



## Checklist of the hornworts and liverworts of Java

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### Abstract

In this checklist all hornworts and liverworts reports for Java are listed. The horn- and liverwort flora of the island consists of 568 known and accepted species (plus 39 invalid or illegitimate names). In addition 12 recorded species are considered dubious and another 111 species are excluded from the flora of Java. Most of the species are reported from West Java. The genus *Stenolejeunea* is synonymized with *Lejeunea* and we make the new combination *Lejeunea thallophora* (Eifrig) Gradst. and the new name *Lejeunea propagulifera* Gradst. (nom. nov. pro *Trachylejeunea schiffneri* Herzog; non *Lejeunea schiffneri* Steph. ex Schiffn.). A new synonym of *Lejeunea papilionacea* (*Cardiolejeunea cardiantha* R.M.Schust. et Kachroo syn. nov.) is proposed.

**Key words:** *Stenolejeunea*, *Cardiolejeunea cardiantha*, Java, checklist, liverworts, hornworts

### Introduction

Checklists are important tools in taxonomy, systematics and conservation (Söderström *et al.* 2007, 2008). In spite of that, several important areas lack recent checklists, including a number of islands in the Malesian archipelago.

Java is one of the larger Indonesian islands with an area of 132,000 km<sup>2</sup> and with mountains up to 3,676 m a.s.l. The western part of the island includes two ecoregions (Olson *et al.* 2001), Western Java Rainforest in the lowlands and Western Java montane rain forest at higher altitudes. The latter belongs to the 200 most threatened ecoregions of the world (Olson & Dinerstein 2002). The corresponding ecoregions in the east are Eastern Java-Bali rain forest and Eastern Java-Bali montane rain forests. The western part of the island is very wet with an annual rainfall of 4500 mm while the eastern part is considerably drier. This can also be seen in the number of liverwort and hornwort species reported from the island. Of the reported 607 species (including doubtful and invalid/illegitimate species) from Java 488 species have been reported from West Java (Jawa Barat) while there are only 84 from Central Java (Jawa Tengah) and 61 from East Java (Jawa Timur). The higher species richness of West Java is also influenced by the location of the main centers of botanical exploration, Herbarium Bogoriense and Bogor Botanical Garden, in this part of the island

### Knowledge of the hornworts and liverworts of Java

Liverworts and hornworts from Java were first reported by Reinwardt *et al.* (1824a) and Nees (1830). Important later authors publishing on liverworts and hornworts of Java are van der Sande Lacoste (e.g., 1857,

1864), Goebel (1888), Schiffner (1893b, 1898a, 1900a, 1900b, 1900c), Verdoorn (1929b, 1930, 1932b, 1933c, 1934b) and Meijer (e.g., 1954c, 1957, 1958a, 1959a, 1959b, 1960). A series of reports on bryological fieldtrips in West and Central Java was published by Meijer (1953, 1954a, 1954b, 1955, 1958b). An unfinished Liverwort Flora of Java by Schiffner (1900a) appeared in the series “Flora de Buitenzorg”, with descriptions (but no illustrations) and keys to the thalloid liverworts and some families of the leafy liverworts (Adelanthaceae, Gymnomitriaceae, Jungermanniaceae, Lophocoleaceae, Plagiochilaceae, Scapaniaceae p.p.). Many of the names used in this Flora, as well as in the other papers cited here, are currently not in use.

After 1960, very little floristic work has been carried out on the liverworts and hornworts of Java, until very recently (e.g., Hasan & Ariyanti 2004, Damayanti 2006, Iskander 2008, Gradstein *et al.* 2010, Haerida *et al.* 2010). However, a large number of taxonomic papers of Southeast Asia have appeared since 1960, and many of these contain descriptions of species from Java.

In this checklist we report 607 species (and an additional 12 species which occurrences are questioned) and several infraspecific taxa. Of these, 479 are accepted species as currently understood based on revision and monographs; the remaining species are little known or of doubtful status (see below, Methods) or invalid/illegitimate names (39 species) that we are unable to place. We also give a list of 111 species that are reported from Java but which are excluded from the Javanese flora either in earlier works or by us here. Many of the species (38) are invalid or illegitimate (and many more of the infraspecific taxa) but as we do not know where to refer them, we report them separately.

Many taxa are described from Javanese material (some only as syntypes). We have found 957 taxa with original material from the island but 151 of them (16 %) have names that are invalid or illegitimate. Of the 633 originally described species, 72 (11 %) are invalid. Among the valid taxa 229 are still recognized, 164 species and 65 infraspecific taxa.

## Nomenclatural novelties

*Stenolejeunea* Schuster (1963) is here reduced to synonymy under *Lejeunea* Lib. in Hampe (1836) because there is no single morphological character separating the two genera. The thalloid, ribbon-like gemmae considered diagnostic of *Stenolejeunea* have recently also been observed in several genuine species of *Lejeunea*, e.g. *L. exilis* (Reinwardt *et al.* 1824a) Grolle (1979a), *L. cocoes* Mitten (1860), *L. infestans* (Stephani 1896) Mizutani (1964) (Zhu & So 2001). In addition they have been found in the genera *Cyclolejeunea* Evans (1904), *Pictolejeunea* Grolle (1977b) and *Prionolejeunea* (Spruce 1885) Schiffner (1893a). Other characters suggested being characteristic of *Stenolejeunea* such as the apiculate-acuminate leaf apex and dentate perianth keels are also not uncommon in *Lejeunea* species (see Reiner-Drehwald & Goda 2000). The correct names for the species from Java assigned to *Stenolejeunea* are:

*Lejeunea apiculata* Sande Lacoste (1854) = *Stenolejeunea apiculata* (Sande Lac.) Schuster (2000)

***Lejeunea thallophora* (Eifrig 1937) Gradst. comb. nov.**

Basionym: *Taxilejeunea thallophora* Eifrig (1937: 99) ≡ *Stenolejeunea thallophora* (Eifrig) Schuster (1957: 130).

***Lejeunea propagulifera* Gradst. nom. nov.**

Basionym: *Trachylejeunea schiffneri* Herzog (1948: 239) ≡ *Stenolejeunea schiffneri* (Herzog) Pócs in Pócs *et al.* (1995: 267).

The new name is necessary because the name “*Lejeunea schiffneri*” has already been used for *Lejeunea schiffneri* Steph. ex Schiffn. in Schiffner (1893b) (≡ *Leptolejeunea schiffneri* (Steph. ex Schiffn.) Stephani 1897). Note that the new name *Lejeunea schiffneri* Steph. ex Schiffn. was proposed twice by Schiffner (1893b) in the same publication, for a species in the subgenus *Leptolejeunea* Spruce (1885) and for one in the subgenus *Pycnolejeunea* Spruce (1885)! Since only one of the two *Lejeunea schiffneri* can be valid, the one in subgenus *Leptolejeunea* is accepted as Stephani (1896) was the first to (indirectly) choose this to be

legitimate, and the one in subgenus *Pycnolejeunea* rejected. In the genus *Pycnolejeunea* the latter species is therefore cited as *Pycnolejeunea schiffneri* Steph. ex Schiffn. in Schiffner (1898), without reference to the rejected basionym in *Lejeunea* from 1893.

Several further species have been assigned to the genus *Stenolejeunea*. As we are unfamiliar with these species, we refrain from transferring these formally to *Lejeunea*.

We also propose a new synonym:

*Lejeunea papilionacea* Stephani (1892) = *Cardiolejeunea cardiantha* R.M.Schust. et Kachroo in Schuster (1963), **syn. nov.**

By the characteristic, large, rounded auricles of the perianth and the oblong leaves, *Cardiolejeunea cardiantha* R.M.Schust. et Kachroo (described from Cibodas) is identical to *Lejeunea papilionacea* (Steph.) E.W. Jones from Africa. We see no differences between the two species and consider them as conspecific. *Lejeunea papilionacea* is widespread in Africa and had not yet been reported from Asia.

## Methods

In this checklist the taxa are arranged in alphabetic order. Invalid and illegitimate names that we are unable to place in any synonymy are included, but no attempts have been made to validate these names. The list is in two parts, accepted reports and doubtful/excluded reports. The latter includes reported taxa not currently in synonymy of anything but for which the occurrence on Java is considered erroneous or very doubtful.

The list has the following format:

\*\*\* *A. fertilis* (Reinw., Blume et Nees) Schiffn. JAV: **LECTOTYPE** of *Acrolejeunea wichurae*, **Reinwardt et al. 1824a** as *Jungermannia fertilis*, **Sande Lacoste 1857, 1864** both as *Phragmicoma fertilis*, **Bonner 1962** also as *Acrolejeunea wichurae*, Bapna & Kachroo 2000b, **Gradstein et al. 2002**. BA: **Van Leeuwen 1936** as *Ptychocoleus fertilis*. JA: **Gradstein 1975**.

Each accepted taxon is qualified using a four level ranking system that indicates our level of confidence about a taxon's value. The coding convention is outlined in detail by von Konrat *et al.* (2010). Briefly, ? = problem with the taxon name; \* = serious doubts about the value of the taxon; \*\* = probably a good taxon; \*\*\* = accepted, a good taxon as currently understood. We have made numerous notes explaining the scoring for individual taxa, especially for taxa that are denoted \*. Taxa that are invalid or illegitimate are always classified ? but not always followed by a note.

We distinguish between first hand reports (“A report citing a specimen or an observation of material either in the field ‘and then locality fairly exact’ or among collected specimens”) using bold and second hand reports (“Merely citing a locality that is not exact enough to be searched for the species, and not apparently based on a specimen that can be found”) using normal font (cf. von Konrat *et al.* 2010). This includes all types coming from Java. We try to distinguish between holotypes, lectotypes and syntypes, but we have not made any effort to check all types. We therefore use the word “type” where we are not sure if it is a holotype or not. In order to condense the list a bit we use the words “both as” or “all as” to denote that the author used this name(s) in both/all publications. The word “also” as means that the author(s) used the current accepted name in addition to another name.

Java is separated into four main provinces, Banten (BA), West Java (WJ; Jawa Barat), Central Java (CJ; Java Tengah) and East Java (EJ; Java Timur) in addition to two special areas Jakarta (JA) and Yogyakarta (YY). We make an attempt separate the reports by these provinces. The underscored abbreviations corresponds to the ones given here. The abbreviation JAV is used for reports that are not specific enough to be placed in a province or where we have been unable to identify the locality.

The synonyms include all names used in reports from Java.

## Anthocerotophyta

### Anthoceros

- \* <sup>1</sup>*A. argillaceus* (Steph.) Verd. JAV: **Stephani 1916** as *Aspiromitus argillaceus* and *Aspiromitus buitenzorgius*, Verdoorn 1932a, **Meijer 1954c**, Bharadwaj 1972 as *Folioceros buitenzorgius*. WJ: **TYPE** of *Aspiromitus argillaceus* and *Aspiromitus buitenzorgius*, **Bonner 1962** as *Aspiromitus argillaceus* and *Aspiromitus buitenzorgius*.
- ? *A. commutatus* Steph. ex Bonner *nom. inval.* JAV: **Bonner 1962**.
- ? <sup>2</sup>*A. glandulosus* Lehm. et Lindenb. var. *vesiculosovenosus* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**.
- \* <sup>3</sup>*A. javanicoides* H.A.Mill. JAV: **Stephani 1916** as *Anthoceros javanicus*, Miller *et al.* 1983 also as *Anthoceros javanicus*. CJ: **TYPE** of *Anthoceros javanicus*, **Bonner 1962** as *Anthoceros javanicus*, **Miller 1981**.
- \* <sup>4</sup>*A. kajumas* (K.I.Goebel) Prosk. JAV: Bonner 1962. EJ: **TYPE** of *Aspiromitus kajumas*, **Goebel 1928** as *Aspiromitus kajumas*, **Bonner 1977** as *Aspiromitus kajumas*.
- \* <sup>5</sup>*A. megasporus* Meijer JAV: **TYPE**, **Bonner 1962**. CJ: **Meijer 1957**. WJ: **Meijer 1957**.
- \*\*\* <sup>6</sup>*A. punctatus* L. JAV: Hasegawa 1984, Guo & Zhang 1999. CJ: Meijer 1955, **1957** both as *Anthoceros crispulus*. WJ: **Meijer 1957** as *Anthoceros crispulus*.
- \*\*\* *A. telaganus* Steph. JAV: **Stephani 1916**, Hasegawa 1998. CJ: Meijer 1955, **1957**. EJ: **Meijer 1957**. WJ: **TYPE**, **Meijer 1957**, **Bonner 1962**. YY: **Meijer 1957**.

### Aspiromitus<sup>7</sup>

- ? *A. asper* Schiffn. CJ: **TYPE**, **Schiffner 1955**.
- ? *A. bullosus* Schiffn. JAV: **Bonner 1977**. CJ: **SYNTYPE**, **Schiffner 1955**.
- ? *A. lobatus* Schiffn. WJ: **TYPE** and **TYPE** of *Aspiromitus lobatus* f. *thermalis*, **Schiffner 1955** also as *Aspiromitus lobatus* f. *thermalis*, **Bonner 1977** also as *Aspiromitus lobatus* f. *thermalis*.

### Dendroceros

- \*\*\* *D. acutilobus* Steph. JAV: Hasegawa 1982, 1986b, Piippo 1993b. WJ: **Hasegawa 1980a**.
- \*\*\* *D. cavernosus* J.Haseg. JAV: Hasegawa 1982, 1986a, 1986b.
- \* <sup>8</sup>*D. crassicosatus* Steph. JAV: **TYPE**, **Stephani 1917a**, **Bonner 1965**.
- \*\*\* *D. difficilis* Steph. JAV: **Stephani 1917a**, Hasegawa 1980a, **Piippo 1993b**, Pócs & Streimann 1999. WJ: **TYPE**, **Bonner 1965**.
- \* <sup>9</sup>*D. gracilis* Steph. JAV: **TYPE**, **Stephani 1917a**, **Bonner 1965**.
- \*\*\* *D. javanicus* (Nees) Nees JAV: **TYPE** of *Anthoceros javanicus* and *Dendroceros elegans*, **Nees 1830** as *Anthoceros javanicus*, **Gottsche et al. 1846**, Campbell 1908, **Stephani 1923** as *Dendroceros elegans*, **Bonner 1962** as *Anthoceros javanicus*, **1965** as *Dendroceros elegans*, **Hasegawa 1980a**, **1980b**, 1982, 1986a, 1986b, 1993, Miller *et al.* 1983 also as *Dendroceros elegans*, **Piippo 1993b**. BA: **Van Leeuwen 1936**. WJ: **Sande Lacoste 1857**, **Schiffner 1898a**, **Renner 1932**.  
? — var. *clathratus* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**.
- \* <sup>10</sup>*D. rarus* Steph. JAV: **TYPE**, **Stephani 1917a**, **Bonner 1965**.
- \* <sup>11</sup>*D. reticulus* Herzog WJ: **TYPE**, **Herzog 1951a**, **Bonner 1965**.
- \*\*\* *D. subplanus* Steph. JAV: **TYPE** and **TYPE** of *Dendroceros angustus*, Stephani 1909c, **Stephani 1917a** also as *Dendroceros angustus* and *Dendroceros integerrimus*, **Bonner 1965**, **Hasegawa 1980a**, 1982, 1986a, **Piippo 1993b**. BA: **Van Leeuwen 1936** also as *Dendroceros angustus*. WJ: **LECTOTYPE** of *Dendroceros integerrimus*, **Bonner 1965** as *Dendroceros integerrimus*.

### Folioceros

- \*\*\* *F. amboinensis* (Schiffn.) Piippo JAV: **Meijer 1954c** as *Anthoceros amboinensis*, Bharadwaj 1973 as *Folioceros spinisporus*, Hasegawa 1986a as *Folioceros spinisporus*, 1993 as *Anthoceros amboinensis*, Asthana & Srivastava 1991 as *Folioceros spinisporus*, Piippo 1993b, Bapna & Kachroo 2000a as *Folioceros spinisporus*. CJ: Meijer 1955, **1957** both as *Anthoceros amboinensis*. WJ: Meijer 1953 as *Anthoceros spinisporus*, **1957** as *Anthoceros amboinensis*. YY: **Meijer 1957** as *Anthoceros amboinensis*.

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1. *Anthoceros argillaceus* is a doubtful taxon since nobody has critically looked at it since Stephani and studied its relationship with *A. punctatus* s. lat.
  2. *Anthoceros glandulosus* is now *Folioceros glandulosus*, but we do not know if this variety also belong there.
  3. *Anthoceros javanicoides* is a doubtful taxon since nobody has critically looked at it since Stephani and studied its relationship with *A. punctatus*.
  4. *Anthoceros kajumas* was not dealt with by Hasegawa in any of his papers on *Anthoceros*, nor did Meijer deal with it for Indonesia. Proskauer made the new combination, but no other notes (D. C. Cargill, pers. comm.).
  5. *Anthoceros megasporus* was not mentioned by Hasegawa and it has not been looked at since Meijer's original description (D. C. Cargill, pers. comm.).
  6. *Anthoceros punctatus* is a species complex in need of a modern revision (J. C. Villarreal & D. C. Cargill, pers. comm.).
  7. *Aspiromitus* is a synonym of *Anthoceros*, but the following taxa are not transferred and their taxonomic value is doubtful.
  8. *Dendroceros crassicosatus* was not studied by Hasegawa and its status is doubtful.
  9. *Dendroceros gracilis* was not studied by Hasegawa and its status is doubtful.
  10. *Dendroceros rarus* was not studied by Hasegawa and its status is doubtful.
  11. *Dendroceros reticulus* was mentioned by Hasegawa (1980), but he does not synonymize it under *D. javanicus*, he just states that Herzog thought it similar to *D. elegans*, which is a synonym of *D. javanicus* (D. C. Cargill, pers. comm.)

- \*\*\* *F. fuciformis* (Mont.) D.C.Bharadwaj JAV: **TYPE** of *Anthoceros falsinervius* and its  $\beta$  *lyratus*, **Meissner 1848** as *Anthoceros falsinervius*, **Gottsche 1853** as *Anthoceros falsinervius* and its  $\beta$  *lyratus*, **Sande Lacoste 1857** as *Anthoceros falsinervius* and its  $\beta$  *lyratus*, Stephani 1916 as *Aspiromitus falsinervius* and *Aspiromitus vesiculosus*, Schiffner 1955 as *Aspiromitus vesiculosus*, **Meijer 1954c** as *Anthoceros falsinervius*, **Bonner 1962** as *Anthoceros falsinervius*, *Anthoceros vesiculosus*, *Aspiromitus vesiculosus* and *Aspiromitus falsinervius*, Miller *et al.* 1983 as *Anthoceros vesiculosus*, **Hasegawa 1984**, Piippo 1993b, Koponen *et al.* 2000. CJ: **Schiffner 1898a** as *Anthoceros falsinervius*, Meijer 1955 as *Anthoceros falsinervius*. WJ: **Schiffner 1898a** as *Anthoceros falsinervius* and its var.  $\beta$  *lyratus*, Meijer 1953, Meijer 1954a, 1958b all as *Anthoceros falsinervius*.
- \*\*\* *F. glandulosus* (Lehm. et Lindenb.) D.C.Bharadwaj JAV: **Sande Lacoste 1857** as *Anthoceros glandulosus*, **Schiffner 1893b, 1898a both** as *Anthoceros glandulosus*, **Stephani 1916** as *Aspiromitus striatus*, Bharadwaj 1972, Miller *et al.* 1983 as *Anthoceros appendiculatus* and *Anthoceros glandulosus*, Hasegawa 1986a, 1986b both as *Folioceros appendiculatus*, Asthana & Srivastava 1991 as *Folioceros appendiculatus*, **Piippo 1993b**, Bapna & Kachroo 2000a also as *Folioceros appendiculatus*. CJ: **Gottsche et al. 1846** as *Anthoceros glandulosus*, Meijer 1955 as *Anthoceros glandulosus*, **1957** as *Anthoceros appendiculatus* and *Anthoceros glandulosus*. EJ: **Schiffner 1955** as *Aspiromitus glandulosus*. WJ: **TYPE** of *Anthoceros doposchegianus*, *Anthoceros polyander* and *Aspiromitus striatus*, **Schiffner 1900c** as *Anthoceros glandulosus* var. *glandulosus*, Meijer 1953, 1954a both as *Anthoceros glandulosus*, **1957** as *Anthoceros appendiculatus* and *Anthoceros glandulosus*, **Bonner 1962** as *Anthoceros doposchegianus*, *Anthoceros polyander* and *Aspiromitus striatus*.

### Megaceros

- \*\*\* *M. flagellaris* (Mitt.) Steph. JAV: Land 1908 as *Megaceros salakensis*, Stephani 1916 as *Megaceros salakensis* and *Megaceros stahlII*, Geissler & Bischler 1985 as *Megaceros stahlII*, **Asthana & Srivastava 1991** as *Megaceros stahlII*, Piippo 1993b, Koponen *et al.* 2000. CJ: **Schiffner 1955** as *Megaceros salakensis*. WJ: **TYPE** of *Anthoceros stahlII* and *Megaceros salakensis*, **Schiffner 1898a, 1900c both** as *Anthoceros stahlII*, **Campbell 1907** as *Megaceros salakensis*, Meijer 1954a as *Megaceros grandis*, **Schiffner 1955** as *Megaceros salakensis*, **Bonner 1962** as *Anthoceros stahlII*, **Geissler & Bischler 1985** as *Megaceros salakensis*.
- \* <sup>12</sup>*M. tjibodensis* Campb. JAV: Stephani 1916, Miller *et al.* 1983, Srivastava 1998, Bapna & Kachroo 2000a. WJ: **LECTOTYPE**, **Campbell 1907**, **Geissler & Bischler 1985**, **Asthana & Srivastava 1991**.

### Notothylas

- \*\*\* *N. javanica* (Sande Lac.) Gottsche JAV: **TYPE** of *Blasia javanica*, **Sande Lacoste 1857** as *Blasia javanica*, **Schiffner 1898a**, Land 1908, Stephani 1917a, **Bonner 1963a** as *Blasia javanica*, Geissler & Bischler 1989, Schuster 1992b, Hasegawa 1993, Bapna & Kachroo 2000a, Piippo *et al.* 2002. CJ: Meijer 1955. WJ: **Campbell 1908**, Meijer 1953.

### Paraphymatoceros

- \*\*\* *P. hirticalyx* (Steph.) Stotler JAV: **TYPE** of *Anthoceros polyandrus*, **Stephani 1916** as *Anthoceros polyandrus*, **Meijer 1954c** as *Anthoceros tjibodensis*, Bonner 1962 as *Anthoceros polyandrus* and *Anthoceros tjibodensis*, Hasegawa 1986b as *Phaeoceros polyandrus*. WJ: Meijer 1957 as *Anthoceros hirticalyx*.

### Phaeoceros

- \*\*\* *P. carolinianus* (Michx.) Prosk. JAV: **Stephani 1916** as *Anthoceros silvaticus*, *Anthoceros validus* and *Aspiromitus preangeranus*, Miller *et al.* 1983 as *Anthoceros validus* and *Phaeoceros laevis* subsp. *carolinianus*, **Schuster 1992b** as *Anthoceros laevis* subsp. *carolinianus*, Piippo 1993b as *Phaeoceros laevis* subsp. *carolinianus*, Damsholt 2002 as *Phaeoceros laevis* subsp. *carolinianus*. BA: **Van Leeuwen 1936** as *Aspiromitus fontinalis*. CJ: **Meijer 1957**. WJ: **TYPE** of *Anthoceros silvaticus*, *Anthoceros validus*, *Aspiromitus fontinalis* and *Aspiromitus preangeranus*, **Stephani 1916** as *Aspiromitus fontinalis*, **Meijer 1957** as *Anthoceros laevis*, **Bonner 1962** as *Anthoceros silvaticus*, *Anthoceros validus*, *Aspiromitus fontinalis* and *Aspiromitus preangeranus*.

## Marchantiophyta

### Acanthocoleus

- \*\*\* *A. javanicus* (Steph.) Kruijt JAV: Verdoorn 1933b as *Dicranolejeunea javanica*, Hattori 1966a as *Dicranolejeunea javanica*, **Kruijt 1988**, Zhu & Grolle 2001. WJ: **TYPE** of *Cyclolejeunea fleischeri* and *Dicranolejeunea javanica*, **Stephani 1912b** as *Dicranolejeunea javanica*, **1913** as *Cyclolejeunea fleischeri*, **Verdoorn 1933** as *Dicranolejeunea javanica*, **Bonner 1963b** as *Cyclolejeunea fleischeri*, **1965** as *Dicranolejeunea javanica*, **Mizutani 1980b** as *Dicranolejeunea javanica*.

### Acrolejeunea

- \*\*\* *A. arcuata* (Nees) Grolle et Gradst. JAV: **TYPE** of *Jungermannia arcuata* and *Ptychocoleus hians*, **Nees 1830** as *Jungermannia arcuata*, **Gottsche et al. 1845a** as *Phragmicoma arcuata*, **Sande Lacoste 1857** as *Phragmicoma arcuata*, **Stephani 1890a** as *Phragmicoma arcuata*, **1912b** as *Ptychocoleus arcuatus* and *Ptychocoleus hians*, Schiffner 1894 as *Mastigolejeunea arcuata*, Geissler & Bischler 1985 as *Marchesinia arcuata* and *Mastigolejeunea arcuata*, **1987** as *Jungermannia arcuata* and *Lejeunea arcuata*, **1989** as *Phragmicoma arcuata*, *Ptychocoleus arcuatus* and *Ptychocoleus hians*, **Gradstein et al. 2002**. WJ: **Sande Lacoste 1864** as *Phragmicoma arcuata*, **Schiffner 1898a** as *Mastigolejeunea arcuata*, **Verdoorn 1933** as *Ptychocoleus arcuatus*, Meijer 1954a as *Ptychocoleus arcuatus*, **Gradstein 1975**, **Gradstein et al. 2010**, **Haerida et al. 2010**.
- \*\*\* *A. fertilis* (Reinw., Blume et Nees) Schiffn. JAV: **LECTOTYPE** of *Acrolejeunea wichurae*, **Reinwardt et al. 1824a** as *Jungermannia fertilis*, **Sande Lacoste 1857, 1864 both** as *Phragmicoma fertilis*, **Stephani 1890a** as *Phragmicoma fertilis*,

12. *Megaceros tjibodensis* was synonymized with *M. flagellaris* by Hasegawa (1983) and a syntype belongs to that species. However, the lectotype belongs to another species that may be conspecific with *M. leptohymenius* (D. C. Cargill, pers. comm.).

Verdoorn 1933b as *Ptychocoleus wichurae*, 1934a as *Ptychocoleus fertilis*, **Bonner 1962** also as *Acrolejeunea wichurae*, Miller *et al.* 1983 also as *Lejeunea fertilis*, *Phragmicoma fertilis* and *Ptychocoleus fertilis*, Geissler & Bischler 1985 as *Marchesinia fertilis*, 1989 as *Phragmicoma fertilis*, *Ptychocoleus fertilis* and *Ptychocoleus wichurae*, Bapna & Kachroo 2000b, **Gradstein *et al.* 2002**. BA: **Van Leeuwen 1936** as *Ptychocoleus fertilis*, **Haerida *et al.* 2010**. JA: **Gradstein 1975**. WJ: **TYPE** of *Jungermannia fertilis*, **Nees 1830** as *Jungermannia fertilis*, **Gottsche *et al.* 1845a** as *Phragmicoma fertilis*, **Schiffner 1894** as *Acrolejeunea wichurae*, **1898a**, Stephani 1912b as *Ptychocoleus wichurae*, **Verdoorn 1933** as *Ptychocoleus fertilis* and *Ptychocoleus wichurae*, **Gradstein 1975**, **Geissler & Bischler 1987** as *Jungermannia fertilis*, **Haerida *et al.* 2010**.

\*\*\* A. *pynoclada* (Taylor) Schiffn. JAV: Schiffner 1894, **1898a**, Verdoorn 1933b, 1934a both as *Ptychocoleus pynocladus*, Mizutani 1977, 1978a, Miller *et al.* 1983 also as *Ptychocoleus pynocladus*, Bapna & Kachroo 2000b. WJ: **TYPE** of *Acrolejeunea pynoclada* var. *rostrata*, **Schiffner 1898a** as *Acrolejeunea pynoclada* var. *rostrata*, **1900c**, **Verdoorn 1933** as *Ptychocoleus pynocladus*, **Haerida *et al.* 2010**.

\*\*\* — subsp. *pynoclada* JAV: **TYPE** of *Phragmicoma cucullata* and *Ptychocoleus cucullatus*, **Stephani 1890a** as *Phragmicoma cucullata*, Bischler *et al.* 1962 as *Ptychocoleus cucullatus*, Miller *et al.* 1983 as *Acrolejeunea cucullata* and *Ptychocoleus cucullatus*, **Geissler & Bischler 1989** as *Phragmicoma cucullata* and *Ptychocoleus cucullatus*, Gradstein *et al.* 2002. EJ: **Gradstein 1975**. WJ: **Gradstein 1975**.

\*\*\* A. *tjibodensis* (Verd.) Grolle et Gradst. JAV: Gradstein 1974, Bonner 1977. CJ: **Verdoorn 1933** as *Ptychocoleus tjibodensis*, **Gradstein 1975**. EJ: **Gradstein 1975**. WJ: **HOLOTYPE** of *Ptychocoleus tjibodensis*, **Verdoorn 1933** as *Ptychocoleus tjibodensis*, **Gradstein 1975**, **Geissler & Bischler 1989** as *Ptychocoleus tjibodensis*, **Gradstein *et al.* 2002**.

#### Acromastigum

\*\*\* A. *divaricatum* (Nees) A.Evans JAV: **TYPE** of *Jungermannia divaricata*, **Nees 1830** as *Jungermannia divaricata*, **Gottsche *et al.* 1845a** as *Mastigobryum divaricatum*, **Sande Lacoste 1857** as *Mastigobryum divaricatum*, **Schiffner 1898a** as *Bazzania divaricata*, **Stephani 1909a** as *Mastigobryum divaricatum*, Bonner 1963a as *Bazzania divaricata*, **Grolle 1978**, Miller *et al.* 1983, Geissler & Bischler 1985 as *Mastigobryum divaricatum*, **Gao 2003**. WJ: **Sande Lacoste 1864** as *Mastigobryum divaricatum*, **Evans 1934**.

\*\*\* A. *inaequilaterum* (Lehm. et Lindenb.) A.Evans JAV: Sharma & Srivastava 1993. WJ: **Evans 1934**.

#### Acroscyphella

\*\*\* A. *tjiwideiensis* (Sande Lac.) N.Kitag. et Grolle JAV: **Sande Lacoste 1854, 1855a, 1856b** all as *Chiloscyphus tjiwideiensis*, **Schiffner 1900a** as *Conoscyphus tjiwideiensis*, Bonner 1962 as *Anthoscyphus tjiwideiensis*, Bonner 1963b as *Clasmatocolea tjiwideiensis*, 1963b as *Conoscyphus tjiwideiensis*, **Piippo 1985b** as *Clasmatocolea tjiwideiensis*, **Grolle 1987a**. WJ: **TYPE** of *Chiloscyphus tjiwideiensis*, **Sande Lacoste 1857, 1864** both as *Chiloscyphus tjiwideiensis*, **Schiffner 1898a** as *Conoscyphus tjiwideiensis*, **Stephani 1907** as *Conoscyphus tjiwideiensis*, **Herzog 1932** as *Conoscyphus tjiwideiensis*, **Bonner 1963b** as *Chiloscyphus tjiwideiensis*, **Engel 1980** as *Clasmatocolea tjiwideiensis*, **Grolle 1984** as *Clasmatocolea tjiwideiensis*.

#### Anastrophyllum

\*\*\* A. *bidens* (Reinw., Blume et Nees) Steph. JAV: **TYPE** of *Jungermannia bidens* and *Jungermannia piligera*  $\gamma$  *tenerrima*, **Reinwardt *et al.* 1824a** as *Jungermannia bidens*, **Nees 1830** as *Jungermannia piligera*  $\gamma$  *tenerrima*, **Gottsche *et al.* 1844** as *Jungermannia piligera*  $\gamma$  *tenerrima*, **Sande Lacoste 1857, 1864** both as *Jungermannia piligera*  $\gamma$  *tenerrima*, **Schiffner 1898a** as *Anastrophyllum piligerum* var.  $\gamma$  *tenerrimum*, **Stephani 1901**, Bonner 1962, Kitagawa 1966, Schuster 1969, Hattori 1971a, 1975c, Vána 1975b, Miller *et al.* 1983, **Geissler & Bischler 1987** as *Jungermannia piligera*  $\gamma$  *tenerrima*, Long & Grolle 1990, Bapna & Kachroo 2000b, **Schill & Long 2003**, Eggers 2006. WJ: Meijer 1954a.

\*\* — var. *aristatum* Herzog ex N.Kitag. JAV: **Vána 1975b**, 1991b, Vána & Piippo 1989b.

\*\* — var. *bidens* JAV: **Schiffner 1900a** as *Anastrophyllum cephalozioides*, Bonner 1962 as *Anastrophyllum cephalozioides*, 1977 as *Andrewsianthus cephalozioides*, Kitagawa 1970, Vána 1974b as *Andrewsianthus cephalozioides*, **Vána 1991b**, Vána & Piippo 1989b. WJ: **TYPE** of *Anastrophyllum cephalozioides*, **Schiffner 1898b** as *Anastrophyllum cephalozioides*.

\*\*\* A. *karstenii* Schiffn. JAV: **Stephani 1901**, Hattori 1966b.

\*\*\* A. *piligerum* (Nees) Steph. JAV: **TYPE** of *Jungermannia piligera* and its  $\alpha$  *major*, **Reinwardt *et al.* 1824b** as *Jungermannia piligera*, **Nees 1830** as *Jungermannia piligera*  $\alpha$  *major*, **Gottsche *et al.* 1844** as *Jungermannia piligera*, **Sande Lacoste 1857, 1864** both as *Jungermannia piligera*  $\alpha$  *major* and  $\beta$  *minor*, **Schiffner 1898a** as *Anastrophyllum piligerum* var.  $\beta$  *minor* and *Anastrophyllum imbricatum*, **1900a** also as *Anastrophyllum piligerum* f. *tenerior*, **Stephani 1901**, Verdoorn 1931b, Bonner 1962 also as *Anastrophyllum imbricatum*, *Anastrophyllum incumbens* and *Anastrophyllum piligerum* f. *tenerior*, Arnell 1965, Hattori 1966a, Miller *et al.* 1983, **Geissler & Bischler 1987** as *Jungermannia piligera*  $\alpha$  *major*, Vána & Piippo 1989b, **Vána 1991b**, **Schill & Long 2003**. WJ: **SYNTYPE** of *Anastrophyllum piligerum* f. *tenerior*, **Sande Lacoste 1864** as *Jungermannia piligera*, **Schiffner 1898a, 1898b** also as *Anastrophyllum piligerum* f. *tenerior*, Meijer 1954a.

\*\*\* A. *revolutum* Steph. JAV: **Schiffner 1900a** as *Anastrophyllum vernicosum*, **Bonner 1962** as *Anastrophyllum vernicosum*, Vána 1975b, Miller *et al.* 1983, Hürlimann 1989, Vána & Piippo 1989b, Vána 1991b, Schuster 2002. WJ: **SYNTYPE** of *Anastrophyllum vernicosum*, **Schiffner 1898b** as *Anastrophyllum vernicosum*, **Kitagawa 1970**.

\*\*\* A. *squarrosus* Herzog JAV: **Bonner 1962**, Vána & Piippo 1989b, **Vána 1991b**. WJ: **TYPE**, **Herzog 1932**, **Kitagawa 1970**.

#### Andrewsianthus

\*\*\* A. *bidens* (Mitt. ex Steph.) R.M.Schust. JAV: **TYPE** of *Lophozia bidens*, Geissler & Bischler 1985 as *Lophozia bidens*, Vána & Piippo 1989b, Schuster 2002. WJ: **Stephani 1902** as *Lophozia bidens*, **Vána 1974b**.

- \*\*\* A. *puniceus* (Nees) R.M.Schust. ex Grolle JAV: **TYPE** of *Jungermannia punicea*, **Nees 1830** as *Jungermannia punicea*, **Gottsche et al. 1844** as *Jungermannia punicea*, **Sande Lacoste 1857** as *Jungermannia punicea*, **Schiffner 1900a** as *Anastrophyllum puniceum*, **Stephani 1901** as *Lophozia punicea*, Bonner 1962 as *Anastrophyllum puniceum*, 1965 as *Gamoscyphus puniceus*, Grolle 1967, Kitagawa 1970, **1973a**, **Váňa 1974b**, Miller et al. 1983 also as *Anastrophyllum puniceum*, *Jungermannia punicea*, *Lophozia gedena* and *Lophozia punicea*, Geissler & Bischler 1985 as *Lophozia punicea*, **1987** as *Jungermannia punicea*, Váňa & Piippo 1989b, **Váňa 1991b**, Schuster 2002. WJ: **TYPE** of *Lophozia gedena*, **Sande Lacoste 1864** as *Jungermannia punicea*, **Schiffner 1898a**, **1898b**, all as *Anastrophyllum puniceum*, **Stephani 1902** as *Lophozia gedena*, **Geissler & Bischler 1985** as *Lophozia gedena*.
- \*\*\* A. *recurvifolius* (Nees) R.M.Schust. JAV: **TYPE** of *Jungermannia recurvifolia*, **Nees 1830** as *Jungermannia recurvifolia*, **Gottsche et al. 1844** as *Jungermannia recurvifolia*, Sande Lacoste 1857 as *Jungermannia recurvifolia*, **Schiffner 1898a**, **1900a** both as *Anastrophyllum recurvifolium*, **Stephani 1902** as *Lophozia recurvifolia*, Bonner 1962 as *Anastrophyllum recurvifolium*, **Váňa 1974b**, Bonner 1977, Geissler & Bischler 1985 as *Lophozia recurvifolia*, **1987** as *Jungermannia recurvifolia*, **Váňa 1991b**.
- \*\*\* A. *sundaicus* (Schiffn.) R.M.Schust. JAV: **Schiffner 1900a** as *Anastrophyllum sundaicum*, Bonner 1977. WJ: **TYPE** of *Anastrophyllum sundaicum*, **Schiffner 1898b** as *Anastrophyllum sundaicum*, **Bonner 1962** as *Anastrophyllum sundaicum*, **Váňa 1974b**.

#### Aneura

- \* <sup>13</sup>A. *densa* Steph. WJ: **TYPE**, **Stephani 1917b**, **Bonner 1962**.
- \*\*\* A. *maxima* (Schiffn.) Steph. JAV: **Stephani 1899**, **Schiffner 1900a** as *Riccardia maxima*, Verdoorn 1932a as *Riccardia maxima*, Bonner 1962, Miller et al. 1983 also as *Riccardia maxima*, Schuster 1992a, Andriessen et al. 1995, **Damsholt 2002**, Buczkowska & Bączkiewicz 2006, Furuki 2006. WJ: **SYNTYPE** of *Riccardia maxima*, **Schiffner 1898b**, **1900c** both as *Riccardia maxima*, Meijer 1953, **1960b** both as *Riccardia maxima*, **Geissler & Bischler 1990** as *Riccardia maxima*, **Furuki 1991**.
- \* <sup>14</sup>A. *nymanii* Steph. WJ: **TYPE**, **Stephani 1917b**, **Bonner 1962**.
- \*\*\* <sup>15</sup>A. *pinguis* (L.) Dumort. JAV: **Sande Lacoste 1857**, **Schiffner 1898a** as *Riccardia pinguis* var. *A. α2 tenuis*, **Stephani 1899**, **Stephani 1899** as *Aneura viridissima*, **Schiffner 1900a** as *Riccardia viridissima*, Bonner 1962 as *Aneura viridissima*, Miller et al. 1983, Miller et al. 1983 as *Aneura viridissima*, Schuster 1992a, Bapna & Kachroo 2000b, Damsholt 2002. WJ: **TYPE** of *Riccardia viridissima*, **Schiffner 1898b** as *Riccardia viridissima*, **Schiffner 1900c** as *Riccardia viridissima*, Meijer 1953 as *Riccardia viridissima*, **Meijer 1959b** as *Riccardia pinguis*, **Geissler & Bischler 1990** as *Riccardia viridissima*, **Furuki 1991**.

#### Archilejeunea

- \*\*\* A. *planuscula* (Mitt.) Steph. JAV: Stephani 1911 as *Archilejeunea owahuensis*, Verdoorn 1933b as *Archilejeunea falcata*, Bonner 1962 as *Archilejeunea owahuensis*, Miller et al. 1983 as *Archilejeunea caramuensis*, *Archilejeunea owahuensis* and *Spruceanthus marianus*. EJ: **Verdoorn 1933** as *Archilejeunea caramuensis*. WJ: **Verdoorn 1933** as *Archilejeunea caramuensis*, **Haerida et al. 2010**.
- ? A. *treubiana* Schiffn. nom. inval. WJ: **Schiffner 1900c**.

#### Asterella

- \*\*\* A. *blumeana* (Nees) Kachroo JAV: **TYPE** of *Fimbraria blumeana*, **Gottsche et al. 1846** as *Fimbraria blumeana*, **Sande Lacoste 1856a** as *Fimbraria blumeana*, **Schiffner 1893b** as *Fimbraria blumeana*, **1900a** as *Hypenantron blumeanum*, **Stephani 1899** as *Fimbraria blumeana*, Bonner 1962, 1966 as *Hypenantron blumeanum*, Hattori 1975c, Bapna & Kachroo 2000b, **Long 2006**. EJ: **Sande Lacoste 1857** as *Fimbraria blumeana*, **Schiffner 1898a** as *Hypenantron blumeanum*. WJ: **Schiffner 1898a** as *Hypenantron blumeanum*.
- \*\*\* A. *khasyana* (Griff.) Pand, K.P.Srivast. et Sultan Khan JAV: **TYPE** of *Fimbraria zollingeri*, **Stephani 1899** as *Fimbraria zollingeri*, **Schiffner 1900a** as *Hypenantron zollingeri*, Verdoorn 1938 as *Asterella zollingeri*, Bonner 1962 as *Asterella zollingeri*, **1965** as *Fimbraria zollingeri*, **Long 2006**. WJ: **Schiffner 1900c** as *Hypenantron zollingeri* f. *purpurascens*, **1900c** as *Hypenantron zollingeri* f. *typica*, **Seifríz 1924** as *Fimbraria zollingeri*, Meijer 1954b as *Fimbraria zollingeriana*.
- \*\*\* A. *leptophylla* (Mont.) Pand et al. ex Grolle JAV: **Long 2006**.
- \*\*\* A. *limbata* D.G.Long et Grolle JAV: **Long 1999**, **2006**.
- \*\*\* A. *vulcanica* (Schiffn.) Pand et al. ex Kachroo et Bapna JAV: **Schiffner 1900a** as *Hypenantron vulcanicum*, Bonner 1962 as *Asterella vulcanica*, 1965 as *Fimbraria vulcanica*, Miller et al. 1983, Bapna & Kachroo 2000b, **Long 2006**. WJ: **TYPE** of *Hypenantron vulcanicum*, **Schiffner 1898b** as *Hypenantron vulcanicum*, Stephani 1899 as *Fimbraria vulcanica*, **Bonner 1966** as *Hypenantron vulcanicum*.
- \*\*\* A. *wallichiana* (Lehm. et Lindenb.) Pand et al. ex Grolle JAV: **TYPE** of *Hypenantron javanicum*, **Schiffner 1900a** as *Hypenantron javanicum*, **Long 2006**.

#### Barbilophozia

- \*\*\* <sup>16</sup>B. *lycopodioides* (Wallr.) Loeske JAV: **Schiffner 1893b** as *Jungermannia lycopodioides*, **1898a** as *Lophozia lycopodioides*, (Schiffner 1900a as *Lophozia lycopodioides* rejecting earlier reports).

13. *Aneura densa* is taxonomically doubtful and most likely a synonym of something.

14. *Aneura nymanii* is taxonomically doubtful and most likely a synonym of something.

15. *Aneura pinguis* is a complex species that contains several distinct entities in Europe (D. G. Long, pers. comm.), including several cryptic species (Wachowiak et al. 2007). It is doubtful that the 'true' *A. pinguis* occurs in SE Asia.

## Bazzania

- \*\* *B. angustisedens* (Steph.) N.Kitag. JAV: Bonner 1977. WJ: **TYPE** of *Mastigobryum angustisedens*, **Stephani 1908** as *Mastigobryum angustisedens*, **Kitagawa 1973a**, **Geissler & Bischler 1985** as *Mastigobryum angustisedens*.
- \*\*\* *B. calcarata* (Sande Lac.) Schiffn. JAV: **SYNTYPE** of *Mastigobryum calcaratum*, **Sande Lacoste 1864** as *Mastigobryum calcaratum*, **Schiffner 1898a**, **Stephani 1908** as *Mastigobryum calcaratum*, **Meijer 1960**, Bonner 1963a, 1977, Kitagawa 1979, **Geissler & Bischler 1985** as *Mastigobryum calcaratum*.
- \*\* *B. commutata* (Lindenb. et Gottsche) Schiffn. JAV: **TYPE** of *Mastigobryum commutatum*, Lindenberg & Gottsche 1851 as *Mastigobryum commutatum*, Sande Lacoste 1857 as *Mastigobryum commutatum*, **Schiffner 1898a** as *Bazzania miqueliana*, **Stephani 1908** as *Mastigobryum commutatum* and *Mastigobryum miquelianum*, **Meijer 1960**, Bonner 1963a as *Bazzania miqueliana*, 1977, Kitagawa 1979, **Geissler & Bischler 1985** as *Mastigobryum commutatum*. WJ: **Sande Lacoste 1864** as *Mastigobryum commutatum*, **Schiffner 1898a**.
- \*\* *B. conophylla* (Sande Lac.) Schiffn. JAV: **Stephani 1908** as *Mastigobryum conophyllum*.
- \*\* *B. densa* (Sande Lac.) Schiffn. JAV: **Sande Lacoste 1854**, **1855a**, **1856b**, **1857**, **1864** all as *Mastigobryum densum*, **Schiffner 1898a**, **Stephani 1908** as *Mastigobryum densum*, **Meijer 1960**, Bonner 1963a, **Kitagawa 1973b**, Miller *et al.* 1983 also as *Mastigobryum densum*. BA: **Van Leeuwen 1936**.
- \*\* — var.  $\beta$  *connata* (Sande Lac.) Schiffn. JAV: **SYNTYPE** of *Mastigobryum densum*  $\beta$  *connatum*, **Sande Lacoste 1864** as *Mastigobryum densum*  $\beta$  *connatum*, **Schiffner 1898a**, Bonner 1963a, **Geissler & Bischler 1985** as *Mastigobryum densum*  $\beta$  *connatum*.
- \*\* *B. desciscens* (Steph.) Meijer JAV: **TYPE** of *Mastigobryum desciscens*, **Sande Lacoste 1857**, **1864** both as *Mastigobryum erosum*  $\gamma$ , **Schiffner 1898a** as *Bazzania erosa* var.  $\gamma$ , **Stephani 1908** as *Mastigobryum desciscens*, **Meijer 1960**, **Geissler & Bischler 1985** as *Mastigobryum desciscens*. WJ: **Gottsche et al. 1845a** as *Mastigobryum erosum*  $\gamma$ , **Sande Lacoste 1856a** as *Mastigobryum erosum*  $\gamma$ .
- \* <sup>17</sup>*B. distans* (Nees) Trevis. JAV: **TYPE** of *Jungermannia distans*, **Nees 1830** as *Jungermannia distans*, **Gottsche et al. 1845a** as *Mastigobryum distans*, **Sande Lacoste 1857** as *Mastigobryum distans*, **Stephani 1908** as *Mastigobryum distans*, **Meijer 1960**, Bonner 1963a also as *Calypogeia distans*, Kitagawa 1980, Miller *et al.* 1983, **Geissler & Bischler 1987** as *Jungermannia distans*. WJ: **Sande Lacoste 1864** as *Mastigobryum distans*, **Schiffner 1898a**.
- \*\*\* *B. erosa* (Reinw., Blume et Nees) Trevis. JAV: **Reinwardt et al. 1824a** as *Jungermannia erosa*, **Sande Lacoste 1864** as *Mastigobryum erosum*  $\alpha$ , Evans 1932, **Meijer 1960**, Bonner 1963a, 1966 as *Herpetium erosum*, Miller *et al.* 1983 also as *Herpetium erosum*, *Jungermannia erosa* and *Mastigobryum erosum*, Geissler & Bischler 1985 as *Mastigobryum erosum*, 1989 as *Pleuroschisma erosum*. WJ: **TYPE** of *Jungermannia erosa*, **Nees 1830** as *Jungermannia erosa*  $\alpha$ , **Gottsche et al. 1845a** as *Mastigobryum erosum*, **Sande Lacoste 1856a** as *Mastigobryum erosum*, **1857** as *Mastigobryum erosum*  $\alpha$ , **Schiffner 1898a**, **Geissler & Bischler 1987** as *Jungermannia erosa*.
- \*\*\* *B. fallax* (Sande Lac.) Schiffn. JAV: **Sande Lacoste 1864** as *Mastigobryum fallax*, **Schiffner 1898a**, **Meijer 1960**, Bonner 1963a, Meagher 2010.
- \*\* *B. fleischeri* (Steph.) Abeyw. JAV: **SYNTYPE** of *Mastigobryum fleischeri*, **Stephani 1908** as *Mastigobryum fleischeri*, **Geissler & Bischler 1985** as *Mastigobryum fleischeri*, Bapna & Kachroo 2000a.
- \*\*\* *B. gedeana* (Steph.) Meijer JAV: **Sande Lacoste 1857** as *Mastigobryum uncigerum*  $\beta$ , **Meijer 1960**. WJ: **TYPE** of *Mastigobryum fleischeri*, **Sande Lacoste 1864** as *Mastigobryum uncigerum*  $\beta$ , **Stephani 1908** as *Mastigobryum fleischeri*, **Geissler & Bischler 1985** as *Mastigobryum fleischeri*.
- \*\* *B. grandiretis* (Steph.) Herzog JAV: **Stephani 1908** as *Mastigobryum grandirete*, Bonner 1963a.
- \*\* *B. halconiensis* (Steph.) N.Kitag. WJ: **SYNTYPE** of *Mastigobryum schadenbergii*, **Stephani 1908** as *Mastigobryum schadenbergii*, **Geissler & Bischler 1985** as *Mastigobryum schadenbergii*.
- \*\* *B. horridula* Schiffn. JAV: **Stephani 1908** as *Mastigobryum horridulum*, Kitagawa 1967.
- \*\* *B. indica* (Gottsche et Lindenb.) Trevis. JAV: **Sande Lacoste 1857**, **1864** both as *Mastigobryum indicum*, **Schiffner 1898a**, **Meijer 1960**, Kitagawa 1967, Bapna & Kachroo 2000a.
- \*\* *B. intermedia* (Gottsche ex Lindenb.) Trevis. JAV: **Stephani 1908** as *Mastigobryum intermedium*, Evans 1932, **Meijer 1960**, Bonner 1963a, Pócs *et al.* 1967, Pócs 1968a, Miller *et al.* 1983 as *Mastigobryum intermedium*, Bapna & Kachroo 2000a. WJ: **TYPE** of *Mastigobryum intermedium*, Lindenberg & Gottsche 1851 as *Mastigobryum intermedium*, **Sande Lacoste 1857**, **1864** both as *Mastigobryum intermedium*, **Schiffner 1898a**, **Mizutani 1967a**, **Geissler & Bischler 1985** as *Mastigobryum intermedium*, **Grolle 1987b**, **Gradstein et al. 2010**.
- \*\* *B. japonica* (Sande Lac.) Lindb. JAV: Geissler & Bischler 1985 as *Mastigobryum connatum*.
- \*\* *B. javanica* (Sande Lac.) Schiffn. JAV: **TYPE** of *Mastigobryum javanicum*, **Sande Lacoste 1854**, **1855a**, **1856b**, **1857** all as *Mastigobryum javanicum*, **Stephani 1908** as *Mastigobryum javanicum*, **Meijer 1960**, Bonner 1963a, Kitagawa 1967, Miller *et al.* 1983, **Geissler & Bischler 1985** as *Mastigobryum javanicum*. WJ: **Sande Lacoste 1864** as *Mastigobryum javanicum*, **Schiffner 1898a**.
- \*\* *B. linguiformis* (Sande Lac.) Schiffn. JAV: **Sande Lacoste 1855a**, **1857**, **1864** all as *Mastigobryum linguiforme*, **Schiffner 1898a**, **1908** as *Mastigobryum linguiforme*, **Meijer 1960**, Bonner 1963a.

16. There exists a correctly identified specimen of *Barbilophozia lycopodioides* from Java in FH-Schiffner (J. Váňa, pers. comm.) and the additional taxa with which it is mixed indicate that the geographic origin is correct. However, this boreal taxon is not reported from anywhere near Java and Schiffner (1900a) rejects it but later confirms the identity. The habitat, epiphytic among *Frullania*, is also unusual.

17. *Bazzania distans* is probably a small and poorly developed form of *B. loricata* (Meijer 1960).



- \*\*\* *B. longicaulis* (Sande Lac.) Schiffn. JAV: **TYPE** of *Mastigobryum longicaule*, **Stephani 1908** as *Mastigobryum longicaule*, **Meijer 1960**, Bonner 1963a, **Geissler & Bischler 1985** as *Mastigobryum longicaule*. WJ: **SYNTYPE** of *Mastigobryum longicaule*, **Sande Lacoste 1864** as *Mastigobryum longicaule*, **Schiffner 1898a**, **Geissler & Bischler 1985** as *Mastigobryum longicaule*.
- \*\*\* *B. loricata* (Reinw., Blume et Nees) Trevis. JAV: **TYPE** of *Jungermannia loricata*, **Reinwardt et al. 1824a** as *Jungermannia loricata*, **Nees 1830** as *Jungermannia loricata*, **Gottsche et al. 1845a** as *Mastigobryum loricatum*, **Sande Lacoste 1856a, 1857** both as *Mastigobryum loricatum*, **Stephani 1908** as *Mastigobryum loricatum*, Evans 1932, **Meijer 1960**, Bonner 1963a, Kitagawa 1967, 1980, Miller et al. 1983, **Geissler & Bischler 1985** as *Mastigobryum loricatum*, **1987** as *Jungermannia loricata*. WJ: **Sande Lacoste 1864** as *Mastigobryum loricatum*, **Schiffner 1898a**.
- \*\* *B. manillana* (Gottsche ex Steph.) S.Hatt. JAV: **Stephani 1908** as *Mastigobryum manillanum*, Bonner 1963a, Miller et al. 1983.
- ? *B. massartii* Schiffn. nom. inval. WJ: **TYPE**, **Schiffner 1900c**, **Bonner 1963a**.
- \*\* *B. paradoxa* (Sande Lac.) Steph. JAV: **TYPE** of *Mastigobryum paradoxum*, **Sande Lacoste 1854, 1855a, 1856b, 1857** all as *Mastigobryum paradoxum*, **Stephani 1908** as *Mastigobryum paradoxum*, Evans 1932, **Meijer 1960**, Bonner 1963a, Miller et al. 1983 also as *Mastigobryum paradoxum*, **Geissler & Bischler 1985** as *Mastigobryum paradoxum*. WJ: **Sande Lacoste 1864** as *Mastigobryum paradoxum*, **Schiffner 1898a**.
- \*\*\* *B. pectinata* (Lindenb. et Gottsche) Schiffn. JAV: **SYNTYPE** of *Mastigobryum pectinatum*, **Nees 1830** as *Jungermannia tridens* β, **Gottsche et al. 1845a** as *Mastigobryum tridens* β, **Meissner 1848** as *Mastigobryum tridens* β, Lindenberg & Gottsche 1851 as *Mastigobryum pectinatum*, **Sande Lacoste 1857** as *Mastigobryum pectinatum*, **Stephani 1908** as *Mastigobryum pectinatum*, Evans 1932, **Meijer 1960**, Bonner 1963a, 1977, **Geissler & Bischler 1985** as *Mastigobryum pectinatum*. WJ: **Sande Lacoste 1864** as *Mastigobryum pectinatum*, **Schiffner 1898a, 1900c**.
- \*\*\* *B. praerupta* (Reinw., Blume et Nees) Trevis. JAV: **TYPE** of *Jungermannia praerupta*, **Reinwardt et al. 1824a** as *Jungermannia praerupta*, **Nees 1830** as *Jungermannia praerupta*, **Gottsche et al. 1845a** as *Mastigobryum praeruptum*, **Meissner 1848** as *Mastigobryum praeruptum*, **Stephani 1908** as *Mastigobryum praeruptum*, **Meijer 1960**, Bonner 1963a, **Kitagawa 1967, Mizutani 1967a**, Pócs 1969b, Hattori 1975c, Miller et al. 1983 also as *Jungermannia praerupta* and *Mastigobryum praeruptum*, **Geissler & Bischler 1985** as *Mastigobryum praeruptum*, **1987** as *Jungermannia praerupta*, **Sharma & Srivastava 1993, Grolle 1995**, Bapna & Kachroo 2000a. CJ: **Sande Lacoste 1864** as *Mastigobryum praeruptum*. WJ: **Sande Lacoste 1864** as *Mastigobryum praeruptum*, **Schiffner 1898a**.
- \* — var. *β obliquata* (Nees) Schiffn. JAV: **TYPE** of *Jungermannia obliquata*, **Nees 1830** as *Jungermannia obliquata*, **Gottsche et al. 1845a** as *Mastigobryum praeruptum β obliquatum*, **Sande Lacoste 1857** as *Mastigobryum praeruptum β obliquatum*, **Schiffner 1898a**, Bonner 1966 as *Herpetium obliquatum*, **Geissler & Bischler 1987** as *Jungermannia obliquata*.
- \*\* — var. *thermalis* Schiffn. WJ: **TYPE**, **Schiffner 1955**, **Bonner 1963a**.
- \* <sup>18</sup>*B. serpentina* (Nees) Trevis. JAV: **Sande Lacoste 1857** as *Mastigobryum serpentinum*, **Stephani 1908** as *Mastigobryum serpentinum*, **Meijer 1960**, Bonner 1963a, Kitagawa 1980, Miller et al. 1983, **Geissler & Bischler 1985** as *Mastigobryum serpentinum*, 1989 as *Pleuroschisma serpentinum*. WJ: **TYPE** of *Jungermannia serpentina*, **Gottsche et al. 1845a** as *Mastigobryum serpentinum*, **Sande Lacoste 1864** as *Mastigobryum serpentinum*, **Schiffner 1898a**, **Geissler & Bischler 1987** as *Jungermannia serpentina*.
- \*\* *B. spiralis* (Reinw., Blume et Nees) Meijer JAV: **Reinwardt et al. 1824a** as *Jungermannia spiralis*, **Sande Lacoste 1857, 1864** both as *Mastigobryum erosum β*, **Stephani 1908** as *Mastigobryum spirale*, **Meijer 1960, Kitagawa 1967**, Miller et al. 1983, **Geissler & Bischler 1985** as *Mastigobryum spirale*, **Gao 2003**. WJ: **TYPE** of *Jungermannia spiralis*, **Nees 1830** as *Jungermannia erosa β*, **Gottsche et al. 1845a** as *Mastigobryum erosum β*, **Sande Lacoste 1856a** as *Mastigobryum erosum β*, **Schiffner 1898a** as *Bazzania erosa* var. β, **Geissler & Bischler 1987** as *Jungermannia spiralis*.
- \*\*\* *B. subtilis* (Sande Lac.) Trevis. JAV: **Schiffner 1898a, Stephani 1908** as *Mastigobryum subtile*, **Meijer 1960**, Bonner 1963a, Kitagawa 1979, Miller et al. 1983 as *Mastigobryum subtile*, **Meagher 2010**. WJ: **Sande Lacoste 1864** as *Mastigobryum subtile*, **Geissler & Bischler 1985** as *Mastigobryum subtile*.
- \* <sup>19</sup>*B. sumbavensis* (Gottsche ex Steph.) Steph. JAV: **Meijer 1960**, Sharma & Srivastava 1993, Bapna & Kachroo 2000a.
- \*\*\* *B. tridens* (Reinw., Blume et Nees) Trevis. JAV: **TYPE** of *Jungermannia tridens*, **Reinwardt et al. 1824a** as *Jungermannia tridens*, **Nees 1830** as *Jungermannia tridens α*, **Gottsche et al. 1845a** as *Mastigobryum tridens α*, **Sande Lacoste 1857** as *Mastigobryum tridens*, **Stephani 1908** as *Mastigobryum tridens*, **1908** as *Mastigobryum australe*, Evans 1932, **Meijer 1960**, Bonner 1963a, **Kitagawa 1967**, Hattori 1968, Miller et al. 1983 also as *Bazzania australis* and *Herpetium australe*, **Geissler & Bischler 1985** as *Mastigobryum tridens*, **1987** as *Jungermannia tridens*, Bapna & Kachroo 2000a, **Zhu & So 2001, Gao 2003**. WJ: **Sande Lacoste 1864** as *Mastigobryum tridens*, **Schiffner 1898a**, **Kitagawa 1973a** as *Bazzania australis*, **Gradstein et al. 2010**.
- \*\*\* — var. *tridens* JAV: **TYPE** of *Mastigobryum typicum*, **Schiffner 1893b** as *Bazzania oblonga*, **Stephani 1924** as *Mastigobryum typicum*, Bonner 1963a as *Bazzania oblonga*, **Pócs 1969b**, Miller et al. 1983 as *Bazzania intermedia*, Sharma & Srivastava 1993. EJ: **Mizutani 1967a**. WJ: **TYPE** of *Mastigobryum olivaceum* and *Mastigobryum tjiburum*, **Schiffner 1898a** as *Bazzania oblonga*, **Stephani 1908** as *Mastigobryum olivaceum* and *Mastigobryum tjiburum*, **Mizutani 1967a, Geissler & Bischler 1985** as *Mastigobryum olivaceum*.
- \*\*\* *B. uncigera* (Reinw., Blume et Nees) Trevis. JAV: **TYPE** of *Jungermannia uncigera*, **Reinwardt et al. 1824a** as *Jungermannia uncigera*, **Nees 1830** as *Jungermannia uncigera*, **Gottsche et al. 1845a** as *Mastigobryum uncigerum*,

18. *Bazzania serpentina* is possibly conspecific with *B. bidens* (Nees) Trevis. (Frahm et al. 1990).

19. *Bazzania sumbavensis* is possibly conspecific with *B. japonica*.

Bonner 1963a, Hattori 1975c, Miller *et al.* 1983 also as *Mastigobryum uncigerum*, Geissler & Bischler 1985 as *Mastigobryum uncigerum*, **1987** as *Jungermannia uncigera*, Bapna & Kachroo 2000a. WJ: **Sande Lacoste 1857** as *Mastigobryum uncigerum*, **Schiffner 1898a**.

\*\* — var. *gibba* (Sande Lac.) Meijer JAV: **TYPE** and **TYPE** of *Mastigobryum gibbum*, **Sande Lacoste 1855a, 1857** both as *Mastigobryum gibbum*, **Stephani 1908** as *Mastigobryum gibbum*, **Meijer 1960**, Bonner 1963a as *Bazzania gibba*, **Geissler & Bischler 1985** as *Mastigobryum gibbum*. WJ: **Sande Lacoste 1864** as *Mastigobryum gibbum*, **Schiffner 1898a** as *Bazzania gibba*.

\*\* — var. *uncigera* JAV: **Meijer 1960**.

\*\*\* *B. vittata* (Gottsche) Trevis. JAV: **TYPE** of *Mastigobryum vittatum*, **Gottsche et al. 1845a** as *Mastigobryum vittatum*, Gottsche 1853 as *Mastigobryum vittatum*, Stephani 1909a as *Mastigobryum vittatum*, Evans 1932, Verdoorn 1935, **Meijer 1960**, Bonner 1963a, Kitagawa 1967, Miller *et al.* 1983 also as *Mastigobryum vittatum*, **Geissler & Bischler 1985** as *Mastigobryum vittatum*. WJ: **Sande Lacoste 1857, 1864** both as *Mastigobryum vittatum*, **Schiffner 1898a, 1900c**.

\*\* *B. zollingeri* (Lindenb.) Trevis. JAV: **TYPE** of *Mastigobryum zollingeri*, **Meissner 1848** as *Mastigobryum zollingeri*, **Gottsche 1853** as *Mastigobryum zollingeri*, **Stephani 1908** as *Mastigobryum zollingeri*, **Meijer 1960**, Bonner 1963a, **Geissler & Bischler 1985** as *Mastigobryum zollingeri*. WJ: **Sande Lacoste 1857, 1864** both as *Mastigobryum zollingeri*, **Schiffner 1898a**.

#### **Blepharostoma**

\*\*\* *B. trichophyllum* (L.) Dumort. JAV: Grolle 1968a, Schuster 1968, Bizot & Pócs 1974, Miller *et al.* 1983, Schuster 1984, Gradstein & Váňa 1987, Fulford & Sharp 1990, Long & Grolle 1990, Piippo *et al.* 1997, Srivastava 1998, Bapna & Kachroo 2000a. WJ: Meijer 1954b, **Grolle 1966b**.

#### **Calypogeia**

\*\* *C. apiculata* (Steph.) Steph. JAV: **TYPE** of *Kantius apiculatus*, **Stephani 1895a** as *Kantius apiculatus*, **Schiffner 1898a** as *Kantia apiculata*, **Stephani 1908**, Bonner 1963a, **Geissler & Bischler 1987** as *Kantius apiculatus*.

\*\*\* *C. arguta* Nees et Mont. JAV: **TYPE** of *Calypogeia furcata*, **Stephani 1908** as *Calypogeia furcata*, **Bonner 1963a** also as *Calypogeia furcata*, **Kitagawa 1973b, Grolle 1977c**, Miller *et al.* 1983, Sharma & Srivastava 1993, Bapna & Kachroo 2000a.

\*\* *C. goebelii* (Schiffn.) Steph. JAV: **TYPE** of *Kantius goebelii*, **Schiffner 1893b, 1898a** both as *Kantia goebelii*, **Stephani 1908**, Verdoorn 1931b, Bonner 1963a, Grolle 1969, **1977c**, Miller *et al.* 1983 also as *Kantius goebelii*, **Geissler & Bischler 1987** as *Kantius goebelii*. WJ: **TYPE** of *Kantius goebelii* f. *thermarum*, **Schiffner 1955** as *Kantius goebelii* f. *thermarum*, **Geissler & Bischler 1987** as *Kantius goebelii* f. *thermarum*, Gradstein *et al.* 2010.

#### **Caudalejeunea**

\*\*\* *C. recurvistipula* (Gottsche) Schiffn. JAV: **TYPE** of *Phragmicoma reniloba*, **Gottsche et al. 1845a** as *Phragmicoma reniloba*, **Sande Lacoste 1857** as *Lejeunea recurvistipula* and *Phragmicoma reniloba*, **Schiffner 1898a** as *Thysananthus renilobus*, Verdoorn 1934a also as *Caudalejeunea circinata*, Bonner 1963a as *Caudalejeunea reniloba*, Mizutani 1977, 1978a both as *Caudalejeunea circinata* and *Caudalejeunea reniloba*, Miller *et al.* 1983 as *Caudalejeunea circinata*, *Caudalejeunea reniloba*, *Caudalejeunea renistipula*, *Lejeunea reniloba*, *Phragmicoma reniloba* and *Thysananthus renilobus*, Geissler & Bischler 1985 as *Marchesinia reniloba*, 1987 as *Lejeunea reniloba*, **1989** as *Phragmicoma reniloba* and *Ptychocoleus renilobus*, 1990 as *Thysananthus renilobus*, **Thiers & Gradstein 1989** as *Caudalejeunea reniloba*, **Zhu & So 2001**. BA: **Van Leeuwen 1936** as *Caudalejeunea reniloba*, **Gradstein et al. 2002** as *Caudalejeunea reniloba*. WJ: **Sande Lacoste 1864** as *Lejeunea recurvistipula*, **Schiffner 1898a, 1900c, Verdoorn 1933** as *Caudalejeunea circinnata*, *Caudalejeunea reniloba* and *Caudalejeunea serrata*.

#### **Cephalozia**

\*\*\* *C. hamatiloba* Steph. JAV: Müller & Schäfer-Verwimp 1999, Long 2005. WJ: **Schiffner 1900c** as *Cephalozia bicuspidata* var. *blepharostoma*, **Gradstein et al. 2010**.

\* <sup>20</sup>*C. neesiana* Steph. JAV: **TYPE**, **Stephani 1908, Bonner 1963a, Váňa 1988**.

? *C. parvitexta* Steph. ex Bonner *nom. inval.* JAV: **Bonner 1963b**.

\* <sup>21</sup>*C. tricuspadata* (Nees) Trevis. JAV: **TYPE** of *Jungermannia tricuspadata*, **Nees 1830** as *Jungermannia tricuspadata*, **Gottsche et al. 1844** as *Jungermannia tricuspadata*, Sande Lacoste 1857 as *Jungermannia tricuspadata*, Schiffner 1898a as *Jungermannia tricuspadata*, Bonner 1963b, **Geissler & Bischler 1987** as *Jungermannia tricuspadata*.

#### **Cephaloziella**

\*\*\* *C. capillaris* (Steph.) Douin JAV: Douin 1920, Bonner 1963a also as *Cephalozia capillaris*, Grolle 1968a, Miller *et al.* 1983, Long & Grolle 1990, Bapna & Kachroo 2000a, Long 2005. WJ: **TYPE** of *Cephalozia capillaris*, **Stephani 1908** as *Cephalozia capillaris*, **Kitagawa 1969**.

\*\* *C. intricata* Schiffn. ex Douin JAV: **TYPE**, **Douin 1920**, Bonner 1963a.

\*\*\* *C. kiaeri* (Austin) Douin JAV: **TYPE** of *Cephaloziella pentagona* var. *serratiflora*, **Douin 1920** as *Cephaloziella pentagona* var. *serratiflora*, Bonner 1963a as *Cephaloziella pentagona* var. *serratiflora*, 1977 as *Cephaloziella willisiana*, Miller *et al.* 1983, Udar & Kumar 1985, Váňa & Piippo 1989b, Long & Grolle 1990, Piippo & Tan 1992, Váňa 1992, Bapna & Kachroo 2000a also as *Cephaloziella willisiana*, Piippo *et al.* 2002, Easa 2003. WJ: **Schiffner 1900c** as *Cephaloziella pentagona*, **Kitagawa 1969** as *Cephaloziella willisiana*.

20. *Cephalozia neesiana* may be a synonym of *C. hamatiloba* (Váňa 1988)

21. *Cephalozia tricuspadata* is a species of *Lepidozia*, not *Cephalozia* (Schiffner 1898), but the type in the Nees herbarium must be studied in order to determine the identity of this old name. Its transfer to *Lepidozia* would require a new species name because of the existence of *Lepidozia tricuspadata* Steph.

\*\*\* *C. stephaniae* Schiffn. ex Douin JAV: **TYPE, Douin 1920**. WJ: **Kitagawa 1969**.

#### **Ceratolejeunea**

\*\*\* *C. belangeriana* (Gottsche) Steph. JAV: **Sande Lacoste 1857** as *Lejeunea belangeriana*, Stephani 1913, Bonner 1963b, Arnell 1965, Miller *et al.* 1983 also as *Ceratolejeunea oceanica*, **Zhu *et al.* 2005**. BA: **Van Leeuwen 1936** as *Ceratolejeunea renistipula*. WJ: **Mizutani 1981** as *Ceratolejeunea oceanica*.

\*\* *C. inflata* Mizut. WJ: **TYPE, Mizutani 1981, Crosby & Engel 2006**.

\* <sup>22</sup>*C. karstenii* Steph. WJ: **TYPE, Stephani 1913, Bonner 1963b**.

#### **Cheilolejeunea**

\*\* *C. ceylanica* (Gottsche) R.M.Schust. et Kachroo JAV: Verdoorn 1938 as *Pycnolejeunea ceylanica*, Mizutani 1982, Miller *et al.* 1983, Bapna & Kachroo 2000b. CJ: **Hoffman 1935** as *Pycnolejeunea ceylanica*, **Thiers 1992**. EJ: **TYPE** of *Pycnolejeunea verdoornii*, **Hoffman 1935** as *Pycnolejeunea ceylanica* and *Pycnolejeunea verdoornii*, **Mizutani 1980a, Geissler & Bischler 1989** as *Pycnolejeunea verdoornii*, **Thiers 1992**. WJ: **Schiffner 1900c** as *Pycnolejeunea ceylanica*, **Hoffman 1935** as *Pycnolejeunea ceylanica*, **Mizutani 1980a, Thiers 1986, 1992**.

\*\*\* *C. decursiva* (Sande Lac.) R.M.Schust. JAV: **TYPE** of *Lejeunea decursiva*, **Sande Lacoste 1855a, 1855b, 1857, 1864** all as *Lejeunea decursiva*, **Schiffner 1898a** as *Eulejeunea decursiva*, Stephani 1915 as *Lejeunea decursiva*, Bonner 1977, **Grolle 1977a, Geissler & Bischler 1987** as *Lejeunea decursiva*, 1990 as *Strepsilejeunea decursiva*, **Zhu & Lai 2005**. WJ: **Schiffner 1900c** as *Eulejeunea decursiva*.

\*\*\* *C. falsinervis* (Sande Lac.) Kachroo et R.M.Schust. JAV: **TYPE** of *Lejeunea falsinervis*, **Sande Lacoste 1854, 1855a, 1856b, 1857** all as *Lejeunea falsinervis*, **Schiffner 1898a** as *Pycnolejeunea falsinervis*, Stephani 1914 as *Pycnolejeunea falsinervis*, Grolle 1965a, Mizutani 1978b, 1982, Miller *et al.* 1983 also as *Pycnolejeunea falsinervis*, **Geissler & Bischler 1987** as *Lejeunea falsinervis*, 1989 as *Pycnolejeunea falsinervis*, **Thiers 1992**, Yang & Lin 2008. WJ: **Hoffman 1935** as *Pycnolejeunea falsinervis*.

\*\* *C. gardneri* (Mitt.) Mizut. EJ: **Hoffman 1935** as *Pycnolejeunea gardneri*.

\*\*\* *C. incisa* (Gottsche) R.M.Schust. et Kachroo JAV: **TYPE** of *Lejeunea incisa* and *Pycnolejeunea excisula*, **Gottsche *et al.* 1845b** as *Lejeunea incisa*, **Sande Lacoste 1864** as *Lejeunea incisa*, **Stephani 1890b** as *Lejeunea incisa*, **1914** as *Pycnolejeunea excisula*, **Schiffner 1898a** as *Pycnolejeunea incisa*, **Mizutani 1967b** as *Cheilolejeunea excisula*, Bonner 1977 also as *Cheilolejeunea excisula*, Mizutani 1977, 1978a both as *Cheilolejeunea excisula*, **Geissler & Bischler 1987** as *Lejeunea incisa*, **1989** as *Pycnolejeunea excisula*, *Pycnolejeunea incisa* and *Pycnolejeunea incisa*, Grolle & Piippo 1990 as *Cheilolejeunea excisula*, **Thiers 1992**, Bapna & Kachroo 2000b. WJ: **Hoffman 1935** as *Pycnolejeunea excisula* and *Pycnolejeunea incisa*, Meijer 1954a as *Pycnolejeunea excisula*, **Thiers 1986** also as *Cheilolejeunea excisula*.

\*\*\* *C. intertexta* (Lindenb.) Steph. JAV: Mizutani 1967b, Hattori 1968, Mizutani 1972, 1975, 1977, 1978a, Miller *et al.* 1983, Asthana *et al.* 1996, Bapna & Kachroo 2000b, Piippo *et al.* 2002. WJ: **Thiers 1986**.

\*\*\* *C. krakakammae* (Lindenb.) R.M.Schust. JAV: **Zhu 2006a**.

\*\*\* *C. lindenbergii* (Gottsche) Mizut. JAV: **TYPE** of *Euosmolejeunea luerssenii*, **Sande Lacoste 1857** as *Lejeunea lindenbergii*, **Stephani 1896, 1898a both** as *Euosmolejeunea luerssenii*, Stephani 1914 as *Euosmolejeunea luerssenii* and *Hygrolejeunea lindenbergii*, Bonner 1965 as *Euosmolejeunea lindenbergii* and *Euosmolejeunea luerssenii*, 1966 as *Hygrolejeunea lindenbergii*, Grolle 1966c as *Hygrolejeunea lindenbergii*, **Mizutani 1967b** as *Cheilolejeunea luerssenii*, 1972, 1973b, Bonner 1977 also as *Cheilolejeunea luerssenii*, Miller *et al.* 1983 as *Hygrolejeunea lindenbergii*, Pócs *et al.* 1994, Szab 1997, Bapna & Kachroo 2000b. WJ: **Sande Lacoste 1864** as *Lejeunea lindenbergii*, **Schiffner 1898a** as *Euosmolejeunea lindenbergii*.

\*\* *C. longidens* (Steph.) R.M.Schust. et Kachroo CJ: **Hoffman 1935** as *Pycnolejeunea micholitzii*.

\*\* *C. meyeniana* (Nees, Lindenb. et Gottsche) R.M.Schust. et Kachroo JAV: **Mizutani 1980a**, Miller *et al.* 1983, Thiers 1992, Pócs *et al.* 1994. EJ: **Hoffman 1935** as *Pycnolejeunea meyeniana*. WJ: **Hoffman 1935** as *Pycnolejeunea meyeniana*.

\*\* *C. serpentina* (Mitt.) Mizut. JAV: Miller *et al.* 1983, Asthana *et al.* 1996, Easa 2003, **Zhu 2006b**. WJ: **Grolle 1979b**.

\* <sup>23</sup>*C. suborbicularis* (Herzog) H.A.Mill. *et al.* JAV: Miller *et al.* 1983 also as *Microlejeunea suborbicularis*. WJ: **TYPE** of *Microlejeunea suborbicularis*, **Herzog 1951a** as *Microlejeunea suborbicularis*, **Geissler & Bischler 1985** as *Microlejeunea suborbicularis*.

\*\*\* *C. trapezia* (Nees) R.M.Schust. et Kachroo JAV: **TYPE** of *Jungermannia thymifolia*  $\alpha$  *imbricata* and *Jungermannia trapezia*, **Nees 1830** as *Jungermannia thymifolia*  $\alpha$  *imbricata*, **Nees 1830** as *Jungermannia trapezia*, **Gottsche *et al.* 1845b** as *Lejeunea imbricata* and *Lejeunea trapezia*, **Sande Lacoste 1857** as *Lejeunea imbricata* and *Lejeunea trapezia*  $\beta$  *minor*, **1864** as *Lejeunea trapezia*, **Stephani 1890b** as *Lejeunea imbricata* and *Lejeunea trapezia*, **1893b** as *Lejeunea imbricata*, Verdoorn 1938 as *Pycnolejeunea imbricata*, Mizutani 1961, 1978b, 1982 all as *Cheilolejeunea imbricata*, Bonner 1977, **Grolle 1979b**, Miller *et al.* 1983 also as *Cheilolejeunea imbricata*, *Jungermannia trapezia*, *Lejeunea imbricata*, *Lejeunea trapezia* and *Pycnolejeunea imbricata*, **Geissler & Bischler 1987** as *Jungermannia thymifolia*  $\alpha$  *imbricata*, *Jungermannia trapezia*, *Lejeunea imbricata* and *Lejeunea trapezia*, 1989 as *Pycnolejeunea imbricata*, *Pycnolejeunea imbricata*, *Pycnolejeunea trapezia*, *Pycnolejeunea trapezia* var.  $\beta$  *minor* and *Pycnolejeunea trapezia*, **Thiers 1992** as *Cheilolejeunea imbricata*, Asthana *et al.* 1996 as *Cheilolejeunea imbricata*, Bapna & Kachroo 2000b as *Cheilolejeunea imbricata*, **Zhu & So 2001** as *Cheilolejeunea imbricata* and *Cheilolejeunea longiloba*, Piippo *et al.* 2002 as *Cheilolejeunea longiloba*, Easa 2003 as *Cheilolejeunea imbricata*. BA: **Hoffman 1935** as *Pycnolejeunea longiloba*, **Van Leeuwen 1936** as *Pycnolejeunea imbricata*. CJ: **Schiffner 1898a** as *Pycnolejeunea trapezia* var.  $\beta$  *minor*, **Mizutani 1980a** as *Cheilolejeunea longiloba*. EJ: **TYPE** of *Lejeunea trapezia*  $\beta$  *minor*, **Gottsche *et al.* 1845b** as *Lejeunea trapezia*  $\beta$  *minor*, **Hoffman 1935** as

22. *Ceratolejeunea karstenii* has not been critically revised and may be a synonym of something.

23. *Cheilolejeunea suborbicularis* is taxonomically doubtful and most likely a synonym of something.

*Pycnolejeunea imbricata* and *Pycnolejeunea trapezia*, **Geissler & Bischler 1987** as *Lejeunea trapezia*  $\beta$  *minor*. WJ: **Sande Lacoste 1857, 1864** both as *Lejeunea imbricata*, **Schiffner 1898a** as *Pycnolejeunea imbricata* and *Pycnolejeunea trapezia*, as *Pycnolejeunea imbricata*, **Hoffman 1935** as *Pycnolejeunea imbricata*, *Pycnolejeunea longiloba* and *Pycnolejeunea trapezia*, Meijer 1954a as *Pycnolejeunea imbricata*, **Mizutani 1980a** as *Cheilolejeunea imbricata* and *Cheilolejeunea longiloba*.

\*\*\* *C. trifaria* (Reinw., Blume et Nees) Mizut. JAV: **TYPE** of *Jungermannia trifaria* and *Lejeunea teretiuscula*, **Reinwardt et al. 1824a** as *Jungermannia trifaria*, **Nees 1830** as *Jungermannia trifaria*, **Gottsche et al. 1845a** as *Lejeunea teretiuscula*, **1845b** as *Lejeunea teretiuscula* and *Lejeunea trifaria*, **Sande Lacoste 1857** as *Lejeunea heterophylla*, *Lejeunea teretiuscula* and *Lejeunea trifaria*, **1864** as *Lejeunea teretiuscula*, **Stephani 1890b** as *Lejeunea trifaria*, **Schiffner 1893b** as *Lejeunea trifaria*, **1898a** as *Euosmolejeunea teretiuscula* and *Euosmolejeunea trifaria*, Bonner 1965 as *Euosmolejeunea heterophylla*, *Euosmolejeunea trifaria* and *Lejeunea teretiuscula*, Hattori 1968, Mizutani 1972, 1977, 1978a, 1982, Miller et al. 1983 also as *Euosmolejeunea trifaria*, *Euosmolejeunea trifaria*, *Jungermannia trifaria* and *Lejeunea teretiuscula*, **Geissler & Bischler 1987** as *Jungermannia trifaria*, *Lejeunea teretiuscula* and *Lejeunea trifaria*, 1989 as *Ptychanthus trifarius*, Fulford & Sharp 1990, **Reiner-Drehwald 1998**, Bapna & Kachroo 2000b, **Zhu & So 2001**, **Yano 2004**. WJ: **Sande Lacoste 1864** as *Lejeunea heterophylla*, **Schiffner 1898a** as *Euosmolejeunea heterophylla*, **1900c** as *Euosmolejeunea trifaria*, **Gradstein et al. 2010**.

\*\*\* *C. vittata* (Steph. ex G.Hoffm.) R.M.Schust. et Kachroo JAV: Verdoorn 1938 as *Pycnolejeunea vittata*, Mizutani 1977, 1978a. WJ: **Hoffman 1935** as *Pycnolejeunea vittata*, **Mizutani 1980a**, **Thiers 1986, 1992**.

#### *Chiastocaulon*

\*\*\* *C. dendroides* (Nees) Carl JAV: **TYPE** of *Jungermannia dendroides*, **Nees 1830** as *Jungermannia dendroides*, **Gottsche et al. 1844** as *Plagiochila dendroides*, **Gottsche 1853** as *Plagiochila dendroides*, **Schiffner 1900a** as *Plagiochila dendroides* and its var. *subtridentata*, **Stephani 1903** as *Plagiochila dendroides*, **Dugas 1929** as *Plagiochila dendroides*, Inoue 1958a, 1967a both as *Plagiochila dendroides*, Bonner 1963b, Grolle 1965a, Miller et al. 1983 also as *Jungermannia dendroides* and *Plagiochila dendroides*, **Geissler & Bischler 1987** as *Jungermannia dendroides*, 1989 as *Plagiochila dendroides*, Piippo 1989a as *Plagiochila dendroides*, **So 2001a** as *Plagiochila dendroides*. WJ: **TYPE** of *Plagiochila dendroides* var. *subtridentata* and *Plagiochila zollingeri*, **Sande Lacoste 1857, 1864** both as *Plagiochila dendroides*, **Schiffner 1898a** as *Plagiochila dendroides*, **1900b** as *Plagiochila dendroides* and its var. *subtridentata*, **Inoue 1967b, 1984** as *Plagiochila dendroides*, **Geissler & Bischler 1989** as *Plagiochila dendroides* var. *subtridentata* and *Plagiochila zollingeri*, **So & Grolle 2000c** as *Plagiochila dendroides*.

#### *Chiloscyphus*

<sup>24</sup>*C. argutus* (Reinw., Blume et Nees) Nees

? —var. *excisus* Schiffn. JAV: **Schiffner 1900a, Bonner 1963b**. WJ: **TYPE, Schiffner 1900b**.

? —var. *minor* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE, Schiffner 1900b, Bonner 1963b**.

? —var. *paucidentatus* Schiffn. JAV: **Schiffner 1900a, Bonner 1963b**. WJ: **TYPE, Schiffner 1900b**.

? —var. *subquadratus* Schiffn. JAV: **Schiffner 1900a, Bonner 1963b**. WJ: **SYNTYPE, Schiffner 1900b**.

<sup>25</sup>*C. aselliformis* (Reinw., Blume et Nees) Nees

? —var. *diversidens* Schiffn. JAV: **Schiffner 1900a**, Bonner 1963b. WJ: **TYPE, Schiffner 1900b**.

? —var. *multiciliatus* Schiffn. JAV: **Schiffner 1900a, 1900b**, Bonner 1963b. WJ: **SYNTYPE, Schiffner 1900b**.

\* <sup>26</sup>*C. bifidus* Schiffn. JAV: **Schiffner 1900a**, Bonner 1966 as *Heteroscyphus bifidus*. WJ: **TYPE, Schiffner 1900b, Stephani 1907, Bonner 1963b**.

\*\* *C. boulyanus* (Steph.) J.J.Engel et R.M.Schust. JAV: **TYPE** of *Lophocolea boulyana*, **Stephani 1922** as *Lophocolea boulyana*, **Geissler & Bischler 1985** as *Lophocolea boulyana*.

\* <sup>27</sup>*C. ciliolatooides* J.J.Engel et R.M.Schust. JAV: **Schiffner 1900a** as *Lophocolea stephanii*, **Stephani 1906** as *Lophocolea stephanii*. WJ: **TYPE** of *Lophocolea stephanii*, **Schiffner 1900b** as *Lophocolea stephanii*, **Geissler & Bischler 1985** as *Lophocolea stephanii*.

\*\*\* *C. ciliolatus* (Nees) J.J.Engel et R.M.Schust. JAV: **TYPE** of *Jungermannia ciliolata*, **Nees 1830** as *Jungermannia ciliolata*, **Gottsche et al. 1844** as *Plagiochila ciliolata*, **Schiffner 1900a** as *Lophocolea ciliolata* and its var. *spinulosa*, **Stephani 1906** as *Lophocolea ciliolata*, Geissler & Bischler 1985 as *Lophocolea ciliolata*, **1987** as *Jungermannia ciliolata*, 1989 as *Plagiochila ciliolata*, **Piippo 1985b** as *Lophocolea ciliolata*, 1989b. WJ: **SYNTYPE** of *Lophocolea ciliolata* f. *angustifolia* and **TYPE** of *Lophocolea ciliolata* var. *spinulosa*, **Sande Lacoste 1857** as *Plagiochila ciliolata*, **1864** as *Lophocolea ciliolata*, **Schiffner 1898a** as *Lophocolea ciliolata*, **1900b** as *Lophocolea ciliolata* and its var. *spinulosa* and f. *angustifolia*, **1900c** as *Lophocolea ciliolata*, **Geissler & Bischler 1985** as *Lophocolea ciliolata* var. *spinulosa*.

\*\*\* *C. coadunatus* (Sw.) J.J.Engel et R.M.Schust. JAV: Nees 1830 as *Jungermannia bidentata*, **Gottsche et al. 1845a** as *Lophocolea bidentata*, **Gottsche 1853** as *Lophocolea bidentata*, **Sande Lacoste 1857** as *Lophocolea bidentata*, **1864** as *Lophocolea bidentata* var.  $\beta$  *minor*, **Schiffner 1898a** as *Lophocolea bidentata* var.  $\beta$  *minor*, **Schiffner 1900a** as

24. *Chiloscyphus argutus* is now *Heteroscyphus argutus*, but we are not sure whether these varieties also belong to the species and are worth recognizing.

25. *Chiloscyphus aselliformis* is now *Heteroscyphus aselliformis*, but we are not sure whether these varieties also belong to the species and are worth recognizing.

26. *Chiloscyphus bifidus* is possibly a small form of *Heteroscyphus aselliformis* (Schiffner 1900).

27. *Chiloscyphus ciliolatooides* is doubtfully distinct from *C. ciliolatus*.

- Lophocolea bidentata*, Hattori 1966a as *Lophocolea bidentata*. WJ: **Schiffner 1898a, 1900b** both as *Lophocolea bidentata*.
- \*\* — var. *rivularis* (Raddi) Frisvoll, Elvebakk, Flatberg et Økland JAV: **TYPE** of *Lophocolea lateralis*, Frye & Clark 1944 as *Lophocolea bidentata* var. *bidentata*, **Geissler & Bischler 1985** as *Lophocolea lateralis*.
- <sup>28</sup>C. *coalitus* (Hook.) Nees
- ? —var. *angustus* Schiffn. JAV: **Schiffner 1900a, Bonner 1963b**. WJ: **TYPE, Schiffner 1900b**.
- ? —var. *grandiretis* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE, Schiffner 1900b, Bonner 1963b**.
- ? —var.  $\gamma$  *tener* (Nees) Schiffn. JAV: **TYPE** of *Chiloscyphus coalitus*  $\gamma$  *tener* and *Jungermannia coalita*  $\gamma$  *tenera*, **Nees 1830** as *Jungermannia coalita*  $\gamma$  *tenera*, **Bonner 1963b** as *Chiloscyphus coalitus*  $\gamma$  *tener*, **Geissler & Bischler 1987** as *Jungermannia coalita*  $\gamma$  *tenera*. WJ: **Sande Lacoste 1857** as *Chiloscyphus coalitus*  $\gamma$  *tener*, **Schiffner 1898a**.
- \* <sup>29</sup>C. *costatoides* J.J.Engel et R.M.Schust. JAV: **Schiffner 1900a** as *Lophocolea massalongoana*, **Stephani 1906** as *Lophocolea massalongoana*, Verdoorn 1933b as *Lophocolea massalongoana*. WJ: **SYNTYPE** of *Lophocolea massalongoana*, **Schiffner 1900b, 1900c** both as *Lophocolea massalongoana*, **Herzog 1932** as *Lophocolea massalongoana*, **Geissler & Bischler 1985** as *Lophocolea massalongoana*.
- \*\*\* C. *costatus* (Nees) J.J.Engel et R.M.Schust. JAV: **TYPE** of *Jungermannia costata*, **Nees 1830** as *Jungermannia costata*, **Gottsche et al. 1844** as *Plagiochila costata*, Sande Lacoste 1857 as *Plagiochila costata*, **Schiffner 1900a** as *Lophocolea costata*, **Stephani 1906** as *Lophocolea costata*, **Kitagawa 1973b** as *Lophocolea costata*, Geissler & Bischler 1985 as *Lophocolea costata*, **1987** as *Jungermannia costata*, **Piippo 1985b** as *Lophocolea costata*, 1989b. WJ: **Sande Lacoste 1864** as *Lophocolea costata*, **Schiffner 1898a, 1900b** both as *Lophocolea costata*.
- \* <sup>30</sup>C. *crenulifolius* (Steph.) J.J.Engel et R.M.Schust. JAV: **TYPE** of *Lophocolea crenulifolia*, **Stephani 1922** as *Lophocolea crenulifolia*, **Geissler & Bischler 1985** as *Lophocolea crenulifolia*.
- <sup>31</sup>C. *decurrrens* (Reinw., Blume et Nees) Nees
- ? —var. *bilobus* Schiffn. JAV: **Schiffner 1900a**, Bonner 1963b, 1977. WJ: **SYNTYPES, Schiffner 1900b**.
- ? —var. *latifolius* Schiffn. JAV: **Schiffner 1900a, Bonner 1963b**, 1977. WJ: **TYPE, Schiffner 1900b**.
- ? —var. *speciosus* Schiffn. JAV: **Schiffner 1900a**, Verdoorn 1935, Bonner 1963b, 1977. WJ: **SYNTYPES, Schiffner 1900b, 1900c**.
- \*\* C. *haskarlianus* (Gottsche) J.J.Engel et R.M.Schust. JAV: **TYPE** of *Lophocolea haskarliana*, **Gottsche et al. 1845a** as *Lophocolea haskarliana*, **Schiffner 1898a** as *Lophocolea haskarliana*, **Stephani 1906** as *Lophocolea haskarliana*, **Geissler & Bischler 1985** as *Lophocolea haskarliana*. WJ: **Sande Lacoste 1857** as *Lophocolea haskarliana*.
- \*\* C. *integerrimus* Schiffn. JAV: **Schiffner 1900a, Stephani 1907, Bonner 1963b**, 1966 as *Heteroscyphus integerrimus*. WJ: **TYPE, Schiffner 1900b**.
- \*\* C. *kurzii* (Sande Lac.) J.J.Engel et R.M.Schust. JAV: **Schiffner 1900a** as *Lophocolea kurzii*, **Stephani 1906** as *Lophocolea kurzii*, Miller et al. 1983 as *Lophocolea kurzii*, Piippo 1989b, Streimann 1991 as *Lophocolea kurzii*, Bapna & Kachroo 2000b. WJ: **TYPE** of *Lophocolea kurzii*, **Sande Lacoste 1864** as *Lophocolea kurzii*, **Schiffner 1898a, 1900b** both as *Lophocolea kurzii*, **Kitagawa 1973b** as *Lophocolea kurzii*, **Geissler & Bischler 1985** as *Lophocolea kurzii*.
- \* <sup>32</sup>C. *laxissimus* (Herzog) J.J.Engel et R.M.Schust. WJ: **TYPE** of *Lophocolea laxissima*, **Herzog 1932** as *Lophocolea laxissima*, **Geissler & Bischler 1985** as *Lophocolea laxissima*.
- \* <sup>33</sup>C. *mollis* (Nees) J.J.Engel et R.M.Schust. JAV: **TYPE** of *Jungermannia mollis*, **Nees 1830** as *Jungermannia mollis*, **Gottsche et al. 1845a** as *Lophocolea mollis*, Sande Lacoste 1857 as *Lophocolea mollis*, **Schiffner 1898a, 1900a** both as *Lophocolea mollis*, **Stephani 1906** as *Lophocolea mollis*, **Geissler & Bischler 1987** as *Jungermannia mollis*, Bapna & Kachroo 2000b. WJ: **Schiffner 1900b, 1955** both as *Lophocolea mollis*.
- \*\*\* C. *muricatus* (Lehm.) J.J.Engel et R.M.Schust. JAV: **TYPE** of *Lophocolea horridula*, **Sande Lacoste 1854, 1855a, 1856b** all as *Lophocolea horridula*, **Schiffner 1900a** as *Lophocolea muricata*, **Stephani 1906** as *Lophocolea muricata*, Frye & Clark 1944 as *Lophocolea muricata*, Arnell 1956 as *Lophocolea muricata*, Schuster 1980 as *Lophocolea muricata*, Miller et al. 1983 as *Lophocolea muricata*, **Geissler & Bischler 1985** as *Lophocolea horridula*. WJ: **Sande Lacoste 1857** as *Lophocolea horridula*, **Schiffner 1898a, 1900b, 1900c** all as *Lophocolea muricata*, Meijer 1954a as *Lophocolea muricata*, **Gradstein et al. 2010**.
- \* <sup>34</sup>C. *parvicus* J.J.Engel et R.M.Schust. JAV: **Schiffner 1900a** as *Lophocolea levieri*, **Stephani 1906** as *Lophocolea levieri*, **Piippo 1985b** as *Lophocolea levieri*, Piippo 1989b. WJ: **TYPE** of *Lophocolea levieri*, **Schiffner 1900b** as *Lophocolea levieri*, **Geissler & Bischler 1985** as *Lophocolea levieri*.
- \*\* C. *propagulifer* Schiffn. JAV: **Schiffner 1900a, Stephani 1907**, Bonner 1966 as *Heteroscyphus propagulifer*. WJ: **TYPE, Schiffner 1900b, Bonner 1963b**.

28. *Chiloscyphus coalitus* is now *Heteroscyphus coalitus*, but we are not sure whether these varieties also belong to the species and are worth recognizing.
29. *Chiloscyphus costatoides* may be a delicate form of *C. costatus* (Piippo 1985b).
30. *Chiloscyphus crenulifolius* is taxonomically doubtful and most likely a synonym of something.
31. *Chiloscyphus decurrrens* belongs to *Heteroscyphus splendens*, but we are not sure whether these varieties also belong to the species and are worth recognizing.
32. *Chiloscyphus laxissimus* is taxonomically doubtful and most likely a synonym of something.
33. *Chiloscyphus mollis* is close to or maybe conspecific with *C. difformis* (Grolle 1995).
34. *Chiloscyphus parvicus* is doubtfully distinct from *C. ciliolatus*.

- \*\* *C. salacensis* (Steph.) J.J.Engel et R.M.Schust. JAV: Miller *et al.* 1983 as *Lophocolea salacensis*. WJ: **TYPE** of *Lophocolea salacensis*, Stephani 1906 as *Lophocolea salacensis*, **Geissler & Bischler 1985** as *Lophocolea salacensis*.
- ? <sup>35</sup>*C. schiffneri* J.J.Engel et R.M.Schust. *nom. illeg.* JAV: **Schiffner 1900a** as *Lophocolea javanica*, **Stephani 1906** as *Lophocolea javanica*, **Piippo 1985b** as *Lophocolea javanica*. WJ: **TYPE** of *Lophocolea javanica*, **Schiffner 1900b** as *Lophocolea javanica*, **Geissler & Bischler 1985** as *Lophocolea javanica*.
- <sup>36</sup>*C. succulentus* Gottsche  
 ? —β *gaudichaudii* Gottsche JAV: Bonner 1963b.  
 ? —var. *integrifolius* Schiffn. WJ: **TYPE**, **Schiffner 1893b**, **1898a**, **Bonner 1963b**.
- \* <sup>37</sup>*C. thermarum* (Schiffn.) J.J.Engel et R.M.Schust. JAV: **Schiffner 1900a** as *Lophocolea thermarum*. WJ: **TYPE** of *Lophocolea thermarum*, **Schiffner 1900b** as *Lophocolea thermarum*, **Geissler & Bischler 1985** as *Lophocolea thermarum*.
- <sup>38</sup>*C. zollingeri* Gottsche  
 ? —var. *fisstipulus* Schiffn. JAV: **Schiffner 1900a**, **Bonner 1963b**. WJ: **TYPE**, **Schiffner 1900b**.  
 ? —var. *pluridentatus* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE**, **Schiffner 1900b**, **Bonner 1963b**.  
 ? —var. *rotundifolius* Schiffn. JAV: **Schiffner 1900a**, **Bonner 1963b**. WJ: **TYPE**, **Schiffner 1900b**.  
 ? —var. *subintegerrimus* Schiffn. JAV: **Schiffner 1900a**, **Bonner 1963b**. WJ: **TYPE**, **Schiffner 1900b**.

### *Cololejeunea*

- \*\* *C. aequabilis* (Sande Lac.) Schiffn. JAV: **SYNTYPE** of *Leptocolea yulensis*, **Stephani 1916** as *Leptocolea yulensis*, Stephani 1916 as *Physocolea aequabilis*, Bonner 1963b also as *Cololejeunea yulensis*, Mizutani 1975 as *Cololejeunea yulensis*, Miller *et al.* 1983 as *Cololejeunea yulensis*, **Geissler & Bischler 1985** as *Leptocolea yulensis*, 1989 as *Physocolea aequabilis*, **Zhu 2005**. CJ: **Benedix 1953** as *Cololejeunea yulensis*. EJ: **Benedix 1953** as *Cololejeunea yulensis*. WJ: **TYPE** of *Lejeunea aequabilis*, **Sande Lacoste 1864** as *Lejeunea aequabilis*, **Schiffner 1898a**, **Benedix 1953** as *Cololejeunea yulensis*, **Geissler & Bischler 1987** as *Lejeunea aequabilis*.
- \* <sup>39</sup>*C. amoena* Benedix JAV: Pócs *et al.* 1967, Mizutani 1975, **Zhu & So 2001**. EJ: **Benedix 1953**. WJ: **TYPE**, **Benedix 1953**, **Bonner 1963b**.
- \*\* *C. angustiflora* (Steph.) Mizut. JAV: **TYPE** of *Physocolea javanica*, **Stephani 1916** as *Physocolea javanica*, **Mizutani 1965**, 1975 both as *Cololejeunea javanica*, Bonner 1977 as *Cololejeunea javanica*, **Tixier 1985** as *Cololejeunea javanica* [incl. *C. flavicans*], **Geissler & Bischler 1989** as *Physocolea javanica*, **Zhu & So 2002**.
- \*\*\* *C. appressa* (A.Evans) Benedix JAV: Kodama 1955 as *Taeniolejeunea appressa*, Mizutani 1961, 1975, 1977, 1978a, 1978b, 1984a, Bonner 1963b, Miller *et al.* 1983, Zhu 1995, Bapna & Kachroo 2000b. EJ: **Benedix 1953**. WJ: **Benedix 1953**.
- ? *C. cardiocalyx* Schiffn. *nom. inval.* WJ: **Geissler & Bischler 1987** as *Lejeunea cardiocalyx*.
- \* <sup>40</sup>*C. cordiflora* Steph. JAV: **TYPE** of *Leptocolea karstenii*, **Stephani 1916** as *Leptocolea karstenii*, Benedix 1953 as *Cololejeunea karstenii*, Bonner 1963b as *Cololejeunea karstenii*, **Geissler & Bischler 1985** as *Leptocolea karstenii*, **Tixier 1985** [incl. *C. yulensis*]. WJ: **Renner 1932** as *Leptocolea karstenii*.
- ? *C. deflexilobula* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**, **Bonner 1963b**.
- \*\*\* *C. dozyana* (Sande Lac.) Schiffn. JAV: **TYPE** of *Lejeunea dozyana*, **Sande Lacoste 1855a**, **1855b**, **1857**, **1864** all as *Lejeunea dozyana*, **Schiffner 1898a**, Stephani 1916 as *Physocolea dozyana*, Bonner 1963b, Mizutani 1977, 1978a, **Tixier 1985**, **Geissler & Bischler 1987** as *Lejeunea dozyana*, 1989 as *Physocolea dozyana*, Zhu & So 1999b, **2001**. CJ: **Benedix 1953**. WJ: **Schiffner 1900c**, **Benedix 1953**.
- \*\* *C. falcata* (Horik.) Benedix JAV: Bonner 1963b as *Cololejeunea falcatoides*, Mizutani 1975, 1977, 1978a all as *Cololejeunea falcatoides*, Miller *et al.* 1983. EJ: **Benedix 1953** as *Cololejeunea falcatoides*. WJ: **Benedix 1953** as *Cololejeunea falcatoides*.
- \*\* *C. filidens* Benedix JAV: **Tixier 1985**, **Zhu & So 2001**. WJ: **TYPE** and **TYPE** of *Cololejeunea papilligera* and *Cololejeunea ungulata*, **Schiffner 1900c** as *Cololejeunea papilligera*, **1900c** as *Cololejeunea ungulata*, **Benedix 1953**, **Bonner 1963b** also as *Cololejeunea papilligera* and *Cololejeunea ungulata*.
- \*\*\* *C. floccosa* (Lehm. et Lindenb.) Schiffn. JAV: **Gottsche et al. 1845b** as *Lejeunea floccosa*, **Sande Lacoste 1857** as *Lejeunea floccosa*, Evans 1912 as *Leptocolea floccosa*, Stephani 1916 as *Leptocolea floccosa*, Kodama 1955 as *Taeniolejeunea floccosa*, Mizutani 1961, 1975, 1978b, Bonner 1963b, Miller *et al.* 1983 also as *Leptocolea floccosa* and *Taeniolejeunea floccosa*, Zhu 1995, Asthana & Srivastava 2003. EJ: **Mizutani 1984a**. WJ: **Sande Lacoste 1864** as *Lejeunea floccosa*, **Schiffner 1898a**, **Schiffner 1900c**.  
 \*\* — var. *aurita* Benedix JAV: Bonner 1963b. WJ: **Benedix 1953**.  
 \*\* — var. *connivens* Benedix WJ: **TYPE**, **Benedix 1953**, **Bonner 1963b**.  
 \*\* — var. *floccosa* JAV: Szab 1997. EJ: **Benedix 1953**. WJ: **Benedix 1953**.

35. *Chiloscyphus schiffneri* J.J.Engel et R.M.Schust. 1985 is a younger homonym of *C. schiffneri* S.W.Arnell 1964 and needs a new name if it should be recognized.
36. *Chiloscyphus succulentus* is now *Heteroscyphus succulentus*, but we are not sure whether these varieties also belong to the species and are worth recognizing.
37. *Chiloscyphus thermarum* is doubtfully distinct from *C. ciliolatus*.
38. *Chiloscyphus zollingeri* is now *Heteroscyphus zollingeri*, but we are not sure whether these varieties also belong to the species and are worth recognizing.
39. *Cololejeunea amoena* is doubtfully distinct from *C. floccosa*.
40. *Cololejeunea cordiflora* is doubtfully distinct from *C. trichomanis* (T. Pócs, pers. comm.).

- \* — var. *plicata* Tixier WJ: **TYPE**, **Tixier 1981**, **Crosby & Engel 2006**.
- \*\* *C. fusca* (Steph.) Mizut. JAV: **TYPE** of *Physocolea fusca*, **Stephani 1916** as *Physocolea fusca*.
- <sup>41</sup>*C. goebelii* (Gottsche ex Schiffn.) Schiffn.  
 ? —var.  $\beta$  *cardiocalyx* (Schiffn.) Schiffn. JAV: Bonner 1963b. WJ: **TYPE** of *Lejeunea goebelii* var.  $\beta$  *cardiocalyx*, **Schiffner 1893b** as *Lejeunea goebelii* var.  $\beta$  *cardiocalyx*, **1898a**, **Geissler & Bischler 1987** as *Lejeunea goebelii* var.  $\beta$  *cardiocalyx*.  
 ? —var. *rotundifolia* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**, **Bonner 1963b**.
- \*\* *C. gynophthalma* Benedix JAV: Mizutani 1975, 1977, 1978a, Tixier 1979, Miller *et al.* 1983 as *Cololejeunea gynophthalma* f. *gynophthalma*, Szab 1997. EJ: **Benedix 1953**. WJ: **TYPE**, **Benedix 1953**, **Bonner 1963b**.
- \*\*\* *C. haskarliana* (Lehm. et Lindenb.) Schiffn. JAV: **TYPE** of *Lejeunea haskarliana*, **Lehmann 1844** as *Lejeunea haskarliana*, **Gottsche et al. 1845b** as *Lejeunea haskarliana*, **Sande Lacoste 1857** as *Lejeunea haskarliana*, **Stephani 1890b** as *Lejeunea haskarliana*, 1913 as *Drepanolejeunea haskarliana*, **Schiffner 1898a**, Bonner 1963b as *Cololejeunea haskarliana*, 1965 as *Drepanolejeunea haskarliana*, Mizutani 1975, 1977, 1978a, 1978b, Miller *et al.* 1983 also as *Lejeunea haskarliana*, **Tixier 1985**, **Geissler & Bischler 1987** as *Lejeunea haskarliana*, Long & Grolle 1990, Zhu 1995, Szab 1997, Bapna & Kachroo 2000b, **Zhu & So 2001**, Piippo *et al.* 2002, Asthana & Srivastava 2003. CJ: **Benedix 1953**. WJ: **Benedix 1953**, **Mizutani 1986**, **Gradstein et al. 2010**.  
 \*\* — var. *haskarliana* JAV: **TYPE** of *Cololejeunea baueriana* and *Lejeunea venusta*, **Sande Lacoste 1854**, **1855a**, **1856b**, **1857** all as *Lejeunea venusta*, Stephani 1916 as *Physocolea venusta*, **Bonner 1963b** as *Cololejeunea baueriana*, **Tixier 1985** as *Cololejeunea hispidissima*, **Geissler & Bischler 1987** as *Lejeunea venusta*. EJ: **Sande Lacoste 1864** as *Lejeunea venusta*. WJ: **Schiffner 1898a** as *Cololejeunea venusta*, **1900c** as *Cololejeunea baueriana*, **Renner 1932** as *Physocolea venusta*.
- \*\* *C. hirta* Steph. JAV: **Tixier 1985**.
- \*\*\* *C. hyalina* G.Asthana et S.C.Srivast. WJ: **Eggers 2006**.
- \*\*\* *C. inflata* Steph. JAV: Mizutani 1961, 1975, 1978b, 1984a all as *Cololejeunea oshimensis*, Tixier 1962 as *Cololejeunea oshimensis*, Bonner 1963b as *Cololejeunea oshimensis*, Miller *et al.* 1983, Zhu 1995. WJ: **Benedix 1953** as *Cololejeunea oshimensis*.
- \*\*\* *C. inflectens* (Mitt.) Benedix JAV: **Schiffner 1893b** as *Lejeunea ciliatilobula*, Bonner 1963a as *Campylolejeunea ciliatilobula*, 1963b as *Cololejeunea peculiaris*, Mizutani 1975 as *Campylolejeunea inflectens*, 1977, 1978a, 1978b all as *Campylolejeunea peculiaris*, Miller *et al.* 1983 also as *Campylolejeunea peculiaris* and *Cololejeunea peculiaris*, Geissler & Bischler 1989 as *Physocolea ciliatilobula*, **Zhu 1995** also as *Cololejeunea peculiaris*, Bapna & Kachroo 2000b as *Campylolejeunea inflectens*, **Zhu & So 2001**, Piippo *et al.* 2002. WJ: **TYPE** of *Lejeunea ciliatilobula*, **Schiffner 1898a**, **1900c** both as *Cololejeunea ciliatilobula*, **Benedix 1953** as *Cololejeunea ciliatilobula* and *Cololejeunea peculiaris*, **Geissler & Bischler 1987** as *Lejeunea ciliatilobula*.
- \* <sup>42</sup>*C. lanciloba* Steph. JAV: **Tixier 1985** as *Cololejeunea bolombensis*, Bapna & Kachroo 2000b, Asthana & Srivastava 2003. WJ: **Renner 1932** as *Leptocolea lanciloba*, **Mizutani 1984b**.
- ? *C. longifolia* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**, **Bonner 1963b**.
- \*\*\* *C. madothecoides* (Steph.) Benedix JAV: Bonner 1963b, **Tixier 1985**, Long & Grolle 1990, Bapna & Kachroo 2000b, Asthana & Srivastava 2003. WJ: **TYPE** of *Physocolea madothecoides*, **Stephani 1916** as *Physocolea madothecoides*, **Benedix 1953**, **Mizutani 1976a**, **Geissler & Bischler 1989** as *Physocolea madothecoides*.
- \* <sup>43</sup>*C. maritima* Tixier JAV: Tixier 1979, **1985**.
- \*\*\* *C. metzgeriopsis* (K.I.Goebel) Gradst., R.Wilson, Ilk.-Borg. et Heinrichs JAV: Stephani 1916 as *Metzgeriopsis pusilla*, Verdoorn 1931a as *Metzgeriopsis pusilla*, Mizutani 1975 as *Metzgeriopsis pusilla*, Miller *et al.* 1983 as *Metzgeriopsis pusilla* and *Thallo-Lejeunea pusilla*, Geissler & Bischler 1987 as *Lejeunea pusilla*. WJ: **TYPE** of *Metzgeriopsis pusilla*, **Goebel 1888** as *Metzgeriopsis pusilla*, **Schiffner 1898a**, **1900c** both as *Metzgeriopsis pusilla*, **Renner 1932** as *Metzgeriopsis pusilla*, Meijer 1954a as *Metzgeriopsis pusilla*, **Geissler & Bischler 1985** as *Metzgeriopsis pusilla*.
- ? *C. modesta* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**, **Bonner 1963b**.
- \*\* *C. mutabilis* Benedix JAV: Bonner 1963b as *Cololejeunea mutabilis* f. *javanica*, Mizutani 1975, Tixier 1979 as *Cololejeunea mutabilis* f. *javanica*, Miller *et al.* 1983 as *Cololejeunea mutabilis* f. *javanica*. WJ: **TYPE**, **TYPE** of *Cololejeunea mutabilis* f. *javanica*, **Benedix 1953**, **Benedix 1953** as *Cololejeunea mutabilis* f. *javanica*, **Bonner 1963b**.
- \*\*\* *C. obliqua* (Nees et Mont.) Schiffn. JAV: **TYPE** of *Cololejeunea scabrifolia* and *Physocolea scabrifolia*, Stephani 1916 as *Physocolea scabrifolia*, Tixier 1962 as *Cololejeunea nymanii*, **Bonner 1963b** as *Cololejeunea campanulata*, *Cololejeunea goebelii* var.  $\gamma$  *acrotremae*, *Cololejeunea nymanii* and *Cololejeunea scabrifolia*, Mizutani 1975 as *Cololejeunea nymanii*, Miller *et al.* 1983 as *Cololejeunea campanulata*, *Cololejeunea mariana* and *Cololejeunea nymanii*, **Tixier 1985** as *Cololejeunea scabriflora*, **Geissler & Bischler 1989** as *Physocolea scabrifolia*, **Zhu & So 2001**. CJ: **Benedix 1953** as *Cololejeunea nymanii*. EJ: **Benedix 1953** as *Cololejeunea nymanii*. WJ: **TYPE** of *Cololejeunea androgyna*, **Schiffner 1900c** as *Cololejeunea scabrifolia*, **Benedix 1953** as *Cololejeunea androgyna*, *Cololejeunea campanulata* var. *campanulata* and *Cololejeunea nymanii*, **Bonner 1963b** as *Cololejeunea androgyna*.
- \*\* *C. ocelloides* (Horik.) Mizut. JAV: Tixier 1962 as *Cololejeunea leonidens* var. *saccata*, Bonner 1963b as *Cololejeunea leonidens*, Pócs *et al.* 1967 as *Cololejeunea leonidens* var. *saccata*, Mizutani 1975, 1977, 1978a all as *Cololejeunea*

41. *Cololejeunea goebelii* belongs to *C. trichomanis*, but we are not sure whether these varieties also belong to the species and are worth recognizing.

42. *Cololejeunea lanciloba* is doubtfully distinct from *C. planissima*.

43. *Cololejeunea maritima* is taxonomically doubtful and most likely a synonym of something.

- leonidens*, 1984a, Zhu 1995 as *Cololejeunea ocelloides*. CJ: **Benedix 1953** as *Cololejeunea leonidens* var. *leonidens*. WJ: **Benedix 1953** as *Cololejeunea leonidens* var. *leonidens*.
- \* <sup>44</sup>*C. paucimarginata* Tixier WJ: **TYPE**, **Tixier 1985**, **Crosby & Engel 2006**.
- \*\* *C. peponiformis* Mizut. WJ: **TYPE** of *Cololejeunea simulans*, **Schiffner 1900c** as *Cololejeunea simulans*, **Bonner 1963b** as *Cololejeunea simulans*.
- \*\* *C. peraffinis* (Schiffn.) Schiffn. JAV: **TYPE** of *Physocolea peraffinis*, **Schiffner 1893b** as *Lejeunea peraffinis*, Stephani 1916 as *Physocolea peraffinis*, Kodama 1955 as *Taeniolejeunea peraffinis*, Mizutani 1961, 1975, 1978b, Bonner 1963b, Pócs 1968a, Geissler & Bischler 1985 as *Leptocolea floccosa* var. *peraffinis* and *Leptocolea peraffinis*, **1989** as *Physocolea peraffinis*, 1990 as *Taeniolejeunea peraffinis*, **Pócs et al. 1994**, Bapna & Kachroo 2000b, **Zhu & So 2001**. WJ: **TYPE** of *Lejeunea peraffinis*, **Schiffner 1898a**, **Schiffner 1900c**, Mizutani 1966, Mizutani 1984a, Geissler & Bischler 1987 as *Lejeunea peraffinis*, **Zhu 1995**.
- \*\* — var. *elegans* Benedix JAV: Tixier 1979, Miller *et al.* 1983. EJ: **TYPE**, **Benedix 1953**, **Bonner 1963b**. WJ: **Benedix 1953**.
- \*\* — var. *peraffinis* JAV: Miller *et al.* 1983. CJ: **Benedix 1953**. EJ: **Benedix 1953**. WJ: **Benedix 1953**.
- \*\* — var. *serrulata* Schiffn. ex Benedix WJ: **TYPE**, **Schiffner 1900c**, **Benedix 1953**, **Bonner 1963b**.
- \*\* *C. plagiophylla* Benedix JAV: Pócs *et al.* 1967, **Tixier 1985**. WJ: **TYPE**, **Benedix 1953**, **Bonner 1963b**.
- \*\* *C. planiflora* Benedix JAV: Pócs 1968a, **Tixier 1985**. EJ: **Benedix 1953**. WJ: **TYPE**, **Benedix 1953**, **Bonner 1963b**.
- \*\*\* *C. planissima* (Mitt.) Abeyw. JAV: Bapna & Kachroo 2000b, Asthana & Srivastava 2003. BA: **Van Leeuwen 1936** as *Physocolea planissima*.
- \* *C. pretiosa* Benedix JAV: Bonner 1963b. WJ: **Benedix 1953**.
- \*\* *C. pseudofloccosa* (Horik.) Benedix JAV: Kodama 1955 as *Taeniolejeunea pseudofloccosa*, Mizutani 1961, 1975, 1977, 1978a, 1984a, Bonner 1963b, Hattori 1966a, Pócs *et al.* 1994, Zhu 1995, Pócs & Streimann 1999, Bapna & Kachroo 2000b, Asthana & Srivastava 2003. EJ: **Benedix 1953**. WJ: **Benedix 1953**.
- ? *C. quadrangularis* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**, **Bonner 1963b**.
- \*\* *C. raduliloba* Steph. JAV: **TYPE** of *Physocolea estipulata*, **Stephani 1916** as *Physocolea estipulata*, Mizutani 1961, 1978b, Miller *et al.* 1983, **Tixier 1985** as *Cololejeunea estipulata*, **Geissler & Bischler 1989** as *Physocolea estipulata*.
- \* <sup>45</sup>*C. reineckeana* Steph. JAV: **Tixier 1985**.
- \*\* *C. schmidtii* Steph. JAV: Tixier 1962, **1985** as *Cololejeunea benedixii*, Mizutani 1975, Pócs *et al.* 1994. WJ: **Benedix 1953**.
- \*\* *C. serrata* (Steph.) Benedix JAV: Bonner 1963b, Onraedt 1981, **Tixier 1985**. EJ: **Benedix 1953**. WJ: **Benedix 1953**.
- ? *C. serrulata* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**, **Bonner 1963b**.
- \*\*\* *C. sigmoidea* Ast et Tixier JAV: **TYPE** of *Cololejeunea subaloba*, **Bonner 1963b** as *Cololejeunea subaloba*, **Zhu & So 2001** also as *Cololejeunea imperfecta*, Asthana & Srivastava 2003. WJ: **Schiffner 1900c** as *Cololejeunea subaloba*.
- \*\* — var. *sigmoidea* JAV: Tixier 1985.
- \*\* *C. stephanii* Schiffn. ex Benedix JAV: Eggers *et al.* 1998, **Zhu & So 2001**. WJ: **TYPE**, **Schiffner 1900c** as *Cololejeunea stephanii*, **Benedix 1953**, **Bonner 1963b**, **Zhu 1995**.
- \*\* *C. tenella* Benedix JAV: Tixier 1985, **Zhu & So 1999a**, **2001**. BA: **Benedix 1953**. WJ: **TYPE**, **Benedix 1953**, **Bonner 1963b**, **Zhu 1995**.
- \* <sup>46</sup>*C. thailandensis* Tixier JAV: **Tixier 1985**.
- \*\* *C. triapiculata* (Herzog) Tixier JAV: **Bonner 1963b** as *Cololejeunea pseudopellucida*, 1977, Miller *et al.* 1983, **Tixier 1985**, Eggers *et al.* 1998. WJ: **TYPE** of *Cololejeunea pseudopellucida*, **Schiffner 1900c** as *Cololejeunea pseudopellucida*.
- \*\* *C. trichomanis* (Gottsche) Steph. JAV: **TYPE** of *Lejeunea goebelii*, Goebel 1888 as *Lejeunea goebelii*, **Schiffner 1893b** as *Lejeunea goebelii*, Stephani 1916 as *Leptocolea goebelii*, Mizutani 1961, 1975, 1978b all as *Cololejeunea goebelii*, Bonner 1963b as *Cololejeunea goebelii*, Miller *et al.* 1983 as *Cololejeunea goebelii* and *Leptocolea goebelii*, Geissler & Bischler 1985 as *Leptocolea goebelii*, **1987** as *Lejeunea goebelii*, Tixier 1985 as *Cololejeunea goebelii*, Bapna & Kachroo 2000b as *Cololejeunea goebelii*, **Zhu & So 2000**, **2001** both as *Cololejeunea goebelii*, Piippo *et al.* 2002 as *Cololejeunea goebelii*, Asthana & Srivastava 2003. WJ: **TYPE** of *Lejeunea goebelii*, *Lejeunea goebelii* f. *normalis* and *Cololejeunea goebelii* f. *brevifolia*, **Schiffner 1893b** as *Lejeunea goebelii* f. *normalis*, **1898a**, **1900c** both as *Cololejeunea goebelii* and its f. *brevifolia*, **Bonner 1963b** as *Cololejeunea goebelii* f. *brevifolia*, **Geissler & Bischler 1987** as *Lejeunea goebelii* f. *normalis*.
- \*\* *C. verrucosa* Steph. JAV: **TYPE**, **Stephani 1895b**, **Schiffner 1898a**, Stephani 1916 as *Physocolea verrucosa*, Tixier 1962, **1985**, **Bonner 1963b**, Mizutani 1976a, 1984a, Miller *et al.* 1983, Geissler & Bischler 1990 as *Taeniolejeunea verrucosa*, **Zhu 1995**, **Zhu & So 2001**. WJ: **Schiffner 1900c**.
- \* — var. *verrucosa* JAV: **Benedix 1953**.
- \*\*\* *C. zangii* R.L.Zhu et M.L.So JAV: **Zhu & So 2001**. WJ: **TYPE** of *Cololejeunea marginata* var. *alimbia*, **Schiffner 1900c** as *Cololejeunea marginata* var. *alimbia*, **Bonner 1963b** as *Cololejeunea marginata* var. *alimbia*.
- Colura**
- \*\*\* *C. acroloba* (Mont. ex Steph.) Ast JAV: **Schiffner 1893b** as *Lejeunea acroloba*, Stephani 1916 as *Colura corynephora*, Bonner 1963b also as *Colura corynephora*, Pócs *et al.* 1967, Mizutani 1975, Miller *et al.* 1983, Szab 1997, Eggers *et al.* 1998, Bapna & Kachroo 2000b. WJ: **Schiffner 1898a**, **1900c** as *Colurolejeunea acroloba* and its var. *acuta*, **Jovet-Ast 1954a**, **1954b**.

44. *Cololejeunea paucimarginata* may be a form of *C. raduliloba* (R.-L. Zhu, pers. comm.).

45. *Cololejeunea reineckeana* is taxonomically doubtful and most likely a synonym of something.

46. *Cololejeunea thailandensis* is taxonomically doubtful and most likely a synonym of something.



- \*\*\* *C. ari* (Steph.) Steph. JAV: **TYPE** of *Colura javanica*, **Stephani 1916** as *Colura javanica*, **Bonner 1963b** also as *Colura javanica*, Grolle 1965a, Miller *et al.* 1983 also as *Colura javanica*, Bapna & Kachroo 2000b, **Zhu & So 2001**. WJ: **Jovet-Ast 1954a, 1954b**.
- \*\*\* *C. conica* (Sande Lac.) K.I.Goebel JAV: Stephani 1916 as *Diplasiolejeunea conica*, Bonner 1965 as *Diplasiolejeunea conica*, Pócs *et al.* 1967, Mizutani 1975, Miller *et al.* 1983, Szab 1997. WJ: **SYNTYPE** of *Lejeunea conica*, **Sande Lacoste 1864** as *Lejeunea conica*, **Schiffner 1898a** as *Colurolejeunea conica*, **Geissler & Bischler 1987** as *Lejeunea conica*.
- \*\*\* *C. corynophora* (Nees, Lindenb. et Gottsche) Trevis. JAV: **Sande Lacoste 1864** as *Lejeunea corynophora*, Miller *et al.* 1983, Zhu & So 1999b.
- \*\*<sup>47</sup> *C. denticulata* Ast JAV: Miller *et al.* 1983. WJ: **TYPE**, **Jovet-Ast 1954b**, **Bonner 1963b**.
- \*\*\* *C. hemisphaerica* Ast JAV: Bonner 1963b. WJ: **Jovet-Ast 1954a**.
- \*\*\* *C. herzogii* Ast JAV: Miller *et al.* 1983. WJ: **TYPE**, **Jovet-Ast 1954a, 1954b**, **Bonner 1963b**.
- \*\*<sup>48</sup> *C. imperfecta* Steph. JAV: Bonner 1963b, Grolle 1966d, Miller *et al.* 1983. WJ: **Jovet-Ast 1954a, 1954b**.
- \*\* *C. junghuhniana* (Steph.) Steph. JAV: **TYPE** of *Lejeunea junghuhniana*, **Stephani 1890b** as *Lejeunea junghuhniana*, **1896** as *Colurolejeunea junghuhniana*, 1916, **Schiffner 1898a** as *Colurolejeunea junghuhniana*, **Jovet-Ast 1954a**, **Bonner 1963b** also as *Colurolejeunea junghuhniana*, Grolle 1969, **Geissler & Bischler 1987** as *Lejeunea junghuhniana*. BA: **Van Leeuwen 1936**.
- \*\*\* *C. leratii* (Steph.) Steph. JAV: Stephani 1916 as *Colura apiculata*, Bonner 1963b also as *Colura apiculata* and *Colurolejeunea leratii*, **Jovet-Ast 1954a** as *Colura apiculata*, Miller *et al.* 1983 also as *Colurolejeunea leratii*, Eggers *et al.* 1998. WJ: **Schiffner 1900c** as *Colurolejeunea apiculata*.
- \*\*\* *C. meijeri* Ast JAV: Mizutani 1961, **Pócs *et al.* 1994**, Szab 1997, Eggers 2006. WJ: **TYPE**, **Jovet-Ast 1954a**, **Bonner 1963b**.
- \*\*\* *C. mosenii* Steph. JAV: **TYPE**, **Stephani 1916**, **Jovet-Ast 1954a**, **Bonner 1963b**, Miller *et al.* 1983.
- \*\*\* *C. ornata* K.I.Goebel JAV: **TYPE**, Goebel 1891, **Schiffner 1893b** as *Lejeunea ornata*, Stephani 1916, Verdoorn 1932a, **Jovet-Ast 1951**, **Bonner 1963b**, Mizutani 1975, Onraedt 1981, **Pócs *et al.* 1994**, Bapna & Kachroo 2000b. WJ: **Schiffner 1898a, 1900c** both as *Colurolejeunea ornata*, **Jovet-Ast 1954a**.
- \*\*\* *C. superba* (Mont.) Steph. JAV: **SYNTYPE** of *Lejeunea superba* var.  $\beta$  *latifolia*, Miller *et al.* 1983 as *Lejeunea superba* var.  $\beta$  *latifolia*, **Geissler & Bischler 1987** as *Lejeunea superba* var.  $\beta$  *latifolia*. WJ: **Jovet-Ast 1954a, 1954b**.
- \*\*\* *C. tenuicornis* (A.Evans) Steph. JAV: Mizutani 1961, Hattori 1975c, Miller *et al.* 1983, Bapna & Kachroo 2000b.

#### *Colurolejeunea*<sup>49</sup>

- ? *C. falcifolia* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**.
- ? *C. scabrilobula* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**.

#### *Conoscyphus*

- \*\*\* *C. trapezioides* (Sande Lac.) Schiffn. JAV: **TYPE** of *Chiloscyphus trapezioides*, **Sande Lacoste 1854, 1855a, 1856b, 1857** all as *Chiloscyphus trapezioides*, **Schiffner 1900a**, Bonner 1962 as *Anthoscyphus trapezoides*, **1963b** as *Chiloscyphus trapezioides*, Miller *et al.* 1983 also as *Chiloscyphus trapezioides*. WJ: **Sande Lacoste 1864** as *Chiloscyphus trapezioides*, **Schiffner 1898a**, **Stephani 1907** as *Conoscyphus inflexifolius*, Meijer 1954a as *Conoscyphus inflexifolius*.

#### *Cuspidatula*

- \*\*\* *C. contracta* (Reinw., Blume et Nees) Steph. JAV: **TYPE** of *Jungermannia contracta* and *Jungermannia squamata* var.  $\gamma$  *apiculata*, **Reinwardt *et al.* 1824a** as *Jungermannia contracta*, **Nees 1830** as *Jungermannia contracta*, Gottsche *et al.* 1844 as *Jungermannia contracta*, **Sande Lacoste 1857** as *Jungermannia contracta*, **1864** as *Jungermannia squamata* var.  $\gamma$  *apiculata*, **Schiffner 1900a** as *Anastrophyllum contractum* var. *virescens*, **1900a** as *Anastrophyllum contractum*, **Stephani 1901**, Bonner 1962 as *Anastrophyllum contractum*, 1963b, Kitagawa 1970, **Grolle 1971**, Bizot & Pócs 1974, Miller *et al.* 1983 also as *Anastrophyllum contractum* and *Jungermannia contracta*, **Geissler & Bischler 1987** as *Jungermannia squamata* var.  $\gamma$  *apiculata*, **Váňa 1991b** as *Jamesoniella contracta*. WJ: **TYPE** of *Anastrophyllum contractum* var. *virescens*, **Sande Lacoste 1864** as *Jungermannia contracta*, **Schiffner 1898a** as *Anastrophyllum contractum*, **1898b** as *Anastrophyllum contractum* and its var. *virescens*, Meijer 1954a, **Bonner 1962** as *Anastrophyllum contractum* var. *virescens*.

#### *Cyathodium*

- \*\*\* *C. cavernarum* Kunze ex Lehm. JAV: Srivastava & Dixit 1996, Piippo *et al.* 1998, Bapna & Kachroo 2000b, Easa 2003, Zhang *et al.* 2004, Bischler-Causse *et al.* 2005, Chaudhary *et al.* 2006.
- \*\*\* *C. foetidissimum* Schiffn. JAV: Stephani 1898, **Schiffner 1900a**, Arnell 1963, Bonner 1963b, Grolle 1966d, Miller *et al.* 1983. CJ: **Srivastava & Dixit 1996**. WJ: **SYNTYPES**, **Schiffner 1898b, 1900c, 1939**, **Herzog 1932**, **Bonner 1963b**, **Srivastava & Dixit 1996**, **Bischler-Causse *et al.* 2005**, **Duckett & Ligrone 2006**.
- \*\*\* *C. smaragdinum* Schiffn. JAV: Srivastava & Dixit 1996, Bapna & Kachroo 2000b, Zhang *et al.* 2004. CJ: Meijer 1955. WJ: Meijer 1953.

#### *Dactylophorella*

- \*\*\* *D. muricata* (Gottsche) R.M.Schust. JAV: **TYPE** of *Lejeunea muricata*, **Gottsche *et al.* 1845b** as *Lejeunea muricata*, Sande Lacoste 1857 as *Lejeunea muricata*, **Schiffner 1898a** as *Drepanolejeunea muricata*, Stephani 1913 as *Drepanolejeunea muricata*, **Bischler 1964** as *Drepanolejeunea muricata*, Bonner 1965 as *Drepanolejeunea muricata*, Mizutani 1977, 1978a both as *Drepanolejeunea muricata*, **Geissler & Bischler 1987** as *Lejeunea muricata*. CJ: **Herzog 1934** as

47. *Colura denticulata* is very close to *C. leratii*.

48. *Colura imperfecta* is very close to *C. leratii*.

49. *Colurolejeunea* is a synonym of *Colura*, but the following two taxa have never been transferred. We do not know if they are worth recognizing or where they belong.

*Drepanolejeunea muricata*. WJ: **Schiffner 1900c** as *Drepanolejeunea muricata*, **Herzog 1934** as *Drepanolejeunea muricata*.

### **Dendrolejeunea**

- \*\*\* *D. fruticosa* (Lindenb. et Gottsche) Lacout. JAV: Sande Lacoste 1857, **1864** both as *Bryopteris fruticosa*, Schiffner 1894 as *Thysananthus fruticosus*, Verdoorn 1934a as *Thysananthus fruticosus*, Bonner 1963a as *Bryopteris filicina* γ *fruticosa*, Mizutani 1977, 1978a, **1987b** all as *Thysananthus fruticosus*, Miller *et al.* 1983 also as *Lejeunea fruticosa* and *Thysananthus fruticosus*, Geissler & Bischler 1987 as *Lejeunea fruticosa*, **Thiers & Gradstein 1989** as *Thysananthus fruticosus*, Fulford & Sharp 1990 as *Bryopteris fruticosa*, Geissler & Bischler 1990 as *Thysananthus fruticosus* and *Thysanolejeunea fruticosa*. WJ: **LECTOTYPE** of *Bryopteris fruticosa*, **Gottsche et al. 1845a** as *Bryopteris filicina* γ *fruticosa*, **1847** as *Bryopteris fruticosa*, **Stephani 1890a** as *Bryopteris fruticosa*, **Schiffner 1898a** as *Thysananthus fruticosus*, **Gradstein et al. 2002**.

### **Denotarisia**

- \*\*\* *D. linguifolia* (De Not.) Grolle JAV: Schiffner 1898a as *Anastrophyllum graeffei*, **1898b** as *Jamesoniella affinis*, **1900a** as *Jamesoniella affinis*, *Jamesoniella ovifolia* var. *minor*, var. *latifolia* and f. *virescens*, **Stephani 1901** as *Jamesoniella ovifolia*, Verdoorn 1931b, 1933b both as *Jamesoniella ovifolia*, Bonner 1966 as *Jamesoniella ovifolia* and its f. *virescens* and var. *minor*, Grolle 1966d as *Jamesoniella ovifolia*, Miller *et al.* 1983 as *Jamesoniella ovifolia* and *Jungermannia affinis*, Vána & Piippo 1989b, Vána 1991b. WJ: **TYPE** of *Jamesoniella affinis*, *Jamesoniella ovifolia* var. *latifolia*, *Jamesoniella ovifolia* f. *virescens* and *Jamesoniella ovifolia* var. *minor*, **Schiffner 1898b** as *Jamesoniella ovifolia* f. *virescens*, var. *latifolia* and var. *minor*, Meijer 1954a as *Jamesoniella ovifolia*, 1954b as *Jamesoniella affinis*, **Bonner 1966** as *Jamesoniella affinis* and *Jamesoniella ovifolia* var. *latifolia*, **Grolle 1971**, **Gradstein et al. 2010**.

### **Diplasiolejeunea**

- \*\*\* *D. cavifolia* Steph. JAV: **SYNTYPE** of *Diplasiolejeunea javanica*, **Stephani 1916** as *Diplasiolejeunea javanica*, Bonner 1965 as *Diplasiolejeunea javanica*, **Grolle 1966a**, 1968a both as *Diplasiolejeunea brachyclada*, Bizot & Pócs 1974, Mizutani 1977, 1978a, Miller *et al.* 1983, **Zhu & So 2001**, Schäfer-Verwimp 2006.
- \*\* *D. patelligera* Herzog JAV: **Grolle 1966a**, Schäfer-Verwimp 2006. WJ: **TYPE**, **Herzog 1948**, **Bonner 1965**.

### **Diplophyllum**

- \*\*\* *D. nanum* Herzog JAV: Grolle 1968a, Schuster 1974, Onraedt 1981, Piippo 1985a, Long & Grolle 1990, **Srivastava et al. 1991**, Engel & Merrill 1998, Srivastava 1998, Müller & Schäfer-Verwimp 1999, Bapna & Kachroo 2000b, Schuster 2002, Srivastava & Alam 2005, Blockeel *et al.* 2006. WJ: **TYPE**, **Herzog 1951a**, **1951b**, **Bonner 1965**.

### **Drepanolejeunea**

- ? *D. affinis* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**.
- \*\*\* *D. angustifolia* (Mitt.) Grolle JAV: **TYPE** of *Jungermannia cucullata* γ *tenuis* and *Jungermannia tenuis*, **Reinwardt et al. 1824a** as *Jungermannia tenuis*, **Nees 1830** as *Jungermannia cucullata* γ *tenuis*, **Gottsche et al. 1845b** as *Lejeunea tenuis*, **Sande Lacoste 1857** as *Lejeunea tenuis*, **Stephani 1890b** as *Lejeunea tenuis*, Bischler *et al.* 1962 as *Drepanolejeunea tenuis*, Tixier 1962 as *Drepanolejeunea tenuis*, Bonner 1965 as *Drepanolejeunea tenuis*, Hattori 1966a, Pócs *et al.* 1967 as *Drepanolejeunea tenuis* var. *brevifolia*, Pócs 1968a as *Drepanolejeunea tenuis*, Udar & Awasthi 1982, Miller *et al.* 1983 also as *Jungermannia tenuis* and *Lejeunea tenuis*, **Thiers 1986**, **Geissler & Bischler 1987** as *Jungermannia cucullata* γ *tenuis*, *Jungermannia tenuis* and *Lejeunea tenuis*, Long & Grolle 1990, Bapna & Kachroo 2000b, **Zhu & So 2001**, Dauphin 2005 as *Drepanolejeunea tenuis*. CJ: **Herzog 1939** as *Drepanolejeunea tenuis* var. *tenuis*. EJ: **Herzog 1939** as *Drepanolejeunea tenuis* var. *tenuis*. WJ: **Sande Lacoste 1864** as *Lejeunea tenuis*, **Schiffner 1898a** as *Drepanolejeunea tenuis*, **Herzog 1939** as *Drepanolejeunea tenuis* var. *tenuis*, Meijer 1954a as *Drepanolejeunea tenuis*.
- \*\* *D. blumei* Steph. ex Schiffn. JAV: **SYNTYPE**, **Stephani 1896** as *Drepanolejeunea blumei*, 1913, **Schiffner 1898a**, **Herzog 1930**, Bonner 1965, **Thiers 1986**. WJ: **Schiffner 1900c**.
- \*\* — var. *angustistipula* Herzog *nom. inval.* JAV: Bonner 1965. WJ: **SYNTYPE**, **Herzog 1937**.
- \*\* *D. cyclops* (Sande Lac.) Grolle et R.L.Zhu JAV: Stephani 1913 as *Leptolejeunea cyclops*, 1916 as *Diplasiolejeunea cyclops*, Herzog 1943 as *Rhaphidolejeunea cyclops* [sensu Herzog is *R. spicata* fide Grolle 1965a], Bonner 1965 as *Diplasiolejeunea cyclops*, Geissler & Bischler 1985 as *Leptolejeunea cyclops*, 1990 as *Rhaphidolejeunea cyclops*. WJ: **TYPE** of *Lejeunea cyclops*, **Sande Lacoste 1864** as *Lejeunea cyclops*, **Schiffner 1898a** as *Leptolejeunea cyclops*, **Grolle 1965a** as *Rhaphidolejeunea cyclops*, **Bischler 1968b** as *Rhaphidolejeunea cyclops*, **Geissler & Bischler 1987** as *Lejeunea cyclops*.
- \*\*\* *D. dactylophora* (Nees, Lindenb. et Gottsche) Schiffn. JAV: **Schiffner 1893ab** as *Lejeunea dactylophora*, **1898a**, Tixier 1962, Bonner 1965, Pócs *et al.* 1967, Mizutani 1975, 1977, 1978a, 1978b, Miller *et al.* 1983, Zhu & So 2001.
- \*\* *D. elegans* Herzog WJ: **TYPE**, **Herzog 1937**, **Bonner 1965**, **Bischler 1968b**.
- ? *D. exilis* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**.
- ? — var. *grossidentata* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**.
- \*\* *D. fissicornua* Steph. JAV: **TYPE**, **Stephani 1913**, **Herzog 1930**, **Bonner 1965**, Pócs *et al.* 1994, Szab 1997. WJ: **Herzog 1937**, **Mizutani 1990**.
- \* <sup>50</sup>*D. hampeana* Steph. JAV: **TYPE**, **TYPE** of *Lejeunea hampeana*, **Stephani 1890b** as *Lejeunea hampeana*, **Schiffner 1898a**, Stephani 1913, **Bonner 1965**, Miller *et al.* 1983, **Geissler & Bischler 1987** as *Lejeunea hampeana*. WJ: **Schiffner 1900c**, **Herzog 1937**.
- \*\*\* *D. intermedia* Zwickel JAV: Miller *et al.* 1983. WJ: **Grolle 1976**.

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50. *Drepanolejeunea hampeana* is doubtfully distinct from *D. thwaitesiana*.

- \*\* *D. levicornua* Steph. JAV: **TYPE, Stephani 1913**, Herzog 1930, **Bonner 1965**, Mizutani 1990, Szab 1997, Eggers *et al.* 1998, **Zhu & So 2001**. BA: **Van Leeuwen 1936**. WJ: **Herzog 1937**.
- \* <sup>51</sup>*D. longicornua* (Herzog) Mizut. JAV: Pócs & Streimann 1999. WJ: **Mizutani 1990**.
- \* <sup>52</sup>*D. nymanii* Steph. JAV: **TYPE, Stephani 1913, Bonner 1965**, Grolle 1965a. WJ: **Herzog 1937, Mizutani 1990**.
- \* <sup>53</sup>*D. obliqua* Steph. JAV: Stephani 1913, Pócs *et al.* 1967. CJ: **Herzog 1939**. WJ: **TYPE, Stephani 1896, Schiffner 1898a, Herzog 1939**, Meijer 1954a, **Bonner 1965, Thiers 1986**.
- \*\*\* *D. pentadactyla* (Mont.) Steph. JAV: **SYNTYPE** of *Drepanolejeunea micholitzii* and **TYPE** of *Drepanolejeunea micholitzii* f. *verdoornii*, **Stephani 1913** as *Drepanolejeunea micholitzii*, Mizutani 1961 as *Drepanolejeunea tenuioides*, **Bonner 1965** as *Drepanolejeunea micholitzii* and its f. *contorta*, f. *acanthantha*, f. *verdoornii*, var. *dactylophoroides*, var. *genuina* and f. *lonchoceras*, Mizutani 1975 as *Drepanolejeunea micholitzii*, Kitagawa 1981 as *Drepanolejeunea micholitzii*, Miller *et al.* 1983 as *Drepanolejeunea micholitzii* and its var. *dactylophoroides*, Szab 1997 as *Drepanolejeunea micholitzii*, Zhu & So 1999b, 2001. CJ: **SYNTYPES** of *Drepanolejeunea micholitzii* var. *dactylophoroides*, f. *contorta* and var. *genuina*, **Herzog 1934** as *Drepanolejeunea micholitzii* var. *dactylophoroides*, f. *contorta* and var. *genuina*. WJ: **SYNTYPES** of *Drepanolejeunea micholitzii* f. *acanthantha*, var. *dactylophoroides* and var. *genuina*, **Herzog 1934** as *Drepanolejeunea micholitzii* f. *acanthantha*, var. *dactylophoroides* and var. *genuina*, Verdoorn 1935 as *Drepanolejeunea micholitzii*.
- \*\* *D. pleiodictya* Herzog JAV: **Thiers 1986**. WJ: **TYPE, Herzog 1934, Bonner 1965**.
- ? *D. pusilla* Steph. ex Bonner *nom. inval.* WJ: **Bonner 1965**.
- \* <sup>54</sup>*D. serricalyx* Herzog JAV: Miller *et al.* 1983, Pócs *et al.* 1994. WJ: **TYPE, Herzog 1937, Bonner 1965, Thiers 1986**.
- \*\* *D. spinoso-cornuta* Steph. **BA: Herzog 1937**.
- \* <sup>55</sup>*D. tenera* K.I.Goebel JAV: Verdoorn 1935, Tixier 1962 as *Drepanolejeunea tenera* var. *goebelii*, Bonner 1965 as *Drepanolejeunea tenera* var. *genuina* and f. *goebelii*, Pócs 1969a as *Drepanolejeunea tenera* f. *tenera* and f. *goebelii*, Miller *et al.* 1983. WJ: **SYNTYPE** of *Drepanolejeunea tenera* f. *goebelii*, **Herzog 1934** as *Drepanolejeunea tenera* var. *genuina* and f. *goebelii*.
- \* — var. *litoceras* Herzog JAV: **TYPE, Bonner 1965**.
- \*\*\* *D. ternatensis* (Gottsche) Steph. ex Schiffn. JAV: **TYPE** of *Drepanolejeunea ternatensis* var. *lancispina*, Mizutani 1961, 1975, 1977, 1978a, 1978b, Bonner 1965 as *Drepanolejeunea ternatensis* var. *lancispina*, Pócs 1969a, Udar & Awasthi 1982 also as *Drepanolejeunea ternatensis* var. *lancispina*, Miller *et al.* 1983 as *Drepanolejeunea ternatensis* var. *ternatensis* and var. *lancispina*, Bapna & Kachroo 2000b as *Drepanolejeunea ternatensis* var. *lancispina* and var. *ternatensis*, **Zhu & So 2001**. CJ: **Herzog 1939** as *Drepanolejeunea ternatensis* var. *lancispina*. EJ: **Herzog 1939** as *Drepanolejeunea ternatensis* var. *lancispina*. WJ: **Schiffner 1900c, Herzog 1939** as *Drepanolejeunea ternatensis* var. *lancispina* and var. *ternatensis*, Gradstein *et al.* 2010.
- ? *D. teysmannii* Gottsche ex Steph. *nom. inval.* JAV: **Gottsche 1882** as *Lejeunea teysmannii*, **Schiffner 1893ab** as *Lejeunea teysmannii*, Mizutani 1961, 1977, 1978a, Bonner 1965, Miller *et al.* 1983, **Geissler & Bischler 1987** as *Lejeunea teysmannii*. WJ: **Schiffner 1900c, Herzog 1939**, Meijer 1954a.
- \*\*\* *D. thwaitesiana* (Mitt.) Steph. JAV: **TYPE** of *Drepanolejeunea setistipa*, **Schiffner 1893ab** as *Lejeunea setistipa*, **Stephani 1896** as *Drepanolejeunea setistipa*, 1913, **Herzog 1930**, Bonner 1965 also as *Drepanolejeunea setistipa*, Tan & Engel 1986, **Geissler & Bischler 1987** as *Lejeunea setistipa*. BA: **Van Leeuwen 1936**. WJ: **TYPE** of *Lejeunea setistipa*, **Schiffner 1898a, 1900c** both as *Drepanolejeunea setistipa*, **Renner 1932, Geissler & Bischler 1987** as *Lejeunea setistipa*.
- ? *D. tjibodensis* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**.
- \*\* *D. tricornua* Herzog WJ: **Herzog 1937, Mizutani 1990**.
- ? *D. tridactyla* (Gottsche) Steph. *nom. inval.* JAV: **TYPE** of *Lejeunea tridactyla*, **Gottsche et al. 1845b** as *Lejeunea tridactyla*, **Sande Lacoste 1857** as *Lejeunea tridactyla*, **Stephani 1890b** as *Lejeunea tridactyla*, **Schiffner 1898a**, Stephani 1913, **Herzog 1939**, Bonner 1965, **Geissler & Bischler 1987** as *Lejeunea tridactyla*.
- \*\*\* *D. vesiculosa* (Mitt.) Steph. JAV: **Herzog 1934** as *Drepanolejeunea vesiculosa* subsp. *affinis*, Tixier 1962 as *Drepanolejeunea vesiculosa* subsp. *affinis*, Bonner 1965 as *Drepanolejeunea vesiculosa* subsp. *affinis*, Pócs *et al.* 1967, Mizutani 1977, 1978a, 1978b, Udar & Awasthi 1982, Miller *et al.* 1983, Bapna & Kachroo 2000b, Zhu & So 2001. WJ: **Herzog 1939** as *Drepanolejeunea vesiculosa* subsp. *affinis*.
- ? — subsp. *propagulifera* Herzog *nom. inval.* JAV: Bonner 1963b, 1965. WJ: **Herzog 1939**.

#### Dumortiera

- \*\*\* <sup>56</sup>*D. hirsuta* (Sw.) Nees JAV: Reinwardt *et al.* 1824a as *Marchantia hirsuta*, **Nees 1830, Gottsche 1853, Schiffner 1893ab** as *Dumortiera hirsuta* a *lactor*, **1900a** as *Dumortiera trichocephala* and *Dumortiera velutina*, **Stephani 1899** also as *Dumortiera trichocephala* and *Dumortiera velutina*, Evans 1919 as *Dumortiera hirsuta* subsp. *hirsuta*, Verdoorn 1932a, Arnell 1958, Arnell 1963 as *Dumortiera hirsuta* var. *nepalensis*, **Bonner 1965** also as *Dumortiera trichocephala*,

51. *Drepanolejeunea longicornua* is doubtfully distinct from *D. thwaitesiana*.

52. *Drepanolejeunea nymanii* is doubtfully distinct from *D. thwaitesiana*.

53. *Drepanolejeunea obliqua* is doubtfully distinct from *D. ternatensis*.

54. *Drepanolejeunea serricalyx* is doubtfully distinct from *D. thwaitesiana*.

55. *Drepanolejeunea tenera* is doubtfully distinct from *D. pentadactyla*.

56. *Dumortiera hirsuta* is a variable species and recent studies (N. Salazar-Allen, pers. comm.) indicate that more than one taxon may be involved. The most commonly recognized infrataxon is subsp. *nepalensis* (Taylor) R.M.Schust. and this is also frequently reported from Java.

*Dumortiera velutina*, *Dumortiera velutina* f. *exigua* and var. *subnuda*, Miller *et al.* 1983 as *Dumortiera hirsuta* subsp. *hirsuta*,  $\alpha$  *laticornis*, *Dumortiera nepalensis*, *Dumortiera trichocephala* and *Dumortiera velutina*, Bapna & Kachroo 2000b as *Dumortiera nepalensis*, Easa 2003. BA: **Van Leeuwen 1936** also as *Dumortiera velutina*. CJ: SYNTYPES of *Dumortiera hirsuta*  $\alpha$  *laticornis* and f. *exigua*, **Gottsche *et al.* 1846** as *Dumortiera hirsuta*  $\alpha$  *laticornis*, **Schiffner 1898a** also as *Dumortiera hirsuta*  $\alpha$  *laticornis*, **1955** as *Dumortiera trichocephala*, *Dumortiera velutina* and its f. *exigua*. EJ: SYNTYPE of *Dumortiera velutina* var. *subnuda*, **Schiffner 1955** as *Dumortiera velutina* var. *subnuda*, *Dumortiera trichocephala* and *Dumortiera velutina*. WJ: SYNTYPE of *Dumortiera velutina* var. *subnuda*, TYPE of *Marchantia hirsuta*, *Dumortiera hirsuta*  $\alpha$  *laticornis* and *Dumortiera velutina*, **Gottsche *et al.* 1846** as *Dumortiera hirsuta*  $\alpha$  *laticornis*, **Sande Lacoste 1856a, 1857** both as *Dumortiera hirsuta*  $\alpha$  *laticornis*, **Schiffner 1898a** also as *Dumortiera hirsuta*  $\alpha$  *laticornis*, **1898b** as *Dumortiera hirsuta*  $\alpha$  *laticornis*,  $\beta$  *angustior* and *Dumortiera velutina*, **1900c** as *Dumortiera hirsuta* subsp. *hirsuta* and *Dumortiera velutina*, **1955** as *Dumortiera velutina* var. *subnuda*, *Dumortiera trichocephala* and *Dumortiera velutina*, **Evans 1919** as *Dumortiera nepalensis*, **Seifrizz 1924, Herzog 1932** as *Dumortiera velutina*, Meijer 1953 as *Dumortiera nepalensis* and *Dumortiera velutina*, Meijer 1954a, 1958b also as *Dumortiera nepalensis*, **Bonner 1965** as *Dumortiera hirsuta*  $\alpha$  *laticornis*, **Geissler & Bischler 1985** as *Marchantia hirsuta*, **Gradstein *et al.* 2010**.

<sup>57</sup>**Eulejeunea**

? *E. heteroclada* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**.

<sup>58</sup>**Euosmolejeunea**

? *E. minuta* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**.

? *E. tenerrima* (Nees) Steph. JAV: SYNTYPE of *Jungermannia sordida* var.  $\beta$  *tenerrima*, Nees 1833 as *Jungermannia sordida* var.  $\beta$  *tenerrima*, **Geissler & Bischler 1987** as *Jungermannia sordida* var.  $\beta$  *tenerrima*.

**Fossombronia**

\*\*\* *F. himalayensis* Kashyap JAV: **Krayesky *et al.* 2005**.

\*\*\* *F. japonica* Schiffn. JAV: **Bonner 1965** as *Fossombronia cristula* var. *verdoornii*, **Stotler *et al.* 2003** as *Fossombronia cristula* var. *verdoornii*, **Krayesky *et al.* 2005**. WJ: **Verdoorn 1931b** as *Fossombronia cristula* var. *verdoornii*, Meijer 1954a, **Gradstein *et al.* 2010**.

**Frullania**

\*\* *F. acutiloba* Mitt. JAV: **Hattori 1973c, 1975b** as *Frullania hampeana* var. *acutiloba*, **Hattori *et al.* 1977** as *Frullania hampeana* var. *acutiloba*, **Hattori & Lin 1985**, Bapna & Kachroo 2000b as *Frullania acutiloba* var. *acutiloba*, Bai 2002.

\*\*\* *F. apiculata* (Nees) Nees JAV: **Reinwardt *et al.* 1824a** as *Jungermannia apiculata*, **Gottsche *et al.* 1845b**, Sande Lacoste 1857 as *Frullania apiculata*  $\gamma$  *obscura*, **Schiffner 1898a** as *Frullania apiculata* var.  $\beta$  *nodulosa* and var.  $\gamma$  *obscura*, Verdoorn 1932a, **Clark 1955b**, Bonner 1965 as *Frullania apiculata*  $\gamma$  *obscura*, **Hattori 1980a**, Miller *et al.* 1983 as *Jungermannia apiculata*, Bapna & Kachroo 2000b, **Zhu & So 2001, So & Wang 2006**. BA: **Geissler & Bischler 1987** as *Jungermannia apiculata*. WJ: TYPE of *Jungermannia apiculata*, **Sande Lacoste 1864, Schiffner 1898a** also as *Frullania nigricans*, **Verdoorn 1929a**, Meijer 1954a, **Hattori 1975b, Gradstein *et al.* 2010**.

\*\* — var. *apiculata* JAV: **Sande Lacoste 1857, Schiffner 1893ab**, Miller *et al.* 1983, **Von Konrat & Braggins 2001**. WJ: **Schiffner 1900c**.

\*\* — var. *goebelii* Schiffn. JAV: TYPE, TYPE of *Frullania pallida*, **Schiffner 1893ab, 1898a, Stephani 1911** as *Frullania pallida*, **Bonner 1965** also as *Frullania pallida*, Miller *et al.* 1983 as *Frullania pallida*. WJ: **Schiffner 1900c**.

\* —  $\beta$  *laxa* Nees JAV: **Sande Lacoste 1857**, Bonner 1965 also as *Frullania apiculata*  $\beta$  *nodulosa*. WJ: TYPE of *Jungermannia apiculata*  $\beta$  *nodulosa*, **Nees 1830** as *Jungermannia apiculata*  $\beta$  *nodulosa*, **Geissler & Bischler 1987** as *Jungermannia apiculata*  $\beta$  *nodulosa*.

\*\*\* *F. arecae* (Spreng.) Gottsche JAV: TYPE of *Frullania hians*  $\beta$  *javanica*, **Gottsche *et al.* 1845b** as *Frullania hians*  $\beta$  *javanica*, **Sande Lacoste 1857** as *Frullania hians*  $\beta$  *javanica*, **Schiffner 1893ab** as *Frullania mundiana*, **1898a** as *Frullania wallichiana*, Verdoorn 1931a as *Frullania wallichiana*, **Bonner 1965** as *Frullania hians*  $\beta$  *javanica* and *Frullania wallichiana*, **Hattori 1966a** as *Frullania wallichiana*, 1973a as *Frullania wallichiana* var. *wallichiana*, 1974a as *Frullania wallichiana*, 1974c as *Frullania wallichiana*, 1982 as *Frullania wallichiana*, **Pócs *et al.* 1967** as *Frullania wallichiana*. WJ: **Verdoorn 1929a** as *Frullania wallichiana*, **Gradstein *et al.* 2010**.

\*\*\* — var. *arecae* WJ: **Yuzawa 1991**.

\* <sup>59</sup>*F. brotheri* Steph. JAV: **Hattori 1976b, 1980b, 1982, Hattori *et al.* 1977, Piippo *et al.* 2002**.

\*\*\* *F. campanulata* Sande Lac. JAV: TYPE, **Sande Lacoste 1854, 1855a, 1856b, 1857, Schiffner 1898a**, Stephani 1910, **Bonner 1965, Hattori 1974b, 1975b, Onraedt 1981, Bapna & Kachroo 2000b, Pócs 2008b**. WJ: **Verdoorn 1929a, 1931a**, Meijer 1953.

\*\* — var. *caduca* Verd. WJ: TYPE, **Bonner 1965**.

\*\* — var. *malesiaca* (Verd.) S.Hatt. CJ: TYPE of *Frullania malesiaca*, Verdoorn 1930 as *Frullania malesiaca*, **Hattori 1975d**.

57. *Eulejeunea* is a synonym of *Lejeunea*, but the following taxon has not been transferred. We do not know where to place it.

58. *Euosmolejeunea* is a synonym of *Cheilolejeunea*, but the following taxa have not been transferred and we do not know where to place them.

59. *Frullania brotheri* is probably a mere high-elevation form of *F. nodulosa*.

- \* <sup>60</sup>*F. claviloba* Steph. JAV: Verdoorn 1931a, Bonner 1965, Pócs *et al.* 1967, Hattori 1975b, 1975d, 1976b, 1982, Hattori *et al.* 1977. WJ: **Verdoorn 1929a**.
- \*\*\* *F. cordistipula* (Reinw., Blume et Nees) Dumort. JAV: **TYPE** of *Frullania solmsiana* and *Jungermannia cordistipula*, **Reinwardt et al. 1824a** as *Jungermannia cordistipula*, **Gottsche et al. 1845b**, **Gottsche 1853**, **Stephani 1911** also as *Frullania solmsiana*, Verdoorn 1931b, **Bonner 1965** also as *Frullania solmsiana*, **Hattori 1975d**, 1977, Miller *et al.* 1983, Geissler & Bischler 1987 as *Jungermannia cordistipula*. WJ: **Sande Lacoste 1864**, **Schiffner 1898a**, **1900c**, **Verdoorn 1929a**.
- \* — var.  $\beta$  *mutica* (Nees) Schiffn. JAV: **Sande Lacoste 1857** as *Frullania cordistipula*  $\beta$  *mutica*, **Schiffner 1898a** as *Frullania cordistipula*  $\beta$  *mutica*, Bonner 1965 as *Frullania cordistipula*  $\beta$  *mutica*.
- \* —  $\gamma$  *regularis* (Nees) Nees JAV: **SYNTYPE** of *Jungermannia cordistipula*  $\beta$  *regularis*, **Nees 1830** as *Jungermannia cordistipula*  $\beta$  *regularis*, **Sande Lacoste 1857**, Bonner 1965, **Geissler & Bischler 1987** as *Jungermannia cordistipula*  $\beta$  *regularis*.
- \*\*\* *F. dentiloba* S.Hatt. WJ: **TYPE**, **Hattori 1975e**, **Crosby & Engel 2006**.
- \*\* *F. emarginatula* Steph. WJ: **TYPE**, **Stephani 1910**, **Bonner 1965**.
- \*\*\* *F. ericoides* (Nees) Mont. JAV: **TYPE** of *Frullania javanica*, *Frullania laciniosa*, *Frullania squarrosa* f. *chonanthelioides*, *Frullania squarrosa* f. *campanuloides*, *Frullania vesiculosa* and *Jungermannia squarrosa*, **Reinwardt et al. 1824a** as *Jungermannia squarrosa*, **Nees 1830** as *Jungermannia squarrosa*, **Lehmann 1844** as *Frullania laciniosa*, **Gottsche et al. 1845b** as *Frullania laciniosa* and *Frullania squarrosa*, **Sande Lacoste 1857** also as *Frullania laciniosa* and *Frullania squarrosa*, **Schiffner 1898a** also as *Frullania laciniosa*, **1910** as *Frullania fleischeri*, *Frullania javanica*, *Frullania laciniosa*, *Frullania luzonensis*, *Frullania nymanii*, *Frullania vesiculosa*, Verdoorn 1930 as *Frullania squarrosa* f. *campanuloides* and f. *chonanthelioides*, Clark & Svihla 1948 as *Frullania squarrosa*, Kamimura 1961 as *Frullania squarrosa*, **Bonner 1965** as *Frullania aeolotis*  $\alpha$  *auriculata*, *Frullania javanica*, *Frullania laciniosa*, *Frullania squarrosa* var. *ericoides*, *Frullania squarrosa* var. *planescens*, *Frullania squarrosa* f. *ericoides*, *Frullania squarrosa* var. *ericoides*, *Frullania squarrosa* f. *chonanthelioides*, *Frullania squarrosa* f. *campanuloides* and *Frullania vesiculosa*, Miller *et al.* 1983 also as *Frullania fleischeri*, *Frullania longispica*, *Frullania squarrosa* and its f. *ericoides*, *Frullania vesiculosa*, Hattori & Lin 1985 as *Frullania ericoides* var. *planescens*, **Geissler & Bischler 1987** as *Jungermannia squarrosa*, Bapna & Kachroo 2000b, Bai 2002 as *Frullania ericoides* var. *planescens*. WJ: **TYPE** of *Frullania fleischeri*, *Frullania nymanii* and *Frullania squarrosa* var. *planescens*, **Sande Lacoste 1864** as *Frullania squarrosa*, **Schiffner 1898a** as *Frullania squarrosa*, **Verdoorn 1929a** as *Frullania squarrosa* and its var. *planescens* and f. *ericoides*, **1932** as *Frullania squarrosa*, Meijer 1953 as *Frullania squarrosa*, **Bonner 1965** as *Frullania fleischeri* and *Frullania nymanii*.
- \* — var.  $\beta$  *laxa* (Nees) Schiffn. JAV: **Gottsche et al. 1845b** as *Frullania ericoides*  $\beta$  *laxa*, Sande Lacoste 1857 as *Frullania ericoides*  $\beta$  *laxa*, **Schiffner 1898a** as *Frullania ericoides*  $\beta$  *laxa*, Bonner 1965 as *Frullania ericoides*  $\beta$  *laxa*.
- \*\* <sup>61</sup>*F. fallax* Gottsche ex Steph. *nom. illeg.* JAV: **TYPE**, Gottsche *et al.* 1845b, **Sande Lacoste 1857**, **Schiffner 1898a**, **Stephani 1911**, **Verdoorn 1928**, 1931b, **Bonner 1965**, Hattori 1975b. WJ: **Verdoorn 1929a**, **Hattori 1980b**.
- \*\*\* *F. gaudichaudii* (Nees et Mont.) Nees et Mont. JAV: **Sande Lacoste 1857** as *Frullania recurvata*, Verdoorn 1931b, Bonner 1965, Miller *et al.* 1983. WJ: **Sande Lacoste 1864** as *Frullania recurvata*, **Schiffner 1898a** as *Frullania recurvata*, **Verdoorn 1929a** as *Frullania recurvata*.
- \*\*\* *F. gracilis* (Reinw., Blume et Nees) Gottsche, Lindenb. et Nees JAV: **TYPE** of *Frullania fusco-purpurea*, *Frullania lacerifolia*, *Frullania minor* and *Jungermannia gracilis*, **Reinwardt et al. 1824a** as *Jungermannia gracilis*, **Nees 1830** as *Jungermannia gracilis*, **Gottsche et al. 1845b**, **Sande Lacoste 1854**, **1855a**, **1856b** all as *Frullania minor*, **1857** also as *Frullania minor*, **Schiffner 1898a** as *Frullania minor*, **Stephani 1911** also as *Frullania fusco-purpurea*, *Frullania lacerifolia* and *Frullania minor*, Verdoorn 1932a, **Bonner 1965** also as *Frullania fusco-purpurea*, *Frullania gracilis* var. *lacerifolia*, *Frullania gracilis* var. *subapiculata*, as *Frullania lacerifolia* and *Frullania minor*, Hattori 1974a, Hattori 1975b also as *Frullania minor* var. *minor*, **1976a** as *Frullania gracilis* subsp. *minor*, 1976b, Hattori *et al.* 1977, Miller *et al.* 1983, **Geissler & Bischler 1987** as *Jungermannia gracilis*, Piippo *et al.* 2002. WJ: **SYNTYPE** of *Frullania gracilis* var. *subapiculata*, **TYPE** of *Frullania minor* var. *subsinuata* and var. *exorta*, **Sande Lacoste 1864**, **Schiffner 1898a**, **1900c** as *Frullania gracilis* var. *subapiculata* and *Frullania minor*, **Verdoorn 1929a** also as *Frullania gracilis* var. *subapiculata* and var. *lacerifolia* and *Frullania minor* and its var. *exorta*, Meijer 1953, **Bonner 1965** as *Frullania minor* var. *exorta* and var. *subsinuata*, **Gradstein et al. 2010**.
- \*\*\* *F. grandistipula* Lindenb. JAV: **TYPE**, **TYPE** of *Frullania apiculiloba*, **Gottsche et al. 1845b**, **Sande Lacoste 1857**, **Stephani 1910** also as *Frullania apiculiloba*, Verdoorn 1932a, **Bonner 1965** also as *Frullania apiculiloba*, Pócs *et al.* 1967, Hattori 1973d, **1974b**, 1976b as *Frullania grandistipula* var. *grandistipula*, 1982, 1986c, Miller *et al.* 1983 also as *Frullania apiculiloba*, Hattori & Piippo 1986, Bapna & Kachroo 2000b as *Frullania grandistipula* var. *grandistipula* and var. *rugosa*. WJ: **Sande Lacoste 1864** also as *Frullania rugosa*, **Schiffner 1898a** also as *Frullania rugosa*, **Verdoorn 1929a**, **Hattori 1975b**, **Gradstein et al. 2010**.
- \*\*\* *F. hasskarliana* Lindenb. JAV: **TYPE**, **Gottsche et al. 1845b**, **Sande Lacoste 1857**, **1864**, **Schiffner 1898a**, **Stephani 1911**, **Bonner 1965** also as *Frullania hasskarliana* f. *integribracteata*, **Hattori 1973b**, 1975b as *Frullania hasskarliana* f.

60. *Frullania claviloba* is probably a synonym of *F. gracilis*.

61. *Frullania fallax* was published twice by Stephani 1911, p. 495 and p. 557. The former was printed 28 February and is a synonym of *F. intumescens* (Lehm. et Lindenb.) Lehm. et Lindenb. while this one was printed 6 May and needs a new name if it should be recognized.

- integribractea*, 1976b as *Frullania hasskarliana* var. *integribractea*, Hattori 1982 also as *Frullania hasskarliana* var. *integribractea*, Hattori & Piippo 1986. WJ: **Verdoorn 1929a**.
- \* — var. *hasskarliana* JAV: Hattori 1975b, 1976b, 1986b.
- \*\*\* *F. hypoleuca* Nees JAV: Pócs *et al.* 1967, Hattori 1975b, 1976b, Miller *et al.* 1983, Hattori & Piippo 1986, Schuster 1992a. WJ: **Verdoorn 1929a**.
- \*\* *F. integristipula* (Nees) Nees JAV: **TYPE** of *Jungermannia integristipula*, **Nees 1830** as *Jungermannia integristipula*, Gottsche *et al.* 1845b, **Sande Lacoste 1857**, Stephani 1911, Verdoorn 1931b, Bonner 1965, Hattori 1976b, **Geissler & Bischler 1987** as *Jungermannia integristipula*. WJ: **TYPE** of *Frullania integristipula* var. *reflexistipuloides*, **Sande Lacoste 1864**, **Schiffner 1898a**, **Verdoorn 1928**, **1929a** also as *Frullania integristipula* var. *reflexistipuloides*, **Bonner 1965** as *Frullania integristipula* var. *reflexistipuloides*.
- \*\* — var. *emarginata* Verd. JAV: Bonner 1965, **Hattori 1980b**, 1982, Hattori & Piippo 1986.
- \*\* — var. *integristipula* WJ: **Hattori 1980b**.
- \*\*\* *F. intermedia* (Reinw., Blume et Nees) Dumort. JAV: **Reinwardt et al. 1824a** as *Jungermannia intermedia*, **Sande Lacoste 1857**, **1864**, **Clark & Frye 1948**, Miller *et al.* 1983, Hattori & Streimann 1985 as *Frullania intermedia* var. *non-apiculata*, Hattori 1986a as *Frullania intermedia* var. *non-appendiculata*, Bapna & Kachroo 2000b. WJ: **TYPE** of *Jungermannia intermedia*, **Nees 1830** as *Jungermannia intermedia*, **Gottsche et al. 1845b**, **Schiffner 1898a**, **Geissler & Bischler 1987** as *Jungermannia intermedia*.
- \*\* — subsp. *intermedia* JAV: **Hattori 1980b**.
- \*\*\* *F. junghuhniana* Gottsche JAV: **TYPE**, **TYPE** of *Frullania diversifolia*, **Gottsche et al. 1845b**, Sande Lacoste 1857, **Schiffner 1893ab**, **Stephani 1911** also as *Frullania diversifolia*, **Bonner 1965** also as *Frullania diversifolia*, **Hattori 1973a**, 1986a, Miller *et al.* 1983 also as *Frullania diversifolia*. WJ: **Schiffner 1898a**, **Verdoorn 1929a**, **1931a**.
- \*\* — var. *junghuhniana* JAV: Hattori 1975b, 1976b, 1982, 1986b, Hattori & Mizutani 1982, Hattori & Piippo 1986.
- \*\* — var. *tenella* (Sande Lac.) Grolle et S.Hatt. JAV: **Sande Lacoste 1854**, **1855a**, **1856b** all as *Frullania tenella*, Bonner 1965 as *Frullania perversa*, *Frullania sinuata*  $\beta$  *tenella* and *Frullania tenella*, Hattori 1975b, 1976b, 1982 all as *Frullania junghuhniana* var. *minutissima*, 1986a, 1986b, Hattori & Mizutani 1982 as *Frullania junghuhniana* var. *minutissima*, Miller *et al.* 1983 as *Frullania junghuhniana* var. *minutissima*, *Frullania sinuata*  $\beta$  *tenella* and *Frullania tenella*, Hattori & Piippo 1986. WJ: **TYPE** of *Frullania junghuhniana* var. *minutissima* and *Frullania minutissima*, **Sande Lacoste 1857** as *Frullania sinuata*  $\beta$  *tenella*, **Schiffner 1898a** as *Frullania tenella*, **1900c** as *Frullania minutissima*, **Bonner 1965** as *Frullania junghuhniana* var. *minutissima* and *Frullania minutissima*.
- \*\* *F. kurzii* Steph. JAV: **TYPE**, **Stephani 1910**, **Bonner 1965**.
- \*\*\* *F. meyeniana* Lindenb. JAV: Verdoorn 1931a, Kamimura 1961, Tixier 1962, 1969, Pócs *et al.* 1967, Hattori 1973a, Bapna & Kachroo 2000b.
- \*\* — var. *meyeniana* JAV: **TYPE** of *Frullania pallens*, **Schiffner 1898a** as *Frullania pallens*, Stephani 1911 as *Frullania pallens*, **Bonner 1965** as *Frullania pallens*, Miller *et al.* 1983. WJ: **Verdoorn 1929a** as *Frullania pallens*.
- \*\* *F. microauriculata* Verd. JAV: **TYPE**, Verdoorn 1931a, **Bonner 1965**, Hattori 1975b. WJ: **Verdoorn 1929a**, **Hattori 1976a**.
- \*\* — var. *rotundior* Verd. JAV: **Bonner 1965**. WJ: **SYNTYPES**.
- \*\*\* *F. moniliata* (Reinw., Blume et Nees) Mont. JAV: **TYPE** of *Jungermannia moniliata*, **Reinwardt et al. 1824a** as *Jungermannia moniliata*, **Nees 1830** as *Jungermannia moniliata*, **Sande Lacoste 1857**, **Stephani 1911** also as *Frullania breviramea*, Kamimura 1961 as *Frullania tamarisci* subsp. *moniliata*, Bonner 1965 also as *Frullania moniliata* subsp. *breviramea*, **Hattori 1972** as *Frullania tamarisci* var. *breviramea* and var. *obscura*, 1974a, 1975b both as *Frullania tamarisci* subsp. *obscura*, 1976b as *Frullania tamarisci* var. *breviramea*, Hattori *et al.* 1977 as *Frullania tamarisci* var. *breviramea*, **Geissler & Bischler 1987** as *Jungermannia moniliata*, Bapna & Kachroo 2000b as *Frullania tamarisci* var. *obscura*, **Zhu & So 2001**. CJ: **Gottsche et al. 1845b**, **Schiffner 1898a**. WJ: **Sande Lacoste 1864**, **Schiffner 1898a**, **1900c**, **Verdoorn 1929a**, **1931b** as *Frullania moniliata* subsp. *breviramea*.
- \*\*\* *F. monocera* (Hook.f. et Taylor) Taylor ex Gottsche, Lindenb. et Nees JAV: Kamimura 1961 as *Frullania hampeana*, Miller *et al.* 1983 also as *Frullania tortuosa*, Bapna & Kachroo 2000b. WJ: **TYPE** of *Frullania tortuosa*, **Verdoorn 1929a** as *Frullania tortuosa*.
- \*\* — var. *schiffneri* (Verd.) S.Hatt. JAV: Hattori & Lin 1985 as *Frullania acutiloba* var. *schiffneri*, Bapna & Kachroo 2000b as *Frullania acutiloba* var. *schiffneri*. WJ: **TYPE** of *Frullania acutiloba* var. *schiffneri*, **Verdoorn 1929a** as *Frullania acutiloba* var. *schiffneri*.
- \*\*\* *F. nepalensis* (Spreng.) Lehm. et Lindenb. JAV: Stephani 1910, Verdoorn 1932a, Kamimura 1961, Bonner 1965, Pócs *et al.* 1967, Hattori 1974a, 1982, Hattori *et al.* 1977, Hattori & Lin 1985, Hattori & Piippo 1986, Bapna & Kachroo 2000b, Zhu & So 2001, Bai 2002. WJ: **Sande Lacoste 1864**, **Schiffner 1898a**, **Verdoorn 1929a**, Meijer 1954a.
- \*\*\* *F. neurota* Taylor JAV: Stephani 1910 as *Frullania lauterbachii*, Verdoorn 1932a, Clark 1953, Bonner 1965, Grolle 1966c, Pócs *et al.* 1967, Hattori 1971a, 1973a as *Frullania neurota* var. *neurota*, Hattori *et al.* 1977, Miller *et al.* 1983, Schuster 1992a, Piippo *et al.* 1998, Bapna & Kachroo 2000b, Bai 2002. EJ: **TYPE** of *Frullania lauterbachii*, **Bonner 1965** as *Frullania lauterbachii*. WJ: **Verdoorn 1929a** as *Frullania lauterbachii*, **Gradstein et al. 2010**.
- \*\* *F. nigricaulis* (Reinw., Blume et Nees) Nees JAV: **TYPE** of *Jungermannia nigricaulis*, **Reinwardt et al. 1824a** as *Jungermannia nigricaulis*, **Nees 1830** as *Jungermannia nigricaulis*, Gottsche *et al.* 1845b, **Sande Lacoste 1857**, **Schiffner 1893ab**, **Stephani 1911** also as *Frullania macrostipula*, Bonner 1965, Hattori *et al.* 1977, **Geissler & Bischler 1987** as *Jungermannia nigricaulis*. WJ: **TYPE** of *Frullania macrostipula*, **Sande Lacoste 1864**, **Schiffner 1900c**, **Verdoorn 1929a**, **1931b**, **Bonner 1965** as *Frullania macrostipula*.

- \*\* — var. *elongata* Verd. WJ: **TYPE, Bonner 1965.**
- \*\*\* *F. nodulosa* (Reinw., Blume et Nees) Nees JAV: **Reinwardt et al. 1824a** as *Jungermannia nodulosa*, **Gottsche et al. 1845b, Meissner 1848, Gottsche 1853**, Verdoorn 1931b, Clark & Svihla 1948, Bonner 1965 as *Frullania nodulosa* f. *dapitana*, Miller et al. 1983 also as *Frullania dapitana*, Bapna & Kachroo 2000b. EJ: **Sande Lacoste 1864**. WJ: **TYPE** of *Jungermannia nodulosa*, **Nees 1830** as *Jungermannia nodulosa*, **Sande Lacoste 1857, Schiffner 1898a, 1900c, Verdoorn 1928, 1929a, Hattori 1980b, Geissler & Bischler 1987** as *Jungermannia nodulosa*.
- \*\*\* *F. orientalis* Sande Lac. JAV: **TYPE, Sande Lacoste 1855a, 1857**, Stephani 1911, Verdoorn 1931b, **Bonner 1965**, Hattori 1973d, 1975b, 1976b, 1982, Miller et al. 1983, Hattori & Piippo 1986, Bapna & Kachroo 2000b. WJ: **Sande Lacoste 1864, Schiffner 1898a, Meijer 1954a.**
- \*\*\* *F. ornithocephala* (Reinw., Blume et Nees) Nees JAV: **TYPE** of *Jungermannia ornithocephala*, **Reinwardt et al. 1824a** as *Jungermannia ornithocephala*, **Gottsche et al. 1845b**, Stephani 1910, Verdoorn 1931a, Bonner 1965, **Hattori 1974c**, 1976b, Hattori et al. 1977, **Geissler & Bischler 1987** as *Jungermannia ornithocephala*. WJ: **Schiffner 1898a, 1900c, Verdoorn 1929a, Gradstein et al. 2010.**
- \* — var.  $\beta$  *major* (Nees) Schiffn. JAV: **TYPE** of *Jungermannia ornithocephala*  $\beta$  *major*, **Nees 1830** as *Jungermannia ornithocephala*  $\beta$  *major*, **Sande Lacoste 1857** as *Frullania ornithocephala*  $\beta$  *major*, **Schiffner 1898a**, Bonner 1965 as *Frullania ornithocephala*  $\beta$  *major*, **Geissler & Bischler 1987** as *Jungermannia ornithocephala*  $\beta$  *major*.
- \* —  $\alpha$  *minor* (Nees) Nees JAV: **TYPE** of *Jungermannia ornithocephala*  $\alpha$  *minor*, **Nees 1830** as *Jungermannia ornithocephala*  $\alpha$  *minor*, **Sande Lacoste 1857**, Bonner 1965, **Geissler & Bischler 1987** as *Jungermannia ornithocephala*  $\alpha$  *minor*.
- \*\* — var. *ornithocephala* JAV: Hattori 1974a, 1975b.
- \*\* — var. *pilosa* Verd. JAV: **TYPE** of *Frullania teres*, Stephani 1910 as *Frullania teres*, **Bonner 1965** as *Frullania ornithocephala* f. *teres* and *Frullania teres*. WJ: **TYPE, Sande Lacoste 1857** as *Frullania teres*, **Verdoorn 1929a, Bonner 1965.**
- \*\* *F. pinnulata* Sande Lac. JAV: **TYPE, Sande Lacoste 1854, 1855a, 1856b, 1857, Schiffner 1898a**, Stephani 1911, Bonner 1965.
- ? *F. propagulifera* Schiffn. nom. inval. WJ: **Schiffner 1900c.**
- \*\*\* *F. ramuligera* (Nees) Mont. JAV: **TYPE** of *Jungermannia ramuligera*, **Nees 1830** as *Jungermannia ramuligera*, **Gottsche et al. 1845b, Sande Lacoste 1857, Schiffner 1898a**, Stephani 1911, Kamimura 1961, Bonner 1965, Pócs et al. 1967, Hattori 1973a, 1974a, 1986b, Onraedt 1981, Hattori & Lin 1985, **Geissler & Bischler 1987** as *Jungermannia ramuligera*, Bai 2002. WJ: **Verdoorn 1929a.**
- \*\* *F. recurvistipula* S.Hatt. WJ: **Hattori 1986c.**
- \*\* *F. reflexistipula* Sande Lac. JAV: **TYPE, Sande Lacoste 1854, 1855a, 1856b, 1857, 1864, Schiffner 1893ab, 1898a**, Stephani 1910, Verdoorn 1932a, Bonner 1965, **Hattori 1973d**, 1974a, 1974c, 1975b, 1976b, 1982, 1986b. WJ: **Verdoorn 1929a.**
- \*\* — var. *reflexistipula* JAV: Miller et al. 1983, Hattori & Piippo 1986.
- \*\* *F. relicta* Steph. JAV: **TYPE, Stephani 1911, Bonner 1965.**
- \*\*\* *F. repandistipula* Sande Lac. JAV: **TYPE, Sande Lacoste 1854, 1855a, 1856b, 1857, Schiffner 1898a**, Stephani 1911, Bonner 1965, **Hattori 1973b**, 1974a, 1976b, 1986b, Bizot et al. 1978.
- \*\*\* <sup>62</sup>*F. riojaneirensis* (Raddi) Ångstr. JAV: **SYNTYPE** of *Frullania commutata*, **TYPE** of *Jungermannia galeata*, **Reinwardt et al. 1824a** as *Jungermannia galeata*, **Nees 1830** as *Jungermannia obscura*, **Gottsche et al. 1845b** as *Frullania sebastianopolitana*  $\beta$  *galeata*, **Sande Lacoste 1857** as *Frullania sebastianopolitana*  $\beta$  *galeata*, **Stephani 1910** as *Frullania commutata*, Verdoorn 1932a as *Frullania galeata*, **Bonner 1965** as *Frullania commutata*, *Frullania galeata* and *Frullania sebastianopolitana*  $\beta$  *galeata*, Hattori 1973a, 1974a, 1975b, 1982 all as *Frullania galeata*, Hattori et al. 1977 as *Frullania galeata*, Miller et al. 1983 as *Frullania galeata*, Hattori & Lin 1985, Hattori & Streimann 1985, Hattori & Piippo 1986, **Geissler & Bischler 1987** as *Jungermannia galeata*, Bapna & Kachroo 2000b, Bai 2002. WJ: **Sande Lacoste 1864** as *Frullania sebastianopolitana*, **Schiffner 1898a, Verdoorn 1929a** as *Frullania galeata*, **Yuzawa 1991, Gradstein et al. 2010.**
- \* <sup>63</sup>*F. serrata* Gottsche JAV: **SYNTYPE** and **SYNTYPE** of *Frullania latistipula*, **Gottsche et al. 1845b, Schiffner 1893ab, Stephani 1911** also as *Frullania latistipula* and *Frullania meteoroides*, Verdoorn 1931b, Clark & Svihla 1948, Arnell 1956, Bonner 1965 also as *Frullania cordistipula* var.  $\delta$  *mucronata*, *Frullania latistipula* and *Frullania meteoroides*, Hattori 1974a, Miller et al. 1983 also as *Frullania meteoroides*, Bapna & Kachroo 2000b. WJ: **Schiffner 1898a, Verdoorn 1929a, 1932, Hattori 1973b.**
- \* — var.  $\beta$  *pertenuis* (Nees) Schiffn. JAV: **TYPE** of *Jungermannia cordistipula*  $\gamma$  *pertenuis*, **Nees 1830** as *Jungermannia cordistipula*  $\gamma$  *pertenuis*, **Sande Lacoste 1857** as *Frullania serrata*  $\beta$  *pertenuis*, **Schiffner 1898a** as *Frullania serrata*  $\beta$  *pertenuis*, Bonner 1965 as *Frullania serrata*  $\beta$  *pertenuis*, **Geissler & Bischler 1987** as *Jungermannia cordistipula*  $\gamma$  *pertenuis*.
- \* — var. *serrata* JAV: **Sande Lacoste 1857**, Bonner 1965 as *Frullania serrata* f. *crispulo-dentata*, Hattori 1976b, 1986b both as *Frullania serrata* f. *crispulo-dentata*, Hattori & Streimann 1985 as *Frullania serrata* f. *crispulo-*

62. *Frullania obscura* (Sw.) Dumort. was treated as a synonym of *F. riojaneirensis* with a question mark by Yuzawa (1991). If this synonymy is correct, the former name must be used.

63. *Frullania serrata* is probably conspecific with *F. cordistipula*. The two differ only by the degree of dentation of the female bracts and sterile material cannot be separated (Verdoorn 1930, Hattori 1986).

*dentata*, Hattori & Piippo 1986 as *Frullania serrata* f. *crispulo-dentata*. WJ: **SYNTYPES** of *Frullania serrata* f. *crispulo-dentata*, **Verdoorn 1929a** as *Frullania serrata* f. *crispulo-dentata*.

- \*\* *F. sinuata* Sande Lac. JAV: **TYPE**, **Sande Lacoste 1854, 1855a, 1856b, 1857, Schiffner 1898a**, Stephani 1911, Bonner 1965, Pócs *et al.* 1967, **Hattori 1973c**, 1975b as *Frullania sinuata* subsp. *sinuata*, Hattori & Piippo 1986. WJ: **Verdoorn 1929a, 1931a**.
- \*\* *F. subnigricaulis* S.Hatt. JAV: **TYPE**, **Hattori 1973c**, 1974b, 1982, Hattori & Streimann 1985.  
\*\* — var. *subnigricaulis* JAV: Hattori 1975b, 1976b, 1986b, Hattori & Piippo 1986.
- \*\*\* *F. ternatensis* Gottsche JAV: **TYPE**, **Gottsche et al. 1846, Meissner 1848, Sande Lacoste 1857**, Verdoorn 1931a, Tixier 1962, Hattori 1982, Miller *et al.* 1983, Hattori & Streimann 1985, Hattori & Piippo 1986. WJ: **Sande Lacoste 1864, Schiffner 1898a, Verdoorn 1929a**, Meijer 1954a, **Hattori 1973b**.  
\* — var. *ternatensis* JAV: Hattori 1974a.
- \* <sup>64</sup>*F. tjibodensis* S.Hatt. et Thaithong JAV: **Crosby & Engel 2006**. WJ: **TYPE**, **Hattori & Thaithong 1977**.
- ? *F. treubiana* Schiffn. *nom. inval.* WJ: **Bonner 1965**.
- \* <sup>65</sup>*F. tricarinata* Sande Lac. JAV: **TYPE**, **Sande Lacoste 1855a, 1857, Schiffner 1898a**, Stephani 1911, **Bonner 1965, Hattori 1973b**, Schuster 1992a.
- \*\* *F. trichodes* Mitt. JAV: Bonner 1965 as *Frullania picta*, Hattori 1982 as *Frullania vethii*, Hattori & Piippo 1986, Piippo *et al.* 1998.
- \*\*\* *F. vaginata* (Sw.) Dumort. JAV: **TYPE** of *Jungermannia vaginata*, Swartz 1781 as *Jungermannia vaginata*, **Reinwardt et al. 1824a** as *Jungermannia vaginata*, **Nees 1830** as *Jungermannia vaginata*, **Gottsche et al. 1846, Schiffner 1893ab**, Stephani 1911, Verdoorn 1931b, Bonner 1965, Hattori 1975b, **1976a**, 1982, Hattori & Piippo 1986, **Geissler & Bischler 1987** as *Jungermannia vaginata*. WJ: **Sande Lacoste 1864, Schiffner 1898a, Verdoorn 1929a**, Meijer 1954a.  
\* — var.  $\beta$  *nigricans* (Nees) Schiffn. JAV: **Sande Lacoste 1857** as *Frullania vaginata*  $\beta$  *nigricans*, **Schiffner 1898a** as *Frullania vaginata*  $\beta$  *nigricans*, Bonner 1965 as *Frullania vaginata*  $\beta$  *nigricans*.

### **Gongylanthus**

- \*\*\* *G. javanicus* Grolle JAV: **TYPE**, **Grolle 1965c**.

### **Gottschea**

- \*\*\* *G. aligera* (Nees) Nees JAV: **TYPE** of *Jungermannia aligera*  $\delta$  *exalbida*, *Jungermannia aligera*, *Plagiochila philippinensis*, *Schistochila cuspidata* and *Schistochila longifolia*, **Blume & Nees 1823** as *Jungermannia aligera*, **Reinwardt et al. 1824a** as *Jungermannia aligera*, **Nees 1830** as *Jungermannia aligera*  $\delta$  *exalbida*, Gottsche *et al.* 1844 as *Gottschea philippinensis*, **Gottsche 1853**, Sande Lacoste 1857 as *Gottschea philippinensis*, **Schiffner 1898a** as *Schistochila aligera* var.  $\delta$  *ex-albida*, **Stephani 1909b** as *Schistochila aligera* and *Schistochila cuspidata*, **1924** as *Schistochila longifolia*, Bonner 1966, Grolle 1966f as *Schistochila aligera*, *Schistochila philippinensis* and *Schistochila recurvata*, Pócs *et al.* 1967 as *Schistochila recurvata*, Pócs 1968a as *Schistochila aligera*, Tixier 1969 as *Schistochila aligera*, Miller *et al.* 1983 also as *Notarisia aligera*, *Paraschistochila aligera*, *Schistochila aligera*, *Schistochila longifolia*, *Schistochilaster aliger* and *Schistochilaster philippinense*, Piippo 1984a as *Schistochila aligera* and *Schistochila philippinensis*, **Geissler & Bischler 1987** as *Jungermannia aligera*  $\delta$  *exalbida* and *Jungermannia aligera*, **1989** as *Notarisia aligera*, *Paraschistochila aligera*, *Paraschistochila cuspidata* and *Plagiochila philippinensis*, **1990** as *Schistochila aligera*, *Schistochila cuspidata*, *Schistochila longifolia* and *Schistochilaster aliger*, Bapna & Kachroo 2000b as *Schistochila aligera* and *Schistochila philippinensis*, **So 2003a** as *Schistochila aligera*. CJ: **Schiffner 1955** as *Schistochila aligera*. WJ: **Gottsche et al. 1844**, Sande Lacoste 1857, **1864** also as *Gottschea philippinensis*, **Schiffner 1898a** as *Schistochila aligera* and *Schistochila philippinensis*, **1900c** as *Schistochila aligera*, **Buch 1939** as *Schistochila aligera*, *Schistochila philippinensis* and *Schistochila recurvata*, Meijer 1954a as *Schistochila aligera*, **Daniels & Daniels 2008** as *Schistochila aligera*.

### **Gottschelia**

- \*\*\* *G. schizopleura* (Spruce) Grolle JAV: **LECTOTYPE** of *Anastrophyllum integerrimum*, **TYPE** of *Jungermannia colorata*  $\gamma$  *microphylla*, **Nees 1830** as *Jungermannia colorata*  $\gamma$  *microphylla*, **Schiffner 1900a** as *Jamesoniella microphylla* and its var. *minuta* and var. *gracilis*, **Stephani 1901** as *Jamesoniella microphylla*, **1917b** as *Anastrophyllum integerrimum* and *Jamesoniella fleischeri*, Verdoorn 1931b as *Jamesoniella microphylla*, **Bonner 1962** as *Anastrophyllum integerrimum*, **1966** as *Jamesoniella microphylla* and its var. *gracilis*, Bizot & Pócs 1974, Miller *et al.* 1983 also as *Anastrophyllum integerrimum*, **Geissler & Bischler 1987** as *Jungermannia colorata*  $\gamma$  *microphylla*, Vána & Piippo 1989b, Vána 1991b, Engel & Braggins 1998, Bapna & Kachroo 2000b. CJ: **Grolle 1968b**. WJ: **TYPE** of *Jamesoniella fleischeri*, *Jamesoniella microphylla* var. *gracilis*, *Jamesoniella microphylla* var. *minuta* and *Jungermannia flexicaulis*  $\beta$  *microphylla*, **Sande Lacoste 1864** as *Jungermannia flexicaulis*  $\beta$  *microphylla*, **Schiffner 1898a** as *Jamesoniella flexicaulis* var.  $\beta$  *microphylla* and *Jamesoniella microphylla* and its var. *gracilis* and var. *minuta*, Meijer 1954a as *Jamesoniella microphylla*, **Bonner 1966** as *Jamesoniella fleischeri* and *Jamesoniella microphylla* var. *minuta*, **Grolle 1968b, Geissler & Bischler 1987** as *Jungermannia flexicaulis*  $\beta$  *microphylla*.

### **Haplomitrium**

- \*\*\* *H. blumei* (Nees) R.M.Schust. JAV: **TYPE** of *Monoclea blumei*, **Nees 1830** as *Monoclea blumei*, **Gottsche et al. 1846** as *Calobryum blumii*, Sande Lacoste 1857 as *Calobryum blumii*, **Schiffner 1893ab, 1900a, 1900** all as *Calobryum blumii*, Verdoorn 1931b as *Calobryum blumei*, Bonner 1963a, 1977 both as *Calobryum blumii*, Piippo 1984a, **Geissler & Bischler**

64. *Frullania tjibodensis* is probably a synonym of *F. campanulata*.

65. *Frullania tricarinata* is probably conspecific with *F. hypoleuca*. The two differ only by the number of ventral perianth keels (1 in *F. hypoleuca*, 3 in *F. tricarinata*).



1985 as *Monoclea blumei*, Srivastava 1998 as *Calobryum blumii*, Bapna & Kachroo 2000a as *Calobryum blumii*, Gao 2003, Higuchi 2005. EJ: **Schiffner 1898a** as *Calobryum blumii*. WJ: **TYPE** of *Scalius carnosulus*, Goebel 1891 as *Calobryum blumii*, **Mitten 1891** as *Scalia carnosula*, **Schiffner 1898a, 1898b** both as *Calobryum blumei*, Meijer 1958b as *Calobryum blumei*, **Geissler & Bischler 1990** as *Scalius carnosulus*.

#### **Harpalejeunea**

\*\*\* *H. filicuspis* (Steph.) Mizut. JAV: Mizutani 1973a, 1977, 1978a, Miller *et al.* 1983 as *Drepanolejeunea filicuspis*. EJ: **Herzog 1939** as *Drepanolejeunea filicuspis*. WJ: **Herzog 1939** as *Drepanolejeunea filicuspis*, **Grolle 1979a, Gradstein *et al.* 2010**.

\* <sup>66</sup>*H. renneri* Herzog JAV: **TYPE, Herzog 1951a, Bonner 1966, Grolle & Reiner-Drehwald 1999**.

#### **Hattoriella**

\*\*\* *H. subcrispa* (Herzog) Bakalin JAV: **Schiffner 1900a** as *Lophozia dubia*. WJ: **TYPE** of *Lophozia dubia*, **Schiffner 1898b** as *Lophozia dubia*, **Geissler & Bischler 1985** as *Lophozia dubia*.

#### **Herbertus**

\*\* *H. armitanus* (Steph.) H.A.Mill. WJ: **Juslén 2006, Gradstein *et al.* 2010**.

\*\*\* *H. dicranus* (Taylor ex Gottsche, Lindenb. et Nees) Trevis. JAV: **Sande Lacoste 1857** as *Sendtnera dicrana*, Bapna & Kachroo 2000a. WJ: **Schiffner 1898a**.

\*\* *H. ramosus* (Steph.) H.A.Mill. JAV: **TYPE** of *Schisma javanicum* and *Schisma ramosum*, **Stephani 1909b** as *Schisma javanicum* and *Schisma ramosum*, **Miller 1965** also as *Herberta javanica*, Pócs 1969a as *Herberta ramosa*, **Geissler & Bischler 1990** as *Schisma javanicum* and *Schisma ramosum*, **Gao 2003** also as *Herbertus javanicus*. CJ: **TYPE** of *Herbertus javanicus* f. *major* and f. *minor*, **Schiffner 1955** as *Herberta javanica* and its f. *minor* and f. *major*. WJ: **Seifrizz 1924** as *Schisma javanica*, **Juslén 2006**.

#### **Heteroscyphus**

\*\* *H. acutangulus* (Schiffn.) Schiffn. JAV: **Schiffner 1900a** as *Chiloscyphus acutangulus*, **Stephani 1907** as *Chiloscyphus acutangulus*, Bonner 1963b as *Chiloscyphus acutangulus*, 1966, **Piippo 1985b**. WJ: **TYPE** of *Chiloscyphus acutangulus*, **Schiffner 1900b** as *Chiloscyphus acutangulus*, **Gao *et al.* 2004**.

\*\*\* *H. argutus* (Reinw., Blume et Nees) Schiffn. JAV: **SYNTYPE** of *Chiloscyphus argutus*  $\epsilon$  *subtilis*, **Reinwardt *et al.* 1824a** as *Jungermannia arguta*, **Gottsche *et al.* 1845a** as *Chiloscyphus argutus* and its  $\epsilon$  *subtilis*, **Schiffner 1898a** as *Chiloscyphus argutus* var.  $\beta$  *amphigastriis-obsoletis*, **1900a** as *Chiloscyphus argutus*, Bonner 1963b as *Chiloscyphus argutus*  $\epsilon$  *subtilis*, Miller *et al.* 1983 as *Jungermannia arguta*, Geissler & Bischler 1985 as *Lophocolea arguta*, Piippo 1985b, 1989b, **Srivastava & Srivastava 1991, 2002**, Bapna & Kachroo 2000b, **Zhu & So 2001, Potemkin 2004**. WJ: **TYPE** of *Jungermannia arguta*, **Nees 1830** as *Jungermannia arguta*, **Sande Lacoste 1857** as *Chiloscyphus argutus* and its  $\epsilon$  *subtilis*, **1864** as *Chiloscyphus argutus*, **Schiffner 1898a** as *Chiloscyphus argutus* and its var.  $\gamma$  *subtilis*, **1900b** as *Chiloscyphus argutus* f. *typica*, **1955** as *Chiloscyphus argutus*. Meijer 1953, 1954a both as *Chiloscyphus argutus*, **Geissler & Bischler 1987** as *Jungermannia arguta*, **Gradstein *et al.* 2010**.

\*\* — var. *brevidens* (Schiffn.) Herzog et Nog. JAV: **Schiffner 1900a** as *Chiloscyphus argutus* var. *brevidens*, Bonner 1966. WJ: **TYPE** of *Chiloscyphus argutus* var. *brevidens*, **Schiffner 1900b** as *Chiloscyphus argutus* var. *brevidens*, **Bonner 1963b** as *Chiloscyphus argutus* var. *brevidens*.

\* — var. *ciliatistipulus* Schiffn. JAV: **Schiffner 1900a** as *Chiloscyphus argutus* var. *ciliatistipus*, **Bonner 1963b** as *Chiloscyphus argutus* var. *ciliatistipus*. WJ: **SYNTYPE** of *Chiloscyphus argutus* var. *ciliatistipus*, **Schiffner 1900b** as *Chiloscyphus argutus* var. *ciliatistipus*.

\*\*\* *H. aselliformis* (Reinw., Blume et Nees) Schiffn. JAV: **TYPE** of *Chiloscyphus javanicus* and *Jungermannia aselliformis*, **Reinwardt *et al.* 1824b** as *Jungermannia aselliformis*, **Nees 1830** as *Jungermannia aselliformis*, **Gottsche *et al.* 1845a** as *Chiloscyphus aselliformis*, **Gottsche 1853** as *Chiloscyphus aselliformis*, **Sande Lacoste 1857** as *Chiloscyphus aselliformis*, **Schiffner 1893ab** as *Chiloscyphus aselliformis*, **1900a** as *Chiloscyphus aselliformis* var. *neesii* and f. *typica*, Stephani 1907 as *Chiloscyphus aselliformis*, **1922** as *Chiloscyphus javanicus*, Verdoorn 1931b as *Chiloscyphus aselliformis*, Kuwahara & Hattori 1953 as *Chiloscyphus javanicus*, **Bonner 1963b** as *Chiloscyphus aselliformis* and its var. *neesii* and *Chiloscyphus javanicus*, 1965 as *Gamoscyphus aselliformis*, 1966, Miller *et al.* 1983 also as *Chiloscyphus javanicus* and *Gamoscyphus aselliformis*, Piippo 1985b, **Geissler & Bischler 1987** as *Jungermannia aselliformis*, Piippo 1989b. EJ: **Grolle 1965a** as *Chiloscyphus aselliformis*. WJ: **TYPE** of *Chiloscyphus aselliformis* var. *neesii*, **Sande Lacoste 1864** as *Chiloscyphus aselliformis*, **Schiffner 1898a** as *Chiloscyphus aselliformis*, **1900b** as *Chiloscyphus aselliformis* var. *neesii* and f. *typica*, **1900c** as *Chiloscyphus aselliformis*, **Seifrizz 1924, Renner 1932** as *Chiloscyphus aselliformis*, Meijer 1954a as *Chiloscyphus aselliformis*, **Grolle 1965a** as *Chiloscyphus aselliformis*, **Gradstein *et al.* 2010**.

\*\* *H. baduinus* (Nees) Schiffn. JAV: **Gottsche *et al.* 1845a** as *Chiloscyphus baduinus*, **Sande Lacoste 1857** as *Chiloscyphus baduinus*, **Schiffner 1898a, 1900a** both as *Chiloscyphus baduinus*, **Stephani 1907** as *Chiloscyphus baduinus*, Bonner 1963b as *Chiloscyphus baduinus*, 1966, **Geissler & Bischler 1987** as *Jungermannia baduina*. WJ: **TYPE** of *Jungermannia baduina*, **Nees 1830** as *Jungermannia baduina*.

\* <sup>67</sup>*H. caesius* (Schiffn.) Schiffn. JAV: **Schiffner 1900a** as *Chiloscyphus caesius*, Bonner 1963b as *Chiloscyphus caesius*, 1966, **Piippo 1992**. WJ: **SYNTYPE** of *Chiloscyphus caesius*, **Schiffner 1900b** as *Chiloscyphus caesius*, **Stephani 1907** as *Chiloscyphus caesius*.

66. *Harpalejeunea renneri* is a *Lejeunea* sp. and most likely a synonym of something (Grolle & Reiner-Drehwald 1999).

67. *Heteroscyphus caesius* is doubtfully distinct from *H. splendens*.

- \*\*\* *H. coalitus* (Hook.) Schiffn. JAV: **SYNTYPE** of *Chiloscyphus communis*, **TYPE** of *Jungermannia affinis*, **Reinwardt et al. 1824a** as *Jungermannia affinis*, **Nees 1830** as *Jungermannia coalita*  $\beta$  *affinis*, **Gottsche 1853** as *Chiloscyphus coalitus*, **Sande Lacoste 1864** as *Chiloscyphus coalitus*  $\beta$  *affinis*, **Schiffner 1893ab** as *Chiloscyphus coalitus*, **1898a** as *Chiloscyphus coalitus* var.  $\beta$  *affinis*, **1900a** as *Chiloscyphus coalitus* f. *typicus* and  $\beta$  *affinis* and *Chiloscyphus porrigens*, **Stephani 1907** as *Chiloscyphus communis* and *Chiloscyphus porrigens*, Verdoorn 1931b as *Chiloscyphus coalitus*, Tixier 1962 as *Chiloscyphus communis*, **Bonner 1963b** as *Chiloscyphus coalitus* f. *pusillus*, f. *remotifolius* and  $\beta$  *affinis* and *Chiloscyphus porrigens*, 1966 as *Heteroscyphus porrigens*, Miller et al. 1983 also as *Chiloscyphus coalitus*, *Chiloscyphus porrigens*, *Heteroscyphus communis* and *Jungermannia affinis*, Piippo 1985b, 1989b, **Geissler & Bischler 1987** as *Jungermannia affinis* and *Jungermannia coalita*  $\beta$  *affinis*, Inoue 1988, Bapna & Kachroo 2000b, **Srivastava & Srivastava 2002**, **Potemkin 2004**. EJ: **Verdoorn 1933b** as *Chiloscyphus coalitus*. WJ: **SYNTYPES** of *Chiloscyphus coalitus* f. *pusillus* and f. *remotifolius*, **TYPE** of *Chiloscyphus porrigens*, **Gottsche et al. 1845a** as *Chiloscyphus coalitus*, **Sande Lacoste 1857** as *Chiloscyphus coalitus*  $\beta$  *affinis*, **1864** as *Chiloscyphus coalitus*, **Schiffner 1898a** as *Chiloscyphus coalitus*, **1900b** as *Chiloscyphus coalitus* var.  $\beta$  *affinis*, f. *pusilla*, f. *remotifolia* and f. *typicus* and *Chiloscyphus porrigens*, **1900c** as *Chiloscyphus coalitus* and its f. *pusillus*, **1955** as *Chiloscyphus coalitus*, Meijer 1954a as *Chiloscyphus communis*, **Gradstein et al. 2010** also as *Chiloscyphus coalitus*.
- \*\* *H. knightii* (Steph.) Grolle JAV: **Schiffner 1900a** as *Chiloscyphus tridentatus*, Bonner 1963b as *Chiloscyphus sandei* and *Chiloscyphus tridentatus*, 1966 as *Heteroscyphus sandei*, Piippo 1985b as *Heteroscyphus tridentatus*, Gao et al. 2004 as *Heteroscyphus tridentatus*. WJ: **TYPE** of *Lophocolea tridentata*, **Sande Lacoste 1864** as *Lophocolea tridentata*, **Schiffner 1898a** as *Lophocolea tridentata*, **Stephani 1907** as *Chiloscyphus sandei*, Meijer 1954b as *Chiloscyphus tridentatus*, **Geissler & Bischler 1985** as *Lophocolea tridentata*.
- \*\* *H. parvulus* (Schiffn.) Schiffn. JAV: **Schiffner 1900a** as *Chiloscyphus parvulus*, **Stephani 1907** as *Chiloscyphus parvulus*, Bonner 1966, Miller et al. 1983 as *Chiloscyphus parvulus*, **Piippo 1989b**, Piippo 1992. WJ: **TYPE** of *Chiloscyphus parvulus*, **Schiffner 1900b** as *Chiloscyphus parvulus*, **Bonner 1963b** as *Chiloscyphus parvulus*.
- \*\*\* *H. splendens* (Lehm. et Lindenb.) Grolle JAV: **SYNTYPE** of *Chiloscyphus decurrens*, **TYPE** of *Jungermannia decurrens*, **Reinwardt et al. 1824a** as *Jungermannia decurrens*, **Nees 1830** as *Jungermannia decurrens*, **Gottsche et al. 1845a** as *Chiloscyphus decurrens*, **Gottsche 1853** as *Chiloscyphus decurrens*, **Sande Lacoste 1857** as *Chiloscyphus decurrens*, **Mitten 1873** as *Chiloscyphus decurrens*, **Schiffner 1893ab** as *Chiloscyphus decurrens*, **1900a** as *Chiloscyphus decurrens* f. *typica*, Verdoorn 1933b as *Chiloscyphus decurrens*, Grolle 1965a as *Chiloscyphus decurrens*, Miller et al. 1983 as *Heteroscyphus decurrens* and *Jungermannia decurrens*, Piippo 1985b, 1989b, **Geissler & Bischler 1987** as *Jungermannia decurrens*, Piippo & Tan 1992, Bapna & Kachroo 2000b as *Chiloscyphus decurrens*. WJ: **Sande Lacoste 1864** as *Chiloscyphus decurrens*, **Schiffner 1898a**, **1900b** both as *Chiloscyphus decurrens*.
- \*\*\* *H. succulentus* (Gottsche) Schiffn. JAV: **TYPE** of *Chiloscyphus obtusus*, **Gottsche 1853** as *Chiloscyphus succulentus*, **Sande Lacoste 1864** as *Chiloscyphus succulentus*, **Schiffner 1898a** as *Chiloscyphus obtusus*, **1900a** as *Chiloscyphus succulentus*, **Stephani 1907** as *Chiloscyphus succulentus*, **Bonner 1963b** as *Chiloscyphus obtusus*, 1966, Miller et al. 1983 also as *Chiloscyphus succulentus*, Piippo 1985b, 1989b, Piippo et al. 2002. WJ: **TYPE** of *Chiloscyphus succulentus*, **Sande Lacoste 1857** as *Chiloscyphus succulentus*, **Schiffner 1898a**, **1900b** both as *Chiloscyphus succulentus*, **Bonner 1963b** as *Chiloscyphus succulentus*, **Kitagawa 1973b** as *Chiloscyphus succulentus*.
- \*\* *H. wettsteinii* (Schiffn.) Schiffn. JAV: **Schiffner 1900a** as *Chiloscyphus wettsteinii*, **Stephani 1907** as *Chiloscyphus wettsteinii*, Bonner 1963b as *Chiloscyphus wettsteinii*, Bonner 1966, **Piippo 1985b**, 1989b, Müller & Schäfer-Verwimp 1999. WJ: **TYPE** of *Chiloscyphus wettsteinii*, **Schiffner 1900b** as *Chiloscyphus wettsteinii*, **Herzog 1932** as *Chiloscyphus wettsteinii*.
- \*\* *H. zollingeri* (Gottsche) Schiffn. JAV: **Gottsche 1853** as *Chiloscyphus zollingeri*, **Sande Lacoste 1864** as *Chiloscyphus zollingeri*, **Schiffner 1900a** as *Chiloscyphus zollingeri*, **Stephani 1907** as *Chiloscyphus zollingeri*, Bonner 1966, Miller et al. 1983 as *Chiloscyphus zollingeri*, **Piippo 1985b**, 1989b, Pócs & Ninh 2005. WJ: **TYPE** of *Chiloscyphus zollingeri*, **Sande Lacoste 1857** as *Chiloscyphus zollingeri*, **Schiffner 1898a**, **1900b**, **1900c**, **1955** all as *Chiloscyphus zollingeri*, Meijer 1953 as *Chiloscyphus zollingeri*, **Bonner 1963b** as *Chiloscyphus zollingeri*.

#### *Hygrolejeunea*<sup>68</sup>

- ? *H. cardiantha* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**.  
 ? *H. harpaphylla* Steph. WJ: **TYPE**, **Stephani 1914**, **Bonner 1966**.  
 ? *H. levierii* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**.  
 ? *H. microscypha* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**.  
 ? *H. parvicalycina* Steph. JAV: **TYPE**, **Stephani 1896**, 1914, **Schiffner 1898a**, **Bonner 1966**, Miller et al. 1983. WJ: **Schiffner 1900c**.

#### *Hygrolembidium*

- \*\*\* *H. boschianum* (Sande Lac.) R.M.Schust. JAV: **TYPE** of *Jungermannia boschiana*, *Lembidium boschianum* f. *luxurians*, f. *laxifolium*, f. *tenue* and f. *etiolatum*, **Sande Lacoste 1855a**, **1855b**, **1857**, **1864** all as *Jungermannia boschiana*, **Schiffner 1898a** as *Lembidium boschianum*, **Stephani 1908** as *Lembidium boschianum*, Verdoorn 1932a as *Lembidium boschianum*, Bonner 1963a as *Cephalozia boschiana*, Grolle 1967, **Geissler & Bischler 1985** as *Lembidium boschianum* and its f. *tenue*, f. *etiolatum*, f. *laxifolium* and f. *luxurians*, **1987** as *Jungermannia boschiana*, Piippo 1991b. CJ: **Schiffner 1955** as *Lembidium boschianum*, **Schuster & Engel 1987**. WJ: Meijer 1954b as *Lembidium boschianum*, **Schuster & Engel 1987**.

68. *Hygrolejeunea* is a synonym of *Lejeunea*, but these species have never been transferred. We do not know the value of them.

### *Isotachis*

- \*\*\* *I. armata* (Nees) Gottsche JAV: **TYPE** of *Jungermannia armata*, Gottsche *et al.* 1844 as *Jungermannia armata*, **Sande Lacoste 1857** as *Jungermannia armata*, **1864**, **Schiffner 1893ab**, **Stephani 1909a**, Verdoorn 1932a, Bonner 1966, Piippo 1984a, **Geissler & Bischler 1987** as *Jungermannia armata*, Gao *et al.* 2003. WJ: **Schiffner 1898a**, Meijer 1954a.
- \* — var.  $\beta$  *elongata* (Sande Lac.) Schiffn. JAV: **TYPE** of *Jungermannia armata*  $\beta$  *elongata*, **Sande Lacoste 1857** as *Jungermannia armata*  $\beta$  *elongata*, **Geissler & Bischler 1987** as *Jungermannia armata*  $\beta$  *elongata*. WJ: **Sande Lacoste 1864** as *Isotachis armata*  $\beta$  *elongata*, **Schiffner 1898a** as *Isotachis armata*  $\beta$  *elongata*.

### *Jackiella*

- \*\*\* *J. javanica* Schiffn. JAV: **TYPE** of *Jamesoniella verdoornii*, **Schiffner 1900a** as *Jackiella javanica* f. *typica*, **Stephani 1908**, Verdoorn 1938 as *Jamesoniella verdoornii*, **Bonner 1966** also as *Jamesoniella verdoornii*, Grolle 1967, Miller *et al.* 1983, Piippo 1985a, **Váňa 1992**, **Gao 2003**. WJ: **TYPE**, **Schiffner 1900b** as *Jackiella javanica* f. *typica*, Meijer 1953, 1954a.
- \*\* — var. *cavifolia* Schiffn. JAV: **Schiffner 1900a**, **Bonner 1966**, Bapna & Kachroo 2000a. WJ: **TYPE**, **Schiffner 1900b**.
- \*\* — var. *cordifolia* Schiffn. JAV: **Schiffner 1900a**, **Bonner 1966**, Srivastava 1998. WJ: **TYPE**, **Schiffner 1900b**.
- \*\* — var. *javanica* JAV: Srivastava 1998, Bapna & Kachroo 2000a.

### *Jamesoniella*

- \*\*\* <sup>69</sup>*J. flexicaulis* (Nees) Schiffn. JAV: **TYPE** of *Jungermannia flexicaulis*, **Reinwardt et al. 1824a** as *Jungermannia squamata*, **Nees 1831** as *Jungermannia flexicaulis*, **Sande Lacoste 1857** as *Jungermannia flexicaulis*, **Schiffner 1893ab** as *Jungermannia flexicaulis*, **1900a** also as *Jamesoniella flexicaulis* f. *virescens*, **Stephani 1901**, Grolle 1965a, **Bonner 1966** also as *Jamesoniella flexicaulis* f. *virescens*, Miller *et al.* 1983 also as *Anastrophyllum flexicaule*, *Crossogyna flexicaulis* and *Jungermannia flexicaulis*, **Geissler & Bischler 1987** as *Jungermannia squamata*, **Váňa & Piippo 1989b**, **Váňa 1991b**, Bapna & Kachroo 2000b. CJ: **Schiffner 1955**. WJ: **TYPE** of *Jamesoniella flexicaulis* f. *virescens*, **Gottsche et al. 1844** as *Jungermannia flexicaulis*, **Sande Lacoste 1864** as *Jungermannia flexicaulis*, **Schiffner 1898a**, **1898b** also as *Jamesoniella flexicaulis* f. *virescens*, **Renner 1932**, **Grolle 1971**, **Gradstein et al. 2010**.

### *Jensenia*

- \*\*\* *J. decipiens* (Mitt.) Grolle JAV: **TYPE** of *Mittenia zollingeri*, **Schiffner 1900a** as *Pallavicinia zollingeri*, **Stephani 1900** as *Pallavicinius zollingeri*, Grolle 1967 as *Jensenia zollingeri*, **Geissler & Bischler 1985** as *Makednothallus zollingeri* and *Mittenia zollingeri*, 1989 as *Pallavicinia zollingeri*, **Grolle & Piippo 1986**, Piippo & Tan 1992. CJ: Meijer 1955 as *Pallavicinia zollingeri*. WJ: **Schiffner 1898a**, **1900c**, **1955** all as *Pallavicinia zollingeri*, **Verdoorn 1931a** as *Mittenia zollingeri*, Meijer 1954b as *Pallavicinia zollingeri*, 1958b as *Makednothallus zollingeriana*.

### *Jubula*

- \*\*\* *J. hutchinsiae* (Hook.) Dumort. JAV: **Nees 1830** as *Jungermannia hutchinsiae*, Miller *et al.* 1983 also as *Frullania hutchinsiae*, **Ahonen 2006**. WJ: **Schiffner 1898a**, **1900c**.
- \*\* — subsp. *javanica* (Steph.) Verd. JAV: **LECTOTYPE** of *Jubula javanica*, **Gottsche et al. 1845b** as *Frullania hutchinsiae*  $\beta$ , **Sande Lacoste 1857** as *Frullania hutchinsiae*  $\beta$ , **Stephani 1911** as *Jubula javanica*, Verdoorn 1931a, Kamimura 1961, Mizutani 1961 as *Jubula javanica*, Bonner 1965 as *Frullania piligera*, **1966** also as *Jubula javanica*, Miller *et al.* 1983 also as *Jubula javanica*, Piippo 1984b, Bapna & Kachroo 2000b as *Jubula javanica*, Bai 2002. CJ: **Guerke 1978**. WJ: **Schiffner 1898a** as *Jubula hutchinsiae* var. *integrifolia*, **Verdoorn 1929a**, **Renner 1932** as *Jubula hutchinsiae* var. *javanica*, **Guerke 1978**, **Crandall-Stotler & Guerke 1980**.

### *Jungermannia*

- ? <sup>70</sup>*J. combinata* Nees  $\beta$  *tenerior* Nees JAV: **TYPE**, **Nees 1830**, **Geissler & Bischler 1987**.
- ? <sup>71</sup>*J. hirtella* F. Weber  $\beta$  *tenera* Nees JAV: **TYPE**, **Nees 1830**, **Sande Lacoste 1857**, **Schiffner 1898a** as *Chandonanthus hirtellus* var.  $\beta$  *tener*, **Geissler & Bischler 1987**.
- ? <sup>72</sup>*J. lobulata* Hook.  $\beta$  *major* Nees JAV: **TYPE**, **Nees 1830**, **Geissler & Bischler 1987**.
- ? *J. porphyranthus* Gottsche *nom. inval.* WJ: **TYPE**, **Gottsche 1886**, **Geissler & Bischler 1987**.
- \*\*\* *J. pumila* With. JAV: **Bonner 1966** as *Jamesoniella ruttneri*, **Váňa 1972**, 1973a, Gradstein & Váňa 1987, Damsholt 2002 as *Jungermannia pumila* subsp. *pumila*, **Váňa & Watling 2004**. WJ: **SYNTYPE** of *Jamesoniella ruttneri*, **Schiffner 1955** as *Jamesoniella ruttneri*.
- ? <sup>73</sup>*J. spathulistipa* Reinw., Blume et Nees  $\beta$  *major* Nees WJ: **TYPE**, **Nees 1830**, **Geissler & Bischler 1987**.

### *Kurzia*

- \*\*\* *K. gonyotricha* (Sande Lac.) Grolle JAV: **TYPE** of *Lepidozia gonyotricha*, **Sande Lacoste 1855a**, **1855b**, **1857**, **1864** all as *Lepidozia gonyotricha*, **Schiffner 1893ab** as *Lepidozia gonyotricha*, **Stephani 1909a** as *Lepidozia gonyotricha*, Mizutani

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69. The genus *Jamesoniella* was transferred to *Syzygiella* by Feldberg *et al.* (2010), but *J. flexicaulis* was not included in their study and they did not transfer it.
70. *Jungermannia combinata* is now *Heteroscyphus combinatus*, but we are not sure whether these varieties also belong to the species and are worth recognizing.
71. *Jungermannia hirtella* is now *Plicanthus hirtellus*, but we are not sure whether these varieties also belong to the species and are worth recognizing.
72. *Jungermannia lobulata* is now *Frullania lobulata*, which is confined to southern South America. The current taxon is probably *F. junguhniiana* (M. von Konrat, pers. comm.).
73. *Jungermannia spathulistipa* is now *Thysananthus spathulistipus*, but we are not sure whether these varieties also belong to the species and are worth recognizing.

1974, Mizutani 1976b, Miller *et al.* 1983 also as *Lepidozia gonyotricha*, **Geissler & Bischler 1985** as *Lepidozia crenacanthoidea* and *Lepidozia gonyotricha*, 1987, Piippo 1985c, Mizutani & Chang 1986. WJ: **TYPE** of *Kurzia crenacanthoidea*, Martens 1870 as *Kurzia crenacanthoidea*, Goebel 1891 as *Kurzia crenacanthoidea*, **Schiffner 1898a, 1900c** both as *Lepidozia gonyotricha*, **Herzog 1932** as *Lepidozia gonyotricha*, Meijer 1953, 1954a both as *Lepidozia gonyotricha*, **Geissler & Bischler 1987** as *Kurzia crenacanthoidea*.

### *Lejeunea*

- \*\*\* *L. alata* Gottsche JAV: Bizot & Pócs 1980, Miller *et al.* 1983 also as *Lejeunea mitracalyx* and *Taxilejeunea mitracalyx*, Pócs *et al.* 1994, Zhu & So 1999b, 2001. WJ: **Eifrig 1937** as *Taxilejeunea mitracalyx*, **Grolle 1977a**.
- \*\*\* *L. albescens* (Steph.) Mizut. JAV: Stephani 1914 as *Taxilejeunea albescens*, Miller *et al.* 1983 also as *Taxilejeunea albescens*. WJ: **Eifrig 1937** as *Taxilejeunea albescens*, **Thiers 1986**.
- \*\* *L. aloba* Sande Lac. JAV: **TYPE**, **Sande Lacoste 1855a, 1857, Schiffner 1898a** as *Eulejeunea aloba*, Stephani 1914 as *Rectolejeunea aloba*, **Geissler & Bischler 1987**, Bapna & Kachroo 2000b as *Rectolejeunea aloba*, Chaudhary *et al.* 2006.
- \*\* *L. apiculata* Sande Lac. JAV: **TYPE**, **Sande Lacoste 1854, 1855a, 1856b**, Bonner 1966 as *Hygrolejeunea apiculata*, **Geissler & Bischler 1987**, 1990 as *Stenolejeunea apiculata* and *Taxilejeunea apiculata*, Pócs *et al.* 1995 as *Stenolejeunea apiculata*, **Zhu & So 2001** as *Stenolejeunea apiculata*. WJ: **TYPE** of *Leptolejeunea cuspidata*, **Schiffner 1898a, 1900c** both as *Eulejeunea apiculata*, **Stephani 1913** as *Leptolejeunea cuspidata*, 1914 as *Hygrolejeunea apiculata*, **Eifrig 1937** as *Taxilejeunea apiculata*, **Grolle 1966e** as *Stenolejeunea apiculata*, **Geissler & Bischler 1985** as *Leptolejeunea cuspidata*.
- \*\* *L. caviloba* (Steph.) Steph. JAV: **TYPE** of *Eulejeunea caviloba*, **Stephani 1896** as *Eulejeunea caviloba*, 1915, **Schiffner 1898a** as *Eulejeunea caviloba*, Miller *et al.* 1983, Geissler & Bischler 1987, Hürlimann 1993.
- \*\* *L. cocoes* Mitt. JAV: Zhu & So 1999b, 2001, Bapna & Kachroo 2000b. WJ: **Mizutani 1963**.
- \*\* *L. cuculliflora* (Steph.) Mizut. JAV: Mizutani 1976a, 1977, 1978a, Miller *et al.* 1983, Hürlimann 1993. WJ: **Eifrig 1937** as *Taxilejeunea cuculliflora*.
- \*\* *L. denticuspis* (Steph.) Mizut. JAV: **TYPE** of *Strepsilejeunea denticuspis*, **Stephani 1896** as *Strepsilejeunea denticuspis*, 1913 as *Trachylejeunea denticuspis*, **Schiffner 1898a** as *Strepsilejeunea denticuspis*, **Mizutani 1973b**, Geissler & Bischler 1987, **1990** as *Strepsilejeunea denticuspis* and *Trachylejeunea denticuspis*.
- \*\*\* *L. discreta* Lindenb. JAV: **TYPE**, **SYNTYPE** of *Lejeunea stahlia*, **Gottsche et al. 1845a, 1845b, Sande Lacoste 1857, Stephani 1890b**, 1914 as *Hygrolejeunea discreta*, **1915** as *Lejeunea stahlia*, Bonner 1966 as *Hygrolejeunea discreta*, **Mizutani 1971**, 1975, 1977, 1978a, Miller *et al.* 1983 also as *Hygrolejeunea discreta*, *Lejeunea stahlia* and *Taxilejeunea discreta*, **Thiers 1986, Geissler & Bischler 1987** also as *Lejeunea stahlia*, 1990 as *Taxilejeunea discreta*, Long & Grolle 1990, Zhu & So 1999b, **2001**. EJ: **Eifrig 1937** as *Hygrolejeunea discreta*. WJ: **Sande Lacoste 1864, Schiffner 1898a, 1900c** both as *Hygrolejeunea discreta*, **Eifrig 1937** as *Hygrolejeunea discreta*.
- \*\* *L. eifrigii* Mizut. JAV: Mizutani 1977, 1978a, **Geissler & Bischler 1990** as *Taxilejeunea acutiloba*, Streimann 1991, Hürlimann 1993, Pócs *et al.* 1995. WJ: **SYNTYPE** of *Taxilejeunea acutiloba* and its f. *major*, **Eifrig 1937** as *Taxilejeunea acutiloba* and its f. *major*, **Geissler & Bischler 1990** as *Taxilejeunea acutiloba* f. *major*.
- \*\*\* *L. exilis* (Reinw., Blume et Nees) Grolle JAV: **TYPE** of *Jungermannia exilis*, **Reinwardt et al. 1824a** as *Jungermannia exilis*, **Nees 1830** as *Jungermannia cucullata*  $\beta$  *exilis*, **Sande Lacoste 1857** as *Lejeunea cucullata*  $\beta$  *exilis*, **Schiffner 1898a** as *Eulejeunea cucullata* var.  $\beta$  *exilis*, Herzog 1948 as *Byssolejeunea abnormis*, Bischler *et al.* 1962 as *Microlejeunea exilis*, Mizutani 1975 as *Lejeunea abnormis*, 1977 as *Lejeunea byssiformis*, 1978a as *Lejeunea byssiformis*, Miller *et al.* 1983 also as *Byssolejeunea abnormis*, *Jungermannia cucullata*  $\beta$  *exilis*, *Jungermannia exilis*, *Lejeunea cucullata*  $\beta$  *exilis* and *Microlejeunea exilis*, Geissler & Bischler 1985 as *Microlejeunea abnormis* and *Microlejeunea exilis*, **1987** as *Jungermannia cucullata*  $\beta$  *exilis*, *Jungermannia exilis*, *Lejeunea abnormis* and *Lejeunea cucullata*  $\beta$  *exilis*, Pócs *et al.* 1994, Pócs & Streimann 1999, Furuki 2001a, Nair *et al.* 2006. WJ: **TYPE** of *Byssolejeunea abnormis*, **Herzog 1941** as *Byssolejeunea abnormis*, **Bonner 1963a** as *Byssolejeunea abnormis*, **Grolle 1979b**.
- \*\* *L. fissistipula* (Steph.) Steph. JAV: Stephani 1915, Miller *et al.* 1983 also as *Eulejeunea fissistipula*.
- \*\*\* *L. flava* (Sw.) Nees JAV: **SYNTYPES** of *Jungermannia thymifolia* and its  $\gamma$  *intertexta*, **Reinwardt et al. 1824a** as *Jungermannia serpyllifolia*, **Nees 1830** as *Jungermannia thymifolia*  $\gamma$  *intertexta*, **Gottsche et al. 1845b** as *Lejeunea thymifolia*, **Stephani 1890b** as *Lejeunea thymifolia*, Mizutani 1971, 1977, 1978a, Miller *et al.* 1983 also as *Eulejeunea flava*, Fulford 1987, **Geissler & Bischler 1987** as *Jungermannia thymifolia* and its  $\gamma$  *intertexta* and *Lejeunea thymifolia*, Bapna & Kachroo 2000b, Easa 2003. BA: **Van Leeuwen 1936**. EJ: **Eifrig 1937**. WJ: **Sande Lacoste 1864** as *Lejeunea thymifolia*, **Stephani 1890b, Schiffner 1898a, 1900c** both as *Eulejeunea flava*, **Eifrig 1937**, Meijer 1953, 1954a, **Thiers 1986, Gradstein et al. 2010**.  
 \*\* — subsp. *orientalis* R.M.Schust. JAV: **SYNTYPE** of *Jungermannia thymifolia*  $\beta$  *discreta*, **Nees 1830** as *Jungermannia thymifolia*  $\beta$  *discreta*, **Gottsche et al. 1845b** as *Lejeunea thymifolia*  $\beta$  *discreta*, **Sande Lacoste 1857** as *Lejeunea thymifolia*  $\beta$  *indica*, Schuster 1980, **Geissler & Bischler 1987** as *Jungermannia thymifolia*  $\beta$  *discreta* and *Lejeunea thymifolia*  $\beta$  *discreta*. WJ: **Schiffner 1898a** as *Eulejeunea flava* var.  $\beta$  *indica*.
- \*\* *L. fleischeri* (Steph.) Mizut. JAV: **Stephani 1914** as *Hygrolejeunea fleischeri*, Bonner 1966 as *Hygrolejeunea fleischeri*, Geissler & Bischler 1987, Streimann 1991. CJ: **LECTOTYPE** of *Hygrolejeunea fleischeri*, **Mizutani 1972**. WJ: **Thiers 1986**.
- ? <sup>74</sup>*L. inchoata* (C.F.W.Meissn. ex Lehm. et Lindenb.) Nees var.  $\beta$  *javanica* Sande Lac. *nom. inval.* JAV: **TYPE**, **Gottsche 1853, Sande Lacoste 1857, Geissler & Bischler 1987**.

74. *Lejeunea inchoata* is a synonym of *Drepanolejeunea inchoata* (C.F.W.Meissn. ex Lehm. et Lindenb.) Schiffn., a South American taxon, so this variety should belong to another species.

- \* <sup>75</sup>*L. litoralis* Steph. JAV: **SYNTYPE, Stephani 1915.**
- \*\*\* *L. lumbricoides* (Nees) Nees JAV: **TYPE** of *Jungermannia lumbricoides*, **Nees 1830** as *Jungermannia lumbricoides*, **Gottsche et al. 1845b**, **Gottsche 1853** as *Omphalanthus lumbricoides*, **Stephani 1890a** as *Omphalanthus lumbricoides*, 1914 as *Taxilejeunea lumbricoides*, **Miller et al. 1983** also as *Taxilejeunea lumbricoides*, **Geissler & Bischler 1987** also as *Jungermannia lumbricoides*, 1989 as *Omphalanthus lumbricoides*, 1990 as *Taxilejeunea lumbricoides*. JA: **Thiers 1986.** WJ: **Sande Lacoste 1857, 1864** both as *Omphalanthus lumbricoides*, **Schiffner 1898a, 1900c** both as *Taxilejeunea lumbricoides*, **Eifrig 1937** as *Taxilejeunea lumbricoides*.
- \*\* *L. micholitzii* Mizut. JAV: **Stephani 1914** as *Cheilolejeunea inaequitexta*, 1915 as *Lejeunea parvisaccata*, **Bonner 1963b** as *Cheilolejeunea inaequitexta*, **Miller et al. 1983** as *Lejeunea parvisaccata*, **Hürlimann 1993** as *Lejeunea parvisaccata*, **Zhu & Grolle 2004**. WJ: **LECTOTYPE** of *Cheilolejeunea inaequitexta*, **Schiffner 1900c** as *Cheilolejeunea inaequitexta*.
- \*\* *L. microstipula* Steph. JAV: **TYPE, TYPE** of *Microlejeunea microstipula*, **Stephani 1890b**, 1915 as *Microlejeunea microstipula*, **Schiffner 1898a** as *Eulejeunea microstipula*, **Bischler et al. 1962** as *Microlejeunea microstipula*, **Geissler & Bischler 1985** as *Microlejeunea microstipula*, **1987, Grolle 1988**. WJ: **Schiffner 1900c** as *Microlejeunea microstipula*.
- \*\* *L. mimula* Hürl. JAV: **Geissler & Bischler 1987** as *Lejeunea luteola*, 1990 as *Taxilejeunea luteola*, **Hürlimann 1993**. WJ: **TYPE** of *Hygrolejeunea luteola*, **Stephani 1914** as *Hygrolejeunea luteola*, **Eifrig 1937** as *Taxilejeunea luteola*, **Bonner 1966** as *Hygrolejeunea luteola* **Thiers 1986** as *Lejeunea luteola*.
- \*\* *L. mizutanii* Grolle JAV: **TYPE** of *Cheilolejeunea zollingeri*, **Stephani 1895b**, 1914 both as *Cheilolejeunea zollingeri*, **Schiffner 1898a** as *Cheilolejeunea zollingeri*, **Bonner 1963b** as *Cheilolejeunea zollingeri*, **Mizutani 1967b** as *Pycnolejeunea zollingeri*, **Geissler & Bischler 1987** as *Lejeunea zollingeri*, 1989 as *Pycnolejeunea zollingeri*.
- \*\* *L. molkenboeriana* Sande Lac. JAV: **TYPE, Sande Lacoste 1854, 1855a, 1856b, 1857, Stephani 1914** as *Hygrolejeunea molkenboeriana*, **Bonner 1966** as *Hygrolejeunea molkenboeriana*, **Geissler & Bischler 1987**. WJ: **Sande Lacoste 1864, Schiffner 1898a** as *Hygrolejeunea molkenboeriana*.
- \* <sup>76</sup>*L. obscura* Mitt. JAV: **Zhu & So 1999b, 2001, Pócs & Ninh 2005**. WJ: **Eifrig 1937** as *Taxilejeunea obscura*.
- \*\* <sup>77</sup>*L. papilionacea* Steph. WJ: **TYPE** of *Cardiolejeunea cardiantha*, **Bonner 1977** as *Cardiolejeunea cardiantha*.
- \*\* *L. patersonii* (Steph.) Steph. JAV: **TYPE** of *Eulejeunea patersonii*, **SYNTYPE** of *Hygrolejeunea patersonii*, **Stephani 1896** as *Eulejeunea patersonii* and *Hygrolejeunea patersonii*, 1914 as *Hygrolejeunea patersonii*, 1915, **Schiffner 1898a** as *Eulejeunea patersonii* and *Hygrolejeunea patersonii*, **Bonner 1965** as *Eulejeunea patersonii*, **1966** as *Hygrolejeunea patersonii*, **Kitagawa 1981** as *Lejeunea leratii*, **Miller et al. 1983** also as *Taxilejeunea patersonii*, **Geissler & Bischler 1987**, 1990 as *Taxilejeunea patersonii*, **Grolle 1987b**, **Hürlimann 1993**. WJ: **Eifrig 1937** as *Taxilejeunea patersonii*, **Meijer 1953**.
- \*\*\* *L. pectinella* Mizut. WJ: **Gradstein et al. 2010.**
- \*\* *L. propagulifera* Gradst. JAV: **Bonner 1977** as *Crossotolejeunea schiffneri*, **Pócs et al. 1995** as *Stenolejeunea schiffneri*. WJ: **TYPE** of *Trachylejeunea schiffneri*, **Herzog 1948** as *Trachylejeunea schiffneri*, **Geissler & Bischler 1990** as *Trachylejeunea schiffneri*, **Schuster 2000** as *Stenolejeunea schiffneri*.
- \*\*\* *L. sordida* (Nees) Nees JAV: **TYPE** of *Hygrolejeunea javanica*, **SYNTYPE** of *Jungermannia sordida*, **Sande Lacoste 1857, 1864, Stephani 1890b, 1914** as *Hygrolejeunea javanica*, **Schiffner 1893ab, 1898a** as *Hygrolejeunea sordida*, **Bonner 1966** as *Hygrolejeunea javanica*, **Mizutani 1977, 1978a, Miller et al. 1983** also as *Hygrolejeunea parkinsonii*, *Hygrolejeunea sordida*, *Jungermannia sordida*, *Taxilejeunea laxiretis* and *Taxilejeunea sordida*, **Geissler & Bischler 1987** also as *Jungermannia sordida* and *Lejeunea sordida*, 1990 as *Taxilejeunea sordida*, **Zhu & So 2001**. WJ: **Nees 1830** as *Jungermannia sordida*, **Gottsche et al. 1845b, Schiffner 1900c** as *Hygrolejeunea sordida*, **Eifrig 1937** as *Taxilejeunea sordida*, **Meijer 1953** as *Taxilejeunea sordida*, **Grolle 1981**.
- \* <sup>78</sup>*L. stephaniana* Mizut. JAV: **TYPE, Mizutani 1964, Geissler & Bischler 1987.**
- \* <sup>79</sup>*L. subaquatica* Schiffn. WJ: **TYPE, Schiffner 1955, Geissler & Bischler 1987.**
- \*\* *L. thallophora* (Eifrig) Gradst. WJ: **Schuster 2000** as *Stenolejeunea thallophora*.
- \* <sup>80</sup>*L. tuberculosa* Steph. JAV: **Zhu & So 1999b.**
- \*\*\* *L. umbilicata* (Nees) Gottsche JAV: **TYPE** of *Jungermannia umbilicata*, **Nees 1830** as *Jungermannia umbilicata*, **Gottsche et al. 1845b** as *Omphalanthus umbilicatus*, **Sande Lacoste 1857** as *Omphalanthus umbilicatus*, **Stephani 1890a** as *Omphalanthus umbilicatus*, **Schiffner 1898a** as *Hygrolejeunea umbilicata*, **Mizutani 1977, 1978a, Miller et al. 1983** also as *Jungermannia umbilicata* and *Omphalanthus umbilicatus*, **Geissler & Bischler 1987** also as *Jungermannia umbilicata*, 1989 as *Omphalanthus umbilicatus*, 1990 as *Taxilejeunea umbilicata*, **Hürlimann 1993**. CJ: **Hoffman 1935** as *Pycnolejeunea novoguineensis*, **He 1997** as *Lejeunea novoguineensis*. WJ: **Sande Lacoste 1864** as *Omphalanthus umbilicatus*, **Schiffner 1900c** as *Hygrolejeunea umbilicata*, **Hoffman 1935** as *Pycnolejeunea novoguineensis*, **Eifrig 1937** as *Taxilejeunea umbilicata*, **He 1997** as *Lejeunea novoguineensis*.
- \*\* *L. utriculata* (Steph.) Mizut. JAV: **TYPE** of *Pycnolejeunea utriculata*, **Stephani 1896**, 1914 both as *Pycnolejeunea utriculata*, **Schiffner 1898a** as *Pycnolejeunea utriculata*, **Geissler & Bischler 1987, 1989** as *Pycnolejeunea utriculata*. WJ: **Schiffner 1900c** as *Pycnolejeunea utriculata*, **Hoffman 1935** as *Pycnolejeunea utriculata*.

75. *Lejeunea litoralis* is taxonomically doubtful and most likely a synonym of something.

76. *Lejeunea obscura* is doubtfully distinct from *L. aloba*.

77. *Cardiolejeunea cardiantha* R.M.Schust. et Kachroo, *syn. nov.*

78. *Lejeunea stephaniana* is doubtfully distinct from *L. discreta*.

79. *Lejeunea subaquatica* is taxonomically doubtful and most likely a synonym of something.

80. *Lejeunea tuberculosa* is doubtfully distinct from *L. wightii*.

- \* <sup>81</sup>*L. wichurae* (Steph.) Steph. JAV: **TYPE** of *Eulejeunea wichurae*, **Stephani 1896** as *Eulejeunea wichurae*, 1915, **Schiffner 1898a** as *Eulejeunea wichurae*, **Bonner 1965** as *Eulejeunea wichurae*, Geissler & Bischler 1987.

### **Lembidium**

- <sup>82</sup>*L. boschianum* (Sande Lac.) Schiffn.  
 ? —var. *grandifolium* Schiffn. CJ: **TYPE**, **Schiffner 1955**, **Geissler & Bischler 1985**.  
 ? —var. *laxum* Schiffn. *nom. inval.* CJ: **TYPE**, **Schiffner 1955**, **Geissler & Bischler 1985**.  
 ? *L. latifolium* Schiffn. ex Verd. *nom. inval.* JAV: Verdoorn 1938, **Geissler & Bischler 1985**.

### **Lepicolea**

- \* <sup>83</sup>*L. ochroleuca* (Spreng.) Spruce var.  $\delta$  *viridis* (Nees) Schiffn. JAV: **TYPE** of *Jungermannia ochroleuca*  $\delta$  *viridis*, **Nees 1830** as *Jungermannia ochroleuca*  $\delta$  *viridis*, **Schiffner 1898a**, Geissler & Bischler 1985, **1987** as *Jungermannia ochroleuca*  $\delta$  *viridis*.  
 \*\*\* *L. rara* (Steph.) Grolle JAV: **TYPE** of *Jungermannia ochroleuca*  $\beta$  *tenerior* and  $\gamma$  *nana*, *Jungermannia trisubulata* and *Lepidozia rara*, **Nees 1830** as *Jungermannia ochroleuca*  $\beta$  *tenerior* and  $\gamma$  *nana* and *Jungermannia trisubulata*, **Sande Lacoste 1857** as *Sendtnera ochroleuca*  $\delta$  *viridis*,  $\beta$  *tenior* and  $\gamma$  *nana*, **Schiffner 1898a** as *Lepicolea ochroleuca* var.  $\beta$  *tenerior*, and var.  $\gamma$  *nana*, **Stephani 1909a** as *Lepidozia rara*, Grolle 1965a as *Lepicolea loriana*, Miller *et al.* 1983 also as *Lepicolea loriana* and *Lepidozia rara*, **Piippo 1984a**, **Geissler & Bischler 1985** also as *Lepicolea ochroleuca* var.  $\beta$  *tenerior* and var.  $\gamma$  *nana* and *Lepidozia rara*, **1987** as *Jungermannia ochroleuca*  $\beta$  *tenerior* and  $\gamma$  *nana* and *Jungermannia trisubulata*. WJ: **TYPE** of *Lepicolea simplicior*, **Herzog 1932** as *Lepicolea simplicior*, **Geissler & Bischler 1985** as *Lepicolea simplicior*.

### **Lepidolejeunea**

- \*\*\* *L. bidentula* (Steph.) R.M.Schust. JAV: Mizutani 1967b as *Pycnolejeunea bidentula*, Bonner 1977 as *Cheilolejeunea bidentula*, Miller *et al.* 1983 as *Pycnolejeunea bidentula*.  
 \*\*\* *L. integristipula* (J.B.Jack et Steph.) R.M.Schust. WJ: **Piippo 1986**.

### **Lepidozia**

- \*\* *L. brevifolia* Mitt. JAV: Bapna & Kachroo 2000a. WJ: **Sande Lacoste 1864**, **Schiffner 1898a**, Verdoorn 1935.  
 \*\*\* *L. cladorhiza* (Reinw., Blume et Nees) Nees JAV: **TYPE** of *Jungermannia cladorhiza*, **Reinwardt et al. 1824a** as *Jungermannia cladorhiza*, **Nees 1830** as *Jungermannia cladorhiza*, **Gottsche et al. 1845a**, Sande Lacoste 1857, **Schiffner 1898a**, **Stephani 1909a**, Mizutani 1968b, 1974, 1976b, Miller *et al.* 1983 also as *Jungermannia cladorhiza*, Geissler & Bischler 1985 also as *Mastigophora cladorhiza*, **1987** as *Jungermannia cladorhiza*.  
 \*\* *L. cordata* Lindenb. JAV: **TYPE**, **Gottsche et al. 1845a**, **Sande Lacoste 1857**, **Stephani 1909a**, **Geissler & Bischler 1985** also as *Mastigophora cordata*. WJ: **Sande Lacoste 1864**, **Schiffner 1898a**.  
 \*\* *L. everettii* Steph.  
 \* — var. *javensis* Herzog WJ: **TYPE**, **Herzog 1932**, **Geissler & Bischler 1985**.  
 \* <sup>84</sup>*L. gedena* Steph. JAV: **Stephani 1922**. WJ: **TYPE**, **Geissler & Bischler 1985**.  
 \*\*\* *L. haskarliana* (Lindenb.) Steph. JAV: **Stephani 1909a**, **Mizutani 1968a**, 1974, 1976b, Piippo 1984b, Geissler & Bischler 1985. WJ: **TYPE** of *Lepidozia supradecomposita*  $\beta$  *haskarliana*, **Gottsche et al. 1845a** as *Lepidozia supradecomposita*  $\beta$  *haskarliana*, **Sande Lacoste 1857** as *Lepidozia supradecomposita*  $\beta$  *haskarliana*, **Schiffner 1898a** as *Lepidozia supradecomposita* var.  $\beta$  *haskarliana*, **Geissler & Bischler 1985** as *Lepidozia supradecomposita*  $\beta$  *haskarliana*.  
 \*\*\* *L. holorrhiza* (Reinw., Blume et Nees) Nees JAV: **TYPE** of *Jungermannia holorrhiza*, **Reinwardt et al. 1824a** as *Jungermannia holorrhiza*, **Nees 1830** as *Jungermannia holorrhiza*, **Gottsche et al. 1845a**, Stephani 1909a, Verdoorn 1935, Miller *et al.* 1983, Piippo 1984b, Geissler & Bischler 1985 also as *Mastigophora holorrhiza*, **1987** as *Jungermannia holorrhiza*, Piippo & Tan 1992. WJ: **Sande Lacoste 1864**, **Schiffner 1898a**, **1900c**.  
 \*\* — var.  $\beta$  *laxa* (Nees) Schiffn. JAV: **TYPE** of *Jungermannia holorrhiza*  $\beta$  *laxa*, Geissler & Bischler 1985 as *Lepidozia holorrhiza*  $\beta$  *laxa*, **1987** as *Jungermannia holorrhiza*  $\beta$  *laxa*. WJ: **Sande Lacoste 1857** as *Lepidozia holorrhiza*  $\beta$  *laxa*.  
 \*\* *L. loheri* Steph. JAV: **SYNTYPE**, **Stephani 1909a**, **Geissler & Bischler 1985**.  
 \* <sup>85</sup>*L. massartiana* Schiffn. ex Steph. JAV: **TYPE**, Miller *et al.* 1983, **Geissler & Bischler 1985**. WJ: **Schiffner 1900c** as *Lepidozia massartiana*, **Kitagawa 1973b**, **Geissler & Bischler 1985** as *Lepidozia massartiana*.  
 ? — var. *laxa* Schiffn. *nom. inval.* WJ: **Schiffner 1900c**, **Geissler & Bischler 1985**.  
 \*\* *L. miqueliana* Sande Lac. JAV: **TYPE**, **Sande Lacoste 1864**, **Schiffner 1898a**, **Stephani 1909a**, **Grolle 1967**, **Geissler & Bischler 1985**.

81. *Lejeunea wichurae* is taxonomically doubtful and most likely a synonym of something.

82. *Lembidium boschianum* is now *Hygrolembidium boschianum*, but we are not sure whether these varieties also belong to the species and are worth recognizing.

83. *Lepicolea ochroleuca*  $\delta$  *viridis* (type from Java) can not belong to *L. ochroleuca* as it does not occur in Asia.

84. *Lepidozia gedena* is taxonomically doubtful and most likely a synonym of something.

85. Engel & Merrill (2004) suggested that Stephani (1909) established a new species, *Lepidozia massartiana* Steph. based on material from Ambon, New Caledonia and Tahiti. However, Stephani clearly identified Schiffner as author, therefore the correct name should be *L. massartiana* Schiffn. ex Steph. and the original material from Java (not cited by Stephani 1909) the type. The identity of the Java material remains to be clarified. According to Engel & Merrill (2004) the material from Ambon, New Caledonia and Tahiti belongs to *Telaranea cuneifolia* (Steph.) J.J.Engel et G.L.Merr., the material from Java to something else.

- \*\*\* *L. quadridens* (Nees) Nees JAV: **TYPE** of *Jungermannia quadridens*, **Nees 1830** as *Jungermannia quadridens*, **Gottsche et al. 1845a**, **Stephani 1909a**, **Mizutani 1968b**, Piippo 1984b, Geissler & Bischler 1985 also as *Mastigophora quadridens*, **1987** as *Jungermannia quadridens*. WJ: **Sande Lacoste 1857, 1864, Schiffner 1898a**, Meijer 1954b.
- \* <sup>86</sup>*L. squamifolia* Steph. JAV: **SYNTYPE**, **Stephani 1922**, **Geissler & Bischler 1985**.
- \*\* *L. stahlII* Steph. JAV: **SYNTYPE**, **Stephani 1909a**, **Piippo 1984b**, **Geissler & Bischler 1985**, Sharma & Srivastava 1993, Bapna & Kachroo 2000a.
- \*\* *L. subintegra* Lindenb. JAV: **TYPE**, **Gottsche et al. 1845a**, **Sande Lacoste 1857**, **Stephani 1909a**, Bonner 1966 as *Herpetium trichodes* var. *major*, **Mizutani 1968a**, 1976b, Miller et al. 1983, **Geissler & Bischler 1985** also as *Mastigophora subintegra*, Bapna & Kachroo 2000a. CJ: **Sande Lacoste 1864**. WJ: **Sande Lacoste 1864, Schiffner 1898a**.
- \*\* *L. supradecomposita* Lindenb. JAV: **Sande Lacoste 1857**, Stephani 1909a, Verdoorn 1935, Mizutani 1974, 1976b, Miller et al. 1983, Geissler & Bischler 1985 as *Mastigophora supradecomposita*. WJ: **TYPE**, **Gottsche et al. 1845a**, **Sande Lacoste 1864, Schiffner 1898a, 1900c**, **Geissler & Bischler 1985**.
- \*\*\* *L. trichodes* (Reinw., Blume et Nees) Nees JAV: **Reinwardt et al. 1824a** as *Jungermannia trichodes*, **Gottsche et al. 1845a**, **Sande Lacoste 1857**, Verdoorn 1935, **Mizutani 1968a**, 1974, Pócs 1968a, Miller et al. 1983 also as *Jungermannia trichodes* and *Mastigophora trichodes*, Piippo 1984b, Geissler & Bischler 1985 also as *Mastigophora trichodes*, **Gao 2003**. WJ: **TYPE** of *Jungermannia trichodes*, **Nees 1830** as *Jungermannia trichodes*, **Sande Lacoste 1856a, 1864, Schiffner 1898a, 1900c**, **Geissler & Bischler 1987** as *Jungermannia trichodes*.
- \* <sup>87</sup>*L. tricuspIdata* Steph. JAV: **TYPE**, **Stephani 1922**, **Geissler & Bischler 1985**.
- ? <sup>88</sup>*L. wallichiana* Gottsche var.  $\beta$  *gracilis* (Sande Lac.) Schiffn. WJ: **TYPE** of *Lepidozia wallichiana*  $\beta$  *gracilis*, **Sande Lacoste 1857, 1864** both as *Lepidozia wallichiana*  $\beta$  *gracilis*, **Schiffner 1898a**, **Geissler & Bischler 1985** as *Lepidozia wallichiana*  $\beta$  *gracilis*.

#### <sup>89</sup>*Leptocolea*

- ? *L. pallida* Steph. JAV: **TYPE**, **Stephani 1916**, **Geissler & Bischler 1985**.

#### *Leptolejeunea*

- \*\*\* *L. elliptica* (Lehm. et Lindenb.) Schiffn. JAV: **Gottsche 1853** as *Lejeunea elliptica*, **Sande Lacoste 1857** as *Lejeunea elliptica a conferta*, **1864** as *Lejeunea elliptica*, **Schiffner 1898a**, Mizutani 1961 as *Leptolejeunea subacuta*, 1975, Tixier 1962 as *Leptolejeunea subacuta*, Pócs et al. 1967 as *Leptolejeunea subacuta*, Pócs 1969a as *Leptolejeunea subacuta*, Schuster 1980 as *Leptolejeunea elliptica* subsp. *subacuta*, Miller et al. 1983 also as *Leptolejeunea subacuta*, Onraedt 1991 as *Leptolejeunea elliptica* subsp. *subacuta*, Bapna & Kachroo 2000b also as *Leptolejeunea subacuta*. WJ: **Herzog 1942** as *Leptolejeunea subacuta*.
- \*\*\* *L. epiphylla* (Mitt.) Steph. JAV: Pócs et al. 1967, Mizutani 1975, 1978b, Miller et al. 1983, Onraedt 1991, Zhu & So 1999b, Bapna & Kachroo 2000b. WJ: **Herzog 1942**.
- \*\*\* *L. foliicola* Steph. JAV: Mizutani 1975, Miller et al. 1983, Eggers et al. 1998, Bapna & Kachroo 2000b. WJ: **TYPE** of *Leptolejeunea brevicornis*, **Schiffner 1900c** as *Leptolejeunea brevicornis*, **Herzog 1942**, **Geissler & Bischler 1985** as *Leptolejeunea brevicornis*, **Gradstein et al. 2010**.
- \*\* *L. maculata* (Mitt.) Schiffn. JAV: **TYPE** of *Drepanolejeunea karstenii* and *Leptolejeunea schiffneri*, **Schiffner 1893ab** as *Lejeunea schiffneri*, **Stephani 1896** as *Leptolejeunea schiffneri*, **1913** as *Drepanolejeunea karstenii* and *Leptolejeunea schiffneri*, **Bonner 1965** as *Drepanolejeunea karstenii*, Mizutani 1975 as *Leptolejeunea schiffneri*, Miller et al. 1983 as *Leptolejeunea schiffneri*, Geissler & Bischler 1985 as *Leptolejeunea schiffneri*, **Thiers 1986**, Onraedt 1991 as *Leptolejeunea schiffneri* f. *latifolia*, Piippo & Tan 1992, Bapna & Kachroo 2000b as *Leptolejeunea schiffneri*, **Zhu & So 2001**. CJ: **SYNTYPE** of *Leptolejeunea schiffneri* f. *latifolia* and f. *angustifolia*, **Herzog 1942** as *Leptolejeunea schiffneri* f. *angustifolia*, **Geissler & Bischler 1985** as *Leptolejeunea schiffneri* f. *angustifolia*. WJ: **TYPE** of *Lejeunea schiffneri*, **SYNTYPE** of *Leptolejeunea schiffneri* f. *angustifolia*, **Sande Lacoste 1864** as *Lejeunea maculata*, **Schiffner 1898a** also as *Leptolejeunea schiffneri*, **Renner 1932** as *Leptolejeunea schiffneri*, **Herzog 1942** as *Leptolejeunea schiffneri* f. *angustifolia*, **Grolle 1976**, **Geissler & Bischler 1985** as *Leptolejeunea schiffneri* f. *angustifolia*, **1987** as *Lejeunea schiffneri*.
- \* <sup>90</sup>*L. massartiana* Schiffn. ex Herzog JAV: Pócs et al. 1967, Eggers et al. 1998. WJ: **TYPE**, **TYPE** of *Leptolejeunea massartiana*, **Schiffner 1900c** as *Leptolejeunea massartiana*, **Herzog 1942**, **Geissler & Bischler 1985** also as *Leptolejeunea massartiana*, **Thiers 1986**.
- ? <sup>91</sup>*L. schiffneri* Steph. var.  $\beta$  *subintegerrima* Herzog BA: **SYNTYPE**, **Van Leeuwen 1936**, **Herzog 1942**, **Geissler & Bischler 1985**. WJ: **SYNTYPE**, **Herzog 1942**, **Geissler & Bischler 1985**.

86. *Lepidozia squamifolia* is taxonomically doubtful and most likely a synonym of something.

87. *Lepidozia tricuspIdata* is taxonomically doubtful and most likely a synonym of something.

88. *Lepidozia wallichiana* is now *Telaranea wallichiana*, but we are not sure whether these varieties also belong to the species and are worth recognizing.

89. *Leptocolea* is a synonym of *Cololejeunea*, but the following species does not seem to have been transferred. We do not know the value of it.

90. *Leptolejeunea massartiana* is, judging from the original description and illustration, very similar to *L. elliptica* and possibly a synonym.

91. *Leptolejeunea schiffneri* is a synonym of *L. maculata*, but we do not know if this variety also can be referred there.

- \*\* *L. subdentata* Schiffn. ex Herzog JAV: Onraedt 1991, Piippo & Tan 1992, **Zhu & So 2001**. WJ: **TYPE, TYPE** of *Leptolejeunea subdentata*, **Schiffner 1900c** as *Leptolejeunea subdentata*, **Herzog 1942**, **Geissler & Bischler 1985** also as *Leptolejeunea subdentata*.
- \*\*\* *L. vitrea* (Nees) Schiffn. JAV: **TYPE** of *Jungermannia vitrea*, **Nees 1830** as *Jungermannia vitrea*, **Gottsche et al. 1845b** as *Lejeunea vitrea*, **Gottsche 1853** as *Lejeunea vitrea*, **Stephani 1890b** as *Lejeunea vitrea*, 1913, Bonner 1963b as *Colura vitrea*, Miller et al. 1983 also as *Colura vitrea*, *Jungermannia vitrea* and *Lejeunea vitrea*, Geissler & Bischler 1985 also as *Leptolejeunea vitrea*, **1987** as *Jungermannia vitrea* and *Lejeunea vitrea*, Pócs et al. 1994, Eggers 2006. CJ: **Herzog 1942**. WJ: **Sande Lacoste 1857, 1864** both as *Lejeunea vitrea*, **Schiffner 1898a**, **Herzog 1942**.

#### **Lethocolea**

- \*\*\* *L. javanica* (Schiffn.) Grolle JAV: **Schiffner 1900a** as *Symphymitra javanica*, **Stephani 1901** as *Symphymitra javanica*, Geissler & Bischler 1985, **Udar & Kumar 1987**, Bapna & Kachroo 2000b. WJ: **TYPE** of *Symphymitra javanica*, **Schiffner 1898b** as *Symphymitra javanica*, Meijer 1954a as *Symphymitra javanica*, **Geissler & Bischler 1990** as *Symphymitra javanica*.

#### **Leucolejeunea**

- \*\*\* *L. decurrens* (Steph.) Mizut. JAV: **TYPE** of *Hygrolejeunea decurrens*, **Stephani 1896** as *Hygrolejeunea decurrens*, **Schiffner 1898a** as *Hygrolejeunea decurrens*, Stephani 1914 as *Hygrolejeunea decurrens*, **Bonner 1966** as *Hygrolejeunea decurrens*, **Mizutani 1976a**, 1977, 1978a, Grolle & Piippo 1990.
- \*\*\* *L. xanthocarpa* (Lehm. et Lindenb.) A.Evans JAV: **Stephani 1890a** as *Lejeunea xanthocarpa*, Evans 1908, Verdoorn 1933b, 1934b, Pagán 1942, Frye & Clark 1947, Mizutani 1961, 1977, 1978a, Kitagawa 1968, Schuster 1980, Miller et al. 1983, Fulford 1987, Fulford & Sharp 1990, Bapna & Kachroo 2000b. WJ: **Sande Lacoste 1857** as *Lejeunea xanthocarpa*, **Schiffner 1898a, 1900c** both as *Archilejeunea xanthocarpa*, **Verdoorn 1933a**, **Gradstein et al. 2010**.

#### **Lobatiriccardia**

- \*\*\* *L. coronopus* (De Not. ex Steph.) Furuki JAV: **Stephani 1899** as *Aneura lobata*, **1900a** as *Riccardia lobata*, Bonner 1962 as *Aneura lobata*, Miller et al. 1983 as *Aneura lobata*, *Aneura pinguis* var. *pinnatiloba* and *Riccardia lobata* var. *lobata*, **Geissler & Bischler 1990** as *Riccardia lobata*, *Riccardia pinguis* var. *pinnatiloba* and *Trichostylum lobatum*. WJ: **TYPE** of *Aneura pinguis* var. *pinnatiloba*, **SYNTYPE** of *Riccardia lobata*, **Schiffner 1898a** as *Riccardia pinguis* var. *pinnatiloba*, **1898b** as *Riccardia lobata*, Meijer 1954a, **1960b** both as *Riccardia lobata*, **Bonner 1962** as *Aneura pinguis* var. *pinnatiloba*, **Furuki 1996** as *Lobatiriccardia lobata*, **2006**.

#### **Lophocolea**<sup>92</sup>

- ? <sup>93</sup>*L. costata* (Nees) Nees var. *speciosissima* Schiffn. WJ: **SYNTYPE, Schiffner 1900b, Geissler & Bischler 1985**.
- ? <sup>94</sup>*L. massalongoana* Schiffn. var. *pumila* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE, Schiffner 1900a, 1900b, Geissler & Bischler 1985**.

#### **Lopholejeunea**

- \*\*\* *L. applanata* (Reinw., Blume et Nees) Schiffn. JAV: **TYPE** of *Lopholejeunea fleischeri*, **Reinwardt et al. 1824a** as *Jungermannia applanata*, **Gottsche et al. 1845b** as *Lejeunea adplanata*, **Sande Lacoste 1857** as *Lejeunea adplanata*, **Stephani 1890a** as *Lejeunea adplanata*, **1912b** also as *Lopholejeunea fleischeri*, **Schiffner 1893ab** as *Lejeunea adplanata*, Verdoorn 1933b, Mizutani 1961, 1969, 1977, 1978a, Miller et al. 1983, Geissler & Bischler 1985, 1987 as *Lejeunea applanata*, 1989 as *Phragmicoma applanata*, 1990 as *Symbiezidium applanatum*, Bapna & Kachroo 2000b, **Zhu & So 2001**, **Gradstein et al. 2002**, **Zhu & Gradstein 2005**. BA: **Van Leeuwen 1936**. WJ: **TYPE** of *Jungermannia applanata* and *Lopholejeunea karstenii*, **Gottsche et al. 1845b** as *Lejeunea adplanata* β\*, **Sande Lacoste 1864** as *Lejeunea adplanata*, **Schiffner 1898a**, **Verdoorn 1933a**, **Geissler & Bischler 1985** as *Lopholejeunea fleischeri*, **1987** as *Jungermannia applanata*, **Gradstein et al. 2010**, **Haerida et al. 2010**.
- \*\*\* *L. ceylanica* Steph. JAV: **Zhu & Gradstein 2005** also as *Lopholejeunea parva*. WJ: **TYPE** of *Lopholejeunea parva* and *Lopholejeunea schiffneri*, **Schiffner 1900c** as *Lopholejeunea parva* and *Lopholejeunea schiffneri*, **Herzog et al. 1933** as *Lopholejeunea schiffneri*, **Verdoorn 1933** as *Lopholejeunea schiffneri*, **Geissler & Bischler 1985** as *Lopholejeunea parva* and *Lopholejeunea schiffneri*, **Mizutani 1985**, **Gradstein et al. 2010**, **Haerida et al. 2010**.
- \*\*\* *L. eulopha* (Taylor) Schiffn. JAV: **TYPE** of *Lopholejeunea nymannii*, **Stephani 1912b** as *Lopholejeunea nymannii*, Verdoorn 1933b, 1934a, Miller et al. 1983, **Geissler & Bischler 1985** as *Lopholejeunea nymannii*, Bapna & Kachroo 2000b, **Zhu & Gradstein 2005**. WJ: **Verdoorn 1933a**, **Gradstein et al. 2010**, **Haerida et al. 2010**.
- \*\*\* *L. herzogiana* Verd. JAV: Hürlimann 1991, **Zhu & Gradstein 2005**. WJ: **TYPE, Verdoorn 1933a**, **Thiers 1983, 1985**, **Geissler & Bischler 1985**, **Mizutani 1985**, **Gradstein et al. 2002**, **Haerida et al. 2010**.
- \*\*\* *L. horticola* Schiffn. JAV: Verdoorn 1933b, **Mizutani 1985**, **Zhu & Gradstein 2005**. WJ: **TYPE, TYPE** of *Lopholejeunea horticola*, **Schiffner 1900c** as *Lopholejeunea horticola*, **Herzog et al. 1933**, **Verdoorn 1933a**, **Geissler & Bischler 1985** also as *Lopholejeunea horticola*, **Mizutani 1985**, **Haerida et al. 2010**.
- \*\*\* *L. nigricans* (Lindenb.) Schiffn. JAV: **LECTOTYPE** of *Lejeunea intermedia*, **TYPE** of *Lejeunea javanica* and *Lejeunea nigricans*, **Gottsche et al. 1845b** as *Lejeunea intermedia*, *Lejeunea javanica* and *Lejeunea nigricans*, **Sande Lacoste 1857** as *Lejeunea intermedia*, *Lejeunea javanica* and *Lejeunea nigricans*, **Stephani 1890a** as *Lejeunea intermedia*, *Lejeunea javanica* and *Lejeunea nigricans*, **Schiffner 1898a** also as *Lopholejeunea javanica*, Stephani 1912b also as *Lopholejeunea intermedia*, Schiffner 1941 as *Heterolejeunea javanica* and its var. *aquatica*, Mizutani 1977, 1978a, 1978b, 1994, Miller et

92. *Lophocolea* is now generally included in *Chiloscyphus*, but the following taxa have never been transferred.

93. *Lophocolea costata* is now *Chiloscyphus costatus*, but we do not know the value of this variety.

94. *Lophocolea massalongoana* is a synonym of *Chiloscyphus costatoides*, but we are not sure whether these varieties also belong to the species and are worth recognizing.



- al.* 1983 also as *Lejeunea javanica*, Geissler & Bischler 1985 also as *Lopholejeunea intermedia*, *Lopholejeunea javanica* and *Lopholejeunea nigricans* var.  $\gamma$  *intermedia*, **1987** as *Lejeunea intermedia*, *Lejeunea javanica* and *Lejeunea nigricans*, 1990 as *Symbiezidium intermedium*, *Symbiezidium javanicum* and *Symbiezidium nigricans*, **Gradstein 1994**, **Zhu & So 2001**, **Gradstein et al. 2002**, Easa 2003, **Zhu & Gradstein 2005**. EJ: **TYPE** of *Heterolejeunea javanica* and its var. *aquatica*, **Schiffner 1955** as *Heterolejeunea javanica* and its f. *aquatica*, **Bonner 1966** as *Heterolejeunea javanica* and its var. *aquatica*, **Grolle 1977a** as *Heterolejeunea javanica*. WJ: **Sande Lacoste 1857** as *Lejeunea apiculata*, **Verdoorn 1933** also as *Lopholejeunea javanica*, **Schiffner 1955** as *Heterolejeunea javanica*, **Haerida et al. 2010**.
- \*\* — var.  $\beta$  *monstrosa* (Nees) Schiffn. JAV: **TYPE** of *Jungermannia applanata*  $\beta$  *monstrosa*, Sande Lacoste 1857 as *Lejeunea nigricans*  $\beta$  *monstrosa*, **Schiffner 1898a**, Geissler & Bischler 1985, **1987** as *Jungermannia applanata*  $\beta$  *monstrosa* and *Lejeunea nigricans*  $\beta$  *monstrosa*.
- \*\*\* *L. recurvata* Mizut. JAV: **TYPE**, **Zhu & Gradstein 2005**, **Crosby & Engel 2006**. WJ: **Mizutani 1979**, **Gradstein et al. 2002**, **Haerida et al. 2010**.
- \*\*\* *L. subfusca* (Nees) Schiffn. JAV: **TYPE** of *Jungermannia subfusca*, **Nees 1830** as *Jungermannia subfusca*, **Gottsche et al. 1845b** as *Lejeunea subfusca*, **Stephani 1890a** as *Lejeunea sagraeana*, 1912b, **Schiffner 1898a** as *Lopholejeunea sagraeana* var.  $\beta$  *subfusca*, **Verdoorn 1933b**, 1934a, **Mizutani 1961**, 1977, 1978a, **Pócs et al. 1967**, **Schuster 1980**, **Miller et al. 1983** also as *Jungermannia subfusca*, *Lejeunea subfusca*, *Lopholejeunea sagraeana* and *Symbiezidium subfuscum*, **Geissler & Bischler 1985** also as *Lopholejeunea sagraeana* var.  $\beta$  *subfusca*, **1987** as *Jungermannia subfusca* and *Lejeunea subfusca*, 1989 as *Phragmicoma subfusca*, 1990 as *Symbiezidium subfuscum*, **Thiers & Gradstein 1989**, **Reiner-Drehwald 1993**, **Gradstein 1994**, **Mizutani 1994**, **Bapna & Kachroo 2000b**, **Zhu & So 2001**, **Gradstein et al. 2002**, **Easa 2003** also as *Lopholejeunea indica*, **Yano 2004**, **Zhu & Gradstein 2005**. BA: **Van Leeuwen 1936**. CJ: **Verdoorn 1933a**. EJ: **Verdoorn 1933a**. WJ: **Schiffner 1900c**, **Verdoorn 1933a**, **Meijer 1953**, **Gradstein et al. 2010**, **Haerida et al. 2010**.
- \*\*\* *L. wiltensii* Steph. JAV: **TYPE** of *Lopholejeunea serrifolia*, **Stephani 1912b** also as *Lopholejeunea serrifolia*, **Verdoorn 1933b**, **Miller et al. 1983** also as *Lopholejeunea serrifolia*, **Geissler & Bischler 1985** as *Lopholejeunea serrifolia*, **Hürlimann 1991**, **Zhu & Gradstein 2005**. WJ: **Haerida et al. 2010**.
- \*\*\* *L. zollingeri* (Steph.) Schiffn. JAV: **TYPE** of *Lejeunea zollingeri* and *Lopholejeunea latialata*, **Stephani 1890a**, 1912b, **Schiffner 1898a**, **Grolle 1968a**, **Mizutani 1979** as *Lopholejeunea latialata*, **Miller et al. 1983**, **Geissler & Bischler 1985**, **1987** as *Lejeunea zollingeri*, **Piippo & Tan 1992**, **Gradstein et al. 2002**, **Zhu & Gradstein 2005**, **Crosby & Engel 2006** as *Lopholejeunea latialata*. CJ: **Verdoorn 1933a**. WJ: **Schiffner 1900c**, **Verdoorn 1933a**, **Gradstein et al. 2010**, **Haerida et al. 2010**.

#### Marchantia

- \*\*\* *M. acaulis* Steph. JAV: **Piippo & Tan 1992**. WJ: **Bischler-Causse 1989**.
- \*\*\* *M. berteroaana* Lehm. et Lindenb. JAV: **Gottsche 1853** as *Marchantia tabularis*, **Bischler-Causse 1993**, **Perold 1999**, **Bednarek-Ochyra et al. 2000**. WJ: **Bischler-Causse 1989**.
- \*\*\* *M. emarginata* Reinw., Blume et Nees JAV: **TYPE**, **Reinwardt et al. 1824a, b**, **Nees 1830**, **Gottsche 1853**, **Sande Lacoste 1856a**, **Schiffner 1900a**, **Gibbs 1914**, **Verdoorn 1935**, **Geissler & Bischler 1985**. CJ: **Schiffner 1898a**, **1955**. EJ: **Gottsche et al. 1846**, **Schiffner 1955**. WJ: **Sande Lacoste 1857**, **Schiffner 1898a**, **1898b** as *Marchantia emarginata a typica*, **1955**, **1900c**, **Meijer 1953**, **1954a**.
- \*\*\* — subsp. *emarginata* JAV: **TYPE** of *Marchantia palmata*, **Reinwardt et al. 1824a** as *Marchantia palmata*, **Nees 1830** as *Marchantia palmata*, **Meissner 1848** as *Marchantia palmata*, **Gottsche 1853** as *Marchantia palmata*, **Stephani 1899** as *Marchantia palmata*, **Schiffner 1900a** as *Marchantia emarginata* var. *longepedunculata*, f. *thermarum*, var. *major* and var. *multiradia*, **Hattori 1968**, 1971a both as *Marchantia palmata*, **Miller et al. 1983** as *Marchantia emarginata*, **Geissler & Bischler 1985** as *Marchantia palmata* and its var. *multiradia* and var. *major-thermarum*, **Bischler & Piippo 1991a**, **Bapna & Kachroo 2000b** as *Marchantia palmata*, **Easa 2003** as *Marchantia palmata*. CJ: **Bischler-Causse 1989**. EJ: **TYPE** of *Marchantia emarginata* f. *minor*, **Schiffner 1955** as *Marchantia emarginata* f. *minor*, **Geissler & Bischler 1985** as *Marchantia emarginata* f. *minor*, **Bischler-Causse 1989**. WJ: **TYPE** of *Marchantia emarginata* f. *thermarum*, var. *longepedunculata* and f. *intermedia*, **SYNTYPE** of *Marchantia emarginata* var. *multiradia*, var.  $\beta$  *leucolepis*, var. *major* and f. *thermarum*, **Sande Lacoste 1857** as *Marchantia palmata*, **Schiffner 1893ab** as *Marchantia emarginata* var.  $\beta$  *leucolepis*, **1898a** as *Marchantia palmata*, **1898b** as *Marchantia emarginata* f. *thermarum*, var. *multiradia*, var. *major*, var. *longepedunculata* and f. *intermedia*, **1955** as *Marchantia emarginata* f. *thermarum*, **Meijer 1954b** as *Marchantia emarginata* f. *thermarum*, **Geissler & Bischler 1985** as *Marchantia emarginata* var. *longepedunculata*, f. *thermarum*, var. *multiradia*, var.  $\beta$  *leucolepis*, var. *major* and f. *intermedia*, **Bischler-Causse 1989**. YY: **SYNTYPE** of *Marchantia emarginata* var.  $\beta$  *leucolepis*, **Gottsche et al. 1846** as *Marchantia palmata*, **Schiffner 1893ab** as *Marchantia emarginata* var.  $\beta$  *leucolepis*, **1898a** as *Marchantia palmata*, **Geissler & Bischler 1985** as *Marchantia emarginata* var.  $\beta$  *leucolepis*.
- \*\*\* *M. geminata* Reinw., Blume et Nees JAV: **TYPE**, **TYPE** of *Grimaldia geminata*  $\beta$ , **Reinwardt et al. 1824a**, **Nees 1830** as *Grimaldia geminata*, **Lehmann 1832** as *Grimaldia geminata*  $\beta$ , **Gottsche et al. 1846**, **Sande Lacoste 1856a**, **Schiffner 1893ab** as *Marchantia geminata* var. *geminata*, **1900a** also as *Marchantia geminata* f. *divaricata* and var. *major*, **Stephani 1899**, **Verdoorn 1935**, **Bonner 1966** as *Grimaldia geminata*, **Miller et al. 1983**, **Geissler & Bischler 1985** also as *Marchantia geminata* var. *divaricata*, **Bapna & Kachroo 2000b**. BA: **Van Leeuwen 1936**. CJ: **Bischler-Causse 1989**. WJ: **TYPE** of *Marchantia geminata* f. *divaricata* and var. *major*, **Sande Lacoste 1857**, **Schiffner 1898a**, **1898b** also as *Marchantia geminata* var. *major* and f. *divaricata*, **Meijer 1954a**, **Geissler & Bischler 1985** as *Marchantia geminata* f. *divaricata* and var. *major*, **1989**.

- \*\*\* *M. miqueliana* Lehm. JAV: **TYPE**, Lehmann 1857, **Schiffner 1898a, 1900a** also as *Marchantia cataractarum*, **Stephani 1899** also as *Marchantia cataractarum*, Verdoorn 1935 as *Marchantia cataractarum*, **Geissler & Bischler 1985**. EJ: **Bischler-Causse 1989**. WJ: **TYPE** of *Marchantia cataractarum* and *Marchantia rufiflora*, **Schiffner 1898b, 1955** both as *Marchantia cataractarum*, Bonner 1953 as *Marchantia rufiflora*, Meijer 1954b as *Marchantia cataractarum*, **Geissler & Bischler 1985** as *Marchantia cataractarum* and *Marchantia rufiflora*, **Bischler-Causse 1989**.
- \*\*\* *M. paleacea* Bertol. JAV: Hattori 1966a, 1968, Miller *et al.* 1983, Bapna & Kachroo 2000b. WJ: **Evans 1917**.  
 \*\*\* — subsp. *paleacea* JAV: **TYPE** of *Marchantia nitida* var. *hillebrandii*, **Sande Lacoste 1857** as *Marchantia nitida*, **Schiffner 1898a** as *Marchantia nitida*, **1900a** as *Marchantia nitida* and its var. *hillebrandii*, **Stephani 1899** as *M. nitida*, Miller *et al.* 1983 as *Marchantia nitida*, **Geissler & Bischler 1985** as *Marchantia nitida* var. *hillebrandii*, **Schuster 1992b**, Bischler-Causse 1993 CJ: **TYPE** of *Marchantia nitida* f. *javanica* and f. *subaquatica*, Meijer 1955 as *Marchantia nitida*, **Schiffner 1955** as *Marchantia nitida* f. *javanica* and f. *subaquatica*, **Geissler & Bischler 1985** as *Marchantia nitida* f. *subaquatica* and f. *javanica*, **Bischler-Causse 1989**. EJ: **Schiffner 1955** as *Marchantia nitida* f. *javanica*, **Bischler-Causse 1989**. WJ: **TYPE** of *Marchantia nitida* f. *javanica*, **Schiffner 1898b** as *Marchantia nitida*, **1955** as *Marchantia nitida* f. *javanica*, Meijer 1954a as *Marchantia nitida*, **Geissler & Bischler 1985** as *Marchantia nitida* f. *javanica*, **Bischler-Causse 1989**.
- \*\*\* *M. polymorpha* L. JAV: **Reinwardt et al. 1824a, b**, Sande Lacoste 1857, **Stephani 1899**, Schiffner 1900a, Barbour 1901, Frye & Clark 1937. CJ: Meijer 1955. EJ: **Bischler-Causse 1989**. WJ: **TYPE** of *Marchantia polymorpha*  $\alpha$  *denticulata*, **Nees 1830, Gottsche et al. 1846** as *Marchantia polymorpha*  $\alpha$  *denticulata*, **Sande Lacoste 1856a** as *Marchantia polymorpha*  $\alpha$  *denticulata*, **Schiffner 1898a** also as *Marchantia polymorpha*  $\alpha$  *denticulata*, Bischler-Causse 1989.
- \*\*\* *M. treubii* Schiffn. JAV: **Schiffner 1893ab** as *Marchantia geminata* var. *subsimplax*, **Stephani 1899, Schiffner 1900a** also as *Marchantia sciaphila* and *Marchantia treubii* var. *intercedens*. CJ: **Schiffner 1955** as *Marchantia sciaphila*, **Bischler-Causse 1989**. EJ: **TYPE** of *Marchantia geminata* var. *subsimplax*, **Schiffner 1893ab** as *Marchantia geminata* var. *subsimplax*, **Geissler & Bischler 1985** as *Marchantia geminata* var. *subsimplax*, **Bischler-Causse 1989**. WJ: **TYPE, TYPE** of *Marchantia sciaphila* and *Marchantia treubii* var. *intercedens*, **Schiffner 1898a** as *Marchantia geminata* var. *subsimplax*, **Schiffner 1898b** also as *Marchantia sciaphila* and *Marchantia treubii* var. *intercedens*, **Stephani 1899** as *Marchantia sciaphila*, Meijer 1954a, **Geissler & Bischler 1985** also as *Marchantia sciaphila* and *Marchantia treubii* var. *intercedens*, **Bischler-Causse 1989**.

#### **Marsupella**

- \*\*\* *M. neesii* Sande Lac. ex Schiffn. JAV: **Schiffner 1900a** as *Marsupella vulcanica*, **Stephani 1901** as *Marsupella vulcanica*, Vána 1999 as *Marsupella vulcanica*. WJ: **LECTOTYPE** of *Marsupella vulcanica*, **Schiffner 1898a, 1898b** as *Marsupella vulcanica*, **Verdoorn 1931b** as *Marsupella vulcanica*, Meijer 1954b as *Marsupella vulcanica*, **Geissler & Bischler 1985** as *Marsupella vulcanica*, **1990** as *Sarcocypnos neesii*.

#### **Marsupidium**

- \*\*\* *M. sumatranum* (Schiffn.) Grolle WJ: **TYPE** of *Tylimanthus repens*, Grolle 1973a, **Geissler & Bischler 1990** as *Tylimanthus repens*.

#### **Mastigolejeunea**

- \*\*\* *M. auriculata* (Wilson) Schiffn. JAV: **TYPE** of *Phragmicoma humilis*, **Gottsche et al. 1845a** as *Phragmicoma humilis*, **Sande Lacoste 1857, 1864** both as *Phragmicoma humilis*, **Stephani 1890a** as *Phragmicoma humilis*, 1912a as *Mastigolejeunea humilis*, **Schiffner 1898a** as *Mastigolejeunea humilis*, Verdoorn 1933b, 1934a both as *Mastigolejeunea humilis*, Mizutani 1977, both as *Mastigolejeunea humilis*, Miller *et al.* 1983 as *Mastigolejeunea humilis*, *Phragmicoma humilis* and *Ptychocoleus humilis*, Geissler & Bischler 1985 as *Marchesinia humilis* and *Mastigolejeunea humilis*, 1987 as *Lejeunea humilis*, **1989** as *Phragmicoma humilis* and *Ptychocoleus humilis*, **Thiers & Gradstein 1989, Gradstein 1994**, Bapna & Kachroo 2000b as *Mastigolejeunea humilis* var. *ciliata* and var. *humilis*, **Gradstein et al. 2002**. BA: **Haerida et al. 2010**. EJ: **Verdoorn 1933** as *Mastigolejeunea humilis*. WJ: **Schiffner 1900c** as *Mastigolejeunea humilis*, **Verdoorn 1933** as *Mastigolejeunea humilis*, Meijer 1953 as *Mastigolejeunea humilis*, **Thiers 1985** as *Mastigolejeunea humilis*, **Mizutani 1987a** as *Mastigolejeunea humilis*, **Haerida et al. 2010**.

- \*\*\* *M. indica* Steph. WJ: **Haerida et al. 2010**.

- \*\*\* *M. virens* (Ångstr.) Steph. EJ: **Mizutani 1987a**. WJ: **Mizutani 1987a, Haerida et al. 2010**.

#### **Mastigophora**

- \*\*\* *M. diclados* (Brid. ex F. Weber) Nees JAV: **TYPE** of *Jungermannia calcarata*, *Jungermannia diclados*  $\alpha^{**}$  *tenerior*,  $\beta^{**}$  *rhizobola*,  $\beta^{***}$  *nana*,  $\alpha^{*}$  *major*, *Jungermannia fissa*, *Sendtnera diclados*  $\beta^{*}$  *conferta*,  $\beta^{**}$  *rhizobola*,  $\beta^{***}$  *nana*, **Reinwardt et al. 1824a** as *Jungermannia calcarata* and *Jungermannia scorpioides*, **Nees 1830** as *Jungermannia diclados*  $\beta$  *calcarata*,  $\beta^{***}$  *nana*,  $\alpha^{**}$  *tenerior*, **Gottsche et al. 1845a** as *Sendtnera diclados* and *Sendtnera fissa*, **Sande Lacoste 1856a** as *Sendtnera diclados*  $\alpha^{**}$  *tenerior*, **1857** as *Sendtnera diclados*  $\alpha^{**}$  *tenerior*,  $\beta^{*}$  *conferta*,  $\beta^{**}$  *rhizobola*,  $\beta$  *calcarata*,  $\alpha^{*}$  *major*,  $\alpha$  *scorpioides* and  $\beta^{***}$  *nana*, **1864** as *Sendtnera diclados*  $\beta^{**}$  *rhizobola* and  $\beta^{*}$  *conferta*, Stephani 1922 as *Lepicolea fissa*, Bonner 1966 as *Herbertia fissa*, Miller *et al.* 1983 also as *Sendtnera diclados* and its  $\alpha$  *scorpioides* and *Sendtnera fissa*, Geissler & Bischler 1985 as *Mastigophora diclados* f. *nana*, f. *tenerior*, f. *rhizobola*, f. *conferta*, var.  $\beta$  *scorpioides*, *Mastigophora fissa* and *Mastigophora vrieseana*, **1987** as *Jungermannia diclados*  $\alpha^{**}$  *tenerior*,  $\beta^{**}$  *rhizobola*,  $\beta^{***}$  *nana*,  $\alpha^{*}$  *major*,  $\beta$  *calcarata*,  $\alpha$  *scorpioides* and *Jungermannia fissa*, **1990** as *Sendtnera diclados*  $\beta^{*}$  *conferta*,  $\beta^{***}$  *nana*,  $\beta$  *calcarata*,  $\alpha$  *scorpioides*,  $\beta^{**}$  *rhizobola*,  $\alpha^{**}$  *tenerior* and *Sendtnera vrieseana*. WJ: **SYNTYPE** of *Jungermannia diclados*  $\beta^{*}$  *conferta*, **TYPE** of *Jungermannia scorpioides*, *Mastigophora diclados* f. *thermarum* and *Sendtnera diclados*  $\alpha^{*}$  *major*, **Nees 1830** as *Jungermannia diclados*  $\alpha^{*}$  *major*, **Gottsche et al. 1845a** as *Sendtnera diclados*  $\beta$  *calcarata* and  $\alpha^{*}$  *major*, **Sande Lacoste 1864** as *Sendtnera diclados*  $\alpha$  *scorpioides* and  $\beta$  *calcarata*, **Schiffner 1898a** also as *Mastigophora diclados* var.  $\beta$  *scorpioides*, **1900c, 1955** also as *Mastigophora diclados* f. *thermarum*, **Seifrizz**

**1924, Renner 1932, Verdoorn 1932a**, Meijer 1954a, **Geissler & Bischler 1987** as *Jungermannia calcarata*, *Jungermannia diclados*  $\beta^*$  *conferta*, *Jungermannia scorpioides*, **1990** as *Sendtnera diclados*  $\alpha^*$  *major*, **Gradstein et al. 2010**.

\*\* — var. *diclados* JAV: **Schiffner 1893ab**.

\* — var. *villosa* Herzog WJ: **TYPE, Herzog 1932, Geissler & Bischler 1985**.

- ? <sup>95</sup>*M. fissa* (Nees) Schiffn. var.  $\beta$  *laxior-et-tenuis* (Nees) Schiffn. JAV: **TYPE** of *Jungermannia fissa*  $\beta$  *laxior-et-tenuis*, **Nees 1830** as *Jungermannia fissa*  $\beta$  *laxior-et-tenuis*, Sande Lacoste 1857 as *Sendtnera fissa*  $\beta$  *laxior-et-tenuis*, **Schiffner 1898a**, Geissler & Bischler 1985, **Geissler & Bischler 1987** as *Jungermannia fissa*  $\beta$  *laxior-et-tenuis*, Geissler & Bischler 1990 as *Sendtnera fissa*  $\beta$  *laxior-et-tenuis*.

### **Metalejeunea**

- \*\*\* *M. cucullata* (Reinw., Blume et Nees) Grolle JAV: **TYPE** of *Jungermannia cucullata* and its  $\alpha$  *major* and *Lejeunea cucullata*  $\alpha$  *major*, **Reinwardt et al. 1824a** as *Jungermannia cucullata*, **Nees 1830** as *Jungermannia cucullata*  $\alpha$  *major*, Gottsche et al. 1845b as *Lejeunea cucullata*  $\alpha$  *major*, **Gottsche 1853** as *Lejeunea cucullata*, **Sande Lacoste 1857** as *Lejeunea cucullata*  $\alpha$  *major*, **Stephani 1890b** as *Lejeunea erectifolia*, Bischler et al. 1962 as *Microlejeunea albicans* and *Microlejeunea cucullata*, Pócs et al. 1967 as *Microlejeunea cucullata*, Mizutani 1977, 1978a both as *Lejeunea cucullata*, Miller et al. 1983 as *Jungermannia cucullata*, *Lejeunea cucullata* var.  $\delta$  *parasitica* and *Microlejeunea cucullata*, Geissler & Bischler 1985 as *Microlejeunea cucullata*, **1987** as *Jungermannia cucullata* and its  $\alpha$  *major*, *Lejeunea cucullata* and its  $\alpha$  *major*, **Grolle 1995, Zhu & So 2001**. WJ: **Sande Lacoste 1864** as *Lejeunea cucullata*, **Schiffner 1898a** as *Eulejeunea cucullata*, **1900c** as *Microlejeunea cucullata*, **Gradstein et al. 2010**.

### **Metzgeria**

\*\*\* *M. attenuata* Steph. WJ: **Kuwahara 1985**.

\*\*\* *M. ciliata* Raddi JAV: Kuwahara 1965, 1968, 1983, 1984, 1985 all as *Metzgeria decipiens*, Miller et al. 1983 as *Metzgeria quadriseriata*, Piippo 1991a as *Metzgeria decipiens*, Bapna & Kachroo 2000b as *Metzgeria decipiens*, Koponen et al. 2000 as *Metzgeria decipiens*, Costa 2008.

\*\*\* <sup>96</sup>*M. conjugata* Lindb. JAV: **Reinwardt et al. 1824a** as *Jungermannia furcata* var.  $\beta$  *elongata*, **Nees 1830** as *Jungermannia furcata* var.  $\beta$  *maxima*, **Stephani 1899, Schiffner 1900a**, Frye & Clark 1937, Miller et al. 1983 as *Metzgeria conjugata* subsp. *conjugata*. WJ: **Schiffner 1898b**.

\* — subsp. *japonica* (S.Hatt.) Kuwah. JAV: **TYPE** of *Metzgeria conjugata* var. *minor*, **Schiffner 1893ab, 1898a** both as *Metzgeria conjugata* var. *minor*, **1900a** as *Metzgeria lindbergii*, **Stephani 1899** as *Metzgeria lindbergii*, Kuwahara 1958 as *Metzgeria conjugata* var. *japonica*, 1965 as *Metzgeria conjugata* subsp. *japonica*, 1968 as *Metzgeria conjugata* subsp. *japonica*, 1978 as *Metzgeria lindbergii*, 1985 as *Metzgeria minor*, Pócs et al. 1967 as *Metzgeria conjugata* subsp. *japonica*, Pócs 1968a as *Metzgeria conjugata* subsp. *japonica*, Hattori 1975c as *Metzgeria conjugata* subsp. *japonica*, Miller et al. 1983 also as *Metzgeria lindbergii*, **Geissler & Bischler 1985** as *Metzgeria lindbergii*, *Metzgeria conjugata* var. *minor* and *Metzgeria minor*, Schuster 1992a as *Metzgeria conjugata* subsp. *japonica*, Bapna & Kachroo 2000b as *Metzgeria lindbergii*, Koponen et al. 2000 as *Metzgeria lindbergii*, **Zhu & So 2001** as *Metzgeria lindbergii*, Damsholt 2002 as *Metzgeria conjugata* subsp. *japonica*, **So 2002, 2003b** both as *Metzgeria lindbergii*. WJ: **LECTOTYPE** of *Metzgeria lindbergii*, **Schiffner 1898b** as *Metzgeria lindbergii*, Meijer 1953 as *Metzgeria lindbergii*.

\*\*\**M. consanguinea* Schiffn. JAV: **Schiffner 1893ab, 1900a, Stephani 1899**, Kuwahara 1965, 1975, 1976, 1978, 1981, 1982, 1986, Hattori 1966a, Grolle 1969, Miller et al. 1983, Long & Grolle 1990, Piippo 1991a, Hodgetts et al. 1999, Bapna & Kachroo 2000b, **Zhu & So 2001, So 2002, 2003b, Costa 2008**. WJ: **TYPE, Schiffner 1898a, 1898b, 1900c, Geissler & Bischler 1985**.

\*\*\* *M. crassipilis* (Lindb.) A.Evans JAV: **So 2003b**. WJ: **Gradstein et al. 2010**.

\* <sup>97</sup>*M. foliicola* Schiffn. JAV: **TYPE** of *Metzgeria cristatissima*, **Schiffner 1900a, Herzog 1951a**, 1951b both as *Metzgeria cristatissima*, Kuwahara 1978, 1984 as *Metzgeria cristata*, 1985 as *Metzgeria cristata*, **Geissler & Bischler 1985** as *Metzgeria cristatissima*, Koponen et al. 2000, **So 2002, 2003b**. WJ: **LECTOTYPE, TYPE** of *Metzgeria cristata*, **Schiffner 1898b, 1900c, Stephani 1917b** as *Metzgeria cristata*, **Renner 1932, Verdoorn 1935, Geissler & Bischler 1985** also as *Metzgeria cristata*.

\*\*\* *M. furcata* (L.) Corda JAV: **TYPE** of *Jungermannia rhizophora*, **Reinwardt et al. 1824a** as *Jungermannia rhizophora*, Gottsche et al. 1846, **Gottsche 1853, Sande Lacoste 1857** as *Metzgeria furcata*  $\beta$  *communis*, **1864, Geissler & Bischler 1987** as *Jungermannia rhizophora*, Bapna & Kachroo 2000b, **So 2003b**. WJ: **Schiffner 1898a**.

<sup>98</sup>*M. hamata* Lindb. nom. illeg.

? —var. *angustior* Schiffn. JAV: **Schiffner 1900a**. WJ: **SYNTYPE, Schiffner 1898b, Geissler & Bischler 1985**.

95. *Mastigophora fissa* is a synonym to *M. diclados*, but we are not sure whether these varieties also belong to the species and are worth recognizing.

96. *Metzgeria conjugata* is in SE Asia only represented by subsp. *japonica*, which sometimes is treated as a species (*M. lindbergii* Schiffn.), sometimes synonymized with *M. conjugata*.

97. *Metzgeria foliicola* is a synonym of *M. albinea* in Kuwahara (1986), but recognized by later authors.

98. *Metzgeria hamata* sensu Lindb. is a synonym of *M. leptoneura* (*M. hamata* Lindb. = *M. procera* Mitt.), but we are not sure whether these varieties also belong to the species and are worth recognizing.

? —var. *saxicola* Schiffn. JAV: **Schiffner 1900a**. WJ: **SYNTYPE**, **Schiffner 1898b**, **1900c**, **Geissler & Bischler 1985**.

? —var. *subplana* Schiffn. JAV: **Schiffner 1900a**. WJ: **SYNTYPE**, **Schiffner 1898b**, **Geissler & Bischler 1985**.

\*\*\* *M. leptoneura* Spruce JAV: **SYNTYPE** of *Metzgeria furcata*  $\beta$ 1 *major*, Nees 1838 as *M. furcata*  $\beta$ 1 *major*, **Sande Lacoste 1857** as *Metzgeria furcata*  $\beta$ 1 *major*, **Schiffner 1898a** as *Metzgeria hamata*, **1900a** as *Metzgeria sandei*, **Stephani 1899** as *Metzgeria sandei*, Kuwahara 1968, 1969 both as *Metzgeria sandei*, 1978 as *Metzgeria thomeensis*, 1982 as *Metzgeria sandei*, 1984 as *Metzgeria australis*, 1985 also as *Metzgeria australis* and *Metzgeria sandei*, 1986 as *Metzgeria australis* and *Metzgeria sandei*, Miller *et al.* 1983, **Geissler & Bischler 1985** as *Metzgeria furcata*  $\beta$ 1 *major*, Schuster 1984, Piippo 1991a as *Metzgeria australis*, Bapna & Kachroo 2000b, Damsholt 2002, Nieva & Schiavone 2002 as *Metzgeria sandei*, So 2002 as *Metzgeria thomeensis*, **2003b**. WJ: **TYPE** of *Metzgeria hamata* f. *transitoria*, **SYNTYPE** of *Metzgeria sandei*, **Schiffner 1898b** as *Metzgeria hamata* and f. *transitoria* and *Metzgeria sandei*, **Geissler & Bischler 1985** as *Metzgeria hamata* f. *transitoria* and *Metzgeria sandei*, **Costa 2008**.

\*\* — var. *leptoneura* JAV: **TYPE** of *Metzgeria furcata*  $\alpha$  *extensa*, Nees 1838 as *Metzgeria furcata*  $\alpha$  *extensa*, **Sande Lacoste 1857** as *Metzgeria furcata*  $\alpha$  *extensa*, **Stephani 1899** as *Metzgeria hamatiformis*, **Schiffner 1900a** as *Metzgeria hamatiformis*, Frye & Clark 1937 as *Metzgeria hamata*, Arnell 1956, 1958 both as *Metzgeria hamata*, Kuwahara 1958 as *Metzgeria hamata*, 1986, Engel 1976, **Geissler & Bischler 1985** as *Metzgeria furcata*  $\alpha$  *extensa*, Schuster 1992a. WJ: **TYPE** of *Metzgeria fuscescens* and *Metzgeria hamata* f. *propagulifera*, **Schiffner 1898b** as *Metzgeria hamata* f. *propagulifera* and *Metzgeria hamatiformis*, **Stephani 1899** as *Metzgeria fuscescens*, **Renner 1932** as *Metzgeria hamata*, **Engel 1978**, **Geissler & Bischler 1985** as *Metzgeria fuscescens* and *Metzgeria hamata* f. *propagulifera*.

\*\* *M. scobina* Mitt. JAV: Miller *et al.* 1983, Kuwahara 1985 as *Metzgeria subscobina*.

### **Mnioloma**

\*\*\* *M. fuscum* (Lehm.) R.M.Schust. JAV: **Gottsche et al. 1845a** as *Mastigobryum alternifolium*  $\beta$  *confertius*, **Sande Lacoste 1857** as *Mastigobryum alternifolium*  $\beta$  *confertius*, **Schiffner 1893ab** as *Bazzania alternifolia* var.  $\beta$  *confertior*, Bonner 1963a as *Calypogeia alternifolia* var. *confertior*, Grolle 1965a as *Calypogeia baldwinii*, Grolle 1977c as *Calypogeia fusca*, Miller *et al.* 1983 as *Calypogeia fusca*, Gao *et al.* 2002, Engel 2006. WJ: **Schiffner 1898a** as *Kantia alternifolia* var.  $\beta$  *confertior*.

### **Nardia**

\*\*\* *N. scalaris* Gray JAV: Reichardt 1871 as *Alicularia scalaris*, Frye & Clark 1944. WJ: **Blockeel et al. 2007**.

\*\* — subsp. *scalaris* JAV: **Gottsche et al. 1844** as *Alicularia scalaris*  $\alpha$  *rigens*, Sande Lacoste 1857 as *Alicularia scalaris*  $\alpha$  *rigens*, Bonner 1962 as *Alicularia scalaris*  $\alpha$  *rigens*. WJ: **Sande Lacoste 1864** as *Alicularia scalaris*  $\alpha$  *rigens*.

### **Notoscyphus**

\*\*\* *N. lutescens* (Lehm. et Lindenb.) Mitt. JAV: **Gottsche 1853** as *Gymnomitrium belangerianum*, **Schiffner 1900a** as *Nardia notoscyphoides*, **1900a** as *Notoscyphus paroicus*, **Stephani 1901** also as *Notoscyphus paroicus* and *Alicularia notoscyphoides*, Verdoorn 1931b as *Notoscyphus paroicus*, Amakawa 1959 as *Notoscyphus paroicus*, Bonner 1962 as *Acolea lutescens* and *Alicularia notoscyphoides*, 1963b as *Cesiusa lutescens*, as *Gymnomitrium lutescens*, Arnell 1963, 1965, Schuster 1969 as *Nardia notoscyphoides*, Udar & Kumar 1981 also as *Notoscyphus paroicus*, Miller *et al.* 1983 also as *Notoscyphus paroicus*, Geissler & Bischler 1989 as *Prasanthus paroicus*, Bapna & Kachroo 2000a also as *Notoscyphus paroicus*, Schuster 2002 as *Notoscyphus paroicus*. CJ: **Schiffner 1955** as *Notoscyphus paroicus*. WJ: **TYPE** of *Nardia notoscyphoides*, **SYNTYPE** of *Notoscyphus paroicus*, **Sande Lacoste 1857**, **1864** both as *Gymnomitrium lutescens*, **Schiffner 1898a**, **1898b** as *Nardia notoscyphoides* and *Notoscyphus paroicus*, Meijer 1954a as *Nardia notoscyphoides* and *Notoscyphus paroicus*, **Geissler & Bischler 1985** as *Nardia notoscyphoides* and *Notoscyphus paroicus*, **Gradstein et al. 2010**.

### **Nowellia**

\*\*\* *N. curvifolia* (Dicks.) Mitt. JAV: Schuster 1974, Gradstein & Váňa 1987, Damsholt 2002. WJ: **Sande Lacoste 1864** as *Jungermannia curvifolia* var.  $\beta$  *baueri*, **Grolle 1968c**.

### **Otolejeunea**

\*\*\* *O. semperiana* (Gottsche ex Steph.) Grolle JAV: **SYNTYPE** of *Prionolejeunea semperiana*, **Stephani 1913** as *Prionolejeunea semperiana*, **Geissler & Bischler 1989** as *Prionolejeunea semperiana*, **Zhu & So 1997**, **1998**, **2001**, Grolle & Reiner-Drehwald 2000, Blockeel *et al.* 2006. WJ: **TYPE** of *Allorgella noertana*, **Tixier 1980** as *Allorgella noertana*, **Crosby & Engel 2006** as *Allorgella noertana*.

### **Pallavicinia**

? <sup>99</sup>*P. indica* Schiffn. var. *aquatica* Schiffn. *nom. inval.* WJ: **Schiffner 1955**, **Geissler & Bischler 1989**.

\*\* *P. levieri* Schiffn. JAV: **Schiffner 1900a**, **Stephani 1900**, Miller *et al.* 1983 also as *Blyttia levieri*, Koponen *et al.* 2000. BA: **Van Leeuwen 1936**. WJ: **LECTOTYPE**, **Schiffner 1898b**, **1900c**, **Renner 1932**, **Grolle & Piippo 1986**, **Geissler & Bischler 1989**.

\*\*\* *P. lyellii* (Hook.) Carruth. JAV: **TYPE** of *Blyttia radiculosa* and *Pallavicinia latifrons*, **Gottsche 1853** as *Blyttia lyellii*, **Sande Lacoste 1857** as *Blyttia lyellii* and *Blyttia radiculosa*, **Schiffner 1898a** as *Calycularia radiculosa*, **1900a** as *Pallavicinia indica* var. *major*, *Pallavicinia indica*, *Pallavicinia radiculosa*, *Pallavicinia latifrons*, Frye & Clark 1937, Verdoorn 1938 as *Calycularia radiculosa* and *Pallavicinia indica*, **Bonner 1963a** as *Blyttia radiculosa* as *Calycularia radiculosa*, 1965 as *Diplolaena lyellii* and *Diplomitrium lyellii*, Grolle 1968a as *Pallavicinia radiculosa*, Hattori 1968 as *Pallavicinia indica*,

99. *Pallavicinia indica* is a synonym to *P. lyellii*, but we are not sure whether these varieties also belong to the species and are worth recognizing.

Miller *et al.* 1983 also as *Pallavicinia indica*, **Geissler & Bischler 1989** as *Pallavicinia latifrons* and *Pallavicinia radiculosa*, Schuster 1992a, Bapna & Kachroo 2000b also as *Pallavicinia indica*. WJ: **SYNTYPE** of *Pallavicinia indica*, **TYPE** of *Pallavicinia indica* var. *major*, **Sande Lacoste 1864** as *Blyttia lyellii*, **Schiffner 1898a, 1898b** as *Pallavicinia indica* and its var. *major* and *Pallavicinia radiculosa*, **1900c** as *Calycularia radiculosa*, *Pallavicinia indica*, *Pallavicinia radiculosa*, **1955** as *Pallavicinia radiculosa*, **Verdoorn 1931b** as *Pallavicinia radiculosa*, 1935 as *Pallavicinia indica*, Meijer 1953 as *Pallavicinia indica*, 1954b as *Pallavicinia radiculosa*, 1958b as *Pallavicinia radiculosa*, **Grolle & Piippo 1986, Geissler & Bischler 1989** as *Pallavicinia indica* and its var. *major*.

#### **Pedinophyllum**

- \*\*\* *P. autoicum* (Steph.) Inoue JAV: **TYPE** of *Plagiochila autoica*, **Stephani 1917b** as *Plagiochila autoica*, Inoue 1966c, Schuster 1984, **Geissler & Bischler 1989** also as *Plagiochila autoica*.

#### **Plagiochila**

- \*\*\* *P. abietina* (Nees) Nees et Mont. JAV: **TYPE** of *Jungermannia abietina*, **Nees 1830** as *Jungermannia abietina*, **Gottsche et al. 1844, Sande Lacoste 1857, Schiffner 1900a, Stephani 1903, Dugas 1929** as *Plagiochila abietina* var. *abietina*, Miller *et al.* 1983 also as *Jungermannia abietina*, **Geissler & Bischler 1987** as *Jungermannia abietina*, Piippo 1989a, **So & Grolle 2000c**. CJ: **Sande Lacoste 1864**. WJ: **Sande Lacoste 1864, Schiffner 1898a, 1900b, Carl 1931, Inoue 1984**.
- \*\*\* *P. arbuscula* (Brid. ex Lehm. et Lindenb.) Lindenb. JAV: **TYPE** of *Plagiochila belangeriana* and its f. *angustifolia* and *Plagiochila terricola*, **Lehmann 1832** as *Jungermannia arbuscula*, Lindenberg 1840 as *Plagiochila belangeriana*, **Gottsche et al. 1844, Meissner 1848** as *Plagiochila belangeriana*, **Gottsche 1853** as *Plagiochila belangeriana*, Sande Lacoste 1857, **Schiffner 1900a** as *Plagiochila belangeriana* and its var. *rufescens* and var. *brevifolia*, Stephani 1903 as *Plagiochila belangeriana*, **1918** as *Plagiochila terricola*, **1921** as *Plagiochila terricola*, **Dugas 1929** as *Plagiochila belangeriana* var. *rufescens*, **Carl 1931** as *Plagiochila belangeriana*, Verdoorn 1932a as *Plagiochila belangeriana*, Inoue 1958b as *Plagiochila belangeriana*, Hattori 1968 as *Plagiochila belangeriana*, Miller *et al.* 1983 also as *Plagiochila belangeriana*, **Geissler & Bischler 1987** as *Jungermannia arbuscula*, **1989** as *Plagiochila belangeriana* and its f. *angustifolia* and *Plagiochila terricola*, Piippo 1989a, Bapna & Kachroo 2000b, **So 2000, 2001a**. CJ: **Sande Lacoste 1864** as *Plagiochila belangeriana*, **Schiffner 1898a** as *Plagiochila belangeriana*, **Inoue 1984, So & Grolle 2000c**. EJ: **Gottsche et al. 1844** as *Plagiochila belangeriana*, **Inoue 1984**. WJ: **NEOTYPE** of *Jungermannia arbuscula*, **TYPE** of *Plagiochila belangeriana* var. *brevifolia* and var. *rufescens*, **Sande Lacoste 1857, 1864** both as *Plagiochila belangeriana*, **Schiffner 1898a** as *Plagiochila belangeriana*, **1900b** as *Plagiochila belangeriana* and its var. *brevifolia* and var. *rufescens*, **Seifriz 1924** as *Plagiochila belangeriana*, **Renner 1932** as *Plagiochila belangeriana*, **Inoue 1984, Geissler & Bischler 1989** as *Plagiochila belangeriana* var. *rufescens* and var. *brevifolia*, **Grolle & So 1998, 1999c, So & Grolle 2000c**.
- \*\*\* *P. bantamensis* (Reinw., Blume et Nees) Mont. JAV: **TYPE** of *Plagiochila bantamensis* f. *minor*, **Reinwardt et al. 1824a** as *Jungermannia bantamensis*, **Sande Lacoste 1857** also as *Plagiochila bantamensis*  $\beta$  *minor*, **1864, Schiffner 1893ab, 1900a** also as *Plagiochila bantamensis*  $\beta$  *minor*, *Plagiochila goethartiana* var. *gadokana*, *Plagiochila lobulata*, *Plagiochila lobulata* var. *longidens*, *Plagiochila media* var. *pauciciliata* and *Plagiochila media*, **Stephani 1903** as *Plagiochila goethartiana* and *Plagiochila renistipula*, **Stephani 1904** also as *Plagiochila lobulata* and *Plagiochila media*, **Dugas 1929** also as *Plagiochila goethartiana* var. *gadokana* and *Plagiochila lobulata* var. *longidens*, **Carl 1931** as *Plagiochila bantamensis* f. *minor*, *Plagiochila lobulata* var. *longidens*, *Plagiochila media* var. *pauciciliata* and *Plagiochila modiglianii*, Pócs *et al.* 1967 as *Plagiochila media*, Hattori 1968 as *Plagiochila lobulata*, Onraedt 1981 as *Plagiochila lobulata*, Miller *et al.* 1983 as *Plagiochila simillima*, **Geissler & Bischler 1989** also as *Plagiochila bantamensis* f. *minor* and *Plagiochila renistipula*, Piippo 1993a, **So & Grolle 2000a, So 2001a**. BA: **Van Leeuwen 1936** as *Plagiochila lobulata* and *Plagiochila simillima*. EJ: **Carl 1931** as *Plagiochila lobulata*. WJ: **TYPE** of *Jungermannia bantamensis*, *Plagiochila goethartiana* var. *gadokana*, *Plagiochila lobulata* and its f. *humilior* and var. *longidens* and *Plagiochila media* var. *pauciciliata*, **SYNTYPE** of *Plagiochila media*, **LECTOTYPE** of *Plagiochila renistipula*, **Nees 1830** as *Jungermannia bantamensis*, **Gottsche et al. 1844, Sande Lacoste 1864** as *Plagiochila bantamensis*  $\beta$  *minor*, **Schiffner 1898a** also as *Plagiochila bantamensis* var.  $\beta$  *minor*, **Schiffner 1900b** also as *Plagiochila goethartiana* var. *gadokana*, *Plagiochila lobulata* and its f. *humilior* and var. *longidens*, *Plagiochila media* and its var. *pauciciliata*, **Schiffner 1900c** also as *Plagiochila media* var. *pauciciliata*, **Carl 1931, Meijer 1954a, Inoue 1984, Geissler & Bischler 1987** as *Jungermannia bantamensis*, **1989** as *Plagiochila goethartiana* var. *gadokana*, *Plagiochila lobulata* and its f. *humilior* and var. *longidens*, *Plagiochila media* and its var. *pauciciliata*, **Grolle & So 1999b, So & Grolle 2000c**.
- ? <sup>100</sup>*P. belangeriana* Lindenb. var. *brevidentata* Schiffn. nom. inval. JAV: **Schiffner 1900a, Geissler & Bischler 1989**.
- \*\* *P. bicornuta* Steph. JAV: **Schiffner 1900a** as *Plagiochila laxissima*, **Dugas 1929** as *Plagiochila laxissima*, **So 2001b**. CJ: **Inoue 1984** as *Plagiochila laxissima*. WJ: **TYPE** of *Plagiochila laxissima*, **Schiffner 1900b** as *Plagiochila laxissima*, **Inoue 1984** as *Plagiochila laxissima*, **Geissler & Bischler 1989** as *Plagiochila laxissima*, **So & Grolle 2000c** as *Plagiochila laxissima*.
- \*\*\* *P. blepharophora* (Nees) Lindenb. JAV: **Schiffner 1900a** also as *Plagiochila blepharophora* var. *exilis*, **Stephani 1903, Dugas 1929, Carl 1931**, Miller *et al.* 1983, Geissler & Bischler 1989, Piippo 1989a. WJ: **TYPE** of *Jungermannia blepharophora* and *Plagiochila blepharophora* var. *exilis*, **Nees 1830** as *Jungermannia blepharophora*, **Gottsche et al. 1844, Sande Lacoste 1856a, 1857, 1864, Schiffner 1898a, Schiffner 1900b** also as *Plagiochila blepharophora* var. *exilis*, **Inoue 1984, Geissler & Bischler 1987** as *Jungermannia blepharophora*, **1989** as *Plagiochila blepharophora* var. *exilis*. **So & Grolle 2000c**.

100. *Plagiochila belangeriana* is a synonym to *P. arbuscula*, but we are not sure whether these varieties also belong to the species and are worth recognizing.

- ? <sup>101</sup>*P. conjugata* (Hook.) Lindenb. var. *falcata* (Nees) Mont. JAV: **TYPE** of *Jungermannia conjugata*  $\gamma$  *falcata*, **Nees 1830** as *Jungermannia conjugata*  $\gamma$  *falcata*, **Sande Lacoste 1857** as *Plagiochila opposita*  $\beta$  *falcata*, **Schiffner 1898a** as *Plagiochila opposita* var.  $\beta$  *falcata*, **Geissler & Bischler 1987** as *Jungermannia conjugata*  $\gamma$  *falcata*, 1989 also as *Plagiochila opposita*  $\beta$  *falcata*.
- \*\* *P. densifolia* Sande Lac. JAV: **Inoue 1984**.
- \*\*\* *P. frondescens* (Nees) Lindenb. JAV: **LECTOTYPE** of *Jungermannia frondescens*, **TYPE** of *Jungermannia javanica*  $\beta$  *diffusa*, *Jungermannia javanica* and its  $\alpha$  *tenerrima*, and  $\gamma$  *rigida*, **Nees 1830** as *Jungermannia javanica*  $\gamma$  *rigida*,  $\alpha$  *tenerrima* and  $\beta$  *diffusa*, **1831** as *Jungermannia frondescens*, **Gottsche et al. 1844**, **Gottsche 1853** as *Plagiochila frondescens*  $\beta$  *diffusa*, **Sande Lacoste 1856a, 1857** as *Plagiochila frondescens*  $\alpha$  *tenerrima*, **1864** as *Plagiochila frondescens*  $\alpha$  *tenerrima*, **Schiffner 1893ab, Schiffner 1898a** also as *Plagiochila frondescens* var.  $\gamma$  *tenerrima*, **Schiffner 1900a** also as *Plagiochila frondescens*  $\beta$  *diffusa* and  $\alpha$  *tenerrima*, **Stephani 1903, Dugas 1929** also as *Plagiochila frondescens*  $\beta$  *diffusa*, **Verdoorn 1932a, Miller et al. 1983, Geissler & Bischler 1987** as *Jungermannia javanica* and its  $\gamma$  *rigida* and  $\beta$  *diffusa*, **Piippo 1989a, Fulford & Sharp 1990**. WJ: **Sande Lacoste 1857** as *Plagiochila frondescens*  $\gamma$  *rigida*, **1857** as *Plagiochila frondescens*  $\beta$  *diffusa*, **1864** as *Plagiochila frondescens*  $\gamma$  *rigida* and  $\beta$  *diffusa*, **Schiffner 1898a** as *Plagiochila frondescens*  $\gamma$  *rigida* and var.  $\beta$  *diffusa*, **Schiffner 1900b** also as *Plagiochila frondescens* var.  $\beta$  *diffusa*, **Carl 1931, Inoue 1984**.
- \*\*\* *P. fusca* Sande Lac. JAV: **TYPE**, **TYPE** of *Plagiochila subdensispina*, **Sande Lacoste 1854, 1856b, 1857, 1864, Schiffner 1900a, Stephani 1903, 1921** as *Plagiochila subdensispina*, **Dugas 1929, Carl 1931, Geissler & Bischler 1989** also as *Plagiochila subdensispina*, **So 2001a**. WJ: **Schiffner 1898a, 1900b, Verdoorn 1932a, Inoue 1984, So & Grolle 2000c, Gradstein et al. 2010**.
- \* <sup>102</sup>*P. gigantea* Lindenb. var.  $\beta$  *laxior* (Nees) Lindenb. JAV: **SYNTYPE** of *Jungermannia gigantea*  $\beta$  *laxior*, **Nees 1830, 1831** both as *Jungermannia gigantea*  $\beta$  *laxior*, **Geissler & Bischler 1987** as *Jungermannia gigantea*  $\beta$  *laxior*, 1989 as *Jungermannia gigantea*  $\beta$  *laxior*.
- \*\*\* *P. gracilis* Lindenb. et Gottsche JAV: **TYPE**, **Gottsche et al. 1847**, Sande Lacoste 1857, **Schiffner 1898a, 1900a, Stephani 1903**, **Hattori 1968, Miller et al. 1983, Geissler & Bischler 1989**, **Bapna & Kachroo 2000b, So & Grolle 2000c, So 2001a**. WJ: **Inoue 1984**.
- \*\*\* *P. gymnoclada* Sande Lac. JAV: **TYPE**, **Sande Lacoste 1855a, 1857, Schiffner Schiffner 1900a** also as *Plagiochila gymnoclada* var. *longifolia*, **Stephani 1903, Dugas 1929** as *Plagiochila gymnoclada* var. *gymnoclada*, **Carl 1931, Geissler & Bischler 1989** also as *Plagiochila hasskarliana*, **Piippo 1989a, So & Grolle 2000b, 2000c, So 2001a**. WJ: **TYPE** of *Plagiochila gymnoclada* var. *longifolia*, **Sande Lacoste 1864, Schiffner 1898a, 1900b** also as *Plagiochila gymnoclada* var. *longifolia*, **Inoue 1984, Geissler & Bischler 1989** as *Plagiochila gymnoclada* var. *longifolia*.
- \*\*\* *P. hampeana* Gottsche JAV: **TYPE**, **TYPE** of *Plagiochila monticola* f. *intermedia*, **Gottsche 1858, Schiffner 1900a** as *Plagiochila abietina* var. *hampeana*, *Plagiochila gedeana* and *Plagiochila monticola*, **Stephani 1903** as *Plagiochila gedeana*, *Plagiochila monticola*, **Dugas 1929** as *Plagiochila gedeana* and *Plagiochila monticola*, **Carl 1931** as *Plagiochila gedeana* and *Plagiochila monticola*, **Verdoorn 1932a** as *Plagiochila monticola*, **Inoue 1970, Miller et al. 1983, Geissler & Bischler 1989** also as *Plagiochila abietina* var. *hampeana*, *Plagiochila monticola* f. *intermedia* and *Plagiochila monticola*, **Piippo 1989a, So & Grolle 1999**. CJ: **TYPE** of *Plagiochila abietina*  $\beta$  *gracilentata*, **Schiffner 1898a** as *Plagiochila abietina*  $\beta$  *gracilentata*, **Geissler & Bischler 1989** as *Plagiochila abietina*  $\beta$  *gracilentata*. WJ: **TYPE** of *Plagiochila gedeana*, **LECTOTYPE** of *Plagiochila monticola*, **Sande Lacoste 1857, 1864** both as *Plagiochila abietina*  $\beta$  *gracilentata*, **Schiffner 1900b** as *Plagiochila gedeana* and *Plagiochila monticola*, **Meijer 1954b** as *Plagiochila monticola*, **Grolle 1968a, Inoue 1984** also as *Plagiochila gedeana*, **Geissler & Bischler 1989** as *Plagiochila gedeana*, **So & Grolle 2000c**.
- \* <sup>103</sup>*P. integrilobula* Schiffn. JAV: **Schiffner 1900a** also as *Plagiochila integrilobula* var. *integrilobula*, **Stephani 1903, Dugas 1929**. WJ: **TYPE**, **Schiffner 1900b, Inoue 1984, Geissler & Bischler 1989, So & Grolle 2000c**.
- \*\*\* *P. javanica* (Sw.) Nees et Mont. JAV: **TYPE** of *Jungermannia javanica* and *Plagiochila geniculata*, **Swartz 1781** as *Jungermannia javanica*, **Reinwardt et al. 1824a** as *Jungermannia javanica*, **Nees 1831** as *Jungermannia javanica*, **Gottsche et al. 1844, Sande Lacoste 1857** also as *Plagiochila calva*, **Schiffner 1900a** as *Plagiochila calva*, *Plagiochila infirma* and its var. *robusta*, *Plagiochila opaca*, *Plagiochila pinnatiramosa*, *Plagiochila revolutifolia*, *Plagiochila subtruncata* var. *brevifolia* and *Plagiochila tjibodensis*, **Stephani 1903** also as *Plagiochila opaca*, *Plagiochila revolutifolia*, *Plagiochila subtruncata*, *Plagiochila calva*, *Plagiochila infirma*, *Plagiochila pinnatiramosa* and as *Plagiochila tjibodensis*, **Dugas 1929** also as *Plagiochila infirma*, *Plagiochila opaca*, *Plagiochila revolutifolia* and *Plagiochila subtruncata*, **Carl 1931** as *Plagiochila infirma* and its var. *robusta* and *Plagiochila revolutifolia*, **Inoue 1969, Geissler & Bischler 1987** as *Jungermannia javanica*, **Geissler & Bischler 1989** also as *Plagiochila calva*, *Plagiochila infirma* and *Plagiochila subtruncata*, **Piippo 1989a** also as *Plagiochila tjibodensis*, **So & Zhu 1997** as *Plagiochila tjibodensis*, **Grolle & So 1999d, Bapna & Kachroo 2000b**. CJ: **Sande Lacoste 1864** as *Plagiochila infirma*, **Schiffner 1898a** as *Plagiochila infirma*, **Inoue 1984** as *Plagiochila infirma*, **So & Grolle 2000c**. WJ: **TYPE** of *Jungermannia calva*, *Plagiochila infirma* var. *robusta*, *Plagiochila opaca*, *Plagiochila pinnatiramosa*, *Plagiochila revolutifolia*, *Plagiochila subtruncata* var. *longifolia*, *Plagiochila subtruncata* var. *brevifolia* and *Plagiochila tjibodensis*, **LECTOTYPE** of *Plagiochila subtruncata*, **SYNTYPE** of *Plagiochila subtruncata* var. *firmior*, **Nees 1830** as *Jungermannia calva*,

101. *Plagiochila conjugata* is now *Plagiochilion conjugatum*, but we are not sure whether these varieties also belong to the species and are worth recognizing.

102. *Plagiochila gigantea* is a taxon from New Zealand and it is unclear where to refer this variety.

103. *Plagiochila integrilobula* is doubtfully distinct from *P. blepharophora*.

- Gottsche et al. 1844** as *Plagiochila calva*, **Schiffner 1898a** also as *Plagiochila calva*, **1900b** as *Plagiochila calva*, as *Plagiochila infirma* and its var. *robusta*, *Plagiochila opaca*, *Plagiochila pinnatiramosa*, *Plagiochila revolutifolia*, *Plagiochila subtruncata*, *Plagiochila subtruncata* var. *brevifolia*, *Plagiochila subtruncata* var. *firmior*, *Plagiochila subtruncata* var. *longifolia* and *Plagiochila tjibodensis*, **1900c** as *Plagiochila revolutifolia*, **Carl 1931** as *Plagiochila pinnatiramosa* and *Plagiochila subtruncata*, **Inoue 1984** also as *Plagiochila infirma* and *Plagiochila tjibodensis*, **Geissler & Bischler 1987** as *Jungermannia calva*, **1989** as *Plagiochila infirma* var. *robusta*, *Plagiochila opaca*, *Plagiochila pinnatiramosa*, *Plagiochila revolutifolia*, *Plagiochila subtruncata* var. *longifolia*, var. *brevifolia* and var. *firmior* and *Plagiochila tjibodensis*, **Grolle & So 1999a**, **So & Grolle 2000c**.
- \*\*\* *P. junghuhniana* Sande Lac. JAV: **TYPE, TYPE** of *Plagiochila junghuhniana* f. *minor*, **Sande Lacoste 1854, 1855a, 1856b, 1857, Schiffner 1900a** also as *Plagiochila massalongoana*, **Stephani 1903** also as *Plagiochila massalongoana*, **Dugas 1929** also as *Plagiochila massalongoana*, **Carl 1931** as *Plagiochila junghuhniana* f. *minor* and *Plagiochila massalongoana*, Miller et al. 1983 as *Plagiochila massalongoana*, **Geissler & Bischler 1989** also as *Plagiochila junghuhniana* f. *minor*, Piippo & Tan 1992, **So & Grolle 1999**, Bapna & Kachroo 2000b as *Plagiochila massalongoana*, **So 2001a**. BA: **Van Leeuwen 1936** as *Plagiochila massalongoana*. EJ: **Inoue 1984**. WJ: **LECTOTYPE** of *Plagiochila*, **Sande Lacoste 1864, Schiffner 1898a, Schiffner 1900b** also as *Plagiochila massalongoana*, **1900c, Carl 1931, Inoue 1984** also as *Plagiochila massalongoana*, **Geissler & Bischler 1989** as *Plagiochila massalongoana*, **Grolle & So 1999d** as *Plagiochila massalongoana*, **So & Grolle 2000c, Gradstein et al. 2010**.
- \* <sup>104</sup>*P. karstenii* Steph. JAV: **Stephani 1904** as *Plagiochila patentispina*, **So & Grolle 2000c**. WJ: **TYPE** of *Plagiochila patentispina*, **Geissler & Bischler 1989** as *Plagiochila patentispina*.
- \*\* *P. korthalsiana* Molk. ex Sande Lac. JAV: **TYPE, TYPE** of *Plagiochila accedens*, *Plagiochila beccariana* f. *simplicior*, *Plagiochila dichotoma* var.  $\beta$ , *Plagiochila korthalsiana*  $\beta$  *robustior*, **Sande Lacoste 1854** also as *Plagiochila korthalsiana*  $\beta$  *robustior*, **1855a** as *Plagiochila korthalsiana*  $\beta$  *robustior*, **1856b** also as *Plagiochila korthalsiana*  $\beta$  *robustior*, **1857** also as *Plagiochila korthalsiana*  $\beta$  *robustior*, **Schiffner 1898a** as *Plagiochila korthalsiana* var.  $\beta$  *robustior*, **1900a** also as *Plagiochila beccariana* and its var. *laxa*, **Stephani 1903** also as *Plagiochila accedens* and *Plagiochila beccariana*, **Dugas 1929** also as *Plagiochila beccariana* var. *laxa*, **Carl 1931** as *Plagiochila beccariana* and its f. *simplicior* and f. *laxa*, Verdoorn 1932a as *Plagiochila beccariana*, **Geissler & Bischler 1989** also as *Plagiochila accedens*, **Geissler & Bischler 1989** as *Plagiochila beccariana* f. *simplicior* and *Plagiochila korthalsiana*  $\beta$  *robustior*, Bapna & Kachroo 2000b also as *Plagiochila accedens*. CJ: **Inoue 1984**. WJ: **TYPE** of *Plagiochila beccariana* and its var. *laxa*, **Sande Lacoste 1864, Schiffner 1898a, 1900b** as *Plagiochila beccariana* and its var. *laxa*, Meijer 1954b as *Plagiochila beccariana* var. *laxa*, **Inoue 1984, Geissler & Bischler 1989** as *Plagiochila beccariana* and its var. *laxa*, **So & Grolle 2000c**.
- \* <sup>105</sup>*P. kuhliana* Sande Lac. JAV: **TYPE** of *Plagiochila diaphana* and *Plagiochila kuhliana* f. *typica*, **Schiffner 1900a** also as *Plagiochila kuhliana* var. *miqueliana*, **Stephani 1903, 1918** as *Plagiochila diaphana*, **Dugas 1929, Carl 1931, Geissler & Bischler 1989** as *Plagiochila diaphana* and *Plagiochila kuhliana* f. *typica*. WJ: **LECTOTYPE, TYPE** of *Plagiochila kuhliana* var. *miqueliana*, **Sande Lacoste 1864, Schiffner 1898a, 1900b** as *Plagiochila kuhliana* f. *typica* and var. *miqueliana*, **1900c, Inoue 1984, Geissler & Bischler 1989** also as *Plagiochila kuhliana* var. *miqueliana*, **So & Grolle 2000c**.
- \*\* *P. kurzii* Steph. JAV: Hattori 1968, Grolle & So 1998, 1999b, Bapna & Kachroo 2000b, So 2001a. WJ: **Carl 1931**.
- \*\* *P. manillana* Mont. et Gottsche JAV: **Piippo 1989a**.
- \*\*\* *P. nobilis* Gottsche JAV: **TYPE, Gottsche 1858, Schiffner 1900a, Stephani 1903, Dugas 1929, Carl 1931, Verdoorn 1932a, Geissler & Bischler 1989, So & Grolle 2000c**. WJ: **Sande Lacoste 1864, Schiffner 1898a, 1900b, 1900c, Inoue 1984**.
- \*\*\* *P. obtusa* Lindenb. JAV: **TYPE, LECTOTYPE** of *Plagiochila hispida*, **TYPE** of *Plagiochila villosa*, **Lindenberg 1840, Gottsche et al. 1844, Meissner 1848, Sande Lacoste 1857, Schiffner 1898a, 1900a, Stephani 1903** also as *Plagiochila hispida*, **Dugas 1929, Carl 1931, Geissler & Bischler 1989** also as *Plagiochila hispida* and *Plagiochila villosa*, **Grolle & So 1999d, So 2001a**. WJ: **Schiffner 1900b, 1900c** as *Plagiochila obtusa* var. *brevifolia*, **Carl 1931** as *Plagiochila villosa*, **Inoue 1984, Grolle & So 1999b, So & Grolle 2000c**.
- \*\*\* *P. parvifolia* Lindenb. JAV: **TYPE** of *Plagiochila megamendongensis*, **Schiffner 1900a** as *Plagiochila treubii* and its var. *megamendongensis*, **Stephani 1903** as *Plagiochila treubii*, **Dugas 1929** as *Plagiochila treubii*, **Inoue 1972** as *Plagiochila treubii*, Schuster 1984 as *Plagiochila treubii*, Piippo 1987, **Geissler & Bischler 1989** as *Plagiochila megamendongensis*, **Grolle & So 1999a, So 2001a**. WJ: **TYPE** of *Plagiochila treubii* and its var. *megamendongensis*, **Schiffner 1900b** as *Plagiochila treubii* and its var. *megamendongensis*, **Schiffner 1900c** as *Plagiochila treubii*, **Inoue 1984, Geissler & Bischler 1989** as *Plagiochila treubii* and its var. *megamendongensis*, **So & Grolle 2000c**.
- ? *P. parvistipula* Schiffn. var. *multiciliata* Schiffn. nom. illeg. JAV: **Schiffner 1900a, Geissler & Bischler 1989**.
- \*\* *P. peculiaris* Schiffn. JAV: **Schiffner 1900a**, Inoue 1972, So 2001a.
- ? <sup>106</sup>*P. pinnatiramosa* Schiffn. var. *remota* Herzog ex Carl nom. inval. JAV: **Carl 1931, Geissler & Bischler 1989**.
- \*\* *P. propinqua* Sande Lac. JAV: **Schiffner 1900a** also as *Plagiochila levieri* and its var. *longissima* and var. *brevidens*, **Stephani 1903** also as *Plagiochila levieri*, **Dugas 1929** as *Plagiochila levieri* var. *brevidens*, var. *levieri* and var. *longissima*, *Plagiochila propinqua* var. *propinqua*, **Carl 1931**, Miller et al. 1983 as *Plagiochila levieri*, Piippo 1989a, Piippo & Tan 1992, **Grolle & So 1999d**, Bapna & Kachroo 2000b as *Plagiochila levieri*, **So & Grolle 2000c, So 2000**. CJ: **Verdoorn 1932a, Inoue 1984**. WJ: **TYPE, TYPE** of *Plagiochila levieri* and its var. *brevidens* and var. *longissima*, **Sande**

104. *Plagiochila karstenii* is probably a synonym of *P. bantamensis* (So & Grolle 2000c). No specimen was located by Inoue (1984).

105. *Plagiochila kuhliana* is very similar to *P. sciophila*.

106. *Plagiochila pinnatiramosa* is a synonym of *P. javanica*, but we are not sure whether these varieties also belong to the species and are worth recognizing.



- Lacoste 1855a, 1857, 1864, Schiffner 1898a, 1900b** also as *Plagiochila levieri* and its var. *brevidens* and var. *longissima*, **1900c** as *Plagiochila levieri*, **Inoue 1984, Geissler & Bischler 1989** also as *Plagiochila levieri* and its var. *brevidens* and var. *longissima*, **Grolle & So 1999c**.
- \*\*\* *P. renitens* (Nees) Lindenb. JAV: **TYPE** of *Jungermannia renitens* and *Plagiochila erronea*, **Nees 1830** as *Jungermannia renitens*, **Gottsche et al. 1844, Sande Lacoste 1856a, 1857, Schiffner 1898a, 1900a** also as *Plagiochila renitens* f. *typica*, var. *brevidentata*, var. *spectabilis*, var. *aberrans*, f. *intermedia* and var. *suborbicularis*, **Stephani 1903, 1918** as *Plagiochila erronea*, **Dugas 1929** also as *Plagiochila renitens* var. *aberrans*, **Carl 1931**, Verdoorn 1932a, Miller et al. 1983 also as *Jungermannia renitens*, Inoue 1984 as *Plagiochila dolichocytis*, **Geissler & Bischler 1987** as *Jungermannia renitens*, **1989** as *Plagiochila erronea*, Piippo 1989a, **So & Grolle 1999, 2000c**. WJ: **LECTOTYPE** of *Plagiochila renitens* var. *aberrans* and var. *brevidentata*, **TYPE** of *Plagiochila renitens* var. *suborbicularis*, f. *typica*, f. *intermedia* and var. *spectabilis*, **Schiffner 1900a** as *Plagiochila renitens* f. *typica* and f. *intermedia*, **1900b** as *Plagiochila renitens* f. *intermedia*, var. *brevidentata*, f. *typica*, var. *spectabilis*, var. *suborbicularis* and var. *aberrans*, **1900c, 1955**, Meijer 1954b, **Inoue 1984, Geissler & Bischler 1989** as *Plagiochila renitens* f. *intermedia*, f. *typica*, var. *suborbicularis*, var. *spectabilis*, var. *brevidentata* and var. *aberrans*.
- \*\*\* *P. salacensis* Gottsche JAV: **Schiffner 1900a** as *Plagiochila jackii* and its var. *salacensis*, var. *virens*, var. *longifolia* and var. *brevidentata*, **Stephani 1903** as *Plagiochila jackii*, **Dugas 1929** as *Plagiochila jackii* var. *jackii*, var. *virens* and var. *salacensis*, **Carl 1931** as *Plagiochila jackii* and its var. *virens*, Piippo & Tan 1992, **So 2001a**. WJ: **TYPE, TYPE** of *Plagiochila jackii* and its f. *tenuior* and var. *longifolia*, **LECTOTYPE** of *Plagiochila jackii* var. *virens* and var. *brevidentata*, **Gottsche 1853, Sande Lacoste 1857, Schiffner 1898a, 1900b** as *Plagiochila jackii* and its var. *longifolia*, var. *virens*, f. *tenuior* and var. *brevidentata*, **Inoue 1984, Geissler & Bischler 1989** also as *Plagiochila jackii* and its var. *brevidentata*, f. *tenuior*, var. *longifolia* and var. *virens*, **Grolle & So 1999a, 1999d, So & Grolle 2000c, Gradstein et al. 2010**.
- ? <sup>107</sup>*P. sancta* Gottsche var. *speciosa* Herzog ex Carl nom. inval. JAV: **TYPE, Carl 1931, Geissler & Bischler 1989**.
- \*\*\* *P. sandei* Dozy ex Sande Lac. JAV: **TYPE** of *Plagiochila altecristata*, **Sande Lacoste 1857, Schiffner 1900a**, Stephani 1903, 1917b as *Plagiochila altecristata*, **Dugas 1929, Geissler & Bischler 1989** as *Plagiochila altecristata*, Müller & Schäfer-Verwimp 1999, **So & Grolle 1999**. WJ: **TYPE, Sande Lacoste 1855a, 1864, Schiffner 1898a, 1900b, Carl 1931, Renner 1932, Inoue 1984, Geissler & Bischler 1989, So & Grolle 2000c**.
- \*\*\* *P. sciophila* Nees ex Lindenb. JAV: **TYPE** of *Plagiochila acanthophylla* and *Plagiochila sockawana*, **SYNTYPE** of *Plagiochila ferriena*, **Sande Lacoste 1857, 1864** as *Plagiochila acanthophylla*, Gottsche 1858 as *Plagiochila acanthophylla*, **Schiffner 1900a** as *Plagiochila acanthophylla*, *Plagiochila ciliata* var. *aberrans* and *Plagiochila ciliata*, **Stephani 1903** as *Plagiochila ferriena*, *Plagiochila sockawana* and *Plagiochila acanthophylla*, **Dugas 1929** as *Plagiochila acanthophylla*, **Carl 1931** as *Plagiochila acanthophylla*, Verdoorn 1932a as *Plagiochila sockawana*, Schuster 1980 as *Plagiochila acanthophylla* subsp. *acanthophylla*, Miller et al. 1983 as *Plagiochila acanthophylla* and *Plagiochila ciliata*, **Geissler & Bischler 1989** as *Plagiochila acanthophylla* and *Plagiochila sockawana*, Piippo 1989a, **So & Grolle 1999** also as *Plagiochila sciophila* subsp. *sciophila*, Bapna & Kachroo 2000b as *Plagiochila acanthophylla*, **So 2001a**. WJ: **TYPE** of *Plagiochila ciliata* and its var. *aberrans*, **Gottsche 1857** as *Plagiochila ciliata*, **Schiffner 1898a** as *Plagiochila acanthophylla* and *Plagiochila ciliata*, **1900b** as *Plagiochila acanthophylla*, *Plagiochila ciliata* and its var. *aberrans*, **1900c** as *Plagiochila acanthophylla*, **Stephani 1903** as *Plagiochila ciliata*, **Carl 1931** as *Plagiochila sockawana*, **Inoue 1962** as *Plagiochila acanthophylla* subsp. *acanthophylla*, **Inoue 1984, Geissler & Bischler 1989** as *Plagiochila ciliata* and its var. *aberrans*, **So & Grolle 2000c, Gradstein et al. 2010**.
- \*\* *P. semidecurrans* (Lehm. et Lindenb.) Lindenb. JAV: **So & Grolle 1999, So 2001a**. WJ: **TYPE** of *Plagiochila spinosissima*, **Stephani 1921** as *Plagiochila spinosissima*, **Geissler & Bischler 1989** as *Plagiochila spinosissima*, **So & Grolle 2000c**.  
\*\* — var. *semidecurrans* JAV: **Carl 1931** as *Plagiochila nidulans*.
- \*\*\* *P. singularis* Schiffn. JAV: **TYPE** of *Jungermannia asplenioides* β\*\* *tenera*, **Nees 1830** as *Jungermannia asplenioides* β\*\* *tenera*, **Sande Lacoste 1857** as *Plagiochila trapezoidea* β *tenera*, Schiffner 1898a as *Plagiochila trapezoidea* var. β *tenera*, **1900a** also as *Plagiochila stenophylla*, **Stephani 1903** also as *Plagiochila stenophylla*, **Dugas 1929, Carl 1931, Geissler & Bischler 1987** as *Jungermannia asplenioides* β\*\* *tenera*, **1989**, Piippo 1989a, **So 2001a, 2001b**. WJ: **TYPE, LECTOTYPE** of *Plagiochila stenophylla*, **Schiffner 1900b** also as *Plagiochila stenophylla*, **Inoue 1984, Geissler & Bischler 1989** as *Plagiochila stenophylla*, **So & Grolle 2000c**.
- \*\* *P. spathulifolia* Mitt. JAV: **TYPE, Sande Lacoste 1864, Schiffner 1898a, 1900a** as *Plagiochila spathulifolia*, **Stephani 1903, Dugas 1929, Carl 1931**, Verdoorn 1932a, Inoue 1972, Miller et al. 1983, **Geissler & Bischler 1989, So & Grolle 2000c**. WJ: **Schiffner 1900b, 1900c, Inoue 1984, Grolle & So 1999c**.
- \* <sup>108</sup>*P. stephanii* Schiffn. JAV: **Schiffner 1900a, Stephani 1904**. WJ: **TYPE, Schiffner 1900b, Inoue 1984, Geissler & Bischler 1989, So & Grolle 2000c**.
- \*\*\* *P. teysmannii* Sande Lac. JAV: **TYPE, TYPE** of *Plagiochila semialata*, **LECTOTYPE** of *Plagiochila truncatula*, **Sande Lacoste 1855a, 1857** both also as *Plagiochila semialata*, **1864, Schiffner 1898a, 1900a** also as *Plagiochila gottschei* and its var. *brachyphylla*, *Plagiochila oblongata* and *Plagiochila semialata*, **Stephani 1903** also as *Plagiochila oblongata*, *Plagiochila gottschei* all as *Plagiochila semialata*, **Dugas 1929** as *Plagiochila gottschei* var. *brachyphylla* and var. *gottschei* and *Plagiochila semialata*, **Carl 1931**, Verdoorn 1932a, **Geissler & Bischler 1989** also as *Plagiochila gottschei* and *Plagiochila semialata*, Piippo 1989a, **So & Grolle 1999**. WJ: **TYPE** of *Plagiochila fusciorufa*, *Plagiochila gottschei*

107. *Plagiochila sancta* is a synonym of *P. fastigiata*, but we are not sure whether these varieties also belong to the species and are worth recognizing.

108. *Plagiochila stephanii* is doubtfully distinct from *P. blepharophora*.



and *Plagiochila oblongata*, **LECTOTYPE** of *Plagiochila gottschei* var. *brachyphylla*, **Sande Lacoste 1864** as *Plagiochila oblongata*, **Sande Lacoste 1864** as *Plagiochila semialata*, **Schiffner 1898a** as *Plagiochila oblongata* and *Plagiochila semialata*, **1900b** also as *Plagiochila gottschei*, *Plagiochila gottschei* var. *brachyphylla* and *Plagiochila semialata*, **Stephani 1918** as *Plagiochila fusciorufa*, **Carl 1931** as *Plagiochila gottschei*, Meijer 1954a as *Plagiochila gottschei*, **Inoue 1984**, **Geissler & Bischler 1989** as *Plagiochila fusciorufa*, *Plagiochila gottschei* var. *brachyphylla* and *Plagiochila oblongata*, **So & Grolle 2000c**.

\*\*\* *P. trapezoidea* Lindenb. JAV: **TYPE** of *Jungermannia asplenioides*  $\beta$  *australis* and *Plagiochila winteri*, **Reinwardt et al. 1824a** as *Jungermannia simplex*, **Nees 1830** as *Jungermannia asplenioides*  $\beta$  *australis*, **Sande Lacoste 1857** also as *Plagiochila heteromalla*, **1864**, **Schiffner 1898a**, **1900a** also as *Plagiochila intercedens*, **Stephani 1903** also as *Plagiochila intercedens*, **1922** as *Plagiochila winteri*, **Dugas 1929** as *Plagiochila trapezoidea* var. *heteromalla*, **Carl 1931**, Inoue 1986, **Geissler & Bischler 1987** as *Jungermannia asplenioides*  $\beta$  *australis*, **1989** as *Plagiochila asplenioides*  $\beta$  *australis* and *Plagiochila winteri*, Piippo 1989a, Piippo & Tan 1992, Bapna & Kachroo 2000b, **So & Grolle 2000a**, **So 2000**. CJ: **Sande Lacoste 1864** as *Plagiochila homomalla*. WJ: **LECTOTYPE** of *Plagiochila homomalla*, **Gottsche et al. 1844**, **Sande Lacoste 1864** as *Plagiochila homomalla*, **Schiffner 1898a** as *Plagiochila homomalla*, **1900b**, Meijer 1954b, **Inoue 1984**, **Geissler & Bischler 1989** as *Plagiochila homomalla*, **So & Grolle 2000c**.

? —  $\gamma$  *major* Lindenb. nom. illeg. JAV: **Schiffner 1898a**, **1900a**.

\*\* — var. *trapezoidea* JAV: **Dugas 1929**.

\*\* *P. ungarangana* Sande Lac. JAV: **Schiffner 1900a**, **Stephani 1903**, **Dugas 1929**, **So & Grolle 1999**. CJ: **TYPE**, **Sande Lacoste 1857**, **1864**, **Schiffner 1898a**, **Inoue 1984**, **Geissler & Bischler 1989**, **So & Grolle 2000c**. WJ: **Schiffner 1900b**, **Inoue 1984**.

### *Plagiochilion*

\*\*\* *P. braunianum* (Nees) S.Hatt. JAV: **TYPE** of *Jungermannia brauniana*, **Nees 1830** as *Jungermannia brauniana*, **Gottsche et al. 1844** as *Plagiochila brauniana*, **Sande Lacoste 1857**, **1864** both as *Plagiochila brauniana*, **Schiffner 1898a**, **1900a** both as *Plagiochila brauniana*, **Stephani 1904** as *Plagiochila brauniana*, **Carl 1931** as *Plagiochila brauniana*, **Miller et al. 1983** also as *Jungermannia brauniana*, *Noguchia brauniana* and *Plagiochila brauniana*, Inoue 1984, **Geissler & Bischler 1987** as *Jungermannia brauniana*, 1989 also as *Noguchia brauniana*, Piippo 1989a, Bapna & Kachroo 2000b. WJ: **Schiffner 1900b** as *Plagiochila brauniana*, Meijer 1954a as *Plagiochila brauniana*, **Inoue 1964**, **Gradstein et al. 2010**.

\*\*\* *P. oppositum* (Reinw., Blume et Nees) S.Hatt. JAV: **TYPE** of *Jungermannia opposita* and *Plagiochila opposita*  $\gamma$  *filiformis*, **Reinwardt et al. 1824a** as *Jungermannia opposita*, **Nees 1830** as *Jungermannia conjugata*  $\alpha$  *opposita*, **Lindenberg 1843** as *Plagiochila opposita*  $\gamma$  *filiformis*, **Gottsche et al. 1844** as *Plagiochila opposita*, **Meissner 1848** as *Plagiochila opposita*, **Gottsche 1853** as *Plagiochila opposita*, **Sande Lacoste 1856a** as *Plagiochila opposita*, **1857** as *Plagiochila opposita* and its  $\gamma$  *filiformis*, **Schiffner 1893ab** as *Plagiochila opposita*, **1898a** as *Plagiochila opposita* var.  $\gamma$  *filiformis*, **1900a** as *Plagiochila opposita*, **Stephani 1904** as *Plagiochila opposita*, **Dugas 1929** as *Plagiochila opposita*, **Carl 1931** as *Plagiochila opposita*, **Verdoorn 1932a** as *Plagiochila opposita*, Inoue 1958b as *Noguchia opposita*, **Hattori 1968**, **Miller et al. 1983** also as *Jungermannia opposita* and *Plagiochila opposita*, **Geissler & Bischler 1987** as *Jungermannia conjugata*  $\alpha$  *opposita* and *Jungermannia opposita*, **1989** also as *Noguchia opposita* and *Plagiochila opposita*  $\gamma$  *filiformis*, Piippo 1989a, Bapna & Kachroo 2000b, **So & Grolle 2000c**, **Zheng et al. 2005**. WJ: **Sande Lacoste 1864** as *Plagiochila opposita*, **Schiffner 1898a**, **1900b**, **1900c** all as *Plagiochila opposita*, Meijer 1954a as *Plagiochila opposita*, **Inoue 1964**, **Gradstein et al. 2010**.

\*\* *P. theriotanum* (Steph.) Inoue JAV: **Miller et al. 1983**, Piippo 1989a, Bapna & Kachroo 2000b. WJ: **Inoue 1964**.

### *Pleurozia*

\*\*\* *P. gigantea* (F.Weber) Lindb. JAV: **Reinwardt et al. 1824b** as *Jungermannia sphagnoides*, **Nees 1830** as *Jungermannia sphagnoides*, **Gottsche et al. 1845a** as *Physotium sphagnoides*, **Sande Lacoste 1856a**, **1857** both as *Physotium sphagnoides*, **Pócs et al. 1967**, **Bizot & Pócs 1974**, **Miller et al. 1983** also as *Physotium sphagnoides* and *Pleurozia sphagnoides*, **Geissler & Bischler 1989** as *Physotium sphagnoides*, **Thiers 1993**. WJ: **Sande Lacoste 1864** as *Physotium sphagnoides*, **Schiffner 1898a**, **Renner 1932**, Meijer 1954a.

### *Plicanthus*

\*\*\* *P. hirtellus* (F.Weber) R.M.Schust. JAV: **TYPE** of *Chandonanthus javanicus*, **Mitten 1886** as *Chandonanthus javanicus*, **Stephani 1909a** as *Chandonanthus hirtellus*, **Sim 1926** as *Chandonanthus hirtellus*, **Arnell 1956** as *Chandonanthus hirtellus* subsp., **Bonner 1963b** as *Chandonanthus hamatus*, **Pócs 1969a** as *Chandonanthus hirtellus*, **Miller et al. 1983** as *Chandonanthus hamatus*, *Chandonanthus hirtellus* and *Chandonanthus javanicus*, **Váňa & Piippo 1989b** as *Chandonanthus hirtellus*, **Váňa 1991b** as *Chandonanthus hirtellus*, **Bapna & Kachroo 2000b** as *Chandonanthus hirtellus*. CJ: **Schiffner 1955** as *Chandonanthus hirtellus*. WJ: **Sande Lacoste 1857**, **1864** both as *Jungermannia hirtella*, **Schiffner 1898a** as *Chandonanthus hirtellus*, **Renner 1932** as *Chandonanthus hirtellus*, Meijer 1954a, 1954b both as *Chandonanthus hirtellus*.

### *Porella*

\*\* *P. acutifolia* (Lehm. et Lindenb.) Trevis. JAV: **TYPE** of *Madotheca stracheyana* and *Porella acutifolia* var. *subligulifera*, **Sande Lacoste 1857** as *Madotheca acutifolia*, **Stephani 1910** as *Madotheca acutifolia* and *Madotheca stracheyana*, **Bonner 1963a** as *Bellincinia acutifolia*, **Hattori 1967** as *Porella stracheyana*, **1970** as *Porella acutifolia* var. *subligulifera*, **1975a**, **Miller et al. 1983**, Piippo 1984a, **Geissler & Bischler 1985** as *Madotheca stracheyana*, **1989** as *Porella acutifolia* var. *stracheyana* and var. *subligulifera*, *Porella plumosa* var. *stracheyana* and *Porella stracheyana*, **Bapna & Kachroo 2000b**. WJ: **Sande Lacoste 1864** as *Madotheca acutifolia*, **Schiffner 1898a**, **1900c** both as *Madotheca acutifolia*, **Pócs 1968b**.

\*\* — var. *acutifolia* JAV: **Hattori 1969** as *Porella acutifolia* var. *johannis-winkleri*, Hattori 1978. WJ: **Hattori 1969** as *Porella acutifolia* var. *elbertii*.

\*\* *P. javanica* (Gottsche ex Steph.) Inoue JAV: **TYPE** of *Madotheca javanica*, **Stephani 1910** as *Madotheca javanica*, **Hattori 1971b**, 1978, Miller *et al.* 1983, **Geissler & Bischler 1985** as *Madotheca javanica*, 1989.

### **Ptychanthus**

? <sup>109</sup>*P. javanicus* Nees var. *β brevifolius* Gottsche WJ: **TYPE**, **Gottsche 1857**, **Schiffner 1898a**, **Geissler & Bischler 1989**.

\*\*\* *P. striatus* (Lehm. et Lindenb.) Nees JAV: **TYPE** of *Ptychanthus grossidens*, Stephani 1912a as *Ptychanthus kurzii* and *Ptychanthus moluccensis*, **1924** as *Ptychanthus grossidens*, Verdoorn 1933b, 1934a, Mizutani 1977, 1978a, Geissler & Bischler 1987 as *Lejeunea javanica*, **1989** as *Ptychanthus grossidens*, *Ptycholejeunea intermedia* and *Ptycholejeunea javanica*, **Thiers & Gradstein 1989**, Bapna & Kachroo 2000b. EJ: **Verdoorn 1933a**. WJ: **TYPE** of *Ptychanthus kurzii*, **Verdoorn 1933a**, **Mizutani 1976a**, **Thiers 1985**, **Geissler & Bischler 1989** as *Ptychanthus kurzii*, **Gradstein *et al.* 2010**, **Haerida *et al.* 2010**.

\*\* — var. *intermedius* (Gottsche) Verd. JAV: Stephani 1912a as *Ptychanthus intermedius*, Verdoorn 1933b as *Ptychanthus intermedius*, Geissler & Bischler 1987 as *Lejeunea javanica* var. *intermedia*, 1989 as *Ptycholejeunea javanica* var. *intermedia*. WJ: **TYPE** of *Ptychanthus intermedius*, **Gottsche 1853** as *Ptychanthus intermedius*, **Sande Lacoste 1857**, **1864** both as *Ptychanthus intermedius*, **Schiffner 1898a** as *Ptychanthus intermedius*, **Verdoorn 1933** as *Ptychanthus intermedius*, **Geissler & Bischler 1989** as *Ptychanthus intermedius*.

\*\* — var. *striatus* JAV: **TYPE** of *Ptychanthus javanicus*, **Gottsche *et al.* 1845a** as *Ptychanthus javanicus*, Sande Lacoste 1857 as *Ptychanthus javanicus*, **Stephani 1890a**, 1912a both as *Ptychanthus javanicus*, Miller *et al.* 1983 also as *Ptychanthus javanicus*, **Geissler & Bischler 1989** as *Ptychanthus javanicus*. WJ: **Sande Lacoste 1864** as *Ptychanthus javanicus*, **Schiffner 1894**, **1898a**, **1900c** all as *Ptychanthus javanicus*.

### **Pycnolejeunea**

\*\*\* *P. contigua* (Nees) Grolle JAV: **SYNTYPE** of *Pycnolejeunea bancana*, **Stephani 1896** as *Pycnolejeunea bancana*, **Schiffner 1898a** as *Pycnolejeunea bancana*, **Geissler & Bischler 1989** as *Pycnolejeunea bancana*.

\* <sup>110</sup>*P. grossiloba* Steph. WJ: **Hoffman 1935**.

? <sup>111</sup>*P. imbricata* (Nees) Schiffn. var. *junghuhniana* G.Hoffm. *nom. inval.* EJ: **Hoffman 1935**, **Geissler & Bischler 1989**.

? <sup>112</sup>*P. meyeniana* (Nees, Lindenb. et Gottsche) Steph. var. *ligulata* Hoffm. *nom. inval.* JAV: Verdoorn 1938. CJ: **Hoffman 1935**. WJ: **Hoffman 1935**, **Geissler & Bischler 1989**.

### **Radula**

\* <sup>113</sup>*R. acuminata* Steph. JAV: **SYNTYPE**, **Stephani 1910**, Tixier 1962, Castle 1969, Yamada & Piippo 1989a, **Geissler & Bischler 1990**, Bapna & Kachroo 2000b, Zhu & So 2001. WJ: **Castle 1939**, **Yamada 1979**.

\*\*\* *R. amentulosa* Mitt. JAV: Stephani 1910, Yamada 1979, 1985, Miller *et al.* 1983, Yamada & Piippo 1989a.

\*\* *R. anceps* Sande Lac. JAV: **TYPE**, **Sande Lacoste 1854**, **1856b**, Stephani 1910, Castle 1969, **Yamada 1979**, Miller *et al.* 1983, **Yamada & Piippo 1989a**, **Geissler & Bischler 1990**, Bapna & Kachroo 2000b, Piippo *et al.* 2002. WJ: **Sande Lacoste 1855a**, **1857**, **1864**, **Schiffner 1898a**, **Castle 1961**.

\*\*\* *R. campanigera* Mont. JAV: **TYPE**, **Montagne 1844**, Gottsche *et al.* 1847, **Sande Lacoste 1857**, Stephani 1910, Miller *et al.* 1983, **Geissler & Bischler 1990** also as *Stephanina campanigera*, Bapna & Kachroo 2000b. WJ: **Sande Lacoste 1864**, **Schiffner 1898a**, **Castle 1937**.

\*\*\* — subsp. *campanigera* WJ: **Yamada 1979**.

\*\*\* *R. cavifolia* Hampe ex Gottsche, Lindenb. et Nees JAV: **TYPE**, **Gottsche *et al.* 1845a**, **Sande Lacoste 1857**, **1864**, **Schiffner 1898a**, Stephani 1910, **Castle 1963** as *Radula aneurismalis*, Miller *et al.* 1983, **Geissler & Bischler 1990** also as *Stephanina cavifolia*, **Zhu & So 2001**, **So 2005a**, **2005b**. WJ: **Yamada 1979**.

\*\*\* *R. formosa* (C.F.W.Meissn. ex Spreng.) Nees JAV: **Nees 1830** as *Jungermannia formosa*, **Gottsche *et al.* 1845a**, **Sande Lacoste 1857**, Stephani 1910, Grolle 1966d, Castle 1969, Yamada 1979, Miller *et al.* 1983 also as *Jungermannia formosa*, Yamada & Piippo 1989a, **So 2006**. WJ: **Sande Lacoste 1864**, **Schiffner 1898a**, **Castle 1950**.

\*\* *R. gedena* Gottsche ex Steph. JAV: Stephani 1910, Szab 1997, **Zhu & So 2001**, Zhu & Lai 2003. WJ: **TYPE**, **Stephani 1884**, **Schiffner 1898a**, **Castle 1968**, **1969**, **Yamada 1974**, **1979**, **Geissler & Bischler 1990**.

\* <sup>114</sup>*R. hedingeri* K.I.Goebel JAV: **TYPE**, **Geissler & Bischler 1990**. WJ: **Goebel 1888**, **Schiffner 1898a**.

\*\*\* *R. javanica* Gottsche JAV: **SYNTYPE** of *Radula colliculosa*, **Gottsche 1853**, **Sande Lacoste 1857**, **Mitten 1860** as *Radula colliculosa*, **Schiffner 1893b**, Stephani 1910 as *Radula sandei*, **Yamada 1976** as *Radula sandei*, 2002 as *Radula pinmulata*, Miller *et al.* 1983 also as *Radula pinmulata*, **Udar & Kumar 1983** as *Radula sandei*, **Yamada & Piippo 1989a**, **Geissler & Bischler 1990** as *Radula colliculosa* and *Stephanina javanica*, Bapna & Kachroo 2000b, **Renner 2005**. BA:

109. *Ptychanthus javanicus* is a synonym of *P. striatus*, but we are not sure whether these varieties also belong to the species and are worth recognizing.

110. *Pycnolejeunea grossiloba* belongs to *Cheilolejeunea*, but its taxonomic status is unclear (Grolle & Piippo 1984a).

111. *Pycnolejeunea junghuhniana* is a synonym of *Cheilolejeunea trapezia*, but we are not sure whether these varieties also belong to the species and are worth recognizing.

112. *Pycnolejeunea meyeniana* is now *Cheilolejeunea meyeniana*, but we are not sure whether these varieties also belong to the species and are worth recognizing.

113. *Radula acuminata* is very close to *R. tjibodensis*.

114. *Radula hedingeri* is taxonomically doubtful and most likely a synonym of something. It was not treated by Yamada (1979).

- Van Leeuwen 1936**. CJ: **Castle 1969** as *Radula sandei*. WJ: **SYNTYPE**, **TYPE** of *Radula sandei*, **Gottsche et al. 1845a**, **Sande Lacoste 1864**, **Stephani 1884** as *Radula sandei*, **Schiffner 1898a** also as *Radula sandei*, **1900c**, **Castle 1966** as *Radula sandei*, **Yamada 1979** also as *Radula pinnulata*, **Geissler & Bischler 1990** also as *Radula sandei*, **Gradstein et al. 2010**.
- \*\*\* *R. lacerata* Steph. JAV: Grolle 1965a, Castle 1969, Yamada 1979, 1985, Miller *et al.* 1983 as *Radula lacerata* var. *lacerata*, Yamada & Piippo 1989a, **So 2006**. WJ: **Castle 1961**.
- \*\*\* *R. lingulata* Gottsche JAV: Stephani 1910, **Yamada & Piippo 1989a**, Geissler & Bischler 1990 as *Stephanina lingulata*, **So 2006**. WJ: **TYPE**, **Gottsche et al. 1845a**, **Sande Lacoste 1857, 1864**, **Schiffner 1898a**, **Castle 1962, 1969**, **Yamada 1975, 1979**, **Geissler & Bischler 1990**.
- \*\* *R. madagascariensis* Gottsche JAV: **Yamada 1979**, Yamada & Piippo 1989a, Bapna & Kachroo 2000b.
- \* <sup>115</sup>*R. nymannii* Steph. JAV: Grolle 1965a, Castle 1969, Miller *et al.* 1983, Yamada & Piippo 1989a. WJ: **Castle 1939**, **Yamada 1979**.
- \*\*\* *R. protensa* Lindenb. JAV: **TYPE**, **Meissner 1848**, **Gottsche 1853**, **Castle 1939, 1969**, Yamada & Piippo 1989a, **Geissler & Bischler 1990**, Bapna & Kachroo 2000b, **Zhu & So 2001**. EJ: **Sande Lacoste 1857**. WJ: **Schiffner 1898a, 1900c**, **Yamada 1979**.
- \*\* — var. *β erectilobula* Schiffn. JAV: **Schiffner 1898a**, Miller *et al.* 1983. WJ: **TYPE**, **Schiffner 1893ab**, **Geissler & Bischler 1990**.
- \*\* — var. *protensa* JAV: **Schiffner 1893b**, Miller *et al.* 1983.
- \*\*\* *R. retroflexa* Taylor JAV: **TYPE** of *Radula mutata*, Stephani 1910, Kitagawa 1973b as *Radula fauciloba*, Miller *et al.* 1983 as *Radula miqueliana*, *Radula retroflexa* var. *fauciloba* and var. *retroflexa* and *Radula salakensis*, Yamada & Piippo 1989a as *Radula retroflexa* var. *retroflexa* and var. *fauciloba*, **Geissler & Bischler 1990** as *Radula mutata* and *Stephanina miqueliana*, **So 2006**. BA: **Van Leeuwen 1936** also as *Radula miqueliana*, **Castle 1962** as *Radula miqueliana*. WJ: **TYPE** of *Radula miqueliana* and *Radula salakensis*, **Taylor 1846** as *Radula miqueliana*, **Sande Lacoste 1857, 1864** both as *Radula miqueliana*, **Schiffner 1898a, 1900c** both as *Radula miqueliana*, **Stephani 1910** as *Radula salakensis*, **Castle 1962** as *Radula miqueliana* and *Radula mutata*, **1965** as *Radula fauciloba*, **1969** as *Radula miqueliana*, **Yamada 1979** as *Radula retroflexa* var. *fauciloba* and var. *retroflexa*, **Geissler & Bischler 1990** as *Radula miqueliana* and *Radula salakensis*.
- \*\* *R. sumatrana* Steph. WJ: **Yamada 1979**.
- \*\*\* *R. tjibodensis* K.I.Goebel JAV: **Schiffner 1893b**, Stephani 1910, Grolle 1965a, Hattori 1966a, 1975c, Pócs *et al.* 1967, Miller *et al.* 1983, Yamada & Piippo 1989a, Bapna & Kachroo 2000b, **Zhu & So 2001**, **So 2006**. WJ: **TYPE**, **Goebel 1888**, **Schiffner 1898a, 1900c**, **Renner 1932**, **Castle 1939, 1969**, Meijer 1954a, **Yamada 1979**, **Geissler & Bischler 1990**.
- \*\* *R. ventricosa* Steph. JAV: **LECTOTYPE** of *Radula subpallens*, **Stephani 1910** as *Radula subpallens*, Grolle 1968a as *Radula subpallens*, Castle 1969 also as *Radula subpallens*, Miller *et al.* 1983 also as *Radula subpallens*, Yamada & Piippo 1989a, **Geissler & Bischler 1990** as *Radula subpallens*, Bapna & Kachroo 2000b also as *Radula subpallens*, **So 2006**. CJ: **Castle 1959** also as *Radula subpallens*. EJ: **Yamada 1975** as *Radula subpallens*. WJ: **Yamada 1979** also as *Radula subpallens*.

### Reboulia

- \*\*\* <sup>116</sup>*R. hemisphaerica* (L.) Raddi JAV: Stephani 1898, Frye & Clark 1937, Hattori 1971a, Miller *et al.* 1983, Schuster 1992b as *Reboulia hemisphaerica* subsp. *hemisphaerica*, Bapna & Kachroo 2000b, Damsholt 2002. CJ: Meijer 1955.
- \*\* — subsp. *australis* R.M.Schust. JAV: Sande Lacoste 1857 as *Reboulia javanica β angustior*, **Schiffner 1900a** as *Reboulia hemisphaerica* var. *javanica*, Gibbs 1914 as *Reboulia hemisphaerica* var. *javanica*, Verdoorn 1938 as *Reboulia hemisphaerica* var. *javanica*, Bonner 1962 as *Asterella javanica*, Miller *et al.* 1983 as *Reboulia javanica*, **Geissler & Bischler 1990** as *Reboulia hemisphaerica* var. *javanica* and *Reboulia javanica*, Boisselier-Dubayle *et al.* 1998 as *Reboulia javanica*. CJ: **TYPE** of *Reboulia javanica* and *Reboulia javanica β angustior*, **Gottsche et al. 1846** as *Reboulia javanica β angustior* and *Reboulia javanica*, **Schiffner 1898a** as *Reboulia javanica*, **Geissler & Bischler 1990** as *Reboulia javanica β angustior*. WJ: **Sande Lacoste 1857** as *Reboulia javanica*, **Schiffner 1898a** as *Reboulia javanica β angustior*, **1898b** as *Reboulia hemisphaerica* var. *javanica*.

### Rectolejeunea

- \* <sup>117</sup>*R. submersa* Schiffn. CJ: **Schiffner 1955**.

### Riccardia

- \* <sup>118</sup>*R. albo-marginata* (Steph.) Schiffn. JAV: Furuki 1991, 2006. WJ: **Furuki 1995**.
- \*\* *R. canaliculata* (Nees) Kuntze JAV: **TYPE** of *Jungermannia canaliculata*, **Nees 1830** as *Jungermannia canaliculata*, **Gottsche et al. 1846** as *Aneura canaliculata*, **Sande Lacoste 1857** as *Aneura canaliculata*, **Schiffner 1898a, 1900a**, Bonner 1962 as *Aneura canaliculata*, Miller *et al.* 1983 also as *Aneura canaliculata* and *Jungermannia canaliculata*, **Geissler & Bischler 1987** as *Jungermannia canaliculata*, 1990, **Furuki 1995, 2006**. WJ: **Schiffner 1898b, 1900c**, **Stephani 1899** as *Aneura canaliculata*, **Meijer 1959b**.

115. *Radula nymannii* is probably a variety of *R. protensa*.

116. *Reboulia hemisphaerica* has recently been split into a number of subspecies. It is uncertain if subsp. *hemisphaerica* occurs in SE Asia although Schuster (1990) reports it.

117. *Rectolejeunea submersa* is taxonomically doubtful. It does not belong in this neotropical genus and is most likely a synonym of something.

118. *Riccardia albo-marginata* is presumably conspecific with *R. canaliculata* and differs only in being dioicous.

- \*\*\* *R. crassa* (Schwägr.) Carrington et Pearson JAV: **Stephani 1899** as *Aneura scabra* and *Aneura stolonifera*, **Schiffner 1900a** as *Riccardia scabra* and *Riccardia scabra* var. *tjiburrunensis*, Verdoorn 1938 as *Riccardia scabra*, Bonner 1962 as *Aneura scabra*, Miller et al. 1983 also as *Aneura scabra* and *Riccardia stolonifera*, **Brown & Braggins 1989**, Furuki 2006. WJ: **SYNTYPE** of *Riccardia scabra*, **TYPE** of *Riccardia scabra* var. *tjiburrunensis*, **Schiffner 1898b** as *Riccardia scabra* and its var. *tjiburrunensis*, **Meijer 1959b** as *Riccardia scabra*, **Geissler & Bischler 1990** as *Riccardia scabra* and its var. *tjiburrunensis*.
- \*\* *R. crassiretis* Schiffn. JAV: Furuki 2006. WJ: **Furuki 2001b**.
- \*\* *R. crenulata* Schiffn. JAV: **TYPE** of *Riccardia crenatilimbia*, **Schiffner 1900a**, **Geissler & Bischler 1990** as *Riccardia crenatilimbia*. WJ: **LECTOTYPE**, **Schiffner 1898b**, **1900c** as *Riccardia crenatilimbia*, **Meijer 1959b**, **Geissler & Bischler 1990**, **Furuki 2001b**.
- \* <sup>119</sup>*R. diminuta* Schiffn. JAV: **Stephani 1899** as *Aneura diminuta*, **Schiffner 1900a**, Verdoorn 1938, Bonner 1962 as *Aneura diminuta*, Miller et al. 1983, Lin et al. 1992, Furuki 2006. WJ: **SYNTYPE**, **TYPE** of *Riccardia diminuta* f. *minor*, f. *laxa*, f. *subpalmata* and f. *propagulifera*, **SYNTYPE** of *Riccardia diminuta* f. *longispica*, **Schiffner 1898b** also as *Riccardia diminuta* f. *longispica*, f. *propagulifera* and f. *subpalmata*, **Meijer 1959b**, **Geissler & Bischler 1990** also as *Riccardia diminuta* f. *minor*, f. *laxa*, f. *subpalmata*, f. *longispica* and f. *propagulifera*.
- \* — var. *thermarum* Schiffn. JAV: **Schiffner 1900a**, Geissler & Bischler 1990 as *Riccardia diminuta* f. *thermarum*. WJ: **TYPE**, **TYPE** of *Riccardia diminuta* f. *thermarum*, **Schiffner 1898b**, **1955** as *Riccardia diminuta* f. *thermarum*, **Geissler & Bischler 1990**.
- \*\* *R. elata* (Steph.) Schiffn. JAV: **TYPE** of *Aneura elata* and *Riccardia elata* var. *α typica*, **Stephani 1893**, **1899** both as *Aneura elata*, **Schiffner 1898a**, **1900a**, **Bonner 1962** as *Aneura elata*, Miller et al. 1983 also as *Aneura elata*, **Geissler & Bischler 1990** also as *Riccardia elata* var. *α typica*. WJ: **TYPE** of *Riccardia elata* f. *propagulifera*, f. *laxior* and f. *densior*, **Schiffner 1898b** as *Riccardia elata* var. *α typica* and f. *propagulifera*, **1900c**, **Meijer 1959b**, **Geissler & Bischler 1990** as *Riccardia elata* f. *laxior*, f. *propagulifera* and f. *densior*.
- \* — var. *angustior* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE**, **Schiffner 1898b**, **Geissler & Bischler 1990**.
- \* — var. *flaccida* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE**, **Schiffner 1898b**, **Geissler & Bischler 1990**.
- \* — var. *intercedens* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE**, **Schiffner 1898b**, **Geissler & Bischler 1990**.
- \* — var. *stephanii* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE**, **Schiffner 1898b**, **Geissler & Bischler 1990**.
- \*\* *R. flaccidissima* Schiffn. JAV: **Schiffner 1900a**, Bonner 1962 as *Aneura flaccidissima*. WJ: **TYPE**, **Schiffner 1898b**, **Stephani 1899** as *Aneura flaccidissima*, **Geissler & Bischler 1990**.
- \*\*\* *R. graeffei* (Steph.) Hewson JAV: **Stephani 1899** as *Aneura platyclada*, **Schiffner 1900a** as *Riccardia androgyna*, *Riccardia elongata* and *Riccardia platyclada*, Bonner 1962 as *Aneura androgyna* and *Aneura platyclada*, Srivastava & Udar 1976 as *Riccardia platyclada*, Miller et al. 1983 also as *Aneura platyclada* and *Riccardia platyclada*, Bapna & Kachroo 2000b as *Riccardia platyclada*, Furuki 2006. EJ: **SYNTYPE** of *Riccardia platyclada* var. *submersa*, **Schiffner 1955** as *Riccardia platyclada* var. *submersa*, **Geissler & Bischler 1990** as *Riccardia platyclada* var. *submersa*, **Furuki 1991**. JA: **SYNTYPE** of *Riccardia platyclada* var. *submersa*, **Schiffner 1955** as *Riccardia platyclada* var. *submersa*. WJ: **TYPE** of *Riccardia androgyna* and *Riccardia platyclada* f. *crenulata*, **SYNTYPE** of *Riccardia elongata* and *Riccardia platyclada* and its var. *submersa*, **Schiffner 1898b** as *Riccardia androgyna*, *Riccardia elongata* and *Riccardia platyclada* and its f. *crenulata*, **1900c** as *Riccardia platyclada* and *Riccardia platyclada* var. *cornuta*, **1955** as *Riccardia androgyna* and *Riccardia platyclada* and its var. *submersa*, **Stephani 1899** as *Aneura androgyna*, Meijer 1953 as *Riccardia platyclada*, **1960b** as *Riccardia elongata* and *Riccardia platyclada* var. *platyclada*, **Geissler & Bischler 1990** as *Riccardia androgyna*, *Riccardia elongata*, *Riccardia platyclada* and its f. *crenulata* and var. *submersa*, **Furuki 1991**.
- \*\* *R. heteroclada* Schiffn. JAV: **Stephani 1899** as *Aneura heteroclada*, **Schiffner 1900a** also as *Riccardia serrulata*, Verdoorn 1938 as *Riccardia serrulata*, Miller et al. 1983 as *Riccardia serrulata*. WJ: **SYNTYPE**, **SYNTYPE** of *Riccardia serrulata*, **Schiffner 1898b** also as *Riccardia serrulata*, **Meijer 1959b** as *Riccardia serrulata*, Bonner 1962 as *Aneura heteroclada*, **Geissler & Bischler 1990** also as *Riccardia serrulata*, **Furuki 1998**.
- \*\* *R. hymenophylloides* Schiffn. JAV: **Schiffner 1900a** also as *Riccardia decipiens*, Bonner 1962 as *Aneura hymenophylloides*, Miller et al. 1983 also as *Aneura hymenophylloides*, Furuki 2006. WJ: **TYPE** of *Riccardia decipiens*, **Schiffner 1898b** as *Riccardia decipiens*, **Stephani 1899** as *Aneura hymenophylloides*, **Geissler & Bischler 1990** as *Riccardia decipiens*.
- \* — var. *flaccida* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE**, **Schiffner 1898b**, **Geissler & Bischler 1990**.
- \*\* *R. jackii* Schiffn. JAV: **Stephani 1899** as *Aneura jackii*, **Schiffner 1900a** also as *Riccardia jackii* var. *crassior*, Verdoorn 1938, Bonner 1962 as *Aneura jackii*, Geissler & Bischler 1990 as *Riccardia jackii* f. *crassior*, Furuki 2006. EJ: **SYNTYPE** of *Riccardia jackii* f. *submersa*, **Schiffner 1955** as *Riccardia jackii* f. *submersa*, **Geissler & Bischler 1990** as *Riccardia jackii* f. *submersa*. WJ: **TYPE**, **SYNTYPE** of *Riccardia jackii* f. *submersa*, **TYPE** of *Riccardia jackii* var. *crassior*, **Schiffner 1898b**, **1900c** as *Riccardia jackii* f. *crassior*, **Schiffner 1955** also as *Riccardia jackii* f. *submersa*, **Meijer 1959b**, **Geissler & Bischler 1990** also as *Riccardia jackii* var. *crassior* and f. *submersa*.
- \* — var. *densa* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE**, **Schiffner 1898b**, **Geissler & Bischler 1990**.
- \* <sup>120</sup>*R. multifidoides* Schiffn. JAV: **Stephani 1899** as *Aneura multifidoides*, **Schiffner 1900a**, Bonner 1962 as *Aneura multifidoides*, Furuki 2006. WJ: **TYPE**, **TYPE** of *Riccardia multifidoides* f. *propagulifera* and f. *subpalmata*, **Schiffner 1898b** also as *Riccardia multifidoides* f. *propagulifera* and f. *subpalmata*, **1955**, Meijer 1954b, **Geissler & Bischler 1990** also as *Riccardia multifidoides* f. *propagulifera* and f. *subpalmata*.

119. *Riccardia diminuta* is very close to *R. elata*.

120. *Riccardia multifidoides* was considered a synonym of *R. multifida* by Meijer (1958b), but that was not based on examination of type material and without study of the axial anatomy (biconvex in *R. multifida*).

- \*\* *R. parvula* Schiffn. JAV: **Schiffner 1900a**, Bonner 1962 as *Aneura parvula*, Furuki 2006. WJ: **TYPE, TYPE** of *Riccardia parvula* f. *paullum-major* and f. *propagulifera*, **Schiffner 1898b** also as *Riccardia parvula* f. *propagulifera*, **1955** as *Riccardia parvula* f. *paullum-major*, Stephani 1899 as *Aneura parvula*, **Meijer 1959b, Geissler & Bischler 1990** also as *Riccardia parvula* f. *paullum-major* and f. *propagulifera*, **Furuki 2001b, Gradstein et al. 2010**.
- \*\* *R. pindensis* Hewson JAV: Furuki 1991.
- <sup>121</sup>*R. platyclada* Schiffn.  
 ? —var. *grandiretis* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE, Schiffner 1898b, Geissler & Bischler 1990**.  
 ? —var. *leiomitra* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE, Schiffner 1898b, Meijer 1959b, Geissler & Bischler 1990**.  
 ? —var. *repens* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE, Schiffner 1898b, Meijer 1959b, Geissler & Bischler 1990**.
- \*\* *R. plumosa* (Mitt.) E.O.Campb. JAV: **TYPE** of *Aneura zollingeri*, **Stephani 1888** as *Aneura zollingeri* and *Pseudoneura javanica*, **Schiffner 1893b** as *Aneura goebelii*, **1898a** as *Riccardia zollingeri*, **1900a** as *Riccardia elata* var. *zollingeri* and var. *goebelii*, Verdoorn 1938 as *Riccardia elata* var. *goebelii*, **Bonner 1962** as *Acrostolia javanica*, *Aneura zollingeri* and *Pseudoneura javanica*, Miller et al. 1983 also as *Aneura goebelii*, *Aneura zollingeri* and *Riccardia zollingeri*, **Geissler & Bischler 1989** as *Pseudoneura javanica*, *Riccardia elata* var. *goebelii* and var. *zollingeri*, *Riccardia goebelii* and *Riccardia zollingeri*, Lin et al. 1992. WJ: **TYPE** of *Aneura goebelii* and *Pseudoneura javanica*, Gottsche & Rabenhorst 1873 as *Pseudoneura javanica*, **Schiffner 1898a** as *Riccardia goebelii*, **Stephani 1899** *Aneura plumosa* and *Aneura zollingeri*, **Bonner 1962** as *Aneura goebelii* and *Pseudoneura javanica*, **Geissler & Bischler 1989** as *Pseudoneura javanica*.
- \*\* *R. subexalata* Schiffn. JAV: **Stephani 1899** as *Aneura subexalata*, **Schiffner 1900a** as *Riccardia subexalata* f. *propagulifera*, Verdoorn 1938, Bonner 1962 as *Aneura subexalata*. EJ: **Schiffner 1955**. WJ: **TYPE, TYPE** of *Riccardia subexalata* f. *propagulifera*, **Schiffner 1898b**, Schiffner 1898b as *Riccardia subexalata* f. *propagulifera*, **1900c, Meijer 1959b, Geissler & Bischler 1990** also as *Riccardia subexalata* f. *propagulifera*.  
 \* — var. *procera* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE, Schiffner 1898b, Geissler & Bischler 1990**.
- \*\* *R. tamariscina* (Steph.) Schiffn. JAV: **TYPE** of *Aneura tamariscina*, **Stephani 1893, 1899** both as *Aneura tamariscina*, **Schiffner 1898a, 1900a, Bonner 1962** as *Aneura tamariscina*, Miller et al. 1983, Geissler & Bischler 1990, **Furuki 1991**.
- \*\* *R. tenuicostata* Schiffn. JAV: **Stephani 1899** as *Aneura tenuicostata*, Verdoorn 1938, Bonner 1962 as *Aneura tenuicostata*, **Srivastava & Udar 1976, 1977**, Miller et al. 1983 also as *Aneura tenuicostata*, Bapna & Kachroo 2000b, Piippo et al. 2002.
- \*\* *R. tenuis* (Steph.) Schiffn. JAV: **Stephani 1893** as *Aneura tenuis*, **Schiffner 1898a, 1900a**, Geissler & Bischler 1990. WJ: **TYPE** of *Aneura tenuis*, **Schiffner 1898b, 1900c, Stephani 1899** as *Aneura tenuis*, **Bonner 1962** as *Aneura tenuis*.
- \* <sup>122</sup>*R. tjibodensis* Schiffn. JAV: **Schiffner 1900a**, Verdoorn 1938, Bonner 1962 as *Aneura tjibodensis*. CJ: **Schiffner 1955**. WJ: **TYPE, Schiffner 1898b, Stephani 1899** as *Aneura tjibodensis*, **Meijer 1959b, Geissler & Bischler 1990**.
- \*\* *R. wettsteinii* Schiffn. JAV: **Stephani 1899** as *Aneura wettsteinii*, **Schiffner 1900a**, Bonner 1962 as *Aneura wettsteinii*. WJ: **SYNTYPE, SYNTYPE** of *Riccardia wettsteinii* f. *propagulifera*, **Schiffner 1898b** also as *Riccardia wettsteinii* f. *propagulifera*, Meijer 1954b, **1960b, Geissler & Bischler 1990** also as *Riccardia wettsteinii* f. *propagulifera*.  
 \* — var. *angustilimbica* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE, Schiffner 1898b, 1955, Geissler & Bischler 1990**.  
 \* — var. *crassa* Schiffn. JAV: **Schiffner 1900a**. WJ: **SYNTYPE, Schiffner 1898b, Geissler & Bischler 1990**.  
 \* — var. *procera* Schiffn. JAV: **Schiffner 1900a**. WJ: **TYPE, Schiffner 1898b, Geissler & Bischler 1990**.  
 \* — var. *tenuiretis* Schiffn. JAV: **Schiffner 1900a**, Verdoorn 1938. WJ: **SYNTYPE, Schiffner 1898b, Geissler & Bischler 1990**.

### **Riccia**

- \*\*\* *R. billardieri* Mont. et Nees JAV: **TYPE, Gottsche et al. 1846, Sande Lacoste 1857, Schiffner 1898a, 1900a**, Stephani 1898, Verdoorn 1931b, **Meijer 1958a, Geissler & Bischler 1990**, Bapna & Kachroo 2000b, **Jovet-Ast 2000, 2003**, Chaudhary et al. 2006. CJ: Meijer 1955. WJ: Meijer 1953.
- \*\*\* *R. fluitans* L. JAV: Verdoorn 1932a, **Meijer 1958a**, Bapna & Kachroo 2000b. CJ: **Schiffner 1955** as *R. canaliculata* Hoffm. var. *javanica*, **Geissler & Bischler 1990** as *R. canaliculata* Hoffm. var. *javanica*. WJ: Meijer 1953.
- \*\*\* *R. gangetica* Ahmad JAV: **Meijer 1958a**, Bapna & Kachroo 2000b, **Jovet-Ast 2000, 2003**, Chaudhary et al. 2006.
- \*\*\* *R. hasskarliana* Steph. JAV: **TYPE, Stephani 1898, Schiffner 1900a, Meijer 1958a, Geissler & Bischler 1990, Jovet-Ast 2003**.
- \*\*\* *R. junghuhniana* Nees et Lindenb. JAV: **TYPE, Gottsche et al. 1846, Sande Lacoste 1857, Schiffner 1898a, 1900a**, Stephani 1898, **Meijer 1958a**, Miller et al. 1983, **Geissler & Bischler 1990** also as *Ricciella junghuhniana*, **Jovet-Ast 2003**. CJ: Meijer 1955. EJ: **TYPE** of *Riccia applanata*, **Meijer 1958a** as *Riccia applanata*, **Geissler & Bischler 1990** as *Riccia applanata*. WJ: Meijer 1953.  
 \*\* — var. *simplex* Schiffn. WJ: **TYPE, Schiffner 1900a, Geissler & Bischler 1990**.
- \* <sup>123</sup>*R. obtusa* Meijer WJ: **TYPE, Meijer 1958a, Geissler & Bischler 1990**.
- \* <sup>124</sup>*R. prominens* Meijer CJ: **TYPE, Meijer 1958a, Geissler & Bischler 1990**.

121. *Riccardia platyclada* is a synonym of *R. graeffei*, but we do not know where these varieties belong.

122. *Riccardia tjibodensis* is taxonomically doubtful and most likely a synonym of something.

123. *Riccia obtusa* may be conspecific with *R. gangetica*.

- \*\* *R. treubiana* Steph. JAV: **Schiffner 1900a**, Verdoorn 1932a, **Meijer 1958a**. WJ: **TYPE**, Stephani 1898, Meijer 1953, **Geissler & Bischler 1990**.  
 \* —<sup>125</sup>var. *subrubescens* Schiffn. JAV: Verdoorn 1932a. WJ: **TYPE**, **Schiffner 1900a**, **Geissler & Bischler 1990**.

### **Saccogynidium**

- \*\* *S. muricellum* (De Not.) Grolle JAV: Grolle & Schultze-Motel 1973, Miller *et al.* 1983 also as *Saccogyna rigidula* var. *laevifolia* and var. *latifolia*, Piippo 1985b, 1989b, Gao & Cao 2001. WJ: **TYPE** of *Saccogyna rigidula* var. *laevifolia*, var. *latifolia*, f. *major* and f. *minor*, **Schiffner 1900a** as *Saccogyna rigidula* var. *latifolia*, var. *laevifolia*, f. *major* and f. *minor*, **1900b** as *Saccogyna rigidula* f. *minor*, var. *laevifolia* and var. *latifolia*, **Geissler & Bischler 1990** as *Saccogyna rigidula* var. *latifolia*, f. *major*, var. *laevifolia* and f. *minor*.  
 \*\* *S. rigidulum* (Nees) Grolle JAV: **TYPE** of *Jungermannia rigidula*, **Nees 1830** as *Jungermannia rigidula*, **Gottsche et al. 1845a** as *Chiloscyphus rigidulus*, **Sande Lacoste 1857** as *Chiloscyphus rigidulus*, **Schiffner 1900a** as *Saccogyna rigidula* f. *typica*, **Stephani 1908** as *Saccogyna rigidula*, Bonner 1963b as *Chiloscyphus rigidulus*, Grolle & Schultze-Motel 1973, Miller *et al.* 1983 also as *Chiloscyphus rigidulus*, *Jungermannia rigidula* and *Saccogyna rigidula* and its var. *latistipula*, Piippo 1985b, 1989b, **Geissler & Bischler 1987** as *Jungermannia rigidula*, 1990 also as *Saccogyna rigidula*, Gao & Cao 2001. WJ: **TYPE** of *Saccogyna rigidula* var. *latistipula*, **Sande Lacoste 1864** as *Chiloscyphus rigidulus*, **Schiffner 1898a** as *Chiloscyphus rigidulus*, **1900a** as *Saccogyna rigidula* var. *latistipula*, **1900b** as *Saccogyna rigidula* f. *typica* and var. *latistipula*, **1900c** as *Saccogyna rigidula*, **Grolle 1961** also as *Saccogynidium jugatum*, **Geissler & Bischler 1990** as *Saccogyna rigidula* var. *latistipula*.

### **Sandeothallus**

- \*\* *S. radiculosus* (Schiffn.) R.M.Schust. JAV: **Schiffner 1900a** as *Calycularia radiculosa*, Grolle 1968a as *Moerckia radiculosa*, Schuster 1982, Miller *et al.* 1983 as *Calycularia radiculosa* and *Moerckia radiculosa*, Geissler & Bischler 1985 as *Moerckia radiculosa*, Piippo 1988, Piippo & Tan 1992.

### **Scapania**

- \*\*\* *S. javanica* Gottsche JAV: **Müller 1901b**, Stephani 1910, Geissler & Bischler 1985 as *Martinellius javanicus*, Piippo 1985a, Potemkin 2002, Blockeel *et al.* 2009. WJ: **TYPE**, **Gottsche 1853**, **Sande Lacoste 1857**, **1864**, **Schiffner 1898a**, **1900c**, **Geissler & Bischler 1990**, **Gradstein et al. 2010**.  
 \* —<sup>126</sup>var. *scabra* Schiffn. CJ: **TYPE**, **Schiffner 1955**, **Geissler & Bischler 1990**.  
 \*\*\* *S. rigida* Nees JAV: **TYPE**, **Gottsche et al. 1844**, **Sande Lacoste 1864**, **Schiffner 1893b** as *Martinellius rigidus*, **1898a**, Müller 1901b, Stephani 1910, Geissler & Bischler 1985 as *Martinellius rigidus*, **1990**, Potemkin 2002. WJ: **TYPE** of *Scapania rigida* f. *minor*, **Schiffner 1955** as *Scapania rigida* f. *minor*, **Geissler & Bischler 1990** as *Scapania rigida* f. *minor*.  
 \*\*\* *S. sandei* Schiffn. ex Müll.Frib. JAV: Müller 1901b, Stephani 1910 as *Scapania sandei*, Potemkin 2002.

### **Schiffneria**

- \*\*\* *S. hyalina* Steph. JAV: Iskander 2008 as *Schiffneria* sp.

### **Schiffneriolejeunea**

- \*\*\* *S. pulopenangensis* (Gottsche) Gradst. JAV: **TYPE** of *Ptychocoleus nymannii*, **Schiffner 1898a** as *Acrolejeunea pulopenangensis*, **Stephani 1912b** as *Ptychocoleus nymannii*, Verdoorn 1933b as *Ptychocoleus pulopenangensis*, **Thiers 1985**, **Geissler & Bischler 1989** as *Ptychocoleus nymannii*, **Thiers & Gradstein 1989**. CJ: **Verdoorn 1933** as *Ptychocoleus pulopenangensis*. WJ: **Schiffner 1900c** as *Acrolejeunea pulopenangensis*, **Renner 1932** as *Ptychocoleus pulopenangensis*, **Verdoorn 1933** as *Ptychocoleus pulopenangensis*, **Haerida et al. 2010**.  
 \*\*\* *S. tumida* (Nees) Gradst. JAV: **Sande Lacoste 1857** as *Phragmicoma tumida*, Verdoorn 1933b as *Ptychocoleus tumidus*, Geissler & Bischler 1985 as *Marchesia haskarliana*. WJ: **TYPE** of *Mastigolejeunea inflatiloba*, **Schiffner 1900c** as *Acrolejeunea tumida*, **Stephani 1924** as *Mastigolejeunea inflatiloba*, **Verdoorn 1933** as *Ptychocoleus tumidus*, **Gradstein & Terken 1981**, **Geissler & Bischler 1985** as *Mastigolejeunea inflatiloba*.  
 \*\*\* — var. *haskarliana* (Gottsche) Gradst. et Terken JAV: **TYPE** of *Phragmicoma haskarliana*, **Gottsche et al. 1845a** as *Phragmicoma haskarliana*, **Sande Lacoste 1857**, **1864** both as *Phragmicoma haskarliana*, **Stephani 1890a** as *Phragmicoma haskarliana*, **1912a** as *Mastigolejeunea javanica*, **Schiffner 1893b** as *Lejeunea haskarliana*, Verdoorn 1933b, 1934a both as *Ptychocoleus haskarlianus*, Bonner 1962 as *Acrolejeunea haskarliana*, Mizutani 1977, 1978a, 1978b all as *Schiffneriolejeunea haskarliana*, Miller *et al.* 1983 as *Acrolejeunea haskarliana*, *Acrolejeunea javanica*, *Mastigolejeunea javanica*, *Phragmicoma haskarliana* and *Schiffneriolejeunea haskarliana*, Geissler & Bischler 1987 as *Lejeunea haskarliana*, **1989** as *Phragmicoma haskarliana* and *Ptychocoleus haskarlianus*, **Thiers & Gradstein 1989**, **Gradstein et al. 2002**. CJ: **Verdoorn 1933** as *Ptychocoleus haskarlianus*. WJ: **TYPE** of *Acrolejeunea javanica* and *Mastigolejeunea javanica*, **Schiffner 1894**, **1898a**, **1900c** all as *Acrolejeunea haskarliana*, **Verdoorn 1933** as *Ptychocoleus haskarlianus*, **Bonner 1962** as *Acrolejeunea javanica*, **Geissler & Bischler 1985** as *Mastigolejeunea javanica*, **Haerida et al. 2010**.  
 \*\*\* — var. *tumida* JAV: **TYPE** of *Ptychocoleus sumatranus*, **Sande Lacoste 1864** as *Phragmicoma peradeniensis*, **Schiffner 1898a** as *Acrolejeunea peradeniensis*, Stephani 1912b as *Ptychocoleus sumatranus*, Miller *et al.* 1983 as *Schiffneriolejeunea tumida*, **Geissler & Bischler 1989** as *Ptychocoleus sumatranus*.

124. *Riccia prominens* may be conspecific with *R. junghuhniana*.

125. *Riccia treubiana* var. *subrubescens* is taxonomically doubtful and most likely a synonym of something.

126. *Scapania javanica* var. *scabra* is taxonomically doubtful and most likely a synonym of something.

### Schistochila

- ? <sup>127</sup>*S. aligera* (Nees) J.B. Jack et Steph. var.  $\gamma$  *laxa* (Nees) Schiffn. JAV: **TYPE** of *Jungermannia aligera*  $\gamma$  *laxa*, **Nees 1830** as *Jungermannia aligera*  $\gamma$  *laxa*, **Geissler & Bischler 1987** as *Jungermannia aligera*  $\gamma$  *laxa*.
- \*\*\* *S. blumei* (Nees) Trevis. JAV: **TYPE** of *Jungermannia blumei*, **Blume & Nees 1823** as *Jungermannia blumei*, **Reinwardt et al. 1824a** as *Jungermannia blumei*, **Nees 1830** as *Jungermannia blumii*, **Gottsche et al. 1844** as *Gottschea blumii*, **Gottsche 1853** as *Gottschea blumii*, **Schiffner 1893b**, **Stephani 1909b**, **Buch 1939**, **Bonner 1966** as *Gottschea blumei*, **Grolle 1966f**, **Kitagawa 1973b**, **Miller et al. 1983** also as *Gottschea blumei*, **Piippo 1984a**, **Geissler & Bischler 1987** as *Jungermannia blumei*, 1990, **So 2003a**, **Gao & Wu 2004**. CJ: **Sande Lacoste 1864** as *Gottschea blumei*, **Schiffner 1898a**. WJ: **Sande Lacoste 1864** as *Gottschea blumei*, **Schiffner 1898a, 1900c**.
- \*\*\* *S. reinwardtii* (Nees) Schiffn. JAV: **TYPE** of *Jungermannia daedalea* and *Jungermannia reinwardtii*, **Nees 1830** as *Jungermannia daedalea* and *Jungermannia reinwardtii*, **Gottsche et al. 1844** as *Gottschea reinwardtii*, **Sande Lacoste 1857** as *Gottschea reinwardtii*, **Schiffner 1898a**, **Buch 1939**, **Bonner 1966** as *Gottschea reinwardtii*, **Grolle 1966f**, **Miller et al. 1983**, **Geissler & Bischler 1987** as *Jungermannia daedalea* and *Jungermannia reinwardtii*, **Geissler & Bischler 1990**, **So 2003a**.
- \*\*\* *S. sciurea* (Nees) Schiffn. JAV: **TYPE** of *Gottschea javanica* and *Jungermannia sciurea*, **Nees 1830** as *Jungermannia sciurea*, **Gottsche et al. 1844** as *Gottschea javanica*, **1845a** as *Ptilidium sciureum*, **Sande Lacoste 1857** as *Ptilidium sciureum*, **Stephani 1909b** also as *Schistochila javanica*, **Buch 1939**, **Bonner 1966** as *Gottschea javanica* and *Gottschea sciurea*, **Grolle 1966f**, **Hattori 1968**, **Miller et al. 1983** also as *Gottschea sciurea*, *Jungermannia sciurea* and *Ptilidium sciureum*, **Piippo 1984a**, **Geissler & Bischler 1987** as *Jungermannia sciurea*, 1989 as *Ptilidium sciureum*, 1990 as *Schistochila javanica*, **So 2003a**. WJ: **Sande Lacoste 1864** as *Gottschea sciurea*, **Schiffner 1898a**, **Seifrizz 1924**, **Gradstein et al. 2010**.
- ? — var. *cordata* H. Buch nom. inval. JAV: **Buch 1939**, **Geissler & Bischler 1990**.

### Sendtnera

- ? <sup>128</sup>*S. juniperina* Nees nom. inval.  $\gamma$  *ramosa* Lehm. et Lindenb. WJ: **Sande Lacoste 1864**.

### Siphonolejeunea

- \*\* *S. schiffneri* (Steph. ex Schiffn.) Herzog JAV: **Schiffner 1893b** as *Lejeunea schiffneri*, **Stephani 1914** as *Pycnolejeunea schiffneri*, **Herzog 1948**, **Grolle 1973b**, **Geissler & Bischler 1989** as *Pycnolejeunea schiffneri*, 1990, **Pócs & Streimann 2006**. WJ: **TYPE** of *Lejeunea schiffneri*, **Schiffner 1898a, 1900c** both as *Pycnolejeunea schiffneri*, **Geissler & Bischler 1987** as *Lejeunea schiffneri*.

### Solenostoma

- \*\*\* *S. appressifolium* (Mitt.) Váňa et D.G. Long JAV: **Váňa & Inoue 1983** as *Jungermannia appressifolia*, **Váňa & Piippo 1989a** as *Jungermannia appressifolia*, **Váňa 1991a** as *Jungermannia appressifolia*.
- \*\*\* — var. *appressifolium* JAV: **Váňa 1973c** as *Jungermannia appressifolia* var. *appressifolia*, **Hattori 1975c** as *Jungermannia appressifolia* var. *appressifolia*, **Long 1979** as *Jungermannia appressifolia* var. *appressifolia*, **Long & Grolle 1990** as *Jungermannia appressifolia* var. *appressifolia*, **Bapna & Kachroo 2000a** as *Jungermannia appressifolia* var. *appressifolia*. JA: **Amakawa 1969** as *Jungermannia decolyana*.
- \*\*\* *S. ariadne* (Taylor ex Lehm.) R.M. Schust. ex Váňa et D.G. Long JAV: **Meissner 1848** as *Jungermannia ariadne*, **Schiffner 1900a** as *Nardia ariadne*, **Stephani 1901** as *Jungermannia ariadne*, **Váňa 1973b, 1975a**, all as *Jungermannia ariadne*, **Miller et al. 1983** as *Plectocolea ariadne*, **Váňa & Piippo 1989a** as *Jungermannia ariadne*, **Bapna & Kachroo 2000a** as *Jungermannia ariadne*. CJ: **Schiffner 1955** as *Nardia ariadne*. WJ: **Sande Lacoste 1857** as *Jungermannia ariadne*, **Schiffner 1898a, 1898b** both as *Nardia ariadne*, **Meijer 1953, 1959** both as *Plectocolea ariadne*, **Amakawa 1968** as *Jungermannia ariadne*, **Váňa 1973c** as *Jungermannia ariadne*.
- \*\*\* *S. baueri* (Schiffn.) Steph. JAV: **Schiffner 1900a** as *Aplozia baueri*, **Stephani 1901**, **Verdoorn 1938** as *Haplozia baueri*, **Bonner 1962** as *Aplozia baueri*, **Geissler & Bischler 1987** as *Jungermannia baueri*, 1990. WJ: **TYPE** of *Aplozia baueri* and *Jungermannia miehena*, **Schiffner 1898b** as *Aplozia baueri*, **Stephani 1917b** as *Jungermannia miehena*, **Meijer 1954b** as *Haplozia baueri*, **Amakawa 1968** as *Jungermannia baueri* and *Jungermannia miehena*, **Váňa 1974a** as *Jungermannia baueri*, **Geissler & Bischler 1987** as *Jungermannia miehena*.
- \*\*\* *S. comatum* (Nees) C. Gao JAV: **TYPE** of *Jungermannia comata*, **Nees 1830** as *Jungermannia comans*, **Gottsche et al. 1844** as *Plagiochila comata*, **Sande Lacoste 1856a, 1857** both as *Plagiochila comata*, **Schiffner 1900a** as *Nardia comata*, **Stephani 1901** as *Jungermannia comata*, **Verdoorn 1933b** as *Eucalyx comatus*, **Amakawa 1960** as *Jungermannia comata*, **Bonner 1965** as *Eucalyx comatus*, **Váňa 1972** as *Jungermannia comata*, **Miller et al. 1983** as *Jungermannia comata*, **Geissler & Bischler 1987** as *Jungermannia comata*, 1989 as *Nardia comata*, *Plagiochila comata* and *Plectocolea comata*, **Bapna & Kachroo 2000a** as *Jungermannia comata*, **Gao & Bai 2001** as *Jungermannia comata*. CJ: **Schiffner 1898a** as *Nardia comata*, **Váňa 1973c** as *Jungermannia comata*. JA: **Amakawa 1970** as *Jungermannia comata*. WJ: **Schiffner 1898a, 1898b** both as *Nardia comata*, **Meijer 1953, 1954a, 1959a** all as *Plectocolea comata*, **Váňa 1973c** as *Jungermannia comata*.
- \*\*\* — var. *comatum* JAV: **Bonner 1962** as *Alicularia junghuhniana*, **Váňa 1973b** as *Jungermannia comata* var. *comata*, **Geissler & Bischler 1989** as *Plectocolea junghuhniana*, **Váňa & Piippo 1989a** as *Jungermannia comata* var. *comata*. EJ: **TYPE** of *Jungermannia junghuhniana*, **Gottsche et al. 1844** as *Jungermannia*

127. *Schistochila aligera* is now *Gottschea aligera*, but we are not sure whether these varieties also belong to the species and are worth recognizing.

128. *Sendtnera juniperina* is a synonym of *Herbertus juniperioideus*. This variety is taxonomically doubtful and most likely a synonym of something.

*junghuhniana*, **Geissler & Bischler 1987** as *Jungermannia junghuhniana*. WJ: **TYPE** of *Tylimanthus javanicus*, **Sande Lacoste 1857, 1864** both as *Jungermannia junghuhniana*, **Stephani 1905** as *Tylimanthus javanicus*, **Geissler & Bischler 1990** as *Tylimanthus javanicus*.

- \*\*\* *S. haskarlianum* (Nees) R.M.Schust. ex Vána et D.G.Long JAV: **TYPE** of *Alicularia haskarliana*, *Jungermannia polygona*, *Plectocolea flexuosa* and *Solenostoma purpurascens*, **Gottsche et al. 1844** as *Alicularia haskarliana*, **Sande Lacoste 1857, 1864** both as *Alicularia haskarliana*, **Schiffner 1898a, 1900a both** as *Nardia haskarliana*, **1900a** as *Nardia haskarliana* var. *virens*, **Stephani 1901** as *Jungermannia haskarliana*, **1917b** as *Solenostoma purpurascens*, **Bonner 1962** as *Alicularia haskarliana*, **1965** as *Eucalyx haskarlianus*, **Grolle 1966d** as *Jungermannia haskarliana*, **Vána 1972** as *Jungermannia haskarliana*, **1973b** as *Jungermannia haskarliana*, **1975a** as *Jungermannia haskarliana*, **Miller et al. 1983** as *Alicularia haskarliana*, *Jungermannia haskarliana* and *Plectocolea haskarliana*, **Geissler & Bischler 1985** as *Mesophylla haskarliana*, **1987** as *Jungermannia haskarliana* and *Jungermannia polygona*, **1989** as *Nardia haskarliana*, *Plectocolea flexuosa* and *Plectocolea haskarliana*, **1990** as *Solenostoma purpurascens*, **Vána & Piippo 1989a** as *Jungermannia haskarliana*, **Vána 1991a** as *Jungermannia haskarliana*, **Bapna & Kachroo 2000a** as *Jungermannia haskarliana*, **Gao & Bai 2001** as *Jungermannia haskarliana*. EJ: **Vána 1973c** as *Jungermannia haskarliana*. WJ: **TYPE** of *Nardia haskarliana* f. *brevior* and var. *virens*, *Nardia tetragona* f. *gracilior*, **Schiffner 1898b** as *Nardia haskarliana* and its f. *brevior* and var. *virens* and *Nardia tetragona* f. *gracilior*, **Meijer 1953, 1954a, 1959a** all as *Plectocolea haskarliana*, **Geissler & Bischler 1989** as *Nardia haskarliana* var. *virens* and f. *brevior* and *Nardia tetragona* f. *gracilior*, **Gradstein et al. 2010**.
- \*\*\* *S. javanicum* (Schiffn.) Steph. JAV: **TYPE** of *Aplozia javanica* var. *nicholsonii*, **Schiffner 1900a** as *Aplozia javanica* and its var. *laxa*, **Stephani 1901**, **Verdoorn 1933b** as *Haplozia javanica*, **1938** as *Aplozia javanica* var. *nicholsonii*, **Bonner 1962** as *Aplozia javanica* and its var. *laxa*, **1966** as *Haplozia javanica* var. *nicholsonii*, **Vána 1972, 1973b** both as *Jungermannia herzogiana*, **Geissler & Bischler 1987** as *Jungermannia herzogiana* and *Jungermannia javanica*, **1989** as *Nardia retusa*, **1990, Vána & Piippo 1989a** as *Jungermannia herzogiana*. WJ: **SYNTYPE** of *Aplozia javanica*, **TYPE** of *Aplozia javanica* var. *laxa* and *Jungermannia retusa*, **Gottsche 1853** as *Jungermannia retusa*, **Schiffner 1898a** as *Nardia retusa*, **1898b** as *Aplozia javanica* and its var. *laxa*, **1900c** as *Aplozia javanica*, **Meijer 1954b** as *Haplozia javanica*, **Vána 1973c, 1991a both** as *Jungermannia herzogiana*, **Geissler & Bischler 1987** as *Jungermannia retusa*.
- \*\*\* *S. obliquifolium* (Schiffn.) R.M.Schust. ex Vána, Hentschel et Heinrichs JAV: **Vána 1973b, 1974a, 1975a, 1991a** all as *Jungermannia obliquifolia*, **Vána & Piippo 1989a** as *Jungermannia obliquifolia*.
- \*\*\* *S. stephanii* (Schiffn.) Steph. JAV: **Schiffner 1900a** as *Aplozia stephanii*, **Stephani 1901, Bonner 1962** as *Aplozia stephanii*, **Vána 1973b** as *Jungermannia stephanii*, **Geissler & Bischler 1987** as *Jungermannia stephanii*, **1990, Srivastava & Singh 1989** as *Jungermannia stephanii*, **Vána & Piippo 1989a** as *Jungermannia stephanii*, **Bapna & Kachroo 2000a** as *Jungermannia stephanii*. CJ: **Schiffner 1955** as *Aplozia stephanii*. WJ: **SYNTYPE** of *Aplozia stephanii*, **Schiffner 1898b** as *Aplozia stephanii*, **Amakawa 1968** as *Jungermannia stephanii*, **Vána 1973c, 1991a** both as *Jungermannia stephanii*, **Gao & Bai 2001** as *Jungermannia stephanii*.
- \*\*\* *S. strictum* (Schiffn.) Vána, Hentschel et Heinrichs JAV: **TYPE** of *Jungermannia exigua* and *Jungermannia kurzii*, **Schiffner 1900a** as *Aplozia stricta* and its var. *radicellifera*, **Stephani 1901** as *Jungermannia stricta*, **Verdoorn 1931b** as *Haplozia stricta* var. *radicellifera*, **1938** as *Haplozia stricta*, **Bonner 1962** as *Aplozia stricta*, **Geissler & Bischler 1987** as *Jungermannia exigua* and *Jungermannia kurzii*, **Vána & Piippo 1989a** as *Jungermannia stricta*. CJ: **Schiffner 1955** as *Aplozia stricta*, **Vána 1973c** as *Jungermannia stricta*. WJ: **SYNTYPE** of *Aplozia stricta*, **TYPE** of *Aplozia stricta* var. *radicellifera*, *Jungermannia pangerangana* and *Solenostoma cinereum*, **Schiffner 1898b** as *Aplozia stricta* and its var. *radicellifera*, **Stephani 1901** as *Solenostoma cinerea*, **Bonner 1962** as *Aplozia stricta* var. *radicellifera*, **Amakawa 1968** as *Jungermannia stricta*, **Vána 1973c, 1991a** both as *Jungermannia stricta*, **Geissler & Bischler 1987** as *Jungermannia pangerangana*, **1990** as *Solenostoma cinereum*.
- \*\*\* *S. tetragonum* (Lindenb.) R.M.Schust. ex Vána et D.G.Long JAV: **TYPE** of *Jungermannia colorata*  $\delta$  *decipiens*, *Jungermannia flexicaulis*  $\gamma$  *decipiens* and *Jungermannia tetragona*, **Nees 1830** as *Jungermannia colorata*  $\delta$  *decipiens*, **Meissner 1848** as *Jungermannia tetragona*, **Gottsche 1853** as *Jungermannia tetragona*, **Schiffner 1900a** as *Nardia tetragona*, **1955** as *Nardia tetragona* var. *aquatica*, **Stephani 1901** as *Jungermannia tetragona*, **Amakawa 1968** as *Jungermannia tetragona*, **Vána 1973b, 1974a, 1975a** all as *Jungermannia tetragona*, **Hattori 1975c** as *Jungermannia tetragona*, **Miller et al. 1983** as *Jungermannia tetragona*, **Geissler & Bischler 1985** as *Nardia tetragona* and its var. *aquatica*, **1987** as *Jungermannia colorata*  $\delta$  *decipiens*, *Jungermannia flexicaulis*  $\gamma$  *decipiens* and *Jungermannia tetragona*, **1989** as *Plectocolea tetragona*, **Vána & Piippo 1989a** as *Jungermannia tetragona*, **Bapna & Kachroo 2000a** as *Jungermannia tetragona*, **Gao & Bai 2001** as *Jungermannia tetragona*. EJ: **Schiffner 1898a** as *Nardia tetragona*. WJ: **TYPE** of *Nardia tetragona* f. *brevior*, **Sande Lacoste 1857** as *Jungermannia tetragona*, **Schiffner 1898a** as *Nardia tetragona*, **Schiffner 1898b** as *Nardia tetragona* and its f. *brevior*, **Meijer 1953, 1954a, 1959a** all as *Plectocolea tetragona*, **Amakawa 1960** as *Jungermannia tetragona*, **Vána 1973c, 1991a both** as *Jungermannia tetragona*, **Geissler & Bischler 1985** as *Nardia tetragona* f. *brevior*, **Gradstein et al. 2010**.
- \*\*\* *S. truncatum* (Nees) R.M.Schust. ex Vána et D.G.Long JAV: **TYPE** of *Jungermannia truncata* and its  $\beta$  *tenerrima*, **Nees 1830** as *Jungermannia truncata* and its  $\beta$  *tenerrima*, **Gottsche et al. 1844** as *Jungermannia truncata*, **Sande Lacoste 1857** as *Jungermannia polyrhiza* and *Jungermannia truncata* and its  $\beta$  *tenerrima*, **1864** as *Jungermannia truncata*  $\beta$  *tenerrima*, **Schiffner 1898a** as *Nardia polyrhiza* and *Nardia truncata* var.  $\beta$  *tenerrima*, **1900a** as *Nardia truncata* and its var. *crassiretis*, **Stephani 1901** as *Jungermannia polyrhiza* and *Jungermannia truncata*, **Verdoorn 1938** as *Eucalyx truncatus* and its var. *crassiretis*, **Bonner 1965** as *Eucalyx truncatus* and its var. *crassiretis*, **Hattori 1968** as *Jungermannia polyrhiza*, **Vána 1972, 1973b** both as *Jungermannia truncata*, **Hattori 1975c** as *Jungermannia truncata*, **Geissler & Bischler 1985** as *Nardia truncata* var.  $\beta$  *tenerrima*, **1987** as *Jungermannia truncata* and its var.  $\beta$  *crassiretis*,  $\beta$  *tenerrima* and f. *transitoriae*,



1989 as *Nardia truncata* and its var. *elongata* and *Plectocolea truncata*, Váňa & Piippo 1989a as *Jungermannia truncata*, Bapna & Kachroo 2000a as *Jungermannia truncata*, Gao & Bai 2001 as *Jungermannia truncata*, Easa 2003 as *Jungermannia truncata*, CA: Váňa 1991a as *Jungermannia truncata*. JA: Amakawa 1972 as *Jungermannia truncata* var. *truncata*. WJ: **TYPE** of *Nardia truncata* var. *crassiretis*, f. *transitoria* and f. *subaquatica*, Sande Lacoste 1864 as *Jungermannia truncata*, Schiffner 1898a as *Nardia truncata*, 1898b as *Nardia truncata* and its f. *transitoria* and var. *crassiretis*, Meijer 1953, 1954a 1959 all as *Plectocolea truncata*, Schiffner 1955 as *Nardia truncata* f. *subaquatica*, Amakawa 1972 as *Jungermannia truncata* var. *truncata*, Geissler & Bischler 1989 as *Nardia truncata* f. *transitoria* and var. *crassiretis*.

\*\*\* *S. vulcanicola* (Schiffn.) Nyushko ex Potemkin et Sofronova JAV: **TYPE** of *Jungermannia vulcanicola*, Sande Lacoste 1857 as *Chiloscyphus stygius*, Schiffner 1900a as *Nardia vulcanicola* and its var. *tenuiretis*, Stephani 1901 as *Jungermannia vulcanicola*, Amakawa 1960 as *Jungermannia vulcanica*, Bonner 1965 as *Eucalyx stygius*, Geissler & Bischler 1987 as *Jungermannia vulcanicola*. CJ: Váňa 1974a as *Jungermannia vulcanicola*. EJ: Verdoorn 1933b as *Eucalyx stygius*. WJ: **TYPE** of *Chiloscyphus stygius*, *Nardia vulcanicola* and its f. *cavifolia* and var. *tenuiretis*, Gottsche *et al.* 1845a as *Chiloscyphus stygius*, Schiffner 1898a as *Chiloscyphus stygius*, 1898b as *Nardia vulcanicola* and its f. *cavifolia* and var. *tenuiretis*, Verdoorn 1933b as *Eucalyx stygius*, Bonner 1963b as *Chiloscyphus stygius*, Váňa 1974a as *Jungermannia vulcanicola*, Geissler & Bischler 1989 as *Nardia vulcanicola* and its var. *tenuiretis* and f. *cavifolia*.

### **Spruceanthus**

\*\*\* *S. polymorphus* (Sande Lac.) Verd. JAV: **TYPE** of *Phragmicoma polymorpha* and its  $\alpha$  *undulifolia*, Sande Lacoste 1854, 1856b both as *Phragmicoma polymorpha*, 1857 as *Phragmicoma polymorpha*  $\alpha$  *undulifolia*, 1864 as *Phragmicoma polymorpha*  $\beta$  *planifolia*, Schiffner 1893b as *Lejeunea polymorpha* var. *undulifolia*, 1898a as *Thysananthus polymorphus*, Verdoorn 1933b, 1934a both as *Thysananthus polymorphus*, Mizutani 1961, 1977, 1978a, Pócs *et al.* 1967, Miller *et al.* 1983 also as *Phragmicoma polymorpha*, *Phragmicoma polymorpha*  $\beta$  *planifolia*, *Phragmilejeunea polymorpha*, *Thysanolejeunea polymorpha*, Geissler & Bischler 1987 as *Lejeunea polymorpha* and its var. *undulifolia*, Geissler & Bischler 1989 as *Phragmicoma polymorpha* and its  $\alpha$  *undulifolia*, Geissler & Bischler 1990 also as *Thysananthus polymorphus* and its var.  $\beta$  *planifolia*, Thiers & Gradstein 1989 as *Archilejeunea polymorpha*, Zhu & So 1999b as *Archilejeunea polymorpha*, Bapna & Kachroo 2000b as *Archilejeunea polymorpha*, Gradstein *et al.* 2002. BA: Haerida *et al.* 2010. EJ: Verdoorn 1933 as *Thysananthus polymorphus*. WJ: **TYPE** of *Phragmicoma polymorpha*  $\beta$  *planifolia*, Sande Lacoste 1857 as *Phragmicoma polymorpha*  $\beta$  *planifolia*, Schiffner 1898a as *Thysananthus polymorphus* var.  $\beta$  *planifolia*, Verdoorn 1933 as *Thysananthus polymorphus*, Geissler & Bischler 1989 as *Phragmicoma polymorpha*  $\beta$  *planifolia*, Haerida *et al.* 2010.

\*\*\* *S. semirepandus* (Nees) Verd. JAV: **TYPE** of *Jungermannia semirepanda*, Nees 1830 as *Jungermannia semirepanda*, Gottsche *et al.* 1845a as *Phragmicoma semirepanda*, Sande Lacoste 1857 as *Phragmicoma semirepanda*, Schiffner 1894 as *Ptychanthus semirepandus*, Stephani 1912a as *Ptychanthus semirepandus*, Verdoorn 1933b as *Ptychanthus semirepandus*, Mizutani 1961, 1977, 1978a, Pócs *et al.* 1967, Kitagawa 1981, Geissler & Bischler 1985 as *Marchesinia semirepanda*, 1987 as *Jungermannia semirepanda* and *Lejeunea semirepanda*, 1989 as *Phragmicoma semirepanda* and *Ptychanthus semirepandus*, 1990 also as *Thysananthus semirepandus*, Bapna & Kachroo 2000b, Zhu & So 2001. WJ: Sande Lacoste 1864 as *Phragmicoma semirepanda*, Schiffner 1898a as *Ptychanthus semirepandus*, Verdoorn 1933 as *Ptychanthus semirepandus*, Gradstein *et al.* 2010, Haerida *et al.* 2010.

\*\*\* *S. sulcatus* (Nees) Gradst. JAV: **TYPE** of *Jungermannia sulcata*, Nees 1830 as *Jungermannia sulcata*, Gottsche *et al.* 1845a as *Ptychanthus sulcatus*, Sande Lacoste 1864 as *Ptychanthus sulcatus*, Schiffner 1894 as *Ptychanthus sulcatus*, Stephani 1912a as *Ptychanthus sulcatus*, Verdoorn 1933b as *Ptychanthus sulcatus*, Thiers 1986, Geissler & Bischler 1987 as *Jungermannia sulcata* and *Lejeunea sulcata*, 1989 as *Ptychanthus sulcatus* and *Ptycholejeunea sulcata*, Hürlimann 1991. WJ: Sande Lacoste 1857 as *Ptychanthus sulcatus*, Stephani 1890a as *Ptychanthus sulcatus*, Schiffner 1898a as *Ptychanthus sulcatus*, Verdoorn 1933 as *Ptychanthus sulcatus*.

### **Stictolejeunea**

\*\*\* *S. balfourii* (Mitt.) E.W.Jones. BA: Haerida & Gradstein, in press.

### **Strepsilejeunea**

? *S. heterophylla* Steph. JAV: **TYPE**, Stephani 1923, Geissler & Bischler 1990. WJ: Meijer 1954b.

### **Symphogyna**

\*\* *S. similis* Grolle WJ: Grolle & Piippo 1986.

\* <sup>129</sup>*S. ulvoides* (Reinw., Blume et Nees) Gottsche, Lindenb. et Nees JAV: **TYPE** of *Jungermannia ulvoides*, Reinwardt *et al.* 1824a as *Jungermannia ulvoides*, Nees 1830 as *Jungermannia ulvoides*, Gottsche *et al.* 1846, Sande Lacoste 1857, Schiffner 1898a, Geissler & Bischler 1987 as *Jungermannia ulvoides*, Geissler & Bischler 1990.

### **Symphogynopsis**

\*\*\* *S. gottscheana* (Mont. et Nees) Grolle JAV: Schiffner 1900a as *Pallavicinia levieri* var. *imperfecta*, Wigginton & Porley 2001. WJ: **TYPE** of *Pallavicinia levieri* var. *imperfecta*, Schiffner 1898b as *Pallavicinia levieri* var. *imperfecta*, Grolle & Piippo 1986 as *Symphogynopsis filicina*, Geissler & Bischler 1989 as *Pallavicinia levieri* var. *imperfecta*, Gradstein *et al.* 2010.

### **Syzygiella**

\*\* *S. securifolia* (Nees ex Lindenb.) Inoue JAV: **TYPE** of *Jungermannia subintegerrima*  $\alpha$  *oblongifolia*, *Plagiochila commutata*, *Plagiochila ligulifolia*, *Plagiochila variabilis* and *Plagiochila variegata*, Nees 1830 as *Jungermannia subintegerrima*  $\alpha$  *oblongifolia*, Gottsche *et al.* 1844 as *Plagiochila variegata*, Sande Lacoste 1854, 1855a, 1856b all as *Plagiochila*

129. *Symphogyna ulvoides* is probably a filmy fern (Schiffner 1900), but the type material was not seen.

*variabilis*, 1857 as *Plagiochila variegata*, 1864 as *Plagiochila subintegerrima*  $\alpha$  *oblongifolia*, Schiffner 1893b as *Syzygiella variegata* and its f. *laxior*, 1898a as *Plagiochila securifolia*, 1900a as *Plagiochila commutata*, *Syzygiella variabilis* and *Syzygiella variegata*, Stephani 1902 as *Syzygiella variabilis* and *Syzygiella variegata*, 1918 as *Plagiochila ligulifolia*, Verdoorn 1932a as *Syzygiella variegata*, Grolle 1967 as *Syzygiella variegata*, Miller *et al.* 1983 as *Plagiochila variegata* and *Syzygiella variegata*, Inoue 1984, Geissler & Bischler 1987 as *Jungermannia subintegerrima*  $\alpha$  *oblongifolia*, 1989 as *Plagiochila commutata*, *Plagiochila ligulifolia*, *Plagiochila subintegerrima*  $\alpha$  *oblongifolia*, *Plagiochila variabilis* and *Plagiochila variegata*, 1990 as *Syzygiella variabilis*, *Syzygiella variegata* and its f. *laxior*, Vána & Piippo 1989b, Vána 1991b, So & Grolle 2000c also as *Syzygiella variabilis*. WJ: TYPE of *Syzygiella variegata* f. *rubescens*, f. *laxior* and f. *latifolia*, Sande Lacoste 1857, 1864 both as *Plagiochila variabilis*, 1864 as *Plagiochila variegata*, Schiffner 1898a as *Syzygiella variabilis* and *Syzygiella variegata*, Schiffner 1900b as *Syzygiella variabilis* and *Syzygiella variegata* and its f. *laxior*, f. *latifolia* and f. *rubescens*, 1900c as *Syzygiella variegata*, Inoue 1966b, 1967b both as *Syzygiella variegata*, Geissler & Bischler 1990 as *Syzygiella variegata* f. *latifolia* and f. *rubescens*.

- \*\*\* *S. subintegerrima* (Reinw., Blume et Nees) Spruce JAV: TYPE of *Jungermannia subintegerrima* and its  $\beta$  *maior*, Reinwardt *et al.* 1824a as *Jungermannia subintegerrima*, Nees 1830 as *Jungermannia subintegerrima*  $\beta$  *maior*, Sande Lacoste 1857 as *Plagiochila subintegerrima* and its  $\beta$  *maior*, Schiffner 1900a as *Plagiochila subintegerrima*, Stephani 1903 as *Plagiochila subintegerrima*, Grolle 1967, Inoue 1968, 1984, Miller *et al.* 1983, Geissler & Bischler 1987 as *Jungermannia subintegerrima* and its  $\beta$  *maior*, 1989 as *Plagiochila subintegerrima* and its  $\beta$  *maior*, Vána & Piippo 1989b, Geissler & Bischler 1990, Vána 1991b, So & Grolle 2000c, Eggers 2006. WJ: Gottsche *et al.* 1844 as *Plagiochila subintegerrima* and its  $\beta$  *maior*, Sande Lacoste 1864 as *Plagiochila subintegerrima*  $\beta$  *maior*, Schiffner 1898a as *Plagiochila subintegerrima*, Inoue 1966b, Gradstein *et al.* 2010.

### Targionia

- \* <sup>130</sup>*T. dioica* Schiffn. JAV: Schiffner 1900a, Bischler-Causse *et al.* 2005 as *Targionia hypophylla*. WJ: TYPE, Schiffner 1898b, Geissler & Bischler 1990.

### <sup>131</sup>Taxilejeunea

- \* *T. aptycta* (Gottsche) Schiffn. JAV: TYPE of *Lejeunea aptycta*, Gottsche *et al.* 1845b as *Lejeunea aptycta*, Sande Lacoste 1857 as *Lejeunea aptycta*, Schiffner 1898a, Stephani 1914, Geissler & Bischler 1987 as *Lejeunea aptycta*, Geissler & Bischler 1990.
- \* *T. compressiuscula* Lindenb. ex Steph. JAV: TYPE, Stephani 1914, Geissler & Bischler 1987 as *Lejeunea compressiuscula*, 1990. WJ: Eifrig 1937.
- \* *T. dipterota* Eifrig JAV: SYNTYPE, Geissler & Bischler 1990. WJ: Eifrig 1937.
- \* *T. grandistipula* Steph. JAV: TYPE, Stephani 1914, Eifrig 1937, Geissler & Bischler 1990.
- \* *T. immersa* Eifrig JAV: Geissler & Bischler 1990. WJ: TYPE, Eifrig 1937.
- \* *T. laxa* (Nees) Steph. JAV: TYPE of *Jungermannia thymifolia*  $\delta$  *laxa*, Nees 1830 as *Jungermannia thymifolia*  $\delta$  *laxa*, Gottsche *et al.* 1845b as *Lejeunea laxa*, Sande Lacoste 1857 as *Lejeunea laxa*, Stephani 1890b as *Lejeunea laxa*, 1914, Geissler & Bischler 1987 as *Jungermannia thymifolia*  $\delta$  *laxa* and *Lejeunea laxa*, 1990. WJ: Schiffner 1898a as *Eulejeunea laxa*.
- \* *T. parvibracteata* Steph. WJ: Eifrig 1937.
- \* *T. splendida* Eifrig WJ: TYPE, Eifrig 1937, Geissler & Bischler 1990.
- \* *T. tjiobodensis* (Steph.) Eifrig JAV: Stephani 1914 as *Hygrolejeunea tjiobodensis*, Geissler & Bischler 1990. WJ: TYPE of *Hygrolejeunea tjiobodensis*, Eifrig 1937, Bonner 1966 as *Hygrolejeunea tjiobodensis*.

### Telaranea

- \*\*\* *T. neesii* (Lindenb.) Fulford JAV: Gottsche 1853 as *Lepidozia neesii*, Stephani 1909a as *Lepidozia neesii*, Mizutani 1974, 1976b, Engel 1978, Piippo 1984b, Geissler & Bischler 1985 as *Lepidozia javanica* and *Mastigophora javanica*, 1987 as *Jungermannia javanica*, 1990, Engel & Smith Merrill 2004. BA: Geissler & Bischler 1987 as *Jungermannia capillaris*  $\beta$  *javanica*. WJ: TYPE of *Jungermannia capillaris*  $\beta$  *javanica*, SYNTYPE of *Lepidozia neesii*, Nees 1830 as *Jungermannia capillaris*  $\beta$  *javanica*, Gottsche *et al.* 1845a as *Lepidozia neesii*, Sande Lacoste 1857, 1864 both as *Lepidozia neesii*, Schiffner 1898a, 1900c both as *Lepidozia neesii*, Meijer 1954a as *Lepidozia neesii*, Grolle 1966g, Amakawa 1968 as *Jungermannia javanica*, Geissler & Bischler 1985 as *Lepidozia neesii*.
- \*\*\* *T. papulosa* (Steph.) J.J.Engel et G.L.Merr. JAV: TYPE of *Lepidozia paucidens*, Stephani 1922 as *Lepidozia paucidens*, Kitagawa 1973b as *Lepidozia papulosa*, Miller *et al.* 1983 as *Lepidozia papulosa*, Geissler & Bischler 1985 as *Lepidozia paucidens*, Engel & Smith Merrill 2004.
- \*\*\* *T. trisetosa* (Steph.) Grolle JAV: SYNTYPE of *Lepidozia trisetosa*, Stephani 1909a as *Lepidozia trisetosa*, Geissler & Bischler 1985 as *Lepidozia trisetosa*, 1990. WJ: Herzog 1932 as *Lepidozia trisetosa*.
- \*\*\* *T. wallichiana* (Gottsche) R.M.Schust. JAV: TYPE of *Lepidozia tenera*, Sande Lacoste 1857 as *Lepidozia wallichiana*, Stephani 1909a as *Lepidozia tenera*, Hattori & Mizutani 1958 as *Lepidozia wallichiana*, Mizutani 1974, 1976b both as *Lepidozia wallichiana*, Miller *et al.* 1983 as *Lepidozia tenera*, *Lepidozia wallichiana* and *Neolepidozia wallichiana*, Piippo 1984b as *Lepidozia wallichiana*, Geissler & Bischler 1985 as *Lepidozia tenera*, Sharma & Srivastava 1993 as *Lepidozia wallichiana*, Bapna & Kachroo 2000a as *Lepidozia wallichiana*, Engel & Smith Merrill 2004. WJ: Sande Lacoste 1864 as *Lepidozia wallichiana*, Schiffner 1898a as *Lepidozia wallichiana*, Gradstein *et al.* 2010 as *Lepidozia wallichiana*.

130. *Targionia dioica* is probably a synonym of *T. hypophylla* L. described by Schiffner (1900) as dioicous, otherwise identical to *T. hypophylla*. We assume that the record by Bischler-Causse (2005) includes *T. dioica* as a synonym although not clearly stated.

131. Asiatic spp. of *Taxilejeunea* generally belong to *Lejeunea* (see papers by Mizutani). The following species were, however, not revised by Mizutani and it is doubtful where they belong.

## *Temnoma*

- \*\*\* *T. setigerum* (Lindenb.) R.M.Schust. JAV: **TYPE** of *Jungermannia setigera*, **Gottsche et al. 1844** as *Jungermannia setigera*, **Sande Lacoste 1857** as *Jungermannia setigera*, **Stephani 1909a** as *Blepharostoma setigerum*, Bonner 1963a as *Blepharostoma setigerum*, Inoue 1966a, Kitagawa 1966, Grolle 1967, Piippo 1984a, **Geissler & Bischler 1987** as *Jungermannia setigera*, 1990, Long & Grolle 1990, Bapna & Kachroo 2000. WJ: **Sande Lacoste 1864** as *Jungermannia setigera*, **Schiffner 1898a** as *Blepharostoma setigerum*, Meijer 1954b.  
\*\* — var. *setigerum* JAV: Miller et al. 1983.

## *Thysananthus*

- \*\*\* *T. comosus* Lindenb. ex Lehm. JAV: Verdoorn 1933b, Pócs et al. 1967, Miller et al. 1983. WJ: **Verdoorn 1933a**.  
\*\*\* *T. convolutus* Lindenb. JAV: **TYPE**, **Gottsche et al. 1845a**, Schiffner 1894, Verdoorn 1933b, Mizutani 1977, 1978a, Geissler & Bischler 1985 as *Mastigolejeunea convoluta*, **1990**, **Gradstein et al. 2002**. CJ: **Verdoorn 1933a**. WJ: **Sande Lacoste 1857, 1864, Stephani 1890a, 1898a, 1900c, Verdoorn 1932a, 1933a**, Meijer 1954a, **Haerida et al. 2010**.  
\* <sup>132</sup>*T. minor* Verd. WJ: **Haerida et al. 2010**.  
\*\*\* *T. retusus* (Reinw., Blume et Nees) B.M.Thiers et Gradst. JAV: **TYPE** of *Jungermannia retusa* and *Thysananthus planus*, **Reinwardt et al. 1824a** as *Jungermannia retusa*, **Nees 1830** as *Jungermannia retusa*, **Gottsche et al. 1845a** as *Ptychanthus retusus*, **Sande Lacoste 1854, 1855a, 1856b** all as *Thysananthus planus*, 1857 as *Ptychanthus retusus*, **Stephani 1890a**, 1912a both as *Ptychanthus retusus*, Schiffner 1894 as *Ptychanthus retusus* and *Thysananthus planus*, Verdoorn 1933b, 1934a both as *Thysananthus planus*, Mizutani 1977, 1978a, **1987b** all as *Thysananthus planus*, Miller et al. 1983 as *Caudalejeunea stephaniae*, *Thysananthus planus* and *Thysanolejeunea plana*, **Geissler & Bischler 1987** as *Jungermannia retusa*, *Lejeunea plana* and *Lejeunea retusa*, 1989 as *Phragmicoma plana*, *Ptychanthus retusus* and *Ptychanthus striatus* var. *retusus*, Hürlimann 1989 as *Thysananthus planus*, **1990** as *Thysananthus planus* and *Thysanolejeunea plana*, **Thiers & Gradstein 1989, Gradstein et al. 2002**. WJ: **Sande Lacoste 1857** as *Jungermannia retusa* and *Thysananthus planus*, **1864** as *Thysananthus planus*, **Schiffner 1898a** as *Thysananthus planus*, **Verdoorn 1933** as *Caudalejeunea stephaniae*, *Ptychanthus retusus* and *Thysananthus planus*, **Haerida et al. 2010**.  
\*\*\* *T. spathulistipus* (Reinw., Blume et Nees) Lindenb. JAV: **TYPE** of *Jungermannia spathulistipa*  $\beta^*$  *subpinnata* and  $\alpha$  *minor*, **Reinwardt et al. 1824a** as *Jungermannia spathulistipa*, **Gottsche 1853, Sande Lacoste 1857**, Schiffner 1894 also as *Jungermannia spathulistipa*  $\beta^*$  *subpinnata*, Verdoorn 1933b, 1934a, Grolle 1965a, Mizutani 1977, 1978a, Miller et al. 1983 also as *Jungermannia spathulistipa* and *Thysanolejeunea spathulistipa*, **Geissler & Bischler 1987** as *Jungermannia spathulistipa*  $\alpha$  *minor* and  $\beta^*$  *subpinnata* and *Lejeunea spathulistipa*, 1989 as *Phragmicoma spathulistipa*, Geissler & Bischler 1990 also as *Thysanolejeunea spathulistipa*, **Thiers & Gradstein 1989**, Bapna & Kachroo 2000b. BA: **Gradstein et al. 2002**. CJ: **Sande Lacoste 1864, Verdoorn 1933a**. EJ: **Verdoorn 1933a**. WJ: **TYPE** of *Jungermannia spathulistipa*, **Nees 1830** as *Jungermannia spathulistipa*  $\alpha$  *minor*, **Gottsche et al. 1845a, Sande Lacoste 1864, Stephani 1890a, Schiffner 1898a, 1900c, Verdoorn 1933a**, Meijer 1954a, **Kitagawa 1973b, Geissler & Bischler 1987** as *Jungermannia spathulistipa*, **Haerida et al. 2010**.

## *Treubia*

- \*\*\* *T. insignis* K.I.Goebel JAV: **Schiffner 1900a, Stephani 1900**, Grolle 1967, Higuchi 2005. WJ: **TYPE**, Goebel 1891, **Schiffner 1898a, 1898b, Verdoorn 1931b, Renner 1932**, Meijer 1954a, **Geissler & Bischler 1990**.  
\*\* — subsp. *insignis* JAV: Miller et al. 1983, Piippo 1988, Akiyama et al. 2001. WJ: **Schuster & Scott 1969**.

## *Triandrophyllum*

- \*\*\* *T. heterophyllum* (Steph.) Grolle JAV: **TYPE** of *Lepicolea flaccida* and *Mastigophora heterophylla*, **Stephani 1922** as *Lepicolea flaccida* and *Mastigophora heterophylla*, Schuster 1968, Grolle 1969, Piippo 1984a, **Geissler & Bischler 1985** as *Lepicolea flaccida* and *Mastigophora heterophylla*, 1990. WJ: **Grolle 1965c**.

## *Trichocolea*

- \*\* *T. obconica* Steph. JAV: **SYNTYPE**, **Stephani 1923**, Miller et al. 1983, **Geissler & Bischler 1990**.  
\* <sup>133</sup>*T. pluma* (Reinw., Blume et Nees) Mont. JAV: **Reinwardt et al. 1824a** as *Jungermannia pluma*, **Gottsche et al. 1845a** as *Trichocolea tomentella*  $\delta$  *pluma*, **Sande Lacoste 1857** as *Trichocolea tomentella*  $\delta$  *pluma*, Grolle 1977c, Miller et al. 1983, Geissler & Bischler 1987 as *Jungermannia tomentella* var.  $\delta$  *pluma*, 1990 also as *Trichocolea tomentella*  $\delta$  *pluma*. BA: **Nees 1830** as *Jungermannia tomentella* var.  $\delta$  *pluma*, **Van Leeuwen 1936, Kitagawa 1973b**. WJ: **TYPE** of *Jungermannia pluma*, **Sande Lacoste 1864** as *Trichocolea tomentella*  $\delta$  *pluma*, **Schiffner 1898a** as *Trichocolea tomentella* var.  $\delta$  *pluma*, **Renner 1932, Geissler & Bischler 1987** as *Jungermannia pluma*.  
\*\*\* *T. tomentella* (Ehrh.) Dumort. JAV: **TYPE** of *Jungermannia tomentella* var.  $\beta$  *javanica*, **Reinwardt et al. 1824a** as *Jungermannia tomentella* var.  $\beta$  *javanica*, **Nees 1830** as *Jungermannia tomentella* var.  $\beta$  *javanica*, **Gottsche et al. 1845a** as *Trichocolea tomentella*  $\gamma$  *javanica*, **Gottsche 1853, Sande Lacoste 1857** as *Trichocolea tomentella*  $\gamma$  *javanica*, Hattori 1966a, Hattori 1975c, Miller et al. 1983 as *Trichocolea tomentella*, **Geissler & Bischler 1987** as *Jungermannia tomentella* var.  $\beta$  *javanica*, 1990 as *Trichocolea tomentella* var.  $\gamma$  *javanica* and f.  $\gamma$  *javanica*, Bapna & Kachroo 2000. WJ: **Sande Lacoste 1864** also as *Trichocolea tomentella*  $\gamma$  *javanica*, **Schiffner 1898a** also as *Trichocolea tomentella* var.  $\beta$  *javanica*, **1900c, Gradstein et al. 2010**.  
\* —  $\epsilon$  *subsimplax* (Nees) **Gottsche, Lindenb. et Nees JAV: TYPE** of *Jungermannia tomentella*  $\epsilon$  *subsimplax*, **Nees 1830** as *Jungermannia tomentella*  $\epsilon$  *subsimplax*, **Gottsche et al. 1845a, Sande Lacoste 1857, 1864, Schiffner 1898a** as *Trichocolea tomentella* var.  $\delta$  *subsimplax*, **Geissler & Bischler 1987** as *Jungermannia tomentella*  $\epsilon$  *subsimplax*, 1990 also as *Trichocolea tomentella* f.  $\epsilon$  *subsimplax*.

132. *Thysananthus minor* is possibly just a small form of *T. spathulistipus*.

133. *Trichocolea pluma* is almost inseparable from *T. tomentella* and often included in the latter.

\* — var. *tomentella* JAV: Gottsche *et al.* 1845a.

### *Tuyamaella*

\*\* *T. angulistipa* (Steph.) R.M.Schust. et Kachroo JAV: Verdoorn 1938 as *Pycnolejeunea angulistipa*, Bapna & Kachroo 2000b. WJ: Hoffman 1935 as *Pycnolejeunea angulistipa*.

### *Wettsteinia*

\*\*\* *W. inversa* (Sande Lac.) Schiffn. JAV: Stephani 1908, Verdoorn 1931b, Grolle 1969, Bonner 1977 as *Adelanthus inversus*, Inoue 1984, Piippo 1984b, Schuster 1984, Geissler & Bischler 1990 also as *Tylimanthus inversus* and *Tylimanthus scaber*, Gao 2003. CJ: Grolle 1965b. WJ: TYPE of *Plagiochila inversa* and *Plagiochila scabra*, Sande Lacoste 1864 as *Plagiochila inversa* and *Plagiochila scabra*, Schiffner 1898a as *Tylimanthus inversus* and *Tylimanthus scaber*, Grolle 1965b, Geissler & Bischler 1989 as *Plagiochila inversa* and *Plagiochila scabra*.

### *Wiesnerella*

\*\*\* *W. denudata* (Mitt.) Steph. JAV: Stephani 1899, Schiffner 1900a as *Wiesnerella javanica*, Verdoorn 1932a, Hattori 1966a, Miller *et al.* 1983 also as *Wiesnerella javanica*, Bapna & Kachroo 2000b, Koponen *et al.* 2000. EJ: Schiffner 1898a as *Wiesnerella javanica*. WJ: TYPE of *Wiesnerella javanica*, Schiffner 1896 as *Wiesnerella javanica*, 1898a as *Wiesnerella javanica*, 1898b as *Wiesnerella javanica*, 1900c, Herzog 1932, Meijer 1954b, Geissler & Bischler 1990 as *Wiesnerella javanica*.

### *Zoopsis*

\*\* *Z. liukuensis* Horik. JAV: Miller *et al.* 1983, Grolle & Piippo 1984a.

## EXCLUDED AND DOUBTFUL RECORDS

### Anthocerotophyta

#### *Anthoceros*

\*\*\* *A. agrestis* Paton JAV: Schuster 1992b as *Aspiromitus punctatus* subsp. *agrestis*, Damsholt 2002 as *Anthoceros punctatus* subsp. *agrestis*, Bakalin *et al.* 2007. EXCLUDED. There are no confirmed reports from SE Asia (D. C. Cargill, 2010).

#### *Dendroceros*

\*\*\* *D. granulatus* Mitt. JAV: Hasegawa 1986a. EXCLUDED. This is a Pacific species that must have been erroneously reported.

\*\*\* *D. validus* Steph. JAV: TYPE, Stephani 1917a. EXCLUDED. Stephani (1917) in his original description cited the distribution of *D. validus* as “Java but according to Hasegawa (1980), who studied the holotype material, the species is from Sumatra (Mt. Singalang, leg. Schiffner). Therefore, we assume that the citation “Java is an error and exclude the species from Java.

#### *Phaeoceros*

\*\*\* *P. laevis* (L.) Prosk. JAV: Sande Lacoste 1857 as *Anthoceros laevis*, Schiffner 1898a as *Anthoceros laevis*, Meijer 1954c, 1957 both as *Anthoceros laevis*, Miller *et al.* 1983. CJ: Meijer 1955 as *Anthoceros laevis*. WJ: Meijer 1953, 1954a, 1958b all as *Anthoceros laevis*, Gradstein *et al.* 2010. EXCLUDED. All reports refer to *Phaeoceros carolinianus* (D. C. Cargill, pers. comm.).

### Marchantiophyta

#### *Albiellopsis*

\*\*\* *A. parvifolia* (Steph.) R.M.Schust. JAV: Bonner 1962 as *Albiella parvifolia*, 1977. EXCLUDED. We are not aware of any first hand reports from Java of this E Asiatic species and thus reject it.

#### *Anastrophyllum*

\*\*\* *A. assimile* (Mitt.) Steph. JAV: Long & Grolle 1990. DOUBTFUL. We are not aware of any first hand report although its occurrence on the island is possible.

#### *Anopolejeunea*

\*\*\* *A. conferta* (C.F.W.Meissn. ex Spreng.) A.Evans JAV: Gottsche *et al.* 1845b as *Lejeunea conferta*, Sande Lacoste 1857 as *Lejeunea conferta*, Schiffner 1898a as *Archilejeunea conferta*, Evans 1908 (questioning the reports). EXCLUDED. This is a neotropical taxon.

#### *Asterella*

\*\*\* *A. tenella* (L.) P.Beauv. JAV: Reinwardt *et al.* 1824b as *Fimbraria tenella*, Nees 1830 as *Fimbriaria tenella*. EXCLUDED. This is a North American taxon erroneously reported from many areas (cf. Long 2006).

\*\*\* *A. venosa* (Lehm. et Lindenb.) A.Evans JAV: Meissner 1848 as *Fimbraria venosa*, Gottsche 1853 as *Fimbriaria venosa*. EJ: Sande Lacoste 1857 as *Fimbraria venosa*, Schiffner 1898a as *Hypenantron venosum*. EXCLUDED. This is an American taxon. The report from Java is *A. khasyana* (cf. Long 2006).

#### *Bazzania*

\*\* *B. erosa* (Reinw., Blume et Nees) Trevis. var.  $\delta$  *pulopenangensis* (Lindenb.) Schiffn. JAV: Bonner 1963a. DOUBTFUL. We do not know of any first hand report of this variety. The species itself is frequently reported.

\*\* *B. intermedia* (Gottsche ex Lindenb.) Trevis. var.  $\beta$  *sarawakiana* (De Not.) Schiffn. JAV: Bonner 1963a. DOUBTFUL. We do not know about any first hand report of this variety. The species itself is frequently reported.

#### *Blasia*

\*\*\* *B. pusilla* L. JAV: Damsholt 2002. EXCLUDED. This is a holarctic taxon with its closest known location in the Himalayas.

### **Bryopteris**

- \*\*\* *B. filicina* (Sw.) Nees JAV: **Reinwardt et al. 1824a** as *Jungermannia filicina*, **Gottsche et al. 1845a** as *Bryopteris filicina*  $\beta$  *arguta*, Sande Lacoste 1857 as *Bryopteris filicina*  $\beta$  *arguta*, Fulford & Sharp 1990. WJ: **Nees 1830** as *Jungermannia filicina*. EXCLUDED. The record from Java is probably based on misidentified *Ptychanthus striatus*. *B. filicina* is not known outside the Neotropics (Gradstein 1994).
- \*\* *B. gaudichaudii* Gottsche JAV: Schiffner 1894, **Schiffner 1898a**. EXCLUDED. This is an African taxon.

### **Calypogeia**

- \*\*\* *C. bidentula* (F.Weber) Nees JAV: **Nees 1830** as *Jungermannia bidentula*, **Gottsche et al. 1845a**, **Sande Lacoste 1857**, **Schiffner 1898a** as *Kantia bidentula*. EXCLUDED. This is an African taxon.

### **Cephalozia**

- \*\*\* *C. bicuspidata* (L.) Dumort. JAV: **Nees 1830** as *Jungermannia bicuspidata*, **Sande Lacoste 1857** as *Jungermannia bicuspidata*, **1864** as *Jungermannia bicuspidata* A  $\alpha$  *vulgaris* **Schiffner 1898a** as *Eucephalozia bicuspidata*. EXCLUDED. Reports from SE Asia belong to *C. hamatiloba*.

### **Cephaloziella**

- \*\*\* *C. divaricata* (Sm.) Schiffn. WJ: **Sande Lacoste 1864** as *Jungermannia divaricata*  $\alpha$  *laxa*. EXCLUDED. Schiffner (1898) excluded this species from Java.

### **Ceratolejeunea**

- \*\*\* *C. cornuta* (Lindenb.) Steph. WJ: **Sande Lacoste 1864** as *Lejeunea ceratantha*, **Schiffner 1898a** as *Ceratolejeunea ceratantha*. EXCLUDED. This is a neotropical species.
- \*\*\* *C. desciscens* (Sande Lac.) Schiffn. JAV: Bonner 1963b. EXCLUDED: This is a neotropical species. The material, on which the record was based, was described as *C. inflata* (Mizutani 1981).
- \* *C. tahitensis* Steph. JAV: Bonner 1963b, Miller *et al.* 1983. EXCLUDED. We are not aware of any first hand report from Java. Moreover, the species has not been critically revised and is most likely a synonym of something.

### **Cheilolejeunea**

- \*\*\* *C. lineata* (Lehm. et Lindenb.) Schiffn. JAV: **Sande Lacoste 1857** as *Lejeunea lineata*, **Schiffner 1898a**. EXCLUDED. This is a neotropical species and Evans (1906) rejects it from Java.
- \*\*\* *C. mariana* (Gottsche) B.M.Thiers et Gradst. JAV: Mizutani 1977, 1978a both as *Spruceanthus marianus*, Miller *et al.* 1983 as *Spruceanthus marianus*. EXCLUDED. This is a Pacific species. Reports from Java belong to *Archilejeunea planiuscula*.
- \*\* *C. orientalis* (Gottsche) Mizut. JAV: Bonner 1965 as *Euosmolejeunea orientalis*, Bapna & Kachroo 2000b. EXCLUDED. Mizutani (1972) rejected it from Java.

### **Chiloscyphus**

- \*\*\* *C. pallescens* (Ehrh. ex Hoffm.) Dumort. JAV: **Nees 1830** as *Jungermannia pallescens*, **Gottsche et al. 1845a**, Sande Lacoste 1857, Schiffner 1898a, Frye & Clark 1944. EXCLUDED. This is a boreal taxon with its nearest occurrence in the Himalayas.

### **Cololejeunea**

- \* *C. decliviloba* Steph. JAV: Stephani 1916 as *Physocolea decliviloba*, Miller *et al.* 1983 also as *Physocolea decliviloba*. DOUBTFUL. We only know that Stephani mentions this taxon from Java. It is a taxonomically doubtful taxon described from New Caledonia and most likely a synonym of something.
- \*\* *C. denticulata* (Horik.) S.Hatt. JAV: Eggers *et al.* 1998. DOUBTFUL. We are not aware of any first hand report from Java.
- \*\* *C. marginata* (Lehm. et Lindenb.) Schiffn. JAV: Bonner 1963b. WJ: **Sande Lacoste 1864** as *Lejeunea marginata*, **Schiffner 1898a, 1900c**. EXCLUDED. This is an African taxon.
- \* *C. spinosa* (Horik.) Pand et R.N.Misra JAV: Bapna & Kachroo 2000b. EXCLUDED. This is a species from China and Japan, very similar to *C. haskarlina* and the record from Java should be the latter.
- \*\*\* *C. vesicaria* (Sande Lac.) Benedix JAV: Schiffner 1893b, Bonner 1963a as *Campylolejeunea vesicaria*. EXCLUDED. Benedix (1953) considered the record from Java as erroneous.

### **Colura**

- \*\*\* *C. karstenii* K.I.Goebel JAV: Bonner 1963b as *Colurolejeunea superba* var.  $\beta$  *latifolia*. EXCLUDED. The identity of the variety *latifolia* remains doubtful. According to Schiffner (1898) who studied the plant, the specimen from Java do not belong to *C. karstenii* (even though this Malesian species may well occur there). However, the type of the variety is from Bismarck Archipelago and Grolle & Piippo (1984b) synonymized it with *C. karstenii*.

### **Cyathodium**

- \*\*\* *C. aureonitens* (Griff.) Schiffn. JAV: Stephani 1898, Arnell 1963, Miller *et al.* 1983, Srivastava & Dixit 1996, Bapna & Kachroo 2000b. DOUBTFUL. The species was recorded from Java in the monograph of *Cyathodium* by Srivastava & Dixit (1996) but no Javanese material was examined.

### **Cyclolejeunea**

- \*\*\* *C. peruviana* (Lehm. et Lindenb.) A.Evans JAV: **SYNTYPE** of *Cyclolejeunea mirabilis*, **Stephani 1913** as *Cyclolejeunea mirabilis*, **Bonner 1963b** as *Cyclolejeunea mirabilis*. EXCLUDED: The syntype of this neotropical species, but it is certainly not from Java (Grolle 1988).

### **Diplasiolejeunea**

- \*\*\* *D. pellucida* (C.F.W.Meissn. ex Spreng.) Schiffn. JAV: **Sande Lacoste 1857** as *Lejeunea pellucida*, **Schiffner 1898a**, Miller *et al.* 1983. WJ: **Schiffner 1900c**. EXCLUDED. This is a neotropical species excluded from paleotropics by Grolle (1966a).

### *Drepanolejeunea*

- \*\* *D. foliicola* Horik. JAV: Onraedt 1991 as *Leptolejeunea foliicola*. DOUBTFUL. We do not know about any first hand report of this species.
- \*\*\* *D. inchoata* (C.F.W.Meissn. ex Lehm. et Lindenb.) Schiffn. JAV: **Sande Lacoste 1856a, 1857** both as *Lejeunea inchoata*, Miller *et al.* 1983. EXCLUDED: This is a neotropical species.
- \*\* *D. longicuris* (Steph.) Grolle et R.L.Zhu JAV: Szab 1997 as *Rhaphidolejeunea longicuris*. WJ: **Bischler 1968b** as *Rhaphidolejeunea longicuris*. EXCLUDED. The Java record is erroneous (Grolle 1974).
- \*\*\* *D. polyrhiza* (Nees) Grolle et R.L.Zhu WJ: **Sande Lacoste 1864** as *Lejeunea polyrhiza*, **Schiffner 1898a** as *Leptolejeunea polyrhiza*. EXCLUDED. Rejected as *Leptolejeunea foliicola* by Bischler 1968b. This is a neotropical species.

### *Fossombronia*

- \*\*\* *F. angulosa* (Dicks.) Raddi JAV: **TYPE** of *Jungermannia javanensis*, Jolyclerc 1799 as *Jungermannia javanensis*, **Geissler & Bischler 1987** as *Jungermannia javanensis*. EXCLUDED. The reference that Jolyclerc (1799) referred to is exactly the same page and image that Dickson (1785) used when describing his *Jungermannia angulosa* and the occurrence of this European species in tropical Asia is very unlikely.
- \*\*\* *F. cristula* Austin JAV: Inoue 1973 as *Fossombronia foveolata* var. *cristula*, Piippo 1991a, Schuster 1992a as *Fossombronia foveolata* var. *cristula*. EXCLUDED. This is an eastern North American species (Scott & Crandall-Stotler 2002, Krayesky *et al.* 2005).

### *Frullania*

- \*\* *F. diptera* (Lehm.) Lehm. et Lindenb. JAV: **Sande Lacoste 1857, Schiffner 1898a**. EXCLUDED. This is an African species.
- \*\*\* *F. falciloba* Taylor ex Lehm. JAV: **Sande Lacoste 1857, Schiffner 1898a**. EXCLUDED. This is an Australian species.
- \*\*\* *F. lobulata* (Hook.) Dumort. JAV: **Reinwardt et al. 1824** **Reinwardt et al. 1824a** as *Jungermannia lobulata*, **Nees 1830** as *Jungermannia lobulata*  $\alpha$  *minor*. EXCLUDED: This is a taxon from southern South America and the reports from Java probably belong to *F. junghuhniana* (M. von Konrat, pers. comm.)
- \*\* *F. semivillosa* Lindenb. et Gottsche JAV: **Sande Lacoste 1857**, Clark 1955a. EXCLUDED. This is an American species.

### *Gottschea*

- \*\* *G. neesii* Mont. JAV: **Sande Lacoste 1857, Schiffner 1898a** as *Schistochila neesii*, Buch 1939 as *Schistochila neesii*. EXCLUDED. This is an African species and the records from Java belong to *Gottschea aligera* (So 2003).

### *Herbertus*

- \*\*\* *H. aduncus* (Dicks.) Gray JAV: **Nees 1830** as *Jungermannia juniperina* var.  $\beta$ . WJ: **Schiffner 1898a**. EXCLUDED. Not occurring South of the Himalayas (Juslén 2006).  
? —subsp. *hutchinsiae* R.M.Schust. *nom. inval.* JAV: **Gottsche et al. 1845a** as *Sendtnera juniperina*  $\beta$ , **Sande Lacoste 1857** as *Sendtnera juniperina*  $\beta$ . EXCLUDED. This subspecies is European.
- \*\* *H. gracilis* (Mont.) Steph. JAV: Miller *et al.* 1983. EXCLUDED. This is a Hawaiian species.
- \*\*\* *H. juniperoides* (Sw.) Grolle WJ: **Sande Lacoste 1864** as *Sendtnera juniperina*, **Renner 1932** as *Herberta juniperina*. EXCLUDED. All reports probably belong to *H. dicranus*.

### *Heteroscyphus*

- \*\* *H. combinatus* (Nees) Schiffn. JAV: **Gottsche et al. 1845a** as *Chiloscyphus combinatus*, **Sande Lacoste 1857** as *Chiloscyphus combinatus*, **Sande Lacoste 1864** as *Chiloscyphus combinatus*, **Schiffner 1898a** as *Chiloscyphus combinatus*. EXCLUDED. This is a neotropical species.

### *Isotachis*

- \*\*\* *I. aubertii* (Schwägr.) Mitt. JAV: **Nees 1830** as *Jungermannia uncinata*. EXCLUDED. This is an African-American species.

### *Jubula*

- \*\* *J. hutchinsiae* (Hook.) Dumort. subsp. *hutchinsiae* JAV: **Sande Lacoste 1857** as *Frullania hutchinsiae*  $\alpha$  *hutchinsiae*. EXCLUDED. This is a European subspecies and only subsp. *javanica* occurs in SE Asia.
- \*\*\* *J. pennsylvanica* (Steph.) A.Evans JAV: **Schiffner 1893b** as *Jubula hutchinsiae* var. *sullivantii*. EXCLUDED. This is an American species.

### *Kurzia*

- \*\*\* *K. capillaris* (Sw.) Grolle JAV: **Reinwardt et al. 1824a** as *Jungermannia capillaris*. EXCLUDED. This is an African-American species.
- \*\*\* *K. pauciflora* (Dicks.) Grolle WJ: **Sande Lacoste 1864** as *Jungermannia setacea*. EXCLUDED. This is a boreal species rejected from Java already by Schiffner (1898a).

### *Lejeunea*

- \*\*\* *L. anisophylla* Mont. WJ: Gradstein *et al.* 2010. DOUBTFUL. The material that this report is based on is rather poorly developed and the identification therefore remains uncertain. *Lejeunea anisophylla* is a very common and widespread species in tropical Asia but has surprisingly not been recorded from Java.
- \*\* *L. patens* Lindb. JAV: **Sande Lacoste 1857** as *Lejeunea serpyllifolia*, **Stephani 1890b** as *Lejeunea serpyllifolia*., WJ: **Sande Lacoste 1864** as *Lejeunea serpyllifolia*. EXCLUDED. This is a mainly western Euro-Asiatic species occurring closest in the Himalayas. It was rejected from Java already by Schiffner (1898a).
- \*\* *L. tenella* Taylor JAV: Stephani 1914 as *Euosmolejeunea tenella*, Bonner 1965 as *Euosmolejeunea tenella*, Miller *et al.* 1983 as *Euosmolejeunea tenella*. EXCLUDED. All reports belong to *Cheilolejeunea serpentina* (Zhu 2006b).

### *Lepicolea*

- \*\*\* *L. ochroleuca* (Spreng.) Spruce JAV: Gottsche *et al.* 1845a as *Sendtnera ochroleuca*, Miller *et al.* 1983 also as *Sendtnera ochroleuca*. CJ: **Sande Lacoste 1864** as *Sendtnera ochroleuca*. WJ: **Sande Lacoste 1864** as *Sendtnera ochroleuca*, **Schiffner 1898a, 1900c**. EXCLUDED. This is an African-American species.

\*\*\* *L. scolopendra* (Hook.) Dumort. ex Trevis. WJ: **Seifriz 1924**. EXCLUDED. This is an Australasian species.

#### **Lepidolejeunea**

\*\*\* *L. involuta* (Gottsche) Grolle JAV: **TYPE** of *Ceratolejeunea cuspidata*, **Bonner 1963b** as *Ceratolejeunea cuspidata*, **Mizutani 1981** as *Ceratolejeunea cuspidata*, **Piippo 1986**. EXCLUDED. *Lepidolejeunea involuta* is a neotropical species and the type of *Ceratolejeunea cuspidata* must be mislabeled.

#### **Lepidozia**

\*\*\* *L. microphylla* (Hook.) Lindenb. JAV: **Reinwardt et al. 1824a** as *Jungermannia microphylla*. WJ: **Nees 1830** as *Jungermannia microphylla*. EXCLUDED. This is a species from Tasmania and New Zealand.

\*\*\* *L. reptans* (L.) Dumort. JAV: **Nees 1830** as *Jungermannia reptans*, Gottsche et al. 1845a as *Lepidozia reptans*  $\delta$  *tenera*, Sande Lacoste 1857 as *Lepidozia reptans*  $\delta$  *tenera*, **Sande Lacoste 1864** as *Lepidozia reptans*  $\delta$  *tenera*, Frye & Clark 1946, Bapna & Kachroo 2000. EXCLUDED. This is a boreal species already excluded from Java by Schiffner (1898a).

#### **Leptoscyphus**

\*\*\* *L. infuscatus* (Mitt.) E.W.Jones ex Grolle JAV: **Stephani 1906** as *Leioscyphus motleyi*, Bizot & Pócs 1974. WJ: **TYPE** of *Leioscyphus motleyi*, **Mitten 1886** as *Leioscyphus motleyi*, **Geissler & Bischler 1987** as *Leioscyphus motleyi*. EXCLUDED. This is an African taxon and the type material of *L. motleyi* was presumably erroneously labeled (Grolle 1963).

#### **Marchantia**

\*\*\* *M. chenopoda* L. JAV: Sprengel 1827. EXCLUDED. This is an American taxon and reports from Java belong to *M. geminata* (Bischler-Causse 1989).

\*\*\* *M. pappeana* Lehm. subsp. *robusta* (Steph. ex Bonner) Bischl. JAV: **TYPE** of *Marchantia robusta*, Bonner 1953 as *Marchantia robusta*, **Geissler & Bischler 1985** as *Marchantia robusta*, **Bischler-Causse 1993**. EXCLUDED. The type material of *Marchantia robusta* probably originated from Sri Lanka and was erroneously labeled (Bischler 1989).

#### **Mastigolejeunea**

\* *M. frauenfeldii* (Reichardt) Verd. JAV: Miller et al. 1983. EXCLUDED. This is a Pacific species of doubtful taxonomic status.

#### **Metacalypogeia**

\*\*\* *M. alternifolia* (Nees) Grolle JAV: **Stephani 1908** as *Calypogeia alternifolia*, Bonner 1963a as *Bazzania alternifolia* and *Calypogeia alternifolia*, Miller et al. 1983 also as *Bazzania alternifolia*, *Calypogeia alternifolia*, *Kantius alternifolius* and *Mastigobryum alternifolium*. WJ: **Sande Lacoste 1864** as *Mastigobryum alternifolium*, **Schiffner 1898a** as *Kantia alternifolia*. EXCLUDED. This is a species from China, Japan and the Himalayas and known from tropical Asia.

#### **Metzgeria**

\*\*\* *M. albinea* Spruce JAV: Kuwahara 1984, Kuwahara 1985, Piippo 1991a, Koponen et al. 2000. EXCLUDED. This is an African-American species.

\*\*\* *M. myriopoda* Lindb. JAV: **Schiffner 1898a**. EXCLUDED. This is an American taxon.

\*\*\* *M. procera* Mitt. JAV: **Stephani 1899** as *Metzgeria hamata*, Pagán 1939 as *Metzgeria hamata*. WJ: **Schiffner 1900c** as *Metzgeria hamata*, Verdoorn 1935 as *Metzgeria hamata*. EXCLUDED. This is an American species reported due to nomenclatural confusion with *Metzgeria hamata*.

#### **Micropterygium**

\*\*\* *M. carinatum* (Grev.) Reimers JAV: Miller et al. 1983 as *Micropterygium cymbifolium*. EXCLUDED. This is an American taxon.

\*\*\* *M. pterygophyllum* (Nees) Trevis. JAV: **Sande Lacoste 1857** as *Micropterygium vulgare*  $\beta$ . EXCLUDED. This is an American species. The report was rejected by Schiffner (1898).

#### **Monosolenium**

\*\*\* *M. tenerum* Griff. JAV: Miller et al. 1983. EXCLUDED. The report of this rare eastern Asian species is almost certainly an error.

#### **Nardia**

\*\*\* *N. succulenta* (A.Rich. ex Lehm.) Spruce WJ: **Sande Lacoste 1857** as *Jungermannia succulenta*. EXCLUDED. This neotropical species was rejected already by Schiffner (1898).

#### **Nowellia**

\*\*\* *N. borneensis* (De Not.) Schiffn. JAV: Bonner 1963a as *Cephalozia borneensis*, Miller et al. 1983. WJ: **Schiffner 1898a, 1900c**, Meijer 1954a. EXCLUDED. The record from Java is misidentified *N. curvifolia* (Grolle 1968c).

#### **Odontoschisma**

\*\*\* *O. prostratum* (Sw.) Trevis. JAV: **Nees 1830** as *Jungermannia prostrata*. EXCLUDED. This is an American taxon rejected from Java already by Schiffner (1898).

#### **Phaeolejeunea**

\*\*\* *P. latistipula* (Schiffn.) Mizut. JAV: **TYPE** of *Lejeunea latistipula* var. *minor*, **Schiffner 1893b** as *Lejeunea latistipula* var. *minor*, **1898a** as *Lopholejeunea latistipula*, Geissler & Bischler 1985 as *Lopholejeunea latistipula* var.  $\beta$  *minor*, **1987** as *Lejeunea latistipula* var. *minor*, Gradstein et al. 2002, **Zhu & Gradstein 2005** as *Lopholejeunea latistipula* var.  $\beta$  *minor*, Pócs 2008a. DOUBTFUL. The type specimen and label needs to be checked before the occurrence on Java of this Pacific species can be accepted.

#### **Plagiochila**

\*\*\* *P. assamica* Steph. JAV: **SYNTYPE**, Bapna & Kachroo 2000b. EJ: **Carl 1931**. EXCLUDED. The report from Java (syntype) is *P. spathulifolia* (Inoue 1968) or *P. frondescens* (Inoue 1984).

\*\*\* *P. cristata* (Sw.) Lindenb. JAV: **Nees 1830** as *Jungermannia cristata*. EXCLUDED. This is an American species.

- \*\*\* *P. dichotoma* (P.Beauv.) Nees et Mont. JAV: **Reinwardt et al. 1824a** as *Jungermannia dichotoma*, **Sande Lacoste 1856a, 1857**, Schiffner 1898a. EXCLUDED. This is an African species.
- \*\* *P. gaudichaudii* Mont. et Gottsche JAV: Miller et al. 1983 as *Plagiochila tenuis*. EXCLUDED. This is a Pacific taxon.
- \*\* *P. geniculata* Lindenb. WJ: **Sande Lacoste 1857**. EXCLUDED. This is a neotropical species.
- \* *P. gigantea* Lindenb. JAV: **Nees 1830** as *Jungermannia gigantea*. EXCLUDED. This is a species from New Zealand of uncertain value.
- \*\*\* *P. gymnocalycina* (Lehm. et Lindenb.) Mont. JAV: **Sande Lacoste 1857** as *Plagiochila rutilans*  $\beta$  *laxa*. EXCLUDED. This is a neotropical species.
- \*\*\* *P. macrostachya* Lindenb. JAV: **Sande Lacoste 1857** as *Plagiochila flaccida*. EXCLUDED. This is a neotropical species.
- \*\*\* *P. nepalensis* Lindenb. JAV: **Dugas 1929**, Hattori 1966a, Long & Grolle 1990. EXCLUDED. Malesian specimens are rejected as *P. celebica* (Inoue 1984, Grolle & So 1999d).
- \*\* *P. peradenyensis* Schiffn. JAV: **Stephani 1903**, Miller et al. 1983. EXCLUDED. Reports from Java belong to *P. parvifolia* (Grolle & So 1999a).
- \*\*\* *P. repanda* (Schwägr.) Lindenb. JAV: **Sande Lacoste 1857, 1864, Schiffner 1898a, 1900a**. EXCLUDED. This is an African species.
- \*\*\* *P. rutilans* Lindenb. JAV: **Sande Lacoste 1857**. EXCLUDED. This is a neotropical species. Specimens from Java are *P. nobilis* (Inoue 1984).
- \*\*\* *P. simplex* (Sw.) Lindenb. JAV: **Sande Lacoste 1857** as *Plagiochila simplex* var.  *$\alpha$  minor*. EXCLUDED. This is a neotropical species. Records from Java belong to *P. spathulifolia* (Sande Lacoste 1864).
- \*\* *P. tenuis* Lindenb. JAV: Miller et al. 1983. WJ: **Sande Lacoste 1864, Schiffner 1898a**. EXCLUDED. This is a neotropical species.
- \*\*\* *P. terebrans* Nees et Mont. ex Lindenb. JAV: **Sande Lacoste 1857**. CJ: **Schiffner 1898a**. EXCLUDED. This is an African species. Reports from Java are *P. javanica* (Inoue 1984).

#### **Plicanthus**

- \* *P. birmensis* (Steph.) R.M.Schust. JAV: Bonner 1963b as *Chandonanthus birmensis*, Hattori 1966a as *Chandonanthus birmensis*, Miller et al. 1983 as *Chandonanthus birmensis*, Bapna & Kachroo 2000b as *Chandonanthus birmensis*. DOUBTFUL. We are not aware of any first hand report from Java. Grolle (2005) thinks it is a depauperate form of *Plicanthus hirtellus*.

#### **Podomitrium**

- \*\* *P. malaccense* (Steph.) Campb. JAV: Miller et al. 1983. EXCLUDED. Grolle & Piippo (1986) reject all reports from Java.
- \*\* *P. phyllanthus* (Hook.) Mitt. JAV: **Sande Lacoste 1857** as *Blyttia phyllanthus*, **Schiffner 1898a** as *Hymenophyllum phyllanthus*. EXCLUDED. This is an Australian taxon (Troll 1930).

#### **Porella**

- \*\* *P. caespitans* (Steph.) S.Hatt. var. *intermedia* (S.Hatt.) S.Hatt. JAV: **SYNTYPE** of *Porella acutifolia* var. *intermedia*, **Hattori 1969** as *Porella acutifolia* var. *intermedia*, Hattori 1978 as *Porella acutifolia* var. *intermedia*, **Geissler & Bischler 1989** as *Porella acutifolia* var. *intermedia*. DOUBTFUL. The specimen from Java (a syntype) are from an unknown locality and of doubtful identity (Hattori 1969).
- \*\* *P. campylophylla* (Lehm. et Lindenb.) Trevis. var. *ligulifera* (Taylor ex Lehm.) S.Hatt. JAV: **Sande Lacoste 1864** as *Madotheca ligulifera*, **Schiffner 1898a** as *Madotheca ligulifera*, Stephani 1910 as *Madotheca ligulifera*, Grolle 1966c as *Porella ligulifera*, Hattori 1966a as *Porella ligulifera*, Bapna & Kachroo 2000b. EXCLUDED. The Java material is misidentified *P. acutifolia* var. *subligulifera* (Hattori 1970).
- \*\* *P. gracillima* Mitt. JAV: Bapna & Kachroo 2000b as *Porella gracillima* subsp. *gracillima*. EXCLUDED. This is a temperate species from E Asia and N America.
- \*\* *P. nitens* (Steph.) S.Hatt. JAV: Long & Grolle 1990. EXCLUDED. Excluded from Java by Hattori (1978).
- \*\* *P. plumosa* (Mitt.) Parihar JAV: Pócs 1968b. EXCLUDED. Excluded from Java by Hattori (1978).

#### **Radula**

- \*\*\* *R. aneurismalis* (Hook.f. et Taylor) Gottsche, Lindenb. et Nees JAV: **Castle 1963, 1969**. EXCLUDED. This is an Australian species.
- \*\*\* *R. boryana* (F.Weber) Nees ex Mont. JAV: **Reinwardt et al. 1824a** as *Jungermannia boryana*. WJ: **Nees 1830** as *Jungermannia boryana*. EXCLUDED. Rejected by Castle (1937) as *R. campanigera*.
- \*\*\* *R. campanulata* Lindenb. et Gottsche JAV: **Castle 1959**, Bapna & Kachroo 2000b. EXCLUDED. A neotropic taxon.
- \*\* *R. gracilis* Mitt. ex Steph. JAV: Miller et al. 1983. EXCLUDED. This is a neotropical species (Yamada 1979).

#### **Rectolejeunea**

- \*\* *R. olivacea* (Steph.) S.C.Srivast. et A.Agarwal JAV: Bapna & Kachroo 2000b. EXCLUDED. We do not know of any first hand report from Java of this species. *Rectolejeunea olivacea* is probably a member of *Lejeunea* subgen. *Heterolejeunea*, characterized by caduceus leaves. *Rectolejeunea* as currently defined (Grolle 1995) is a neotropical genus.

#### **Riccardia**

- \* *R. baumannii* Hürl. JAV: Furuki 1991. DOUBTFUL. This is a dubious record, recorded from Java by Furuki (1991) without citation of material. *Riccardia baumannii* differs from *R. grossitexta* and *R. tenuicostata* (older names) presumably only in sex distribution (being autoicous; Furuki 1991).
- \*\*\* *R. chamedryfolia* (With.) Grolle JAV: **Nees 1830** as *Jungermannia pinnatifida*, **Gottsche et al. 1846** as *Aneura pinnatifida* f.  $\beta$  *denticulata*, **Gottsche 1853** as *Aneura pinnatifida*, **Sande Lacoste 1857** as *Aneura pinnatifida*, **Engel 1978** as *Riccardia pinnatifida*. WJ: Schiffner 1898a as *Riccardia pinnatifida*. EXCLUDED. There is no confirmed record from Java of this holarctic species.



- \*\*\* *R. fucoidea* (Sw.) Schiffn. JAV: **Nees 1830** as *Jungermannia fucoidea*, **Gottsche et al. 1846** as *Metzgeria fucoidea*, **Gottsche 1853** as *Metzgeria fucoidea*. EXCLUDED. This neotropical species was excluded from Java already by Schiffner (1898a).
- \*\*\* *R. multifida* (L.) Gray JAV: **Gottsche et al. 1846** as *Aneura multifida*, **Sande Lacoste 1857** as *Aneura multifida*, **Schiffner 1898a** as *Riccardia multifida* var. *ambrosioides*, Bonner 1962 as *Aneura crenulata*, Geissler & Bischler 1990 as *Riccardia multifida* var. *ambrosioides*. WJ: **Nees 1830** as *Jungermannia multifida*, **Schiffner 1898a**, **Meijer 1959b**. DOUBTFUL. The Java records are unconfirmed and may all be *R. multifidoides* that Meijer (1958b) considered as a synonym of *R. multifida* (see note under *R. multifidoides*).

### Riccia

- \*\*\* *R. canaliculata* Hoffm. JAV: **Schiffner 1900a**. EXCLUDED. This is a holarctic taxon. The record from Java is probably a land form of *R. fluitans* (Meijer 1958a).
- \*\*\* *R. huebeneriana* Lindenb. JAV: Jovet-Ast 2003. EXCLUDED. We do not know of any first hand report of this species from Java. Possibly, there has been a confusion with *R. haskarliana*, which according to Meijer (1958a) is narrowly related to *R. huebeneriana*.

### Scapania

- \*\*\* *S. ciliatospinosa* Horik. JAV: Hattori 1971a as *Scapania schiffneri*, Long & Grolle 1990, Bapna & Kachroo 2000b. EXCLUDED. Reports from Java are probably erroneous (A. Potemkin, pers. comm.)
- \*\*\* *S. ferruginea* (Lehm. et Lindenb.) Gottsche, Lindenb. et Nees JAV: Amakawa 1964 as *Scapania ferruginea* var. *ferruginea*, Long 1979, Piippo et al. 1997, Bapna & Kachroo 2000b as *Scapania ferruginea* var. *ferruginea*. WJ: **Sande Lacoste 1857**, **1864**, **Schiffner 1898a**, Meijer 1954b. EXCLUDED. Reports from Java are *S. sandei* according to Grolle (1965h)
- \*\*\* *S. griffithii* Schiffn. JAV: **TYPE** of *Scapania indica*, **Müller 1901b** as *Scapania indica*, **Geissler & Bischler 1990** as *Scapania indica*. EXCLUDED. It is unclear whether Müller ever had any authentic material from Java.
- \*\*\* *S. nemorea* (L.) Grolle JAV: **Nees 1830** as *Jungermannia nemorosa*, Gottsche et al. 1844 as *Scapania nemorosa*, Sande Lacoste 1857 as *Scapania nemorosa*. EXCLUDED. This is a boreal species excluded from Java already by Schiffner (1898a).

### Schiffneriolejeunea

- \*\*\* *S. cumingiana* (Mont.) Gradst. JAV: Verdoorn 1933b, 1934a both as *Ptychocoleus cumingianus*, Miller et al. 1983, Bapna & Kachroo 2000b. WJ: **Verdoorn 1933** as *Ptychocoleus cumingianus*. EXCLUDED. The report from Java is based on misidentified *S. tumida* var. *haskarliana*.

### Steeereella

- \*\*\* *S. linearis* (Sw.) Kuwah. JAV: **SYNTYPE** of *Metzgeria furcata*  $\beta 2$  minor, **Nees 1830** as *Jungermannia furcata*  $\gamma$  linearis, Nees 1838 as *Metzgeria furcata*  $\beta 2$  minor, **Sande Lacoste 1857** as *Metzgeria furcata*  $\beta 2$  minor, **Geissler & Bischler 1985** as *Metzgeria furcata*  $\beta 2$  minor. EXCLUDED. This is a neotropical species (Costa 2008) and the syntype of *M. furcata*  $\beta 2$  minor must either be mislabeled or does not belong here.

### Stictolejeunea

- \*\*\* *S. squamata* (Willd. ex F.Weber) Schiffn. JAV: Miller et al. 1983 as *Lejeunea squamata*. EXCLUDED. This is a neotropical species (Gradstein 1994).

### Symphyogyna

- \*\*\* *S. brasiliensis* Nees et Mont. JAV: **Nees 1830** as *Jungermannia brasiliensis*. EXCLUDED. This is an African-American species excluded from Java already by Schiffner (1900).
- \*\*\* *S. podophylla* (Thunb.) Mont. et Nees JAV: **Meissner 1848**, **Gottsche 1853**. WJ: **Sande Lacoste 1857**. EXCLUDED. This does not occur in Asia.

### Syzygiella

- \*\*\* *S. autumnalis* (DC.) K.Feldberg, Váña, Hentschel et Heinrichs JAV: Schuster 1969 as *Jamesoniella autumnalis* var. *autumnalis*, Bapna & Kachroo 2000b as *Jamesoniella autumnalis*. EXCLUDED. This is a holarctic-neotropical species never reported from Java based on specimens cited.

### Taxilejeunea

- \*\*\* *T. conformis* (Nees et Mont.) Steph. WJ: **Thiers 1986** as *Lejeunea conformis*. EXCLUDED: This is an African taxon and we think the report from Java is based on a misidentification.

### Trocholejeunea

- \*\*\* *T. sandvicensis* (Gottsche) Mizut. JAV: Schiffner 1894, 1898a both as *Brachiolejeunea gottschei*. EXCLUDED. No genuine records from Malesia exist for this E Asian species. The record from Java was strongly questioned by Verdoorn (1934).

### Zoopsis

- \*\*\* *Z. argentea* (Hook.f. et Taylor) Hook.f. ex Gottsche, Lindenb. et Nees JAV: **Schiffner 1893b** as *Cephalozia argentea*, Stephani 1908, Miller et al. 1983. WJ: **Sande Lacoste 1864**, Goebel 1888, **Schiffner 1898a**, **Schiffner 1900c**, **Verdoorn 1931b**, **Schiffner 1955**, Meijer 1958b. EXCLUDED. This is an Australasian species.

## Synonyms

*Acolea lutescens* (Lehm. et Lindenb.) Trevis. = *Notoscyphus lutescens*  
*Acrolejeunea cucullata* (Gottsche ex Steph.) Steph. nom. inval. = *Acrolejeunea pycnoclada* subsp. *pycnoclada*  
*Acrolejeunea haskarliana* (Gottsche) Spruce ex Schiffn. = *Schiffneriolejeunea tumida* var. *haskarliana*  
*Acrolejeunea javanica* Steph. ex Bonner nom. inval. = *Schiffneriolejeunea tumida* var. *haskarliana*

*Acrolejeunea peradeniensis* (Mitt.) Steph. = *Schiffneriolejeunea tumida* var. *tumida*  
*Acrolejeunea pulopenangensis* (Gottsche) Trevis. = *Schiffneriolejeunea pulopenangensis*  
*Acrolejeunea pycnoclada* var. *rostrata* Schiffn. = *Acrolejeunea pycnoclada*  
*Acrolejeunea tumida* (Nees) Schiffn. = *Schiffneriolejeunea tumida*  
*Acrolejeunea wichurae* Schiffn. = *Acrolejeunea fertilis*  
*Acrostolia javanica* (Gottsche et Rabenh.) Trevis. = *Riccardia plumosa*  
*Adelanthus inversus* (Sande Lac.) E.A.Hodgs. = *Wettsteinia inversa*  
*Alicularia haskarliana* Nees = *Solenostoma haskarlianum*  
*Alicularia junghuhniana* (Nees) Steph. ex Bonner nom. inval. = *Solenostoma comatum* var. *comatum*  
*Alicularia notoscyphoides* (Schiffn.) Steph. = *Notoscyphus lutescens*  
*Alicularia scalaris* (Gray) Corda = *Nardia scalaris*  
*Alicularia scalaris* α *rigens* (Nees) Nees = *Nardia scalaris* subsp. *scalaris*  
*Allorgella noertana* Tixier = *Otolejeunea semperiana*  
*Alobiella parvifolia* Steph. = *Alobiellopsis parvifolia*  
*Anastrophyllum cephalozoides* Schiffn. = *A. bidens* var. *bidens*  
*Anastrophyllum contractum* (Reinw., Blume et Nees) Steph. = *Cuspidatula contracta*  
*Anastrophyllum contractum* var. *virescens* Schiffn. = *Cuspidatula contracta*  
*Anastrophyllum flexicaule* (Nees) Steph. = *Jamesoniella flexicaulis*  
*Anastrophyllum graeffei* J.B.Jack et Steph. = *Denotarisia linguifolia*  
*Anastrophyllum imbricatum* (Wilson ex Gottsche, Lindenb. et Nees) Steph. = *Anastrophyllum piligerum*  
*Anastrophyllum incumbens* (Lehm. et Lindenb.) Steph. = *Anastrophyllum piligerum*  
*Anastrophyllum integerrimum* Steph. = *Gottschelia schizopleura*  
*Anastrophyllum piligerum* var. β *minor* (Nees) Schiffn. = *Anastrophyllum piligerum*  
*Anastrophyllum piligerum* f. *tenerior* Schiffn. = *Anastrophyllum piligerum*  
*Anastrophyllum piligerum* var. γ *tenerrimum* (Nees) Schiffn. = *Anastrophyllum bidens*  
*Anastrophyllum puniceum* (Nees) Steph. = *Andrewsianthus puniceus*  
*Anastrophyllum recurvifolium* (Nees) Steph. = *Andrewsianthus recurvifolius*  
*Anastrophyllum sundaicum* Schiffn. = *Andrewsianthus sundaicus*  
*Anastrophyllum vernicosum* Schiffn. = *Anastrophyllum revolutum*  
*Andrewsianthus cephalozoides* (Schiffn.) R.M.Schust. = *Anastrophyllum bidens* var. *bidens*  
*Aneura androgyna* (Schiffn.) Steph. = *Riccardia graeffei*  
*Aneura canaliculata* (Nees) Nees = *Riccardia canaliculata*  
*Aneura crenulata* Steph. nom. illeg. = *Riccardia multifida* subsp. *multifida*  
*Aneura diminuta* (Schiffn.) Steph. = *Riccardia diminuta*  
*Aneura elata* Steph. = *Riccardia elata*  
*Aneura flaccidissima* (Schiffn.) Steph. = *Riccardia flaccidissima*  
*Aneura goebelii* Schiffn. = *Riccardia plumosa*  
*Aneura heteroclada* (Schiffn.) Steph. = *Riccardia heteroclada*  
*Aneura hymenophylloides* (Schiffn.) Steph. = *Riccardia hymenophylloides*  
*Aneura jackii* (Schiffn.) Steph. = *Riccardia jackii*  
*Aneura lobata* (Schiffn.) Steph. = *Lobatiriccardia coronopus*  
*Aneura multifida* (L.) Dumort. = *Riccardia multifida*  
*Aneura multifidioides* (Schiffn.) Steph. = *Riccardia multifidioides*  
*Aneura parvula* (Schiffn.) Steph. = *Riccardia parvula*  
*Aneura pinguis* var. *pinnatiloba* Schiffn. = *Lobatiriccardia coronopus*  
*Aneura pinnatifida* (Weber) Dumort. = *Riccardia chamedryfolia*  
*Aneura pinnatifida* (Weber) Nees = *Riccardia chamedryfolia*  
*Aneura pinnatifida* f. β *denticulata* Nees = *Riccardia chamedryfolia*  
*Aneura platyclada* (Schiffn.) Steph. = *Riccardia graeffei*  
*Aneura plumosa* (Mitt.) Steph. = *Riccardia plumosa*  
*Aneura scabra* (Schiffn.) Steph. = *Riccardia crassa*  
*Aneura stolonifera* Steph. = *Riccardia crassa*  
*Aneura subexalata* (Schiffn.) Steph. = *Riccardia subexalata*  
*Aneura tamariscina* Steph. = *Riccardia tamariscina*  
*Aneura tenuicostata* (Schiffn.) Steph. = *Riccardia tenuicostata*  
*Aneura tenuis* Steph. = *Riccardia tenuis*  
*Aneura tjibodensis* (Schiffn.) Steph. = *Riccardia tjibodensis*  
*Aneura viridissima* (Schiffn.) Steph. = *Aneura pinguis*  
*Aneura wettsteinii* (Schiffn.) Steph. = *Riccardia wettsteinii*  
*Aneura zollingeri* Steph. = *Riccardia plumosa*  
*Anthoceros amboinensis* Schiffn. = *Folioceros amboinensis*  
*Anthoceros appendiculatus* Steph. = *Folioceros glandulosus*  
*Anthoceros crispulus* (Mont.) Douin = *Anthoceros punctatus*  
*Anthoceros dopschegianus* K.I.Goebel = *Folioceros glandulosus*

*Anthoceros falsinervius* Lindenb. ex Meissner = *Folioceros fuciformis*  
*Anthoceros falsinervius* var.  $\beta$  *lyratus* (Gottsche) Schiffn. = *Folioceros fuciformis*  
*Anthoceros falsinervius*  $\beta$  *lyratus* Gottsche = *Folioceros fuciformis*  
*Anthoceros glandulosus* Lehm. et Lindenb. = *Folioceros glandulosus*  
*Anthoceros hirticalyx* (Steph.) Meijer = *Paraphymatoceros hirticalyx*  
*Anthoceros javanicus* Nees = *Dendroceros javanicus*  
*Anthoceros javanicus* Steph. *nom. illeg.* = *Anthoceros javanicoides*  
*Anthoceros laevis* L. = *Phaeoceros laevis*  
*Anthoceros laevis* subsp. *carolinianus* (Michx.) Prosk. = *Phaeoceros carolinianus*  
*Anthoceros polyander* K.I.Goebel = *Folioceros glandulosus*  
*Anthoceros polyandrus* Steph. = *Paraphymatoceros hirticalyx*  
*Anthoceros punctatus* subsp. *agrestis* (Paton) Damsh. *nom. inval.* = *Anthoceros agrestis*  
*Anthoceros silvaticus* Steph. = *Phaeoceros carolinianus*  
*Anthoceros spinisporus* (Steph.) Steph. ex Joshi, Wani et Chavan = *Folioceros amboinensis*  
*Anthoceros stahlīi* Steph. = *Megaceros flagellaris*  
*Anthoceros tjibodensis* (Steph.) Meijer = *Paraphymatoceros hirticalyx*  
*Anthoceros validus* Steph. = *Phaeoceros carolinianus*  
*Anthoceros vesiculosus* Austin = *Folioceros fuciformis*  
*Anthoscyphus tjiwideiensis* (Sande Lac.) Trevis. = *Acrosocyphella tjiwideiensis*  
*Anthoscyphus trapezoides* (Sande Lac.) Trevis. = *Conoscyphus trapezoides*  
*Aplozia baueri* Schiffn. = *Solenostoma baueri*  
*Aplozia javanica* Schiffn. = *Solenostoma javanicum*  
*Aplozia javanica* var. *laxa* Schiffn. = *Solenostoma javanicum*  
*Aplozia javanica* Schiffn. var. *nicholsonii* Schiffn. = *Solenostoma javanicum*  
*Aplozia stephanii* Schiffn. = *Solenostoma stephanii*  
*Aplozia stricta* Schiffn. = *Solenostoma strictum*  
*Aplozia stricta* var. *radicellifera* Schiffn. = *Solenostoma strictum*  
*Apothomanthus succulentus* (A.Rich. ex Lehm.) Schiffn. = *Nardia succulenta*  
*Archilejeunea caramuensis* Steph. = *Archilejeunea planiuscula*  
*Archilejeunea conferta* (C.F.W.Meissn. ex Spreng.) Steph. = *Anoplolejeunea conferta*  
*Archilejeunea falcata* Steph. = *Archilejeunea planiuscula*  
*Archilejeunea owahuensis* Gottsche ex Steph. = *Archilejeunea planiuscula*  
*Archilejeunea polymorpha* (Sande Lac.) B.M.Thiers et Gradst. = *Spruceanthus polymorphus*  
*Archilejeunea xanthocarpa* (Lehm. et Lindenb.) Steph. = *Leucolejeunea xanthocarpa*  
*Aspiromitus argillaceus* Steph. = *Anthoceros argillaceus*  
*Aspiromitus buitenzorgius* Steph. = *Anthoceros argillaceus*  
*Aspiromitus falsinervius* (Lindenb. ex Meissner) Steph. = *Folioceros fuciformis*  
*Aspiromitus fontinalis* Steph. = *Phaeoceros carolinianus*  
*Aspiromitus glandulosus* (Lehm. et Lindenb.) Steph. = *Folioceros glandulosus*  
*Aspiromitus kajumas* K.I.Goebel = *Anthoceros kajumas*  
*Aspiromitus lobatus* f. *thermalis* Schiffn. = *Aspiromitus lobatus*  
*Aspiromitus preangeranus* Steph. = *Phaeoceros carolinianus*  
*Aspiromitus punctatus* subsp. *agrestis* (Paton) R.M.Schust. = *Anthoceros agrestis*  
*Aspiromitus striatus* Steph. = *Folioceros glandulosus*  
*Aspiromitus vesiculosus* (Austin) Steph. = *Folioceros fuciformis*  
*Asterella javanica* (Nees) Trevis. = *Reboulia hemisphaerica* subsp. *australis*  
*Asterella vulcanica* (Schiffn.) Pand, K.P.Srivast. et Sultan Khan *nom. inval.* = *Asterella vulcanica*  
*Asterella zollingeri* (Steph.) Verd. = *Asterella khasyana*  
*Bazzania alternifolia* (Nees) Trevis. = *Metacalypogeia alternifolia*  
*Bazzania alternifolia* var.  $\beta$  *confertior* (Gottsche, Lindenb. et Nees) Schiffn. = *Mnioloma fuscum*  
*Bazzania australis* (Mont.) Trevis. = *Bazzania tridens*  
*Bazzania australis* Gottsche, Lindenb. et Nees = *Bazzania tridens*  
*Bazzania divaricata* (Nees) Trevis. = *Acromastigum divaricatum*  
*Bazzania erosa* var.  $\beta$  (Nees) Schiffn. = *Bazzania spiralis*  
*Bazzania erosa* var.  $\gamma$  (Lindenb.) Schiffn. = *Bazzania desciscens*  
*Bazzania gibba* (Sande Lac.) Schiffn. = *Bazzania uncigera* var. *gibba*  
*Bazzania intermedia* auct. *nom. inval.* = *Bazzania tridens* var. *tridens*  
*Bazzania miqueliana* (Lehm.) Schiffn. = *Bazzania commutata*  
*Bazzania oblonga* (Mitt.) Schiffn. = *Bazzania tridens* var. *tridens*  
*Bellincinia acutifolia* (Lehm. et Lindenb.) Kuntze = *Porella acutifolia*  
*Blasia javanica* Sande Lac. = *Notothylas javanicus*  
*Blepharostoma setigerum* (Lindenb.) Steph. = *Temnoma setigerum*  
*Blytia levieri* Steph. *nom. inval.* = *Pallavicinia levieri*  
*Blytia lyellii* (Hook.) Endl. mut. Gottsche, Lindenb. et Nees = *Pallavicinia lyellii*

*Blyttia phyllanthus* (Hook.) Nees = *Podomitrium phyllanthus*  
*Blyttia radiculosa* Sande Lac. = *Pallavicinia lyellii*  
*Brachiolejeunea gottschei* Schiffn. = *Trocholejeunea sandvicensis*  
*Bryopteris filicina* β *arguta* Gottsche, Lindenb. et Nees = *Bryopteris filicina*  
*Bryopteris filicina* γ *fruticosa* Gottsche, Lindenb. et Nees *nom. inval.* = *Dendrolejeunea fruticosa*  
*Bryopteris fruticosa* Lindenb. et Gottsche = *Dendrolejeunea fruticosa*  
*Byssolejeunea abnormis* Herzog = *Lejeunea exilis*  
*Calobryum blumii* (Nees) Gottsche, Lindenb. et Nees = *Haplomitrium blumei*  
*Calycularia radiculosa* (Sande Lac.) Steph. = *Pallavicinia lyellii*  
*Calycularia radiculosa* Steph. *nom. illeg.* = *Sandeothallus radiculosus*  
*Calycularia radiculosa* Steph. ex Schiffn. *nom. illeg.* = *Sandeothallus radiculosus*  
*Calypogeia alternifolia* (Nees) Steph. = *Metacalypogeia alternifolia*  
*Calypogeia alternifolia* var. *confertior* (Gottsche, Lindenb. et Nees) Bonner = *Mnioloma fuscum*  
*Calypogeia baldwinii* Austin = *Mnioloma fuscum*  
*Calypogeia distans* (Nees) Steph. = *Bazzania distans*  
*Calypogeia furcata* Steph. = *Calypogeia arguta*  
*Calypogeia fusca* (Lehm.) Steph. = *Mnioloma fuscum*  
*Campylolejeunea ciliatilobula* (Schiffn.) S.Hatt. = *Cololejeunea inflectens*  
*Campylolejeunea inflectens* (Mitt.) Mizut. = *Cololejeunea inflectens*  
*Campylolejeunea peculiaris* (Herzog) Amakawa = *Cololejeunea inflectens*  
*Campylolejeunea vesicaria* (Sande Lac.) S.Hatt. = *Cololejeunea vesicaria*  
*Cardiolejeunea cardiantha* R.M.Schust. et Kachroo = *Lejeunea papilionacea*  
*Caudalejeunea circinata* Steph. = *Caudalejeunea recurvistipula*  
*Caudalejeunea reniloba* (Gottsche) Steph. = *Caudalejeunea recurvistipula*  
*Caudalejeunea renistipula* Steph. = *Caudalejeunea recurvistipula*  
*Caudalejeunea serrata* Steph. = *Caudalejeunea recurvistipula*  
*Caudalejeunea stephanii* Spruce ex Steph. = *Thysananthus retusus*  
*Cephalozia argentea* (Hook.f. et Taylor) Lindb. = *Zoopsis argentea*  
*Cephalozia bicuspidata* var. *blepharostoma* Schiffn. *nom. inval.* = *Cephalozia hamatiloba*  
*Cephalozia borneensis* (De Not.) J.B.Jack et Steph. = *Nowellia borneensis*  
*Cephalozia boschiana* (Sande Lac.) Spruce = *Hygrolembidium boschianum*  
*Cephalozia capillaris* Steph. = *Cephaloziella capillaris*  
*Cephaloziella pentagona* (Schiffn. ex Douin) Schiffn. *nom. inval.* = *Cephaloziella kiaeri*  
*Cephaloziella pentagona* var. *serratiflora* Schiffn. ex Douin = *Cephaloziella kiaeri*  
*Cephaloziella willisiana* (Steph.) C.M.Cooke = *Cephaloziella kiaeri*  
*Cephaloziella willisiana* (Steph.) N.Kitag. = *Cephaloziella kiaeri*  
*Ceratolejeunea ceratantha* (Nees et Mont.) Steph. = *Ceratolejeunea cornuta*  
*Ceratolejeunea cuspidata* Steph. = *Lepidolejeunea involuta*  
*Ceratolejeunea oceanica* (Mitt.) Horik. = *Ceratolejeunea belangeriana*  
*Ceratolejeunea renistipula* Steph. = *Ceratolejeunea belangeriana*  
*Cesiusa lutescens* (Lehm. et Lindenb.) Kuntze = *Notoscyphus lutescens*  
*Chandonanthus birmensis* Steph. = *Plicanthus birmensis*  
*Chandonanthus hamatus* Steph. = *Plicanthus hirtellus*  
*Chandonanthus hirtellus* (F.Weber) Mitt. = *Plicanthus hirtellus*  
*Chandonanthus hirtellus* var. β *tener* (Nees) Schiffn. = *Jungermannia hirtella* β *tenera*  
*Chandonanthus javanicus* Mitt. = *Plicanthus hirtellus*  
*Cheilolejeunea bidentula* (Steph.) Inoue = *Lepidolejeunea bidentula*  
*Cheilolejeunea excisula* (Steph.) Mizut. = *Cheilolejeunea incisa*  
*Cheilolejeunea imbricata* (Nees) R.M.Schust. et Kachroo = *Cheilolejeunea trapezia*  
*Cheilolejeunea imbricata* (Nees) S.Hatt. = *Cheilolejeunea trapezia*  
*Cheilolejeunea inaequitexta* Schiffn. *nom. inval.* = *Lejeunea micholitzii*  
*Cheilolejeunea inaequitexta* Schiffn. ex Steph. = *Lejeunea micholitzii*  
*Cheilolejeunea longiloba* (Steph. ex G.Hoffm.) J.J.Engel et B.C.Tan = *Cheilolejeunea trapezia*  
*Cheilolejeunea longiloba* (Steph. ex G.Hoffm.) Kachroo et R.M.Schust. *nom. illeg.* = *Cheilolejeunea trapezia*  
*Cheilolejeunea luerssenii* (Steph.) Mizut. = *Cheilolejeunea lindenbergii*  
*Cheilolejeunea zollingeri* Steph. = *Lejeunea mizutanii*  
*Chiloscyphus acutangulus* Schiffn. = *Heteroscyphus acutangulus*  
*Chiloscyphus argutus* (Reinw., Blume et Nees) Nees = *Heteroscyphus argutus*  
*Chiloscyphus argutus* f. *typica* Schiffn. *nom. inval.* = *Heteroscyphus argutus*  
*Chiloscyphus argutus* var. *brevidens* Schiffn. = *Heteroscyphus argutus* var. *brevidens*  
*Chiloscyphus argutus* var. *ciliatistipulus* Schiffn. = *Heteroscyphus argutus* var. *ciliatistipulus*  
*Chiloscyphus argutus* var. β *amphigastriis-obsoletis* (Nees) Schiffn. = *Heteroscyphus argutus*  
*Chiloscyphus argutus* var. γ *subtilis* (Nees) Schiffn. = *Heteroscyphus argutus*  
*Chiloscyphus argutus* ε *subtilis* Nees = *Heteroscyphus argutus*

*Chiloscyphus aselliformis* (Reinw., Blume et Nees) Nees = *Heteroscyphus aselliformis*  
*Chiloscyphus aselliformis* f. *typica* Schiffn. nom. inval. = *Heteroscyphus aselliformis*  
*Chiloscyphus aselliformis* var. *neesii* Schiffn. = *Heteroscyphus aselliformis*  
*Chiloscyphus baduinus* (Nees) Nees = *Heteroscyphus baduinus*  
*Chiloscyphus caesius* Schiffn. = *Heteroscyphus caesius*  
*Chiloscyphus coalitus* (Hook.) Nees = *Heteroscyphus coalitus*  
*Chiloscyphus coalitus* f. *pusillus* Schiffn. = *Heteroscyphus coalitus*  
*Chiloscyphus coalitus* f. *remotifolius* Schiffn. = *Heteroscyphus coalitus*  
*Chiloscyphus coalitus* f. *typicus* Schiffn. nom. inval. = *Heteroscyphus coalitus*  
*Chiloscyphus coalitus* var.  $\beta$  *affinis* (Reinw., Blume et Nees) Schiffn. = *Heteroscyphus coalitus*  
*Chiloscyphus coalitus*  $\beta$  *affinis* (Reinw., Blume et Nees) Nees = *Heteroscyphus coalitus*  
*Chiloscyphus combinatus* (Nees) Nees = *Heteroscyphus combinatus*  
*Chiloscyphus communis* Steph. = *Heteroscyphus coalitus*  
*Chiloscyphus decurrens* (Reinw., Blume et Nees) Nees = *Heteroscyphus splendens*  
*Chiloscyphus decurrens* f. *typica* Schiffn. nom. inval. = *Heteroscyphus splendens*  
*Chiloscyphus decurrens* Mitt. nom. illeg. = *Heteroscyphus splendens*  
*Chiloscyphus javanicus* Steph. = *Heteroscyphus aselliformis*  
*Chiloscyphus obtusus* Steph. = *Heteroscyphus succulentus*  
*Chiloscyphus parvulus* Schiffn. = *Heteroscyphus parvulus*  
*Chiloscyphus porrigens* Schiffn. = *Heteroscyphus coalitus*  
*Chiloscyphus rigidulus* (Nees) Gottsche, Lindenb. et Nees = *Saccogynidium rigidulum*  
*Chiloscyphus sandei* (Sande Lac.) Steph. = *Heteroscyphus knightii*  
*Chiloscyphus stygius* Nees = *Solenostoma vulcanicola*  
*Chiloscyphus succulentus* Gottsche = *Heteroscyphus succulentus*  
*Chiloscyphus tjiwideiensis* Sande Lac. = *Acrosyphella tjiwideiensis*  
*Chiloscyphus trapezioides* Sande Lac. = *Conoscyphus trapezioides*  
*Chiloscyphus tridentatus* (Sande Lac.) Schiffn. nom. illeg. = *Heteroscyphus knightii*  
*Chiloscyphus tridentatus* Mitt. = *Heteroscyphus knightii*  
*Chiloscyphus wettsteinii* Schiffn. = *Heteroscyphus wettsteinii*  
*Chiloscyphus zollingeri* Gottsche = *Heteroscyphus zollingeri*  
*Clasmatocolea tjiwideiensis* (Sande Lac.) Grolle = *Acrosyphella tjiwideiensis*  
*Cololejeunea androgyna* Benedix = *Cololejeunea obliqua*  
*Cololejeunea baueriana* Schiffn. nom. inval. = *Cololejeunea haskarliana* var. *haskarliana*  
*Cololejeunea benedixii* Tixier nom. inval. = *Cololejeunea schmidtii*  
*Cololejeunea bolombensis* (Steph.) Vanden Berghen = *Cololejeunea lanciloba*  
*Cololejeunea campanulata* Benedix = *Cololejeunea obliqua*  
*Cololejeunea ciliatilobula* (Schiffn.) Schiffn. = *Cololejeunea inflectens*  
*Cololejeunea estipulata* (Steph.) Tixier = *Cololejeunea raduliloba*  
*Cololejeunea falcatoides* Benedix = *Cololejeunea falcata*  
*Cololejeunea goebelii* (Gottsche ex Schiffn.) Schiffn. = *Cololejeunea trichomanis*  
*Cololejeunea goebelii* f. *brevifolia* Schiffn. nom. inval. = *Cololejeunea trichomanis*  
*Cololejeunea goebelii* var.  $\gamma$  *acrotremae* (Schiffn.) Schiffn. = *Cololejeunea obliqua*  
*Cololejeunea hispidissima* (Steph.) Pand, K.P.Srivast. et Sultan Khan = *Cololejeunea haskarliana* var. *haskarliana*  
*Cololejeunea imperfecta* Benedix nom. inval. = *Cololejeunea sigmoidea*  
*Cololejeunea javanica* (Steph.) Mizut. = *Cololejeunea angustiflora*  
*Cololejeunea karstenii* (Steph.) Benedix = *Cololejeunea cordiflora*  
*Cololejeunea leonidens* Benedix = *Cololejeunea ocelloides*  
*Cololejeunea leonidens* var. *saccata* Benedix = *Cololejeunea ocelloides*  
*Cololejeunea marginata* var. *alimbia* Schiffn. nom. inval. = *Cololejeunea zangii*  
*Cololejeunea mariana* Tixier = *Cololejeunea obliqua*  
*Cololejeunea mutabilis* f. *javanica* Benedix nom. inval. = *Cololejeunea mutabilis*  
*Cololejeunea nymanii* (Steph.) Benedix = *Cololejeunea obliqua*  
*Cololejeunea oshimensis* (Horik.) Benedix = *Cololejeunea inflata*  
*Cololejeunea papilligera* Schiffn. nom. inval. = *Cololejeunea filidens*  
*Cololejeunea peculiaris* (Herzog) Benedix = *Cololejeunea inflectens*  
*Cololejeunea pseudopellucida* Schiffn. nom. inval. = *Cololejeunea triapiculata*  
*Cololejeunea scabriflora* Gottsche ex Steph. = *Cololejeunea obliqua*  
*Cololejeunea scabrifolia* Schiffn. nom. inval. = *Cololejeunea obliqua*  
*Cololejeunea simulans* Schiffn. nom. inval. = *Cololejeunea peponiformis*  
*Cololejeunea subaloba* Schiffn. nom. inval. = *Cololejeunea sigmoidea*  
*Cololejeunea ungulata* Schiffn. nom. inval. = *Cololejeunea filidens*  
*Cololejeunea venusta* (Sande Lac.) Schiffn. = *Cololejeunea haskarliana* var. *haskarliana*  
*Cololejeunea yulensis* (Steph.) Benedix = *Cololejeunea aequabilis*  
*Colura apiculata* Schiffn. ex Steph. = *Colura leratii*

*Colura corynephora* K.I.Goebel *nom. illeg.* = *Colura acroloba*  
*Colura javanica* Steph. = *Colura ari*  
*Colura vitrea* (Nees) Trevis. = *Leptolejeunea vitrea*  
*Colurolejeunea acroloba* (Mont. ex Steph.) Mont. ex Steph. *nom. inval.* = *Colura acroloba*  
*Colurolejeunea- acroloba* var. *acuta* Schiffn. *nom. inval.* = *Colura acroloba*  
*Colurolejeunea apiculata* Schiffn. *nom. inval.* = *Colura leratii*  
*Colurolejeunea conica* (Sande Lac.) Schiffn. = *Colura conica*  
*Colurolejeunea junghuhniana* (Steph.) Steph. = *Colura junghuhniana*  
*Colurolejeunea junghuhniana* Steph. *nom. inval.* = *Colura junghuhniana*  
*Colurolejeunea leratii* Steph. = *Colura leratii*  
*Colurolejeunea ornata* (K.I.Goebel) Schiffn. = *Colura ornata*  
*Colurolejeunea superba* var.  $\beta$  *latifolia* Schiffn. = *Colura karstenii*  
*Conoscyphus inflexifolius* Mitt. = *Conoscyphus trapezioides*  
*Conoscyphus tjiwideiensis* (Sande Lac.) Schiffn. = *Acrosocyphella tjiwideiensis*  
*Crossogyna flexicaulis* (Nees) Schljakov = *Jamesoniella flexicaulis*  
*Crossotolejeunea schiffneri* (Herzog) R.M.Schust. = *Lejeunea propagulifera*  
*Cyclolejeunea fleischeri* Steph. = *Acanthocoleus javanicus*  
*Cyclolejeunea mirabilis* Steph. = *Cyclolejeunea peruviana*  
*Cystolejeunea lineata* (Lehm. et Lindenb.) A.Evans = *Cheilolejeunea lineata*  
*Dendroceros angustus* Steph. = *Dendroceros subplanus*  
*Dendroceros elegans* Steph. = *Dendroceros javanicus*  
*Dendroceros integerrimus* Steph. = *Dendroceros subplanus*  
*Dicranolejeunea javanica* Steph. = *Acanthocoleus javanicus*  
*Diplasiolejeunea brachyclada* A.Evans = *Diplasiolejeunea cavifolia*  
*Diplasiolejeunea conica* (Sande Lac.) Steph. = *Colura conica*  
*Diplasiolejeunea cyclops* (Sande Lac.) Steph. = *Drepanolejeunea cyclops*  
*Diplasiolejeunea javanica* Steph. = *Diplasiolejeunea cavifolia*  
*Diplolaena lyellii* (Hook.) Dumort. = *Pallavicinia lyellii*  
*Diplomitrium lyellii* (Hook.) Corda = *Pallavicinia lyellii*  
*Drepanolejeunea filicuspis* Steph. = *Harpalejeunea filicuspis*  
*Drepanolejeunea haskarliana* (Lehm. et Lindenb.) Steph. = *Cololejeunea haskarliana*  
*Drepanolejeunea karstenii* Steph. = *Leptolejeunea maculata*  
*Drepanolejeunea micholitzii* f. *acanthantha* Herzog = *Drepanolejeunea pentadactyla*  
*Drepanolejeunea micholitzii* f. *contorta* Herzog *nom. inval.* = *Drepanolejeunea pentadactyla*  
*Drepanolejeunea micholitzii* f. *lonchoceras* Herzog = *Drepanolejeunea pentadactyla*  
*Drepanolejeunea micholitzii* f. *verdoornii* Herzog = *Drepanolejeunea pentadactyla*  
*Drepanolejeunea micholitzii* Steph. = *Drepanolejeunea pentadactyla*  
*Drepanolejeunea micholitzii* var. *dactylophoroides* Herzog = *Drepanolejeunea pentadactyla*  
*Drepanolejeunea micholitzii* var. *genuina* Herzog *nom. illeg.* = *Drepanolejeunea pentadactyla*  
*Drepanolejeunea muricata* (Gottsche) Steph. = *Dactylophorella muricata*  
*Drepanolejeunea setistipa* Steph. = *Drepanolejeunea thwaitesiana*  
*Drepanolejeunea tenera* f. *goebelii* Herzog = *Drepanolejeunea tenera*  
*Drepanolejeunea tenera* var. *genuina* Herzog *nom. illeg.* = *Drepanolejeunea tenera*  
*Drepanolejeunea tenera* var. *goebelii* Herzog = *Drepanolejeunea tenera*  
*Drepanolejeunea tenuioides* Horik. = *Drepanolejeunea pentadactyla*  
*Drepanolejeunea tenuis* (Nees) Steph. = *Drepanolejeunea angustifolia*  
*Drepanolejeunea tenuis* var. *brevifolia* Herzog = *Drepanolejeunea angustifolia*  
*Drepanolejeunea ternatensis* var. *lancispina* Herzog = *Drepanolejeunea ternatensis*  
*Drepanolejeunea vesiculosa* subsp. *affinis* Schiffn. ex Herzog *nom. inval.* = *Drepanolejeunea vesiculosa*  
*Dumortiera hirsuta* a. *laticor* Gottsche, Lindenb. et Nees = *Dumortiera hirsuta*  
*Dumortiera hirsuta*  $\beta$  *angustior* Gottsche, Lindenb. et Nees = *Dumortiera hirsuta*  
*Dumortiera hirsuta* subsp. *nepalensis* (Taylor) R.M.Schust. = *Dumortiera hirsuta*  
*Dumortiera nepalensis* (Taylor) Nees = *Dumortiera hirsuta*  
*Dumortiera trichocephala* (Hook.) Nees = *Dumortiera hirsuta*  
*Dumortiera velutina* f. *exigua* Schiffn. *nom. inval.* = *Dumortiera hirsuta*  
*Dumortiera velutina* Schiffn. = *Dumortiera hirsuta*  
*Dumortiera velutina* var. *subnuda* Schiffn. *nom. inval.* = *Dumortiera hirsuta*  
*Eucalyx comatus* (Nees) Verd. = *Solenostoma comatum*  
*Eucalyx hasskarlianus* (Nees) Verd. ex Váňa *nom. inval.* = *Solenostoma haskarlianum*  
*Eucalyx stygius* (Nees) Verd. = *Solenostoma vulcanicola*  
*Eucalyx truncatus* (Nees) Verd. = *Solenostoma truncatum*  
*Eucalyx truncatus* var. *crassiretis* (Schiffn.) Verd. = *Solenostoma truncatum*  
*Eucephalozia bicuspidata* (L.) Schiffn. = *Cephalozia bicuspidata*  
*Eulejeunea aloba* (Sande Lac.) Schiffn. = *Lejeunea aloba*

*Eulejeunea apiculata* (Sande Lac.) Schiffn. = *Lejeunea apiculata*  
*Eulejeunea caviloba* Steph. = *Lejeunea caviloba*  
*Eulejeunea cucullata* (Reinw., Blume et Nees) Schiffn. = *Metalejeunea cucullata*  
*Eulejeunea cucullata* var.  $\beta$  *exilis* (Reinw., Blume et Nees) Nees ex Schiffn. = *Lejeunea exilis*  
*Eulejeunea decursiva* (Sande Lac.) Schiffn. = *Cheilolejeunea decursiva*  
*Eulejeunea fissistipula* Steph. = *Lejeunea fissistipula*  
*Eulejeunea flava* (Sw.) Steph. = *Lejeunea flava*  
*Eulejeunea flava* var.  $\beta$  *indica* (Nees et Blandow) Schiffn. = *Lejeunea flava* subsp. *orientalis*  
*Eulejeunea laxa* (Nees) Steph. = *Taxilejeunea laxa*  
*Eulejeunea microstipula* (Steph.) Schiffn. = *Lejeunea microstipula*  
*Eulejeunea patersonii* Steph. = *Lejeunea patersonii*  
*Eulejeunea serpyllifolia* (Dicks.) Schiffn. = *Lejeunea patens*  
*Eulejeunea wichurae* Steph. = *Lejeunea wichurae*  
*Euosmolejeunea heterophylla* (Sande Lac.) Schiffn. = *Cheilolejeunea trifaria*  
*Euosmolejeunea lindenbergii* (Gottsche) Steph. = *Cheilolejeunea lindenbergii*  
*Euosmolejeunea luerksenii* Steph. = *Cheilolejeunea lindenbergii*  
*Euosmolejeunea orientalis* (Gottsche) Steph. = *Cheilolejeunea orientalis*  
*Euosmolejeunea tenella* (Taylor) Steph. = *Lejeunea tenella*  
*Euosmolejeunea teretiuscula* (Lindenb.) Schiffn. = *Cheilolejeunea trifaria*  
*Euosmolejeunea trifaria* (Reinw., Blume et Nees) Schiffn. nom. illeg. = *Cheilolejeunea trifaria*  
*Euosmolejeunea trifaria* (Reinw., Blume et Nees) Spruce = *Cheilolejeunea trifaria*  
*Euosmolejeunea trifaria* (Reinw., Blume et Nees) Steph. = *Cheilolejeunea trifaria*  
*Fimbraria blumeana* Nees = *Asterella blumeana*  
*Fimbraria tenella* (L.) Nees = *Asterella tenella*  
*Fimbraria venosa* Lehm. et Lindenb. = *Asterella venosa*  
*Fimbraria vulcanica* (Schiffn.) Steph. = *Asterella vulcanica*  
*Fimbraria zollingeri* Steph. = *Asterella khasyana*  
*Folioceros appendiculatus* (Steph.) J.Haseg. = *Folioceros glandulosus*  
*Folioceros buitenzorgius* (Steph.) D.C.Bharadwaj = *Anthoceros argillaceus*  
*Folioceros spinisporus* (Steph.) D.C.Bharadwaj = *Folioceros amboinensis*  
*Folioceros vesiculosus* (Austin) D.C.Bharadwaj = *F. fuciformis*  
*Fossombronia cristula* var. *verdoornii* Chalaud = *Fossombronia japonica*  
*Fossombronia foveolata* var. *cristula* (Austin) R.M.Schust. = *Fossombronia cristula*  
*Frullania acutiloba* var. *schiffneri* Verd. = *Frullania monocera* var. *schiffneri*  
*Frullania aeolotis*  $\alpha$  *auriculata* Mont. nom. illeg. = *Frullania ericoides*  
*Frullania apiculata* var.  $\beta$  *nodulosa* (Nees) Schiffn. = *Frullania apiculata*  
*Frullania apiculata* var.  $\gamma$  *obscura* (Nees) Schiffn. = *Frullania apiculata*  
*Frullania apiculata*  $\beta$  *nodulosa* (Nees) nom. inval. = *Frullania apiculata*  $\beta$  *laxa*  
*Frullania apiculata*  $\gamma$  *obscura* Nees = *Frullania apiculata*  
*Frullania apiculiloba* Steph. = *Frullania grandistipula*  
*Frullania breviramea* Steph. = *Frullania moniliata*  
*Frullania commutata* Steph. = *Frullania riojaneirensis*  
*Frullania cordistipula* var.  $\delta$  *mucronata* Nees nom. inval. = *Frullania serrata*  
*Frullania dapitana* Steph. = *Frullania nodulosa*  
*Frullania diversifolia* Steph. = *Frullania junghuhniana*  
*Frullania ericoides* var. *planescens* (Verd.) S.Hatt. = *Frullania ericoides*  
*Frullania fleischeri* Steph. = *Frullania ericoides*  
*Frullania fusco-purpurea* Steph. = *Frullania gracilis*  
*Frullania galeata* (Reinw., Blume et Nees) Dumort. = *Frullania riojaneirensis*  
*Frullania gracilis* subsp. *minor* (Sande Lac.) S.Hatt. = *Frullania gracilis*  
*Frullania gracilis* var. *lacerifolia* (Steph.) Verd. = *Frullania gracilis*  
*Frullania gracilis* var. *subapiculata* Schiffn. nom. inval. = *Frullania gracilis*  
*Frullania gracilis* var. *subapiculata* Schiffn. ex Verd. = *Frullania gracilis*  
*Frullania grandistipula* var. *rugosa* (Mitt.) S.Hatt. = *Frullania grandistipula*  
*Frullania hampeana* Nees = *Frullania monocera*  
*Frullania hampeana* var. *acutiloba* (Mitt.) S.Hatt. = *Frullania acutiloba*  
*Frullania hasskarliana* f. *integribractea* Verd. = *Frullania hasskarliana*  
*Frullania hasskarliana* var. *integribractea* (Verd.) S.Hatt. = *Frullania hasskarliana*  
*Frullania hians*  $\beta$  *javanica* Gottsche, Lindenb. et Nees = *Frullania arecae*  
*Frullania hutchinsiae* (Hook.) Nees = *Jubula hutchinsiae*  
*Frullania hutchinsiae*  $\beta$  (Nees) Nees = *Jubula hutchinsiae* subsp. *javanica*  
*Frullania integristipula* var. *reflexistipuloides* Verd. = *Frullania integristipula*  
*Frullania intermedia* var. *non-apiculata* S.Hatt. = *Frullania intermedia*  
*Frullania javanica* Steph. = *Frullania ericoides*

*Frullania junghuhniana* var. *minutissima* Schiffn. ex Verd. *nom. inval.* = *Frullania junghuhniana* var. *tenella*  
*Frullania lacerifolia* Steph. = *Frullania gracilis*  
*Frullania laciniosa* Lehm. = *Frullania ericoides*  
*Frullania latistipula* Steph. = *Frullania serrata*  
*Frullania lauterbachii* Steph. = *Frullania neurota*  
*Frullania longispica* Steph. = *Frullania ericoides*  
*Frullania luzonensis* Steph. = *Frullania ericoides*  
*Frullania macrostipula* Steph. = *Frullania nigricaulis*  
*Frullania malesiaca* Verd. ≡ *Frullania campanulata* var. *malesiaca*  
*Frullania meteoroides* Mitt. = *Frullania serrata*  
*Frullania minor* Sande Lac. = *Frullania gracilis*  
*Frullania minor* var. *exorta* Verd. = *Frullania gracilis*  
*Frullania minor* var. *subsINUATA* Schiffn. ex Verd. = *Frullania gracilis*  
*Frullania minutissima* Schiffn. *nom. inval.* = *Frullania junghuhniana* var. *tenella*  
*Frullania moniliata* subsp. *breviramea* (Steph.) Verd. = *Frullania moniliata*  
*Frullania mundiana* Lindenb. et Gottsche = *Frullania arecae*  
*Frullania nigricans* Steph. = *Frullania apiculata*  
*Frullania nodulosa* f. *dapitana* (Steph.) Verd. = *Frullania nodulosa*  
*Frullania nymanii* Steph. = *Frullania ericoides*  
*Frullania ornithocephala* f. *teres* (Sande Lac.) Verd. = *Frullania ornithocephala* var. *pilosa*  
*Frullania pallens* Steph. = *Frullania meyeniana* var. *meyeniana*  
*Frullania pallida* Steph. = *Frullania apiculata* var. *goebelii*  
*Frullania perversa* Steph. = *Frullania junghuhniana* var. *tenella*  
*Frullania picta* Steph. = *Frullania trichodes*  
*Frullania piligera* Austin = *Jubula hutchinsiae* subsp. *javanica*  
*Frullania recurvata* Lehm. et Lindenb. = *Frullania gaudichaudii*  
*Frullania rugosa* Mitt. = *Frullania grandistipula*  
*Frullania sebastianopolitana* Lindenb. = *Frullania riojaneirensis*  
*Frullania sebastianopolitana* β *galeata* (Reinw., Blume et Nees) Gottsche, Lindenb. et Nees = *Frullania riojaneirensis*  
*Frullania serrata* f. *crispulo-dentata* Verd. = *Frullania serrata* var. *serrata*  
*Frullania sinuata* β *tenella* (Sande Lac.) Sande Lac. ≡ *Frullania junghuhniana* var. *tenella*  
*Frullania solmsiana* Steph. = *Frullania cordistipula*  
*Frullania squarrosa* (Nees) Nees *nom. illeg.* = *Frullania ericoides*  
*Frullania squarrosa* f. *campanuloides* Verd. = *Frullania ericoides*  
*Frullania squarrosa* f. *chonantherioides* Verd. = *Frullania ericoides*  
*Frullania squarrosa* f. *ericoides* (Nees) Verd. ≡ *Frullania ericoides*  
*Frullania squarrosa* var. *ericoides* (Nees) Schiffn. ex Bonner *nom. illeg.* ≡ *Frullania ericoides*  
*Frullania squarrosa* var. *ericoides* (Nees) Schiffn. ≡ *Frullania ericoides*  
*Frullania squarrosa* var. *planescens* Verd. = *Frullania ericoides*  
*Frullania tamarisci* subsp. *moniliata* (Reinw., Blume et Nees) Kamim. ≡ *Frullania moniliata*  
*Frullania tamarisci* subsp. *obscura* (Verd.) S.Hatt. = *Frullania moniliata*  
*Frullania tamarisci* var. *breviramea* (Steph.) S.Hatt. = *Frullania moniliata*  
*Frullania tenella* Sande Lac. ≡ *Frullania junghuhniana* var. *tenella*  
*Frullania teres* Sande Lac. = *Frullania ornithocephala* var. *pilosa*  
*Frullania tortuosa* Verd. = *Frullania monocera*  
*Frullania vesiculosa* Steph. = *Frullania ericoides*  
*Frullania vethii* Sande Lac. = *Frullania trichodes*  
*Frullania wallichiana* Mitt. = *Frullania arecae*  
*Gamoscyphus aselliformis* (Reinw., Blume et Nees) Trevis. ≡ *Heteroscyphus aselliformis*  
*Gamoscyphus puniceus* (Nees) Trevis. ≡ *Andrewsianthus puniceus*  
*Gottschea blumei* (Nees) Nees ≡ *Schistochila blumei*  
*Gottschea javanica* Nees = *Schistochila sciurea*  
*Gottschea philippinensis* Mont. = *Gottschea aligera*  
*Gottschea reinwardtii* (Nees) Nees ≡ *Schistochila reinwardtii*  
*Gottschea sciurea* (Nees) Sande Lac. ≡ *Schistochila sciurea*  
*Grimaldia geminata* (Reinw., Blume et Nees) Nees ≡ *Marchantia geminata*  
*Grimaldia geminata* β Lehm. et Lindenb. = *Marchantia geminata*  
*Gymnomitrium belangerianum* (Lehm. et Lindenb.) Gottsche = *Notoscyphus lutescens*  
*Gymnomitrium lutescens* (Lehm. et Lindenb.) Gottsche ≡ *Notoscyphus lutescens*  
*Herbertia javanica* (Steph.) H.A.Mill. = *Herbertus ramosus*  
*Herbertia ramosa* (Steph.) H.A.Mill. ≡ *Herbertus ramosus*  
*Herbertia fissa* (Nees) Kuntze = *Mastigophora diclados*  
*Herbertus javanicus* (Steph.) Schiffn. = *Herbertus ramosus*  
*Herbertus javanicus* f. *major* Schiffn. *nom. inval.* = *Herbertus ramosus*



*Herbertus javanicus* f. *minor* Schiffn. *nom. inval.* = *Herbertus ramosus*  
*Herbertus juniperinus* Trevis. 1877 *nom. illeg.* = *Herbertus juniperoideus*  
*Herpetium australe* Mont. = *Bazzania tridens*  
*Herpetium erosum* (Reinw., Blume et Nees) Mont. = *Bazzania erosa*  
*Herpetium obliquatum* (Nees) Mont. = *Bazzania praerupta* var. *obliquata*  
*Herpetium trichodes* var. *major* Nees *nom. inval.* = *Lepidozia subintegra*  
*Heterolejeunea javanica* f. *aquatica* Schiffn. = *Lopholejeunea nigricans*  
*Heterolejeunea javanica* Schiffn. = *Lopholejeunea nigricans*  
*Heterolejeunea javanica* var. *aquatica* Schiffn. = *Lopholejeunea nigricans*  
*Heteroscyphus bifidus* (Schiffn.) Schiffn. = *Chiloscyphus bifidus*  
*Heteroscyphus communis* (Steph.) Schiffn. = *Heteroscyphus coalitus*  
*Heteroscyphus decurrens* (Reinw., Blume et Nees) Schiffn. = *Heteroscyphus splendens*  
*Heteroscyphus integerrimus* (Schiffn.) Schiffn. = *Chiloscyphus integerrimus*  
*Heteroscyphus porrigens* (Schiffn.) Schiffn. = *Heteroscyphus coalitus*  
*Heteroscyphus propagulifer* (Schiffn.) Schiffn. = *Chiloscyphus propagulifer*  
*Heteroscyphus sandei* (Steph.) Schiffn. = *Heteroscyphus knightii*  
*Heteroscyphus tridentatus* (Sande Lac.) Grolle = *Heteroscyphus knightii*  
*Hygrolejeunea apiculata* (Sande Lac.) Steph. = *Lejeunea apiculata*  
*Hygrolejeunea decurrens* Steph. = *Leucolejeunea decurrens*  
*Hygrolejeunea discreta* (Lindenb.) Schiffn. = *Lejeunea discreta*  
*Hygrolejeunea discreta* (Lindenb.) Steph. = *Lejeunea discreta*  
*Hygrolejeunea fleischeri* Steph. = *Lejeunea fleischeri*  
*Hygrolejeunea javanica* Steph. = *Lejeunea sordida*  
*Hygrolejeunea lindenbergii* (Gottsche) Steph. = *Cheilolejeunea lindenbergii*  
*Hygrolejeunea luteola* Steph. = *Lejeunea mimula*  
*Hygrolejeunea molkenboeriana* Steph. = *Lejeunea molkenboeriana*  
*Hygrolejeunea parkinsonii* Steph. = *Lejeunea sordida*  
*Hygrolejeunea patersonii* Steph. = *Lejeunea patersonii*  
*Hygrolejeunea sordida* (Nees) Steph. = *Lejeunea sordida*  
*Hygrolejeunea tjibodensis* Steph. = *Taxilejeunea tjibodensis*  
*Hygrolejeunea umbilicata* (Nees) Steph. = *Lejeunea umbilicata*  
*Hymenophyton phyllanthus* (Hook.) Steph. = *Podomitrium phyllanthus*  
*Hypenantron blumeanum* (Nees) Trevis. = *Asterella blumeana*  
*Hypenantron javanicum* Schiffn. = *Asterella wallichiana*  
*Hypenantron venosum* (Lehm. et Lindenb.) Trevis. = *Asterella venosa*  
*Hypenantron vulcanicum* Schiffn. = *Asterella vulcanica*  
*Hypenantron zollingeri* (Steph.) Schiffn. = *Asterella khasyana*  
*Hypenantron zollingeri* f. *purpurascens* Schiffn. *nom. inval.* = *Asterella khasyana*  
*Hypenantron zollingeri* f. *typica* Schiffn. *nom. inval.* = *Asterella khasyana*  
*Jackiella javanica* f. *typica* Schiffn. *nom. inval.* = *Jackiella javanica*  
*Jamesoniella affinis* Schiffn. = *Denotarisia linguifolia*  
*Jamesoniella autumnalis* (DC.) Steph. = *Syzygiella autumnalis*  
*Jamesoniella contracta* (Reinw., Blume et Nees) N.Kitag. = *Cuspidatula contracta*  
*Jamesoniella fleischeri* Steph. = *Gottschelia schizopleura*  
*Jamesoniella flexicaulis* f. *virescens* Schiffn. = *Jamesoniella flexicaulis*  
*Jamesoniella flexicaulis* var.  $\beta$  *microphylla* (Nees) Schiffn. = *Gottschelia schizopleura*  
*Jamesoniella microphylla* (Nees) Schiffn. = *Gottschelia schizopleura*  
*Jamesoniella microphylla* var. *gracilis* Schiffn. = *Gottschelia schizopleura*  
*Jamesoniella microphylla* var. *minuta* Schiffn. = *Gottschelia schizopleura*  
*Jamesoniella ovifolia* (Schiffn.) Schiffn. = *Denotarisia linguifolia*  
*Jamesoniella ovifolia* f. *virescens* Schiffn. = *Denotarisia linguifolia*  
*Jamesoniella ovifolia* var. *latifolia* Schiffn. = *Denotarisia linguifolia*  
*Jamesoniella ovifolia* var. *minor* Schiffn. = *Denotarisia linguifolia*  
*Jamesoniella rutneri* Schiffn. = *Jungermannia punila*  
*Jamesoniella verdoornii* Schiffn. *nom. inval.* = *Jackiella javanica*  
*Jensenia zollingeri* (Gottsche) Grolle = *Jensenia decipiens*  
*Jubula hutchinsiae* var. *integrifolia* (Steph.) S.Hatt. = *Jubula hutchinsiae* subsp. *javanica*  
*Jubula hutchinsiae* var. *javanica* (Steph.) Renner 1932 *nom. inval.* = *Jubula hutchinsiae* subsp. *javanica*  
*Jubula hutchinsiae* var. *sullivantii* Spruce = *Jubula pennsylvanica* subsp. *pennsylvanica*  
*Jubula javanica* Steph. = *Jubula hutchinsiae* subsp. *javanica*  
*Jungermannia abietina* Nees = *Plagiochila abietina*  
*Jungermannia affinis* Reinw., Blume et Nees = *Heteroscyphus coalitus*  
*Jungermannia affinis* Schiffn. = *Denotarisia linguifolia*  
*Jungermannia aligera* Nees = *Gottschea aligera*

*Jungermannia aligera*  $\gamma$  *laxa* Nees  $\equiv$  *Schistochila aligera* var. *laxa*  
*Jungermannia aligera*  $\delta$  *exalbida* Nees = *Gottschea aligera*  
*Jungermannia apiculata* Nees  $\equiv$  *Frullania apiculata*  
*Jungermannia apiculata*  $\beta$  *nodulosa* Nees = *Frullania apiculata*  $\beta$  *laxa*  
*Jungermannia applanata* Reinw., Blume et Nees  $\equiv$  *Lopholejeunea applanata*  
*Jungermannia applanata*  $\beta$  *monstrosa* Nees  $\equiv$  *Lopholejeunea nigricans* var. *monstrosa*  
*Jungermannia appressifolia* Mitt.  $\equiv$  *Solenostoma appressifolium*  
*Jungermannia arbuscula* Brid. ex Lehm. et Lindenb.  $\equiv$  *Plagiochila arbuscula*  
*Jungermannia arcuata* Nees  $\equiv$  *Acrolejeunea arcuata*  
*Jungermannia arguta* Reinw., Blume et Nees  $\equiv$  *Heteroscyphus argutus*  
*Jungermannia ariadne* Taylor ex Lehm.  $\equiv$  *Solenostoma ariadne*  
*Jungermannia armata* Nees  $\equiv$  *Isotachis armata*  
*Jungermannia armata*  $\beta$  *elongata* Sande Lac.  $\equiv$  *Isotachis armata* var. *elongata*  
*Jungermannia aselliformis* Reinw., Blume et Nees  $\equiv$  *Heteroscyphus aselliformis*  
*Jungermannia asplenioides*  $\beta$  *australis* Nees  $\equiv$  *Plagiochila trapezoidea*  
*Jungermannia asplenioides*  $\beta^{**}$  *tenera* Nees = *Plagiochila singularis*  
*Jungermannia baduina* Nees  $\equiv$  *Heteroscyphus baduinus*  
*Jungermannia bantamensis* Reinw., Blume et Nees  $\equiv$  *Plagiochila bantamensis*  
*Jungermannia baueri* (Schiffn.) Amakawa nom. illeg.  $\equiv$  *Solenostoma baueri*  
*Jungermannia bicuspidata* A  $\alpha$  *vulgaris* (Nees) Gottsche, Lindenb. et Nees nom. illeg. = *Cephalozia bicuspidata* subsp. *bicuspidata*  
*Jungermannia bicuspidata* L.  $\equiv$  *Cephalozia bicuspidata*  
*Jungermannia bidens* Reinw., Blume et Nees  $\equiv$  *Anastrophyllum bidens*  
*Jungermannia bidentata* L. = *Chiloscyphus coadunatus*  
*Jungermannia bidentula* F. Weber  $\equiv$  *Calypogeia bidentula*  
*Jungermannia blepharophora* Nees  $\equiv$  *Plagiochila blepharophora*  
*Jungermannia blumei* Nees  $\equiv$  *Schistochila blumei*  
*Jungermannia boryana* F. Weber = *Radula boryana*  
*Jungermannia boschiana* Sande Lac.  $\equiv$  *Hygrolembidium boschianum*  
*Jungermannia brasiliensis* (Nees et Mont.) Nees  $\equiv$  *Symphyogyna brasiliensis*  
*Jungermannia brauniana* Nees  $\equiv$  *Plagiochilium braunianum*  
*Jungermannia calcarata* Reinw., Blume et Nees = *Mastigophora diclados*  
*Jungermannia calva* Nees = *Plagiochila javanica*  
*Jungermannia canaliculata* Nees  $\equiv$  *Riccardia canaliculata*  
*Jungermannia capillaris* Sw.  $\equiv$  *Kurzia capillaris*  
*Jungermannia capillaris*  $\beta$  *javanica* Nees = *Telaranea neesii*  
*Jungermannia ciliolata* Nees  $\equiv$  *Chiloscyphus ciliolatus*  
*Jungermannia cladorrhiza* Reinw., Blume et Nees  $\equiv$  *Lepidozia cladorrhiza*  
*Jungermannia coalita*  $\beta$  *affinis* (Reinw., Blume et Nees) Nees = *Heteroscyphus coalitus*  
*Jungermannia coalita*  $\gamma$  *tenera* Nees  $\equiv$  *Chiloscyphus coalitus* var. *tener*  
*Jungermannia colorata*  $\gamma$  *microphylla* Nees = *Gottschelia schizopleura*  
*Jungermannia colorata*  $\delta$  *decipiens* Nees = *Solenostoma tetragonum*  
*Jungermannia comans* Nees = *Solenostoma comatum*  
*Jungermannia comata* Nees  $\equiv$  *Solenostoma comatum*  
*Jungermannia conjugata*  $\alpha$  *opposita* (Reinw., Blume et Nees) Nees  $\equiv$  *Plagiochilium oppositum*  
*Jungermannia conjugata*  $\gamma$  *falcata* Nees  $\equiv$  *Plagiochila conjugata* var. *falcata*  
*Jungermannia contracta* Reinw., Blume et Nees  $\equiv$  *Cuspidatula contracta*  
*Jungermannia cordistipula* Reinw., Blume et Nees  $\equiv$  *Frullania cordistipula*  
*Jungermannia cordistipula*  $\beta$  *regularis* Nees  $\equiv$  *Frullania cordistipula*  $\gamma$  *regularis*  
*Jungermannia cordistipula*  $\gamma$  *pertenuis* Nees  $\equiv$  *Frullania serrata* var. *pertenuis*  
*Jungermannia costata* Nees  $\equiv$  *Chiloscyphus costatus*  
*Jungermannia cristata* Sw.  $\equiv$  *Plagiochila cristata*  
*Jungermannia cucullata* Reinw., Blume et Nees  $\equiv$  *Metalejeunea cucullata*  
*Jungermannia cucullata*  $\alpha$  *major* Nees nom. inval. = *Metalejeunea cucullata*  
*Jungermannia cucullata*  $\beta$  *exilis* (Reinw., Blume et Nees) Nees  $\equiv$  *Lejeunea exilis*  
*Jungermannia cucullata*  $\gamma$  *tenuis* Nees = *Drepanolejeunea angustifolia*  
*Jungermannia curvifolia* var.  $\beta$  *baueri* (Mart.) Lindenb. = *Nowellia curvifolia*  
*Jungermannia daedalea* Nees = *Schistochila reinwardtii*  
*Jungermannia decolyana* Schiffn. ex Steph. = *Solenostoma appressifolium* var. *appressifolium*  
*Jungermannia decurrens* Reinw., Blume et Nees nom. illeg. = *Heteroscyphus splendens*  
*Jungermannia dendroides* Nees  $\equiv$  *Chiastocaulon dendroides*  
*Jungermannia dichotoma* (P. Beauv.) Steud.  $\equiv$  *Plagiochila dichotoma*  
*Jungermannia diclados*  $\alpha$  *scorpioides* (Reinw., Blume et Nees) Nees = *Mastigophora diclados*  
*Jungermannia diclados*  $\alpha^{*}$  *major* Nees = *Mastigophora diclados*  
*Jungermannia diclados*  $\alpha^{**}$  *tenerior* Nees = *Mastigophora diclados*

*Jungermannia diclados*  $\beta$  *calcarata* (Reinw., Blume et Nees) Nees *nom. illeg.* = *Mastigophora diclados*  
*Jungermannia diclados*  $\beta^*$  *conferta* Nees = *Mastigophora diclados*  
*Jungermannia diclados*  $\beta^{**}$  *rhizobola* Nees = *Mastigophora diclados*  
*Jungermannia diclados*  $\beta^{***}$  *nana* Nees = *Mastigophora diclados*  
*Jungermannia distans* Nees *nom. illeg.* = *Bazzania distans*  
*Jungermannia divaricata* Nees *nom. illeg.* = *Acromastigum divaricatum*  
*Jungermannia divaricata*  $\alpha$  *laxa* Nees = *Cephaloziella divaricata*  
*Jungermannia erosa* Reinw., Blume et Nees = *Bazzania erosa*  
*Jungermannia erosa*  $\alpha$  Nees *nom. inval.* = *Bazzania erosa*  
*Jungermannia erosa*  $\beta$  Nees = *Bazzania spiralis*  
*Jungermannia exigua* Gottsche ex Váňa *nom. inval.* = *Solenostoma strictum*  
*Jungermannia exilis* Reinw., Blume et Nees = *Lejeunea exilis*  
*Jungermannia fertilis* Reinw., Blume et Nees = *Acrolejeunea fertilis*  
*Jungermannia filicina* Sw. = *Bryopteris filicina*  
*Jungermannia fissa* Nees *nom. illeg.* = *Mastigophora diclados*  
*Jungermannia fissa*  $\beta$  *laxior-et-tenuis* Nees = *Mastigophora fissa* var. *laxior-et-tenuis*  
*Jungermannia flexicaulis* Nees = *Jamesoniella flexicaulis*  
*Jungermannia flexicaulis*  $\beta$  *microphylla* Gottsche, Lindenb. et Nees = *Gottschelia schizopleura*  
*Jungermannia flexicaulis*  $\gamma$  *decipiens* Gottsche, Lindenb. et Nees = *Solenostoma tetragonum*  
*Jungermannia formosa* C.F.W.Meissn. ex Spreng. = *Radula formosa*  
*Jungermannia frondescens* (Nees) Nees = *Plagiochila frondescens*  
*Jungermannia fucoidea* Sw. = *Riccardia fucoidea*  
*Jungermannia furcata* var.  $\beta$  *elongata* Hook. *nom. illeg.* = *Metzgeria conjugata*  
*Jungermannia furcata* var.  $\beta$  *maxima* Weber = *Metzgeria conjugata*  
*Jungermannia furcata*  $\gamma$  *linearis* (Sw.) Nees = *Steereella linearis*  
*Jungermannia galeata* Reinw., Blume et Nees = *Frullania riojaneirensis*  
*Jungermannia gigantea* Hook. *nom. illeg.* = *Plagiochila gigantea*  
*Jungermannia gigantea*  $\beta$  *laxior* Nees = *Plagiochila gigantea* var. *laxior*  
*Jungermannia gracilis* Reinw., Blume et Nees = *Frullania gracilis*  
*Jungermannia hasskarliana* (Nees) Steph. = *Solenostoma hasskarlianum*  
*Jungermannia herzogiana* (Schiffn.) Váňa = *Solenostoma javanicum*  
*Jungermannia hirtella* F.Weber = *Plicanthus hirtellus*  
*Jungermannia holorrhiza* Reinw., Blume et Nees = *Lepidozia holorrhiza*  
*Jungermannia holorrhiza*  $\beta$  *laxa* Nees = *Lepidozia holorrhiza* var. *laxa*  
*Jungermannia hutchinsiae* Hook. = *Jubula hutchinsiae*  
*Jungermannia integristipula* Nees = *Frullania integristipula*  
*Jungermannia intermedia* Reinw., Blume et Nees = *Frullania intermedia*  
*Jungermannia javanensis* Jolycl. *nom. illeg.* = *Fossombronia angulosa*  
*Jungermannia javanica* (Nees) Taylor et Hook.f. *nom. illeg.* = *Telaranea neesii*  
*Jungermannia javanica* (Schiffn.) Amakawa *nom. illeg.* = *Solenostoma javanicum*  
*Jungermannia javanica* Nees *nom. illeg.* = *Plagiochila frondescens*  
*Jungermannia javanica* Sw. = *Plagiochila javanica*  
*Jungermannia javanica*  $\alpha$  *tenerrima* Nees = *Plagiochila frondescens*  
*Jungermannia javanica*  $\beta$  *diffusa* Nees = *Plagiochila frondescens*  
*Jungermannia javanica*  $\gamma$  *rigida* Nees = *Plagiochila frondescens*  
*Jungermannia junghuhniana* Nees = *Solenostoma comatum* var. *comatum*  
*Jungermannia juniperina* var.  $\beta$  Hook. = *Herbertus aduncus*  
*Jungermannia kurzii* Gottsche ex Váňa *nom. inval.* = *Solenostoma strictum*  
*Jungermannia lobulata* Hook. = *Frullania lobulata*  
*Jungermannia lobulata*  $\alpha$  *minor* Nees *nom. illeg.* = *Frullania lobulata*  
*Jungermannia loricata* Reinw., Blume et Nees = *Bazzania loricata*  
*Jungermannia lumbricoides* Nees = *Lejeunea lumbricoides*  
*Jungermannia lycopodioides* Wallr. = *Barbilophozia lycopodioides*  
*Jungermannia microphylla* Hook. = *Lepidozia microphylla*  
*Jungermannia miehena* Steph. = *Solenostoma baueri*  
*Jungermannia mollis* Nees = *Chiloscyphus mollis*  
*Jungermannia moniliata* Reinw., Blume et Nees = *Frullania moniliata*  
*Jungermannia multifida* L. = *Riccardia multifida*  
*Jungermannia nemorosa* L. *nom. illeg.* = *Scapania nemorea*  
*Jungermannia nigricaulis* Reinw., Blume et Nees = *Frullania nigricaulis*  
*Jungermannia nodulosa* Reinw., Blume et Nees = *Frullania nodulosa*  
*Jungermannia obliquata* Nees = *Bazzania praerupta* var. *obliquata*  
*Jungermannia obliquifolia* (Schiffn.) Váňa = *Solenostoma obliquifolium*  
*Jungermannia obscura* Sw. = *Frullania riojaneirensis*

*Jungermannia ochroleuca*  $\beta$  *tenerior* Nees = *Lepicolea rara*  
*Jungermannia ochroleuca*  $\gamma$  *nana* Nees = *Lepicolea rara*  
*Jungermannia ochroleuca*  $\delta$  *viridis* Nees = *Lepicolea ochroleuca* var. *viridis*  
*Jungermannia opposita* Reinw., Blume et Nees = *Plagiochilium oppositum*  
*Jungermannia ornithocephala* Reinw., Blume et Nees = *Frullania ornithocephala*  
*Jungermannia ornithocephala*  $\alpha$  *minor* Nees = *Frullania ornithocephala*  $\alpha$  *minor*  
*Jungermannia ornithocephala*  $\beta$  *major* Nees = *Frullania ornithocephala* var. *major*  
*Jungermannia pallescens* Ehrh. ex Hoffm. = *Chiloscyphus pallescens*  
*Jungermannia pangerangana* Gottsche ex Váňa nom. inval. = *Solenostoma strictum*  
*Jungermannia piligera* Nees = *Anastrophyllum piligerum*  
*Jungermannia piligera*  $\alpha$  *major* Nees nom. inval. = *Anastrophyllum piligerum*  
*Jungermannia piligera*  $\beta$  *minor* Nees = *Anastrophyllum piligerum*  
*Jungermannia piligera*  $\gamma$  *tenerrima* Nees = *Anastrophyllum bidens*  
*Jungermannia pinnatifida* (Weber) Nees = *Riccardia chamedryfolia*  
*Jungermannia pluma* Reinw., Blume et Nees = *Trichocolea pluma*  
*Jungermannia polygona* Mitt. ex Váňa nom. inval. = *Solenostoma haskarlianum*  
*Jungermannia polyrhiza* Hook. ex Lehm. = *Solenostoma truncatum*  
*Jungermannia praerupta* Reinw., Blume et Nees = *Bazzania praerupta*  
*Jungermannia prostrata* Sw. = *Odontoschisma prostratum*  
*Jungermannia punicea* Nees = *Andrewsianthus puniceus*  
*Jungermannia quadridens* Nees = *Lepidozia quadridens*  
*Jungermannia radiculosa* (Mitt.) Steph. = *Solenostoma radiculosum*  
*Jungermannia ramuligera* Nees = *Frullania ramuligera*  
*Jungermannia recurvifolia* Nees = *Andrewsianthus recurvifolius*  
*Jungermannia reinwardtii* Nees = *Schistochila reinwardtii*  
*Jungermannia renitens* Nees = *Plagiochila renitens*  
*Jungermannia reptans* L. = *Lepidozia reptans*  
*Jungermannia retusa* Gottsche nom. illeg. = *Solenostoma javanicum*  
*Jungermannia retusa* Reinw., Blume et Nees = *Thysananthus retusus*  
*Jungermannia rhizophora* Reinw., Blume et Nees = *Metzgeria furcata*  
*Jungermannia rigidula* Nees = *Saccogynidium rigidulum*  
*Jungermannia sciurea* Nees = *Schistochila sciurea*  
*Jungermannia scorpioides* Reinw., Blume et Nees = *Mastigophora diclados*  
*Jungermannia semirepanda* Nees = *Spruceanthus semirepandus*  
*Jungermannia serpentina* Nees = *Bazzania serpentina*  
*Jungermannia serpyllifolia* Wilson et Hook. nom. illeg. = *Lejeunea flava*  
*Jungermannia setacea* Weber = *Kurzia pauciflora*  
*Jungermannia setigera* Lindenb. = *Temnoma setigerum*  
*Jungermannia simplex* Weber nom. illeg. = *Plagiochila trapezoidea*  
*Jungermannia sordida* Nees = *Lejeunea sordida*  
*Jungermannia sordida* var.  $\beta$  *tenerrima* Nees = *Euosmolejeunea tenerrima*  
*Jungermannia spathulistipa* Reinw., Blume et Nees = *Thysananthus spathulistipus*  
*Jungermannia spathulistipa*  $\alpha$  *minor* Nees nom. illeg. = *Thysananthus spathulistipus*  
*Jungermannia spathulistipa*  $\beta^*$  *subpinnata* Nees ex Schiffn. nom. inval. = *Thysananthus spathulistipus*  
*Jungermannia sphagnoides* A.Rich. ex Hook. nom. illeg. = *Pleurozia gigantea*  
*Jungermannia spiralis* Reinw., Blume et Nees = *Bazzania spiralis*  
*Jungermannia squamata* Reinw., Blume et Nees nom. illeg. = *Jamesoniella flexicaulis*  
*Jungermannia squamata* var.  $\gamma$  *apiculata* Nees ex Sande Lac. nom. inval. = *Cuspidatula contracta*  
*Jungermannia squarrosa* Nees nom. illeg. = *Frullania ericoides*  
*Jungermannia stephanii* (Schiffn.) Amakawa = *Solenostoma stephanii*  
*Jungermannia stricta* (Schiffn.) Steph. = *Solenostoma strictum*  
*Jungermannia subfusca* Nees = *Lopholejeunea subfusca*  
*Jungermannia subintegerrima* Reinw., Blume et Nees = *Syzygiella subintegerrima*  
*Jungermannia subintegerrima*  $\alpha$  *oblongifolia* Nees = *Syzygiella securifolia*  
*Jungermannia subintegerrima*  $\beta$  *maior* Nees nom. illeg. = *Syzygiella subintegerrima*  
*Jungermannia succulenta* A.Rich. ex Lehm. = *Nardia succulenta*  
*Jungermannia sulcata* Nees = *Spruceanthus sulcatus*  
*Jungermannia tenuis* (Nees) Reinw., Blume et Nees nom. illeg. = *Drepanolejeunea angustifolia*  
*Jungermannia tetragona* Lindenb. = *Solenostoma tetragonum*  
*Jungermannia thymifolia* Nees = *Lejeunea flava*  
*Jungermannia thymifolia*  $\alpha$  *imbricata* Nees = *Cheilolejeunea trapezia*  
*Jungermannia thymifolia*  $\beta$  *discreta* Nees = *Lejeunea flava* subsp. *orientalis*  
*Jungermannia thymifolia*  $\gamma$  *intertexta* Nees = *Lejeunea flava*  
*Jungermannia thymifolia*  $\delta$  *laxa* Nees = *Taxilejeunea laxa*

*Jungermannia tomentella* var.  $\beta$  *javanica* Reinw., Blume et Nees = *Trichocolea tomentella*  
*Jungermannia tomentella* var.  $\delta$  *pluma* (Reinw., Blume et Nees) Lindenb. = *Trichocolea pluma*  
*Jungermannia tomentella*  $\epsilon$  *subsimplex* Nees = *Trichocolea tomentella*  $\epsilon$  *subsimplex*  
*Jungermannia trapezia* Nees = *Cheilolejeunea trapezia*  
*Jungermannia trichodes* Reinw., Blume et Nees = *Lepidozia trichodes*  
*Jungermannia tricuspidata* Nees = *Cephalozia tricuspidata*  
*Jungermannia tridens* Reinw., Blume et Nees = *Bazzania tridens*  
*Jungermannia tridens*  $\alpha$  Nees = *Bazzania tridens*  
*Jungermannia tridens*  $\beta$  Nees = *Bazzania pectinata*  
*Jungermannia trifaria* Reinw., Blume et Nees = *Cheilolejeunea trifaria*  
*Jungermannia trisubulata* Nees = *Lepicolea rara*  
*Jungermannia truncata* f. *transitoriae* (Schiffn.) Amakawa *nom. inval.* = *Solenostoma truncatum*  
*Jungermannia truncata* Nees = *Solenostoma truncatum*  
*Jungermannia truncata* var.  $\beta$  *crassiretis* (Schiffn.) Amakawa *nom. inval.* = *Solenostoma truncatum*  
*Jungermannia truncata*  $\beta$  *tenerrima* Nees = *Nardia truncata*  
*Jungermannia ulvoides* Reinw., Blume et Nees = *Symphyogyna ulvoides*  
*Jungermannia umbilicata* Nees = *Lejeunea umbilicata*  
*Jungermannia uncigera* Reinw., Blume et Nees = *Bazzania uncigera*  
*Jungermannia uncinata* F.Weber = *Isotachis aubertii*  
*Jungermannia vaginata* Sw. = *Frullania vaginata*  
*Jungermannia vitrea* Nees = *Leptolejeunea vitrea*  
*Jungermannia vulcanicola* (Schiffn.) Steph. = *Solenostoma vulcanicola*  
*Kantius alternifolius* (Nees) Spruce = *Metacalypogeia alternifolia*  
*Kantius alternifolius* var.  $\beta$  *confertior* (Gottsche, Lindenb. et Nees) Schiffn. = *Mnioloma fuscum*  
*Kantius apiculatus* Steph. = *Calypogeia apiculata*  
*Kantius bidentulus* (F.Weber) Trevis. = *Calypogeia bidentula*  
*Kantius goebelii* f. *thermarum* Schiffn. *nom. inval.* = *Calypogeia goebelii*  
*Kantius goebelii* Schiffn. = *Calypogeia goebelii*  
*Kurzia crenacanthoidea* Mart. = *Kurzia gonyotricha*  
*Leioscyphus motleyi* Mitt. = *Leptoscyphus infuscatus*  
*Lejeunea abnormis* (Herzog) Inoue *nom. illeg.* = *Lejeunea exilis*  
*Lejeunea abnormis* (Herzog) R.M.Schust. *nom. illeg.* = *Lejeunea exilis*  
*Lejeunea acroloba* Mont. ex Steph. = *Colura acroloba*  
*Lejeunea aequabilis* Sande Lac. = *Cololejeunea aequabilis*  
*Lejeunea apiculata* Horik. = *Lopholejeunea nigricans*  
*Lejeunea applanata* (Reinw., Blume et Nees) Nees = *Lopholejeunea applanata*  
*Lejeunea applanata*  $\beta^*$  Gottsche, Lindenb. et Nees = *Lopholejeunea applanata*  
*Lejeunea aptycta* Gottsche = *Taxilejeunea aptycta*  
*Lejeunea arcuata* (Nees) Steph. = *Acrolejeunea arcuata*  
*Lejeunea belangeriana* Gottsche = *Ceratolejeunea belangeriana*  
*Lejeunea byssiformis* (Herzog) Grolle et Mizut. = *Lejeunea exilis*  
*Lejeunea cardiocalyx* Schiffn. *nom. inval.* = *Cololejeunea cardiocalyx*  
*Lejeunea ceratantha* Nees et Mont. = *Ceratolejeunea cornuta*  
*Lejeunea ciliatilobula* Schiffn. = *Cololejeunea inflectens*  
*Lejeunea compressiuscula* Lindb. ex Steph. *nom. inval.* = *Taxilejeunea compressiuscula*  
*Lejeunea conferta* (C.F.W.Meissn. ex Spreng.) Gottsche, Lindenb. et Nees = *Anoplolejeunea conferta*  
*Lejeunea conica* Sande Lac. = *Colura conica*  
*Lejeunea corynophora* Nees, Lindenb. et Gottsche = *Colura corynophora*  
*Lejeunea cucullata* (Reinw., Blume et Nees) Nees = *Metalejeunea cucullata*  
*Lejeunea cucullata* var.  $\delta$  *parasitica* Gottsche, Lindenb. et Nees = *Metalejeunea cucullata*  
*Lejeunea cucullata*  $\alpha$  *major* Nees *nom. illeg.* = *Metalejeunea cucullata*  
*Lejeunea cucullata*  $\beta$  *exilis* (Reinw., Blume et Nees) Nees = *Lejeunea exilis*  
*Lejeunea cyclops* Sande Lac. = *Drepanolejeunea cyclops*  
*Lejeunea dactylophora* Nees, Lindenb. et Gottsche = *Drepanolejeunea dactylophora*  
*Lejeunea decursiva* Sande Lac. = *Cheilolejeunea decursiva*  
*Lejeunea dozyana* Sande Lac. = *Cololejeunea dozyana*  
*Lejeunea elliptica* (Lehm. et Lindenb.) Mont. = *Leptolejeunea elliptica*  
*Lejeunea elliptica*  $\alpha$  *conferta* (Lehm. et Lindenb.) Gottsche, Lindenb. et Nees = *Leptolejeunea elliptica*  
*Lejeunea erectifolia* Spruce ex Spruce = *Metalejeunea cucullata*  
*Lejeunea falsinervis* Sande Lac. = *Cheilolejeunea falsinervis*  
*Lejeunea fertilis* (Reinw., Blume et Nees) Mitt. = *Acrolejeunea fertilis*  
*Lejeunea floccosa* (Lehm. et Lindenb.) Lehm. et Lindenb. = *Cololejeunea floccosa*  
*Lejeunea fruticosa* (Lindenb. et Gottsche) Spruce = *Dendrolejeunea fruticosa*  
*Lejeunea goebelii* f. *normalis* Schiffn. *nom. inval.* = *Cololejeunea trichomanis*

*Lejeunea goebelii* Gottsche ex K.I.Goebel *nom. inval.* = *Cololejeunea trichomanis*  
*Lejeunea goebelii* Gottsche ex Schiffn. = *Cololejeunea trichomanis*  
*Lejeunea goebelii* var.  $\beta$  *cardiocalyx* Schiffn.  $\equiv$  *Cololejeunea goebelii* var. *cardiocalyx*  
*Lejeunea hampeana* Steph. *nom. illeg.* = *Drepanolejeunea hampeana*  
*Lejeunea haskarliana* Lehm. et Lindenb.  $\equiv$  *Cololejeunea haskarliana*  
*Lejeunea hasskarliana* (Gottsche) Spruce  $\equiv$  *Schiffneriolejeunea tumida* var. *haskarliana*  
*Lejeunea heterophylla* Sande Lac. = *Cheilolejeunea trifaria*  
*Lejeunea humilis* (Gottsche) Spruce = *Mastigolejeunea auriculata*  
*Lejeunea imbricata* (Nees) Nees = *Cheilolejeunea trapezia*  
*Lejeunea inchoata* (C.F.W.Meissn. ex Lehm. et Lindenb.) Nees *nom. illeg.*  $\equiv$  *Drepanolejeunea inchoata*  
*Lejeunea incisa* Gottsche  $\equiv$  *Cheilolejeunea incisa*  
*Lejeunea intermedia* Lindenb. = *Lopholejeunea nigricans*  
*Lejeunea javanica* (Nees) Spruce *nom. illeg.* = *Ptychanthus striatus*  
*Lejeunea javanica* Nees = *Lopholejeunea nigricans*  
*Lejeunea javanica* var. *intermedia* (Gottsche) Spruce  $\equiv$  *Ptychanthus striatus* var. *intermedius*  
*Lejeunea junghuhniana* Steph.  $\equiv$  *Colura junghuhniana*  
*Lejeunea latistipula* var. *minor* Schiffn. = *Phaeolejeunea latistipula*  
*Lejeunea laxa* (Nees) Lindenb.  $\equiv$  *Taxilejeunea laxa*  
*Lejeunea leratii* (Steph.) Mizut. = *Lejeunea patersonii*  
*Lejeunea lindenbergii* Gottsche  $\equiv$  *Cheilolejeunea lindenbergii*  
*Lejeunea lineata* (Lehm. et Lindenb.) Nees  $\equiv$  *Cheilolejeunea lineata*  
*Lejeunea luteola* (Steph.) Mizut. *nom. illeg.*  $\equiv$  *Lejeunea mimula*  
*Lejeunea maculata* Mitt.  $\equiv$  *Leptolejeunea maculata*  
*Lejeunea marginata* (Lehm. et Lindenb.) Gottsche, Lindenb. et Nees  $\equiv$  *Cololejeunea marginata*  
*Lejeunea mitracalyx* (Eifrig) Mizut. = *Lejeunea alata*  
*Lejeunea muricata* Gottsche  $\equiv$  *Dactylophorella muricata*  
*Lejeunea nigricans* Lindenb.  $\equiv$  *Lopholejeunea nigricans*  
*Lejeunea nigricans*  $\beta$  *monstrosa* (Nees) Gottsche, Lindenb. et Nees  $\equiv$  *Lopholejeunea nigricans* var. *monstrosa*  
*Lejeunea novoguineensis* Schiffn. = *Lejeunea umbilicata*  
*Lejeunea ornata* (K.I.Goebel) Schiffn.  $\equiv$  *Colura ornata*  
*Lejeunea parvisaccata* (Steph.) Steph. = *Lejeunea micholitzii*  
*Lejeunea pellucida* (C.F.W.Meissn. ex Spreng.) Gottsche, Lindenb. et Nees  $\equiv$  *Diplasiolejeunea pellucida*  
*Lejeunea peraffinis* Schiffn.  $\equiv$  *Cololejeunea peraffinis*  
*Lejeunea plana* (Sande Lac.) Steph. = *Thysananthus retusus*  
*Lejeunea polymorpha* (Sande Lac.) Schiffn.  $\equiv$  *Spruceanthus polymorphus*  
*Lejeunea polymorpha* var. *undulifolia* (Sande Lac.) Schiffn. = *Spruceanthus polymorphus*  
*Lejeunea polyrhiza* Nees  $\equiv$  *Drepanolejeunea polyrhiza*  
*Lejeunea pusilla* (K.I.Goebel) Schiffn. *nom. illeg.* = *Cololejeunea metzgeriopsis*  
*Lejeunea recurvistipula* Gottsche  $\equiv$  *Caudalejeunea recurvistipula*  
*Lejeunea reniloba* (Gottsche) Spruce = *Caudalejeunea recurvistipula*  
*Lejeunea retusa* (Reinw., Blume et Nees) Steph.  $\equiv$  *Thysananthus retusus*  
*Lejeunea sagraeana* (Mont.) Gottsche, Lindenb. et Nees = *Lopholejeunea subfusca*  
*Lejeunea schiffneri* Steph. ex Schiffn. *nom. illeg.* = *Leptolejeunea maculata*  
*Lejeunea semirepanda* (Nees) Nees et Mont.  $\equiv$  *Spruceanthus semirepandus*  
*Lejeunea serpyllifolia* (Dicks.) Lib. = *Lejeunea patens*  
*Lejeunea setistipa* Steph. *nom. inval.* = *Drepanolejeunea thwaitesiana*  
*Lejeunea setistipa* Steph. ex Schiffn. = *Drepanolejeunea thwaitesiana*  
*Lejeunea spathulistipa* (Reinw., Blume et Nees) Mitt.  $\equiv$  *Thysananthus spathulistipus*  
*Lejeunea squamata* (Willd. ex F.Weber) Nees ex Mont.  $\equiv$  *Stictolejeunea squamata*  
*Lejeunea stahlianiana* Steph. = *Lejeunea discreta*  
*Lejeunea subfusca* (Nees) Nees et Mont.  $\equiv$  *Lopholejeunea subfusca*  
*Lejeunea sulcata* (Nees) Spruce  $\equiv$  *Spruceanthus sulcatus*  
*Lejeunea superba* var.  $\beta$  *latifolia* Schiffn. = *Colura superba*  
*Lejeunea tenuis* (Nees) Nees = *Drepanolejeunea angustifolia*  
*Lejeunea teretiuscula* Lindenb. = *Cheilolejeunea trifaria*  
*Lejeunea teysmannii* Gottsche = *Drepanolejeunea teysmannii*  
*Lejeunea thymifolia* (Nees) Mont. = *Lejeunea flava*  
*Lejeunea thymifolia*  $\beta$  *discreta* (Nees) Gottsche, Lindenb. et Nees *nom. inval.* = *Lejeunea flava* subsp. *orientalis*  
*Lejeunea thymifolia*  $\beta$  *indica* (Nees et Blandow) Gottsche, Lindenb. et Nees = *Lejeunea flava* subsp. *orientalis*  
*Lejeunea trapezia* (Nees) Nees  $\equiv$  *Cheilolejeunea trapezia*  
*Lejeunea trapezia* (Nees) Spruce  $\equiv$  *Cheilolejeunea trapezia*  
*Lejeunea trapezia*  $\beta$  *minor* Gottsche, Lindenb. et Nees = *Cheilolejeunea trapezia*  
*Lejeunea tridactyla* Gottsche  $\equiv$  *Drepanolejeunea tridactyla*  
*Lejeunea trifaria* Gottsche, Lindenb. et Nees = *Cheilolejeunea trifaria*

*Lejeunea venusta* Sande Lac. = *Cololejeunea haskarliana* var. *haskarliana*  
*Lejeunea vitrea* (Nees) Nees, Lindenb. et Gottsche = *Leptolejeunea vitrea*  
*Lejeunea xanthocarpa* (Lehm. et Lindenb.) Gottsche, Lindenb. et Nees = *Leucolejeunea xanthocarpa*  
*Lejeunea zollingeri* (Steph.) Mizut. nom. illeg. = *Lejeunea mizutanii*  
*Lejeunea zollingeri* Steph. = *Lopholejeunea zollingeri*  
*Lembidium boschianum* (Sande Lac.) Schiffn. = *Hygrolembidium boschianum*  
*Lembidium boschianum* f. *etiolatum* Schiffn. nom. inval. = *Hygrolembidium boschianum*  
*Lembidium boschianum* f. *laxifolium* Schiffn. nom. inval. = *Hygrolembidium boschianum*  
*Lembidium boschianum* f. *luxurians* Schiffn. nom. inval. = *Hygrolembidium boschianum*  
*Lembidium boschianum* f. *tenue* Schiffn. nom. inval. = *Hygrolembidium boschianum*  
*Lepicolea fissa* (Nees) Steph. = *Mastigophora diclados*  
*Lepicolea flaccida* Steph. = *Triandrophyllum heterophyllum*  
*Lepicolea loriana* Steph. = *Lepicolea rara*  
*Lepicolea ochroleuca* var.  $\beta$  *tenerior* (Nees) Schiffn. = *Lepicolea rara*  
*Lepicolea ochroleuca* var.  $\gamma$  *nana* (Nees) Schiffn. = *Lepicolea rara*  
*Lepicolea simplicior* Herzog = *Lepicolea rara*  
*Lepidozia crenacanthoidea* (Mart.) K.I.Goebel = *Kurzia gonyotricha*  
*Lepidozia gonyotricha* Sande Lac. = *Kurzia gonyotricha*  
*Lepidozia javanica* (Nees) Mont. = *Telaranea neesii*  
*Lepidozia neesii* Lindenb. = *Telaranea neesii*  
*Lepidozia papulosa* Steph. = *Telaranea papulosa*  
*Lepidozia paucidens* Steph. = *Telaranea papulosa*  
*Lepidozia rara* Steph. = *Lepicolea rara*  
*Lepidozia reptans*  $\delta$  *tenera* (Huebener) Gottsche, Lindenb. et Nees = *Lepidozia reptans*  
*Lepidozia setacea* (Weber) Mitt. = *Kurzia pauciflora*  
*Lepidozia supradecomposita* var.  $\beta$  *haskarliana* (Lindenb.) Schiffn. = *Lepidozia haskarliana*  
*Lepidozia supradecomposita*  $\beta$  *haskarliana* Lindenb. = *Lepidozia haskarliana*  
*Lepidozia tenera* Steph. = *Telaranea wallichiana*  
*Lepidozia trisetosa* Steph. = *Telaranea trisetosa*  
*Lepidozia wallichiana* Gottsche = *Telaranea wallichiana*  
*Leptocolea floccosa* (Lehm. et Lindenb.) A.Evans = *Cololejeunea floccosa*  
*Leptocolea floccosa* var. *peraffinis* (Schiffn.) Herzog = *Cololejeunea peraffinis*  
*Leptocolea goebelii* (Gottsche ex Schiffn.) A.Evans = *Cololejeunea trichomanis*  
*Leptocolea karstenii* Steph. = *Cololejeunea cordiflora*  
*Leptocolea peraffinis* (Schiffn.) Horik. = *Cololejeunea peraffinis*  
*Leptocolea yulensis* Steph. = *Cololejeunea aequabilis*  
*Leptolejeunea brevicornis* Schiffn. nom. inval. = *Leptolejeunea foliicola*  
*Leptolejeunea cuspidata* Steph. = *Lejeunea apiculata*  
*Leptolejeunea cyclops* (Sande Lac.) Schiffn. = *Drepanolejeunea cyclops*  
*Leptolejeunea elliptica* subsp. *subacuta* (Steph. ex A.Evans) R.M.Schust. = *Leptolejeunea elliptica*  
*Leptolejeunea foliicola* (Horik.) R.M.Schust. nom. illeg. = *Drepanolejeunea foliicola*  
*Leptolejeunea polyrhiza* (Nees) Steph. = *Drepanolejeunea polyrhiza*  
*Leptolejeunea schiffneri* (Steph. ex Schiffn.) Steph. = *Leptolejeunea maculata*  
*Leptolejeunea schiffneri* (Steph.) Steph. nom. inval. = *Leptolejeunea maculata*  
*Leptolejeunea schiffneri* f. *angustifolia* Herzog nom. inval. = *Leptolejeunea maculata*  
*Leptolejeunea schiffneri* f. *latifolia* Herzog = *Leptolejeunea maculata*  
*Leptolejeunea subacuta* Steph. ex A.Evans = *Leptolejeunea elliptica*  
*Lobatiriccardia lobata* (Schiffn.) Furuki = *Lobatiriccardia coronopus*  
*Lophocolea arguta* (Reinw., Blume et Nees) Nees et Mont. = *Heteroscyphus argutus*  
*Lophocolea bidentata* (L.) Dumort. = *Chiloscyphus coadunatus*  
*Lophocolea bidentata* var. *rivularis* (Raddi) Schiffn. = *Chiloscyphus coadunatus* var. *rivularis*  
*Lophocolea bidentata* var.  $\beta$  *minor* Sande Lac. nom. inval. = *Chiloscyphus coadunatus*  
*Lophocolea boulyana* Steph. = *Chiloscyphus boulyanus*  
*Lophocolea ciliolata* (Nees) Gottsche = *Chiloscyphus ciliolatus*  
*Lophocolea ciliolata* f. *angustifolia* Schiffn. = *Chiloscyphus ciliolatus*  
*Lophocolea ciliolata* var. *spinulosa* Schiffn. = *Chiloscyphus ciliolatus*  
*Lophocolea costata* (Nees) Nees = *Chiloscyphus costatus*  
*Lophocolea crenulifolia* Steph. = *Chiloscyphus crenulifolius*  
*Lophocolea haskarliana* Gottsche = *Chiloscyphus haskarlianus*  
*Lophocolea horridula* Sande Lac. = *Chiloscyphus muricatus*  
*Lophocolea javanica* Schiffn. = *Chiloscyphus schiffneri*  
*Lophocolea kurzii* Sande Lac. = *Chiloscyphus kurzii*  
*Lophocolea lateralis* Dumort. = *Chiloscyphus coadunatus* var. *rivularis*  
*Lophocolea laxissima* Herzog = *Chiloscyphus laxissimus*

*Lophocolea levieri* Schiffn. = *Chiloscyphus paroicus*  
*Lophocolea massalongoana* Schiffn. = *Chiloscyphus costatoides*  
*Lophocolea mollis* (Nees) Nees = *Chiloscyphus mollis*  
*Lophocolea muricata* (Lehm.) Nees = *Chiloscyphus muricatus*  
*Lophocolea salacensis* Steph. = *Chiloscyphus salacensis*  
*Lophocolea stephanii* Schiffn. = *Chiloscyphus ciliolatooides*  
*Lophocolea thermanum* Schiffn. = *Chiloscyphus thermanum*  
*Lophocolea tridentata* Sande Lac. = *Heteroscyphus knightii*  
*Lopholejeunea fleischeri* Steph. = *Lopholejeunea applanata*  
*Lopholejeunea horticola* Schiffn. *nom. inval.* = *Lopholejeunea horticola*  
*Lopholejeunea indica* Udar et U.S.Awasthi = *Lopholejeunea subfusca*  
*Lopholejeunea intermedia* (Lindenb.) Steph. = *Lopholejeunea nigricans*  
*Lopholejeunea javanica* (Nees) Schiffn. = *Lopholejeunea nigricans*  
*Lopholejeunea karstenii* Steph. ex R.L.Zhu et Gradst. *nom. inval.* = *Lopholejeunea applanata*  
*Lopholejeunea latialata* Mizut. = *Lopholejeunea zollingeri*  
*Lopholejeunea latistipula* (Schiffn.) Schiffn. = *Phaeolejeunea latistipula*  
*Lopholejeunea latistipula* var.  $\beta$  *minor* (Schiffn.) Schiffn. = *Phaeolejeunea latistipula*  
*Lopholejeunea nigricans* var.  $\gamma$  *intermedia* (Lindenb.) Schiffn. = *Lopholejeunea nigricans*  
*Lopholejeunea nymannii* Steph. = *Lopholejeunea eulopha*  
*Lopholejeunea parva* Schiffn. *nom. inval.* = *Lopholejeunea ceylanica*  
*Lopholejeunea sagraeana* (Mont.) Schiffn. = *Lopholejeunea subfusca*  
*Lopholejeunea sagraeana* var.  $\beta$  *subfusca* (Nees) Schiffn. = *Lopholejeunea subfusca*  
*Lopholejeunea schiffneri* Verd. = *Lopholejeunea ceylanica*  
*Lopholejeunea serrifolia* Steph. = *Lopholejeunea wiltensii*  
*Lophozia bidens* Mitt. ex Steph. = *Andrewsianthus bidens*  
*Lophozia dubia* Schiffn. = *Hattoriella subcrispa*  
*Lophozia gedena* Steph. = *Andrewsianthus puniceus*  
*Lophozia lycopodioides* (Wallr.) Cogn. = *Barbilophozia lycopodioides*  
*Lophozia punicea* (Nees) Steph. = *Andrewsianthus puniceus*  
*Lophozia recurvifolia* (Nees) Steph. = *Andrewsianthus recurvifolius*  
*Madotheca acutifolia* Lehm. et Lindenb. = *Porella acutifolia*  
*Madotheca javanica* Gottsche ex Steph. = *Porella javanica*  
*Madotheca ligulifera* Taylor ex Lehm. = *Porella campylophylla* var. *ligulifera*  
*Madotheca stracheyana* Gottsche ex Steph. = *Porella acutifolia*  
*Makednothallus zollingeri* (Gottsche) Verd. = *Jensenia decipiens*  
*Marchantia cataractarum* Schiffn. = *Marchantia miqueliana*  
*Marchantia emarginata* f. *intermedia* Schiffn. = *Marchantia emarginata* subsp. *emarginata*  
*Marchantia emarginata* f. *minor* Schiffn. = *Marchantia emarginata* subsp. *emarginata*  
*Marchantia emarginata* f. *thermarum* Schiffn. *nom. inval.* = *Marchantia emarginata* subsp. *emarginata*  
*Marchantia emarginata* f. *thermarum* Schiffn. = *Marchantia emarginata* subsp. *emarginata*  
*Marchantia emarginata* var. *longepedunculata* Schiffn. = *Marchantia emarginata* subsp. *emarginata*  
*Marchantia emarginata* var. *major* Schiffn. = *Marchantia emarginata* subsp. *emarginata*  
*Marchantia emarginata* var. *multiradia* Schiffn. = *Marchantia emarginata* subsp. *emarginata*  
*Marchantia emarginata* var.  $\beta$  *leucolepis* Schiffn. *nom. inval.* = *Marchantia emarginata* subsp. *emarginata*  
*Marchantia emarginata*  $\alpha$  *typica* Schiffn. *nom. inval.* = *Marchantia emarginata*  
*Marchantia geminata* f. *divaricata* Schiffn. = *Marchantia geminata*  
*Marchantia geminata* var. *divaricata* (Schiffn.) Burgeff = *Marchantia geminata*  
*Marchantia geminata* var. *major* Schiffn. = *Marchantia geminata*  
*Marchantia geminata* var. *subsimplex* Schiffn. = *Marchantia treubii*  
*Marchantia hirsuta* Reinw., Blume et Nees *nom. illeg.* = *Dumortiera hirsuta*  
*Marchantia nitida* f. *javanica* Schiffn. *nom. inval.* = *Marchantia paleacea* subsp. *paleacea*  
*Marchantia nitida* f. *subaquatica* Schiffn. *nom. inval.* = *Marchantia paleacea* subsp. *paleacea*  
*Marchantia nitida* Lehm. et Lindenb. = *Marchantia paleacea* subsp. *paleacea*  
*Marchantia nitida* var. *hillebrandii* Schiffn. = *Marchantia paleacea* subsp. *paleacea*  
*Marchantia palmata* Reinw., Blume et Nees = *Marchantia emarginata* subsp. *emarginata*  
*Marchantia palmata* var. *major-thermarum* (Schiffn.) Burgeff = *Marchantia emarginata* subsp. *emarginata*  
*Marchantia palmata* var. *multiradia* (Schiffn.) Burgeff = *Marchantia emarginata* subsp. *emarginata*  
*Marchantia polymorpha*  $\alpha$  *denticulata* Gottsche, Lindenb. et Nees = *Marchantia polymorpha*  
*Marchantia robusta* Steph. ex Bonner = *Marchantia pappeana* subsp. *robusta*  
*Marchantia rufiflora* Steph. = *Marchantia miqueliana*  
*Marchantia sciaphila* Schiffn. = *Marchantia treubii*  
*Marchantia tabularis* Nees = *Marchantia berteroaana*  
*Marchantia treubii* var. *intercedens* Schiffn. = *Marchantia treubii*  
*Marchesia arcuata* (Nees) Kuntze = *Acrolejeunea arcuata*



*Marchesinia fertilis* (Reinw., Blume et Nees) Kuntze = *Acrolejeunea fertilis*  
*Marchesinia haskarliana* (Gottsche) Kuntze = *Schiffneriolejeunea tumida*  
*Marchesinia humilis* (Gottsche) Kuntze = *Mastigolejeunea auriculata*  
*Marchesinia reniloba* (Gottsche) Kuntze = *Caudalejeunea recurvistipula*  
*Marchesinia semirepanda* (Nees) Kuntze = *Spruceanthus semirepandus*  
*Marsupella vulcanica* Schiffn. = *Marsupella neesii*  
*Martinellius javanicus* Mitt. = *Scapania javanica*  
*Martinellius rigidus* (Nees) Trevis. nom. illeg. = *Scapania rigida*  
*Mastigobryum alternifolium* Nees = *Metacalypogeia alternifolia*  
*Mastigobryum alternifolium*  $\beta$  *confertius* Gottsche, Lindenb. et Nees = *Mnioloma fuscum*  
*Mastigobryum angustisedens* Steph. = *Bazzania angustisedens*  
*Mastigobryum australe* (Mont.) Lindenb. = *Bazzania tridens*  
*Mastigobryum calcaratum* Sande Lac. = *Bazzania calcarata*  
*Mastigobryum commutatum* Lindenb. et Gottsche = *Bazzania commutata*  
*Mastigobryum connatum* Sande Lac. nom. inval. = *Bazzania japonica*  
*Mastigobryum conophyllum* Sande Lac. = *Bazzania conophylla*  
*Mastigobryum densum* Sande Lac. = *Bazzania densa*  
*Mastigobryum densum*  $\beta$  *connatum* Sande Lac. = *Bazzania densa* var. *connata*  
*Mastigobryum desciscens* Steph. = *Bazzania desciscens*  
*Mastigobryum distans* (Nees) Nees = *Bazzania distans*  
*Mastigobryum divaricatum* (Nees) Nees = *Acromastigum divaricatum*  
*Mastigobryum erosum* (Reinw., Blume et Nees) Nees = *Bazzania erosa*  
*Mastigobryum erosum*  $\alpha$  Nees = *Bazzania erosa*  
*Mastigobryum erosum*  $\beta$  (Nees) Lindenb. = *Bazzania spiralis*  
*Mastigobryum erosum*  $\gamma$  Lindenb. = *Bazzania desciscens*  
*Mastigobryum fallax* Sande Lac. = *Bazzania fallax*  
*Mastigobryum fleischeri* Steph. nom. illeg. = *Bazzania gedeana*  
*Mastigobryum fleischeri* Steph. = *Bazzania fleischeri*  
*Mastigobryum gibbum* Sande Lac. = *Bazzania uncigera* var. *gibba*  
*Mastigobryum grandirete* Steph. = *Bazzania grandiretis*  
*Mastigobryum horridulum* (Schiffn.) Steph. = *Bazzania horridula*  
*Mastigobryum indicum* Gottsche et Lindenb. = *Bazzania indica*  
*Mastigobryum intermedium* Gottsche ex Lindenb. = *Bazzania intermedia*  
*Mastigobryum javanicum* Sande Lac. = *Bazzania javanica*  
*Mastigobryum linguiforme* Sande Lac. = *Bazzania linguiformis*  
*Mastigobryum longicaule* Sande Lac. = *Bazzania longicaulis*  
*Mastigobryum loricatum* (Reinw., Blume et Nees) Gottsche, Lindenb. et Nees = *Bazzania loricata*  
*Mastigobryum manillanum* Gottsche ex Steph. = *Bazzania manillana*  
*Mastigobryum miquelianum* Lehm. = *Bazzania commutata*  
*Mastigobryum olivaceum* Steph. nom. illeg. = *Bazzania tridens* var. *tridens*  
*Mastigobryum paradoxum* Sande Lac. = *Bazzania paradoxa*  
*Mastigobryum pectinatum* Lindenb. et Gottsche = *Bazzania pectinata*  
*Mastigobryum praeruptum* (Reinw., Blume et Nees) Nees = *Bazzania praerupta*  
*Mastigobryum praeruptum*  $\beta$  *obliquatum* (Nees) Gottsche, Lindenb. et Nees = *Bazzania praerupta* var. *obliquata*  
*Mastigobryum schadenbergii* Steph. = *Bazzania halconiensis*  
*Mastigobryum serpentinum* (Nees) Lindenb. = *Bazzania serpentina*  
*Mastigobryum spirale* (Reinw., Blume et Nees) Steph. = *Bazzania spiralis*  
*Mastigobryum subtile* Sande Lac. = *Bazzania subtilis*  
*Mastigobryum tjiburum* Steph. = *Bazzania tridens* var. *tridens*  
*Mastigobryum tridens* (Reinw., Blume et Nees) Dumort. = *Bazzania tridens*  
*Mastigobryum tridens*  $\alpha$  (Nees) Gottsche, Lindenb. et Nees = *Bazzania tridens*  
*Mastigobryum tridens*  $\beta$  (Nees) Gottsche, Lindenb. et Nees = *Bazzania pectinata*  
*Mastigobryum typicum* Steph. = *Bazzania tridens* var. *tridens*  
*Mastigobryum uncigerum* (Reinw., Blume et Nees) Nees = *Bazzania uncigera*  
*Mastigobryum uncigerum*  $\beta$  Nees = *Bazzania gedeana*  
*Mastigobryum vittatum* Gottsche = *Bazzania vittata*  
*Mastigobryum zollingeri* Lindenb. = *Bazzania zollingeri*  
*Mastigolejeunea arcuata* (Nees) Schiffn. = *Acrolejeunea arcuata*  
*Mastigolejeunea convoluta* (Lindenb.) Schiffn. nom. inval. = *Thysananthus convolutus*  
*Mastigolejeunea humilis* (Gottsche) Schiffn. = *Mastigolejeunea auriculata*  
*Mastigolejeunea humilis* var. *ciliata* U.S.Awasthi et Udar = *Mastigolejeunea auriculata*  
*Mastigolejeunea inflatiloba* Steph. = *Schiffneriolejeunea tumida*  
*Mastigolejeunea javanica* Steph. = *Schiffneriolejeunea tumida* var. *haskarliana*  
*Mastigophora cladorhiza* (Reinw., Blume et Nees) Trevis. = *Lepidozia cladorhiza*

*Mastigophora cordata* (Lindenb.) Trevis. = *Lepidozia cordata*  
*Mastigophora diclados* f. *conferta* (Nees) Schiffn. = *Mastigophora diclados*  
*Mastigophora diclados* f. *nana* (Nees) Schiffn. = *Mastigophora diclados*  
*Mastigophora diclados* f. *rhizobola* (Nees) Schiffn. = *Mastigophora diclados*  
*Mastigophora diclados* f. *tenerior* (Nees) Schiffn. = *Mastigophora diclados*  
*Mastigophora diclados* f. *thermarum* Schiffn. = *Mastigophora diclados*  
*Mastigophora diclados* var.  $\beta$  *scorpioides* (Reinw., Blume et Nees) Schiffn. = *Mastigophora diclados*  
*Mastigophora fissa* (Nees) Schiffn. = *Mastigophora diclados*  
*Mastigophora heterophylla* Steph. = *Triandrophyllum heterophyllum*  
*Mastigophora holorrhiza* (Reinw., Blume et Nees) Trevis. = *Lepidozia holorrhiza*  
*Mastigophora javanica* (Nees) Trevis. = *Telaranea neesii*  
*Mastigophora quadridens* (Nees) Trevis. = *Lepidozia quadridens*  
*Mastigophora subintegra* (Lindenb.) Trevis. = *Lepidozia subintegra*  
*Mastigophora supradecomposita* (Lindenb.) Trevis. = *Lepidozia supradecomposita*  
*Mastigophora trichodes* (Reinw., Blume et Nees) Mont. = *Lepidozia trichodes*  
*Mastigophora vrieseana* (Sande Lac.) Schiffn. = *Mastigophora diclados*  
*Megaceros grandis* (Ångstr.) Steph. = *Megaceros flagellaris*  
*Megaceros salakensis* Campb. = *Megaceros flagellaris*  
*Megaceros stahlia* (Steph.) Campb. = *Megaceros flagellaris*  
*Mesophylla hasskarliana* (Nees) Trevis. = *Solenostoma hasskarlianum*  
*Metzgeria australis* Steph. = *Metzgeria leptoneura*  
*Metzgeria conjugata* var. *japonica* S.Hatt. = *Metzgeria conjugata* subsp. *japonica*  
*Metzgeria conjugata* var. *minor* Schiffn. = *Metzgeria conjugata* subsp. *japonica*  
*Metzgeria cristata* Steph. = *Metzgeria foliicola*  
*Metzgeria cristatissima* Herzog = *Metzgeria foliicola*  
*Metzgeria decipiens* (C.Massal.) Schiffn. = *Metzgeria ciliata*  
*Metzgeria fucoidea* (Sw.) Mont. et Nees = *Riccardia fucoidea*  
*Metzgeria furcata*  $\alpha$  *extensa* Nees = *Metzgeria leptoneura* var. *leptoneura*  
*Metzgeria furcata*  $\beta$  *communis* (Nees) Gottsche, Lindenb. et Nees *nom. illeg.* = *Metzgeria furcata*  
*Metzgeria furcata*  $\beta$  1 *major* Nees = *M. leptoneura*  
*Metzgeria furcata*  $\beta$  2 *minor* Nees *nom. inval.* = *Steereella linearis*  
*Metzgeria fuscescens* Mitt. ex Steph. = *Metzgeria leptoneura* var. *leptoneura*  
*Metzgeria hamata* (Mitt.) Lindb. *nom. illeg.* = *Metzgeria procera*  
*Metzgeria hamata* f. *propagulifera* Schiffn. = *Metzgeria leptoneura* var. *leptoneura*  
*Metzgeria hamata* f. *transitoria* Schiffn. *nom. inval.* = *Metzgeria leptoneura*  
*Metzgeria hamata* Lindb. *nom. inval.* = *Metzgeria leptoneura* var. *leptoneura*  
*Metzgeria hamatififormis* Schiffn. = *Metzgeria leptoneura* var. *leptoneura*  
*Metzgeria lindbergii* Schiffn. = *Metzgeria conjugata* subsp. *japonica*  
*Metzgeria minor* (Schiffn.) Kuwah. *nom. inval.* = *Metzgeria conjugata* subsp. *japonica*  
*Metzgeria quadriseriata* A.Evans = *Metzgeria ciliata*  
*Metzgeria sandei* Schiffn. = *Metzgeria leptoneura*  
*Metzgeria subscobina* Kuwah. = *Metzgeria scobina*  
*Metzgeria thomeensis* Steph. = *Metzgeria leptoneura*  
*Metzgeriopsis pusilla* K.I.Goebel = *Cololejeunea metzgeriopsis*  
*Microlejeunea abnormis* (Herzog) Inoue et H.A.Mill. = *Lejeunea exilis*  
*Microlejeunea albicans* (Nees) Steph. = *Metalejeunea cucullata*  
*Microlejeunea cucullata* (Reinw., Blume et Nees) J.B.Jack et Steph. = *Metalejeunea cucullata*  
*Microlejeunea exilis* (Reinw., Blume et Nees) Bischl., H.A.Mill. et Bonner = *Lejeunea exilis*  
*Microlejeunea microstipula* Steph. *nom. inval.* = *Lejeunea microstipula*  
*Microlejeunea suborbicularis* Herzog = *Cheilolejeunea suborbicularis*  
*Micropterygium cymbifolium* (Hook. ex Lehm. et Lindenb.) Nees *nom. illeg.* = *Micropterygium carinatum*  
*Mittenia zollingeri* Gottsche = *Jensenia decipiens*  
*Moerckia radiculosa* Schiffn. = *Sandeothallus radiculosus*  
*Monoclea blumei* Nees = *Haplomitrium blumei*  
*Nardia ariadne* (Taylor ex Lehm.) Schiffn. = *Solenostoma ariadne*  
*Nardia comata* (Nees) Schiffn. = *Solenostoma comatum*  
*Nardia hasskarliana* (Nees) Lindb. = *Solenostoma hasskarlianum*  
*Nardia hasskarliana* f. *brevior* Schiffn. *nom. inval.* = *Solenostoma hasskarlianum*  
*Nardia hasskarliana* var. *virens* Schiffn. = *Solenostoma hasskarlianum*  
*Nardia notoscyphoides* Schiffn. = *Notoscyphus lutescens*  
*Nardia polyrhiza* (Hook. ex Lehm.) Steph. = *Solenostoma truncatum*  
*Nardia retusa* (Gottsche) Schiffn. = *Solenostoma javanicum*  
*Nardia tetragona* (Lindenb.) Schiffn. = *Solenostoma tetragonum*  
*Nardia tetragona* (Lindenb.) Schiffn. var. *aquatica* Schiffn. *nom. inval.* = *Solenostoma tetragonum*

*Nardia tetragona* f. *brevior* Schiffn. *nom. inval.* = *Solenostoma tetragonum*  
*Nardia tetragona* f. *gracilior* Schiffn. *nom. inval.* = *Solenostoma haskarlianum*  
*Nardia truncata* (Nees) Schiffn. = *Solenostoma truncatum*  
*Nardia truncata* f. *subaquatica* Schiffn. = *Solenostoma truncatum*  
*Nardia truncata* (Nees) Schiffn. var.  $\beta$  *tenerrima* (Nees) Schiffn. = *Solenostoma truncatum*  
*Nardia truncata* f. *transitoria* Schiffn. = *Solenostoma truncatum*  
*Nardia truncata* var. *crassiretis* Schiffn. = *Solenostoma truncatum*  
*Nardia truncata* var. *elongata* Schiffn. *nom. inval.* = *Solenostoma truncatum*  
*Nardia vulcanicola* f. *cavifolia* Schiffn. *nom. inval.* = *Solenostoma vulcanicola*  
*Nardia vulcanicola* Schiffn. = *Solenostoma vulcanicola*  
*Nardia vulcanicola* var. *tenuiretis* Schiffn. = *Solenostoma vulcanicola*  
*Neolepidozia wallichiana* (Gottsche) Fulford et J. Taylor = *Telaranea wallichiana*  
*Noguchia brauniana* (Nees) Inoue = *Plagiochilium braunianum*  
*Noguchia opposita* (Reinw., Blume et Nees) Inoue = *Plagiochilium oppositum*  
*Notarisia aligera* (Nees) Trevis. = *Gottschea aligera*  
*Notoscyphus paroicus* Schiffn. = *Notoscyphus lutescens*  
*Omphalanthus lumbricoides* (Nees) Nees = *Lejeunea lumbricoides*  
*Omphalanthus umbilicatus* (Nees) Nees = *Lejeunea umbilicata*  
*Pallavicinia indica* Schiffn. = *Pallavicinia lyellii*  
*Pallavicinia indica* var. *major* Schiffn. = *Pallavicinia lyellii*  
*Pallavicinia latifrons* Steph. = *Pallavicinia lyellii*  
*Pallavicinia levieri* var. *imperfecta* Schiffn. = *Symphyogynopsis gottscheana*  
*Pallavicinia radiculosa* (Sande Lac.) Schiffn. = *Pallavicinia lyellii*  
*Pallavicinia zollingeri* (Gottsche) Schiffn. = *Jensenia decipiens*  
*Paraschistochila aligera* (Nees) R.M.Schust. = *Gottschea aligera*  
*Paraschistochila cuspidata* (Steph.) R.M.Schust. = *Gottschea aligera*  
*Phaeoceros laevis* subsp. *carolinianus* (Michx.) Prosk. = *Phaeoceros carolinianus*  
*Phaeoceros polyandrus* (Steph.) J.Haseg. = *Paraphymatoceros hirticalyx*  
*Phragmicoma applanata* (Reinw., Blume et Nees) Nees = *Lopholejeunea applanata*  
*Phragmicoma arcuata* (Nees) Nees = *Acrolejeunea arcuata*  
*Phragmicoma cucullata* Gottsche ex Steph. *nom. inval.* = *Acrolejeunea pycnoclada* subsp. *pycnoclada*  
*Phragmicoma cucullata* Steph. *nom. inval.* = *Acrolejeunea pycnoclada* subsp. *pycnoclada*  
*Phragmicoma fertilis* (Reinw., Blume et Nees) Nees *nom. illeg.* = *Acrolejeunea fertilis*  
*Phragmicoma fertilis* (Reinw., Blume et Nees) Nees ex Mont. = *Acrolejeunea fertilis*  
*Phragmicoma haskarliana* Gottsche = *Schiffneriolejeunea tumida* var. *haskarliana*  
*Phragmicoma humilis* Gottsche = *Mastigolejeunea auriculata*  
*Phragmicoma peradeniensis* (Mitt.) Sande Lac. = *Schiffneriolejeunea tumida* var. *tumida*  
*Phragmicoma plana* (Sande Lac.) Mitt. = *Thysananthus retusus*  
*Phragmicoma polymorpha* Sande Lac. = *Spruceanthus polymorphus*  
*Phragmicoma polymorpha*  $\alpha$  *undulifolia* Sande Lac. = *Spruceanthus polymorphus*  
*Phragmicoma polymorpha*  $\beta$  *planifolia* Sande Lac. = *Spruceanthus polymorphus*  
*Phragmicoma reniloba* Gottsche = *Caudalejeunea recurvistipula*  
*Phragmicoma semirepanda* (Nees) Gottsche = *Spruceanthus semirepandus*  
*Phragmicoma spathulistipa* (Reinw., Blume et Nees) Mont. = *Thysananthus spathulistipus*  
*Phragmicoma subfusca* (Nees) Nees = *Lopholejeunea subfusca*  
*Phragmicoma tumida* Nees et Mont. = *Schiffneriolejeunea tumida*  
*Phragmilejeunea polymorpha* (Sande Lac.) Schiffn. = *Spruceanthus polymorphus*  
*Physotium sphagnoides* (A.Rich. ex Hook.) Hook. ex Nees *nom. illeg.* = *Pleurozia gigantea*  
*Physotium sphagnoides* Nees = *Pleurozia gigantea*  
*Physocolea aequabilis* (Sande Lac.) Steph. = *Cololejeunea aequabilis*  
*Physocolea ciliatilobula* (Schiffn.) Steph. = *Cololejeunea inflectens*  
*Physocolea decliviloba* (Steph.) Steph. = *Cololejeunea decliviloba*  
*Physocolea dozyana* (Sande Lac.) Steph. = *Cololejeunea dozyana*  
*Physocolea estipulata* Steph. = *Cololejeunea raduiloba*  
*Physocolea fusca* Steph. = *Cololejeunea fusca*  
*Physocolea javanica* Steph. = *Cololejeunea angustiflora*  
*Physocolea madothecoides* Steph. = *Cololejeunea madothecoides*  
*Physocolea peraffinis* (Schiffn.) Steph. = *Cololejeunea peraffinis*  
*Physocolea planissima* (Mitt.) Steph. = *Cololejeunea planissima*  
*Physocolea scabrifolia* (Schiffn.) Schiffn. ex Steph. = *Cololejeunea obliqua*  
*Physocolea venusta* (Sande Lac.) Steph. = *Cololejeunea haskarliana* var. *haskarliana*  
*Physocolea verrucosa* (Steph.) Steph. = *Cololejeunea verrucosa*  
*Plagiochila abietina* var. *hampeana* (Gottsche) Schiffn. = *Plagiochila hampeana*  
*Plagiochila abietina*  $\beta$  *gracilentata* Sande Lac. = *Plagiochila hampeana*

*Plagiochila acanthophylla* Gottsche = *Plagiochila sciophila*  
*Plagiochila accedens* Steph. = *Plagiochila korthalsiana*  
*Plagiochila altecristata* Steph. = *Plagiochila sandei*  
*Plagiochila asplenioides*  $\beta$  *australis* (Nees) Nees  $\equiv$  *Plagiochila trapezoidea*  
*Plagiochila autoica* Steph.  $\equiv$  *Pedinophyllum autoicum*  
*Plagiochila bantamensis* f. *minor* Carl *nom. inval.* = *Plagiochila bantamensis*  
*Plagiochila bantamensis* var.  $\beta$  *minor* (Lindenb.) Schiffn. = *Plagiochila bantamensis*  
*Plagiochila bantamensis*  $\beta$  *minor* Lindenb. = *Plagiochila bantamensis*  
*Plagiochila beccariana* f. *laxa* Herzog ex Carl *nom. inval.* = *Plagiochila korthalsiana*  
*Plagiochila beccariana* f. *simplicior* Herzog ex Carl = *Plagiochila korthalsiana*  
*Plagiochila beccariana* Schiffn. = *Plagiochila korthalsiana*  
*Plagiochila beccariana* var. *laxa* Schiffn. = *Plagiochila korthalsiana*  
*Plagiochila belangeriana* f. *angustifolia* Herzog *nom. inval.* = *Plagiochila arbuscula*  
*Plagiochila belangeriana* Lindenb. = *Plagiochila arbuscula*  
*Plagiochila belangeriana* var. *brevifolia* Schiffn. = *Plagiochila arbuscula*  
*Plagiochila belangeriana* var. *rufescens* Schiffn. = *Plagiochila arbuscula*  
*Plagiochila blepharophora* var. *exilis* Schiffn. = *Plagiochila blepharophora*  
*Plagiochila brauniana* (Nees) Lindenb.  $\equiv$  *Plagiochilium braunianum*  
*Plagiochila calva* (Nees) Lindenb. = *Plagiochila javanica*  
*Plagiochila ciliata* Gottsche = *Plagiochila sciophila*  
*Plagiochila ciliata* var. *aberrans* Schiffn. = *Plagiochila sciophila*  
*Plagiochila ciliolata* (Nees) Lindenb.  $\equiv$  *Chiloscyphus ciliolatus*  
*Plagiochila comata* (Nees) Lindenb.  $\equiv$  *Solenostoma comatum*  
*Plagiochila commutata* Schiffn. = *Syzygiella securifolia*  
*Plagiochila costata* (Nees) Lindenb.  $\equiv$  *Chiloscyphus costatus*  
*Plagiochila dendroides* (Nees) Lindenb.  $\equiv$  *Chiastocaulon dendroides*  
*Plagiochila dendroides* var. *subtridentata* Schiffn. = *Chiastocaulon dendroides*  
*Plagiochila diaphana* Steph. = *Plagiochila kuhliana*  
*Plagiochila dichotoma* var.  $\beta$  Sande Lac. = *Plagiochila korthalsiana*  
*Plagiochila erronea* Steph. *nom. illeg.* = *Plagiochila renitens*  
*Plagiochila ferriena* Steph. = *Plagiochila sciophila*  
*Plagiochila flaccida* Lindenb. = *Plagiochila macrostachya*  
*Plagiochila frondescens* var.  $\beta$  *diffusa* (Nees) Schiffn. = *Plagiochila frondescens*  
*Plagiochila frondescens* var.  $\gamma$  *tenerrima* (Nees) Schiffn. = *Plagiochila frondescens*  
*Plagiochila frondescens*  $\alpha$  *tenerrima* (Nees) Lindenb. = *Plagiochila frondescens*  
*Plagiochila frondescens*  $\beta$  *diffusa* (Nees) Lindenb. = *Plagiochila frondescens*  
*Plagiochila frondescens*  $\gamma$  *rigida* (Nees) Lindenb. = *Plagiochila frondescens*  
*Plagiochila fusciorufa* Steph. = *Plagiochila teysmannii*  
*Plagiochila gedeana* Schiffn. = *Plagiochila hampeana*  
*Plagiochila geniculata* Sande Lac. *nom. illeg.* = *Plagiochila javanica*  
*Plagiochila goethartiana* Schiffn. = *Plagiochila bantamensis*  
*Plagiochila goethartiana* var. *gadokana* Schiffn. = *Plagiochila bantamensis*  
*Plagiochila gottschei* Schiffn. = *Plagiochila teysmannii*  
*Plagiochila gottschei* var. *brachyphylla* Schiffn. = *Plagiochila teysmannii*  
*Plagiochila gymnoclada* var. *longifolia* Schiffn. = *Plagiochila gymnoclada*  
*Plagiochila hasskarliana* Gottsche ex Sande Lac. *nom. inval.* = *Plagiochila gymnoclada*  
*Plagiochila heteromalla* Sande Lac. = *Plagiochila trapezoidea*  
*Plagiochila hispida* Steph. = *Plagiochila obtusa*  
*Plagiochila homomalla* Sande Lac. = *Plagiochila trapezoidea*  
*Plagiochila infirma* (Sande Lac.) Sande Lac. = *Plagiochila javanica*  
*Plagiochila infirma* var. *robusta* Schiffn. = *Plagiochila javanica*  
*Plagiochila intercedens* Schiffn. = *Plagiochila trapezoidea*  
*Plagiochila inversa* Sande Lac.  $\equiv$  *Wettsteinia inversa*  
*Plagiochila jackii* f. *tenerior* Schiffn. *nom. inval.* = *Plagiochila salacensis*  
*Plagiochila jackii* f. *tenuior* Schiffn. = *Plagiochila salacensis*  
*Plagiochila jackii* Schiffn. *nom. illeg.* = *Plagiochila salacensis*  
*Plagiochila jackii* var. *brevidentata* Schiffn. = *Plagiochila salacensis*  
*Plagiochila jackii* var. *longifolia* Schiffn. = *Plagiochila salacensis*  
*Plagiochila jackii* var. *salacensis* (Gottsche) Schiffn.  $\equiv$  *Plagiochila salacensis*  
*Plagiochila jackii* var. *virens* Schiffn. = *Plagiochila salacensis*  
*Plagiochila junghuhniana* f. *minor* Herzog ex Carl *nom. inval.* = *Plagiochila junghuhniana*  
*Plagiochila korthalsiana* var.  $\beta$  *robustior* (Sande Lac.) Schiffn. = *Plagiochila korthalsiana*  
*Plagiochila korthalsiana*  $\beta$  *robustior* Sande Lac. = *Plagiochila korthalsiana*  
*Plagiochila kuhliana* f. *typica* Schiffn. *nom. inval.* = *Plagiochila kuhliana*

*Plagiochila kuhliana* var. *miqueliana* Schiffn. = *Plagiochila kuhliana*  
*Plagiochila laxissima* Schiffn. = *Plagiochila bicornuta*  
*Plagiochila levieri* Schiffn. = *Plagiochila propinqua*  
*Plagiochila levieri* var. *brevidens* Schiffn. = *Plagiochila propinqua*  
*Plagiochila levieri* var. *longissima* Schiffn. = *Plagiochila propinqua*  
*Plagiochila ligulifolia* Steph. = *Syzygiella securifolia*  
*Plagiochila lobulata* f. *humilior* Schiffn. nom. inval. = *Plagiochila bantamensis*  
*Plagiochila lobulata* Schiffn. = *Plagiochila bantamensis*  
*Plagiochila lobulata* var. *longidens* Schiffn. = *Plagiochila bantamensis*  
*Plagiochila massalongoana* Schiffn. = *Plagiochila junghuhniana*  
*Plagiochila media* Schiffn. = *Plagiochila bantamensis*  
*Plagiochila media* var. *pauciciliata* Schiffn. = *Plagiochila bantamensis*  
*Plagiochila megamendongensis* Schiffn. nom. inval. = *Plagiochila parvifolia*  
*Plagiochila modiglianii* Steph. = *Plagiochila bantamensis*  
*Plagiochila monticola* f. *intermedia* Herzog nom. inval. = *Plagiochila hampeana*  
*Plagiochila monticola* Schiffn. = *Plagiochila hampeana*  
*Plagiochila nidulans* Herzog = *Plagiochila semidecurrans* var. *semidecurrans*  
*Plagiochila oblongata* Sande Lac. = *Plagiochila teysmannii*  
*Plagiochila obtusa* var. *brevifolia* Schiffn. nom. inval. = *Plagiochila obtusa*  
*Plagiochila opaca* Schiffn. = *Plagiochila javanica*  
*Plagiochila opposita* (Reinw., Blume et Nees) Lindenb. = *Plagiochilion oppositum*  
*Plagiochila opposita* var.  $\beta$  *falcata* (Nees) Schiffn. = *Plagiochila conjugata* var. *falcata*  
*Plagiochila opposita* var.  $\gamma$  *filiformis* (Lindenb.) Schiffn. = *Plagiochilion oppositum*  
*Plagiochila opposita*  $\beta$  *falcata* (Nees) Lindenb. = *Plagiochila conjugata* var. *falcata*  
*Plagiochila opposita*  $\gamma$  *filiformis* Lindenb. nom. inval. = *Plagiochilion oppositum*  
*Plagiochila patentispina* Steph. nom. illeg. = *Plagiochila karstenii*  
*Plagiochila philippinensis* Mont. ex Gottsche, Lindenb. et Nees nom. inval. = *Gottschea aligera*  
*Plagiochila pinnatiramosa* Schiffn. = *Plagiochila javanica*  
*Plagiochila renistipula* Steph. = *Plagiochila bantamensis*  
*Plagiochila renitens* f. *intermedia* Schiffn. = *Plagiochila renitens*  
*Plagiochila renitens* f. *typica* Schiffn. nom. inval. = *Plagiochila renitens*  
*Plagiochila renitens* var. *aberrans* Schiffn. = *Plagiochila renitens*  
*Plagiochila renitens* var. *brevidentata* Schiffn. = *Plagiochila renitens*  
*Plagiochila renitens* var. *spectabilis* Schiffn. = *Plagiochila renitens*  
*Plagiochila renitens* var. *suborbicularis* Schiffn. = *Plagiochila renitens*  
*Plagiochila revolutifolia* Schiffn. = *Plagiochila javanica*  
*Plagiochila rutilans*  $\beta$  *laxa* Lindenb. = *Plagiochila gymnocalycina*  
*Plagiochila scabra* Sande Lac. = *Wettsteinia inversa*  
*Plagiochila securifolia* Nees ex Lindenb. = *Syzygiella securifolia*  
*Plagiochila semialata* Sande Lac. = *Plagiochila teysmannii*  
*Plagiochila simillima* Steph. = *Plagiochila bantamensis*  
*Plagiochila simplex* var.  $\alpha$  *minor* Lindenb. nom. illeg. = *Plagiochila simplex*  
*Plagiochila sockawana* Steph. = *Plagiochila sciophila*  
*Plagiochila spathulifolia* (Mitt.) Mitt. = *Plagiochila spathulifolia*  
*Plagiochila spinosissima* Steph. = *Plagiochila semidecurrans*  
*Plagiochila stenophylla* Schiffn. = *Plagiochila singularis*  
*Plagiochila subdensispina* Steph. = *Plagiochila fusca*  
*Plagiochila subintegerrima* (Reinw., Blume et Nees) Mont. et Nees = *Syzygiella subintegerrima*  
*Plagiochila subintegerrima*  $\alpha$  *oblongifolia* (Nees) Lindenb. = *Syzygiella securifolia*  
*Plagiochila subintegerrima*  $\beta$  *maior* (Nees) Lindenb. = *Syzygiella subintegerrima*  
*Plagiochila subtruncata* Schiffn. = *Plagiochila javanica*  
*Plagiochila subtruncata* var. *brevifolia* Schiffn. = *Plagiochila javanica*  
*Plagiochila subtruncata* var. *firmior* Schiffn. = *Plagiochila javanica*  
*Plagiochila subtruncata* var. *longifolia* Schiffn. = *Plagiochila javanica*  
*Plagiochila tenuis* Mont. nom. illeg. = *Plagiochila gaudichaudii*  
*Plagiochila terricola* Steph. = *Plagiochila arbuscula*  
*Plagiochila tjibodensis* Schiffn. = *Plagiochila javanica*  
*Plagiochila trapezoidea* var. *heteromalla* Gottsche = *Plagiochila trapezoidea*  
*Plagiochila trapezoidea* var.  $\beta$  *tenera* (Nees) Schiffn. = *Plagiochila singularis*  
*Plagiochila trapezoidea*  $\beta$  *tenera* (Nees) Lindenb. = *Plagiochila singularis*  
*Plagiochila treubii* Schiffn. = *Plagiochila parvifolia*  
*Plagiochila treubii* var. *megamendongensis* Schiffn. = *Plagiochila parvifolia*  
*Plagiochila truncatula* Sande Lac. = *Plagiochila teysmannii*  
*Plagiochila variabilis* Sande Lac. = *Syzygiella securifolia*

*Plagiochila variegata* Lindenb. = *Syzygiella securifolia*  
*Plagiochila villosa* Steph. = *Plagiochila obtusa*  
*Plagiochila winteri* Steph. *nom. illeg.* = *Plagiochila trapezoidea*  
*Plagiochila zollingeri* Mont. = *Chiastocaulon dendroides*  
*Plectocolea ariadne* (Taylor ex Lehm.) Mitt. = *Solenostoma ariadne*  
*Plectocolea comata* (Nees) S.Hatt. = *Solenostoma comatum*  
*Plectocolea flexuosa* Mitt. ex Váňa = *Solenostoma haskarlianum*  
*Plectocolea haskarliana* (Nees) Mitt. = *Solenostoma haskarlianum*  
*Plectocolea junghuhniana* (Nees) Mitt. = *Solenostoma comatum* var. *comatum*  
*Plectocolea tetragona* (Lindenb.) Amakawa = *Solenostoma tetragonum*  
*Plectocolea truncata* (Nees) Herzog = *Solenostoma truncatum*  
*Pleuroschisma erosum* (Reinw., Blume et Nees) Trevis. = *Bazzania erosa*  
*Pleuroschisma serpentinum* (Nees) Trevis. = *Bazzania serpentina*  
*Pleurozia sphagnoides* (A.Rich. ex Hook.) Dumort. = *Pleurozia gigantea*  
*Porella acutifolia* var. *elbertii* (Steph.) S.Hatt. = *Porella acutifolia* var. *acutifolia*  
*Porella acutifolia* var. *intermedia* S.Hatt. *nom. inval.* = *Porella caespitans* subsp. *latior* var. *intermedia*  
*Porella acutifolia* var. *johannis-winkleri* (Herzog) S.Hatt. = *Porella acutifolia* var. *acutifolia*  
*Porella acutifolia* var. *stracheyana* (Gottsche ex Steph.) S.Hatt. = *Porella acutifolia*  
*Porella acutifolia* var. *subligulifera* S.Hatt. = *Porella acutifolia*  
*Porella ligulifera* (Taylor ex Lehm.) Trevis. = *Porella campylophylla* var. *ligulifera*  
*Porella plumosa* var. *stracheyana* (Gottsche ex Steph.) Pócs = *Porella acutifolia*  
*Porella stracheyana* (Gottsche ex Steph.) S.Hatt. = *Porella acutifolia*  
*Prasanthus paroicus* (Schiffn.) Kamim. = *Notoscyphus lutescens*  
*Prionolejeunea semperiana* Gottsche ex Steph. = *Otolejeunea semperiana*  
*Pseudoneura javanica* Gottsche et Rabenh. *nom. inval.* = *Riccardia plumosa*  
*Ptilidium sciureum* (Nees) Nees = *Schistochila sciurea*  
*Ptychanthus grossidens* Steph. = *Ptychanthus striatus*  
*Ptychanthus intermedius* Gottsche = *Ptychanthus striatus* var. *intermedius*  
*Ptychanthus javanicus* Nees = *Ptychanthus striatus* var. *striatus*  
*Ptychanthus kurzii* Gottsche ex Steph. = *Ptychanthus striatus*  
*Ptychanthus moluccensis* Sande Lac. = *Ptychanthus striatus*  
*Ptychanthus retusus* (Reinw., Blume et Nees) Nees = *Thysananthus retusus*  
*Ptychanthus semirepandus* (Nees) Nees = *Spruceanthus semirepandus*  
*Ptychanthus striatus* var. *retusus* (Reinw., Blume et Nees) Verd. = *Thysananthus retusus*  
*Ptychanthus sulcatus* (Nees) Nees = *Spruceanthus sulcatus*  
*Ptychanthus trifarius* Nees = *Cheilolejeunea trifaria*  
*Ptychocoleus arcuatus* (Nees) Trevis. = *Acrolejeunea arcuata*  
*Ptychocoleus cucullatus* Steph. = *Acrolejeunea pycnoclada* subsp. *pycnoclada*  
*Ptychocoleus cumingianus* (Mont.) Trevis. = *Schiffneriolejeunea cumingiana*  
*Ptychocoleus fertilis* (Reinw., Blume et Nees) Trevis. = *Acrolejeunea fertilis*  
*Ptychocoleus haskarlianus* (Gottsche) Steph. = *Schiffneriolejeunea tumida* var. *haskarliana*  
*Ptychocoleus hians* Steph. = *Acrolejeunea arcuata*  
*Ptychocoleus humilis* (Gottsche) Trevis. = *Mastigolejeunea auriculata*  
*Ptychocoleus nymannii* Steph. = *Schiffneriolejeunea pulopenangensis*  
*Ptychocoleus pulopenangensis* (Gottsche) Trevis. = *Schiffneriolejeunea pulopenangensis*  
*Ptychocoleus pycnocladus* (Taylor) Steph. = *Acrolejeunea pycnoclada*  
*Ptychocoleus renilobus* (Gottsche) Trevis. = *Caudalejeunea recurvistipula*  
*Ptychocoleus sumatranus* Steph. *nom. illeg.* = *Schiffneriolejeunea tumida* var. *tumida*  
*Ptychocoleus tjibodensis* Verd. = *Acrolejeunea tjibodensis*  
*Ptychocoleus tumidus* (Nees) Steph. = *Schiffneriolejeunea tumida*  
*Ptychocoleus wichurae* (Schiffn.) Steph. = *Acrolejeunea fertilis*  
*Ptycholejeunea intermedia* (Gottsche) Steph. = *Ptychanthus striatus*  
*Ptycholejeunea javanica* (Nees) Steph. ex Verd. *nom. inval.* = *Ptychanthus striatus*  
*Ptycholejeunea javanica* var. *intermedia* (Gottsche) Verd. *nom. inval.* = *Ptychanthus striatus* var. *intermedius*  
*Ptycholejeunea sulcata* (Nees) Verd. *nom. inval.* = *Spruceanthus sulcatus*  
*Pycnolejeunea angulistipa* Steph. = *Tuyamaella angulistipa*  
*Pycnolejeunea bancana* Steph. = *Pycnolejeunea contigua*  
*Pycnolejeunea bidentula* (Steph.) Steph. *nom. inval.* = *Lepidolejeunea bidentula*  
*Pycnolejeunea ceylanica* Spruce = *Cheilolejeunea ceylanica*  
*Pycnolejeunea excisula* Steph. = *Cheilolejeunea incisa*  
*Pycnolejeunea falsinervis* (Sande Lac.) Schiffn. = *Cheilolejeunea falsinervis*  
*Pycnolejeunea gardneri* (Mitt.) Steph. = *Cheilolejeunea gardneri*  
*Pycnolejeunea imbricata* (Nees) Schiffn. = *Cheilolejeunea trapezia*  
*Pycnolejeunea imbricata* (Nees) Steph. *nom. inval.* = *Cheilolejeunea trapezia*

*Pycnolejeunea incisa* (Gottsche) Schiffn. = *Cheilolejeunea incisa*  
*Pycnolejeunea incisa* (Gottsche) Steph. nom. inval. = *Cheilolejeunea incisa*  
*Pycnolejeunea longiloba* Steph. ex G.Hoffm. = *Cheilolejeunea trapezia*  
*Pycnolejeunea meyeniana* (Nees, Lindenb. et Gottsche) Steph. = *Cheilolejeunea meyeniana*  
*Pycnolejeunea micholitzii* Steph. = *Cheilolejeunea longidens*  
*Pycnolejeunea novoguineensis* (Schiffn.) Steph. = *Lejeunea umbilicata*  
*Pycnolejeunea schiffneri* Steph. ex Schiffn. = *Siphonolejeunea schiffneri*  
*Pycnolejeunea trapezia* (Nees) Schiffn. = *Cheilolejeunea trapezia*  
*Pycnolejeunea trapezia* (Nees) Steph. nom. inval. = *Cheilolejeunea trapezia*  
*Pycnolejeunea trapezia* var.  $\beta$  *minor* (Gottsche, Lindenb. et Nees) Schiffn. = *Cheilolejeunea trapezia*  
*Pycnolejeunea utriculata* Steph. = *Lejeunea utriculata*  
*Pycnolejeunea verdoornii* G.Hoffm. = *Cheilolejeunea ceylanica*  
*Pycnolejeunea vittata* Steph. ex G.Hoffm. = *Cheilolejeunea vittata*  
*Pycnolejeunea zollingeri* (Steph.) Mizut. = *Lejeunea mizutanii*  
*Radula colliculosa* Mitt. = *Radula javanica*  
*Radula fauciloba* Steph. = *Radula retroflexa*  
*Radula miqueliana* Taylor = *Radula retroflexa*  
*Radula mutata* Mitt. ex Castle nom. inval. = *Radula retroflexa*  
*Radula pinnulata* Mitt. = *Radula javanica*  
*Radula retroflexa* var. *fauciloba* (Steph.) K.Yamada = *Radula retroflexa*  
*Radula salakensis* Steph. = *Radula retroflexa*  
*Radula sandei* Steph. = *Radula javanica*  
*Radula subpallens* Steph. = *Radula ventricosa*  
*Reboulia hemisphaerica* var. *javanica* (Nees) Schiffn. = *Reboulia hemisphaerica* subsp. *australis*  
*Reboulia javanica* Nees = *Reboulia hemisphaerica* subsp. *australis*  
*Reboulia javanica*  $\beta$  *angustior* Gottsche, Lindenb. et Nees = *Reboulia hemisphaerica* subsp. *australis*  
*Rectolejeunea aloba* (Sande Lac.) Steph. = *Lejeunea aloba*  
*Rhaphidolejeunea cyclops* (Sande Lac.) Herzog = *Drepanolejeunea cyclops*  
*Rhaphidolejeunea longicuris* (Steph.) Herzog = *Drepanolejeunea longicuris*  
*Riccardia androgyna* Schiffn. = *Riccardia graeffei*  
*Riccardia crenatilimbica* (Schiffn.) Schiffn. nom. inval. = *Riccardia crenulata*  
*Riccardia decipiens* Schiffn. = *Riccardia hymenophylloides*  
*Riccardia diminuta* f. *laxa* Schiffn. = *Riccardia diminuta*  
*Riccardia diminuta* f. *longispica* Schiffn. = *Riccardia diminuta*  
*Riccardia diminuta* f. *minor* Schiffn. = *Riccardia diminuta*  
*Riccardia diminuta* f. *propagulifera* Schiffn. = *Riccardia diminuta*  
*Riccardia diminuta* f. *subpalmata* Schiffn. = *Riccardia diminuta*  
*Riccardia elata* f. *densior* Schiffn. = *Riccardia elata*  
*Riccardia elata* f. *laxior* Schiffn. = *Riccardia elata*  
*Riccardia elata* f. *propagulifera* Schiffn. = *Riccardia elata*  
*Riccardia elata* var. *goebelii* (Schiffn.) Schiffn. = *Riccardia plumosa*  
*Riccardia elata* var. *zollingeri* (Steph.) Schiffn. = *Riccardia plumosa*  
*Riccardia elata* var.  $\alpha$  *typica* Schiffn. nom. inval. = *Riccardia elata*  
*Riccardia elongata* Schiffn. = *Riccardia graeffei*  
*Riccardia goebelii* (Schiffn.) Schiffn. = *Riccardia plumosa*  
*Riccardia jackii* f. *crassior* (Schiffn.) Schiffn. = *Riccardia jackii*  
*Riccardia jackii* f. *submersa* Schiffn. nom. inval. = *Riccardia jackii*  
*Riccardia jackii* var. *crassior* Schiffn. = *Riccardia jackii*  
*Riccardia lobata* Schiffn. = *Lobatiriccardia coronopus*  
*Riccardia maxima* Schiffn. = *Aneura maxima*  
*Riccardia multifida* var. *ambrosioides* (Nees) Carrington et Pearson = *Riccardia multifida* subsp. *multifida*  
*Riccardia multifidoides* f. *propagulifera* Schiffn. nom. inval. = *Riccardia multifidoides*  
*Riccardia multifidoides* f. *subpalmata* Schiffn. = *Riccardia multifidoides*  
*Riccardia parvula* f. *paullum-major* Schiffn. nom. inval. = *Riccardia parvula*  
*Riccardia parvula* f. *propagulifera* Schiffn. nom. inval. = *Riccardia parvula*  
*Riccardia pinguis* (L.) Gray = *Aneura pinguis*  
*Riccardia pinguis* var. *pinnatiloba* (Schiffn.) Schiffn. = *Lobatiriccardia coronopus*  
*Riccardia pinguis* var.  $\alpha$  *tenuis* (Nees) Schiffn. = *Aneura pinguis*  
*Riccardia pinnatifida* (Weber) Carruth. = *Riccardia chamedryfolia*  
*Riccardia platyclada* f. *crenulata* Schiffn. = *Riccardia graeffei*  
*Riccardia platyclada* Schiffn. = *Riccardia graeffei*  
*Riccardia platyclada* var. *cornuta* Schiffn. nom. inval. = *Riccardia graeffei*  
*Riccardia platyclada* var. *submersa* Schiffn. nom. inval. = *Riccardia graeffei*  
*Riccardia scabra* Schiffn. = *Riccardia crassa*

*Riccardia scabra* var. *tjiburumensis* Schiffn. = *Riccardia crassa*  
*Riccardia serrulata* Schiffn. = *Riccardia heteroclada*  
*Riccardia stolonifera* (Steph.) E.A.Hodgs. = *Riccardia crassa*  
*Riccardia subexalata* f. *propagulifera* Schiffn. nom. inval. = *Riccardia subexalata*  
*Riccardia viridissima* Schiffn. = *Aneura pinguis*  
*Riccardia wettsteinii* f. *propagulifera* Schiffn. nom. inval. = *Riccardia wettsteinii*  
*Riccardia zollingeri* (Steph.) Schiffn. = *Riccardia plumosa*  
*Riccia appplanata* Meijer = *Riccia junghuhniana*  
*Riccia canaliculata* Hoffm. var. *javanica* Schiffn. nom. inval. = *Riccia fluitans*  
*Ricciella junghuhniana* (Nees et Lindenb.) Trevis. = *Riccia junghuhniana*  
*Saccogyna rigidula* (Nees) Schiffn. = *Saccogynidium rigidulum*  
*Saccogyna rigidula* f. *major* Schiffn. = *Saccogynidium muricellum*  
*Saccogyna rigidula* f. *minor* Schiffn. = *Saccogynidium muricellum*  
*Saccogyna rigidula* f. *typica* Schiffn. nom. inval. = *Saccogynidium rigidulum*  
*Saccogyna rigidula* var. *laevifolia* Schiffn. = *Saccogynidium muricellum*  
*Saccogyna rigidula* var. *latifolia* Schiffn. = *Saccogynidium muricellum*  
*Saccogyna rigidula* var. *latistipula* Schiffn. = *Saccogynidium rigidulum*  
*Saccogynidium jugatum* (Mitt.) Grolle = *Saccogynidium rigidulum*  
*Sarcocyphos neesii* Nees ex Sande Lac. nom. inval. = *Marsupella neesii*  
*Scalius carnosulus* Mitt. = *Haplomitrium blumei*  
*Scapania indica* Schiffn. ex Müll.Frib. nom. inval. = *Scapania griffithii*  
*Scapania nemorosa* (Dumort.) Dumort. nom. illeg. = *Scapania nemorea*  
*Scapania rigida* f. *minor* Schiffn. = *Scapania rigida*  
*Scapania sandei* Schiffn. nom. inval. = *Scapania sandei*  
*Scapania schiffneri* Grolle = *Scapania ciliatospinosa*  
*Schiffneriolejeunea hasskarliana* (Gottsche) Gradst. = *Schiffneriolejeunea tumida* var. *haskarliana*  
*Schisma javanicum* Steph. = *Herbertus ramosus*  
*Schisma ramosum* Steph. = *Herbertus ramosus*  
*Schistochila aligera* (Nees) J.B.Jack et Steph. = *Gottschea aligera*  
*Schistochila aligera* var. *δ ex-albida* (Nees) Schiffn. = *Gottschea aligera*  
*Schistochila cuspidata* Steph. = *Gottschea aligera*  
*Schistochila javanica* (Nees) Steph. = *Schistochila sciurea*  
*Schistochila longifolia* Steph. = *Gottschea aligera*  
*Schistochila neesii* (Mont.) Lindb. = *Gottschea neesii*  
*Schistochila philippinensis* (Mont.) J.B.Jack et Steph. nom. illeg. = *Gottschea aligera*  
*Schistochila philippinensis* (Mont.) Steph. = *Gottschea aligera*  
*Schistochila recurvata* H.Buch nom. inval. = *Gottschea aligera*  
*Schistochilaster aliger* (Nees) H.A.Mill. = *Gottschea aligera*  
*Schistochilaster philippinense* (Mont.) H.A.Mill. = *Gottschea aligera*  
*Sendtnera diclados* (Brid. ex F.Weber) Endl. ex Gottsche, Lindenb. et Nees = *Mastigophora diclados*  
*Sendtnera diclados α scorpioides* (Reinw., Blume et Nees) Nees = *Mastigophora diclados*  
*Sendtnera diclados α\* major* (Nees) Gottsche, Lindenb. et Nees = *Mastigophora diclados*  
*Sendtnera diclados α\*\* tenerior* (Nees) Gottsche, Lindenb. et Nees = *Mastigophora diclados*  
*Sendtnera diclados β calcarata* (Reinw., Blume et Nees) Gottsche, Lindenb. et Nees nom. inval. = *Mastigophora diclados*  
*Sendtnera diclados β\* conferta* (Nees) Gottsche, Lindenb. et Nees = *Mastigophora diclados*  
*Sendtnera diclados β\*\* rhizobola* (Nees) Gottsche, Lindenb. et Nees = *Mastigophora diclados*  
*Sendtnera diclados β\*\*\* nana* (Nees) Gottsche, Lindenb. et Nees = *Mastigophora diclados*  
*Sendtnera dicrana* Taylor ex Gottsche, Lindenb. et Nees = *Herbertus dicranus*  
*Sendtnera fissa* (Nees) Nees = *Mastigophora diclados*  
*Sendtnera fissa β laxior-et-tenuis* (Nees) Gottsche, Lindenb. et Nees = *Mastigophora fissa* var. *laxior-et-tenuis*  
*Sendtnera juniperina* (Sw.) Nees nom. inval. = *Herbertus juniperoides*  
*Sendtnera juniperina β* Gottsche, Lindenb. et Nees = *Herbertus aduncus* subsp. *hutchinsiae*  
*Sendtnera ochroleuca* (Spreng.) Nees = *Lepicolea ochroleuca*  
*Sendtnera ochroleuca β tenior* (Nees) Gottsche, Lindenb. et Nees = *Lepicolea rara*  
*Sendtnera ochroleuca γ nana* (Nees) Gottsche, Lindenb. et Nees = *Lepicolea rara*  
*Sendtnera ochroleuca δ viridis* Gottsche, Lindenb. et Nees = *Lepicolea rara*  
*Sendtnera vrieseana* Sande Lac. = *Mastigophora diclados*  
*Solenostoma cinereum* Mitt. ex Steph. = *Solenostoma strictum*  
*Solenostoma purpurascens* Steph. = *Solenostoma haskarlianum*  
*Spruceanthus marianus* (Gottsche) Mizut. = *Cheilolejeunea mariana*  
*Stenolejeunea apiculata* (Sande Lac.) R.M.Schust. = *Lejeunea apiculata*  
*Stenolejeunea schiffneri* (Herzog) Pócs = *Lejeunea propagulifera*  
*Stenolejeunea thallophora* (Eifrig) R.M.Schust. = *Lejeunea thallophora*  
*Stephanina campanigera* (Mont.) Kuntze = *Radula campanigera*



*Stephanina cavifolia* (Hampe ex Gottsche, Lindenb. et Nees) Kuntze ≡ *Radula cavifolia*  
*Stephanina javanica* (Gottsche) Kuntze ≡ *Radula javanica*  
*Stephanina lingulata* (Gottsche) Kuntze ≡ *Radula lingulata*  
*Stephanina miqueliana* (Taylor) Kuntze = *Radula retroflexa*  
*Strepsilejeunea decursiva* (Sande Lac.) Herzog ≡ *Cheilolejeunea decursiva*  
*Strepsilejeunea denticuspis* Steph. ≡ *Lejeunea denticuspis*  
*Symbiezidium applanatum* (Reinw., Blume et Nees) Trevis. ≡ *Lopholejeunea applanata*  
*Symbiezidium intermedium* (Lindenb.) Trevis. = *Lopholejeunea nigricans*  
*Symbiezidium javanicum* (Nees) Trevis. = *Lopholejeunea nigricans*  
*Symbiezidium nigricans* (Lindenb.) Trevis. ≡ *Lopholejeunea nigricans*  
*Symbiezidium subfuscum* (Nees) Trevis. ≡ *Lopholejeunea subfusca*  
*Symphyogynopsis filicina* (Nadeaud) Grolle = *Symphyogynopsis gottscheana*  
*Symphyomitra javanica* Schiffn. ≡ *Lethocolea javanica*  
*Syzygiella variabilis* (Sande Lac.) Schiffn. = *Syzygiella securifolia*  
*Syzygiella variegata* (Lindenb.) Spruce = *Syzygiella securifolia*  
*Syzygiella variegata* f. *latifolia* Schiffn. = *Syzygiella securifolia*  
*Syzygiella variegata* f. *laxior* Schiffn. *nom. inval.* = *Syzygiella securifolia*  
*Syzygiella variegata* f. *laxior* Schiffn. = *Syzygiella securifolia*  
*Syzygiella variegata* f. *rubescens* Schiffn. = *Syzygiella securifolia*  
*Taeniolejeunea appressa* (A.Evans) Zwickel ≡ *Cololejeunea appressa*  
*Taeniolejeunea floccosa* (Lehm. et Lindenb.) Zwickel ≡ *Cololejeunea floccosa*  
*Taeniolejeunea peraffinis* (Schiffn.) Zwickel ≡ *Cololejeunea peraffinis*  
*Taeniolejeunea pseudofloccosa* (Horik.) S.Hatt. ≡ *Cololejeunea pseudofloccosa*  
*Taeniolejeunea verrucosa* (Steph.) S.Hatt. ≡ *Cololejeunea verrucosa*  
*Taxilejeunea acutiloba* Eifrig ≡ *Lejeunea eifrigii*  
*Taxilejeunea acutiloba* f. *major* Eifrig *nom. inval.* = *Lejeunea eifrigii*  
*Taxilejeunea albescens* Steph. ≡ *Lejeunea albescens*  
*Taxilejeunea apiculata* (Sande Lac.) Eifrig *nom. illeg.* ≡ *Lejeunea apiculata*  
*Taxilejeunea cuculliflora* Steph. ≡ *Lejeunea cuculliflora*  
*Taxilejeunea discreta* (Lindenb.) R.M.Schust. ≡ *Lejeunea discreta*  
*Taxilejeunea laxiretis* (Steph.) Eifrig = *Lejeunea sordida*  
*Taxilejeunea lumbricoides* (Nees) Schiffn. ≡ *Lejeunea lumbricoides*  
*Taxilejeunea luteola* (Steph.) Eifrig ≡ *Lejeunea mimula*  
*Taxilejeunea mitracalyx* Eifrig = *Lejeunea alata*  
*Taxilejeunea obscura* (Mitt.) Eifrig ≡ *Lejeunea obscura*  
*Taxilejeunea patersonii* (Steph.) Eifrig ≡ *Lejeunea patersonii*  
*Taxilejeunea sordida* (Nees) Eifrig ≡ *Lejeunea sordida*  
*Taxilejeunea umbilicata* (Nees) J.B.Jack et Steph. ≡ *Lejeunea umbilicata*  
*Thallo-Lejeunea pusilla* (K.I.Goebel) Schiffn. = *Cololejeunea metzgeriopsis*  
*Thysananthus fruticosus* (Lindenb. et Gottsche) Steph. ≡ *Dendrolejeunea fruticosa*  
*Thysananthus planus* Sande Lac. = *Thysananthus retusus*  
*Thysananthus polymorphus* (Sande Lac.) Schiffn. ≡ *Spruceanthus polymorphus*  
*Thysananthus polymorphus* var. *β planifolia* (Sande Lac.) Schiffn. = *Spruceanthus polymorphus*  
*Thysananthus renilobus* (Gottsche) Schiffn. = *Caudalejeunea recurvistipula*  
*Thysananthus semirepandus* (Nees) Schiffn. ≡ *Spruceanthus semirepandus*  
*Thysanolejeunea fruticosa* (Lindenb. et Gottsche) Steph. ≡ *Dendrolejeunea fruticosa*  
*Thysanolejeunea plana* (Sande Lac.) Steph. = *Thysananthus retusus*  
*Thysanolejeunea polymorpha* (Sande Lac.) Schiffn. ≡ *Spruceanthus polymorphus*  
*Thysanolejeunea spathulistipa* (Reinw., Blume et Nees) Steph. ≡ *Thysananthus spathulistipus*  
*Trachylejeunea denticuspis* (Steph.) Steph. ≡ *Lejeunea denticuspis*  
*Trachylejeunea schiffneri* Herzog ≡ *Lejeunea propagulifera*  
*Trichocolea tomentella* f. *γ javanica* (Reinw., Blume et Nees) Nees = *Trichocolea tomentella*  
*Trichocolea tomentella* var. *β javanica* (Reinw., Blume et Nees) Schiffn. = *Trichocolea tomentella*  
*Trichocolea tomentella* var. *δ pluma* (Reinw., Blume et Nees) Schiffn. ≡ *Trichocolea pluma*  
*Trichocolea tomentella* *γ javanica* (Reinw., Blume et Nees) Gottsche, Lindenb. et Nees = *Trichocolea tomentella*  
*Trichocolea tomentella* *δ pluma* (Reinw., Blume et Nees) Nees ≡ *Trichocolea pluma*  
*Trichostylium lobatum* (Schiffn.) R.M.Schust. = *Lobatiriccardia coronopus*  
*Tylimanthus inversus* (Sande Lac.) Schiffn. ≡ *Wettsteinia inversa*  
*Tylimanthus javanicus* Steph. = *Solenostoma comatum* var. *comatum*  
*Tylimanthus repens* Grolle *nom. inval.* = *Marsupidium sumatranum*  
*Tylimanthus scaber* (Sande Lac.) Schiffn. = *Wettsteinia inversa*  
*Wiesnerella javanica* Schiffn. = *Wiesnerella denudata*

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