

# THE CHECKLIST OF HUNGARIAN BRYOPHYTES – SECOND UPDATE

Peter ERZBERGER<sup>1</sup> and Beáta PAPP<sup>2</sup>

<sup>1</sup>Belziger Str. 37, D–10823 Berlin, Germany; erzberger.peter@gmail.com

<sup>2</sup>Department of Botany, Hungarian Natural History Museum, H–1431 Budapest, Pf. 137, Hungary

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**Abstract:** According to the checklist presented here, the bryophyte flora of Hungary consists of 2 species in 2 genera and 2 families of hornworts, 146 species and 3 additional infraspecific taxa (1 subspecies and 2 varieties) in 60 genera and 34 families of liverworts, and 521 species and 17 additional infraspecific taxa (5 subspecies and 12 varieties) in 186 genera and 64 families of mosses, in total 669 species, 6 subspecies and 14 varieties or 689 taxa. During the last decade, 40 bryophyte taxa (6 liverworts and 34 mosses) were added to the Hungarian bryophyte flora (Appendix 1.1), and an additional 19 taxa (4 liverworts and 15 mosses) that were already part of the Hungarian flora but not recognised in the previous checklist, are now incorporated in the list (Appendix 1.2). On the other hand, 29 taxa (7 liverworts and 22 mosses) must be excluded according to our present state of knowledge (Appendix 2). Another 13 taxa (2 liverworts and 11 mosses) that are at present not considered members of the Hungarian bryoflora are annotated in Appendix 3. They were not recognised in the previous checklist (with one exception), but are reported from Hungary in some literature and with five exceptions are also recognised in the European checklist. In many cases we have insufficient information to definitely decide upon their status. Annotations to all taxa listed in the three appendices provide additional information. In Appendix 4 to all names of bryophyte taxa that appeared in the previous checklist (except excluded taxa) the presently accepted names are assigned.

**Key words:** hornworts, liverworts, mosses, nomenclature, synonymy, taxonomy

## INTRODUCTION

The first checklist of the bryophytes of Hungary (ERZBERGER and PAPP 2004) intended to adopt moderately modern taxonomy to the Hungarian bryophyte flora which had been summarised in three major accounts during the 20th century (BOROS 1953, 1968, ORBÁN and VAJDA 1983). These, however, were rather outdated by the time. Also, many reports of species not mentioned in these accounts and published in a scattered literature, were scrutinised and added to the list if approved. The updated list (PAPP *et al.* 2010), at the same time the first red list, was based on ERZBERGER and PAPP (2004) as far as taxonomy and nomenclature is concerned, but incorporated 30 additional taxa, many recognised during

herbarium revisions dealing with the legacy of Boros and Vajda (ERZBERGER and SCHRÖDER 2008, ERZBERGER 2009a), and more recent fieldwork. Meanwhile, another 40 taxa were added to the Hungarian bryophyte flora, and taxonomy has undergone dramatic changes, mainly due to molecular work, resulting also in a bewildering number of nomenclatural substitutions. The time has therefore come to present a second update of the checklist. An update of the red list is also urgently needed, since we now have a much better knowledge of the situation of many species, but to evaluate this, more time will be needed. On a European scale, a new red list (HODGETTS *et al.* 2019) and a new checklist (HODGETTS *et al.* 2020) have recently been published which are the result of coordinating the work of many individual authors (94 in HODGETTS *et al.* 2019, 26 in HODGETTS *et al.* 2020) and thus setting new standards. It seems a good occasion to follow the new European checklist with respect to taxonomy as far as possible, since a uniform approach will create best comparability between European countries.

Whereas the first Hungarian checklist (ERZBERGER and PAPP 2004) commented on many infraspecific taxa, these were nearly completely omitted in the updated list (PAPP *et al.* 2010). However, the new European checklist (HODGETTS *et al.* 2020) draws attention to many subspecies and varieties, some of which were recognised in Hungary in the 20th century (literature reports or herbarium specimens) or found during recent field work; these have been incorporated into the list when appropriate.

Finally, 29 taxa should be excluded from the Hungarian bryoflora, mostly since their vouchers turned out to represent other taxa (Appendix 2).

We follow the nomenclature of HODGETTS *et al.* (2020) with certain reservations. Any nomenclatural change should ultimately aim at nomenclatural stability. However, obviously, the present stage of molecular work is not final and therefore taxonomy as well as nomenclature will doubtless continue to change even in the near future.

On the other hand, the checklist, and in particular the future red list, which most likely will be largely based on the former regarding taxonomy and nomenclature, will be read and used also by many non-experts, e.g. professionals and national park staff involved with conservational aspects. For these users, the 168 nomenclatural novelties will be cumbersome, and make the necessary comparison with accounts published earlier very troublesome. To ensure compatibility with previous publications (and the extensive list of synonymies referring to the work of Boros, Orbán and Vajda published in ERZBERGER and PAPP 2004) we therefore decided to present our updated checklist Janus-faced, including an abridged version of the present checklist (without the newly added and excluded taxa) using the 'old' nomenclature with reference to the new names (Appendix 4).

## METHODS

The taxa listed in HODGETTS *et al.* (2020) were compared with those reported from Hungary in ERZBERGER and PAPP (2004), PAPP *et al.* (2010) and other publications from the period 2010–2019 concerning the Hungarian bryoflora (most referenced in NAGY *et al.* 2019). In few cases unpublished results were also considered. Whenever specimen details are given, the code of the quadrant in the Central European system (BARTHA *et al.* 2015) is given in square brackets. Separate lists of recognised taxa, taxa not listed in PAPP *et al.* (2010) (Appendix 1), excluded taxa (Appendix 2), and problematic taxa (Appendix 3) were compiled. Nomenclature in general follows HODGETTS *et al.* (2020) with the following exceptions: *Bryum barnesii*, *B. bicolor*, *B. stirtonii*, *Hypnum pallescens* var. *reptile*, and *Microbryum muticum* are not recognised in HODGETTS *et al.* (2020). For details, see the annotations to these taxa. On the other hand, we do not differentiate between *Riccia canaliculata* and *R. duplex*, nor between the two subspecies of *Fissidens crassipes* (ERZBERGER 2016b). We also include *Brachythecium tenuicaule* in the synonymy of *B. tommasinii*.

## RESULTS

### Annotated and updated checklist of Hungarian bryophytes

Nomenclature and taxonomy mostly according to HODGETTS *et al.* 2020) ordered alphabetically according to the accepted names (for comparison with older literature, see Appendix 4, where ordering is according to the names in older checklists (ERZBERGER and PAPP 2004, PAPP *et al.* 2010), and thus synonymy can be found. Synonyms from HODGETTS *et al.* (2020) are in square brackets. If the name used in PAPP *et al.* (2010) is not among them, it is added in parentheses (irrespective to its taxonomic correctness). Annotations in HODGETTS *et al.* (2020) mostly highlight molecular evidence for taxonomic placement, these are generally not repeated here. Our annotations mostly deal with the reports for the occurrence of taxa in Hungary, but also discuss some taxonomic questions and cases where we do not follow the nomenclature of the European checklist.

### Hornworts

- Anthoceros agrestis* Paton [*Anthoceros punctatus* subsp. *agrestis* (Paton) Damsh.,  
*Anthoceros punctatus* var. *douinii* (R. M. Schust.) Damsh.]  
*Phaeoceros carolinianus* (Michx.) Prosk. [*Phaeoceros laevis* subsp. *carolinianus*  
(Michx.) Prosk.]

## Liverworts

- Anastrophyllum michauxii* (F. Weber) H. Buch  
*Aneura pinguis* (L.) Dumort. [*Aneura pinguis* var. *angustior* (Hook.) Dumort.,  
*Aneura pinguis* var. *denticulata* (Nees) Godelin., *Aneura pinguis* var. *fuscovi-*  
*rens* (Lindb.) Damsh.]  
*Apopellia endiviifolia* (Dicks.) Nebel et D. Quandt [*Pellia endiviifolia* (Dicks.)  
Dumort.]  
*Asterella saccata* (Wahlenb.) A. Evans  
*Barbilophozia barbata* (Schmidel ex Schreb.) Loeske [*Lophozia barbata* (Schmi-  
del ex Schreb.) Dumort.]  
*Barbilophozia hatcheri* (A. Evans) Loeske [*Lophozia hatcheri* (A. Evans) Steph.]  
– (NÉMETH and NAGY 2016).  
*Barbilophozia sudetica* (Nees ex Huebener) L. Söderstr., De Roo et Hedd. [*Lo-*  
*phozia alpestris* auct. non (Schleich. ex F. Weber) A. Evans, *L. sudetica* (Nees  
ex Huebener) Grolle, *Pseudolophozia sudetica* (Nees ex Huebener) Konstant.  
et Vilnet, *Lophozia sudetica* var. *anomala* (Schljakov) Schljakov, *L. debiliformis*  
R. M. Schust. et Damsh., *Pseudolophozia debiliformis* (R. M. Schust. et Damsh.)  
Konstant. et Vilnet, *Lophozia debiliformis* var. *concolor* R. M. Schust. et Damsh.]  
*Bazzania trilobata* (L.) Gray  
*Blasia pusilla* L.  
*Blepharostoma trichophyllum* (L.) Dumort.  
*Calypogeia azurea* Stotler et Crotz  
*Calypogeia fissa* (L.) Raddi  
*Calypogeia integristipula* Steph.  
*Calypogeia muelleriana* (Schiffn.) Müll. Frib.  
*Calypogeia neesiana* (C. Massal. et Carestia) Müll. Frib.  
*Calypogeia suecica* (Arnell et J. Perss.) Müll. Frib.  
*Cephalozia bicuspidata* (L.) Dumort.  
*Cephalozia lacinulata* (J. B. Jack ex Gottsche et Rabenh.) Spruce  
*Cephaloziella divaricata* (Sm.) Schiffn. var. *divaricata*  
*Cephaloziella divaricata* (Sm.) Schiffn. var. *scabra* (M. Howe) Haynes [*Cephalozi-*  
*ella divaricata* var. *asperifolia* (Taylor) Damsh.] – According to HODGETTS  
et al. (2020), the taxonomic value of *Cephaloziella divaricata* var. *scabra* is  
controversial. In Central Europe var. *scabra* intergrades with var. *divaricata*  
and is possibly only a morph of shady habitats (KÖCKINGER 2017). Occur-  
rence in Hungary (unpublished): [9975.1] Baranya County, Mecsek, Pécs-  
Ürög, Éger-völgy, N 46° 05' 31.3", E 18° 10' 26.0", acidophilous oak forest,  
soil over sandstone, 360 m a.s.l., 07.10.2014, leg. Erzberger, Csiky, Kovács,  
det. Meinunger (B-Erzberger 19052).

- Cephaloziella hampeana* (Nees) Schiffn. ex Loeske [*Cephaloziella hampeana* var. *subtilis* (Velen.) Macvicar]
- Cephaloziella integerrima* (Lindb.) Warnst. [*Dichiton integerrimum* (Lindb.) H. Buch, *Cephaloziella integerrima* var. *obtusa* Müll. Frib.]
- Cephaloziella rubella* (Nees) Warnst. [*Cephaloziella rubella* var. *sullivantii* (Austin) Müll. Frib. ex R. M. Schust., *Cephaloziella rubella* var. *bifida* (Lindb.) Douin, *Cephaloziella rubella* var. *pulchella* (C. E. O. Jensen) R. M. Schust.]
- Cephaloziella spinigera* (Lindb.) Jørg. [*Cephaloziella spinigera* f. *striatula* (C. E. O. Jensen) Damsh., *Cephaloziella subdentata* Warnst.]
- Cephaloziella stellulifera* (Taylor ex Carrington et Pearson) Croz. [*Cephaloziella stellulifera* var. *limprichtii* (Warnst.) Macvicar]
- Cephaloziella varians* (Gottsche) Steph. [*Cephaloziella alpina* Douin, *Cephaloziella arctica* Bryhn et Douin, *Cephaloziella varians* var. *arctica* (Bryhn et Douin) Damsh., *Cephaloziella varians* var. *scabra* (S. W. Arnell) Damsh.] – ERZBERGER and MEINUNGER (2014a).
- Chiloscyphus pallescens* (Ehrh.) Dumort.
- Chiloscyphus polyanthos* (L.) Corda
- Clevea hyalina* (Sommerf.) Lindb. [*Athalamia hyalina* (Sommerf.) S. Hatt., *Clevea hyalina* var. *suecica* (Lindb.) Lindb., *Athalamia hyalina* var. *suecica* (Lindb.) S. Hatt., *Clevea hyalina* var. *rufescens* (S. W. Arnell) Konstant. *nom. inval.*]
- Cololejeunea calcarea* (Lib.) Steph.
- Cololejeunea rossettiana* (C. Massal.) Schiffn.
- Conocephalum conicum* (L.) Dumort.
- Conocephalum salebrosum* Szweyk., Buczk. et Odrzyk.
- Crossocalyx hellerianus* (Nees ex Lindenb.) Meyl. [*Anastrophyllum hellerianum* (Nees ex Lindenb.) R. M. Schust.]
- Diplophyllum albicans* (L.) Dumort.
- Diplophyllum obtusifolium* (Hook.) Dumort.
- Endogemma caespiticia* (Lindenb.) Konstant., Vilnet et A. V. Troitsky [*Jungermannia caespiticia* Lindenb.]
- Fossombronia foveolata* Lindb.
- Fossombronia pusilla* (L.) Nees
- Fossombronia wondraczekii* (Corda) Dumort. ex Lindb.
- Frullania cleistostoma* Schiffn. et W. Wollny [*Frullania inflata* auct. eur. non Gottsche]
- Frullania dilatata* (L.) Dumort.
- Frullania fragilifolia* (Taylor) Gottsche, Lindenb. et Nees
- Frullania jackii* Gottsche [*Frullania davurica* subsp. *jackii* (Gottsche) S. Hatt.]
- Frullania tamarisci* (L.) Dumort. [*Frullania tamarisci* var. *atrovirens* Carrington, *Frullania tamarisci* var. *cornubica* Carrington, *Frullania tamarisci* var. *erice-*

- torum* Jørg., *Frullania tamarisci* var. *robusta* Lindb., *Frullania tamarisci* var. *sardoa* (De Not.) De Not.]
- Fuscocephaloziopsis catenulata*** (Huebener) Váňa et L. Söderstr. [*Cephalozia catenulata* (Huebener) Lindb., *Pleurocladula catenulata* (Huebener) Konstant., Vilnet et Troitsky]
- Fuscocephaloziopsis lunulifolia*** (Dumort.) Váňa et L. Söderstr. [*Cephalozia lunulifolia* (Dumort.) Dumort., *Pleurocladula lunulifolia* (Dumort.) Konstant., Vilnet et Troitsky]
- Fuscocephaloziopsis macrostachya*** (Kaal.) Váňa et L. Söderstr. [*Cephalozia macrostachya* Kaal., *Pleurocladula macrostachya* (Kaal.) Konstant., Vilnet et Troitsky]
- Fuscocephaloziopsis pleniceps*** (Austin) Váňa et L. Söderstr. [*Cephalozia pleniceps* (Austin) Lindb., *Pleurocladula pleniceps* (Austin) Konstant., Vilnet et Troitsky]
- Gymnocolea inflata*** (Huds.) Dumort.
- Isopaches bicrenatus*** (Schmidel ex Hoffm.) H. Buch [*Lophozia bicrenata* (Schmidel ex Hoffm.) Dumort.]
- Jungermannia atrovirens*** Dumort. [*Jungermannia lanceolata* L. *nom. rejic.*, *Jungermannia lanceolata* var. *atrovirens* (Dumort.) Damsh.]
- Jungermannia pumila*** With. [*Jungermannia pumila* var. *alpestris* Gottsche et Rabenh.]
- Lejeunea cavifolia*** (Ehrh.) Lindb.
- Lepidozia reptans*** (L.) Dumort. [*Lepidozia reptans* var. *julacea* (Nees) Damsh. *nom. inval.*, *Lepidozia reptans* var. *tenera* (Huebener) P. Allorge *nom. inval.*]
- Liochlaena lanceolata*** Nees [*Jungermannia lanceolata* auct. non L., *Jungermannia leiantha* Grolle, *Jungermannia subulata* var. *leiantha* (Grolle) Damsh.]
- Liochlaena subulata*** (A. Evans) Schljakov [*Jungermannia subulata* A. Evans]
- Lophocolea coadunata*** (Sw.) Mont. [*Chiloscyphus coadunatus* (Nees) J. J. Engel et R. M. Schust., *Lophocolea cuspidata* auct. non (Nees) Limpr., *L. bidentata* var. *rivularis* (Raddi) Schiffn., *Chiloscyphus latifolius* (Nees) J. J. Engel et R. M. Schust.] – See annotation 84 in HODGETTS *et al.* (2020): ‘The *Lophocolea bidentata* complex has been treated in various ways in the past, and there is also some nomenclatural confusion. VÁŇA and ENGEL (2013) clarify the concepts, not only for Europe but world-wide. As we follow the World checklist (SÖDERSTRÖM *et al.* 2016), we here treat them in the genus *Lophocolea* as *Lophocolea bidentata* (autoicous) and *Lophocolea coadunata* (dioicous). Many earlier reports are confusing and the occurrences in some countries are still questioned. Vegetative distinguishing characters are mostly not diagnostic. On the other hand, the formation of antheridia and archegonia seems to be influenced by environmental factors, and in most cases it is impossible to unequivocally

determine the sexual condition (MEINUNGER and SCHRÖDER 2007). Many authors therefore treat the complex as a single, variable species. According to KÖCKINGER (2017), the dioicous *L. coadunata* is frequent, whereas the autoicous *L. bidentata* is rare. We tentatively identify the frequent taxon occurring in Hungary as the dioicous *L. coadunata*, and exclude *L. bidentata*. At present, we refrain from rectifying reports in BOROS (1968) and ORBÁN and VAJDA (1983) of *Lophocolea cuspidata* (Nees) Limpr. and *L. alata* Mitt.

***Lophocolea heterophylla*** (Schrad.) Dumort. [*Chiloscyphus profundus* (Nees) J. J. Engel et R. M. Schust.]

***Lophocolea minor*** Nees [*Chiloscyphus minor* (Nees) J. J. Engel et R. M. Schust.]

***Lophozia ascendens*** (Warnst.) R. M. Schust. [*Lophozia gracillima* H. Buch]

***Lophozia guttulata*** (Lindb. et Arnell) A. Evans [*Lophozia porphyroleuca* (Nees) Schiffn. *nom. illeg.*, *L. longiflora* auct. (sensu GROLLE and LONG 2000; SÖDERSTRÖM, URMI, *et al.* 2002; DAMSHOLT 2002), *L. longiflora* var. *guttulata* (Lindb. et Arnell) Schljakov] – The specimens hitherto inserted in *L. longiflora* have been collected from dead wood. They represent *L. guttulata* according to annotation 26 in HODGETTS *et al.* (2020): ‘Since SCHLJAKOV (1980), *Lophozia longiflora* has been used to include *Lophozia guttulata*, a species mostly restricted to moist dead wood habitats. *Lophozia longiflora* was lectotypified by BAKALIN (2016). The lectotype corresponds to the concept of MÜLLER (1954), SAUKEL (1985), MEINUNGER and SCHRÖDER (2007), BAKALIN (2016) and KÖCKINGER (2017), describing a species occurring mostly on peaty soil and in rocky habitats, but not the concept of GROLLE and LONG (2000), which corresponds to our *Lophozia guttulata*.’ Characters of stem anatomy as described in MEINUNGER and SCHRÖDER (2007) and of leaf shape and perianth mouth (BAKALIN 2016) were studied in some specimens from the Mátra Mts and confirm this view. Specimens studied: (1) Heves County [8186.1] Mátra Mts, Parád, Northern slope of Mt Kékes, Sötét-Lápa, andesite boulder scree, on decaying log, ca N 47.87639°, E 20.01725°, 790 m a.s.l., 17.07.1997, leg. P. Erzberger, det. J. Váňa (as *L. longiflora* (Nees) Schiffn.) (B-Erzberger 3583, 3588) soc. *Anastrophyllum hellerianum*, *Nowellia curvifolia*; rev. as *L. guttulata* P. Erzberger 01.07.2020. (2) Heves County [8186.1] Mátra Mts, Mátraháza village, Kékes North Forest Reserve, on decaying log in montane beech forest, N 47.874°, E 20.007°, 800–900 m a.s.l., 20.06.1998, leg. P. Ódor, det. J. Váňa (as *L. longiflora* (Nees) Schiffn.), 09.10.1999, ‘Rev.’ (conf.) T. Pócs and P. Ódor, 18.10.1999, Herbarium Péter Ódor, Budapest, Hungary, Collection No. 19980620-3 (BP 48629/H). (3) Heves County [8186.1] Mátra Mts, Mátraháza village, Kékes North Forest Reserve, on decaying log in montane beech forest, N 47.874°, E 20.007°, 800–900 m a.s.l., 24.09.1999, leg. P. Ódor, det. P. Ódor and T. Pócs (as *L. longiflora* (Nees) Schiffn.), 17.11.1999,

Herbarium Péter Ódor, Budapest, Hungary, Collection No. 19990924-2 (BP 47408/H). (4) Borsod-Abaúj-Zemplén County [7989.1] Bükk Mts, in lignis putresc. in sylva Svédfenyves prope Jávorkút, 27.07.1959, leg. (et det.) L. Vajda (as *Lophozia porphyroleuca* (Nees) Schiffner c. per. cum *Nowellia* et *Dolichotheca silesiaca*) (BP 20977/H). (5) Baranya County [9975.1] Mecsek Mts, in valle Egervölgy prope Magyarürög, 27.06.1952, leg. (et det.) L. Vajda (as *Lophozia ventricosa* (Dicks.) Dumort. var. *porphyroleuca* (Nees) Hartmann cum *Leucobryum glaucum*) (BP 5113/H).

***Lophozia silvicola*** H. Buch [*Lophozia ventricosa* auct. (sensu MÜLLER 1954, SCHLJAKOV 1980, MEINUNGER and SCHRÖDER 2007, KÖCKINGER 2017, non GROLLE and LONG 2000), *Lophozia ventricosa* var. *silvicola* (H. Buch) E. W. Jones] – Plants with biconcentric oil bodies and an overall morphology of *L. ventricosa* have been collected in Hungary, but have hitherto been included in *L. ventricosa*. Specimens studied: (1) Heves County [8186.1] Mátra Mts, Parád, northern slope of Mt Kékes, Sötét-Lápa, andesite boulder scree, N 47.87628°, E 20.01686°, 770 m a.s.l., 31.03.2017, leg. et det. P. Erzberger (B-Erzberger 22819, 22821, 22823) soc. *Trilophozia quinquedentata*. (2) Borsod-Abaúj-Zemplén County [7594.3] Zemplén Mts, Nagy-Péter-mennykő at Regéc, andesite rocks, N 48.41969°, E 21.38828°, 710 m a.s.l., 25–26.05.2007, leg. et det. B. Papp (with biconcentric oil bodies) (BP 49318/H). *L. silvicola* has also been reported from Hungary by BAKALIN (2005) according to SÖDERSTRÖM *et al.* (2007: annotation 234).

***Lophozia ventricosa*** (Dicks.) Dumort. [*Lophozia groenlandica* auct. (sensu SCHLJAKOV 1980, 1998), *L. confertifolia* auct. (sensu SCHLJAKOV 1975, 1998, ȘTEFĂNUȚ 2008), *L. murmanica* auct. (sensu SCHLJAKOV 1970), *L. ventricosa* var. *confusa* R. M. Schust.] – See annotation 32 in HODGETTS *et al.* (2020): ‘The *Lophozia ventricosa/wenzelii* complex has never been studied in detail worldwide using both molecular and morphological methods. VILNET *et al.* (2010) and DE ROO *et al.* (2007) concentrated on other problems and did not include a sufficient number of specimens of these and related taxa to include the full morphological variation of this group. The taxonomy proposed here is based mostly on morphological studies (which, however, are contradictory!) and is therefore provisional pending future research. The name *Lophozia ventricosa* has been applied to different concepts since BUCH (1929) described *Lophozia silvicola* (see also BUCH 1932) and has often included the latter as synonym. The neotype chosen by GROLLE and LONG (2000) for *Lophozia ventricosa* define it as different from *Lophozia silvicola*. However, there are some doubts if this neotype represents *Lophozia ventricosa* sensu SÖDERSTRÖM *et al.* (2016) or is a form of *Lophozia wenzelii* (see MEINUNGER and SCHRÖDER 2007, KÖCKINGER 2017). *Lophozia ventricosa* is here understood as a plant with the

overall morphology and anatomy of *Lophozia silvicola*, but showing homogeneous granular oil bodies. The neotype of GROLLE and LONG (2000) needs a reinvestigation as it approaches what we understand as *Lophozia wenzelii*?

*Lophozia wenzelii* (Nees) Steph. [*Lophozia groenlandica* auct. (sensu DAMSHOLT 1994, 2002, ȘTEFĂNUȚ 2008), *L. confertifolia* Schiffn. (sensu DAMSHOLT 2002, KÖCKINGER 2017), *L. ventricosa* var. *uliginosa* Breidl. ex Schiffn., *L. iremelensis* Schljakov] – See annotation 33 in HODGETTS *et al.* (2020): *Lophozia wenzelii* is very close to *Lophozia ventricosa* according to molecular studies by DE ROO *et al.* (2007) and VILNET *et al.* (2010), but refer to the annotation under *Lophozia ventricosa* concerning the neotype of the latter species’

*Lophozopsis excisa* (Dicks.) Konstant. et Vilnet [*Lophozia excisa* (Dicks.) Dumort.]

*Lophozopsis longidens* (Lindb.) Konstant. et Vilnet [*Lophozia longidens* (Lindb.) Macoun]

*Lunularia cruciata* (L.) Dumort. ex Lindb.

*Mannia fragrans* (Balb.) Frye et L. Clark

*Mannia triandra* (Scop.) Grolle

*Marchantia polymorpha* L. subsp. *polymorpha* [*Marchantia aquatica* (Nees) Burgeff]

*Marchantia polymorpha* L. subsp. *ruderalis* Bischl. et Boissel.-Dub. [*Marchantia latifolia* Gray]

*Marchantia quadrata* Scop. [*Preissia quadrata* (Scop.) Nees]

*Marsupella emarginata* (Ehrh.) Dumort. [*Marsupella emarginata* var. *pearsonii* (Schiffn. ex Macvicar) Jørg.]

*Marsupella funckii* (F. Weber et D. Mohr) Dumort. [*M. ramosa* Müll. Frib., *Marsupella funckii* var. *badensis* (Schiffn.) Fam.]

*Marsupella sprucei* (Limpr.) Bernet [*Marsupella sprucei* var. *neglecta* (Limpr.) Damsh., *Marsupella sprucei* var. *ustulata* (Limpr.) Damsh.]

*Mesoptychia badensis* (Gottsche ex Rabenh.) L. Söderstr. et Váňa [*Lophozia badensis* (Gottsche ex Rabenh.) Schiffn., *Leiocolea badensis* (Gottsche) Jørg., *Lophozia badensis* var. *obtusiloba* (Bernet) Schiffn.]

*Mesoptychia collaris* (Nees) L. Söderstr. et Váňa [*Leiocolea collaris* (Nees) Schljakov, *Lophozia alpestris* (Schleich ex F. Weber) Evans *nom. rej.*, *Leiocolea alpestris* (Schleich. ex F. Weber) Isov., *Lophozia alpestris* var. *libertae* (Huebener) Damsh.]

*Mesoptychia heterocolpos* (Thed. ex Hartm.) L. Söderstr. et Váňa [*Lophozia heterocolpos* (Thed. ex C. Hartm.) M. Howe, *Leiocolea heterocolpos* (Thed. ex Hartm.) H. Buch]

*Metzgeria conjugata* Lindb. [*Metzgeria conjugata* var. *alipila* Kaal., *Metzgeria conjugata* var. *macvicarii* Kaal.]

- Metzgeria furcata* (L.) Corda [*Metzgeria furcata* var. *expansa* Douin, *Metzgeria furcata* var. *flexipilis* Kaal., *Metzgeria furcata* var. *ulvula* (Nees) Pavletic]
- Metzgeria pubescens* (Schrank) Raddi [*Apometzgeria pubescens* (Schrank) Kuwah.]
- Nardia geoscyphus* (De Not.) Lindb.
- Nardia scalaris* Gray
- Neoorthocaulis floerkei* (F. Weber et D. Mohr) L. Söderstr., De Roo et Hedd. [*Barbilophozia floerkei* (F. Weber et D. Mohr) Loeske, *Orthocaulis floerkei* (F. Weber et D. Mohr) H. Buch, *Lophozia floerkei* (F. Weber et D. Mohr) Schiffn.]
- Nowellia curvifolia* (Dicks.) Mitt.
- Obtusifolium obtusum* (Lindb.) S. W. Arnell [*Lophozia obtusa* (Lindb.) A. Evans]
- Oxymitra incrassata* (Brot.) Sérgio et Sim-Sim
- Pedinophyllum interruptum* (Nees) Kaal.
- Pellia epiphylla* (L.) Corda
- Pellia neesiana* (Gottsche) Limpr. – ERZBERGER (2018).
- Plagiochila asplenoides* (L.) Dumort. [*Plagiochila major* (Nees) S. W. Arnell]
- Plagiochila porelloides* (Torr. ex Nees) Lindenb. [*Plagiochila asplenoides* subsp. *porelloides* (Torrey ex Nees) Kaal.]
- Porella arboris-vitae* (With.) Grolle
- Porella baueri* (Schiffn.) C. E. O. Jensen
- Porella cordaeana* (Huebener) Moore [*Porella cordaeana* var. *faeroensis* (C. E. O. Jensen) E. W. Jones, *Porella cordaeana* var. *simplicior* (J. E. Zetterst.) Arnell]
- Porella platyphylla* (L.) Pfeiff. [*Porella platyphylla* var. *subsquarrosa* (Schiffn.) Arnell]
- Ptilidium pulcherrimum* (Weber) Vain. [*Ptilidium pulcherrimum* var. *subpinna-tum* (Jørg.) Damsh.]
- Radula complanata* (L.) Dumort. [*Radula complanata* var. *alpestris* (Lindb. ex Berggr.) Lindb.]
- Radula lindenbergiana* Gottsche ex C. Hartm. [*Radula complanata* subsp. *lindenbergiana* (Gottsche ex C. Hartm.) R. M. Schust., *R. lindenbergiana* Gottsche ex J. B. Jack *nom. inval.*] – Although the only voucher in BP for this species is sterile and the determination by R. Düll as ‘probably *R. lindenbergiana*’ must therefore appear doubtful, we accept the species even in the absence of a voucher, based on the literature: BOROS (1968) reports a collection with perianths from the Kőszeg Mts by Latzel, which therefore was estimated to be reliable, contrary to the sterile collections from other regions. Unfortunately, we could not locate a specimen for the record from the Kőszeg Mts.
- Reboulia hemisphaerica* (L.) Raddi
- Riccardia chamedryfolia* (With.) Grolle [*Riccardia chamedryfolia* var. *major* (Nees) R. M. Schust. *nom. illeg.*, *Riccardia chamedryfolia* var. *submersa* (C. E. O. Jensen ex Müll. Frib.) Damsh. *nom. inval.*]

- Riccardia incurvata* Lindb.  
*Riccardia latifrons* (Lindb.) Lindb.  
*Riccardia multifida* (L.) Gray  
*Riccardia palmata* (Hedw.) Carruth.  
*Riccia bifurca* Hoffm. [*Riccia bifurca* var. *subinermis* Heeg]  
*Riccia canaliculata* Hoffm. – We follow CASPARI *et al.* (2018) in including *Riccia duplex* Lorb. ex Müll. Frib. in *R. canaliculata* Hoffm.  
*Riccia cavernosa* Hoffm. [*Riccia teneriffae* S. W. Arnell, *Riccia cavernosa* var. *angustior* (Nees) Damsh.]  
*Riccia ciliata* Hoffm. [*Riccia ciliata* var. *epilosa* Warnst., *R. ciliata* var. *intumescens* Bisch., *R. ciliata* var. *violacea* Kny, *R. dalslandica* S. W. Arnell, *R. intumescens* (Bisch.) Underw., *R. canescens* Steph., *R. trichocarpa* M. Howe, *R. crinita* auct. eur.] – See annotation 150 in HODGETTS *et al.* (2020): ‘*Riccia trichocarpa* was synonymised with the Australian *Riccia crinita* (the latter having priority) by JOVET-AST (2000), a synonymisation that has been largely overlooked or rejected by European bryologists. HUGONNOT (2010) argued that JOVET-AST’s (1986) concept of *Riccia trichocarpa* is actually *Riccia ciliata*, and her *Riccia ciliata* belongs to other species. Thus, Hugonnot synonymised both taxa under the oldest name, *Riccia ciliata*.’ As a consequence, we exclude the name *Riccia crinita* Taylor from the checklist and use *Riccia ciliata* Hoffm. instead.  
*Riccia ciliifera* Link [*Riccia melitensis* C. Massal.]  
*Riccia crozalsii* Levier  
*Riccia fluitans* L.  
*Riccia frostii* Austin  
*Riccia glauca* L. var. *glauca* [*Riccia glauca* var. *major* (Roth) Lindenb.]  
*Riccia glauca* L. var. *ciliaris* Warnst. [*Riccia glauca* var. *subinermis* (Lindb.) Warnst.] – recognised in HODGETTS *et al.* (2020). Occurrence in Hungary (unpublished): [8079.2] Pest County, Börzsöny, Kemence, Rakottyásbérc, N 47° 58’ 13.1”, E 18° 57’ 08.0”, nyílt andezit sziklagyep, 650 m a.s.l., 07.08.2016, leg. J. Nagy, det. L. Meinunger (hb. J. Nagy).  
*Riccia gougetiana* Durieu et Mont.  
*Riccia huebeneriana* Lindenb.  
*Riccia papillosa* Moris  
*Riccia rhenana* Lorb. ex Müll. Frib.  
*Riccia sorocarpa* Bisch. subsp. *sorocarpa* [*Riccia sorocarpa* var. *heegii* Schiffn.]  
*Riccia subbifurca* Warnst. ex Croz. [?*Riccia oelandica* C. E. O. Jensen]  
*Riccia warnstorffii* Limpr. ex Warnst. [*Riccia warnstorffii* var. *commutata* (J. B. Jack ex Levier) Damsh., *Riccia warnstorffii* var. *subinermis* Warnst., *Riccia warnstorffii* var. *ciliaris* Warnst.]  
*Ricciocarpos natans* (L.) Corda

- Scapania aequiloba* (Schwägr.) Dumort.  
*Scapania apiculata* Spruce  
*Scapania aspera* M. Bernet et Bernet  
*Scapania calcicola* (Arnell et J. Perss.) Ingham  
*Scapania curta* (Mart.) Dumort.  
*Scapania irrigua* Nees  
*Scapania lingulata* H. Buch  
*Scapania mucronata* H. Buch  
*Scapania nemorea* (L.) Grolle  
*Scapania parvifolia* Warnst. – Already reported in BOROS (1968) and ORBÁN and VAJDA (1983), but later (ERZBERGER and PAPP 2004, PAPP *et al.* 2010) included in *S. scandica* following GROLLE and LONG (2000); now recognised as a species in its own right (HODGETTS *et al.* 2020). New occurrence in Hungary (unpublished): [7494.4] Zemplén Mts, Borsod-Abaúj-Zemplén County, Füzérkömlós, Tegda-bérc, N 48° 31' 33.0", E 21° 25' 36.1", on acidic soil between rhyolit rocks, 360 m a.s.l., 27.08.2015, leg. Németh, det. Németh, conf. Schröder and Erzberger (hb. Cs. Németh 7232).  
*Scapania praetervisa* Meyl. [*Scapania mucronata* subsp. *praetervisa* (Meyl.) R. M. Schust.] – ERZBERGER and MEINUNGER (2014b).  
*Scapania scandica* (Arnell et H. Buch) Macvicar  
*Scapania umbrosa* (Schrad.) Dumort.  
*Scapania undulata* (L.) Dumort. [*Scapania undulata* var. *aequatiformis* (De Not.) C. Massal. et Carestia, *Scapania undulata* var. *dentata* (Dumort.) Jørg., *Scapania undulata* var. *oakesii* (Austin) H. Buch]  
*Schistochilopsis incisa* (Schrad.) Konstant. [*Lophozia incisa* (Schrad.) Dumort., *Massularia incisa* (Schrad.) Schljakov, *Schistochilopsis incisa* var. *inermis* (Müll. Frib.) Konstant.]  
*Solenostoma gracillimum* (Sm.) R. M. Schust. [*Jungermannia gracillima* Sm., *Jungermannia gracillima* var. *crenulata* (Mitt.) Damsh.]  
*Solenostoma hyalinum* (Lyell) Mitt. [*Jungermannia hyalina* Lyell, *Plectocolea hyalina* (Lyell) Mitt.]  
*Solenostoma sphaerocarpum* (Hook.) Steph. [*Jungermannia sphaerocarpa* Hook., *Solenostoma pusillum* (C. E. O. Jens.) Steph., *Jungermannia jenseniana* Grolle, *Jungermannia sphaerocarpa* var. *nana* (Nees ex Flot.) Frye et L. Clark *nom. illeg.*, *Solenostoma sphaerocarpum* var. *nanum* (Nees ex Flot.) R. M. Schust.]  
*Sphaerocarpos europaeus* Lorb. [*Sphaerocarpos texanus* auct. eur. non Austin]  
*Sphenolobus minutus* (Schreb. ex D. Crantz) Berggr. [*Anastrophyllum minutum* (Schreb.) R. M. Schust., *Anastrophyllum minutum* var. *weberi* (Mart.) Kartt.]  
*Syzygiella autumnalis* (DC.) K. Feldberg, Váňa, Hentschel et Heinrichs [*Jamesoniella autumnalis* (DC.) Steph., *Crossogyna autumnalis* (DC.) Schljakov]

*Trichocolea tomentella* (Ehrh.) Dumort.

*Trilophozia quinquedentata* (Huds.) Bakalin [*Tritomaria quinquedentata* (Huds.) H. Buch, *T. quinquedentata* subsp. *turgida* (Lindb.) Damsh., *Trilophozia quinquedentata* subsp. *turgida* (Lindb.) Konstant., *Tritomaria quinquedentata* f. *gracilis* (C. E. O. Jensen) R. M. Schust., *T. quinquedentata* var. *dentata* S. W. Arnell nom. inval., *T. quinquedentata* var. *grandiretis* H. Buch et S. W. Arnell]

*Tritomaria exsecta* (Schmidel) Schiffn. ex Loeske

*Tritomaria exsectiformis* (Breidl.) Schiffn. ex Loeske

### Mosses

*Abietinella abietina* (Hedw.) M. Fleisch. (*Thuidium abietinum* (Hedw.) Schimp.)  
– For *Abietinella abietina* var. *hystricosa* (Mitt.) Sakurai see Appendix 3.

*Acaulon muticum* (Hedw.) Müll. Hal.

*Acaulon triquetrum* (Spruce) Müll. Hal.

*Alleniella besseri* (Lobarz.) S. Olsson, Enroth et D. Quandt [*Neckera besseri* (Lobarz.) Jur.] (*Homalia besseri* Lobarz.)

*Alleniella complanata* (Hedw.) S. Olsson, Enroth et D. Quandt [*Neckera complanata* (Hedw.) Huebener]

*Aloina aloides* (Koch ex Schultz) Kindb.

*Aloina ambigua* (Bruch et Schimp.) Limpr.

*Aloina rigida* (Hedw.) Limpr.

*Amblyodon dealbatus* (Hedw.) P. Beauv.

*Amblystegium serpens* (Hedw.) Schimp. [*Amblystegium serpens* var. *salinum* Car-rington] – Following ERZBERGER and PAPP (2004), *Amblystegium serpens* var. *juratzkanum* (Schimp.) Rau et Herv. is included; it was treated as a separate taxon in the older Hungarian literature (BOROS 1953, 1968, ORBÁN and VAJDA 1983), but it is not recognised in HODGETTS *et al.* (2020).

*Amphidium mougeotii* (Schimp.) Schimp.

*Anacamptodon splachnoides* (Froel. ex Brid.) Brid.

*Andreaea rupestris* Hedw.

*Anomodon longifolius* (Schleich. ex Brid.) Hartm. [*Anomodontella longifolia* (Schleich. ex Brid.) Ignatov et Fedosov]

*Anomodon rugelii* (Müll. Hal.) Keissl. [*Anomodontopsis rugelii* (Müll. Hal.) Ignatov et Fedosov]

*Anomodon viticulosus* (Hedw.) Hook. et Taylor

*Antitrichia curtipendula* (Hedw.) Brid.

*Archidium alternifolium* (Hedw.) Mitt.

*Atrichum angustatum* (Brid.) Bruch et Schimp.

*Atrichum flavisetum* Mitt. (*Atrichum undulatum* var. *gracilisetum* Besch., *Atrichum haussknechtii* Juratzka et Milde, *Catharinea haussknechtii* Broth.) –

recognised as separate species in BOROS (1968), ORBÁN and VAJDA (1983), but included in *A. undulatum* in previous checklists (ERZBERGER and PAPP 2004, PAPP *et al.* 2010).

- Atrichum undulatum* (Hedw.) P. Beauv.  
*Aulacomnium androgynum* (Hedw.) Schwägr.  
*Aulacomnium palustre* (Hedw.) Schwägr.  
*Barbula unguiculata* Hedw.  
*Bartramia halleriana* Hedw.  
*Bartramia ithyphylla* Brid.  
*Bartramia pomiformis* Hedw.  
*Blindia acuta* (Hedw.) Bruch et Schimp.  
*Blindiadelphus campylopodus* (Kindb.) Fedosov et Ignatov [*Seligeria campylo-poda* Kindb.]  
*Blindiadelphus recurvatus* (Hedw.) Fedosov et Ignatov [*Seligeria recurvata* (Hedw.) Bruch et Schimp.]  
*Brachydontium trichodes* (F. Weber) Milde [*Seligeria transylvanica* Plam.]  
*Brachytheciastrum olympicum* (Jur.) Vanderp. *et al.* – PAPP *et al.* (2020).  
*Brachytheciastrum velutinum* (Hedw.) Ignatov et Huttunen [*Brachytheciastrum vanekii* (Šmarda) Ochyra et Żarnowiec, *B. velutinum* var. *vagans* (Milde) Ochyra et Żarnowiec] (*Brachythecium velutinum* (Hedw.) Schimp.)  
*Brachythecium albicans* (Hedw.) Schimp.  
*Brachythecium campestre* (Müll. Hal.) Schimp.  
*Brachythecium capillaceum* (F. Weber et D. Mohr) Giacom. [*Brachythecium ro-taeantum* De Not.]  
*Brachythecium geheebii* Milde  
*Brachythecium glareosum* (Bruch ex Spruce) Schimp.  
*Brachythecium laetum* (Brid.) Schimp.  
*Brachythecium mildeanum* (Schimp.) Schimp.  
*Brachythecium rivulare* Schimp.  
*Brachythecium rutabulum* (Hedw.) Schimp.  
*Brachythecium salebrosum* (Hoffm. ex F. Weber et D. Mohr) Schimp.  
*Brachythecium tommasinii* (Sendtn. ex Boulay) Ignatov et Huttunen (*Cirriphyllum tommasinii* (Boulay) Grout, *Brachythecium tenuicaule* (Spruce) Kindb., *Rhynchostegiella tenuicaulis* (Spruce) Kartt., *Cirriphyllum germanicum* (Grebe) Loeske et M. Fleisch.) – We follow CASPARI *et al.* 2018 and NEBEL and PHILIPPI (2001) and include *Brachythecium tenuicaule* in the synonymy of *B. tommasinii*. According to HODGETTS *et al.* (2020, annotation 480), molecular studies by KÖCKINGER and KUČERA (2016) also demonstrate a close relationship of *Brachythecium tenuicaule* to *B. tommasinii*.  
*Bruchia flexuosa* (Schwägr.) Müll. Hal. – MESTERHÁZY and NÉMETH (2015).

*Bryoerythrophyllum recurvirostrum* (Hedw.) P. C. Chen

*Bryum argenteum* Hedw.

*Bryum barnesii* J. B. Wood ex Schimp. (*Gemmabryum barnesii* (J. B. Wood ex Schimp.) J. R. Spence, *Osculatia barnesii* (J. B. Wood ex Schimp.) Ochyra, Plášek et Bedn.-Ochyra) – ERZBERGER (2015). Although HOLYOAK (2003) included *Bryum barnesii* in *Bryum dichotomum*, stating that ‘many plants and populations intermediate between *Bryum barnesii* and *Bryum dichotomum* occur’ (HODGETTS *et al.* 2020: annotation 363), we follow Central European authors (e.g. CASPARI *et al.* 2018) in regarding *Bryum barnesii* as a distinct species and retain the narrower concept of *Bryum bicolor* Dicks.

*Bryum bicolor* Dicks. [*Osculatia bicolor* (Dicks.) Ochyra, Plášek et Bedn.-Ochyra] – see the annotation under *Bryum barnesii*.

*Bryum gemmiferum* R. Wilczek et Demaret [*Gemmabryum gemmiferum* (R. Wilczek et Demaret) J. R. Spence, *Osculatia gemmifera* (R. Wilczek et Demaret) Ochyra, Plášek et Bedn.-Ochyra]

*Bryum gemmilucens* R. Wilczek et Demaret [*Gemmabryum gemmilucens* (R. Wilczek et Demaret) J. R. Spence, *Osculatia gemmilucens* (R. Wilczek et Demaret) Ochyra, Plášek et Bedn.-Ochyra]

*Bryum klinggraeffii* Schimp. [*Gemmabryum klinggraeffii* (Schimp.) J. R. Spence et H. P. Ramsay, *Osculatia klinggraeffii* (Schimp.) Ochyra, Plášek et Bedn.-Ochyra]

*Bryum radiculosum* Brid. [*Gemmabryum radiculosum* (Brid.) J. R. Spence et H. P. Ramsay, *Osculatia radiculosa* (Brid.) Ochyra, Plášek et Bedn.-Ochyra]

*Bryum ruderale* Crundw. et Nyholm [*Gemmabryum ruderale* (Crundw. et Nyholm) J. R. Spence, *Osculatia ruderalis* (Crundw. et Nyholm) Ochyra, Plášek et Bedn.-Ochyra]

*Bryum stirtonii* Schimp. – not recognised in HODGETTS *et al.* (2020), included in *Ptychostomum elegans* by many authors, e.g. CASPARI *et al.* (2018), KÖCKINGER *et al.* (2008). In spite of its controversial taxonomic status, we want to keep this name in the checklist, in order to stimulate further floristical research, see also ERZBERGER and SCHRÖDER (2013).

*Bryum violaceum* Crundw. et Nyholm [*Gemmabryum violaceum* (Crundw. et Nyholm) J. R. Spence, *Osculatia violacea* (Crundw. et Nyholm) Ochyra, Plášek et Bedn.-Ochyra]

*Buckia vaucheri* (Lesq.) D. Rios, M. T. Gallego et J. Guerra [*Hypnum vaucheri* Lesq.]

*Buxbaumia aphylla* Hedw.

*Buxbaumia viridis* (Moug. ex Lam. et DC.) Brid. ex Moug. et Nestl.

*Callicladium baldanianum* (Grev.) H. A. Crum – ERZBERGER *et al.* (2016b).

*Calliargon cordifolium* (Hedw.) Kindb.

- Calliergon giganteum* (Schimp.) Kindb.  
*Calliergonella cuspidata* (Hedw.) Loeske  
*Calliergonella lindbergii* (Mitt.) Hedenäs (*Hypnum lindbergii* Mitt.)  
*Campyliadelphus chrysophyllus* (Brid.) R. S. Chopra (*Campylium chrysophyllum*  
 (Brid.) Lange)  
*Campyliadelphus elodes* (Lindb.) Kanda (*Campylium elodes* (Lindb.) Kindb.)  
*Campylium protensum* (Brid.) Kindb. (*Campylium stellatum* var. *protensum*  
 (Brid.) Bryhn) – See annotation 431 in HODGETTS *et al.* (2020): ‘*Campylium*  
*protensum* and *Campylium stellatum* are distinct in some parts of their range  
 and overlap in others. They are retained as separate species for the present,  
 although there is a strong case for *Campylium protensum* to be reduced to a  
 variety of *Campylium stellatum*, as some authors have done.’ Var. *protensum*  
 is missing in PAPP *et al.* (2010), but see ERZBERGER and PAPP (2004).  
*Campylium stellatum* (Hedw.) Lange et C. E. O. Jensen  
*Campylophyllopsis calcarea* (Crundw. et Nyholm) Ochyra [*Campylidium calcareum*  
 (Crundw. et Nyholm) Ochyra, *Campylophyllum calcareum* (Crundw. et  
 Nyholm) Hedenäs]  
*Campylopus flexuosus* (Hedw.) Brid. – ERZBERGER and NÉMETH (2014).  
*Campylopus fragilis* (Brid.) Bruch et Schimp. – DEME *et al.* (2015).  
*Campylopus introflexus* (Hedw.) Brid.  
*Campylopus pyriformis* (Schultz) Brid. [*Campylopus pyriformis* var. *azoricus*  
 (Mitt.) M. F. V. Corley]  
*Campylostelium saxicola* (F. Weber et D. Mohr) Bruch et Schimp.  
*Ceratodon purpureus* (Hedw.) Brid.  
*Chenia leptophylla* (Müll. Hal.) R. H. Zander [*Leptophascum leptophyllum* (Müll.  
 Hal.) J. Guerra et M. J. Cano] (*Phascum leptophyllum* Müll. Hal.)  
*Chionoloma tenuirostre* (Hook. et Taylor) M. Alonso, M. J. Cano et J. A. Jiménez  
 [*Oxystegus tenuirostris* (Hook. et Taylor) A. J. E. Sm., *Trichostomum tenui-*  
*rostre* (Hook. et Taylor) Lindb.]  
*Cinclidotus danubicus* Schiffn. et Baumgartner  
*Cinclidotus fontinaloides* (Hedw.) P. Beauv.  
*Cinclidotus riparius* (Host ex Brid.) Arn. [*Cinclidotus confertus* Lüth]  
*Cirriphyllum crassinervium* (Taylor) Loeske et M. Fleisch. (*Eurhynchium crassi-*  
*nervium* (Wilson) Schimp.)  
*Cirriphyllum piliferum* (Hedw.) Grout  
*Claopodium rostratum* (Hedw.) Ignatov [*Anomodon rostratus* (Hedw.) Schimp.]  
*Climacium dendroides* (Hedw.) F. Weber et D. Mohr  
*Cnestrum schisti* (F. Weber et D. Mohr) I. Hagen – Among several collections  
 inserted in BP under this name, only a single specimen could be confirmed  
 (Papp, unpublished): Comit. Heves [8185.2] (Mátra Mts) In rupibus ande-

sit. silvat. sept. montis Saskő prope Parád, 8–890 m, 27.04.1942, leg. et det. Boros, Á. (BP 97612).

*Codonoblepharon forsteri* (Dicks.) Goffinet [*Zygodon forsteri* (Dicks.) Mitt.] – PAPP and SINIGLA (2017).

*Conardia compacta* (Drumm. ex Müll. Hal.) H. Rob.

*Coscinodon cribrosus* (Hedw.) Spruce [*Grimmia cribrosa* Hedw.]

*Cratoneuron filicinum* (Hedw.) Spruce

*Crossidium crassinervium* (De Not.) Jur. – spelled ‘*crassinerve*’ in ERZBERGER and PAPP (2004) and PAPP *et al.* (2010).

*Crossidium laxefilamentosum* W. Frey et Kürschner – According to HODGETTS *et al.* (2020: annotation 241), *Crossidium laxefilamentosum* is doubtfully separable from *Crossidium crassinervium*.

*Crossidium squamiferum* (Viv.) Jur. var. *squamiferum* – NAGY and ERZBERGER (2018).

*Ctenidium molluscum* (Hedw.) Mitt.

*Cynodontium polycarpon* (Hedw.) Schimp. – spelled ‘*polycarpum*’ in ERZBERGER and PAPP (2004) and PAPP *et al.* (2010).

*Cynodontium strumiferum* (Hedw.) Lindb. (*Cynodontium polycarpon* var. *strumiferum* (Hedw.) Schimp.) – var. *strumiferum* is missing in PAPP *et al.* (2010), but see ERZBERGER and PAPP (2004).

*Cynodontium tenellum* (Schimp.) Limpr.

*Dichodontium pellucidum* (Hedw.) Schimp.

*Dicranella cerviculata* (Hedw.) Schimp.

*Dicranella crispa* (Hedw.) Schimp.

*Dicranella heteromalla* (Hedw.) Schimp.

*Dicranella howei* Renaud et Cardot

*Dicranella humilis* R. Ruthe

*Dicranella rufescens* (Dicks.) Schimp.

*Dicranella schreberiana* (Hedw.) Dixon

*Dicranella staphylina* H. Whitehouse

*Dicranella subulata* (Hedw.) Schimp.

*Dicranella varia* (Hedw.) Schimp.

*Dicranodontium denudatum* (Brid.) E. Britton [*Dicranodontium denudatum* var. *alpinum* (Schimp.) I. Hagen]

*Dicranoweisia cirrata* (Hedw.) Lindb.

*Dicranum bonjeanii* De Not. [*Dicranum undulatum* Turner, *nom. illeg.*]

*Dicranum flagellare* Hedw. [*Orthodicranum flagellare* (Hedw.) Loeske]

*Dicranum fulvum* Hook. [*Orthodicranum fulvum* (Hook.) G. Roth ex Casares-Gil]

*Dicranum montanum* Hedw. [*Orthodicranum montanum* (Hedw.) Loeske]

- Dicranum muehlenbeckii* Bruch et Schimp.  
*Dicranum polysetum* Sw. ex anon. [*Dicranum rugosum* (Hoffm. ex Funck) Brid.,  
*Dicranum undulatum* Ehrh. ex F. Weber et D. Mohr, *nom. illeg.*]  
*Dicranum scoparium* Hedw.  
*Dicranum spurium* Hedw.  
*Dicranum tauricum* Sapjegin [*Dicranum strictum* Schleich. ex D. Mohr, *hom. illeg.*,  
*Orthodicranum tauricum* (Sapjegin) Smirnova]  
*Dicranum viride* (Sull. et Lesq.) Lindb.  
*Didymodon acutus* (Brid.) K. Saito  
*Didymodon cordatus* Jur. [*Vinealobryum cordatum* (Jur.) R. H. Zander]  
*Didymodon fallax* (Hedw.) R. H. Zander [*Geheebia fallax* (Hedw.) R. H. Zander]  
*Didymodon ferrugineus* (Schimp. ex Besch.) M. O. Hill [*Geheebia ferruginea*  
(Schimp. ex Besch.) R. H. Zander]  
*Didymodon glaucus* Ryan  
*Didymodon insulanus* (De Not.) M. O. Hill [*Vinealobryum insulanum* (De Not.)  
R. H. Zander]  
*Didymodon luridus* Hornsch. [*Vinealobryum luridum* (Hornsch.) R. H. Zander]  
*Didymodon rigidulus* Hedw.  
*Didymodon sinuosus* (Mitt.) Delogne [*Vinealobryum sinuosum* (Mitt.) R. H.  
Zander]  
*Didymodon spadiceus* (Mitt.) Limpr. [*Geheebia spadicea* (Mitt.) R. H. Zander]  
*Didymodon tophaceus* (Brid.) Lisa subsp. *erosus* (J. A. Jiménez et J. Guerra) Jan  
Kučera [*Didymodon erosus* J. A. Jiménez et J. Guerra] – KUČERA *et al.* (2018).  
*Didymodon tophaceus* (Brid.) Lisa subsp. *sicculus* (M. J. Cano, Ros, García-Zam.  
et J. Guerra) Jan Kučera [*Didymodon sicculus* M. J. Cano, Ros, García-Zam.  
et J. Guerra] – KUČERA *et al.* (2018).  
*Didymodon tophaceus* (Brid.) Lisa subsp. *tophaceus*  
*Didymodon vinealis* (Brid.) R. H. Zander [*Vinealobryum vineale* (Brid.) R. H.  
Zander]  
*Diphyscium foliosum* (Hedw.) D. Mohr  
*Distichium capillaceum* (Hedw.) Bruch et Schimp.  
*Ditrichum heteromallum* (Hedw.) E. Britton  
*Ditrichum lineare* (Sw.) Lindb. – NÉMETH (2016).  
*Ditrichum pallidum* (Hedw.) Hampe  
*Ditrichum pusillum* (Hedw.) Hampe  
*Drepanocladus aduncus* (Hedw.) Warnst.  
*Drepanocladus lycopodioides* (Brid.) Warnst. [*Pseudocalliogon lycopodioides*  
(Brid.) Hedenäs]  
*Drepanocladus polygamus* (Schimp.) Hedenäs (*Campylium polygamum* (Schimp.)  
C. E. O. Jensen) – See annotation 438 in HODGETTS *et al.* (2020): ‘*Campylium*

*decipiens* (Warnst.) Walsemann is a central European plant recognised as a distinct species by FRAHM and WALSEMANN (1973) and MEINUNGER and SCHRÖDER (2007), but otherwise largely disregarded. It may be a form of *Drepanocladus polygamus*, but it requires further study. See also ERZBERGER and NÉMETH (2015) and the note under *Campylium decipiens* in Appendix 3.

*Drepanocladus sendtneri* (Schimp. ex H. Müll.) Warnst.

*Drepanocladus sordidus* (Müll. Hal.) Hedenäs

*Encalypta ciliata* Hedw.

*Encalypta rhaptocarpa* Schwägr. – ERZBERGER (2014).

*Encalypta streptocarpa* Hedw.

*Encalypta vulgaris* Hedw.

*Entodon concinnus* (De Not.) Paris

*Entosthodon fascicularis* (Hedw.) Müll. Hal.

*Entosthodon hungaricus* (Boros) Loeske

*Entosthodon muhlenbergii* (Turner) Fife (*Funaria muhlenbergii* Turner) – misspelled ‘muehlenbergii’ in PAPP *et al.* (2010).

*Entosthodon pulchellus* (H. Philib.) Brugués (*Funaria pulchella* H. Philib.)

*Ephemerum cohaerens* (Hedw.) Hampe

*Ephemerum crassinervium* (Schwägr.) Hampe subsp. *sessile* (Bruch) Holyoak [*Ephemerum sessile* (Bruch) Müll. Hal.]

*Ephemerum recurvifolium* (Dicks.) Boulay

*Ephemerum serratum* (Hedw.) Hampe [*Ephemerum minutissimum* Lindb., *E. serratum* var. *minutissimum* (Lindb.) Grout] – ‘As a consequence of lectotypification, *Ephemerum minutissimum* Lindb. was placed in synonymy with *Ephemerum serratum* (Hedw.) Hampe (ELLIS and PRICE 2015)’ (HODGETTS *et al.* 2020: annotation 283). We would like to discourage the use of the name *E. serratum* without any clarification, because it is ambiguous: sensu ELLIS and PRICE (2015) it stands for what was formerly named *E. minutissimum*, but in long established use it formerly meant *E. stoloniferum*.

*Ephemerum stoloniferum* (Hedw.) L. T. Ellis et M. J. Price [*Ephemerum serratum* auct., *Ephemerum stellatum* H. Philib.] – ‘*Ephemerum stellatum* was synonymised with *Ephemerum serratum* by HOLYOAK (2010). Subsequently, ELLIS and PRICE (2015) lectotypified *E. stoloniferum* and showed that it was the correct name for the large-spored taxon previously treated under the name *E. serratum*’ (HODGETTS *et al.* 2020: annotation 284).

*Eucladium verticillatum* (With.) Bruch et Schimp. [*Eucladium verticillatum* var. *angustifolium* Lindb]

*Eurhynchiastrum pulchellum* (Hedw.) Ignatov et Huttunen [*Eurhynchiastrum pulchellum* var. *praecox* (Hedw.) Ochyra et Żarnowiec] (*Eurhynchium pulchellum* (Hedw.) Jenn.)

- Eurhynchium angustirete* (Broth.) T. J. Kop.  
*Eurhynchium striatum* (Hedw.) Schimp.  
*Exsertotheca crispa* (Hedw.) S. Olsson, Enroth et D. Quandt [*Neckera crispa* Hedw.]  
*Fabronia ciliaris* (Brid.) Brid.  
*Fabronia pusilla* Raddi  
*Fissidens adianthoides* Hedw.  
*Fissidens arnoldii* R. Ruthe  
*Fissidens bryoides* Hedw.  
*Fissidens crassipes* Wilson ex Bruch et Schimp. – Contrary to HODGETTS *et al.* (2020), we follow BRUGUÉS and GUERRA (2015) and include subsp. *warnstorffii* (M. Fleisch.) Brugg.-Nann. in the synonymy of *F. crassipes*. See also ERZBERGER (2016b).  
*Fissidens crispus* Mont. [*Fissidens herzogii* R. Ruthe ex Herzog, *Fissidens limbatus* Sull., *Fissidens minutulus* Sull.] – ERZBERGER (2016a, b).  
*Fissidens curvatus* Hornsch. [*Fissidens algarvicus* Solms]  
*Fissidens dubius* P. Beauv. var. *dubius* [*Fissidens cristatus* Wilson ex Mitt.]  
*Fissidens dubius* P. Beauv. var. *mucronatus* (Limpr.) Kartt., Hedenäs et L. Söderstr. – ERZBERGER (2016b), see also HODGETTS *et al.* (2020: annotation 213) ‘*Fissidens dubius* var. *mucronatus* is morphologically characterised by the mucronate apex of the upper leaves. It also has a different ecology. Recent Dutch research also shows differences in DNA sequences between var. *mucronatus* and the type (H. N. Siebel and M. Stech, pers. comm. 2019)’.  
*Fissidens exilis* Hedw.  
*Fissidens gracilifolius* Brugg.-Nann. et Nyholm [*Fissidens viridulus* var. *tenuifolius* (Boulay) A. J. E. Sm.]  
*Fissidens gymnandrus* Buse  
*Fissidens incurvus* Starke ex Röhl. [*Fissidens viridulus* var. *incurvus* (Starke ex Röhl.) Waldh.]  
*Fissidens pusillus* (Wilson) Milde [*Fissidens viridulus* var. *pusillus* Wilson]  
*Fissidens taxifolius* Hedw. [*Fissidens taxifolius* subsp. *pallidicaulis* (Mitt.) Mönk.]  
*Fissidens viridulus* (Sw.) Wahlenb. [*Fissidens bambergeri* Milde, *Fissidens exiguus* Sull., *Fissidens viridulus* var. *bambergeri* (Schimp.) Waldh.] – see the notes under *F. bambergeri* and *F. exiguus* in Appendix 3.  
*Flexitrichum flexicaule* (Schwägr.) Ignatov et Fedosov [*Ditrichum flexicaule* (Schwägr.) Hampe]  
*Flexitrichum gracile* (Mitt.) Ignatov et Fedosov [*Ditrichum crispatisimum* (Müll. Hal.) Paris, *Ditrichum gracile* (Mitt.) Kuntze]  
*Fontinalis antipyretica* Hedw.  
*Fontinalis hypnoides* C. Hartm.  
*Funaria hygrometrica* Hedw.

- Grimmia anodon* Bruch et Schimp.  
*Grimmia crinita* Brid.  
*Grimmia decipiens* (Schultz) Lindb.  
*Grimmia dissimulata* E. Maier  
*Grimmia elatior* Bruch ex Bals.-Criv. et De Not.  
*Grimmia funalis* (Schwägr.) Bruch et Schimp.  
*Grimmia hartmanii* Schimp.  
*Grimmia laevigata* (Brid.) Brid. [*Guembelia laevigata* (Brid.) Ochyra et Żarnowiec]  
*Grimmia lisae* De Not.  
*Grimmia longirostris* Hook. [*Guembelia longirostris* (Hook.) Ochyra et Żarnowiec]  
*Grimmia montana* Bruch et Schimp. [*Orthogrimmia montana* (Bruch et Schimp.) Ochyra et Żarnowiec]  
*Grimmia muehlenbeckii* Schimp.  
*Grimmia orbicularis* Bruch ex Wilson [*Dryptodon orbicularis* (Bruch ex Wilson) Ochyra et Żarnowiec]  
*Grimmia ovalis* (Hedw.) Lindb. [*Guembelia ovalis* (Hedw.) Müll. Hal.]  
*Grimmia plagiopodia* Hedw.  
*Grimmia pulvinata* (Hedw.) Sm.  
*Grimmia teretinervis* Limpr.  
*Grimmia tergestina* Tomm. ex Bruch et Schimp. [*Grimmia tergestina* var. *tergestinoides* (Culm.) Podp., *Guembelia tergestina* (Tomm. ex Bruch et Schimp.) Buys.] – ‘*Grimmia tergestina* var. *tergestinoides* seems distinct in Central Europe. More work is needed to determine its taxonomic value’ (annotation 328 in HODGETTS *et al.* 2020). Because of this taxonomic uncertainty, we refrain from recognising var. *tergestinoides*, in spite of the fact that a specimen of var. *tergestinoides* from the Bükk Mts is cited in ERZBERGER and PAPP (2004).  
*Grimmia trichophylla* Grev. [*Grimmia britannica* A. J. E. Sm.]  
*Gymnostomum aeruginosum* Sm.  
*Gymnostomum calcareum* Nees et Hornsch. [*Gymnostomum calcareum* var. *lancoelatum* Sérgio, *Gymnostomum lanceolatum* M. J. Cano, Ros et J. Guerra]  
*Gymnostomum viridulum* Brid.  
*Gyrowesia tenuis* (Hedw.) Schimp.  
*Hamatocaulis vernicosus* (Mitt.) Hedenäs  
*Hedwigia ciliata* (Hedw.) P. Beauv.  
*Hedwigia emodica* Hampe ex Müll. Hal. [*Hedwigia ciliata* var. *leucophaea* Bruch et Schimp.] – ‘HEDENÄS (1994) suggested that *Hedwigia emodica* was a synonym of *Hedwigia ciliata* var. *leucophaea*. BUCHBENDER *et al.* (2014) later proved the hybrid origin of some accessions referable to this taxon. IGNATOVA *et al.*

(2016) recognised the taxon at species level, as *Hedwigia emodica*, but doubts persist that all the European material is the same as the plants from Russia (or the Himalayan type of *Hedwigia emodica*)' (HODGETTS *et al.* 2020: annotation 346). In Hungary, *H. ciliata* var. *leucophaea* occurs in two morphs: One with straight, appressed leaves in the dry state, which corresponds to the photographs published in IGNATOVA *et al.* (2016), and another one with dry leaves squarrosely reflexed, in habit not different from *H. stellata* (Erzberger, unpublished observations). Preliminary molecular work kindly undertaken by J. Kučera on Hungarian specimens (unpublished) unfortunately did not yield unequivocal results, not least due to insufficient sampling of the Russian and Asian material examined in IGNATOVA *et al.* (2016).

*Hedwigia stellata* Hedenäs

*Helodium blandowii* (F. Weber et D. Mohr) Warnst. [*Elodium blandowii* (F. Weber et D. Mohr) Eckel]

*Henediella heimii* (Hedw.) R. H. Zander [*Desmatodon wilczekii* Meyl., *Tortula rhodonia* R. H. Zander] (*Desmatodon heimii* (Hedw.) Mitt.)

*Herzogiella seligeri* (Brid.) Z. Iwats.

*Heterocладиella dimorpha* (Brid.) Ignatov et Fedosov [*Heterocladium dimorphum* (Brid.) Schimp.]

*Heterocladium heteropterum* (Brid.) Schimp. – BARÁTH and ERZBERGER (2017a).

*Hilpertia velenovskyi* (Schiffn.) R. H. Zander

*Homalia trichomanoides* (Hedw.) Brid.

*Homalothecium lutescens* (Hedw.) H. Rob.

*Homalothecium philippeanum* (Spruce) Schimp.

*Homalothecium sericeum* (Hedw.) Schimp.

*Homomallium incurvatum* (Schrad. ex Brid.) Loeske

*Hookeria lucens* (Hedw.) Sm. – ÓDOR and SZURDOKI (2011).

*Hydrogonium consanguineum* (Thwaites et Mitt.) Hilp. [*Barbula consanguinea* (Thwaites et Mitt.) A. Jaeger] (*Barbula indica* (Hook.) Spreng.) – 'Hydrogonium consanguineum was earlier reported from Europe as *Barbula indica*; KÖCKINGER *et al.* (2012) proved that these reports belong to *Barbula consanguinea*, transferred to *Hydrogonium* by KUČERA *et al.* (2013)' (HODGETTS *et al.* 2020: annotation 291).

*Hygroamblystegium fluviatile* (Hedw.) Loeske (*Amblystegium fluviatile* (Hedw.) Schimp.)

*Hygroamblystegium humile* (P. Beauv.) Vanderp., Goffinet et Hedenäs [*Hygroamblystegium varium* var. *humile* Vanderp. et Hedenäs] (*Amblystegium humile* (P. Beauv.) Crundw.)

*Hygroamblystegium tenax* (Hedw.) Jenn. (*Amblystegium tenax* (Hedw.) C. E. O. Jensen)

*Hygroamblystegium varium* (Hedw.) Mönk. [*Amblystegium varium* (Hedw.) Lindb.]

*Hygrohypnum luridum* (Hedw.) Jenn.

*Hylocomiadelphus triquetrus* (Hedw.) Ochyra et Stebel [*Rhytidiadelphus triquetrus* (Hedw.) Warnst.]

*Hylocomium splendens* (Hedw.) Schimp.

*Hymenostylium recurvirostrum* (Hedw.) Dixon [*Gymnostomum recurvirostrum* Hedw.]

*Hypnum cupressiforme* Hedw. var. *cupressiforme*

*Hypnum cupressiforme* Hedw. var. *lacunosum* Brid.

*Hypnum cupressiforme* Hedw. var. *subjulaceum* Molendo [*Hypnum subcomplatum* Hedenäs, Schlesak et D. Quandt, *nom. illeg.*, *H. subjulaceum* (Molendo) Hedenäs, Schlesak et D. Quandt] (*Hypnum cupressiforme* var. *cuspidatum* Jur.) – *Hypnum subjulaceum* was published by SCHLESÁK *et al.* (2018) as *H. subcomplatum* rather than *H. subjulaceum* because the latter was thought to be blocked by the name *H. subjulaceum* Besch. However, the latter name was not validly published, so its use at species level is not blocked. This was corrected by SCHLESÁK *et al.* (2019). Later, KUČERA *et al.* (2019) found that *Hypnum subjulaceum* formed a supported lineage within *H. cupressiforme* s. lat., and so it was returned to varietal status (HODGETTS *et al.* 2020, annotation 492). The variety is reported by BOROS (1968) as *H. cupressiforme* var. *cuspidatum* Jur. for the Bükk Mts and Mátra Mts, but its occurrence in Hungary was considered doubtful by Düll (in litt., see ERZBERGER and PAPP 2004). Inter alia, the following specimen from the Börzsöny Mts was confirmed: Herbarium Musei Hist. Nat. Hung. Budapest. Flora Hungarica. Comit Nógrád. In rupibus siccis montis Oltárkő prope pag. Diósjenő, montes Börzsöny, 02.10.1957, leg. et det. L. Vajda (BP 58014) conf. B. Papp, 25.06.2020 [8079.4, ca 800 m a.s.l.].

*Hypnum jutlandicum* Holmen et E. Warncke

*Hypnum pallescens* (Hedw.) P. Beauv. var. *reptile* (Michx.) Husn. – HODGETTS *et al.* (2020) include *Hypnum pallescens* var. *reptile* in a broadly understood taxon *Jochenia pallescens* (Hedw.) Hedenäs, Schlesak et D. Quandt, in the family Jocheniaceae Jan Kučera et Ignatov. However, in accordance with CASPARI *et al.* (2018) and based on the experience of MEINUNGER and SCHRÖDER (2007), who separated *Hypnum reptile* at species level from *H. pallescens* and described in detail their morphological, ecological and chorological differences, we here retain the name *H. pallescens* var. *reptile* for the Hungarian plants, which are clearly different from var. *pallescens* as found, e.g. in the Alps. As a consequence, we cannot recognise the family Jocheniaceae for the bryoflora of Hungary.

*Imbribryum alpinum* (Huds. ex With.) N. Pedersen [*Bryum alpinum* Huds. ex With.]

*Imbribryum mildeanum* (Jur.) J. R. Spence [*Bryum mildeanum* Jur.]

- Imbribryum subapiculatum* (Hampe) D. Bell et Holyoak [*Bryum subapiculatum* Hampe, *Gemmabryum subapiculatum* (Hampe) J. R. Spence et H. P. Ramsay, *Osculatia subapiculata* (Hampe) Ochyra, Plášek et Bedn.-Ochyra] – SCHRÖDER and ERZBERGER (2012).
- Imbribryum tenuisetum* (Limpr.) D. Bell et Holyoak [*Bryum tenuisetum* Limpr., *Gemmabryum tenuisetum* (Limpr.) J. R. Spence et H. P. Ramsay, *Osculatia tenuiseta* (Limpr.) Ochyra, Plášek et Bedn.-Ochyra] – ERZBERGER and SCHRÖDER (2016).
- Isopterygiopsis pulchella* (Hedw.) Z. Iwats. – The status of this species in Hungary is controversial. Köckinger (2016, pers. comm.) doubted the occurrence of *I. pulchella* in Hungary, and some representative specimens were revised to *Orthothecium intricatum* (Hartm.) Schimp. by Hedenäs (2016, unpublished). Interestingly, some of the old collections by Boros in BP were originally identified as *O. intricatum*. More work is needed to decide on the status of *I. pulchella* in Hungary.
- Isothecium alopecuroides* (Lam. ex Dubois) Isov.
- Isothecium myosuroides* Brid. [*Isothecium myosuroides* subsp. *brevinerve* Kindb.]
- Kindbergia praelonga* (Hedw.) Ochyra
- Leptobryum pyriforme* (Hedw.) Wilson
- Leptodictyum riparium* (Hedw.) Warnst.
- Leptodon smithii* (Hedw.) F. Weber et D. Mohr
- Lescuraea saviana* (De Not.) E. Lawton [*Pseudoleskea saviana* (De Not.) Latzel]
- Leskea polycarpa* Hedw.
- Leucobryum glaucum* (Hedw.) Ångstr.
- Leucobryum juniperoideum* (Brid.) Müll. Hal.
- Leucodon sciuroides* (Hedw.) Schwägr. [*Leucodon sciuroides* var. *morensis* (Schwägr.) De Not.]
- Lewinskya affinis* (Schrad. ex Brid.) F. Lara, Garilleti et Goffinet [*Orthotrichum affine* Schrad. ex Brid., *O. affine* var. *bohemicum* Plášek et Sawicki]
- Lewinskya rupestris* (Schleich. ex Schwägr.) F. Lara, Garilleti et Goffinet [*Orthotrichum rupestre* Schleich. ex Schwägr.]
- Lewinskya speciosa* (Nees) F. Lara, Garilleti et Goffinet [*Orthotrichum speciosum* Nees]
- Lewinskya striata* (Hedw.) F. Lara, Garilleti et Goffinet [*Orthotrichum striatum* Hedw.] – *Lewinskya shawii* (Wilson) F. Lara, Garilleti et Goffinet (*Orthotrichum shawii* Wilson), which was mentioned in ERZBERGER and PAPP (2004) based on a report in BOROS (1968), does not occur in Hungary (specimens revised by Kirmaci, Papp and Erzberger, unpublished).
- Loeskeobryum brevirostre* (Brid.) M. Fleisch. (*Hylocomium brevirostre* (Brid.) Schimp.)

- Meesia triquetra* (L. ex Jolycl.) Ångstr.
- Microbryum curvicollum* (Hedw.) R. H. Zander (*Phascum curvicolle* Hedw.)
- Microbryum davallianum* (Sm.) R. H. Zander (*Pottia davalliana* (Sm.) C. E. O. Jensen)
- Microbryum floerkeanum* (F. Weber et D. Mohr) Schimp. (*Phascum floerkeanum* F. Weber et D. Mohr)
- Microbryum muticum* (Venturi) Cl. Schneid., Th. Schneid. et Mahévas (*Pottia mutica* Venturi) – This taxon is not recognised in HODGETTS *et al.* (2020). We follow CASPARI *et al.* (2018) for the combination under *Microbryum*.
- Microbryum starckeanum* (Hedw.) R. H. Zander (*Pottia starckeana* (Hedw.) Müll. Hal.)
- Microeurhynchium pumilum* (Wilson) Ignatov et Vanderp. [*Oxyrrhynchium pumilum* (Wilson) Loeske] (*Eurhynchium pumilum* (Wilson) Schimp.)
- Mnium hornum* Hedw.
- Mnium lycopodioides* Schwägr.
- Mnium marginatum* (Dicks.) P. Beauv.
- Mnium spinulosum* Bruch et Schimp.
- Mnium stellare* Hedw.
- Mnium thomsonii* Schimp.
- Myurella julacea* (Schwägr.) Schimp.
- Neckera pennata* Hedw.
- Neckera pumila* Hedw.
- Nogopterium gracile* (Hedw.) Crosby et W. R. Buck [*Pterogonium gracile* (Hedw.) Sm. *nom. illeg.*]
- Nyholmiella gymnostoma* (Bruch ex Brid.) Holmen et E. Warncke [*Orthotrichum gymnostomum* Bruch ex Brid.]
- Nyholmiella obtusifolia* (Brid.) Holmen et E. Warncke [*Orthotrichum obtusifolium* Brid.]
- Orthodontium lineare* Schwägr. – SZÜCS and BIDLÓ (2012).
- Orthothecium intricatum* (Hartm.) Schimp.
- Orthotrichum anomalum* Hedw.
- Orthotrichum cupulatum* Brid. – HODGETTS *et al.* (2020) distinguish several varieties, but in Hungary only the typical variety occurs, contrary to reports of var. *riparium* in BOROS (1968), also mentioned in ERZBERGER and PAPP (2004); the corresponding specimens represent var. *cupulatum* and a mixture of *O. cupulatum* var. *cupulatum* and *O. anomalum*, respectively (Papp, unpublished revision).
- Orthotrichum diaphanum* Brid.
- Orthotrichum pallens* Bruch ex Brid.
- Orthotrichum patens* Bruch ex Brid.

*Orthotrichum pumilum* Sw. ex anon.

*Orthotrichum rogeri* Brid.

*Orthotrichum schimperi* Hammar – *O. schimperi* was treated by BOROS (1968) as a variety of *O. pumilum*, and thus included in the latter in PAPP *et al.* (2010). However, recently the taxon has been elevated to species rank, and we therefore follow HODGETTS *et al.* (2020) in considering it a species in its own right. The species has many recent records.

*Orthotrichum sprucei* Mont.

*Orthotrichum stramineum* Hornsch. ex Brid.

*Orthotrichum urnigerum* Myrin

*Oxyrrhynchium hians* (Hedw.) Loeske (*Eurhynchium hians* (Hedw.) Sande Lac.)

*Oxyrrhynchium schleicheri* (R. Hedw.) Röhl (*Eurhynchium schleicheri* (R. Hedw.) Jur.)

*Oxyrrhynchium speciosum* (Brid.) Warnst. (*Eurhynchium speciosum* (Brid.) Jur.)

*Palustriella commutata* (Hedw.) Ochyra

*Palustriella falcata* (Brid.) Hedenäs – PAPP *et al.* (2020).

*Paraleucobryum longifolium* (Hedw.) Loeske

*Philonotis caespitosa* Jur.

*Philonotis calcarea* (Bruch et Schimp.) Schimp.

*Philonotis capillaris* Lindb. [*Philonotis arnellii* Husn.] – *Philonotis capillaris* is the correct name for *Philonotis arnellii* (KOPONEN and ISOVIITA 2010, HODGETTS *et al.* 2020: annotation 353).

*Philonotis fontana* (Hedw.) Brid.

*Philonotis marchica* (Hedw.) Brid.

*Physcomitrium eurystomum* Sendtn.

*Physcomitrium patens* (Hedw.) Mitt. [*Aphanorrhagma patens* (Hedw.) Lindb., *Physcomitrella patens* (Hedw.) Bruch et Schimp.]

*Physcomitrium pyriforme* (Hedw.) Bruch et Schimp.

*Physcomitrium sphaericum* (C. F. Ludw. ex Schkuhr) Brid.

*Plagiomnium affine* (Blandow ex Funck) T. J. Kop. [*Orthomnion affine* (Blandow ex Funck) T. J. Kop. et Yu Sun]

*Plagiomnium cuspidatum* (Hedw.) T. J. Kop. [*Orthomnion cuspidatum* (Hedw.) T. J. Kop. et Yu Sun]

*Plagiomnium elatum* (Bruch et Schimp.) T. J. Kop. [*Orthomnion elatum* (Bruch et Schimp.) T. J. Kop. et Yu Sun]

*Plagiomnium ellipticum* (Brid.) T. J. Kop. [*Orthomnion ellipticum* (Brid.) T. J. Kop. et Yu Sun]

*Plagiomnium medium* (Bruch et Schimp.) T. J. Kop. [*Orthomnion medium* (Bruch et Schimp.) T. J. Kop. et Yu Sun]

- Plagiomnium rostratum* (Schrad.) T. J. Kop. [*Orthomnion rostratum* (Schrad.) T. J. Kop. et Yu Sun]
- Plagiomnium undulatum* (Hedw.) T. J. Kop. [*Orthomnion undulatum* (Hedw.) T. J. Kop. et Yu Sun]
- Plagiopus oederianus* (Sw.) H. A. Crum et L. E. Anderson
- Plagiothecium cavifolium* (Brid.) Z. Iwats.
- Plagiothecium curvifolium* Schlieph. ex Limpr.
- Plagiothecium denticulatum* (Hedw.) Schimp. var. *denticulatum*
- Plagiothecium denticulatum* (Hedw.) Schimp. var. *undulatum* R. Ruthe ex Geh. (*Plagiothecium ruthei* Limpr.) – This taxon has been reduced from specific rank to variety in HODGETTS *et al.* (2020).
- Plagiothecium laetum* Schimp.
- Plagiothecium latebricola* Schimp. – BARÁTH and ERZBERGER (2017b).
- Plagiothecium nemorale* (Mitt.) A. Jaeger
- Plagiothecium platyphyllum* Mönk.
- Plagiothecium succulentum* (Wilson) Lindb.
- Plagiothecium undulatum* (Hedw.) Schimp. [*Buckiella undulata* (Hedw.) Ireland]
- Plasteurhynchium striatulum* (Spruce) M. Fleisch. (*Eurhynchium striatulum* (Spruce) Schimp.)
- Platydictya jungermannioides* (Brid.) H. A. Crum
- Platygyrium repens* (Brid.) Schimp.
- Pleuridium acuminatum* Lindb.
- Pleuridium subulatum* (Hedw.) Rabenh.
- Pleurozium schreberi* (Willd. ex Brid.) Mitt.
- Pogonatum aloides* (Hedw.) P. Beauv.
- Pogonatum nanum* (Hedw.) P. Beauv.
- Pogonatum urnigerum* (Hedw.) P. Beauv.
- Pohlia andalusica* (Höhn.) Broth.
- Pohlia annotina* (Hedw.) Lindb.
- Pohlia camptotrachela* (Renauld et Cardot) Broth.
- Pohlia cruda* (Hedw.) Lindb.
- Pohlia elongata* Hedw.
- Pohlia lescuriana* (Sull.) Ochi
- Pohlia lutescens* (Limpr.) H. Lindb.
- Pohlia melanodon* (Brid.) A. J. Shaw
- Pohlia nutans* (Hedw.) Lindb. subsp. *nutans*
- Pohlia nutans* (Hedw.) Lindb. subsp. *schimperi* (Müll. Hal.) Nyholm (*Pohlia schimperi* (Müll. Hal.) A. L. Andrews) – This taxon has been reduced from specific rank to that of subspecies in HODGETTS *et al.* (2020).
- Pohlia proligera* (Kindb.) Lindb. ex Broth.

- Pohlia wahlenbergii* (F. Weber et D. Mohr) A. L. Andrews
- Polytrichastrum alpinum* (Hedw.) G. L. Sm. [*Polytrichastrum norwegicum* (Hedw.) Schljakov, *Polytrichum alpinum* Hedw., *P. alpinum* var. *arcticum* (Sw. ex Brid.) Wahlenb.]
- Polytrichum commune* Hedw. [*Polytrichum commune* var. *commune*, *P. commune* var. *uliginosum* Wallr., *P. uliginosum* (Wallr.) Schriebl]
- Polytrichum formosum* Hedw. [*Polytrichastrum formosum* (Hedw.) G. L. Sm.]
- Polytrichum juniperinum* Hedw.
- Polytrichum longisetum* Sw. ex Brid. [*Polytrichastrum longisetum* (Sw. ex Brid.) G. L. Sm.]
- Polytrichum perigoniale* Michx. [*Polytrichum commune* var. *humile* Sw., *P. commune* var. *perigoniale* (Michx.) Hampe] – var. *perigoniale* is missing in PAPP *et al.* (2010), but see ERZBERGER and PAPP (2004).
- Polytrichum piliferum* Hedw.
- Polytrichum strictum* Menzies ex Brid. [*Polytrichum alpestre* Hoppe]
- Pseudanomodon attenuatus* (Hedw.) Ignatov et Fedosov [*Anomodon attenuatus* (Hedw.) Huebener]
- Pseudephemerum nitidum* (Hedw.) Loeske
- Pseudoamblystegium subtile* (Hedw.) Vanderp. et Hedenäs [*Amblystegium subtile* (Hedw.) Schimp.]
- Pseudocampylium radicale* (P. Beauv.) Vanderp. et Hedenäs [*Amblystegium radicale* (P. Beauv.) Schimp.]
- Pseudocrossidium hornschuchianum* (Schultz) R. H. Zander
- Pseudocrossidium revolutum* (Brid.) R. H. Zander
- Pseudoleskeella catenulata* (Brid. ex Schrad.) Kindb.
- Pseudoleskeella nervosa* (Brid.) Nyholm
- Pseudoscleropodium purum* (Hedw.) M. Fleisch. (*Scleropodium purum* (Hedw.) Limpr.)
- Pseudotaxiphyllum elegans* (Brid.) Z. Iwats.
- Pterigynandrum filiforme* Hedw. [*Pterigynandrum filiforme* var. *majus* (De Not.) De Not.]
- Pterygoneurum lamellatum* (Lindb.) Jur.
- Pterygoneurum ovatum* (Hedw.) Dixon [*Pterygoneurum compactum* M. J. Cano, J. Guerra et Ros, *Pterygoneurum crossidioides* W. Frey, Herrnst. et Kürschner, *Pterygoneurum squamosum* Segarra et Kürschner] – ‘Synonymies of *Pterygoneurum ovatum* follow GUERRA *et al.* 2006. However, this treatment is not yet supported by molecular data’ (HODGETTS *et al.* 2020: annotation 259). In consequence, we exclude *P. compactum*, *P. crossidioides* and *P. squamosum* from the updated Hungarian checklist.
- Pterygoneurum subsessile* (Brid.) Jur.

- Ptilium crista-castrensis* (Hedw.) De Not.
- Ptychostomum capillare* (Hedw.) Holyoak et N. Pedersen [*Rosulabryum capillare* (Hedw.) J. R. Spence, *Bryum capillare* Hedw.]
- Ptychostomum cernuum* (Hedw.) Hornsch. [*Bryum uliginosum* (Brid.) Bruch et Schimp.]
- Ptychostomum compactum* Hornsch. [*Bryum algovicum* Sendtn. ex Müll. Hal., *Bryum compactum* (Hornsch.) Kindb.]
- Ptychostomum creberrimum* (Taylor) J. R. Spence et H. P. Ramsay [*Bryum creberrimum* Taylor]
- Ptychostomum elegans* (Nees) D. Bell et Holyoak [*Bryum elegans* Nees, *Rosulabryum elegans* (Nees) Ochyra]
- Ptychostomum funkii* (Schwägr.) J. R. Spence [*Bryum funkii* Schwägr.] – For the spelling ‘*funkii*’ see annotation 379 in HODGETTS *et al.* (2020).
- Ptychostomum imbricatum* (Müll. Hal.) Holyoak et N. Pedersen [*Bryum caespiticium* Hedw., *Gemmabryum caespiticium* (Hedw.) J. R. Spence, *Osculatia caespiticia* (Hedw.) Ochyra, Plášek et Bedn.-Ochyra]
- Ptychostomum inclinatum* (Sw. ex Brid.) J. R. Spence [*Bryum archangelicum* Bruch et Schimp., *Ptychostomum archangelicum* (Bruch et Schimp.) J. R. Spence] (*Bryum imbricatum* (Schwägr.) Bruch et Schimp.) – For the nomenclatural issues see annotation 380 in HODGETTS *et al.* (2020).
- Ptychostomum intermedium* (Brid.) J. R. Spence [*Bryum intermedium* (Brid.) Blandow]
- Ptychostomum moravicum* (Podp.) Ros et Mazimpaka [*Bryum moravicum* Podp., *Rosulabryum laevifilum* (Syed) Ochyra]
- Ptychostomum pallens* (Sw. ex anon.) J. R. Spence [*Bryum pallens* Sw. ex anon., *Bryum sibiricum* Lindb. et Arnell]
- Ptychostomum pallescens* (Schleich. ex Schwägr.) J. R. Spence [*Bryum pallescens* Schleich. ex Schwägr., *Ptychostomum boreale* (F. Weber et D. Mohr) Ochyra et Bedn.-Ochyra] – we include *Ptychostomum lonchocaulon* (Müll. Hal.) J. R. Spence (*Bryum lonchocaulon* Müll. Hal.) in a broadly conceived *P. pallescens*. See also Appendix 3.
- Ptychostomum pseudotriquetrum* (Hedw.) J. R. Spence et H. P. Ramsay ex Holyoak et N. Pedersen var. *pseudotriquetrum* [*Bryum neodamense* Itzigs., *Bryum pseudotriquetrum* (Hedw.) P. Gaertn., B. Mey. et Scherb., *Ptychostomum neodamense* (Itzigs.) J. R. Spence] – ‘*Ptychostomum neodamense* has been shown by HOLYOAK and HEDENÄS (2006), from molecular and other data, to represent an inconstant phenotype of *Ptychostomum pseudotriquetrum* occurring locally in highly calcareous habitats prone to inundation, and connected to it by intermediate forms known widely in Europe and also in Asia, Alaska and Greenland. Its retention at species rank by SPENCE (2014) is a

- consequence of an over-emphasis on morphological data' (HODGETTS *et al.* 2020: annotation 386). In consequence, we exclude *Ptychostomum (Bryum) neodamense* from the updated Hungarian checklist.
- Ptychostomum pseudotriquetrum* (Hedw.) J. R. Spence et H. P. Ramsay ex Holyoak et N. Pedersen var. *bimum* (Schreb.) Holyoak et N. Pedersen [*Bryum pseudotriquetrum* var. *bimum* (Schreb.) Lilj.] – var. *bimum* is missing in PAPP *et al.* (2010), but see ERZBERGER and PAPP (2004).
- Ptychostomum rubens* (Mitt.) Holyoak et N. Pedersen [*Bryum rubens* Mitt., *Osculatia rubens* (Mitt.) Ochyra, Plášek et Bedn.-Ochyra, *Rosulabryum rubens* (Mitt.) J. R. Spence]
- Ptychostomum torquescens* (Bruch et Schimp.) Ros et Mazimpaka [*Bryum torquescens* Bruch et Schimp., *Rosulabryum torquescens* (Bruch et Schimp.) J. R. Spence]
- Ptychostomum turbinatum* (Hedw.) J. R. Spence [*Bryum turbinatum* (Hedw.) Turner]
- Ptychostomum warneum* (Röhl.) J. R. Spence [*Bryum warneum* (Röhl.) Brid.]
- Ptychostomum weigeli* (Biehler) J. R. Spence [*Bryum weigeli* Biehler]
- Ptychostomum zieri* (Hedw.) Holyoak et N. Pedersen [*Plagiobryum zieri* (Hedw.) Lindb.] – spelled as '*zierii*' in ERZBERGER and PAPP (2004) and PAPP *et al.* (2010).
- Pulvigerella lyellii* (Hook. et Taylor) Plášek, Sawicki et Ochyra [*Orthotrichum lyellii* Hook. et Taylor]
- Pylaisia polyantha* (Hedw.) Schimp.
- Pyramidula tetragona* (Brid.) Brid.
- Racomitrium aciculare* (Hedw.) Brid. [*Codriophorus acicularis* (Hedw.) P. Beauv.]
- Racomitrium affine* (F. Weber et D. Mohr) Lindb. [*Bucklandiella affinis* (Schleich. ex F. Weber et D. Mohr) Bedn.-Ochyra et Ochyra]
- Racomitrium aquaticum* (Brid. ex Schrad.) Brid. [*Codriophorus aquaticus* (Brid. ex Schrad.) Bedn.-Ochyra et Ochyra]
- Racomitrium canescens* (Hedw.) Brid. [*Niphotrichum canescens* (Hedw.) Bedn.-Ochyra et Ochyra]
- Racomitrium heterostichum* (Hedw.) Brid. [*Bucklandiella heterosticha* (Hedw.) Bedn.-Ochyra et Ochyra]
- Racomitrium lanuginosum* (Hedw.) Brid. – According to PAPP *et al.* (2010) the presence of this species in Hungary was based on a single herbarium specimen (Cottus Castriferrei, S-Kápolna (Sorkikápolna) in silvis, without year, leg. J. Márton BP 6630). However, later doubts arose concerning the trustworthiness of the collector, József Márton (1860–1895), whose herbarium also holds other taxa that did not grow in the reported localities (A. Mesterházy, pers. comm.). But even if this doubtful record is excluded, the presence

of *R. lanuginosum* in Hungary is out of question, since, fortunately, a new occurrence has recently been discovered: [8182.2] Nógrád County, Cserhát, Bér, Nagy-hegy, Kőtenger, on andesite boulders, N 47° 51' 56.91", E 19° 28' 41.38", 365 m a.s.l., 18.07.2020, leg. Csiky János and Csikyné Radnai Éva, det. Csiky János, conf. P. Erzberger, J. Csiky, pers. comm.

*Racomitrium microcarpon* (Hedw.) Brid. [*Bucklandiella microcarpa* (Hedw.) Bedn.-Ochyra et Ochyra] – BEDNAREK-OCHYRA *et al.* (2011).

*Rhabdoweisia crispata* (Dicks.) Lindb. – MESTERHÁZY *et al.* (2017).

*Rhabdoweisia fugax* (Hedw.) Bruch et Schimp.

*Rhizomnium punctatum* (Hedw.) T. J. Kop.

*Rhodobryum ontariense* (Kindb.) Kindb.

*Rhodobryum roseum* (Hedw.) Limpr.

*Rhynchostegiella curviseta* (Brid.) Limpr.

*Rhynchostegiella tenella* (Dicks.) Limpr.

*Rhynchostegiella teneriffae* (Mont.) Dirkse et Bouman [*Rhynchostegiella jacquini* (Garov.) Limpr., *Rhynchostegiella macilenta* (Renauld et Cardot) Cardot, *Rhynchostegiella teesdalei* (Schimp.) Limpr.]

*Rhynchostegium confertum* (Dicks.) Schimp.

*Rhynchostegium megapolitanum* (Blandow ex F. Weber et D. Mohr) Schimp.

*Rhynchostegium murale* (Hedw.) Schimp. [*Rhynchostegium arcticum* (I. Hagen) Ignatov et Huttunen]

*Rhynchostegium riparioides* (Hedw.) Cardot [*Platyhypnidium grolleanum* Ochyra et Bedn.-Ochyra, *Platyhypnidium torrenticola* (Ochyra, C. Schmidt et Bültmann) Ochyra et Bedn.-Ochyra] (*Platyhypnidium riparioides* (Hedw.) Dixon)

*Rhynchostegium rotundifolium* (Scop. ex Brid.) Schimp.

*Rhytidiadelphus squarrosus* (Hedw.) Warnst.

*Rhytidium rugosum* (Hedw.) Kindb.

*Saelania glaucescens* (Hedw.) Broth.

*Sanionia uncinata* (Hedw.) Loeske

*Sarmentypnum exannulatum* (Schimp.) Hedenäs [*Warnstorfia exannulata* (Schimp.) Loeske]

*Schistidium apocarpum* (Hedw.) Bruch et Schimp.

*Schistidium brunnescens* Limpr. subsp. *brunnescens*

*Schistidium brunnescens* Limpr. subsp. *griseum* (Nees et Hornsch.) H. H. Blom

*Schistidium confertum* (Funck) Bruch et Schimp.

*Schistidium confusum* H. H. Blom

*Schistidium crassipilum* H. H. Blom

*Schistidium dupretii* (Thér.) W. A. Weber

*Schistidium elegantulum* H. H. Blom subsp. *elegantulum*

*Schistidium flaccidum* (De Not.) Ochyra

- Schistidium helveticum* (Schkuhr) Deguchi [*Schistidium singarense* (Schiffn.) Laz.]  
*Schistidium lancifolium* (Kindb.) H. H. Blom  
*Schistidium papillosum* Culm.  
*Schistidium platyphyllum* (Mitt.) H. Perss.  
*Schistidium pruinosum* (Wilson ex Schimp.) G. Roth  
*Schistidium robustum* (Nees et Hornsch.) H. H. Blom  
*Sciuro-hypnum curtum* (Lindb.) Ignatov – ECKSTEIN *et al.* (2017), see also annotation 487 in HODGETTS *et al.* (2020): ‘*Sciuro-hypnum curtum* was restored from synonymy with *Sciuro-hypnum oedipodium* by IGNATOV and MILYUTINA (2007). It is a widespread species in Europe, whereas *Sciuro-hypnum oedipodium*, which is primarily a western North American species, is very rare, with just a few records from Eastern Europe’  
*Sciuro-hypnum flotowianum* (Sendtn.) Ignatov et Huttunen (*Eurhynchium flotowianum* (Sendtn.) Kartt.)  
*Sciuro-hypnum plumosum* (Hedw.) Ignatov et Huttunen (*Brachythecium plumosum* (Hedw.) Schimp.)  
*Sciuro-hypnum populeum* (Hedw.) Ignatov et Huttunen (*Brachythecium populeum* (Hedw.) Schimp.)  
*Sciuro-hypnum reflexum* (Starke) Ignatov et Huttunen (*Brachythecium reflexum* (Starke) Schimp.)  
*Scorpidium cossonii* (Schimp.) Hedenäs (*Drepanocladus cossonii* (Schimp.) Loeske)  
*Scorpidium scorpioides* (Hedw.) Limpr.  
*Seligeria acutifolia* Lindb. – NÉMETH *et al.* (2016).  
*Seligeria calcarea* (Hedw.) Bruch et Schimp.  
*Seligeria donniana* (Sm.) Müll. Hal. [*Seligeria galinae* Mogensen et I. Goldberg]  
*Seligeria patula* (Lindb.) I. Hagen [*Seligeria alpestris* T. Schauer, *S. patula* var. *alpestris* (T. Schauer) Gos et Ochyra, *S. tristichoides* var. *patula* (Lindb.) Broth.] – Occurrence in Hungary is based on an unpublished revision by L. Gos, which R. Ochyra (pers. comm.) kindly brought to our attention. Specimen: Herbar. Musei Hist. Nat. Hung. Budapest, Flora Hungarica, Comit. Veszprém. In rupibus calcareis umbrosis vallis Ördögárok, prope Gézaháza, montes Bakony [8673.4] 5. VII. 1969, leg. et det. L. Vajda (as *Seligeria calcarea* (Dicks.) Br. eur.) (BP 74406). *Seligeria tristichoides* Kindb. var. *patula* (Lindb.) Broth. Revised by Lidia Gos 1991.  
*Seligeria pusilla* (Hedw.) Bruch et Schimp.  
*Seligeria trifaria* (Brid.) Lindb. var. *longifolia* (Lindb. ex Broth.) Ochyra et Gos  
*Sematophyllum adnatum* (Michx.) E. Britton – ERZBERGER *et al.* (2018b).  
*Serpoleskea confervoides* (Brid.) Schimp. [*Amblystegium confervoides* (Brid.) Schimp.]  
*Sphagnum angustifolium* (C. E. O. Jensen ex Russow) C. E. O. Jensen

- Sphagnum auriculatum* Schimp. [*Sphagnum denticulatum* Brid.]  
*Sphagnum capillifolium* (Ehrh.) Hedw. [*Sphagnum capillifolium* subsp. *capillifolium*]  
*Sphagnum centrale* C. E. O. Jensen [*Sphagnum palustre* var. *centrale* (C. E. O. Jensen) A. Eddy]  
*Sphagnum compactum* Lam. et DC.  
*Sphagnum contortum* Schultz  
*Sphagnum cuspidatum* Ehrh. ex Hoffm.  
*Sphagnum divinum* Flatberg et Hassel [*Sphagnum magellanicum* auct. eur. p. p., non Brid.] – ‘All European records of *Sphagnum magellanicum* are referable to *Sphagnum divinum* or *Sphagnum medium* (HASSEL *et al.* 2018). *Sphagnum magellanicum* s. str. is confined to southern South America’ (HODGETTS *et al.* 2020: annotation 164). According to E. Szurdoki (pers. comm.), all Hungarian specimens inserted under ‘*Sphagnum magellanicum*’ in BP and EGR represent *Sphagnum divinum*.  
*Sphagnum fallax* (H. Klinggr.) H. Klinggr.  
*Sphagnum fimbriatum* Wilson  
*Sphagnum flexuosum* Dozy et Molk.  
*Sphagnum girgensohnii* Russow  
*Sphagnum inundatum* Russow  
*Sphagnum obtusum* Warnst.  
*Sphagnum palustre* L.  
*Sphagnum platyphyllum* (Lindb. ex Braithw.) Warnst.  
*Sphagnum quinquefarium* (Braithw.) Warnst.  
*Sphagnum riparium* Ångstr.  
*Sphagnum russowii* Warnst.  
*Sphagnum squarrosus* Crome  
*Sphagnum subnitens* Russow et Warnst.  
*Sphagnum subsecundum* Nees  
*Sphagnum teres* (Schimp.) Ångstr.  
*Sphagnum warnstorffii* Russow  
*Splachnobryum obtusum* (Brid.) Müll. Hal.  
*Straminergon stramineum* (Dicks. ex Brid.) Hedenäs (*Calliergon stramineum* (Brid.) Kindb.)  
*Streblotrichum convolutum* (Hedw.) P. Beauv. var. *commutatum* (Jur.) J. J. Amann [*Barbula convoluta* var. *sardoa* Schimp., *Streblotrichum commutatum* (Jur.) Hilp.] – var. *commutata* is not listed in PAPP *et al.* (2010), but has been mentioned in ERZBERGER and PAPP (2004), although as being controversial. Meanwhile, the occurrence of the variety in Hungary has been confirmed from 20 floristical grid cells during recording (Erzberger *et al.*, unpublished).

- Streblotrichum convolutum* (Hedw.) P. Beauv. var. *convolutum* [*Barbula convoluta* Hedw.]
- Syntrichia calcicola* J. J. Amann (*Tortula calcicolens* W. A. Kramer)
- Syntrichia caninervis* Mitt. var. *gypsophila* (J. J. Amann ex G. Roth) Ochyra (*Tortula caninervis* (Mitt.) Broth. subsp. *spuria* (J. J. Amann) W. A. Kramer)
- Syntrichia laevipila* Brid. [*Syntrichia pagorum* (Milde) J. J. Amann] (*Tortula laevipila* (Brid.) Schwaegr.)
- Syntrichia latifolia* (Bruch ex Hartm.) Huebener (*Tortula latifolia* Bruch ex Hartm.)
- Syntrichia montana* Nees var. *calva* (Durieu et Sagot ex Bruch et Schimp.) J. J. Amann (*Tortula crinita* var. *calva* (Durieu et Sagot) Nebel et Heinrichs) – var. *calva* is missing in PAPP *et al.* (2010), but see ERZBERGER and PAPP (2004).
- Syntrichia montana* Nees var. *montana* [*Syntrichia intermedia* Brid.] (*Tortula crinita* (De Not.) De Not.)
- Syntrichia norvegica* F. Weber (*Tortula norvegica* (F. Weber) Wahlenb. ex Lindb.)
- Syntrichia papillosa* (Wilson) Jur. (*Tortula papillosa* Wilson)
- Syntrichia ruraliformis* (Besch.) Mans. [*Syntrichia ruralis* var. *ruraliformis* (Besch.) Delogne] (*Tortula ruraliformis* (Besch.) Ingham)
- Syntrichia ruralis* (Hedw.) F. Weber et D. Mohr var. *epilosa* (Venturi) J. J. Amann – ‘*Syntrichia ruralis* var. *epilosa* was resurrected by GALLEGO *et al.* (2018). It may represent a special phenotype within *Syntrichia ruraliformis* or *Syntrichia ruralis*, but more study is required (HEDENÄS *et al.* 2019)’ (HODGETTS *et al.* 2020: annotation 264). Occurrence in Hungary: ERZBERGER *et al.* (2018a).
- Syntrichia ruralis* (Hedw.) F. Weber et D. Mohr var. *ruralis* [*Syntrichia densa* (Velen.) J.-P. Frahm, *Syntrichia glabra* J.-P. Frahm et M. T. Gallego] (*Tortula ruralis* (Hedw.) P. Gaertn., B. Mey. et Scherb.)
- Syntrichia subpapillosissima* (Bizot et R. B. Pierrot ex W. A. Kramer) M. T. Gallego et J. Guerra (*Tortula papillosissima* (Copp.) Broth. var. *submamillosa* (W. A. Kramer) Heinrichs et Caspari) – var. *submamillosa* is not listed in PAPP *et al.* (2010), but see ERZBERGER and PAPP (2004). Contrary to TÓTH (1986), the typical variety (var. *papillosissima* = *Syntrichia papillosissima* (Copp.) Loeske) does not occur in Hungary (U. Abts, unpublished). See also annotation 266 in HODGETTS *et al.* (2020): ‘*Syntrichia subpapillosissima* may represent a special phenotype within *Syntrichia ruraliformis* or *Syntrichia ruralis*, but more study is required (HEDENÄS *et al.* 2019)’. The species has many recent records.
- Syntrichia virescens* (De Not.) Ochyra (*Tortula virescens* (De Not.) De Not.)
- Taxiphyllum densifolium* (Lindb. ex Broth.) Reimers

*Taxiphyllum wissgrillii* (Garov.) Wijk et Margad.

*Tetraphis pellucida* Hedw.

*Thamnobryum alopecurum* (Hedw.) Gangulee

*Thamnobryum neckeroides* (Hook.) E. Lawton – Occurrence in Hungary is based on an unpublished revision by M. Mastracci. Specimen: Herbar. Musei Nat. Hungar. Budapest, Flora Hungarica Comit. Nógrád. In rupibus umbrosis supra vall. rivi Rakottyáspatak prope Királyháza, montes Börzsöny [8079.2] 09.05.1959, leg. et det. L. Vajda (as *Thamnium alopecurum* (L.) Br. eur. fo. *pratensa* Turn.) with a handwritten note (in Á. Boros' writing) reading: 'Isothecium myurum nem lehet a teljesen más sejthálózat miatt. Keskeny, hosszú levél sejtjei vannak. Climacium-nak széles, háromszög alakú levelei vannak. Sejthálózata a Thamnium-éhez hasonló, középere is fogas, de levélformája más és nagyon concav, míg a Th.-é lapos, ovális, élesen hegyes' (transl.: It cannot be *Isothecium myurum* because of its totally different areolation. It has narrow, long leaf cells. *Climacium* has broad triangular leaves. The areolation is similar to that of *Thamnium*, also the midrib is denticulate, but the leaf shape is different, very concave, whereas *Th.* has flat, ovate, sharply acute leaves.) (BP 62151) *Thamnobryum neckeroides* (Hook.) E. Lawton, rev. M. Mastracci 2003.

*Thuidium assimile* (Mitt.) A. Jaeger (*Thuidium philibertii* Limpr.)

*Thuidium delicatulum* (Hedw.) Schimp.

*Thuidium recognitum* (Hedw.) Lindb.

*Thuidium tamariscinum* (Hedw.) Schimp.

*Timmia austriaca* Hedw.

*Timmia bavarica* Hessel.

*Tomentypnum nitens* (Hedw.) Loeske

*Tortella fasciculata* (Culm.) Culm. [*Tortella bambergi* auct., non (Schimp.) Broth. p. p., *Tortella tortuosa* subsp. *fasciculata* Culm.] – '*Tortella fasciculata* was resurrected by KÖCKINGER and HEDENÄS (2017) as part of their revision of *Tortella bambergi*' (HODGETTS *et al.* 2020: annotation 299). A Hungarian collection by Boros was studied by KÖCKINGER and HEDENÄS (2017). See also ERZBERGER and PAPP (2018).

*Tortella inclinata* (R. Hedw.) Limpr.

*Tortella pseudofragilis* (Thér.) Köckinger et Hedenäs [*Tortella bambergi* auct., non (Schimp.) Broth. p. p., *Tortella fragilis* var. *moravica* Podp.] – 'The name *Tortella pseudofragilis* was introduced by KÖCKINGER and HEDENÄS (2017) as part of their revision of *Tortella bambergi*' (HODGETTS *et al.* 2020: annotation 303). Occurrence in Hungary: CASPARI and ERZBERGER (2019), see also ERZBERGER and PAPP (2018).

*Tortella squarrosa* (Brid.) Limpr. [*Pleurochaete squarrosa* (Brid.) Lindb.]

*Tortella tortuosa* (Hedw.) Limpr. [*Tortella bambergerei* (Schimp.) Broth.] – ‘Using morphological and molecular methods, KÖCKINGER and HEDENÄS (2017) demonstrated that the type of *Tortella bambergerei* was synonymous with *Tortella tortuosa*. Plants recently treated as *Tortella bambergerei* are referable to *Tortella fasciculata* and *Tortella pseudofragilis*. Up to now, the acceptance of *Tortella tortuosa* var. *fragilifolia* (Jur.) Limpr. has been based on the treatment of ECKEL (1998), but this concept is based on plants later referred to *Tortella bambergerei* (ECKEL 2010). In general, the name ‘var. *fragilifolia*’ has been used for morphs of *Tortella tortuosa* with fragile leaves, and the variety is therefore not included in the checklist’ (HODGETTS *et al.* 2020: annotation 306).

*Tortula acaulon* (With.) R. H. Zander var. *acaulon* [*Phascum cuspidatum* Hedw.]

*Tortula acaulon* (With.) R. H. Zander var. *papillosa* (Lindb.) R. H. Zander [*Phascum cuspidatum* var. *papillosum* (Lindb.) G. Roth] – *Phascum cuspidatum* var. *papillosum* Limpr. is missing in PAPP *et al.* (2010), but mentioned in ERZBERGER and PAPP (2004). Meanwhile its occurrence in Hungary has been established in 19 floristical grid cells during recording (Erzberger *et al.*, unpublished). Another variety, var. *mitraeforme* Limpr., also mentioned in ERZBERGER and PAPP (2004), has been preliminarily synonymised with var. *papillosum*, based on available descriptions, but original material should also be checked (CASPARI *et al.* 2018).

*Tortula acaulon* (With.) R. H. Zander var. *pilifera* (Hedw.) R. H. Zander [*Phascum cuspidatum* var. *piliferum* (Hedw.) Hook. et Taylor] – *Phascum cuspidatum* var. *piliferum* (Hedw.) Hook. et Taylor is missing in PAPP *et al.* (2010), but mentioned in ERZBERGER and PAPP (2004) and was already reported by BOROS (1968). Meanwhile its occurrence in Hungary has been established in 51 floristical grid cells during recording (Erzberger *et al.*, unpublished).

*Tortula atrovirens* (Sm.) Lindb.

*Tortula brevissima* Schiffn.

*Tortula caucasica* Broth. [*Pottia intermedia* (Turner) Fürnr., *Tortula modica* R. H. Zander]

*Tortula cernua* (Huebener) Lindb. (*Desmatodon cernuus* (Huebener) Bruch et Schimp.)

*Tortula inermis* (Brid.) Mont.

*Tortula lindbergii* Broth. [*Pottia lanceolata* (Hedw.) Müll. Hal., *Tortula lanceola* R. H. Zander]

*Tortula mucronifolia* Schwägr.

*Tortula muralis* Hedw. subsp. *muralis* var. *aestiva* Hedw. – included in *Tortula muralis* in PAPP *et al.* (2010), but mentioned in ERZBERGER and PAPP (2004). ‘The two varieties of *Tortula muralis* subsp. *muralis* intergrade, but

there is a certain level of distinctness, so this treatment follows KOŠNAR and KOLÁŘ (2009)' (HODGETTS *et al.* 2020: annotation 270).

*Tortula muralis* Hedw. subsp. *muralis* var. *muralis*

*Tortula muralis* Hedw. subsp. *obtusifolia* (Schwägr.) Culm. [*Tortula obtusifolia* (Schwägr.) Mathieu] – 'KOŠNAR and KOLÁŘ (2009) reduced *Tortula obtusifolia* to a subspecies of *Tortula muralis*' (HODGETTS *et al.* 2020: annotation 271).

*Tortula protobryoides* R. H. Zander [*Protobryum bryoides* (Dicks.) J. Guerra et M. J. Cano] (*Pottia bryoides* (Dicks.) Mitt.)

*Tortula schimperi* M. J. Cano, O. Werner et J. Guerra [*Tortula subulata* var. *angustata* (Schimp.) Limpr.]

*Tortula subulata* Hedw. [*Tortula subulata* var. *graeffii* Warnst., *Tortula subulata* var. *subinermis* (Bruch et Schimp.) Wilson]

*Tortula truncata* (Hedw.) Mitt. (*Pottia truncata* (Hedw.) Bruch et Schimp.)

*Trichodon cylindricus* (Hedw.) Schimp. [*Ditrichum cylindricum* (Hedw.) Grout]

*Trichostomum brachydontium* Bruch

*Trichostomum crispulum* Bruch

*Uloa bruchii* Hornsch. ex Brid.

*Uloa coarctata* (P. Beauv.) Hammar

*Uloa crispa* (Hedw.) Brid. – 'The treatment of the *Uloa crispa* complex (*Uloa crispa* s. str., *Uloa crispula*, *Uloa intermedia*) follows CAPARRÓS *et al.* (2016)' (HODGETTS *et al.* 2020: annotation 418).

*Uloa crispula* Bruch [*Uloa crispa* var. *crispula* (Bruch) Hammar] – The presence of *Uloa crispula* in Hungary was first demonstrated by CAPARRÓS *et al.* (2016). Meanwhile there are data from 77 floristical grid cells (Erzberger *et al.*, unpublished).

*Uloa hutchinsiae* (Sm.) Hammar

*Uloa intermedia* Schimp. [*Uloa crispa* var. *intermedia* (Schimp.) Cardot] – The presence of *Uloa intermedia* in Hungary was first demonstrated by CAPARRÓS *et al.* (2016). Meanwhile there are data from 19 floristical grid cells (Erzberger *et al.*, unpublished).

*Weissia brachycarpa* (Nees et Hornsch.) Jur.

*Weissia condensata* (Voit) Lindb.

*Weissia controversa* Hedw. var. *controversa*

*Weissia controversa* Hedw. var. *crispata* (Nees et Hornsch.) Nyholm (*Weissia fallax* Sehm.)

*Weissia longifolia* Mitt.

*Weissia rostellata* (Brid.) Lindb.

*Weissia rutilans* (Hedw.) Lindb.

*Zygodon rupestris* Schimp. ex Lorentz

## DISCUSSION

Compared to the latest checklist (PAPP *et al.* 2010), 59 additional taxa (Appendix 1) have been added to the list, but not all of these represent ‘true’ additions to the bryoflora of Hungary, since taxonomic re-evaluation also contributes to these additional names. True additions to the Hungarian bryoflora (Appendix 1.1) since 2010 comprise 4 species and 2 infraspecific taxa (varieties) of liverworts, and 29 species and 5 infraspecific taxa (2 subspecies and 3 varieties) of mosses, altogether 40 taxa. Due to taxonomic changes, another 19 taxa that were known to be part of the Hungarian bryoflora but were not recognised in the previous checklist have been added (Appendix 1.2), 4 species of liverworts and 8 species and 7 varieties of mosses.

On the other hand, 29 taxa have been excluded from the bryophyte flora of Hungary, 7 liverworts and 22 mosses (Appendix 2).

As a result, we obtain a total number of 689 taxa in the Hungarian bryoflora (Table 1).

Table 1. Number of taxa in different Hungarian checklists.

	Hornworts	Liverworts	Mosses	total
ERZBERGER and PAPP (2004)	2	143	484	629
PAPP <i>et al.</i> (2010)	2	146	511	659
‘true’ additions (Appendix 1.1)	0	6	34	40
‘taxonomic additions’ (Appendix 1.2)	0	4	15	19
exclusions (Appendix 2)	0	7	22	29
result present checklist	2	149	538	689

For some critical or otherwise problematic taxa we feel that our decision not to incorporate them into the checklist of the Hungarian bryoflora is preliminary, these taxa were reported from Hungary but for various reasons cannot be verified satisfactorily. They are compiled and annotated in Appendix 3.

Finally, in Appendix 4 an abridged version of the checklist (without the taxa of Appendices 1 and 2) is arranged according to traditional nomenclature in order to facilitate comparison with previous publications and as a table of synonyms, which seems necessary since there are more than 150 names unfamiliar to bryological non-experts.

Checklists usually are out of date the moment they are printed, yet we hope that much of our work can serve as a taxonomic and nomenclatural basis for a future red list.

\* \* \*

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**Összefoglaló:** Az alábbi „checklist” alapján a magyar mohaflóra 2 becsmoha fajból (2 nemzetség, 2 család), 146 májmoha fajból és 3 faj alatti taxonból (1 alfaj és 2 változat), amelyek 60 nemzetségbe és 34 családba tartoznak, valamint 521 lombosmoha fajból és 17 faj alatti taxonból (5 alfaj és 12 változat) áll, amelyek 186 nemzetségbe és 64 családba tartoznak. Így a magyar mohaflóra összesen 669 fajt és további 6 alfajt és 14 változatot, azaz 689 taxont számlál. Az eltelt 10 év alatt 40 mohataxont (6 májmohát és 34 lombosmohát) először mutattak ki a magyar mohaflórában (1.1. Függelék) és további 19 taxon (4 májmoha és 15 lombosmoha), amelyek már korábban a magyar mohaflóra tagjai voltak, de az előző „checklist”-ben nem szerepeltek, most ismét felkerültek a listára (1.2. Függelék). Más részről, 29 taxont (7 májmohát és 22 lombosmohát) jelen ismereteink alapján ki kell zárni a magyar mohaflórából (2. Függelék). A 3. Függelékben további 13 taxont (2 májmohát és 11 lombosmohát) találunk, amelyeket jelenleg nem tekintünk a magyar mohaflóra tagjainak, egy kivételével nem szerepeltek az előző „checklist”-ben, de említésre kerültek valamely más irodalomban és öt kivételével szerepelnek az európai „checklist”-ben. Ezekről a taxonokról nem rendelkezünk még elég információval, hogy megfelelően dönthessünk róluk. A fent említett függelékben az egyes fajokról bővebb magyarázatokat is adunk, hogy helyzetük megfelelő értékelését segítsük. A 4. Függelékben az összes fajnevet feltüntetjük, amelyek az előző „checklist”-ben szerepeltek, és hozzájuk rendeljük aktuálisan elfogadott nevüket.

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## Appendix 1. Taxa not included in PAPP *et al.* (2010) (but inserted in the main checklist).

### 1.1. Additions to the bryophyte flora of Hungary (taxa not known previously to occur in Hungary).

#### Liverworts

- Barbilophozia hatcheri* (A. Evans) Loeske – NÉMETH and NAGY (2016).  
*Cephaloziella divaricata* var. *scabra* (M. Howe) Haynes – (B-Erzberger 19052, det. Meinunger, unpublished) see entry in main list.  
*Cephaloziella varians* (Gottsche) Steph. – ERZBERGER and MEINUNGER (2014a).  
*Pellia neesiana* (Gottsche) Limpr. – ERZBERGER (2018).  
*Riccia glauca* var. *ciliaris* Warnst. – see entry in main list.  
*Scapania praetervisiva* Meyl. – ERZBERGER and MEINUNGER (2014b).

#### Mosses

- Brachythecium olympicum* (Jur.) Vanderp. et al. – PAPP *et al.* (2020).  
*Bruchia flexuosa* (Schwägr.) Müll. Hal. – MESTERHÁZY and NÉMETH (2015).  
*Bryum barnesii* J. B. Wood – ERZBERGER (2015).  
*Callicladium haldanianum* (Grev.) H. A. Crum – ERZBERGER *et al.* (2016b).  
*Campylopus flexuosus* (Hedw.) Brid. – ERZBERGER and NÉMETH (2014).  
*Campylopus fragilis* (Brid.) Bruch et Schimp. – DEME *et al.* (2015).  
*Codonoblepharon forsteri* (Dicks.) Goffinet (*Zygodon forsteri* (Dicks.) Mitt.) – PAPP and SINIGLA (2017).  
*Crossidium squamiferum* (Viv.) Jur. var. *squamiferum* – NAGY and ERZBERGER (2018).  
*Didymodon tophaceus* subsp. *erosus* (J. A. Jiménez et J. Guerra) Jan Kučera – KUČERA *et al.* (2018).  
*Didymodon tophaceus* subsp. *sicculus* (M. J. Cano, Ros, García-Zam. et J. Guerra) Jan Kučera – KUČERA *et al.* (2018).  
*Ditrichum lineare* (Sw.) Lindb. – NÉMETH (2016).  
*Encalypta rhaptocarpa* Schwägr. – ERZBERGER (2014).  
*Fissidens crispus* Mont. – ERZBERGER (2016a).  
*Fissidens dubius* var. *mucronatus* (Limpr.) Kartt., Hedenäs et L. Söderstr. – ERZBERGER (2016b).  
*Heterocladium heteropterum* (Brid.) Schimp. – BARÁTH and ERZBERGER (2017a).  
*Hookeria lucens* (Hedw.) Sm. – ÓDOR and SZURDOKI (2011).  
*Imbribryum subapiculatum* (Hampe) D. Bell et Holyoak – SCHRÖDER and ERZBERGER (2012).  
*Imbribryum tenuisetum* (Limpr.) D. Bell et Holyoak – ERZBERGER and SCHRÖDER (2016).  
*Orthodontium lineare* Schwägr. – SZÜCS and BIDLÓ (2012).  
*Plagiothecium latebricola* Schimp. – BARÁTH and ERZBERGER (2017b).  
*Racomitrium microcarpum* (Hedw.) Brid. – BEDNAREK-OCHYRA *et al.* (2011).  
*Rhabdoweisia crispata* (Dicks.) Lindb. – MESTERHÁZY *et al.* (2017).  
*Sciuro-hypnum curtum* (Lindb.) Ignatov – ECKSTEIN *et al.* (2017).  
*Seligeria acutifolia* Lindb. – NÉMETH *et al.* (2016).  
*Seligeria patula* (Lindb.) I. Hagen – a specimen collected by L. Vajda (BP) was revised by L. Gos, see note in main checklist.  
*Sematophyllum adnatum* (Michx.) E. Britton – ERZBERGER *et al.* (2018b).  
*Sphagnum divinum* Flatberg et Hassel – see entry in main list; specimens of this taxon were previously considered to represent *S. magellanicum* Brid.

- Syntrichia ruralis* var. *epilosa* (Venturi) J. J. Amann – ERZBERGER *et al.* (2018a).  
*Thamnobryum neckeroides* (Hook.) E. Lawton – see entry in main list.  
*Tortella fasciculata* (Culm.) Culm. – KÖCKINGER and HEDENÄS (2017), ERZBERGER and PAPP (2018).  
*Tortella pseudofragilis* (Thér.) Köckinger et Hedenäs – CASPARI and ERZBERGER (2019), ERZBERGER and PAPP (2018).  
*Tortula acaulon* var. *papillosa* (Lindb.) R. H. Zander (*Phascum cuspidatum* var. *papillosum* (Lindb.) G. Roth) – infraspecific taxon recognised in HODGETTS *et al.* (2020) and recorded from Hungary (Erzberger *et al.* unpublished).  
*Ulota crispula* Bruch – CAPARRÓS *et al.* (2016).  
*Ulota intermedia* Schimp. – CAPARRÓS *et al.* (2016).

## 1.2. Taxa previously known to occur in Hungary but not recognised in PAPP *et al.* (2010).

### Liverworts

- Lophocolea coadunata* (Sw.) Mont. – see entry in main list; this name replaces the familiar name *Lophocolea bidentata* (L.) Dumort., which stands for a different taxon.  
*Lophozia guttulata* (Lindb. et Arnell) A. Evans – see entry in main list; specimens of this taxon were previously considered to represent *L. longiflora* (Nees) Schiffn.  
*Lophozia silvicola* H. Buch – see entry in main list; previously included in *L. ventricosa* (Dicks.) Dumort.  
*Scapania parvifolia* Warnst. – see entry in main list; previously included in *S. scandica* (Arnell et H. Buch) Macvicar

### Mosses

- Atrichum flavisetum* Mitt. – see entry in main list; previously included in *A. undulatum* (Hedw.) P. Beauv.  
*Campylium protensum* (Brid.) Kindb. (*Campylium stellatum* var. *protensum* (Brid.) Bryhn) – upgraded to specific rank, previously included in *C. stellatum* (Hedw.) Lange et C. E. O. Jensen  
*Cynodontium strumiferum* (Hedw.) Lindb. – upgraded to specific rank from *C. polycarpon* var. *strumiferum*  
*Hedwigia emodica* Hampe ex Müll. Hal. (*Hedwigia ciliata* var. *leucophaea* Bruch et Schimp.) – see entry in main list; upgraded to specific rank  
*Hypnum cupressiforme* var. *lacunosum* Brid. – see entry in main list; previously included in *H. cupressiforme* Hedw.  
*Hypnum cupressiforme* var. *subjulaceum* Molendo – see entry in main list; previously included in *H. cupressiforme* Hedw.  
*Orthotrichum schimperi* Hammar – included in *Orthotrichum pumilum* Sw. as *Orthotrichum pumilum* var. *schimperi* (Hammar) Hinn. in BOROS (1968), upgraded to specific rank.  
*Palustriella falcata* (Brid.) Hedenäs – upgraded to specific rank and recorded from Hungary (PAPP *et al.* 2020).  
*Polytrichum perigoniale* Michx. – upgraded to specific rank and recorded from 5 floristical grid cells (Erzberger *et al.* unpublished).  
*Ptychostomum pseudotriquetrum* var. *bimum* (Schreb.) Holyoak et N. Pedersen – previously included in *Bryum pseudotriquetrum* (Hedw.) P. Gaertn., E. Mey. et Scherb. (syn. *Ptychostomum*

- pseudotriquetrum* J. R. Spence et H. P. Ramsay ex Holyoak et N. Pedersen) or treated as separate species *Bryum bimum* (Schreb.) Turner (ERZBERGER and SCHRÖDER 2013).
- Streblotrichum convolutum* var. *commutatum* (Jur.) J. J. Amann – infraspecific taxon recognised in HODGETTS *et al.* (2020) and recorded from 20 floristical grid cells (Erzberger *et al.* unpublished).
- Syntrichia montana* var. *calva* (Durieu et Sagot ex Bruch et Schimp.) J. J. Amann – previously included in *S. montana* Nees.
- Syntrichia subpapillosissima* (Bizot et R. B. Pierrot ex W. A. Kramer) M. T. Gallego et J. Guerra (*Tortula papillosissima* (Copp.) Broth. var. *submamillosa* (W. A. Kramer) Heinrichs et Caspari) – see entry in main list; previously included in *Tortula papillosissima* (Copp.) Broth.
- Tortula acaulon* var. *pilifera* (Hedw.) R. H. Zander (*Phascum cuspidatum* var. *piliferum* (Hedw.) Hook. et Taylor) – see entry in main list; previously included in *Phascum cuspidatum* Hedw. (syn. *Tortula acaulon* (With.) R. H. Zander).
- Tortula muralis* subsp. *muralis* var. *aestiva* Hedw. – previously included in *T. muralis* L. ex Hedw., not rare in Hungary (BOROS 1968, ORBÁN and VAJDA 1983).

## Appendix 2. Taxa excluded from the checklist.

### Liverworts

- Lophocolea bidentata* (L.) Dumort. [*Lophocolea cuspidata* (Nees) Limpr.] – see entry in main list under *L. coadunata* (Sw.) Mont.
- Lophozia longiflora* (Nees) Schiffl. [*Lophozia ventricosa* var. *longiflora* (Nees) Macoun, *Lophozia ventricosa* var. *uliginosa* auct. (sensu SÖDERSTRÖM, URMI, *et al.* 2002, DAMSHOLT 2002)] (*Lophozia porphyroleuca* (Nees) Schiffl.) – The Hungarian specimens under this name were collected on dead wood (in one case on peat with *Leucobryum glaucum*), they were revised to *L. guttulata* (see the entry in main list under that name).
- Metzgeria simplex* Lorb. ex Müll. Frib. [*Metzgeria conjugata* subsp. *simplex* (Lorb. ex Müll. Frib.) R. M. Schust.] – doubtful according to ERZBERGER and PAPP (2004). To our knowledge the only voucher specimen for this taxon has not been examined cytologically, which would be necessary to identify it properly as the haploid taxon, since it cannot reliably be distinguished from *M. conjugata* by morphological methods. Until appropriate material of this taxon turns up, we exclude *Metzgeria simplex* from the Hungarian bryophyte flora.
- Metzgeria violacea* (Ach.) Dumort. [*Metzgeria fruticulosa* auct. non (O. F. Müll.) A. Evans] – ‘GROLLE and So (2003) demonstrated that the name *Metzgeria fruticulosa* technically belongs to *Riccardia palmata* and *Metzgeria violacea* is the name that should be used’ (HODGETTS *et al.* (2020): annotation 127). According to ERZBERGER and PAPP (2004), no voucher specimen could be located for the single record of this taxon, which was already considered doubtful by BOROS (1968). We therefore exclude this taxon from the bryophyte flora of Hungary until proper material turns up.
- Riccia crystallina* L. emend. Raddi – All reports of this species from Hungary are referable to *Riccia cavernosa* Hoffm. emend. Raddi. *R. crystallina* does not occur in Central Europe (HOLZ 2005).
- Riccia crinita* Taylor – See the note under *Riccia ciliata* Hoffm.
- Riccia duplex* Lorb. ex Müll. Frib. – According to MEINUNGER and SCHRÖDER (2007), *R. duplex* is only a cytological race (with doubled chromosome number) of *R. canaliculata* Hoffm. We therefore follow CASPARI *et al.* (2018) and include *R. duplex* in *R. canaliculata*. In addition, the only Hungarian specimen (for details, see ERZBERGER and PAPP 2004) was interpreted differently by L. Vajda and S. Jovet-Ast, who revised Vajda’s determination to *R. canaliculata*.

## Mosses

- Aloina brevirostris* (Hook. et Grev.) Kindb. – The specimens under this name in BP and in the herbarium of the first author do not represent this species (B. Papp and P. Erzberger, unpublished revision).
- Brachythecium tenuicaule* (Spruce) Kindb. (*Rhynchostegiella tenuicaulis* (Spruce) Kartt., *Cirriophyllum germanicum* (Grebe) Loeske et M. Fleisch.) – We follow CASPARI *et al.* 2018 and NEBEL and PHILIPPI (2001) and include *Brachythecium tenuicaule* in the synonymy of *B. tommasinii* (Sendtn. ex Boulay) Ignatov et Huttunen.
- Bryum neodamense* Itzigs. ex Müll. Hal. – See the note under *Ptychostomum pseudotriquetrum* (Hedw.) J. R. Spence et H. P. Ramsay ex Holyoak et N. Pedersen.
- Bryum versicolor* A. Braun ex Bruch et Schimp. – No specimens to support earlier reports of this species in Hungary were found during generic revision (ERZBERGER and SCHRÖDER 2013).
- Ceratodon conicus* (Hampe) Lindb. [*Ceratodon purpureus* var. *conicus* (Hampe) Husn.] – The report by ZANTEN (1999) is based on a single sterile specimen (ERZBERGER and PAPP 2004), however, the diagnostic difference to *C. purpureus* is found in the peristome. Since the specimen collected by Zanten is the only voucher for the taxon in Hungary, we consider the presence of *C. conicus* doubtful and exclude it from the Hungarian bryophyte flora until appropriate material turns up.
- Dialytrichia mucronata* (Brid.) Broth. – According to ERZBERGER and PAPP (2004), the presence of this species in Hungary was based on a single collection by A. Latzel (BP 110580. Com. Sopron. Kéthely [Répcekéthely = Mannersdorf an der Rabnitz]. In der Klausen. 25.04.1895. leg. A. Latzel). This record was also published by LATZEL (1930). However, the locality 'Klausen' is situated in present-day Austria (H. Köckinger and Chr. Schröck, pers. comm.). Therefore, *D. mucronata* must be excluded from the Hungarian bryoflora.
- Fissidens crassipes* subsp. *warnstorffii* (M. Fleisch.) Brugg.-Nann. – See the note under *F. crassipes*.
- Fissidens curnovii* Mitt. (*F. bryoides* var. *caespitans* Schimp.) – No specimens to support earlier reports of this species in Hungary were found during generic revision, the specimen cited in ERZBERGER and PAPP (2004) was revised to *F. bryoides* var. *bryoides* (ERZBERGER 2016b).
- Fissidens exiguus* Sull. – see entry in Appendix 3.
- Lescuraea incurvata* (Hedw.) E. Lawton (*Pseudoleskea incurvata* (Hedw.) Loeske) – see entry in Appendix 3.
- Orthotrichum scanicum* Grönvall – A single specimen was found under this name in BP (Comit. Fejér. Ad corticem in silva Nagy-erdő prope Vajta, 14.05.1952, without collector, det. B. Oláh, rev. L. Vajda, BP 157967) and was revised to *O. pallens* by P. Erzberger and Th. Kiebacher in 2017 (unpublished).
- Orthotrichum stellatum* Brid. (*O. braunii* Bruch et Schimp.) – All specimens under this name in BP collected in Hungary (13 specimens: BP 10021, BP 39181, BP 57753, BP 57767, BP 58398, BP 58399, BP 58400, BP 59357, BP 59404, BP 62779, BP 63935, BP 63937, BP 156033) were revised to other species by P. Erzberger and Th. Kiebacher in 2017 (unpublished).
- Orthotrichum tenellum* Bruch ex Brid. – Two specimens were found under this name in BP collected in Hungary (BP 155951, BP 10043), both were revised to other species by Th. Kiebacher 12.10.2017 (unpublished).
- Pterygoneurum compactum* M. J. Cano, J. Guerra et Ros – see the note under *Pterygoneurum ovatum* (Hedw.) Dixon.
- Pterygoneurum crossidioides* W. Frey, Herrnst. et Kürschn. – see the note under *Pterygoneurum ovatum* (Hedw.) Dixon.
- Pterygoneurum squamosum* Segarra et Kürschn. – see the note under *Pterygoneurum ovatum* (Hedw.) Dixon.

- Ptychostomum bornholmense* (Wink. et R. Ruthe) Holyoak et N. Pedersen (*Bryum bornholmense* Wink. et R. Ruthe) – There is no specimen to support earlier reports of this species in Hungary (ERZBERGER and SCHRÖDER 2013).
- Ptychostomum schleicheri* (DC.) J. R. Spence ex D. Bell et Holyoak (*Bryum schleicheri* DC.) – All specimens originally labelled *Bryum schleicheri* were revised to *B. pseudotriquetrum* (ERZBERGER and SCHRÖDER 2013).
- Racomitrium obtusum* (Brid.) Brid. – All specimens under this name in BP collected in Hungary were shown by H. Bednarek-Ochyra to represent epilose morphs of *Bucklandiella heterosticha* (Hedw.) Bednarek-Ochyra et Ochyra (*Racomitrium heterostichum* (Hedw.) Brid.) (ERZBERGER *et al.* 2016a).
- Sphagnum magellanicum* Brid. – see the note under *Sphagnum divinum* Flatberg et Hassel.
- Tortella bambergi* auct. europ. non (Schimp.) Broth. – see the notes under *Tortella fasciculata* (Culm.) Culm., *Tortella pseudofragilis* (Thér.) Köckinger et Hedenäs and *Tortella tortuosa* (Hedw.) Limpr.
- Tortula papillosissima* (Copp.) Broth. var. *papillosissima* (*Syntrichia papillosissima* (Copp.) Loeske) – see the note under *Syntrichia subpapillosissima* (Bizot et R. B. Pierrot ex W. A. Kramer) M. T. Gallego et J. Guerra. The corresponding specimens from BP cited in ΤÓΤΗ (1986) were revised by U. Abts (unpublished).

### Appendix 3. Problematic taxa (not included in main list).

#### Liverworts

- Chiloscyphus pallescens* var. *fragilis* (Roth) Müll. Frib. – see annotation 81 in HODGETTS *et al.* 2020: ‘The *Chiloscyphus polyanthos* complex has been treated in various ways in the past, without any recent solution. Some authors have treated it as one species (*Chiloscyphus polyanthos*) with two subspecies (subsp. *polyanthos* and *pallescens* (e.g. SMITH 1990); others as four segregate species (*Chiloscyphus polyanthos*, *Chiloscyphus pallescens*, *Chiloscyphus fragilis* and *Chiloscyphus rivularis* (e.g. KONSTANTINOVA, POTEKIN, *et al.* 1992). GROLLE and LONG (2000) kept two species, but did not deal with any subspecific taxa. SÖDERSTRÖM, URMI, *et al.* (2002) kept two species but recognised four varieties (*Chiloscyphus polyanthos* var. *polyanthos* and var. *rivularis* and *Chiloscyphus pallescens* var. *pallescens* and var. *fragilis*). KONSTANTINOVA, BAKALIN, *et al.* (2009) also used this concept as well as the World checklist of hornworts and liverworts (SÖDERSTRÖM *et al.* 2016). However, several recent publications do not recognise any varieties of the two species (e.g. KÖCKINGER 2017). The distribution of the taxa recognised here is therefore not recorded consistently over the continent.’ Var. *fragilis* is distinguished in BOROS (1968), but the distinction from var. *pallescens* seems difficult (DAMSHOLT 2002). We follow CASPARI *et al.* (2018) in not distinguishing between varieties.
- Chiloscyphus polyanthos* var. *rivularis* (Schrad.) Nees – see also the note on *Chiloscyphus pallescens* var. *fragilis*. Var. *rivularis* is distinguished in BOROS (1968), but we follow CASPARI *et al.* 2018 and many other authors and do not recognise this variety.

#### Mosses

- Abietinella abietina* var. *hystricosa* (Mitt.) Sakurai – On a joint excursion of the authors with T. Pócs and Cs. Németh in 2014, a population of *Abietinella abietina* (Hedw.) M. Fleisch. was studied in Aggtelek National Park (Borsod-Abaúj-Zemplén County 7490.3 Bódvarákó, limestone grassland on Esztrámos Hill, N 48° 31' 01.0", E 20° 44' 50.4", 300 m a.s.l., 18.03.2014,

leg. Erzberger, Németh, Papp and Pócs, B-Erzberger 17082 dupl. in BP and EGR). There was a discussion whether these plants belong to var. *abietina* or var. *hystricosa*, and a sample was sent to Nick Hodgetts for revision together with other collections of T. Pócs from Romania. The answer ‘I agree that all the specimens key out as *hystricosa*, although your specimen from Esztramos is the least satisfactory. It just emphasises the unsatisfactory nature of these two taxa’ did not finally resolve the question. T. Pócs and B. Papp supported acceptance as var. *hystricosa*, whereas P. Erzberger’s opinion was that intermediate forms between the two varieties were at hand. At the moment, this taxon remains controversial.

*Campylium decipiens* (Warnst.) Walslem. – See the note under *Drepanocladus polygamus*. ERZBERGER and NÉMETH (2015) reported *C. decipiens* (det. Meinunger) from Hungary, but that report remains controversial, since a specimen shown to L. Hedenäs was revised by him to *Pseudocampylium radicale* (unpublished). The population at the original site had been destroyed by wild animals. Until proper material turns up, we exclude this taxon as doubtful from the Hungarian checklist.

*Fissidens bambergeri* Schimp. ex Milde – although provisionally recognised in ERZBERGER (2016b), we do not include it in this updated checklist pending further studies. The same applies for *F. exiguus* Sull. See also annotation 217 in HODGETTS *et al.* (2020): ‘The status of *Fissidens bambergeri* and *Fissidens exiguus*, treated here as synonyms of *Fissidens viridulus*, remains problematic. In a recent DNA study, it appeared that an incompletely limbate species of the *Fissidens bryooides* complex from the Netherlands was different from *Fissidens viridulus* (H. N. Siebel and M. Stech, pers. comm. 2019). However, several incompletely limbate species in this complex have been described. A morphological and molecular revision of these species is needed.’

*Fissidens exiguus* Sull. – see the note above under *Fissidens bambergeri*.

*Homalothecium lutescens* var. *fallax* (H. Philib. ex Schimp.) Düll – Although recognised in HODGETTS *et al.* (2020) and distinguished by BOROS (1968), this taxon has been mostly neglected following HOFMANN (1998). The only difference between var. *fallax* and var. *lutescens* is the shape and orientation of the capsule: straight and erect in var. *fallax*, and curved and inclined in the typical variety. However, these characters are not constant. Some authors assume a hybrid origin (between *H. lutescens* var. *lutescens* and *H. sericeum*, HOFMANN 1998). We follow CASPARI *et al.* (2018) in not recognising infraspecific taxa.

*Lescuraea incurvata* (Hedw.) E. Lawton (syn. *Pseudoleskea incurvata* (Hedw.) Loeske) – In ERZBERGER and PAPP (2004) this species was excluded on the basis of revised specimens. However, meanwhile other specimens had turned up (e.g. ERZBERGER 2009b), but these were ultimately revised to *P. saviana* (for details, see NAGY and NÉMETH 2017). The only remaining evidence for the presence of *L. incurvata* in Hungary is a report by LATZEL (1930) from the Kőszeg Mts without a specimen. K. Baráth and P. Erzberger searched the valley described by Latzel for the species in 2016 without finding it. In view of the difficulties of the distinction between *P. saviana* and *L. incurvata* we cannot accept Latzel’s report without a specimen as sufficient evidence and therefore exclude *L. incurvata* until proper material is found.

*Mnium marginatum* var. *dioicum* (H. Müll.) Crundwell – Although recognised in HODGETTS *et al.* (2020), the taxonomy of this and related taxa still seems problematic, therefore we follow CASPARI *et al.* (2018) in not recognising infraspecific taxa of *M. marginatum*. See also ERZBERGER and PAPP (2004).

*Ptychostomum badium* (Bruch ex Brid.) J. R. Spence (*Bryum badium* (Bruch ex Brid.) Schimp.) not recognised in HODGETTS *et al.* (2020), doubtfully recorded from Hungary (ERZBERGER and SCHRÖDER 2013).

*Ptychostomum knowltonii* (Barnes) J. R. Spence (*Bryum knowltonii* Barnes) – doubtfully recorded from Hungary (ERZBERGER and SCHRÖDER 2013).

*Ptychostomum kunzei* (Hornsch.) J. R. Spence (*Bryum kunzei* Hornsch.) – due to the difficulties in separating this taxon from *Ptychostomum imbricatum* (Müll. Hal.) Holyoak et N. Pedersen (*Bryum caespiticium* Hedw.) many authors have included the former in the synonymy or as an infraspecific taxon in the latter (ERZBERGER and SCHRÖDER 2013). We follow KÖCKINGER *et al.* (2008) and include *P. kunzei* as a taxon of controversial status (doubtful infraspecific rank or representing merely an environment-induced modification) in *P. imbricatum*.

*Ptychostomum lonchocaulon* (Müll. Hal.) J. R. Spence (*Bryum lonchocaulon* Müll. Hal.) – the status of this taxon is controversial: accepted as species by MEINUNGER and SCHRÖDER (2007), considered conspecific with *Bryum pallescens* in HILL *et al.* (2006), not recognised by HODGETTS *et al.* (2020). It has been shown to occur in Hungary (ERZBERGER and SCHRÖDER 2013), however due to the difficulties in separating it from *Ptychostomum pallescens* s.str. (ERZBERGER and SCHRÖDER 2013), we include it in a broadly conceived *Ptychostomum pallescens*.

#### Appendix 4. Updated checklist of Hungarian bryophytes ordered alphabetically according to traditional nomenclature, PAPP *et al.* (2010), also list of synonyms.

In the following list, only taxa recognised in PAPP *et al.* (2010) are contained; excluded taxa are not listed, see Appendix 2 for these. For the taxa newly reported from Hungary, see Appendix 1.

The abbreviation p. p. (latin: pro parte) indicates that a name was used in PAPP *et al.* (2010) in a wider sense than the same name accepted in the present checklist (e. g. in the previous checklist, *Ulota crispa* contained, apart from *U. crispa* s. str., also the new segregates *U. crispula* and *U. intermedia*).

#### Hornworts

*Anthoceros agrestis* = *Anthoceros agrestis* Paton

*Phaeoceros carolinianus* = *Phaeoceros carolinianus* (Michx.) Prosk.

#### Liverworts

*Anastrophyllum hellerianum* = *Crossocalyx hellerianus* (Nees ex Lindenb.) Meyl.

*Anastrophyllum michauxii* = *Anastrophyllum michauxii* (F. Weber) H. Buch

*Anastrophyllum minutum* = *Sphenolobus minutus* (Schreb. ex D. Crantz) Berggr.

*Aneura pinguis* = *Aneura pinguis* (L.) Dumort.

*Apometzgeria pubescens* = *Metzgeria pubescens* (Schrank) Raddi

*Asterella saccata* = *Asterella saccata* (Wahlenb.) A. Evans

*Athalamia hyalina* = *Clevea hyalina* (Sommerf.) Lindb.

*Barbilophozia barbata* = *Barbilophozia barbata* (Schmidel ex Schreb.) Loeske

*Barbilophozia floerkei* = *Neoorthocaulis floerkei* (F. Weber et D. Mohr) L. Söderstr., De Roo et Hedde.

*Bazzania trilobata* = *Bazzania trilobata* (L.) Gray

*Blasia pusilla* = *Blasia pusilla* L.

*Blepharostoma trichophyllum* = *Blepharostoma trichophyllum* (L.) Dumort.

*Calypogeia azurea* = *Calypogeia azurea* Stotler et Crotz

*Calypogeia fissa* = *Calypogeia fissa* (L.) Raddi

*Calypogeia integristipula* = *Calypogeia integristipula* Steph.

- Calypogeia muelleriana* = *Calypogeia muelleriana* (Schiffn.) Müll. Frib.  
*Calypogeia neesiana* = *Calypogeia neesiana* (C. Massal. et Carestia) Müll. Frib.  
*Calypogeia suecica* = *Calypogeia suecica* (Arnell et J. Perss.) Müll. Frib.  
*Cephalozia bicuspidata* = *Cephalozia bicuspidata* (L.) Dumort.  
*Cephalozia catenulata* = *Fuscocephaloziopsis catenulata* (Huebener) Váňa et L. Söderstr.  
*Cephalozia lacinulata* = *Cephalozia lacinulata* (J. B. Jack ex Gottsche et Rabenh.) Spruce  
*Cephalozia lunulifolia* = *Fuscocephaloziopsis lunulifolia* (Dumort.) Váňa et L. Söderstr.  
*Cephalozia macrostachya* = *Fuscocephaloziopsis macrostachya* (Kaal.) Váňa et L. Söderstr.  
*Cephalozia pleniceps* = *Fuscocephaloziopsis pleniceps* (Austin) Váňa et L. Söderstr.  
*Cephaloziella divaricata* = *Cephaloziella divaricata* (Sm.) Schiffn.  
*Cephaloziella hampeana* = *Cephaloziella hampeana* (Nees) Schiffn. ex Loeske  
*Cephaloziella integerrima* = *Cephaloziella integerrima* (Lindb.) Warnst.  
*Cephaloziella rubella* = *Cephaloziella rubella* (Nees) Warnst.  
*Cephaloziella spinigera* = *Cephaloziella spinigera* (Lindb.) Jørg.  
*Cephaloziella stellulifera* = *Cephaloziella stellulifera* (Taylor ex Carrington et Pearson) Croz.  
*Chiloscyphus pallescens* = *Chiloscyphus pallescens* (Ehrh.) Dumort.  
*Chiloscyphus polyanthos* = *Chiloscyphus polyanthos* (L.) Corda  
*Cololejeunea calcarea* = *Cololejeunea calcarea* (Lib.) Steph.  
*Cololejeunea rossettiana* = *Cololejeunea rossettiana* (C. Massal.) Schiffn.  
*Conocephalum conicum* = *Conocephalum conicum* (L.) Dumort.  
*Conocephalum salebrosum* = *Conocephalum salebrosum* Szweyk., Buczk. et Odrzyk.  
*Diplophyllum albicans* = *Diplophyllum albicans* (L.) Dumort.  
*Diplophyllum obtusifolium* = *Diplophyllum obtusifolium* (Hook.) Dumort.  
*Fossombronia foveolata* = *Fossombronia foveolata* Lindb.  
*Fossombronia pusilla* = *Fossombronia pusilla* (L.) Nees  
*Fossombronia wondraczekii* = *Fossombronia wondraczekii* (Corda) Dumort. ex Lindb.  
*Frullania dilatata* = *Frullania dilatata* (L.) Dumort.  
*Frullania fragilifolia* = *Frullania fragilifolia* (Taylor) Gottsche, Lindenb. et Nees  
*Frullania inflata* = *Frullania cleistostoma* Schiffn. et W. Wollny  
*Frullania jackii* = *Frullania jackii* Gottsche  
*Frullania tamarisci* = *Frullania tamarisci* (L.) Dumort.  
*Gymnocolea inflata* = *Gymnocolea inflata* (Huds.) Dumort.  
*Jamesoniella autumnalis* = *Syzygiella autumnalis* (DC.) K. Feldberg, Váňa, Hentschel et Heinrichs  
*Jungermannia atrovirens* = *Jungermannia atrovirens* Dumort.  
*Jungermannia caespiticia* = *Endogemma caespiticia* (Lindenb.) Konstant., Vilnet et A. V. Troitsky  
*Jungermannia gracillima* = *Solenostoma gracillimum* (Sm.) R. M. Schust.  
*Jungermannia hyalina* = *Solenostoma hyalinum* (Lyell) Mitt.  
*Jungermannia leiantha* = *Lioclaena lanceolata* Nees  
*Jungermannia pumila* = *Jungermannia pumila* With.  
*Jungermannia sphaerocarpa* = *Solenostoma sphaerocarpum* (Hook.) Steph.  
*Jungermannia subulata* = *Lioclaena subulata* (A. Evans) Schljakov  
*Leiocolea badensis* = *Mesoptychia badensis* (Gottsche ex Rabenh.) L. Söderstr. et Váňa  
*Leiocolea collaris* = *Mesoptychia collaris* (Nees) L. Söderstr. et Váňa  
*Leiocolea heterocolpos* = *Mesoptychia heterocolpos* (Thed. ex Hartm.) L. Söderstr. et Váňa  
*Lejeunea cavifolia* = *Lejeunea cavifolia* (Ehrh.) Lindb.  
*Lepidozia reptans* = *Lepidozia reptans* (L.) Dumort.  
*Lophocolea bidentata* = *Lophocolea coadunata* (Sw.) Mont.  
*Lophocolea heterophylla* = *Lophocolea heterophylla* (Schrad.) Dumort.

- Lophocolea minor* = *Lophocolea minor* Nees  
*Lophozia ascendens* = *Lophozia ascendens* (Warnst.) R. M. Schust.  
*Lophozia bicrenata* = *Isopaches bicrenatus* (Schmidel ex Hoffm.) H. Buch  
*Lophozia excisa* = *Lophozioipsis excisa* (Dicks.) Konstant. et Vilnet  
*Lophozia incisa* = *Schistochilopsis incisa* (Schrad.) Konstant.  
*Lophozia longidens* = *Lophozioipsis longidens* (Lindb.) Konstant. et Vilnet  
*Lophozia obtusa* = *Obtusifolium obtusum* (Lindb.) S. W. Arnell  
*Lophozia sudetica* = *Barbilophozia sudetica* (Nees ex Huebener) L. Söderstr., De Roo et Hedd.  
*Lophozia ventricosa* = *Lophozia ventricosa* (Dicks.) Dumort.  
*Lophozia wenzelii* = *Lophozia wenzelii* (Nees) Steph.  
*Lunularia cruciata* = *Lunularia cruciata* (L.) Dumort. ex Lindb.  
*Mannia fragrans* = *Mannia fragrans* (Balb.) Frye et L. Clark  
*Mannia triandra* = *Mannia triandra* (Scop.) Grolle  
*Marchantia polymorpha* subsp. *polymorpha* = *Marchantia polymorpha* L. subsp. *polymorpha*  
*Marchantia polymorpha* subsp. *ruderalis* = *Marchantia polymorpha* L. subsp. *ruderalis* Bischl. et Boissel.-Dub.  
*Marsupella emarginata* = *Marsupella emarginata* (Ehrh.) Dumort.  
*Marsupella funckii* = *Marsupella funckii* (F. Weber et D. Mohr) Dumort.  
*Marsupella sprucei* = *Marsupella sprucei* (Limpr.) Bernet  
*Metzgeria conjugata* subsp. *conjugata* = *Metzgeria conjugata* Lindb.  
*Metzgeria furcata* = *Metzgeria furcata* (L.) Corda  
*Nardia geoscyphus* = *Nardia geoscyphus* (De Not.) Lindb.  
*Nardia scalaris* = *Nardia scalaris* Gray  
*Nowellia curvifolia* = *Nowellia curvifolia* (Dicks.) Mitt.  
*Oxymitra incrassata* = *Oxymitra incrassata* (Brot.) Sérgio et Sim-Sim  
*Pedinophyllum interruptum* = *Pedinophyllum interruptum* (Nees) Kaal.  
*Pellia endiviifolia* = *Apopellia endiviifolia* (Dicks.) Nebel et D. Quandt  
*Pellia epiphylla* = *Pellia epiphylla* (L.) Corda  
*Plagiochila asplenioides* = *Plagiochila asplenioides* (L.) Dumort.  
*Plagiochila porelloides* = *Plagiochila porelloides* (Torr. ex Nees) Lindenb.  
*Porella arboris-vitae* = *Porella arboris-vitae* (With.) Grolle  
*Porella baueri* = *Porella baueri* (Schiffn.) C. E. O. Jensen  
*Porella cordaeana* = *Porella cordaeana* (Huebener) Moore  
*Porella platyphylla* = *Porella platyphylla* (L.) Pfeiff.  
*Preissia quadrata* = *Marchantia quadrata* Scop.  
*Ptilidium pulcherrimum* = *Ptilidium pulcherrimum* (Weber) Vain.  
*Radula complanata* = *Radula complanata* (L.) Dumort.  
*Radula lindenbergiana* = *Radula lindenbergiana* Gottsche ex C. Hartm.  
*Reboulia hemisphaerica* = *Reboulia hemisphaerica* (L.) Raddi  
*Riccardia chamedryfolia* = *Riccardia chamedryfolia* (With.) Grolle  
*Riccardia incurvata* = *Riccardia incurvata* Lindb.  
*Riccardia latifrons* = *Riccardia latifrons* (Lindb.) Lindb.  
*Riccardia multifida* = *Riccardia multifida* (L.) Gray  
*Riccardia palmata* = *Riccardia palmata* (Hedw.) Carruth.  
*Riccia bifurca* = *Riccia bifurca* Hoffm.  
*Riccia canaliculata* = *Riccia canaliculata* Hoffm.  
*Riccia cavernosa* = *Riccia cavernosa* Hoffm.  
*Riccia ciliata* = *Riccia ciliata* Hoffm.

*Riccia ciliifera* = *Riccia ciliifera* Link  
*Riccia crozalsii* = *Riccia crozalsii* Levier  
*Riccia fluitans* = *Riccia fluitans* L.  
*Riccia frostii* = *Riccia frostii* Austin  
*Riccia glauca* = *Riccia glauca* L.  
*Riccia gougetiana* = *Riccia gougetiana* Durieu et Mont.  
*Riccia huebeneriana* = *Riccia huebeneriana* Lindenb.  
*Riccia papillosa* = *Riccia papillosa* Moris  
*Riccia rhenana* = *Riccia rhenana* Lorb. ex Müll. Frib.  
*Riccia sorocarpa* = *Riccia sorocarpa* Bisch.  
*Riccia subbifurca* = *Riccia subbifurca* Warnst. ex Croz.  
*Riccia warnstorffii* = *Riccia warnstorffii* Limpr. ex Warnst.  
*Ricciocarpos natans* = *Ricciocarpos natans* (L.) Corda  
*Scapania aequiloba* = *Scapania aequiloba* (Schwägr.) Dumort.  
*Scapania apiculata* = *Scapania apiculata* Spruce  
*Scapania aspera* = *Scapania aspera* M. Bernet et Bernet  
*Scapania calcicola* = *Scapania calcicola* (Arnell et J. Perss.) Ingham  
*Scapania curta* = *Scapania curta* (Mart.) Dumort.  
*Scapania irrigua* = *Scapania irrigua* Nees  
*Scapania lingulata* = *Scapania lingulata* H. Buch  
*Scapania mucronata* = *Scapania mucronata* H. Buch  
*Scapania nemorea* = *Scapania nemorea* (L.) Grolle  
*Scapania scandica* = *Scapania scandica* (Arnell et H. Buch) Macvicar  
*Scapania umbrosa* = *Scapania umbrosa* (Schrad.) Dumort.  
*Scapania undulata* = *Scapania undulata* (L.) Dumort.  
*Sphaerocarpos texanus* auct. = *Sphaerocarpos europaeus* Lorb.  
*Trichocolea tomentella* = *Trichocolea tomentella* (Ehrh.) Dumort.  
*Tritomaria exsecta* = *Tritomaria exsecta* (Schmidel) Schiffn. ex Loeske  
*Tritomaria exsectiformis* = *Tritomaria exsectiformis* (Breidl.) Schiffn. ex Loeske  
*Tritomaria quinqueidentata* = *Trilophozia quinqueidentata* (Huds.) Bakalin

### Mosses

*Acaulon muticum* = *Acaulon muticum* (Hedw.) Müll. Hal.  
*Acaulon triquetrum* = *Acaulon triquetrum* (Spruce) Müll. Hal.  
*Aloina aloides* = *Aloina aloides* (Koch ex Schultz) Kindb.  
*Aloina ambigua* = *Aloina ambigua* (Bruch et Schimp.) Limpr.  
*Aloina rigida* = *Aloina rigida* (Hedw.) Limpr.  
*Amblyodon dealbatus* = *Amblyodon dealbatus* (Hedw.) P. Beauv.  
*Amblystegium confervoides* = *Serpoleskea confervoides* (Brid.) Schimp.  
*Amblystegium fluviatile* = *Hygroamblystegium fluviatile* (Hedw.) Loeske  
*Amblystegium humile* = *Hygroamblystegium humile* (P. Beauv.) Vanderp., Goffinet et Hedenäs  
*Amblystegium radicale* = *Pseudocampylium radicale* (P. Beauv.) Vanderp. et Hedenäs  
*Amblystegium serpens* = *Amblystegium serpens* (Hedw.) Schimp.  
*Amblystegium subtile* = *Pseudoamblystegium subtile* (Hedw.) Vanderp. et Hedenäs  
*Amblystegium tenax* = *Hygroamblystegium tenax* (Hedw.) Jenn.  
*Amblystegium varium* = *Hygroamblystegium varium* (Hedw.) Mönk.  
*Amphidium mougeotii* = *Amphidium mougeotii* (Schimp.) Schimp.

- Anacamptodon splachnoides* = *Anacamptodon splachnoides* (Froel. ex Brid.) Brid.  
*Andreaea rupestris* = *Andreaea rupestris* Hedw.  
*Anomodon attenuatus* = *Pseudanomodon attenuatus* (Hedw.) Ignatov et Fedosov  
*Anomodon longifolius* = *Anomodon longifolius* (Schleich. ex Brid.) Hartm.  
*Anomodon rostratus* = *Claopodium rostratum* (Hedw.) Ignatov  
*Anomodon rugelii* = *Anomodon rugelii* (Müll. Hal.) Keissl.  
*Anomodon viticulosus* = *Anomodon viticulosus* (Hedw.) Hook. et Taylor  
*Antitrichia curtispindula* = *Antitrichia curtispindula* (Hedw.) Brid.  
*Aphanorrhagma patens* = *Physcomitrium patens* (Hedw.) Mitt.  
*Archidium alternifolium* = *Archidium alternifolium* (Hedw.) Mitt.  
*Atrichum angustatum* = *Atrichum angustatum* (Brid.) Bruch et Schimp.  
*Atrichum undulatum* = *Atrichum undulatum* (Hedw.) P. Beauv.  
*Aulacomnium androgynum* = *Aulacomnium androgynum* (Hedw.) Schwägr.  
*Aulacomnium palustre* = *Aulacomnium palustre* (Hedw.) Schwägr.  
*Barbula convoluta* = *Streblotrichum convolutum* (Hedw.) P. Beauv.  
*Barbula indica* = *Hydrogonium consanguineum* (Thwaites et Mitt.) Hilp.  
*Barbula unguiculata* = *Barbula unguiculata* Hedw.  
*Bartramia halleriana* = *Bartramia halleriana* Hedw.  
*Bartramia ithyphylla* = *Bartramia ithyphylla* Brid.  
*Bartramia pomiformis* = *Bartramia pomiformis* Hedw.  
*Blindia acuta* = *Blindia acuta* (Hedw.) Bruch et Schimp.  
*Brachydontium trichodes* = *Brachydontium trichodes* (F. Weber) Milde  
*Brachythecium albicans* = *Brachythecium albicans* (Hedw.) Schimp.  
*Brachythecium campestre* = *Brachythecium campestre* (Müll. Hal.) Schimp.  
*Brachythecium capillaceum* = *Brachythecium capillaceum* (F. Weber et D. Mohr) Giacom.  
*Brachythecium geheebii* = *Brachythecium geheebii* Milde  
*Brachythecium glareosum* = *Brachythecium glareosum* (Bruch ex Spruce) Schimp.  
*Brachythecium laetum* = *Brachythecium laetum* (Brid.) Schimp.  
*Brachythecium mildeanum* = *Brachythecium mildeanum* (Schimp.) Schimp.  
*Brachythecium plumosum* = *Sciuro-hypnum plumosum* (Hedw.) Ignatov et Huttunen  
*Brachythecium populeum* = *Sciuro-hypnum populeum* (Hedw.) Ignatov et Huttunen  
*Brachythecium reflexum* = *Sciuro-hypnum reflexum* (Starke) Ignatov et Huttunen  
*Brachythecium rivulare* = *Brachythecium rivulare* Schimp.  
*Brachythecium rutabulum* = *Brachythecium rutabulum* (Hedw.) Schimp.  
*Brachythecium salebrosum* = *Brachythecium salebrosum* (Hoffm. ex F. Weber et D. Mohr) Schimp.  
*Brachythecium velutinum* = *Brachytheciastrium velutinum* (Hedw.) Ignatov et Huttunen  
*Bryoerythrophyllum recurvirostrum* = *Bryoerythrophyllum recurvirostrum* (Hedw.) P. C. Chen  
*Bryum algovicum* = *Ptychostomum compactum* Hornsch.  
*Bryum alpinum* = *Imbribryum alpinum* (Huds. ex With.) N. Pedersen  
*Bryum argenteum* = *Bryum argenteum* Hedw.  
*Bryum bicolor* = *Bryum bicolor* Dicks.  
*Bryum caespiticium* = *Ptychostomum imbricatulum* (Müll. Hal.) Holyoak et N. Pedersen  
*Bryum capillare* = *Ptychostomum capillare* (Hedw.) Holyoak et N. Pedersen  
*Bryum creberrimum* = *Ptychostomum creberrimum* (Taylor) J. R. Spence et H. P. Ramsay  
*Bryum elegans* = *Ptychostomum elegans* (Nees in Brid.) D. Bell et Holyoak  
*Bryum funckii* = *Ptychostomum funckii* (Schwägr.) J. R. Spence  
*Bryum gemmiferum* = *Bryum gemmiferum* R. Wilczek et Demaret  
*Bryum gemmilucens* = *Bryum gemmilucens* R. Wilczek et Demaret

- Bryum imbricatum* = *Ptychostomum inclinatum* (Sw. ex Brid.) J. R. Spence  
*Bryum intermedium* = *Ptychostomum intermedium* (Brid.) J. R. Spence  
*Bryum klinggraeffii* = *Bryum klinggraeffii* Schimp.  
*Bryum mildeanum* = *Imbribryum mildeanum* (Jur.) J. R. Spence  
*Bryum moravicum* = *Ptychostomum moravicum* (Podp.) Ros et Mazimpaka  
*Bryum pallens* = *Ptychostomum pallens* (Sw. ex anon.) J. R. Spence  
*Bryum pallescens* = *Ptychostomum pallescens* (Schleich. ex Schwägr.) J. R. Spence  
*Bryum pseudotriquetrum* = *Ptychostomum pseudotriquetrum* (Hedw.) J. R. Spence et H. P. Ramsay  
 ex Holyoak et N. Pedersen  
*Bryum radiculosum* = *Bryum radiculosum* Brid.  
*Bryum rubens* = *Ptychostomum rubens* (Mitt.) Holyoak et N. Pedersen  
*Bryum ruderale* = *Bryum ruderale* Crundw. et Nyholm  
*Bryum stirtonii* = *Bryum stirtonii* Schimp.  
*Bryum torquescens* = *Ptychostomum torquescens* (Bruch et Schimp.) Ros et Mazimpaka  
*Bryum turbinatum* = *Ptychostomum turbinatum* (Hedw.) J. R. Spence  
*Bryum uliginosum* = *Ptychostomum cernuum* (Hedw.) Hornsch.  
*Bryum violaceum* = *Bryum violaceum* Crundw. et Nyholm  
*Bryum warneum* = *Ptychostomum warneum* (Röhl.) J. R. Spence  
*Bryum weigelii* = *Ptychostomum weigelii* (Biehler) J. R. Spence  
*Buxbaumia aphylla* = *Buxbaumia aphylla* Hedw.  
*Buxbaumia viridis* = *Buxbaumia viridis* (Moug. ex Lam. et DC.) Brid. ex Moug. et Nestl.  
*Calliergon cordifolium* = *Calliergon cordifolium* (Hedw.) Kindb.  
*Calliergon giganteum* = *Calliergon giganteum* (Schimp.) Kindb.  
*Calliergon stramineum* = *Straminergon stramineum* (Dicks. ex Brid.) Hedenäs  
*Calliergonella cuspidata* = *Calliergonella cuspidata* (Hedw.) Loeske  
*Campylium calcareum* = *Campylophyllopsis calcarea* (Crundw. et Nyholm) Ochyra  
*Campylium chrysophyllum* = *Campyliadelphus chrysophyllus* (Brid.) R. S. Chopra  
*Campylium elodes* = *Campyliadelphus elodes* (Lindb.) Kanda  
*Campylium polygamum* = *Drepanocladus polygamus* (Schimp.) Hedenäs  
*Campylium stellatum* = *Campylium stellatum* (Hedw.) Lange et C. E. O. Jensen  
*Campylopus introflexus* = *Campylopus introflexus* (Hedw.) Brid.  
*Campylopus pyriformis* = *Campylopus pyriformis* (Schultz) Brid.  
*Campylostelium saxicola* = *Campylostelium saxicola* (F. Weber et D. Mohr) Bruch et Schimp.  
*Ceratodon purpureus* = *Ceratodon purpureus* (Hedw.) Brid.  
*Cinclidotus danubicus* = *Cinclidotus danubicus* Schiffn. et Baumgartner  
*Cinclidotus fontinaloides* = *Cinclidotus fontinaloides* (Hedw.) P. Beauv.  
*Cinclidotus riparius* = *Cinclidotus riparius* (Host ex Brid.) Arn.  
*Cirriphyllum piliferum* = *Cirriphyllum piliferum* (Hedw.) Grout  
*Cirriphyllum tommasinii* = *Brachythecium tommasinii* (Sendtn. ex Boulay) Ignatov et Huttunen  
*Climacium dendroides* = *Climacium dendroides* (Hedw.) F. Weber et D. Mohr  
*Cnestrum schisti* = *Cnestrum schisti* (F. Weber et D. Mohr) I. Hagen  
*Conardia compacta* = *Conardia compacta* (Drumm. ex Müll. Hal.) H. Rob.  
*Coscinodon cribrosus* = *Coscinodon cribrosus* (Hedw.) Spruce  
*Cratoneuron filicinum* = *Cratoneuron filicinum* (Hedw.) Spruce  
*Crossidium crassinerve* = *Crossidium crassinervium* (De Not.) Jur.  
*Crossidium laxefilamentosum* = *Crossidium laxefilamentosum* W. Frey et Kürschner  
*Ctenidium molluscum* = *Ctenidium molluscum* (Hedw.) Mitt.  
*Cynodontium polycarpon* p. p. = *Cynodontium polycarpon* (Hedw.) Schimp.

- Cynodontium tenellum* = *Cynodontium tenellum* (Schimp.) Limpr.  
*Desmatodon cernuus* = *Tortula cernua* (Huebener) Lindb.  
*Desmatodon heimii* = *Henediella heimii* (Hedw.) R. H. Zander  
*Dichodontium pellucidum* = *Dichodontium pellucidum* (Hedw.) Schimp.  
*Dicranella cerviculata* = *Dicranella cerviculata* (Hedw.) Schimp.  
*Dicranella crispa* = *Dicranella crispa* (Hedw.) Schimp.  
*Dicranella heteromalla* = *Dicranella heteromalla* (Hedw.) Schimp.  
*Dicranella howei* = *Dicranella howei* Renauld et Cardot  
*Dicranella humilis* = *Dicranella humilis* R. Ruthe  
*Dicranella rufescens* = *Dicranella rufescens* (Dicks.) Schimp.  
*Dicranella schreberiana* = *Dicranella schreberiana* (Hedw.) Dixon  
*Dicranella staphylina* = *Dicranella staphylina* H. Whitehouse  
*Dicranella subulata* = *Dicranella subulata* (Hedw.) Schimp.  
*Dicranella varia* = *Dicranella varia* (Hedw.) Schimp.  
*Dicranodontium denudatum* = *Dicranodontium denudatum* (Brid.) E. Britton  
*Dicranoweisia cirrata* = *Dicranoweisia cirrata* (Hedw.) Lindb.  
*Dicranum bonjeanii* = *Dicranum bonjeanii* De Not.  
*Dicranum flagellare* = *Dicranum flagellare* Hedw.  
*Dicranum fulvum* = *Dicranum fulvum* Hook.  
*Dicranum montanum* = *Dicranum montanum* Hedw.  
*Dicranum muehlenbeckii* = *Dicranum muehlenbeckii* Bruch et Schimp.  
*Dicranum polysetum* = *Dicranum polysetum* Sw. ex anon.  
*Dicranum scoparium* = *Dicranum scoparium* Hedw.  
*Dicranum spurium* = *Dicranum spurium* Hedw.  
*Dicranum tauricum* = *Dicranum tauricum* Sapjegin  
*Dicranum viride* = *Dicranum viride* (Sull. et Lesq.) Lindb.  
*Didymodon acutus* = *Didymodon acutus* (Brid.) K. Saito  
*Didymodon cordatus* = *Didymodon cordatus* Jur.  
*Didymodon fallax* = *Didymodon fallax* (Hedw.) R. H. Zander  
*Didymodon ferrugineus* = *Didymodon ferrugineus* (Schimp. ex Besch.) M. O. Hill  
*Didymodon glaucus* = *Didymodon glaucus* Ryan  
*Didymodon insulanus* = *Didymodon insulanus* (De Not.) M. O. Hill  
*Didymodon luridus* = *Didymodon luridus* Hornsch.  
*Didymodon rigidulus* = *Didymodon rigidulus* Hedw.  
*Didymodon sinuosus* = *Didymodon sinuosus* (Mitt.) Delogne  
*Didymodon spadiceus* = *Didymodon spadiceus* (Mitt.) Limpr.  
*Didymodon tophaceus* = *Didymodon tophaceus* (Brid.) Lisa subsp. *tophaceus*  
*Didymodon vinealis* = *Didymodon vinealis* (Brid.) R. H. Zander  
*Diphyscium foliosum* = *Diphyscium foliosum* (Hedw.) D. Mohr  
*Distichium capillaceum* = *Distichium capillaceum* (Hedw.) Bruch et Schimp.  
*Ditrichum crispatisimum* = *Flexitrichum gracile* (Mitt.) Ignatov et Fedosov  
*Ditrichum cylindricum* = *Trichodon cylindricus* (Hedw.) Schimp.  
*Ditrichum flexicaule* = *Flexitrichum flexicaule* (Schwägr.) Ignatov et Fedosov  
*Ditrichum heteromallum* = *Ditrichum heteromallum* (Hedw.) E. Britton  
*Ditrichum pallidum* = *Ditrichum pallidum* (Hedw.) Hampe  
*Ditrichum pusillum* = *Ditrichum pusillum* (Hedw.) Hampe  
*Drepanocladus aduncus* = *Drepanocladus aduncus* (Hedw.) Warnst.  
*Drepanocladus cossonii* = *Scorpidium cossonii* (Schimp.) Hedenäs

- Drepanocladus lycopodioides* = *Drepanocladus lycopodioides* (Brid.) Warnst.  
*Drepanocladus sendtneri* = *Drepanocladus sendtneri* (Schimp. ex H. Müll.) Warnst.  
*Drepanocladus sordidus* = *Drepanocladus sordidus* (Müll. Hal.) Hedenäs  
*Encalypta ciliata* = *Encalypta ciliata* Hedw.  
*Encalypta streptocarpa* = *Encalypta streptocarpa* Hedw.  
*Encalypta vulgaris* = *Encalypta vulgaris* Hedw.  
*Entodon concinnus* = *Entodon concinnus* (De Not.) Paris  
*Entosthodon fascicularis* = *Entosthodon fascicularis* (Hedw.) Müll. Hal.  
*Entosthodon hungaricus* = *Entosthodon hungaricus* (Boros) Loeske  
*Ephemerum cohaerens* = *Ephemerum cohaerens* (Hedw.) Hampe  
*Ephemerum minutissimum* = *Ephemerum serratum* (Hedw.) Hampe  
*Ephemerum recurvifolium* = *Ephemerum recurvifolium* (Dicks.) Boulay  
*Ephemerum serratum* auct. non (Hedw.) Hampe = *Ephemerum stoloniferum* (Hedw.) L. T. Ellis et  
M. J. Price  
*Ephemerum sessile* = *Ephemerum crassinervium* (Schwägr.) Hampe subsp. *sessile* (Bruch) Holyoak  
*Eucladium verticillatum* = *Eucladium verticillatum* (With.) Bruch et Schimp.  
*Eurhynchium angustirete* = *Eurhynchium angustirete* (Broth.) T. J. Kop.  
*Eurhynchium crassinervium* = *Cirriphyllum crassinervium* (Taylor) Loeske et M. Fleisch.  
*Eurhynchium flotowianum* = *Sciuro-hypnum flotowianum* (Sendtn.) Ignatov et Huttunen  
*Eurhynchium hians* = *Oxyrrhynchium hians* (Hedw.) Loeske  
*Eurhynchium praelongum* = *Kindbergia praelonga* (Hedw.) Ochyra  
*Eurhynchium pulchellum* = *Eurhynchiastrum pulchellum* (Hedw.) Ignatov et Huttunen  
*Eurhynchium pumilum* = *Microeurhynchium pumilum* (Wilson) Ignatov et Vanderp.  
*Eurhynchium schleicheri* = *Oxyrrhynchium schleicheri* (R. Hedw.) Röhl  
*Eurhynchium speciosum* = *Oxyrrhynchium speciosum* (Brid.) Warnst.  
*Eurhynchium striatulum* = *Plasteurhynchium striatulum* (Spruce) M. Fleisch.  
*Eurhynchium striatum* = *Eurhynchium striatum* (Hedw.) Schimp.  
*Fabronia ciliaris* = *Fabronia ciliaris* (Brid.) Brid.  
*Fabronia pusilla* = *Fabronia pusilla* Raddi  
*Fissidens adianthoides* = *Fissidens adianthoides* Hedw.  
*Fissidens arnoldii* = *Fissidens arnoldii* R. Ruthe  
*Fissidens bryoides* = *Fissidens bryoides* Hedw.  
*Fissidens crassipes* subsp. *crassipes* = *Fissidens crassipes* Wilson ex Bruch et Schimp.  
*Fissidens curvatus* = *Fissidens curvatus* Hornsch.  
*Fissidens dubius* p. p. = *Fissidens dubius* P. Beauv. var. *dubius*  
*Fissidens exilis* = *Fissidens exilis* Hedw.  
*Fissidens gracilifolius* = *Fissidens gracilifolius* Brugg.-Nann. et Nyholm  
*Fissidens gymnandrus* = *Fissidens gymnandrus* Buse  
*Fissidens incurvus* = *Fissidens incurvus* Starke ex Röhl.  
*Fissidens pusillus* = *Fissidens pusillus* (Wilson) Milde  
*Fissidens taxifolius* = *Fissidens taxifolius* Hedw.  
*Fissidens viridulus* = *Fissidens viridulus* (Sw.) Wahlenb.  
*Fontinalis antipyretica* = *Fontinalis antipyretica* Hedw.  
*Fontinalis hypnoides* = *Fontinalis hypnoides* C. Hartm.  
*Funaria hygrometrica* = *Funaria hygrometrica* Hedw.  
*Funaria muhlenbergii* = *Entosthodon muhlenbergii* (Turner) Fife  
*Funaria pulchella* = *Entosthodon pulchellus* (H. Philib.) Brugués  
*Grimmia anodon* = *Grimmia anodon* Bruch et Schimp.

- Grimmia crinita* = *Grimmia crinita* Brid.  
*Grimmia decipiens* = *Grimmia decipiens* (Schultz) Lindb.  
*Grimmia dissimulata* = *Grimmia dissimulata* E. Maier  
*Grimmia elatior* = *Grimmia elatior* Bruch ex Bals.-Criv. et De Not.  
*Grimmia funalis* = *Grimmia funalis* (Schwägr.) Bruch et Schimp.  
*Grimmia hartmanii* = *Grimmia hartmanii* Schimp.  
*Grimmia laevigata* = *Grimmia laevigata* (Brid.) Brid.  
*Grimmia lisae* = *Grimmia lisae* De Not.  
*Grimmia longirostris* = *Grimmia longirostris* Hook.  
*Grimmia montana* = *Grimmia montana* Bruch et Schimp.  
*Grimmia muehlenbeckii* = *Grimmia muehlenbeckii* Schimp.  
*Grimmia orbicularis* = *Grimmia orbicularis* Bruch ex Wilson  
*Grimmia ovalis* = *Grimmia ovalis* (Hedw.) Lindb.  
*Grimmia plagiopodia* = *Grimmia plagiopodia* Hedw.  
*Grimmia pulvinata* = *Grimmia pulvinata* (Hedw.) Sm.  
*Grimmia teretinervis* = *Grimmia teretinervis* Limpr.  
*Grimmia tergestina* = *Grimmia tergestina* Tomm. ex Bruch et Schimp.  
*Grimmia trichophylla* = *Grimmia trichophylla* Grev.  
*Gymnostomum aeruginosum* = *Gymnostomum aeruginosum* Sm.  
*Gymnostomum calcareum* = *Gymnostomum calcareum* Nees et Hornsch.  
*Gymnostomum viridulum* = *Gymnostomum viridulum* Brid.  
*Gyroweisia tenuis* = *Gyroweisia tenuis* (Hedw.) Schimp.  
*Hamatocaulis vernicosus* = *Hamatocaulis vernicosus* (Mitt.) Hedenäs  
*Hedwigia ciliata* p. p. = *Hedwigia ciliata* (Hedw.) P. Beauv.  
*Hedwigia stellata* = *Hedwigia stellata* Hedenäs  
*Helodium blandowii* = *Helodium blandowii* (F. Weber et D. Mohr) Warnst.  
*Herzogiella seligeri* = *Herzogiella seligeri* (Brid.) Z. Iwats.  
*Heterocladium dimorphum* = *Heteroclediella dimorpha* (Brid.) Ignatov et Fedosov  
*Hilpertia velenovskyi* = *Hilpertia velenovskyi* (Schiffn.) R. H. Zander  
*Homalia besseri* = *Alleniella besseri* (Lobarz.) S. Olsson, Enroth et D. Quandt  
*Homalia trichomanoides* = *Homalia trichomanoides* (Hedw.) Brid.  
*Homalothecium lutescens* = *Homalothecium lutescens* (Hedw.) H. Rob.  
*Homalothecium philippeanum* = *Homalothecium philippeanum* (Spruce) Schimp.  
*Homalothecium sericeum* = *Homalothecium sericeum* (Hedw.) Schimp.  
*Homomallium incurvatum* = *Homomallium incurvatum* (Schrad. ex Brid.) Loeske  
*Hygrohypnum luridum* = *Hygrohypnum luridum* (Hedw.) Jenn.  
*Hylocomium brevirostre* = *Loeskeobryum brevirostre* (Brid.) M. Fleisch.  
*Hylocomium splendens* = *Hylocomium splendens* (Hedw.) Schimp.  
*Hymenostylium recurvirostrum* = *Hymenostylium recurvirostrum* (Hedw.) Dixon  
*Hypnum cupressiforme* = *Hypnum cupressiforme* Hedw.  
*Hypnum jutlandicum* = *Hypnum jutlandicum* Holmen et E. Warncke  
*Hypnum lindbergii* = *Calliergonella lindbergii* (Mitt.) Hedenäs  
*Hypnum pallescens* = *Hypnum pallescens* (Hedw.) P. Beauv. var. *reptile* (Michx.) Husn.  
*Hypnum vaucheri* = *Buckia vaucheri* (Lesq.) D. Rios, M. T. Gallego et J. Guerra  
*Isopterygiopsis pulchella* = *Isopterygiopsis pulchella* (Hedw.) Z. Iwats.  
*Isothecium alopecuroides* = *Isothecium alopecuroides* (Lam. ex Dubois) Isov.  
*Isothecium myosuroides* = *Isothecium myosuroides* Brid.  
*Leptobryum pyriforme* = *Leptobryum pyriforme* (Hedw.) Wilson

- Leptodictyum riparium* = *Leptodictyum riparium* (Hedw.) Warnst.  
*Leptodon smithii* = *Leptodon smithii* (Hedw.) F. Weber et D. Mohr  
*Leskea polycarpa* = *Leskea polycarpa* Hedw.  
*Leucobryum glaucum* = *Leucobryum glaucum* (Hedw.) Ångstr.  
*Leucobryum juniperoideum* = *Leucobryum juniperoideum* (Brid.) Müll. Hal.  
*Leucodon sciuroides* = *Leucodon sciuroides* (Hedw.) Schwägr.  
*Meesia triquetra* = *Meesia triquetra* (L. ex Jolycl.) Ångstr.  
*Mnium hornum* = *Mnium hornum* Hedw.  
*Mnium lycopodioides* = *Mnium lycopodioides* Schwägr.  
*Mnium marginatum* = *Mnium marginatum* (Dicks.) P. Beauv.  
*Mnium spinulosum* = *Mnium spinulosum* Bruch et Schimp.  
*Mnium stellare* = *Mnium stellare* Hedw.  
*Mnium thomsonii* = *Mnium thomsonii* Schimp.  
*Myurella julacea* = *Myurella julacea* (Schwägr.) Schimp.  
*Neckera complanata* = *Alleniella complanata* (Hedw.) S. Olsson, Enroth et D. Quandt  
*Neckera crispa* = *Exsertotheca crispa* (Hedw.) S. Olsson, Enroth et D. Quandt  
*Neckera pennata* = *Neckera pennata* Hedw.  
*Neckera pumila* = *Neckera pumila* Hedw.  
*Orthothecium intricatum* = *Orthothecium intricatum* (Hartm.) Schimp.  
*Orthotrichum affine* = *Lewinskya affinis* (Schrad. ex Brid.) F. Lara, Garilleti et Goffinet  
*Orthotrichum anomalum* = *Orthotrichum anomalum* Hedw.  
*Orthotrichum cupulatum* = *Orthotrichum cupulatum* Brid.  
*Orthotrichum diaphanum* = *Orthotrichum diaphanum* Brid.  
*Orthotrichum gymnostomum* = *Nyholmiella gymnostoma* (Bruch ex Brid.) Holmen et E. Warncke  
*Orthotrichum lyellii* = *Pulvigerella lyellii* (Hook. et Taylor) Plášek, Sawicki et Ochrya  
*Orthotrichum obtusifolium* = *Nyholmiella obtusifolia* (Brid.) Holmen et E. Warncke  
*Orthotrichum pallens* = *Orthotrichum pallens* Bruch ex Brid.  
*Orthotrichum patens* = *Orthotrichum patens* Bruch ex Brid.  
*Orthotrichum pumilum* p. p. = *Orthotrichum pumilum* Sw. ex anon.  
*Orthotrichum rogeri* = *Orthotrichum rogeri* Brid.  
*Orthotrichum rupestre* = *Lewinskya rupestris* (Schleich. ex Schwägr.) F. Lara, Garilleti et Goffinet  
*Orthotrichum speciosum* = *Lewinskya speciosa* (Nees) F. Lara, Garilleti et Goffinet  
*Orthotrichum sprucei* = *Orthotrichum sprucei* Mont.  
*Orthotrichum stramineum* = *Orthotrichum stramineum* Hornsch. ex Brid.  
*Orthotrichum striatum* = *Lewinskya striata* (Hedw.) F. Lara, Garilleti et Goffinet  
*Orthotrichum urnigerum* = *Orthotrichum urnigerum* Myrin  
*Oxystegus tenuirostris* = *Chionoloma tenuirostre* (Hook. et Taylor) M. Alonso, M. J. Cano et J. A. Jiménez  
*Palustriella commutata* p. p. = *Palustriella commutata* (Hedw.) Ochrya  
*Paraleucobryum longifolium* = *Paraleucobryum longifolium* (Hedw.) Loeske  
*Phascum curvicolle* = *Microbryum curvicollum* (Hedw.) R. H. Zander  
*Phascum cuspidatum* = *Tortula acaulon* (With.) R. H. Zander  
*Phascum floerkeanum* = *Microbryum floerkeanum* (F. Weber et D. Mohr) Schimp.  
*Phascum leptophyllum* = *Chenia leptophylla* (Müll. Hal.) R. H. Zander  
*Philonotis arnellii* = *Philonotis capillaris* Lindb.  
*Philonotis caespitosa* = *Philonotis caespitosa* Jur.  
*Philonotis calcarea* = *Philonotis calcarea* (Bruch et Schimp.) Schimp.  
*Philonotis fontana* = *Philonotis fontana* (Hedw.) Brid.

- Philonotis marchica* = ***Philonotis marchica*** (Hedw.) Brid.  
*Physcomitrium eurystomum* = ***Physcomitrium eurystomum*** Sendtn.  
*Physcomitrium pyriforme* = ***Physcomitrium pyriforme*** (Hedw.) Bruch et Schimp.  
*Physcomitrium sphaericum* = ***Physcomitrium sphaericum*** (C. F. Ludw. ex Schkuhr) Brid.  
*Plagiobryum zierii* = ***Ptychostomum zieri*** (Hedw.) Holyoak et N. Pedersen  
*Plagiomnium affine* = ***Plagiomnium affine*** (Blandow ex Funck) T. J. Kop.  
*Plagiomnium cuspidatum* = ***Plagiomnium cuspidatum*** (Hedw.) T. J. Kop.  
*Plagiomnium elatum* = ***Plagiomnium elatum*** (Bruch et Schimp.) T. J. Kop.  
*Plagiomnium ellipticum* = ***Plagiomnium ellipticum*** (Brid.) T. J. Kop.  
*Plagiomnium medium* = ***Plagiomnium medium*** (Bruch et Schimp.) T. J. Kop.  
*Plagiomnium rostratum* = ***Plagiomnium rostratum*** (Schrad.) T. J. Kop.  
*Plagiomnium undulatum* = ***Plagiomnium undulatum*** (Hedw.) T. J. Kop.  
*Plagiopus oederianus* = ***Plagiopus oederianus*** (Sw.) H. A. Crum et L. E. Anderson  
*Plagiothecium cavifolium* = ***Plagiothecium cavifolium*** (Brid.) Z. Iwats.  
*Plagiothecium curvifolium* = ***Plagiothecium curvifolium*** Schlieph. ex Limpr.  
*Plagiothecium denticulatum* = ***Plagiothecium denticulatum*** (Hedw.) Schimp. var. *denticulatum*  
*Plagiothecium laetum* = ***Plagiothecium laetum*** Schimp.  
*Plagiothecium nemorale* = ***Plagiothecium nemorale*** (Mitt.) A. Jaeger  
*Plagiothecium platyphyllum* = ***Plagiothecium platyphyllum*** Mönk.  
*Plagiothecium ruthei* = ***Plagiothecium denticulatum*** (Hedw.) Schimp. var. *undulatum* R. Ruthe  
 ex Geh.  
*Plagiothecium succulentum* = ***Plagiothecium succulentum*** (Wilson) Lindb.  
*Plagiothecium undulatum* = ***Plagiothecium undulatum*** (Hedw.) Schimp.  
*Platydictya jungermannioides* = ***Platydictya jungermannioides*** (Brid.) H. A. Crum  
*Platygyrium repens* = ***Platygyrium repens*** (Brid.) Schimp.  
*Platyhypnidium riparioides* = ***Rhynchostegium riparioides*** (Hedw.) Cardot  
*Pleuridium acuminatum* = ***Pleuridium acuminatum*** Lindb.  
*Pleuridium subulatum* = ***Pleuridium subulatum*** (Hedw.) Rabenh.  
*Pleurochaete squarrosa* = ***Tortella squarrosa*** (Brid.) Limpr.  
*Pleurozium schreberi* = ***Pleurozium schreberi*** (Willd. ex Brid.) Mitt.  
*Pogonatum aloides* = ***Pogonatum aloides*** (Hedw.) P. Beauv.  
*Pogonatum nanum* = ***Pogonatum nanum*** (Hedw.) P. Beauv.  
*Pogonatum urnigerum* = ***Pogonatum urnigerum*** (Hedw.) P. Beauv.  
*Poblia andalusica* = ***Poblia andalusica*** (Höhn.) Broth.  
*Poblia annotina* = ***Poblia annotina*** (Hedw.) Lindb.  
*Poblia camptotrachela* = ***Poblia camptotrachela*** (Renauld et Cardot) Broth.  
*Poblia cruda* = ***Poblia cruda*** (Hedw.) Lindb.  
*Poblia elongata* = ***Poblia elongata*** Hedw.  
*Poblia lescuriana* = ***Poblia lescuriana*** (Sull.) Ochi  
*Poblia lutescens* = ***Poblia lutescens*** (Limpr.) H. Lindb.  
*Poblia melanodon* = ***Poblia melanodon*** (Brid.) A. J. Shaw  
*Poblia nutans* = ***Poblia nutans*** (Hedw.) Lindb. subsp. *nutans*  
*Poblia proligera* = ***Poblia proligera*** (Kindb.) Lindb. ex Broth.  
*Poblia schimperi* = ***Poblia nutans*** (Hedw.) Lindb. subsp. *schimperi* (Müll. Hal.) Nyholm  
*Poblia wahlenbergii* = ***Poblia wahlenbergii*** (F. Weber et D. Mohr) A. L. Andrews  
*Polytrichum alpinum* = ***Polytrichastrum alpinum*** (Hedw.) G. L. Sm.  
*Polytrichum commune* p. p. = ***Polytrichum commune*** Hedw.  
*Polytrichum formosum* = ***Polytrichum formosum*** Hedw.

- Polytrichum juniperinum* = *Polytrichum juniperinum* Hedw.  
*Polytrichum longisetum* = *Polytrichum longisetum* Sw. ex Brid.  
*Polytrichum piliferum* = *Polytrichum piliferum* Hedw.  
*Polytrichum strictum* = *Polytrichum strictum* Menzies ex Brid.  
*Pottia bryoides* = *Tortula protobryoides* R. H. Zander  
*Pottia davalliana* = *Microbryum davallianum* (Sm.) R. H. Zander  
*Pottia intermedia* = *Tortula caucasica* Broth.  
*Pottia lanceolata* = *Tortula lindbergii* Broth.  
*Pottia mutica* = *Microbryum muticum* (Venturi) Cl. Schneid., Th. Schneid. et Mahévas  
*Pottia starckeana* = *Microbryum starckeanum* (Hedw.) R. H. Zander  
*Pottia truncata* = *Tortula truncata* (Hedw.) Mitt.  
*Pseudephemerum nitidum* = *Pseudephemerum nitidum* (Hedw.) Loeske  
*Pseudocrossidium hornschurchianum* = *Pseudocrossidium hornschurchianum* (Schultz) R. H. Zander  
*Pseudocrossidium revolutum* = *Pseudocrossidium revolutum* (Brid.) R. H. Zander  
*Pseudoleskea saviana* = *Lescuraea saviana* (De Not.) E. Lawton  
*Pseudoleskeella catenulata* = *Pseudoleskeella catenulata* (Brid. ex Schrad.) Kindb.  
*Pseudoleskeella nervosa* = *Pseudoleskeella nervosa* (Brid.) Nyholm  
*Pseudotaxiphyllum elegans* = *Pseudotaxiphyllum elegans* (Brid.) Z. Iwats.  
*Pterigynandrum filiforme* = *Pterigynandrum filiforme* Hedw.  
*Pterogonium gracile* = *Nogopterium gracile* (Hedw.) Crosby et W. R. Buck  
*Pterygoneurum lamellatum* = *Pterygoneurum lamellatum* (Lindb.) Jur.  
*Pterygoneurum ovatum* = *Pterygoneurum ovatum* (Hedw.) Dixon  
*Pterygoneurum subsessile* = *Pterygoneurum subsessile* (Brid.) Jur.  
*Ptilium crista-castrensis* = *Ptilium crista-castrensis* (Hedw.) De Not.  
*Pylaisia polyantha* = *Pylaisia polyantha* (Hedw.) Schimp.  
*Pyramidula tetragona* = *Pyramidula tetragona* (Brid.) Brid.  
*Racomitrium aciculare* = *Racomitrium aciculare* (Hedw.) Brid.  
*Racomitrium affine* = *Racomitrium affine* (F. Weber et D. Mohr) Lindb.  
*Racomitrium aquaticum* = *Racomitrium aquaticum* (Brid. ex Schrad.) Brid.  
*Racomitrium canescens* = *Racomitrium canescens* (Hedw.) Brid.  
*Racomitrium heterostichum* = *Racomitrium heterostichum* (Hedw.) Brid.  
*Racomitrium lanuginosum* = *Racomitrium lanuginosum* (Hedw.) Brid.  
*Rhabdoweisia fugax* = *Rhabdoweisia fugax* (Hedw.) Bruch et Schimp.  
*Rhizomnium punctatum* = *Rhizomnium punctatum* (Hedw.) T. J. Kop.  
*Rhodobryum ontariense* = *Rhodobryum ontariense* (Kindb.) Kindb.  
*Rhodobryum roseum* = *Rhodobryum roseum* (Hedw.) Limpr.  
*Rhynchostegiella curviseta* = *Rhynchostegiella curviseta* (Brid.) Limpr.  
*Rhynchostegiella tenella* = *Rhynchostegiella tenella* (Dicks.) Limpr.  
*Rhynchostegiella teneriffae* = *Rhynchostegiella teneriffae* (Mont.) Dirkse et Bouman  
*Rhynchostegium confertum* = *Rhynchostegium confertum* (Dicks.) Schimp.  
*Rhynchostegium megapolitanum* = *Rhynchostegium megapolitanum* (Blandow ex F. Weber et D. Mohr) Schimp.  
*Rhynchostegium murale* = *Rhynchostegium murale* (Hedw.) Schimp.  
*Rhynchostegium rotundifolium* = *Rhynchostegium rotundifolium* (Scop. ex Brid.) Schimp.  
*Rhytidiadelphus squarrosus* = *Rhytidiadelphus squarrosus* (Hedw.) Warnst.  
*Rhytidiadelphus triquetrus* = *Hylocomiadelphus triquetrus* (Hedw.) Ochyra et Stebel  
*Rhytidium rugosum* = *Rhytidium rugosum* (Hedw.) Kindb.  
*Saelania glaucescens* = *Saelania glaucescens* (Hedw.) Broth.

- Sanionia uncinata* = *Sanionia uncinata* (Hedw.) Loeske  
*Schistidium apocarpum* = *Schistidium apocarpum* (Hedw.) Bruch et Schimp.  
*Schistidium brunnescens* subsp. *brunnescens* = *Schistidium brunnescens* Limpr. subsp. *brunnescens*  
*Schistidium brunnescens* subsp. *griseum* = *Schistidium brunnescens* Limpr. subsp. *griseum* (Nees et  
 Hornsch.) H. H. Blom  
*Schistidium confertum* = *Schistidium confertum* (Funck) Bruch et Schimp.  
*Schistidium confusum* = *Schistidium confusum* H. H. Blom  
*Schistidium crassipilum* = *Schistidium crassipilum* H. H. Blom  
*Schistidium dupretii* = *Schistidium dupretii* (Thér.) W. A. Weber  
*Schistidium elegantulum* = *Schistidium elegantulum* H. H. Blom  
*Schistidium flaccidum* = *Schistidium flaccidum* (De Not.) Ochyra  
*Schistidium helveticum* = *Schistidium helveticum* (Schkuhr) Deguchi  
*Schistidium lancifolium* = *Schistidium lancifolium* (Kindb.) H. H. Blom  
*Schistidium papillosum* = *Schistidium papillosum* Culm.  
*Schistidium platyphyllum* = *Schistidium platyphyllum* (Mitt.) H. Perss.  
*Schistidium pruinatum* = *Schistidium pruinatum* (Wilson ex Schimp.) G. Roth  
*Schistidium robustum* = *Schistidium robustum* (Nees et Hornsch.) H. H. Blom  
*Scleropodium purum* = *Pseudoscleropodium purum* (Hedw.) M. Fleisch.  
*Scorpidium scorpioides* = *Scorpidium scorpioides* (Hedw.) Limpr.  
*Seligeria calcarea* = *Seligeria calcarea* (Hedw.) Bruch et Schimp.  
*Seligeria campylopoda* = *Blindiadelphus campylopodus* (Kindb.) Fedosov et Ignatov  
*Seligeria donniana* = *Seligeria donniana* (Sm.) Müll. Hal.  
*Seligeria pusilla* = *Seligeria pusilla* (Hedw.) Bruch et Schimp.  
*Seligeria recurvata* = *Blindiadelphus recurvatus* (Hedw.) Fedosov et Ignatov  
*Seligeria trifaria* var. *longifolia* = *Seligeria trifaria* (Brid.) Lindb. var. *longifolia* (Lindb. ex Broth.)  
 Ochyra et Gos  
*Sphagnum angustifolium* = *Sphagnum angustifolium* (C. E. O. Jensen ex Russow) C. E. O. Jensen  
*Sphagnum capillifolium* = *Sphagnum capillifolium* (Ehrh.) Hedw.  
*Sphagnum centrale* = *Sphagnum centrale* C. E. O. Jensen  
*Sphagnum compactum* = *Sphagnum compactum* Lam. et DC.  
*Sphagnum contortum* = *Sphagnum contortum* Schultz  
*Sphagnum cuspidatum* = *Sphagnum cuspidatum* Ehrh. ex Hoffm.  
*Sphagnum denticulatum* = *Sphagnum auriculatum* Schimp.  
*Sphagnum fallax* = *Sphagnum fallax* (H. Klinggr.) H. Klinggr.  
*Sphagnum fimbriatum* = *Sphagnum fimbriatum* Wilson  
*Sphagnum flexuosum* = *Sphagnum flexuosum* Dozy et Molk.  
*Sphagnum girgensohnii* = *Sphagnum girgensohnii* Russow  
*Sphagnum inundatum* = *Sphagnum inundatum* Russow  
*Sphagnum magellanicum* auct. p. p. = *Sphagnum divinum* Flatberg et Hassel  
*Sphagnum obtusum* = *Sphagnum obtusum* Warnst.  
*Sphagnum palustre* = *Sphagnum palustre* L.  
*Sphagnum platyphyllum* = *Sphagnum platyphyllum* (Lindb. ex Braithw.) Warnst.  
*Sphagnum quinquefarium* = *Sphagnum quinquefarium* (Braithw.) Warnst.  
*Sphagnum riparium* = *Sphagnum riparium* Ångstr.  
*Sphagnum russowii* = *Sphagnum russowii* Warnst.  
*Sphagnum squarrosum* = *Sphagnum squarrosum* Crome  
*Sphagnum subnitens* = *Sphagnum subnitens* Russow et Warnst.  
*Sphagnum subsecundum* = *Sphagnum subsecundum* Nees

- Sphagnum teres* = *Sphagnum teres* (Schimp.) Ångstr.  
*Sphagnum warnstorffii* = *Sphagnum warnstorffii* Russow  
*Splachnobryum obtusum* = *Splachnobryum obtusum* (Brid.) Müll. Hal.  
*Taxiphyllum densifolium* = *Taxiphyllum densifolium* (Lindb. ex Broth.) Reimers  
*Taxiphyllum wissgrillii* = *Taxiphyllum wissgrillii* (Garov.) Wijk et Margad.  
*Tetraphis pellucida* = *Tetraphis pellucida* Hedw.  
*Thamnobryum alopecurum* = *Thamnobryum alopecurum* (Hedw.) Gangulee  
*Thuidium abietinum* = *Abietinella abietina* (Hedw.) M. Fleisch.  
*Thuidium delicatulum* = *Thuidium delicatulum* (Hedw.) Schimp.  
*Thuidium philibertii* = *Thuidium assimile* (Mitt.) A. Jaeger  
*Thuidium recognitum* = *Thuidium recognitum* (Hedw.) Lindb.  
*Thuidium tamariscinum* = *Thuidium tamariscinum* (Hedw.) Schimp.  
*Timmia austriaca* = *Timmia austriaca* Hedw.  
*Timmia bavarica* = *Timmia bavarica* Hessel.  
*Tomentypnum nitens* = *Tomentypnum nitens* (Hedw.) Loeske  
*Tortella bambergi* auct. p. p. = *Tortella fasciculata* (Culm.) Culm.  
*Tortella bambergi* auct. p. p. = *Tortella pseudofragilis* (Thér.) Köckinger et Hedenäs  
*Tortella inclinata* = *Tortella inclinata* (R. Hedw.) Limpr.  
*Tortella tortuosa* = *Tortella tortuosa* (Hedw.) Limpr.  
*Tortula atrovirens* = *Tortula atrovirens* (Sm.) Lindb.  
*Tortula brevissima* = *Tortula brevissima* Schiffn.  
*Tortula calcicolens* = *Syntrichia calcicola* J. J. Amann  
*Tortula caninervis* subsp. *spuria* = *Syntrichia caninervis* Mitt. var. *gypsophila* (J. J. Amann ex G. Roth) Ochyra  
*Tortula crinita* p. p. = *Syntrichia montana* Nees var. *montana*  
*Tortula inermis* = *Tortula inermis* (Brid.) Mont.  
*Tortula laevipila* = *Syntrichia laevipila* Brid.  
*Tortula latifolia* = *Syntrichia latifolia* (Bruch ex Hartm.) Huebener  
*Tortula mucronifolia* = *Tortula mucronifolia* Schwägr.  
*Tortula muralis* p. p. = *Tortula muralis* Hedw.  
*Tortula norvegica* = *Syntrichia norvegica* F. Weber  
*Tortula obtusifolia* = *Tortula muralis* Hedw. subsp. *obtusifolia* (Schwägr.) Culm.  
*Tortula papillosa* = *Syntrichia papillosa* (Wilson) Jur.  
*Tortula papillosissima* p. p. = *Syntrichia subpapillosissima* (Bizot et R. B. Pierrot ex W. A. Kramer) M. T. Gallego et J. Guerra  
*Tortula ruraliformis* = *Syntrichia ruraliformis* (Besch.) Mans.  
*Tortula ruralis* p. p. = *Syntrichia ruralis* (Hedw.) F. Weber et D. Mohr var. *ruralis*  
*Tortula schimperi* = *Tortula schimperi* M. J. Cano, O. Werner et J. Guerra  
*Tortula subulata* = *Tortula subulata* Hedw.  
*Tortula virescens* = *Syntrichia virescens* (De Not.) Ochyra  
*Trichostomum brachydontium* = *Trichostomum brachydontium* Bruch  
*Trichostomum crispulum* = *Trichostomum crispulum* Bruch  
*Ulota bruchii* = *Ulota bruchii* Hornsch. ex Brid.  
*Ulota coarctata* = *Ulota coarctata* (P. Beauv.) Hammar  
*Ulota crispa* p. p. = *Ulota crispa* (Hedw.) Brid.  
*Ulota hutchinsiae* = *Ulota hutchinsiae* (Sm.) Hammar  
*Warnstorfia exannulata* = *Sarmentypnum exannulatum* (Schimp.) Hedenäs  
*Weissia brachycarpa* = *Weissia brachycarpa* (Nees et Hornsch.) Jur.

*Weissia condensa* = *Weissia condensa* (Voit) Lindb.

*Weissia controversa* = *Weissia controversa* Hedw. var. *controversa*

*Weissia fallax* = *Weissia controversa* Hedw. var. *crispata* (Nees et Hornsch.) Nyholm

*Weissia longifolia* = *Weissia longifolia* Mitt.

*Weissia rostellata* = *Weissia rostellata* (Brid.) Lindb.

*Weissia rutilans* = *Weissia rutilans* (Hedw.) Lindb.

*Zygodon rupestris* = *Zygodon rupestris* Schimp. ex Lorentz