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## **Notes on Early Land Plants Today. 91\*. Types and original material of liverworts (Marchantiophyta) in Herbarium Haussknecht (JE) collected in Central America**

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# Notes on Early Land Plants Today. 91\*. Types and original material of liverworts (Marchantiophyta) in Herbarium Haussknecht (JE) collected in Central America

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For a forthcoming catalogue of liverworts and hornworts of Central America, types and other original material from Central America deposited in the Herbarium Haussknecht (JE) are listed. We have tried to identify the earliest valid typification of all listed taxon names and lectotypifications for 36 names, as well as second-step typifications for five further names. One new synonym is proposed.

Keywords: hepatics, Paul C. Standley, Theodor Herzog, typification

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## Introduction

Early authors of plant names often noted only the origin of the plants they described, without specifying any type (holotype). They very often described the taxon from several gatherings or made duplicates which were distributed to several herbaria. For all those names, unless it can be demonstrated that there exist only ‘a single specimen conserved in one herbarium’ (ICN2018 Art. 8.1; [Turland et al. 2018](#)), a lectotype must be selected. After 1990, a holotype must be specified for a name to be validly published. Thus, there is no need to select a lectotype for new names unless it can be demonstrated that the selected holotype consists of several taxa.

Before 1 January 2001, the mention of a ‘type’ or ‘holotype’ citing a single gathering can be accepted as a lectotypification, but after that date a statement as ‘lectotype here designated’ or equivalent is required (ICN2018 Art. 7.11; [Turland et al. 2018](#)).

It can be difficult to trace all possible type material among the world’s herbaria, and if the original publication does not state what the holotype is, it is best to lectotypify the name. If only one possible type is known to the typifying author, but it can not be ruled out that there exist more material not traced, the ‘best practice’ recommended by [McNeill \(2014\)](#) should be followed and a statement like ‘lectotype here designated, if not a holotype’ would permanently attach the name to a single specimen, irrespective of if more possible type material will be found later or not. See [Renner \(2021\)](#) for further discussion on typification.

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Many typifications, inadvertent or deliberate, are ‘hidden’ in publications not well known to the wide audience. Thus, later authors, unaware of the earlier typification, select a lectotype that may or may not be the same as the previous lectotypification. Unless it can be demonstrated that the earlier lectotypification is against the protologue, the later one must then be regarded as superfluous and disregarded.

In the first six volumes of *Index Hepaticarum*, Charles Edmond Bradlaugh Bonner identified type material, mostly from Conservatoire et Jardin botaniques de la Ville de Genève (G) where he was based. This has sometimes (Schuster 1980, Yuzawa 1991) been accepted as inadvertent lectotypification, but Engel and Smith Merrill (2019) argue that he did not intend to select any type. However, Renner (2021) did not accept Engel and Smith Merrill’s arguments, and showed for Australasian *Plagiochila* (Dumort.) Dumort. that in most cases the same specimen would be used as lectotype also if Bonner’s types were not accepted. Here, we accept Bonner’s typification if it adds any information/restriction to the text in the protologue. However, if we are aware of any later lectotypification, supporting or disagreeing with Bonner, we make a note on it.

In many cases, material was separated from the main packet for microscopic examination and stored in some sort of microslide collection without a substantial reference from which collection it has been extracted. Often, when a new taxon is described, microcharacters are taken from the slides while macrocharacters must be taken from the larger sample. However, if the microscopically examined material is not returned to the original packet, and the connection is not clearly stated, the microslide creates a new sample and is in several herbaria, like JE, filed separately with different herbarium/barcode numbers. Our recommendation is that all examined material should be returned to the packet it was taken from instead of stored separately. In cases, where a microslide exists without a direct connection to where it was extracted, we recommend that the larger specimen is selected as lectotype whenever possible.

For a forthcoming catalogue of liverworts and hornworts of Central America, we here list all hepatic names with types or other original material from Central America that are known to occur in Herbarium Haussknecht (JE), both validly and invalidly published names. Many taxa were described by Theodor Herzog from material collected by Paul C. Standley and sent to him. One problem is that Herzog often gave a specimen a *forma* name without formally describing them, thus creating many *nomina nuda*. Most of the corresponding specimens are deposited in JE and/or US. Those names are effectively published and some of them cited in subsequent literature and thus we include also them. Here, we try to list all sorts of type or original material (for definitions of different type categories, Table 1).

As invalidly published names do not have types in the sense of the International Code of Nomenclature for Algae, Fungi, and Plants (ICN2018; Turland et al. 2018), we here instead use the term ‘original material’ for what could be potential type material if the name would have been validly published (i.e. a bit broader sense than the definition of ‘original material’ in

ICN2018, Table 1). In case, there is no clear holotype mentioned in the original publication, we repeat the original citation of type material, and the lectotypification we are aware of, and cite lectotype material and its place of deposition. In case, the types are available in digital herbaria, we cite the barcode number and give the URL to the specimen.

We are taking a strict view on what a holotype is and accept only cases when it was definitely indicated in the protologue. In many cases, publications before 2001 cite material as ‘holotype’ or ‘type’ without being identified as such in the original publication. We accept this as inadvertent lectotypifications. However, if we are aware of only one possible type specimen in a single herbarium (c.f. ICN2018 Art. 8.1; Turland et al. 2018) we note that it may be a holotype as defined by the code unless more type material can be identified. In many cases in the past, a lectotype was selected from several syntypes without specifying a herbarium, or with several duplicates in the specified herbarium. In such cases a second-step lectotypification is needed to select a single specimen conserved in one herbarium (c.f. ICN2018 Art. 9.17; Turland et al. 2018).

We here lectotypify 36 names and make second-step lectotypification to another five names. We have not been able to find all types that should be in JE as many are on loan to other institutions and mostly lack barcode numbers. Also, the effort has been to mainly database types and thus original material of many non-valid names not databased and bar-coded yet. We have not very actively searched the herbarium for possible isotypes, syntypes, paratypes, etc. and there is certainly more type material of some kind in JE that we have not located yet. However, we think we have located all holotypes and lectotypes.

In this list, we mark illegitimate names with one asterisk (\*) and invalid names with double asterisks (\*\*). Unless a clear holotype is specified in the original publication, we here also cite the complete original material from which a type can be selected. We also cite such material in case of invalid names (Table 1). For all names that are not currently accepted, we provide the currently accepted name with a reference to the synonymisation.

## Typification notes

***Adelanthus parvus* Herzog**, Rev. Bryol. Lichénol. 11: 18, 1939 (Herzog 1938)

Original citation: Costa Rica, Cerro de Las Vueltas, 2700–3000 m., on tree ([Standley] n. 43.723/c).

Lectotype (Grolle 1972: 343 as ‘holotype’) if not holotype: Costa Rica, Prov. de San José, 2700–3000 m, Standley 43723c (JE04002323 <https://je.jacq.org/JE04002323>).

Currently accepted name: *Adelanthus lindenbergianus* (Lehm.) Mitt. (cf. Grolle 1972).

***Aphanolejeunea angustissima* Steph.**, Sp. Hepat.

(Stephani) 5: 859, 1916 (Stephani 1916).

Original type citation: Hab. Guatemala.

Table 1. Definitions of type categories and related terms used in this publication (ICN2018; Turland et al. 2018).

Category	ICN definition	Note
Type	The type (holotype, lectotype, or neotype) of a name of a species or infraspecific taxon is either a single specimen conserved in one herbarium or other collection or institution, or a published or unpublished illustration (but see Art. 8.5; see also Art. 40.4, 40.5, and Art. 40 Ex. 6)	
Holotype	The one specimen or illustration indicated as the nomenclatural type by the author(s) of a name of a new species or infraspecific taxon or, when no type was indicated, used by the author(s) when preparing the account of the new taxon (Art. 9.1 and Note 1; see also Art. 9.2)	We take a strict view of what a holotype is (text)
Lectotype	One specimen or illustration designated from the original material as the nomenclatural type, in conformity with Art. 9.11 and 9.12, if the name was published without a holotype, or if the holotype is lost or destroyed, or if a type is found to belong to more than one taxon (Art. 9.3)	We accept inadvertent lectotypifications prior to 1 January 2001
Syntype	Any specimen cited in the protologue when there is no holotype, or any of two or more specimens simultaneously designated in the protologue as types (Art. 9.6)	
Neotype	A specimen or illustration selected to serve as nomenclatural type if no original material is extant or as long as it is missing (Art. 9.8 and 9.13; see also Art. 9.16 and 9.19)	
Epitype	A specimen or illustration selected to serve as an interpretative type when the holotype, lectotype, or previously designated neotype, or all original material associated with a validly published name, cannot be identified for the purpose of the precise application of the name to a taxon (Art. 9.9)	
Isotype, isolectotype	Any duplicates of holotypes or lectotypes	
Paratype	Any specimen cited in the protologue that is neither the holotype nor an isotype, nor one of the syntypes if in the protologue two or more specimens were simultaneously designated as types (Art. 9.7)	This category has no type value but can be used in case a neotype must be selected
Gathering	A collection presumed to be of a single taxon made by the same collector(s) at the same time from a single locality (Art. 8.2 footnote; see also Art. 8 Note 1)	
Original material	The set of specimens and illustrations from which a lectotype may be chosen (see Art. 9.4, Notes 2 and 3, Art. F.3.9, and Note 2 for details), or the holotype (see Art. 9.1)	We use the term also for invalid names where material that could be potential type material if the name would have been validly published

Lectotype (Bonner 1962b: 235, also Pócs and Bernecker 2009 as 'holotype'): Guatemala, Cobán, Türkheim ex hb. Levier 5826 (G00067015, [www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=113712&lang=en](http://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=113712&lang=en), isolectotype JE04001106 <https://je.jacq.org/JE04001106>).

Note. Since the type material is poor and belongs to two species (Pócs and Bernecker 2009), the name should be rejected, as formally proposed by Söderström et al. (2022).

**\*\* *Bazzania chimborazensis* Spruce f. *cellulis-apicalibus* Herzog**, Rev. Bryol. Lichénol. 11(1): 24, 1939 (Herzog 1938), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: Costa Rica, Cerro de La Carpintera, Prov. Cartago, 1500–1850 m., on tree ([Standley] n. 35.660, f. *cellulis apicalibus* 27  $\mu$  metientibus).

Original material: Costa Rica, Cerro de La Carpintera, Province of Cartago; altitude 1500–1850 m, February 1924, Standley 35660 (JE s.n., US04665880 <http://n2t.net/ark:/65665/31a04163f-a345-4cfc-8a62-6b4586bd9720>).

Note. The original material in JE and US is named *Mastigobryum chimborazense* without *forma* and contains a later annotation 'Probably *Bazzania asperistipula*. M. Fulford 1939' but was not cited by Fulford (1946).

Currently accepted name: *Bazzania hookeri* (Lindenb.) Trevis. (following the synonymization of the species by Gradstein 2017).

***Bazzania conchophylla* Herzog**, Rev. Bryol.

Lichénol. 11(1): 20, 1939 (Herzog 1938)

Original citation: Costa Rica, Sta Maria de Dota, Prov. S. José, on tree, 1500–1800 m. ([Standley] n. 41.629). El Muñeco on the Rio Navarro, Prov. Cartago, 1400–1500 m. ([Standley] n. 50.884).

Lectotype (here designated): Costa Rica, Vicinity of Santa Maria de Dota, Provincia de San José, altitude 1500–1800 m, 14–26 Dec. 1925, Standley 41629 (JE04001113 <https://je.jacq.org/JE04001113>; synlectotypes Standley & Torres 50884 JE04001114 <https://je.jacq.org/JE04001114>, US04675710 <http://n2t.net/ark:/65665/3ad7b7e89-9740-4cd0-b3aa-755feef75a65>).

Note. Both specimens in JE cited in the protologue are named '*Mastigobryum conchophyllum* n. sp.' in Herzog's handwriting. The selected lectotype is richer.

Currently accepted name: *Bazzania hookeri* (Lindenb.) Trevis. var. *hookeri* (cf. Fulford 1963 as synonym of *Bazzania teretiuscula* (Lindenb. et Gottsche) Trevis. and Gradstein 2017).

***Bazzania jamaicensis* (Lehm. et Lindenb.) Trevis. var. *chamaecardia* Herzog**, Rev. Bryol. Lichénol. 11(1/2): 19, 1938 (Herzog 1938)

Original type citation: Costa Rica, Cerros de Zurqui, Prov. de Heredia, 2000–2400 m. ([Standley] n. 50.713. Cerro de Las Lajas, Prov. de Heredia, 2000–2400 m. ([Standley] n. 51.643/a, 51.645); Cerro de Las Caricias, Prov. de Heredia, 2000–2400 m., on tree ([Standley] n. 52.117, 52.267).

Lectotype (Fulford 1963: 144): Costa Rica, Cerro de las Lajas, 25 Mar 1926, Standley & Valerio 52267 (US04666041, <http://n2t.net/ark:/65665/346b8e9d7-2f93-48b8-998b-6b629f3e78b5>; islectotype JE04006235 <https://je.jacq.org/JE04006235>; synlectotypes Standley 50713 JE04006236 <https://je.jacq.org/JE04006236>, Standley 51643a JE04006237 <https://je.jacq.org/JE04006237>, Standley 52117 JE04006238 <https://je.jacq.org/JE04006238>).

Currently accepted name: *Bazzania jamaicensis* (Lehm. et Lindenb.) Trevis. (cf. Fulford 1963).

***Bazzania portoricensis* (Hampe et Gottsche) Steph. var. *pycnodictyon* Herzog**, Rev. Bryol. Lichénol. 11(1/2): 19, 1938 (Herzog 1938)

Original type citation: Costa Rica, El Muñeco, on the Rio Navarro, Prov. Cartago, 1400–1500 m., on tree ([Standley] n. 51.338, 50.887); Alto de La Estrella, Prov. Cartago, on tree ([Standley] n. 39.106, 39.117); La Estrella, Prov. Cartago ([Standley] n. 39.403).

Lectotype (Fulford 1963: 133): El Muñeco, Standley 51338, 50887, US. Second-step lectotypification (Söderström et al. 2023b: 150): Standley 50887 (US04665905 <http://n2t.net/ark:/65665/395ca296e-afa0-40b3-89df-ad8acc4127e6>; islectotype JE04005948, <https://je.jacq.org/JE04005948>; synlectotype Standley 51338 JE04005949 <https://je.jacq.org/JE04005949>, US04665907 <http://n2t.net/ark:/65665/m3951d11f7-b09f-4560-b6fd-a8b88ac1720b>, Standley 39117 JE04005946 <https://je.jacq.org/JE04005946>, Standley 39106 JE04005947 <https://je.jacq.org/JE04005947>, Standley 39403 JE04005945 <https://je.jacq.org/JE04005945>).

Currently accepted name: *Bazzania hookeri* (Lindenb.) Trevis. (cf. Fulford 1963).

\*\* ***Brachiolejeunea mamillata* Steph. f. *brevifolia* Herzog**, Rev. Bryol. Lichénol. 20(1/2): 135, 1951 (Herzog 1951), nom. inval. (ICN Art. 38.1(a); no description)

Original citation: Honduras, Lancetilla Valley, near Tela, 20–600 m., [Standley] n. [...] 54.372 und 55.428 (fo. *brevifolia*).

Original material: Honduras, Lancetilla Valley, near Tela, 20–600 m., Standley 54372 (JE04010821 <https://je.jacq.org/JE04010821>) and Standley 55428 (JE04010820 <https://je.jacq.org/JE04010820>).

Currently accepted name: *Frullanoides mexicana* van Slageren (van Slageren 1985).

\*\* ***Brachiolejeunea mamillata* Steph. f. *obtusifolia* Herzog**, Rev. Bryol. Lichénol. 20(1/2): 135, 1951 (Herzog 1951), nom. inval. (ICN Art. 38.1(a); no description)

Original citation: Honduras, Lancetilla Valley, near Tela, 20–600 m., [Standley] n. [...], 54.526.

Original material: Honduras, Lancetilla Valley, near Tela, 20–600 m., Standley 54526 (JE04010822 <https://je.jacq.org/JE04010822>).

Currently accepted name: *Frullanoides mexicana* van Slageren (van Slageren 1985).

\*\* ***Brachiolejeunea mamillata* Steph. f. *typica* Herzog**, Rev. Bryol. Lichénol. 20(1/2): 135, 1951 (Herzog 1951), nom. inval. (ICN Art. 38.1(a); no description)

Original citation: Honduras, Lancetilla Valley, near Tela, 20–600 m., [Standley] n. 55.249.

Original material: Honduras, Lancetilla Valley, near Tela, 20–600 m., Standley 55249 (JE04010819 <https://je.jacq.org/JE04010819>).

Currently accepted name: *Frullanoides mexicana* van Slageren (van Slageren 1985).

***Brachiolejeunea parva* Herzog**, Rev. Bryol. Lichénol. 20: 125, 1951 (Herzog 1951)

Original citation: Honduras, Lancetilla Valley, near Tela, Dep. of Atlántida, 20–600 m., [Standley] n. 56.075.

Lectotype (van Slageren 1985: 111 as 'holotype') if not holotype: Honduras, Lancetilla valley, near Tela, Dep. of Atlántida, 20–600 m, Standley 56075a (JE 04002172 <https://je.jacq.org/JE04002172>).

Currently accepted name: *Frullanoides chinantlana* (Gottsche) L. Söderstr. et A. Hagborg (cf. van Slageren 1985 as *Frullanoides tristis* (Steph.) van Slageren, Söderström and Hagborg 2023a).

***Bryopteris tenuicaulis* Taylor ex Gottsche, Lindenb. et Nees f. *flagellifera* Herzog**, Rev. Bryol. Lichénol. 20(1/2): 132, 1951 (Herzog 1951)

Original type citation: Costa Rica, Prov. Limon, Guapiles, 300–500 m., [Standley] n. 37.049 und 37.317; Prov. Cartago, El Muneco, s. of Navarro, 1400 m., [Standley] 33.934 und 51.049; Prov. Limon, Hamburg Finca, rio Reventazon, below Cairo, 55 m., [Standley] n. 48.714; Prov. Guanacaste, El Arenal, on tree, 485–600 m., [Standley] n. 45.075 und 45.252; Prov. Guanacaste, Los Ayotes near Tilarán, on tree, 600–700 m., [Standley] n. 45.408 — Honduras: Lancetilla valley, near Tela, 20–600 m., [Standley] n. 53.219.



Lectotype (Stotler and Crandall-Stotler 1974: 142): Honduras, Dept. Atlántida: Lancetilla Valley, near Tela, 20–600 m, 1927–1927, Standley 53219 (F-C0000049F, <https://fm-digital-assets.fieldmuseum.org/288/632/C0000049F.jpg>, isolectotype JE04005919 <https://je.jacq.org/JE04005919>; synlectotypes Standley 33934 JE04005922 <https://je.jacq.org/JE04005922>, Standley 37049 JE04005923 <https://je.jacq.org/JE04005923>, Standley 37317 JE04005921 <https://je.jacq.org/JE04005921>, Standley 45075 JE04005925 <https://je.jacq.org/JE04005925>, Standley 45252 JE04005927 <https://je.jacq.org/JE04005927>, Standley 45408 JE04005924 <https://je.jacq.org/JE04005924>, Standley 48714 JE04005920 <https://je.jacq.org/JE04005920>, Standley 51049 JE04005926 <https://je.jacq.org/JE04005926>).

Currently accepted name: *Bryopteris filicina* (Sw.) Nees (cf. Stotler and Crandall-Stotler 1974).

***Cephalozia subforficata* Herzog**, Rev. Bryol.

Lichénol. 11: 17, 1938 (Herzog 1938)

Original citation: Costa Rica, Laguna de la Chonta, n. e. of Santa María de Dota, Prov. S. José, 2000–2100 m., on log ([Standley] n. 42.299).

Lectotype (Váña 1988: 196 as ‘holotype’): Costa Rica, Laguna de la Chonta, northeast of Santa María de Dota, Provincia de San José, 2000–2100 m, 18.XII.1925, Standley 42299 (JE04001123 <https://je.jacq.org/JE04001123>; isolectotypes US00289479 <http://n2t.net/ark:/65665/378eaac82-cd5e-4375-9f81-ba6fdec193a2>).

Currently accepted name: *Fuscocephalozia crassifolia* (Lindenb. et Gottsche) Váña et L. Söderstr. (cf. Váña 1988).

***Ceratolejeunea deficiens* Herzog**, Rev. Bryol.

Lichénol. 20: 148, 1951 (Herzog 1951)

Original citation: Costa-rica, Prov. Guanacaste, el Silencio, near Tilarán, 400–700 m., [Standley] n. 44.309 and 44.392p.; Prov. Heredia, Yerba Buena, n. e. of San Isidro, 2000 m., [Standley] n. 50.010 and 50.049. — Honduras: Lancetilla Valley, near Tela, Dep of Atlántida, 20–600 m., [Standley] n. 55.622p (parcissime).

Lectotype (Dauphin 2003: 63): Costa Rica, Guanacaste, vicinity of Tilarán, 500–650 m, 10–31 Jan. 1926, Standley & Valerio 44392p. (JE04001122 <https://je.jacq.org/JE04001122>, isolectotype US00070803 <http://n2t.net/ark:/65665/321f74d78-ae3f-4927-8e55-2bb9cfe66bc6>; synlectotypes Standley 44309 JE04005688 <https://je.jacq.org/JE04005688>, Standley 50010 JE04005661 <https://je.jacq.org/JE04005661>, JE04005662 <https://je.jacq.org/JE04005662>, JE04005664 <https://je.jacq.org/JE04005664>, Standley 5049 JE04005663 <https://je.jacq.org/JE04005663>, JE04005665 <https://je.jacq.org/JE04005665>, JE04005666 <https://je.jacq.org/JE04005666>).

Currently accepted name: *Ceratolejeunea laetefusca* (Austin) R. M. Schust. (cf. Dauphin 2003).

***Ceratolejeunea fusilobula* Herzog**, Rev. Bryol.

Lichénol. 20: 149, 1951 (Herzog 1951)

Original citation: Costa Rica, Prov. Alajuela, Vienta Fresco, 1600–1900 m., [Standley] n. 47.806p.

Lectotype (**here designated**, cf. Dauphin 2003: 58 as ‘holotype’) if not holotype: Costa Rica, Viento Fresco, 1600–1900 m, 1908, Standley 47806, ‘Typus! Unicum’ (JE04001125 <https://je.jacq.org/JE04001125>).

Note. We have only been able to trace one possible type specimen, but it is possible that there exists more as Standley placed duplicates in several herbaria. Dauphin (2003: 58) named this specimen ‘holotype’ but as it was published after 1 January 2001 it cannot be accepted as an inadvertent lectotypification. The specimen in JE is marked as ‘unicum’ by Herzog. It may thus be a holotype.

Currently accepted name: *Ceratolejeunea fallax* (Lehm. et Lindenb.) Bonner (cf. Dauphin 2003).

***Ceratolejeunea multiocellata* Herzog**, Rev. Bryol.

Lichénol. 20: 150, 1951 (Herzog 1951)

Original citation: Costa-Rica, Prov. Cartago, vicinity of Pejivalle, ca 900 m., [Standley] n. 46.809.

Lectotype (**here designated**; c.f. Dauphin 2003: 59 as ‘holotype’): Costa Rica, Cartago: Pejivalle, 900 m, Standley 46809 (JE04002356 <https://je.jacq.org/JE04002356>; isolectotypes JE04007798 <https://je.jacq.org/JE04007798>, US00070808 <http://n2t.net/ark:/65665/314bfd475-b8c1-4edc-8d0e-ea01f687a74c>).

Note. Dauphin (2003) regarded this specimen as holotype, but as there are duplicates in several herbaria, a lectotype must be selected. Dauphin’s designation as ‘holotype’ can not be accepted as an inadvertent lectotype as it was published after 1 January 2001 (c.f. ICN2018 Art. 7.11). We here formally designate the specimen as a lectotype.

Currently accepted name: *Ceratolejeunea filaria* (Taylor) Steph. (cf. Dauphin 2003).

***Ceratolejeunea spinosa* (Gottsche) Steph. var.**

***costaricensis* Zwickel**, Beih. Bot. Centralbl. 49: 610, 1932 (Zwickel 1932).

Original citation: Costa Rica, Standley, n. 36.412, 37.691, 47.806. Herb. Herzog, Jena. Dominica: leg. Elliot, n. ?. Staatsherbar München, n. 7 als *C. ceratantha*. Costa Rica: leg. Tonduz, n.?. Staatsherbar München, n. 26 als *C. involvens*. Para: leg. Caripi, n. ?. Staatsherbar München, n. 29 als *C. maritima*.

Lectotype: (**here designated**): Costa Rica, La Hondura, Province of San José, altitude 1300–1700 m, 2–4 March 1924, Standley 36412 (JE04010817 <https://je.jacq.org/04010817>; isolectotype US00070810 <http://n2t.net/ark:/65665/3a2ee40c9-7fb7-4922-8e0d-63b13d92362>).

Note. All syntypes in JE, including the lectotype, were reported as *Ceratolejeunea filaria* by Dauphin (2003). Syntypes from Costa Rica (leg. Tonduz), Dominica, and Pará are in M and their identities are unknown to us.

Currently accepted name: *Ceratolejeunea filaria* (Taylor) Steph. (cf. Dauphin 2003).

***Cheilolejeunea pililoba* (Spruce) A. Evans f. *varians***

**Herzog**, Rev. Bryol. Lichénol. 20(1/2): 167, 1951 (Herzog 1951)

Original citation: Honduras, Lancetilla Valley, near Tela, 20–600 m., [Standley] n. 55.577.

Lectotype (here designated) or possibly holotype: Honduras, Atlántida, Lancetilla Valley, near Tela, altitude 20–600 m, 6 Dec. 1927–20 Mar. 1928, Standley 55577 (JE04010835 <https://je.jacq.org/JE04010835>).

Currently accepted name: *Lejeunea trinitensis* Lindenb. var. *varians* (Herzog) B. Cañiza [Cañiza et al. \(2023\)](https://doi.org/10.1007/s11467-023-10000-0).

***Cheilolejeunea schaefer-verwimpii* Gradst. et C. J.**

**Bastos**, Nova Hedwigia 113(1/2): 82, 2021

(Gradstein and Bastos 2021)

Holotype: Costa Rica, Cartago: Cordillera de Talamanca, Panamericano km 67, Reserva 3 de Junio, ‘in Quellmoor epiphytisch an Sträuchern,’ 2460 m, 3 Jan. 2000, A. Schäfer-Verwimp & I. Holz 0452/B as *Cheilolejeunea choachina* (Gottsche) Gradst. (JE s.n.; isotypes: GOET, CR).

***Chiloscyphus nigrescens* Lindenb. et Hampe**,

Linnaea 24(3): 640, 1851 (Hampe 1851)

Original citation: Hab. in Costa rica ad crateris Reventado aquas stagnates.

Lectotype (Grolle 1960: 84): Costarica, Reventado, 10.000’ alt., im Kratersee Reventado, oja de Pascado, leg. Oersted ex hb. Lehmann in hb. S. Second-step lectotypification (Söderström et al. 2023c: 151): S-B22184 (<https://herbarium.nrm.se/specimens/B22184>); isoelectotypes S, JE04002254 <https://je.jacq.org/JE04002254>).

Note. There exist three specimens in S fitting Grolle’s lectotypification. The selected specimen is the richest of the three and also annotated as ‘type’ by J. J. Engel in 1978.

Currently accepted name: *Clasmatocolea vermicularis* (Lehm.) Grolle (cf. Grolle 1960).

**\*\* *Chiloscyphus obliquefolius* Herzog ex Fulford**,

Mem. New York Bot. Gard. 11: 448, 1976 (Fulford

1976), nom. inval. (ICN Art. 36.1(c); publ. in syn.

[sub *Lophocolea guadalupensis* Steph. 1907])

Original citation: Costa Rica, Cartago: Cerro de la Carpintera, 1500–1800 m, Standley 35724, type of *Ch. obliquefolius* (JE).

Original material: Costa Rica, Cartago: Cerro de la Carpintera, 1500–1800 m, Standley 35724 (JE04010814 <https://je.jacq.org/JE04010814>).

Currently accepted name: *Cryptolophocolea guadalupensis* (Steph.) L. Söderstr. et Váña (cf. Fulford 1976).

***Chiloscyphus pittieri* Steph.**, Prim. Fl. Cost.: 112.

1893 (Stephani 1892)

Original citation: Bois humides entre la lagune du Barba et le Carrizal, 2800 m. (Pitt. 6014).

Lectotype (Grolle 1962: 57 as ‘holotypus’): Costa Rica.

Entre la Lagune de Barba et le Carrisel, 2800 m., I 1889, Pittier 6014 (G00069439 [www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=115868&lang=en](http://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=115868&lang=en)); isoelectotypes JE04002039 <https://je.jacq.org/JE04002039>, JE04002038 <https://je.jacq.org/JE04002038>).

Currently accepted name: *Leptoscyphus amphibolius* (Nees) Grolle (cf. Grolle 1962).

**\*\* *Cololejeunea ensifolia* (Spruce) Steph. f.**

***angustifolia* Herzog**, Rev. Bryol. Lichenol. 20(1/2):

174, (Herzog 1951), nom. inval. (ICN Art. 38.1(a); no description)

Original citation: Honduras, Lancetilla Valley, near Tela, 20–600 m., [...], [Standley] n. 54.846p.

Original material: Honduras, Lancetilla Valley, near Tela, 20–600 m., Dec. 1927–Mar. 1928, Standley 54846 (JE04010815 <https://je.jacq.org/JE04010815>).

Currently accepted name: *Cololejeunea diaphana* A. Evans (following var. *Cololejeunea ensifolia* var. *pygmaea* Herzog under which it was described, cf. Dauphin et al. 2008).

**\*\* *Cololejeunea ensifolia* (Spruce) Steph. f. *genuina***

**Herzog**, Rev. Bryol. Lichenol. 20(1/2): 174, 1951

(Herzog 1951), nom. inval. (ICN Art. 38.1(a); no description)

Original citation: Honduras, Lancetilla Valley, near Tela, 20–600 m., [Standley] n. 55 577.

Original material: Honduras, Lancetilla Valley, near Tela, 20–600 m., Standley 55577 (JE04010816 <https://je.jacq.org/JE04010816>).

Currently accepted name: *Cololejeunea diaphana* A. Evans (following var. *Cololejeunea ensifolia* var. *pygmaea* Herzog under which it was described, cf. Dauphin et al. 2008).

***Cololejeunea minutilobula* Herzog**, Rev. Bryol.

Lichénol. 20(1/2): 171, 1952 (Herzog 1951)

Original citation: Costa Rica, ohne Fundortsnotiz, [Standley] n. 26.176.

Lectotype (here designated): Panama, Río Tapia, 7 Dec. 1923–11 Jan. 1924, Standley 26176 (JE04004064 <https://je.jacq.org/JE04004064>), isoelectotypes (JE04000973 <https://je.jacq.org/JE04000973> (microslide), US00070983 <http://n2t.net/ark:/65665/34d6b9a3a-a59d-455b-af8e-4a9e611388d8>).

Note. Herzog mistakenly placed the locality in Costa Rica (‘ohne Fundortsnotiz’) although both the larger specimen in JE and the specimen in US clearly state they are from Panama. Although it is highly probable that Herzog did see the specimen in US, the specimen in JE comes from his personal herbarium. Thus, we select this as the lectotype.

***Cololejeunea standleyi* Herzog**, Rev. Bryol. Lichénol.

20(1/2): 172, 1951 (Herzog 1951)

Original citation: Honduras, Lancetilla Valley, near Tela, 20–600 m., [Standley] n. 54.827.

**Lectotype (here designated):** Honduras, Atlántida, Lancetilla Valley near Tela, 20–600 m, 6 Dec. 1927, Standley 54827 (JE04003945 [www.jacq.org/JE04003945](http://www.jacq.org/JE04003945), islectotype US00070986, <http://n2t.net/ark:/65665/324192e64-4c6a-48a3-8438-70b81447882b>).

**Note.** Although, it is highly probable that Herzog did see the specimen in US, the specimen in JE comes from his personal herbarium. Thus, we select the larger specimen as the lectotype. The microslide was most probably extracted from it.

***Cololejeunea tamsii* Schäf.-Verw.,** Phytotaxa 60: 9, 2012 (Schäfer-Verwimp 2012)

**Holotype:** Panama, Chiriquí: Cordillera de Talamanca, Boquete, Ostseite des Vulkan Baru, Regenwald entlang der Erdstraße zum Sendero Los Quetzales, epiphyll, 1880 m, 8°51.0'N, 82°29.9'W, 7 Apr. 2010, A. Schäfer-Verwimp & I. Verwimp 30 992 (JE s.n.; isotype EGR).

***Crossotolejeunea lindeniana* Gottsche ex Steph. var. *connivens* Herzog,** Rev. Bryol. Lichénol. 20: 141, 1951 (Herzog 1951)

**Original citation:** Costa-Rica, on tree, Cerro de las Caricias, n. of San Isidro, Prov. Heredia, 2000–2400 m., leg. P. C. Standley, n. 52.294.

**Lectotype (Reiner-Drehwald and Goda 2000: 15 as 'holotype'):** Costa Rica, Heredia, C. de Las Caricias, N of San Isidro, Standley & Valerio 52294 (JE04002113 <https://je.jacq.org/JE04002113>; islectotypes JE04002112 <https://je.jacq.org/JE04002112>, US00070849 <http://n2t.net/ark:/65665/329a7ae97-31a4-4cf1-916e-800406f8cf12>).

**Note.** There are two specimens in JE corresponding to this collection, but only JE04002113 is annotated as 'holotype' by Reiner-Drehwald. If a formal second lectotypification is required, this specimen is here designated as lectotype.

**Currently accepted name:** *Lejeunea controversa* Gottsche (cf. Reiner-Drehwald and Goda 2000).

***Crossotolejeunea obtusiuscula* Herzog,** Rev. Bryol. Lichénol. 20: 142, 1951 (Herzog 1951)

**Original citation:** Costa Rica, on tree, vicinity of Pejivalle, Prov. Cartago, ca 900 m., leg. P. C. Standley, n. 47.128/b.

**Lectotype (Reiner-Drehwald and Goda 2000: 15 as 'holotype')** or possibly holotype: Costa Rica. Cartago: vicinity of Pejivalle, Standley 47128b (JE04002106 <https://je.jacq.org/JE04002106>).

**Currently accepted name:** *Lejeunea controversa* Gottsche (cf. Reiner-Drehwald and Goda 2000).

***Cyclolejeunea schaefer-verwimpii* M. L. M. Prado et Ilk.-Borg.,** Nova Hedwigia 113(1/2): 130, 2021 (Prado and Ilkiu-Borges 2021)

**Holotype:** Panama, Chiriquí, Reserva Forestal Fortuna, 8°44.3'N, 82°14.7'W, 'epiphytisch, feuchtes Sekundärgebüsch am Ufer des Stausees', 1100 m, 31 Mar. 2013, A. Schäfer-Verwimp & Verwimp 34520 (JE s.n.; isotype: MG).

***Dicranolejeunea pulchella* Herzog,** Rev. Bryol. Lichénol. 20, 1951 (Herzog 1951)

**Original type citation:** Costa-Rica, on exposed rock, vicinity of Santa Maria de Dota, Prov. San José, 1500–1800 m., leg. P. C. Standley, n. 43.153.

**Lectotype (Gradstein 1994: 191 as 'holotype'):** Costa Rica, San José, Vicinity of Santa Maria de Dota. On exposed rock, 1500–1800 m., 26 Dec. 1925–3 Jan. 1926, Standley & Valerio 43153 (JE00401075 <https://je.jacq.org/JE00401075>; islectotype US00070854 <http://n2t.net/ark:/65665/3813e1b57-2f0d-445a-aaa8-ea1e8199a2ac>).

**Currently accepted name:** *Acanthocoleus aberrans* (Lindenb. et Gottsche) Kruijt var. *aberrans* (cf. Gradstein 1994).

***Diplasiolejeunea involuta* S. Winkl.,** Rev. Bryol. Lichénol. 35(1/4): 320, 1967 (Winkler 1967)

**Original type citation:** SE-hang des Cerro Miramundo bei der Hacienda Montecristo, Metapan, Dep. Santa Ana, 2350 m A/17/3 (Typus) 23. 5. 62 leg. S. Winkler.

**Isotype:** JE04008786 (<https://je.jacq.org/JE04008786>) 'herb. R. Grolle ex TUB, Winkler 57a/8'. Collection number is not the same as in protologue but all other data seem to fit.

**Note.** A lectotype from TUB should be selected.

***Diplasiolejeunea pluridentata* Schäf.-Verw.,** Haussknechtia 8: 71, 2001 (Schäfer-Verwimp 2001)

**Holotype:** Costa Rica, Prov. de San Jose, Cordillera de Talamanca, San Gerardo de Dota, *Quercus-copeyensis*-Primärwald 'Los Rabies', an freistehendem Strauch, 2400 m, 4 Jan. 2000, Schäfer-Verwimp & Holz Nr. SV/H-0486/B (JE04002281 <https://je.jacq.org/JE04002281>; isotypes in EGR, CR).

**\*\* *Drepanolejeunea bidens* (Prantl) A. Evans f. *denticulata* Herzog,** Rev. Bryol. Lichénol. 20: 145, 1951 (Herzog 1951), nom. inval. (ICN2018 Art. 38.1(a); no description)

**Original citation:** Costa-Rica, Prov. Heredia, Yerba Buena, on leaves, [Standley] n. 49.709p.

**Original material** (cf. also Bischler 1964 as 'type'): Costa Rica, Heredia, Yerba Buena, on leaves, Standley 49 709 (JE04010818 <https://je.jacq.org/JE04010818>).

**Currently accepted name:** *Drepanolejeunea infundibulata* (Spruce) A. Evans (cf. Bischler 1964).

***Drepanolejeunea integerrima* Herzog,** Rev. Bryol. Lichénol. 20(1/2): 146, 1951 (Herzog 1951)

**Original citation:** Honduras, Lancetilla Valley, near Tela, Dep. of Atlántida, 20–600 m., epiphyll mit *Cyclolejeunea convexistipa*, ausserst spärlich, [Standley] n. 56.755p.

**Possible lectotype:** Honduras, Lancetilla Valley, near Tela, Dep. of Atlántida, 20–600 m., Standley 56755 (US04659783 <http://n2t.net/ark:/65665/38261d299-4865-46b1-afaf-488afb77377e>).

**Note.** Bischler (1964) stated that the type is lost and that it is a *Leptolejeunea*. We have not been able to locate any type material in JE. US04659783 is filed under *Drepanolejeunea mosenii* after an annotation by H. Bischler.



***Frullania armata* Herzog et L. Clark**, Bryologist 57(1): 36, 1954 (Clark 1954)

Original citation: Costa Rica, Provincia de San Jose, vicinity of Santa Maria de Dota, altitude 1500–1800 m (Paul Standley 42479) 14–26 Dec. 1925 (type).

Lectotype:?

Note. Clark (1954) said it was borrowed from US and is an isotype. This is illustrated in the original publication. UW holding Clark's herbarium is not databased. A microslide (JE04010811 <https://je.jacq.org/JE04010811>) was probably extracted by Herzog, but lectotypification should wait until it is known if more material exists in US and/or UW.

***Frullania convoluta* Lindenb. et Hampe var. *ampliata***

**Herzog**, Rev. Bryol. Lichénol. 20(1/2): 129, 1952 (Herzog 1951)

Original citation: Costa-rica, Prov. San José, La Palma, 1600 m, [Standley] n. 33.014 und 33.039; Prov. San José, Zurqui 2000–2500 m, on tree, [Standley] n. 48.170; Prov. Heredia, Yerba Buena, on tree, 2000 m., [Standley] n. 49.844; Prov. Heredia, Cerros de Zurqui, 2000–2400 m., [Standley] n. 50.457; Prov. Heredia, Cerro de las Lajas, 2000–2400 m., [Standley] n. 51.458; Prov. Heredia, Cerro de las Caricias, 2000–2400 m., [Standley] n. 51.986.

Lectotype (Söderström et al. 2023a: 2): Costa Rica, La Palma, Province de San José, altitude about 1600 m, 3 Feb. 1924, Standley 33014 (JE04002308 <https://je.jacq.org/JE04002308>, synlectotypes Standley 33039 JE04010810 <https://je.jacq.org/JE04010810>, Standley 48170 JE04002307 <https://je.jacq.org/JE04002307>, Standley 49844 JE04002306 <https://je.jacq.org/JE04002306>, Standley 50457 JE04002305 <https://je.jacq.org/JE04002305>, Standley 51986 JE04002303 <https://je.jacq.org/JE04002303>, Standley 51458 JE04002304 <https://je.jacq.org/JE04002304>, Standley 33039 JE04010810 <https://je.jacq.org/JE04010810>).

Currently accepted name: *Frullania convoluta* Lindenb. et Hampe (cf. Söderström et al. 2023a).

***Frullania hamiflora* Herzog et L. Clark**, Bryologist 56(3): 180, 1953 (Clark and Schultz 1953a)

Holotype: Costa Rica, Provincia de Alajuela, vicinity of Fraijanes, altitude 1500–1700 m, 12–13 Feb. 1926, Standley & Torres 47636, (US00070889 <http://n2t.net/ark:/65665/335b4c841-0671-4c15-89b8-b88c8abac97d>; isotypes G, JE04000986 <https://je.jacq.org/JE04000986>).

***Frullania hondurae* Herzog et L. Clark**, Bryologist 56: 289, 1953 (Clark and Svihla 1953)

Original citation: Costa Rica, Province of San José, vicinity of La Hondura, altitude 1300–1700 m, 2–4 Mar. 1924 (Standley 36559).

Lectotype (Stotler 1969 as 'type'): Costa Rica, San José: La Hondura, 1300–1700 m, Standley 36559 (US00070891 <http://n2t.net/ark:/65665/3e774f1d9-cd2a-4f3b-b414-7d170b75d4b2>; isolectotype JE04002301 <https://je.jacq.org/JE04002301>).

Currently accepted name: *Frullania brasiliensis* Raddi (cf. Stotler 1969).

***Frullania macrorhyncha* Herzog et L. Clark**, Bryologist 56(4): 283, 1953 (Clark and Schultz 1953b)

Holotype: Costa Rica, Provincia San José (Zurqui, altitude 2000–2500 m, 13 Feb. 1926, Standley & Valerio 48135 (US00070894 <http://n2t.net/ark:/65665/30b865f22-a4b3-400b-96c2-99d75683c5e8>, isotype JE04001005 <https://je.jacq.org/JE04001005>).

Currently accepted name: *Frullania hamiflora* Herzog et L. Clark (cf. Stotler 1969).

***Frullania piliflora* Steph. var. *appendiculata* Herzog**, Rev. Bryol. Lichénol. 20(1/2): 129, 1951 (Herzog 1951)

Original citation: Costa Rica, south slope of volcan de Turrialba, near finca of V.d.T., 2000–2400 m., [Standley] n. 35.088; Prov. San José, Las Nubes, wet bank, 1500–1900 m., [Standley] n. 38.421.

Lectotype (Söderström et al. 2023a: 2): Costa Rica, Cartago, slope of Volcan de Turrialba, near Finca of V.d.T., 2000–2400 m., 2 Feb. 1924, Standley 35088 (JE04004146 <https://je.jacq.org/JE04004146>; isolectotypes G00265605 [www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=271882&lang=en](http://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=271882&lang=en), US04646508 <http://n2t.net/ark:/65665/30c6ff639-2fe7-4383-b919-296397863453>).

Currently accepted name: *Frullania peruviana* Gottsche (cf. Söderström et al. 2023a).

***Harpalejeunea excellata* Herzog**, Rev. Bryol. Lichénol. 20(1/2): 144, 1952 (Herzog 1951)

Original citation: Costa Rica, Prov. Heredia, Cerro de las Caricias, 2000–2400 m., leg. P. C. Standley, n. 51.988p., n. 47.157.

Lectotype (Grolle and Reiner-Drehwald 1999: 37): Costa Rica, Heredia, Cerro de las Caricias, 2000–2400 m., Standley 51998 (JE). Second-step lectotypification (here designated): JE04002123 (<https://je.jacq.org/JE04002123>; isolectotype JE04002124 <https://je.jacq.org/JE04002124>).

Note. There exist two specimens in JE and Grolle and Reiner-Drehwald (1999) did not specify which of them they selected. The isolectotype is a microslide almost certainly extracted from the lectotype but as stated above we can not be sure of this and we prefer to designate the richer material as lectotype.

\*\* ***Herbertus angustifolius* (Steph.) Herzog f. *minor* Herzog**, Rev. Bryol. Lichénol. 11(1): 24, 1939 (Herzog 1938), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: Costa Rica, Cerros de Zurqui, Prov. de Heredia, 2000–2400 m., on tree ([Standley] n. 50.292, f. *minor*).

Original material: Costa Rica, Cerros de Zurquí, Prov. de Heredia, 2000–2400 m., on tree, Standley & Valerio 50292 (JE04010823 <https://je.jacq.org/JE04010823>).

Currently accepted name: *Herbertus pensilis* (Taylor) Trevis. (cf. Morales 1991).

***Herbertus bivittatus* Spruce var. *latilobus* Herzog**, Rev. Bryol. Lichénol. 11(1): 24, 1939 (Herzog 1938)

Original citation: Costa Rica, Vicinity of Pejivalle, Prov. Cartago, 900 m., on tree ([Standley] n. 47.021, 47.173).

Lectotype (Fulford 1963: 98 as 'type'): Costa Rica, Cartago: near Pejivalle, Standley & Valerio 47021 (JE04010828 <https://je.jacq.org/JE04010828>; isolectotype US00072894 <http://n2t.net/ark:/65665/36cd9e300-ab36-4b54-b30f-f9e3530bd2f1>).

Currently accepted name: *Herbertus bivittatus* Spruce (cf. Fulford 1963).

***Herbertus cancerinus* Herzog**, Rev. Bryol. Lichénol. 11(1/2): 25, 1938 (Herzog 1938)

Original citation: Costa Rica, Cerro de Las Lajas, Prov. de Heredia, 2000–2400 m. on tree ([Standley] n. 51.629).

Lectotype (Fulford 1963: 100 as 'type'): Costa Rica, Cerro de Las Lajas, 2000–2400 m, Standley & Valerio 51629 (JE04010836 <https://je.jacq.org/JE04010836>; isolectotype US00072895 <http://n2t.net/ark:/65665/3e397f894-9316-4d72-b1e1-3548c1ddac53>).

Currently accepted name: *Herbertus acanthelium* Spruce (cf. Fulford 1963 as *Herbertus serratus* Spruce, and Feldberg and Heinrichs 2006).

**\*\* *Herbertus cancerinus* Herzog f. *foliis-minus-serratis* Herzog**, Rev. Bryol. Lichénol. 11(1/2): 27, 1938 (Herzog 1938), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original type citation: Costa Rica, Yerba Buena, Prov. de Heredia, 2000 m. on tree ([Standley] n. 50.011, f. foliis minus serratis).

Original material: Costa Rica, Heredia, Yerba Buena, NE San Isidro, 22 Feb. 1926, Standley & Valerio 50011 (JE04010804 <https://je.jacq.org/JE04010804>, US00072896, <http://n2t.net/ark:/65665/3c32b5dad-1dc9-40a1-8661-a5b08bd9be68>).

**\*\* *Herbertus durandii* (Steph.) Herzog var. *dissectus* Herzog**, Rev. Bryol. Lichénol. 11(1/2): 25, 1939 (Herzog 1938), nom. inval. (ICN2018 Art. 39.1; no Latin description)

Original citation: Costa Rica, Cerros de Zurquí, Prov. de Heredia, 2000–2400 m. ([Standley] n. 50.338).

Original material: (Fulford 1963: 104 as 'lectotype'): Costa Rica, Heredia: Cerros de Zurquí, 2000–2400 m, Standley & Valerio 50338 [...] (Hb. Herzog, JE04010809 <https://je.jacq.org/JE04010809>). Original material is also in US04667650 (<http://n2t.net/ark:/65665/3ed9e4d50-7465-4b82-8d46-2c605294398c>).

Currently accepted name: *Herbertus sendtneri* (Nees) Lindb. (cf. Feldberg and Heinrichs 2005).

***Herbertus pectinatus* Herzog**, Rev. Bryol. Lichénol. 11(1/2): 27, 1938 (Herzog 1938)

Original citation: Costa Rica, Cerros de Zurquí, Prov. de Heredia, 2000–2400 m., on tree ([Standley] n. 50.380, 50.642).

Lectotype (Fulford 1963: 100 as 'type'): Costa Rica, Cerros de Zurquí, Standley & Valerio 50642 (JE04010834 <https://je.jacq.org/JE04010834>; isolectotype US00072897 (<http://n2t.net/ark:/65665/366cd81be-dd7d-4644-98a0-dc0ecb803a53>; synlectotype Standley & Valerio 50380 JE04010806 <https://je.jacq.org/JE04010806>).

Currently accepted name: *Herbertus acanthelium* Spruce (cf. Feldberg and Heinrichs 2006).

***Herbertus penicillatus* Herzog**, Rev. Bryol. Lichénol. 11(1): 27, 1938 [1939] (Herzog 1938)

Original citation: Costa Rica, La Palma, Prov. S. José, 1600 m. ([Standley] n. 38.080).

Lectotype (Fulford 1963: 98 as 'type'): Costa Rica, San José, La Palma, Standley 38080 (JE04010854 <https://je.jacq.org/JE04010854>; isolectotypes B-04270, US00072898 <http://n2t.net/ark:/65665/31e26bb06-3bb1-4a25-9f0a-80f944fd77ce>).

Currently accepted name: *Herbertus bivittatus* Spruce (cf. Fulford 1963).

***Herbertus stenochizon* Herzog**, Rev. Bryol. Lichénol. 11(1/2): 27, 1938 (Herzog 1938)

Original citation: Costa Rica, Cerros de Zurquí, Prov. de Heredia, 2000–2400 m., on tree ([Standley] n. 50.392, 50.529).

Lectotype (Fulford 1963: 100 as 'type'): Costa Rica, Heredia: Cerros de Zurquí 2000–2400 m, Standley & Valerio 50392 (JE04010833 <https://je.jacq.org/JE04010833>; isolectotype US00072900 <http://n2t.net/ark:/65665/396f4181d-de9a-47ab-a37c-8b5c8fa53106>; synlectotype Standley & Valerio 50529 JE04010807 <https://je.jacq.org/JE04010807>).

Currently accepted name: *Herbertus acanthelium* Spruce (cf. Feldberg and Heinrichs 2006).

***Herbertus vulcanicola* Herzog**, Rev. Bryol. Lichénol. 11(1/2): 25, 1938 (Herzog 1938)

Original citation: Costa Rica, southern slope of the Volcán de Turrialba, near the Finca, 2000–2400 m., on tree ([Standley] n. 35.297).

Lectotype (Fulford 1963: 102 as 'type'): Costa Rica, slope Volcán Turrialba, 2000–2400 m., Standley 35297, Hb. Herzog. Second-step lectotypification (here designated) (JE04010853 <https://je.jacq.org/JE04010853>; isolectotypes JE04010808 <https://je.jacq.org/JE04010808>, US00072901 <http://n2t.net/ark:/65665/372d95699-cfe6-4040-b231-f01ae6f6a9b7>).

Note. The isolectotype in JE is a microslide almost certainly extracted from the lectotype.

Currently accepted name: *Herbertus acanthelium* Spruce (cf. Feldberg and Heinrichs 2006).

***Hygrolejeunea costaricensis* Steph.**, Hedwigia 35(3): 100, 1896 (Stephani 1896)

Original citation: Hab. Costa Rica, Carrisal 2800 m (Pittier).  
Lectotype (Bonner 1966: 646; also Schuster 1994: 220 as 'type'): Costa Rica, Carrisal, 2800 m., I 1889, Pittier; Pittier & Durand, Plantae Costaricensis Exsiccatae No 6013a (G00282422 [www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=214857&lang=en](http://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=214857&lang=en); isoelectotype JE04007655 <https://je.jacq.org/JE04007655>).

Currently accepted name: *Lejeunea reflexistipula* (Lehm. et Lindenb.) Lehm. et Lindenb. var. *costaricensis* (Steph.) M.E.Reiner (cf. Reiner-Drehwald 2005).

***Hygrolejeunea punctata* Herzog**, Rev. Bryol. Lichénol. 20(1/2): 163. 1951 (Herzog 1951)

Original citation: Costa-Rica, on tree, Cerros de Zurqui, Prov. Heredia, 2000–2400 m., leg. P. C. Standley, n. 50.640/a (zwischen *Hygrolejeunea rotundifolia*).

Lectotype (Heinrichs et al. 2015: 224): Costa Rica, Heredia, Cerros de Zurqui, 2000–2400 m, 3 Mar. 1926, Standley 50640a (JE04002098 <https://je.jacq.org/JE04002098> 'handwritten label'; isoelectotypes JE04002096 <https://je.jacq.org/JE04002096>, JE04002097 <https://je.jacq.org/JE04002097>).

Currently accepted name: *Lepidolejeunea cuspidata* (Gottsche) Heinrichs et Schäf.-Verw. (cf. Heinrichs et al. 2015).

***Isotachis ripensis* Spruce var. *armata* Herzog**, Rev. Bryol. Lichénol. 11: 38, 1939 (Herzog 1938)

Original citation: Costa Rica, southern slope of Volcán de Turrialba, near the Finca, 2000–2400 m., on tree ([Standley] 35.279).

Lectotype (Grolle 1964: 240): Costa Rica, Volcán de Turrialba, 2000–2400 m, on tree, 1924, Standley 35279 (JE04004922 <https://je.jacq.org/JE04004922>, isoelectotype US00289478 <http://n2t.net/ark:/65665/3ed61fec0-b1ee-4e11-9dc2-448452c121a4>).

Currently accepted taxon: *Triandrophyllum subtrifidum* (Hook.f. et Taylor) Fulford et Hatcher var. *trifidum* (Gottsche) Solari (cf. Grolle 1964).

**\*\* *Jubula hutchinsiae* (Hook.) Dumort. var.**

***costaricensis* Herzog**, Rev. Bryol. Lichénol. 20: 128, 1951 (Herzog 1951), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: Costa Rica, Prov. Cartago, Cerro de la Carpintera, 1500 m., [Standley] n. 35.674p.; Prov. Cartago, Vicinity of Pejivalle, 900 m., wet bank, [Standley] n. 47.017; Prov. Heredia, Yerba Buena, 2000 m., on wet rocks, [Standley] n. 49.678.

Original material (Guerke 1978: 92 as 'holotype'): Costa Rica, Cerro de La Carpintera, Standley 35674 (JE04010824 <https://je.jacq.org/JE04010824>, 'isotype' US04544769 <http://n2t.net/ark:/65665/305f56692-050d-4ed4-a7d0-0502815b0baf>).

Currently accepted name: *Jubula hutchinsiae* subsp. *bogotensis* (Steph.) Verd. (cf. Guerke 1978).

***Lejeunea succulenta* Herzog**, Rev. Bryol. Lichénol. 20(1/2): 171, 1951 (Herzog 1951)

Original citation: Costa Rica, Prov. Guanacaste, vicinity of Tilarán, 500–600 m., [Standley] n. 46.647p. – Honduras: Lancetilla Valley, near Tela, Dep. of Atlántida, 20–600 m., [Standley] n. 56.369p.

Lectotype: (**here designated**): Costa-Rica, Prov. Guanacaste, vicinity of Tilarán, 500–600 m., Standley 46647p. (JE04010830 <https://je.jacq.org/JE04010830>, isoelectotypes JE04009372 <https://je.jacq.org/JE04009372>, JE04009373 <https://je.jacq.org/JE04009373>, B300025227 <https://herbarium.bgbm.org/object/B300025227>, US 00070960 <http://n2t.net/ark:/65665/34d0b12c7-8241-43b2-b288-10f63b277115>).

Note. JE04009372 and JE04009373 are syntypes of *Rectolejeunea defolians* Herzog but annotated as also including *Lejeunea succulenta* 'sehr spärlich'. The selected lectotype was most likely extracted from one of those packets.

***Lejeunea talamancensis* M. E. Reiner et Schäf.-Verw.**, Nova Hedwigia 87(3/4): 414, 2008 (Reiner-Drehwald and Schäfer-Verwimp 2008)

Holotype: Costa Rica, San José: Cordillera de Talamanca, San Gerardo de Dota, path from Chacón to 'Las Cruces' on river Savegre, epiphyte on *Alnus* sp., 1900 m, 25 Dec. 1999, Schäfer-Verwimp & Holz SV/H-0098/B (JE s.n.; isotypes GOET, CR).

**\*\* *Lepidozia karstenii* Steph. f. *angustisecta* Herzog**, Rev. Bryol. Lichénol. 11(1/2): 22, 1939 (Herzog 1938), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: Costa Rica, ...; Zurqui, Prov. S. José, 2000–2500 m., on tree ([Standley] n. 48.173, 48.194/a, forma *angustisecta*); Cerro de Las Caricias, Prov de Heredia, 2000–2400 m., on tree ([Standley] n. 52.001, f. *angustisecta*; Cerros de Zurqui, Prov. de Heredia, 2000–2400 m., on tree ([Standley] n. 50.512, 50.518, f. *angustisecta*); [...]; La Palma. Prov. S. José, 1600 m., wet bank, in large soft cushions ([Standley] n. 32.968, f. *angustisecta*).

Original material: Standley 48173 (JE04002072 <https://je.jacq.org/JE04002072>), Standley 48194a (JE04002066 <https://je.jacq.org/JE04002066>), Standley 52001 (JE04002067 <https://je.jacq.org/JE04002067>), Standley 50512 (US04666846 <http://n2t.net/ark:/65665/33f5090e7-f130-4285-9896-e5c90be44755>), Standley 50518 (JE04002070 <https://je.jacq.org/JE04002070>), Standley 32968 (JE04002074 <https://je.jacq.org/JE04002074>, US04666849 <http://n2t.net/ark:/65665/38b75a1e4-69ef-4944-bf2a-56db37824e97>).

Note. All original material was cited under *Lepidozia karstenii* var. *standleyi* Herzog and are all syntypes of the variety although not considered 'typical' by Herzog.

Currently accepted name: *Lepidozia armata* Steph. (cf. Fulford 1966 following the synonymization of *Lepidozia karstenii*).



\*\* *Lepidozia karstenii* Steph. f. *brevifissa* Herzog, Rev. Bryol. Lichénol. 11(1/2): 22, 1939 (Herzog 1938), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: Costa Rica, [...]; Cerro de Las Lajas ([Standley] n. 51.540, f. *brevifissa*); Cerros de Zurqui, Prov. de Heredia, 2000–2400 m., on tree [Standley] n. 50.696; f. *brevissima*); Zurqui, Prov. S. José, 2000–2500 m. ([Standley] n. 48.214, f. *brevissima*).

Original material: Standley 50696 (JE04002069 <https://je.jacq.org/JE04002069>), Standley 48214 (JE04002071 <https://je.jacq.org/JE04002071>).

Note. All original material was cited under *Lepidozia karstenii* var. *standleyi* Herzog and are all syntypes of the variety although not considered 'typical' by Herzog.

Currently accepted name: *Lepidozia armata* Steph. (cf. Fulford 1966 following the synonymization of *Lepidozia karstenii*, but see Gradstein 2021).

***Lepidozia karstenii* var. *standleyi* Herzog**, Rev. Bryol. Lichénol. 11(1/2): 22, 1939 (Herzog 1938)

Original type citation: Costa Rica, Las Nubes, Prov. S. José, 1500–1600 m., on tree ([Standley] n. 38.735, 38.466); Alto de La Estrella, Prov. Cartago, on tree ([Standley] n. 39.061); Zurqui, Prov. S. José, 2000–2500 m., on tree ([Standley] n. 48.173, 48.194/a, forma *angustisecta*); Cerro de Las Caricias, Prov. de Heredia, 2000–2400 m., on tree ([Standley] n. 52.001, f. *angustisecta*); Cerros de Zurqui, Prov. de Heredia, 2000–2400 m., on tree ([Standley] n. 50.512, 50.518, f. *angustisecta*); Cerro de Las Lajas, Prov. de Heredia, 2000–2400 m., on tree ([Standley] n. 51.432); La Palma, Prov. S. José, 1600 m., wet bank, in large soft cushions ([Standley] n. 32.968, f. *angustisecta*); Cerro de Las Lajas ([Standley] n. 51.540, f. *brevifissa*); Cerros de Zurqui, Prov. de Heredia, 2000–2400 m., on tree [Standley] n. 50.696; f. *brevifissa*); Zurqui, Prov. S. José, 2000–2500 m. ([Standley] n. 48.214, f. *brevifissa*). – Cerro Galito, 2000 m. (Valerio n. 13); La Palma (Valerio n. 20).

Lectotype (Fulford 1966: 201 as 'isotypes'): Costa Rica, San Jose: Las Nubes, 1500–1600 m, Standley 38735, Verdoorn, Hep. Select. & Crit. 375 (BR, C, F <https://collections-botany.fieldmuseum.org/catalogue/2130884>). Second-step lectotypification (Söderström et al. 2023b:152): BR5040110401156 ([www.botanicalcollections.be/specimen/BR5040110401156](http://www.botanicalcollections.be/specimen/BR5040110401156)). Synlectotypes (excl. those cited as f. *angustisecta* or f. *brevifissa*): Valerio 20 JE04002073 <https://je.jacq.org/JE04002073>, Standley 38466 JE04002075 <https://je.jacq.org/JE04002075>, Standley 39061 JE04002076 <https://je.jacq.org/JE04002076>, Standley 51432 JE04002068 <https://je.jacq.org/JE04002068>.

Note. Original material cited under *Lepidozia karstenii* f. *angustisecta* and f. *brevifissa* above are technically synlectotypes also to var. *standleyi* although T. Herzog did not consider them 'typical'.

Currently accepted name: *Lepidozia armata* Steph. (cf. Fulford 1966, but see Gradstein 2021).

***Lepidozia macropatens* Herzog**, Rev. Bryol. Lichénol. 11(1/2): 20, 1939 (Herzog 1938)

Original citation: Costa Rica, Cerro de Las Vueltas, Prov. S. José, 2700–3000 m., on tree ([Standley] n. 43.723).

Lectotype (here designated): Costa Rica: Cerro de Las Vueltas, Prov. S. José, 2700–3000 m., on tree, Standley n. 43.723 (JE04002087 <https://je.jacq.org/JE04002087>; isolectotype US00289481 <http://n2t.net/ark:/65665/3f0f8ebad-c8b4-4953-9a47-20a1f36bbbc9>).

Note. Herzog did probably see the specimen in US but the description is most certainly based on the specimen in JE. Currently accepted name: *Lepidozia reptans* (L.) Dumort. (cf. Fulford 1966).

\*\* ***Leptolejeunea stenophylla* (Lindenb. et Gottsche) Schifff. f. *latifolia* Herzog**, Rev. Bryol. Lichénol. 20:

146, 1951 (Herzog 1951), nom. inval. (ICN Art. 38.1(a); no description)

Original citation: Honduras, Lancetilla Valley, near Tela, 20–600 m., on leaves, [Standley] n. [...] und 56.755.

Original material (cf. Bischler 1967): Honduras, Atlántida, Lancetilla Valley, near Tela, 20–600 m, Standley 56755 (JE, US).

Currently accepted name: *Drepanolejeunea mosenii* (Steph.) Bischl. (cf. Bischler 1967).

Note. No originally material is digitized in JE or US but should be there fide Bischler (1967).

***Leptoscyphus lambinonii* Vanderp.**, Schäf.-Verw. et D. G. Long, Taxon 59(1): 179, 2010 (Vanderpoorten et al. 2010)

Holotype: Costa Rica, Cartago: Orosi valley, Tapantí National Park, primary rain forest, Sendero La Oropendola, epiphytic, ca 600 m, 30 Dec. 1999, Schäfer-Verwimp & Holz SV/H-0342 (JE s.n.; isotype, CR).

***Lophocolea aberrans* Lindenb. et Gottsche var. *costaricensis* Herzog**, Rev. Bryol. Lichénol. 11(1/2): 17, 1939 (Herzog 1938)

Original citation: Costa Rica, Vicinity of [sic] Sta Maria de Dota, Prov. S. José, 1500–1800 m. ([Standley] n. 41.686, 41.758/a, 41.835); near Finca La cima, above Los Lotes, n. of El Copey, Prov. S. José, 2100–2400 m. ([Standley] n. 42.711, 42.781, 42.800); Quebradillas, 1800 m. oak forest ([Standley] n. 42.933); El Muñeco, Rio Navarro, 1400–1800 m. ([Standley] n. 50.931); Cerro de Las Vueltas, 2700–3000 m., old log ([Standley] n. 43.758); Laguna de La Chonta, 2000–2100 m. ([Standley] n. 42.248).

Lectotype (here designated): Costa Rica, Cerro de las Vueltas, Provincia de San José, on old log, altitude 2700–3000 m, 29 Dec. 1925–1 Jan. 1926, Standley & Valerio 43758 (JE04002012 <https://je.jacq.org/JE04002012>; isolectotype JE04002011 <https://je.jacq.org/JE04002011>, US04628457 <http://n2t.net/ark:/65665/331215e63-87b4-4a33-a9f3-8e3c14753ea1>, synlectotypes Standley 41686 JE04002022 <https://je.jacq.org/JE04002022>, Standley 41758a JE04002021 <https://je.jacq.org/JE04002021>,



Standley 41835 JE04002020 <https://je.jacq.org/JE04002020>, Standley 42248 JE04002019 <https://je.jacq.org/JE04002019>, Standley 42711 JE04002017 <https://je.jacq.org/JE04002017>, JE04002018 <https://je.jacq.org/JE04002018>, Standley 42781 JE04002016 <https://je.jacq.org/JE04002016>, Standley 42800 JE04002015 <https://je.jacq.org/JE04002015>, Standley 42933 JE04002014 <https://je.jacq.org/JE04002014>, Standley 50931 JE04002013 <https://je.jacq.org/JE04002013>).

Note. All syntypes in JE were studied and annotated by R. Grolle, and further also by M. Fulford. Material of all seems good and the selected lectotype seems appropriate. Currently accepted name: *Leptoscyphus amphibolius* (Nees) Grolle (cf. [Grolle 1962](#)).

\*\* *Lophocolea breutelii* Gottsche var. *robusta* Herzog ex Fulford, Mem. New York Bot. Gard. 11(4): 435. 1976 ([Fulford 1976](#)), nom. inval. (ICN Art. 36.1(c); publ. in syn.)

Original citation: Costa Rica, [...] Heredia: San Isidro, Standley & Valerio 51474 as *L. breutelii* var. *robusta* (JE).

Original material ([Fulford 1976: 437](#)): Costa Rica, Heredia, Cerro de Las Lajas, north of San Isidro Standley & Valerio 51474 (JE04010837 <https://je.jacq.org/JE04010837>; original material also in US04675709 <http://n2t.net/ark:/65665/33a19c1a8-02ad-4d83-83b7-731f05dc6f02>).

Currently accepted name: *Leptoscyphus orbignianus* (Nees et Mont.) L. Söderstr. et A. Hagborg (cf. [Fulford 1976](#) and [Söderström and Hagborg 2023b](#)).

*Lophocolea effusidens* Steph., Bull. Herb. Boissier (sér. 2) 7(4): 301 [Sp. Hepat. (Stephani) 3: 165], 1907 ([Stephani 1907](#))

Original type citation: Hab. *Peruvia*, St Gavan (Lechler) Costarica (Tonduz).

Lectotype ([Fulford 1976: 431](#)): Peru, St. Gavin, ex Hb Jack, Lechler (G00112460; [www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=134928&lang=en](http://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=134928&lang=en); synlectotypes Tonduz JE04001875 <https://je.jacq.org/JE04001875>, JE04001876 <https://je.jacq.org/JE04001876>, M?).

Currently accepted name: *Leptoscyphus orbignianus* (Nees et Mont.) L. Söderstr. et A. Hagborg (cf. [Gradstein 2021](#) and [Söderström and Hagborg 2023b](#)).

Note. The synlectotype from Costa Rica is *Heteroscyphus marginatus* (Steph.) Fulford (cf. [Fulford 1976](#)).

\*\* *Lophocolea liebmannaiana* Gottsche var. *bisbifida* Herzog ex Standl., Field Mus. Nat. Hist. Bot. Ser. 10: 62. 1931 ([Standley 1931](#)), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: [Honduras, Atlántida, Lancetilla valley].

Original material (cf. [Fulford 1976: 427](#)): Honduras, Lancetilla Valley, near Tela, on log, 20–600 m, 6 Dec. 1927–20 Mar. 1928, Paul C. Standley 54836, det Herzog Mar. 1929 (JE04010827 <https://je.jacq.org/JE04010827>).

Note. Annotated as no *Lophocolea liebmannaiana* in packet by M. Fulford although she synonymized it with that species. If her annotation is correct, which we think it is, the synonymisation is wrong!

Currently accepted name: *Lophocolea liebmannaiana* Gottsche (cf. [Fulford 1976](#)).

*Lophocolea tricuspudata* Herzog, Rev. Bryol. Lichénol. 11(1): 17, 1939 ([Herzog 1938](#))

Original citation: Costa Rica, Cerro de Las Vueltas, 2700–3000 m., on tree ([Standley] n. 43.723/c, mingled with *Notoscyphus paramicola*, *Adelanthus parvus* and *Nowellia curvifolia*).

Lectotype (here designated) if not holotype: Costa Rica, Cerro de Las Vueltas, 2700–3000 m, Standley 43723c (JE04001777 <https://je.jacq.org/JE04001777>).

Note. This specimen may have been taken from a richer specimen. Standley's collection number. 43723 is identified as *Lepidozia macropatens* in US00289481 and JE04002087. The type material was probably extracted from this gathering and, thus, an isotype probably exists among the US specimens. The type of *Adelanthus parvus* (JE04002323 <https://je.jacq.org/JE04002323>) is also marked with the same number. (43723c) and is poor and possibly extracted from the same specimen. Type material of *Notoscyphus paramicola* (JE04000934 <https://je.jacq.org/JE04000934> and JE04000935 <https://je.jacq.org/JE04000935>) is also poor and numbered 43723a and may originate from the same gathering.

\*\* *Macrolejeunea subsimplex* (Mont. et Nees)

*Schiffn. f. minor* Herzog, Rev. Bryol. Lichénol. 20(1/2): 161. 1951 ([Herzog 1951](#)), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: Costa-Rica, [...]; Prov. Guanacaste, Quebrada Serena, s. e., of Tilarán, 700 m., on tree, [Standley] n. 46.256.

Original material: Costa Rica, Quebrada Serena, southeast of Tilarán, Provincia de Guanacaste, altitude about 700 m, on tree, Standley & Valerio 46256 (JE04010825 <https://je.jacq.org/JE04010825>, US04658647 <http://n2t.net/ark:/65665/33920f591-1c38-4054-9cf7-8ffce0d7e93a>).

Currently accepted name: *Lejeunea cerina* (Lehm. et Lindenb.) Lehm. et Lindenb. (cf. [Grolle 1987](#)).

\*\* *Macrolejeunea subsimplex* (Mont. et Nees)

*Schiffn. f. parvistipula* Herzog, Rev. Bryol. Lichénol. 20(1/2): 161. 1951 ([Herzog 1951](#)), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: Honduras, Dept of Atlántida, Lancetilla valley, near Tela, on *Cyclopeltis*, 20–600 m., [Standley] n. 56.865.

Original material: Honduras, Atlántida, Lancetilla Valley, Standley 56805 (JE04010826 <https://je.jacq.org/JE04010826>).

Note. The collection number in the 'protologue' and on the specimen differ but we assume it is an error in print.

Currently accepted name: *Lejeunea cerina* (Lehm. et Lindenb.) Lehm. et Lindenb. (cf. [Grolle 1987](#)).

***Madotheca maxonii* Herzog**, Beih. Bot. Centralbl. 61B (3): 569, 1942 ([Herzog 1942](#))

Original citation: Costa Rica, Vara Blanca, between Poás and Barba-volcanoes, 1600–1700 m, tree trunk, leg. W. R. Maxon, 22. VII. 28 (no. 8277).

Lectotype ([Swails 1970: 229](#) as ‘type’ hb Herzog) or possible holotype: Costa Rica, Vara Blanca, 1600–1700 m, Maxon & Harvey 8277 (JE04001321 <https://je.jacq.org/JE04001321>).

Currently accepted name: *Porella leiboldii* (Lehm.) Trevis. (cf. [So 2005](#)).

***Madotheca subciliata* Lehm. et Lindenb. var. *endiviifolia* Herzog**, Rev. Bryol. Lichénol. 20: 127, 1951 ([Herzog 1951](#))

Original citation: Costa Rica, Prov. San José, vicinity of Santa Mario de Dota, on log, [Standley] n. 42.374.

Lectotype ([Swails 1970: 212](#) as ‘type’): Costa Rica, San José: nr Santa Maria de Dota, 1500–1800 m, 14–26 Dec. 1925, Standley 42374, Hb Herzog (JE04001320 <https://je.jacq.org/JE04001320>; isolectotype US00072952 <http://n2t.net/ark:/65665/3f47db749-f76c-40e4-907c-67c176bf6ec8>).

Currently accepted name: *Porella crispata* (Hook.) Trevis. (cf. [Swails 1970](#)).

***Madotheca swartziana* (F.Weber) Lindenb. var. *decurrenti-spinulosa* Herzog**, Rev. Bryol. Lichénol. 20(1/2): 128, 1951 ([Herzog 1951](#))

Original citation: Costa Rica, Prov. Cartago, La Estrella, on tree, [Standley] n. 39.553; Prov. Alajuela, Viento Fresco, on tree, [Standley] n. 47.921; Prov. Heredia, Cerros de Zurqui, on tree, 2000–2400 m., [Standley] n. 50.312.

Lectotype ([Swails 1970: 229](#) as ‘type’): Costa Rica, Prov. Cartago, La Estrella, on tree, Standley 39553 (JE04010855 <https://je.jacq.org/JE04010855>; synlectotype Standley 50312 JE04010856 <https://je.jacq.org/JE04010856>).

Note. US00072948 (<http://n2t.net/ark:/65665/3f4968966-8fb1-4880-916e-5f04789947a4>) is possibly an isolectotype (no image of label) although collector number differs a bit (error in registration?).

Currently accepted name: *Porella leiboldii* (Lehm.) Trevis. (cf. [So 2005](#)).

***Madotheca swartziana* (F.Weber) Lehm. var. *guatemalensis* Herzog**, Beih. Bot. Centralbl. 61B(3): 570, 1942 ([Herzog 1942](#))

Original citation: Guatemala, District of Petén, Fallabón–Yaxha Road, leg. C. L. Lundell, no 2066.

Lectotype ([Swails 1970: 218](#) as ‘type’ in hb. Herzog), if not holotype: Guatemala, Petén: Fallabón–Yaxha Road, 23 Mar. 1933, Lundell 2052, Hb Herzog (JE04001294 <https://je.jacq.org/JE04001294>).

Note. Collection number in protologue is 2066 but only no. 2052 exists in JE and the number in the protologue is probably an error.

Currently accepted name: *Porella swartziana* (F.Weber) Trevis. (cf. [Swails 1970](#)).

***Marchesinia longirostris* Herzog**, Rev. Bryol. Lichénol. 20: 138, 1951 ([Herzog 1951](#))

Original citation: Costa-Rica, on tree, vicinity of Tilarán, Prov. Guanacaste, 500–600 m., leg. P. C. Standley, n. 44.309.

Lectotype ([Gradstein 1994: 106](#) as ‘holotype’): Costa Rica, Guanacaste, Tilarán, Standley 44309 (JE04001750 <https://je.jacq.org/JE04001750>; isolectotypes B300025480 <https://herbarium.bgbm.org/object/B300025480>, US02482525 <http://n2t.net/ark:/65665/3cda41101-edf0-4967-b917-5202c208db43>).

Currently accepted name: *Marchesinia bongardiana* (Lehm. et Lindenb.) Schiffn. (cf. [Gradstein 2021](#)).

***Marchesinia longirostris* Herzog var. *rivularis* Herzog**, Rev. Bryol. Lichénol. 20: 138, 1951 ([Herzog 1951](#))

Original citation: Costa-Rica, on rock, along Rio Reventado, n. of Cartago, 1400–1600 m., leg. P. C. Standley, n. 49.561.

Lectotype ([Gradstein 1994: 106](#) as ‘holotype’): Costa Rica, Cartago, Rio Reventado, 1460–1650 m, 26 Feb. 1926, Standley 49561 (JE04001751 <https://je.jacq.org/JE04001751>; isolectotypes B300025481 <https://herbarium.bgbm.org/object/B300025481>, US00070855 <http://n2t.net/ark:/65665/3b03522e2-efa7-4473-bccc-7c4c122ebd95>).

Currently accepted name: *Marchesinia bongardiana* (Lehm. et Lindenb.) Schiffn. (cf. [Gradstein 2021](#)).

***Marchesinia minor* Herzog**, Rev. Bryol. Lichénol. 20: 137, 1951 ([Herzog 1951](#))

Original citation: Costa Rica, on tree, vicinity of Tilarán, Prov. Guanacaste, 500–600 m., leg. P. C. Standley, n. 44.393.

Lectotype ([Gradstein 1994: 106](#) as ‘holotype’): Costa Rica, Guanacaste, Tilarán, Standley 44393 (JE04001752 <https://je.jacq.org/JE04001752>; isolectotype US02482550 <http://n2t.net/ark:/65665/39f497ced-0544-45b2-a053-1a360d8947aa>).

Currently accepted name: *Marchesinia brachiata* (Sw.) Schiffn. (cf. [Gradstein 1994](#)).

***Marchesinia trollii* Herzog**, Ann. Bryol.: 137, 1932 ([Verdoorn 1932](#))

Original citation: Panama, Cerro Canajagua, Halbinsel Azuero, ea 950 m, leg. C. Troll, IV, 1929 [Hepaticae Selectae et Criticae 156].

Lectotype ([Gradstein 1994: 106](#) as ‘holotype’): Panama, Peninsula Azuero, Cerro Canajagua, Troll s.n., Verdoorn (ed.), Hep. Sel. Crit. 156 (JE04001746 <https://je.jacq.org/JE04001746>; isolectotypes JE04001747 <https://je.jacq.org/JE04001747>, JE04001748 <https://je.jacq.org/JE04001748>, B, BR, FH, G, M, NY, S, U, US, YU).

Currently accepted name: *Marchesinia brachiata* (Sw.) Schiffn. var. *brachiata* (cf. [Gradstein 1994](#)).

***Mastigobryum asperistipulum* Steph.**, Sp. Hepat. (Stephani) 6: 453, 1924 ([Stephani 1924](#))

Original type citation: Hab. Guatemala, Alta Verapaz (Türkheim legit.).

Lectotype ([Fulford 1963](#): 156 as 'type'): Guatemala, Alta Verapaz, Cobán, Türkheim s.n., Hb Levier 5817, Stephani herb. n. 22873 (G00067589 [www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=123767&lang=en](http://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=123767&lang=en)), isolectotypes JE04001013 <https://je.jacq.org/JE04001013>, NY253479 <https://sweetgum.nybg.org/science/vh/specimen-details/?irn=610740>, NY02697201 <https://sweetgum.nybg.org/science/vh/specimen-details/?irn=2985283>).

Currently accepted name: *Bazzania hookeri* (Lindenb.) Trevis. (cf. [Fulford 1963](#)).

***Mastigolejeunea dentilobula* Herzog**, Rev. Bryol. Lichénol. 20(1/2):134, 1951 ([Herzog 1951](#))

Original citation: Honduras, Lancetilla Valley near Tela, 20–600 m. Costa-Rica: loco incerto, leg. P. C. Standley, n. 48.775p.

Lectotype ([Gradstein 1994](#): 121): Honduras, Atlántida, Lancetilla valley, near Tela, Standley 48775a (JE04001662 <https://je.jacq.org/JE04001662>; synlectotype (Costa Rica) NY01059497 <http://sweetgum.nybg.org/science/vh/specimen-details/?irn=1197081>).

Currently accepted name: *Caudalejeunea lehmanniana* (Gottsche) A. Evans (cf. [Gradstein 1994](#)).

***Mastigolejeunea innovans* (Spruce) Steph. var. *parciflora* Herzog**, Rev. Bryol. Lichénol. 20: 132, 1951 ([Herzog 1951](#))

Original citation: Honduras, Lancetilla Valley, near Telas, Dep. of Atlántida, 20–600 m, [Standley] n. 55.342.

Lectotype ([Gradstein 1994](#): 77 as 'holotype'): Honduras, Atlántida, Lancetilla Valley, near Tela, Standley 55.342p. (JE04001656 <https://je.jacq.org/JE04001656>).

Note. The specimen in Jena is marked as 'var. *latistipula*' but it is almost certain that it was the base for Herzog's name. He may have changed the epithet before publishing it without indicating it on the specimen. A specimen with the same collection number is present in US (US04660319, <http://n2t.net/ark:/65665/3fbbe7d45-41fc-4212-a5a9-174150287093>) originally identified as '*Symbiezidium setosum*?' and re-identified as *Archilejeunea parviflora* by S. R. Gradstein and published as such by [Gradstein 1994](#).

Currently accepted name: *Thysananthus auriculatus* (Wilson et Hook.) Sukkharak et Gradst. (cf. [Gradstein 1994](#)).

***Mnioloma rhynchophyllum* Herzog**, Ann. Bryol. 3: 120, 1930 ([Herzog 1930](#))

Original citation: Costa Rica, leg. P. C. Standley n. 39.843 (on tree, vicinity of Orosi, Province of Cartago, 30 Mar. 1924).

Lectotype (here designated): Costa Rica, Vicinity of Orosí, Province of Cartago, 30 Mar. 1924, Standley 39843 (JE04001641 <https://je.jacq.org/JE04001641>, isolectotype JE04001642 <https://je.jacq.org/JE04001642>).

Note: The selected lectotype is in Herzog's handwriting and the isolectotype is probably a duplicate. There may also be isolectotypes in B and G.

***Notoscyphus paramicola* Herzog**, Rev. Bryol. Lichénol. 11: 6, 1939 ([Herzog 1938](#))

Original citation: Costa Rica, Cerro de las Vueltas, 2700–3000 m., on tree (n. 43.723/a).

Lectotype ([Grolle 1971](#): 71 as 'holotype'): Kostarika, Prov. S. José, C. de Las Vueltas, 2700–300 m, 1925, Standley 43723 (JE04000935 <https://je.jacq.org/JE04000935> annotated as 'holotype' by R. Grolle in 1969, isolectotype JE04000934 <https://je.jacq.org/JE04000934>).

Currently accepted name: *Syzygiella autumnalis* (DC.) K. Feldberg, Vaña, Hentschel et Heinrichs (cf. [Grolle 1971](#) as *Jamesoniella autumnalis* (DC.) Steph.).

Note. The lectotype may have been extracted from a larger gathering (see under *Lophocolea tricuspidata* above).

***Oryzolejeunea grolleana* Bernecker**, Haussknechtia, Beih. 9: 37, 1999 ([Bernecker-Lücking 1999](#))

Holotype: Costa Rica, Limón Province, Botarrama-Trail in the Braulio Carillo National Park, on leaves of *Rhodospatha wendlandii* Schott. ex Engl. (Araceae), Bernecker 92-147 (JE04001647 <https://je.jacq.org/JE04001647>).

Currently accepted name: *Lejeunea grolleana* (Bernecker) R. L. Zhu et W. Ye (cf. [Ye et al. 2013](#)).

***Otigoniolejeunea quinqueumbonata* (Spruce) Steph. var. *rotundata* Herzog**, Rev. Bryol. Lichénol. 20(1/2): 154, 1951 ([Herzog 1951](#))

Original citation: Honduras, Lancetilla Valley, near Tela, 20–600 m., on rotten log, [Standley] n. 55.379.

Lectotype (here designated): Honduras, Lancetilla Valley, near Tela, Departement of Atlántida; altitude 20–600 m, 6 Dec. 1927–20 Mar. 1928, Standley 55379 (JE04006773 (<https://je.jacq.org/JE04006773>, isolectotype JE04001622 <https://je.jacq.org/JE04001622>).

Note. The selected type was annotated as 'holotype' by M. Reiner-Drehwald in 2007. The isolectotype is a microslide from R. Grolle's herbarium that almost certainly was extracted from the specimen in T. Herzog's herbarium. It is not known if there exists any duplicate material in US.

Currently accepted name: *Lejeunea quinqueumbonata* Spruce var. *rotundata* (Herzog) Sushil K. Singh.

***Physocolea elliptica* Steph.**, Sp. Hepat. (Stephani) 5: 876, 1916 ([Stephani 1916](#)).

Original citation: Hab. Guatemala.

Lectotype (here designated): Guatemala, Alta Verapaz, Cobán, 1600 m, Türkheim 5826 (G00069375, [www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=11576](http://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=11576))



4&lang=en; isoelectotype JE04002248 <https://je.jacq.org/JE04002248> a microslide annotated 'dupl. ex FI zwischen Diplasiol. brunnea').

Note. The lectotype was annotated as 'lectotypus' by R. Grolle in 1976 and M. Reiner-Drehwald in 1994. It was mentioned as selected by R. Grolle in 1974 by Pócs et al. (2014), but this is probably only referring to Grolle's annotation in G, and Pócs et al. (2014) did not say that they make a new lectotype and thus not validly selected one. A formal lectotypification seems not to have been made yet. Currently accepted name: *Cololejeunea camillii* (Lehm. et Lindenb.) A. Evans (cf. Pócs et al. 2014).

***Physocolea semidentata* Steph., Sp. Hepat.**

(Stephani) 5: 883, 1916 (Stephani 1916)

Original citation: Hab. Costarica.

Lectotype (Pócs et al. 2015): Costa Rica, Bois de la vallée de Tuis, bassin du Reventarazón, September 1893, A. Tonduz, herb Cardot. n. 15591 (G00069367 <http://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=115606&lang=en>; isoelectotype JE04004047 <https://je.jacq.org/JE04004047>).

Currently accepted name: *Cololejeunea obliqua* (Nees et Mont.) Schifffn. (cf. Pócs et al. 2015).

**\*\* *Plagiochila bursata* Lindenb. f. *depauperata***

**Herzog ex Carl**, Ann. Bryol. Suppl. 2: 67, 1931 (Carl 1931). nom. inval. (ICN Art. 38.1(a); no description)

Original citation: Costarica, Standley ...; n. 51.505, 50.709, 50.299 (var. *minor* f. *depauperata* Hzg.).

Original material: Costa Rica, Cerro de las Lajas, north of San Isidro, Provincia de Heredia, altitude 2000–2400 m, 7 Mar. 1926, Standley & Valerio 51505 (JE s.n., US04627055 <http://n2t.net/ark:/65665/30cc6abf3-82de-494b-939a-0aedc2256b8b>); Costa Rica, Cerros de Zurqui, northeast of San Isidro, Provincia de Heredia, altitude 2000–2400 m, 3 Mar. 1926, Standley & Valerio 50709 (JE s.n., M, US04627056 <http://n2t.net/ark:/65665/3a52bef74-e37c-4d48-b3ab-8d41e26f82f8>); *ibid.*, Standley & Valerio 50299 (JE s.n., US04627054 <http://n2t.net/ark:/65665/34e92e297-2c48-40cc-8b42-a0b79772318e>).

Currently accepted name: *Plagiochila aerea* Taylor (cf. Grolle and Heinrichs 1999).

**\*\* *Plagiochila bursata* Lindenb. var. *fissistipula* Herzog**

**ex Carl**, Ann. Bryol. Suppl. 2: 67, 1931 (Carl 1931).

nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: Costarica, Standley [...]; n. 51.864 und 52.150 (var. *fissistipula* Hzg.).

Original material: Costa Rica, La Hondura, Provincia de San José, altitude 1200–1500 m, 9 Mar. 1926, Standley & Valerio 51864 (JE s.n.); Costa Rica, Heredia; Cerro de las Caricias, N of San Isidro, 11 Mar. 1926, Standley & Valerio 52150 (JE s.n., US00289474 <http://n2t.net/ark:/65665/3082bbb6b-2cf0-4e7e-8170-b110d6faf690>).

Currently accepted name: *Plagiochila aerea* Taylor (cf. Grolle and Heinrichs 1999).

**\*\* *Plagiochila bursata* Lindenb. var. *fissistipula***

**Herzog**, Rev. Bryol. Lichénol. 11:16.1939 (Herzog 1938), nom. inval. (ICN2018 Art. 39.1; no Latin description)

Original citation: Costa Rica, La Hondura, Prov. S. José, 1200–1500 m. ([Standley] n. 51.864); Cerro de las Caricias, 2000–2400 m. ([Standley] n. 52.150).

Original material: Costa Rica, La Hondura, Provincia de San José, altitude 1200–1500 m, 9 Mar. 1926, Standley & Valerio 51864 (JE s.n.); Costa Rica, Heredia; Cerro de las Caricias, N of San Isidro, 11 Mar. 1926, Standley & Valerio 52150 (JE s.n., US00289474 <http://n2t.net/ark:/65665/3082bbb6b-2cf0-4e7e-8170-b110d6faf690>).

Currently accepted name: *Plagiochila aerea* Taylor (cf. Grolle and Heinrichs 1999).

**\*\* *Plagiochila bursata* Lindenb. f. *pilistipula* Herzog**,

Rev. Bryol. Lichénol. 11(1/2): 16, 1938 (Herzog 1938), nom. inval. (ICN2018 Art. 30.1; no Latin description)

Original citation: Costa Rica, La Hondura, prov. San José, 1300–1700 m. ([Standley] n. 36.300, 37.811).

Original material: Costa Rica, La Hondura, Province of San José; altitude 1300–1700 m, 2–4 Mar. 1924, Standley 36300 (JE s.n., US04675708 <http://n2t.net/ark:/65665/338668d00-ee81-47c9-b23b-3af64b75d695>); *ibid.*, 16 Mar. 1924, Standley 37811 (JE s.n., US04627043 <http://n2t.net/ark:/65665/39766537c-664a-45d1-a229-c4f4305d275a>).

Currently accepted name: *Plagiochila aerea* Taylor (cf. Grolle and Heinrichs 1999).

**\*\* *Plagiochila bursata* Lindenb. var. *pilistipula***

**Herzog ex Carl**, Ann. Bryol. Suppl. 2: 67, 1931 (Carl 1931), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: Costarica, Standley [...]; n. 36.300, 37.811, 52.161 (var. *pilistipula* Hzg.).

Original material: Costa Rica, La Hondura, Province of San José, altitude 1300–1700 m, 2–4 Mar. 1924, Standley 36300 (JE s.n., US04675708 <http://n2t.net/ark:/65665/338668d00-ee81-47c9-b23b-3af64b75d695>); *ibid.*, 16 Mar. 1924, Standley 37811 (JE s.n., US04627043 <http://n2t.net/ark:/65665/39766537c-664a-45d1-a229-c4f4305d275a>); Cerro de las Caricias, north of San Isidro, Provincia de Heredia, altitude 2000–2400 m, 11 Mar. 1926, Standley & Valerio 52161 (JE s.n., M, US04626933 <http://n2t.net/ark:/65665/39578e3d5-167d-4192-a7a2-336e06f0c5e6>).

Note. Standley & Valerio 52161 (US04626933) is filed as *Plagiochila semidecurrens* (Lehm. et Lindenb.) Lindenb.

Currently accepted name: *Plagiochila aerea* Taylor (cf. Grolle and Heinrichs 1999).

**\*\* *Plagiochila bursata* Lindenb. f. *tenera* Herzog**,

Rev. Bryol. Lichénol. 11(1/2): 16, 1938 (Herzog



1938), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: Costa Rica, La Estrella, Prov. Cartago ([Standley] n. 39.460); Cerro de las Lajas, Prov. Heredia, 2000–2400 m. ([Standley] n. 51.505); Cerros de Zurqui, Prov. Heredia, 2000–2400 m. ([Standley] n. 50.299, 50.709); Las Nubes, Prov. S. José, 1500–1900 m. ([Standley] n. 38.479).

Original material: Costa Rica, La Estrella, Province of Cartago, 26–27 Mar. 1924, Standley 39460 (US04675707 <http://n2t.net/ark:/65665/3977c943f-6c69-4ef7-83f8-30fc929bfb817>); Cerro de las Lajas, north of San Isidro, Provincia de Heredia, altitude 2000–2400 m, 7 Mar. 1926, Standley & Valerio 51505 (US04627055 <http://n2t.net/ark:/65665/30cc6abf3-82de-494b-939a-0aedc2256b8b>, JE s.n.); Cerros de Zurquí, northeast of San Isidro, Provincia de Heredia, altitude 2000–2400 m, 3 Mar. 1926, Standley & Valerio 50299 (US04627054 <http://n2t.net/ark:/65665/34e92e297-2c48-40cc-8b42-a0b79772318e>, JE s.n.); *ibid.*, 3 Mar. 1926, Standley & Valerio 50709 (US04627056 <http://n2t.net/ark:/65665/3a52bef74-e37c-4d48-b3ab-8d41e26f82f8>, JE s.n., M); Las Nubes, Province of San José, altitude 1500–1900 m, 20–22 Mar. 1924, Standley 38479 (US04627052 <http://n2t.net/ark:/65665/3cfb6f2d1-936c-4e9b-92c8-cf4f86a6c3dc>).

Currently accepted name: *Plagiochila aerea* Taylor (cf. Grolle and Heinrichs 1999).

\*\* *Plagiochila caudatodecurrens* Herzog ex Carl, Ann. Bryol., Suppl. 2: 50, 1931 (Carl 1931), nom. inval. (ICN Art. 38.1(a); no description)

Original citation: Costa Rica, Standley n. 43.324.

Original material: Costa Rica, vicinity of Santa María de Dota, Provincia de San José, altitude 1500–1800 m, on tree, 26 Dec. 1925, Standley & Valerio 43324 (JE04008791 <https://je.jacq.org/JE04008791>).

Currently accepted name: *Plagiochila raddiana* Lindenb. (cf. Morales 1991).

*Plagiochila choachina* Gottsche var. *plurispina* Herzog, Rev. Bryol. Lichénol. 11(1): 15, 1939 (Herzog 1938)

Original citation: Costa Rica, Laguna de la Chonta, n. e. of Sta Maria de Dota, Prov. Heredia, 2000–2400 m., on tree ([Standley] n. 50.627), Yerba Buena, Prov. Heredia, 2000 m., on tree ([Standley] n. 49.889/a).

Lectotype (here designated): Costa Rica, Yerba Buena, Prov. Heredia, 2000 m., on tree, Standley 49889a (JE04010917 <https://je.jacq.org/JE04010917>; synlectotype Standley 50627 US04627074 <http://n2t.net/ark:/65665/33b491946-552f-4f10-9c6a-a178f94d7d06>).

Currently accepted name: *Plagiochila punctata* (Taylor) Taylor (cf. Morales 1991).

*Plagiochila confundens* Lindenb. ex Hampe et Gottsche var. *alpinoides* Herzog, Ann. Bryol. 4: 126, 1931 (Verdoorn 1931)

Original citation: Panama, Hep. Sel. Crit. 9.

Lectotype (here designated): Panama, Peninsula Azuero, Cerro Canajaque, K. Troll, Hepat. Sel. Crit. 9 (JE04008925 <https://je.jacq.org/JE04008925>; isolectotypes CANM-10526, MO, and several other herbaria).

Note. This exsiccatae exists in several herbaria, but the specimen in JE is annotated by Herzog as original material.

Currently accepted name: *Plagiochila confundens* is a synonym of *Plagiochila simplex* (Sw.) Lindenb. (cf. Heinrichs et al. 1998b) but it is unclear to us if the variety also belongs to that species.

\*\* *Plagiochila contingens* Gottsche f. *longifolia* Herzog, Rev. Bryol. Lichénol. 11(1): 10, 1939 (Herzog 1938), nom. inval. (ICN Art. 39.1; no Latin description)

Original citation: [Costa Rica] Yerba Buena, Prov. de Heredia, ca 2000 m., on tree ([Standley] n. 49.875, c. per.; Cerro de las Caricias, Prov. de Heredia, 2000–2400 m ([Standley] n. 52.101).

Original material (cf. Heinrichs 2002: 111): Costa Rica, Heredia, Yerba Buena NE of San Isidro, 2000 m, 1926, Standley & Valerio 49875 (JE s.n., US04627085 <http://n2t.net/ark:/65665/3edcfa105-f1fd-44f9-8611-692810f6b55b>), Cerro de las Caricias, N of San Isidro, 2000–2400 m, 1926, Standley & Valerio 52101 (JE s.n., US04627083 <http://n2t.net/ark:/65665/3d5b899cc-096b-459d-9c67-82139fef5d38>).

Currently accepted name: *Plagiochila superba* (Nees ex Spreng.) Mont. et Nees (cf. Heinrichs 2002).

\*\* *Plagiochila contingens* Gottsche f. *minor* Herzog, Rev. Bryol. Lichénol. 11(1): 10, 1939 (Herzog 1938), nom. inval. (ICN Art. 39.1; no Latin description)

Original citation: [Costa Rica] La Hondura, Prov. de S. José, 1500–1700 m ([Standley] n. 37.812, ster.).

Original material: Costa Rica, La Hondura, Prov. de S. José, 1500–1700 m, Standley 37812 (JE s.n., US00289477 <http://n2t.net/ark:/65665/32d5ebd32-07d4-4ad9-ac3b-6a4f88fccd2f>).

Currently accepted name: *Plagiochila turgida* Herzog ex Carl (cf. Heinrichs 2002).

\*\* *Plagiochila crassiretis* Herzog ex Carl, Ann. Bryol. Suppl. 2: 70, 1931 (Carl 1931), nom. inval. (ICN Art. 38.1(a); no description)

Original citation: Costa Rica, Standley n. 39.060.

Original material (cf. Heinrichs 2002: 148): Costa Rica, Cartago, Alto de La Estrella, 1924, Standley 39060 (JE04010813 <https://je.jacq.org/JE04010813>).

Currently accepted name: *Plagiochila macra* Taylor (cf. Heinrichs 2002 under *Plagiochila heterophylla* Lindenb. var. *beauverdii* (Steph.) Heinrichs and Gradstein 2016).

***Plagiochila crispatodecurrens* Herzog**, Hedwigia 72(6): 214, 1932 ([Herzog 1932](#))

Original citation: Costa Rica, 'Vicinity of Pejivalle, Prov. de Cartago, alt. about 900 m, on tree' (leg. P. C. Standley, n. 46.747, 7.18. II. 1926, c. per.).

Lectotype ([Heinrichs and Gradstein 2000: 176](#) as 'holotype'): Costa Rica, Cartago, Vicinity of Pejivalle, ca 900 m, Standley & Valerio 46747 (JE04010924 <https://je.jacq.org/JE04010924>; isolectotypes US00073027 <http://n2t.net/ark:/65665/3430205ff-0856-4560-b13c-f2297f8062e6>, F-C0000335F <https://collections-botany.fieldmuseum.org/catalogue/1767912>).

Currently accepted name: *Plagiochila raddiana* Lindenb. (cf. [Heinrichs and Gradstein 2000](#)).

***Plagiochila cristata* (Sw.) Lindenb. var. *minor* Herzog**, Rev. Bryol. Lichénol. 11(1): 14, 1939 ([Herzog 1938](#))

Original citation: Costa Rica, La Palma, Prov. San José, 1600 m., on tree ([Standley] n. 38.338; Alto de la Estrella, prov. Cartago, on tree ([Standley] n. 39.050).

Lectotype (here designated): Costa Rica, Alto de la Estrella, prov. Cartago, on tree, Standley 39050 (JE04010983 <https://je.jacq.org/JE04010983>; isolectotype F-C0000334F ex US <https://collections-botany.fieldmuseum.org/catalogue/58348>; synlectotypes Standley 38338 JE04010985 <https://je.jacq.org/JE04010985>, JE04010984 <https://je.jacq.org/JE04010984>).

Currently accepted name: According to [Heinrichs et al. \(1998a\)](#) the specimen does not belong to *Plagiochila cristata*, but a determination is not provided.

***Plagiochila densiflora* Herzog**, Hedwigia 72(6): 226, 1932 ([Herzog 1932](#))

Original citation: Costa Rica, 'Yerba Buena, n. e. of San Isidro, Prov. de Heredia, alt. about 2000 m, on tree' (leg. P. C. Standley, n. 49.134, 22./28. II. 1926, c. per.).

Lectotype (here designated): Costa Rica, Heredia, San Isidro, Yerba Buena, 1926, Standley 49134 (JE04010971 <https://je.jacq.org/JE04010971>; isolectotypes US00073032 <http://n2t.net/ark:/65665/371295c4d-39d7-469d-be79-8705e24c3a0e>, PC0103076 <https://science.mnhn.fr/institution/mnhn/collection/pc/item/pc0103076>, F-C0000333F <https://collections-botany.fieldmuseum.org/catalogue/1767914>).

Note. It is probable that T. Herzog has seen all syntypes, but he has definitely seen this one.

\*\* ***Plagiochila distinctifolia* Lindenb. f. *crassiretis* Herzog ex Carl**, Ann. Bryol., Suppl. 2: 81, 1931 ([Carl 1931](#)), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: Costarica, Standley [...]; n. 35.668.

Original material: Costa Rica. Cerro de La Carpintera, Province of Cartago; altitude 1500–1850 m, February 1924, *Standley 35668* (JE s.n., US04627127 <http://n2t.net/ark:/65665/351388952-8f2d-4889-8fd5-596e4ecd5228>).

[.net/ark:/65665/351388952-8f2d-4889-8fd5-596e4ecd5228](http://n2t.net/ark:/65665/351388952-8f2d-4889-8fd5-596e4ecd5228)).

Currently accepted name: *Plagiochila distinctifolia* Lindenb. (c.f. [Herzog 1938](#)).

\*\* ***Plagiochila distinctifolia* Lindenb. f. *linearifolia* Herzog**, Rev. Bryol. Lichénol. 11(1): 15, 1939

([Herzog 1938](#)), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: Costa Rica: [...]; Cerro de Las Lajas, Prov. Heredia, 2600–2400 m, on tree ([Standley] n. 51.512).

Original material Costa Rica, Heredia, Cerro de Las Lajas N of San Isidro, 2000–2400 m, 7 May 1926, Standley & Valerio 51512 (JE s.n. [c. per.] (c.f. [Heinrichs et al. 2001: 352](#)); US04627125 (<http://n2t.net/ark:/65665/3de3ecff1-4a20-4e8c-be69-4ef28172c70c>).

Currently accepted name: *Plagiochila rutilans* Lindenb. var. *rutilans* (cf. [Heinrichs et al. 2001](#)).

***Plagiochila dotensis* Herzog**, Hedwigia 72: 211.1932 ([Herzog 1932](#))

Original citation: Costa Rica, 'Vicinity of Sta Maria de Dota, Prov. de San Jose, alt. 1500– 1800 m, on tree' (leg. P. C. Standley, n. 43.141, 43.145 und 43.235, 26. XII. 1925 bis 3. I. 1926, ♀ und ♂).

Lectotype ([Heinrichs et al. 2000: 127](#)): Costa Rica, San José, vicinity of Santa María de Dota, 1500–1800 m, Standley & Valerio 43141 (JE04010961 <https://je.jacq.org/JE04010961>; isolectotypes F, NY, US; synlectotypes JE04010962 <https://je.jacq.org/JE04010962>, JE04010963 <https://je.jacq.org/JE04010963>).

Currently accepted name: *Plagiochila diversifolia* Lindenb. et Gottsche (cf. [Heinrichs et al. 2000](#)).

***Plagiochila eurydictyon* Herzog**, Hedwigia 72: 207, 1932 ([Herzog 1932](#))

Original citation: Costa Rica, 'Cerro de las Caricias, n. of San Isidro, Prov. de Heredia, alt. 2000–2400 m, on wet rocks' (leg. P. C. Standley, n. 51.956, ll. III. 1926).

Lectotype ([Müller et al. 1999: 741](#) as 'holotype'): Costa Rica, Heredia, Cerro de las Caricias, N of San Isidro, on wet rocks, 2000–2400 m, Standley 51956 (JE04007587 <https://je.jacq.org/JE04007587>; isolectotype US00073039, <http://n2t.net/ark:/65665/30560bc17-f420-46ef-a3f9-955f3f03a7b5>).

\*\* ***Plagiochila exalata* Herzog ex Carl**, Ann. Bryol. Suppl. 2: 62, 1931 ([Carl 1931](#)), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: Costarica, Standley n. 49.877, 49.826 und 52.164.

Original material: Costa Rica. Yerba Buena, NE of San Isidro, Prov. de Heredia, 2000 m, on tree, Standley & Valerio 49877 (JE04001601 <https://je.jacq.org/JE04001601>; US00073041 <http://n2t.net/ark:/65665/3fae69d29-effa-44ab-8f09-ef3c301548ae>), 49826 (JE04001602 <https://je.jacq.org/JE04001602>).

[je.jacq.org/JE04001602](http://je.jacq.org/JE04001602), US00073040 <http://n2t.net/ark:/65665/31be1a165-34f3-44bc-8598-cd02e03329ea>), Costa Rica, Heredia, Cerro de las Caricais, N of San Isidro, 2000 m, 1926, Standley & Valerio 52164 (US04627148 <http://n2t.net/ark:/65665/3ae4cb7bb-072c-4f47-935b-a060d158bb85>).

Currently accepted name: *Plagiochila breuteliana* Lindenb. (cf. [Heinrichs 2002](#)).

***Plagiochila exalata* Herzog**, Hedwigia 72: 200, 1932 ([Herzog 1932](#))

Original citation: Costa Rica, ‘Cerro de las Caricias, n. of. San Isidro, Prov. de Heredia, alt. 2000–2400 m, on tree’ (leg. P. C. Standley, n. 49.877, 22./28. II. 1926).

Lectotype (here designated, cf. [Heinrichs 2002: 76](#)): Costa Rica, Heredia, Yerba Buena (not ‘Cerro de las Caricias’ as stated in the protologue), NE of San Isidro, ca 2000 m, 1926, Standley & Valerio 49877 (JE04001601 <https://je.jacq.org/JE04001601>); isolectotypes US00073041 <http://n2t.net/ark:/65665/3fae69d29-ffa-44ab-8f09-ef3c301548ae>, B-13058, FH, PC).

Note. [Heinrichs \(2002\)](#) stated that the JE material was the ‘holotype’ and the other materials ‘isotypes’. However, as Herzog did not specify any holotype, a lectotype must be selected. Since [Heinrichs \(2002\)](#) was published after 1 January 2001 and no lectotype has been selected therein (cf. ICN2018 Art. 7.10), we formally lectotypify it here with the ‘holotype’ of [Heinrichs \(2002\)](#).

Currently accepted name: *Plagiochila breuteliana* Lindenb. (cf. [Heinrichs 2002](#)).

***Plagiochila exalata* Herzog f. *brevifolia* Herzog**, Hedwigia 72: 200, 1932 ([Herzog 1932](#))

Original citation: ‘Cerro de las Caricias, n. of. San Isidro, Prov. de Heredia, alt. 2000–2400 m, on tree’ [...]; *ibidem* (leg. P. C. Standley, n. 49.826).

Lectotype (here designated): Costa Rica, Heredia, Yerba Buena (not ‘Cerro de las Caricias’ as stated in the protologue, NE of San Isidro, ca 2000 m, 1926, Standley & Valerio 49826 (JE04001602 <https://je.jacq.org/JE04001602>); isolectotype FH, US00073040 <http://n2t.net/ark:/65665/31be1a165-34f3-44bc-8598-cd02e03329ea>).

Note. A lectotypification is needed for the same reason as for the previous entry.

Currently accepted name: *Plagiochila breuteliana* Lindenb. (cf. [Heinrichs 2002](#)).

***Plagiochila funkiana* Steph. var. *trilaciniata* Herzog**, Hedwigia 72: 238, 1932 ([Herzog 1932](#))

Original citation: Costa Rica, Standley 50664.

Lectotype: (here designated): Costa Rica, Cerros de Zurqui, northeast of San Isidro, Provincia de Heredia, altitude 2000–2400 m, 3 Mar. 1926, Paul C. Standley & Juvenal Valerio 50664 (JE04010831 <https://je.jacq.org/>

JE04010831; isolectotype US04627152 <http://n2t.net/ark:/65665/3e3c0fa2c-72f4-44f6-bd11-dafbd8de9150>).

Note. It is probable that T. Herzog did see both specimens but the selected lectotype is from his personal herbarium. The latter is identified as *Plagiochila beauverdii* Steph. by [Heinrichs and Renker \(2001\)](#).

Currently accepted name: *Plagiochila macra* Taylor (cf. [Heinrichs and Renker 2001](#) as *Plagiochila beauverdii* Steph. and [Gradstein 2016](#)).

***Plagiochila grandifolia* Steph.**, Sp. Hepat. 6: 160, 1918 ([Stephani 1918](#))

Original citation: Hab. *Costarica*. Cartago. (Werckle legit.).

Lectotype (Bonner 1962a: 127, also Müller et al. 1999: 732 as ‘holotype’): Costa Rica, Cartago, 1500 m, V 1900, Wercklé s.n., hb Levier 6267 (G00061423 [www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=127763&lang=en](http://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=127763&lang=en), isolectotypes JE04007571 <https://je.jacq.org/JE04007571>, JE04007572 <https://je.jacq.org/JE04007572>, M).

Currently accepted name: *Plagiochila alternans* Lindenb. et Gottsche (cf. [Herzog 1955](#)).

***Plagiochila hondurensis* Herzog ex Carl**, Ann. Bryol. Suppl. 2: 78, 1931 ([Carl 1931](#))

Original citation: *Costarica*, Standley n. 37.139 und 44.590; – *Honduras*, Standley n. 54.564.

Lectotype (Heinrichs et al. 1999: 172): Costa Rica, Limón, Guapiles, 300–500 m, Standley 37139 (JE04001523, <https://je.jacq.org/JE04001523> [male], proposed by [Grolle 1962](#), in sched.; synlectotype Standley 44 590 JE04001518 <https://je.jacq.org/JE04001518>, Standley 54564 JE04001520 <https://je.jacq.org/JE04001520>).

Currently accepted name: *Plagiochila subplana* Lindenb. (cf. [Heinrichs et al. 1999](#)).

**\*\* *Plagiochila hypnoides* Willd. ex Lindenb. var.**

***brevifolia* Herzog ex Carl**, Ann. Bryol. Suppl. 2: 57, 1931 ([Carl 1931](#)), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: *Costarica*, Standley [...]; n. 48.887 (var. *brevifolia* Hzg.)

Original material (cf. [Heinrichs and Gradstein 2000: 170](#)): ‘Costa Rica, Limon, Hamburg Finca on the Río Limon below Cairo, 55 m, Standley & Valerio 48887’ (JE04010839 <https://je.jacq.org/JE04010839>, US00073050 <http://n2t.net/ark:/65665/30ba6dc67-9c4e-4caf-a778-9ac694efdef5>).

Currently accepted name: *Plagiochila montagnei* Nees (cf. [Heinrichs and Gradstein 2000](#)).

***Plagiochila hypnoides* Willd. ex Lindenb. var.**

***brevifolia* Herzog**, Rev. Bryol. Lichénol. 11: 13, 1938 ([Herzog 1938](#))

Original citation: Costa Rica, Hamburg Finca, Río Reventazón, ca 55 m ([Standley] 48.887).



Lectotype (Heinrichs and Gradstein 2000: 170 as ‘holotype’): Costa Rica, Limón, Hamburg Finca on the Río Limon below Cairo, 55 m, Standley & Valerio 48887 (JE04010839 <https://je.jacq.org/JE04010839>; isolectotype US00073050 <http://n2t.net/ark:/65665/30ba6dc67-9c4e-4caf-a778-9ac694efdef5>).

Currently accepted name: *Plagiochila montagnei* Nees (cf. Heinrichs and Gradstein 2000).

**\*\* *Plagiochila hypnoides* Willd. ex Lindenb. f. *minor* Herzog ex Carl**, Ann. Bryol. Suppl. 2: 57, 1931 (Carl 1931), nom. inval. (ICN Art. 38.1(a); no description)

Original citation: Costarica, Standley [...]; n. 25.678 (f. *minor* Hzg.).

Original material (cf. Heinrichs and Gradstein 2000: 170): Panama (not Costa Rica, as published in Carl [1931: 57]), Canal Zone, Las Cascadas Plantation, Standley 25678 (JE04010840 <https://je.jacq.org/JE04010840>, US04627171 (<http://n2t.net/ark:/65665/39a449ff6-e5d6-4009-8339-e7ab3642785c>)).

Currently accepted name: *Plagiochila montagnei* Nees (cf. Heinrichs and Gradstein 2000).

**\*\* *Plagiochila hypnoides* Willd. ex Lindenb. f. *propagulifera* Herzog**, Rev. Bryol. Lichénol. 11: 13, 1939 (Herzog 1938), nom. inval. (ICN2018 Art. 38.1(a); no description)

Original citation: Costa Rica: [...], Finca Montecristo, Río Reventazón, ca 25 m ([Standley] 48.511).

Original material (cf. Heinrichs and Gradstein 2000: 171): Costa Rica, Limon, Finca Montecristo on the Río Reventazón below Cairo, 25 m, Standley & Valerio 48511 (JE s.n., US04627166 <http://n2t.net/ark:/65665/38bd0d15a-b00a-41e4-a81b-3f33b2d2a401>).

Currently accepted name: *Plagiochila montagnei* Nees (cf. Heinrichs and Gradstein 2000).

***Plagiochila integricrista* Herzog**, Rev. Bryol. Lichénol. 11(1): 14, 1939 (Herzog 1938)

Original citation: Costa Rica, La Hondura, Prov. S. José, 1300–1700 m, on tree, ([Standley] n. 36.212).

Lectotype (**here designated**, cf. Heinrichs 2002: 131 as ‘holotype’): Costa Rica, San José, La Hondura, 1300–1700 m, 1924, Standley 36212 (JE04009193 <https://je.jacq.org/JE04009193>; isolectotype US00073025 <http://n2t.net/ark:/65665/31fbb9d83-2e20-49c4-8b5b-46222ae85a5a>).

Note. Heinrichs (2002) called the JE specimen ‘holotype’ and the US specimen ‘isotype’. However, after 1 January 2001 this can not be accepted as a lectotypification. Thus, we here formally lectotypify the name with Heinrichs’ (2002) ‘holotype’.

Currently accepted name: *Plagiochila grandicrista* Steph. (cf. Heinrichs 2002).

***Plagiochila leptodictyon* Herzog ex Carl**, Ann. Bryol. Suppl. 2: 78, 1931 (Carl 1931)

Original citation: Costarica, Standley n. 36.815.

Lectotype (Heinrichs et al. 1999: 172 as ‘holotype’): Costa Rica, Limón, La Colombiana Farm of the United Fruit Company, 70 m, Standley 36815 (JE04001539 <https://je.jacq.org/JE04001539>, isolectotypes PC0103079, US00073053).

Currently accepted name: *Plagiochila subplana* Lindenb. (cf. Heinrichs et al. 1999).

**\*\* *Plagiochila longaeva* Herzog ex Carl**, Ann. Bryol. Suppl. 2: 63, 1931 (Carl 1931), nom. inval. (ICN Art. 38.1(a); no description)

Original citation: Costarica, Standley n. 52.297.

Original material: ?

Note. We have not found any material corresponding to this collection number and think it is a misprint for ‘52292’ and thus the same as in Herzog (1932).

Currently accepted name: *Plagiochila turgida* Herzog ex Carl (cf. Heinrichs 2002).

***Plagiochila longaeva* Herzog**, Hedwigia 72: 201, 1932 (Herzog 1932)

Original citation: Costa Rica, ‘Cerro de las Caricias, n. of San Isidro, Prov. de Heredia, alt. 2000–2400 m, on tree’ (leg. P. C. Standley, n. 52.292, 11. III. 1926, c. per.).

Lectotype (**here designated**, cf. Heinrichs et al. 2002: 116 as ‘holotype’): Costa Rica, Heredia, Cerro de las Caricias, N of San Isidro, 2000–2400 m, 1926, Standley 52292 (JE04008966 <https://je.jacq.org/JE04008966>; isolectotypes B, FH, PC0097287, US00073054).

Note. Heinrichs (2002) ‘holotype’ cannot to be accepted as a lectotype as it was published after 1 January 2001 (cf. ICN2018 Art. 7.11) and we here formally designate it as lectotype.

Currently accepted name: *Plagiochila turgida* Herzog ex Carl (cf. Heinrichs 2002).

***Plagiochila oerstediana* Lindenb. et Hampe**, Linnaea 24(3): 301, 1851 (Hampe 1851)

Original citation: Hab. in Costa rica in mont. 5–8000’.

Syntypes: JE04010838 <https://je.jacq.org/JE04010838> ‘a single shoot’ (microslide), G three specimens, PC two specimens, S three specimens, C, BM?

Note. The name needs to be lectotypified preferably with a specimen from Hampe’s herbarium in BM.

***Plagiochila parcisipina* Herzog**, Beih. Bot. Centralbl. 61(B): 565, 1942 (Herzog 1942)

Original citation: Costa Rica, La Palma, Prov. San José, ca 1600 m, on tree, leg. P. C. Standley, n. 33.196.

Lectotype (**here designated**, cf. Heinrichs 2002: 111 as ‘holotype’): Costa Rica, San José, La Palma, 1600 m, 1924, Standley 33196 (JE04008940 <https://je.jacq.org/JE04008940>; isolectotype US00073067 <http://n2t.net/ark:/65665/36a18f1e8-3436-4b65-b745-5d836c8ff456>).

Note. Heinrichs (2002) ‘holotype’ is too late to accept as a lectotype (cf. ICN2018 Art. 7.11) but we select the same specimen as lectotype here.



Currently accepted name: *Plagiochila superba* (Nees ex Spreng.) Mont. et Nees (cf. [Heinrichs 2002](#)).

***Plagiochila patriciae* Heinrichs et H. Anton**, Bryophyt. Biblioth. 58: 107, 2002 ([Heinrichs 2002](#))

Original type citation: Costa Rica, Cartago: Reserva Tres de Junio, Panamerican Highway (km 67), 2600 m, 1999, Heinrichs et al. 4349, holotype GOET, isotypes G, JE, NY, MO.

Holotype: Costa Rica, Cartago, Panamerican Highway (Km 67), Reserva 3 de Junio, 2600 m, 1999, Heinrichs et al. 4349 (GOET11619 [https://gwdu64.gwdg.de/pls/herbar/moos\\$moos.QueryViewByKey?P\\_ID=11619&Z\\_CHK=2109](https://gwdu64.gwdg.de/pls/herbar/moos$moos.QueryViewByKey?P_ID=11619&Z_CHK=2109); isotypes G00128925 [www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=285899&lang=en](http://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=285899&lang=en), JE04001528 <https://je.jacq.org/JE04001528>, NY, MO5381551 [www.tropicos.org/specimen/90158121](http://www.tropicos.org/specimen/90158121)).

***Plagiochila permista* Spruce var. *subintegerrima***

**Herzog**, Rev. Bryol. Lichénol. 11(1): 12, 1939 ([Herzog 1938](#))

Original citation: Costa Rica, Cerro de las Vueltas, 2700–3000 m., wet bank ([Standley] 43.536).

Lectotype (here designated, cf. [Rycroft et al. 2001: 24](#) as 'holotype'): Costa Rica, San José: Cerro de las Vueltas, 2700–3000 m, Standley & Valerio 43582 (JE04009219 <https://je.jacq.org/JE04009219>; isolectotypes US00072818 <http://n2t.net/ark:/65665/3bf25a3c9-e68b-4e6c-b864-42b1da78c1cf>, NY1020838 <http://sweetgum.nybg.org/science/vh/specimen-details/?irn=1115877>).

Note. [Rycroft et al. \(2001\)](#) named the selected specimen 'holotype' but as there is type material in at least three herbaria a lectotype must be selected. However, [Rycroft et al.'s \(2001\)](#) 'holotype' cannot be accepted as a lectotypification as it was published after 1 January 2001 (cf. ICN2018 Art. 7.11) so we here formally designate the same specimen as lectotype.

Currently accepted name: *Plagiochila retrorsa* Gottsche (cf. [Rycroft et al. 2001](#)).

***Plagiochila platyphylla* Herzog**, Hedwigia 72: 223, 1932 ([Herzog 1932](#))

Original citation: Costa Rica, 'Southern slope of Volcan de Turrialba, near the Finca del Volcan de Turrialba, alt. about 2000–2400 m, on tree' (leg. P. C. Standley, n. 35.100, 22. II. 1924, c. per.).

Lectotype (here designated): Costa Rica, Cartago, Turrialba, S slope of V. Turrialba, ca 2000–2400 m, 22 Feb. 1924, Standley 35100 (JE04010832 <https://je.jacq.org/JE04010832>; isolectotypes US00073070 <http://n2t.net/ark:/65665/3cb5211cd-14f7-4582-a39b-bb17aa14d55b>, F-C0000348F <https://collections-botany.fieldmuseum.org/catalogue/1767949>, PC0103081 <https://science.mnhn.fr/institution/mnhn/collection/pc/item/pc0103081?listIndex=5&listCount=32>).

***Plagiochila standleyi* Herzog ex Carl**, Ann. Bryol. Suppl. 2: 80, 1931 ([Carl 1931](#))

Original citation: Costa Rica, Standley n. 37.881 und 47.057.

Lectotype (Herzog 1932: 232): Costa Rica, La Hondura, Prov. de San Jose, alt. 1300–1700 m, on tree', 16 III 1924, Standley 37881 (JE04008803 <https://je.jacq.org/JE04008803>; isolectotype US00072809 <http://n2t.net/ark:/65665/3e7f5f6d6-6d5f-41e2-8b3d-7dbf13d2335>; synlectotype JE04008804 [https://je.jacq.org/JE04008804\\_](https://je.jacq.org/JE04008804_)).

Note. [Herzog \(1932\)](#) also described the taxon without reference to Carl but only referring to one of Standley's collection numbers (which also was one referred to by Carl) but did not state where the type is, and there is a duplicate in at least one other herbarium. However, [Heinrichs et al. \(2001\)](#) claim that the lectotype of [Herzog \(1932\)](#) is in JE, which should be taken as a second lectotypification unless ICN2018 Art. 7.11 prevents it (too late), in which case we **here designate** the same specimen JE04008803 as lectotype.

Currently accepted name: *Plagiochila rutilans* Lindenb. var. *standleyi* (Herzog ex Carl) Heinrichs et D. S. Rycroft.

***Plagiochila subatra* Steph. var. *longidecurrens***

**Herzog**, Rev. Bryol. Lichénol. 11(1): 12, 1939 ([Herzog 1938](#))

Original citation: Costa Rica, Vicinity of Sta Maria de Dota, Prov. S. José, 1500–1800 m ([Standley] n. 43.166, 43.324).

Lectotype (here designated): Costa Rica, vicinity of Santa María de Dota, Provincia de San José, altitude 1500–1800 m, on tree, Standley & Valerio 43166 (JE04008792 <https://je.jacq.org/JE04008792>; isolectotype US00072811 <http://n2t.net/ark:/65665/332ade018-155b-4648-b644-ac04b1c6dcef>; synlectotype (Standley & Valerio 43324) JE04008791 <https://je.jacq.org/JE04008791>; US04627261 <http://n2t.net/ark:/65665/3af238638-9ce3-42ca-a64b-ddaf4f912711>).

Note. The selected lectotype includes rich material.

Currently accepted name: *Plagiochila raddiana* Lindenb. (cf. [Morales 1991](#)).

***Plagiochila subglaucescens* Herzog**, Hedwigia 72:

209, 1932 ([Herzog 1932](#))

Original citation: Costa Rica, 'Vicinity of Sta Maria de Dota, Prov. de San José, alt. 1500–1880 m, on tree' (leg. P. C. Standley, n. 43.236, 26. XII. 1925, c. per.).

Lectotype (Heinrichs et al. 2000: 127 as 'holotype'): Costa Rica, San José, Vicinity of Santa Maria de Dota, 1500–1800 m, Standley & Valerio 43236 (JE04010965 <https://je.jacq.org/JE04010965>; isolectotype US00072812 <http://n2t.net/ark:/65665/35f107180-dddb-4fd3-8c2b-adceaa45f0ed>).

Currently accepted name: *Plagiochila diversifolia* Lindenb. et Gottsche (cf. [Heinrichs et al. 2000](#)).

***Plagiochila subtrinitensis* Herzog**, Hedwigia 72: 198, 1932 ([Herzog 1932](#))

Original citation: Costa Rica, ‘Cerros de Zurqui, n. e. of San Isidro, Prov. de Heredia, alt. 2000–2400 m, on tree’ (leg. P. C. Standley, n. 50.500, 3. III. 1926, c. per.); ‘La Palma, Prov. de San Jose, alt. about 1600 m, on tree’ (leg. P. C. Standley, n. 38.198, 17. III. 1924, c. per.); ‘Near Finca La Cima, above Los Lotes, north of El Copey, Prov. de San Jose, alt. 2100–2400 m, wet bank’ (leg. P. C. Standley, n. 42.689, 21./22. XII. 1925, c. per.).

Lectotype ([Heinrichs et al. 2002: 105](#)): Costa Rica, San José, La Palma, ca 1600 m, 1924, Standley 38198 (JE04010977 <https://je.jacq.org/JE04010977>; isolecotypes JE04010975 <https://je.jacq.org/JE04010975>, B-13443, FH, PC, US; synlectotype Standley 42689 JE04010976 <https://je.jacq.org/JE04010976>).

Currently accepted name: *Plagiochila deflexa* Mont. et Gottsche (cf. [Heinrichs et al. 2002](#)).

\*\* ***Plagiochila subturgida* Herzog ex Carl**, Ann. Bryol. Suppl. 2: 63, 1931 ([Carl 1931](#)), nom inval. (ICN Art. 38.1(a); no description)

Original citation: Costarica, Standley n. 47.126.

Original material: Costa Rica, Cartago, Vicinity of Pejivalle, 900 m, Standley & Valerio 47126 (JE04010812 <https://je.jacq.org/JE04010812>).

Currently accepted name: *Plagiochila canelensis* Steph. (cf. [Heinrichs 2002](#)).

\*\* ***Plagiochila subviminea* Steph. var. *paramicola* Herzog ex Carl**, Ann. Bryol. Suppl. 2: 55, 1931 ([Carl 1931](#)), nom inval. (ICN Art. 38.1(a); no description)

Original citation: Costa Rica, Standley n. 43.862.

Original material (cf. [Grolle 1972: 343](#) as ‘holotype’): Costa Rica, Cerro de Las Vueltas, Standley 43862 (JE00404866 <https://je.jacq.org/JE00404866>, US00072815).

Currently accepted name: *Adelanthus lindenbergianus* (Lehm.) Mitt. (cf. [Grolle 1972](#)).

***Plagiochila subviminea* Steph. f. *paramicola* Herzog**, Rev. Bryol. Lichénol. 11: 12, 1939 ([Herzog 1938](#)).

Original citation: Costa Rica, Cerro de Las Vueltas, wet bank in paramo ([Standley] n. 43.862).

Lectotype ([Grolle 1972: 343](#) as ‘holotype’): Costa Rica, Cerro de Las Vueltas, Standley 43862 (JE00404866, <https://je.jacq.org/JE00404866>; isolecotype US00072815 <http://n2t.net/ark:/65665/3bafcc490-98ce-4e95-9b9a-c42204d02ea5>).

Currently accepted name: *Adelanthus lindenbergianus* (Lehm.) Mitt. (cf. [Grolle 1972](#)).

***Plagiochila tenera* Steph.**, Sp. Hepat. (Stephani) 6: 231, 1921 ([Stephani 1921](#)).

Original citation: Hab. *Costarica* (Tonduz legit).

Lectotype ([Bonner 1962a: 307](#)): Costa Rica, Rio Naranjo, III 1893, Tonduz s.n., hb Levier 15653 (G00061487 [www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=126711&lang=en](http://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=126711&lang=en); isolecotypes JE s.n. microslide [www.jacq.org/detail.php?ID=1296013](http://www.jacq.org/detail.php?ID=1296013), MICH514958).

Note. Jochen Heinrichs stated on an annotation label to the lectotype that it contains two species, but a determination is lacking.

***Plagiochila tricarinata* Carl**, Ann. Bryol. Suppl.

Original citation: Costarica, Standley n. 43.582.

Lectotype (**here designated**): Costa Rica, San José, Cerro de las Vueltas, 2700–3000 m, Standley & Valerio 43582 (JE04008795 <https://je.jacq.org/JE04008795>; isolecotypes US00072818 <http://n2t.net/ark:/65665/3bf25a3c9-e68b-4e6c-b864-42b1da78c1cf>, NY1020838 <http://sweetgum.nybg.org/science/vh/specimen-details/?irn=1115877>).

Note. [Rycroft et al. \(2001\)](#) named the selected specimen ‘holotype’ but as there is type material in at least three herbaria a lectotype must be selected. However, [Rycroft et al.’s](#) ‘holotype’ is too late to take as a lectotypification but we here formally designate the specimen as lectotype.

Currently accepted name: *Plagiochila retrorsa* Gottsche (cf. [Rycroft et al. 2001](#)).

***Plagiochila trilaciniata* Herzog ex Carl**, Ann. Bryol. Suppl.

Original citation: Costarica, Standley n. 38.470.

Lectotype (**here designated**, cf. [Heinrichs 2002: 148](#) as ‘original material’): Costa Rica, San José, Las Nubes, 1500–1900 m, 1924, Standley 38470 (JE04010841 <https://je.jacq.org/JE04010841>; isolecotype US00072819 <http://n2t.net/ark:/65665/37a0e7f9f-f7df-426e-9f77-3e7aeb21e878>).

Note. [Heinrichs \(2002\)](#) considered the name invalid (ICN2018 38.1(a); i.e. no description) but there is a description in [Carl \(1931\)](#) on p. 44 which validates the name. The US specimen is regarded an isotype of *Plagiochila funkiana* Steph. var. *trilaciniata* Herzog but without image.

Currently accepted name: *Plagiochila macra* Taylor (cf. [Heinrichs 2002](#) under *Plagiochila heterophylla* Lindenb. var. *beauverdii* (Steph.) Heinrichs).

***Plagiochila turgida* Herzog ex Carl**, Ann. Bryol. Suppl. 2: 63, 1931 ([Carl 1931](#))

Original citation: Costarica, Standley n. 33.935 (Orig.).

Lectotype (**here designated**, cf. [Heinrichs 2002: 116](#) as ‘holotype’): Costa Rica, Cartago, El Muñeco, S of Navarro, ca 1400 m, 1924, Standley 33935 (JE04001527 <https://je.jacq.org/JE04001527>; isolecotypes B, US00072821 <http://n2t.net/ark:/65665/3776a8154-9166-4419-a9a5-ac0a5e8c326f>).

Note. [Heinrichs’ \(2002\)](#) ‘holotype’ is too late to be accepted as a lectotype and we here formally lectotypify it with the same specimen.

\*\* ***Plagiochila vincentina* Lindenb. f. *minor* Herzog ex Carl**, Ann. Bryol. Suppl. 2: 52, 1931 ([Carl 1931](#)), nom. inval. (ICN Art. 38.1(a); no description)

Original citation: Costarica, Standley n. 48.480.

Original material (cf. [Heinrichs 2002: 119](#)): Costa Rica, Limón, Finca Montecristo on the Rio Reventazón below Cairo, ca 25 m, Standley & Valerio 48480 (B, JE s.n., US04627276 <http://n2t.net/ark:/65665/m36712924-9-547b-4cab-8dbb-c2f04f4867d1>).

Currently accepted name: *Plagiochila vincentina* Lindenb. (cf. [Heinrichs 2002](#)).

**\*\**Plagiochila vincentina* Lindenb. f. *minor* Herzog,**

Rev. Bryol. Lichénol. 11(1/2): 11, 1938 ([Herzog 1938](#)), nom. inval. (ICN Art. 38.1(a); no description)

Original citation: Costa Rica, Standley n. 48.480

Original material (cf. [Heinrichs 2002: 119](#)): Costa Rica, Limón, Finca Montecristo on the Rio Reventazón below Cairo, ca 25 m, Standley & Valerio 48480 (B, JE s.n., US04627276 <http://n2t.net/ark:/65665/m36712924-9-547b-4cab-8dbb-c2f04f4867d1>).

Currently accepted name: *Plagiochila vincentina* Lindenb. (cf. [Heinrichs 2002](#)).

***Prionolejeunea mucronata* (Sande Lac.) Steph. f.**

***minutissima* Herzog**, Rev. Bryol. Lichénol. 20: 141, 1951. ([Herzog 1951](#))

Original citation: Costa-Rica, Prov. Cartago, el Muneco, on the rio Navarro, 1400–1500 m., [Standley] n. 50.905/a.

Lectotype (**here designated**, cf. [Ilkiu-Borges 2006: 140](#) as ‘holotype’): Costa Rica, Cartago, El Muñeco, Río Navarro, 1400–1500 m., 6–7 Mar. 1926, Standley & Torres 50905a (JE04001277 <https://je.jacq.org/JE04001277>; isolectotypes JE04001278 <https://je.jacq.org/JE04001278>, B300025820 <https://herbarium.bgbm.org/object/B300025820>, S-B72010 <https://herbarium.nrm.se/specimens/B72010>).

Note. [Ilkiu-Borges \(2006\)](#) ‘holotype’ cannot be accepted as an inadvertent lectotypification as it is published after 1 January 2001 (cr. ICN2018 Art. 7.11). The selected lectotype was annotated as ‘holotypus’ by R. Grolle in 1976 and also by A.L. Ilkiu-Borges in 2003.

Currently accepted name: *Prionolejeunea muricatoserrulata* (Spruce) Steph. (cf. [Ilkiu-Borges 2006](#)).

***Ptychocoleus torulosus* (Lehm. et Lindenb.) Trevis. f.**

***parvistipulus* Herzog**, Rev. Bryol. Lichénol. 20(1/2): 135, 1952 ([Herzog 1951](#))

Original citation: Honduras, Lancetilla Valley, near Tela, 20–600 m., [Standley] n. 54.496 (spärlich).

Lectotype ([van Slageren 1985: 85](#) as ‘holotype’) or possibly holotype: Honduras, Lancetilla Valley, near Tela, 20–600 m., 14.XII.1927–15.III.1928, Standley 54496 (JE04010829 <https://je.jacq.org/JE04010829>).

Currently accepted name: *Frullanoides corticalis* (Lehm. et Lindenb.) van Slageren (cf. [van Slageren 1985](#)).

***Pycnolejeunea densistipula* (Lehm. et Lindenb.)**

**Steph. var. *dubia* Herzog**, Rev. Bryol. Lichénol. 20: 165, 1951 ([Herzog 1951](#))

Original citation: Costa Rica, Prov. Limón, vicinity of Guapiles, 300–500 m., leg. P. C. Standley, n. 37.371; Prov.

Cartago, vicinity of Pejivalle, 900 m., on tree, [Standley] n. 46.822.

Lectotype ([Grolle 1979: 180](#)): Kostarika, Prov. Limón, 300–500 m, on tree, Standley 37371 (JE04002681 <https://je.jacq.org/JE04002681>; isolectotype US00072846 <http://n2t.net/ark:/65665/36b171d03-37a9-4bb8-9f3f-16ba47cb08e2>; synlectotype Standley & Valerio 46822 JE04002680 <https://je.jacq.org/JE04002680>).

Currently accepted name: *Pycnolejeunea densistipula* (Lehm. et Lindenb.) Steph. (cf. [He 1999](#)).

***Pycnolejeunea parvilobula* Herzog ex Zwickel, Beih.**

Bot. Centralb. 49: 600, 1932 ([Zwickel 1932](#))

Original citation: Costa Rica, leg. Standley, n. 37.371 und 46.822. Herbar Herzog, Jena.

Lectotype ([Grolle 1979: 180](#); also [He 1999: 25](#)): Costa Rica, Prov. Limón, 300–500 m, on tree, Standley 37371 (JE04002681 <https://je.jacq.org/JE04002681>; isolectotype US00072846 <http://n2t.net/ark:/65665/36b171d03-37a9-4bb8-9f3f-16ba47cb08e2>).

Note. [He \(1999\)](#) regarded the name invalid (without description) but as [Zwickel \(1932\)](#) provides some description it must be regarded as valid. [Herzog \(1951\)](#) used the same gatherings as [Zwickel \(1932\)](#) when describing his *Pycnolejeunea densistipula* (Lehm. et Lindenb.) Steph. var. *dubia* Herzog with Zwickel's name as a synonym. Grolle's (1979) lectotypification can thus also stand as a lectotypification of this name.

Currently accepted name: *Pycnolejeunea densistipula* (Lehm. et Lindenb.) Steph. (cf. [He 1999](#)).

***Radula schofieldiana* K. Yamada, J. Hattori Bot. Lab.**

82: 337, 1997 ([Yamada 1997](#))

Holotype: Costa Rica, San José, La Palma, 1600 m, 17 Mar. 1924, Standley 37992 (JE04008914 <https://je.jacq.org/JE04008914>, isotype NICH432557).

***Rectolejeunea defolians* Herzog, Rev. Bryol.**

Lichénol. 20: 168. 1951 ([Herzog 1951](#))

Original citation: Costa Rica, Prov. Guanacaste, vicinity of Tilarán, 500–600 m., [Standley] n. 46.647p. – Honduras: Lancetilla Valley, near Tela, dep. of Atlántida, 20–600 m., [Standley] n. 55.626, La Fragua, Dep. of Atlántida, 20 m., [Standley] n. 55.775 (♂).

Lectotype ([Reiner-Drehwald and Grolle 2012: 475](#)): Honduras, Atlántida, Lancetilla Valley, near Tela, 20–600 m, Standley 55626 (JE04009370 <https://je.jacq.org/JE04009370>, isolectotype B 300026013 <https://herbarium.bgbm.org/object/B300026013>; synlectotypes Standley 46647 JE04009372 <https://je.jacq.org/JE04009372>, Standley 55775 JE04009371 <https://je.jacq.org/JE04009371>).

Note. The lectotype and syntype also includes small amounts of *Lejeunea succulenta* Herzog and it is likely that the type material of the latter was extracted from one of them (see above).



Currently accepted name: *Lejeunea parviloba* Ångstr. (cf. Reiner-Drehwald and Grolle 2012).

***Syzygiella apiculata* Herzog**, Beih. Bot. Centralbl. 61B (3): 563, 1942 (Herzog 1942)

Original citation: Costa Rica, La Palma, Prov. San José, ca 1600 m, wet bank (leg. P. C. Standley n. 32.937/a).

Lectotype (Inoue 1966: 198 as 'type'): Costa Rica, La Palma, S. José, ca 1600 m, Standley 32937a (JE04007064 <https://je.jacq.org/JE04007064>, isoelectotypes JE04007063 <https://je.jacq.org/JE04007063>, B300012154 <https://herbarium.bgbm.org/object/B300012154>).

Currently accepted name: *Syzygiella macrocalyx* (Mont.) Spruce (cf. Inoue 1966).

***Syzygiella appendiculata* Herzog**, Rev. Bryol. Lichénol. 11(1): 7, 1939 (Herzog 1938)

Original citation: Costa Rica, Las Nubes, Prov. S. José, 1500–1900 m., on tree (n. 38.494, 38.770) ; Las Nubes, wet open bank (n. 38.435).

Lectotype (Inoue 1966: 202): Costa Rica, Las Nubes, S. José, 1500–1900 m, Standley 38435 (S-B47753 <https://herbarium.nrm.se/specimens/B47753>, M). Second-step lectotypification (here designated): (M-0082572; isoelectotypes JE04007029 <https://je.jacq.org/JE04007029>, US00072916, B300012155, S-B47753; synlectotypes Standley 38770 JE04007027 <https://je.jacq.org/JE04007027>, Standley 38494 <https://je.jacq.org/JE04007028>).

Note. Feldberg et al. (2011: 691) lectotypified it with the same gathering but did choose the specimen in JE04007029 (<https://je.jacq.org/JE04007029>) as lectotype with isoelectotypes M, US00072916, B300012155, S-B47753). As Inoue's (1966) lectotypification is earlier, the specimen in S or M must be selected as lectotype. H. Inoue did not annotate any of the cited specimens. We here select the M specimen as lectotype as it is stated on the label that T. Herzog identified it.

Currently accepted name: *Syzygiella concreta* (Gottsche) Spruce (cf. Feldberg et al. 2011).

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

Original citation: Costa Rica, southern slope of the Volcán de Turrialba, 2000–2400 m., on tree ([Standley] n. 35.157).

Lectotype (Inoue 1966: 199 as 'type'): Costa Rica, southern slope of the Volcán de Turrialba, 2000–2400 m, on tree, Standley 35157 (JE). Secondary lectotypification (here designated): JE04007067 <https://je.jacq.org/JE04007067>, isoelectotypes JE04007066 <https://je.jacq.org/JE04007066>, US00070931 <http://n2t.net/ark:/65665/3e614bf39-67f4-43ad-a9e8-15365855ae6e>, B30001256 <https://herbarium.bgbm.org/object/B300012156>.

Note. There are two possible type specimens in JE. The selected lectotype is marked 'Typus!' with T. Herzog's handwriting.

***Syzygiella gracillima* Herzog**, Rev. Bryol. Lichénol. 11: 9, 1939 (Herzog 1938)

Original citation: Costa Rica, El Gallito, 2000 m. (leg. Valerio n. 60).

Lectotype (Inoue 1968: 306 as 'type'): Costa Rica, El Gallito, 2000 m. alt., 28.X.1928 Valerio 60 (JE04007078 <https://je.jacq.org/JE04007078>, isoelectotype B300012160 <https://herbarium.bgbm.org/object/B300012160>).

Currently accepted name: *Syzygiella perfoliata* (Sw.) Spruce (cf. Inoue 1966).

**\*\* *Syzygiella tonduzana* Steph. f. *depauperata***

**Herzog**, Rev. Bryol. Lichénol. 11(1): 7, 1938 (Herzog 1938), nom. inval. (ICN Art. 38.1(a); no description)

Original citation: [Costa Rica] La Hondura, 1300–1700 m, on tree ([Standley] n. 36.299).

Original material: Costa Rica, La Hondura, Province of San José, altitude 1300–1700 m, on tree, 2–4 Mar. 1924, Standley 36299 (JE04007163 <https://je.jacq.org/JE04007163>).

Currently accepted name: *Syzygiella tonduzana* Steph., **syn. nov.**

Note. The original material is referred to the type by S.R. Gradstein in a note on the specimen.

***Syzygiella tonduzana* Steph. f. *setulosa* Herzog ex Carl**, Hedwigia 71: 288, 1931 (Carl 1931)

Original citation: Costa Rica, P. C. Standley n. 38.013.

Lectotype (here designated): Costa Rica, La Palma, prov. San José, 1600 m, 17 Mar. 1924, Standley 38013 (JE04007164 <https://je.jacq.org/JE04007164>, isoelectotypes B-12171, US00072919 <http://n2t.net/ark:/65665/3290cae1-3f9b-48c9-ba28-b90d80f36c50>).

Note. Only one specimen exists in JE and it is annotated as 'holotype' by S. R. Gradstein in 2013. Carl must have seen this specimen but it is less certain that he did see the B and US material.

Currently accepted name: *Syzygiella tonduzana* Steph. (cf. Inoue 1966).

***Taxilejeunea carinata* Herzog**, Rev. Bryol. Lichénol. 20: 157, 1951 (Herzog 1951)

Original citation: Costa Rica, Quebrada Serena, s. o. of Tilarán, Prov. Guanacaste, ca 700 m., [Standley] n. 46.256/a.

Lectotype (here designated): Costa Rica, Guanacaste, Tilarán, Quebrada Serena, Standley 46256a (JE04002599 <https://je.jacq.org/JE04002599>; isoelectotype B300026137 <https://herbarium.bgbm.org/object/B300026137>).

Note. Only one possible type specimen exist in JE and this is marked 'n. sp.' by T. Herzog.

Currently accepted name: *Lejeunea anomala* Lindenb. et Gottsche (cf. Dauphin 2005).

***Taxilejeunea coilantha* Herzog**, Rev. Bryol. Lichénol. 20: 159, 1951 (Herzog 1951)

Original citation: Costa Rica, La Hondura, Prov. San José, 1200–1500 m., [Standley] n. 51.801.

Lectotype (**here designated**) if not holotype: Costa Rica, La Hondura, Prov. San José, 1200–1500 m., Standley 51801 (JE04002598 <https://je.jacq.org/JE04002598>).

Note. Only one possible type has been localized, but it is still possible more type material exists.

**Taxilejeunea planilobula Herzog**, Rev. Bryol.

Lichénol. 20: 160, 1951 (Herzog 1951)

Original citation: Costa Rica, El Muñeco, s. of Navarro, Prov. Cartago, ca 1400 m., [Standley] n. 33.470p.

Lectotype (**here designated**) if not holotype: Costa Rica, El Muñeco, S of Navarro, Prov. Cartago, ca 1400 m, Standley 33470p (JE04002558 <https://je.jacq.org/JE04002558>).

Note. Only one possible type has been localized, but it is still possible more type material exists. Standley deposited duplicates in many herbaria.

**Taxilejeunea standleyi Herzog**, Rev. Bryol. Lichénol.

20: 156, 1951 (Herzog 1951)

Original citation: Costa Rica, Wet bank, La Hondura; Prov. San José, 1200–1500 m., leg. P. C. Standley, n. 51.875/c.

Lectotype (**here designated**): Costa Rica, San José, La Hondura, Standley 51875c (JE04002531 <https://je.jacq.org/JE04002531>; isoelectotypes US00072925 <http://n2t.net/ark:/65665/3d9d27f53-2c66-4886-91d4-9deb576afe0>, B300026211 <https://herbarium.bgbm.org/object/B300026211>).

Note. Although T. Herzog may have seen all syntypes, the one from his own herbarium is probably the base for the description.

Currently accepted name: *Lejeunea flaccida* Lindenb. et Gottsche (cf. Dauphin 2005 as *Taxilejeunea obtusangula* Spruce).

**Taxilejeunea tonduzana Steph.**, Sp. Hepat. (Stephani)

5: 498, 1914 (Stephani 1914)

Original citation: Hab. *Costarica*.

Lectotype (Söderström et al. 2023b: 156): Costa Rica, forêts du Rio Naranjo, mars 1893, leg. A. Tonduz 15614 (G00113325, [www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=147603&lang=en](http://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=147603&lang=en); isoelectotypes NY1059616 <http://sweetgum.nybg.org/science/vh/specimen-details/?irn=1199910>, JE04002537 <https://je.jacq.org/JE04002537>).

Currently accepted name: *Lejeunea tonduzana* (Steph.) M. E. Reiner.

**Trichocolea floccosa Herzog et Hatcher**, Lloydia 20:

148, 1958 (Hatcher 1957)

Holotype: Costa Rica, Santa Clara de Cartago, 1950 m elev., 20 July 1923, Maxon 8194 in Herb. Herzog (JE04004894 <https://je.jacq.org/JE04004894>; isotype B300004804 <https://herbarium.bgbm.org/object/B300004804>).

Currently accepted name: *Leiomitra sprucei* (Steph.) T. Katag. (cf. Katagiri 2019).

**Tylimanthus pittieri Steph.**, Sp. Hepat. (Stephani) 6: 250, 1922 (Stephani 1922)

Original citation: Hab. *Costarica* (Pittier et Durand).

Lectotype (Grolle 1972: 337 as 'holotype'): Costa Rica, 1891, Pittier & Durand 6058 (G00113405 [www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=146667&lang=en](http://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=146667&lang=en), isoelectotype JE04001083 <https://je.jacq.org/JE04001083>).

Currently accepted name: *Adelanthus pittieri* (Steph.) Grolle.

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