobryum*, giving a detailed historical and taxonomical account of it. The name was originally used as that of a new genus *Mniobryum* by Limpricht (1892) and Amann (1893) reduced it to a subgenus within *Webera* Hedw. which is an illegitimate name. Thus, the name is validated here as a subgeneric name of *Pohlia*.

Pohlia Hedw. subgenus ***Mniobryum*** (Bruch & Schimp. *ex* Limpr.) Ochyra, *comb. nov.*

Basionym: *Mniobryum* Bruch & Schimp. *ex* Limpr., Laubm. Deutschl. 2: 272. 1892. — TYPE: *Mniobryum carneum* (With.) Limpr., *nom. illeg.* [=*Pohlia melanodon* (Brid.) A.J.Shaw].

[263] The treatment adopted here of the propaguliferous species of *Pohlia* which mostly constitute section *Cacodon* follows Shaw (1981*b*).

[264] For typification of *Pohlia drummondii* see Demaret & Wilczek (1978) and for the occurrence of this species in Poland see Karczmarz & Żarnowiec (1989*b*).

[265] For the occurrence of *Pohlia andalusica* in Poland see Karczmarz & Żarnowiec (1989*b*).

[266] For the occurrence of *Pohlia bulbifera* in Poland see Karczmarz & Żarnowiec (1989*b*).

[267] For the occurrence of *Pohlia camptotrachaela* in Poland see Karczmarz & Żarnowiec (1989*b*).

[268] For the occurrence of *Pohlia proligera* in Poland see Karczmarz & Żarnowiec (1989*b*).

[269] Nyholm (1958, 1993) and Shaw (1981*a*) used the name *Mniobryum* for a section of *Pohlia* but in each case this sectional name was invalidly published because the basionym was either not or incompletely cited. But even validly published it could not be used, because the oldest available name for this section appears to be *Apalodictyon*. It was used as one of ten sections of the genus *Bryum* by Müller (1849) who placed in this section some 33 species, including *B. carneum* L. *ex* With. and *B. albicans* (Wahlenb.) Röhl., which were later placed by Limpricht (1892) in his genus *Mniobryum*. Pfeiffer (1872) lectotypified sect. *Apalodictyon* with *Bryum carneum* L. *ex* With. which is a taxonomic synonym of *Pohlia melanodon* (Brid.) A.J.Shaw (Shaw 1981*a*). Accordingly, the following nomenclatural change is necessary:

Pohlia Hedw. sectio ***Apalodictyon*** (Müll.Hal.) Ochyra, *comb. nov*.

Basionym: *Bryum* Hedw. sectio *Apalodictyon* Müll.Hal., Syn. Musc. Frond. 1: 291. 1848. — LECTOTYPE (*fide* Pfeiffer 1872: p. 225): *Bryum carneum* L. *ex* With., *nom. illeg*. [=*Pohlia melanodon* (Brid.) A.J.Shaw].

[270] Shaw (1981*a*) showed that *Pohlia melanodon* is the correct name for *P. carnea*.

[271] As presently understood the genus *Bryum* is polyphyletic with sections that appear to be more closely related to other genera of the Bryaceae than they are to one another (Spence 1987, 1996). This suggests that *Bryum* should be split into a number of segregates which would appear to be natural taxa. In order to avoid destruction of the current nomenclature by the introduction of many unavoidable nomenclatural changes, Spence & Ramsay (1999) proposed to conserve the name *Bryum* with a conserved type, *B. caespiticium*. This was because *Bryum* is lectotypified with *B. argenteum* (Britton 1918), a species which is certainly the least typical member of the genus and exhibits close alliance to the genus *Anomobryum* (Spence & Ramsay 2002). Failure to save the firmly rooted and well-known name *Bryum* in this way have been a setback to the stabilization of moss nomenclature because the generic name *Bryum* could then only have been used for the small genus which is now called *Anomobryum* and consists of no more than 15 species worldwide, whereas the vast majority of species of the present *Bryum* (more than 200) would have had to have been given names under a different generic name.

The infrageneric classification of *Bryum* adopted here follows the scheme proposed by Ochi (1992). However, the nomenclature of the sections is changed in accordance with comments by Isoviita (1992).

[272] Isoviita (1992) proved that *Bryum* sect. *Amblyophyllum* of Müller (1848), which is lectotypified with *B. calophyllum* (Pfeiffer 1872), is a taxonomic synonym of and has priority over *B.* sect. *Leucodontium* (J.J.Amann *ex* Broth.) Grout which was suggested by Ochi (1992) as the proper name for this section.

[273] Although Ochi (1980) considered *Bryum bicolor* to be conspecific with the austral *B. dichotomum*, these two species are here considered as separate taxa following the concept of Wilczek & Demaret (1976, 1978) and Demaret & Wilczek (1980).

[274] Ochi (1992) used the name *Bryum* sect. *Apalodictyon* for this section which, however, correctly refers to the section of *Pohlia* comprising species sometimes treated as the separate genus *Mniobryum*. According to Isoviita (1992) *Bryum* sect. *Alpniformia* is available for this group. Ochi (1992) divided the section into three subsections but in the present treatment subsections are not recognized. One of these, incorrectly named subsect. *Apalodictyon* or subsect. *Erythrocarpa*, but for which no correct name is available at the moment (Isoviita 1992), consists of small species with characteristic rhizoid gemmae. They constitute a distinct group of species which are commonly, but again incorrectly, designated as the *Bryum erythrocarpum* complex (Crundwell & Nyholm 1964).

[275] These species constitute the *Bryum erythrocarpum* complex and for the taxonomic concept of this group adopted here see Crundwell & Nyholm (1964) and Karczmarz (1975).

[276] *Bryum microërythrocarpum* was placed into synonymy with *B. subapiculatum* by Ochi (1980).

[277] *Bryum bornholmense* was reported from Białogard (*Germ*. Belgard) in West Pomerania by Duell (1994*a*) on the basis of the specimen collected in 1931 by F. Hintze.

[278] The treatment of the *Bryum pseudotriquetrum* aggregate adopted here follows Demaret & Empain (1985).

[279] For discussion of *Bryum subneodamense* (under *B. ovatum*) see Persson (1952) and Kuc (1957*a*).

[280] For the typification and taxonomic position of *Bryum uliginosum* and *B. cernuum* see Demaret & Wilczek (1983).

[281] *Bryum salinum* was reported for the first time from Poland by Nyholm & Crundwell (1958). These authors interpreted the type of *Bryum fissum*, a species described by Ruthe (1897) as "a large but otherwise quite typical *B. salinum*". The type material of this species was collected "am Swineufer bei Swinemünde" and Nyholm & Crundwell (1958) erroneously placed the type locality in Germany. Actually, this locality refers to the banks of the Świna River near Świnoujście which still lie within the Polish border. Examination of the original collections of *B. fissum* confirmed this conclusion and here this species name is lectotypified and formally synonymized with *B. salinum*.

Bryum salinum I.Hagen *ex* Limpr.

Laubm. Deutschl. 2: 334. 1892. — TYPE: Am grassigen Meeresufer, von der Fluth überspült, bei Lyngör (Nedenaes Amt) and der Südküste Norwegens von Dr. med. J. Hagen (Drondheim) am 7. August 1891 mit überreifen und zumeist entdeckelten Kapseln entdeckt [ISOTYPE: "Musci Norwegici ex herb. I. Hagen. Bryum salinum n.sp. Nedenaes amt, Lyngör, in litore graminoso 7/8 1891 leg. I. H." – KRAM!].

Bryum fissum R.Ruthe, Hedwigia 36: 386. 1897. – *B. stenotrichum* Müll.Hal. var. *fissum* (R.Ruthe) Ochyra & Szmajda, Fragm. Florist. Geobot. 24: 140. 1978. — TYPE: Das Moss fand ich ... am Swineufer bei Swinemünde auffeuchtem, 2 Jahre zuvor ausgebaggertem feinen Flusssande im Juni 1894 mit überreifen und vom 15. Mai bis 2. Juni 1895 [LECTOTYPE (selected here): "Bryum fissum R. Ruth. n.sp. Hedwigia 1897, p. 386. Fl. Pomeraniae: Swinemünde am Swineufer bei Westswine auf feuchtem Sande 17.5.95. leg. R. Ruthe" – POZG!; ISOLECTOTYPE: KRAM! SYNTYPES: (1) same locality and collector, 25/5 95 – S!; (2), same locality and collector, 15–27. Mai, 1895 – JE-HERZOG!; TOPOTYPES: (1) same locality and collector, 20.5.[19]99 – JE-MIGULA!; (2) same locality and collector, 27.5.[18]99 – JE-DOHL!, JE-SPINDLER!, S!, S-DUSÉN!; (3) same locality and collector, 27.5.1900 – JE!, KRAM!, POZG!]. First synonymized by Nyholm & Crundwell (1958: p. 376).

In addition to the locality near Świnoujście on Wolin Island, several specimens of *Bryum salinum* were collected in 1932 and 1935 on salty meadows near Białogard (*Germ.* Belgard) in West Pomerania by F. Hintze (specimens in KRAM) (Duell 1994*a*).

[282] Initially, Geissler (1984) indicated that the correct name for *Bryum inclinatum* (Brid.) Turton, *hom. illeg*., is *B. imbricatum* (Schwägr.) Bruch & Schimp. Later, Ochi (1980) found that the oldest available name for this otherwise widespread moss species is the Neotropical *B. amblyodon* and this taxonomic conclusion was subsequently confirmed by Demaret & Geissler (1990).

[283] The taxonomic treatment and nomenclature of *Rhodobryum ontariense* adopted here follows Iwatsuki & Koponen (1972). T. Pócs (in Bizot & Pócs 1979) suggested that an older name for this species was *Rh. spathulatum* (Hornsch.) Pócs and this name has subsequently been accepted in Europe (e.g., Corley *et al*. 1981; De Zuttere & Demaret 1993). However, Touw (1984) convincingly showed that the South African type material used by Hornschuch (1841) for the description of *Mnium spathulatum*, the basionym of *Rhodobryum spathulatum*, had nothing to do with the northern *Rh. ontariense* but actually represented *Rh. aubertii* (Schwägr.) Thér., a South African-Mascarenian species (Rooy & Magill 1987). Accordingly, the correct name for the Holarctic species still remains *Rh. ontariense*. For distribution of this species in Poland see Ochyra & Szmajda (1985) and Ochyra *et al*. (1985*e*).

[284] For distribution of *Rhodobryum roseum* in Poland see Ochyra *et al*. (1985*f*).

[285] For the concept of the genus *Rosulabryum* adopted here see Spence (1996) and for the taxonomic concept of species see Syed (1973), Haji Mohamed (1979) and Wilczek & Demaret (1982). Examination of the relevant type collections has resulted in some additional species being confirmed for this genus, necessitating the following nomenclatural changes:

Rosulabryum andicola (Hook.) Ochyra, *comb. nov*.

Basionym: *Bryum andicola* Hook. *in* Kunth, Syn. Pl. 1: 58. 1822.

Rosulabryum canariense (Brid.) Ochyra, *comb. nov*.

Basionym: *Bryum canariense* Brid., Muscol. Recent. Suppl. 3: 29. 1817.

Rosulabryum densifolium (Brid.) Ochyra, *comb. nov*.

Basionym: *Bryum densifolium* Brid., Bryol. Univ. 1: 855. 1827.

Rosulabryum donianum (Grev.) Ochyra, *comb. nov*.

Basionym: *Bryum donianum* Grev., Trans. Linn. Soc. London 15: 345. 1827.

Rosulabryum elegans (Nees) Ochyra, *comb*. *nov*.

Basionym: *Bryum elegans* Nees *in* Brid., Bryol. Univ. 1: 849. 1827.

Rosulabryum goudotii (Hampe) Ochyra, *comb*. *nov*.

Basionym: *Bryum goudotii* Hampe, Ann. Sci. Nat. Bot. Sér. 5, 4: 340. 1865.

Rosulabryum huillense (Welw. & Duby) Ochyra, *comb. nov*.

Basionym: *Bryum huillense* Welw. & Duby, Mém. Soc. Phys. Genève 21: 221. 1870.

Rosulabryum keniae (Müll.Hal.) Ochyra, *comb. nov*.

Basionym: *Bryum keniae* Müll.Hal., Flora 73: 475. 1890.

Rosulabryum laevifilum (Syed) Ochyra, *comb. nov*.

Basionym: *Bryum laevifilum* Syed, J. Bryol. 3: 293, *f. 13–14*. 1973.

Rosulabryum leptoneurum (P.de la Varde) Ochyra, *comb. nov*.

Basionym: *Bryum leptoneurum* P.de la Varde, Ark. Bot. Ser. 2, 3(8): 165. 1955.

Rosulabryum macrophyllum (Cardot & Broth.) Ochyra, *comb. nov*.

Basionym: *Bryum macrophyllum* Cardot & Broth., Kongl. Svenska Vetenskapsakad. Handl. 63(10): 48. 1923.

Rosulabryum perlimbatum (Cardot) Ochyra, *comb. nov*.

Basionym: *Bryum perlimbatum* Cardot, Bull. Herb. Boissier Sér. 2, 5: 1007. 1905.

Rosulabryum platyloma (Schwägr.) Ochyra, *comb. nov*.

Basionym: *Bryum platyloma* Schwägr., Sp. Musc. Frond. Suppl. 1(2): 116. 1816.

Rosulabryum pseudocapillare (Besch.) Ochyra, *comb. nov*.

Basionym: *Bryum pseudocapillare* Besch., Ann. Sci. Nat. Bot. Sér. 6, 3: 205. 1876.

Rosulabryum pycnophyllum (Dixon) Ochyra, *comb. nov*.

Basionym: *Bryum truncorum* Brid. var. *pycnophyllum* Dixon, S. African J. Bot. 18: 321. 1922.

Rosulabryum stirtonii (Schimp.) Ochyra, *comb. nov*.

Basionym: *Bryum stirtonii* Schimp., Syn. Musc. Eur. Ed. 2, 2: 470. 1876.

Rosulabryum subelegans (Kindb.) Ochyra, *comb. nov*.

Basionym: *Bryum subelegans* Kindb., Skand. Bladmossfl.: 176. 203. 1903.

Rosulabryum truncorum (Brid.) Ochyra, *comb. nov*.

Basionym: *Bryum truncorum* Brid., Mant. Musc.: 19. 1819.

Rosulabryum viridescens (Welw. & Duby) Ochyra, *comb. nov*.

Basionym: *Bryum viridenscens* Welw. & Duby, Mém. Soc. Phys. Genève 21: 218. 1870.

[286] For typification of *Rosulabryum capillare* and related species see Wilczek & Demaret (1982).

[287] For the occurrence of *Rosulabryum elegans* in Poland see Bloch (1971).

[288] *Rosulabryum laevifilum* was described relatively recently as *Bryum laevifilum* on the basis of material from Europe, the Caucasus and North America (Syed 1973). It was considered to be closely related to the widespread *B. flaccidum* Brid. from which it differed in having smooth axillary gemmae, which in the later species were finely papillose. Wilczek & Demaret (1982) examined the type collections of species in the *Bryum capillare* complex and found that the gemmae in the leaf axils in *B. laevifilum* were actually very finely papillose ('très finement papilleux') as is clearly seen on the SEM micrographs presented by these authors (Wilczek & Demaret 1982, f. 11A–B). At the same time they found that the type specimen of *B. flaccidum*, originating from Hispaniola in the West Indies in Central America (Bridel 1827), had commonly been misinterpreted by European bryologists and was actually conspecific with *B. andicola* (=*Rosulabryum andicola*). (By an error they gave priority to *B. flaccidum* over *B. andicola*.) Wilczek & Demaret (1982) concluded that all specimens named by European authors as *Bryum flaccidum* should be named *B. laevifilum* and Demaret (1993) maintained this in the Moss Flora of Belgium. Unfortunately, Corley & Crundwell (1991) completely misinterpreted the taxonomic conclusion presented by Wilczek & Demaret (1982) in that they considered *B. flaccidum* as "an illegitimate name" which "must be replaced by *B. laevifilum*, but *B. subelegans* is an earlier name". *B. flaccidum* is a **legitimate** name and it was only misinterpreted. Hence, *B. laevifilum* is an entirely correct name for the plants which have commonly been named *B. flaccidum* by European bryologists.

The conclusion presented by Corley & Crundwell (1991) on the conspecificity of *Bryum laevifilum* and *B. subelegans* is a little strange and surprising. Syed (1973) and Nyholm (1993) considered them to be definitely distinct but closely related species. (It is worth noting that the latter author still used the name *B. flaccidum* and considered *B. laevifilum* to be its synonym.) *B. subelegans* has coarsely papillose axillary gemmae, narrower elongate-ovate leaves and stout broad costae which are excurrent on the upper leaves and percurrent to subpercurrent on the lower. In contrast, *B. laevifilum* has finely papillose

to almost smooth axillary gemmae, broadly elliptical to rounded-ovate leaves and weak costae which are broad only at the base and are excurrent to ceasing well below the leaf apex. *B. subelegans* is exceedingly rare in southern Sweden, Norway and France whereas *B. laevifilum* is very common and widespread throughout Europe and North America (Syed 1973; Nyholm 1993). The evidence regarding the separateness of *B. subelegans* and *B. laevifilum* presented by Syed (1973) and Nyholm (1993) is convincing and therefore the latter is reinstated as a good species.

[289] For the occurrence of *Orthodontium lineare* in Poland see Ochyra (1982*a*), Gos & Gos (1993) and Fudali (1993).

[290] The infrafamilial classification of the Bartramiaceae adopted here follows Griffin & Buck (1989).

[291] For distribution of *Bartramia halleriana* in Poland see Ochyra *et al*. (1992*e*).

[292] For distribution of *Bartramia pomiformis* in Poland see Ochyra *et al*. (1992*f*).

[293] Brotherus (1904, 1924) used the name *Vaginella* for this section and it was accepted by subsequent authors (e.g., Kabiersch 1938; Fransen 1995; Virtanen 1999). Sect. *Vaginella* was recognized by Müller (1849) but this name is illegitimate because *Bartramia halleriana*, the lectotype of the generic name *Bartramia*, is included in this section. Corley *et al*. (1981) used the name sect. *Ithyphyllae* for this group but Kindberg (1898) had introduced it as an unranked taxon. The only available name for this section is *Pyridium* which was described by Müller (1874) for a single species, *B. polytrichoides*, from Colombia. This species was actually placed in sect. *Vaginalla* by Fransen (1995).

[294] For distribution of *Bartramia ithyphylla* in Poland see Ochyra *et al*. (1992*d*).

[295] *Plagiopus oederiana* has long been known as *P. oederi* (Brid.) Limpr., a name based on the *Bartramia oederi* of Bridel (1803). However, Crum & Anderson (1981) found that the pre-Hedwigian *Bryum oederi* of Gunnerus (1772) was validated a year earlier by Swartz (1802) as *Bartramia oederiana* and therefore this epithet has to be accepted as the oldest available name for this species. For distribution of *P. oederiana* in Poland see Ochyra & Szmajda (1983*d*).

[296] For a taxonomic revision of the genus *Conostomum* see Frahm *et al*. (1996).

[297] Frahm *et al*. (1996) presented the broad taxonomic concept of *Conostomum tetragonum*, merging with it some austral and tropical species including *C. pentastichum* (Brid.) Lindb. and *C. aequinoctiale* Schimp. *ex* Müll.Hal. In this way *C. tetragonum* was established as a bipolar species with some intermediate stations in the tropical mountains. This concept of *C. tetragonum* is not approved here because the austral *C. pentastichum* is definitely distinct from the northern species in, among other things, its ill-defined costa and autoicous sexuality (Virtanen 1999).

[298] Nyholm (1998) recognized sect. *Homomorphae* Kindb. but this name was invalidly

published because Kindberg (1898) had given no definite taxonomic rank to this group and Nyholm (1998) failed to cite the basionym in full and to indicate the type of the section. Consequently, this sectional name has to be validated.

Philonotis Brid. sectio ***Homomorphae*** (Kindb.) Ochyra, *stat. et comb. nov.*

Basionym: *Philonotis* Brid. II. [unranked] *Philonotula* Kindb. 1. [unranked] *Homomorphae* Kindb., Eur. N. Am. Bryin. 2: 324. 1898. — LECTOTYPE (selected here): *Philonotis marchica* (Hedw.) Brid. (*Mnium marchicum* Hedw.).

[299] The taxonomic concept of the Cinclidiaceae adopted here follows Koponen (1988, 1993).

[300] For a taxonomic revision of the genus *Cinclidium* see Mogensen (1973).

[301] For the occurrence of *Cinclidium stygium* in Poland see Karczmarz (1962).

[302] *Cyrtomnium* was established by Holmen (1957) to accommodate *Mnium hymenophyllum* Bruch & Schimp.

[303] For the occurrence of *Cyrtomnium hymenophylloides* in Poland see Lisowski (1965).

[304] *Rhizomnium* was established as a new genus by Koponen (1968*a*). For a key to the European species of the genus see Koponen (1980).

[305] *Mnium punctatum* Hedw. var. *elatum* Schimp. was raised to the rank of species as *Rhizomnium perssonii* (Koponen 1968*b*) which was later shown to be a synonym of *Rh. magnifolium* (Koponen 1973).

[306] For the occurrence of *Rhizomnium pseudopunctatum* in Poland see Lisowski (1960*a*).

[307] The taxonomic concept of the Plagiomniaceae adopted here follows Koponen (1988, 1993).

[308] The genus *Plagiomnium* was described and subdivided into sections by Koponen (1968*a*). These are adopted here. For a key to European species of this genus see Koponen (1980).

[309] For a taxonomic revision of *Plagiomnium* sect. *Rosulata* see Koponen (1971).

[310] For a discussion of the distinctions between *Plagiomnium affine* and *P. elatum* see Mamczarz (1974).

[311] For the synonymy of *Plagiomnium ellipticum* which was earlier named *P. rugicum* (Laurer) T.J.Kop. see Koponen (1971).

[312] *Mnium cinclidioides* Huebener was placed in the new genus *Pseudobryum* by Koponen (1968*a*).

[313] For the occurrence of *Pseudobryum cinclidioides* in Poland see Karczmarz & Mickiewicz (1974).

[314] Koponen (1988) markedly modified the traditional concept of the Mniaceae which he had outlined some 20 years earlier (Koponen 1968*a*). *Plagiomnium*, *Pseudobryum* and *Orthomnion* Wilson were segregated into the separate family Plagiomniaceae and *Cinclidium*, *Rhizomnium* and *Cyrtomnium* placed in the family Cinclidiaceae. At the same time, the original concept of the Mniaceae was expanded and the residual genera *Mnium*, *Leucolepis* Lindb. and *Trachycystis* Lindb. were joined by the exotic genera *Leptotheca* Schwägr., *Pyrrhobryum* Mitt., *Cryptopodium* Brid. and *Hymenodontopsis* Herzog.

[315] The sectional classification of *Mnium* adopted here follows Koponen (1968*a*) and Li & Zang (1979). For a key to European species of this genus see Koponen (1980).

[316] *Mnium thomsonii* is the correct name for the species which has been named by numerous authors as *M. orthorrhynchum* (Koponen 1972*a*).

[317] Li & Zang (1979) established sect. *Laevinervia* to accommodate the Asiatic *Mnium laevinerve* and *M. lycopodioides* as well as *M. marginatum*, and this was approved by Koponen (1994).

[318] *Mnium lycopodioides* is closely related to *M. marginatum* from which it differs in the spinose costa and dioicous inflorescences. Koponen (1979, 1980) intially used the name *M. ambiguum* H.Müll. for this species but finally he (Koponen 1994) found it to be conspecific with the Asiatic *M. lycopodioides*.

[319] For the correct author citation for *Mnium marginatum* see Karttunen (1988).

[320] Bowers (1980) established for *Mnium stellare* the separate genus *Stellariomnium* in which he additionally placed *M. blyttii* Bruch & Schimp. and *M. heterophyllum* (Hook.) Schwägr. Here, the traditional placement of this species is retained.

[321] Based on molecular data Buck *et al*. (2000*a*, *b*) suggested that all pleurocarpous mosses which had been placed in the orders Leucodontales, Hypnales and Hookeriales represented a separate lineage which deserved recognition as the separate subclass Hypnidae.

[322] Buck *et al*. (2000*a*, *b*) showed that pleurocarpous mosses which constitute the subclass Hypnidae represent two major lineages, hypnalean and hookerialean, which correspond to the two orders Hypnales and Hookeriales. The order Leucodontales does not deserve separate recognition and is merged with the order Hypnales.

[323] For the correct author citation of *Dichelyma capillaceum* see Karttunen (1988).

[324] The infrageneric classification of *Fontinalis* adopted here follows Cardot (1892). Welch (1960), in her worldwide monograph of the Fontinalaceae, also accepted Cardot's (1892) division of the genus, but without giving his sections formal taxonomic recognition.

[325] The infraspecific taxonomy of *Fontinalis antipyretica* adopted here follows Welch (1960).

[326] The taxonomic treatment and infrageneric classification of *Anomodon* adopted here follows Granzow-de la Cerda (1997).

[327] Limpricht (1895) divided the genus *Anomodon* into two rankless subdivisions, namely *Eu-Anomodon* and *Pseud-Anomodon*. Granzow-de la Cerda (1997) accepted this division and designated these groups as subgenera, subg. *Anomodon* and subg. *Pseudanomodon*. The latter name is invalidly published because the basionym is not cited and, accordingly, subg. *Pseudanomodon* is validated here.

Anomodon Hook. & Taylor subgenus ***Pseudanomodon*** (Limpr.) Ochyra, *stat. et comb. nov*.

Basionym: *Anomodon* Hook. & Taylor B. [unranked] *Pseudanomodon* Limpr., Laubm. Deutschl. 2: 774. 1895 [‘Pseud-Anomodon’].

[328] For distribution of *Neckera crispa* in Poland see Ochyra *et al*. (1988*p*).

[329] For distribution of *Neckera complanata* in Poland see Ochyra *et al*. (1988*q*).

[330] *Neckera besseri* was originally described by our compatriot Łobarzewski (1847) as *Omalia besseri* which was subsequently transferred to *Neckera* by Juratzka (1862). Duell (1979) suggested the conspecificity of this species with the Macaronesian *Homalia webbiana* (Mont.) Schimp. (*Hookeria webbiana* Mont.), but Frahm (1983) reinstated *Neckera besseri* as a good species. For distribution of *Neckera besseri* in Poland see Ochyra *et al*. (1988*r*).

[331] The taxonomic treatment of the genus *Homalia* adopted here follows He (1997).

[332] The family Thamnobryaceae is sometimes merged with the Neckeraceae (e.g., Enroth 1994; Buck & Goffinet 2000) within which it is usually considered as a separate subfamily Porotrichoideae (cf. Ochyra 1986*c*, 1993*c*).

[333] For the correct author of the combination *Thamnobryum alopecurum* see Crosby & Bauer (1984) and for the distribution of *Th. alopecurum* in Poland see Bednarek-Ochyra *et al*. (1994*e*).

[334] Hedenäs (1992) expanded the concept of the monotypic family Echinodiaceae and apart from the type genus *Echinodium* placed in it also *Isothecium* and *Pterigynandrum*. This concept is accepted here but the latter genus is placed in the separate family Pterigynandraceae.

[335] *Isothecium* has long been a troublesome genus and its taxonomic relationships and familial placement have always been a source of controversy. Brotherus (1906–1907, 1925) placed it in the Lembophyllaceae but Robinson (1962) transferred it to the Brachytheciaceae. This placement was later confirmed by Crum (1987) and *Isothecium* had become firmly rooted in this family. Hedenäs (1989*a*) placed *Isothecium* in the group of

dendroid to subdendroid genera (*Echinodium*, *Thamnobryum*, *Rigodium*, *Camptochaete* and *Lembophyllum*) and later he (Hedenäs 1992) transferred it, without comment, to the Echinodiaceae. Ignatov (1999) and Ignatov & Huttunen (2002) confirmed that *Isothecium* was a discordant element in the Brachytheciaceae but they did not indicate another family for it. The modern circumscription of the Lembophyllaceae (Crum 1991; Tangney 1997) precludes this family as a proper home for *Isothecium*. Perhaps the best solution would be establishing the separate monotypic family to accommodate it. In fact, Berkeley (1863) established the family Isotheciaceae ['Order Isothecii'] but this name is illegitimate because types of earlier family names, namely Leskeaceae, Leucodontaceae, Pterogoniaceae and Leptodontaceae, are included. Until future studies provide more evidence on the affinities and relationships of *Isothecium*, following Hedenäs (1989*a*, 1992) the genus is placed in the hitherto monotypic Echinodiaceae. Although the extreme species in the two genera, for example *Echinodium setigerum* (Mitt.) Jur. and *Isothecium alopecuroides*, differ markedly in their overall appearance, other species share more similarities in habit and leaf areolation, for instance *Echinodium prolixum* (Mitt.) Broth. and *Isothecium holtii* Kindb.

[336] For the combination *Isothecium alopecuroides* see Isoviita (1981).

[337] For distribution of *Isothecium myosuroides* in Poland see Bednarek-Ochyra *et al*. (1994*g*).

[338] The taxonomic concept of the Pterigynandraceae adopted here follows Buck & Crum (1990).

[339] The generic placement of *Myurella* adopted here follows Buck & Crum (1990). An alternative position of this genus in the Plagiotheciaceae has been suggested by Hedenäs (1987*a*); Ignatov & Ochyra (1995), Pedersen & Hedenäs (2001, 2002) and Hedenäs & Pedersen (2002).

[340] For distribution of *Myurella julacea* in Poland see Ochyra *et al*. (1990*g*).

[341] Ochyra & Bednarek-Ochyra (1991*b*) have shown that *Myurella julacea* var. *ciliata* is the correct name for *M. julacea* var. *scabrifolia* Lindb. *ex* Limpr.

[342] For distribution of *Myurella tenerrima* in Poland see Ochyra *et al*. (1990*h*).

[343] The taxonomic concept of *Pterigynandrum* adopted here follows Buck (1980*a*).

[344] For distribution of *Heterocladium heteropterum* in Poland see Bednarek-Ochyra (1990) and Bednarek-Ochyra *et al*. (1990*f*).

[345] For distribution of *Heterocladium dimorphum* in Poland see Bednarek-Ochyra *et al*. (1990*g*).

[346] The Hedwigian species *Leskea varia* has had a very unstable taxonomic position and it has been shifted from genus to genus having been placed in *Hygroamblystegium*, *Amblystegium*, *Hypnum*, *Rigodium*, *Leskea*, *Stereodon* and *Pseudoleskea*. In addition, it

shares some features with *Cratoneuron* and *Cratoneuropsis*, especially the strong and excurrent to percurrent costa and the presence of paraphyllia. In the Northern Hemisphere, where populations with weaker costa predominate, the species has usually been associated with *Amblystegium* or *Hygroamblystegium*, whereas in the Southern Hemisphere the plants are mostly large and robust and have usually been associated with *Pseudoleskea* (Cardot 1908). Brotherus (1907, 1925) recognized the separate section *Orthotheciella* to accommodate species which are now considered to be conspecific with *Leskea varia*. The species itself is exceedingly variable, perfectly reflecting the specific epithet, and Reimers (1926) compared this variation to that found in *Hypnum cupressiforme*. Ochyra & Matteri (2001) and Ochyra & Streimann (2001) recognized over 20 heterotypic synonyms of this name in the Southern Hemisphere. In order to cut the Gordian knot associated with the taxonomic placement of *Leskea varia*, Ochyra (1998*b*) established the monotypic genus *Orthotheciella* to accommodate the single species *O. varia*. Following traditional usage which was based on its superficial similarity to *Amblystegium* species and frequent association with aquatic or otherwise wet habitats, *Orthotheciella* was placed in the Amblystegiaceae. However, *Orthotheciella* appears to be an anomalous element in the Amblystegiaceae. It shares some important structural characters with the Leskeaceae, especially the presence of filiform paraphyllia on the surface of the stem and branches, as well as the leaf areolation of cells with thickened walls, especially in the leaf angles. Such a placement has actually been suggested by many authors working on austral plants who have placed various species, which actually represented only environmental modifications of *O. varia*, in *Leskea* (e.g., Bescherelle 1889) or *Pseudoleskea* (e.g., Cardot 1900, 1901, 1905, 1906, 1908; Cardot & Brotherus 1923; Ochyra 1987). Therefore, *Orthotheciella* is here transferred to the Leskeaceae and considered to be closely related to *Pseudoleskea* from which it differs in having non-plicate leaves, thinner-walled laminal cells, entire leaf margins and perfect hypnaceous peristome with well-developed cilia.

[347] For a discussion of the family placement of *Ptychodium* see Ochyra (1991) but the alignment of the genus with the Leskeaceae follows Lawton (1957) and Nyholm (1960).

[348] There has been some confusion with regard to the valid publication of the generic name *Haplocladium*. Because of the existence of an earlier name for the algal genus *Haplocladium* Nägeli of 1862, the moss generic name *Haplocladium* (Müll.Hal.) Müll.Hal. of 1896 was proposed for conservation (Ochyra 1983*b*). Later, it proved that the algal *Haplocladium* was invalidly published, whereas the muscological *Haplocladium* was in fact validly published in 1899 by Müller (Zijlstra 1990). It is worth noting that in the interim Watanabe & Iwatsuki (1981) published *Bryohaplocladium* as a replacement of the putative illegitimate *Haplocladium* Müll.Hal. but this substitute name was superfluous. The familial placement of *Haplocladium* adopted here follows Buck & Crum (1990).

[349] *Haplocladium microphyllum* was reported by Reimers (1937) from Paszowice (*Germ.* Poischwitz) near Jawor (*Germ.* Jauer) in Lower Silesia on the basis of the specimen collected on 30 November 1892 by H. Schmidt. A portion of this specimen was delivered to KRAM by Professor Ruprecht Duell of Duisburg.

[350] The taxonomic concept of the Thuidiaceae adopted here follows Buck & Crum (1990).

[351] For typification of *Thuidium delicatulum* and clarification of the nomenclatural confusion associated with the name *Hypnum delicatulum* see Hedenäs & Geissler (1999).

[352] For the concept of the genus *Cyrto-hypnum* adopted here and the relevant nomenclature see Buck & Crum (1990). Touw (2001) merged *Cyrto-hypnum* with *Pelekium* Mitt. but this concept is rejected here. At this point it is worth noting that both Buck & Crum (1990) and Touw (2001) incorrectly cited the authorities for *Cyrto-hypnum* as '(Hampe) Hampe & Lorentz'. Hampe (1867) recognized *Cyrto-hypnum* as an unranked taxon within *Hypnum*. Two years later Hampe (1869) described this taxon again, but as a genus when describing the new species *Cyrto-hypnum brachythecium* Hampe & Lorentz from Ecuador. He gave no reference to the 1867 unranked taxon and *Cyrto-hypnum* is validly published as a *descriptio generico-specifica* (Art. 42.1). In this compound name the hyphen has to be retained and the spelling can be changed only by conservation (Art. 60.9 Note 2). The best example of a similar case among mosses is *Rhodobryum* (Schimp.) Limpr. which is conserved against *Rhodo-bryum* Hampe (Isoviita & Koponen 1984).

[353] Some authors consider *Abietinella hystricosa* as a variety (Duell-Hermanns 1981) or subspecies (Smith 1978; Blockeel & Long 1998) of *A. abietina*.

[354] For the circumscription and relationships of the Helodiaceae see Ochyra (1989*b*).

[355] For distribution of *Helodium blandowii* in Poland see Ochyra *et al*. (1988*f*).

[356] Ochyra (1989*b*) showed that *Cratoneuron commutatum* and *C. decipiens* are only remotely related to *C. filicinum* and he transferred them to the new genus *Palustriella*.

[357] According to Hedenäs (1992, 1993*b*) *Palustriella commutata* var. *falcata* is a distinct species. This is doubtful because var. *falcata* comprises plants growing in fast flowing streams and there exist many intermediates between it and the type variety. A similar situation occurs with other varieties of *P. commutata*.

[358] The concept of the family Hylocomiaceae adopted here follows Rohrer (1985*a*, *b*).

[359] For the distribution of *Loeskeobryum brevirostre* in Poland see Ochyra *et al*. (1992*h*).

[360] In order to preserve the current use of the generic name, *Hylocomium* was proposed for conservation (Margadant & Geissler 1995) because the designation of *Hypnum squarrosum* Hedw. as its generitype affected the current use of both *Hylocomium* and *Rhytidiadelphus*. The proposal was approved by the Committee for Bryophyta (Zijlstra 1998) and since the inception of the Saint Louis Code (Greuter *et al*. 2000) *Hylocomium* has been on the list of conserved generic names.

[361] For distribution of *Hylocomiastrum pyrenaicum* in Poland see Ochyra *et al*. (1992*i*).

[362] For distribution of *Hylocomiastrum umbratum* in Poland see Ochyra *et al*. (1992*j*).

[363] *Pleurozium* and *Rhytidiadelphus* differ from *Hylocomium* and its allies in the total absence of paraphyllia and are placed here in the separate subfamily Pleurozioideae which was established by Nishimura *et al*. (1984) to accommodate *Pleurozium*.

[364] For distribution of *Rhytidiadelphus loreus* in Poland see Bednarek-Ochyra *et al*. (1994*j*).

[365] For the status of *Rhytidiadelphus calvescens* and the new combination *Rh. subpinnatus* see Koponen (1972*b*).

[366] For distribution of *Rhytidium rugosum* in Poland see Ochyra & Szmajda (1983*k*).

[367] Ochyra (1989*b*) split the traditional genus *Cratoneuron* into *Palustriella* and *Cratoneuron* s.str. which is a monotypic genus consisting of only *C. filicinum*, a highly protean species associated with aquatic or otherwise wet habitats.

[368] The montane taxon usually recognized as *Cratoneuron filicinum* var. *curvicaule* superficially resembles the type variety of this species in the shape of its leaves and prominent alar cells but is at once distinct in the lack of paraphyllia and the leaf areolation of elongate, oblong-hexagonal to linear-rhomboidal cells. This prompted Ochyra (1989*b*) to recognize the separate genus *Callialaria* to accommodate *Cratoneuron filicinum* var. *curvicaule*.

[369] In Poland *Callialaria curvicaulis* is known only from the Tatra Mountains, for example the specimen distributed in *Musci Poloniae Exsiccati* as No. 1169 (Ochyra & Bednarek-Ochyra 1990*b*). Many specimens named *Cratoneuron filicinum* var. *curvicaule* from other ranges in the Carpathians actually belong to *Cratoneuron filicinum*.

[370] The circumscription and infrafamilial classification of the Brachytheciaceae proposed by Ignatov & Huttunen (2002) is adopted here.

[371] For a taxonomic revision of the genus *Homalothecium* see Hofmann (1998).

[372] For distribution of *Homalothecium philippeanum* in Poland see Ochyra *et al*. (1985*h*).

[373] Ignatov & Huttunen (2002) recognized the new genus *Brachytheciastrum* to accommodate species of *Brachythecium* subg. *Velutina* and this concept is adopted here. These authors transferred nine species to *Brachytheciastrum* and probably twice as many belong to it but they need further examination.

[374] *Brachytheciastrum velutinum* is a variable species and a number of infraspecific taxa have been recognized in it (see Podpěra 1954). At least two distinct varieties, var.

salicinum and var. *vagans*, are confirmed for Poland (Duell 1995) and their transfer to *Brachytheciastrum* needs the following nomenclatural changes.

Brachytheciastrum velutinum (Hedw.) Ignatov & Huttunen var. ***salicinum*** (Schimp.) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Brachythecium salicinum* Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 6: 19, *pl. 548*. 1853 [Fasc. 52–54 Mon.: 15, *pl. 14*].

Brachytheciastrum velutinum (Hedw.) Ignatov & Huttunen var. ***vagans*** (Milde) Ochyra & Żarnowiec, *comb. nov.*

Basionym: *Brachythecium vagans* Milde, Hedwigia 8: 50. 1869.

[375] *Brachythecium vanekii* is a critical altimontane species described from the High Tatras by Šmarda (1953). It is closely related to *Brachytheciastrum velutinum* but differs in its falcate leaves, incrassate cell walls and indistinct alar cells. It was discovered in the Polish part of the Tatras by Lisowski (1959). The transfer to *Brachytheciastrum* is effected below:

Brachytheciastrum vanekii (Šmarda) Ochyra & Żarnowiec, *comb. nov*.

Basionym: *Brachythecium vanekii* Šmarda, Preslia 25: 135, *f. 1–3*. 1953 [‘vaněkii’].

[376] Corley *et al*. (1981) considered *Brachytheciastrum collinum* (as *Brachythecium collinum*) to be conspecific with *Brachythecium fendleri*, the latter name having priority. However, the conspecificity of these taxa seems doubtful, has not been widely approved and recognition of *B. collinum* as a distinct species has continued (e.g., Duell 1985; Ireland *et al*. 1987; McFarland 1988, 1994; Anderson *et al*. 1990; Ignatov & Afonina 1992; Ignatov 1998). Examination of many North American specimens of *Brachythecium fendleri* clearly confirms its placement in *Brachytheciastrum* and the suitable transfer is made here.

Brachytheciastrum fendleri (Sull.) Ochyra & Żarnowiec, *comb. nov*.

Basionym: *Leskea fendleri* Sull., Mem. Amer. Acad. Arts N. Ser. 4: 169, *f. 1*. 1849.

[377] The placement of *Eurhynchium pulchellum* in the newly erected genus *Eurhynchiastrum* follows Ignatov & Huttunen (2002).

[378] *Eurhynchiastrum pulchellum* is a variable species and at least two distinct varieties are recognized within it. Here, they are given names under *Eurhynchiastrum*.

Eurhynchiastrum pulchellum (Hedw.) Ignatov & Huttunen var. ***diversifolium*** (Schimp.) Ochyra & Żarnowiec, *comb. nov*.

Basionym: *Eurhynchium diversifolium* Schimp. *in* Bruch, Schimp. & W.Gümbel, Bryol. Eur. 5: 220, *pl. 520*. 1854 [Fasc. 57–61 Mon.: 4, *pl. 2*].

Eurhynchiastrum pulchellum (Hedw.) Ignatov & Huttunen var. ***praecox*** (Sw. *ex* Hedw.) Ochyra & Żarnowiec, *comb. nov*.

Basionym: *Hypnum praecox* Sw. *ex* Hedw., Sp. Musc. Frond.: 249, *pl. 64 f. 11–14*. 1801.

[379] *Kindbergia* was proposed as a replacement of the nomenclaturally illegitimate *Stokesiella* by Ochyra (1982*b*). The latter name was introduced by Robinson (1967) as a segregate of *Eyrhynchium* to accommodate species with distinctive heterophylly.

[380] The treatment of the genus *Brachythecium* adopted here follows Ignatov & Huttunen (2002).

[381] For taxonomy and variability of species in the *Brachythecium rutabulum–B. rivulare* complex see Wigh (1977*a*, *b*).

[382] For taxonomy of *Brachythecium campestre* see Hedenäs (1995).

[383] For validation of the sectional name *Albicantia* see Ochyra (1998*c*).

[384] For typification of *Hypnum salebrosum* see Hedenäs & Isoviita (1996*a*). This name was proposed for conserving because when it was published by Weber & Mohr (1803) it was nomenclaturally superfluous and thus illegitimate. The proposal was approved by the Committee of Bryophyta (Zijlstra 1999*a*) and consequently this species name is placed on the list of "Nomina specifica conservanda" with a conserved type in the Saint Louis Code (Greuter *et al*. 2000).

[385] *Brachythecium geheebii* is characterized by the strongly plicate leaves and rather short laminal cells. Plication is typical of *Camptothecium* or *Homalothecium*, whereas the areolation is more in agreement with that of species of *Brachythecium*. Therefore this species has alternatively been placed in *Homalothecium* (Wigh 1973; Duell 1994*b*), *Camptothecium* (Kindberg 1894, 1897; Brotherus 1923) or, most often, in *Brachythecium* (e.g., Limpricht 1896; Mönkemeyer 1927; Pilous & Duda 1960; Szafran 1961; Nyholm 1965; Corley *et al*. 1981). Szafran (1961) erected the separate section *Pseudocamptothecium* for it within *Brachythecium* and this seems to be a sensible solution in the case of this otherwise anomalous species. This concept is adopted here and only the name of the section is validated because its name was invalidly published without diagnosis and indication of the type.

Brachythecium Schimp. sectio ***Pseudocamptothecium*** Szafran *ex* Ochyra, Żarnowiec & Bednarek-Ochyra, *sect. nov.*

Brachythecium Schimp. sectio *Pseudocamptothecium* Szafran, Fl. Polsk. Mchy 2: 203. 1961, *nom. inval. descr. polon*.

Folia valde plicata. Costa valida ad 3/4 longitudinem folii attingens. — TYPE: *Brachythecium geheebii* Milde.

[386] For distribution of *Brachythecium geheebii* in Poland see Ochyra & Szmajda (1983*i*).

[387] *Pseudocirriphyllum* was established as a new section of *Brachythecium* by Ignatov (1998) to accommodate *B. cirrosum* which was formerly placed in the genus *Cirriphyllum*. This species occupy an isolated position in *Brachythecium* in having very concave piliferous leaves and small alar cells. According to M. S. Ignatov (personal communication, 5 September 2003) molecular data indicate the close affinity of *B. cirrosum* to the genus *Unclejackia* from New Guinea (Ignatov *et al*. 1999).

[388] For the identity of *Cirriphyllum tenuinerve* with *Brachythecium tomassinii* see Karttunen (1990). The distribution of *B*. *tomassinii* in Poland has been reviewed by Ochyra *et al*. (1988*t*, 1999*b*).

[389] According to Ignatov & Huttunen (2002) species of *Brachythecium* sect. *Reflexa* Broth. constitute the separate genus *Sciuro-hypnum* and this genus is accepted here. However, this generic name should be ascribed only to 'Hampe' as correctly stated in the *Index muscorum* (Wijk *et al*. 1967), not '(Hampe) Hampe', as incorrectly used by Ignatov & Huttunen (2002). Initially, Hampe (1867) introduced the name *Sciuro-hypnum* as an unranked subdivision of *Hypnum* and later he (Hampe 1874) used it as a generic name when describing a new species from Madagascar, *Sciuro-hypnum borgenii*. Because there is no reference to the previously published unranked *Sciuro-hypnum* of 1867, this generic name is validated in the 1874 publication as a *descriptio generico-specifica* (Art. 42.1 of the Code) and its name should be ascribed to Hampe alone. Additionally, Ignatov & Huttunen (2002) overlooked the fact that *Sciuro-hypnum* is hyphenized. The original spelling has to be retained and deletion of the hyphen may only be effected by conservation.

Ignatov & Huttunen (2002) placed 12 species in *Sciuro-hypnum* and suggested that an additional seven species may belong to this genus. After examination of the type and/or non-type collections, the following six species are transferred to *Sciuro-hypnum*.

Sciuro-hypnum filirepens (Dusén) Ochyra & Żarnowiec, *comb. nov*.

Basionym: *Brachythecium filirepens* Dusén, Bot. Not. 1905: 309. 1905.

Sciuro-hypnum fuegianum (Broth.) Ochyra & Żarnowiec, *comb. nov*.

Basionym: *Brachythecium fuegianum* Broth. *in* Engl. & Prantl, Nat. Pflanzenfam. 1(3): 1143. 1909.

Sciuro-hypnum glaciale (Schimp.) Ignatov & Huttunen var. ***dovrense*** (Limpr.) Ochyra & Żarnowiec, *comb. nov*.

Basionym: *Brachythecium glaciale* Schimp. var. *dovrense* Limpr., Laubm. Deutschl. 3: 112. 1896.

Sciuro-hypnum glaciale (Schimp.) Ignatov & Huttunen var. ***gelidum*** (Limpr.) Ochyra & Żarnowiec, *comb. nov*.

Basionym: *Brachythecium gelidum* Bryhn, Bot. Not. 1899: 256. 1899.

Sciuro-hypnum nelsonii (Grout) Ochyra & Żarnowiec, *comb. nov*.

Basionym: *Brachythecium nelsonii* Grout, Bryologist 5: 76, *pl. 7*. 1902.

Sciuro-hypnum pulchellum (Broth. & Paris) Ochyra & Żarnowiec, *comb. nov*.

Basionym: *Brachythecium pulchellum* Broth. & Paris, Rev. Bryol. 31: 63. 1904.

Sciuro-hypnum uematsui (Broth.) Ochyra & Żarnowiec, *comb. nov*.

Basionym: *Brachythecium uematsui* Broth. *in* Cardot, Bull. Herb. Boissier Sér. 2, 3: 292. 1911 [‘uyematsui’].

Sciuro-hypnum uncinifolium (Broth. & Paris) Ochyra & Żarnowiec, *comb. nov*.

Basionym: *Brachythecium uncinifolium* Broth. & Paris, Rev. Bryol. 31: 64. 1904.

[390] For taxonomy and nomenclature of *Sciuro-hypnum starkei* see Piippo (1983).

[391] For taxonomy and nomenclature of *Sciuro-hypnum oedipodium* see Piippo (1983).

[392] For typification of *Hypnum plumosum* see Hedenäs & Isoviita (1996*a*). This name was proposed for conserving because the available type material represented actually what is currently called *H. salebrosum*. The proposal was approved by the Committee of the Bryophyta (Zijlstra 1999*b*) and consequently this species name is placed on the list of “Nomina specifica conservanda” with a conserved type in the Saint Louis Code (Greuter *et al*. 2000).

[393] For nomenclature of *Sciuro-hypnum flotowianum* see Karttunen (1990).

[394] For the occurrence and taxonomy of *Sciuro-hypnum ornellanum* in Poland see Kuc (1957*b*).

[395] The treatment of the genus *Cirriphyllum* adopted here largely follows Ignatov & Huttunen (2002). They restricted the genus to three species only, namely *C. piliferum* and *C. crassinervium* from the Holarctic and *C. koponenii* (Ignatov) Ignatov & Huttunen from New Guinea (Ignatov *et al*. 1999).

[396] For distribution of *Cirriphyllum crassinervium* in Poland see Ochyra *et al*. (1988*s*).

[397] For the status of *Cirriphyllum germanicum* and the combination *C. tenuicaule* see Karttunen (1990). Ignatov & Huttunen (2002) suggested that *C. tenuicaule* does not belong within the Brachytheciaceae but they did not indicate an alternative placement. Therefore the species is tentatively retained in *Cirriphyllum* and the Brachytheciaceae until a better home is not found for it. For the occurrence of *C. tenuinerve* in Poland see Kuc (1958*c*).

[398] The genus *Oxyrrhynchium* has had a chequered nomenclatural and taxonomic history and throughout several recent decades it has been mostly merged with *Eurhynchium*. The basic reason for this nomenclatural confusion and resultant complications surrounding *Oxyrrhynchium* has been two different interpretations of the Hedwigian *Hypnum praelongum* and this Gordian knot was cut by Touw & Knol (1978) who typified this name and made it a member of the genus *Kindbergia*. In order to maintain the traditional concept

of *Oxyrrynchium*, Ignatov & Isoviita (2003) proposed conserving this generic name with the conserved type *O. swartzii*.

[399] Touw & Knol (1978) showed that *Oxyrrhynchium hians* is the correct name for *O. swartzii* (Turner) Warnst.

[400] ***Oxyrrhynchium hians*** (Hedw.) Loeske var. ***rigidum*** (Boulay) Ochyra & Żarnowiec, *comb. nov*.

Basionym: *Hypnum praelongum* Hedw. var. *rigidum* Boulay, Fl. Crypt. Est Muscin.: 230. 1872.

[401] *Rhynchostegiella* was proposed for conserving (Margadant & Geissler 1995) because it was antedated by about two months by the name *Remeyella* which had been used by Müller (1896) for a Hawaiian moss species subsequently merged with *Rhynchostegiella* by Brotherus (1909). The proposal was approved by the Committee for Bryophyta (Zijlstra 1999*a*) and *Rhynchostegiella* was placed in the Saint Louis Code (Greuter *et al*. 2000) on the list of conserved names. It is worth noting that Ignatov & Huttunen (2002) reinstated *Remeyella* as a distinct genus consisting of 5–8 species from East Asia and the Pacific region.

[402] For the combination *Rhynchostegiella teneriffae* see Dirkse & Bouman (1995). The species has only once been recorded in Poland by Wacławska (1956).

[403] Ignatov & Huttunen (2002) restricted the genus *Platyhypnidium* to four species only but it seems to contain a much greater number in species. For discussion of the European species of the genus see Ochyra & Bednarek-Ochyra (1999*b*) and Neotropical species (Ochyra 1999*c*).

[404] *Rhynchostegium confertum* is a name which has been in use since the early days of modern bryology when Dickson (1801) described it as *Hypnum confertum*. However, this name is a synonym of *H. clavellatum* of Hedwig (1801), the latter name having priority. Hedenäs & Geissler (1999) indicated as the lectotype of *H. clavellatum* a specimen from the De Candolle herbarium in Geneva and the information on the label reads: "e locis a Pollichio indicatis Mr Koch". This information indicates that this specimen is rather a topotype, not an original plant collected by Pollich. Nevertheless, the material is identical to what is commonly known as *Rhynchostegium confertum*. In order to stabilize moss nomenclature, *Hypnum clavellatum* should be proposed for rejection in favour of *H. confertum*.

[405] For the occurrence of *Rhynchostegium megalophyllum* in Poland see Melosik (1993).

[406] *Eurhynchium magnusii* (H.Winter) Pilous was reported from western Poland by Pilous (1965) but this species is considered to be identical to *E. striatum* (Corley *et al*. 1981).

[407] For the status of *Eurhynchium zetterstedtii* and the combination *E. angustirete* see Koponen (1967).

[408] The delimitation of the family Entodontaceae adopted here follows Buck (1980*b*).

[409] The taxonomic circumscription and delimitation of the family Plagiotheciaceae adopted here follows Buck & Ireland (1985). It is worth noting that Pedersen & Hedenäs (2001, 2002) presented an alternative, much expanded concept of this family to include, among others, such genera as *Platydictya*, *Myurella*, *Herzogiella*, *Isopterygiopsis* and *Orthothecium*.

[410] The sectional classification of *Plagiothecium* adopted here follows Jedlička (1948). The taxonomic treatment of this genus follows Iwatsuki (1970) and Lewinsky (1974).

[411] *Plagiothecium latebricola* and *P. piliferum* constitute an isolated group within the genus *Plagiothecium*. They are characterized by their symmetric or nearly symmetric leaves, in contrast to all other species which have most of their leaves asymmetric. M. Fleischer (in Brotherus 1925) distinguished the separate genus *Plagiotheciella* to accommodate these species. However, this generic name is illegitimate because it includes the type of the older generic name *Philoscia* which was proposed by Berkeley (1863) for a monotypic genus comprising *Ph. latebricola*. Following curent conventional thought we have retained *Plagiothecium latebricola* and *P. pilifera* in the genus *Plagiothecium*, but in order to emphasize their isolated position, the separate section *Philoscia* is here established to accommodate them.

Plagiothecium Schimp. sectio ***Philoscia*** (Berk.) Ochyra, *stat. et comb. nov.*

Basionym: *Philoscia* Berk., Handb. Brit. Mosses: 49, 146. 1863. — TYPE: *Plagiothecium latebricola* (Wilson) Schimp. (*Leskea latebricola* Wilson).

[412] For the combination *Plagiothecium cavifolium* see Iwatsuki (1970).

[413] There have been many attempts at redefinition and reclassification of the family Amblystegiaceae on the basis of cladistic and molecular data (Hedenäs 1997*a*; Stech *et al*. 1999; Stech & Frahm 2000, 2001; Buck *et al*. 2000*a*; Vanderpoorten *et al*. 2002*a*, *b*) resulting, among others, in the splitting of the family into the smaller families Campyliaceae and Calliergonaceae. Because these studies provide mostly very divergent opinions regarding the span and circumscription of the various taxa segregated from the Amblystegiaceae and in practice say nothing about its peripheral taxa, the traditional concept of the family as outlined by Brotherus (1924) is followed here, with some minor deviations which are indicated alongside the taxa in question. The infrafamilial classification adopted here follows, with some minor exceptions, Kanda (1975, 1976). For the correct author citation of the Amblystegiaceae see Ochyra (2003*c*) who found that in fact the first to describe this family was Kindberg (1885), not Roth (1899).

[414] For the typification and synonymy of *Amblystegium radicale* see Hedenäs (1997*b*).

[415] Hedenäs (1987*a*) has shown that the traditional genus *Platydictya* is a heterogeneous taxon comprising two groups of species which are only remotely related to one another. *P. subtile* and *P. confervoides* are characterized by smooth, brown and inter-

calary rhizoids, whereas *P. jungermannioides* has axillary, purple and granular-papillose rhizoids. Söderström *et al*. (1992) resurrected the generic name *Serpoleskea* for the first group of species but incorrectly ascribed this generic name to Warnstorf (1906). In fact, *Serpoleskea* had been validly published a year earlier by Loeske (1905).

[416] The combination *Serpoleskea confervoides* was made by Loeske (1905) and Karttunen (in Söderström *et al*. 1992) superfluously made the same combination.

[417] For the combination *Leptodictyum humile* see Ochyra (1981). It was superfluously published by Crum (1983) and Crum & Anderson (1989) (see also Crosby & Magill 1994).

[418] Hedenäs (1993*a*) recognized the genus *Straminergon* to accommodate *Calliergon stramineum*.

[419] *Calliergon* was monographed by Karczmarz (1971) but the concept of the genus adopted here is restricted to the the type subsection as circumscribed by this author.

[420] For the occurrence of *Calliergon megalophyllum* in Poland see Lisowski (1960*b*), Karczmarz (1961*b*), Ochyra & Szmajda (1983*h*) and Ochyra & Tomaszewicz (1984). The name *C. megalophyllum* Mikut. of 1908 is antedated by *Hypnum moldavicum* Velen. of 1903 and in order to preserve its current usage *C. megalophyllum* has been proposed for conservation (Hedenäs *et al*. 1999).

[421] For the occurrence of *Callieregon richardsonii* in Poland see Kuc (1958*b*), Lisowski (1965), Karczmarz (1967) and Ochyra & Szmajda (1983*g*).

[422] *Scorpidium* is considered here as a monotypic genus consisting of *S. scorpioides* as the sole representative. Hedenäs (1989*c*) expanded the concept of this genus and merged it with *Limprichtia*.

[423] For distribution of *Scorpidium scorpioides* in Poland see Ochyra *et al*. (1988*h*).

[424] For a discussion of the familial placement of the genus *Tomentypnum* see Hedenäs (1987*b*). This generic name is often spelled *Tomenthypnum* but this orthographic variant is inadmissible because in the original publication Loeske (1911) used the spelling *Tomentypnum* at least twice (including the title of the article) and, additionally, explained that this name originated “aus Tomentohypnum zusammengezogene Bildung”, so it cannot be considered a misprint. The spelling *Tomenthypnum* could eventually be sanctioned by conservation.

[425] For distribution of *Tomentypnum nitens* in Poland see Ochyra *et al*. (1988*j*).

[426] The splitting of the genus *Drepanocladus* into *Sanionia*, *Warnstorfia*, *Limprichtia*, *Pseudocalliergon* and *Drepanocladus* s.str. adopted here follows Loeske (1907*a*, *b*). Because the generic name *Drepanocladus* (Müll.Hal.) G.Roth of 1899 was antedated by *Drepano-hypnum* Hampe and *Drepanocladus* Müll.Hal. 1898 (=*Sanionia*) Isoviita

& Ochyra (1990) proposed conserving it with the conserved type *D. aduncus*. This proposal was approved by the Commitee of Bryophyta (Zijlstra 1993) and in the Tokyo Code (Greuter *et al*. 1994) *Drepanocladus* was placed on the list of conserved generic names.

[427] The *Drepanocladus aduncus* complex constitutes the type section of *Drepanocladus* and the taxonomic concept of this group adopted here follows Żarnowiec (2001).

[428] Hedenäs (1997*c*) considered *Drepanocladus capillifolius* to be conspecific with the South American *D. longifolius* (Mitt.) Broth. *ex* Paris. Żarnowiec (2001) showed that these two species are unrelated and immediately differ in the shape of the alar cells which in *D. longifolius* are like those in species of sect. *Sendtneri*.

[429] Żarnowiec (2001) described *Drepanocladus stagnatus* as a new species and it is currently known from two localities in northern Poland. The specimen from the Suwałki Landscape Park in NE Poland is selected as holotype.

[430] Roth (1909) recognized the unranked *Sendtneri*-Gruppe within the genus *Drepanocladus* in which he placed six species. Two of them, *D. lycopodioides* and *D. latifolius*, belong within the genus *Pseudocalliergon* in the modern sense and the remaining species, *D. sendtneri*, *D. wilsonii*, *D. hamifolius* and *D. perplicatus*, represent *Drepanocladus* in the strict sense and all belong within the *D. sendtneri* complex as overviewed by Hedenäs (1998*b*). This group is validated here as a section of *Drepanocladus*.

Drepanocladus (Müll.Hal.) G.Roth sectio ***Sendtneri*** (G.Roth) Ochyra & Żarnowiec, *stat. et comb. nov*.

Basionym: *Drepanocladus* (Müll.Hal.) G.Roth [unranked] Gruppe *Sendtneri* G.Roth, Hedwigia 48: 157. 1908. — TYPE: *Drepanocladus sendtneri* (Schimp. *ex* H.Müll.) Warnst. (*Hypnum sendtneri* Schimp. *ex* H.Müll.).

[431] For the typification and correct author citation of *Drepanocladus sendtneri* see Isoviita & Koponen (1981).

[432] For the combination *Drepanocladus sordidus* see Buck (1998). This species has long been known as *D. tenuinerve* T.J.Kop. from Fennoscandia (Koponen 1977). In Poland *D. sordidus* is very rare in oligotrophic lakes (the so-called lobelia lakes) in West Pomerania (Bednarek-Ochyra *et al*. 1996; Kraska & Rusińska 1998).

[433] The taxonomic concept of the genus *Pseudocalliergon* adopted here follows Hedenäs (1990*a*). Because species currently included in the genus differ markedly in their overall morphology and leaf shape, it is divided here into two sections.

[434] For the discovery and distribution of *Pseudocalliergon turgescens* in Poland see Kuc (1955) and Ochyra *et al*. (1988*i*) and for its occurrence in Quaternary deposits see Karczmarz (1969). This species is now extinct in Poland (Ochyra & Baryła 1988).

[435] For the current distribution of *Pseudocalliergon trifarium* in Poland see Ochyra *et al*. (1988*g*) and for its occurrence in Holocene deposits see Jasnowski (1957).

[436] *Pseudocalliergon lycopodioides* differs markedly from *P. turgescens* and *P. trifarium*, which constitute the type section of the genus, in its falcate stem leaves which are gradually or more or less abruptly narrowed to a short- or long-acuminate apex. Smirnova (1962) established a separate section in the genus *Drepanocladus*, sect. *Turgidi*, to accommodate this species.

Pseudocalliergo*n* (Limpr.) Loeske sectio ***Turgidi*** (Smirnova) Ochyra, *comb. nov*.

Basionym: *Drepanocladus* (Müll.Hal.) G.Roth. sectio *Turgidi* Smirnova, Bot. Mater. Otd. Spor. Rast. 15: 181. 1962 ['Turgidus'].

[437] The nomenclatural issues associated with the name *Pseudocalliergon lycopodioides* are discussed by Ochyra & Zijlstra (2003).

[438] For the combination *Limprichtia cossonii* see Anderson *et al*. (1990); for a description and the nomenclature of this species, and its separation from *L. revolvens*, see Hedenäs (1989*c* as *Scorpidium cossonii*).

[439] Hedenäs (1989*c*) described the genus *Hamatocaulis* to accommodate *Drepanocladus vernicosus*.

[440] The treatment of the genus *Warnstorfia* adopted here follows Hedenäs (1993*a*).

[441] *Warnstorfia pseudostraminea* is a critical and poorly understood species closely related to *W. fluitans* from which it differs, according to Hedenäs (1993*b*), in the shape of the alar cells and the often obtuse and incurved leaf apex.

[442] *Warnstorfia exannulata* var. *nigricans* had long been known as *Drepanocladus exannulatus* (Schimp.) Warnst. var. *rotae* De Not. and Ochyra (1995*b*) showed that the two taxa were identical.

[443] Tuomikoski & Koponen (1979) distinguished the monotypic genus *Sarmentypnum* to accommodate *Calliergon sarmentosum*. Hedenäs (1993*a*) transferred *C. sarmentosum* to *Warnstorfia* and considered *Sarmentypnum* to be its synonym. This concept is also adopted here (cf. also Ochyra & Matteri 2001) but because *Warnstorfia sarmentosa* displays a distinct set of characters in its leaf shape, it is placed in the separate subgenus *Sarmentypnum* within *Warnstorfia*.

Warnstorfia Loeske subgenus ***Sarmentypnum*** (Tuom. & T.J.Kop.) Ochyra, *stat. et comb. nov*.

Basionym: *Sarmentypnum* Tuom. & T.J.Kop., Ann. Bot. Fenn. 16: 223. 1979.

[444] For a taxonomic revision of the genus *Sanionia* see Hedenäs (1989*b*).

[445] The genus *Anacamptodon* has been firmly associated with the Fabroniaceae (Buck & Crum 1978), but on the basis of molecular data Buck *et al*. (2000*a*) have shown close relationships of this genus with *Campylium* and transferred it to the Campyliaceae, a family considered here as a subfamily of the Amblystegiaceae.

[446] For distribution of *Anacamptodon splachnoides* in Poland see Bednarek-Ochyra *et al*. (1994*f*).

[447] Traditionally (Brotherus 1925) the genus *Campylium* was a heterogeneous and polyphyletic taxon which was split into three segregates comprising *Campylium* s.str., *Campyliadelphus* and *Campylophyllum* (Chopra 1975; Kanda 1975; Hedenäs 1997*b*). The species composition of these segregates differed markedly among the authors, primarily because of the typification of this generic name. Until recently, *C. hispidulum* was considered to be the lectotype of *Campylium* (Grout 1931; Andrews 1957) but Isoviita & Hedenäs (1997) found that this name was in fact lectotypified much earlier with *C. stellatum* (Pfeiffer 1872). Accordingly, this genus is considered to consist of five species centred around the lectotype species and its circumscription adopted here largely follows Hedenäs (1997*b*).

[448] According to Fremstad (1978) and Hedenäs (1997*b*) *Campylium stellatum* var. *protensum* is a good species. In Central Europe there are many intermediates between it and the type variety and it is quite clear that *C. stellatum* and *C. protensum* are not separate species.

[449] According to Hedenäs (1997*b*) *Campylium polygamum* belongs within the genus *Drepanocladus*. The species indeed shows some superficial similarity of its alar cells to those in the *Drepanocladus aduncus* complex but the distinctly channelled leaf acumen, the variable and mostly weak costa and the erect-spreadingto strict leaves very strongly suggest its close alliance to *Campylium*.

[450] The generic placement of *Campyliadelphus chrysophyllus* and *C. elodes* adopted here follows Kanda (1975) and Hedenäs (1997*c*).

[451] Fleischer (1914) established the genus *Campylophyllum* for a single species, *C. halleri*, a pan-Holarctic altimontane species and placed it in the Hypnaceae. The essential diagnostic features of this genus are filiform paraphyllia, leaf margins recurved at the base and roughly papillose rhizoids. Additionally, the leaves are strongly squarrose from an erect-spreading base, the leaf acumen is as long as or shorter than the base and sharply serrate, the alar cells form a small group occupying at the utmost one third of the leaf base and the axillary hairs consist of 1–6 rectangular or shortly rectangular upper cells. Hedenäs (1997*c*) expanded the concept of *Campylophyllum* and transferred to it several species of the *Campylium hispidulum* complex. This does not seem to have been wise decision because *Campylophyllum* has become a heterogeneous assemblage of two different elements, and species of the *C. hispidulum* group do not possess any of the diagnostic characters of *Campylophyllum*. They always lack paraphyllia, the leaf margins are entirely plane and the rhizoids are smooth. Moreover, the leaf acumen is usually as long as or longer than the base, the alar group occupies usually about half to two third of the leaf base and the axillary hairs are composed of 1–3 linear or shortly linear cells. Actually, species of the *Campylium hispidulum* complex and *Campylophyllum halleri* do share to some extent a similar overall appearance of the plants, including their small size and squarrose to recurved leaves. Accordingly, the *Campylium hispidulum* group is here

recognized as a separate genus, *Campylidium*, which is placed in the Amblystegiaceae. This taxon was originally recognized by Kindberg (1897) as an unranked subdivision of *Campylium*. Hedenäs (1997*b*) incorrectly considered it to be a subgenus (see Annotation No. 82) but his lectotypification of this name with *Campylium hispidulum* is entirely correct. Accordingly, the following nomenclatural changes are proposed:

Campylidium (Kindb.) Ochyra, *stat. et comb. nov*.

Basionym: *Campylium* (Sull.) Mitt. I. [unranked] *Campylidium* Kindb., Eur. N. Am. Bryin. 1: 119. 1897. – *Hypnum* Hedw. sectio *Campylidium* (Kindb.) Paris, Index Bryol. Suppl.: 87. 1900. — LECTOTYPE (*fide* Hedenäs (1997*c*: p. 73): *Campylium hispidulum* (Brid.) Mitt. (*Hypnum hispidulum* Brid.).

Campylidium calcareum (Crundwell & Nyholm) Ochyra, *comb. nov*.

Basionym: *Campylium calcareum* Crundwell & Nyholm, Trans. Brit. Bryol. Soc. 4: 198, *f. 2B*. 1962.

Campylidium creperum (Mitt.) Ochyra, *comb. nov*.

Basionym: *Stereodon creperus* Mitt., J. Linn. Soc. Bot. Suppl. 1: 98. 1859.

Campylidium hispilulum (Brid.) Ochyra, *comb. nov*.

Basionym: *Hypnum hispidulum* Brid., Muscol. Recent. Suppl. 2: 198. 1812.

Campylidium lacerulum (Mitt.) Ochyra, *comb. nov*.

Basionym: *Stereodon lacerulus* Mitt., J. Linn. Soc. Bot. Suppl. 1: 115. 1859.

Campylidium porphyreticum (Müll.Hal.) Ochyra, *comb. nov*.

Basionym: *Campylium porphyreticum* Müll.Hal., Nuovo Giorn. Bot. Ital. N. Ser. 5: 205. 1898.

Campylidium praegracile (Mitt.) Ochyra, *comb. nov*.

Basionym: *Ctenidium praegracile* Mitt., J. Linn. Soc. Bot. 12: 510. 1869.

Campylidium quisqueyanum (W.R.Buck) Ochyra, *comb. nov*.

Basionym: *Campylium quisqueyanum* W.R.Buck, Beih. Nova Hedwigia 90: 338. 1988.

Campylidium sommerfeltii (Myrin) Ochyra, *comb. nov*.

Basionym: *Hypnum sommerfeltii* Myrin, Årsberätt. Bot. Arbeten Upptäckter 1831: 328. 1832.

Campylidium squarrosobyssoides (Müll.Hal.) Ochyra, *comb. nov*.

Basionym: *Campylium squarrosobyssoides* Müll.Hal., Hedwigia 36: 125. 1897 [‘squarrosobyssoides’].

Campylidium trichocladum (Taylor) Ochyra, *comb. nov*.

Basionym: *Pterogonium trichocladum* Taylor, London J. Bot. 6: 336. 1847.

[452] For the taxonomy and nomenclature of *Campylidium calcareum* and *C. sommerfeltii* see Crundwell & Nyholm (1962). Pilous (1963) claimed that the oldest available name for this species is *Campylium polymorphum* (Hedw.) Pilous based on *Hypnum polymorphum*

of Hedwig (1801). Because the Hedwigian name in the past has been frequently misused and the type itself represents what is now called *Campylium stellatum* var. *protensum* or *C. protensum*, Hedenäs & Isoviita (1996*b*) proposed rejecting this name and this proposal was approved by the Committee for Bryophyta (Zijlstra 1999*a*) and in the Saint Louis Code (Greuter *et al*. 2000) this name is on the list of "Nomina utique rejicienda".

[453] Szafran (1961) was the first to recognize the subfamily Hygrohypnoideae within the Amblystegiaceae but he invalidly published this name in Polish.

[454] The taxonomic concept of the genus *Hygrohypnum* adopted here follows Jamieson (1976). The infrageneric classification of the genus follows Szafran (1961).

[455] For validation the sectional name *Hygrohypnum* sect. *Dilatata* see Ochyra (1983*c*).

[456] For the combination of *Hygrohypnum duriusculum* and the placement of *H. dilatatum* in synonymy with it see Jamieson (1980). Geissler (1985) considered *H. duriusculum* to be conspecific with *H. molle*.

[457] Geissler (1985) considered *Hygrohypnum alpinum* to be conspecific with *H. molle*.

[458] The traditional subfamilial classification proposed by Fleischer (1923) and Brotherus (1925) is adopted here. For a historical review of the various classificational systems of this family see Nishimura *et al*. (1984) and Nishimura (1999).

[459] The generic name *Pylaisia* has been a source of permanent confusion because of the existence of the orthographic variants *Pilaisia* Schimp. *ex* Hérib. and *Pylaiea* Schimp. *ex* Lindb. and the parahomonyms *Pilaisaea* Desv. *ex* Bach.Pyl. and *Pylaisaea* Desv. *ex* Bach.Pyl. Grout (1896) introduced the name *Pylaisiella* as a replacement for *Pylaisaea* which had long been in use, but it was also affected by two parahomonyms, *Pylaiella* Léman and *Pilayella* Bory. Therefore, in order to resolve the problem, the name *Pylaisia* was proposed for conservation (Margadant & Geissler 1995). This proposal was accepted (Zijlstra 1999*b*) and in the Saint Louis Code (Greuter *et al*. 2000) *Pylaisia* is on the list of conserved generic names. The conservation of the generic name *Pylaisia* necessitates the following nomenclatural changes:

Pylaisia frahmii (W.R.Buck) Ochyra, *comb. nov.*

Basionym: *Pylaisiella frahmii* W.R.Buck, Trop. Bryol. 8: 214. 1993.

Pylaisia kunisawae (Ando) Ochyra, *comb. nov.*

Basionym: *Pylaisiella kunisawae* Ando *in* Z.Iwats., J. Hattori Bot. Lab. 46: 381, *f. 2*. 1979.

Pylaisia steerei (Ando & Higuchi) Ochyra, *comb. nov.*

Basionym: *Pylaisiella steerei* Ando & Higuchi, Mem. New York Bot. Gard. 45: 211, *f. 1–34*. 1987.

[460] Ireland (2001) described the genus *Buckiella* to accommodate *Plagiothecium undulatum* on account of its papillose laminal cells which are unknown in any other species

of the genus *Plagiothecium* except for *P. draytonii* (Sull.) E.B.Bartram. On the basis of the symmetric leaves with very short, inconspicuous decurrencies the genus is placed in the Hypnaceae.

[461] For distribution of *Buckiella undulata* in Poland see Ochyra *et al*. (1990*i*).

[462] The taxonomic treatment and sectional classification of the genus *Hypnum* adopted here follows to a large extent the works of Ando (1972, 1973, 1976, 1986, 1987, 1989, 1990, 1992, 1993, 1996).

[463] The taxonomic treatment of the protean *Hypnum cupressiforme* adopted here follows Ando (1989, 1990, 1992, 1993).

[464] *Hypnum cupressiforme* var. *resupinatum* is sometimes treated as a species in its own right, *H. resupinatum* Taylor (Frahm 1993; Smith 1997).

[465] *Hypnum cupressiforme* var. *lacunosum* is sometimes considered as a distinct species, *H. lacunosum* (Brid.) Brid. (Frahm 1976; Smith 1997).

[466] *Hypnum andoi* was introduced as a replacement for the nomenclaturally illegitimate *H. mammilatum* (Brid.) Lindb. (Smith 1981). The arguments for using this name have been discussed in detail by Frahm & Isoviita (1999).

[467] *Hypnum jutlandicum* was proposed as a replacement for the illegitimate name *H. ericetorum* (Schimp.) Loeske by Damsholt *et al*. (1969).

[468] Hedenäs (1990*b*) suggested the placement of *Hypnum lindbergii* in the genus *Calliergonella*.

[469] Hedenäs (1990*b*) resurrected the genus *Breidleria* of Loeske (1910) to accommodate *Hypnum pratense* and the Japanese *H. eretiusculum* Sull. & Lesq.

[470] *Hypnum procerrimum* is sometimes placed in the separate monotypic genus *Pseudostereodon* (Broth.) M.Fleisch. (e.g., Pilous & Duda 1960; Szafran 1961) or considered to be a member of the genus *Ctenidium* (e.g., Nyholm 1965; Smith 1978).

[471] *Callicladium* was described by Crum (1971) as a new genus comprising the single species *C. haldanianum* which had usually been considered to be a member of the genus *Heterophyllium* (Schimp.) M.Fleisch.

[472] The familial placement of the genus *Calliergonella* has been the subject of eternal controversy and for a discussion of this problem see Tuomikoski & Koponen (1979) and Hedenäs (1990*b*). The position of the genus in the Hypnaceae adopted here follows Nishimura *et al*. (1984).

[473] Iwatsuki (1965) introduced the generic name *Sharpiella* as a replacement of the illegitimate *Dolichotheca* Lindb. but subsequently he (Iwatsuki 1970) stated the congenericity of *Sharpiella* with the South American *Herzogiella*.

[474] For distribution of *Herzogiella striatella* in Poland see Ochyra *et al*. (1992*g*).

[475] Iwatsuki (1970) described the genus *Isopterygiopsis* to accommodate *Isopterygium muellerianum*.

[476] For distribution of *Isopterygiopsis muelleriana* in Poland see Ochyra (1976) and Ochyra & Szmajda (1983*j*).

[477] For the combination *Isopterygiopsis pulchella* see Iwatsuki (1987).

[478] The genus *Orthothecium* has usually been placed in the Entodontaceae (Brotherus 1925) but the familial position adopted here follows Buck (1980*b*).

[479] For distribution of *Orthothecium intricatum* in Poland see Ochyra *et al*. (1985*i*).

[480] *Platydictya* is the oldest name for a genus which had long been known by the illegitimate name *Amblystegiella* Loeske (Crum 1964).

[481] For typification of *Platydictya jungermannioides* see Isoviita (1979).

[482] For distribution of *Taxiphyllum densifolium* in Poland see Bednarek-Ochyra *et al*. (1994*h*).

[483] For distribution of *Taxiphyllum wissgrillii* in Poland see Bednarek-Ochyra *et al*. (1994*i*).

[484] Iwatsuki (1987) segregated *Pseudotaxiphyllum* as a new genus from the large and all-encompassing genus *Isopterygium* to accommodate species centred around *I. elegans* which was selected as generitype of *Pseudotaxiphyllum*.

[485] For a taxonomic revision of the genus *Ctenidium* see Nishimura (1985).

[486] For distribution of *Ctenidium molluscum* in Poland see Ochyra *et al*. (1985*j*).

[487] Following Kanda (1975) *Campylophyllum* is interpreted in the present work as a monotypic genus.

[488] For distribution of *Hookeria lucens* in Poland see Ochyra *et al*. (1985*g*).

[489] *Bartramia ithyphylla* var. *breviseta* is an arctic-alpine taxon which is sometimes considered as a species in its own right, *B. breviseta* Lindb. (Nyholm 1998). It was reported from Poland by Duell (1985) but without indication of the source of this record. Until this report is confirmed by the relevant collections, this variety is excluded from the moss flora of Poland.

[490] *Bartramia subulata* was reported as *Bartramia viridissima* (Brid.) Kindb. from the Sudetes by Szafran (1957) without detailed locality data. This record is doubtful and cannot be confirmed by any herbarium collections. Nor has this species been cited in the old German literature from this region (e.g., Milde 1869*a*; Limpricht 1876, 1895).

[491] *Bryum boreale* is a critical and poorly known species reported from West Pomerania and the Sudetes as *B. pallescens* var. *boreale* (F.Weber & D.Mohr) Bruch & Schimp. (Szafran 1957). Weber & Mohr (1807) cited in the protologue the specimen collected by Ludwig in Silesia which was later described by Schwägrichen (1816) as *B. ludwigii* (=*Pohlia ludwigii*), so eventually typification of this name with this specimen could destabilize current nomenclature since *Pohlia ludwigii* is a widely accepted species.

[492] *Bryum veronense* was reported by Bloch (1974) from Nizina Północnopodlaska in north-eastern Poland but the voucher collection in LBL represents a typical expression of *B. argenteum*.

[493] *Ceratodon purpureus* var. *rotundifolius* is an arctic-alpine taxon (Ireland 1980) which was reported from Poland by Duell (1985) without citation of the specimens. Until the relevant voucher collection is studied this taxon is excluded from the moss flora of the country.

[494] *Cinclidium arcticum* was reported from the Tatras by Pilous (1954) and Lisowski (1959) but Mogensen (1973) showed that these records actually represented small specimens of *C. stygium*.

[495] Szafran (1957) reported *Cinclidotus aquaticus* from the Tatras and attributed this record to Wahlenberg (1814) who actually collected it in the Slovak part of these mountains (... in ipso cacumine arduo Lomnitzensis ....). The species has never been found in the Polish part of the Tatras, nor has it been rediscovered in Slovakia since (Šmarda 1948).

[496] Chałubiński (1886) reported from the Tatras *Dicranella varia* var. *tenuifolia* (Bruch & Schimp.) Schimp. which is considered by Crundwell & Nyholm (1977) to be a synonym of *D. howei*. However, the Tatra specimens represent typical *D. varia* (Ochyra & Cisło 1999).

[497] Mamczarz (1970) reported *Didymodon montanus* from "Skałka pod Makowicą 700 m" in the Beskid Sądecki Range in the Western Carpathians and ascribed this record to Szafran (1956). This author actually reported from this locality *Tortula montana* (Nees) Lindb. i.e. *Syntrichia montana* Nees. *Didymodon montanus* is a South American species correctly belonging to *Rhamphidium* (Zander 1993).

[498] *Dryptodon piliferus* was erroneously reported as *Grimmia pilifera* P.Beauv. by Mamczarz (1977) from Kadcza in the Beskid Sądecki Range in the Western Carpathians. This was due to the confusion associated with the interpretation of *Grimmia apocarpa* Hedw. var. *pilifera* De Not., the name under which this taxon was originally reported (Mamczarz 1970).

[499] *Fontinalis howelii* is a western North American species (Welch 1960) which was reported from Europe on the basis of misinterpretation of the type material of *F. kindbergii* Renauld & Cardot by European authors. Nyholm (1960) and Duell (1985, 1994*b*) still con-

sider this taxon as occurring in Europe and recognize it as a subspecies of *F. antipyretica*, although nomenclaturally this is inadmissible if *F. kindbergii* is a synonym of *F. howelii* as proposed by Welch (1960).

[500] *Myurella sibirica* was reported from Poland by Limpricht (1895) as *M. careyana* Sull. It was based upon a record of *M. apiculata* (Sommerf.) Schimp. var. *ciliata* Chał. which in fact represents that variety of *M. julacea* which had formerly been called var. *scabrifolia* Lindb. *ex* Limpr. (Ochyra & Bednarek Ochyra 1991*b*).

[501] *Pseudoleskeella tectorum* was reported as *Leskeella tectorum* (Brid.) I.Hagen from the Beskid Sądecki Range in the Western Carpathians by Mamczarz (1970), but the voucher material deposited in LBL and KRAM consists of *Hypnum cupressiforme*.

[502] *Rhynchostegiella curviseta* was reported from Lower Silesia by Błoński (1890*a*) and Szafran (1961). These records were based upon the erroneous concept of the conspecificity of this species and *Rh. teesdalei* which are definitely distinct (Duell 1986).

[503] Limpricht (1876) reported *Rhynchostegiella teesdalei* from the vicinity of Strzelin (*Germ.* Strehlen) in Lower Silesia but later he excluded this species from the bryoflora of the region (Limpricht 1896).

[504] *Schistidium strictum* is now interpreted as a species having a narrow geographical range which covers western Europe and western North America (Blom 1996) but in the past the concept of this species was much broader and this name was applied to the plants named also as *S. apocarpum* var. *gracile*. Actually, they mostly represent *S. apocarpum* s.str.

[505] *Schistidium tenerrimum* was reported by Ochyra & Szmajda (1978) and this name referred to *Grimmia apocarpa* var. *tenerrima* which was reported from the Tatras by Chałubiński (1882, 1886). Actually, the material belongs to the *S. apocarpum* complex and has nothing to do with *S. tenerum* wich is an arctic species. The status of of the type material of *Grimmia apocarpa* var. *tenerrima* is uncertain because it has not been located (Blom 1996).

[506] Chałubiński (1886) reported *Scleropodium touretii* (as *Scleropodium illecebrum* Schimp.) from the Tatras but the plants actually represent *Sciuro-hypnum ornellanum* (Ochyra & Cisło 1999).

[507] *Seligeria austriaca* was reported from Poland by Ochyra (1984*a*, *b*) but correctly the voucher specimens represent *S. patula* s.lato. This species was described by Schauer (1967) and the type material consists of a few sporophytes with immature capsules almost lacking in spores or possessing aborted ones. The plants have elongate, acute leaves with irregular areolation at the apex and resemble very much phenotypes of *S. patula* with entire leaf margins. Other non-type specimens determined by Schauer as *S. austriaca* actually belong to *S. trifaria* s.lato or to *S. patula* var. *alpestris* with smooth leaf cells.

Therefore *S. austriaca* is here reduced, with some reservations, to synonymy with the latter varietal name.

Seligeria patula (Lindb.) I.Hagen var. ***alpestris*** (T.Schauer) L.Gos & Ochyra

Seligeria austriaca T.Schauer, Nova Hedwigia 14: 323, *pl. 100 f. 7–12.* 1967. — TYPE: Algäuer Alpen, Flyschschlucht bei Hinterhornbach, Tirol, 1000 m, 9.66, leg. Th. Schauer [HOLOTYPE: M!], ***syn. nov.***

[508] *Seligeria brevifolia* was reported from the Pieniny Mountains by Szafran (1952) but the material correctly belongs to *S. campylopoda* (Smirnova 1965; Szafran 1970; Ochyra 1984*a*; Ochyra *et al*. 1985*b*).

[509] *Sphagnum aongstroemii* was erroneously reported from the Wielkopolska region in western Poland (Wodziczko 1933). This error was detected by Czubiński (1936) who stated that correctly this record referred to *S. compactum*.

[510] Flatberg (1984) reported *Sphagnum austinii* from "Ostpreussen, Samland, Cranzen Hochmor". This locality is actually situated in Kaliningrad Oblast in Russia.

[511] *Sphagnum pulchrum* was reported from the Tatras by Chałubiński (1886) but the voucher specimens belong to *S. fallax* (Ochyra & Cisło 1999). The material distributed as *S. pulchrum* in *Musci Poloniae Exsiccati* as No. 408 (Ochyra 1981) represents this species as well.

[512] *Warnstorfia procera* was reported from Poland by Duell (1985) as *Drepanocladus exannulatus* (Schimp.) Warnst. var. *procerus* (Renauld & Arnell) Warnst., but without identifying the source of this record. Until the voucher collection confirming the record is located, the species is excluded from the list of Polish moss species.

[513] *Zygodon conoideus* was reported by Milde (1852) in one of his earliest bryological papers from Ustroń in the Silesian Beskid. Subsequently, no mention of this speciesfrom the region has been made in any handbook of Silesian mosses, including Milde's (1869*a*) *Bryologia silesiaca* in which he mentioned the species only from western Germany.

6 SYNONYMS

The following cross index to synonyms is intended to include all the old and newer names and concepts which have been published in the bryological literature devoted to the present territory of Poland from the earliest times up to the end of 2002. Only names having true nomenclatural status are included in the list of synonyms. All isonyms, i.e. the same names, based on the same types which have been published independently at different times by different authors, have been rejected automatically since they have no nomenclatural status. Isonyms are very frequently quoted as synonyms in the analogical catalogue of Polish vascular plants (Mirek *et al*. 2003) and their inclusion leads to serious confusion, especially in those cases when their variants, which may be designated as para-isonyms, are involved. They are characterized by the lack of the authorities of the basionyms. Consideration of them as proper synonymous names is inadmissible nomenclaturally because such forms of the citation of the authorities may be totally misinterpreted as, for instance, homonyms.

In total, 2329 synonyms are listed alphabetically consisting 1469 specific, 37 subspecific, 573 varietal and 250 form names. They are primarily taken from the major Floras and phytogeographical treatments of Klinggräff (1858, 1893), Milde (1869*a*), Limpricht (1876, 1890, 1895, 1894), Chałubiński (1886), Lützow (1895), Warnstorf (1903, 1906) and Szafran (1957, 1961, 1963). In addition, numerous floristic, phytogeographical and taxonomic accounts have been consulted, although as a rule they present the nomenclature based on the available Floras and handbooks of mosses. Occasionally, some names which have not appeared in the Polish bryological or botanical literature, but reflect different taxonomic concepts are also cited, and the user is thereby left free to choose whichever name is consistent with his or her individual taxonomic philosophy.

A

Acaulon floerkeanum (F.Weber & D.Mohr) Müll.Hal. = *Microbryum floerkeanum*
Acrocladium cuspidatum (Hedw.) Lindb. = *Calliergonella cuspidata*
Aloina collina Torka = *Aloina rigida*
Aloina ericaefolia Kindb. = *Aloina ambigua*
Aloina longirostris Torka = *Aloina rigida*
Aloina rigida var. *longirostris* (Torka) Podp. = *Aloina rigida*

Aloina rigida fo. *mucronata* Mönk. = *Aloina rigida*
Aloina rigida fo. *obtusa* (Jur.) Mönk. = *Aloina rigida*
Aloina rigida fo. *pilifera* (De Not.) Mönk. = *Aloina rigida*
Aloina stellata Kindb. = *Aloina rigida*
Amblyodum stygium (Sw.) P.Beauv. = *Cinclidium stygium*
Amblystegiella confervoides (Brid.) Loeske = *Serpoleskea confervoides*
Amblystegiella jungermannioides (Brid.) Giacom. = *Platydictya jungermannioides*
Amblystegiella sprucei (Bruch) Loeske = *Platydictya jungermannioides*
Amblystegiella subtilis (Hedw.) Loeske = *Serpoleskea subtilis*
Amblystegium cashii Buyss. = *Amblystegium serpens*
Amblystegium confervoides (Brid.) Schimp. = *Serpoleskea confervoides*
Amblystegium curvicaule (Jur.) Lindb. = *Callialaria curvicaulis*
Amblystegium curvipes Schimp. = *Leptodictyum humile*
Amblystegium fallax (Brid.) Milde = *Cratoneuron filicinum*
Amblystegium filicinum (Hedw.) De Not. = *Cratoneuron filicinum*
Amblystegium fluviatile (Hedw.) Schimp. = *Hygroamblystegium fluviatile*
Amblystegium humile (P.Beauv.) Crundwell = *Leptodictyum humile*
Amblystegium incurvatum (Hedw.) Kindb. = *Homomallium incurvatum*
Amblystegium irriguum (Hook. & Wilson) Schimp. = *Hygroamblystegium tenax*
Amblystegium kneiffii Schimp. = *Drepanocladus polycarpos*
Amblystegium kochii Schimp. = *Leptodictyum humile*
Amblystegium oligorrhizon Schimp. = *Amblystegium radicale*
Amblystegium polygamum Schimp. = *Campylium polygamum*
Amblystegium rigescens Limpr. = *Amblystegium serpens*
Amblystegium riparium (Hedw.) Schimp. = *Leptodictyum riparium*
Amblystegium riparium fo. *fontinaloides* Mönk. = *Leptodictyum riparium*
Amblystegium riparium fo. *longifolium* (Schultz) Warnst. = *Leptodictyum riparium*
Amblystegium riparium fo. *subsecundum* (Schimp.) Mönk. = *Leptodictyum riparium*
Amblystegium riparium fo. *tenuis* (Jur.) Mönk. = *Leptodictyum riparium*
Amblystegium riparium var. *trichopodium* (Schultz) Schimp. = *Leptodictyum riparium*
Amblystegium saxatile Schimp. = *Amblystegium radicale*
Amblystegium serpens var. *juratzkanum* (Schimp.) Rau & Herv. = *Amblystegium juratzkanum*
Amblystegium serpens var. *rigescens* (Limpr.) Loeske = *Amblystegium serpens*
Amblystegium serpens var. *rigidusculum* Lindb. & Arnell = *Amblystegium serpens*
Amblystegium serpens var. *salinum* Carringt. = *Amblystegium serpens*
Amblystegium sprucei (Bruch) Schimp. = *Platydictya jungermannioides*
Amblystegium subtile (Hedw.) Schimp. = *Serpoleskea subtilis*
Amblystegium tenuissimum Schimp. = *Serpoleskea subtilis*
Amblystegium trichopodium (Schultz) C.Hartm. = *Leptodictyum riparium*
Amblystegium trichopodium var. *curvipes* (Schimp.) Broth. = *Leptodictyum humile*
Amblystegium trichopodium var. *kochii* (Schimp.) Lindb. = *Leptodictyum humile*
Amblystegium varium (Hedw.) Lindb. = *Orthotheciella varia*

Amblystegium varium var. *paludosum* G.Roth = *Orthotheciella varia*
Amblystegium xerophilum Warnst. = *Amblystegium juratzkanum*
Amphoridium lapponicum (Hedw.) Schimp. = *Amphidium lapponicum*
Amphoridium mougeotii (Bruch & Schimp.) Schimp. = *Amphidium mougeotii*
Anacalypta inclinata Nees = *Tortula cernua*
Anacalypta lanceolata (Hedw.) Nees & Hornsch. = *Tortula lanceola*
Anacalypta recurvirostris (Hedw.) Fürnr. = *Bryoerythrophyllum recurvirostrum*
Anacalypta rubella Huebener = *Bryoerythrophyllum recurvirostrum*
Anacalypta starkeana (Hedw.) Fürnr. = *Microbryum starkeanum*
Anacalypta tophacea (Brid.) Fürnr. = *Didymodon tophaceus*
Andreaea alpestris (Thed.) Schimp. = *Andreaea rupestris* var. *alpestris*
Andreaea frigida var. *sudetica* Limpr. = *Andreaea frigida*
Andreaea nivalis fo. *fuscescens* (Hook.) Mönk. = *Andreaea nivalis*
Andreaea nivalis var. *greschikii* G.Roth *ex* Röll = *Andreaea nivalis*
Andreaea nivalis fo. *mucronata* (Chał.) Szafran = *Andreaea nivalis*
Andreaea nivalis var. *mucronata* Chał. = *Andreaea nivalis*
Andreaea petrophila Ehrh. *ex* Fürnr. = *Andreaea rupestris*
Andreaea petrophila fo. *acuminata* (Bruch & Schimp.) Mönk. = *Andreaea rupestris* var. *papillosa*
Andreaea petrophila subsp. *alpestris* (Thed.) Lindb. = *Andreaea rupestris* var. *alpestris*
Andreaea petrophila var. *alpestris* Thed. = *Andreaea rupestris* var. *alpestris*
Andreaea petrophila fo. *flaccida* (Bruch & Schimp.) Mönk. = *Andreaea rupestris*
Andreaea petrophila fo. *gracilis* (Bruch & Schimp.) Mönk. = *Andreaea rupestris*
Andreaea petrophila var. *homomalla* Thed. = *Andreaea rupestris*
Andreaea petrophila fo. *pygmea* (Bruch & Schimp.) Mönk. = *Andreaea rupestris*
Andreaea petrophila fo. *rupestris* Mönk. = *Andreaea rupestris*
Andreaea petrophila fo. *squarrosula* (Bruch & Schimp.) Mönk. = *Andreaea rupestris*
Andreaea petrophila fo. *sylvicola* (Bruch & Schimp.) Podp. = *Andreaea rupestris*
Andreaea rothii var. *falcata* (Schimp.) Lindb. = *Andreaea rothii* subsp. *falcata*
Andreaea rothii subsp. *frigida* (Huebener) W.Schultze-Motel = *Andreaea frigida*
Andreaea rupestris var. *grimsulana* (Bruch) Schimp. = *Andreaea frigida*
Anictangium ciliatum Hedw. = *Hedwigia ciliata*
Anisothecium crispum (Hedw.) C.E.O.Jensen = *Dicranella crispa*
Anisothecium palustre (Dicks.) I.Hagen = *Diobelonella palustris*
Anisothecium rubrum Lindb. = *Dicranella varia*
Anisothecium rufescens (With.) Lindb. = *Dicranella rufescens*
Anisothecium schreberianum (Hedw.) Dixon = *Dicranella schreberiana*
Anisothecium squarrosum (Schrad.) Lindb. = *Diobelonella palustris*
Anisothecium vaginale (Dicks. *ex* With.) Loeske = *Dicranella crispa*
Anisothecium varium (Hedw.) Mitt. = *Dicranella varia*
Anodon donianus (Sm.) Bruch & Schimp. = *Seligeria donniana*
Anodon pulvinatus (Hedw.) Rabenh. = *Grimmia anodon*
Anoectangium compactum Schwägr. = *Anoectangium aestivum*

Anoectangium compactum fo. *brevifolium* (Jur. *ex* Milde) Chał. = *Anoectangium aestivum*
Anoectangium compactum var. *brevifolium* Jur. *ex* Milde = *Anoectangium aestivum*
Anoectangium hornschuchianum (Funck) Funck = *Molendoa hornschuchiana*
Anomobryum concinnatum (Spruce) Lindb. = *Anomobryum julaceum*
Anomobryum filiforme (Dicks.) Husn. = *Anomobryum julaceum*
Anomobryum filiforme var. *concinnatum* (Spruce) Loeske = *Anomobryum julaceum*
Anomobryum julaceum var. *concinnatum* (Spruce) J.E.Zetterst. = *Anomobryum julaceum*
Anomodon apiculatus Sull. = *Anomodon rugelii*
Anomodon curtipendulus (Timm *ex* Hedw.) Hook. & Taylor = *Antitrichia curtipendula*
Anomodon longifolius var. *pumilus* Milde *ex* Limpr. = *Anomodon longifolius*
Anomodon repens (Brid.) Fürnr. = *Platygyrium repens*
Anomodon striatus (Schwägr.) Fürnr. = *Lescuraea mutabilis*
Anomodon viticulosus var. *rugelii* (Müll.Hal.) Szafran = *Anomodon rugelii*
Antitrichia curtipendula fo. *falcata* (Warnst.) Podp. = *Antitrichia curtipendula*
Antitrichia curtipendula var. *falcata* Warnst. = *Antitrichia curtipendula*
Aongstroemia cerviculata (Hedw.) Müll.Hal. = *Dicranella cerviculata*
Aongstroemia crispa (Hedw.) Müll.Hal. = *Dicranella crispa*
Aongstroemia curvata (Hedw.) Müll.Hal. = *Dicranella subulata* var. *curvata*
Aongstroemia heteromalla (Hedw.) Müll.Hal. = *Dicranella heteromalla*
Aongstroemia pellucida (Hedw.) Müll.Hal. = *Dichodontium pellucidum*
Aongstroemia rufescens (Dicks.) Müll.Hal. = *Dicranella rufescens*
Aongstroemia schreberi Müll.Hal. = *Dicranella schreberiana*
Aongstroemia squarrosa (Schrad.) Müll.Hal. = *Diobelonella palustris*
Aongstroemia subulata (R.Br.) Müll.Hal. = *Dicranella subulata*
Aongstroemia varia (Hedw.) Müll.Hal. = *Dicranella varia*
Archidium phascoides Brid. = *Archidium alternifolium*
Astomum alternifolium (Dicks. *ex* Hedw.) Hampe = *Pleuridium subulatum*
Astomum crispum (Hedw.) Hampe = *Weissia longifolia*
Astomum nitidum (Hedw.) Hampe *ex* Müll.Hal. = *Pseudephemerum nitidum*
Astomum rostellatum (Brid.) Bruch & Schimp. = *Weissia rostellata*
Astomum subulatum (Hedw.) Hampe = *Pleuridium subulatum*
Atrichum hausknechtii Jur. & Milde = *Atrichum flavisetum*
Atrichum undulatum var. *gracilisetum* Besch. = *Atrichum flavisetum*
Atrichum undulatum var. *rivulare* (Bryhn) Paris = *Atrichum undulatum*
Aulacomnium palustre var. *fasciculare* (Funck *ex* Brid.) Bruch & Schimp. = *Aulacomnium palustre*
Aulacomnium palustre var. *serrulatum* Warnst. = *Aulacomnium palustre*
Aulacomnium palustre var. *submersum* Sanio *ex* Limpr. = *Aulacomnium palustre*

B

Barbula aciphylla Bruch & Schimp. = *Syntrichia norvegica*
Barbula acuta (Brid.) Brid. = *Didymodon acutus*

Barbula aestiva (Brid. *ex* Hedw.) Schultz = *Tortula muralis* var. *aestiva*
Barbula aloides (Koch *ex* Schultz) Bruch = *Aloina aloides*
Barbula alpina Bruch & Schimp. = *Syntrichia sinensis*
Barbula ambigua Bruch & Schimp. = *Aloina ambigua*
Barbula convoluta var. *densa* Milde = *Barbula convoluta*
Barbula cylindrica (Taylor) Schimp. = *Didymodon insulanus*
Barbula cylindrica var. *vinealis* (Brid.) Lindb. = *Didymodon vinealis*
Barbula fallax Hedw. = *Didymodon fallax*
Barbula fallax var. *brevicaulis* (Schwägr.) Huebener = *Didymodon fallax*
Barbula fallax var. *brevifolia* (Dicks.) Schultz = *Didymodon fallax* var. *brevifolius*
Barbula ferruginascens Stirt. = *Bryoerythrophyllum ferruginascens*
Barbula flavipes Bruch & Schimp. = *Barbula enderesii*
Barbula fragilis (Taylor) Müll.Hal. = *Tortella fragilis*
Barbula gigantea Funck = *Didymodon giganteus*
Barbula gracilis Schwägr. = *Didymodon acutus*
Barbula hornschuchiana Schultz = *Pseudocrossidium hornschuchianum*
Barbula imberbis Brockm. = *Didymodon fallax*
Barbula inclinata (R.Hedw.) Schwägr. = *Tortella inclinata*
Barbula insidiosa Jur. & Milde = *Didymodon spadiceus*
Barbula intermedia (Brid.) A.Walther & Molendo = *Syntrichia montana*
Barbula intermedia var. *pulvinata* (Jur.) Milde = *Syntrichia virescens*
Barbula intermedia var. *rupestris* Milde = *Syntrichia montana*
Barbula laevipila (Brid.) Garov. = *Syntrichia laevipila*
Barbula latifolia Brid. = *Syntrichia latifolia*
Barbula lurida Hornsch. = *Didymodon luridus*
Barbula lurida subsp. *cordata* (Jur.) Dixon = *Didymodon cordatus*
Barbula mucronifolia (Schwägr.) Garov. = *Tortula mucronifolia*
Barbula muralis (Hedw.) Crome = *Tortula muralis*
Barbula muralis var. *aestiva* (Brid. *ex* Hedw.) Röhl. = *Tortula muralis* var. *aestiva*
Barbula paludosa F.Weber & D.Mohr = *Barbula crocea*
Barbula papillosa (Wilson) Müll.Hal. = *Syntrichia papillosa*
Barbula pulvinata Jur. = *Syntrichia virescens*
Barbula recurvifolia Schimp. = *Didymodon ferrugineus*
Barbula recurvirostris (Hedw.) Dixon = *Bryoerythrophyllum recurvirostrum*
Barbula reflexa (Brid.) Brid. = *Didymodon ferrugineus*
Barbula revoluta Brid. = *Pseudocrossidium revolutum*
Barbula rigida Hedw. = *Aloina rigida*
Barbula rigidula (Hedw.) Milde = *Didymodon rigidulus*
Barbula rufa (Lorentz) Jur. = *Didymodon asperifolius*
Barbula ruraliformis Besch. = *Syntrichia ruraliformis*
Barbula ruralis Hedw. = *Syntrichia ruralis*
Barbula sinuosa (Mitt.) Grav. = *Didymodon sinuosus*

Barbula spadicea (Mitt.) Braithw. = *Didymodon spadiceus*
Barbula subulata (Hedw.) P.Beauv. = *Tortula subulata*
Barbula tophacea (Brid.) Mitt. = *Didymodon tophaceus*
Barbula tortuosa (Hedw.) F.Weber & D.Mohr = *Tortella tortuosa*
Barbula unguiculata fo. *apiculata* (Hedw.) Mönk. = *Barbula unguiculata*
Barbula unguiculata fo. *cuspidata* Mönk. = *Barbula unguiculata*
Barbula unguiculata fo. *fastigiata* Mönk. = *Barbula unguiculata*
Barbula unguiculata fo. *microcarpa* Podp. = *Barbula unguiculata*
Barbula unguiculata fo. *obtusifolia* Mönk. = *Barbula unguiculata*
Barbula vinealis Brid. = *Didymodon vinealis*
Barbula vinealis var. *cylindrica* (Taylor) Boulay = *Didymodon insulanus*
Bartramia crispa Brid. = *Bartramia pomiformis* var. *elongata*
Bartramia crispa var. *minor* F.Weber & D.Mohr = *Bartramia pomiformis* var. *elongata*
Bartramia fontana (Hedw.) Turner = *Philonotis fontana*
Bartramia gracilis Hoppe = *Plagiopus oederiana*
Bartramia halleri Gray = *Bartramia halleriana*
Bartramia marchica (Hedw.) Sw. = *Philonotis marchica*
Bartramia norvegica Lindb. = *Bartramia halleriana*
Bartramia oederi Brid. = *Plagiopus oederiana*
Bartramia oederi var. *condensata* Brid. = *Plagiopus oederiana*
Bartramia pomiformis var. *crispa* (Brid.) Bruch & Schimp. = *Bartramia pomiformis* var. *elongata*
Blindia acuta var. *irrorata* Pfeff. = *Blindia acuta*
Blindia acuta var. *seligeria* (Brid.) Limpr. = *Blindia acuta*
Blindia cirrata (Hedw.) Müll.Hal. = *Dicranoweissia cirrata*
Blindia crispula (Hedw.) Müll.Hal. = *Hymenoloma crispulum*
Brachythecium albicans var. *dumetorum* Limpr. = *Brachythecium albicans*
Brachythecium albicans var. *julaceum* Warnst. = *Brachythecium albicans*
Brachythecium albicans var. *macrophyllum* Żmuda = *Brachythecium albicans*
Brachythecium amoenum Milde = *Sciuro-hypnum populeum*
Brachythecium campestre fo. *falcatum* (Warnst.) Podp. = *Brachythecium campestre*
Brachythecium curtum (Lindb.) Limpr. = *Sciuro-hypnum oedipodium*
Brachythecium fendleri auct. eur. non (Sull.) A.Jaeger = *Brachytheciastrum collinum*
Brachythecium funckii Schimp. = *Cirriphyllum crassinervium*
Brachythecium glaciale Schimp. = *Sciuro-hypnum glaciale*
Brachythecium glaciale var. *gelidum* (Bryhn) Mönk. = *Sciuro-hypnum glaciale*
Brachythecium glaciale var. *laxum* Mönk. = *Sciuro-hypnum glaciale*
Brachythecium glareosum var. *alpinum* (De Not.) Limpr. = *Brachythecium glaerosum*
Brachythecium laetum Milde = *Brachythecium geheebii*
Brachythecium lutescens (Hedw.) De Not. = *Homalothecium lutescens*
Brachythecium mildeanum fo. *longisetum* (Warnst.) Podp. = *Brachythecium mildeanum*
Brachythecium mildeanum fo. *robustum* (Warnst.) Podp. = *Brachythecium mildeanum*
Brachythecium oedipodium (Mitt.) A.Jaeger = *Sciuro-hypnum oedipodium*

Brachythecium ornellanum (Molendo) Venturi & Bott. = *Sciuro-hypnum ornellanum*
Brachythecium piliferum (Hedw.) Kindb. = *Cirriphyllum piliferum*
Brachythecium plicatum (Schleich. *ex* F.Weber & D.Mohr) Schimp. = *Ptychodium plicatum*
Brachythecium plumosum (Hedw.) Schimp. = *Sciuro-hypnum plumosum*
Brachythecium plumosum fo. *aquaticum* (Funck) Mönk. = *Sciuro-hypnum plumosum*
Brachythecium plumosum fo. *homomallum* (Schimp.) Mönk. = *Sciuro-hypnum plumosum*
Brachythecium plumosum fo. *julaceum* (Breidl.) Mönk. = *Sciuro-hypnum plumosum*
Brachythecium plumosum var. *julaceum* Breidl. *ex* Chał. = *Sciuro-hypnum plumosum*
Brachythecium populeum (Hedw.) Schimp. = *Sciuro-hypnum populeum*
Brachythecium populeum fo. *amoenum* (Milde) Mönk. = *Sciuro-hypnum populeum*
Brachythecium populeum fo. *attenuatum* (Schimp.) Podp. = *Sciuro-hypnum populeum*
Brachythecium populeum fo. *longisetum* (Schimp.) Podp. = *Sciuro-hypnum populeum*
Brachythecium populeum fo. *major* (Schimp.) Mönk. = *Sciuro-hypnum populeum*
Brachythecium populeum fo. *rufescens* (Schimp.) Mönk. = *Sciuro-hypnum populeum*
Brachythecium populeum fo. *subfalcatum* (Schimp.) Mönk. = *Sciuro-hypnum populeum*
Brachythecium pseudoplumosum (Brid.) Brockm. = *Sciuro-hypnum plumosum*
Brachythecium purum (Hedw.) Dixon = *Pseudoscleropodium purum*
Brachythecium reflexum (Starke) Schimp. = *Sciuro-hypnum reflexum*
Brachythecium reflexum var. *subglaciale* Limpr. = *Sciuro-hypnum reflexum*
Brachythecium reflexum var. *tromsoeense* (Kaur. & Arnell) Podp. = *Sciuro-hypnum reflexum*
Brachythecium rivulare fo. *cataractarum* (Saut.) Mönk. = *Brachythecium rivulare*
Brachythecium rivulare fo. *fluitans* Mönk. = *Brachythecium rivulare*
Brachythecium rivulare fo. *unbrosum* (Limpr.) Mönk. = *Brachythecium rivulare*
Brachythecium rutabulum fo. *densum* (Schimp.) Podp. = *Brachythecium rutabulum*
Brachythecium rutabulum var. *eurhynchioides* Limpr. = *Brachythecium rutabulum*
Brachythecium rutabulum fo. *flavescens* (Schimp.) C.E.O.Jensen = *Brachythecium rutabulum*
Brachythecium rutabulum var. *flavescens* Schimp. = *Brachythecium rutabulum*
Brachythecium rutabulum var. *klinggraeffii* Limpr. = *Brachythecium rutabulum*
Brachythecium rutabulum fo. *longisetum* (Brid.) Podp. = *Brachythecium rutabulum*
Brachythecium rutabulum fo. *plumulosum* (Schimp.) C.E.O.Jensen = *Brachythecium rutabulum*
Brachythecium rutabulum var. *turgescens* Limpr. = *Brachythecium rutabulum*
Brachythecium salebrosum var. *capillaceum* (F.Weber & D.Mohr) Lorentz = *Brachythecium capillaceum*
Brachythecium salebrosum var. *cylindricum* Schimp. = *Brachythecium capillaceum*
Brachythecium salebrosum fo. *densum* Mönk. = *Brachythecium salebrosum*
Brachythecium salebrosum var. *mildeanum* (Schimp.) Chał. = *Brachythecium mildeanum*
Brachythecium salebrosum var. *pratense* H.Klinggr. = *Brachythecium salebrosum*
Brachythecium salebrosum var. *sericeum* (Warnst.) Warnst. = *Brachythecium salebrosum*
Brachythecium schimperi H.Klinggr. = *Brachythecium campestre*
Brachythecium starkei (Brid.) Schimp. = *Sciuro-hypnum starkei*

Brachythecium starkei var. *alpestre* Schimp. = *Sciuro-hypnum starkei*
Brachythecium starkei var. *complanatum* Limpr. = *Sciuro-hypnum starkei*
Brachythecium starkei var. *explanatum* (Brid.) Mönk. = *Sciuro-hypnum oedipodium*
Brachythecium starkei var. *praelongum* Schimp. = *Sciuro-hypnum glaciale*
Brachythecium starkei var. *robustum* Schimp. = *Sciuro-hypnum starkei*
Brachythecium tatrae Żmuda = *Brachytheciastrum velutinum* var. *vagans*
Brachythecium tenuicaule (Spruce) Kindb. = *Cirriphyllum tenuicaule*
Brachythecium trachypodium (Funck *ex* Brid.) Schimp. = *Brachytheciastrum trachypodium*
Brachythecium vagans Milde = *Brachytheciastrum velutinum* var. *vagans*
Brachythecium vanekii Šmarda = *Brachytheciastrum vanekii*
Brachythecium velutinum (Hedw.) Schimp. = *Brachytheciastrum velutinum*
Brachythecium velutinum fo. *graniticum* (Mönk.) Szafran = *Brachytheciastrum velutinum* var. *vagans*
Brachythecium velutinum fo. *intricatum* C.E.O.Jensen = *Brachytheciastrum velutinum*
Brachythecium velutinum fo. *praelongum* C.E.O.Jensen = *Brachytheciastrum velutinum*
Brachythecium velutinum var. *robustum* Warnst. = *Brachytheciastrum velutinum*
Brachythecium velutinum var. *salicinum* (Schimp.) Mönk. = *Brachytheciastrum velutinum* var. *salicinum*
Brachythecium velutinum var. *vagans* (Milde) Warnst. = *Brachytheciastrum velutinum* var. *vagans*
Brachytrichum cupulatum (Hoffm *ex* Brid.) Röhl. = *Orthotrichum cupulatum*
Breidleria arcuata (Molendo) Loeske = *Hypnum lindbergii*
Breidleria pratensis (W.D.J.Koch *ex* Spruce) Loeske = *Hypnum pratense*
Bryum affine Lindb. & Arnell = *Bryum creberrimum*
Bryum albicans (Wahlenb.) Röhl. = *Pohlia wahlenbergii*
Bryum algovicum var. *spadiceum* (Brid.) Margad. = *Bryum algovicum*
Bryum ammophilum R.Ruthe = *Bryum knowltonii*
Bryum androgynum Hedw. = *Aulacomnium androgynum*
Bryum angustirete Kindb. = *Bryum algovicum*
Bryum angustirete var. *ruppinense* (Warnst.) Wijk & Margad. = *Bryum algovicum*
Bryum annotinum Hedw. = *Pohlia annotina*
Bryum anomalum R.Ruthe *ex* Warnst. = *Bryum amblyodon*
Bryum argenteum var. *lanatum* (P.Beauv.) Hampe = *Bryum argenteum*
Bryum arvense Warnst. = *Bryum bicolor*
Bryum atropurpureum Bruch & Schimp. = *Bryum bicolor*
Bryum bimum (Brid.) Turner = *Bryum pseudotriquetrum* var. *bimum*
Bryum caespiticium var. *kunzei* (Hornsch.) Braithw. = *Bryum caespiticium* var. *imbricatum*
Bryum capillare Hedw. = *Rosulabryum capillare*
Bryum capillare var. *cochlearifolium* Brid. = *Rosulabryum elegans*
Bryum capillare var. *elegans* (Nees) Husn. = *Rosulabryum elegans*
Bryum capillare var. *ferchelii* (Funck *ex* Brid.) Bruch & Schimp. = *Rosulabryum elegans*

Bryum capillare var. *flaccidum* (Brid.) Bruch & Schimp. = *Rosulabryum laevifilum*
Bryum capillare var. *macrocarpum* Huebener = *Rosulabryum capillare*
Bryum capillare var. *rosulatum* Mitt. = *Rosulabryum elegans*
Bryum carneum With. = *Pohlia melanodon*
Bryum cernuum auct. non (Hedw.) Bruch & Schimp. = *Bryum uliginosum*
Bryum cirrhatum Hoppe & Hornsch. = *Bryum pallescens*
Bryum concinnatum Spruce = *Anomobryum julaceum*
Bryum crudum (Hedw.) Turner = *Pohlia cruda*
Bryum cuspidatum (Bruch & Schimp.) Schimp. = *Bryum creberrimum*
Bryum duvalii Voit = *Bryum weigelii*
Bryum elegans Nees = *Rosulabryum elegans*
Bryum elegans var. *ferchelii* (Funck *ex* Brid.) Breidl. = *Rosulabryum elegans*
Bryum erythrocarpon Schwägr. = *Bryum subapiculatum*
Bryum fallax Milde = *Bryum pallens* var. *alpinum*
Bryum filiforme var. *concinnatum* (Spruce) Boulay = *Anomobryum julaceum*
Bryum fissum R.Ruthe = *Bryum salinum*
Bryum flaccidum Brid. = *Rosulabryum laevifilum*
Bryum imbricatum auct. non (Schwägr.) Bruch & Schimp. = *Bryum amblyodon*
Bryum inclinatum (Sw. *ex* Brid.) Blandow = *Bryum amblyodon*
Bryum intermedium var. *crassicollum* Warnst. = *Bryum intermedium*
Bryum intermedium var. *fuscum* (Lindb.) Bryhn = *Bryum creberrimum*
Bryum intermedium var. *limprichtii* Warnst. = *Bryum intermedium*
Bryum intermedium var. *longicollum* Warnst. = *Bryum intermedium*
Bryum intermedium var. *subcylindricum* Limpr. = *Bryum intermedium*
Bryum knowltonii var. *ammophilum* (R.Ruthe) Wijk & Margad. = *Bryum knowltonii*
Bryum knowltonii var. *planioperculatum* (Warnst.) Wijk & Margad. = *Bryum knowltonii*
Bryum kunzei Hornsch. = *Bryum caespiticium* var. *imbricatum*
Bryum lacustre (F.Weber & D.Mohr) Blandow = *Bryum knowltonii*
Bryum latifolium (Schwägr.) Brid. = *Bryum schleicheri*
Bryum lisae De Not. = *Bryum creberrimum*
Bryum lisae var. *fuscum* (Lindb.) Margad. = *Bryum creberrimum*
Bryum lonchocaulon Müll.Hal. = *Bryum pallescens*
Bryum ludwigii Spreng. *ex* Schwägr. = *Pohlia ludwigii*
Bryum luridum R.Ruthe = ? *Bryum arcticum*
Bryum macrostomum Jur. = *Bryum klinggraeffii*
Bryum microerythrocarpum Müll.Hal. & Kindb. = *Bryum subapiculatum*
Bryum mnioides Wilson = *Rhizomnium pseudopunctatum*
Bryum neodamense var. *ovatum* Lindb. & Arnell = *Bryum subneodamense*
Bryum nutans (Hedw.) Turner = *Pohlia nutans*
Bryum ovatum Jur. = *Bryum subneodamense*
Bryum pachydermum Bom. = *Bryum tenuisetum*
Bryum pallens var. *abbreviatum* Schimp. = *Bryum pallens*
Bryum pallens var. *arcuatum* Schimp. = *Bryum pallens*

Bryum pallens var. *fallax* Jur. = *Bryum pallens* var. *alpinum*
Bryum pallens var. *meesioides* (Kindb.) Broth. = *Bryum pallens*
Bryum pallescens var. *contextum* (Hornsch.) Huebener = *Bryum pallescens*
Bryum pallescens var. *subrotundum* (Brid.) Bruch & Schimp. = *Bryum pallescens*
Bryum paradoxum var. *cirratum* (Huebener) Jur. = *Bryum pallescens*
Bryum pendulum (Hornsch.) Schimp. = *Bryum algovicum*
Bryum pendulum var. *compactum* (Hornsch.) Hartm. = *Bryum algovicum*
Bryum planioperculatum Warnst. = *Bryum knowltonii*
Bryum pseudotriquetrum var. *cavifolium* Schimp. = *Bryum neodamense*
Bryum pyriforme (Hedw.) Lam. & DC. = *Leptobryum pyriforme*
Bryum roseum (Hedw.) Crome = *Rhodobryum roseum*
Bryum sanguineum Brid. = *Bryum subapiculatum*
Bryum schistii Oeder = *Cnestrum schistii*
Bryum schleicheri var. *latifolium* (Schwägr.) Schimp. = *Bryum schleicheri*
Bryum squarrosum Hedw. = *Paludella squarrosa*
Bryum stenotrichum Müll.Hal. = *Bryum amblyodon*
Bryum stenotrichum var. *anomalum* (R.Ruthe *ex* Warnst.) Ochyra & Szmajda = *Bryum amblyodon*
Bryum stenotrichum var. *fissum* (R.Ruthe) Ochyra & Szmajda = *Bryum salinum*
Bryum subelegans Kindb. = *Rosulabryum laevifilum*
Bryum subrotundum Brid. = *Bryum pallescens*
Bryum tortifolium Brid. = *Bryum cyclophyllum*
Bryum turbinatum var. *latifolium* (Schwägr.) Bruch & Schimp. = *Bryum schleicheri*
Bryum turbinatum var. *minus* Hook. = *Bryum turbinatum*
Bryum ventricosum Relh. = *Bryum pseudotriquetrum*
Bryum ventricosum var. *compactum* (Bruch & Schimp.) Lindb. = *Bryum pseudotriquetrum*
Bryum ventricosum var. *duvalioides* (Itzigs.) Głow. = *Bryum pseudotriquetrum*
Bryum ventricosum var. *gracilescens* (Schimp.) Lindb. = *Bryum pseudotriquetrum*
Bryum wahlenbergii (F.Weber & D.Mohr) Schwägr. = *Pohlia wahlenbergii*
Bryum willdenowii Itzigs. = *Bryum longisetum*
Bryum zieri Dicks. *ex* Hedw. = *Plagiobryum zieri*
Buxbaumia foliosa Hedw. = *Diphyscium foliosum*
Buxbaumia indusiata Brid. = *Buxbaumia viridis*
Buxbaumia sessilis Schmidel = *Diphyscium foliosum*
Buxbaumia vulgaris Brid. = *Buxbaumia aphylla*

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Calliergidium pseudostramineum (Müll.Hal.) Grout = *Warnstorfia pseudostraminea*
Calliergon cordifolium fo. *angustifolium* (G.Roth) Mönk. = *Calliergon cordifolium*
Calliergon cordifolium fo. *fontinaloides* (Lange) Mönk. = *Calliergon cordifolium*
Calliergon cordifolium var. *richardsonii* (Mitt.) Kindb. = *Calliergon richardsonii*
Calliergon cuspidatum (Hedw.) Kindb. = *Calliergonella cuspidata*

Calliergon cuspidatum fo. *angustissimum* (Mönk.) Szafran = *Calliergonella cuspidata*
Calliergon cuspidatum fo. *brevifolium* (Warnst.) Mönk. = *Calliergonella cuspidata*
Calliergon cuspidatum fo. *fluitans* H.Klinggr. = *Calliergonella cuspidata*
Calliergon cuspidatum fo. *inundatum* (Warnst.) Mönk. = *Calliergonella cuspidata*
Calliergon cuspidatum fo. *molle* H.Klinggr. = *Calliergonella cuspidata*
Calliergon cuspidatum fo. *pungens* (Schimp.) Mönk. = *Calliergonella cuspidata*
Calliergon eugyrium (Schimp.) Kindb. = *Hygrohypnum eugyrium*
Calliergon giganteum fo. *brevifolium* (Limpr.) Mönk. = *Calliergon giganteum*
Calliergon giganteum fo. *dendroides* (Limpr.) Mönk. = *Calliergon giganteum*
Calliergon giganteum fo. *immersum* (Warnst.) Mönk. = *Calliergon giganteum*
Calliergon richardsonii var. *fluitans* (Bryhn) Broth. = *Calliergon megalophyllum*
Calliergon richardsonii var. *megalophyllum* (Mikut.) Meyl. = *Calliergon megalophyllum*
Calliergon richardsonii var. *robustum* (Lindb. & Arnell) G.Roth = *Calliergon megalophyllum*
Calliergon sarmentosum (Wahlenb.) Kindb. = *Warnstorfia sarmentosa*
Calliergon sarmentosum fo. *fallaciosum* (Milde) Mönk. = *Warnstorfia sarmentosa*
Calliergon sarmentosum var. *fallaciosum* (Milde) G.Roth = *Warnstorfia sarmentosa*
Calliergon sarmentosum var. *fontinaloides* (Berggr.) G.Roth = *Warnstorfia sarmentosa*
Calliergon sarmentosum fo. *pumilum* (Milde) Mönk. = *Warnstorfia sarmentosa*
Calliergon scorpioides (Hedw.) Kindb. = *Scorpidium scorpioides*
Calliergon stramineum (Dicks. *ex* Brid.) Kindb. = *Straminergon stramineum*
Calliergon stramineum var. *acutifolium* (Lindb. & Arnell) Warnst. = *Straminergon stramineum*
Calliergon stramineum fo. *compactum* (Milde) Mönk. = *Straminergon stramineum*
Calliergon stramineum fo. *patens* (Lindb.) Mönk. = *Straminergon stramineum*
Calliergon trifarium (F.Weber & D.Mohr) Kindb. = *Pseudocalliergon trifarium*
Calliergon trifarium fo. *giganteum* Podp. = ? *Pseudocalliergon trifarium*
Calliergon turgescens (T.Jensen) Kindb. = *Pseudocalliergon turgescens*
Calliergonella schreberi (Willd. *ex* Brid.) Grout = *Pleurozium schreberi*
Camptothecium geheebii (Milde) Kindb. = *Brachythecium geheebii*
Camptothecium lutescens (Hedw.) Schimp. = *Homalothecium lutescens*
Camptothecium lutescens var. *fallax* (H.Philib.) Breidl. = *Homalothecium lutescens*
Camptothecium nitens (Hedw.) Schimp. = *Tomentypnum nitens*
Camptothecium philippeanum (Spruce) Kindb. = *Homalothecium philippeanum*
Camptothecium philippei Kindb. = *Homalothecium philippeanum*
Camptothecium sericeum (Hedw.) Kindb. = *Homalothecium sericeum*
Camptothecium sericeum fo. *robustum* (Warnst.) Limpr. = *Homalothecium sericeum*
Camptothecium sericeum fo. *tenellum* Limpr. = *Homalothecium sericeum*
Camptothecium trichodes Lindb. = *Tomentypnum nitens*
Campyliadelphus polygamus (Schimp.) Kanda = *Campylium polygamum*
Campyliadelphus stellatus (Hedw.) Kanda = *Campylium stellatum*
Campylium calcareum Crundwell & Nyholm = *Campylidium calcareum*
Campylium chrysophyllum (Brid.) Lange = *Campyliadelphus chrysophyllus*

Campylium chrysophyllum fo. *subfalcatum* (Warnst.) Podp. = *Campyliadelphus chrysophyllus*
Campylium chrysophyllum fo. *tenellum* (Schimp.) Mönk. = *Campyliadelphus chrysophyllus*
Campylium chrysophyllum fo. *uliginosum* (Limpr.) Mönk. = *Campyliadelphus chrysophyllus*
Campylium elodes (Lindb.) Kindb. = *Campyliadelphus elodes*
Campylium elodes fo. *falcatum* (Milde) C.E.O.Jensen = *Campyliadelphus elodes*
Campylium elodes var. *falcatum* (Milde) Baur = *Campyliadelphus elodes*
Campylium halleri (Sw. *ex* Hedw.) Lindb. = *Campylophyllum halleri*
Campylium hispidulum auct. eur. = *Campylidium sommerfeltii*
Campylium hispidulum var. *sommerfeltii* auct. eur. = *Campylidium calcareum*
Campylium hygrophilum (Jur.) Kindb. = *Amblystegium radicale*
Campylium polygamum var. *minus* (Schimp.) G.Roth = *Campylium polygamum*
Campylium polygamum var. *stagnatum* (Wilson) Dixon = *Campylium polygamum*
Campylium protensum (Brid.) Kindb. = *Campylium stellatum* var. *protensum*
Campylium radicale (P.Beauv.) Grout = *Amblystegium radicale*
Campylium sommerfeltii auct. eur. = *Campylidium calcareum*
Campylium striatellum (Brid.) Kindb. = *Herzogiella striatella*
Campylopus brevifolius Schimp. = *Campylopus subulatus*
Campylopus densus Bruch & Schimp. = *Campylopus fragilis*
Campylopus fragilis var. *pyriformis* (Schultz) Ångstr. = *Campylopus pyriformis*
Campylopus torfaceus Bruch & Schimp. = *Campylopus pyriformis*
Campylopus turfaceus Schimp. = *Campylopus pyriformis*
Campylopus viridis Sull. & Lesq. = *Dicranum viride*
Catharinea angustata (Brid.) Brid. = *Atrichum angustatum*
Catharinea haussknechtii (Jur. & Milde) Broth. = *Atrichum flavisetum*
Catharinea hercynica (Hedw.) F.Weber & D.Mohr = *Oligotrichum hercynicum*
Catharinea tenella Röhl. = *Atrichum tenellum*
Catharinea undulata (Hedw.) F.Weber & D.Mohr = *Atrichum undulatum*
Catharinea undulata var. *minor* (Hedw.) F.Weber & D.Mohr = *Atrichum tenellum*
Catharinea undulata fo. *polycarpa* (Jaap) Mönk. = *Atrichum undulatum*
Catharinea undulata fo. *rivularis* (Bryhn) Mönk. = *Atrichum undulatum*
Ceratodon cylindricus (Hedw.) Fürnr. = *Trichodon cylindricus*
Ceratodon purpureus fo. *brevifolius* (Milde) E.Britton *ex* Grout = *Ceratodon purpureus*
Ceratodon purpureus fo. *flavisetus* (Limpr.) Mönk. = *Ceratodon purpureus*
Ceratodon purpureus fo. *graefii* (Limpr.) Mönk. = *Ceratodon purpureus*
Ceratodon purpureus fo. *obtusifolius* (Limpr.) Mönk. = *Ceratodon purpureus*
Ceratodon purpureus var. *xanthopus* Sull. & Lesq. *ex* Lesq. & James = *Ceratodon purpureus*
Chamberlainia salebrosa (Hoffm. *ex* F.Weber & D.Mohr) H.Rob. = *Brachythecium salebrosum*
Chamberlainia velutina (Hedw.) H.Rob. = *Brachytheciastrum velutinum*

Chrysohypnum halleri (Sw. *ex* Hedw.) G.Roth = *Campylophyllum halleri*
Chrysohypnum polygamum (Schimp.) Loeske = *Campylium polygamum*
Cinclidotus minor Lindb. = *Cinclidotus fontinaloides*
Cinclidotus nigricans (Brid.) Wijk & Margad. = *Cinclidotus riparius*
Cirriphyllum cirrosum (Schwägr.) Grout = *Brachythecium cirrosum*
Cirriphyllum crassinervium var. *pachyneuron* (Hampe) Żmuda = *Cirriphyllum crassinervium*
Cirriphyllum filiforme Broth. = *Sciuro-hypnum flotowianum*
Cirriphyllum flotowianum (Sendtn.) Ochyra = *Sciuro-hypnum flotowianum*
Cirriphyllum germanicum (Grebe) Loeske & M.Fleisch. = *Cirriphyllum tenuicaule*
Cirriphyllum molliculum Broth. = *Brachythecium tommasinii*
Cirriphyllum ornellanum (Molendo) Loeske = *Sciuro-hypnum ornellanum*
Cirriphyllum plumosum (Hedw.) Loeske & M.Fleisch. = *Sciuro-hypnum plumosum*
Cirriphyllum reichenbachianum (Huebener) Wijk & Margad. = *Sciuro-hypnum flotowianum*
Cirriphyllum tenuinerve (Lindb.) Wijk & Margad. = *Brachythecium tommasinii*
Cirriphyllum tommasinii (Sendtn. *ex* Boulay) Grout = *Brachythecium tommasinii*
Cirriphyllum vaucheri (Schimp.) Loeske & M.Fleisch. = *Brachythecium tommasinii*
Cirriphyllum vaucheri subsp. *tenuicaule* (Spruce) Waldh. = *Cirriphyllum tenuicaule*
Cirriphyllum velutinoides (Schimp.) Loeske & M.Fleisch. = *Sciuro-hypnum flotowianum*
Cladodium inclinatum (Sw. *ex* Brid.) Brid. = *Bryum amblyodon*
Cladodium uliginosum Brid. = *Bryum uliginosum*
Climacium dendroides var. *fluitans* Huebener = *Climacium dendroides*
Conomitrium julianum (Savi *ex* DC.) Mont. = *Fissidens fontanus*
Conomitrium osmundoides (Hedw.) Müll.Hal. = *Fissidens osmundoides*
Conostomum boreale Sw. = *Conostomum tetragonum*
Coscinodon lanceolatus (Hedw.) Brid. = *Tortula lanceola*
Coscinodon pulvinatus Spreng. = *Coscinodon cribrosus*
Cratoneuron commutatum (Hedw.) G.Roth = *Palustriella commutata*
Cratoneuron commutatum subsp. *falcatum* (Brid.) Giacom. = *Palustriella commutata* var. *falcata*
Cratoneuron commutatum var. *falcatum* (Brid.) Mönk. = *Palustriella commutata* var. *falcata*
Cratoneuron commutatum var. *irrigatum* (J.E.Zetterst.) Mönk. = *Palustriella commutata* var. *fluctuans*
Cratoneuron commutatum var. *sulcatum* (Lindb.) Mönk. = *Palustriella commutata* var. *sulcata*
Cratoneuron decipiens (De Not.) Loeske = *Palustriella decipiens*
Cratoneuron falcatum (Brid.) G.Roth = *Palustriella commutata* var. *falcata*
Cratoneuron filicinum var. *curvicaule* (Jur.) Mönk. = *Callialaria curvicaulis*
Cratoneuron filicinum fo. *falcatulum* (Warnst.) Mönk. = *Cratoneuron filicinum*
Cratoneuron filicinum fo. *falcatum* Mönk. = *Cratoneuron filicinum*
Cratoneuron filicinum var. *fallax* (Brid.) G.Roth = *Cratoneuron filicinum*
Cratoneuron filicinum fo. *gracilescens* (Brid.) Mönk. = *Cratoneuron filicinum*
Cratoneuron filicinum fo. *trichodes* (Brid.) Mönk. = *Cratoneuron filicinum*

Cratoneuron filicinum fo. *xerophilum* Mönk. = *Cratoneuron filicinum*
Cratoneuron glaucum Broth. = *Palustriella commutata*
Ctenidium molluscum var. *condensatum* (Schimp.) E.Britton = *Ctenidium molluscum*
Ctenidium molluscum var. *procerum* Bryhn = *Ctenidium molluscum*
Ctenidium molluscum var. *squarrosulum* (Boulay) G.Roth = *Ctenidium molluscum*
Ctenidium procerrimum (Molendo) Lindb. = *Hypnum procerrimum*
Cylindrothecium concinnum (De Not.) Schimp. = *Entodon concinnus*
Cylindrothecium repens (Brid.) De Not. = *Platygyrium repens*
Cynodon luridus Bruch = *Didymodon luridus*
Cynodontium alpestre (Wahlenb.) Milde = *Cnestrum alpestre*
Cynodontium capillaceum (Hedw.) Brid. = *Distichium capillaceum*
Cynodontium cernuum (Hedw.) Brid. = *Bryum uliginosum*
Cynodontium flexicaule Schwägr. = *Ditrichum flexicaule*
Cynodontium polycarpum var. *strumiferum* (Hedw.) Schimp. = *Cynodontium strumiferum*
Cynodontium polycarpum var. *tenellum* Schimp. = *Cynodontium tenellum*
Cynodontium schistii (F.Weber & D.Mohr) Lindb. = *Cnestrum schistii*
Cynodontium torquescens Limpr. = *Cynodontium tenellum*
Cynodontium virens (Hedw.) Schimp. = *Oncophorus virens*
Cynodontium virens var. *serratum* (Bruch & Schimp.) Schimp. = *Oncophorus virens*
Cynodontium viride (Hedw.) Schimp. = *Oncophorus virens*
Cynodontium wahlenbergii (Brid.) C.Hartm. = *Oncophorus wahlenbergii*

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Desmatodon cernuus (Huebener) Bruch & Schimp. = *Tortula cernua*
Desmatodon guentheri Sendtn. = *Tortula euryphylla*
Desmatodon heimii (Hedw.) Mitt. = *Hennediella heimii*
Desmatodon lanceolatus (Hedw.) De Not. = *Tortula lanceola*
Desmatodon latifolius (Hedw.) Brid. = *Tortula euryphylla*
Desmatodon latifolius var. *brevicaulis* Schimp. = *Tortula euryphylla*
Desmatodon latifolius var. *glacialis* (Funck *ex* Brid.) Ångstr. = *Tortula euryphylla*
Desmatodon obtusifolius (Schwägr.) Schimp. = *Tortula obtusifolia*
Desmatodon randii (Kenn.) Laz. = *Tortula randii*
Desmatodon starkei De Not. = *Microbryum starkeanum*
Desmatodon subulatus var. *angustatus* (Schimp.) Jur. = *Tortula subulata* var. *angustata*
Dichodontium pellucidum var. *fagimontanum* (Brid.) Schimp. = *Dichodontium pellucidum*
Dichodontium pellucidum var. *flavescens* (Dicks.) Moore = *Dichodontium flavescens*
Dichodontium pellucidum var. *serratum* (Bruch & Schimp.) Schimp. = *Dichodontium flavescens*
Dichodontium squarrosum (Schrad.) Schimp. = *Diobelonella palustris*
Dicranella curvata (Hedw.) Schimp. = *Dicranella subulata* var. *curvata*
Dicranella heteromalla var. *interrupta* (Hedw.) Schimp. = *Dicranella heteromalla*
Dicranella heteromalla fo. *sericea* (Schimp.) Mönk. = *Dicranella heteromalla*

Dicranella heteromalla var. *sericea* (Schimp.) Pfeff. = *Dicranella heteromalla*
Dicranella heteromalla fo. *stricta* (Schimp.) Mönk. = *Dicranella heteromalla*
Dicranella heteromalla var. *stricta* (Schimp.) Schimp. = *Dicranella heteromalla*
Dicranella hybrida Sanio = *Dicranella cerviculata*
Dicranella palustris (Dicks.) Crundwell = *Diobelonella palustris*
Dicranella rubra Lindb. = *Dicranella varia*
Dicranella rubra var. *tenella* Bruch & Schimp. = *Dicranella humilis*
Dicranella schreberi (Hedw.) Schimp. = *Dicranella schreberiana*
Dicranella schreberi var. *grevilleana* (Brid.) Mönk. = *Dicranella grevilleana*
Dicranella secunda Lindb. = *Dicranella subulata*
Dicranella squarrosa (Schrad.) Schimp. = *Diobelonella palustris*
Dicranella vaginalis (Dicks.) Lindb. = *Dicranella crispa*
Dicranella varia var. *callistoma* (Dicks.) Schimp. = *Dicranella varia*
Dicranella varia var. *tenella* Schimp. = *Dicranella humilis*
Dicranodontium aristatum Schimp. = *Dicranodontium asperulum*
Dicranodontium asperulum var. *falcatum* (Milde) Broth. = *Dicranodontium asperulum*
Dicranodontium circinatum (Milde) Schimp. = *Dicranodontium uncinatum*
Dicranodontium denudatum var. *alpinum* (Schimp.) I.Hagen = ? *Dicranodontium denudatum*
Dicranodontium denudatum var. *fulgidum* (Milde) Podp. = ? *Dicranodontium denudatum*
Dicranodontium longirostre (F.Weber & D.Mohr) Bruch & Schimp. = *Dicranodontium denudatum*
Dicranodontium longirostre var. *fulgidum* Milde = ? *Dicranodontium denudatum*
Dicranodontium longirostre var. *montanum* Milde = ? *Dicranodontium denudatum*
Dicranodontium longirostre var. *subalpinum* Milde = ? *Dicranodontium denudatum*
Dicranodontium sericeum Schimp. = *Dicranella heteromalla*
Dicranoweisia compacta (Schwägr.) Schimp. = *Hymenoloma compactum*
Dicranoweisia crispula (Hedw.) Milde = *Hymenoloma crispulum*
Dicranoweisia crispula var. *compacta* (Schwägr.) Lindb. = *Hymenoloma compactum*
Dicranum adianthoides (Hedw.) F.Weber & D.Mohr = *Fissidens adianthoides*
Dicranum affine Funck = *Dicranum undulatum*
Dicranum albicans Schwägr. = *Paraleucobryum enerve*
Dicranum alpestre Wahlenb. = *Cnestrum alpestre*
Dicranum ambiguum Hedw. = *Trematodon ambiguus*
Dicranum bambergeri Schimp. = *Dicranum muehlenbeckii*
Dicranum bergeri Blandow = *Dicranum undulatum*
Dicranum blyttii Bruch & Schimp. = *Kiaeria blyttii*
Dicranum bonjeanii var. *juniperifolium* (Sendtn.) Braithw. = *Dicranum bonjeanii*
Dicranum bonjeanii var. *polycladum* Müll.Hal. = *Dicranum bonjeanii*
Dicranum bruntonii Sm. = *Cynodontium bruntonii*
Dicranum cerviculatum Hedw. = *Dicranella cerviculata*
Dicranum circinatum Brid. = *Dicranodontium uncinatum*
Dicranum congestum Brid. = *Dicranum flexicaule*

Dicranum congestum var. *flexicaule* (Brid.) Bruch & Schimp. = *Dicranum flexicaule*
Dicranum crispum Hedw. = *Dicranella crispa*
Dicranum curvatum Hedw. = *Dicranella subulata* var. *curvata*
Dicranum cylindricum (Hedw.) Sm. = *Trichodon cylindricus*
Dicranum elongatum var. *flagelliferum* T.Jensen = *Dicranum elongatum*
Dicranum elongatum var. *longifolium* C.E.O.Jensen = *Dicranum elongatum*
Dicranum elongatum var. *nitidum* C.E.O.Jensen = *Dicranum elongatum*
Dicranum elongatum var. *orthocarpum* Bruch & Schimp. = *Dicranum groenlandicum*
Dicranum elongatum var. *polycladum* (Limpr.) Breidl. *ex* J.J.Amann = *Dicranum elongatum*
Dicranum elongatum var. *robustum* C.E.O.Jensen = *Dicranum elongatum*
Dicranum enerve Thed. = *Paraleucobryum enerve*
Dicranum fagimontanum Brid. = *Dicranum flexicaule*
Dicranum falcatum Hedw. = *Kiaeria falcata*
Dicranum fastigiatum Schultz = *Dicranum undulatum*
Dicranum flagellare Hedw. = *Orthodicranum flagellare*
Dicranum flexuosum Hedw. = *Campylopus flexuosus*
Dicranum fulvellum (Dicks.) Sm. = *Arctoa fulvella*
Dicranum fuscescens var. *compactum* Chał. = *Dicranum fuscescens*
Dicranum fuscescens var. *congestum* (Brid.) Husn. = *Dicranum flexicaule*
Dicranum fuscescens var. *flexicaule* (Brid.) Wilson = *Dicranum flexicaule*
Dicranum fuscescens var. *longirostre* (Schwägr.) Wilson = *Dicranum fuscescens*
Dicranum fuscescens var. *robustum* (Bruch & Schimp.) Wilson = *Dicranum fuscescens*
Dicranum fuscescens fo. *subalbescens* Limpr. = *Dicranum fuscescens*
Dicranum glaucum Hedw. = *Leucobryum glaucum*
Dicranum goeppertianum Sendtn. & Molendo = *Dicranum scoparium*
Dicranum gracilescens F.Weber & D.Mohr = *Cynodontium gracilescens*
Dicranum heteromallum Hedw. = *Dicranella heteromalla*
Dicranum incurvum (Huds. *ex* Brid.) P.Beauv. = *Fissidens incurvus*
Dicranum juniperifolium Sendtn. = *Dicranum bonjeanii*
Dicranum longifolium Ehrh. *ex* Hedw. = *Paraleucobryum longifolium*
Dicranum longifolium fo. *hamatum* (Jur.) Mönk. = *Paraleucobryum longifolium*
Dicranum longifolium var. *orthophyllum* (Hazsl.) Chał. = *Paraleucobryum longifolium*
Dicranum longifolium var. *sauteri* (Bruch & Schimp.) Velen. = *Paraleucobryum sauteri*
Dicranum longifolium fo. *subalpinum* (Milde) Mönk. = *Paraleucobryum longifolium* var. *subalpinum*
Dicranum longifolium var. *subalpinum* Milde = *Paraleucobryum longifolium* var. *subalpinum*
Dicranum majus fo. *orthophyllum* (A.Braun *ex* Milde) Mönk. = *Dicranum majus*
Dicranum majus var. *orthophyllum* A.Braun *ex* Milde = *Dicranum majus*
Dicranum montanum Hedw. = *Orthodicranum montanum*
Dicranum montanum var. *pulvinatum* Pfeff. = *Orthodicranum montanum*
Dicranum neglectum Jur. *ex* De Not. = *Dicranum spadiceum*

Dicranum pallidum (Hedw.) D.Mohr = *Ditrichum pallidum*
Dicranum palustre Brid. *ex* Schumach. = *Dicranum bonjeanii*
Dicranum palustre var. *juniperifolium* (Sendtn.) Bruch & Schimp. = *Dicranum bonjeanii*
Dicranum pellucidum Hedw. = *Dichodontium pellucidum*
Dicranum polycarpum (Hedw.) F.Weber & D.Mohr = *Cynodontium polycarpon*
Dicranum pulvinatum (Hedw.) Sw. *ex* Lagasca y Segura = *Dryptodon pulvinatus*
Dicranum purpureum Hedw. = *Ceratodon purpureus*
Dicranum pyriforme Schultz = *Campylopus pyriformis*
Dicranum rufescens (With.) Turner = *Dicranella rufescens*
Dicranum rugosum Hoffm. *ex* Brid. = *Dicranum polysetum*
Dicranum rupestre F.Weber & D.Mohr = *Blindia acuta*
Dicranum sauteri Bruch & Schimp. = *Paraleucobryum sauteri*
Dicranum schleicheri Müll.Hal. = *Campylopus fragilis*
Dicranum schraderi F.Weber & D.Mohr = *Dicranum undulatum*
Dicranum schreberianum Hedw. = *Dicranella schreberiana*
Dicranum scoparium var. *alpestre* Huebener = *Dicranum scoparium*
Dicranum scoparium var. *curvulum* Brid. = *Dicranum scoparium*
Dicranum scoparium fo. *orthophyllum* (Brid.) Mönk. = *Dicranum scoparium*
Dicranum scoparium var. *orthophyllum* Brid. = *Dicranum scoparium*
Dicranum scoparium var. *paludosum* Schimp. = *Dicranum scoparium*
Dicranum scoparium var. *recurvatum* (Schultz) Brid. = *Dicranum scoparium*
Dicranum scoparium var. *turfosum* Milde = *Dicranum scoparium*
Dicranum seligeri Brid. = *Blindia acuta*
Dicranum starkei F.Weber & D.Mohr = *Kiaeria starkei*
Dicranum strictum (Dicks.) Sm. = *Orthodicranum tauricum*
Dicranum strumiferum (Hedw.) F.Weber & D.Mohr = *Cynodontium strumiferum*
Dicranum subulatum Hedw. = *Dicranella subulata*
Dicranum sudeticum Schwägr. = *Dicranella subulata*
Dicranum tauricum Sapjegin = *Orthodicranum tauricum*
Dicranum taxifolium (Hedw.) F.Weber & D.Mohr = *Fissidens taxifolius*
Dicranum tectorum Warnst. & H.Klinggr. = *Dicranum scoparium*
Dicranum tenuinerve J.E.Zetterst. = *Dicranum groenlandicum*
Dicranum tortile (Schrad.) P.Beauv. = *Ditrichum pusillum*
Dicranum turfaceum Müll.Hal. = *Campylopus pyriformis*
Dicranum undulatum Ehrh. *ex* F.Weber & D.Mohr = *Dicranum polysetum*
Dicranum undulatum Turn. = *Dicranum bonjeanii*
Dicranum varium Hedw. = *Dicranella varia*
Dicranum viridulum Sw. = *Fissidens viridulus*
Didymodon austriacus Schiffn. & Baumgartner = *Didymodon cordatus*
Didymodon bruntonii (Sm.) Arn. = *Cynodontium bruntonii*
Didymodon capillaceus (Hedw.) F.Weber & D.Mohr = *Distichium capillaceum*
Didymodon crispulus (Bruch) Wilson = *Trichostomum crispulum*
Didymodon cylindricus Bruch & Schimp. = *Trichostomum tenuirostre*

Didymodon cylindricus (Hedw.) Wahlenb. = *Trichodon cylindricus*
Didymodon flexicaulis (Schwägr.) Röhl. = *Ditrichum flexicaule*
Didymodon longirostris F.Weber & D.Mohr = *Dicranodontium denudatum*
Didymodon obscurus Kaulf. = *Cynodontium bruntonii*
Didymodon pusillus Hedw. = *Ditrichum pusillum*
Didymodon rigidicaulis (Müll.Hal.) K.Saito = *Didymodon ferrugineus*
Didymodon rubellus Bruch & Schimp. = *Bryoerythrophyllum recurvirostrum*
Didymodon rufus Lorentz = *Didymodon asperifolius*
Didymodon styriacus Jur. = *Leptodontium styriacum*
Didymodon tenuis Sendtn. = *Ditrichum lineare*
Didymodon trifarius (Hedw.) Röhl. = *Didymodon luridus*
Diobelon squarrosum (Schrad.) Hampe = *Diobelonella palustris*
Diphyscium sessile Lindb. = *Diphyscium foliosum*
Diplocomium hexastichum Funck = *Meesia hexasticha*
Diplocomium longisetum (Hedw.) F.Weber & D.Mohr = *Meesia longiseta*
Dissodon froelichianus (Hedw.) Grev. & Arn. = *Tayloria froelichiana*
Dissodon splachnoides Grev. & Arn. = *Tayloria lingulata*
Distichia crispa (Hedw.) Brid. = *Neckera crispa*
Distichia pennata (Hedw.) Brid. = *Neckera pennata*
Distichium capillaceum var. *brevifolium* Bruch & Schimp. = *Distichium capillaceum*
Distichium montanum I.Hagen = *Distichium capillaceum*
Ditrichum crispatissimum (Müll.Hal.) Paris = *Ditrichum gracile*
Ditrichum flexicaule var. *densum* (Bruch & Schimp.) Braithw. = *Ditrichum flexicaule*
Ditrichum flexicaule var. *longifolium* (J.E.Zetterst.) I.Hagen = *Ditrichum gracile*
Ditrichum glaucescens (Müll.Hal.) Hampe = *Saelania glaucescens*
Ditrichum homomallum (Hedw.) Hampe = *Ditrichum heteromallum*
Ditrichum homomallum var. *zonatum* (Brid.) Lindb. = *Ditrichum zonatum*
Ditrichum pusillum var. *tortile* (Schrad.) I.Hagen = *Ditrichum pusillum*
Ditrichum tenuifolium Lindb. = *Trichodon cylindricus*
Ditrichum tortile (Schrad.) Brockm. = *Ditrichum pusillum*
Ditrichum tortile var. *pusillum* (Hedw.) Brockm. = *Ditrichum pusillum*
Ditrichum vaginans (Sull.) Hampe = *Ditrichum lineare*
Dolichotheca repens Lindb. *ex* Paris = *Herzogiella seligeri*
Dolichotheca seligeri (Brid.) Loeske = *Herzogiella seligeri*
Dolichotheca silesiaca (F.Weber & D.Mohr) M.Fleisch. = *Herzogiella seligeri*
Dolichotheca striatella (Brid.) Loeske = *Herzogiella striatella*
Drepanium arcuatum C.E.O.Jensen = *Hypnum lindbergii*
Drepanium bambergeri (Schimp.) C.E.O.Jensen = *Hypnum bambergeri*
Drepanium callichroum (Brid.) C.E.O.Jensen = *Hypnum callichroum*
Drepanium cupressiforme (Hedw.) G.Roth = *Hypnum cupressiforme*
Drepanium cupressiforme var. *imponens* (Hedw.) J.J.Amann = *Hypnum imponens*
Drepanium fastigiatum (Brid.) C.E.O.Jensen = *Hypnum recurvatum*
Drepanium fertile (Sendtn.) G.Roth = *Hypnum fertile*

Drepanium hamulosum (Schimp.) C.E.O.Jensen = *Hypnum hamulosum*
Drepanium imponens (Hedw.) G.Roth = *Hypnum imponens*
Drepanium incurvatum (Schrad. *ex* Brid.) G.Roth = *Homomallium incurvatum*
Drepanium lindbergii (Mitt.) G.Roth = *Hypnum lindbergii*
Drepanium pallescens (Hedw.) G.Roth = *Hypnum pallescens*
Drepanium pratense (Rabenh.) C.E.O.Jensen = *Hypnum pratense*
Drepanium reptile (Michx.) G.Roth = *Hypnum pallescens*
Drepanium sauteri (Schimp.) G.Roth = *Hypnum sauteri*
Drepanium vaucheri (Lesq.) G.Roth = *Hypnum vaucheri*
Drepanocladus aduncus var. *capillifolius* (Warnst.) Riehm. = *Drepanocladus capillifolius*
Drepanocladus aduncus fo. *gracilescens* (Schimp.) Mönk. = *Drepanocladus polycarpos*
Drepanocladus aduncus var. *kneiffii* (Schimp.) Mönk. = *Drepanocladus polycarpos*
Drepanocladus aduncus var. *polycarpos* (Blandow *ex* Voit) G.Roth = *Drepanocladus polycarpos*
Drepanocladus aduncus fo. *pseudofluitans* (Sanio) Mönk. = *Drepanocladus aduncus*
Drepanocladus aduncus fo. *pungens* (Milde) Mönk. = *Drepanocladus polycarpos*
Drepanocladus aquaticus (Sanio) Warnst. = *Drepanocladus aduncus*
Drepanocladus cossonii (Schimp.) Loeske = *Limprichtia cossonii*
Drepanocladus exannulatus (Schimp.) Warnst. = *Warnstorfia exannulata*
Drepanocladus exannulatus var. *brachydictyus* (Renauld) Mönk. = *Warnstorfia exannulata*
Drepanocladus exannulatus fo. *calcareus* Mönk. = *Warnstorfia exannulata*
Drepanocladus exannulatus fo. *excurrens* Mönk. = ? *Warnstorfia trichophylla*
Drepanocladus exannulatus fo. *falcatus* Mönk. = *Warnstorfia exannulata*
Drepanocladus exannulatus fo. *integrus* Mönk. = *Warnstorfia exannulata*
Drepanocladus exannulatus fo. *obtusus* Mönk. = *Warnstorfia exannulata*
Drepanocladus exannulatus fo. *orthophyllus* Mönk. = *Warnstorfia exannulata*
Drepanocladus exannulatus var. *pinnatus* (Boulay) G.Roth = *Warnstorfia exannulata*
Drepanocladus exannulatus fo. *pratensis* Mönk. = *Warnstorfia exannulata*
Drepanocladus exannulatus fo. *rotae* (De Not.) Mönk. = *Warnstorfia exannulata* var. *nigricans*
Drepanocladus exannulatus fo. *serratus* Mönk. = *Warnstorfia exannulata*
Drepanocladus exannulatus fo. *submersus* Mönk. = *Warnstorfia exannulata*
Drepanocladus exannulatus fo. *tenuis* Mönk. = *Warnstorfia exannulata*
Drepanocladus fluitans (Hedw.) Warnst. = *Warnstorfia fluitans*
Drepanocladus fluitans fo. *alpinus* (Schimp.) Mönk. = *Warnstorfia fluitans*
Drepanocladus fluitans var. *falcatus* (Sanio *ex* C.E.O.Jensen) G.Roth = *Warnstorfia fluitans*
Drepanocladus fluitans fo. *obtusus* Mönk. = *Warnstorfia fluitans*
Drepanocladus fluitans fo. *paludosus* (Sanio) Mönk. = *Warnstorfia fluitans*
Drepanocladus fluitans fo. *pseudostramineus* (Müll.Hal.) Mönk. = *Warnstorfia pseudostraminea*

Drepanocladus fluitans fo. *submersus* Mönk. = *Warnstorfia exannulata*
Drepanocladus fluitans var. *uncatus* H.A.Crum, Steere & L.E.Anderson = *Warnstorfia fluitans*
Drepanocladus intermedius (Lindb.) Warnst. = *Limprichtia cossonii*
Drepanocladus intermedius var. *cossoni* (Schimp.) Warnst. = *Limprichtia cossonii*
Drepanocladus kneiffii (Schimp.) Warnst. = *Drepanocladus polycarpos*
Drepanocladus lycopodioides (Brid.) Warnst. = *Pseudocalliergon lycopodioides*
Drepanocladus pseudostramineus (Müll.Hal.) G.Roth = *Warnstorfia pseudostraminea*
Drepanocladus revolvens (Sw.) Warnst. = *Limprichtia revolvens*
Drepanocladus revolvens fo. *cossoni* (Schimp.) Mönk. = *Limprichtia cossonii*
Drepanocladus revolvens fo. *gracilescens* Mönk. = *Limprichtia revolvens*
Drepanocladus revolvens var. *intermedius* (Lindb.) Wilson = *Limprichtia cossonii*
Drepanocladus rotae (De Not.) Warnst. = *Warnstorfia exannulata* var. *nigricans*
Drepanocladus rotae var. *trichophyllus* Warnst. = *Warnstorfia trichophylla*
Drepanocladus sendtneri fo. *aristinervis* Mönk. = *Drepanocladus capillifolius*
Drepanocladus sendtneri fo. *gracilescens* Sanio = *Drepanocladus sendtneri*
Drepanocladus sendtneri fo. *latifolius* (San.) Mönk. = *Drepanocladus sendtneri*
Drepanocladus sendtneri fo. *wilsonii* (Lindb.) Mönk. = *Drepanocladus sendtneri*
Drepanocladus serratus (Milde) Warnst. = *Warnstorfia fluitans*
Drepanocladus simplicissimus Warnst. = *Drepanocladus polycarpos*
Drepanocladus subaduncus Warnst. = *Drepanocladus polycarpos*
Drepanocladus submersus (Schimp.) Warnst. = *Warnstorfia fluitans*
Drepanocladus tenuinervis T.J.Kop. = *Drepanocladus sordidus*
Drepanocladus tenuis (Schimp.) Warnst. = *Warnstorfia exannulata*
Drepanocladus trichophyllus (Warnst.) Podp. = *Warnstorfia trichophylla*
Drepanocladus uncinatus (Hedw.) Warnst. = *Sanionia uncinata*
Drepanocladus uncinatus var. *fastigiatus* (Chał.) Szafran = *Sanionia uncinata*
Drepanocladus uncinatus fo. *gracilescens* Schimp. = ? *Sanionia uncinata*
Drepanocladus uncinatus var. *gracilescens* (Schimp.) Warnst. = ? *Sanionia uncinata*
Drepanocladus uncinatus fo. *plumosus* (Schimp.) Mönk. = *Sanionia uncinata*
Drepanocladus uncinatus var. *plumosus* (Schimp.) Warnst. = *Sanionia uncinata*
Drepanocladus vernicosus (Mitt.) Warnst. = *Hamatocaulis vernicosus*
Drepanocladus vernicosus fo. *brevifolius* Mönk. = *Hamatocaulis vernicosus*
Drepanocladus vernicosus fo. *gigas* C.E.O.Jensen = *Hamatocaulis vernicosus*
Drepanocladus vernicosus fo. *gracilescens* Limpr. = *Hamatocaulis vernicosus*
Drepanocladus vernicosus fo. *inundatus* Mönk. = *Hamatocaulis vernicosus*
Drepanocladus vernicosus fo. *major* (Renauld) Mönk. = *Hamatocaulis vernicosus*
Drepanocladus wilsonii (Sull. & Lesq.) Loeske = *Drepanocladus sendtneri*
Dryptodon leucophaeus (Grev.) Brid. = *Guembelia laevigata*
Dryptodon ovatus Brid. = *Guembelia ovalis*
Dryptodon schultzii Brid. = *Dryptodon decipiens*
Dryptodon spiralis (Hook.) Brid. = *Dryptodon funalis*

E

Encalypta apophysata Nees & Hornsch. = *Encalypta affinis*
Encalypta commutata Nees & Hornsch = *Encalypta alpina*
Encalypta contorta Hoppe *ex* Lindb. = *Encalypta streptocarpa*
Encalypta extinctoria Sw. *ex* Lindb. = *Encalypta vulgaris*
Encalypta extinctoria var. *apiculata* (Wahlenb.) D.Coker = *Encalypta vulgaris*
Encalypta extinctoria var. *obtusa* (Nees & Hornsch.) Broth. = *Encalypta vulgaris*
Encalypta fimbriata Brid. = *Encalypta ciliata*
Encalypta grandis Sw. *ex* Wahlenb. = *Encalypta streptocarpa*
Encalypta laciniata Lindb. = *Encalypta ciliata*
Encalypta lanceolata Hedw. = *Tortula lanceola*
Encalypta vulgaris var. *apiculata* Wahlenb. = *Encalypta vulgaris*
Encalypta vulgaris var. *elongata* Schimp. = *Encalypta vulgaris*
Encalypta vulgaris var. *mutica* Brid. = *Encalypta vulgaris*
Encalypta vulgaris var. *obtusa* Nees & Hornsch. = *Encalypta vulgaris*
Encalypta vulgaris var. *pilifera* (Funck) Huebener = *Encalypta rhaptocarpa*
Encalypta wimmeriana Sendtn. = *Encalypta rhaptocarpa*
Entodon orthocarpus (Brid.) Lindb. = *Entodon concinnus*
Entodon repens (Brid.) Grout = *Platygyrium repens*
Entodon schreberi (Willd. *ex* Brid.) Mönk. = *Pleurozium schreberi*
Entodon schreberi fo. *secundus* (Arn. & C.E.O.Jensen) Mönk. = *Pleurozium schreberi*
Ephemerella flowtowiana (Funck) Schimp. = *Ephemerum cohaerens*
Ephemerella recurvifolia (Dicks.) Schimp. = *Ephemerum recurvifolium*
Ephemerum cohaerens var. *flotowianum* (Funck) Hampe = *Ephemerum cohaerens*
Ephemerum cohaerens var. *longifolium* (Mönk.) Szafran = *Ephemerum serratum* var. *rutheanum*
Ephemerum flotowianum (Funck) Limpr. = *Ephemerum cohaerens*
Ephemerum longifolium Schimp. = *Ephemerum serratum* var. *rutheanum*
Ephemerum minutissimum Lindb. = *Ephemerum serratum* var. *angustifolium*
Ephemerum muticum (Schreb. *ex* Hedw.) Hampe = *Acaulon muticum*
Ephemerum patens (Hedw.) Hampe = *Physcomitrella patens*
Ephemerum rutheanum Schimp. = *Ephemerum serratum* var. *rutheanum*
Ephemerum serratum var. *longifolium* Mönk. = *Ephemerum serratum* var. *rutheanum*
Ephemerum serratum var. *minutissimum* (Lindb.) Grout = *Ephemerum serratum* var. *angustifolium*
Erythrophyllum alpigenum (Ventenant) Loeske = *Bryoerythrophyllum recurvirostrum* var. *dentatum*
Erythrophyllum ferruginascens (Stirt.) Szafran = *Bryoerythrophyllum ferruginascens*
Erythrophyllum rubellum (Hoffm.) Loeske = *Bryoerythrophyllum recurvirostrum*
Eurhynchium abbreviatum (Turner) Brockm. = *Oxyrrhynchium schleicheri*
Eurhynchium androgynum (Schimp.) Schimp. = *Oxyrrhynchium speciosum*
Eurhynchium atrovirens H. Klinggr. = *Oxyrrhynchium hians*
Eurhynchium cirrosum Molendo = *Brachythecium cirrosum*

Eurhynchium confertum (Dicks.) Milde = *Rhynchostegium confertum*
Eurhynchium crassinervium (Taylor) Schimp. = *Cirriphyllum crassinervium*
Eurhynchium depressum (Brid.) Milde = *Taxiphyllum wissgrillii*
Eurhynchium distans Bryhn = *Oxyrrhynchium hians*
Eurhynchium germanicum Grebe = *Cirriphyllum tenuicaule*
Eurhynchium hians (Hedw.) Sande Lac. = *Oxyrrhynchium hians*
Eurhynchium hians var. *rigidum* (Boulay) J.-P. Frahm = *Oxyrrhynchium hians* var. *rigidum*
Eurhynchium longirostre Schimp. = *Eurhynchium striatum*
Eurhynchium magnusii (H.Winter) Pilous = *Eurhynchium striatum*
Eurhynchium megapolitanum (Blandow *ex* F.Weber & D.Mohr) Milde = *Rhynchostegium megapolitanum*
Eurhynchium murale (Hedw.) Milde = *Rhynchostegium murale*
Eurhynchium murale var. *complanatum* (Schimp.) Milde = *Rhynchostegium murale*
Eurhynchium murale var. *julaceum* (Schimp.) Milde = *Rhynchostegium murale*
Eurhynchium myosuroides (Brid.) Schimp. = *Isothecium myosuroides*
Eurhynchium piliferum (Hedw.) Schimp. = *Cirriphyllum piliferum*
Eurhynchium praecox (Hedw.) De Not. = *Eurhynchiastrum pulchellum* var. *praecox*
Eurhynchium praelongum (Hedw.) Schimp. = *Kindbergia praelonga*
Eurhynchium praelongum var. *abbreviatum* Schimp. = *Oxyrrhynchium schleicheri*
Eurhynchium praelongum var. *atrovirens* (Brid.) Schimp. = *Oxyrrhynchium hians* var. *rigidum*
Eurhynchium praelongum var. *stokesii* (Turner) Dixon = *Kindbergia praelonga*
Eurhynchium pulchellum (Hedw.) Jenn. = *Eurhynchiastrum pulchellum*
Eurhynchium pulchellum var. *praecox* (Hedw.) Dixon = *Eurhynchiastrum pulchellum* var. *praecox*
Eurhynchium reflexum (Starke) Kindb. = *Sciuro-hypnum reflexum*
Eurhynchium riparioides (Hedw.) P.W.Richards = *Platyhypnidium riparioides*
Eurhynchium rusciforme Milde = *Platyhypnidium riparioides*
Eurhynchium rusciforme var. *atlanticum* (Brid.) Milde = *Platyhypnidium riparioides*
Eurhynchium schleicheri (R.Hedw.) Milde = *Oxyrrhynchium schleicheri*
Eurhynchium speciosum (Brid.) Jur. = *Oxyrrhynchium speciosum*
Eurhynchium speciosum fo. *tatrense* (Żmuda) Podp. = *Oxyrrhynchium speciosum*
Eurhynchium speciosum var. *tatrense* Żmuda = *Oxyrrhynchium speciosum*
Eurhynchium starkei (Brid.) Kindb. = *Sciuro-hypnum starkei*
Eurhynchium stokesii (Turner) Schimp. = *Kindbergia praelonga*
Eurhynchium striatulum (Spruce) Schimp. = *Plasteurhynchium striatulum*
Eurhynchium striatum var. *brevifolium* Röll = *Eurhynchium angustirete*
Eurhynchium striatum var. *pachycladum* G.Roth = *Eurhynchium angustirete*
Eurhynchium striatum subsp. *zetterstedtii* (Størmer) Podp. = *Eurhynchium angustirete*
Eurhynchium strigosum (Hoffm. *ex* F.Weber & D.Mohr) Schimp. = *Eurhynchiastrum pulchellum*
Eurhynchium strigosum var. *imbricatum* Schimp. = *Eurhynchiastrum pulchellum* var. *praecox*

Eurhynchium strigosum var. *praecox* (Hedw.) Husn. = *Eurhynchiastrum pulchellum* var. *praecox*
Eurhynchium swartzii (Turner) Curnow = *Oxyrrhynchium hians*
Eurhynchium swartzii var. *abbreviatum* (Turner) Jäggli = *Oxyrrhynchium schleicheri*
Eurhynchium swartzii var. *atrovirens* (Brid.) Dixon = *Oxyrrhynchium hians*
Eurhynchium swartzii var. *rigidum* (Boulay) Thér. = *Oxyrrhynchium hians* var. *rigidum*
Eurhynchium swartzii var. *robustum* Limpr. = *Oxyrrhynchium hians* var. *rigidum*
Eurhynchium tatrense (Żmuda) Żmuda = *Oxyrrhynchium speciosum*
Eurhynchium tommasinii (Sendtn. *ex* Boulay) Molendo = *Brachythecium tommasinii*
Eurhynchium trachypodium (Funck *ex* Brid.) Kindb. = *Brachytheciastrum trachypodium*
Eurhynchium uliginosum Warnst. = *Oxyrrhynchium speciosum*
Eurhynchium velutinoides = *Sciuro-hypnum flotowianum*
Eurhynchium zetterstedtii Størmer = *Eurhynchium angustirete*

F

Fabronia splachnoides (Brid.) Müll.Hal. = *Anacamptodon splachnoides*
Fiedleria subsessilis (Brid.) Rabenh. = *Pterygoneurum subsessile*
Fissidens adianthoides var. *cristatus* (Wilson & Mitt.) F.Koppe = *Fissidens dubius*
Fissidens bloxamii Wilson = *Fissidens exilis*
Fissidens bryoides var. *gymnandrus* (Büse) R.Ruthe = *Fissidens gymnandrus*
Fissidens bryoides var. *hedwigii* Limpr. = *Fissidens viridulus*
Fissidens bryoides var. *inconstans* (Schimp.) R.Ruthe = *Fissidens bryoides*
Fissidens bryoides var. *incurvus* (Starke *ex* Röhl.) Huebener = *Fissidens incurvus*
Fissidens bryoides var. *intermedius* R.Ruthe = *Fissidens viridulus*
Fissidens bryoides var. *viridulus* (Sw.) Broth. = *Fissidens viridulus*
Fissidens crassipes var. *mildeanus* (Schimp.) Mönk. = *Fissidens crassipes*
Fissidens crassipes var. *rufipes* Schimp. = *Fissidens crassipes*
Fissidens cristatus Wilson *ex* Mitt. = *Fissidens dubius*
Fissidens decipiens De Not. = *Fissidens dubius*
Fissidens impar Mitt. = *Fissidens viridulus*
Fissidens julianus (Savi *ex* DC.) Schimp. = *Fissidens fontanus*
Fissidens mildeanus Schimp. = *Fissidens crassipes*
Fissidens minutulus Sull. = *Fissidens viridulus*
Fissidens pulvinatus Hedw. = *Dryptodon pulvinatus*
Fissidens pusillus var. *minutulus* (Sull.) Husn. = *Fissidens viridulus*
Fissidens rupestris Wilson = *Fissidens dubius*
Fissidens sciuroides Hedw. = *Leucodon sciuroides*
Fissidens tamarindifolius (Turner) Brid. = *Fissidens incurvus* var. *tamarindifolius*
Fissidens viridulus var. *haraldii* (Lindb.) C.E.O.Jens. = *Fissidens incurvus*
Fontinalis androgyna R.Ruthe = *Fontinalis antipyretica*
Fontinalis antipyretica fo. *alpestris* (Milde) Mönk. = *Fontinalis antipyretica*
Fontinalis antipyretica var. *alpestris* Milde = *Fontinalis antipyretica*
Fontinalis antipyretica fo. *gigantea* Sull. = *Fontinalis antipyretica* var. *gigantea*

Fontinalis antipyretica fo. *latifolia* (Milde) Mönk. = *Fontinalis antipyretica* var. *gigantea*
Fontinalis antipyretica var. *latifolia* Milde = *Fontinalis antipyretica* var. *gigantea*
Fontinalis antipyretica fo. *laxa* Milde = *Fontinalis antipyretica* var. *gigantea*
Fontinalis antipyretica fo. *montana* (H.Müll.) Mönk. = *Fontinalis antipyretica*
Fontinalis antipyretica fo. *sparsifolia* (Limpr.) Mönk. = *Fontinalis antipyretica* var. *gracilis*
Fontinalis antipyretica var. *vulgaris* (Mönk.) Szafran = *Fontinalis antipyretica*
Fontinalis baltica (Limpr.) H.Klinggr. = *Fontinalis dalecarlica*
Fontinalis capillacea With. = *Dichelyma capillaceum*
Fontinalis dalecarlica var. *baltica* Limpr. = *Fontinalis dalecarlica*
Fontinalis dalecarlica var. *microphylla* (Schimp. *ex* Limpr.) H.Möller = *Fontinalis dalecarlica*
Fontinalis falcata Hedw. = *Dichelyma falcatum*
Fontinalis gracilis Lindb. = *Fontinalis antipyretica* var. *gracilis*
Fontinalis hypnoides fo. *pungens* (H.Klinggr.) Mönk. = *Fontinalis hypnoides*
Fontinalis juliana Savi *ex* DC. = *Fissidens fontanus*
Fontinalis microphylla Schimp. *ex* Limpr. = *Fontinalis dalecarlica*
Fontinalis sparsifolia Limpr. = *Fontinalis antipyretica* var. *gracilis*
Fontinalis squamosa var. *tenella* Schimp. = *Fontinalis hypnoides*
Funaria calcarea Wahlenb. = *Funaria muhlenbergii*
Funaria dentata Crome = *Funaria muhlenbergii*
Funaria fascicularis (Hedw.) Lindb. = *Entosthodon fascicularis*
Funaria hygrometrica var. *patula* Bruch & Schimp. = *Funaria hygrometrica*

G

Geheebia cataractarum Schimp. = *Didymodon giganteus*
Geheebia gigantea (Funck) Boulay = *Didymodon giganteus*
Georgia browniana (Dicks.) Müll.Hal. = *Tetrodontium brownianum*
Georgia mnemosynum Ehrh. *ex* Müll.Hal. = *Tetraphis pellucida*
Georgia ovata Funck = *Tetrodontium repandum*
Georgia pellucida (Hedw.) Rabenh. = *Tetraphis pellucida*
Grimmia affinis Hornsch. = *Guembelia longirostris*
Grimmia alpestris (F.Weber & D.Mohr) Schleich. *ex* Nees = *Orthogrimmia alpestris*
Grimmia alpestris fo. *hybrida* Chał. = *Orthogrimmia sessitana*
Grimmia alpestris var. *hybrida* (Chał.) Chał. = *Orthogrimmia sessitana*
Grimmia alpestris var. *sessitana* (De Not.) I.Hagen = *Orthogrimmia sessitana*
Grimmia alpestris var. *stomata* Loeske = *Orthogrimmia sessitana*
Grimmia alpicola Hedw. = *Schistidium agassizii*
Grimmia alpicola var. *linearis* Chał. = *Schistidium agassizii*
Grimmia alpicola var. *rivularis* (Brid.) Wahlenb. = *Schistidium rivulare*
Grimmia anomala Hampe = *Dryptodon anomalus*
Grimmia apocarpa Hedw. = *Schistidium apocarpum*
Grimmia apocarpa fo. *alpicola* (Hedw.) Chał. = *Schistidium agassizii*

Grimmia apocarpa var. *alpicola* (Hedw.) Röhl. = *Schistidium agassizii*
Grimmia apocarpa var. *atrofusca* (Schimp.) Husn. = *Schistidium atrofuscum*
Grimmia apocarpa var. *brunnescens* (Limpr.) Mönk. = *Schistidium brunnescens*
Grimmia apocarpa fo. *conferta* (Funck) Chał. = *Schistidium confertum*
Grimmia apocarpa var. *conferta* (Funck) Spreng. = *Schistidium confertum*
Grimmia apocarpa fo. *gracilis* (Röhl.) Chał. = *Schistidium apocarpum*
Grimmia apocarpa var. *gracilis* sensu Szafran non Röhl. = *Schistidium apocarpum*
Grimmia apocarpa fo. *linearis* Chał. = *Schistidium agassizii*
Grimmia apocarpa var. *linearis* (Chał.) Chał. = *Schistidium agassizii*
Grimmia apocarpa fo. *rivularis* (Brid.) Chał. = *Schistidium rivulare*
Grimmia apocarpa var. *rivularis* (Brid.) Nees & Hornsch. = *Schistidium rivulare*
Grimmia apocarpa fo. *tenerrima* (Nees & Hornsch.) Chał. = *Schistidium apocarpum* complex
Grimmia apocarpa var. *tenerrima* sensu Chał. non Nees & Hornsch. = *Schistidium apocarpum* complex
Grimmia apocarpa fo. *vulgaris* (Hartm.) Chał. = *Schistidium apocarpum*
Grimmia caespiticia (Brid.) Jur. = *Orthogrimmia caespiticia*
Grimmia campestris Burch. *ex* Hook. = *Guembelia laevigata*
Grimmia campestris fo. *latifolia* (Limpr.) Szafran = *Guembelia laevigata*
Grimmia canescens (Hedw.) Müll.Hal. = *Niphotrichum canescens*
Grimmia commutata Huebener = *Guembelia ovalis*
Grimmia conferta Funck = *Schistidium confertum*
Grimmia contorta (Wahlenb.) Arn. = *Dryptodon contortus*
Grimmia contorta fo. *tatrensis* Chał. = *Dryptodon contortus*
Grimmia contorta var. *tatrensis* (Chał.) Chał. = *Dryptodon contortus*
Grimmia controversa (Hedw.) F.Weber & D.Mohr = *Weissia controversa*
Grimmia cribrosa Hedw. = *Coscinodon cribrosus*
Grimmia decipiens (Schultz) Lindb. = *Dryptodon decipiens*
Grimmia donniana Sm. = *Orthogrimmia donniana*
Grimmia donniana fo. *sudetica* (Spreng.) Chał. = *Orthogrimmia donniana*
Grimmia elatior Bruch *ex* Bals.-Criv. & De Not. = *Dryptodon incurvus*
Grimmia elatior var. *pseudofunalis* Limpr. = ? *Dryptodon incurvus*
Grimmia elongata Kaulf. = *Dryptodon elongatus*
Grimmia fascicularis (Hedw.) Müll.Hal. = *Codriophorus fascicularis*
Grimmia filiformis (Hedw.) F.Weber & D.Mohr = *Pterigynandrum filiforme*
Grimmia flaccida (De Not.) Lindb. = *Schistidium flaccidum*
Grimmia flaccida var. *carpatica* Żmuda = *Guembelia tergestina*
Grimmia funalis (Schwägr.) Bruch & Schimp. = *Dryptodon funalis*
Grimmia funalis fo. *epilifera* J.E.Zetterst. = *Dryptodon funalis*
Grimmia funalis var. *epilosa* Milde = *Dryptodon funalis*
Grimmia hartmanii Schimp. = *Dryptodon hartmanii*
Grimmia hartmanii var. *anomala* (Hampe) Mönk. = *Dryptodon anomalus*
Grimmia hartmanii var. *epilosa* Milde = *Dryptodon hartmanii*

Grimmia hartmanii fo. *propagulifera* (Milde) Milde = *Dryptodon hartmanii*
Grimmia hartmanii var. *propagulifera* Milde = *Dryptodon hartmanii*
Grimmia heterosticha (Hedw.) Müll.Hal. = *Bucklandiella heterosticha*
Grimmia hoffmanii Müll.Hal. = *Schistidium flaccidum*
Grimmia incurva Schwägr. = *Dryptodon contortus*
Grimmia incurva fo. *brevifolia* Chał. = *Dryptodon contortus*
Grimmia laevigata (Brid.) Brid. = *Guembelia laevigata*
Grimmia lanceolata (Hedw.) F.Weber & D.Mohr = *Tortula lanceola*
Grimmia leucophaea Grev. = *Guembelia laevigata*
Grimmia longirostris Hook. = *Guembelia longirostris*
Grimmia microcarpa (Hedw.) Müll.Hal. = *Bucklandiella microcarpa*
Grimmia mollis Bruch & Schimp. = *Hydrogrimmia mollis*
Grimmia mollis fo. *aquatica* (Schimp.) Loeske = *Hydrogrimmia mollis*
Grimmia montana Bruch & Schimp. = *Orthogrimmia montana*
Grimmia muehlenbeckii Schimp. = *Dryptodon muehlenbeckii*
Grimmia muehlenbeckii fo. *propagulifera* Limpr. = *Dryptodon muehlenbeckii*
Grimmia orbicularis Bruch = *Dryptodon orbicularis*
Grimmia ovalis (Hedw.) Lindb. = *Guembelia ovalis*
Grimmia ovalis auct. non (Hedw.) Lindb. = *Guembelia longirostris*
Grimmia ovalis var. *obliqua* (Hornsch.) I.Hagen = *Guembelia longirostris*
Grimmia ovata F.Weber & D.Mohr = *Guembelia longirostris*
Grimmia ovata var. *cylindrica* (Nees & Hornsch.) Huebener = *Guembelia longirostris*
Grimmia patens Hornsch. = *Dryptodon patens*
Grimmia pulvinata (Hedw.) Sm. = *Dryptodon pulvinatus*
Grimmia pulvinata fo. *brevipila* Boulay = *Dryptodon pulvinatus*
Grimmia pulvinata var. *epilosa* Schimp. *ex* Milde = *Dryptodon pulvinatus*
Grimmia pulvinata fo. *longipila* Boulay = *Dryptodon pulvinatus*
Grimmia pulvinata var. *obtusa* (Brid.) Huebener = *Dryptodon pulvinatus*
Grimmia recurvirostris (Hedw.) Turner = *Bryoerythrophyllum recurvirostrum*
Grimmia reflexidens Müll.Hal. = *Orthogrimmia sessitana*
Grimmia schultzii Huebener = *Dryptodon decipiens*
Grimmia seligeri F.Weber & D.Mohr = *Seligeria recurvata*
Grimmia sessitana De Not. = *Orthogrimmia sessitana*
Grimmia sphaerica Schimp. = *Schistidium flaccidum*
Grimmia subsquarrosa Wilson = *Dryptodon trichophyllus*
Grimmia tergestina Tomm. *ex* Bruch & Schimp. = *Guembelia tergestina*
Grimmia torquata Grev. = *Dryptodon torquatus*
Grimmia trichophylla Grev. = *Dryptodon trichophyllus*
Grimmia trichophylla subsp. *muehlenbeckii* (Schimp.) Boulay = *Dryptodon muehlenbeckii*
Grimmia trichophylla fo. *propagulifera* Limpr. = *Dryptodon trichophyllus*
Grimmia trichophylla var. *tenuis* (Wahlenb.) Wijk & Margad. = *Dryptodon muehlenbeckii*

Grimmia uncinata Kaulf. = *Dryptodon contortus*
Grimmia verticillata (Hedw.) Sm. = *Eucladium verticillatum*
Guembelia crinita (Brid.) Hampe = *Grimmia crinita*
Guembelia fontinaloides (Hedw.) Müll.Hal. = *Cinclidotus fontinaloides*
Gymnocybe palustris (Hedw.) Fr. = *Aulacomnium palustre*
Gymnostomum acaule Flörke *ex* F.Weber & D.Mohr = *Pterygoneurum subsessile*
Gymnostomum aestivum Hedw. = *Anoectangium aestivum*
Gymnostomum affine Nees & Hornsch. = *Hennediella heimii*
Gymnostomum articulatum Schkuhr = *Gymnostomum aeruginosum*
Gymnostomum compactum Brid. = *Anoectangium aestivum*
Gymnostomum condensum Voit = *Weissia condensa*
Gymnostomum conicum Schleich. *ex* Schwägr. = *Microbryum davallianum*
Gymnostomum curvirostrum Hedw. *ex* Brid. = *Hymenostylium recurvirostrum*
Gymnostomum eurystomum (Sendtn.) Lindb. & Arnell = *Physcomitrium eurystomum*
Gymnostomum fasciculare Hedw. = *Entosthodon fascicularis*
Gymnostomum intermedium Turner = *Tortula modica*
Gymnostomum microstomum Hedw. = *Weissia brachycarpa*
Gymnostomum minutulum Schwägr. = *Microbryum davallianum*
Gymnostomum ovatum Hedw. = *Pterygoneurum ovatum*
Gymnostomum pyriforme Hedw. = *Physcomitrium pyriforme*
Gymnostomum rigidulum (Sendtn.) Sendtn. = *Gymnostomum calcareum*
Gymnostomum rostellatum (Brid.) Schimp. = *Weissia rostellata*
Gymnostomum rufescens Schultz = *Microbryum davallianum*
Gymnostomum rupestre Schleich. *ex* Schwägr. = *Gymnostomum aeruginosum*
Gymnostomum rupestre fo. *compactum* (Bruch & Schimp.) Chał. = *Gymnostomum aeruginosum*
Gymnostomum rupestre fo. *gracilescens* Chał. = *Gymnostomum aeruginosum*
Gymnostomum rupestre fo. *ramosissimum* (Bruch & Schimp.) Chał. = *Gymnostomum aeruginosum*
Gymnostomum rupestre fo. *stelligerum* (Dicks.) Chał. = *Gymnostomum aeruginosum*
Gymnostomum sphaericum C.F.Ludw. *ex* Schkuhr = *Physcomitrium sphaericum*
Gymnostomum squarrosum (Nees & Hornsch.) Garov. = *Weissia squarrosa*
Gymnostomum stelligerum (Dicks.) F.Weber & D.Mohr = *Gymnostomum aeruginosum*
Gymnostomum subsessile Brid. = *Pterygoneurum subsessile*
Gymnostomum systylium Funck = *Hennediella heimii*
Gymnostomum tenue Schrad. *ex* Hedw. = *Gyroweisia tenuis*
Gymnostomum tetragonum Brid. = *Pyramidula tetragona*
Gymnostomum tortile Schwägr. = *Weissia condensa*
Gymnostomum truncatum Hedw. = *Tortula truncata*
Gymnostomum wimmerianum Sendtn. = *Weissia controversa* var. *wimmeriana*
Gyroweisia tenuis var. *acutifolia* (H.Philib.) Jelenc = *Gyroweisia tenuis*
Gyroweisia tenuis var. *badia* Limpr. = *Gyroweisia tenuis*

H

Harpidium fluitans (Hedw.) Spruce = *Warnstorfia fluitans*
Harrisonia aquatica (Hedw.) Spreng. = *Cinclidotus aquaticus*
Hedwigia albicans Lindb. = *Hedwigia ciliata*
Hedwigia albicans fo. *leucophea* Bruch & Schimp. = *Hedwigia ciliata* var. *leucophaea*
Hedwigia albicans fo. *secunda* Medelius = *Hedwigia ciliata*
Hedwigia albicans fo. *viridis* Medelius = *Hedwigia ciliata*
Hedwigia ciliata var. *viridis* Bruch & Schimp. = *Hedwigia ciliata*
Helodium lanatum (Brid.) Broth. = *Helodium blandowii*
Heterocladium heteropterum fo. *flacidum* (Schimp.) Mönk. = *Heterocladium heteropterum*
Heterocladium heteropterum var. *fallax* Milde = *Heterocladium heteropterum*
Heterocladium squarrosulum Lindb. = *Heterocladium dimorphum*
Heterocladium squarrosulum fo. *compactum* (Molendo *ex* Pfeff.) Mönk. = *Heterocladium dimorphum*
Heterophyllium haldanianum (Grev.) M.Fleisch. = *Callicladium haldanianum*
Histiomitrium falcatum Sendtn. = *Dichelyma falcatum*
Holmgrenia chrysea (Schwägr.) Lindb. = *Orthothecium chryseon*
Holmgrenia intricata (Hartm.) Lindb. = *Orthothecium intricatum*
Holmgrenia rufescens (Dicks. *ex* Brid.) Lindb. = *Orthothecium rufescens*
Homalia complanata (Hedw.) De Not. = *Neckera complanata*
Homalothecium nitens (Hedw.) H.Rob. = *Tomentypnum nitens*
Homalothecium philippei (Spruce) Schimp. = *Homalothecium philippeanum*
Homomallium pallescens (Hedw.) Loeske = *Hypnum pallescens*
Hygroamblystegium irriguum (Hook. & Wilson) Loeske = *Hygroamblystegium tenax*
Hygroamblystegium tenax fo. *spinifolium* (Schimp.) Demaret = *Hygroamblystegium tenax*
Hygroamblystegium varium (Hedw.) Loeske = *Orthotheciella varia*
Hygrohypnum arcticum (Sommerf.) Loeske = *Hygrohypnum smithii*
Hygrohypnum dilatatum (Wilson) Loeske = *Hygrohypnum duriusculum*
Hygrohypnum dilatatum var. *duriusculum* (De Not.) J.J.Amann = *Hygrohypnum duriusculum*
Hygrohypnum eugyrium var. *mackayi* (Schimp.) Broth. = *Hygrohypnum eugyrium*
Hygrohypnum goulardii (Schimp.) Loeske = *Hygrohypnum cochlearifolium*
Hygrohypnum luridum fo. *hamulosum* (Schimp.) C.E.O.Jensen = *Hygrohypnum luridum*
Hygrohypnum luridum var. *julaceum* (Schimp.) Podp. = *Hygrohypnum luridum*
Hygrohypnum luridum var. *tatricum* (Lisowski) Ochyra & Szmajda = *Hygrohypnum luridum*
Hygrohypnum luridum var. *tenellum* (Schimp.) Podp. = *Hygrohypnum luridum*
Hygrohypnum molle var. *schimperianum* (Lorentz) Loeske = *Hygrohypnum molle*
Hygrohypnum ochraceum fo. *complanatum* (Milde) Mönk. = *Hygrohypnum ochraceum*
Hygrohypnum ochraceum fo. *filiforme* (Limpr.) Mönk. = *Hygrohypnum ochraceum*
Hygrohypnum ochraceum fo. *flaccidum* (Milde) Mönk. = *Hygrohypnum ochraceum*

Hygrohypnum ochraceum fo. *uncinatum* (Milde) Mönk. = *Hygrohypnum ochraceum*
Hygrohypnum palustre Loeske = *Hygrohypnum luridum*
Hygrohypnum palustre var. *polare* (Lindb.) Mönk. = *Hygrohypnum polare*
Hygrohypnum palustre var. *tatricum* Lisowski = *Hygrohypnum luridum*
Hygrohypnum polare fo. *falcatum* (Bryhn) C.E.O.Jensen = *Hygrohypnum polare*
Hygrohypnum schimperianum (Lorentz) Baur = *Hygrohypnum molle*
Hygrohypnum smithii var. *cochlearifolium* Mönk. = *Hygrohypnum cochlearifolium*
Hygrohypnum viridulum Broth. = *Hygrohypnum norvegicum*
Hylocomium brevirostre (Brid.) Schimp. = *Loeskeobryum brevirostre*
Hylocomium loreum (Hedw.) Schimp. = *Rhytidiadelphus loreus*
Hylocomium oakesii (Sull.) Schimp. = *Hylocomiastrum pyrenaicum*
Hylocomium parietinum Lindb. = *Pleurozium schreberi*
Hylocomium proliferum (Brid.) Lindb. = *Hylocomium splendens*
Hylocomium purum (Hedw.) De Not. = *Pseudoscleropodium purum*
Hylocomium pyrenaicum (Spruce) Lindb. = *Hylocomiastrum pyrenaicum*
Hylocomium rugosum (Ehrh. *ex* Hedw.) De Not. = *Rhytidium rugosum*
Hylocomium splendens fo. *alpinum* (Schlieph. *ex* Limpr.) Mönk. = *Hylocomium splendens*
Hylocomium splendens var. *alpinum* Schlieph. *ex* Limpr. = *Hylocomium splendens*
Hylocomium splendens fo. *paludosum* (Warnst.) Podp. = *Hylocomium splendens*
Hylocomium squarrosum (Hedw.) Schimp. = *Rhytidiadelphus squarrosus*
Hylocomium squarrosum subsp. *calvescens* Kindb. = *Rhytidiadelphus subpinnatus*
Hylocomium striatum (Schreb *ex* Hedw.) Kindb. = *Eurhynchium striatum*
Hylocomium subpinnatum Lindb. = *Rhytidiadelphus subpinnatus*
Hylocomium triquetrum (Hedw.) Schimp. = *Rhytidiadelphus triquetrus*
Hylocomium umbratum (Ehrh. *ex* Hedw.) Schimp. = *Hylocomiastrum umbratum*
Hymenostomum microstomum (Hedw.) R.Br. = *Weissia brachycarpa*
Hymenostomum microstomum var. *brachycarpum* (Nees & Hornsch.) Huebener = *Weissia brachycarpa*
Hymenostomum microstomum var. *obliquum* (Nees & Hornsch.) Huebener = ? *Weissia brachycarpa*
Hymenostomum rostellatum (Brid.) Schimp. = *Weissia rostellata*
Hymenostomum squarrosum Nees & Hornsch. = *Weissia squarrosa*
Hymenostomum tortile (Schwägr.) Bruch & Schimp. = *Weissia condensa*
Hymenostylium calcareum (Nees & Hornsch.) Mitt. = *Gymnostomum calcareum*
Hymenostylium curvirostrum var. *scabrum* (Lindb.) Limpr. = *Hymenostylium recurvirostrum*
Hymenostylium recurvirostrum var. *latifolium* (J.E.Zetterst.) Wijk & Margad. = *Hymenostylium recurvirostrum*
Hypnopsis schreberi (Willd. *ex* Brid.) Podp. = *Pleurozium schreberi*
Hypnum abbreviatum Hedw. = *Rhynchostegium murale*
Hypnum abietinum Hedw. = *Abietinella abietina*
Hypnum aduncum Hedw. = *Drepanocladus aduncus*

Hypnum aduncum var. *gracilescens* Schimp. = *Drepanocladus polycarpos*
Hypnum aduncum var. *subalpinum* (Milde) Chał. = ? *Warnstorfia exannulata*
Hypnum aduncum var. *tenue* Schimp. = *Warnstorfia exannulata*
Hypnum albicans Hedw. = *Brachythecium albicans*
Hypnum alopecurum Hedw. = *Thamnobryum alopecurum*
Hypnum androgynum (Hedw.) F.Weber & D.Mohr = *Aulacomnium androgynum*
Hypnum annotinum (Hedw.) F.Weber & D.Mohr = *Pohlia annotina*
Hypnum arcticum Sommerf. = *Hygrohypnum smithii*
Hypnum arcuatum Hedw. = *Hypnum lindbergii*
Hypnum arcuatum fo. *demissum* (Schimp.) Podp. = *Hypnum lindbergii*
Hypnum arcuatum fo. *elatum* (Schimp.) Podp. = *Hypnum lindbergii*
Hypnum argenteum (Hedw.) F.Weber & D.Mohr = *Bryum argenteum*
Hypnum atrovirens Dicks. *ex* Brid. = *Pseudoleskea incurvata*
Hypnum atrovirens Sw. = *Oxyrrhynchium hians* var. *rigidum*
Hypnum attenuatum Dicks. = *Anomodon attenuatus*
Hypnum bambergeri var. *condensatum* (Schimp.) Lindb. = *Hypnum bambergeri*
Hypnum blandowii F.Weber & D.Mohr = *Helodium blandowii*
Hypnum brevirostre (Brid.) Ehrh. = *Loeskeobryum brevirostre*
Hypnum caespiticium (Hedw.) F.Weber & D.Mohr = *Bryum caespiticium*
Hypnum calvescens Wilson = *Rhytidiadelphus subpinnatus*
Hypnum campestre (Müll.Hal.) Mitt. = *Brachythecium campestre*
Hypnum capillare (Hedw.) F.Weber & D.Mohr = *Rosulabryum capillare*
Hypnum carneum F.Weber & D.Mohr = *Pohlia melanodon*
Hypnum catenulatum (Brid. *ex* Schrad.) Brid. = *Pseudoleskeella catenulata*
Hypnum cavifolium Brid. = *Plagiothecium cavifolium*
Hypnum chryseum Schwägr. = *Orthothecium chryseon*
Hypnum chrysophyllum Brid. = *Campyliadelphus chrysophyllus*
Hypnum cirrosum Schwägr. = *Brachythecium cirrosum*
Hypnum commutatum Hedw. = *Palustriella commutata*
Hypnum concinnum De Not. = *Entodon concinnus*
Hypnum condensatum Schimp. = *Hypnum bambergeri*
Hypnum condensatum var. *flexuosum* Lindb. = *Hypnum bambergeri*
Hypnum confertum Dicks. = *Rhynchostegium confertum*
Hypnum contiguum Nees = *Sanionia uncinata*
Hypnum cordifolium Hedw. = *Calliergon cordifolium*
Hypnum cordifolium var. *richardsonii* (Mitt.) Husn. = *Calliergon richardsonii*
Hypnum cordifolium var. *robustum* H.Klinggr. = *Calliergon megalophyllum*
Hypnum cossonii Schimp. = *Limprichtia cossonii*
Hypnum crassinervium Taylor = *Cirriphyllum crassinervium*
Hypnum cristacastrensis Hedw. = *Ptilium cristacastrensis*
Hypnum crudum (Hedw.) F.Weber & D.Mohr = *Pohlia cruda*
Hypnum cupressiforme subsp. *imponens* (Hedw.) Boulay = *Hypnum imponens*
Hypnum cupressiforme subsp. *vaucheri* (Lesq.) Bryhn = *Hypnum vaucheri*

Hypnum cupressiforme var. *brevisetum* Schimp. = *Hypnum cupressiforme*
Hypnum cupressiforme var. *ericetorum* Schimp. = *Hypnum jutlandicum*
Hypnum cupressiforme var. *hamulosum* Brid. = *Hypnum hamulosum*
Hypnum cupressiforme var. *mammillatum* Brid. = *Hypnum andoi*
Hypnum cupressiforme var. *uncinatulum* Schimp. = *Hypnum cupressiforme*
Hypnum cupressiforme var. *vaucheri* (Lesq.) Boulay = *Hypnum vaucheri*
Hypnum cuspidatum Hedw. = *Calliergonella cuspidata*
Hypnum delicatulum Hedw. = *Thuidium delicatulum*
Hypnum denticulatum Hedw. = *Plagiothecium denticulatum*
Hypnum depressum (Hedw.) Sw. *ex* P.Beauv. = *Taxiphyllum wissgrillii*
Hypnum dilatatum Wilson = *Hygrohypnum duriusculum*
Hypnum dimorphum Brid. = *Heterocladium dimorphum*
Hypnum elegans Brid. = *Pseudotaxiphyllum elegans*
Hypnum elodes F.Weber & D.Mohr = *Campyliadelphus elodes*
Hypnum elodes var. *falcatum* Everk. *ex* Milde = *Campyliadelphus elodes*
Hypnum ericetorum Brid. = *Hypnum jutlandicum*
Hypnum eugyrium (Schimp.) Sull. & Lesq. = *Hygrohypnum eugyrium*
Hypnum exannulatum Schimp. = *Warnstorfia exannulata*
Hypnum exannulatum var. *orthophyllum* Milde = ? *Warnstorfia exannulata*
Hypnum exannulatum var. *purpurascens* Pfeff. = *Warnstorfia exannulata*
Hypnum exannulatum var. *serratum* Milde = *Warnstorfia exannulata*
Hypnum falcatum Brid. = *Palustriella commutata* var. *falcata*
Hypnum fallax Brid. = *Cratoneuron filicinum*
Hypnum fastigiatum Wibel = *Hypnum recurvatum*
Hypnum filescens Brid. = *Plasteurhynchium striatulum*
Hypnum filicinum Hedw. = *Cratoneuron filicinum*
Hypnum filiforme Timm = *Pterigynandrum filiforme*
Hypnum flotowianum Sendtn. = *Sciuro-hypnum flotowianum*
Hypnum fluitans Hedw. = *Warnstorfia fluitans*
Hypnum fluitans var. *pseudostramineum* (Müll.Hal.) H.Müll. = *Warnstorfia pseudostraminea*
Hypnum fluviatile Hedw. = *Hygroamblystegium fluviatile*
Hypnum geheebii (Milde) Lindb. = *Brachythecium geheebii*
Hypnum giganteum Schimp. = *Calliergon giganteum*
Hypnum glaciale (Schimp.) Mitt. = *Sciuro-hypnum glaciale*
Hypnum glareosum Bruch *ex* Spruce = *Brachythecium glareosum*
Hypnum goeppertianum Sendtn. = *Brachythecium glaerosum*
Hypnum haldanianum Grev. = *Callicladium haldanianum*
Hypnum halleri Sw. *ex* Hedw. = *Campylophyllum halleri*
Hypnum herjedalicum (Schimp.) Lindb. = *Brachythecium cirrosum*
Hypnum heteropterum (Brid.) Hampe = *Heterocladium heteropterum*
Hypnum hians Hedw. = *Oxyrrhynchium hians*
Hypnum hornum (Hedw.) F.Weber & D.Mohr = *Mnium hornum*
Hypnum hygrophilum Jur. = *Amblystegium radicale*

Hypnum incurvatum Schrad. *ex* Brid. = *Homomallium incurvatum*
Hypnum incurvatum (Hedw.) P.Beauv. = *Pseudoleskea incurvata*
Hypnum insigne Milde = *Tomentypnum nitens*
Hypnum intermedium (Brid.) F.Weber & D.Mohr = *Bryum intermedium*
Hypnum intermedium Lindb. = *Limprichtia cossonii*
Hypnum intricatum Schreb. *ex* Hedw. = *Brachytheciastrum velutinum*
Hypnum irriguum Hook. & Wilson = *Hygroamblystegium tenax*
Hypnum irroratum Müll.Hal. = *Orthothecium intricatum*
Hypnum jacquini Garov. = *Rhynchostegiella teneriffae*
Hypnum julaceum (Schwägr.) Vill. *ex* Schwägr. = *Myurella julacea*
Hypnum kneiffii (Schimp.) Schimp. = *Drepanocladus polycarpos*
Hypnum kneiffii var. *laxum* Schimp. *ex* Milde = *Drepanocladus polycarpos*
Hypnum kneiffii var. *pungens* H.Müll. *ex* Milde = *Drepanocladus polycarpos*
Hypnum kneiffii var. *subalpinum* Milde = ? *Warnstorfia exannulata*
Hypnum lacunosum (Brid.) Hoffm. *ex* Brid. = *Hypnum cupressiforme* var. *lacunosum*
Hypnum lacustre F.Weber & D.Mohr = *Bryum knowltonii*
Hypnum ligulatum F.Weber & D.Mohr = *Plagiomnium undulatum*
Hypnum longifolium Schultz = *Anomodon longifolius*
Hypnum longirostrum Ehrh. *ex* Brid. = *Eurhynchium striatum*
Hypnum loreum Hedw. = *Rhytidiadelphus loreus*
Hypnum luridum Hedw. = *Hygrohypnum luridum*
Hypnum lutescens Hedw. = *Homalothecium lutescens*
Hypnum lycopodioides Brid. = *Pseudocalliergon lycopodioides*
Hypnum lycopodioides var. *genuinum* Sanio = *Hamatocaulis vernicosus*
Hypnum mamillatum (Brid.) Loeske = *Hypnum andoi*
Hypnum marginatum (Dicks.) F.Weber & D.Mohr = *Mnium marginatum*
Hypnum megapolitanum Blandow *ex* F.Weber & D.Mohr = *Rhynchostegium megapolitanum*
Hypnum mildeanum Schimp. = *Brachythecium mildeanum*
Hypnum molle Hedw. = *Hygrohypnum molle*
Hypnum molle subsp. *dilatatum* (Wilson) Dixon = *Hygrohypnum duriusculum*
Hypnum molluscum Hedw. = *Ctenidium molluscum*
Hypnum molluscum var. *condensatum* Schimp. = *Ctenidium molluscum*
Hypnum muehlenbeckii Schimp. *ex* C.Hartm. = *Herzogiella striatella*
Hypnum murale Hedw. = *Rhynchostegium murale*
Hypnum myurum Pollich *ex* Brid. = *Isothecium alopecuroides*
Hypnum nervosum P.Beauv. = *Leskella nervosa*
Hypnum nitens Hedw. = *Tomentypnum nitens*
Hypnum nitidulum Wahlenb. = *Isopterygiopsis pulchella*
Hypnum nutans (Hedw.) F.Weber & D.Mohr = *Pohlia nutans*
Hypnum oakesii Sull. = *Hylocomiastrum pyrenaicum*
Hypnum ochraceum Turner *ex* Wilson = *Hygrohypnum ochraceum*
Hypnum ochraceum var. *complanatum* Milde = *Hygrohypnum ochraceum*

Hypnum ochraceum var. *flaccidum* Milde = *Hygrohypnum ochraceum*
Hypnum ochraceum var. *uncinatum* Milde = *Hygrohypnum ochraceum*
Hypnum ornellanum Molendo = *Sciuro-hypnum ornellanum*
Hypnum orthocarpum Bach.Pyl. = *Entodon concinnus*
Hypnum pallens (Sw.) F.Weber & D.Mohr = *Bryum pallens*
Hypnum pallescens var. *perichaetiale* (Schimp.) Podp. = *Hypnum pallescens*
Hypnum pallescens var. *reptile* (Michx.) Husn. = *Hypnum pallescens*
Hypnum pallescens var. *subjulaceum* (Schimp.) C.Hartm. = *Hypnum pallescens*
Hypnum paludella F.Weber & D.Mohr = *Paludella squarrosa*
Hypnum palustre Huds. *ex* Brid. = *Hygrohypnum luridum*
Hypnum palustre var. *laxum* (Schimp.) Schimp. = *Hygrohypnum luridum*
Hypnum palustre var. *subsphaericarpon* (Brid.) Schwägr. = *Hygrohypnum luridum* var. *subsphaericarpon*
Hypnum perichaetiale Schimp. = *Hypnum pallescens*
Hypnum philippeanum (Spruce) Müll.Hal. = *Homalothecium philippeanum*
Hypnum piliferum Hedw. = *Cirriphyllum piliferum*
Hypnum plicatum Schleich. *ex* F.Weber & D.Mohr = *Ptychodium plicatum*
Hypnum plumosum Hedw. = *Sciuro-hypnum plumosum*
Hypnum polare Lindb. = *Hygrohypnum polare*
Hypnum polyanthum (Hedw.) Dicks. = *Pylaisia polyantha*
Hypnum polygamum (Schimp.) Wilson = *Campylium polygamum*
Hypnum polymorphum Hedw. = *Campyliadelphus chrysophyllus*
Hypnum populeum Hedw. = *Sciuro-hypnum populeum*
Hypnum praecox Hedw. = *Eurhynchiastrum pulchellum* var. *praecox*
Hypnum praelongum Hedw. = *Kindbergia praelonga*
Hypnum praelongum var. *stokesii* (Turner) Brid. = *Kindbergia praelonga*
Hypnum proliferum var. *umbratum* (Ehrh. *ex* Hedw.) Wahlenb. = *Hylocomiastrum umbratum*
Hypnum pseudostramineum Müll.Hal. = *Warnstorfia pseudostraminea*
Hypnum pulchellum Dicks. = *Isopterygiopsis pulchella*
Hypnum pulchellum Hedw. = *Eurhynchiastrum pulchellum*
Hypnum punctatum (Hedw.) F.Weber & D.Mohr = *Rhizomnium punctatum*
Hypnum purum Hedw. = *Pseudoscleropodium purum*
Hypnum pyrenaicum Spruce = *Hylocomiastrum pyrenaicum*
Hypnum pyriforme (Hedw.) F.Weber & D.Mohr = *Leptobryum pyriforme*
Hypnum radicale P.Beauv. = *Amblystegium radicale*
Hypnum reflexum Starke = *Sciuro-hypnum reflexum*
Hypnum reflexum var. *starkei* (Brid.) Hartm. = *Sciuro-hypnum starkei*
Hypnum reptile Michx. = *Hypnum pallescens*
Hypnum revolvens Sw. = *Limprichtia revolvens*
Hypnum riparioides Hedw. = *Platyhypnidium riparioides*
Hypnum riparium Hedw. = *Leptodictyum riparium*
Hypnum rivulare Brid. = *Brachythecium rivulare*

Hypnum roeseanum Hampe = *Plagiothecium cavifolium*
Hypnum roseum (Hedw.) F.Weber & D.Mohr = *Rhodobryum roseum*
Hypnum rostratum (Schrad.) F.Weber & D.Mohr = *Plagiomnium rostratum*
Hypnum rugelii Müll.Hal. = *Anomodon rugelii*
Hypnum rugosum Ehrh. *ex* Hedw. = *Rhytidium rugosum*
Hypnum ruscifolium Neck. *ex* With. = *Platyhypnidium riparioides*
Hypnum rusciforme Weiss *ex* Brid. = *Platyhypnidium riparioides*
Hypnum rutabulum Hedw. = *Brachythecium rutabulum*
Hypnum rutabulum var. *campestre* Müll.Hal. = *Brachythecium campestre*
Hypnum salebrosum Hoffm. *ex* F.Weber & D.Mohr = *Brachythecium salebrosum*
Hypnum sarmentosum Wahlenb. = *Warnstorfia sarmentosa*
Hypnum sarmentosum var. *fallaciosum* Milde = *Warnstorfia sarmentosa*
Hypnum sarmentosum var. *pumilum* Milde = *Warnstorfia sarmentosa*
Hypnum schleicheri R.Hedw. = *Oxyrrhynchium schleicheri*
Hypnum schreberi Willd. *ex* Brid. = *Pleurozium schreberi*
Hypnum scorpioides Hedw. = *Scorpidium scorpioides*
Hypnum scorpioides var. *submersum* Torka = *Scorpidium scorpioides*
Hypnum seligeri Brid. = *Herzogiella seligeri*
Hypnum sendtneri Schimp. *ex* H.Müll. = *Drepanocladus sendtneri*
Hypnum sendtneri var. *wilsonii* Schimp. = *Drepanocladus sendtneri*
Hypnum sericeum (Hedw.) With. = *Homalothecium sericeum*
Hypnum serpens Hedw. = *Amblystegium serpens*
Hypnum silesiacum F.Weber & D.Mohr = *Herzogiella seligeri*
Hypnum sommerfeltii Myr. = *Campylidium sommerfeltii*
Hypnum speciosum Brid. = *Oxyrrhynchium speciosum*
Hypnum splendens Hedw. = *Hylocomium splendens*
Hypnum squarrosum Hedw. = *Rhytidiadelphus squarrosus*
Hypnum starkei Brid. = *Sciuro-hypnum starkei*
Hypnum stellare (Hedw.) F.Weber & D.Mohr = *Mnium stellare*
Hypnum stellatum Hedw. = *Campylium stellatum*
Hypnum stramineum Dicks. *ex* Brid. = *Straminergon stramineum*
Hypnum striatellum (Brid.) Müll.Hal. = *Herzogiella striatella*
Hypnum striatulum Spruce = *Plasteurhynchium striatulum*
Hypnum striatum Schreb. *ex* Hedw. = *Eurhynchium striatum*
Hypnum strigosum Hoffm. *ex* F.Weber & D.Mohr = *Eurhynchiastrum pulchellum*
Hypnum styriacum Limpr. = *Hygrohypnum styriacum*
Hypnum subpinnatum (Brid.) Arn. = *Rhytidiadelphus subpinnatus*
Hypnum subsulcatum Schimp. = *Palustriella commutata* var. *sulcata*
Hypnum subtile Brid. = *Serpoleskea subtilis*
Hypnum succulentum Wilson = *Plagiothecium succulentum*
Hypnum sudeticum Schimp. = *Warnstorfia fluitans*
Hypnum swartzii Turner = *Oxyrrhynchium hians*
Hypnum sylvaticum Brid. = *Plagiothecium nemorale*

Hypnum tamariscinum Hedw. = *Thuidium tamariscinum*
Hypnum tenellum Dicks. = *Rhynchostegiella tenella*
Hypnum trachypodium (Funck *ex* Brid.) Müll.Hal. = *Brachytheciastrum trachypodium*
Hypnum trichomanoides (Hedw.) With. = *Homalia trichomanoides*
Hypnum trifarium F.Weber & D.Mohr = *Pseudocalliergon trifarium*
Hypnum triquetrum Hedw. = *Rhytidiadelphus triquetrus*
Hypnum turbinatum (Hedw.) F.Weber & D.Mohr = *Bryum turbinatum*
Hypnum turfosum Sendtn. = *Warnstorfia fluitans*
Hypnum turgidum (Hartm.) Hartm. = *Brachythecium turgidum*
Hypnum umbratum Ehrh. *ex* Hedw. = *Hylocomiastrum umbratum*
Hypnum uncinatum Hedw. = *Sanionia uncinata*
Hypnum uncinatum var. *plumulosum* Schimp. = ? *Sanionia uncinata*
Hypnum undulatum Hedw. = *Buckiella undulata*
Hypnum vaucheri Schimp. = *Brachythecium tommasinii*
Hypnum velutinoides Bruch = *Sciuro-hypnum flotowianum*
Hypnum velutinum Hedw. = *Brachytheciastrum velutinum*
Hypnum vernicosum Lindb. = *Hamatocaulis vernicosus*
Hypnum viridulum C.Hartm. = *Hygrohypnum norvegicum*
Hypnum viticulosum (Hedw.) With. = *Anomodon viticulosus*
Hypnum wahlenbergii F.Weber & D.Mohr. = *Pohlia wahlenbergii*
Hypnum wilsonii (Lindb.) Schimp. *ex* Renauld = *Drepanocladus sendtneri*

I

Isopterygium densifolium Lindb. *ex* Broth. = *Taxiphyllum densifolium*
Isopterygium depressum (Brid.) Mitt. = *Taxiphyllum wissgrillii*
Isopterygium elegans (Brid.) Lindb. = *Pseudotaxiphyllum elegans*
Isopterygium elegans var. *nanum* (Jur.) A.Jaeger = *Pseudotaxiphyllum elegans*
Isopterygium elegans var. *schimperi* (Jur. & Milde) Braithw. = *Pseudotaxiphyllum elegans*
Isopterygium elegans var. *terrestre* (Lindb.) Wijk & Margad. = *Pseudotaxiphyllum elegans*
Isopterygium muellerianum (Schimp.) A.Jaeger = *Isopterygiopsis muelleriana*
Isopterygium nitidum Lindb. = *Isopterygiopsis pulchella*
Isopterygium nitidum var. *pulchellum* (Hedw.) Lindb. = *Isopterygiopsis pulchella*
Isopterygium pratense (Rabenh.) Lindb. = *Hypnum pratense*
Isopterygium pulchellum (Hedw.) A.Jaeger = *Isopterygiopsis pulchella*
Isopterygium pulchellum var. *nitidulum* (Wahlenb.) G.Roth = *Isopterygiopsis pulchella*
Isopterygium repens (Brid.) Lindb. *ex* Delogne = *Herzogiella seligeri*
Isopterygium seligeri (Brid.) Dixon = *Herzogiella seligeri*
Isopterygium silesiacum Warnst. = *Herzogiella seligeri*
Isopterygium striatellum (Brid.) Loeske = *Herzogiella striatella*
Isothecium alopecurum (Hedw.) Spruce = *Thamnobryum alopecurum*
Isothecium elegans Brid. = *Pseudotaxiphyllum elegans*
Isothecium filescens (Brid.) Mönk. = *Plasteurhynchium striatulum*
Isothecium intricatum (Hartm.) Boulay = *Orthothecium intricatum*

Isothecium lutescens (Hedw.) Spruce = *Homalothecium lutescens*
Isothecium myosuroides fo. *cavernarum* (Molendo) Mönk. = *Isothecium myosuroides*
Isothecium myurum Brid. = *Isothecium alopecuroides*
Isothecium philippeanum Spruce = *Homalothecium philippeanum*
Isothecium polyanthum (Hedw.) Spruce = *Pylaisia polyantha*
Isothecium repens (Brid.) Spruce = *Platygyrium repens*
Isothecium rufescens (Dicks. *ex* Brid.) Huebener = *Orthothecium rufescens*
Isothecium sericeum (Hedw.) Spruce = *Homalothecium sericeum*
Isothecium viviparum Lindb. = *Isothecium alopecuroides*
Isothecium viviparum fo. *scabridum* Mönk. = *Isothecium alopecuroides*

L

Leersia ciliata Hedw. = *Encalypta ciliata*
Leersia vulgaris Hedw. = *Encalypta vulgaris*
Leptodictyum kochii (Schimp.) Warnst. = *Leptodictyum humile*
Leptodictyum kochii var. *curvipes* (Schimp.) Warnst. = ? *Leptodictyum humile*
Leptodictyum trichopodium (Schultz) Warnst. = *Leptodictyum riparium*
Leptohymenium filiforme (Hedw.) Huebener = *Pterigynandrum filiforme*
Leptohymenium repens (Brid.) Hampe = *Platygyrium repens*
Leptotrichum flexicaule (Schwägr.) Hampe = *Ditrichum flexicaule*
Leptotrichum glaucescens (Hedw.) Hampe = *Saelania glaucescens*
Leptotrichum homomallum (Hedw.) Hampe = *Ditrichum heteromallum*
Leptotrichum pallidum (Hedw.) Hampe = *Ditrichum pallidum*
Leptotrichum tortile (Schrad.) Hampe = *Ditrichum pusillum*
Leptotrichum tortile var. *pusillum* (Hedw.) Müll.Hal. = *Ditrichum pusillum*
Leptotrichum vaginans (Sull.) Molendo = *Ditrichum lineare*
Lescuraea atrovirens (Dicks. *ex* Brid.) Kindb. = *Pseudoleskea incurvata*
Lescuraea brachyclados (Schwägr.) Kindb. = *Pseudoleskea radicosa*
Lescuraea incurvata (Hedw.) E.Lawton = *Pseudoleskea incurvata*
Lescuraea incurvata var. *brachyclados* Schimp. = *Pseudoleskea radicosa*
Lescuraea incurvata var. *patens* I.Hagen = *Pseudoleskea patens*
Lescuraea incurvata var. *tenella* Limpr. = *Pseudoleskea incurvata*
Lescuraea mutabilis var. *saxicola* (Schimp.) I.Hagen = *Lescuraea saxicola*
Lescuraea radicosa (Mitt.) Mönk. = *Pseudoleskea radicosa*
Lescuraea striata (Schwägr.) Schimp. = *Lescuraea mutabilis*
Lescuraea striata var. *saxicola* Schimp. = *Lescuraea saxicola*
Leskea apiculata Schimp. = *Anomodon rugelii*
Leskea atrovirens (Dicks. *ex* Brid.) Hartm. = *Pseudoleskea incurvata*
Leskea attenuata Hedw. = *Anomodon attenuatus*
Leskea brachyclados Schwägr. = *Pseudoleskea radicosa*
Leskea catenulata (Brid. *ex* Schrad.) Mitt. = *Pseudoleskeella catenulata*
Leskea chrysea (Schwägr.) Ångstr. = *Orthothecium chryseon*
Leskea complanata Hedw. = *Neckera complanata*

Leskea dendroides Hedw. = *Climacium dendroides*
Leskea incurvata Hedw. = *Pseudoleskea incurvata*
Leskea intricata Hartm. = *Orthothecium intricatum*
Leskea julacea Schwägr. = *Myurella julacea*
Leskea latebricola (Schimp.) Wilson = *Plagiothecium latebricola*
Leskea myosuroides (Brid.) Ångstr. = *Isothecium myosuroides*
Leskea nervosa (Brid.) Myrin = *Leskella nervosa*
Leskea nitidula Wahlenb. *ex* Brid. = *Isopterygiopsis pulchella*
Leskea pallescens Hedw. = *Hypnum pallescens*
Leskea paludosa Hedw. = *Leskea polycarpa*
Leskea polyantha Hedw. = *Pylaisia polyantha*
Leskea polycarpa var. *exilis* (Starke *ex* Schwägr.) Milde = *Leskea polycarpa*
Leskea polycarpa var. *paludosa* (Hedw.) Schimp. = *Leskea polycarpa*
Leskea polycarpa var. *tenella* Schimp. = *Leskea polycarpa*
Leskea pulchella Hedw. = *Isopterygiopsis pulchella*
Leskea rufescens (Dicks. *ex* Brid.) Schwägr. = *Orthothecium rufescens*
Leskea sericea Hedw. = *Homalothecium sericeum*
Leskea subtilis Hedw. = *Serpoleskea subtilis*
Leskea trichomanoides Hedw. = *Homalia trichomanoides*
Leskea viticulosa (Hedw.) Spruce = *Anomodon viticulosus*
Leskia seligeri Brid. = *Herzogiella seligeri*
Leskia striatella Brid. = *Herzogiella striatella*
Lesquereuxia mutabilis Lindb. = *Lescuraea mutabilis*
Lesquereuxia plicata (Schleich. *ex* F.Weber & D.Mohr) Lindb. = *Ptychodium plicatum*
Leucobryum albidum auct. = *Leucobryum juniperoideum*
Leucobryum vulgare Hampe = *Leucobryum glaucum*
Limnobium arcticum (Sommerf.) Schimp. = *Hygrohypnum smithii*
Limnobium cochlearifolium Venturi = *Hygrohypnum cochlearifolium*
Limnobium dilatatum (Wilson) Venturi & Bott. = *Hygrohypnum duriusculum*
Limnobium eugyrium Schimp. = *Hygrohypnum eugyrium*
Limnobium molle (Hedw.) Schimp. = *Hygrohypnum molle*
Limnobium norvegicum Schimp. = *Hygrohypnum norvegicum*
Limnobium palustre Schimp. = *Hygrohypnum luridum*
Limnobium polare (Lindb.) C.E.O.Jensen = *Hygrohypnum polare*
Limnobium styriacum (Limpr.) G.Roth = *Hygrohypnum styriacum*
Limnobium submolle Kindb. = *Hygrohypnum molle*
Limnobryum palustre (Hedw.) Rabenh. = *Aulacomnium palustre*
Limprichtia vernicosa (Lindb.) Loeske = *Hamatocaulis vernicosus*

M

Maschalocarpus filiformis (Hedw.) Spreng. = *Pterigynandrum filiforme*
Meesia albertinii Bruch & Schimp. = *Meesia hexasticha*
Meesia dealbata Sw. *ex* Hedw. = *Amblyodon dealbatus*

Meesia hexagona Alb. = *Meesia hexasticha*
Meesia stygia (Sw.) Brid. = *Cinclidium stygium*
Meesia trichodes Spruce = *Meesia uliginosa*
Meesia trichodes var. *angustifolia* (Brid.) I.Hagen = *Meesia uliginosa*
Meesia trichodes var. *minor* (Brid.) Braithw. = *Meesia uliginosa*
Meesia triquetra var. *gigantea* Sanio = *Meesia triquetra*
Meesia triquetra var. *timmioides* Sanio = *Meesia triquetra*
Meesia tristicha Bruch = *Meesia triquetra*
Mildeella bryoides (Dicks.) Limpr. = *Protobryum bryoides*
Mniobryum albicans (Wahlenb.) Limpr. = *Pohlia wahlenbergii*
Mniobryum albicans var. *glaciale* (Brid.) Limpr. = *Pohlia wahlenbergii* var. *glacialis*
Mniobryum carneum (F.Weber & D.Mohr) Limpr. = *Pohlia melanodon*
Mniobryum delicatulum (Hedw.) Dixon = *Pohlia melanodon*
Mniobryum ludwigii (Spreng. *ex* Schwägr.) Loeske = *Pohlia ludwigii*
Mniobryum lutescens (Limpr.) Loeske = *Pohlia lutescens*
Mniobryum wahlenbergii (F.Weber & D.Mohr) Jenn. = *Pohlia wahlenbergii*
Mnium affine Blandow *ex* Funck = *Plagiomnium affine*
Mnium affine var. *elatum* Bruch & Schimp. = *Plagiomnium elatum*
Mnium affine var. *integrifolium* (Lindb.) Milde = *Plagiomnium ellipticum*
Mnium ambiguum H.Müll. = *Mnium lycopodioides*
Mnium androgynum (Hedw.) Sm. = *Aulacomnium androgynum*
Mnium cinclidioides Huebener = *Pseudobryum cinclidioides*
Mnium cinclidioides var. *tomentosum* Milde = *Pseudobryum cinclidioides*
Mnium crudum Hedw. = *Pohlia cruda*
Mnium cuspidatum Hedw. = *Plagiomnium cuspidatum*
Mnium cyclophyllum Schwägr. = *Bryum cyclophyllum*
Mnium drummondii Bruch & Schimp. = *Plagiomnium drummondii*
Mnium fontanum Hedw. = *Philonotis fontana*
Mnium hymenophylloides Huebener = *Cyrtomnium hymenophylloides*
Mnium insigne Mitt. = *Plagiomnium elatum*
Mnium lacustre Blandow = *Bryum knowltonii*
Mnium latifolium Schwägr. = *Bryum schleicheri*
Mnium longirostre Brid. = *Plagiomnium rostratum*
Mnium marchicum Hedw. = *Philonotis marchica*
Mnium marginatum var. *dioicum* (H.Müll.) Crundwell = *Mnium lycopodioides*
Mnium marginatum var. *riparium* (Mitt.) Husn. = *Mnium lycopodioides*
Mnium medium Bruch & Schimp. = *Plagiomnium medium*
Mnium orthorrhynchium Brid. = *Atrichum tenellum*
Mnium orthorrhynchum auct. = *Mnium thomsonii*
Mnium palustre Hedw. = *Aulacomnium palustre*
Mnium pseudopunctatum Bruch & Schimp. = *Rhizomnium pseudopunctatum*
Mnium pseudotriquetrum Hedw. = *Bryum pseudotriquetrum*
Mnium punctatum Hedw. = *Rhizomnium punctatum*

Mnium punctatum var. chałubiński Żmuda = *Rhizomnium punctatum*
Mnium punctatum var. *elatum* Schimp. = *Rhizomnium magnifolium*
Mnium punctatum var. *subglobosum* Hampe = *Rhizomnium pseudopunctatum*
Mnium pyriforme (Hedw.) Funck = *Leptobryum pyriforme*
Mnium riparium Mitt. = *Mnium marginatum*
Mnium roseum Hedw. = *Rhodobryum roseum*
Mnium rostratum Schrad. = *Plagiomnium rostratum*
Mnium rostratum var. *rugicum* Bruch & Schimp. = *Plagiomnium ellipticum*
Mnium rugicum Laurer = *Plagiomnium ellipticum*
Mnium seligeri Jur. = *Plagiomnium elatum*
Mnium seligeri var. *decipiens* Warnst. = *Plagiomnium elatum*
Mnium seligeri var. *intermedium* Warnst. = *Plagiomnium ellipticum*
Mnium serphyllifolium Neck. = *Rhizomnium punctatum*
Mnium serratum Schrad. *ex* Brid. = *Mnium marginatum*
Mnium stygium (Sw.) Bruch & Schimp. = *Cinclidium stygium*
Mnium subglobosum Bruch & Schimp. = *Rhizomnium pseudopunctatum*
Mnium turbinatum Hedw. = *Bryum turbinatum*
Mnium undulatum Hedw. = *Plagiomnium undulatum*
Molendoa hornschuchiana subsp. *sendtneriana* Lindb. = *Molendoa sendtneriana*
Molendoa hornschuchiana var. *tenuinervis* (Limpr.) Mönk. = *Molendoa hornschuchiana*
Molendoa tenuinervis Limpr. = *Molendoa hornschuchiana*
Myurella apiculata (Sommerf.) Schimp. = *Myurella tenerrima*
Myurella apiculata var. *ciliata* Chał. = *Myurella julacea* var. *ciliata*
Myurella julacea var. *scabrifolia* Lindb. *ex* Limpr. = *Myurella julacea* var. *ciliata*

N

Neckera besseri fo. *depauperata* Szafran = *Neckera besseri*
Neckera besseri fo. *rotundifolia* (Hartm.) Mönk. = *Neckera besseri*
Neckera capillacea Griff. = *Dichelyma capillaceum*
Neckera complanata fo. *longifolia* (Schimp.) Mönk. = *Neckera complanata*
Neckera complanata var. *longifolia* Schimp. = *Neckera complanata*
Neckera complanata fo. *secunda* (Grav.) Mönk. = *Neckera complanata*
Neckera complanata var. *secunda* (Grav.) Velen. = *Neckera complanata*
Neckera complanata var. *tenella* Schimp. = *Neckera complanata*
Neckera crispa fo. *cavernarum* Żmuda = *Neckera crispa*
Neckera crispa fo. *compacta* Jur. = *Neckera crispa*
Neckera crispa fo. *depauperata* Szafran = *Neckera crispa*
Neckera crispa fo. *pendula* Jur. = *Neckera crispa*
Neckera crispa fo. *pseudopennata* Schlieph. *ex* Mönk. = *Neckera crispa*
Neckera curtipendula Timm *ex* Hedw. = *Antitrichia curtipendula*
Neckera dendroides (Hedw.) Timm = *Climacium dendroides*
Neckera falcata Reinw. & Hornsch. = *Dichelyma falcatum*
Neckera filiformis Hedw. = *Pterigynandrum filiforme*

Neckera fontinaloides Lindb. = *Neckera pumila*
Neckera fontinaloides var. *philippeana* (Schimp.) Mach. = *Neckera pumila*
Neckera philippeana Schimp. = *Neckera pumila*
Neckera pseudopennata (Warnst.) Schlieph. *ex* Żmuda = *Neckera crispa*
Neckera pumila var. *philippeana* (Schimp.) Milde = *Neckera pumila*
Neckera repens (Brid.) Schwägr. = *Platygyrium repens*
Neckera sciuroides (Hedw.) Müll.Hal. = *Leucodon sciuroides*
Neckera splachnoides Sm. = *Anacamptodon splachnoides*
Neckera striata (Schwägr.) Schwägr. = *Lescuraea mutabilis*
Neckera viticulosa Hedw. = *Anomodon viticulosus*
Neckera webbiana auct. eur. non (Mont.) Düll = *Neckera besseri*

O

Octodiceras fontanum (Bach.Pyl.) Lindb. = *Fissidens fontanus*
Octodiceras julianus (Savi *ex* DC.) Brid. = *Fissidens fontanus*
Oligotrichum hercynicum var. *brevifolium* I.Hagen = *Oligotrichum hercynicum*
Oligotrichum incurvum (Huds. *ex* Brid.) Lindb. = *Oligotrichum hercynicum*
Oligotrichum incurvum var. *brevifolium* (I.Hagen) I.Hagen = *Oligotrichum hercynicum*
Omalia complanata Brid. = *Neckera complanata*
Omalia trichomanoides Schmidel = *Homalia trichomanoides*
Oncophorus cerviculatus (Hedw.) Brid. = *Dicranella cerviculata*
Oncophorus falcatus (Hedw.) Brid. = *Kiaeria falcata*
Oncophorus glaucus (Hedw.) Bruch & Schimp. = *Leucobryum glaucum*
Oncophorus polycarpus (Hedw.) Brid. = *Cynodontium polycarpon*
Oncophorus squarrosus (Schrad.) Brid. = *Diobelonella palustris*
Oncophorus starkei (F.Weber & D.Mohr) Brid. = *Kiaeria starkei*
Oreoweisia bruntonii (Sm.) Milde = *Cynodontium bruntonii*
Orthodicranum montanum var. *polycladum* (Warnst.) Casares-Gil = *Orthodicranum montanum*
Orthodicranum strictum Broth. = *Orthodicranum tauricum*
Orthopyxis palustris (Hedw.) P.Beauv. = *Aulacomnium palustre*
Orthotrichum affine fo. *apendiculatum* (Schimp.) Mönk. = *Orthotrichum affine*
Orthotrichum affine var. *fastigiatum* (Bruch *ex* Brid.) Huebener = *Orthotrichum affine*
Orthotrichum affine fo. *neglectum* (Limpr.) Szafran = *Orthotrichum affine*
Orthotrichum affine var. *robustum* (Limpr.) Warnst. = *Orthotrichum affine*
Orthotrichum anomalum var. *defluens* Venturi = *Orthotrichum anomalum*
Orthotrichum anomalum var. *montanum* Venturi = *Orthotrichum anomalum*
Orthotrichum anomalum var. *saxatile* Milde = *Orthotrichum anomalum*
Orthotrichum bruchii Hornsch. *ex* Moug. & Nestl. = *Ulota bruchii*
Orthotrichum commune P.Beauv. = *Orthotrichum anomalum*
Orthotrichum crispulum (Bruch) Hornsch. *ex* Bruch & Schimp. = *Ulota crispa*
Orthotrichum crispum Hedw. = *Ulota crispa*
Orthotrichum cupulatum var. *nudum* (Dicks.) Lindb. = *Orthotrichum cupulatum*

Orthotrichum cupulatum var. *riparium* Huebener = *Orthotrichum cupulatum*
Orthotrichum cupulatum var. *rudolphianum* Schimp. = *Orthotrichum cupulatum*
Orthotrichum fallax Bruch *ex* Brid. = *Orthotrichum pumilum*
Orthotrichum hutchinsiae Sm. = *Ulota hutchinsiae*
Orthotrichum leiocarpum Bruch & Schimp. = *Orthotrichum striatum*
Orthotrichum leucomitrium Bruch *ex* Brid. = *Orthotrichum scanicum*
Orthotrichum ludwigii Brid. = *Ulota coarctata*
Orthotrichum nigritum Bruch & Schimp. = *Ulota hutchinsiae*
Orthotrichum pallens var. *parvum* Venturi = *Orthotrichum microcarpum*
Orthotrichum rhemannii (Jur.) Kindb. = *Ulota rhemannii*
Orthotrichum rupestre var. *franzonianum* (De Not. *ex* Venturi) Venturi = *Orthotrichum rupestre*
Orthotrichum rupestre fo. *rupincola* (Funck) Mönk. = *Orthotrichum rupestre*
Orthotrichum rupestre var. *rupincola* (Funck) Huebener = *Orthotrichum rupestre*
Orthotrichum rupestre var. *sturmii* (Hoppe & Hornsch.) Jur. = *Orthotrichum rupestre*
Orthotrichum saxatile Brid. = *Orthotrichum anomalum*
Orthotrichum schimperi Hammar = *Orthotrichum pumilum*
Orthotrichum speciosum fo. *montanum* Limpr. = *Orthotrichum speciosum*
Orthotrichum splachnoides Brid. = *Anacamptodon splachnoides*
Orthotrichum stramineum fo. *defluens* (Venturi) Szafran = *Orthotrichum stramineum*
Orthotrichum stramineum var. *patens* (Bruch & Brid.) Venturi = *Orthotrichum patens*
Orthotrichum stramineum fo. *vexabile* (Limpr.) Szafran = *Orthotrichum stramineum*
Orthotrichum striatum var. *rotae* (De Not.) I.Hagen = *Orthotrichum striatum*
Orthotrichum sturmii Hoppe & Hornsch. = *Orthotrichum rupestre*
Orthotrichum tenellum var. *pumilum* (Sw.) Boulay = *Orthotrichum pumilum*
Oxyrrhynchium praelongum (Hedw.) Warnst. = *Kindbergia praelonga*
Oxyrrhynchium riparioides (Hedw.) Jenn. = *Platyhypnidium riparioides*
Oxyrrhynchium rusciforme Warnst. = *Platyhypnidium riparioides*
Oxyrrhynchium swartzii (Turner) Warnst. = *Oxyrrhynchium hians*
Oxyrrhynchium tatrense (Żmuda) Żmuda = *Oxyrrhynchium hians*
Oxystegus cylindricus (Bruch *ex* Brid.) Hilp. = *Trichostomum tenuirostre*
Oxystegus sinuosus (Mitt.) Hilp. = *Didymodon sinuosus*
Oxystegus tenuirostris (Hook. & Taylor) A.J.E.Sm. = *Trichostomum tenuirostre*

P

Palustriella falcata (Brid.) Hedenäs = *Palustriella commutata* var. *falcata*
Panckovia stokesii (Turner) J.Kickx f. = *Kindbergia praelonga*
Panckowia strigosa (Hoffm. *ex* F.Weber & D.Mohr) Piré = *Eurhynchiastrum pulchellum*
Paramyurium cirrosum (Schwägr.) Loeske = *Brachythecium cirrosum*
Paramyurium germanicum (Grebe) Loeske = *Cirriphyllum tenuicaule*
Paramyurium piliferum (Hedw.) Warnst. = *Cirriphyllum piliferum*
Paramyurium velutinoides Loeske = *Sciuro-hypnum flotowianum*
Pharomitrium subsessile (Brid.) Schimp. = *Pterygoneurum subsessile*

Phascum acaulon With. = *Tortula acaulon*
Phascum acaulon var. *curvisetum* (Dicks.) Brockm. = *Tortula acaulon*
Phascum acaulon var. *elatum* (Brid.) Mönk. = *Tortula acaulon*
Phascum acaulon var. *mitraeforme* (Limpr.) Levier = *Tortula acaulon*
Phascum acaulon var. *schreberianum* (Dicks.) Jansen & Wacht. = *Tortula acaulon*
Phascum axillare Dicks. *ex* Sm. = *Pseudephemerum nitidum*
Phascum badium Voit = *Microbryum floerkeanum*
Phascum bryoides Dicks. = *Protobryum bryoides*
Phascum crispum Hedw. = *Weissia longifolia*
Phascum curvicolle Hedw. = *Microbryum curvicolle*
Phascum cuspidatum Hedw. = *Tortula acaulon*
Phascum cuspidatum var. *curvisetum* (Dicks.) Nees & Hornsch. = *Tortula acaulon*
Phascum cuspidatum var. *piliferum* (Hedw.) Hook. & Taylor = *Tortula acaulon*
Phascum floerkeanum F.Weber & D.Mohr = *Microbryum floerkeanum*
Phascum lucasianum Nees & Hornsch. = *Physcomitrella patens*
Phascum muticum Schreb. *ex* Hedw. = *Acaulon muticum*
Phascum nitidum Hedw. = *Pseudephemerum nitidum*
Phascum patens Hedw. = *Physcomitrella patens*
Phascum piliferum Hedw. = *Tortula acaulon*
Phascum recurvifolium Dicks. = *Ephemerum recurvifolium*
Phascum rostellatum Brid. = *Weissia rostellata*
Phascum subulatum Hedw. = *Pleuridium subulatum*
Phascum triquetrum Spruce = *Acaulon triquetrum*
Philonotis alpicola Jur. = *Philonotis tomentella*
Philonotis caespitosa var. *laxa* Loeske & Warnst. = *Philonotis caespitosa*
Philonotis capillaris auct. non Lindb. = *Philonotis arnellii*
Philonotis falcata auct. non (Hook.) Mitt. = *Philonotis fontana*
Philonotis fontana fo. *adpressa* (Fergusson) Mönk. = *Philonotis fontana*
Philonotis fontana var. *alpina* (Brid.) Brid. = *Philonotis fontana*
Philonotis fontana fo. *aristinervis* Mönk. = *Philonotis fontana*
Philonotis fontana var. *compacta* Schimp. = *Philonotis fontana*
Philonotis fontana fo. *laxifolia* (Mönk. *ex* Loeske) Mönk. = *Philonotis fontana*
Philonotis fontana var. *pumila* (Turner) Brid. = *Philonotis tomentella*
Philonotis marchica fo. *rivularis* (Warnst.) Mönk. = *Philonotis marchica*
Physcomitrella patens var. *anomala* Hampe *ex* Milde = *Physcomitrella patens*
Physcomitrella patens var. *lucasiana* (Nees & Hornsch.) Schimp. = *Physcomitrella patens*
Physcomitrella patens var. *megapolitana* (Schultz) Bruch & Schimp. = *Physcomitrella patens*
Physcomitrium patens (Hedw.) Mitt. = *Physcomitrella patens*
Physcomitrium patens fo. *elatum* Loeske = *Physcomitrella patens*
Physcomitrium sphaericum var. *cuspidatum* Dozy & Molk. = *Physcomitrium eurystomum*
Physcomitrium sphaericum fo. *serotinum* Huebener = *Physcomitrium eurystomum*

Physcomitrium tetragonum (Brid.) Fürnr. = *Pyramidula tetragona*
Pilotrichum antipyretica (Hedw.) Müll.Hal. = *Fontinalis antipyretica*
Pilotrichum ciliatum (Hedw.) Müll.Hal. = *Hedwigia ciliata*
Pilotrichum squamosum (Hedw.) Müll.Hal. = *Fontinalis squamosa*
Plagiopus oederi (Brid.) Limpr. = *Plagiopus oederiana*
Plagiotheciella latebricola (Bruch & Schimp.) M.Fleisch. = *Plagiothecium latebricola*
Plagiothecium densifolium (Lindb. *ex* Broth.) Limpr. = *Taxiphyllum densifolium*
Plagiothecium denticulatum var. *aptychus* (Spruce) Lees = *Plagiothecium curvifolium*
Plagiothecium denticulatum var. *curvifolium* (Schlieph. *ex* Limpr.) Meyl. = *Plagiothecium curvifolium*
Plagiothecium denticulatum var. *densum* Bruch & Schimp. = *Plagiothecium denticulatum*
Plagiothecium denticulatum var. *laetum* (Bruch & Schimp.) Lindb. = *Plagiothecium laetum*
Plagiothecium denticulatum var. *orthocladum* Warnst. = *Plagiothecium denticulatum*
Plagiothecium denticulatum var. *recurvum* Warnst. = *Plagiothecium curvifolium*
Plagiothecium denticulatum var. *ruthei* (Limpr.) Riehm. = *Plagiothecium ruthei*
Plagiothecium denticulatum var. *secundum* Lindb. = *Plagiothecium curvifolium*
Plagiothecium denticulatum var. *succulentum* (Wilson) Dixon = *Plagiothecium succulentum*
Plagiothecium denticulatum var. *undulatum* R.Ruthe *ex* Geh. = *Plagiothecium ruthei*
Plagiothecium depressum (Brid.) Spruce = *Taxiphyllum wissgrillii*
Plagiothecium elegans (Brid.) Sull. = *Pseudotaxiphyllum elegans*
Plagiothecium laetum subsp. *curvifolium* (Schlieph. *ex* Limpr.) Szafran = *Plagiothecium curvifolium*
Plagiothecium laetum fo. *julaceum* Jedl. = *Plagiothecium laetum*
Plagiothecium laetum subsp. *succulentum* (Wilson) Szafran = *Plagiothecium succulentum*
Plagiothecium laetum subsp. *succulentum* fo. *longifolium* (Mönk.) Jedl. = *Plagiothecium succulentum*
Plagiothecium lucens Saut. = *Plagiothecium cavifolium*
Plagiothecium luridum (Molendo) Molendo & Lorentz = *Plagiothecium laetum*
Plagiothecium muehlenbeckii Schimp. = *Herzogiella striatella*
Plagiothecium muellerianum Schimp. = *Isopterygiopsis muelleriana*
Plagiothecium nanum Jur. = *Pseudotaxiphyllum elegans*
Plagiothecium neglectum Mönk. = *Plagiothecium nemorale*
Plagiothecium neglectum subsp. *platyphyllum* (Mönk.) Szafran = *Plagiothecium platyphyllum*
Plagiothecium neglectum subsp. *platyphyllum* fo. *fontanum* (Mönk.) Jedl. = *Plagiothecium platyphyllum*
Plagiothecium nitellum Braithw. = *Plagiothecium denticulatum*
Plagiothecium nitidum Lindb. = *Isopterygiopsis pulchella*
Plagiothecium nitidum var. *pulchellum* (Hedw.) Lindb. *ex* Venturi & Bott. = *Isopterygiopsis pulchella*
Plagiothecium nitidum var. *suberectum* Lindb. = *Isopterygiopsis pulchella*

Plagiothecium obtusifolium (Turner) J.J.Amann = *Plagiothecium denticulatum* var. *obtusifolium*
Plagiothecium pulchellum (Hedw.) Schimp. = *Isopterygiopsis pulchella*
Plagiothecium repens Lindb. = *Herzogiella seligeri*
Plagiothecium roeseanum (Hampe) Bruch & Schimp. = *Plagiothecium cavifolium*
Plagiothecium roeseanum fo. *acuminatum* Jedl. = *Plagiothecium cavifolium*
Plagiothecium roeseanum fo. *flagellaceum* (Warnst.) Mönk. = *Plagiothecium cavifolium*
Plagiothecium roeseanum fo. *heterophyllum* (Warnst.) Jedl. = *Plagiothecium cavifolium*
Plagiothecium roeseanum fo. *propaguliferum* R.Ruthe = *Plagiothecium cavifolium*
Plagiothecium roesei Milde = *Plagiothecium cavifolium*
Plagiothecium schimperi Jur. & Milde = *Pseudotaxiphyllum elegans*
Plagiothecium schimperi var. *nanum* (Jur.) A.W.H.Walther & Molendo = *Pseudotaxiphyllum elegans*
Plagiothecium seligeri (Brid.) Lindb. = *Herzogiella seligeri*
Plagiothecium silesiacum (F.Weber & D.Mohr) Schimp. = *Herzogiella seligeri*
Plagiothecium stoloniferum Velen. = *Plagiothecium ruthei*
Plagiothecium striatellum (Brid.) Lindb. = *Herzogiella striatella*
Plagiothecium sylvaticum (Brid.) Bruch & Schimp. = *Plagiothecium nemorale*
Plagiothecium sylvaticum var. *cavifolium* Jur. = *Plagiothecium cavifolium*
Plagiothecium sylvaticum var. *myurum* Molendo = *Plagiothecium cavifolium*
Plagiothecium sylvaticum var. *roesei* Lindb. = *Plagiothecium cavifolium*
Plagiothecium sylvaticum var. *succulentum* (Wilson) Spruce = *Plagiothecium succulentum*
Plagiothecium trichodeum Stirt. = *Plagiothecium denticulatum*
Plagiothecium undulatum (Hedw.) Schimp. = *Buckiella undulata*
Plagiothecium undulatum fo. *recurvum* Jedl. = *Buckiella undulata*
Plagiothecium undulatum fo. *teres* Mönk. = *Buckiella undulata*
Plathyphyllum dilatatum Loeske = *Hygrohypnum duriusculum*
Plathyphyllum molle Loeske = *Hygrohypnum molle*
Platydictya confervoides (Brid.) H.A.Crum = *Serpoleskea confervoides*
Platydictya subtilis (Hedw.) H.A.Crum = *Serpoleskea subtilis*
Platygyrium repens fo. *gemmicladum* (Limpr.) Mönk. = *Platygyrium repens*
Platygyrium repens fo. *orthoclados* (Kindb.) Podp. = *Platygyrium repens*
Platygyrium repens fo. *rupestre* (Milde *ex* Limpr.) Mönk. = *Platygyrium repens*
Platyhypnidium rusciforme (Brid.) Podp. = *Platyhypnidium riparioides*
Platyhypnidium rusciforme fo. *complanatum* (Schulze) Podp. = *Platyhypnidium riparioides*
Platyhypnidium rusciforme fo. *inundatum* (Brid.) Podp. = *Platyhypnidium riparioides*
Platyhypnidium rusciforme fo. *prolixum* Podp. = *Platyhypnidium riparioides*
Pleuridium alternifolium (Dicks. *ex* Hedw.) Brid. = *Pleuridium subulatum*
Pleuridium nitidum (Hedw.) Rabenh. = *Pseudephemerum nitidum*
Pleuridium palustre (Bruch & Schimp.) Bruch & Schimp. = *Cleistocarpidium palustre*
Pleuridium subulatum (Hedw.) Rabenh. = *Pleuridium acuminatum*

Pleurozium brevirostrum (Brid.) Kindb. = *Loeskeobryum brevirostre*
Pleurozium calvescens (Kindb.) Kindb. = *Rhytidiadelphus subpinnatus*
Pleurozium pyrenaicum (Spruce) Kindb. = *Hylocomiastrum pyrenaicum*
Pogonatum alpinum (Hedw.) Röhl = *Polytrichastrum alpinum*
Pogonatum alpinum var. *arcticum* (Sw. *ex* Brid.) Brid. = *Polytrichastrum alpinum*
Pogonatum alpinum var. *brevifolium* (R.Br.) Brid. = *Polytrichastrum alpinum*
Pogonatum alpinum var. *septentrionale* (Brid.) Brid. = *Polytrichastrum alpinum*
Pogonatum alpinum var. *simplex* Schimp. = *Polytrichastrum alpinum*
Pogonatum nanum var. *minimum* (Crome) H.Möller = *Pogonatum aloides* var. *minimum*
Pogonatum polytrichoides (Balbis) P.Beauv. = *Pogonatum nanum*
Pogonatum urnigerum var. *crassum* Bruch & Schimp. = *Pogonatum urnigerum*
Pohlia albicans Lindb. = *Pohlia wahlenbergii*
Pohlia annotina subsp. *bulbifera* (Warnst.) Szafran = *Pohlia bulbifera*
Pohlia annotina subsp. *proligera* Dixon = *Pohlia proligera*
Pohlia arctica R.Br. = *Bryum arcticum*
Pohlia camtotrachela var. *decipiens* (Loeske) Ochyra & Szmajda = *Pohlia camptotrachela*
Pohlia carnea (Schimp.) Lindb. = *Pohlia melanodon*
Pohlia commutata (Schimp.) Lindb. = *Pohlia drummondii*
Pohlia cucullata Bruch = *Pohlia obtusifolia*
Pohlia delicatula (Mitt.) Broth. = *Pohlia melanodon*
Pohlia elongata subsp. *ambigua* Kindb. = *Pohlia elongata*
Pohlia elongata var. *humilis* (Schimp.) J.J.Amann = *Pohlia elongata*
Pohlia gracilis Hoppe & Hornsch. = *Pohlia filum*
Pohlia grandiflora H.Lindb. = *Pohlia camptotrachela*
Pohlia inclinata Sw. *ex* Brid. = *Bryum amblyodon*
Pohlia lacustris (F.Weber & D.Mohr) Schwägr. = *Bryum knowltonii*
Pohlia longiseta (Blandow *ex* Schwägr.) Huebener = *Bryum longisetum*
Pohlia minor Schleich. *ex* Schwägr. = *Pohlia elongata*
Pohlia nutans var. *anomala* Warnst. = *Pohlia nutans*
Pohlia nutans var. *bicolor* (Hoppe & Hornsch.) Hult = *Pohlia nutans*
Pohlia nutans var. *caespitosa* (Hoppe & Hornsch.) Podp. = *Pohlia nutans*
Pohlia nutans var. *longiseta* (Huebener) Delogne = *Pohlia nutans*
Pohlia nutans var. *microcarpa* Warnst. = *Pohlia nutans*
Pohlia nutans var. *pseudocucullata* (Limpr.) H.Möller = *Pohlia nutans*
Pohlia nutans var. *sphagnetorum* (Schimp.) Delogne = *Pohlia nutans*
Pohlia nutans var. *strangulata* (Nees) Delogne = *Pohlia nutans*
Pohlia nutans var. *subdenticulata* (Brid.) Delogne = *Pohlia nutans*
Pohlia nutans var. *subglobosa* R.Ruthe = *Pohlia nutans*
Pohlia nutans var. *uliginosa* (Schimp.) Herzog = *Pohlia nutans*
Pohlia paradoxa Huebener = *Bryum pallescens*
Pohlia polymorpha Hoppe & Hornsch. = *Pohlia elongata*
Pohlia polymorpha var. *brachycarpa* (Hoppe & Hornsch.) Huebener = *Pohlia elongata*
Pohlia polymorpha var. *gracilis* (Hoppe & Hornsch.) Braithw. = *Pohlia elongata*

Pohlia pulchella Hoppe & Hornsch. = *Pohlia lescuriana*
Pohlia schimperi (Müll.Hal.) A.L.Andrews = *Pohlia nutans* subsp. *schimperi*
Pohlia tenuifolia (A.Jaeger) Broth. = *Pohlia bulbifera*
Pohlia uliginosa (Brid.) Wallroth = *Bryum uliginosum*
Pohlia warnensis Huebener = *Bryum warneum*
Polla affinis (Funck) Brid. = *Plagiomnium affine*
Polla cruda (Hedw.) Brid. = *Pohlia cruda*
Polla cuspidata (Hedw.) Brid. = *Plagiomnium cuspidatum*
Polla horna (Hedw.) Brid. *ex* Loeske = *Mnium hornum*
Polla ligulata (Brid.) Brid. = *Plagiomnium undulatum*
Polla punctata Brid. = *Rhizomnium punctatum*
Polla rosea (Hedw.) Brid. = *Rhodobryum roseum*
Polla rostrata (Schrad.) Brid. = *Plagiomnium rostratum*
Polla serrata (Schrad. *ex* Brid.) Brid. *ex* Loeske = *Mnium marginatum*
Polla stellaris (Reichard *ex* Hedw.) Loeske = *Mnium stellare*
Polytrichum aloides Hedw. = *Pogonatum aloides*
Polytrichum alpestre Hoppe = *Polytrichum strictum*
Polytrichum alpinum Hedw. = *Polytrichastrum alpinum*
Polytrichum alpinum var. *arcticum* (Sw. *ex* Brid.) Wahlenb. = *Polytrichastrum alpinum*
Polytrichum alpinum var. *brevifolium* (R.Br.) Müll.Hal. = *Polytrichastrum alpinum*
Polytrichum alpinum var. *campanulatum* (Hornsch.) Müll.Hal. = *Polytrichastrum alpinum*
Polytrichum alpinum var. *septentrionale* (Brid.) Lindb. = *Polytrichastrum alpinum*
Polytrichum alpinum var. *silvaticum* (Menzies) Lindb. = *Polytrichastrum alpinum*
Polytrichum alpinum var. *simplex* (Schimp.) Limpr. = *Polytrichastrum alpinum*
Polytrichum angustatum Brid. = *Atrichum angustatum*
Polytrichum anomalum (Milde) Milde = *Polytrichastrum formosum*
Polytrichum attenuatum Menzies *ex* Brid. = *Polytrichastrum formosum*
Polytrichum attenuatum var. *pallidisetum* (Funck) H.Möller = *Polytrichastrum pallidisetum*
Polytrichum aurantiacum Hoppe *ex* Brid. = *Polytrichastrum longisetum*
Polytrichum commune var. *chałubiński* Żmuda = *Polytrichum commune*
Polytrichum commune var. *minus* Brid. = *Polytrichum commune*
Polytrichum commune fo. *nigrescens* Warnst. = *Polytrichum commune*
Polytrichum commune fo. *uliginosum* (Huebener) Mönk. = *Polytrichum commune*
Polytrichum decipiens Limpr. = *Polytrichastrum pallidisetum*
Polytrichum formosum Hedw. = *Polytrichastrum formosum*
Polytrichum formosum var. *pallidisetum* (Funck) Steud. = *Polytrichastrum pallidisetum*
Polytrichum gracile Dicks. = *Polytrichastrum longisetum*
Polytrichum gracile var. *anomalum* (Milde) I.Hagen = *Polytrichastrum longisetum*
Polytrichum gracile fo. *aquaticum* Bryhn = *Polytrichastrum longisetum*
Polytrichum juniperinum var. *alpinum* Schimp. = *Polytrichum juniperinum*
Polytrichum juniperinum var. *strictum* (Menzies *ex* Brid.) Röhl. = *Polytrichum strictum*
Polytrichum longisetum Sw. *ex* Brid. = *Polytrichastrum longisetum*

Polytrichum nanum Schreb. *ex* Hedw. = *Pogonatum nanum*
Polytrichum pallidisetum Funck = *Polytrichastrum pallidisetum*
Polytrichum perigoniale Michx. = *Polytrichum commune* var. *perigoniale*
Polytrichum piliferum var. *hoppei* (Hornsch.) H.C.Hall = *Polytrichum piliferum*
Polytrichum sexangulare Brid. = *Polytrichastrum sexangulare*
Polytrichum strictum var. *alpestre* (Hoppe) Rabenh. = *Polytrichum strictum*
Polytrichum subrotundum Menzies *ex* Brid. = *Pogonatum nanum*
Polytrichum undulatum Hedw. = *Atrichum undulatum*
Polytrichum urnigerum Hedw. = *Pogonatum urnigerum*
Polytrichum yuccaefolium Ehrh. *ex* Funck = *Polytrichum commune*
Pottia bryoides (Dicks.) Mitt. = *Protobryum bryoides*
Pottia cavifolia Ehrh. *ex* Fürnr. = *Pterygoneurum ovatum*
Pottia curvirostris Ehrh. = *Hymenostylium recurvirostrum*
Pottia davalliana (Sm.) C.E.O.Jensen = *Microbryum davallianum*
Pottia heimii (Hedw.) Hampe = *Hennediella heimii*
Pottia intermedia (Turner) Fürnr. = *Tortula modica*
Pottia lanceolata (Hedw.) Müll.Hal. = *Tortula lanceola*
Pottia lanceolata var. *intermedia* (Turner) Milde = *Tortula modica*
Pottia lanceolata var. *leucodonta* Schimp. = *Tortula lanceola*
Pottia latifolia (Schwägr.) Müll.Hal. = *Stegonia latifolia*
Pottia leucodonta Schimp. = *Tortula lanceola*
Pottia minutula (Schwägr.) Fürnr. *ex* Hampe = *Microbryum davallianum*
Pottia rufescens Müll.Hal. = *Microbryum davallianum*
Pottia starkeana (Hedw.) Müll.Hal. = *Microbryum starkeanum*
Pottia starkei Lindb. = *Microbryum starkeanum*
Pottia starkei var. *gymnostoma* Lindb. = *Microbryum davallianum*
Pottia subsessilis (Brid.) Bruch & Schimp. = *Pterygoneurum subsessile*
Pottia truncata (Hedw.) Bruch & Schimp. = *Tortula truncata*
Pottia truncata var. *major* (F.Weber & D.Mohr) Bruch & Schimp. = *Tortula modica*
Pottia truncatula Lindb. = *Tortula truncata*
Pseudephemerum axillare (Dicks. *ex* Sm.) I.Hagen = *Pseudephemerum nitidum*
Pseudoleskea atrovirens (Dicks. *ex* Brid.) Schimp. = *Pseudoleskea incurvata*
Pseudoleskea atrovirens var. *brachyclados* (Schwägr.) Schimp. = *Pseudoleskea radicosa*
Pseudoleskea catenulata (Brid. *ex* Schrad.) Schimp. = *Pseudoleskeella catenulata*
Pseudoleskea filamentosa (Dicks.) C.E.O.Jensen = *Pseudoleskea incurvata*
Pseudoleskea incurvata var. *tenella* (Limpr.) Podp. = *Pseudoleskea incurvata*
Pseudoleskea plicata (Schleich. *ex* F.Weber & D.Mohr) Kindb. = *Ptychodium plicatum*
Pseudoleskeella catenulata var. *laxifolia* (Kindb.) Żmuda = *Pseudoleskeella catenulata*
Pseudostereodon procerrimum (Molendo) M.Fleisch. = *Hypnum procerrimum*
Pterigynandrum algirianum Brid. *ex* P.Beauv. = *Rhynchostegiella tenella*
Pterigynandrum filiforme var. *decipiens* (F.Weber & D.Mohr) Limpr. = *Pterigynandrum filiforme*
Pterigynandrum longifolium Schleich. *ex* Brid. = *Anomodon longifolius*

Pterigynandrum mutabile (Brid.) Brid. = *Lescuraea mutabilis*
Pterigynandrum repens Brid. = *Platygyrium repens*
Pterigynandrum sciuroides (Hedw.) Brid. = *Leucodon sciuroides*
Pterogonium filiforme (Hedw) Schwägr. = *Pterigynandrum filiforme*
Pterogonium heteropterum (Brid.) Bruch = *Heterocladium heteropterum*
Pterogonium repens (Brid.) Schwägr. = *Platygyrium repens*
Pterogonium striatum Schwägr. = *Lescuraea mutabilis*
Pterygoneurum cavifolium Jur. = *Pterygoneurum ovatum*
Pterygoneurum pusillum C.E.O.Jensen = *Pterygoneurum ovatum*
Pterygophyllum lucens (Hedw.) Brid. = *Hookeria lucens*
Ptilium cristacastrensis fo. *gracilescens* (Jaap) Podp. = *Ptilium cristacastrensis*
Ptychodium plicatum fo. *homomalum* Limpr. = *Ptychodium plicatum*
Ptychodium pyrenaicum Laz. = *Hylocomiastrum pyrenaicum*
Ptychodium trisulcatum J.J.Amann = *Sciuro-hypnum glaciale*
Ptychostomum caespiticium Brid. = *Bryum uliginosum*
Ptychostomum cernuum (Hedw.) Hornsch. = *Bryum uliginosum*
Pylaisia chrysea (Schwägr.) Venturi & Bott. = *Orthothecium chryseon*
Pylaisia intricata (Hartm.) Venturi & Bott. = *Orthothecium intricatum*
Pylaisia polyantha fo. *crispata* Podp. = *Pylaisia polyantha*
Pylaisia polyantha fo. *longicuspis* (Lindb. & Arnell) Conard = *Pylaisia polyantha*
Pylaisia rufescens (Dicks. *ex* Brid.) De Not. = *Orthothecium rufescens*
Pylaisiella polyantha (Hedw.) Grout = *Pylaisia polyantha*

R

Racomitrium aciculare (Hedw.) Brid. = *Codriophorus acicularis*
Racomitrium affine (Schleich. *ex* F.Weber & D.Mohr) Lindb. = *Bucklandiella affinis*
Racomitrium aquaticum (Brid. *ex* Schrad.) Brid. = *Codriophorus aquaticus*
Racomitrium canescens (Hedw.) Brid. = *Niphotrichum canescens*
Racomitrium canescens var. *arenicola* Torka = *Niphotrichum canescens*
Racomitrium canescens fo. *epilosum* Chał. = *Niphotrichum ericoides*
Racomitrium canescens var. *epilosum* (Chał.) Chał. = *Niphotrichum ericoides*
Racomitrium canescens fo. *ericoides* (Brid.) Chał. = *Niphotrichum ericoides*
Racomitrium canescens var. *ericoides* (Brid.) Hampe = *Niphotrichum ericoides*
Racomitrium canescens fo. *prolixum* (Bruch & Schimp.) Chał. = *Niphotrichum canescens*
Racomitrium canescens fo. *vulgare* Chał. = *Niphotrichum canescens*
Racomitrium cataractarum Brid. = *Codriophorus aquaticus*
Racomitrium elongatum Ehrh. *ex* Frisvoll = *Niphotrichum elongatum*
Racomitrium ericoides (Brid.) Brid. = *Niphotrichum ericoides*
Racomitrium fasciculare (Hedw.) Brid. = *Codriophorus fascicularis*
Racomitrium fontinaloides (Hedw.) Brid. = *Cinclidotus fontinaloides*
Racomitrium heterostichum (Hedw.) Brid. = *Bucklandiella heterosticha*
Racomitrium heterostichum var. *affine* (Schleich. *ex* F.Weber & D.Mohr) Lesq.
= *Bucklandiella affinis*

Racomitrium heterostichum fo. *obtusum* (Brid.) Boulay = *Bucklandiella obtusa*
Racomitrium heterostichum fo. *repens* Chał. = *Bucklandiella sudetica*
Racomitrium heterostichum var. *repens* (Chał.) Chał. = *Bucklandiella sudetica*
Racomitrium heterostichum var. *tatrense* (Chał.) Chał. = *Bucklandiella sudetica*
Racomitrium hypnoides Lindb. = *Racomitrium lanuginosum*
Racomitrium macounii Kindb. = *Bucklandiella macounii* subsp. *macounii*
Racomitrium macounii subsp. *alpinum* (E.Lawton) Frisvoll = *Bucklandiella macounii* subsp. *alpinum*
Racomitrium microcarpon (Hedw.) Brid. = *Bucklandiella microcarpa*
Racomitrium obtusum (Brid.) Brid. = *Bucklandiella obtusa*
Racomitrium patens (Dicks. *ex* Hedw.) Huebener = *Dryptodon patens*
Racomitrium protensum (Schultz) Bruch & Schimp. = *Codriophorus aquaticus*
Racomitrium protensum (Schultz) Huebener = *Codriophorus aquaticus*
Racomitrium ramulosum Lindb. = *Bucklandiella microcarpa*
Racomitrium sudeticum (Funck) Bruch & Schimp. = *Bucklandiella sudetica*
Racomitrium sudeticum var. *repens* (Chał.) Chał. = *Bucklandiella sudetica*
Rhabdoweisia denticulata Bruch & Schimp. = *Rhabdoweisia crispata*
Rhabdoweisia schistii (F.Weber & D.Mohr) Bruch & Schimp. = *Cnestrum schistii*
Rhabdoweisia striata (Schrad.) Lindb. = *Rhabdoweisia fugax*
Rhodobryum spathulatum (Hornsch.) Pócs = *Rhodobryum ontariense*
Rhynchostegiella algiriana (Brid. *ex* P.Beauv.) Warnst. = *Rhynchostegiella tenella*
Rhynchostegiella curviseta (Brid.) Limpr. = *Rhynchostegiella teneriffae*
Rhynchostegiella jacquinii (Garov.) Limpr. = *Rhynchostegiella teneriffae*
Rhynchostegium densifolium (Lindb. *ex* Broth.) Paris = *Taxiphyllum densifolium*
Rhynchostegium depressum (Brid.) Schimp. = *Taxiphyllum wissgrillii*
Rhynchostegium elegans (Brid.) Lindb. = *Pseudotaxiphyllum elegans*
Rhynchostegium murale fo. *complanatum* (Schimp.) Podp. = *Rhynchostegium murale*
Rhynchostegium murale fo. *julaceum* (Schimp.) Podp. = *Rhynchostegium murale*
Rhynchostegium piliferum (Hedw.) De Not. = *Cirriphyllum piliferum*
Rhynchostegium rusciforme (Weiss *ex* Brid.) Schimp. = *Platyhypnidium riparioides*
Rhynchostegium speciosum (Brid.) Venturi & Bott. = *Oxyrrhynchium speciosum*
Rhynchostegium striatum (Schreb. *ex* Hedw.) De Not. = *Eurhynchium striatum*
Rhynchostegium strigosum (Hoffm. *ex* F.Weber & D.Mohr) De Not. = *Eurhynchiastrum pulchellum*
Rhynhostegium velutinoides Delogne = *Sciuro-hypnum flotowianum*
Rhytidiadelphus calvescens (Kindb.) Broth. = *Rhytidiadelphus subpinnatus*
Rhytidiadelphus squarrosus subsp. *calvescens* (Kindb.) Giacom. = *Rhytidiadelphus subpinnatus*

S

Saelania caesia (P.Beauv.) Lindb. = *Saelania glaucescens*
Sanionia fertilis (Sendtn.) Loeske = *Hypnum fertile*
Sarmentypnum sarmentosum (Wahlenb.) Tuom. & T.J.Kop. = *Warnstorfia sarmentosa*

Schistidium alpicola (Hedw.) Limpr. = *Schistidium agassizii*
Schistidium alpicola var. *rivulare* (Brid.) Limpr. = *Schistidium rivulare*
Schistidium apocarpum var. *atrofuscum* (Schimp.) C.E.O.Jensen = *Schistidium atrofuscum*
Schistidium atrofuscum fo. *decipiens* Limpr. = *Schistidium atrofuscum*
Schistidium carpaticum (Żmuda) Żmuda = *Guembelia tergestina*
Schistidium ciliatum (Hedw.) Brid. = *Hedwigia ciliata*
Schistidium pulvinatum auct. non (Hedw.) Brid. = *Schistidium flaccidum*
Schistidium pulvinatum var. *carpaticum* (Żmuda) Ochyra & Szmajda = *Guembelia tergestina*
Schistidium singarense (Schifn.) Laz. = *Schistidium helveticum*
Schistidium sphaericum var. *carpaticum* Żmuda = *Guembelia tergestina*
Schistidium subsessile (Brid.) Brid. = *Pterygoneurum subsessile*
Schistostega osmundacea D.Mohr = *Schistostega pennata*
Scleropodium ornellanum (Molendo) Lorentz = *Sciuro-hypnum ornellanum*
Scleropodium purum (Hedw.) Limpr. = *Pseudoscleropodium purum*
Scleropodium purum fo. *depauperatum* Podp. = *Pseudoscleropodium purum*
Scorpidium scorpioides fo. *fluitans* C.E.O.Jensen = *Scorpidium scorpioides*
Scorpidium scorpioides fo. *gracile* C.E.O.Jensen = *Scorpidium scorpioides*
Scorpidium scorpioides fo. *julaceum* (Sanio) Mönk. = *Scorpidium scorpioides*
Scorpidium scorpioides var. *submersum* Torka = *Scorpidium scorpioides*
Scorpidium scorpioides var. *turgescens* (T.Jensen) Mönk. = *Pseudocalliergon turgescens*
Scorpidium trifarium (F.Weber & D.Mohr) Paul = *Pseudocalliergon trifarium*
Scorpidium turgescens (T.Jensen) Loeske = *Pseudocalliergon turgescens*
Scorpiurium strigosum Loeske & M.Fleisch. = *Eurhynchiastrum pulchellum*
Seligeria pusilla var. *acutifolia* (Lindb.) Schimp. = *Seligeria acutifolia*
Seligeria pusilla var. *longiseta* (Lindb.) Dixon = *Seligeria acutifolia*
Seligeria setacea Lindb. = *Seligeria recurvata*
Seligeria tristicha (Brid.) Bruch & Schimp. = *Seligeria trifaria*
Serpoleskea sprucei (Bruch) Loeske = *Platydictya jungermannioides*
Skitophyllum fontanum Bach.Pyl. = *Fissidens fontanus*
Sphaerangium muticum (Schreb. *ex* Hedw.) Schimp. = *Acaulon muticum*
Sphaerangium triquetrum (Spruce) Schimp. = *Acaulon triquetrum*
Sphagnum acutifolium Schrad. = *Sphagnum capillifolium*
Sphagnum acutifolium var. *alpinum* Milde = *Sphagnum capillifolium*
Sphagnum acutifolium var. *deflexum* Schimp. = *Sphagnum capillifolium*
Sphagnum acutifolium var. *fuscum* Schimp. = *Sphagnum fuscum*
Sphagnum acutifolium var. *luridum* Huebener = *Sphagnum subnitens*
Sphagnum acutifolium var. *purpureum* Schimp. = *Sphagnum capillifolium*
Sphagnum acutifolium var. *quinquefarium* Lindb. = *Sphagnum quinquefarium*
Sphagnum acutifolium var. *robustum* Russow = *Sphagnum russowii*
Sphagnum acutifolium var. *roseum* Limpr. = *Sphagnum capillifolium*
Sphagnum acutifolium var. *schliephackeanum* Warnst. = *Sphagnum capillifolium*
Sphagnum acutifolium var. *tenellum* Schimp. = *Sphagnum rubellum*

Sphagnum acutifolium var. *versicolor* Warnst. = *Sphagnum capillifolium*
Sphagnum acutiforme Schlieph. *ex* Warnst. = *Sphagnum rubellum*
Sphagnum acutiforme var. *robustum* Warnst. = *Sphagnum russowii*
Sphagnum amblyphyllum (Russow) Warnst. = *Sphagnum flexuosum*
Sphagnum apiculatum H.Lindb. = *Sphagnum fallax*
Sphagnum apiculatum subsp. *amblyphyllum* (Russow) Szafran = *Sphagnum flexuosum*
Sphagnum apiculatum var. *amblyphyllum* Russow = *Sphagnum flexuosum*
Sphagnum apiculatum var. *majus* Ångstr. *ex* Szafran = *Sphagnum fallax*
Sphagnum apiculatum subsp. *parvifolium* (Warnst.) Szafran = *Sphagnum angustifolium*
Sphagnum apiculatum var. *parvulum* (Warnst.) Szafran = *Sphagnum fallax*
Sphagnum apiculatum var. *robustum* (Breidl.) Szafran = *Sphagnum fallax*
Sphagnum auriculatum Schimp. = *Sphagnum denticulatum*
Sphagnum bavaricum Warnst. = *Sphagnum denticulatum*
Sphagnum capillaceum (Weiss) Schrank = *Sphagnum capillifolium*
Sphagnum compactum var. *imbricatum* Warnst. = *Sphagnum compactum*
Sphagnum compactum var. *squarrosum* (Russow) Warnst. = *Sphagnum compactum*
Sphagnum compactum var. *subsquarrosum* Warnst. = *Sphagnum compactum*
Sphagnum contortum var. *platyphyllum* Warnst. = *Sphagnum platyphyllum*
Sphagnum cuspidatum fo. *falcatum* Schimp. *ex* Szafran = *Sphagnum cuspidatum*
Sphagnum cuspidatum var. *fallax* H.Klinggr. = *Sphagnum fallax*
Sphagnum cuspidatum var. *majus* Russow = *Sphagnum majus*
Sphagnum cuspidatum fo. *plumosum* (Nees & Hornsch.) Szafran = *Sphagnum cuspidatum*
Sphagnum cuspidatum fo. *plumulosum* (Schimp.) Szafran = *Sphagnum cuspidatum*
Sphagnum cuspidatum var. *riparium* (Ångstr.) Schlieph. = *Sphagnum riparium*
Sphagnum cuspidatum var. *speciosum* Russow = *Sphagnum cuspidatum*
Sphagnum cuspidatum fo. *submersum* (Schimp.) Szafran = *Sphagnum cuspidatum*
Sphagnum cymbifolium (Ehrh.) Hedw. = *Sphagnum palustre*
Sphagnum cymbifolium var. *compactum* (Lam. & DC.) Schultz = *Sphagnum magellanicum*
Sphagnum cymbifolium var. *glaucescens* C.E.O.Jensen = *Sphagnum palustre*
Sphagnum dusenii (C.E.O.Jensen) Russow & Warnst. = *Sphagnum majus*
Sphagnum dusenii fo. *drepanocladus* Szafran = *Sphagnum majus*
Sphagnum dusenii fo. *leptocladus* (Warnst.) Szafran = *Sphagnum majus*
Sphagnum dusenii fo. *macrocephalum* (Warnst.) Szafran = *Sphagnum majus*
Sphagnum fimbriatum fo. *robustum* (Braithw. *ex* Warnst.) Szafran = *Sphagnum fimbriatum*
Sphagnum fimbriatum fo. *tenue* (Grav. *ex* Röll) Szafran = *Sphagnum fimbriatum*
Sphagnum fimbriatum var. *tenue* Grav. *ex* Röll = *Sphagnum fimbriatum*
Sphagnum fimbriatum fo. *validius* (Cardot) Szafran = *Sphagnum fimbriatum*
Sphagnum fulvum Sendtn. = *Sphagnum lindbergii*
Sphagnum fuscum var. *fuscescens* Warnst. = *Sphagnum fuscum*
Sphagnum girgensohnii fo. *homocladus* Szafran = *Sphagnum girgensohnii*
Sphagnum girgensohnii fo. *microcephalum* (Warnst.) Szafran = *Sphagnum girgensohnii*
Sphagnum girgensohnii fo. *robustum* (Warnst.) Szafran = *Sphagnum girgensohnii*
Sphagnum girgensohnii var. *robustum* Warnst. = *Sphagnum russowii*

Sphagnum girgensohnii var. *roseum* (Limpr.) Limpr. = *Sphagnum russowii*
Sphagnum girgensohnii var. *stachyodes* Russow = *Sphagnum girgensohnii*
Sphagnum gravetii Russow = *Sphagnum denticulatum*
Sphagnum intermedium (Warnst.) Russow = *Sphagnum capillifolium*
Sphagnum klinggraeffii Röll = *Sphagnum palustre*
Sphagnum laricinum (Wilson) Spruce *ex* Lindb. = *Sphagnum contortum*
Sphagnum latifolium Hedw. = *Sphagnum palustre*
Sphagnum laxifolium Müll.Hal. = *Sphagnum cuspidatum*
Sphagnum laxifolium var. *monocladum* (H.Klinggr.) H.Klinggr. = *Sphagnum cuspidatum*
Sphagnum lescurii Sull. & Lesq. = *Sphagnum denticulatum*
Sphagnum limprichtii Röll = *Sphagnum obtusum*
Sphagnum lindbergii fo. *macrophyllum* (Warnst.) Szafran = *Sphagnum lindbergii*
Sphagnum lindbergii fo. *mesophyllum* (Warnst.) Szafran = *Sphagnum lindbergii*
Sphagnum lindbergii fo. *plumosum* (Warnst.) Szafran = *Sphagnum lindbergii*
Sphagnum medium Limpr. = *Sphagnum magellanicum*
Sphagnum molluscoides Müll.Hal. = *Sphagnum molle*
Sphagnum molluscum Bruch = *Sphagnum tenellum*
Sphagnum monocladum (H.Klinggr.) Warnst. = *Sphagnum cuspidatum*
Sphagnum muelleri Schimp. = *Sphagnum molle*
Sphagnum nemoreum Scop. = *Sphagnum capillifolium*
Sphagnum nemoreum var. *leptocladum* (Limpr.) Pilous = *Sphagnum capillifolium*
Sphagnum nemoreum subsp. *plumulosum* (Röll) Bott. = *Sphagnum subnitens*
Sphagnum obtusum var. *fluitans* Warnst. = *Sphagnum obtusum*
Sphagnum obtusum var. *recurviforme* Warnst. = *Sphagnum obtusum*
Sphagnum obtusum var. *riparioides* (Warnst.) Warnst. = *Sphagnum obtusum*
Sphagnum palustre var. *papillosum* Schimp. = *Sphagnum papillosum*
Sphagnum palustre var. *subbicolor* Hampe = *Sphagnum centrale*
Sphagnum parvifolium (Sendtn. *ex* Warnst.) Warnst. = *Sphagnum angustifolium*
Sphagnum plumulosum Röll = *Sphagnum subnitens*
Sphagnum pycnocladum Müll.Hal. = *Sphagnum wulfianum*
Sphagnum recurvum auct. non P.Beauv. = *Sphagnum fallax*
Sphagnum recurvum var. *amblyphyllum* (Russow) Warnst. = *Sphagnum flexuosum*
Sphagnum recurvum var. *majus* (Ångstr. *ex* Warnst.) Warnst. = *Sphagnum flexuosum*
Sphagnum recurvum var. *mucronatum* (Russow) Warnst. = *Sphagnum fallax*
Sphagnum recurvum var. *obtusum* (Warnst.) Warnst. = *Sphagnum obtusum*
Sphagnum recurvum var. *roellii* Schlieph. = *Sphagnum angustifolium*
Sphagnum recurvum var. *tenue* H.Klinggr. = *Sphagnum angustifolium*
Sphagnum rigidum (Nees & Hornsch.) Schimp. = *Sphagnum compactum*
Sphagnum rigidum var. *compactum* (Lam. & DC.) Schimp. = *Sphagnum compactum*
Sphagnum rigidum var. *squarrosum* Milde = *Sphagnum compactum*
Sphagnum riparium var. *corypheum* Russow = *Sphagnum riparium*
Sphagnum riparium var. *speciosum* (Russow) C.E.O.Jensen = *Sphagnum riparium*
Sphagnum riparium var. *submersum* Warnst. = *Sphagnum riparium*

Sphagnum robustum (Warnst.) Röll = *Sphagnum russowii*
Sphagnum rubellum subsp. *fuscum* (H.Klinggr.) Szafran = *Sphagnum fuscum*
Sphagnum rubellum var. *subtile* (Russow) J.J.Amann = *Sphagnum rubellum*
Sphagnum rufescens (Nees & Hornsch.) Warnst. = *Sphagnum denticulatum*
Sphagnum speciosum (Russow) H.Klinggr. = *Sphagnum riparium*
Sphagnum squarrosulum (Schimp.) Lesq. = *Sphagnum teres*
Sphagnum squarrosum fo. *imbricatum* (Schimp.) Szafran = *Sphagnum squarrosum*
Sphagnum squarrosum fo. *spectabile* (Russow) Szafran = *Sphagnum squarrosum*
Sphagnum squarrosum var. *squarrosulum* Schimp. = *Sphagnum teres*
Sphagnum squarrosum fo. *subsquarrosum* Russow = *Sphagnum squarrosum*
Sphagnum squarrosum var. *teres* Schimp. = *Sphagnum teres*
Sphagnum strictum Sull. = *Sphagnum girgensohnii*
Sphagnum subbicolor auct. non Hampe = *Sphagnum centrale*
Sphagnum subbicolor Hampe = *Sphagnum palustre*
Sphagnum subsecundum var. *auriculatum* (Schimp.) Schlieph. = *Sphagnum denticulatum*
Sphagnum subsecundum var. *bavaricum* (Warnst.) Ăberg = *Sphagnum inundatum*
Sphagnum subsecundum var. *contortum* (Schultz) Huebener = *Sphagnum contortum*
Sphagnum subsecundum var. *inundatum* (Russow) C.E.O.Jensen = *Sphagnum inundatum*
Sphagnum subsecundum var. *isophyllum* Russow = *Sphagnum denticulatum*
Sphagnum subsecundum var. *platyphyllum* (Lindb.) Cardot = *Sphagnum platyphyllum*
Sphagnum subsecundum var. *rufescens* (Nees & Hornsch.) Huebener = *Sphagnum denticulatum*
Sphagnum subtile (Russow) Warnst. = *Sphagnum capillifolium*
Sphagnum tenellum (Brid.) Brid. = *Sphagnum rubellum*
Sphagnum tenerum Sull. & Lesq. *ex* Sull. = *Sphagnum capillifolium* var. *tenerum*
Sphagnum tenerum Warnst. = *Sphagnum capillifolium*
Sphagnum teres fo. *imbricatum* (Schimp.) Warnst. = *Sphagnum teres*
Sphagnum teres fo. *squarrosulum* (Schimp.) Warnst. = *Sphagnum teres*
Sphagnum warnstorfianum Du Rietz = *Sphagnum warnstorfii*
Splachnum angustatum Hedw. = *Tetraplodon angustatus*
Splachnum ovatum Dicks. *ex* Hedw. = *Splachnum sphaericum*
Splachnum pedunculatum Lindb. = *Splachnum sphaericum*
Sporledera palustris (Bruch & Schimp.) Schimp. = *Cleistocarpidium palustre*
Stereodon abietinus (Hedw.) Brid. = *Abietinella abietina*
Stereodon arcticus (Sommerf.) Mitt. = *Hygrohypnum smithii*
Stereodon arcuatus Lindb. = *Hypnum lindbergii*
Stereodon bambergeri (Schimp.) Lindb. = *Hypnum bambergeri*
Stereodon blandowii (F.Weber & D.Mohr) Brid. = *Helodium blandowii*
Stereodon callichrous (Brid.) Braithw. = *Hypnum callichroum*
Stereodon chryseus (Schwägr.) Mitt. = *Orthothecium chryseon*
Stereodon chrysophyllus (Brid.) Brid. = *Campyliadelphus chrysophyllus*
Stereodon cupressiformis (Hedw.) Brid. *ex* Mitt. = *Hypnum cupressiforme*
Stereodon cuspidatus (Hedw.) Brid. = *Calliergonella cuspidata*

Stereodon denticulatus (Hedw.) Mitt. = *Plagiothecium denticulatum*
Stereodon fastigiatus (Brid.) Braithw. = *Hypnum recurvatum*
Stereodon fastigiatus var. *sauteri* (Schimp.) Lindb. = *Hypnum sauteri*
Stereodon fertilis (Sendtn.) Lindb. = *Hypnum fertile*
Stereodon hamulosus (Schimp.) Lindb. = *Hypnum hamulosum*
Stereodon imponens (Hedw.) Brid. *ex* Mitt. = *Hypnum imponens*
Stereodon incurvatus (Schrad. *ex* Brid.) Lindb. & Arnell = *Homomallium incurvatum*
Stereodon lindbergii (Mitt.) Braithw. = *Hypnum lindbergii*
Stereodon lycopodioides (Brid.) Brid. = *Pseudocalliergon lycopodioides*
Stereodon nitens (Hedw.) Brid. = *Tomentypnum nitens*
Stereodon pallescens (Hedw.) Mitt. = *Hypnum pallescens*
Stereodon palustris Brid. *ex* Mitt. = *Hygrohypnum luridum*
Stereodon polyanthos (Hedw.) Mitt. = *Pylaisia polyantha*
Stereodon procerrimus Baumgartner = *Hypnum procerrimum*
Stereodon pulchellus (Griff.) Mitt. = *Isopterygiopsis pulchella*
Stereodon reptilis (Michx.) Mitt. = *Hypnum pallescens*
Stereodon richardsonii Mitt. = *Calliergon richardsonii*
Stereodon rufescens (Dicks. *ex* Brid.) Mitt. = *Orthothecium rufescens*
Stereodon sauteri (Schimp.) H.Möller = *Hypnum sauteri*
Stereodon serpens (Hedw.) Brid. = *Amblystegium serpens*
Stereodon starkei (Brid.) Brid. = *Sciuro-hypnum starkei*
Stereodon stellatus (Hedw.) Brid. = *Campylium stellatum*
Stereodon stramineus (Dicks. *ex* Brid.) Brid. = *Straminergon stramineum*
Stereodon subrufus Lindb. = *Orthothecium intricatum*
Stereodon sylvaticus (Brid.) Brid. = *Plagiothecium nemorale*
Stereodon uncinatus (Hedw.) Brid. = *Sanionia uncinata*
Stereodon undulatus (Hedw.) Mitt. = *Buckiella undulata*
Stereodon vaucheri (Lesq.) Lindb. *ex* Broth. = *Hypnum vaucheri*
Stereodon vernicosus Mitt. = *Hamatocaulis vernicosus*
Stokesiella praelonga (Hedw.) H.Rob. = *Kindbergia praelonga*
Streblotrichum convolutum (Hedw.) P.Beauv. = *Barbula convoluta*
Streblotrichum croceum (Brid.) Loeske = *Barbula crocea*
Streblotrichum enderesii (Garov.) Loeske = *Barbula enderesii*
Stroemia gymnostoma (Bruch *ex* Brid.) I.Hagen = *Orthotrichum gymnostomum*
Syntrichia intermedia Brid. = *Syntrichia montana*
Syntrichia subulata (Hedw.) F.Weber & D.Mohr = *Tortula subulata*
Systegium crispum (Hedw.) Schimp. = *Weissia longifolia*

T

Taxiphyllum densifolium var. *concavum* (Broth.) Podp. = *Taxiphyllum densifolium*
Taxiphyllum depressum (Brid.) Reimers = *Taxiphyllum wissgrillii*
Tayloria serrata var. *flagellaris* (Brid.) Bruch & Schimp. = *Tayloria serrata*
Tayloria serrata var. *tenuis* (Dicks.) Bruch & Schimp. = *Tayloria tenuis*

Tetraphis browniana (Dicks.) Grev. = *Tetrodontium brownianum*
Tetraphis ovata Funck = *Tetrodontium brownianum*
Tetraplodon bryoides Lindb. = *Tetraplodon mnioides*
Tetraplodon bryoides var. *breverianus* (Hedw.) I.Hagen = *Tetraplodon mnioides*
Tetraplodon bryoides var. *cavifolius* (Schimp.) H.Möller = *Tetraplodon mnioides*
Tetrodontium brownianum var. *repandum* (Funck) Limpr. = *Tetrodontium repandum*
Tetrodontium brownianum var. *rigidum* (R.Hedw.) Jur. = *Tetrodontium brownianum*
Tetrodontium varium Lindb. = *Tetrodontium brownianum*
Thamnium alopecurum (Hedw.) Schimp. = *Thamnobryum alopecurum*
Thuidium abietinum (Hedw.) Schimp. = *Abietinella abietina*
Thuidium abietinum var. *gracile* J.J.Amann = *Abietinella abietina*
Thuidium abietinum subsp. *histricosum* (Mitt.) Kindb. = *Abietinella hystricosa*
Thuidium abietinum var. *histricosum* (Mitt.) Loeske = *Abietinella hystricosa*
Thuidium blandowii (F.Weber & D.Mohr) Schimp. = *Helodium blandowii*
Thuidium decipiens De Not. = *Palustriella decipiens*
Thuidium delicatulum var. *dubiosum* (Warnst.) Dism. = *Thuidium delicatulum*
Thuidium dubiosum Warnst. = *Thuidium delicatulum*
Thuidium erectum Duby = *Thuidium delicatulum*
Thuidium histricosum Mitt. = *Abietinella hystricosa*
Thuidium lanatum (Strøm *ex* Brid.) I.Hagen = *Helodium blandowii*
Thuidium minutulum (Hedw.) Schimp. = *Cyrto-hypnum minutulum*
Thuidium philiberti fo. *pseudotamarisci* (Limpr.) H.Möller = *Thuidium philibertii*
Thuidium recognitum var. *delicatulum* (Hedw.) Warnst. = *Thuidium delicatulum*
Thuidium recognitum subsp. *philibertii* (Limpr.) Dixon = *Thuidium philibertii*
Thuidium tamariscifolium Lindb. = *Thuidium tamariscinum*
Timmia megapolitana fo. *brevifolia* (I.G.Borszczow & G.G.Borszczow) Limpr. = *Timmia megapolitana*
Timmia megapolitana var. *brevifolia* I.G.Borszczow & G.G.Borszczow = *Timmia megapolitana*
Timmia neglecta Warnst. = *Timmia megapolitana*
Tomentypnum nitens var. *involutum* (Limpr.) C.E.O.Jensen = *Tomentypnum nitens*
Tortella cylindrica (Bruch *ex* Brid.) Loeske = *Trichostomum tenuirostre*
Tortella squarrosa (Brid.) Limpr. = *Pleurochaete squarrosa*
Tortella tortuosa var. *brevifolia* Breidl. = *Tortella densa*
Tortella tortuosa fo. *fragilifolia* (Jur.) Mönk. = *Tortella tortuosa*
Tortula aciphylla (Bruch & Schimp.) Hartm. = *Syntrichia norvegica*
Tortula alpina (Brid.) Arn. = *Syntrichia sinensis*
Tortula angustata Mitt. = *Tortula subulata* var. *angustata*
Tortula flavovirens (Bruch) Fior.-Mazz. = *Tortella flavovirens*
Tortula intermedia (Brid.) De Not. = *Syntrichia montana*
Tortula laevipila (Brid.) Schwägr. = *Syntrichia laevipila*
Tortula latifolia Bruch *ex* Hartm. = *Syntrichia latifolia*
Tortula montana Mitt = *Syntrichia montana*

Tortula muralis subsp. *aestiva* (Brid. *ex* Hedw.) Meyl. = *Tortula muralis* var. *aestiva*
Tortula muralis fo. *incana* Sapjegin = *Tortula muralis*
Tortula muralis subsp. *lingulata* (Lindb.) Szafran = *Tortula muralis*
Tortula muralis subsp. *obtusifolia* (Schwägr.) Culm. = *Tortula muralis*
Tortula norvegica (F.Weber) Lindb. = *Syntrichia norvegica*
Tortula papillosa Wilson = *Syntrichia papillosa*
Tortula pulvinata (Jur.) Limpr. = *Syntrichia virescens*
Tortula rigidula (Hedw.) Lindb. = *Didymodon rigidulus*
Tortula rufa (Lorentz) Braithw. = *Didymodon asperifolius*
Tortula ruraliformis (Besch.) Ingham = *Syntrichia ruraliformis*
Tortula ruralis (Hedw.) P.Gaertn., B.Mey. & Scherb. = *Syntrichia ruralis*
Tortula ruralis var. *arenicola* Braithw. = *Syntrichia ruraliformis*
Tortula ruralis subsp. *calcicola* (J.J.Amann) Giacom. = *Syntrichia calcicola*
Tortula ruralis var. *calcicola* (J.J.Amann) Barkman = *Syntrichia calcicola*
Tortula ruralis subsp. *norvegica* (F.Weber) Dixon = *Syntrichia norvegica*
Tortula ruralis subsp. *ruraliformis* (Besch.) Dixon = *Syntrichia ruraliformis*
Tortula sinensis (Müll.Hal.) Broth. = *Syntrichia sinensis*
Tortula sinuosa Mitt. = *Didymodon sinuosus*
Tortula subulata subsp. *angustata* (Schimp.) Kindb. = *Tortula subulata* var. *angustata*
Tortula subulata fo. *dentata* Boulay = *Tortula subulata*
Tortula subulata subsp. *mucronifolia* (Schwägr.) Kindb. = *Tortula mucronifolia*
Tortula velenovskyi Schiffn. = *Hilpertia velenovskyi*
Tortula virescens (De Not.) De Not. = *Syntrichia virescens*
Trematodon elongatus I.Hagen = *Trematodon ambiguus*
Trichostomum aeruginosum (Sm.) Lindb. = *Gymnostomum aeruginosum*
Trichostomum bruntonii (Sm.) De Not. = *Cynodontium bruntonii*
Trichostomum calcareum (Nees & Hornsch.) Lindb. = *Gymnostomum calcareum*
Trichostomum canescens Hedw. = *Niphotrichum canescens*
Trichostomum cernuum (Huebener) Lindb. = *Tortula cernua*
Trichostomum cordatum (Jur.) Milde = *Didymodon cordatus*
Trichostomum cylindricum (Brid.) Müll.Hal. = *Trichostomum tenuirostre*
Trichostomum cylindricum Hedw. = *Trichodon cylindricus*
Trichostomum ericoides (Hedw.) Brid. = *Niphotrichum ericoides*
Trichostomum fasciculare Hedw. = *Codriophorus fascicularis*
Trichostomum flavovirens Bruch = *Tortella flavovirens*
Trichostomum flexicaule (Schwägr.) Bruch & Schimp. = *Ditrichum flexicaule*
Trichostomum heterostichum Hedw. = *Bucklandiella heterosticha*
Trichostomum latifolium (Hedw.) Schwägr. = *Tortula euryphylla*
Trichostomum luridum (Hornsch.) Spruce = *Didymodon luridus*
Trichostomum microcarpon Hedw. = *Bucklandiella microcarpa*
Trichostomum pallidum Hedw. = *Ditrichum pallidum*
Trichostomum patens (Dicks. *ex* Hedw.) D.Mohr = *Dryptodon patens*
Trichostomum pulvinatum (Hedw.) F.Weber & D.Mohr = *Dryptodon pulvinatus*

Trichostomum purpureum (Hedw.) De Not. = *Ceratodon purpureus*
Trichostomum pusillum (Hedw.) Sm. = *Ditrichum pusillum*
Trichostomum recurvirostre (Hedw.) Lindb. = *Bryoerythrophyllum recurvirostrum*
Trichostomum reflexum var. *gymnostomum* Lindb. = *Gyroweisia tenuis*
Trichostomum rigidulum (Hedw.) Turner = *Didymodon rigidulus*
Trichostomum rubellum Rabenh. = *Bryoerythrophyllum recurvirostrum*
Trichostomum rupestre (Schleich. *ex* Schwägr.) Milde = *Gymnostomum aeruginosum*
Trichostomum sciuroides (Hedw.) F.Weber & D.Mohr = *Leucodon sciuroides*
Trichostomum tophaceum Brid. = *Didymodon tophaceus*
Trichostomum tortile Schrad. = *Ditrichum pusillum*
Trichostomum tortile var. *pusillum* (Hedw.) Bruch & Schimp. = *Ditrichum pusillum*
Trichostomum trifarium (Hedw.) Sm. = *Didymodon tophaceus*
Trichostomum viridulum Bruch = *Trichostomum crispulum*
Tridontium pellucidum (Hedw.) Lindb. = *Dichodontium pellucidum*

U

Ulota americana Mitt. = *Ulota hutchinsiae*
Ulota crispa var. *intermedia* (Schimp.) Mönk. = *Ulota crispa*
Ulota crispula Bruch = *Ulota crispa*
Ulota intermedia Schimp. = *Ulota crispa*
Ulota ludwigii (Brid.) Brid. = *Ulota coarctata*
Ulota ulophylla Broth. = *Ulota crispa*
Ulota ulophylla var. *crispula* (Bruch) Weimarck = *Ulota crispa*
Ulota ulophylla var. *intermedia* (Schimp.) Jansen & Wacht. = *Ulota crispa*

W

Webera albicans Schimp. = *Pohlia wahlenbergii*
Webera annotina (Hedw.) Bruch = *Pohlia annotina*
Webera carnea Schimp. = *Pohlia melanodon*
Webera commutata Schimp. = *Pohlia drummondii*
Webera cruda (Hedw.) Fürnr. = *Pohlia cruda*
Webera cucullata (Schwägr.) Schimp. = *Pohlia obtusifolia*
Webera diphyscium Ehrh. = *Diphyscium foliosum*
Webera elongata (Hedw.) Schwägr. = *Pohlia elongata*
Webera gracilis (Bruch & Schimp.) De Not. = *Pohlia drummondii*
Webera intermedia (Brid.) Schwägr. = *Bryum intermedium*
Webera lacustris (F.Weber & D.Mohr) Brid. = *Bryum knowltonii*
Webera longicollis Hedw. = *Pohlia longicollis*
Webera ludwigii (Spreng. *ex* Schwägr.) Fürnr. = *Pohlia ludwigii*
Webera lutescens Limpr. = *Pohlia lutescens*
Webera nutans Hedw. = *Pohlia nutans*
Webera nutans var. *longiseta* Huebener = *Pohlia nutans*
Webera nutans var. *sphagnetorum* Schimp. = *Pohlia nutans*

Webera nutans var. *strangulata* (Nees) Schimp. = *Pohlia nutans*
Webera polymorpha (Hoppe & Hornsch.) Schimp. = *Pohlia elongata*
Webera proligera Kindb. = *Pohlia proligera*
Webera pulchella (Hedw.) Fürnr. = *Pohlia lescuriana*
Webera pyriformis Hedw. = *Leptobryum pyriforme*
Webera serrifolia Bryhn = *Pohlia bulbifera*
Webera sessilis Lindb. = *Diphyscium foliosum*
Weissia calcarea (Nees & Hornsch.) Müll.Hal. = *Gymnostomum calcareum*
Weissia calcarea Hedw. = *Seligeria calcarea*
Weissia cirrata Hedw. = *Dicranoweissia cirrata*
Weissia crispa (Hedw.) P.Gaertn., B.Mey. & Scherb. = *Weissia longifolia*
Weissia crispula Hedw. = *Hymenoloma crispulum*
Weissia curvirostris (Hedw. *ex* Brid.) Müll.Hal. = *Hymenostylium recurvirostrum*
Weissia denticulata Brid. = *Rhabdoweisia crispata*
Weissia fugax Hedw. = *Rhabdoweisia fugax*
Weissia lanceolata (Hedw.) D.Mohr = *Tortula lanceola*
Weissia microstoma Hornsch. *ex* Nees & Hornsch. = *Weissia brachycarpa*
Weissia microstoma var. *obliqua* (Nees & Hornsch.) Müll.Hal. = *Weissia brachycarpa*
Weissia mucronata Bruch & Schimp. = *Weissia rutilans*
Weissia pusilla Hedw. = *Seligeria pusilla*
Weissia recurvirostris Hedw. = *Bryoerythrophyllum recurvirostrum*
Weissia rupestris Hedw. = *Gymnostomum aeruginosum*
Weissia schistii (F.Weber & D.Mohr) Brid. = *Cnestrum schistii*
Weissia seligeri (F.Weber & D.Mohr) Wahlenb. = *Seligeria recurvata*
Weissia striata (Hedw.) Schreb. *ex* P.Gaertn., B.Mey. & Scherb. = *Rhabdoweisia fugax*
Weissia tenuis (Schrad. *ex* Hedw.) Müll.Hal. = *Gyroweisia tenuis*
Weissia tortilis Spreng. = *Weissia condensa*
Weissia tortilis var. *fallax* (Sehlm.) Mönk. = *Weissia fallax*
Weissia verticillata Hedw. = *Eucladium verticillatum*
Weissia viridula Brid. = *Weissia controversa*
Weissia viridula var. *amblyodon* (Brid.) Bruch & Schimp. = *Weissia controversa*
Weissia viridula var. *arenicola* Limpr. = *Weissia controversa*
Weissia viridula var. *densifolia* Bruch & Schimp. = *Weissia controversa*
Weissia viridula var. *gymnostomoides* (Brid.) Bruch & Schimp. = *Weissia controversa*
Weissia viridula var. *mucronata* (Bruch & Schimp.) Müll.Hal. = *Weissia rutilans*
Weissia viridula var. *stenocarpa* (Nees & Hornsch.) Bruch & Schimp. = *Weissia controversa*
Weissia viridula var. *subglobosa* Schimp. *ex* Limpr. = *Weissia controversa*
Weissia wimmeriana (Sendtn.) Bruch & Schimp. = *Weissia controversa* var. *wimmeriana*

Z

Zieria demissa (Hook) Schimp. = *Plagiobryum demissum*
Zieria julacea Schimp. = *Plagiobryum zieri*
Zygodon compactus Müll.Hal. = *Anoectangium aestivum*
Zygodon gracillis var. *alpinus* (Schimp.) Grav. = *Zygodon gracilis*
Zygodon mougeotii Bruch & Schimp. = *Amphidium mougeotii*
Zygodon torquatus (Grev.) Liebm. = *Dryptodon torquatus*
Zygodon viridissimus subsp. *dentatus* (Breidl.) J.J.Amann = *Zygodon dentatus*
Zygodon viridissimus var. *dentatus* Limpr. = *Zygodon dentatus*
Zygodon viridissimus var. *occidentalis* Malta = *Zygodon viridissimus*
Zygodon viridissimus var. *vulgaris* Malta = *Zygodon rupestris*

7 ALPHABETICAL LIST OF POLISH NAMES OF MOSS TAXA

Polish moss nomenclature has a long and interesting history and in contrast to common conviction it is well-developed and rich, although many old names are often neglected and not widely used. However, a great demand for Polish moss names has been observed in recent decades in popular scientific works, textbooks and various plant atlases. Also, it is required that Latin names of mosses placed in lists of legally protected species should be accompanied by Polish names. Therefore the completion of the present catalogue provides a good opportunity for revising, bringing up to date and supplementing the Polish nomenclature of mosses.

The first Polish names for mosses were introduced by Kluk (1786–1788) in his *Dykcyonarz roślinny* (=A plant dictionary). His Polish nomenclature reflected the state of general moss taxonomy in those days which recognized only a few catch-all genera such as *Bryum*, *Mnium*, *Polytrichum*, *Sphagnum* and *Hypnum*. He used trinomial names for mosses with the term "mech" (=moss) being the first element in each name. Each was followed by an adjective designating the proper genus, for example "knotowy" (=snuffy) for *Bryum*, "włoskowy" (=hairy) for *Polytrichum* and "gałązkowy" (=branched) for *Hypnum* and the third element was mostly the adjectival specific epithet. Thus, for instance the name "mech gałązkowy ząbkowany" means the "denticulate branched moss' and refers to *Hypnum denticulatum* (=*Plagiothecium denticulatum*) and "mech gwiazdkowy purpurowy" (=starry purple moss) is the name of *Mnium purpureum* (=*Ceratodon purpureus*).

The true binomial Polish moss nomenclature was introduced by B.S. Jundziłł (1791) who proposed seven generic names which mostly corresponded to the generic names used by Kluk (1786–1788). Twenty years later B.S. Jundziłł (1811) added three new Polish names for moss genera. One of these was "prątnik" for *Bryum* which replaced "knotnik", used by B.S. Jundziłł himself for this genus, and this is the first case of synonymy in Polish generic names. Additionally, in the first half of the 19th century J. Jundziłł (1830) coined 13 and Waga (1848) ten new Polish generic names. These early names reflected the progress in the development of moss taxonomy in that period and they are mostly in current use. In addition, some incidentally proposed generic names have appeared in various textbooks and treatises of botany (Löhr 1822; Dziarkowski & Siennicki 1824; Pampuch 1840; Czerwiakowski 1841, 1849) but these are neglected names which are mostly considered as synonyms of others and have never been widely in common use. It is

worth noting that Witowski (1867) translated *Das Buch der Pflanzenwelt* of Müller (1856, 1857) and introduced the name "bielistka" for *Leucobryum* as well as some Polish names for exotic liverwort and moss genera, namely "zatokowiec" (*Symphyogyna*), "ośmiorzęs" (*Octoblepharum*), "podskrzydlik" (*Hypopterygium*), "drzewobród" (*Dendropogon*) and "włosistka" (*Pilotrichum*).

In the second half of the 19th century Błoński (1888, 1889, 1890*a*, *b*) contributed greatly to Polish moss nomenclature, as well as that of other cryptogams. He made a remarkable effort to introduce order in the existing Polish generic names of mosses and, among other things, he proposed 60 new names which are accepted here. In addition, several names introduced by him are here considered as synonyms due to changes in the generic classification of mosses. At that time the introduction of Polish moss names was mainly for political reasons. In those days Poland did not exist as an independent state having been annexed by Austria, Prussia and Russia, and the Polish language was very much oppressed and even officially forbidden, especially in the Prussian and Russian sectors of partitioned Poland. F. Błoński lived and worked in Warsaw which was the capital of the Kingdom of Poland. It was a part of the Russian empire where the process of russification reached the highest level and therefore, whenever possible, such actions as introducing Polish names of plants was considered a defence of the national language. Apart from F. Błoński only Witowski (1867) proposed the Polish name "bielistka" (for *Leucobryum*) and Rostafiński (1886) coined the name "świetlanka" (for *Schistostega*) and in both cases these names perfectly rendered the morphological features of the genera concerned and are in current use. The Polish botanical nomenclature up to end of the 19th century was compiled in two excellent dictionaries by Majewski (1893–1894) and Rostafiński (1900) in which all generic and suprageneric names of mosses, both accepted and synonymous, with full bibliographic data, were listed.

In the first quarter of the 20th century Fleischer (1904*a*, *b*, 1908, 1923) and Brotherus (1901–1909; 1924, 1925) made truly significant strides in the classification of mosses, especially pleurocarps, and their system has exclusively dominated moss systematics to the present. One of the most important features of the Fleischer-Brotherus system was the increase in number of moss genera as a result of splitting traditional large and all-encompassing genera such as *Hypnum*, *Amblystegium* and *Leskea*. Accordingly, a demand for new Polish generic names emerged and Szafran (1939) named some 35 genera in his key to the genera of Polish mosses, introducing nine additional generic names in his moss flora of Poland (Szafran 1957, 1961). It is worth noting that at the beginning of 20th century Szafnagel (1908) established some 35 Polish names for moss genera but they largely proved to be synonyms of older and accepted names and now only four generic names coined by this author are approved. In recent decades the number of moss genera has increased, mostly owing to the acceptance of many segregates of large genera and again additional new Polish generic names have been required. Ochyra (1996*b*) coined 19 and Kłosowski & Kłosowski (2001) three. In the present catalogue some 48 new names are proposed.

In total, over two centuries, 207 genera are now accepted in the Polish moss flora. Błoński (1888, 1889, 1890*a*, *b*) coined 57 generic names, Szafran (1939, 1957, 1961) – 42,

Ochyra (1996*b*) and Ochyra (in Kłosowski & Kłosowski 2001) – 22, J. Jundziłł (1830) – 13, Waga (1848) – 10, B.S. Jundziłł (1791, 1811) – 9, Szafnagel (1908) – 4, as well as Witowski (1867) and Rostafiński (1886) – 1 each. The remaining 48 names we propose in the present catalogue.

In general, whenever possible, we have tried to follow the rule of priority in the acceptance of Polish names for moss genera and only in a few cases have we departed from it. For example, B.S. Jundziłł (1791) used the name "knotnik" for *Bryum* but later he rejected it in favour of "prątnik", a name which has gained wide acceptance in Polish botany, not only as a generic name, but also in the name of the family Bryaceae ("prątnikowate"), the order Bryales ("prątnikowce"), the subclass Bryidae and class Bryopsida ("prątniki"). On the other hand, Błoński (1890*b*) and Szafran (1957) accepted the name "knotnik" for the synonymous names *Webera* and *Pohlia* but we rejected this usage because in fact no species of *Pohlia* in the modern sense was placed by B.S. Jundziłł (1791) in his original broad concept of *Bryum* which followed that presented in the major moss Floras of those days. Therefore we have chosen "borześlad", a name introduced by Waga (1848) which sounds euphonically true in Polish. We have given priority to this name over "polia" proposed by J. Jundziłł (1830) which is simply a polonized version of the Latin generic name *Pohlia*, an eponym of the German medical doctor J.E. Pohl.

The new Polish generic names have usually been coined on the basis of a characteristic morphological or ecological feature of the genus concerned, or are polonized versions of Latin names. In the case of some eponymous generic names, including *Kindbergia*, *Warnstorfia*, *Limprichtia* and *Sanionia*, the original spelling has been adopted in the Polish names without change. In a few cases some old names have been resurrected from oblivion and used for some segregates of larger genera if the species concerned formed part of a genus for which this name had been used. Paradoxically, some Polish names are older than the Latin ones. For example, Szafnagel (1908) used the nice Polish generic epithet "błyszcze" (=glance) for *Camptothecium* in which he placed only *C. nitens*. This species was segregated by Loeske (1911) into the genus *Tomentypnum*. When this old name was discovered, the recent name "chwytnikowiec" (=having a rhizoidal tomentum) (Ochyra 1996*b*) was placed in synonymy. In several cases we have adopted the names which had originally been used for different Latin generic names and later, for taxonomic or nomenclatural reasons, were replaced. For instance, J. Jundziłł (1830) introduced the name "międzylist" for *Maschalocarpus* Spreng. which is a synonym of *Pterigynandrum*. For the same reasons "pędzlik" was retained for *Ditrichum* (initially used for *Leptotrichum*), "smętnowieczek" for *Cleistocarpidium* (originally adopted for *Sporledera*) and "nurzypląs" for *Cinclidotus* (originally used for *Harrisonia*).

The Polish specific nomenclature of mosses is in flux because there has never been a serious effort to make order in this field. Polish specific epithets were not used by Szafran (1957, 1961, 1963) in his Flora of Polish mosses. Nor have they been introduced in the popular guides to common mosses of Poland (Lublinerówna 1935; Lubliner-Mianowska 1951), and Szafran (1948) in his small key to the commonest mosses used only a few specific names. A relatively complete set of Polish names for species of peatmosses was presented by Lubliner-Mianowska (1957), although Szafran (1966) introduced for some

species alternative Polish specific names. Nonetheless, Polish names do exist for the vast majority of common moss species having been mostly introduced in the 19th century along with generic names and have been summarized by Błoński (1888, 1889, 1890*a*, *b*). Unfortunately, the Polish nomenclature of moss species is quite chaotic because, since the beginning, the rule of priority has never been taken into consideration and various authors quite freely proposed different names for the same species. For example, the common moss *Funaria hygrometrica* was initially designated as "leśny" (=forest) (Kluk 1788; B.S. Jundziłł 1791), then as "higrometryczny" (=hygrometric") and, finally, as "wilgociomierczy" (=literal Polish translation of 'hygrometric') (Czerwiakowski 1849; Błoński 1890*b*) and the last Polish epithet has gained wide acceptance and is in current use, whereas the first two names are totally in oblivion.

Whenever Polish specific names existed, we have chosen the most frequently used ones or those which best rendered the nature of the species concerned. Only the spelling of some old specific names has been accommodated to the modern Polish language, for example, B.S. Jundziłł (1791) used the name "bręgowany" for *Orthotrichum striatum* which in the modern Polish is spelled "pręgowany" (=striate). If no epithets were available, we coined them, either by translation of the Latin names or to reflect characteristic features of a species. Sometimes we have used Polish names which had been applied to species which are now considered as synonyms of currently used names, for example *Pohlia melanodon* has as a synonym *P. carnea* which was called "prątnik cielisty" and we retained the Polish specific epithet in the new combination as "borześlad cielisty". For obvious reasons, the Polish specific epithets have been retained notwithstanding changes of the generic placement of the species concerned, excluding the necessary grammatical changes due to the accommodation of a name to the proper gender.

In the case of some species we have accepted the substantival epithets which had formerly been used as generic names and later considered as synonyms when two genera were united. For instance, the genus *Desmatodon* is now considered to be congeneric with *Tortula* (Zander 1993) and this concept is followed here. However, the Polish generic epithet "wstęgozą̨b" is used as the specific name for the generitype of *Desmatodon* under *Tortula*, i.e. *Tortula euryphylla* is called "brodek wstęgozą̨b".

We decided not to introduce Polish names for infraspecific taxa including subspecies, varieties and forms. In general, there are not many such taxa accepted in the present catalogue and often they are not universally recognized. They serve to accentuate variability of some protean species and they are usually "sunk" as a result of careful taxonomic studies.

In the list below all Polish names for classes, orders, families and genera are arranged alphabetically. All suprageneric names are automatically formed and are derived from the proper generic name and denoted by the proper termination. All accepted Polish generic names are printed in normal type and synonymous names are italicized with the indication of the currently accepted Polish generic name; for the accepted generic names their Latin equivalents are provided. Each generic name, both accepted and synonymous, is followed by citation, in parantheses, of the author who first introduced it and the new names introduced in the present work are indicated by the Latin *nobis*, i.e. by ourselves.

Species names are arranged alphabetically under suitable genera and are followed by the relevant Latin equivalents. For species, only accepted names are listed and synonyms are abandoned. The authors of Polish specific epithets are not cited.

A

Andreea (Czerwiakowski 1849) = Naleźlina

B

Bagiennik (*nobis*) → *Pseudocalliergon*
  obły → *P. turgescens*
  widłakowaty → *P. lycopodioides*
  żmijowaty → *P. trifarium*
Bagnak (Kwieciński 1892) = Bagniak
Bagniak (Błoński 1888) → *Philonotis*
  darniowy → *Ph. caespitosa*
  długokończysty → *Ph. marchica*
  kutnerowaty → *Ph. tomentella*
  spiralny → *Ph. seriata*
  wapienny → *Ph. calcarea*
  włosowaty → *Ph. arnellii*
  zdrojowy → *Ph. fontana*
Bagnik (Szafnagel 1908) = Mszar
Bartramia (J. Jundziłł 1830) = Szmotłoch
Baźkowiec (Błoński 1889) = Myszyniec
Bezlist (B.S. Jundziłł 1811) → *Buxbaumia*
  okrywowy → *B. viridis*
  zwyczajny → *B. aphylla*
Bezlistowate → *Buxbaumiaceae*
Bezlistowce → *Buxbaumiales*
Bezłodyż (Szafran 1939) = Kulczak
Bezrąbek (Błoński 1889) → *Pyramidula*
  czterokanciasty → *P. tetragona*
Bezwłosek (Błoński 1889) = Żurawiec
Białomech (Szafnagel 1908) = Bielistka
Białoząb (J. Jundziłł 1830) → *Leucodon*
  pospolity → *L. sciuroides*
Białozębowate → *Leucodontaceae*
Bielistka (Witowski 1867) → *Leucobryum*
  jałowcowata → *L. juniperoideum*
  siwa → *L. glaucum*

C

D

Dętek (Szafnagel 1908) = Czarecznik
Długoszyj (*nobis*) → *Tayloria*
  cienki → *T. tenuis*
  eliptyczny → *T. froelichiana*
  językowaty → *T. lingulata*
  piłkowany → *T. serrata*
  podsadnikowy → *T. splachnoides*
  zaostrzony → *T. acuminata*
Długowieczek (Szafran 1957) → *Hymenostylium*
  krzywy → *H. recurvirostrum*
Drabik (J. Jundziłł 1830) → *Climacium*
  drzewkowaty → *C. dendroides*
Drabikowate → *Climaciaceae*
Drabinowcowate → *Cinclidiaceae*
Drabinowiec (Szafran 1939) → *Cinclidium*
  mroczny → *C. stygium*
Drást (Waga 1848) → *Leskea*
  wielozarodniowy → *L. polycarpa*
Drąstewka (*nobis*) → *Leskeella*
  długożeberkowa → *L. nervosa*
Drąstewniczek (*nobis*) → *Lescuraea*
  skalny → *L. saxicola*
  zmienny → *L. mutabilis*
Drąstewnik (Błoński 1889) → *Pseudoleskea*
  czarnozielony → *P. incurvata*
  korzeniowy → *P. radicosa*
  otwarty → *P. patens*
Drąstowate → *Leskeaceae*
Drobniaczek (Błoński 1889) → *Seligeria*
  bezząb → *S. donniana*
  łukowaty → *S. campylopoda*
  odgięty → *S. recurvata*
  ostrolistny → *S. acutifolia*
  pospolity → *S. pusilla*
  rozłożysty → *S. patula*
  trójrzędowy → *S. trifaria*
  wapienny → *S. calcarea*
Drobniaczkowate → *Seligeriaceae*
Dwurożek (Błoński 1889) → *Dichodontium*
  przeświecający → *D. pellucidum*
  żółtawy → *D. flavescens*

F

G

H

I

J

K

Krągłolistka (*nobis*) → *Gyroweisia*
cienka → *G. tenuis*
Krętoząb (Błoński 1889) → *Trichodon*
cienkolistny → *T. cylindricus*
Krokiewka (*nobis*) → *Diobelonella*
bagienna → *D. palustris*
Krótkodziobek (Kwieciński 1892) = Krótkosz
Krótkosz (Błoński 1889) → *Brachythecium*
górski → *B. cirrosum*
Mildego → *B. mildeanum*
namurnikowy → *B. geheebii*
obły → *B. turgidum*
pospolity → *B. rutabulum*
rowowy → *B. salebrosum*
równinny → *B. campestre*
strumieniowy → *B. rivulare*
wapienny → *B. tommasinii*
włosowaty → *B. capillaceum*
wyblakły → *B. albicans*
żwirowy → *B. glareosum*
Krótkoszek (*nobis*) → *Brachytheciastrum*
aksamitny → *B. velutinum*
chropowaty → *B. trachypodium*
pagórkowy → *B. collinum*
tatrzański → *B. vanekii*
Krótkoszowate → *Brachytheciaceae*
Krótkozą b (Szafran 1939) → *Brachydontium*
skalny → *B. trichodes*
Krzewik (Błoński 1889) → *Thamnobryum* (actually this name was used for *Thamnium*)
źródliskowy → *Th. alopecurum*
Krzewikowate → *Thamnobryaceae*
Krzywolistek (*nobis*) → *Campylidium*
maleńki → *C. sommerfeltii*
wapienny → *C. calcareum*
Krzywoprątnik (Szafran 1939) → *Plagiobryum*
baźkowaty → *P. zieri*
słaby → *P. demissim*
Krzywosz (Błoński 1889) = Namurnik
Krzywoszczeć (Błoński 1889) → *Campylopus*
krótkolistna → *C. subulatus*
krucha → *C. fragilis*
pogięta → *C. flexuosus*
przywłoka → *C. introflexus*

L

Ł

Łodyżkowiec (*nobis*) → *Haplocladium*
drobnolistny → *H. microphyllum*
Łukomerzyk (Ochyra 1996*b*) → *Cyrtomnium*
błoniastolistny → *C. hymenophylloides*
Łukowiec (Szafran 1961) → *Herzogiella* (actually this name was used for *Dolichotheca*)
prążkowany → *H. striatella*
śląski → *H. seligeri*
Łuskolist (Błoński 1889) = Jeżolist
Łysak (Szafnagel 1908) = Żurawiec

M

Matownik (Szafnagel 1908) = Międzylist
Mchy → *Bryophyta*
Mech (Ney 1841) = Prątnik
Meesia (Czerwiakowski 1849) = Parzęchlin
Meezia (J. Jundziłł 1830) = Parzęchlin
Merzyk (B.S. Jundziłł 1791) → *Mnium*
ciernisty → *M. spinosum*
drobnociernisty → *M. spinulosum*
groblowy → *M. hornum*
gwiazdkowaty → *M. stellare*
obrzeżony → *M. marginatum*
prostodzióbkowy → *M. thomsonii*
widłakowaty → *M. lycopodioides*
Merzykowate → *Mniaceae*
Meszek (Rzepecki 1874) = Merzyk
Miechera (Waga 1848) → *Neckera*
Bessera → *N. besseri*
kędzierzawa → *N. crispa*
pierzasta → *N. pennata*
spłaszczona → *N. complanata*
wysmukła → *N. pumila*
Miecherowate → *Neckeraceae*
Miedziówka (*nobis*) → *Orthothecium*
brunatnawa → *O. rufescens*
poplątana → *O. intricatum*
złocista → *O. chryseon*
Mierzoprątnik (Szafran 1939) = Borześlad
Mierzyk (Pampuch 1840) = Merzyk
Międzylist (Jundziłł *in* Błoński 1889) → *Pterigynandrum* (actually this name was used for *Maschalocarpus*)
nitkowaty → *P. filiforme*
Międzylistowate → *Pterigynandraceae*

N

O

Opończyk (J. Jundziłł 1830) → *Encalypta*
alpejski → *E. alpina*
bruzdowany → *E. rhaptocarpa*
krętozarodniowy → *E. streptocarpa*
orzęsiony → *E. ciliata*
szczypcowy → *E. vulgaris*
szyjkowaty → *E. affinis*
wąskootworowy → *E. microstoma*
Opończykowate → *Encalyptaceae*
Opończykowce → *Encalyptales*
Osadniczek (Błoński 1889) → *Discelium*
goły → *D. nudum*
Osadniczkowate → *Disceliaceae*
Osiadek (Waga 1848) = Podsadnik
Ostrosz (Szafran 1939) → *Rhynchostegium*
gęstolistny → *Rh. confertum*
meklemburski → *Rh. megapolitanum*
murowy → *Rh. murale*
Ostrowiek (Szafnagel 1908) → *Eurhynchiastrum*
szorstki → *E. pulchellum*
Ostrószek (Szafran 1961) → *Rhynchostegiella*
delikatny → *Rh. tenella*
kanaryjski → *Rh. teneriffae*

P

Paprociowiec (Kwieciński 1890) = Skrzydlik
Paroząb (J. Jundziłł 1830) → *Didymodon*
fałdowany → *D. sinuosus*
kasztanowaty → *D. spadiceus*
mylny → *D. fallax*
olbrzymi → *D. giganteus*
ostry → *D. acutus*
rdzawy → *D. ferrugineus*
sercowaty → *D. cordatus*
szorstkolistny → *D. asperifolius*
sztywny → *D. rigidulus*
śniady → *D. luridus*
tufowy → *D. tophaceus*
winnicowy → *D. vinealis*
wyspowy → *D. insulanus*

Parzęchlin (Waga 1848) → *Meesia*
trzęsawiskowy → *M. uliginosa*
długoszczecinowy → *M. longiseta*
sześciorzędowy → *M. hexasticha*
trójrzędowy → *M. triquetra*
Parzęchlinek (Szafran 1957) = Czarnogłów
Parzęchlinowate → *Meesiaceae*
Penzlik (Szafnagel 1908) = Krótkosz
Pęcherzowiec (Kwieciński 1890) = Osadniczek
Pędzliczek (Ochyra 1996*b*) → *Syntrichia*
brodawkowaty → *S. papillosa*
chiński → *S. sinensis*
gładkowłoskowy → *S. laevipila*
górski → *S. montana*
norweski → *S. norvergica*
piaskowy → *S. ruraliformis*
szerokolistny → *S. latifolia*
wapienny → *S. calcicola*
wiejski → *S. ruralis*
zielonawy → *S. virescens*
Pędzlik (Błoński 1890*b*) → *Ditrichum* [actually this name was used for *Leptotrichum*]
blady → *D. pallidum*
drobny → *D. pusillum*
jednostronny → *D. heteromallum*
pasiasty → *D. zonatum*
pochwiasty → *D. lineare*
pogięty → *D. flexicaule*
smukły → *D. gracile*
Pędzlik (Szafran 1957) = Brodek (*p.p.*) and Pędzliczek (p.p.)
Pędzlikowate → *Ditrichaceae*
Pęzlik (J. Jundziłł 1830) = Pędzliczek
Pierwomszak (Błoński 1889) → *Archidium*
naprzemianlistny → *A. alternifolium*
Pierwomszakowate → *Archidiaceae*
Pierwomszakowce → *Archidiales*
Piórosz (Szafran 1939) → *Ptilium*
pierzasty → *P. crista-castrensis*
Płagosz (Szafnagel 1908) = Dwustronek
Płaskodziur (*nobis*) → *Plagiopus*
trójkątny → *P. oederiana*
Płaskolist (Błoński 1889) → *Hookeria*
lśniący → *H. lucens*
Płaskoliściowate → *Hookeriaceae*

R

S

Skąpowłosek (Szafran 1939) → *Oligotrichum*
hercyński → *O. hercynicum*
Skorpionowiec (Szafran 1939) → *Scorpidium*
brunatnawy → *S. scorpioides*
Skrętek (J. Jundziłł 1830) → *Funaria*
mieszańcowy → *F. hybrida*
wapienny → *F. muhlenbergii*
wąskootworowy → *F. microstoma*
wilgociomierczy → *F. hygrometrica*
Skrętek (Szafran 1939) = Kędzierzawka
Skrętka (Godlewski 1875) = Skrętek
Skrętkowate → *Funariaceae*
Skrętkowce → *Funariales*
Skrobak (*nobis*) → *Cnestrum*
alpejski → *C. alpestre*
rozłupany → *C. schistii*
Skrzydlanka (*nobis*) → *Isopterygiopsis*
błyszcząca → *I. muelleriana*
śliczna → *I. pulchella*
Skrzydlik (Błoński 1889) → *Fissidens*
Arnolda → *F. arnoldii*
chudy → *F. exilis*
cisolistny → *F. taxifolius*
długoszowaty → *F. osmundoides*
drobny → *F. pusillus*
grzebieniasty → *F. dubius*
nagi → *F. gymnmandrus*
paprociowaty → *F. adianthoides*
prątnikowy → *F. bryoides*
smukłolistny → *F. gracilifolius*
studziennik → *F. fontanus*
tęgoszczecinowy → *F. crassipes*
zagięty → *F. incurvus*
zielonkawy → *F. viridulus*
Skrzydlikowate → *Fissidentaceae*
Skrzydłosz (*nobis*) → *Callialaria*
zgięty → *C. curvicaulis*
Słomiaczek (*nobis*) → *Straminergon*
złotawy → *S. stramineum*
Smętnowieczek (Błoński 1889) → *Cleistocarpidium* (actually this name was used for *Sporledera*)
błotny → *C. palustre*

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8 FAMILIAL AND SUBFAMILIAL PLACEMENT OF MOSS GENERA

The following index presents an alphabetic listing of the moss genera represented in the moss flora of Poland with an indication of their familial and subfamilial disposition adopted in the present catalogue. It should facilitate the rapid discovery of the current position of a genus. This is of particular importance in the case of genera which have had unstable taxonomic positions, shifting from family to family, and for which alternative placements can be found in other treatments. In such cases the accepted familial disposition is usually discussed in the fifth section of the catalogue in which annotations to the "Systematic arrangement of taxa" section are given.

A

Abietinella Müll.Hal. → Thuidiaceae Schimp.
Acaulon Müll.Hal. → Pottiaceae Schimp. – Pottioideae
Aloina Kindb. → Pottiaceae Schimp. – Pottioideae
Amblyodon P.Beauv. → Meesiaceae Schimp. – Amblyodontoideae (Schimp.) Matteri & Ochyra
Amblystegium Schimp. → Amblystegiaceae Kindb. – Amblystegioideae
Amphidium Schimp. → Dicranaceae Schimp. – Amphidioideae Ochyra
Anacamptodon Brid. → Amblystegiaceae Kindb. – Campylioideae Kanda
Andreaea Hedw. → Andreaeaceae Dumort.
Anoectangium Schwägr. → Pottiaceae Schimp. – Merceyoideae Broth.
Anomobryum Schimp. → Bryaceae Schwägr.
Anomodon Hook. & Taylor → Anomodontaceae Kindb.
Antitrichia Brid. → Leucodontaceae Schimp.
Archidium Brid. → Archidiaceae Schimp.
Arctoa Bruch & Schimp. → Dicranaceae Schimp. – Dicranoideae
Atrichum P.Beauv. → Polytrichaceae Schwägr.
Aulacomnium Schwägr. → Aulacomniaceae Schimp.

B

Barbula Hedw. → Pottiaceae Schimp. – Merceyoideae Broth.
Bartramia Hedw. → Bartramiaceae Schwägr. – Bartramioideae
Blindia Bruch & Schimp. → Seligeriaceae Schimp. – Seligerioideae
Brachydontium Fürnr. → Seligeriaceae Schimp. – Seligerioideae
Brachytheciastrum Ignatov & Huttunen → Brachytheciaceae Schimp. – Homalothecioideae Ignatov & Huttunen
Brachythecium Schimp. → Brachytheciaceae Schimp. – Brachythecioideae
Bryoerythrophyllum P.C.Chen → Pottiaceae Schimp. – Merceyoideae Broth.
Bryum Hedw. → Bryaceae Schwägr.
Buckiella Ireland → Hypnaceae Schimp.
Bucklandiella Roiv. → Grimmiaceae Arn. – Racomitrioideae Ochyra & Bednarek-Ochyra
Buxbaumia Hedw. → Buxbaumiaceae Schwägr.

C

Callialaria Ochyra → Cratoneuraceae Mönk.
Callicladium H.A.Crum → Hypnaceae Schimp. – Hypnoideae
Calliergon (Sull.) Kindb. → Amblystegiaceae Kindb. – Calliergonoideae Kanda
Calliergonella Loeske → Hypnaceae Schimp. – Hypnoideae
Campyliadelphus (Kindb.) R.S.Chopra → Amblystegiaceae Kindb. – Campylioideae Kanda
Campylidium (Kindb.) Ochyra → Amblystegiaceae Kindb. – Campylioideae Kanda
Campylium (Sull.) Mitt. → Amblystegiaceae Kindb. – Campylioideae Kanda
Campylophyllum (Schimp.) M.Fleisch. → Hypnaceae Schimp. – Ctenidioideae M.Fleisch.
Campylopus Brid. → Dicranaceae Schimp. – Campylopoideae (Limpr.) Ochyra
Campylostelium Bruch & Schimp. → Ptychomitriaceae Schimp.
Catoscopium Brid. → Catoscopiaceae (Boulay) Broth.
Ceratodon Brid. → Ditrichaceae Limpr. – Ceratodontoideae Broth.
Cinclidium Sw. → Cinclidiaceae Kindb.
Cinclidotus P.Beauv. → Cinclidotaceae Schimp.
Cirriphyllum Grout → Brachytheciaceae Schimp. – Rhynchostegielloideae Ignatov & Huttunen
Cleistocarpidium Ochyra & Bednarek-Ochyra → Ditrichaceae Limpr. – Ditrichoideae
Climacium F.Weber & D.Mohr → Climaciaceae Kindb.
Cnestrum I.Hagen. → Dicranaceae Schimp. – Oncophoroideae Lindb.
Codriophorus P.Beauv. → Grimmiaceae Arn. – Racomitrioideae Ochyra & Bednarek-Ochyra
Conostomum Sw. *ex* F.Weber & D.Mohr → Bartramiaceae Schwägr. – Conostomoideae D.G.Griffin & W.R.Buck
Coscinodon Spreng. → Grimmiaceae Arn. – Grimmioideae
Cratoneuron (Sull.) Spruce → Cratoneuraceae Mönk.
Ctenidium (Schimp.) Mitt. → Hypnaceae Schimp. – Ctenidioideae M.Fleisch.

Cynodontium Schimp. → Dicranaceae Schimp. – Oncophoroideae Lindb.
Cyrto-hypnum Hampe & Lorentz → Thuidiaceae Schimp.
Cyrtomnium Holmen → Cinclidiaceae Kindb.

D

Dichelyma Myrin → Fontinalaceae Schimp.
Dichodontium Schimp. → Dicranaceae Schimp. – Oncophoroideae Lindb.
Dicranella (Müll.Hal.) Schimp. → Dicranaceae Schimp. – Dicranelloideae Lindb.
Dicranodontium Bruch & Schimp. → Dicranaceae Schimp. – Campylopoideae (Limpr.) Ochyra
Dicranoweisia Milde → Seligeriaceae Schimp. – Dicranoweisioideae I.Hagen
Dicranum Hedw. → Dicranaceae Schimp. – Dicranoideae
Didymodon Hedw. → Pottiaceae Schimp. – Merceyoideae Broth.
Diobelonella Ochyra → Dicranaceae Schimp. – Oncophoroideae Lindb.
Diphyscium D.Mohr → Diphysciaceae M.Fleisch.
Discelium Brid. → Disceliaceae Schimp.
Distichium Bruch & Schimp. → Ditrichaceae Limpr. – Distichioideae Broth.
Ditrichum Timm *ex* Hampe → Ditrichaceae Limpr. – Ditrichoideae
Drepanocladus (Müll.Hal.) G.Roth → Amblystegiaceae Kindb. – Drepanocladoideae Kanda
Dryptodon Brid. → Grimmiaceae Arn. – Grimmioideae

E

Encalypta Hedw. → Encalyptaceae Schimp.
Entodon Müll.Hal. → Entodontaceae Kindb.
Entosthodon Schwägr. → Funariaceae Schwägr.
Ephemerum Hampe → Ephemeraceae Schimp.
Eucladium Bruch & Schimp. → Pottiaceae Schimp. – Trichostomoideae Broth.
Eurhynchiastrum Ignatov & Huttunen → Brachytheciaceae Schimp. – Homalothecioideae Ignatov & Huttunen
Eurhynchium Schimp. → Brachytheciaceae Schimp. – Rhynchostegioideae Ignatov & Huttunen

F

Fissidens Hedw. → Fissidentaceae Schimp.
Fontinalis Hedw. → Fontinalaceae Schimp.
Funaria Hedw. → Funariaceae Schwägr.

G

Grimmia Hedw. → Grimmiaceae Arn. – Grimmioideae
Guembelia Hampe → Grimmiaceae Arn. – Grimmioideae
Gymnostomum Nees & Hornsch. → Pottiaceae Schimp. – Merceyoideae Broth.
Gyroweisia Schimp. → Pottiaceae Schimp. – Merceyoideae Broth.

H

Hamatocaulis Hedenäs → Amblystegiaceae Kindb. – Drepanocladoideae Kanda
Haplocladium Müll.Hal. → Leskeaceae Schimp.
Hedwigia P.Beauv. → Hedwigiaceae Schimp.
Helodium Warnst. → Helodiaceae (M.Fleisch.) Ochyra
Hennediella Paris → Pottiaceae Schimp. – Pottioideae
Herzogiella Broth. → Hypnaceae Schimp. – Hypnoideae
Heterocladium Schimp. → Pterigynandraceae Schimp.
Hilpertia R.H.Zander → Pottiaceae Schimp. – Pottioideae
Homalia (Brid.) Bruch. & Schimp. → Neckeraceae Schimp.
Homalothecium Schimp. → Brachytheciaceae Schimp. – Homalothecioideae Ignatov & Huttunen
Homomallium (Schimp.) Loeske → Hypnaceae Schimp. – Hypnoideae
Hookeria Sm. → Hookeriaceae Schimp.
Hydrogrimmia (I.Hagen) Loeske → Grimmiaceae Arn. – Grimmioideae
Hygroamblystegium Loeske → Amblystegiaceae Kindb. – Amblystegioideae
Hygrohypnum Lindb. → Amblystegiaceae Kindb. – Hygrohypnoideae Kanda
Hylocomiastrum M.Fleisch. *ex* Broth. → Hylocomiaceae (Broth.) M.Fleisch. – Hylocomioideae
Hylocomium Schimp. → Hylocomiaceae (Broth.) M.Fleisch. – Hylocomioideae
Hymenoloma Dusén → Seligeriaceae Schimp. – Dicranoweisioideae I.Hagen
Hymenostylium Brid. → Pottiaceae Schimp. – Merceyoideae Broth.
Hypnum Hedw. → Hypnaceae Schimp. – Hypnoideae

I

Isopterygiopsis Z.Iwats. → Hypnaceae Schimp. – Hypnoideae
Isothecium Brid. → Echinodiaceae Broth.

K

Kiaeria I.Hagen → Dicranaceae Schimp. – Dicranoideae
Kindbergia Ochyra → Brachytheciaceae Schimp. – Brachythecioideae

L

Leptobryum (Bruch & Schimp.) Wilson → Meesiaceae Schimp. – Leptobryoideae Ochyra
Leptodictyum (Schimp.) Warnst. → Amblystegiaceae Kindb. – Amblystegioideae
Leptodontium (Müll.Hal.) Hampe *ex* Lindb. → Pottiaceae Schimp. – Merceyoideae Broth.
Lescuraea Schimp. → Leskeaceae Schimp.
Leskea Hedw. → Leskeaceae Schimp.
Leskeella (Limpr.) Loeske → Leskeaceae Schimp.
Leucobryum Hampe → Leucobryaceae Schimp.

Leucodon Schwägr. → Leucodontaceae Schimp.
Limprichtia Loeske → Amblystegiaceae Kindb. – Drepanocladoideae Kanda
Loeskeobryum Broth. → Hylocomiaceae (Broth.) M.Fleisch. – Hylocomioideae

M

Meesia Hedw. → *Meesiaceae* Schimp. – Meesioideae
Microbryum Schimp. → Pottiaceae Schimp. – Pottioideae
Mnium Hedw. → Mniaceae Schwägr.
Molendoa Lindb. → Pottiaceae Schimp. – Pottioideae
Myurella Schimp. → Pterigynandraceae Schimp.

N

Neckera Hedw. → Neckeraceae Schimp.
Niphotrichum (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra → Grimmiaceae Arn. – Racomitrioideae Ochyra & Bednarek-Ochyra

O

Oligotrichum Lam. & DC. → Polytrichaceae Schwägr.
Oncophorus (Brid.) Brid. → Dicranaceae Schimp. – Oncophoroideae Lindb.
Orthodicranum (Bruch & Schimp.) Loeske → Dicranaceae Schimp. – Dicranoideae
Orthodontium Schwägr. → Orthodontiacea*e* (Broth.) Goffinet
Orthogrimmia (Schimp.) Ochyra & Żarnowiec → Grimmiaceae Arn. – Grimmioideae
Orthotheciella (Müll.Hal.) Ochyra → Leskeaceae Schimp.
Orthothecium Schimp. → Hypnaceae Schimp. – Hypnoideae
Orthotrichum Hedw. → Orthotrichaceae Arn. – Orthotrichoideae
Oxyrrhynchium (Schimp.) Warnst. → Brachytheciaceae Schimp. – Rhynchostegielloideae Ignatov & Huttunen

P

Paludella Brid. → Meesiaceae Schimp. – Paludelloideae Lindb.
Palustriella Ochyra → Helodiaceae (M.Fleisch.) Ochyra
Paraleucobryum (Limpr.) Loeske → Dicranaceae Schimp. – Dicranoideae
Philonotis Brid. → Bartramiaceae Schwägr. – Breutelioideae D.G.Griffin & W.R.Buck
Physcomitrella Bruch & Schimp. → Funariaceae Schwägr.
Physcomitrium (Brid.) Brid. → Funariaceae Schwägr.
Plagiobryum Lindb. → Bryaceae Schwägr.
Plagiomnium T.J.Kop. → Plagiomniaceae T.J.Kop.
Plagiopus Brid. → Bartramiaceae Schwägr. – Bartramioideae
Plagiothecium Schimp. → Plagiotheciaceae (Broth.) M.Fleisch.
Plasteurhynchium Broth. → Brachytheciaceae Schimp. – Rhynchostegioideae Ignatov & Huttunen
Platydictya Berk. → Hypnaceae Schimp. – Hypnoideae

Platygyrium Schimp. → Hypnaceae Schimp. – Pylaisioideae M.Fleisch.
Platyhypnidium M.Fleisch. → Brachytheciaceae Schimp. – Rhynchostegioideae Ignatov & Huttunen
Pleuridium Rabenh. → Ditrichaceae Limpr. – Ditrichoideae
Pleurochaete Lindb. → Pottiaceae Schimp. – Trichostomoideae Broth.
Pleurozium Mitt. → Hylocomiaceae (Broth.) M.Fleisch. – Pleurozioideae Ando, Seki, N.Nishim. & Higuchi
Pogonatum P.Beauv. → Polytrichaceae Schwägr.
Pohlia Hedw. → Bryaceae Schwägr.
Polytrichastrum G.L.Sm. → Polytrichaceae Schwägr.
Polytrichum Hedw. → Polytrichaceae Schwägr.
Protobryum J.Guerra & Cano → Pottiaceae Schimp. – Pottioideae
Pseudephemerum (Lindb.) I.Hagen → Ditrichaceae Limpr. – Ditrichoideae
Pseudobryum (Kindb.) T.J.Kop. → Plagiomniaceae T.J.Kop.
Pseudocalliergon (Limpr.) Loeske → Amblystegiaceae Kindb. – Drepanocladoideae Kanda
Pseudocrossidium R.S.Williams → Pottiaceae Schimp. – Merceyoideae Broth.
Pseudoleskea Schimp. → Leskeaceae Schimp.
Pseudoleskeella Kindb. → Leskeaceae Schimp.
Pseudoscleropodium (Limpr.) M.Fleisch. *ex* Broth. → Brachytheciaceae Schimp. – Rhynchostegioideae Ignatov & Huttunen
Pseudotaxiphyllum Z.Iwats. → Hypnaceae Schimp. – Hypnoideae
Pterigynandrum Hedw. → Pterigynandraceae Schimp.
Pterygoneurum Jur. → Pottiaceae Schimp. – Pottioideae
Ptilium De Not. → Hypnaceae Schimp. – Hypnoideae
Ptychodium Schimp. → Leskeaceae Schimp.
Pylaisia Schimp. → Hypnaceae Schimp. – Pylaisioideae M.Fleisch.
Pyramidula Brid. → Funariaceae Schwägr.

R

Racomitrium Brid. → Grimmiaceae Arn. – Racomitrioideae Ochyra & Bednarek-Ochyra
Rhabdoweisia Bruch & Schimp. → Dicranaceae Schimp. – Oncophoroideae Lindb.
Rhizomnium (Mitt. *ex* Broth.) T.J.Kop. → Cinclidiaceae Kindb.
Rhodobryum (Schimp.) Limpr. → Bryaceae Schwägr.
Rhynchostegiella (Schimp.) Limpr. → Brachytheciaceae Schimp. – Rhynchostegielloideae Ignatov & Huttunen
Rhynchostegium Schimp. → Brachytheciaceae Schimp. – Rhynchostegioideae Ignatov & Huttunen
Rhytidiadelphus (Limpr.) Warnst. → Hylocomiaceae (Broth.) M.Fleisch. – Pleurozioideae Ando, Seki, N.Nishim. & Higuchi
Rhytidium (Sull.) Kindb. → Rhytidiaceae Broth.
Rosulabryum J.R.Spence → Bryaceae Schwägr.

S

Saelania Lindb. → Ditrichaceae Limpr. – Ceratodontoideae Broth.
Sanionia Loeske → Amblystegiaceae Kindb. – Drepanocladoideae Kanda
Schistidium Bruch & Schimp. → Grimmiaceae Arn. – Grimmioideae
Schistostega D.Mohr → Schistostegaceae Schimp.
Sciuro-hypnum Hampe → Brachytheciaceae Schimp. – Brachythecioideae
Scorpidium (Schimp.) Limpr. → Amblystegiaceae Kindb. – Calliergonoideae Kanda
Seligeria Bruch & Schimp. → Seligeriaceae Schimp. – Seligerioideae
Serpoleskea (Limpr.) Loeske → Amblystegiaceae Kindb. – Amblystegioideae
Sphagnum L. → Sphagnaceae Dumort.
Splachnum Hedw. → Splachnaceae Grev. & Arn. – Splachnoideae
Stegonia Venturi → Pottiaceae Schimp. – Pottioideae
Straminergon Hedenäs → Amblystegiaceae Kindb. – Calliergonoideae Kanda
Syntrichia Brid. → Pottiaceae Schimp. – Pottioideae

T

Taxiphyllum M.Fleisch. → Hypnaceae Schimp. – Hypnoideae
Tayloria Hook. → Splachnaceae Grev. & Arn. – Taylorioideae Broth.
Tetraphis Hedw. → Tetraphidaceae Schimp.
Tetraplodon Bruch & Schimp. → Splachnaceae Grev. & Arn. – Splachnoideae
Tetrodontium Schwägr. → Tetraphidaceae Schimp.
Thamnobryum Nieuwl. → Thamnobryaceae Margad. & During
Thuidium Schimp. → Thuidiaceae Schimp.
Timmia Hedw. → Timmiaceae Schimp.
Tomentypnum Loeske → Amblystegiaceae Kindb. – Calliergonoideae Kanda
Tortella (Lindb.) Limpr. → Pottiaceae Schimp. – Trichostomoideae Broth.
Tortula Hedw. → Pottiaceae Schimp. – Pottioideae
Trematodon Michx. → Bruchiaceae Schimp.
Trichodon Schimp. → Ditrichaceae Limpr. – Ditrichoideae
Trichostomum Bruch → Pottiaceae Schimp. – Trichostomoideae Broth.

U

Ulota D.Mohr → Orthotrichaceae Arn. – Orthotrichoideae

W

Warnstorfia Loeske → Amblystegiaceae Kindb. – Drepanocladoideae Kanda
Weissia Hedw. → Pottiaceae Schimp. – Pottioideae

Z

Zygodon Hook. & Taylor → Orthotrichaceae Arn. – Zygodontoideae Broth.

9 AUTHORS OF MOSS NAMES CITED IN THE CATALOGUE

All the authors of the names of moss taxa occurring in Poland appear in the following list. They are arranged alphabetically by their abbreviation in the left column, while the right column contains the data available concerning birth and death dates. Full forename(s) are provided for each author. In the case of abbreviations composed of the initial(s) of forename(s) and surname, the latter is cross-referenced in the list. The system of abbreviations of author names proposed by Brummitt & Powell (1992) is strictly followed here and in the case of new authors who are missing in this compendium the abbreviations suggested in the *Index of mosses* (Crosby *et al*. 1992; Crosby & Magill 1994, 1997, 2000) are adopted. This system is becoming more and more popular because it ensures the univocal interpretation of different author names, and some bryological journals, for example *Journal of Bryology*, insist on its use. It is of importance because the names of some well-known authors of moss names have been variously abbreviated in different bryological papers. For example, for Karl Müller of Halle such abbreviations as "C. Muell.", "C. Müll.", "K. Muell. Hal." and "C. M." have often been used, so the abbreviation "Müll. Hal." is unequivocal and readily distinguishes this author from the dozens of other Müllers known to have been the authors of plant names. In a few cases the proposed abbreviations deviate from the traditional usage. For instance J. Cardot is designated as "Cardot", whereas traditionally his name has been abbreviated as "Card.". This latter form should be retained, especially as his name cannot be mistaken for other Cardots. Likewise, the name of the famous British bryologist William Wilson has been traditionally abbreviated as "Wils.", and this abbreviation is especially well-known from his joint works with both Hookers (Ochyra 2003*d*). Here the full version is proposed, even though all other Wilsons are not abbreviated and are recognized by the various initials preceding their names.

A

A.Braun — Braun, Alexander Karl (Carl) Heinrich (1805–1877)
A.Eddy — Eddy, Alan (1937–1998)
A.J.E.Sm. — Smith, Anthony John Edwin (1935–)
A.J.Shaw — Shaw, Arthur Jonathan (1954–)
A.Jaeger — Jaeger, August (1842–1877)

A.L.Andrews — Andrews, Albert LeRoy (1878–1961)
A.W.H.Walther — Walther, Alexander Wilhelm Hannibal Franz (1813–1890)
Åberg — Åberg, Johann Gerhard (‘Goran’) (1868–1940)
Alberts. — Albertson, Nils (1909–1956)
Amann, J.J. — see J.J.Amann
Anderson, L.E. — see L.E.Anderson
Ando — Ando, Hisatsugu (1922–)
Andrews, A.L. — see A.L.Andrews
Ångstr. — Ångström, Johan (1813–1879)
Arn. — Arnott, George Arnott Walker (1799–1868)
Arnell — Arnell, Hampus Wilhelm (1848–1932)

B

B.Mey. — Meyer, Bernhard (1767–1836)
Bach.Pyl. — Bachelot de la Pylaie, Auguste Jean Marie (1786–1856)
Balb. — Balbis, Gioanni (Giovanni) Battista (1765–1831)
Bals.-Criv. — Balsamo-Crivelli, Giuseppe Gabriel (1800–1874)
Barkman — Barkman, Jan Johannes (1922–1990)
Barnes — Barnes, Charles Reid (1858–1910)
Baumgartner — Baumgartner, Julius (1870–1955)
Baur — Baur, Wilhelm (1839–1920)
Beauv., P. — see P.Beauv.
Bednarek-Ochyra — Bednarek-Ochyra, Halina Krystyna (1959–)
Berk. — Berkeley, Miles Joseph (1803–1889)
Berrgr. — Berggren, Sven (1837–1917)
Besch. — Bescherelle, Émile (1828–1903)
Blandow — Blandow, Otto Christian (1778–1810)
Blockeel — Blockell, Thomas Leo (1950–)
Blom, H.H. — see H.H.Blom
Bom. — Bomansson, Johan Oskar (1830–1906)
Borszczow, G.G. — see G.G.Borszczow
Borszczow, I.G. — see I.G.Borszczow
Bory — Bory, Jean Baptiste Georges Geneviéve Marcellin (1778–1846)
Bott. — Bottini, Antonio (1850–1931)
Boulay — Boulay, Jean Nicolas (1837–1905)
Bouman — Bouman, Adrianus Cornelis (1951–)
Br., R. — see R.Br.
Braithw. — Braithwaite, Robert (1824–1917)
Brassard — Brassard, Guy Raymond (1943–)
Braun, A. — see A.Braun
Breidl. — Breidler, Johann (1828–1913)
Brid. — Bridel, Samuel Élisée von (1761–1828)
Britton, E. — see E.Britton

Brockm. — Brockmüller, Hans Joachim Heinrich (1821–1882)
Broth. — Brotherus, Viktor Ferdinand (1849–1929)
Bruch — Bruch, Philipp (1781–1847)
Brugg.-Nann. — Bruggeman-Nannenga, Maria Alida (1944–)
Brunt. — Brunton, William (1775–1806)
Bryhn — Bryhn, Niels (1854–1916)
Buck, W.R. — see W.R.Buck
Burch. — Burchell, William John (1781–1863)
Büse — Büse, Lodewijk Hendrik (1819–1888)
Buyss. — Buysson, Robert du (1871–1893)

C

C.E.O.Jensen — Jensen, Christian Erasmus Otterström (1859–1941)
C.F.Ludw. — Ludwig, Christian Friedrich (1757–1823)
C.Hartm. — Hartman, Carl (1824–1884)
Cano — Cano, María Jesús (1967–)
Cardot — Cardot, Jules (1860–1934)
Carringt. — Carrington, Benjamin (1827–1893)
Casares-Gil — Casares-Gil, Antonio (1871–1929)
Chał. — Chałubiński, Tytus (1820–1889)
Chen, P.C. — see P.C.Chen
Chopra, R.S. — see R.S.Chopra
Coker, D. — see D.Coker
Conard — Conard, Henry Shoemaker (1874–1971)
Crome — Crome, Georg Ernst Wilhelm (1781–1813)
Crum, H.A. — see H.A.Crum
Crundwell — Crundwell, Alan Cyril (1923–2000)
Culm. — Culmann, Paul Frederic (1860–1936)
Curn. — Curnow, William (1809–1887)

D

D.Coker — Coker, Dorothy (1894–)
D.G.Griffin — Griffin, Dana Gove, III (1938–)
D.Mohr — Mohr, Daniel Matthias Henrich (1780–1808)
D.W.Jamieson — Jamieson, David W. (1943–)
DC. — Candolle, Augustin Pyramus de (1778–1841)
De Not. — De Notaris, Giuseppe (Josephus) (1805–1877)
Deguchi — Deguchi, Hironori (1948–)
Delogne — Delogne, Charles Henri (1834–1901)
Demaret — Demaret, Ferdinand M.H. (1911–)
Dicks. — Dickson, James (Jacobus) J. (1738–1822)
Dirkse — Dirkse, Gerard Martinus (1946–)
Dism. — Dismier, Gabriel (1856–1942)

Dixon — Dixon, Hugh Neville (1861–1944)
Dozy — Dozy, Frans (François) (1807–1856)
Drumm. — Drummond, Thomas (1780–1835)
Du Rietz — Du Rietz, Gustaf Einar (1895–1967)
Dubois — Dubois, François Noel Alexandre (1752–1824)
Duby — Duby, Jean Étienne (1798–1885)
Düll — Düll, Ruprecht Peter George (1939–)
Dumort. — Dumortier, Barthélemy Charles Joseph (1797–1878)
During — During, Hein Johannes (1947–)
Dusén — Dusén, Perl Karl Hjalmar (1855–1926)

E

E.Britton — Britton, Elizabeth Gertrude (1858–1934)
E.F.Warb. — Warburg, Edmund Frederic (1908–1966)
E.Lawton — Lawton, Elva (1896–1993)
E.Warncke — Warncke, Esbern (1939–)
Eddy, A. — see A.Eddy
Ehrh. — Ehrhart, Jakob Friedrich (1742–1795)
Engl. — Engler, Heinrich Gustav Adolf (1844–1930)
Everk. — Everken, V. (– 1881?)

F

F. Weber — Weber, Friedrich (1781–1823)
F.Koppe — Koppe, Fritz (1896–1981)
Fergusson — Fergusson, John (1834–1907)
Fior.-Mazz. — Fiorini-Mazzanti, Elisabetta (1799–1879)
Fleisch., M. — see M.Fleisch.
Flörke — Flörke, Heinrich Gustav (1764–1835)
Fr. — Fries, Elias Magnus (1794–1878)
Frahm, J.-P. — see J.-P.Frahm
Frey, W. — see W.Frey
Frisvoll — Frisvoll, Anna Arnfinn (1944–)
Froel. — Froelich, Joseph Aloys von (1766–1841)
Funck — Funck, Heinrich Christian (1771–1839)
Fürnr. — Fürnrohr, August Emanuel (1804–1861)

G

G.G.Borszczow — Borszczow, Grigori Grigorievicz (fl. 1857)
G.L.Sm. — Smith, Gary Lane (1939–)
G.Roth — Roth, Georg (1842–1915)
Gaertn., P. — see P.Gaertn.
Gangulee — Gangulee, Hirendra Chandra (1914–)

Garov. — Garovaglio, Santo (1805–1882)
Geh. — Geheeb, Adalbert (1842–1909)
Giacom. — Giacomini, Valerio (1914–1981)
Girg. — Girgensohn, Gustav Karl (1786–1872)
Głow. — Głowacki, Julius (1846–1915)
Goffinet — Goffinet, Bernard (1966–)
Gos, L. — see L.Gos
Grav. — Gravet, Pierre Joseph Frédéric (1827–1907)
Gray — Gray, Samuel Frederic (1766–1828)
Grebe — Grebe, Carl (1852–1922)
Grev. — Greville, Robert Kaye (1794–1866)
Griff. — Griffith, William (1810–1845)
Griffin, D.G. — see D.G.Griffin
Grönvall — Grönvall, Troed Axel Ludwig (1838–1892)
Grout — Grout, Abel Joel (1867–1947)
Guerra, J. — see J.Guerra
Gunnerus — Gunnerus, Johan Ernst (1718–1773)
Györffy — Györffy, Istvan (1880–1959)

H

H.A.Crum — Crum, Howard Alvin (1922–2002)
H.C.Hall — Hall, Herman (Hermanus) Christian van (1801–1974)
H.H.Blom — Blom, Hans Haavardsholm (1955–)
H.K.G.Paul — Paul, Hermann Karl Gustav (1876–1964)
H.Klinggr. — Klinggräff, Hugo Erich Meyer von (1820–1902)
H.Lindb. — Lindberg, Harald (1871–1963)
H.Möller — Möller, Hjalmar August (1866–1941)
H.Müll. — Müller, Heinrich Ludwig Hermann (1829–1883)
H.Philib. — Philibert, Henri (1822–1901)
H.Rob. — Robinson, Harold Ernest (1932–)
H.Whitehouse — Whitehouse, Harold Leslie Keer (1917–2000)
H.Winter — Winter, (Karl) Hermann (1845–1933)
Hagen, I. — see I.Hagen
Hall, H.C. — see H.C.Hall
Hamm. — Hammerschmid, Anton (1851–1933)
Hammar — Hammar, Olaf Niklas (1821–1875)
Hampe — Hampe, Georg Ernst Ludwig (1795–1880)
Hartm. — Hartman, Carl Johan(n) (1790–1849)
Hartm., C. — see C.Hartm.
Harv. — Harvey, William Henry (1811–1866)
Hazsl. — Hazlinszky von Hazslin, Friedrich August (Frigyes Ágost) (1818–1896)
Hedd. — Hedderson, Terry Albert John (1962–)
Hedenäs — Hedenäs, Lars (1955–)

Hedw. — Hedwig, Johann (1730–1799)
Hedw., R. — see R.Hedw.
Herv. — Hervey, Alpheus Baker (1839–1931)
Herzog — Herzog, Theodor Carl (Karl) Julius (1880–1961)
Hessl. — Hessler, Karl (1799–?)
Higuchi — Higuchi, Masanobu (1955–)
Hill, M.O. — see M.O.Hill
Hilp. — Hilpert, Friedrich Wilhelm (1907–)
Hoffm. — Hoffmann, George Franz (1761–1826)
Höhn. — Höhnel, Franz Xaver Rudolf von (1852–1920)
Holmen — Holmen, Kield Áxel (1921–1974)
Hook. — Hooker, Wiliam Jackson (1785–1865)
Hook.f. — Hooker, Joseph Dalton (1817–1911)
Hoppe — Hoppe, David Heinrich (1760–1846)
Horik. — Horikawa, Yoshiwo (1902–1976)
Hornsch. — Hornschuch, Christian Friedrich (1793–1850)
Host — Host, Nicolaus Thomas (1761–1834)
Huds. — Hudson, William (1730–1793)
Huebener — Huebener, Johann Wilhelm Peter (1807–1847)
Hult — Hult, Ragnar (1857–1899)
Husn. — Husnot, Pierre Tranquille (1840–1929)
Huttunen — Huttunen, Sanna (fl. 2002)

I

I.G.Borszczow — Borszczow, Ilya (Elia) Grigorievicz (1833–1878)
I.Hagen — Hagen, Ingebrigt Severin (1852–1917)
Ignatov — Ignatov, Michail Stanislavovich (1956–)
Ingham — Ingham, William (1854–1923)
Ireland — Ireland, Robert Root (1932–)
Isov. — Isoviita, Pekka (1931–)
Itzigs. — Itzigsohn, Ernst Friedrich Hermann (1814–1879)
Iwats., Z. — see Z.Iwats.

J

J.E.Zetterst. — Zetterstedt, Johan Emanuel (1828–1880)
J.Guerra — Guerra, Juan (1952–)
J.J.Amann — Amann, Jean Jules (1858–1939)
J.Kickx f. — Kickx, Jean (1803–1864)
J.-P.Frahm — Frahm, Jahn-Peter (1945–)
J.R.Spence — Spence, John R. (1956–)
Jaap — Jaap, Otto (1864–1922)
Jaeger, A. — see A.Jaeger

Jäggli — Jäggli, Mario (1880–1959)
James — James, Thomas Potts (1803–1882)
Jamieson, D.W. — see D.W.Jamieson
Jansen — Jansen, Pieter (1882–1955)
Jedl. — Jedlicka, Josef (1912–1959)
Jelenc — Jelenc, Féodor (1911–2001)
Jenn. — Jennings, Otto Emery (1877–1964)
Jensen, C.E.O. — see C.E.O.Jensen
Jensen, T. — see T.Jensen
Jolycl. — Jolyclerc, Nicolas Marie Thérese (1746–1817)
Jur. — Juratzka, Jakob (Jacob) (1821–1878)

K

K.Saito — Saito, Kamezo (1947–)
Kanda — Kanda, Hiroshi (1946–)
Karttunen — Karttunen, Krister (1960–)
Kaulf. — Kaulfuss, Georg Friedrich (1787–1830)
Keissl. — Keissler, Karl (Carl) von (1872–1965)
Kenn. — Kennedy, George Golding (1841–1918)
Kickx, J., f. — see J.Kickx f.
Kindb. — Kindberg, Nils Conrad (1832–1910)
Klinggr., H. — see H.Klinggr.
Koch — Koch, Johann Friedrich Wilhelm (1759–1831)
Koch, L.F. — see L.F.Koch
Koch, W.D.J. — see W.D.J.Koch
Kop., T.J. — see T.J.Kop.
Koppe, F. — see F.Koppe
Korcz. — Korczagin, Aleksandr Aleksandrovich (Alexander Alexandrovich) (1900–1987)
Kramer, W.A. — see W.A.Kramer
Kuntze — Kuntze, Carl (Karl) Ernst (Eduard) Otto (1843–1907)

L

L. — Linnaeus, Carl von (1707–1778)
L.E.Anderson — Anderson, Lewis Edward (1912–)
L.F.Koch — Koch, Leo Francis (1916–)
L.Gos — Gos, Lidia (1964–)
L.I.Savicz — Savicz-Lubitskaya, Lydia Ivanovna (1886–1982)
Lagasca y Segura — Lagasca y Segura, Mariano (1776–1839)
Lam. — Lamarck, Jean Baptiste Antoine Pierre de Monnet de (1744–1829)
Lange — Lange, Johan Martin Christian (1818–1898)
Laurer — Laurer, Johann Friedrich (1798–1873)
Lawton, E. — see E.Lawton

Laz. — Lazarenko, Andrei Sazontovich (1901–1979)
Lees — Lees, Edwin (1800–1887)
Lesq. — Lesquereux, Charles Léo (1806–1889)
Li, X.J. — see X.J.Li
Levier — Levier, Emile (Emilio) (1839–1911)
Liebm. — Liebmann, Frederik Michael (1813–1856)
Lilj. — Liljeblad, Samuel (1761–1815)
Limpr. — Limpricht, Karol Gustav (1834–1902)
Lindb. — Lindberg, Sextus Otto (1835–1889)
Lindb., H. — see H.Lindb.
Lisa — Lisa, Domenico (1801–1867)
Lisowski — Lisowski, Stanisław (1924–2002)
Lobarz. — Łobarzewski, Hyacinth Strzemię von (1816–1862)
Loeske — Loeske, Leopold (1865–1935)
Lorentz — Lorentz, Paul (Pablo) Günther (1835–1881)
Ludw., C.F. — see C.F.Ludwig

M

Mårtensson — Mårtensson, Olle (Olof) (1915–1995)
M.Fleisch. — Fleischer, Max (1861–1930)
M.O.Hill — Hill, Mark Oliver (1945–)
M.Zang — Zhang, Mu (fl.1985)
Macoun — Macoun, John (1831–1920)
Malta — Malta, Nicolajs (1890–1944)
Margad. — Margadant, Willem Daniel (1916–1997)
Mathieu — Mathieu, Charles Marie Joseph (1791–1873)
Matteri — Matteri, Celina Maria (1943–)
Medelius — Medelius, Sigrid Olof (1878–1930)
Menzies — Menzies, Archibald (1754–1842)
Mey., B. — see B.Mey.
Meyl. — Meylan, Charles (1868–1941)
Michx. — Michaux, André (1746–1803)
Mikut. — Mikutowicz, Johann Mattias (Johannes Mathias) (1872–1951)
Milde — Milde, Carl August Julius (1824–1871)
Mitt. — Mitten, William (1819–1906)
Mogensen — Mogensen, Gert Steen (1944–)
Mohr, D. — see D.Mohr
Molendo — Molendo, Ludwig (1833–1902)
Molk. — Molkenboer, Julian(us) Hendrik (1816–1854)
Möller, H. — see H.Möller
Mönk. — Mönkemeyer, Wilhelm (1862–1938)
Mont. — Montagne, Jean Pierre François Camille (1784–1866)

Moore — Moore, David (1808–1879)
Moug. — Mougeot, Jean Baptiste (1776–1858)
Müll., H. — see H.Müll.
Müll.Hal. — Müller (Halle), Johann Karl (Carl) August (Friedrich Wihelm) (1818–1899)
Myrin — Myrin, Claus (Claës) Gustaf (1803–1835)

N

N.Nishim. — Nishimura, Naoki (1951–)
Neck. — Necker, Noel Martin Joseph de (1730–1793)
Nees — Nees von Esenbeck, Christian Gottfried Daniel (1776–1858)
Nestl. — Nestler, Chrétien Géofroy (Christian Gottfried) (1778–1832)
Nieuwl. — Nieuwland, Julius (Aloysius) Arthur (1878–1936)
Nishim., N. — see N.Nishim.
Nog. — Noguchi, Akira (1907–1988)
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P.Gaertn. — Gaertner, Philipp Gottfried (1754–1825)
P.W.Richards — Richards, Paul Westmacott (1908–1995)
Paris — Paris, Jean Édouard Gabriel Narcisse (1827–1911)
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Pers. — Persoon, Christiaan Hendrik (1761–1836)
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Pfeff. — Pfeffer, Wilhelm Friedrich Philipp (1845–1920)
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Pócs — Pócs, Tamás (1933–)
Pyl., Bach. — see Bach.Pyl.

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R.H.Zander — Zander, Richard Henry (1941–)
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R.Ruthe — Ruthe, (Johann Gustav) Rudolf (1823–1905)
R.S.Chopra — Chopra, Ram Saran (1904–)
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Rabenh. — Rabenhorst, Gottlob (Gotlieb) Ludwig (1806–1881)
Rau — Rau, Eugene Abraham (1848–1932)
Rchb. — Reichenbach, (Heinrich Gottlieb) Ludwig (1793–1879)
Reichard — Reichard, Johann Jacob (Jakob) (1743–1782)
Reimers — Reimers, Hermann Johann O. (1893–1961)
Reinw. — Reinwardt, Caspar Georg Carl (1773–1854)
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Rothm. — Rothmaler, Werner Hugo Paul (1908–1962)
Russow — Russow, Edmund (August Friedrich) (1841–1897)
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Sapjegin — Sapjegin, Andrej Afanesievich (1883–1946)
Saut. — Sauter, Anton Eleutherius (1800–1881)
Savi — Savi, Gaetano (1769–1844)
Savicz, L.I. — see L.I.Savicz
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Scherb. — Scherbius, Johannes (1769–1813)
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Schimp. — Schimper, Wilhelm Philip (1808–1880)
Schkuhr — Schkuhr, Christian (1741–1811)
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Schrad. — Schrader, Heinrich Adolph (1767–1836)
Schrank — Schrank, Franz von Paula von (1747–1835)
Schreb. — Schreber, Johann Christian Daniel von (1739–1810)
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Schumach. — Schumacher, Heinrich Christian Friedrich (1757–1830)
Schwägr. — Schwägrichen, Christian Friedrich (1775–1853)
Scop. — Scopoli, Joannes Antonius (Giovanni Antonio) (1723–1788)
Sehlm. — Sehlmeyer, Johann Friedrich (1788–1856)
Seki — Seki, Tarow (1934–)
Sendtn. — Sendtner, Otto (1813–1859)
Sharp — Sharp, Aaron John ('Jack') (1904–1997)
Shaw, A.J. — see A.J.Shaw
Sim — Sim, Thomas Robertson (1856–1938)
Sjörs — Sjörs, Hugo Mattias (1915–)
Sm. — Smith, James Edward (1759–1828)
Sm., A.J.E. — see A.J.E.Sm.
Sm., G.L. — see G.L.Sm.
Šmarda — Šmarda, Jan (1904–1968)
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Strøm — Strøm, Hans (1726–1797)
Sull. — Sullivant, William Starling (1803–1873)
Sw. — Swartz, Olof (Peter) (1760–1818)
Syed — Syed, Hadiuzzaman (fl. 1973)
Szafran — Szafran, Bronisław (1897–1968)
Szmajda — Szmajda, Piotr Henryk (1945–)

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T.Jensen — Jensen, Thomas (1824–1877)
T.Schauer — Schauer, Thomas (1938–)
Taylor — Taylor, Thomas (1775–1848)

Thed. — Thedenius, Knut Fredrik (1814–1894)
Thér. — Thériot, (Marie Hypolite) Irénée (1859–1947)
Thunb. — Thunberg, Carl Peter (1743–1828)
Timm — Timm, Joachim Christian (1734–1805)
Tomm. — Tommasini, Muzio Giuseppe Spirito de (Mutius Joseph Spiritus) (1794–1879)
Torka — Torka, Valentin (1867–1952)
Trevis. — Trevisan de Saint-Léon, Vittore Benedetto Antonio (1818–1897)
Tuom. — Tuomikoski, Risto Kalevi (1911–1989)
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Velen. — Velenovský, Josef (Joseph) (1858–1949)
Ventenant — Ventenant, Étienne Pierre (1757–1808)
Venturi — Venturi, Gustavo (1830–1898)
Vilh. — Vilhelm, Jan (1876–1931)
Vill. — Villars, Dominique (1745–1814)
Vitt — Vitt, Dale Hadley (1944–)
Voit — Voit, Johann Gottlob Wilhelm (1787–1813)

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Walther, A.W.H. — see A.W.H.Walther
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Zander, R.H. — see R.H.Zander
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Zetterst., J.E. — see J.E.Zetterst.
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11 TAXONOMIC AND NOMENCLATURAL NOVELTIES

New taxa

Amphidioideae Ochyra, *subfam. nov.*

Brachythecium Schimp. sectio *Pseudocamptothecium* Szafran *ex* Ochyra, Żarnowiec & Bednarek-Ochyra, *sect. nov.*

Catoscopiineae Ochyra, *subord. nov.*

Diobelonella Ochyra, *gen. nov.*
Dryptodon Brid. sectio *Elongati* Ochyra & Żarnowiec, *sect. nov.*

Encalyptidae Vitt, Goffinet & Hedd. *ex* Ochyra, Żarnowiec & Bednarek-Ochyra, *subclass. nov.*

Hedwigiales Ochyra, *ord. nov.*

Leptobryoideae Ochyra, *subfam. nov.*

Polytrichopsida Vitt, Goffinet & Hedd. *ex* Ochyra, Żarnowiec & Bednarek-Ochyra, *class. nov.*

Racomitrioideae Ochyra & Bednarek-Ochyra, *subfam. nov.*

Schistidium Bruch & Schimp. subgenus *Canalicularia* Ochyra, *subg. nov.*
Schistidium Bruch & Schimp. sectio *Atrofusca* Ochyra, *sect. nov.*
Schistidium Bruch & Schimp. sectio *Rivularia* Ochyra, *sect. nov.*
Schistidium Bruch & Schimp. sectio *Robusta* Ochyra, *sect. nov.*
Schistidium Bruch & Schimp. sectio *Tenera* Ochyra, *sect. nov.*
Seligeria Bruch & Schimp. sectio *Calcareae* Ochyra & L.Gos, *sect. nov.*

Timmiidae Ochyra, *subclass. nov.*

New names and combinations

Andreaeobryidae (B.M. Murray) Ochyra, *stat. et comb. nov.*
Anomodon Hook. & Taylor subgenus *Pseudanomodon* (Limpr.) Ochyra, *stat. et comb. nov.*

Bicosta Ochyra, *nom. nov.*
Bicosta fuegiana (Cardot) Ochyra, *comb. nov.*
Brachytheciastrum fendleri (Sull.) Ochyra & Żarnowiec, *comb. nov*.
Brachytheciastrum vanekii (Šmarda) Ochyra & Żarnowiec, *comb. nov*.
Brachytheciastrum velutinum (Hedw.) Ignatov & Huttunen var. *salicinum* (Schimp.) Ochyra & Żarnowiec, *comb. nov.*
Brachytheciastrum velutinum (Hedw.) Ignatov & Huttunen var. *vagans* (Milde) Ochyra & Żarnowiec, *comb. nov.*
Bucklandiella Roiv. sectio *Emersae* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella Roiv. sectio *Laevifoliae* (Kindb.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella Roiv. sectio *Lawtoniae* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella Roiv. sectio *Marginatae* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella Roiv. sectio *Ptychophyllae* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella Roiv. sectio *Subsecundae* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella Roiv. sectio *Sudeticae* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella Roiv. subsectio *Cucullaria* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella Roiv. subsectio *Diaphanae* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella Roiv. subsectio *Grimmiaeformes* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella Roiv. subsectio *Horridae* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella affinis (F.Weber & D.Mohr) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella afoninae (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella albipilifera (C.H.Gao & T.Cao) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella albipilifera var. *lorifolia* (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella angustifolia (Broth.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella brevipes (Kindb.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella compactula (Müll. Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella crispipila (Taylor) Bednarek-Ochyra & Ochyra, *comb. nov.*

Bucklandiella crispula (Hook.f. & Wilson) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella cucullata (Broth.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella cucullatifolia (Hampe) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella cylindropyxis (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella decurrens (Dixon) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella defoliata (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella didyma (Mont.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella elliptica (Turner) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella emersa (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella fuscescens (Wilson) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella fuscolutea (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella gracillima (Dixon) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella grimmioides (Herzog) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella heterosticha (Hedw.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella heterostichoides (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella himalayana (Mitt.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella joseph-hookeri (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella laeta (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella lamprocarpa (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella lawtonae (Ireland) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella lepervanchei (Besch.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella lusitanica (Ochyra & Sérgio) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella macounii (Kindb.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella macounii subsp. *alpinum* (E.Lawton) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella membranacea (Mitt.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella microcarpa (Hedw.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella microcarpa fo. *afoninae* (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella minuta (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella nitidula (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella obesa (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella obtusa (Brid.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella obtusa fo. *trichophora* (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella occidentalis (Renauld & Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella ochracea (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella orthotrichacea (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella pachydictyon (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella pacifica (Ireland & J.R.Spence) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella procumbens (Mitt.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella ptychophylla (Mitt.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella rupestris (Mitt.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella seychellara (Besch.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella striatipila (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella suborthotrichacea (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Bucklandiella subsecunda (Hook. & Grev.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella subulifolia (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella sudetica (Funck) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella sudetica fo. *kindbergii* (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella sudetica fo. *terricola* (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella valdon-smithii (Ochyra & Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov*
Bucklandiella venusta (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella verrucosa (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella verrucosa var. *emodensis* (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*
Bucklandiella visnadiae (W.R.Buck) Bednarek-Ochyra & Ochyra, *comb. nov*
Bucklandiella vulcanicola (Frisvoll & Deguchi) Bednarek-Ochyra & Ochyra, *comb. nov.*
Buxbaumiidae (M.Fleisch.) Ochyra, *stat. et comb*. *nov*.

Campylidium (Kindb.) Ochyra, *stat. et comb. nov*.
Campylidium calcareum (Crundwell & Nyholm) Ochyra, *comb. nov*.
Campylidium creperum (Mitt.) Ochyra, *comb. nov*.
Campylidium hispilulum (Brid.) Ochyra, *comb. nov*.
Campylidium lacerulum (Mitt.) Ochyra, *comb. nov*.
Campylidium porphyreticum (Müll.Hal.) Ochyra, *comb. nov*.
Campylidium praegracile (Mitt.) Ochyra, *comb. nov*.
Campylidium quisqueyanum (W.R.Buck) Ochyra, *comb. nov*.
Campylidium sommerfeltii (Myrin) Ochyra, *comb. nov*.
Campylidium squarrosobyssoides (Müll.Hal.) Ochyra, *comb. nov*.
Campylidium trichocladum (Taylor) Ochyra, *comb. nov*.
Codriophorus P.Beauv. sectio *Chrysei* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Codriophorus P.Beauv. sectio *Fascicularia* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Codriophorus P.Beauv. sectio *Piliferi* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Codriophorus P.Beauv. subsectio *Andicola* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Codriophorus P.Beauv. subsectio *Hydrophilus* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Codriophorus aduncoides (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov*.
Codriophorus anomodontoides (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*
Codriophorus aquaticus (Brid. *ex* Schrad.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Codriophorus brevisetus (Lindb.) Bednarek-Ochyra & Ochyra, *comb. nov*.
Codriophorus carinatus (Cardot)) Bednarek-Ochyra & Ochyra, *comb. nov.*
Codriophorus depressus (Lesq.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Codriophorus dichelymoides (Herzog) Bednarek-Ochyra & Ochyra, *comb. nov.*
Codriophorus fascicularis (Hedw.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Codriophorus hespericus (Sérgio, J.Muñoz & Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov*.
Codriophorus laevigatus (A.Jaeger) Bednarek-Ochyra & Ochyra, *comb. nov.*
Codriophorus mollis (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*
Codriophorus norrisii (Bednarek-Ochyra & Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Codriophorus papeetense (Besch.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Codriophorus ryszardii (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Codriophorus varius (Mitt.) Bednarek-Ochyra & Ochyra, *comb. nov.*

Dicranella (Müll. Hal.) Schimp. sectio *Anisothecium* (Kindb.) Ochyra, *comb. nov*.
Dicranidae (W.Frey) Ochyra, *stat. et comb. nov*.
Dicranum Hedw. sectio *Convolutifolia* (Kindb.) Ochyra, *stat. et comb. nov*.
Dicranum Hedw. sectio *Fuscescentiformia* (Kindb.) Ochyra, *stat. et comb. nov*.
Diobelonella palustris (Dicks.) Ochyra, *comb. nov.*
Diphysciidae (M.Fleisch.) Ochyra, *stat. et comb. nov*.
Drepanocladus (Müll.Hal.) G.Roth sectio *Sendtneri* (G.Roth) Ochyra & Żarnowiec, *stat. et comb. nov*.
Dryptodon Brid. sectio *Pulvinati* (Bruch & Schimp.) Ochyra & Żarnowiec, *comb. nov*.
Dryptodon Brid. sectio *Torquati* (I.Hagen) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon Brid. sectio *Trichophylli* (Bruch & Schimp.) Ochyra & Żarnowiec, *comb. nov*.
Dryptodon arcuatifolius (Kindb.) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon austrofunalis (Müll.Hal.) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon bicolor (Herzog) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon brachydictyon (Cardot) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon capillatus (De Not.) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon curvisetus (Bouman) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon dissimulatus (E.Maier) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon fuscoluteus (Hook.) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon handelii (Broth.) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon herzogii (Broth.) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon humilis (Mitt.) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon indicus (Dixon & P.de la Varde) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon leibergii (Paris) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon lesherae (Greven) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon macrotheca (Mitt.) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon mauiensis (Greven) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon maunakeaensis (Greven) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon meridionalis (Müll. Hal.) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon molestus (J.Muñoz) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon navicularis (Herzog) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon nepalensis (Mitt.) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon nutans (Bruch) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon ochyrianus (J.Muñoz) Ochyra & Żarnowiec, *comb. nov.*

Dryptodon olneyi (Sull.) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon orbicularis (Bruch *ex* Wilson) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon percarinarus (Dixon & Sakurai) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon piliferus (P.Beauv.) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon pseudoanodon (Deguchi) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon pullus (Cardot) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon reduncus (Mitt.) Ochyra & Żarnowiec, *comb. nov.*
Dryptodon tortuosus (Hook.f. & Wilson) Ochyra & Żarnowiec, *comb. nov.*

Eurhynchiastrum pulchellum (Hedw.) Ignatov & Huttunen var. *diversifolium* (Schimp.) Ochyra & Żarnowiec, *comb. nov*.
Eurhynchiastrum pulchellum (Hedw.) Ignatov & Huttunen var. *praecox* (Sw. *ex* Hedw.) Ochyra & Żarnowiec, *comb. nov*.

Fissidentineae (M.Fleisch.) Ochyra, *stat. et comb. nov*.
Funariidae (W.Frey) Ochyra, *stat. et comb. nov*.

Guembelia bernoullii (Müll. Hal.) Ochyra & Żarnowiec, *comb. nov.*
Guembelia crassifolia (Broth.) Ochyra & Żarnowiec, *comb. nov.*
Guembelia hamulosa (Lesq.) Ochyra & Żarnowiec, *comb. nov.*
Guembelia involucrata (Cardot) Ochyra & Żarnowiec, *comb. nov.*
Guembelia khasiana (Mitt.) Ochyra & Żarnowiec, *comb. nov.*
Guembelia kidderi (James) Ochyra & Żarnowiec, *comb. nov.*
Guembelia laevigata (Brid.) Ochyra & Żarnowiec, *comb. nov.*
Guembelia limprichtii (Kern) Ochyra & Żarnowiec, *comb. nov.*
Guembelia longirostris (Hook.) Ochyra & Żarnowiec, *comb. nov.*
Guembelia macroperichaetialis (Greven) Ochyra & Żarnowiec, *comb. nov.*
Guembelia mammosa (C.H.Gao & T.Cao) Ochyra & Żarnowiec, *comb. nov.*
Guembelia nevadensis (Greven) Ochyra & Żarnowiec, *comb. nov.*
Guembelia obtusolinealis (Müll.Hal.) Ochyra & Żarnowiec, *comb. nov.*
Guembelia serrana (J.Muñoz, Shevock & D.R.Toren) Ochyra & Żarnowiec, *comb. nov.*
Guembelia stenobasis (Dixon) Ochyra & Żarnowiec, *comb. nov.*
Guembelia teretinervis (Limpr.) Ochyra & Żarnowiec, *comb. nov.*
Guembelia wilsonii (Greven) Ochyra & Żarnowiec, *comb. nov.*

Hymenoloma alpinum (Mitt.) Ochyra, *comb. nov.*
Hymenoloma antarcticum (Müll.Hal.) Ochyra, *comb. nov.*
Hymenoloma austrocrispulum (Müll.Hal.) Ochyra, *comb. nov.*
Hymenoloma brevifolium (Dixon & Herzog) Ochyra, *comb. nov*.
Hymenoloma brevipes (Müll.Hal.) Ochyra, *comb. nov.*
Hymenoloma brevisetum (Cardot) Ochyra, *comb. nov.*
Hymenoloma compactum (Schwägr.) Ochyra, *comb. nov.*
Hymenoloma conterminum (Renauld & Cardot) Ochyra, *comb. nov.*
Hymenoloma crispulum (Hedw.) Ochyra, *comb. nov.*

Hymenoloma dryptodontoides (Müll.Hal.) Ochyra, *comb. nov.*
Hymenoloma funiculipes (Cardot & Broth.) Ochyra, *comb. nov.*
Hymenoloma grimmiaceum (Müll.Hal.) Ochyra, *comb. nov.*
Hymenoloma immersum (Broth.) Ochyra, *comb. nov.*
Hymenoloma indicum (Wilson.) Ochyra, *comb. nov.*
Hymenoloma insulare (Mitt.) Ochyra, *comb. nov.*
Hymenoloma intermedium (J.J.Amann) Ochyra, *comb. nov.*
Hymenoloma jugelliferum (Dusén) Ochyra, *comb. nov.*
Hymenoloma macrosporum (Reimers) Ochyra, *comb. nov.*
Hymenoloma subinclinatum (Müll.Hal.) Ochyra, *comb. nov.*
Hymenoloma subtortifolium (Broth.) Ochyra, *comb. nov.*
Hymenoloma tortifolium (Hook.f. & Wilson) Ochyra, *comb. nov.*

Niphotrichum (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *stat. et comb. nov.*
Niphotrichum sectio *Elongata* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Niphotrichum subsectio *Ericoides* (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*
Niphotrichum subsectio *Japonica* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Niphotrichum subsectio *Minima* (Bednarek-Ochyra) Bednarek-Ochyra & Ochyra, *comb. nov.*
Niphotrichum barbuloides (Cardot) Bednarek-Ochyra & Ochyra, *comb. nov.*
Niphotrichum canescens (Hedw.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Niphotrichum canescens subsp. *latifolium* (C.E.O.Jensen) Bednarek-Ochyra & Ochyra, *comb. nov.*
Niphotrichum elongatum (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*
Niphotrichum ericoides (Brid.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Niphotrichum japonicum (Dozy & Molk.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Niphotrichum muticum (Kindb.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Niphotrichum panschii (Müll.Hal.) Bednarek-Ochyra & Ochyra, *comb. nov.*
Niphotrichum pygmaeum (Frisvoll) Bednarek-Ochyra & Ochyra, *comb. nov.*

Orthogrimmia (Schimp.) Ochyra & Żarnowiec, *stat. et comb. nov*.
Orthogrimmia sectio *Montanae* (I.Hagen) Ochyra & Żarnowiec, *comb. nov.*
Orthogrimmia alpestris (Schleich. *ex* F.Weber & D.Mohr) Ochyra & Żarnowiec, *comb. nov.*
Orthogrimmia arenaria (Hampe) Ochyra & Żarnowiec, *comb. nov.*
Orthogrimmia argyrotricha (Müll.Hal.) Ochyra & Żarnowiec, *comb. nov.*
Orthogrimmia asperitricha (Dixon & Sainsbury) Ochyra & Żarnowiec, *comb. nov.*
Orthogrimmia caespiticia (Brid.) Ochyra & Żarnowiec, *comb. nov.*
Orthogrimmia donniana (Sm.) Ochyra & Żarnowiec, *comb. nov.*
Orthogrimmia grisea (Cardot) Ochyra & Żarnowiec, *comb. nov.*
Orthogrimmia mariniana (Sayre) Ochyra & Żarnowiec, *comb. nov.*

Orthogrimmia montana (Bruch & Schimp.) Ochyra & Żarnowiec, *comb. nov.*
Orthogrimmia nivalis (Kindb.) Ochyra & Żarnowiec, *comb. nov.*
Orthogrimmia sessitana (De Not.) Ochyra & Żarnowiec, *comb. nov.*
Orthogrimmia shastai (Greven) Ochyra & Żarnowiec, *comb. nov.*
Orthogrimmia triformis (Carestia & De Not.) Ochyra & Żarnowiec, *comb. nov.*
Orthogrimmia ungeri (Jur.) Ochyra & Żarnowiec, *comb. nov.*
Orthotrichidae (Dixon) Ochyra, *stat. et comb. nov.*
Oxyrrhynchium hians (Hedw.) Loeske var. *robustum* (Boulay) Ochyra & Żarnowiec, *comb. nov.*

Philonotis Brid. sectio *Homomorphae* (Kindb.) Ochyra, *stat. et comb. nov.*
Plagiothecium Schimp. sectio *Philoscia* (Berk.) Ochyra, *stat. et comb. nov.*
Pohlia Hedw. subgenus *Mniobryum* (Bruch & Schimp. *ex* Limpr.) Ochyra, *comb. nov.*
Pohlia Hedw. sectio *Apalodictyon* (Müll. Hal.) Ochyra, *comb. nov.*
Polytrichidae (W.Frey) Ochyra, *stat. et comb. nov.*
Pseudocalliergon (Limpr.) Loeske sectio *Turgidi* (Smirnova) Ochyra, *comb. nov.*
Pylaisia frahmii (W.R.Buck) Ochyra, *comb. nov.*
Pylaisia kunisawae (Ando) Ochyra, *comb. nov.*
Pylaisia steerei (Ando & Higuchi) Ochyra, *comb. nov.*

Rosulabryum andicola (Hook.) Ochyra, *comb. nov.*
Rosulabryum canariense (Brid.) Ochyra, *comb. nov.*
Rosulabryum densifolium (Brid.) Ochyra, *comb. nov.*
Rosulabryum donianum (Grev.) Ochyra, *comb. nov.*
Rosulabryum elegans (Nees) Ochyra, *comb. nov.*
Rosulabryum goudotii (Hampe) Ochyra, *comb. nov.*
Rosulabryum huillense (Welw. & Duby) Ochyra, *comb. nov.*
Rosulabryum keniae (Müll.Hal.) Ochyra, *comb. nov.*
Rosulabryum laevifilum (Syed) Ochyra, *comb. nov.*
Rosulabryum leptoneurum (P.de la Varde) Ochyra, *comb. nov.*
Rosulabryum macrophyllum (Cardot & Broth.) Ochyra, *comb. nov.*
Rosulabryum perlimbatum (Cardot) Ochyra, *comb. nov.*
Rosulabryum platyloma (Schwägr.) Ochyra, *comb. nov.*
Rosulabryum pseudocapillare (Besch.) Ochyra, *comb. nov.*
Rosulabryum pycnophyllum (Dixon) Ochyra, *comb. nov.*
Rosulabryum stirtonii (Schimp.) Ochyra, *comb. nov.*
Rosulabryum subelegans (Kindb.) Ochyra, *comb. nov.*
Rosulabryum truncorum (Brid.) Ochyra, *comb. nov.*
Rosulabryum viridescens (Welw. & Duby) Ochyra, *comb. nov.*

Schistidium Bruch & Schimp. sectio *Apocarpiformia* (Kindb.) Ochyra, *stat. et comb. nov.*
Schistidium Bruch & Schimp. sectio *Conferta* (Vilh.) Ochyra, *stat. et comb. nov.*
Schistostegineae (M.Fleisch.) Ochyra, *stat. et comb. nov.*

Sciuro-hypnum filirepens (Dusén) Ochyra & Żarnowiec, *comb. nov*.
Sciuro-hypnum fuegianum (Broth.) Ochyra & Żarnowiec, *comb. nov*.
Sciuro-hypnum glaciale (Schimp.) Ignatov & Huttunen var. *dovrense* (Limpr.) Ochyra & Żarnowiec, *comb. nov*.
Sciuro-hypnum glaciale (Schimp.) Ignatov & Huttunen var. *gelidum* (Limpr.) Ochyra & Żarnowiec, *comb. nov*.
Sciuro-hypnum nelsonii (Grout) Ochyra & Żarnowiec, *comb. nov*.
Sciuro-hypnum pulchellum (Broth. & Paris) Ochyra & Żarnowiec, *comb. nov*.
Sciuro-hypnum uematsui (Broth.) Ochyra & Żarnowiec, *comb. nov*.
Sciuro-hypnum uncinifolium (Broth. & Paris) Ochyra & Żarnowiec, *comb. nov*.
Seligeria sectio *Anodus* (Bruch & Schimp.) Ochyra & L.Gos, *stat. et comb. nov.*
Seligeria patula (Lindb.) I.Hagen var. *alpestris* (T.Schauer) L.Gos & Ochyra, *stat. et comb. nov.*
Sphagnopsida (Engl.) Ochyra, *stat. et comb. nov.*
Splachnales (M. Fleisch.) Ochyra, *stat*. *et comb*. *nov*.
Streptocolea (I.Hagen) Ochyra & Żarnowiec, *stat. et comb. nov*.
Streptocolea atrata (Miel. *ex* Hornsch.) Ochyra & Żarnowiec, *comb. nov*.

Tetraphidiidae (M.Fleisch.) Ochyra, *stat*. *et comb*. *nov*.
Timmiales (M.Fleisch.) Ochyra, *stat*. *et comb*. *nov*.
Tortula Hedw. sectio *Cuneifoliae* (Schimp.) Ochyra, *comb. nov*.
Trichostomum Bruch subgenus *Oxystegus* (Lindb. *ex* Limpr.) Ochyra, *stat. et comb. nov.*

Warnstorfia Loeske subgenus *Sarmentypnum* (Tuom. & T.J.Kop.) Ochyra, *stat. et comb. nov*.

New synonyms

Bryum fissum R.Ruthe = *Bryum salinum*

Dicranum Hedw. sectio *Fuscescentia* Nyholm, *nom. inval. descr. suec. et angl*. = *Dicranum* sectio *Fuscescentiformia*
Dicranum Hedw. sectio *Muehlenbeckia* W.L.Peterson *ex* Nyholm, *nom. illeg. descr. angl.* = *Dicranum* sectio *Convolutifolia*
Dryptodon Brid. subgenus *Ellipticodryptodon* Vilh. = *Bucklandiella*

Grimmia Hedw. subgenus *Litoneurum* I.Hagen = *Guembelia*
Grimmia Hedw. subgenus *Rhabdogrimmia* Limpr. = *Dryptodon*
Grimmia singarensis Schiffn. = *Schistidium helveticum*

Racomitrium Brid. subgenus *Cataracta* Vilh. = *Codriophorus*
Racomitrium Brid. subgenus *Microcarpa* Vilh. = *Bucklandiella*

Schistidium atrofuscum (Schimp.) Limpr. fo. *decipiens* Limpr. = *Schistidium atrofuscum*

Schistidium sphaericum (Schimp.) G.Roth var. *carpaticum* Żmuda
= *Guembelia tergestina*
Seligeria austriaca T.Schauer = *Seligeria patula* var. *alpestris*

Trigonodictyon Dixon & P. de la Varde = *Dryptodon*

12 STRESZCZENIE POLISH SUMMARY

Jedyny pełny wykaz mchów Polski został opracowany dokładnie ćwierć wieku temu (Ochyra & Szmajda 1978). Obejmował on 651 gatunków i 133 odmiany należące do 178 rodzajów i 47 rodzin. Wykaz ten został następnie opublikowany z niewielkimi zmianami w pierwszym zeszycie „Atlasu rozmieszczenia geograficznego roślin zarodnikowych w Polsce. Seria V. Mchy (Musci)" (Ochyra & Szmajda 1983*a*). Stanowił on podstawę do opracowania map zasięgowych dla poszczególnych gatunków mchów, które były publikowane w kolejnych fascykułach tego seryjnego wydawnictwa. Zmodyfikowana wersja tej listy została ponownie wydana w 1992 r. w ósmym zeszycie „Atlasu" i obejmowała 677 gatunków (Ochyra i in. 1992*a*).

Ostatnie dwa dziesięciolecia przyniosły duży postęp w badaniach taksonomicznych, nomenklatorycznych i fitogeograficznych nad mchami, których odzwierciedleniem były liczne zmiany w ujęciach taksonomicznych w różnych rodzinach i rodzajach w tej grupie roślin. Jednocześnie daje się również zaobserwować wyraźny postęp w badaniach florystycznych i ekologicznych nad mchami w Polsce, zmierzających w pierwszym rzędzie do ochrony ich różnorodności biologicznej. W ich wyniku nie tylko stwierdzono szereg gatunków nowych dla Polski, ale również okazało się, że niektóre gatunki zostały błędnie podane i powinny być skreślone z krajowej flory. Ponieważ wszystkie te dane były rozproszone po literaturze i nie zawsze łatwe do szybkiego odnalezienia, lub wręcz trudno dostępne dla wielu krajowych briologów, coraz dotkliwiej dawał się odczuć brak nowoczesnego standardowego opracowania, które uwzględniałoby wszystkie najnowsze zdobycze z dziedziny taksonomii, nomenklatury i fitogeografii mchów. Lukę tę ma wypełnić niniejszy katalog.

Do końca 2002 r. stwierdzono w Polsce 700 gatunków, 8 podgatunków i 87 odmian mchów, które zaliczane są do 207 rodzajów i 55 rodzin. Formy zostały pominięte w niniejszym katalogu, chociaż krytyczne studia taksonomiczne potwierdziły zasadność ich wyróżnienia przynajmniej w niektórych gatunkach. W porównaniu do poprzedniego wykazu mchów Polski zredukowana została liczba odmian, które w wielu wypadkach okazały się być tylko modyfikacjami siedliskowymi, nie zasługującymi na wyróżnienie jako odrębne taksony. Nie zostały również uwzględnione gatunki egzotyczne, które incydentalnie pojawiają się w szklarniach w różnych ogrodach botanicznych.

Przygotowując obecny katalog zbadaliśmy prawie wszystkie okazy zielnikowe potwierdzające występowanie poszczególnych gatunków w Polsce. Szczególną uwagę zwracaliśmy na zbiory dawnych niemieckich badaczy takich jak J. Milde, K. G. Limpricht, H. von Klinggräff, C. Warnstorf i F. Koppe ze Sudetów, Śląska, Pomorza Zachodniego i byłych Prus Wschodnich. Ich lokalizacja nie zawsze należy do łatwych zadań, gdyż są one często rozproszone w rozmaitych zielnikach europejskich, przy czym szczególnie bogatym i ważnym źródłem tych okazów są zielniki w Muzeum Historii Naturalnej w Budapeszcie (BP) i w Muzeum Przyrodniczym Uniwersytetu Wrocławskiego (WRSL), gdzie można odnaleźć większość zbiorów K. G. Limprichta i J. Mildego, badaczy, którzy położyli największe zasługi w poznanie śląskiej brioflory.

Postawowym celem niniejszego katalogu jest zestawienie wszystkich rodzajów, gatunków, podgatunków i odmian mchów, które stwierdzone zostały w Polsce w jej obecnych granicach, wraz z podaniem pełnej synonimiki nazw użytych kiedykolwiek w literaturze dla tych roślin na tym obszarze (rozdział szósty). Dla wszystkich akceptowanych nazw taksonów podane są pełne dane bibliograficzne (rozdział trzeci), przy czym warto zauważyć, że w niniejszym katalogu po raz pierwszy podjęto próbę uporządkowania nazewnictwa dla wyższych jednostek taksonomicznych mchów, od rodziny do gromady. W rozdziale czwartym zestawione zostały wszystkie taksony, które zostały skreślone z flory mchów Polski i w każdym przypadku podane są powody wykluczenia.

Następnym celem niniejszego katalogu jest podanie poprawnej pisowni nazw taksonów i ich autorów oraz zestawienie ich w nowoczesnym systemie klasyfikacyjnym (rozdział drugi). Szczególnie silny nacisk położony jest w całym katalogu na stronę taksonomiczną i nomenklatoryczną. W trakcie długoletnich badań nad tymi zagadnieniami nagromadziliśmy liczne dane odnośnie do taksonomii i nazewnictwa mchów europejskich, z których większość z różnych powodów nigdy nie była publikowana. Uznaliśmy, że obecny katalog jest dobrym miejscem do udostępnienia ich społeczności briologicznej, zwłaszcza gdy idzie o sprostowanie rozmaitych błędów, które od dawna przewijają się niezauważone w literaturze. Wszystkie nowości taksonomiczne i nomenklatoryczne są obszernie dyskutowane w rozdziale piątym. W sumie w niniejszym katalogu opisano 17 nowych taksonów rodzajowych i ponadrodzajowych, zaproponowano 278 nowych nazw i kombinacji nomenklatorycznych i po raz pierwszy zasugerowano 13 synonimizacji (rozdział jedenasty).

Wreszcie, po raz pierwszy podjęto próbę uporządkowania polskiego nazewnictwa mchów (rozdział siódmy). Ma ono długą i interesującą historię i jest wyjątkowo bogate, chociaż wiele nazw jest zapomnianych lub nieużywanych. W ostatnich latach obserwuje się jednak wzmożoną potrzebę stosowania polskich nazw mchów, zwłaszcza w literaturze popularnonaukowej, podręcznikach i atlasach roślin. Prócz tego wszystkie prawnie chronione gatunki roślin muszą obok nazw łacińskich posiadać także polskie nazwy. Polskie nazwy zostały zastosowane dla wszystkich gatunków, rodzajów, rodzin, rzędów i klas. W przypadku nazw rodzajowych zestawiono pełną synonimikę oraz podano ich autorstwo.

BIODIVERSITY OF POLAND

VOL.3

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[*from the foreword to the series, vol. 1*]

„Różnorodność biologiczna stała się jednym z pojęć-kluczy współczesnego świata, miernikiem rozwoju zrównoważonego oraz paradygmatem nowoczesnej ochrony przyrody i środowiska. (...) Docierająca do rąk Państwa seria *Biodiversity of Poland – Różnorodność biologiczna Polski* – zbiera i ukazuje, po raz pierwszy w naszej historii, krajowe bogactwo gatunkowe wszystkich grup roślin oraz grzybów i innych organizmów zaliczanych tradycyjnie do świata roślin. Jest to także swego rodzaju przyrodniczy «bilans otwarcia» u progu trzeciego tysiąclecia."

[*z przedmowy do serii, tom 1*]

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