



## Article

### Early Land Plants Today: Index of Liverworts & Hornworts 2009–2010

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#### Abstract

A widely accessible list of known plant species is a fundamental requirement for plant conservation and has vast applications. An index of published names of liverworts and hornworts between 2009 and 2010 is provided as part of a continued effort in working toward producing a world checklist of this group. Included in the list are also names overlooked by earlier indices. The list includes 30 higher taxa, 250 species, 52 infraspecific taxa, 31 autonyms, and two fossils for 2009 and 2010. A number of taxa not covered by the earlier indices for 2000–2008 are also included.

**Key words:** Liverworts, hornworts, index, nomenclature

#### Introduction

Under the auspices of the Early Land Plants Today project, there has been a strong community-driven effort attempting to address the critical need to synthesize the vast nomenclatural, taxonomic and global distributional data for liverworts (Marchantiophyta) and hornworts (Anthocerotophyta) (von Konrat *et al.* 2010a). These endeavours are critical in providing the foundation to develop a working checklist of liverworts and hornworts worldwide; the first version is projected to be published in 2012. This effort is fundamental toward the development of a working list of all known plant species under the auspices of the *Convention on Biological Diversity* (CBD) and the *Global Strategy for Plant Conservation* (GSPC). The significance of this target was underscored again by the Conference of the Parties to the Convention on Biological Diversity who have further developed the GSPC into its second phase (2011–2020), taking into account current and emerging environmental challenges on plant diversity (Blackmore *et al.* 2011). The critical need for this target to be achieved and the implications for conservation, taxonomy, and botanical science were recently outlined by Paton *et al.* (2008). Progress towards the Targets of the *Global Strategy for Plant Conservation* (GSPC) have recently been reviewed by Paton & Lughadha (2011).

This index follows on from the resourceful indices of recent years: Index of Hepatics (Crosby & Engel 2006), the series Index of Bryophytes 2001–2004 (Crosby & Magill 2005) and Index of Bryophytes 2005 (Crosby & Magill 2006), as well as the most recently published Index of Liverworts and Hornworts 2006–2008 (von Konrat *et al.* 2010b). In the current index we attempt to list citations for names published for liverworts and hornworts during the period January 1, 2009 through December 31, 2010. Valid, illegitimate and invalid names that were overlooked by earlier indices (2000–2008) are also included. A bibliography contains complete citations for the places of publication of the names, their basionyms and blocking names. The format generally follows that of previous indices, especially von Konrat *et al.* (2010b). One significant departure is that full type details of new species and infraspecies are as they appear in the protologue,

including the formatting used. This will aid those researchers who do not always have access to all journals and publications where novel taxa are described. Unlike previous indices basionyms published before 2009 do not have their own entries here. Instead they follow the names of taxa built on them. For fossils we state the geological period. The type taxon is also provided for new higher taxa. All names are arranged alphabetically. As a matter of reference autonyms are included only if created during the period that this index covers, providing a useful resource indicating the publication date on which the autonym was first created. Although names that we judge to be invalidly published under the Vienna Code of Botanical Nomenclature (McNeill *et al.* 2006) are included in the list, nomenclaturally they are not accepted by the authors of this index, and therefore not published under the Vienna Code of Botanical Nomenclature (McNeill *et al.* 2006). As in previous indices, no disposition is provided to an accepted name or to the taxonomy.

The number of names validly published during 2009 and 2010 includes 29 higher taxa, 237 species, 45 infraspecific taxa, and two fossils. In addition, 31 autonyms were also created.

## Format

Authorities and citation abbreviations follow the on-line version of Authors of Plant Names at the Royal Botanic Gardens, Kew, Website ([www.ipni.org](http://www.ipni.org)), which is an updated version of Brummitt & Powell (1992). For nomenclatural elements we follow the Vienna Code of Botanical Nomenclature (McNeill *et al.* 2006).

The following outlines the format for the different categories of names published during the period. At the end of each name, referral to the full citation for the journal/book article in which the name appeared is in the form: (Renner *et al.* 2009). Entries may have an annotation in the form of a NOTE near the end. Common reasons for the note are superfluous combinations, blocking names, etc., and era for fossils.

The name of a *new taxon* published during the period takes the form:

***Cheilolejeunea fisheri*** Malombe, *Acta Bot. Hung.* 51: 319, 2009. TYPE: “Kenya, Kakamega Forest; Salazar II fragment, along the path towards Buzambuli A, W. Salazar Circuit, 14 September 2005, Malombe, I. and Chituyi, B. B. 5006/SII2bS1x. Holotype: EA, isotype: EGR” (Malombe 2009).

Its article from the Bibliography:

Malombe I (2009) Studies on African *Cheilolejeunea* (Lejeuneaceae) I: New species and new combinations. *Acta Botanica Hungarica* 51: 315–328.

A *new combination* published during the period takes the form:

***Cololejeunea thiersiae*** (Pócs) Pócs, *Polish Bot. J.* 54: 9, 2009 (Pócs & Bernecker 2009). BASIONYM: *Aphanolejeunea thiersiae* Pócs, *Hikobia* 11: 459, 1994 (Pócs 1994).

Its articles from the Bibliography:

Pócs, T. (1994) New or little known epiphyllous liverworts, V. *Aphanolejeunea* collected by Barbara M. Thiers in Australia and Papua New Guinea. *Hikobia* 11: 457–462.

Pócs T, Bernecker A (2009) Knowledge of *Aphanolejeunea* (Jungermanniopsida) after 25 years. *Polish Botanical Journal* 54: 1–11.

One or two asterisks preceding an entry indicate that the name has been interpreted by us as contrary to McNeill *et al.* (2006) being either illegitimate (a single asterisk) or invalid (two asterisks). We give both the article that we base our interpretation on, and a short statement about what we think is wrong. For example:

\* ***Chiloscyphus himalayensis*** (A.Srivast. et S.C.Srivast.) J.J.Engel, *Fieldiana, Bot. n.s.* 48: 20, 2010, *nom. illeg.* Art. 53.1; hom. illeg. [non Steph. 1907] (Engel 2010). BASIONYM: *Lophocolea himalayensis* A.Srivast. et S.C.Srivast., *Indian Geocalyc.*: 182, 2002 (Srivastava & Srivastava 2002). NOTE: Blocking name is *Chiloscyphus himalayensis* Steph., *Bull. Herb. Boissier ser. 2, 7*: 837 (*Spec. Hep.* 3: 209), 1907 (Stephani 1907).

A dagger, †, preceding an entry indicates a name for a fossil. For example,

† *Frullania cretacea* Hentschel, A.R.Schmidt et Heinrichs, *Cryptog. Bryol.* 30: 326, 2009. TYPE: “amber inclusion in sample AMNH B-011 from Myanmar”. NOTE: Upper Albion (mid Cretaceous, 100 my) amber from Burma. (Hentschel *et al.* 2009).

## The index

**Acrobolbinae** Hässel (subord.), *Beih. Nova Hedwigia* 134: 475, 2009 (Hässel & Rubies 2009). BASED ON: Acrobolbaceae E.A.Hodgs. (fam.), *Rec. Domin. Mus.* 4: 117, 1962 (Hodgson 1962).

\*\* *Acromastigum furcatifolium* (Steph.) E.A.Br., *Cunninghamia* 10: 241, 2007, *nom. inval.* Art. 33.4; basionym not cited, “*furcatifolia*” (Downing *et al.* 2007). BASIONYM: *Lepidozia furcatifolia* Steph., *J. & Proc. Roy. Soc. New South Wales* 48: 112, 1914 (Stephani & Watts 1914).

**Adelanthinae** Hässel (subord.), *Beih. Nova Hedwigia* 134: 475, 2009 (Hässel & Rubies 2009). BASED ON: Adelanthaceae Grolle (fam.), *J. Hattori Bot. Lab.* 35: 327, 1972 (Grolle 1972).

**Anastrophyllaceae** L.Söderstr., De Roo et Hedd. (fam.), *Phytotaxa* 3: 48, 2010. TYPE: *Anastrophyllum* (Spruce) Steph. (Söderström *et al.* 2010b).

\*\* *Anastrophyllum sect. Revolutae* R.M.Schust. *Beih. Nova Hedwigia* 119: 313, 2002, *nom. inval.* Art. 36.1; no Latin description (Schuster 2002).

\*\* *Anastrophyllum ambiguum* R.M.Schust., *Beih. Nova Hedwigia* 119: 305, 2002, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: New Zealand (Schuster 2002).

*Anastrophyllum assimile* var. *nardioides* (Lindb.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 163, 2002 (Damsholt 2002). BASIONYM: *Jungermannia nardioides* Lindb., *Musci Scand.*: 8, 1879 (Lindberg 1879).

*Anastrophyllum hypocladopsis* R.M.Schust., *Beih. Nova Hedwigia* 119: 315, 2002. HOLOTYPE: VENEZUELA: Páramo de Tama, Estado Tachira, 3000 m (RMS 76-1941a; F) (Schuster 2002). NOTE: Erroneously given as invalid by Crosby & Magill (2005).

*Anastrophyllum minutum* var. *acuminatum* (Horik.) T.Cao et J.Sun, *Fl. Bryophyt. Sin.* 10: 46, 2008 (Gao & Wu 2008). BASIONYM: *Sphenolobus acuminatus* Horik., *J. Sci. Hiroshima Univ., Ser. B., Div. 2, Bot.* 2: 155, 1934 (Horikawa 1934).

\*\* *Andrewsianthus hodgsoniae* (R.M.Schust.) R.M.Schust., *Beih. Nova Hedwigia* 119: 327, 2002, *nom. inval.* Art. 33.4; basionym not cited, “*hodgsonae*” (Schuster 2002). BASIONYM: *Cephalolobus hodgsoniae* R.M.Schust., *Rev. Bryol. Lichénol.* 34: 254, 1966, “*hodgsonae*” (Schuster 1966). NOTE: Later validated by Engel (2007).

\*\* *Andrewsianthus squarrosus* (R.M.Schust.) R.M.Schust., *Beih. Nova Hedwigia* 119: 331, 2002, *nom. inval.* Art. 33.4; basionym not cited (Schuster 2002). BASIONYM: *Cephalolobus squarrosus* R.M.Schust., *Rev. Bryol. Lichénol.* 34: 256, 1966 (Schuster 1966).

*Aneura mirabilis* (Malmb.) Wickett et Goffinet, *J. Linn. Soc., Bot.* 156: 11, 2008 (Wickett & Goffinet 2008). BASIONYM: *Cryptothallus mirabilis* Malmb., *Ann. Bryol.* 6: 122, 1933 (Malmborg 1933).

*Aneura pinguis* var. *fuscovirens* (Lindb.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 656, 2002 (Damsholt 2002). BASIONYM: *Riccardia fuscovirens* Lindb., *Musci Scand.*: 5, 1879 (Lindberg 1879).

\*\* **Aneurineae** R.M.Schust. ex C.Gao et Y.H.Wu, (subord.), *Genera Hepaticopsida Anthocerotopsida Sinicorum*: 83, 2010, *nom. inval.* Art. 36.1; no Latin description, “*Aneurinae*” (Gao *et al.* 2010). NOTE: Automatically typified (Art. 16.1.a) by Aneuraceae Klinggr.

\*\* *Anthoceros dichotomus* var. *beltranii* Casares-Gil ex Cros, L. Sáez et Brugués, *J. Bryol.* 30: 76, 2008, *nom. inval.* Art. 32.1.d; no description (Cros *et al.* 2008). BASED ON: *Anthoceros beltranii* Casares-Gil, *Trab. Mus. Nac. Ci. Nat., Ser. Bot.* 8: 47, 1915 (Casares-Gil 1915).

*Anthoceros punctatus* subsp. *agrestis* (Paton) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 800, 2002 (Damsholt 2002). BASIONYM: *Anthoceros agrestis* Paton, *J. Bryol.* 10: 257, 1979 (Paton 1979).

- \*\* *Anthoceros punctatus* var. *douinii* (R.M.Schust.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 802, 2002, *nom. inval.* Art. 32.1.d; basionym not valid (Damsholt 2002). BASIONYM: *Aspiromitus punctatus* var. *douinii* R.M.Schust., *Hepat. Anthocerotae N. Amer.* 6: 801, 1992, *nom. inval.* Art. 37.7; no herbarium indicated (Schuster 1992). NOTE: placed under subsp. *agrestis* (Paton) Damsh.
- \*\* *Aphanolejeunea papilliloba* (Steph.) Pócs et Bern.-Lück. ex León-Yáñez, Gradst. et Wegner, *Hepat. Anthoc. Ecuador*: 25, 2006, *nom. inval.* Art. 33.4; basionym not cited, “*palliloba*” (León-Yáñez *et al.* 2006). BASIONYM: *Cololejeunea papilliloba* Steph., *Hedwigia* 34: 250, 1895 (Stephani 1895b).
- Apometzgeria pubescens* f. *attenuata* (Schiffn.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 644, 2002 (Damsholt 2002). BASIONYM: *Metzgeria pubescens* f. *attenuata* Schiffn., *Sitzungsber. Deutsch. Naturwiss.-Med. Vereins Böhmen “Lotos” Prag* 49: 97, 1901 (Schiffner 1901).
- Apometzgeria pubescens* f. *latifrons* (Kaal.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 642, 2002 (Damsholt 2002). BASIONYM: *Metzgeria pubescens* f. *latifrons* Kaal., *Bergens Mus. Skr. n.s.* 16: 48, 1934 (Jørgensen 1934).
- Asterella mussuriensis* subsp. *crassa* (Shimizu et S.Hatt.) D.G.Long, *Lindbergia* 26: 44 2001 [2000] (Long 2000). BASIONYM: *Asterella crassa* Shimizu et S.Hatt., *J. Hattori Bot. Lab.* 8: 48, 1952 (Shimizu & Hattori 1952).
- Athalamia hyalina* f. *rufescens* (S.W.Arnell) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 745, 2002 (Damsholt 2002). BASIONYM: *Clevea hyalina* f. *rufescens* S.W.Arnell, *Ark. Bot. n.s.* 4 (6): 123, 1959 (Arnell & Mårtensson 1959).
- Austrolejeunea carcharias* (M.A.M.Renner) M.A.M.Renner, *Bryologist* 113: 786, 2010 (Renner 2010). BASIONYM: *Nephelolejeunea carcharias* M.A.M.Renner, *Syst. Bot.* 34: 621, 2009 (Renner *et al.* 2009).
- Austrolejeunea secunda* M.A.M.Renner, *Bryologist* 113: 782, 2010. TYPE: “NEW ZEALAND. NORTH ISLAND, Ruahine Ecological Region and District, Ruahine Range, Armstrong Saddle above Sunshine Hut, mixed low subalpine scrub of *Olearia colensoi*, *Brachyglottis bidwillii*, *Hebe tetragona*, *Dracophyllum recurvum* with *Celmisia spectabilis* and *Celmisia incana*. On dead branches of *Hebe tetragona* with *Metzgeria submarginata* and *Austrolejeunea hispida*, 39°46.5'S 176° 9.9'E, 1356 m, 17 October 2009, Renner *et al.* 4453, (holotype: AK; isotype: CHR)” (Renner 2010).
- Barbilophozia* subgen. *Sudeticae* (Schljakov) L.Söderstr., De Roo et Hedd., *Phytotaxa* 3: 50, 2010 (Söderström *et al.* 2010b). BASIONYM: *Lophozia* sect. *Sudeticae* Schljakov, *Petjen. Mchi Sev. SSSR* 3: 113, 1980 (Schljakov 1980).
- Barbilophozia sudetica* (Nees ex Huebener) L.Söderstr., De Roo et Hedd., *Phytotaxa* 3: 50, 2010 (Söderström *et al.* 2010b). BASIONYM: *Jungermannia sudetica* Nees ex Huebener, *Hepaticol. Germ.*: 142, 1834 (Hübener 1834).
- \*\* *Bazzania decrescens* var. *ambahatrae* Pócs, *Boissiera* 59: 60, 2002 *nom. inval.* Art. 32.1.d; no description. ORIGINAL MATERIAL: MADAGASCAR, Manongarivo, PG 19742, 1300-1400 m (Pócs & Geissler 2002).
- \*\* *Bazzania mindorensis* Steph. ex Bapna et Kachroo, *Hepaticol. India* I: 282, 2000, *nom. inval.* Art. 34.1.c; publ. in syn. [sub *Bazzania ovistipula*], “*mindorensis*” (Bapna & Kachroo 2000). BASED ON: *Mastigobryum mindorense* Steph., *Bull. Herb. Boissier ser. 2*, 8: 761 (*Spec. Hep.* 3: 445), 1908 (Stephani 1908).
- Biantheridion* (Grolle) Konstant. et Vilnet, *Arctoa* 18: 67, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Jamesoniella* sect. *Biantheridion* Grolle, *Trans. Brit. Bryol. Soc.* 4: 662, 1964 (Grolle 1964).
- Biantheridion undulifolium* (Nees) Konstant. et Vilnet, *Arctoa* 18: 67, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Jungermannia schraderi* β *undulifolia* Nees, *Naturgesch. Eur. Leberm.* 1: 306, 1833 (Nees 1833).
- \*\* *Calycularia crispula* var. *udarii* Rajeevan ex Easa, *Kerala Forest Res. Handb.* 17: 8, 2003, *nom. inval.* Art. 32.1.d; no description, “*udarii*”. ORIGINAL MATERIAL: India, Kerala, Rajeevan 1990 (Easa 2003).

- Calypogeia azurea f. luxurians*** (Müll.Frib.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 466, 2002 (Damsholt 2002). BASIONYM: *Calypogeia trichomanis f. luxurians* Müll.Frib., *Rabenh. Krypt.-Fl., ed. 2*, 6 (18): 251, 1913 (Müller 1913).
- Calypogeia fissa f. subintegrifolia*** (C.E.O.Jensen ) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 466, 2002 (Damsholt 2002). BASIONYM: *Kantius calypogeus f. subintegrifolius* C.E.O.Jensen, *Danmarks Mosser*: 227, 1915, “*Kantia calypogeia f. subintegrifolia*” (Jensen 1915).
- Calypogeia neogaea*** (R.M.Schust.) Bakalin, *Sokhranenie bioraznoobrazia Kamchatki i prilegayushchikh morej*, 2007 (Bakalin 2007; non vidi, page number not known). BASIONYM: *Calypogeia fissa* subsp. *neogaea* R.M.Schust., *Hepat. Anthocerotae N. Amer.* 2: 169, 1969 (Schuster 1969).
- Calypetrocolea lindenberghiana*** (Lehm.) R.M.Schust., *Beih. Nova Hedwigia* 119: 193, 2002 (Schuster 2002). BASIONYM: *Jungermannia lindenberghiana* Lehm., *Linnaea* 4: 367, 1829 (Lehmann 1829).
- Calypetrocoleidae** C.Gao, Y.H.Wu et W.Li (subcl.), *Genera Hepaticopsida Anthocerotopsida Sinicorum*: 74, 2010 (Gao *et al.* 2010). NOTE: Automatically typified (Art. 16.1.a) by Calypetrocoleaceae C.Gao et Y.H.Wu.
- Calypetrocoleinales** C.Gao, Y.H.Wu et W.Li (order), *Genera Hepaticopsida Anthocerotopsida Sinicorum*: 75, 2010 (Gao *et al.* 2010). NOTE: Automatically typified (Art. 16.1.a) by Calypetrocoleaceae C.Gao et Y.H.Wu.
- \*\* **Calypetrocoleineae** C.Gao, Y.H.Wu et W.Li (subord.), *Genera Hepaticopsida Anthocerotopsida Sinicorum*: 75, 2010, *nom. inval.* Art. 36.1; no Latin description (Gao *et al.* 2010).
- Cephalozia chilensis*** R.M.Schust., *Beih. Nova Hedwigia* 119: 29, 2002 (Schuster 2002). NOM NOV. PRO *Cephalozia heteroica* R.M.Schust. et J.J.Engel, *Fieldiana, Bot. n.s.* 41: 219, 1978 (Engel 1978). BLOCKING NAME: *Cephalozia heteroica* C.M.Cooke, *Trans. Connecticut Acad. Arts* 12: 38, 1904 (Cooke 1904). NOTE: Engel & Schuster (1988) transferred *Cephalozia heteroica* R.M.Schust. et J.J.Engel to *Metahygrobiella*, using the name *M. chilensis* J.J.Engel et R.M.Schust. However, in *Metahygrobiella* nothing is blocking the epithet “*heteroica*” and that should have been used there. We regard this as valid new name for *C. heteroica* R.M.Schust. et J.J.Engel although Schuster (2002: 29) gives *Metahygrobiella chilensis* as a “basionym” since he also has a direct and clear reference to *C. heteroica*.
- \*\* ***Cephalozia ciliolata*** R.M.Schust., *Beih. Nova Hedwigia* 119: 25, 29, 2002, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: NEW ZEALAND, South Island (Schuster 2002). NOTE: Later validated as *Cephalozia schusteriana* J.J.Engel (Engel 2007).
- Cephalozia lunulifolia f. conferta*** (Nees) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 508, 2002 (Damsholt 2002). BASIONYM: *Jungermannia connivens a. conferta* Nees, *Naturgesch. Eur. Leberm.* 2: 283, 1836 (Nees 1836). NOTE: Damsholt cited the basionym as *Cephalozia connivens f. conferta* citing the page where Nees has *Jungermannia*. We still think the name is validly published, basing our opinion on Art. 33.5.
- \*\* ***Cephalozia pachygyna*** R.M.Schust., *Beih. Nova Hedwigia* 119: 25, 29, 2002, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: NEW ZEALAND, Fiordland, RMS 84-138 (Schuster 2002). NOTE: Later validated by Engel (2007).
- Cephalozia pleniceps f. concinnata*** (Müll.Frib.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 505, 2002, “*concinnatum*” (Damsholt 2002). BASIONYM: *Cephalozia pleniceps* var. *concinnata* Müll.Frib., *Rabenh. Krypt.-Fl., ed. 2*, 6 (15): 31, 1912 (Müller 1912).
- \*\* ***Cephaloziella brunnea*** R.M.Schust., *Beih. Nova Hedwigia* 119: 110, 131, 2002, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: VENEZUELA, Est. Mérida, Sierra de Santo Domingo, Páramo de Mucubaji, RMS 76-865 (Schuster 2002). NOTE: Later validated by Engel (2007).
- Cephaloziella divaricata* var. *rupestris*** (C.E.O.Jensen ex Arnell) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 549, 2002 (Damsholt 2002). BASIONYM: *Cephalozia divaricata* var. *rupestris* C.E.O.Jensen ex Arnell, *Bot. Not.* 64: 7, 1911 (Arnell 1911).
- Cephaloziella elachista* var. *spinophylla*** (C.Gao) C.Gao, *Fl. Bryoph. Sin.* 9: 181, 2003 (Gao 2003). BASIONYM: *Cephaloziella spinophylla* C.Gao, *Fl. Hepat. Chin. Boreali-Orient.*: 208, 1981 (Gao &

- Zhang 1981). NOTE: Reported erroneously as a combination under *Cephalozia* in Crosby & Magill (2005).
- \*\* *Cephaloziella granatensis* var. *spiniflora* R.M.Schust., *Beih. Nova Hedwigia* 119: 140, 2002, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: VENEZUELA: Estado Mérida, Sierra de Santo Domingo, Páramo de Mucubaji, 3000 m, RMS 76-811a (Schuster 2002).
- \*\* *Cephaloziella spegazziniana* subsp. *andicola* R.M.Schust., *Beih. Nova Hedwigia* 119: 116, 2002, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: VENEZUELA: Estado Mérida, above Laguna Grande, Páramo de Mucubaji, Sierra de Santo Domingo, 3600 m, RMS 76-857a (Schuster 2002).
- \* *Cephaloziella varians* var. *arctica* (Bryhn et Douin) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 570, 2002, *nom. illeg.* Art. 52,1; earlier name included [*Cephaloziella alpina* var. *kaalaasii* Douin 1920] (Damsholt 2002). BASIONYM: *Cephaloziella arctica* Bryhn et Douin, *Rabenh. Krypt.-Fl.*, ed. 2, 6 (18): 159, 1913 (Müller 1913).
- Cephaloziella varians* var. *kaalaasii* (Douin) Ochyra, *Polish Polar Res.* 25: 125, 2004 (Ochyra 2004). BASIONYM: *Cephaloziella alpina* var. *kaalaasii* Douin, *Mem. Soc. Bot. France* 29: 71, 1920 (Douin 1920).
- Cephaloziella varians* var. *scabra* (S.W.Arnell) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 570, 2002 (Damsholt 2002). BASIONYM: *Cephaloziella arctica* var. *scabra* S.W.Arnell, *Bot. Not.* 103: 86, 1950 (Arnell 1950).
- Cephaloziella varians* f. *verrucosa* (C.E.O.Jensen) Damsh., *Lindbergia* 33: 108, 2010 (Damsholt 2010). BASIONYM: *Cephalozia divaricata* var. *verrucosa* C.E.O.Jensen, *Meddel. Grønland* 15: 374, 1897 [1898] (Jensen 1898).
- Ceratolejeunea kuerschneri* Eb.Fisch. et Vanderp., *Beih. Nova Hedwigia* 138: 87, 2010. TYPE: “Gabon. Prov. Ogooué-Ivindo, Kongou waterfalls on Ivindo River, 0°17'24" N, 12°34'18" E, on rocks at base of the falls, 9 April 2006, Vanderpoorten & Fischer GAB1230 (LG-holotype, LBV, KOBL-isotype)” (Fischer & Vanderpoorten 2010).
- Cheilolejeunea acanthina* (Spruce) Gradst. et Ilk.-Borg., *Mem. New York Bot. Gard.* 76 (4): 62, 2009 (Gradstein & Ilkiu-Borges 2009). BASIONYM: *Lejeunea acanthina* Spruce, *Trans. & Proc. Bot. Soc. Edinburgh* 15: 182, 1884 (Spruce 1884).
- Cheilolejeunea adnata* (Kunze ex Lehm. et Lindenb.) Grolle var. *adnata*, created by *Cheilolejeunea adnata* var. *autoica* Gradst. et Ilk.-Borg., *Mem. New York Bot. Gard.* 76 (4): 64, 2009 (Gradstein & Ilkiu-Borges 2009).
- Cheilolejeunea adnata* var. *autoica* Gradst. et Ilk.-Borg., *Mem. New York Bot. Gard.* 76 (4): 64, 2009. TYPE: “French Guiana, near Saül, 53°11'W, 3°37'N, trail 3 in lowland rain forest, 200-400 m, on rotten log in much light, 26 June 1986, J. M. Bekker 2233-1 (Holotype: GOET; isotype: U)” (Gradstein & Ilkiu-Borges 2009).
- † *Cheilolejeunea antiqua* (Grolle) W.Ye et R.L.Zhu, *J. Bryol.* 32: 280, 2010 (Ye & Zhu 2010). BASIONYM: *Leucolejeunea antiqua* Grolle, *Stuttgarter Beitr. Naturk. B* 96: 1, 1983 (Grolle 1983).
- Cheilolejeunea asperiflora* (Spruce) Gradst. et Ilk.-Borg., *Mem. New York Bot. Gard.* 76 (4): 62, 2009 (Gradstein & Ilkiu-Borges 2009). BASIONYM: *Lejeunea asperiflora* Spruce, *Trans. & Proc. Bot. Soc. Edinburgh* 15: 183, 1884 (Spruce 1884).
- Cheilolejeunea caducifolia* (Gradst. et Schäf.-Verw.) W.Ye et R.L.Zhu, *J. Bryol.* 32: 280, 2010 (Ye & Zhu 2010). BASIONYM: *Leucolejeunea caducifolia* Gradst. et Schäf.-Verw., *J. Hattori Bot. Lab.* 74: 64, 1993 (Gradstein et al. 1993).
- Cheilolejeunea clypeata* (Schwein.) W.Ye et R.L.Zhu, *J. Bryol.* 32: 280, 2010 (Ye & Zhu 2010). BASIONYM: *Jungermannia clypeata* Schwein., *Spec. Fl. Amer. Crypt.*: 12, 1821 (Schweinitz 1821).
- Cheilolejeunea conchifolia* (A.Evans) W.Ye et R.L.Zhu, *J. Bryol.* 32: 280, 2010 (Ye & Zhu 2010). BASIONYM: *Archilejeunea conchifolia* A.Evans, *Mem. Torrey Bot. Club* 8: 128, 1902 (Evans 1902).
- Cheilolejeunea fischeri* Malombe, *Acta Bot. Hung.* 51: 319, 2009. TYPE: “Kenya, Kakamega Forest; Salazar II fragment, along the path towards Buzambuli A, W. Salazar Circuit, 14 September 2005, Malombe, I. and Chituyi, B. B. 5006/SII2bS1x. Holotype: EA, isotype: EGR” (Malombe 2009).

- Cheilolejeunea gradsteinii*** (Grolle et Piippo) W.Ye et R.L.Zhu, *J. Bryol.* 32: 280, 2010 (Ye & Zhu 2010). BASIONYM: *Leucolejeunea gradsteinii* Grolle et Piippo, *Ann. Bot. Fenn.* 27: 122, 1990 (Grolle & Piippo 1990).
- Cheilolejeunea japonica*** (Horik.) W.Ye et R.L.Zhu, *J. Bryol.* 32: 280, 2010 (Ye & Zhu 2010). BASIONYM: *Archilejeunea japonica* Horik., *J. Sci. Hiroshima Univ. Ser. B, Div. 2, Bot.* 1: 84, 1932 (Horikawa 1932).
- Cheilolejeunea kitagawae*** W.Ye et R.L.Zhu, *J. Bryol.* 32: 280, 2010 (Ye & Zhu 2010). NOM. NOV. PRO *Leucolejeunea paroica* N.Kitag., *Acta Phytotax. Geobot.* 18: 190, 1960 (Kitagawa 1960). BLOCKING NAME: *Cheilolejeunea paroica* Mizut., *J. Hattori Bot. Lab.* 46: 364, 1979 (Mizutani 1979).
- Cheilolejeunea loriana*** (Steph.) W.Ye et R.L.Zhu, *J. Bryol.* 32: 280, 2010 (Ye & Zhu 2010). BASIONYM: *Symbiezidium lorianum* Steph., *Sp. Hepat. (Stephani)* 5: 106, 1912 (Stephani 1912).
- Cheilolejeunea mizutanii*** W.Ye et R.L.Zhu, *J. Bryol.* 32: 281, 2010 (Ye & Zhu 2010). NOM. NOV. PRO *Hygrolejeunea decurrens* Steph., *Hedwigia* 35: 101, 1896 (Stephani 1896). NOTE: BLOCKING NAME: *Cheilolejeunea decurrens* (Steph.) Xiao L.He, *Ann. Bot. Fenn.* 32: 251, 1995 (He 1995).
- Cheilolejeunea ngongensis*** Malombe et Pócs, *Acta Bot. Hung.* 51: 317, 2009. TYPE: “Kenya, Kajiado District, Ngong Hills, SW of Nairobi city, near the top ridge, 2,400, 25 February 2004, Pócs, T. with EA staff 04011/AN. Holotype: EGR” (Malombe 2009).
- Cheilolejeunea polystachya*** (Spruce) Gradst. et Ilk.-Borg., *Mem. New York Bot. Gard.* 76 (4): 62, 2009 (Gradstein & Ilkiu-Borges 2009). BASIONYM: *Lejeunea polystachya* Spruce, *Trans. & Proc. Bot. Soc. Edinburgh* 15: 250, 1884 (Spruce 1884).
- Cheilolejeunea rotundistipula*** (Lindenb. ex Lehm.) Malombe, *Acta Bot. Hung.* 51: 322, 2009 (Malombe 2009). BASIONYM: *Jungermannia rotundistipula* Lindenb. ex Lehm., *Linnaea* 4: 360, 1829 (Lehmann 1829).
- Cheilolejeunea suprema*** (Grolle et Piippo) W.Ye et R.L.Zhu, *J. Bryol.* 32: 281, 2010 (Ye & Zhu 2010). BASIONYM: *Leucolejeunea suprema* Grolle et Piippo, *Ann. Bot. Fenn.* 27: 123, 1990 (Grolle & Piippo 1990).
- Cheilolejeunea turgida*** (Mitt.) W.Ye et R.L.Zhu, *J. Bryol.* 32: 281, 2010 (Ye & Zhu 2010). BASIONYM: *Lejeunea turgida* Mitt., *J. Proc. Linn. Soc., Bot.* 5: 110, 1860 (Mitten 1860).
- \*\* ***Cheilolejeunea ulugurica*** Malombe, Eb.Fisch. et Pócs, *Acta Bot. Hung.* 51: 321, 2009, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: “only known from the Uluguru Mts in Tanzania” (Malombe 2009). NOTE: Later validly described by Malombe, Eb.Fisch. et Pócs, *Acta Biol. Plant. Agric.* 1: 24, 2010 [2011] (Malombe *et al.* 2011).
- Cheilolejeunea unciloba*** (Lindenb.) Malombe, *Acta Bot. Hung.* 51: 325, 2009 (Malombe 2009). BASIONYM: *Lejeunea unciloba* Lindenb., *Syn. Hepat.* 2: 331, 1845 (Gottsche *et al.* 1845).
- Cheilolejeunea xanthocarpa*** (Lehm. et Lindenb.) Malombe, *Acta Bot. Hung.* 51: 326, 2009 (Malombe 2009). BASIONYM: *Jungermannia xanthocarpa* Lehm. et Lindenb., *Nov. Stirp. Pug.* 5: 8, 1833 (Lehmann 1833).
- Chiloscyphus* sect. *Aperticaulis*** J.J.Engel, *Fieldiana, Bot. n.s.* 48: 119, 2010. TYPE: *Chiloscyphus aperticaulis* J.J.Engel (Engel 2010).
- \*\* ***Chiloscyphus* sect. *Connati*** (Lindenb.) J.J.Engel, *Fieldiana, Bot. n.s.* 48: 133, 2010, *nom. inval.* Art. 33.4; basionym not cited (Engel 2010). BASIONYM: *Plagiochila* sect. V *Connatae* Lindenb., *Monogr. Hep. Gen Plagiochilae*: XXIX, 1844 (Lindenberg 1844). NOTE: Engel erroneously cited the basionym as published in “Spec. Hep. XXIX, 1839”.
- Chiloscyphus* sect. *Notholophocoleus*** J.J.Engel, *Fieldiana, Bot. n.s.* 48: 12, 2010. TYPE: *Chiloscyphus boveanus* (C.Massal.) J.J.Engel et R.M.Schust. (Engel 2010).
- Chiloscyphus* subgen. *Septati*** J.J.Engel, *Fieldiana, Bot. n.s.* 48: 125, 2010. TYPE: *Chiloscyphus septatus* J.J.Engel (Engel 2010).
- Chiloscyphus* subgen. *Spinoscypus*** J.J.Engel, *Fieldiana, Bot. n.s.* 48: 199, 2010. TYPE: *Chiloscyphus trichocoleoides* Glenny, J.J.Engel et Xiao L.He (Engel 2010).

- \* *Chiloscyphus bidentatus* (L.) J.J.Engel et R.M.Schust. ex Darigo, *Evansia* 19: 166, 2002, *nom. illeg.* Art. 53.1; *hom. illeg.* [non Steph. 1893] (Darigo 2002): BASIONYM: *Jungermannia bidentata* L., *Sp. Pl.*: 1132, 1753 (Linnaeus 1753). BLOCKING NAME: *Chiloscyphus bidentatus* Steph., *Hedwigia* 32: 320, 1893 (Stephani 1893).
- Chiloscyphus brookwoodianus* (Paton et Sheahan) J.J.Engel, *Fieldiana, Bot. n.s.* 48: 90, 2010 (Engel 2010). BASIONYM: *Lophocolea brookwoodiana* Paton et Sheahan, *J. Bryol.* 28: 163, 2006 (Paton & Sheahan 2006).
- Chiloscyphus canaliculatus* Hook.f. et Taylor ex Gottsche, Lindenb. et Nees **var. canaliculatus**, created by *Chiloscyphus canaliculatus* var. *concausus* J.J.Engel, *Fieldiana, Bot. n.s.* 48: 107, 2010 (Engel 2010).
- Chiloscyphus canaliculatus* var. *concausus* J.J.Engel, *Fieldiana, Bot. n.s.* 48: 107, 2010. TYPE: “New Zealand, Stewart Is., Fern Gully Track at terminus of Kaipipi Road, Mill Creek, ca. 2 km W of Oban, 20–30 m, *Engel 24081* (F); isotype: (CHR)” (Engel 2010).
- Chiloscyphus ceylonensis* J.J.Engel, *Fieldiana, Bot. n.s.* 48: 133, 2010 (Engel 2010). NOM. NOV. PRO *Lophocolea fleischeri* Steph., *Bull. Herb. Boissier ser. 2, 6 (Spec. Hep. 3)*: 952 (132), 1906 (Stephani 1906). BLOCKING NAME: *Chiloscyphus fleischeri* Steph., *Sp. Hepat. (Stephani)* 6: 306, 1922 (Stephani 1922).
- Chiloscyphus chiloscyphoideus* (Lindenb. ex Lehm.) Vanderp., Schäf.-Verw. et D.G.Long, *Taxon* 59: 185, 2010 (Vanderpoorten *et al.* 2010). BASIONYM: *Plagiochila chiloscyphoidea* Lindenb. ex Lehm., *Nov. Stirp. Pug.* 8: 4, 1844 (Lehmann 1844).
- \*\* *Chiloscyphus chinnarensis* Manju, *Trop. Bryol. Res. Rep.* 7: 3, 2008, *nom. inval.* Art. 32.1.d; no description. ORIGINAL MATERIAL: “Kerala” (Manju *et al.* 2008). NOTE: Later validly published by Manju, K.P.Rajesh & Madhus., *Acta Bot. Hung.* 51: 152, 2011 (Manju *et al.* 2011).
- Chiloscyphus coadunatus* f. *gracillimus* (Kaal.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 397, 2002 (Damsholt 2002). BASIONYM: *Lophocolea bidentata* var. *gracillima* Kaal., *Nyt Mag. Naturvidensk.* 33: 473, 1893 (Kaalaas 1893). NOTE: Damsholt cited the basionym as a form citing the page where Kaalaas has a variety. We still think the name is validly published, basing our opinion on Art. 33.5.
- \* *Chiloscyphus himalayensis* (A.Srivast. et S.C.Srivast.) J.J.Engel, *Fieldiana, Bot. n.s.* 48: 20, 2010, *nom. illeg.* Art. 53.1; *hom. illeg.* [non Steph. 1907] (Engel 2010). BASIONYM: *Lophocolea himalayensis* A.Srivast. et S.C.Srivast., *Indian Geocalyc.*: 182, 2002 (Srivastava & Srivastava 2002). BLOCKING NAME: *Chiloscyphus himalayensis* Steph., *Bull. Herb. Boissier ser. 2, 7*: 837 (*Spec. Hep. 3*: 209), 1907 (Stephani 1907).
- Chiloscyphus mediifrons* J.J.Engel et Braggins, *Fieldiana, Bot. n.s.* 48: 107, 2010. TYPE: “New Zealand, Stewart Is., Paterson Inlet, Ulva Island, Flagstaff Point, NE end of island, sea level to ca. 60 m, *Engel, von Konrat and Braggins 24598A* (F); isotype: (AK)” (Engel 2010). NOTE: Also combined by J.J.Engel in *Fieldiana: Botany n.s.* 48: 74, 2010 (Engel 2010).
- Chiloscyphus morobeanus* (Piippo) Gradst., *Blumea* 54: 288, 2009 (Ariyanti *et al.* 2009). BASIONYM: *Lophocolea morobea* Piippo, *Acta Bot. Fenn.* 131: 160, 1985 (Piippo 1985).
- Chiloscyphus obvolutus* var. *cookianus* (C.Massal.) Hässel, *Beih. Nova Hedwigia* 134: 474, 2009 (Hässel & Rubies 2009). BASIONYM: *Lophocolea cookiana* C.Massal., *Nuovo Giorn. Bot. Ital.* 17: 224, 1885 (Massalongo 1885).
- Chiloscyphus obvolutus* (Hook.f. et Taylor) Hässel **var. obvolutus**, created by *Chiloscyphus obvolutus* var. *cookianus* (C.Massal.) Hässel, *Beih. Nova Hedwigia* 134: 474, 2009 (Hässel & Rubies 2009).
- Chiloscyphus semiteres* var. *retusus* J.J.Engel, *Phytologia* 83: 44, 1997 [1998]. TYPE: “AUSTRALIA. New South Wales: Murrumbidgee River, Rules Point, 37 km NW of Adaminaby, *Streimann 7482* (CBG!)” (Engel 1998). NOTE: Also published by J.J.Engel, *Fieldiana: Bot. n.s.* 48: 103, 2010, citing the same specimen (Engel 2010).
- Chiloscyphus septatus* J.J.Engel, *Fieldiana, Bot. n.s.* 48: 125, 2010. TYPE: “New Zealand, North Is., North Auckland Prov., Radar Bush, WSW of Cape Reinga, S of Mt. Te Pahi, ca. 100 m, *Engel 20825–c.* ♂ (F); isotype: (AK)” (Engel 2010).



- \*\* *Chiloscyphus trapezoïdes* (Mont.) J.J.Engel et R.M.Schust. ex Gradst., *Biblioth. Lichenol.* 99: 147, 2009, *nom. inval.* Art. 33.4; basionym not fully cited (Gradstein 2009). BASIONYM: *Lophocolea trapezoïdes* Mont., *Ann. Sci. Nat. Bot. (ser. 2)* 19: 251, 1843 (Montagne 1843). NOTE: If valid, it would be blocked by *Chiloscyphus trapezioides* Sande Lac., *Ned. Kruidk. Arch.* 3: 417, 1855 [1854].
- Chiloscyphus trichocoleoides* Glenny, J.J.Engel et Xiao L.He, *J. Bryol.* 31: 100, 2009. HOLOTYPE: “New Zealand, Western Nelson Ecological Province, Marino Mountains, valley between Mt Owen and Mt Bell, 41° 32.7'S, 172° 33.1'E, NZMS 260 M28 726622, 1440 m, on soil on walls of sinkhole in dense *Chionochloa pallens* tussockland; *D. Glenny* 9888, 19 December 2006; CHR. Isotypes: F, H” (Glenny *et al.* 2009).
- Chiloscyphus undulatus* (Mont.) Hässel, *Beih. Nova Hedwigia* 134: 474, 2009 (Hässel & Rubies 2009). BASIONYM: *Lophocolea undulata* Mont., *Ann. Sci. Nat. Bot. (ser. 3)* 4: 351, 1845 (Montagne 1845).
- Chiloscyphus wambanus* (Piippo) J.J.Engel, *Fieldiana, Bot. n.s.* 48: 18, 2010 (Engel 2010). BASIONYM: *Lophocolea wambana* Piippo, *Acta Bot. Fenn.* 131: 163, 1985 (Piippo 1985).
- \*\* *Cladopodiella francisci* f. *laxior* (Lindb.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 525, 2002 *nom. inval.* Art. 32.1.d basionym not valid (Damsholt 2002). BASIONYM: *Jungermannia francisci* var. *laxior* Lindb., *Morgonbladet (Helsinki) 1876 (287) 10 Dec.*: 1, 1876, *nom. inval.* Art. 32,1,d; no description (Lindberg 1876).
- Cololejeunea antillana* Pócs, *Polish Bot. J.* 54: 3, 2009 (Pócs & Bernecker 2009). NOM. NOV. PRO *Aphanolejeunea longifolia* Ast, *Rev. Bryol. Lichénol.* 16: 23, 1947 [1948] (Jovet-Ast 1948). BLOCKING NAME: *Cololejeunea longifolia* (Mitt.) Benedix ex Mizut., *J. Hattori Bot. Lab.* 26: 184, 1963 (Mizutani 1963).
- Cololejeunea berneckerae* Pócs, *Polish Bot. J.* 54: 4, 2009 (Pócs & Bernecker 2009). NOM. NOV. PRO *Aphanolejeunea pocsii* Bern.-Lück., *Nova Hedwigia* 66: 168, 1998 (Bernecker-Lücking 1998). BLOCKING NAME: *Cololejeunea pocsii* Tixier, *Ann. Hist.-Nat. Mus. Natl. Hung.* 66: 95, 1974 (Tixier 1974).
- Cololejeunea caihuaella* But et P.C.Wu, *Hepat. Fl. Hong Kong*: 132, 2009. TYPE: “[Hong Kong] Tai Mo Shan, Tai Po, on the leaves of *Pothos chinensis*, 820 m alt., T. H. Yip 726” (Wu & But 2009).
- Cololejeunea cingens* (Herzog) Bern.-Lück. et Pócs, *Polish Bot. J.* 54: 4, 2009 (Pócs & Bernecker 2009). BASIONYM: *Aphanolejeunea cingens* Herzog, *Svensk Bot. Tidskr.* 46: 104, 1952 (Herzog 1952a).
- Cololejeunea cornutissima* (R.M.Schust.) Stotler et Crand.-Stotl., *Bryologist* 80: 411, 1977 (Stotler & Crandall-Stotler 1977). BASIONYM: *Aphanolejeunea cornutissima* R.M.Schust., *Bryologist* 59: 217, 1956 (Schuster 1956). NOTE: Also combined by Pócs in *Polish Bot. J.* 54: 4, 2009 (Pócs & Bernecker 2009).
- Cololejeunea costaricensis* (Bern.-Lück.) Bern.-Lück. et Pócs, *Polish Bot. J.* 54: 5, 2009 (Pócs & Bernecker 2009). BASIONYM: *Aphanolejeunea costaricensis* Bern.-Lück., *Nova Hedwigia* 66: 164, 1998 (Bernecker-Lücking 1998).
- Cololejeunea crenata* (A.Evans) Pócs, *Polish Bot. J.* 54: 5, 2009 (Pócs & Bernecker 2009). BASIONYM: *Aphanolejeunea crenata* A.Evans, *Bull. Torrey Bot. Club* 38: 276, 1911 (Evans 1911).
- Cololejeunea cubensis* Pócs, *Polish Bot. J.* 54: 5, 2009 (Pócs & Bernecker 2009). NOM. NOV. PRO *Aphanolejeunea evansii* Herzog, *Beih. Bot. Centralbl.* 61: 583, 1942 (Herzog 1942). BLOCKING NAME: *Cololejeunea evansii* Tixier, *Candollea* 46: 271, 1991 (Tixier 1991).
- Cololejeunea epiphylla* G.Asthana et A.Shukla, *Cryptog. Bryol.* 31: 218, 2010. TYPE: “India, Karnataka, Shimoga, Megarvalli (18 km from Agumbe), alt. ca 650 m, epiphyllous, 10 November, 2006, *G. Asthana & party, 19762/06* (LWU)” (Asthana & Shukla 2010).
- Cololejeunea erostrata* (Herzog) Bern.-Lück. et Pócs, *Polish Bot. J.* 54: 5, 2009 (Pócs & Bernecker 2009). BASIONYM: *Physocolea erostrata* Herzog, *Beih. Bot. Centralbl.* 61: 582, 1942 (Herzog 1942).
- Cololejeunea grossepapillosa* (Horik.) N.Kitag., *Hikobia, suppl.* 1: 68, 1981 (Kitagawa 1981). BASIONYM: *Aphanolejeunea grossepapillosa* Horik., *J. Sci. Hiroshima Univ. Ser. B, Div. 2, Bot.* 1: 92, 1931 (Horikawa 1931). NOTE: Also combined by Pócs in *Polish Bot. J.* 54: 5. 2009 (Pócs & Bernecker 2009).

- Cololejeunea iwatsukiana*** (Pócs) Pócs, *Polish Bot. J.* 54: 6, 2009 (Pócs & Bernecker 2009). BASIONYM: *Aphanolejeunea iwatsukiana* Pócs, *Hikobia* 11: 457, 1994 (Pócs 1994).
- Cololejeunea jovetastiana*** (Pócs) Pócs, *Polish Bot. J.* 54: 6, 2009 (Pócs & Bernecker 2009). BASIONYM: *Aphanolejeunea jovetastiana* Pócs, *Cryptog. Bryol. Lichénol.* 5: 251, 1984 (Pócs 1984).
- Cololejeunea koponenii*** (Pócs) Pócs, *Polish Bot. J.* 54: 6, 2009 (Pócs & Bernecker 2009). BASIONYM: *Aphanolejeunea koponenii* Pócs, *Acta Bot. Fenn.* 165: 91, 1999 (Pócs & Piippo 1999).
- \*\* ***Cololejeunea lichenyae*** M.Wigginton, *Trop. Bryol.* 20: 85, 2001, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: MALAWI, Mt. Mulanje, in the vicinity of the Nessa path, south of Lichenya: 7429, 7529, 1800-1820 m, Porley 271h, 279d; Hodgetts 2554hh, 2558a, 2569f (Wigginton 2001). NOTE: Later validated by Wigginton *et al.* (2007).
- Cololejeunea lisowskii*** (Pócs) Pócs, *Polish Bot. J.* 54: 6, 2009 (Pócs & Bernecker 2009). BASIONYM: *Aphanolejeunea lisowskii* Pócs, *Cryptog. Bryol. Lichénol.* 5: 259, 1984 (Pócs 1984).
- Cololejeunea microscopica* var. *exigua*** (A.Evans) Pócs, *Mem. New York Bot. Gard.* 76 (4): 73, 2009 (Gradstein & Ilkiu-Borges 2009). BASIONYM: *Aphanolejeunea exigua* A.Evans, *Bull. Torrey Bot. Club* 38: 273, 1911 (Evans 1911).
- Cololejeunea minuscula*** Pócs, *Polish Bot. J.* 54: 7, 2009 (Pócs & Bernecker 2009). NOM. NOV. PRO *Aphanolejeunea minuta* R.M.Schust., *Hepat. Anthocerotae N. Amer.* 4: 1310, 1980 (Schuster 1980a). NOTE: Blocking name is *Cololejeunea minuta* Steph., *Bull. Herb. Boissier* 5: 79, 1897 (Stephani 1897a).
- Cololejeunea moralesiae*** (Bern.-Lück.) Bern.-Lück. et Pócs, *Polish Bot. J.* 54: 7, 2009 (Pócs & Bernecker 2009). BASIONYM: *Aphanolejeunea moralesiae* Bern.-Lück., *Nova Hedwigia* 66: 166, 1998 (Bernecker-Lücking 1998).
- Cololejeunea morobensis*** (Pócs) Pócs, *Polish Bot. J.* 54: 7, 2009 (Pócs & Bernecker 2009). BASIONYM: *Aphanolejeunea morobensis* Pócs, *Ann. Bot. Fenn.* 31: 180, 1994 (Pócs *et al.* 1994).
- Cololejeunea norrisii*** (Pócs) Pócs, *Polish Bot. J.* 54: 7, 2009 (Pócs & Bernecker 2009). BASIONYM: *Aphanolejeunea norrisii* Pócs, *Acta Bot. Fenn.* 165: 95, 1999 (Pócs & Piippo 1999).
- Cololejeunea papillosa*** (K.I.Goebel) Mizut., *J. Hattori Bot. Lab.* 29: 156, 1966 (Mizutani 1966). BASIONYM: *Physocolea papillosa* K.I.Goebel, *Ann. Jard. Bot. Buitenzorg* 39: 39, 1928 (Goebel 1928). NOTE: Also combined by Bern.-Lück. et Pócs in *Cryptog., Bryol.* 29: 234, 2008 (Dauphin *et al.* 2008).
- Cololejeunea paucifolia*** (Spruce) Bern.-Lück. et Pócs, *Polish Bot. J.* 54: 8, 2009 (Pócs & Bernecker 2009). BASIONYM: *Lejeunea paucifolia* Spruce, *Trans. & Proc. Bot. Soc. Edinburgh* 15: 250, 1884 (Spruce 1884).
- Cololejeunea sicaefolia*** (Gottsche ex Steph.) Pócs et Bern.-Lück., *Polish Bot. J.* 54: 8, 2009 (Pócs & Bernecker 2009). BASIONYM: *Lejeunea sicaefolia* Gottsche ex Steph., *Hedwigia* 27: 290, 1888 (Stephani 1888).
- Cololejeunea sicaefolia* subsp. *jamaicensis*** (R.M.Schust.) Bern.-Lück. et Pócs, *Polish Bot. J.* 54: 8, 2009 (Pócs & Bernecker 2009). BASIONYM: *Aphanolejeunea jamaicensis* R.M.Schust., *Phytologia* 45: 434, 1980 (Schuster 1980b).
- Cololejeunea sicaefolia*** (Gottsche ex Steph.) Pócs et Bern.-Lück. **subsp. *sicaefolia***, created by *Cololejeunea sicaefolia* subsp. *jamaicensis* (R.M.Schust.) Bern.-Lück. et Pócs, *Polish Bot. J.* 54: 8, 2009 (Pócs & Bernecker 2009).
- Cololejeunea thiersiae*** (Pócs) Pócs, *Polish Bot. J.* 54: 9, 2009 (Pócs & Bernecker 2009). BASIONYM: *Aphanolejeunea thiersiae* Pócs, *Hikobia* 11: 459, 1994 (Pócs 1994).
- \* ***Cololejeunea verrucosa*** (Ast) Pócs, *Mem. New York Bot. Gard.* 76 (4): 78, 2009, *nom. illeg.* Art. 53.1; *hom. illeg.* [non Steph. 1895] (Gradstein & Ilkiu-Borges 2009). BASIONYM: *Aphanolejeunea verrucosa* Ast, *Rev. Bryol. Lichénol.* 16: 25, 1947 [1948] (Jovet-Ast 1948). BLOCKING NAME: *Cololejeunea verrucosa* Steph., *Hedwigia* 34: 253, 1895 (Stephani 1895b).
- Cololejeunea winkleri*** (M.I.Morales et Bern.-Lück.) Pócs, *Mem. New York Bot. Gard.* 76 (4): 78, 2009 (Gradstein & Ilkiu-Borges 2009). BASIONYM: *Aphanolejeunea winkleri* M.I.Morales et Bern.-Lück., *Nova Hedwigia* 60: 120, 1995 (Morales & Lücking 1995).

- Cololejeunea yipii*** R.L.Zhu, *Beih. Nova Hedwigia* 121: 346, 2001. HOLOTYPE: CHINA. Yunnan. Gongshan, Dulongjiang, between Qinlangdang and Intersection (Jiebei) no. 41, 1240 m, epiphyllous, *M. Zhang* 2282, HSNU; isotype in IFP (Zhu & So 2001).
- Corsiniales** C.Gao, Y.H.Wu et W.Li (order), *Genera Hepaticopsida Anthocerotopsida Sinicorum*: 96, 2010 (Gao *et al.* 2010). NOTE: Automatically typified (Art. 16.1.a) by Corsiniaceae Engler.
- Cuspidatula flaccida*** (Steph.) K.Feldberg, Váňa, Hentschel et Heinrichs, *Cryptog. Bryol.* 31: 142, 2010 (Feldberg *et al.* 2010). BASIONYM: *Anastrophyllum flaccidum* Steph., *Sp. Hepat. (Stephani)* 6: 105, 1917 (Stephani 1917b).
- Cuspidatula kirkii*** (Steph.) K.Feldberg, Váňa, Hentschel et Heinrichs, *Cryptog. Bryol.* 31: 142, 2010 (Feldberg *et al.* 2010). BASIONYM: *Jamesoniella kirkii* Steph., *Hedwigia* 34: 47, 1895 (Stephani 1895a).
- Cyathodiales** C.Gao, Y.H.Wu et W.Li (order), *Genera Hepaticopsida Anthocerotopsida Sinicorum*: 578, 2010 (Gao *et al.* 2010). NOTE: Automatically typified (Art. 16.1.a) by Cyathodiaceae Müll.Frib.
- Dendroceros herasii*** M.Infante, *J. Bryol.* 32: 285, 2010. TYPE: “Type: Guinea Ecuatorial, Annobón, Mte. Quioveo. 1°26'12"S, 5°37'58"E, 590 m. Bosque neblinoso de *Schefflera mannii* (Hook.f.) Harms en la cumbre, muy musgoso. Colgante en liana fina. Corticícola. Leg. Marta Infante & Patxi Heras 27 October 2000. Holotype: VIT 25366 (1295/00). Paratypes: VIT 25311 (1240/00), VIT 25352 (1281/00), UPS (collector number 422–423), UPS (collector number 447)” (Infante 2010).
- \*\* ***Di cladolejeunea rotundifolia*** (Mitt.) M.E.Reiner ex León-Yáñez, Gradst. et Wegner, *Hepat. Anthoc. Ecuador*: 35, 2006, *nom. inval.* Art. 33.4; basionym not cited (León-Yáñez *et al.* 2006): BASIONYM: *Lejeunea rotundifolia* Mitt., *Hooker's J. Bot. Kew Gard. Misc.* 3: 359, 1851 (Mitten 1851).
- \*\* ***Diplasiolejeunea costaricensis*** J.Eggers, *Trop. Bryol.* 20: 114, 2001, *nom. inval.* Art. 32.1.d; no description. ORIGINAL MATERIAL: COSTA RICA, Alajuela, Cordillera Central, between Vara Blanca and Poas Volcano, pastures with scattered trees at 1970 m, epiphyllous, accompanied by *Diplasiolejeunea alata*, *Microlejeunea bullata*, *Lejeunea flava*, *D. inchoata*, *Metzgeria* sp. and others, 31 Jan 1985, J. Eggers CR 1/200 (EGR, hb. Eggers) (Eggers 2001).
- Drepanolejeunea herzogii*** R.L.Zhu et M.L.So, *Beih. Nova Hedwigia* 121: 181, 2001 (Zhu & So 2001). NOM. NOV. PRO *Strepsilejeunea ocellata* Herzog, *Memoranda Soc. Fauna Fl. Fenn.* 26: 57, 1950 [1951] (Herzog 1951a). BLOCKING NAME: *Drepanolejeunea ocellata* Steph., *Sp. Hepat. (Stephani)*: 349, 1913 (Stephani 1913).
- Drepanolejeunea inchoata* var. *palmicola*** Pócs, *Acta Bot. Hung.* 51: 381, 2009. TYPE: “[Dominican Republic] La Vega. Cordillera Central. S of Arroyo Prieto (A. Frio) village, in Arroyo Aguacate valley (territory called “La Joya de Paulina”). Epiphyllous in undisturbed rainforest on palm leaflets, 1,100–1,200 m altitude, N 19° 00.22'–30', W 70° 31.90'–32.10', coll.: Pócs 03172/BO (holotype of var.: EGR; Isotypes: JBSD, Herbarium Schäfer-Verwimp, G)” (Schäfer-Verwimp & Pócs 2009).
- Drepanolejeunea thwaitesiana* var. *zhengii*** R.L.Zhu, *Beih. Nova Hedwigia* 121: 197, 2001. HOLOTYPE: CHINA, Hainan. Jianfengling, 1200 m, on leaves, *P.-Z. Zheng* 503, HSNU; isotype in IBSC (Zhu & So 2001).
- Fossombronia marshii*** J.R.Bray et Stotler, *Phytologia* 92: 230, 2010. TYPE: “HOLOTYPE: U.S.A. ARKANSAS. Columbia County, Ebenezer Church Cemetery, 33° 35' N, 93° 17' W, on sandy soil in an open mowed grassy area, 10 March 1997, *Stotler & Crandall-Stotler* 3940 (ABSH); PARATYPES: ARKANSAS. Columbia County, ca 1.8 mi W of Atlanta on Hwy 98, S side of Highway, 33° 12' N, 93° 05' W, on fine sandy loam along power line cut, 24 Nov. 1996, *Bray* 297 (ABSH); 22 Nov. 1998, *Bray* 327 (ABSH)” (Stotler *et al.* 2010).
- Frullania* sect. *Inconditum*** von Konrat, Hentschel et Heinrichs, *Nova Hedwigia* 91: 480, 2010. TYPE: *Frullania hodgsoniae* von Konrat, Braggins, Hentschel et Heinrichs (von Konrat *et al.* 2010c).
- \*\* ***Frullania brasiliensis* f. *spinuliflora*** Herzog ex G.Dauphin, *Trop. Bryol.* 26: 159, 2005, *nom. inval.* Art. 32.1.d; no description. ORIGINAL MATERIAL: COSTA RICA, Cartago, Turrialba, Volcán Turrialba, P. Standley 34963, 34977 (Dauphin 2005). NOTE: Probably error for *Frullania robusta* f. *spinuliflora* Herzog (Herzog 1951b: 129).

- Frullania colliculosa*** von Konrat, Braggins, Hentschel et Heinrichs, *Nova Hedwigia* 91: 494, 2010. TYPE: “HOLOTYPE: New Zealand, SOUTH ISLAND, Kahurangi National Park, ca. 200 m below summit of Mt Arthur from its ridge approach above Horseshoe Basin. Communities of subalpine shrubs, cushion vegetation, and rocky herbfields, including *Dracophyllum*, *Hebe albicans*-*Aciphylla aurea*-*Chionochloa* herblands, on bark of 0.5 m. tall *Dracophyllum latifolium*, protected deep within its protected branches towards base, 41°13'S 172°41.5'E, c. 1600 m, von Konrat 99/405, 20 Dec 1999. AK; isotypes CHR, F” (von Konrat *et al.* 2010c).
- † ***Frullania cretacea*** Hentschel, A.R.Schmidt et Heinrichs, *Cryptog. Bryol.* 30: 326, 2009. TYPE: “amber inclusion in sample AMNH B-011 from Myanmar” (Hentschel *et al.* 2009). NOTE: Upper Albion (mid Cretaceous, 100 my) amber from Burma.
- Frullania hodgsoniae*** von Konrat, Braggins, Hentschel et Heinrichs, *Nova Hedwigia* 91: 492, 2010 (von Konrat *et al.* 2010c). STAT. ET NOM. NOV. PRO *Frullania aterrima* var. *lepida* E.A.Hodgs., *Trans. & Proc. Roy. Soc. New Zealand* 77: 386, 1949 (Hodgson 1949).
- \*\* ***Frullania mesophila*** Gradst., *Hepat. Anthoc. Ecuador*: 41, 2006, *nom. inval.* Art. 34.1.c; publ. in syn. [sub *Frullania gradsteinii* Yuzawa, Mues et S.Hatt. 1987] (León-Yáñez *et al.* 2006).
- Frullania teneriffae* f. *explanata*** (Macvicar) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 601, 2002 (Damsholt 2002). BASIONYM: *Frullania germana* f. *explanata* Macvicar, *Stud. Handb. Brit. Hep.*: 437, 1912 (Macvicar 1912).
- Gymnomitrium asperulatum*** R.M.Schust. ex Váňa, *Egri Tanárképző Föisk. Tud. Közlem.* 24: 114, 2003. HOLOTYPE: “Estado Mérida, Venezuela: Sierra Nevada de Mérida, ca. 4160 m, above small *Polylepis* bosque, near the penultimate station of the Teleferico (RMS 76-1429)”, hb. Schuster, isotype in PRC (Váňa 2003).
- Gymnomitrium bolivianum*** (Steph.) Váňa, *Novon* 20: 225, 2010 (Váňa *et al.* 2010b). BASIONYM: *Anastrophyllum bolivianum* Steph., *Herzog, Biblioth. Bot.* 87: 186, 1916 (Stephani 1916b).
- Gymnomitrium minutulum*** (Hässel) Váňa, *Novon* 20: 225, 2010 (Váňa *et al.* 2010b). BASIONYM: *Marsupella minutula* Hässel, *J. Bryol.* 11: 123, 1980 (Hässel 1980).
- Gymnomitrium nigrum*** (Grolle et Váňa) Váňa, *Novon* 20: 225, 2010 (Váňa *et al.* 2010b). BASIONYM: *Marsupella nigra* Grolle et Váňa, *J. Hattori Bot. Lab.* 40: 186, 1976 (Váňa 1976).
- Gymnomitrium subintegrum*** (S.W.Arnell) Váňa, *Novon* 20: 225, 2010 (Váňa *et al.* 2010b). BASIONYM: *Marsupella subintegra* S.W.Arnell, *Ark. Bot.* 3 (16): 545, 1956 (Arnell 1956).
- Harpalejeunea molleri* subsp. *integra*** (R.M.Schust.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 615, 2002 (Damsholt 2002). BASIONYM: *Harpalejeunea ovata* subsp. *integra* R.M.Schust., *J. Elisha Mitchell Sci. Soc.* 83: 199, 1967 (Schuster 1967).
- \*\* ***Harpalejeunea molleri* subsp. *subacuta*** (A.Evans) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 615, 2002, *nom. inval.* Art. 33.4; basionym not cited (Damsholt 2002). BASIONYM: *Harpalejeunea subacuta* A.Evans, *Bull. Torrey Bot. Club* 30: 547, 1903 (Evans 1903).
- \*\* ***Herbertus gymnocoloides*** X.Fu, *Flora Yunnanica* 17: 6, 2000, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: [in Chinese] (Gao & Cao 2000).
- \*\* ***Herbertus haidensis*** W.B.Schofield ex W.S.Hong, *Lindbergia* 32: 70, 2007 [2008] *nom. inval.* Art. 32.1.d; no description. ORIGINAL MATERIAL: Queen Charlotte Islands (Hong 2008).
- Herbertus stramineus* var. *alpinus*** (Macvicar) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 42, 2002, ”*alpina*” (Damsholt 2002). BASIONYM: *Herbertus aduncus* var. *alpinus* Macvicar, *Stud. Handb. Brit. Hep.*: 340, 1912 (Macvicar 1912).
- Herbertus udarii*** D.Kumar et N.Manocha, *Geophytology* 29: 105, 2000. HOLOTYPE: India. West Darjeeling, Ray Ville Road. R. Udar, S.C. Srivastava & D. Kumar s.n., Dec 31, 1969 (Holotype: LWU-1400/69) (Kumar & Manocha 2000),
- Herzogianthaceae** Stotler et Crand.-Stotl. (fam.), *Bryoph. Biol. ed.* 2: 54, 2009. TYPE: *Herzogianthus* R.M.Schust. (Crandall-Stotler *et al.* 2009b).

- Heterogemma*** (Jørg.) Konstant. et Vilnet, *Arctoa* 18: 67, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Lophozia* sect. *Heterogemmae* Jørg., *Bergens Mus. Skr. n.s.* 16: 146, 1934 (Jørgensen 1934).
- Heterogemma capitata*** (Hook.) Konstant. et Vilnet, *Arctoa* 18: 67, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Jungermannia capitata* Hook., *Brit. Jungerm.*: pl. 80, 1816 (Hooker 1816).
- Heterogemma laxa*** (Lindb.) Konstant. et Vilnet, *Arctoa* 18: 67, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Jungermannia laxa* Lindb., *Acta Soc. Sci. Fenn.* 10: 539, 1874 [1875] (Lindberg 1875).
- Heteroscyphus echinellus*** (Lindenb. et Gottsche) J.J.Engel et Xiao L.He, *Bryologist* 113: 155, 2010 (Engel & He 2010). BASIONYM: *Lophocolea echinella* Lindenb. et Gottsche, *Syn. Hepat.* 5: 703, 1847 (Gottsche et al. 1847).
- Heteroscyphus echinellus*** (Lindenb. et Gottsche) J.J.Engel et Xiao L.He **var. *echinellus***, created by *Heteroscyphus echinellus* var. *hyalinus* J.J.Engel, *Bryologist* 113: 161, 2010 (Engel & He 2010).
- Heteroscyphus echinellus* var. *hyalinus*** J.J.Engel, *Bryologist* 113: 161, 2010. TYPE: “New Zealand, North Is.: North Auckland Prov., Hewad, SE of Whangarei, 390 m, *Engel 22240* (F, holotype; AK, isotype)” (Engel & He 2010).
- \*\* ***Hyalolepidozia bicuspadata* var. *autoica*** R.M.Schust., *Beih. Nova Hedwigia* 118: 387, 2000, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: RMS 69-9436, Puerto Alert, Chile (Schuster 2000).
- \*\* **Hygrobiellaceae** Konstant. et Vilnet (fam.), *Arctoa* 18: 65, 2009 [2010], *nom. inval.* Art. 33.4; basionym not cited (Konstantinova & Vilnet 2010). BASED ON: Hygrobiellae Jørg. (tr.), *Bergens Mus. Skr. n.s.* 16: 257, 1934 (Jørgensen 1934).
- Isotachis chinensis*** C.Gao, T.Cao et J.Sun, *Bryologist* 105: 694, 2002 [2003]. HOLOTYPE: CHINA, Guangxi. Xin An County, Miaoer Mt., elev. 3,200, on rock, *Gao & Zhang 1317*, 14 Sept. 1974 (IFSBH) (Gao et al. 2003a).
- † ***Isotachis simonesii*** Fittip., *Rev. Inst. Geol. São Paulo* 23: 20, 2002. HOLOTYPE: Brasil, São Paulo, Itaquaquecetuba, Porto de area no 1 da Itaquareia GP/3E-S189 [Cenozoic] (Fittipaldi 2002).
- Jungermannia exsertifolia* var. *gracilis*** (C.E.O.Jensen) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 211, 2002 (Damsholt 2002). BASIONYM: *Aplozia cordifolia* var. *gracilis* C.E.O.Jensen, *Danmarks Mosser*: 94, 1915, “*Haplozia*” (Jensen 1915).
- \*\* ***Jungermannia gracillima* var. *arctica*** Damsh., *Lindbergia* 33: 102, 2010, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: “s. loc. spec.” (Damsholt 2010).
- Jungermannia gracillima* var. *crenulata*** (Mitt.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 224, 2002 (Damsholt 2002). BASIONYM: *Solenostoma crenulatum* Mitt., *J. Linn. Soc., Bot.* 8: 51, 1865 (Mitten 1865). NOTE: Damsholt (2002) cites *Jungermannia crenulata* Sm. as basionym. However that is an illegitimate homonym and Mitten’s name must be considered as a *nomen novum* for it and thus the basionym for the taxon (cf. Art. 58.1). We do not think this error makes the name invalid or illegitimate.
- \*\* ***Jungermannia gracillima* f. *subaquatica*** (Schiffn.) Damsh., *Distr. maps Bryoph. Anthoc. Faeroes*: 12, 2000, *nom. inval.* Art. 33.4; basionym not cited (Damsholt 2000). BASIONYM: *Nardia crenulata* var. *subaquatica* Schiffn., *Österr. Bot. Z.* 54: 132, 1904 (Schiffner 1904).
- Jungermannia konstantinovae*** Bakalin et Vilnet, *Arctoa* 18: 161, 2009 [2010]. TYPE: “the Russian Far East, Primorskij Territory, Nakhodka City area, Sestra Mt. (42°49’40”N 132°59’40”E), 328 m alt. Wet calcareous cliffs in deep ravine, surrounded scattered oak and *Rhododendron* shrubs, leg. 17 October 2008 Bakalin (VLA, P-69-16-08, isotype in KPABG 112870)” (Bakalin & Vilnet 2010).
- Jungermannia lanceolata* var. *atrovirens*** (Dumort.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 201, 2002 (Damsholt 2002). BASIONYM: *Jungermannia atrovirens* Dumort., *Syll. Jungerm. Europ.*: 51, 1831 (Dumortier 1831).
- Jungermannia obovata* subsp. *minor*** (Carrington) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 232, 2002 (Damsholt 2002). BASIONYM: *Nardia obovata* β *minor* Carrington, *Brit. Hep.* 1: 33, 1874 (Carrington 1874).

- Jungermannia sphaerocarpa* subsp. **purpurea** (R.M.Schust. et Damsh.) Damsh., *Lindbergia* 33: 102, 2010 (Damsholt 2010). BASIONYM: *Solenostoma pyriformum* subsp. *purpureum* R.M.Schust. et Damsh., *Meddel. Grønland* 199 (1): 176, 1974 (Schuster & Damsholt 1974).
- Jungermannia sphaerocarpa* Hook. subsp. **sphaerocarpa**, created by *Jungermannia sphaerocarpa* subsp. *purpurea* (R.M.Schust. et Damsh.) Damsh., *Lindbergia* 33: 102, 2010 (Damsholt 2010).
- Jungermannia subulata* var. **leiantha** (Grolle) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 200, 2002 (Damsholt 2002). BASIONYM: *Jungermannia leiantha* Grolle, *Taxon* 15: 187, 1966 (Grolle 1966b).
- Kurzia caduciloba* R.M.Schust., *Beih. Nova Hedwigia* 118: 273, 2000. HOLOTYPE: NEW CALEDONIA, Pic Buse, RMS 52771, F (Schuster 2000).
- \*\* *Kurzia calcarata* var. **temnomoides** (R.M.Schust.) R.M.Schust., *Beih. Nova Hedwigia* 118: 258, 2000, *nom. inval.* Art. 33.4; basionym not cited (Schuster 2000). BASIONYM: *Kurzia temnomoides* R.M.Schust., *J. Hattori Bot. Lab.* 48: 371, 1980 (Schuster 1980c).
- \*\* *Kurzia rigidissima* R.M.Schust., *Beih. Nova Hedwigia* 118: 270, 2000, *nom. inval.* Art. 32.1.d; no description. ORIGINAL MATERIAL: Westland, New Zealand [Pakahi, 4 km N. of Big Totara R., RMS 841045a (Schuster 2000).
- Kurzia trilobata* (R.M.Schust.) R.M.Schust., *Beih. Nova Hedwigia* 118: 270, 2000 (Schuster 2000). BASIONYM: *Kurzia quadriseta* var. *trilobata* R.M.Schust., *J. Hattori Bot. Lab.* 48: 363, 1980 (Schuster 1980c).
- Leiocolea bantriensis* (Hook.) Jørg. subsp. **bantriensis**, created by *Leiocolea bantriensis* subsp. *wallfischii* Ștefănuț, *Hornwort Liverwort Romania*: 21, 2008 (Ștefănuț 2008).
- Leiocolea bantriensis* subsp. **wallfischii** Ștefănuț, *Hornwort Liverwort Romania*: 21, 2008. TYPE: “Romania, Southern Carpathians, Bucegi Massif, Lăptici Peatbog, 1470 m alt., coord. 45°22'26"N / 25°26'23"E, 28 July 2005, leg. Ștefănuț S., BUCA B5209 - holotype” (Ștefănuț 2008).
- \*\* *Leiocolea collaris* var. **libertae** (Huebener) L.Söderstr., *Prel. Distr. Maps Norden I. Hep. Anthocerot.* (ed. 2): 25, 2002, *nom. inval.* Art. 33.4; basionym not cited (Söderström et al. 2002). BASIONYM: *Jungermannia libertae* Huebener, *Flora* 15: 305, 1832 (Hübener 1832).
- Leiocolea mayebarae* (S.Hatt.) Furuki et Mizut., *Bryol. Res.* 8: 310, 2004 (Furuki & Mizutani 2004). BASIONYM: *Cephalozia mayebarae* S.Hatt., *J. Hattori Bot. Lab.* 3: 37, 1948 [1950] (Hattori 1950b).
- Leiocolea morrisoncola* (Horik.) Furuki et Mizut., *Bryol. Res.* 8: 310, 2004 (Furuki & Mizutani 2004). BASIONYM: *Lophozia morrisoncola* Horik., *J. Sci. Hiroshima Univ., Ser. B., Div. 2, Bot.* 2: 150, 1934 (Horikawa 1934).
- Leiomitra breviseta* (Steph.) R.M.Schust., *Beih. Nova Hedwigia* 118: 152, 2000 (Schuster 2000). BASIONYM: *Trichocolea breviseta* Steph., *Sp. Hepat. (Stephani)* 4: 60, 1909 (Stephani 1909).
- \*\* *Leiomitra robusta* (Steph.) R.M.Schust., *Beih. Nova Hedwigia* 118: 147, 2000, *nom. inval.* Art. 33.4; basionym not cited (Schuster 2000). BASIONYM: *Trichocolea robusta* Steph., *Sp. Hepat. (Stephani)* 4: 58, 1909 (Stephani 1909).
- \*\* *Lejeunea caulicalyx* var. **microgyna** (R.M.Schust.) R.M.Schust., *J. Hattori Bot. Lab.* 91: 169, 2001, *nom. inval.* Art. 32.1.d; basionym not valid (Schuster 2001). BASIONYM: *Lejeunea bermudiana* subsp. *microgyna* R.M.Schust., *Hepat. Anthocerotae N. Amer.* 4: 1111, 1980, *nom. inval.* Art. 36.1; no Latin description (Schuster 1980a).
- Lejeunea colensoana* (Steph.) M.A.M.Renner, *Austral. Syst. Bot.* 23: 455, 2010 (Renner et al. 2010a). BASIONYM: *Taxilejeunea colensoana* Steph., *Hedwigia* 35: 132, 1896 (Stephani 1896).
- \*\* *Lejeunea contractiloba* R.M.Schust. ex M.E.Reiner et Goda, *J. Hattori Bot. Lab.* 89: 51, 2000 *nom. inval.* Art. 32.1.d; no description (Reiner-Drehwald & Goda 2000). ORIGINAL MATERIAL: “Antillean plant”.
- Lejeunea deplanata* var. **cuspidata** (Steph.) M.E.Reiner, *Nova Hedwigia* 91: 529, 2010 (Reiner-Drehwald 2010). BASIONYM: *Pycnolejeunea cuspidata* Steph., *Sp. Hepat. (Stephani)* 5: 605, 1914 (Stephani 1914).
- Lejeunea deplanata* Nees var. **deplanata**, created by *Lejeunea deplanata* var. *cuspidata* (Steph.) M.E.Reiner, *Nova Hedwigia* 91: 529, 2010 (Reiner-Drehwald 2010).

- \*\* *Lejeunea evansiana* (R.M.Schust.) Schäf.-Verw., *Candollea* 56: 64, 2001, *nom. inval.* Art. 32.1.d; basionym not valid (Schäfer-Verwimp 2001). BASYONYM: *Rectolejeunea evansiana* R.M.Schust., *Hepat. Anthocerotae N. Amer.* 4: 1127, 1980, *nom. inval.* Art. 37.2; based on more than one gathering (Schuster 1980a).
- Lejeunea halei* subsp. *africana* Pócs, *J. Bryol.* 29: 89, 2007. TYPE: “Equatorial Guinea. Bioko Island, Hochland von Moca, Wälder am Südufer des Lago Biao, 1750-1800 m, 03°21'N, 08°37'E, F. Müller B999/f, 19.2.2002. HOLOTYPE: DR. ISOTYPE: EGR, GOET” (Müller & Pócs 2007).
- Lejeunea halei* H.Rob. subsp. *halei*, created by *Lejeunea halei* subsp. *africana* Pócs, *J. Bryol.* 29: 89, 2007 (Müller & Pócs 2007).
- \*\* *Lejeunea halei* var. *africana* Pócs ex von Konrat, L.Söderstr., A.Hagborg, Crosby et J.J.Engel, *Cryptog., Bryol.* 31: 14, 2010, *nom. inval.* Art. 32.1.d; no description (von Konrat *et al.* 2010b). BASED ON: *Lejeunea halei* subsp. *africana* Pócs, *J. Bryol.* 29: 89, 2007 (Müller & Pócs 2007). NOTE: Erroneously published as a variety instead of a subspecies.
- \*\* *Lejeunea hodgsoniana* Grolle ex M.A.M.Renner, E.A.Br. et G.M.Wardle, *Austral. Syst. Bot.* 23: 452, 2010, *nom. inval.* Art. 32.1.d; no description. ORIGINAL MATERIAL: “s. loc. spec. [New Zealand]” (Renner *et al.* 2010a).
- Lejeunea hui* R.L.Zhu, *Beih. Nova Hedwigia* 121: 134, 2001. HOLOTYPE: CHINA, Yunnan. Gongshan, Dulongjiang, between Maku and Bapo, 1400 m, 7 Aug. 1982, D.-C. Zhang 1725, HSNU (isotypes in IFP & KUN) (Zhu & So 2001).
- Lejeunea kuerschneriana* Pócs, *Beih. Nova Hedwigia* 138: 100, 2010. TYPE: “Kenya: Rift Valley Region, Elgeyo Marakwet District. S range of Elgeyo Escarpment. Tumeiyo Forest along the Eldoret – Eldama Ravine road, 2 km S of Kapkitoni village. Degraded (grazed) montane rainforest dominated by *Podocarpus latifolius* and *Macaranga kilimandscharica*, at 2500 m altitude. 00° 13' 55" N, 24° 33' 36" E, T. Pócs with M. S. Chuah-Petiot and with Nairobi University students, 03017/P, 6 Feb 2003. (Holotype EGR, Isotypes EA, GOET)” (Pócs 2010b).
- Lejeunea longilobula* Pócs, *Beih. Nova Hedwigia* 138: 112, 2010 (Pócs 2010b). NOM. NOV. PRO *Lejeunea halei* subsp. *africana* Pócs, *J. Bryol.* 29: 89, 2007 (Müller & Pócs 2007). BLOCKING NAME: *Lejeunea africana* (Steph.) Steph., *Hedwigia* 30: IX, 1891 (Stephani 1891b).
- \*\* *Lejeunea longilobulata* E.W.Jones ex M.Wigginton, *Trop. Bryol.* 20: 88, 2001, *nom. inval.* Art. 32.1.d; no description. ORIGINAL MATERIAL: MALAWI, Mt. Mulanje, Upper Ruo Gorge, 8237, epiphyll on tree-fern, 1900 m, Porley 111b. Thuchila, 7840, epiphyll on forest shrub and sapling, 1730 m, Wigginton 1489g, Hodgetts 2389d (Wigginton 2001).
- Lejeunea masoalae* Pócs, *Beih. Nova Hedwigia* 138: 103, 2010. TYPE: “Madagascar: W side of Masoala Peninsula above Antongil Bay. Montane rainforest on the summit ridge SE of Ambanizana village, at 660–720 m altitude, 15°37' S, 50°05' E. coll. T. Pócs 9448/AN, 9 Sep. 1994 (Holotype: EGR, isotypes: MO, TANA)” (Pócs 2010b).
- \*\* *Lejeunea meridensis* R.M.Schust. ex M.E.Reiner et Goda, *J. Hattori Bot. Lab.* 89: 51, 2000 *nom. inval.* Art. 32.1.d; no description (Reiner-Drehwald & Goda 2000), “*meridense*”. ORIGINAL MATERIAL: “Venezuela”.
- Lejeunea oracola* M.A.M.Renner, *Austral. Syst. Bot.* 23: 448, 2010. TYPE: “NEW ZEALAND. North Island, Maungataniwha Ecological District, Wainui River catchment, Iwitaua Road, on trunk of *Kunzea* aff. *ericoides*, 100 m, M.A.M. Renner 2940, 5 July 2007 (holotype: AK299972; isotypes: CHR, F, NSW)” (Renner *et al.* 2010a).
- Lejeunea propagulifera* Gradst., *Phytotaxa* 9: 54, 2010 (Söderström *et al.* 2010a). NOM. NOV. PRO *Trachylejeunea schiffneri* Herzog, *Svensk Bot. Tidskr.* 42: 239, 1948 (Herzog 1948). BLOCKING NAME: *Lejeunea schiffneri* Steph. ex Schiffn., *Nova Acta. Acad. Caes. Leop.-Carol. German Nat. Cur.* 60: 233, 1893 (Schiffner 1893b).
- Lejeunea rhigophila* M.A.M.Renner, *Austral. Syst. Bot.* 23: 453, 2010. TYPE: “NEW ZEALAND. North

- Island, Pureora Ecological District, Waihaha Stream catchment, on *Coprosma propinqua*, 480 m, 8 July 2007, M.A.M. Renner 2993 (Holotype: AK300148, isotypes: CHR, F, NSW)” (Renner *et al.* 2010a).
- \*\* *Lejeunea subacuminata* R.M.Schust. ex M.E.Reiner et Goda, *J. Hattori Bot. Lab.* 89: 51, 2000 *nom. inval.* Art. 32.1.d; no description (Reiner-Drehwald & Goda 2000). ORIGINAL MATERIAL: Venezuela.
- \*\* *Lejeunea tachirensis* R.M.Schust. ex M.E.Reiner et Goda, *J. Hattori Bot. Lab.* 89: 51, 2000 *nom. inval.* Art. 32.1.d; no description (Reiner-Drehwald & Goda 2000), “*tachirensis*”. ORIGINAL MATERIAL: “Venezuela”.
- Lejeunea thallophora* (Eifrig) Gradst., *Phytotaxa* 9: 54, 2010 (Söderström *et al.* 2010a). BASIONYM: *Taxilejeunea thallophora* Eifrig, *Ann. Bryol.* 9: 99, 1936 [1937] (Eifrig 1937).
- Lejeunea vojtkoi* Pócs, *Beih. Nova Hedwigia* 138: 107, 2010. TYPE: “Madagascar: On decaying wood in montane rainforest, bordered by *Sphagnum* marshes on the hill with radio tower, 10 km N of Fianarantsoa, at 1230–1360 m altitude, 21°15' S, 47°14' E, coll. A. Vojtkó 9461/ AY, 22 Sept. 1994 (Holotype: EGR – microslide)” (Pócs 2010b).
- Lepidozia cupressina* var. *dissitifolia* (Jørg.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 450, 2002 (Damsholt 2002). BASIONYM: *Lepidozia pinnata* var. *dissitifolia* Jørg., *Bergens Mus. Skr. n.s.* 16: 302, 1934 (Jørgensen 1934).
- Leptolejeunea mirikana* M.Dey et D.K.Singh, *Taiwania* 55: 355, 2010. TYPE: “Holotype: India. Eastern Himalaya, West Bengal, Darjeeling district, near Mirik lake, ca 1700 m, 18. 01. 2005, D. Singh & M. Dey 36289 (CAL)” (Dey & Singh 2010).
- Leptolejeunea udarii* M.Dey et D.K.Singh, *Taiwania* 55: 359, 2010. TYPE: “Holotype: India. Eastern Himalaya, Sikkim, East district, Rolep, ca 1300 m, 30. 10. 2005, D. Singh 36711A (CAL)” (Dey & Singh 2010).
- Leptoscyphus* subgen. *Austroleptoscyphus* Vanderp., Schäf.-Verw. et D.G.Long, *Taxon* 59: 183, 2010. TYPE: *Leptoscyphus australis* (Taylor ex Gottsche, Lindenb. et Nees) R.M.Schust. (Vanderpoorten *et al.* 2010).
- Leptoscyphus* subgen. *Spinoscyphus* Vanderp., Schäf.-Verw. et D.G.Long, *Taxon* 59: 183, 2010. TYPE: *Leptoscyphus cleefii* Fulford (Vanderpoorten *et al.* 2010).
- Leptoscyphus gradsteinii* Vanderp., Schäf.-Verw. et D.G.Long, *Taxon* 59: 182, 2010. TYPE: “Holotype: Costa Rica, San José: Cerro de la Muerte, Reserva 3 de Junio and surroundings, alt. 2650–2800 m, on trunk in *Sphagnum* bog, 25 Sept. 1994, S.R. Gradstein & R. Mues 9694 (GOET!)” (Vanderpoorten *et al.* 2010).
- Leptoscyphus lambinonii* Vanderp., Schäf.-Verw. et D.G.Long, *Taxon* 59: 179, 2010. TYPE: “Holotype: Costa Rica, Cartago: Orosi valley, Tapanti National Park, primary rain forest, Sendero La Oropendola, epiphytic, ca. 600 m, 30 Dec. 1999, Schäfer-Verwimp & Holz SV/H-0342 (JE!; isotype, INB!)” (Vanderpoorten *et al.* 2010).
- Leptoscyphus porphyrius* subsp. *azoricus* (H.Buch et Perss.) Vanderp. et Heinrichs, *Taxon* 59: 181, 2010 (Vanderpoorten *et al.* 2010). BASIONYM: *Mylia azorica* H.Buch et Perss., *Commentat. Biol.* 8 (7): 7, 1941 (Buch & Persson 1941).
- Leptoscyphus porphyrius* (Nees) Grolle subsp. *porphyrius*, created by *Leptoscyphus porphyrius* subsp. *azoricus* (H.Buch et Perss.) Vanderp. et Heinrichs, *Taxon* 59: 181, 2010 (Vanderpoorten *et al.* 2010).
- Leptoscyphus sotiauxii* Vanderp., Schäf.-Verw. et D.G.Long, *Taxon* 59: 183, 2010. TYPE: “Holotype: Ecuador, Napo, Papallacta pass between Quito and Baeza, Reserva Ecologica Cayambe-Coca, Páramo de La Virgen northeast of pass height, on steep rocky slope, 4030 m, 15 Aug. 2004, A. Schäfer-Verwimp, J. Heinrichs, R.A. Wilson & S.O. Yandún 24282 (JE!; isotypes, PRC!, QCA!)” (Vanderpoorten *et al.* 2010).
- Lobatiriccardia coronopus* subsp. *australis* (R.M.Schust.) Nebel, Preussing, Schäf.-Verw. et D.Quandt, *Taxon* 59: 1434, 2010 (Preussing *et al.* 2010). BASIONYM: *Aneura lobata* subsp. *australis* R.M.Schust., *Phytologia* 56: 451, 1985 (Schuster 1985).
- Lobatiriccardia coronopus* (De Not. ex Steph.) Furuki subsp. *coronopus*, created by *Lobatiriccardia coronopus* subsp. *australis* (R.M.Schust.) Nebel, Preussing, Schäf.-Verw. et D.Quandt, *Taxon* 59: 1434, 2010 (Preussing *et al.* 2010).
- Lobatiriccardia oberwinkleri* Nebel, Preussing, Schäf.-Verw. et D.Quandt, *Taxon* 59: 1435, 2010. TYPE:



“Type: ECUADOR. Prov. Zamora-Chinchipec, road from Loja to Zamora, 20 km E of Loja, Río San Francisco valley, Reserva Biológica San Francisco, Quebrada 2, steep northern exposed slope S of station, 1850 m, ravine in upper mountain rainforest, on steepdripping rock face beside a small cascade, 10 Nov. 2005, *M. Preußing* MPE05009 (holotype, STU; isotype, QCA). Paratype: same locality as the type, *M. Nebel* & *M. Preußing* MNE06014, 17 Sept. 2006 (QCA, STU)” (Preussing *et al.* 2010).

***Lobatiriccardia verdoornioides*** Nebel, Preussing, Schäf.-Verw. et D.Quandt, *Taxon* 59: 1437, 2010. TYPE: “Type: ECUADOR. Cuenca, El Cajas, 3700 m, wet páramo-vegetation, in a bog on the bank of a small lake, embedded in angiosperm-cushions together with other bryophytes (*Riccardia* and *Campylopus* species), and rivulets, 27 Sept. 2006, *M. Nebel* & *M. Preußing* MNE06049 (holotype, STU; isotype, QCA). Paratypes: *ibid.* in the surrounding area, *M. Nebel* & *M. Preußing* MNE06051, MNE06052, MNE06054 (QCA, STU)” (Preussing *et al.* 2010).

\*\* ***Lopholejeunea inflata*** Steph. ex R.L.Zhu et Gradst., *Monogr. Syst. Bot. Missouri Bot. Gard.* 74: 86, 2005, *nom. inval.* Art. 32.1.d; no description. ORIGINAL MATERIAL: DOMINICA. *Elliott 1661*, G-23613 (Zhu & Gradstein 2005).

***Lopholejeunea sikkimensis* var. *tenuicostata*** Sushil K.Singh et D.K.Singh, *Bull. Bot. Surv. India* 47: 189, 2005. TYPE: “Type: India, Himachal Pradesh, Great Himalayan National Park (Kullu), Sainj Valley - On way from Bah - Lapah, ca 1800 m, 26 May 2002, *S.K. Singh* 99594-b (Holotype: CAL; Isotype: BSD).” (Singh & Singh 2005).

\*\* ***Lophozia aenigmatica*** R.M.Schust., *Beih. Nova Hedwigia* 119: 281, 2002, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: VENEZUELA: Sierra de Santo Domingo, 3750 m, RMS & L. Ruiz-Teran 76-904 (Schuster 2002).

***Lophozia alpestris* var. *libertae*** (Huebener) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 122, 2002 (Damsholt 2002). BASIONYM: *Jungermannia libertae* Huebener, *Flora* 15: 305, 1832 (Hübener 1832).

\*\* ***Lophozia brunnea*** R.M.Schust., *Beih. Nova Hedwigia* 119: 282, 2002, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: VENEZUELA: Páramo de Mucubaji, 3600 m, Sierra de Santo Domingo, 3750 m, RMS 76-836c (Schuster 2002).

***Lophozia fitzgeraldiae*** (Paton et A.R.Perry) Schumacker et Váňa, *Identif. keys liverw. hornw. Europe*: 110, 2005 (Schumacker & Váňa 2005). BASIONYM: *Leiocolea fitzgeraldiae* Paton et A.R.Perry, *J. Bryol.* 18: 470, 1995 (Paton & Perry 1995).

***Lophozia grandiretis*** (Lindb. ex Kaal.) Schiffn. **subsp. *grandiretis***, created by *Lophozia grandiretis* subsp. *proteidea* (Arnell) Damsh., *Lindbergia* 33: 98, 2010 (Damsholt 2010).

***Lophozia grandiretis* subsp. *proteidea*** (Arnell) Damsh., *Lindbergia* 33: 98, 2010 (Damsholt 2010). BASIONYM: *Jungermannia grandiretis* var. *proteidea* Arnell, *Ark. Bot.* 19 (10): 70, 1925 (Arnell 1925).

***Lophozia grandiretis* var. *hyperarctica*** (R.M.Schust.) Damsh., *Lindbergia* 33: 98, 2010 (Damsholt 2010). BASIONYM: *Lophozia hyperarctica* R.M.Schust., *Canad. J. Bot.* 39: 967, 1961 (Schuster 1961).

***Lophozia jamesonii*** (Mont.) R.M.Schust., *Beih. Nova Hedwigia* 119: 279, 2002 (Schuster 2002). BASIONYM: *Jungermannia jamesonii* Mont., *Syll. Gen. Sp. Crypt.*: 60, 1856 (Montagne 1856).

\*\* ***Lophozia pellucida* f. *rubrigemma*** Bakalin, *Monogr. Lophozia*: 107, 2005, *nom. inval.* Art. 36.1; no Latin description (Bakalin 2005). NOTE: Bakalin published this in a key as *Lophozia pellucida* var. *rubrigemma* f. *rubrigemma*, next to the new combination *Lophozia pellucida* var. *rubrigemma* f. *arctica* (R.M.Schust.) Bakalin.

***Lophozia rutheana* var. *laxa*** (Schiffn. ex Burrell) Paton ex Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 115, 2002 (Damsholt 2002). BASIONYM: *Lophozia schultzii* var. *laxa* Schiffn. ex Burrell, *J. Bot.* 49: 217, 1911 (Burrell 1911). NOTE: Damsholt ascribed the taxon to Paton although she only described it under *Leiocolea*. However, citing the basionym in full we think it is a valid combination. It was also published by Sjörs et Een, *J. Bryol.* 22: 230, 2000, *nom. inval.* Art. 32.1.d; no description (Sjörs & Een 2000).

\*\* ***Lophozia sudetica* var. *gelida*** (Taylor) Damsh., *Distr. maps Bryoph. Anthoc. Faeroes*: 17, 2000, *nom. inval.* Art. 33.4; basionym not cited (Damsholt 2000). BASIONYM: *Jungermannia gelida* Taylor, *London J. Bot.* 4: 277, 1845 (Taylor 1845).

- \*\* *Lophozia sudetica* var. *minor* (Nees) Damsh., *Distr. maps Bryoph. Anthoc. Faeroes*: 17, 2000, *nom. inval.* Art. 33.4; basionym not cited (Damsholt 2000). BASIONYM: *Jungermannia alpestris*  $\gamma$  *minor* Nees, *Naturgesch. Eur. Leberm.* 2: 106, 1836 (Nees 1836).
- Lophoziopsis* Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010]. TYPE: *Jungermannia excisa* Dicks. (Konstantinova & Vilnet 2010).
- Lophoziopsis excisa* (Dicks.) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Jungermannia excisa* Dicks., *Fasc. Pl. Crypt. Brit.* 3: 11, 1793 (Dickson 1793).
- Lophoziopsis excisa* var. *elegans* (R.M.Schust.) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Lophozia excisa* var. *elegans* R.M.Schust., *Hepat. Anthocerotae N. Amer.* 2: 522, 1969 (Schuster 1969).
- Lophoziopsis excisa* (Dicks.) Konstant. et Vilnet var. *excisa*, created by *Lophoziopsis excisa* var. *elegans* (R.M.Schust.) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010).
- Lophoziopsis excisa* var. *infuscata* (R.M.Schust. et Damsh.) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Lophozia excisa* var. *infuscata* R.M.Schust. et Damsh., *Meddel. Grønland* 199 (1): 94, 1974 (Schuster & Damsholt 1974).
- Lophoziopsis excisa* var. *succulenta* (R.M.Schust. et Damsh.) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Lophozia excisa* var. *succulenta* R.M.Schust. et Damsh., *Meddel. Grønland* 199 (1): 96, 1974 (Schuster & Damsholt 1974).
- Lophoziopsis longidens* (Lindb.) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Jungermannia longidens* Lindb., *Bot. Not.* 1877: 27, 1877 (Lindberg 1877).
- Lophoziopsis pellucida* (R.M.Schust.) Konstant. et Vilnet, *Arctoa* 18: 67, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Lophozia pellucida* R.M.Schust., *Canad. J. Bot.* 39: 978, 1961 (Schuster 1961).
- Lophoziopsis perssonii* (H.Buch et S.W.Arnell) Konstant. et Vilnet, *Arctoa* 18: 67, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Lophozia perssonii* H.Buch et S.W.Arnell, *Bot. Not.* 97: 382, 1944 (Buch 1944).
- Lophoziopsis polaris* (R.M.Schust.) Konstant. et Vilnet, *Arctoa* 18: 67, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Lophozia alpestris* subsp. *polaris* R.M.Schust., *Hepat. Anthocerotae N. Amer.* 2: 614, 1969 (Schuster 1969).
- Lophoziopsis polaris* (R.M.Schust.) Konstant. et Vilnet var. *polaris*, created by *Lophoziopsis polaris* var. *sphagnorum* (R.M.Schust.) Konstant. et Vilnet, *Arctoa* 18: 67, 2009 [2010] (Konstantinova & Vilnet 2010).
- Lophoziopsis polaris* var. *sphagnorum* (R.M.Schust.) Konstant. et Vilnet, *Arctoa* 18: 67, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Lophozia alpestris* f. *sphagnorum* R.M.Schust., *Hepat. Anthocerotae N. Amer.* 2: 619, 1969 (Schuster 1969).
- Lophoziopsis propagulifera* (Gottsche) Konstant. et Vilnet, *Arctoa* 18: 67, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Jungermannia propagulifera* Gottsche, *Neumayer, Int. Polarforsch., Deutsch. Exped.* 2: 451, 1890 (Gottsche 1890).
- Lophoziopsis rubrigemma* (R.M.Schust.) Konstant. et Vilnet, *Arctoa* 18: 67, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Lophozia rubrigemma* R.M.Schust., *Hepat. Anthocerotae N. Amer.* 2: 621, 1969 (Schuster 1969).
- Lophoziopsis rubrigemma* f. *arctica* (R.M.Schust.) Bakalin, *Arctoa* 18: 38, 2009 [2010] (Konstantinova et al. 2010). BASIONYM: *Lophozia longidens* subsp. *arctica* R.M.Schust., *Hepat. Anthocerotae N. Amer.* 2: 539, 1969 (Schuster 1969).
- Lophoziopsis rubrigemma* (R.M.Schust.) Konstant. et Vilnet f. *rubrigemma*, created by *Lophoziopsis rubrigemma* f. *arctica*, *Arctoa* 18: 38, 2009 [2010] (Konstantinova et al. 2010).
- Mannia** subgen. *Neesiella* (Schiffn.) D.B.Schill et D.G.Long, *Bryologist* 113: 175, 2010 (Schill et al. 2010). BASIONYM: *Neesiella* Schiffn., *Hepat. (Engl.-Prantl)*: 32, 1893 (Schiffner 1893a).

- Mannia gracilis*** (F. Weber) D.B. Schill et D.G. Long, *Bryologist* 113: 173, 2010 (Schill *et al.* 2010). BASIONYM: *Marchantia gracilis* F. Weber, *Hist. Musc. Hepat. Prodr.*: 105, 1815 (Weber 1815).
- Marchantia alpestris f. mamillata*** (I. Hagen ex Schiffn.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 749, 2002 (Damsholt 2002). BASIONYM: *Marchantia polymorpha* var. *mamillata* I. Hagen ex Schiffn., *Sitzungsber. Deutsch. Naturwiss.-Med. Vereins Böhmen "Lotos" Prag* 49: 93, 1901 (Schiffner 1901).
- \*\* ***Mastigolejeunea nepalensis*** Steph. ex Kattel, *Liverw. Nepal*: 36, 2002, *nom. inval.* Art. 32.1.d; no description (Kattel 2002). ORIGINAL MATERIAL: Nepal. NOTE: Apparently error for *Microlejeunea nepalensis* Steph., *Sp. Hepat. (Stephani)* 5: 832, 1915 (Stephani 1915).
- \*\* ***Microlejeunea pulla*** Steph. ex Kattel, *Liverw. Nepal*: 36, 2002, *nom. inval.* Art. 32.1.d; no description (Kattel 2002). ORIGINAL MATERIAL: Nepal. NOTE: Apparently error for *Prionolejeunea pulla* (Mitt.) Steph., *Sp. Hepat. (Stephani)* 5: 226, 1913 (Stephani 1913).
- \*\* ***Metahygrobiella subgen. Apohygrobiella*** R.M. Schust., *Beih. Nova Hedwigia* 119: 15, 2002, *nom. inval.* Art. 36.1; no Latin description (Schuster 2002).
- Metzgeria americana*** Masuzaki, *Hikobia* 15: 441, 2010. TYPE: "Canada. British Columbia, Upper Victoria Lake, S. W. Moresby Is., Queen Charlotte Is., on cliff shelf, also near base of cedar, July 6, 1966, leg. Schofield 30764 (HIRO)" (Masuzaki *et al.* 2010).
- \*\* ***Metzgeria dominicensis*** Steph. ex Schäf.-Verw., *Cryptog. Bryol.* 31: 367, 2010, *nom. inval.* Art. 32.1.d; no description. ORIGINAL MATERIAL: Dominica, Elliott s.n., "olim *M. longitexta*, *nom. occupatum*" [their quotes] (Schäfer-Verwimp 2010).
- \*\* ***Metzgeria falklandica*** Kuwah. ex Hässel et Rubies, *Beih. Nova Hedwigia* 134: 266, 2009, *nom. inval.* Art. 32.1.d; no description. ORIGINAL MATERIAL: "Argentina, Malvinas Is. (Falkland Is.)" (Hässel & Rubies 2009). NOTE: The name is also published invalidly (Art. 30.5; published in theses) by J.J. Engel, *Falkland Island Hepaticae and Anthocerotae*: 500, 1972 with the same type specimen as later used for *Metzgeria engelii* Kuwah., *Hikobia* 8: 275, 1980 (Engel 1972 and Kuwahara 1980).
- \*\* ***Metzgeria formosana*** Masuzaki ex Deguchi et T. Yamag., *Hikobia* 15: 530, 2010, *nom. inval.* Art. 32.1.d; no description [error for *M. americana* (Masuzaki, pers. comm.)]. ORIGINAL MATERIAL: "Taiwan. Taichung Co., en route from Shiyuan Yakou to Mt. Nanhu, between Nanhu Cabin to New Yunleng Cabin, 24°22'45.09"N, 121°24'34.56"E, 2,960 m alt., on boulder. 4 October 2010, coll. T. Yamaguchi 32950, det. H. Masuzaki" (Deguchi & Yamaguchi 2010).
- \*\* ***Metzgeria kinabaluensis*** (Kuwah.) Masuzaki, *Hikobia* 15: 436, 2010, *nom. inval.* Art. 32.1.d; basionym not valid (Masuzaki *et al.* 2010). BASIONYM: *Apometzgeria pubescens* var. *kinabaluensis* Kuwah., *J. Hattori Bot. Lab.* 28: 166, 1965, *nom. inval.* Art. 43.1; genus not valid (Kuwahara 1965). NOTE: Later validly described in *Hikobia* 16: 59 (Masuzaki 2011).
- Metzgeria senjoana*** Masuzaki, *Hikobia* 15: 445, 2010. TYPE: "Japan. Honshu, Nagano Pref., S. Jpn. Alps, Mt. Senjogatake, Yabusawa course, from Taihei mountain villa to Ōtaki bifurcation, 35°44'22"N, 138°12'16"E, Aug. 15, 2008, leg. Masuzaki 1485 (HIRO)" (Masuzaki *et al.* 2010).
- Myriocoleopsis vuquangensis*** (Pócs et Ninh) Pócs, *Trop. Bryol.* 31: 124, 2010 (Pócs 2010a). BASIONYM: *Cololejeunea vuquangensis* Pócs et Ninh, *Acta Bot. Hung.* 47: 158, 2005 (Pócs & Ninh 2005).
- Nardia geoscyphus* var. *dioica*** Bakalin, *Arctoa* 18: 87, 2009 [2010]. TYPE: "Russia, Sakhalin Province, Shikotan Island, area of Malokurilsk Village, Shikotan Mt. (43°52'17.0"N 146°51'18.1"E), 400 m alt., cliff crevices near the top. 23.VIII.2007 Coll. V.A. Bakalin K-38-8-07 (VLA)" (Bakalin *et al.* 2010a).
- Nardia grollei*** Váňa et D.G. Long, *Nova Hedwigia* 89: 491, 2009. TYPE: "EAST NEPAL, Sankhuwasabha District, ridge near Kauma, south of Shipton La, 27°39'N, 87°13'E, steep rocky slope with Rhododendrons, on wet shaded cliff, c. 3540 m, 26 September 1991, D.G. Long 20652 (E, holotype; G, JE, H, isotypes)" (Váňa & Long 2009).
- \*\* ***Nardia guatemalensis*** M.E. Pérez, *Brenesia* 71-72: 8, 2009, *nom. inval.* Art. 32.1.d; no description. ORIGINAL MATERIAL: "Sacatepéquez, sin recolector (NY)" (Pérez 2009).
- Neoorthocaulis*** L. Söderstr., De Roo et Hedd., *Phytotaxa* 3: 49, 2010. TYPE: *Neoorthocaulis attenuatus* (Mart.) L. Söderstr., De Roo et Hedd. (Söderström *et al.* 2010b).

- Neoorthocaulis attenuatus*** (Mart.) L.Söderstr., De Roo et Hedd., *Phytotaxa* 3: 49, 2010 (Söderström *et al.* 2010b). BASIONYM: *Jungermannia quinquentata*  $\delta$  *attenuata* Mart., *Fl. Crypt. Erlang.*: 177, 1817 (Martius 1817).
- Neoorthocaulis binsteadii*** (Kaal.) L.Söderstr., De Roo et Hedd., *Phytotaxa* 3: 49, 2010 (Söderström *et al.* 2010b). BASIONYM: *Jungermannia binsteadii* Kaal., *Skr. Vidensk.-Selsk. Christiana, Math.-Naturvidensk. Kl.* 1898(9): 9, 1898 (Kaalas 1898).
- Neoorthocaulis floerkei*** (F.Weber et D.Mohr) L.Söderstr., De Roo et Hedd., *Phytotaxa* 3: 50, 2010 (Söderström *et al.* 2010b). BASIONYM: *Jungermannia floerkei* F.Weber et D.Mohr, *Bot. Taschenb. (Weber)*: 410, 1807 (Weber & Mohr 1807).
- Neoorthocaulis hyperboreus*** (R.M.Schust.) L.Söderstr., De Roo et Hedd., *Phytotaxa* 3: 50, 2010 (Söderström *et al.* 2010b). BASIONYM: *Lophozia floerkei* var. *hyperborea* R.M.Schust., *Bull. Natl. Mus. Canada* 164: 21, 1959 (Schuster *et al.* 1959).
- Nephelolejeunea carcharias*** M.A.M.Renner, *Syst. Bot.* 34: 621, 2009. TYPE: “NEW ZEALAND. South Island, Fiordland National Park, Cozette Burn, Mixed low shrub with *Brachyglottis* sp, *Coprosma pseudocuneata*, *Coprosma serrulata*, *Coprosma* sp., *Hebe subalpina*, *Hebe* sp., forming a dense thicket with *Polystichum vestitum* beneath. On branches of *Brachyglottis* with *Metzgeria submarginata* and *Austrolejeunea hispida*, 45°16.4'S 167°18.6'E, 1,080 m, 10 Apr 2002, M. A. M. Renner CMS Plot L-158, (holotype: CHR 564881!)” (Renner *et al.* 2009).
- Nothoceros aenigmaticus*** J.C.Villarreal et K.D.McFarland, *Bryologist* 113: 109, 2010. HOLOTYPE: U.S.A., North Carolina: Joyce Kilmer-Slickrock Wilderness, Graham Co., *Schuster 87-1451*, F (isotype in NY) (Villarreal *et al.* 2010a). BASED ON: *Megaceros aenigmaticus* R.M.Schust., *Hepat. Anthocerotae N. Amer.* 6: 830, 1992, *nom. inval.* Art. 37.7; no herbarium indicated (Schuster 1992).
- Nothoceros fuegiensis*** (Steph.) J.C.Villarreal, *Bryologist* 113: 109, 2010 (Villarreal *et al.* 2010a). BASIONYM: *Megaceros fuegiensis* Steph., *Kungl. Svenska Vetenskapsakad. Handl.* 46 (9): 91, 1911 (Stephani 1911).
- Nothoceros vincentianus*** (Lehm. et Lindenb.) J.C.Villarreal, *Bryologist* 113: 111, 2010 (Villarreal *et al.* 2010a). BASIONYM: *Anthoceros vincentianus* Lehm. et Lindenb., *Nov. Stirp. Pug.* 6: 16, 1834 (Lehmann 1834).
- Oleolophozia*** L.Söderstr., De Roo et Hedd., *Phytotaxa* 3: 50, 2010. TYPE: *Oleolophozia perssonii* (H.Buch et S.W.Arnell) L.Söderstr., De Roo et Hedd. (Söderström *et al.* 2010b).
- Oleolophozia perssonii*** (H.Buch et S.W.Arnell) L.Söderstr., De Roo et Hedd., *Phytotaxa* 3: 51, 2010 (Söderström *et al.* 2010b). BASIONYM: *Lophozia perssonii* H.Buch et S.W.Arnell, *Bot. Not.* 97: 382, 1944 (Buch 1944).
- \*\* ***Omphalanthus filiformis* var. *platycoleus*** (Herzog) Malonek, *J. Hattori Bot. Lab.* 93: 28, 2003, *nom. inval.* Art. 33.4; basionym not cited (Gradstein *et al.* 2003). BASIONYM: *Omphalanthus platycoleus* Herzog, *Feddes Repert. Spec. Nov. Regni Veget.* 57: 171, 1955 (Herzog 1955).
- \* **Pallaviciniales** C.Gao, Y.H.Wu et W.Li (order), *Genera Hepaticopsida Anthocerotopsida Sinicorum*: 563, 2010, *nom. illeg.* Art. 53.1; *hom. illeg.* [non W.Frey et M.Stech 2005] (Gao *et al.* 2010). NOTE: Automatically typified (Art. 16.1.a) by Pallaviciniaceae Mig.
- \*\* ***Paracromastigum bifidum* subsp. *andinum*** R.M.Schust., *Beih. Nova Hedwigia* 118: 366, 2000, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: VENEZUELA, Páramo de Tama, Villa Paez, RMS 76-1911 (Schuster 2000).
- \*\* ***Paracromastigum bifidum* subsp. *densum*** (Pearson) R.M.Schust., *Beih. Nova Hedwigia* 118: 361, 2000, *nom. inval.* Art. 33.4; basionym not cited (Schuster 2000). BASIONYM: *Cephalozia densa* Pearson, *Ann. Bryol.* 4: 108, 1931 (Pearson 1931).
- \*\* ***Paracromastigum dominicensis*** R.M.Schust., *Beih. Nova Hedwigia* 118: 369, 2000, *nom. inval.* Art. 36.1, 37.1; no Latin description, no type indicated (Schuster 2000). ORIGINAL MATERIAL: s. loc. spec.
- \*\* ***Paracromastigum dominicensis* var. *borinquena*** R.M.Schust., *Beih. Nova Hedwigia* 118: 369, 2000, *nom. inval.* Art. 36.1; no Latin description and no specimen cited (Schuster 2000). ORIGINAL MATERIAL: s. loc. cit.

- Paracromastigum ryszardii*** Váňa, Bedn.-Ochyra et Cykowska, *Nova Hedwigia* 89: 122, 2009. TYPE: “PRINCE EDWARD ISLANDS. PRINCE EDWARD ISLAND: eastern part, central highland, stream at the eastern foot of Hoedberg towards Plattekop, lat. 46°38'924"S, long. 37°58'317"E, elev. 180 m, on damp bare soil forming extensive brown patches on steep bank of stream associated with *Notoligotrichum tristianiense*, *Clasmatocolea vermicularis* and *Solenostoma coniflorum*, 11 April 2001, coll. R.Ochyra No. 404/01 (with V.R.Smith) (HOLOTYPE: KRAM!; ISOTYPES: JE!, NY!, PRE!)” (Váňa *et al.* 2009).
- Pedinolejeunea desciscens*** (Steph.) But et P.C.Wu, *Hepat. Fl. Hong Kong*: 141, 2009 (Wu & But 2009). BASIONYM: *Cololejeunea desciscens* Steph., *Hedwigia* 34: 248, 1895 (Stephani 1895b).
- Pedinolejeunea raduliloba*** (Steph.) P.C.Wu et But, *Hepat. Fl. Hong Kong*: 136, 2009 (Wu & But 2009). BASIONYM: *Cololejeunea raduliloba* Steph., *Hedwigia* 34: 251, 1895 (Stephani 1895b).
- Pedinolejeunea reineckeana*** (Steph.) P.C.Wu et But, *Hepat. Fl. Hong Kong*: 138, 2009 (Wu & But 2009). BASIONYM: *Cololejeunea reineckeana* Steph., *Bot. Jahrb. Syst.* 23: 309, 1896 [1897] (Stephani 1897b).
- Pedinolejeunea schwabei*** (Herzog) P.C.Chen ex P.C.Wu et But, *Hepat. Fl. Hong Kong*: 138, 2009 (Wu & But 2009). BASIONYM: *Cololejeunea schwabei* Herzog, *J. Hattori Bot. Lab.* 14: 54, 1955 (Herzog & Noguchi 1955).
- Peltolepis quadrata* var. *sibirica*** (Lindb.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 738, 2002 (Damsholt 2002). BASIONYM: *Peltolepis sibirica* Lindb., *Acta Soc. Fauna Fl. Fenn.* 2(3): 4, 1882 (Lindberg 1882).
- \*\* **Personiellales** C.Gao, T.Cao et Y.H.Wu, *Int. Bryol. Symp. Chen's Cent.*: 20, 2005, *nom. inval.* Art. 32.1.d; no description (Gao *et al.* 2005).
- Phaeoceros dendroceroides*** (Steph.) Hässel, *Beih. Nova Hedwigia* 134: 487, 2009 (Hässel & Rubies 2009). BASIONYM: *Anthoceros dendroceroides* Steph., *Sp. Hepat. (Stephani)* 5: 984, 1916 (Stephani 1916a).
- Phaeoceros perpusillus*** Chantanaorr., *Acta Bot. Hung.* 51: 30, 2009. TYPE: “Thailand, Chiang Mai Province, Mae Rim, Doi Mon Long Viewpoint, lat.: 18° 55.012' N, long.: 98° 50.60' E, alt.: 1,390 m, coll.: Chantanaorrapint 1431, 14 August 2005 (holotype: PSU, isotypes: EGR, G, L)” (Chantanaorrapint 2009).
- Phaeomegaceros chiloensis*** (Steph.) J.C.Villarreal, *Nova Hedwigia* 91: 353, 2010 (Villarreal *et al.* 2010b). BASIONYM: *Anthoceros chiloensis* Steph., *Kungl. Svenska Vetenskapsakad. Handl.* 46 (9): 90, 1911 (Stephani 1911).
- Phaeomegaceros coriaceus*** (Steph.) R.J.Duff, J.C.Villarreal, Cargill et Renzaglia, *Bryologist* 110: 241, 2007 (Duff *et al.* 2007). BASIONYM: *Anthoceros coriaceus* Steph., *Sp. Hepat. (Stephani)* 5: 991, 1916 (Stephani 1916a). NOTE: Also combined by Stotler in *Fieldiana: Bot. n.s.* 47: 233, 2008 (Crandall-Stotler *et al.* 2008).
- Phaeomegaceros foveatus*** (J.Haseg.) J.C.Villarreal, *Nova Hedwigia* 91: 352, 2010 (Villarreal *et al.* 2010b). BASIONYM: *Phaeoceros foveatus* J.Haseg., *Bryol. Res.* 7: 374, 2001 (Hasegawa 2001).
- Phaeomegaceros squamuliger*** (Spruce) J.C.Villarreal, *Nova Hedwigia* 91: 351, 2010 (Villarreal *et al.* 2010b). BASIONYM: *Anthoceros squamuliger* Spruce, *Trans. & Proc. Bot. Soc. Edinburgh* 15: 576, 1885 (Spruce 1885).
- Phaeomegaceros squamuliger* subsp. *hassellii*** J.C.Villarreal, Cargill et Goffinet, *Nova Hedwigia* 91: 352, 2010. TYPE: “HOLOTYPE: Chile. Los Lagos. Prov. Osorno. W of Parque Nacional Puyehue, along road to Antillanca, about 1.2 km E of junction with Rd 215. Seepy road bank, dominated by mosses, below bamboos and tree ferns. 40°43'S 72°18'W, alt.: 380 m. Goffinet 7106. March, 2000. (SGO!). ISOTYPE [sic! should be paratype]: Chile. Prov. Osorno. Parque Nacional Puyehue. 1.2 km S of Chile, 215 towards Termas de Puyehue. Seepage down rocky outcrop by side of road. 40°43'S 72°18'W, alt.: 380 m C.J.Cox 523/00 & Goffinet. 23rd March, 2000. (CANB!, DUKE!)” (Villarreal *et al.* 2010b).
- Phaeomegaceros squamuliger*** (Spruce) J.C.Villarreal **subsp. *squamuliger***, created by *Phaeomegaceros squamuliger* subsp. *hassellii* J.C.Villarreal, Cargill et Goffinet, *Nova Hedwigia* 91: 352, 2010 (Villarreal *et al.* 2010b).
- Plagiochila* sect. *Jacquiniotiae*** Hässel, *Nova Hedwigia* 86: 85, 2009. TYPE: *Plagiochila jacquiniotii* Mont. (Hässel 2009).

- Plagiochila arbuscula* (Brid. ex Lehm. et Lindenb.) Lindenb. **var. arbuscula**, created by *Plagiochila arbuscula* var. *rekohuensis* J.J.Engel et G.L.Merr., *Nova Hedwigia* 91: 508, 2010 (Engel & Smith Merrill 2010).
- Plagiochila arbuscula* **var. rekohuensis** J.J.Engel et G.L.Merr., *Nova Hedwigia* 91: 509, 2010. TYPE: “HOLOTYPE: Chatham Is., Southern Tablelands, Lake Rakeinui, ca. 240 m, 17 Sept. 2007, de Lange CH1230 and Heenan (AK - c. sporophyte + ♂; isotype: F)” (Engel & Smith Merrill 2010).
- Plagiochila circinalis* **var. hemicardia** (Hook.f. et Taylor) J.J.Engel et G.L.Merr., *Nova Hedwigia* 91: 512, 2010 (Engel & Smith Merrill 2010). BASIONYM: *Jungermannia hemicardia* Hook.f. et Taylor, *London J. Bot.* 3: 371, 1844 (Hooker & Taylor 1844).
- Plagiochila circumdentata* **var. carinata** J.J.Engel et G.L.Merr., *Nova Hedwigia* 91: 510, 2010. TYPE: “HOLOTYPE: New Zealand, South Is., Otago Prov., Mt. Aspiring Natl. Park, Blue Valley Track, above Blue River just N of confluence with Makaroa River, 430–480 m, Engel 21897 (F); isotype: (CHR)” (Engel & Smith Merrill 2010).
- Plagiochila circumdentata* Steph. **var. circumdentata**, created by *Plagiochila circumdentata* var. *carinata* J.J.Engel et G.L.Merr., *Nova Hedwigia* 91: 511, 2010 (Engel & Smith Merrill 2010).
- Plagiochila colensoi* Hook.f. et Taylor **var. colensoi**, created by *Plagiochila colensoi* var. *quinqespina* (Steph.) J.J.Engel et G.L.Merr., *Nova Hedwigia* 91: 504, 2010 (Engel & Smith Merrill 2010).
- Plagiochila colensoi* **var. quinqespina** (Steph.) J.J.Engel et G.L.Merr., *Nova Hedwigia* 91: 504, 2010 (Engel & Smith Merrill 2010). BASIONYM: *Plagiochila quinqespina* Steph., *Bull. Herb. Boissier ser. 2, 3 (Spec. Hep. 2)*: 328, 1903 (Stephani 1903).
- \*\* *Plagiochila cowelliana* Steph. ex Mustelier et Vicario, *Biodiv. Cuba Oriental* 5: 27, 2000, *nom. inval.* Art. 32.1.d; no description (Mustelier & Vicario 2000). ORIGINAL MATERIAL: Cuba.
- Plagiochila deltoidea* Lindenb. **var. deltoidea**, created by *Plagiochila deltoidea* var. *densa* J.J.Engel et G.L.Merr., *Nova Hedwigia* 91: 505, 2010 (Engel & Smith Merrill 2010).
- Plagiochila deltoidea* **var. densa** J.J.Engel et G.L.Merr., *Nova Hedwigia* 91: 506, 2010. TYPE: “Holotype: New Zealand, South Is., Westland Prov., Westland Natl. Park, Franz Josef Glacier Valley, Roberts Point, SW of Mt. Gunn, ca. 620–670 m, Engel 18116 (F); isotype: (CHR)” (Engel & Smith Merrill 2010).
- \*\* *Plagiochila fracta* Pócs, *Boissiera* 59: 61, 2002, *nom. inval.* Art. 32.1.d; no description (Pócs & Geissler 2002). ORIGINAL MATERIAL: Madagascar, PG 19691/1, 1250–1300 m.
- Plagiochila fuscella* (Hook.f. et Taylor) Taylor et Hook.f. ex Gottsche, Lindenb. et Nees **var. fuscella**, created by *Plagiochila fuscella* var. *novae-zelandiae* (E.A.Hodgs.) J.J.Engel et G.L.Merr., *Nova Hedwigia* 89: 294, 2009 (Engel & Smith Merrill 2009).
- Plagiochila fuscella* **var. novae-zelandiae** (E.A.Hodgs.) J.J.Engel et G.L.Merr., *Nova Hedwigia* 89: 294, 2009 (Engel & Smith Merrill 2009). BASIONYM: *Plagiochila retrospectans* var. *novae-zelandiae* E.A.Hodgs., *Trans. & Proc. Roy. Soc. New Zealand* 73: 293, 1944 (Hodgson 1944).
- \*\* *Plagiochila fuscolata* Steph. ex Mustelier, *Rapid Biol. Invent.* 14: 226, 2005, *nom. inval.* Art. 32.1.d; no description (Mustelier 2005). ORIGINAL MATERIAL: Cuba.
- Plagiochila gigantea* Lindenb. **var. gigantea**, created by *Plagiochila gigantea* var. *inermis* J.J.Engel et G.L.Merr., *Nova Hedwigia* 91: 512, 2010 (Engel & Smith Merrill 2010).
- Plagiochila gigantea* **var. inermis** J.J.Engel et G.L.Merr., *Nova Hedwigia* 91: 513, 2010. TYPE: “HOLOTYPE: Auckland Is., Lake Hinemoa, ca. 100 ft., Common 1295 (MSC - c. sporophyte); isotypes: (CHR, F)” (Engel & Smith Merrill 2010).
- Plagiochila incurvicolla* (Hook.f. et Taylor) Hook.f. et Taylor ex Gottsche, Lindenb. et Nees **var. incurvicolla**, created by *Plagiochila incurvicolla* var. *lonchoscypha* (Herzog) J.J.Engel et G.L.Merr., *Nova Hedwigia* 91: 504, 2010 (Engel & Smith Merrill 2010).
- Plagiochila incurvicolla* **var. lonchoscypha** (Herzog) J.J.Engel et G.L.Merr., *Nova Hedwigia* 91: 505, 2010 (Engel & Smith Merrill 2010). BASIONYM: *Plagiochila lonchoscypha* Herzog, *Trans. & Proc. Roy. Soc. New Zealand* 68: 42, 1938 (Herzog 1938).
- \*\* *Plagiochila mayebarae* S.Hatt. ex Kattel, *Liverw. Nepal*: 56, 2002, *nom. inval.* Art. 32.1.d; no description

- (Kattel 2002). ORIGINAL MATERIAL: Nepal. NOTE: Apparently error for *Plagiochilon mayebarae* S.Hatt., *J. Hattori Bot. Lab.* 3: 39, 1948 [1950] (Hattori 1950b).
- \*\* *Plagiochila spiralis* Steph. ex Mustelier et Vicario, *Biodiv. Cuba Oriental* 5: 27, 2000, *nom. inval.* Art. 32.1.d; no description (Mustelier & Vicario 2000). ORIGINAL MATERIAL: Cuba.
- \*\* *Plagiochila subsimplex* Besch. et C.Massal. ex Hässel, *Nova Hedwigia* 86: 73, 2009, *nom. inval.* Art. 34.1.c; publ. in syn. [sub *Plagiochila elata* Taylor 1846]. ORIGINAL MATERIAL: “Chile, Otway, Savatier 1778 (VER !, FI !); Baie de l’Isthme, Savatier 234 (VER !, FI !)” (Hässel 2009).
- \*\* *Plagiochila vastifolia* var. *umbrosa* Steph. ex O.Yano, *Bol. Inst. Bot. São Paulo* 19: 64, 2008, *nom. inval.* Art. 32.1.d; no description (Yano 2008). BASED ON: *Plagiochila vastifolia* f. *umbrosa* Steph. ex Schiffn. et S.W.Arnell, *Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr.* 111: 56, 1964, *nom. inval.* Art. 32.1.d; no description (Schiffner & Arnell 1964). NOTE: Apparently error for *Plagiochila vastifolia* f. *umbrosa* Steph. ex Schiffn. et S.W.Arnell, *Österr. Akad. Wiss., Math.-Naturwiss. Kl., Denkschr.* 111: 56, 1964 (Schiffner & Arnell 1964).
- Plagiochila watsiana* J.J.Engel et G.L.Merr., *Nova Hedwigia* 91: 511, 2010 (Engel & Smith Merrill 2010). NOM. NOV. PRO *Plagiochila watsii* Steph., *Sp. Hepat. (Stephani)* 6: 240, 1921, *nom. illeg.* Art. 53.1; hom. illeg. (Stephani 1921). BLOCKING NAME: *Plagiochila watsii* Steph. ex Rodway, *Pap. & Proc. Roy. Soc. Tasmania* 1915: 105, 1908 (Rodway 1908).
- Plagiochilineae** Hässel (subord.), *Beih. Nova Hedwigia* 134: 475, 2009. TYPE: *Plagiochila* (Dumort.) Dumort. (Hässel & Rubies 2009). BASED ON: Plagiochilaceae Müll.Frib. et Herzog (fam.), *Leberm. Eur.*: 877, 1956 (Müller 1956).
- Plectocolea flagellata* S.Hatt. var. *flagellata*, created by *Plectocolea flagellata* var. *kurilensis* Bakalin, *Arctoa* 18: 90, 2009 [2010] (Bakalin *et al.* 2010a).
- Plectocolea flagellata* var. *kurilensis* Bakalin, *Arctoa* 18: 90, 2009 [2010]. TYPE: “Russia, Sakhalin Province, Iturup Island, valley of Khvoynaya River near Gornyy Settl. (44°55'55,6"N 147°34'30,2"E), 64 m alt., *Duschekia* flood-valley forest with admixture of *Betula* and *Sorbus* and cover of high herbs, on stones along river, sometimes splashed by water. 7.VIII.2007 Coll. V.A. Bakalin, K-10-1-07 (VLA)” (Bakalin *et al.* 2010a).
- Plectocolea rupicola* (Amakawa) Bakalin, *Arctoa* 18: 26, 2009 [2010] (Konstantinova *et al.* 2010). BASIONYM: *Jungermannia rupicola* Amakawa, *J. Hattori Bot. Lab.* 22: 23, 1960 (Amakawa 1960).
- Plectocolea truncata* (Nees) Herzog, *Trans. Brit. Bryol. Soc.* 1: 281, 1950 (Herzog 1950). BASIONYM: *Jungermannia truncata* Nees, *Enumer. Pl. Javae*: 29, 1830 (Nees 1830). NOTE: Also combined by Bakalin, *Hepat. Fl. Phytogeogr. Kamchatka*: 359, 2009 (Bakalin 2009a).
- Plectocoleineae** C.Gao, Y.H.Wu et W.Li (subord.), *Genera Hepaticopsida Anthocerotopsida Sinicorum*: 499, 2010, “Plectocoleiineae” (Gao *et al.* 2010). NOTE: Automatically typified (Art. 16.1.a) by Plectocoleaceae C.Gao, T.Cao et Y.H.Wu.
- \*\* **Plectocoleaceae** C.Gao, Y.H.Wu et W.Li (fam.), *Genera Hepaticopsida Anthocerotopsida Sinicorum*: 500, 2010, *nom. inval.* Art. 37.1; no type indicated (Gao *et al.* 2010).
- Porella andica* (Gottsche) Hässel, *Beih. Nova Hedwigia* 134: 452, 2009 (Hässel & Rubies 2009). BASIONYM: *Madotheca andica* Gottsche, *Ann. Sci. Nat. Bot. (ser. 4)* 8: 339, 1857 (Gottsche 1857a).
- Porella chilensis* var. *antucensis* (Gottsche) Hässel, *Beih. Nova Hedwigia* 134: 452, 2009 (Hässel & Rubies 2009). BASIONYM: *Madotheca chilensis* β *antucensis* Gottsche, *Ann. Sci. Nat. Bot. (ser. 4)* 8: 340, 1857 (Gottsche 1857a).
- \*\* *Porella densifolia* var. *appendiculata* (Steph.) S.Hatt. ex Hentschel, R.L.Zhu, D.G.Long, P.G.Davison, H.Schneid., Gradst. et Heinrichs, *Molec. Phylog. Evol.* 45: 695, 2007, *nom. inval.* Art. 33.4; basionym not cited (Hentschel *et al.* 2007). BASIONYM: *Madotheca appendiculata* Steph., *Sp. Hepat. (Stephani)* 4: 301, 1910 (Stephani 1910). NOTE: Apparently error for *Porella densifolia* subsp. *appendiculata* (Steph.) S.Hatt., *J. Hattori Bot. Lab.* 32: 343, 1969 (Hattori 1969).
- † *Porella subgrandiloba* Grolle et M.L.So, *J. Linn. Soc., Bot.* 145: 485, 2004. HOLOTYPE: inclusion in Baltic amber, GPIH 4828, inventory no. *Gröhn 2096* (Grolle & So 2004).

- \*\* *Pseudocephalozia lepidozoides* f. *microstipula* R.M.Schust., *Beih. Nova Hedwigia* 118: 350, 2000, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: RMS 51900; Waipoua Kauri Forest, S. of Opononi, North Island, New Zealand (Schuster 2000).
- Pseudolophozia* Konstant. et Vilnet, *Arctoa* 18: 65, 2009 [2010]. TYPE: *Pseudolophozia sudetica* (Nees ex Huebener) Konstant. et Vilnet (Konstantinova & Vilnet 2010).
- Pseudolophozia debiliformis* (R.M.Schust. et Damsh.) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Lophozia debiliformis* R.M.Schust. et Damsh., *Phytologia* 63: 326, 1987 (Schuster & Damsholt 1987).
- Pseudolophozia debiliformis* var. *concolor* (R.M.Schust. et Damsh.) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Lophozia debiliformis* var. *concolor* R.M.Schust. et Damsh., *Phytologia* 63: 326, 1987 (Schuster & Damsholt 1987).
- Pseudolophozia debiliformis* (R.M.Schust. et Damsh.) Konstant. et Vilnet var. *debiliformis*, created by *Pseudolophozia debiliformis* var. *concolor* (R.M.Schust. et Damsh.) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010).
- Pseudolophozia sudetica* (Nees ex Huebener) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Jungermannia sudetica* Nees ex Huebener, *Hepaticol. Germ.*: 142, 1834 (Hübener 1834).
- Pseudolophozia sudetica* var. *anomala* (Schljakov) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Lophozia alpestris* var. *anomala* Schljakov, *Novosti Sist. Nizsh. Rast.* 11: 352, 1974 (Schljakov 1974).
- Pseudolophozia sudetica* (Nees ex Huebener) Konstant. et Vilnet var. *sudetica*, created by *Pseudolophozia sudetica* var. *anomala* (Schljakov) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010).
- Pseudotritomaria* Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] . TYPE: *Pseudotritomaria heterophylla* (R.M.Schust.) Konstant. et Vilnet (Konstantinova & Vilnet 2010).
- Pseudotritomaria heterophylla* (R.M.Schust.) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Tritomaria heterophylla* R.M.Schust., *Bryologist* 61: 272, 1958 (Schuster 1958).
- Radula splendida* M.A.M.Renner et Devos, *Nova Hedwigia* 90: 113, 2010. TYPE: “New Zealand, South Island, North Westland Ecological Region, Blackball Ecological District, Paparoa Peak, 42°24'S 171°20'E, 30 Mar 2001, 830 m, M.A.M.Renner 01/70a, holotype: AK 304884 [ex AK 280284 pro parte], isotypes: CHR, F, NSW” (Renner *et al.* 2010b).
- \*\* *Riccardia breutelii* Steph. ex R.R.Rico, *Trop. Bryol.* 27: 47, 2006, *nom. inval.* Art. 32.1.d; no description, “breutellii” (Rico 2006). BASED ON: *Aneura breutelii* Steph., *Bull. Herb. Boissier* 7: 759 (*Spec. Hep.* 1: 269), 1899 (Stephani 1899).
- Riccardia chamedryfolia* var. *submersa* (C.E.O.Jensen ex Müll.Frib.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 670, 2002 (Damsholt 2002). BASIONYM: *Aneura sinuata* f. *submersa* C.E.O.Jensen ex Müll.Frib., *Rabenhorsts Kryptogamen Flora*, ed. 2 6(6): 339. 1908 (Müller 1908).
- Riccardia dilatata* (Spruce ex A.Gepp) Schäf.-Verw. et Pócs, *Cryptog. Bryol.* 31: 389, 2010 (Schäfer-Verwimp 2010). BASIONYM: *Aneura dilatata* Spruce ex A.Gepp, *J. Linn. Soc., Bot.* 30: 368, 1894 [1895] (Gepp 1895).
- \*\* *Riccardia infectans* Steph. ex R.R.Rico, *Trop. Bryol.* 27: 47, 2006, *nom. inval.* Art. 32.1.d; no description (Rico 2006). ORIGINAL MATERIAL: Venezuela, Bolívar, Roraima-tepui.
- Riccardia ligulata* (Steph.) Pócs et Schäf.-Verw., *Cryptog. Bryol.* 31: 390, 2010 (Schäfer-Verwimp 2010). BASIONYM: *Aneura ligulata* Steph., *Sp. Hepat. (Stephani)* 6: 32, 1917 (Stephani 1917b).
- \*\* *Riccardia multifida* f. *stenoclada* (Schiffn.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 667, 2002, *nom. inval.* Art. 34.1.a; not accepted by author (Damsholt 2002). BASIONYM: *Riccardia sinuata* var. *stenoclada* Schiffn., *Österr. Bot. Z.* 58: 8, 1908 (Schiffner 1908).



- \*\* *Riccardia roraimensis* Steph. ex R.R.Rico, *Trop. Bryol.* 27: 48, 2006, *nom. inval.* Art. 32.1.d; no description (Rico 2006). BASED ON: *Aneura roraimensis* Steph., *Trans. Linn. Soc. London, Bot.* 6: 94, 1901 (Stephani 1901b).
- Riccia cavernosa* var. *angustior*** (Nees) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 670, 2002 (Damsholt 2002). BASIONYM: *Riccia crystallina*  $\beta$  *angustior* Nees, *Naturgesch. Eur. Leberm.* 4: 430, 1838 (Nees 1838).
- \*\* *Riccia nagalandensis* D.D.Pant et Bhowmik ex S.K.Chaturv. et S.Chaturv., *Bryology in the New Millennium*: 88, 2008 [2009], *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: “206, Arkong Ward, Mokokchung, May 30, 2006 - August 30, 2006, S.K. Chaturvedi TLN- 1008” (Chaturvedi & Chaturvedi 2009). NOTE: Reportedly appearing earlier as *Riccia nagalandensis* D.D.Pant et Bhowmik, *Abstract*: 54, 1997 (Pant & Bhowmik 1997; non vidi), probably also invalid.
- \*\* *Riccia rhenana* var. *violacea* M.F.Boiko, *Bryobionta of the Steppe Zone of Ukraine*: 25, 2009, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: UKRAINE, “Dnipropetrovsk obl. [in Ukrainian]” (Boiko 2009). NOTE: Later validly described in *Chornomor. Botan. Journ.* 7: 93, 2011 (Boiko 2011).
- Riccia subbifurca* var. *armata*** (C.E.O.Jensen) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 670, 2002 (Damsholt 2002). BASIONYM: *Riccia oelandica* var. *armata* C.E.O.Jensen, *Svensk Bot. Tidskr.* 20: 68, 1926 (Jensen 1926).
- Riccia warnstorffii* var. *commutata*** (J.B.Jack ex Levier) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 787, 2002 (Damsholt 2002). BASIONYM: *Riccia commutata* J.B.Jack ex Levier, *Boll. Soc. Bot. Ital.* 5: 114, 1894 (Levier 1894).
- Sauteria nyikaensis*** Perold, *Bothalia* 33: 167, 2003. HOLOTYPE: MALAWI, Nyika National Park, Jalawe viewpoint, (-BD), on soil, in cavity under rock overhang, at altitude 2 3473 m, 3 April 2000, *Koekemoer 1874*, PRE (Perold 2003).
- Scapania brevicaulis* var. *dubia*** (R.M.Schust.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 355, 2002 (Damsholt 2002). BASIONYM: *Scapania degenii* var. *dubia* R.M.Schust., *Amer. Midl. Nat.* 49: 475, 1953 (Schuster 1953).
- Scapania ciliata* subsp. *hawaiiica*** (Müll.Frib.) Potemkin, *Ann. Bot. Fenn.* 39: 321, 2002 (Potemkin 2002). BASIONYM: *Scapania hawaiiica* Müll.Frib., *Nova Acta. Acad. Caes. Leop.-Carol. German Nat. Cur.* 83: 160, 1905 (Müller 1905).
- Scapania glaucocephala* var. *scapanioides*** (C.Massal.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 317, 2002 (Damsholt 2002). BASIONYM: *Jungermannia scapanioides* C.Massal., *Atti Soc. Veneto-Trentino Sci. Nat. Padova* 6: 154, 1879 (Massalongo 1879).
- \*\* ***Scapania paludicola* var. *rufescens*** Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 353, 2002, *nom. inval.* Art. 37.7; no herbarium indicated. ORIGINAL MATERIAL: SWEDEN. Tl. Bajip Njágajávri, Wet meadows, KT & KD 92.053 (Damsholt 2002).
- Scapania subalpina* f. *submersa*** (Jørg.) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 371, 2002 (Damsholt 2002). BASIONYM: *Scapania subalpina* var. *submersa* Jørg., *Bergens Mus. Skr. n.s.* 16: 237, 1934 (Jørgensen 1934).
- Scapania uliginosa* f. *obliqua*** (Arnell) Damsh., *Ill. Fl. Nord. Liverw. Hornw.*: 361, 2002 (Damsholt 2002). BASIONYM: *Martinellius obliquus* Arnell, *Rev. Bryol.* 32: 1, 1905 (Arnell 1905).
- Scapania valdonii*** Váňa, Bedn.-Ochyra et Cykowska, *Nova Hedwigia* 89: 126, 2009. TYPE: “PRINCE EDWARD ISLAND: eastern part, south-eastern coast, Penguin Beach 1 km south-west of East Cape, about 120 m from the coast near a large pool, lat. 46°39'40"S, long. 37°59'11"E, elev. ca. 35 m, 12 April 2001, coll. R.Ochyra No. 602/01 (with V.R.Smith) (HOLOTYPE: KRAM!; ISOTYPE: PRE!)” (Váňa *et al.* 2009).
- \*\* ***Scapania valdonsmithii*** R.M.Schust., *Beih. Nova Hedwigia* 119: 484, 2002, *nom. inval.* Art. 36.1; no Latin description. ORIGINAL MATERIAL: Prince Edward I. (Schuster 2002). NOTE: Later validated as *Scapania valdonii* Váňa, Bedn.-Ochyra et Cykowska (Váňa *et al.* 2009).

- Schiffneriaceae** C.Gao, Y.H.Wu et W.Li (fam.), *Genera Hepaticopsida Anthocerotopsida Sinicorum*: 564, 2010. TYPE: *Schiffneria* Steph. (Gao *et al.* 2010). Also invalidly published (Art. 32.1.d; no description) by Gao *et al.* (2005: 21).
- Schiffneriineae** C.Gao, Y.H.Wu et W.Li (subord.), *Genera Hepaticopsida Anthocerotopsida Sinicorum*: 564, 2010 (Gao *et al.* 2010). NOTE: Automatically typified (Art. 16.1.a) by Schiffneriaceae C.Gao, Y.H.Wu et W.Li.
- \*\* ***Schistochila aligera f. longifolia*** Steph. ex M.L.So, *New Zealand J. Bot.* 41: 261, 2003, *nom. inval.* Art. 36.1; no Latin description (So 2003). ORIGINAL MATERIAL: s. loc. spec.
- Schistochila berggrenii*** (J.J.Engel et R.M.Schust.) Xiao L.He et Glenný, *Austral. Syst. Bot.* 23: 237, 2010 (He & Glenný 2010). BASIONYM: *Pachyschistochila berggrenii* J.J.Engel et R.M.Schust., *J. Hattori Bot. Lab.* 58: 476, 1985 (Schuster & Engel 1985).
- Schistochila childii*** (R.M.Schust. et J.J.Engel) Xiao L.He et Glenný, *Austral. Syst. Bot.* 23: 237, 2010 (He & Glenný 2010). BASIONYM: *Pachyschistochila childii* R.M.Schust. et J.J.Engel, *J. Hattori Bot. Lab.* 58: 471, 1985 (Schuster & Engel 1985).
- Schistochila isotachyphylla*** (J.J.Engel et R.M.Schust.) Xiao L.He et Glenný, *Austral. Syst. Bot.* 23: 237, 2010 (He & Glenný 2010). BASIONYM: *Paraschistochila isotachyphylla* J.J.Engel et R.M.Schust., *J. Hattori Bot. Lab.* 58: 429, 1985 (Schuster & Engel 1985).
- Schistochila latiloba*** (R.M.Schust. et J.J.Engel) Xiao L.He et Glenný, *Austral. Syst. Bot.* 23: 237, 2010 (He & Glenný 2010). BASIONYM: *Pachyschistochila latiloba* R.M.Schust. et J.J.Engel, *J. Hattori Bot. Lab.* 58: 493, 1985 (Schuster & Engel 1985).
- Schistochila nivicola*** (R.M.Schust. et J.J.Engel) Xiao L.He et Glenný, *Austral. Syst. Bot.* 23: 237, 2010 (He & Glenný 2010). BASIONYM: *Pachyschistochila nivicola* R.M.Schust. et J.J.Engel, *J. Hattori Bot. Lab.* 58: 512, 1985 (Schuster & Engel 1985).
- Schistochila subhyalina* var. *grandidentata*** (J.J.Engel et R.M.Schust.) Xiao L.He et Glenný, *Austral. Syst. Bot.* 23: 237, 2010 (He & Glenný 2010). BASIONYM: *Pachyschistochila subhyalina* var. *grandidentata* J.J.Engel et R.M.Schust., *J. Hattori Bot. Lab.* 58: 507, 1985 (Schuster & Engel 1985).
- Schistochila subhyalina* var. *subhyalina***, created by *Schistochila subhyalina* var. *grandidentata* (J.J.Engel et R.M.Schust.) Xiao L.He et Glenný, *Austral. Syst. Bot.* 23: 237, 2010 (He & Glenný 2010).
- Schistochila succulenta*** (J.J.Engel et R.M.Schust.) Xiao L.He et Glenný, *Austral. Syst. Bot.* 23: 237, 2010 (He & Glenný 2010). BASIONYM: *Pachyschistochila succulenta* J.J.Engel et R.M.Schust., *J. Hattori Bot. Lab.* 58: 517, 1985 (Schuster & Engel 1985).
- Schistochila vitreocincta*** (Herzog) Xiao L.He et Glenný, *Austral. Syst. Bot.* 23: 237, 2010 (He & Glenný 2010). BASIONYM: *Perssoniella vitreocincta* Herzog, *Ark. Bot. n.s.* 2: 265, 1952 (Herzog 1952b).
- Schljakovia*** Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010]. TYPE: *Schljakovia kunzeana* (Huebener) Konstant. et Vilnet (Konstantinova & Vilnet 2010).
- Schljakovia kunzeana*** (Huebener) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Jungermannia kunzeana* Huebener, *Hepaticol. Germ.*: 115, 1834 (Hübener 1834).
- Schljakovianthus*** Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010]. TYPE: *Schljakovianthus quadrilobus* (Lindb.) Konstant. et Vilnet (Konstantinova & Vilnet 2010).
- Schljakovianthus quadrilobus*** (Lindb.) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010). BASIONYM: *Jungermannia quadriloba* Lindb., *Kongl. Svenska Vetensk.-Akad. Handl. n.f.* 23 (5): 55, 1889 (Lindberg & Arnell 1889).
- Schljakovianthus quadrilobus* var. *collenchymaticus*** (R.M.Schust.) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010], “*collenchymatica*” (Konstantinova & Vilnet 2010). BASIONYM: *Lophozia quadriloba* var. *collenchymatica* R.M.Schust., *Hepat. Anthocerotae N. Amer.* 2: 281, 1969 (Schuster 1969).
- Schljakovianthus quadrilobus* var. *glareosus*** (Jørg.) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010], “*glareosa*” (Konstantinova & Vilnet 2010). BASIONYM: *Jungermannia quadriloba* var. *glareosa* Jørg., *Skr. Vidensk.-Selsk. Christiana, Math.-Naturvidensk. Kl.* 1894 (8): 59, 1894 (Jørgensen 1894).

- Schljakovianthus quadrilobus* (Lindb.) Konstant. et Vilnet **var. quadrilobus**, created by *Schljakovianthus quadrilobus* var. *collenchymaticus* (R.M.Schust.) Konstant. et Vilnet, *Arctoa* 18: 66, 2009 [2010] (Konstantinova & Vilnet 2010).
- Solenostoma amoenum* (Lindenb. et Gottsche) R.M.Schust. ex Váňa, Hentschel et Heinrichs, *Cryptog. Bryol.* 31: 136, 2010 (Váňa *et al.* 2010a). BASIONYM: *Jungermannia amoena* Lindenb. et Gottsche, *Syn. Hepat.* 5: 674, 1847 (Gottsche *et al.* 1847). NOTE: Also published invalidly (Art. 33.4; basionym not cited) by Schuster (2002: 379).
- Solenostoma amplexifolium* (Hampe ex Lehm. et Lindenb.) Váňa et Schäf.-Verw., *Acta Bot. Hung.* 51: 408, 2009, “*amplexifolia*” (Schäfer-Verwimp & Pócs 2009). BASIONYM: *Plagiochila amplexifolia* Hampe ex Lehm. et Lindenb., *Nov. Stirp. Pug.* 7: 6, 1838 (Lehmann 1838).
- Solenostoma appressifolium* (Mitt.) Váňa et D.G.Long, *Nova Hedwigia* 89: 494, 2009 (Váňa & Long 2009). BASIONYM: *Jungermannia appressifolia* Mitt., *J. Proc. Linn. Soc., Bot.* 5: 91, 1860 (Mitten 1860).
- Solenostoma appressifolium* (Mitt.) Váňa et D.G.Long **var. appressifolium**, created by *Solenostoma appressifolium* var. *minor* (Amakawa) Váňa et D.G.Long, *Nova Hedwigia* 89: 495, 2009 (Váňa & Long 2009).
- Solenostoma appressifolium* **var. minor** (Amakawa) Váňa et D.G.Long, *Nova Hedwigia* 89: 495, 2009 (Váňa & Long 2009). BASIONYM: *Jungermannia clavellata* var. *minor* Amakawa, *J. Hattori Bot. Lab.* 26: 25, 1963 (Amakawa 1963).
- Solenostoma appressifolium* **var. nigricans** (Amakawa) Váňa et D.G.Long, *Nova Hedwigia* 89: 495, 2009 (Váňa & Long 2009). BASIONYM: *Jungermannia decolyana* var. *nigricans* Amakawa, *J. Hattori Bot. Lab.* 30: 185, 1967 (Amakawa 1967).
- Solenostoma ariadne* (Taylor ex Lehm.) R.M.Schust. ex Váňa et D.G.Long, *Nova Hedwigia* 89: 495, 2009 (Váňa & Long 2009). BASIONYM: *Jungermannia ariadne* Taylor ex Lehm., *Nov. Stirp. Pug.* 8: 9, 1844 (Lehmann 1844). NOTE: Also published invalidly (Art. 33.4; basionym not cited) by Schuster (2002: 377).
- Solenostoma atrobrunneum* (Amakawa) Váňa et D.G.Long, *Nova Hedwigia* 89: 495, 2009 (Váňa & Long 2009). BASIONYM: *Jungermannia atrobrunnea* Amakawa, *J. Hattori Bot. Lab.* 30: 192, 1967 (Amakawa 1967).
- Solenostoma atrorevolutum* (Grolle ex Amakawa) Váňa et D.G.Long, *Nova Hedwigia* 89: 496, 2009 (Váňa & Long 2009). BASIONYM: *Jungermannia atrorevoluta* Grolle ex Amakawa, *J. Hattori Bot. Lab.* 29: 255, 1966 (Amakawa 1966).
- Solenostoma balfourii* (Váňa) Váňa, Hentschel et Heinrichs, *Cryptog. Bryol.* 31: 136, 2010 (Váňa *et al.* 2010a). BASIONYM: *Jungermannia balfourii* Váňa, *Folia Geobot. Phytotax.* 9: 279, 1974 (Váňa 1974).
- Solenostoma bengalense* (Amakawa) Váňa et D.G.Long, *Nova Hedwigia* 89: 496, 2009, “*bengalensis*” (Váňa & Long 2009). BASIONYM: *Jungermannia bengalensis* Amakawa, *J. Hattori Bot. Lab.* 31: 112, 1968 (Amakawa 1968).
- Solenostoma bilobum* (S.Hatt. ex Amakawa) Potemkin et Nyushko, *Liverworts and Hornworts of Russia* 1: 286, 2009 (Potemkin & Sofronova 2009). BASIONYM: *Plectocolea biloba* S.Hatt. ex Amakawa, *J. Jap. Bot.* 32: 216, 1957 (Amakawa 1957). NOTE: Also combined by Váňa, Hentschel et Heinrichs, *Cryptog., Bryol.* 31: 136, 2010 (Váňa *et al.* 2010a).
- Solenostoma borneense* (Amakawa) Váňa, Hentschel et Heinrichs, *Cryptog. Bryol.* 31: 136, 2010 (Váňa *et al.* 2010a). BASIONYM: *Jungermannia borneensis* Amakawa, *J. Hattori Bot. Lab.* 33: 160, 1970 (Amakawa 1970).
- Solenostoma caeleste* (Inoue et Váňa) Váňa, Hentschel et Heinrichs, *Cryptog. Bryol.* 31: 136, 2010 (Váňa *et al.* 2010a). BASIONYM: *Jungermannia caelestis* Inoue et Váňa, *Stud. Cryptog. Papua N. Guinea*: 16, 1979 (Inoue 1979).
- Solenostoma caoi* (C.Gao et X.L.Bai) Váňa et D.G.Long, *Nova Hedwigia* 89: 496, 2009 (Váňa & Long 2009). BASIONYM: *Jungermannia caoi* C.Gao et X.L.Bai, *Philipp. Scientist* 38: 152, 2001, “*caoi*” (Gao & Bai 2001).

- Solenostoma champawatense* (S.N.Srivast. et Amakawa) Váňa et D.G.Long, *Nova Hedwigia* 89: 496, 2009, “*champawatensis*” (Váňa & Long 2009). BASIONYM: *Jungermannia champawatensis* S.N.Srivast. et Amakawa, *Proc. Natl. Acad. Sci. India* 61: 205, 1991 (Srivastava & Amakawa 1991).
- Solenostoma chenianum* (C.Gao, Y.H.Wu et Grolle) Váňa et D.G.Long, *Nova Hedwigia* 89: 496, 2009 (Váňa & Long 2009). BASIONYM: *Jungermannia cheniana* C.Gao, Y.H.Wu et Grolle, *Nova Hedwigia* 77: 190, 2003 (Gao *et al.* 2003b).
- Solenostoma comatum* (Nees) C.Gao var. *comatum*, created by *Solenostoma comatum* var. *novae-guineae* (Váňa) Váňa, Hentschel et Heinrichs, *Cryptog. Bryol.* 31: 136, 2010 (Váňa *et al.* 2010a).
- Solenostoma comatum* var. *novae-guineae* (Váňa) Váňa, Hentschel et Heinrichs, *Cryptog. Bryol.* 31: 136, 2010 (Váňa *et al.* 2010a). BASIONYM: *Jungermannia comata* var. *novae-guineae* Váňa, *J. Hattori Bot. Lab.* 37: 187, 1973 (Váňa 1973a).
- Solenostoma decolor* (Schiffn.) R.M.Schust. ex Váňa, Hentschel et Heinrichs, *Cryptog. Bryol.* 31: 136, 2010 (Váňa *et al.* 2010a). BASIONYM: *Jungermannia decolor* Schiffn., *Leberm., Forschungsr. Gazelle* 4: 10, 1889 [1890] (Schiffner 1890). NOTE: Also published invalidly (Art. 33.4; basionym not cited) by Schuster (2002: 379).
- Solenostoma diversiclavellatum* (Amakawa et Grolle) R.M.Schust. ex Váňa et D.G.Long, *Nova Hedwigia* 89: 501, 2009 (Váňa & Long 2009). BASIONYM: *Jungermannia diversiclavellata* Amakawa et Grolle, *J. Hattori Bot. Lab.* 31: 107, 1968 (Amakawa 1968). NOTE: Also published invalidly (Art. 33.4; basionym not cited) by Schuster (2002: 377).
- Solenostoma dulongense* Váňa et D.G.Long, *Nova Hedwigia* 89: 497, 2009, “*dulongensis*”. TYPE: “CHINA, YUNNAN, Gongshan County, Dulong Xiang, west slope of Gaoligong Shan, Irrawadi catchment, Qiqi trail between Bapo and Shu Gung Qiao (Stone Arch Bridge), 27°43'35.5"N, 98°21' 41.7"E, disturbed valley slope with patches of evergreen broad-leaved forest, *Alnus nepalensis* and scrub, small gullies; on shady gravel bank by path, 1824 m, 28 October 2004, D.G. Long 33676 (E, HOLOTYPE; KUN, CAS, MO, isotypes)” (Váňa & Long 2009).
- Solenostoma dusenii* (Steph.) Váňa, Hentschel et Heinrichs, *Cryptog. Bryol.* 31: 136, 2010 (Váňa *et al.* 2010a). BASIONYM: *Nardia dusenii* Steph., *Hedwigia* 30: 209, 1891 (Stephani 1891a).
- Solenostoma emarginatum* (Amakawa) Váňa, Hentschel et Heinrichs, *Cryptog. Bryol.* 31: 136, 2010 (Váňa *et al.* 2010a). BASIONYM: *Plectocolea emarginata* Amakawa, *J. Jap. Bot.* 33: 340, 1958 (Amakawa 1958).
- Solenostoma faurieanum* (Beauverd) R.M.Schust., *Hepat. Anthocerotae N. Amer.* 2: 945, 1969 (Schuster 1969). BASIONYM: *Jungermannia faurieana* Beauverd, *Sp. Hepat. (Stephani)* 6: 571, 1924 (Stephani 1924). NOTE: Also combined by Bakalin, *Hep. Flora Kamchatka*: 366, 2009, “*fauriana*” (Bakalin 2009a).
- Solenostoma flagellare* (Amakawa) Váňa et D.G.Long, *Nova Hedwigia* 89: 501, 2009, “*flagellaris*” (Váňa & Long 2009). BASIONYM: *Jungermannia flagellaris* Amakawa, *J. Hattori Bot. Lab.* 29: 258, 1966 (Amakawa 1966).
- Solenostoma flagellatum* (S.Hatt.) Váňa et D.G.Long, *Nova Hedwigia* 89: 501, 2009 [Nov.] (Váňa & Long 2009). BASIONYM: *Plectocolea flagellata* S.Hatt., *J. Hattori Bot. Lab.* 3: 12, 1948 [1950] (Hattori 1950a). NOTE: Also combined by Potemkin et Nyushko in *Liverworts and Hornworts of Russia* 1: 287, 2009 [Dec.] (Potemkin & Sofronova 2009).
- Solenostoma flavi-albicans* (Amakawa et Grolle) Váňa et D.G.Long, *Nova Hedwigia* 89: 501, 2009 (Váňa & Long 2009). BASIONYM: *Jungermannia flavi-albicans* Amakawa et Grolle, *J. Hattori Bot. Lab.* 31: 108, 1968 (Amakawa 1968).
- Solenostoma flavorevolutum* (Váňa) Váňa et D.G.Long, *Nova Hedwigia* 89: 501, 2009 (Váňa & Long 2009). BASIONYM: *Jungermannia flavorevoluta* Váňa, *J. Hattori Bot. Lab.* 36: 63, 1972 [1973] (Váňa 1973b).
- Solenostoma glaucum* (Amakawa) Váňa et D.G.Long, *Nova Hedwigia* 89: 502, 2009 (Váňa & Long 2009). BASIONYM: *Jungermannia glauca* Amakawa, *J. Hattori Bot. Lab.* 29: 256, 1966 (Amakawa 1966).

- Solenostoma gongshanense*** (C.Gao et J.Sun) Váňa et D.G.Long, *Nova Hedwigia* 89: 502, 2009, “gongshanensis” (Váňa & Long 2009). BASIONYM: *Jungermannia gongshanensis* C.Gao et J.Sun, *Bull. Bot. Res., Harbin* 27: 140, 2007 (Sun & Duan 2007).
- Solenostoma grollei*** (D.G.Long et Váňa) K.Feldberg, Hentschel, Bombosch, D.G.Long, Váňa et Heinrichs, *Pl. Syst. Evol.* 280: 244, 2009 (Feldberg *et al.* 2009). BASIONYM: *Gottschelia grollei* D.G.Long et Váňa, *J. Bryol.* 29: 167, 2007 (Long & Váňa 2007).
- Solenostoma haskarlianum*** (Nees) R.M.Schust. ex Váňa et D.G.Long, *Nova Hedwigia* 89: 502, 2009, “hasskarlianum” (Váňa & Long 2009). BASIONYM: *Alicularia haskarliana* Nees, *Syn. Hepat.* 1: 12, 1844 (Gottsche *et al.* 1844). NOTE: Also published invalidly (Art. 33.4; basionym not cited) by Schuster (2002: 378; “hasskarlianum”).
- Solenostoma hattorianum*** (Amakawa) Potemkin et Nyushko, *Liverworts and Hornworts of Russia* 1: 287, 2009 (Potemkin & Sofronova 2009). BASIONYM: *Plectocolea hattoriana* Amakawa, *J. Jap. Bot.* 33: 341, 1958 (Amakawa 1958). NOTE: Also combined by Váňa, Hentschel et Heinrichs in *Cryptog., Bryol.* 31: 136, 2010 (Váňa *et al.* 2010a).
- Solenostoma heterolimbatum*** (Amakawa) Váňa et D.G.Long, *Nova Hedwigia* 89: 503, 2009 (Váňa & Long 2009). BASIONYM: *Jungermannia heterolimbata* Amakawa, *J. Hattori Bot. Lab.* 30: 183, 1967 (Amakawa 1967).
- Solenostoma hewsoniae*** (Amakawa et Grolle) R.M.Schust. ex Váňa, Hentschel et Heinrichs, *Cryptog. Bryol.* 31: 136, 2010 (Váňa *et al.* 2010a). BASIONYM: *Jungermannia hewsoniae* Amakawa et Grolle, *J. Hattori Bot. Lab.* 31: 108, 1968 (Amakawa 1968). NOTE: Also published invalidly (Art. 33.4; basionym not cited) by Schuster (2002: 377; “hewsonianum”).
- Solenostoma hirticalyx*** (Steph.) R.M.Schust. ex Váňa, Hentschel et Heinrichs, *Cryptog. Bryol.* 31: 137, 2010 (Váňa *et al.* 2010a). BASIONYM: *Jungermannia hirticalyx* Steph., *Sp. Hepat. (Stephani)* 6: 87, 1917 (Stephani 1917b). NOTE: Also published invalidly (Art. 33.4; basionym not cited) by Schuster (2002: 377).
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- Solenostoma pseudocyclops* (Inoue) Váňa et D.G.Long, *Nova Hedwigia* 89: 506, 2009 (Váňa & Long 2009). BASIONYM: *Jungermannia pseudocyclops* Inoue, *Bull. Natl. Sci. Mus., n.s.* 9: 37, 1966 (Inoue 1966a).
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- Solenostoma speciosum*** (Horik.) Hentschel, K.Feldberg, Bombosch, D.G.Long, Váňa et Heinrichs **subsp. *speciosum***, created by *Solenostoma speciosum* subsp. *villosum* (R.M.Schust.) Hentschel, K.Feldberg, Bombosch, D.G.Long, Váňa et Heinrichs, *Pl. Syst. Evol.* 280: 246, 2009 (Feldberg et al. 2009).
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- Spruceanthus wiggintonii*** A.E.D.Daniels, Kariyappa et P.Daniel, *Cryptog. Bryol.* 31: 121, 2010. TYPE: “India, Tamil Nadu, Kanyakumari Dist., W. Ghats, Muthukuzhivayal, ca 1250 m, 26.1.2001, Daniels 1433 p.p. (Holotype: MH; Isotype: SCCN)” (Daniels *et al.* 2010).
- Stolonivector clasmatocoleoides*** J.J.Engel, *Nova Hedwigia* 88: 339, 2009. TYPE: “HOLOTYPE: New Zealand, South Island., Western Nelson Ecological Prov., Kahurangi Natl. Park, Matiri Range, Thousand Acres Plateau, 1100–1200 m, Engel & von Konrat 27036 (F); isotype: (CHR)” (Engel 2009).
- Stolonivector obtusilobus*** J.J.Engel, *Nova Hedwigia* 88: 337, 2009. TYPE: “HOLOTYPE: New Zealand, North Island., Southern North Island Ecological Prov., Ruahine Forest Park, NW Ruahine Range, vicinity of Makirikiri Tarns, N of Te Rakaunuiakura and NW of Makirikiri peak, ca. 1100 m, Engel & von Konrat 28088A (F); isotype: (AK)” (Engel 2009).
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