

Checklist of the Bryophytes of Boyacá (Colombia)

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Abstract: Aponte-R, A. M., Álvaro-A, W. R., Uribe-M., J. (2022): Checklist of the Bryophytes of Boyacá (Colombia). *Frahmia* 26:1-50.

The checklist of bryophytes reported in the literature for the department of Boyacá (Colombia) is presented. For the territory, 849 species of bryophytes are accepted (6 hornworts, 330 liverworts, 513 mosses) distributed in 295 genera and 102 families. For each name, the source or origin of the report is cited. The information included in this catalog was based on the catalogs or lists of bryophyte species in which specimens located in the department of Boyacá are referenced. Also included is a list of 198 names that correspond to synonyms and 15 questionable records. *Campylopus*, *Frullania*, *Plagiochila*, *Fissidens* and *Metzgeria* were the genera with the highest number of species. Lejeuneaceae, Pottiaceae, Brachytheciaceae and Hypnaceae were the families with the highest number of genera, while Lejeuneaceae, Leucobryaceae, Bartramiaceae, Pottiaceae and Lepidoziaceae were the families with the highest number of species. The information available for the region that reported 527 species in the catalog of plants and lichens of Colombia is updated.

1. Introduction

The oldest records of bryophytes for Boyacá department are dated from when Nueva Granada still existed, and this region was known as the province of Sogamoso Mitten (1869) reported 12 species, since then the catalogs of both liverworts and mosses for Colombia have included a significant amount, showing that the Andean region and in particular this department has a significant presence of the diversity known to the country.

The Catalog of lichens and plants of Colombia (Bernal et al. 2016) reports the presence of about 1660 species of bryophytes (13 hornworts, 715 liverworts and 932 mosses), of which 539 have been found in the territory of Boyacá (Churchill 2016, Gradstein & Uribe 2016). When carrying out the compendium of bryophyte studies in Colombia, it is found that Boyacá is the department where the largest number of floristic studies have been carried out. This leads us to consider the importance of gathering that information and presenting it up to date.

The objective of this work is to present the updated catalogue resulting from the compendium of all those bryological studies carried out in department, which will also identify those areas studied so far. In this way it seeks to contribute to the knowledge of national diversity.

2. Materials and methods

The list of bryophytes reported for the department was constructed from information published in taxonomic reviews for Colombia and for the Neotropics, as well as inventories or floristic studies carried out for the region. The catalog of the species reported for the department of Boyacá was built after an exhaustive review of each scientific name from the list stated above, which allowed updating the information of all those names cited in the consulted publications.

Additionally, it was found that many of them have been considered synonymous, others in which their known distribution is restricted to another natural region in relation to areas with low altitude (doubtful record) and for which a review of the voucher specimen is suggested. For this reason, a list of synonyms is provided. Finally, the list of those names for which the review of the specimen is suggested to confirm their identity, this is presented in the doubtful records section. The catalog follows the classification systems of Goffinet & Buck (2020) and Zander (2018), for mosses and Söderström et al. (2016), for liverworts and hornworts.

Study area

The department of Boyacá is in the north-eastern central part of Colombia, on the eastern cordillera, between 04 ° 39'10 " and 07 ° 03'17 " North latitude and 71 ° 57'49 " and 74 ° 41'35 " West longitude (Figure 1). It has an area of 23,189 km², distributed in 123 municipalities, which are grouped into 12 provinces: Sugamuxi, Tundama, Valderrama, Norte, Gutiérrez, Centro, Neira, Oriente, Lengua, Ricaurte, Márquez and Occidente. It limits to the north with the departments of Santander and Norte de Santander; to the east with Arauca and Casanare; to the south with Cundinamarca and Meta and to the west with Antioquia and Cundinamarca (Estupiñán 2014).

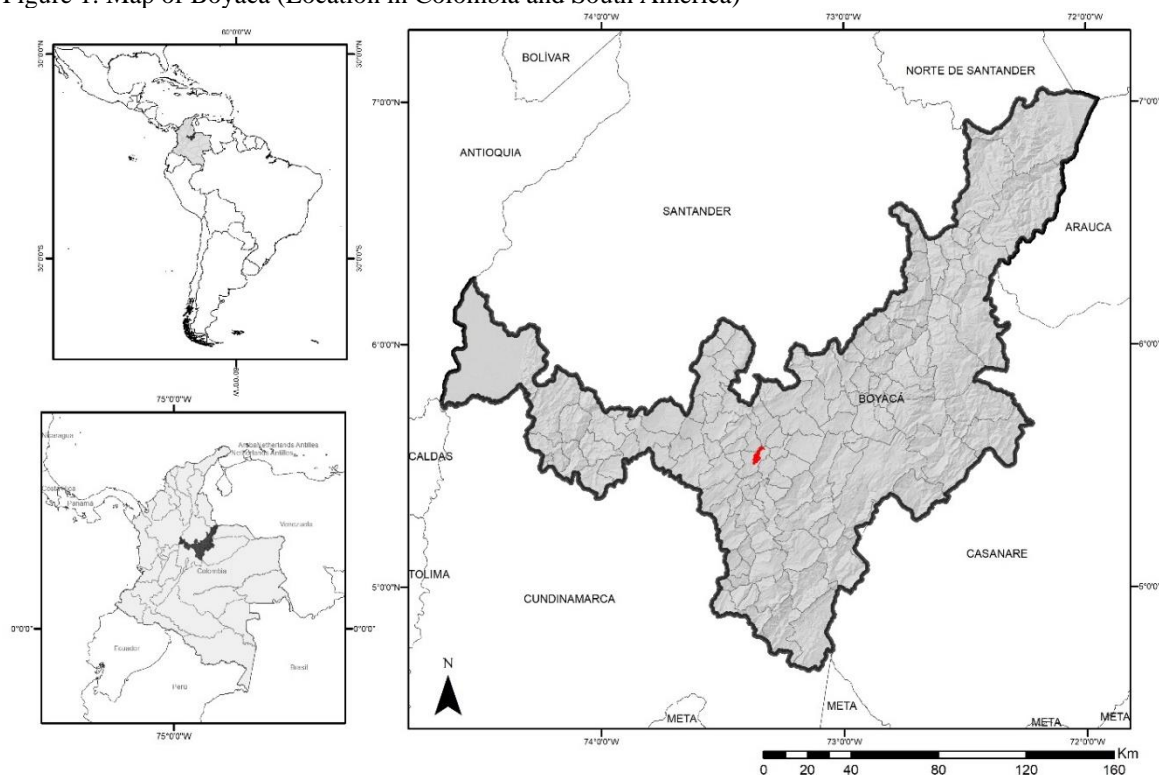
In the department, four morphological units can be distinguished according to the relief, the Magdalena River valley, the Altiplano, the foothills (750 m, serranía Las Quinchas) and the eastern mountain range (5380 m, Ritacuba Blanco in the Sierra Nevada del Cocuy).

The hydrographic system of Boyacá is made up of numerous rivers and streams that are tributaries of the Magdalena, Suárez, Chicamocha, Meta and Arauca rivers. It also presents numerous lentic environments of tourist importance such as the lakes of Tota, Sochagota and the Iguaque lagoon, and supplying aqueducts such as the Chivor reservoir, Teatinos, among others (Gobernación de Boyacá 2017).

Boyacá has four areas of National Natural Parks, 11 regional reserves, 11 municipal reserves, 9 civil society reserves and 1 indigenous reservation, which are important to ensure the conservation of biodiversity and the environmental offer in general (Vásquez 2005).

The main biomes in the department are perpetual snows, located in the Sierra Nevada del Cocuy; the paramos are represented in five complexes; wetlands; Andean forests, tropical humid forests and subxerophytic enclaves (Gobernación de Boyacá 2017).

Figure 1. Map of Boyacá (Location in Colombia and South America)



3. Checklist of Bryophytes of Boyacá department (Colombia)

The catalog of bryophyte species for the department of Boyacá is presented, which is organized by group of plants (hornworts, liverworts and mosses), and within each of them, the families, genera and species.

HORNWORTS

ANTHOCEROTACEAE

Anthoceros lamellatus Steph. - (Álvaro et al. 2019b)

Anthoceros tristanianus J.C. Villarreal, J.J. Engel & Vaña- (Peñaloza et al. 2020)

DENDROCEROTACEAE

Nothoceros vincentianus (Lehm. & Lindenb.) J.C. Villarreal- (Álvaro et al. 2004, 2006, 2019a, Lagos & Morales 2008, Becerra et al. 2017, Becerra et al. 2020, Gradstein 2021)

Phaeomegaceros fimbriatus (Gottsche) R.J. Duff, J.C. Villarreal, Cargill & Renzaglia- (Gradstein 2021)

NOTOTHYLADACEAE

Phaeoceros carolinianus (Michx.) Prosk. - (Álvaro et al. 2019a, Becerra et al. 2020)

Phaeoceros laevis (L.) Prosk. - (Álvaro et al. 2019b)

LIVERWORTS
ACROBOLBACEAE

- Acrobolbus cuneifolius* (Steph.) Briscoe- (Gradstein & Uribe 2016, Gradstein 2021)
Acrobolbus laxis (Lehm. & Lindenb.) Briscoe- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2007, 2019a, Gradstein & Uribe 2016, Becerra et al. 2020, Gil et al. 2020, Gradstein 2021)
Acrobolbus wilsonii Nees- (Gil & Morales 2016, Gradstein 2021)
Lethocolea glossophylla (Spruce) Grolle- (Gradstein & Uribe 2016, Gradstein 2021)

ADELANTHACEAE

- Adelanthus lindenbergianus* (Lehm.) Mitt. - (Álvaro et al. 2007, Gil et al. 2020, Gradstein 2021)
Adelanthus pittieri (Steph.) Grolle- (Gradstein & Uribe 2016, Gradstein 2021)
Pseudomarsupidium decipiens (Hook.) Grolle- (Uribe & Gradstein 1998, Álvaro et al. 2007, Gradstein & Uribe 2016, Gil & Morales 2016, Gradstein 2021)
Syzygiella anomala (Lindenb. & Gottsche) Steph. - (Álvaro et al. 2007, Gradstein 2021)
Syzygiella autumnalis (DC.) K.Feldberg, Váña, Hentschel & Heinrichs- (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
Syzygiella perfoliata (Sw.) Spruce- (Gradstein & Uribe 2016, Gradstein 2021)
Syzygiella rubricaulis (Nees) Steph. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2004, 2006, 2007, Medina 2006, Gradstein & Uribe 2016, Gil & Morales 2016, Gil et al. 2020, Gradstein 2021)
Syzygiella sonderi (Gottsche) K.Feldberg, Váña, Hentschel & Heinrichs- (Uribe & Gradstein 1998, Medina 2006, Lagos & Morales 2008, Gradstein & Uribe 2016, Álvaro et al. 2019a, Becerra et al. 2020, Gradstein 2021)
Syzygiella trigonifolia (Steph.) Herzog- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2007, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
Syzygiella undata (Mont.) K.Feldberg, Váña, Hentschel & Heinrichs- (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)

ANASTROPHYLLACEAE

- Anastrophyllum auritum* (Lehm.) Steph. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2007, Vargas & Morales 2014, Gradstein & Uribe 2016, Simijaca & Vargas 2016, Álvaro & Uribe 2017, Gradstein 2021)
Anastrophyllum nigrescens (Mitt.) Steph. - (Uribe & Gradstein 1998, Álvaro et al. 2007, Gradstein & Uribe 2016, Álvaro & Uribe 2017, Gil et al. 2020, Gradstein 2021)
Anastrophyllum piligerum (Nees) Steph. - (Gradstein 2021)
Anastrophyllum stellatum R.M.Schust. - (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Álvaro & Uribe 2017, Gradstein 2021)
Anastrophyllum tubulosum (Nees) Grolle- (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Álvaro & Uribe 2017, Gradstein 2021)
Sphenolobus austroamericanus (Váña) Váña- (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)

ANEURACEAE

- Aneura pinguis* (L.) Dumort. - (Gradstein & Uribe 2016, Gradstein 2021)
Riccardia cataractarum (Spruce) Schiffn. - (Gradstein & Uribe 2016, Becerra et al. 2017, 2020, Gradstein & Reeb 2018b, Álvaro et al. 2019a, Gil et al. 2020, Gradstein 2021)
Riccardia ciliolata (Spruce) Horik. - (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein & Reeb 2018b, Gradstein 2021)
Riccardia fucoidea (Sw.) C.Massal. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein & Reeb 2018b, Gradstein 2021)

- Riccardia hans-meyeri* (Steph.) Meenks & C.De Jong- (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein & Reeb 2018b, Álvaro et al. 2019a, Becerra et al. 2020, Gil et al. 2020, Gradstein 2021)
- Riccardia latifrons* (Lindb.) Lindb. subsp. *parasitans* (Steph.) Gradst. & Reeb- (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein & Reeb 2018b, Gradstein 2021)
- Riccardia leptophylla* (Spruce) Herzog- (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein & Reeb 2018b, Gradstein 2021)
- Riccardia pallida* (Spruce) Meenks & C.De Jong- (Uribe & Gradstein 1998, Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein & Reeb 2018b, Gradstein 2021)
- Riccardia poeppigiana* (Lehm. & Lindenb.) Hässel ex Meenks & C.De Jong- (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein & Reeb 2018b, Gil et al. 2020, Gradstein 2021)
- Riccardia regnellii* (Ångstr.) K.G. Hell- (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein & Reeb 2018a, Gradstein 2021)
- Riccardia wallisii* (Steph.) Gradst. - (Gil et al. 2020)

AYTONIACEAE

- Asterella macropoda* (Spruce) A.Evans- (Bischler et al. 2005, Gradstein & Uribe 2016, Gradstein 2021)
- Plagiochasma rupestre* (J.R.Forst. & G.Forst.) Steph. - (Álvaro et al. 2019b)

BALANTIOPSISACEAE

- Isotachis lopezii* (R.M.Schust.) Gradst. - (Uribe & Gradstein 1998, Campos & Uribe 2012, Gradstein & Uribe 2016, Gradstein 2021)
- Isotachis multiceps* (Lindenb. & Gottsche) Gottsche- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2007, Lagos & Morales 2008, Campos & Uribe 2012, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
- Isotachis obtusa* Steph. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Campos & Uribe 2012, Gradstein & Uribe 2016, Gradstein 2021)
- Isotachis serrulata* (Sw.) Gottsche- (Robinson 1967, Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2004, Barbosa et al. 2007, Lagos & Morales 2008, Campos & Uribe 2012, Gradstein & Uribe 2016, Gradstein 2021)
- Neesioscyphus argillaceus* (Nees) Grolle- (Gradstein & Hekking 1979, Barbosa et al. 2007, Campos & Uribe 2012, Gradstein & Uribe 2016, Gradstein 2021)

BLEPHAROSTOMATACEAE

- Blepharostoma trichophyllum* (L.) Dumort. - (Álvaro et al. 2007, Gradstein 2021)

CALYPOGEIACEAE

- Calypogeia andicola* Bischl. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Lagos & Morales 2008, Gradstein & Uribe 2016, Álvaro et al. 2019a, Becerra et al. 2020, Gil et al. 2020, Gradstein 2021)
- Calypogeia miquelii* Mont. ex Gottsche, Lindenb. & Nees- (Barbosa et al. 2007)
- Calypogeia peruviana* Nees & Mont. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Calypogeia rhombifolia* (Spruce) Steph. - (Barbosa et al. 2007)
- Calypogeia subintegra* (Gottsche, Lindenb. & Nees) Bischl. - (Álvaro et al. 2004, 2007, 2019a, Becerra et al. 2020, Gradstein 2021)
- Mnioloma cyclostipum* (Spruce) R.M.Schust. - (Álvaro et al. 2007, Barbosa et al. 2007, Gil et al. 2020, Gradstein 2021)

CEPHALOZIACEAE

- Cephalozia bicuspidata* (L.) Dumort. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
- Cephalozia crossii* Spruce- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
- Fuscocephaloziopsis crassifolia* (Lindenb. & Gottsche) Vána & L. Söderstr. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2007, Aguirre 2008, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
- Fuscocephaloziopsis pleniceps* (Austin) Vána & L. Söderstr. - (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
- Odontoschisma cleefii* Gradst., S.C. Aranda & Vanderp. - (Gradstein & Ilkiu-Borges 2015, Gradstein & Uribe 2016, Gradstein 2021)
- Odontoschisma longiflorum* (Taylor) Trevis. - (Gradstein & Ilkiu-Borges 2015, Gradstein & Uribe 2016, Gradstein 2021)
- Odontoschisma variabile* (Lindenb. & Gottsche) Trevis. - (Uribe & Gradstein 1998, Álvaro et al. 2007, Gradstein & Ilkiu-Borges 2015, Gil et al. 2020, Gradstein 2021)

CEPHALOZIACEAE

- Cephaloziella divaricata* (Sm.) Schiffn. - (Gradstein 2021)
- Cephaloziella fragillima* (Spruce) Fulford - (Uribe & Gradstein 1998, Álvaro et al. 2007, Lagos & Morales 2008, Vargas & Morales 2014, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
- Cephaloziopsis intertexta* (Gottsche) R.M.Schust. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Gymnocoleopsis cylindriflora* (Mitt.) R.M.Schust. - (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
- Lophonardia jamesonii* (Mont.) L.Söderstr. & Vána- (Uribe & Gradstein 1998, Medina 2006, Gradstein & Uribe 2016, Gradstein 2021)
- Lophonardia laxifolia* (Mont.) L.Söderstr. & Vána- (Gradstein & Uribe 2016, Gradstein 2021)

CYATHODIACEAE

- Cyathodium cavernarum* Kunze- (Gradstein 2021)

DUMORTIERACEAE

- Dumortiera hirsuta* (Sw.) Nees- (Álvaro et al. 2004, Barbosa et al. 2007)

FOSSOMBRONIACEAE

- Fossombronia fernandeziensis* Steph. - (Gradstein 2021)
- Fossombronia peruviana* Gottsche & Hampe- (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)

FRULLANIACEAE

- Frullania atrata* (Sw.) Nees ex Mont. - (Barbosa et al. 2007, Gradstein & Uribe 2011, 2016, Morales et al. 2012, Gil et al. 2020, Gradstein 2021)
- Frullania bogotensis* Steph. - (Barbosa et al. 2007, Gradstein & Uribe 2011, 2016, Simijaca & Vargas 2016, Álvaro et al. 2019b, Gradstein 2021)
- Frullania brasiliensis* Raddi- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Barbosa et al. 2007, Gradstein & Uribe 2011, 2016, Morales et al. 2012, Gil et al. 2020, Gradstein 2021)
- Frullania confertiflora* Steph. - (Barbosa et al. 2007, Gradstein & Uribe 2011, Gradstein 2021)
- Frullania convoluta* Lindenb. & Hampe- (Uribe & Gradstein 1998, Gradstein & Uribe 2011, 2016, Moreno et al. 2018, Gil et al. 2020, Gradstein 2021)
- Frullania cuencensis* Taylor- (Gradstein & Uribe 2016, Álvaro et al. 2019b)
- Frullania decidua* Spruce- (Uribe & Gradstein 1998, Gradstein 2021)

- Frullania ecklonii* (Spreng.) Gottsche, Lindenb. & Nees- (Uribe & Gradstein 1998, Gradstein & Uribe 2011, 2016, Gradstein 2021)
- Frullania ericoides* (Nees) Mont. - (Gradstein & Uribe 2011, 2016, Gradstein 2021)
- Frullania gibbosa* Nees- (Barbosa et al. 2007, Gradstein & Uribe 2011, 2016, Gradstein 2021)
- Frullania intumescens* var. *sabanetica* (Gottsche) Gradst. - (Barbosa et al. 2007, Gradstein & Uribe 2011, 2016)
- Frullania kunzei* (Lehm. & Lindenb.) Lehm. & Lindenb- (Barbosa et al. 2007, Gradstein & Uribe 2011, 2016, Gradstein 2021)
- Frullania lobatohastata* Steph. - (Moreno et al. 2018, Gradstein 2021)
- Frullania macrocephala* (Lehm. & Lindenb.) Lehm. & Lindenb. - (Barbosa et al. 2007, Gradstein & Uribe 2011, 2016, Gradstein 2021)
- Frullania meridana* Steph. - (Gil et al. 2020)
- Frullania obcordata* (Lehm. & Lindenb.) Lehm. & Lindenb. - (Gradstein 2021)
- Frullania obscura* (Sw.) Mont. var. *obscura*- (Barbosa et al. 2007, Gradstein & Uribe 2011, 2016, Gradstein 2021)
- Frullania paradoxa* Lehm. & Lindenb. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2011, 2016, Gradstein 2021)
- Frullania peruviana* Gottsche- (Gradstein & Uribe 2011, Gradstein & Uribe 2016, Moreno et al. 2018, Gil et al. 2020, Gradstein 2021)
- Frullania pittieri* Steph. - (Gradstein & Uribe 2011, 2016, Gradstein 2021)
- Frullania pluricarinata* Gottsche- (Álvaro et al. 2019b)
- Frullania rio-janeirensis* (Raddi) Ångstr. var. *riojaneirensis*- (Gradstein & Uribe 2011, 2016, Gradstein 2021)
- Frullania setigera* Steph. - (Gradstein & Uribe 2011, 2016, Gradstein 2021)
- Frullania standaertii* Steph. - (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
- Frullania winteri* Steph. var. *vanderhammenii* (Haarbrink) Yuzawa- (Gradstein & Uribe 2011, 2016)

GYMNOMITRIACEAE

- Gymnomitrium bolivianum* (Steph.) Váña- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
- Gymnomitrium setaceum* Grolle & Váña- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
- Gymnomitrium truncatoapiculatum* Herzog- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
- Marsupella miniata* (Lindenb. & Gottsche) Grolle- (Vana et al. 2010, Gil et al. 2020)
- Nardia succulenta* (Rich. ex Lehm.) Spruce- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)

HERBERTACEAE

- Herbertus acanthelius* Spruce- (Uribe & Gradstein 1998, Álvaro et al. 2004, Medina 2006, Álvaro et al. 2007, Gradstein & Uribe 2016, Gil & Morales 2016, Gradstein 2021)
- Herbertus bivittatus* Spruce- (Morales et al. 2012)
- Herbertus juniperoideus* (Sw.) Grolle- (Uribe & Gradstein 1998, Álvaro et al. 2004, Medina 2006, Álvaro et al. 2007, Morales et al. 2012, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
- Herbertus pensilis* (Taylor) Spruce- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2004, Álvaro et al. 2006, Gradstein & Uribe 2016, Gradstein 2021)
- Herbertus sendtneri* (Nees) A.Evans- (Gradstein & Uribe 2016, Gradstein et al. 2018, Gil et al. 2020, Gradstein 2021)

Triandrophyllum subtrifidum (Hook. f. & Taylor) Fulford & Hatcher- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2007, Gradstein & Uribe 2016, Gil & Morales 2016, Álvaro et al. 2019a, Becerra et al. 2020, Gil et al. 2020, Gradstein 2021)

JUBULACEAE

Jubula bogotensis Steph. - (Barbosa et al. 2007)

JUNGERMANNIACEAE

Jungermannia ovatotrigona (Steph.) Grolle- (Gradstein & Uribe 2016, Becerra et al. 2017, Álvaro et al. 2019a, Becerra et al. 2020, Gradstein 2021)

LEJEUNEACEAE

Acanthocoleus aberrans (Lindenb. & Gottsche) Kruijt var. *laevis* Gradst. - (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)

Acrolejeunea torulosa (Lehm. & Lindenb.) Schiffn. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)

Anoplolejeunea conferta (C.F.W. Meissn. ex Spreng.) A. Evans- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2004, 2006, 2007, Barbosa et al. 2007, Vargas & Morales 2014, Gradstein & Uribe 2016, Gil & Morales 2016, Simijaca & Vargas 2016, Gradstein 2021)

Archilejeunea ludoviciana (De Not.) P.Geissler & Gradst. subsp. *ludoviciana*- (Gradstein & Hekking 1979)

Blepharolejeunea incongrua (Lindenb. & Gottsche) Slageren & Kruijt- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2004, 2006, Medina 2006, Gradstein & Uribe 2016, Gradstein 2021)

Blepharolejeunea securifolia (Steph.) R.M.Schust. - (Uribe & Gradstein 1998, Álvaro et al. 2007, Vargas & Morales 2014, Gradstein & Uribe 2016, Simijaca & Vargas 2016, Gradstein 2021)

Brachiolejeunea laxifolia (Taylor) Schiffn. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2004, 2007, Simijaca et al. 2014, Gradstein & Uribe 2016, Moreno et al. 2018, Gil et al. 2020, Gradstein 2021)

Bryopteris filicina (Sw.) Nees- (Barbosa et al. 2007, Morales et al. 2012, Gradstein & Uribe 2016, Gradstein 2021)

Caudalejeunea lehmanniana (Gottsche) A.Evans - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)

Ceratolejeunea cornuta (Lindenb.) Steph. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)

Ceratolejeunea cubensis (Mont.) Schiffn. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)

Ceratolejeunea fallax (Lehm. & Lindenb.) Bonner- (Barbosa et al. 2007)

Ceratolejeunea grandiloba J.B.Jack & Steph. - (Gil et al. 2020)

Ceratolejeunea oxygonia Steph. - (Gradstein & Uribe 2016, Gradstein 2021)

Ceratolejeunea patentissima (Hampe & Gottsche) A.Evans- (Gil et al. 2020)

Cheilolejeunea acutangula (Nees) Grolle- (Bastos 2017, Gradstein 2021)

Cheilolejeunea asperrima (Steph.) Grolle- (Gradstein 2021)

Cheilolejeunea beyrichii (Lindenb.) M.E.Reiner- (Gradstein & Uribe 2016, Bastos 2017, Gradstein 2021)

Cheilolejeunea comans (Spruce) R.M.Schust. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)

Cheilolejeunea filiformis (Sw.) W. Ye, R.L. Zhu & Gradst. var. *filiformis*- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Barbosa et al. 2007, Gradstein & Uribe 2016, Gil et al. 2020)

Cheilolejeunea fragrantissima (Spruce) R.M.Schust. - (Barbosa et al. 2007, Gradstein & Uribe 2016)

- Cheilolejeunea inflexa* (Hampe ex Lehm.) Grolle- (Bastos 2017)
Cheilolejeunea paramicola (Herzog) W. Ye, R.L. Zhu & Gradst. - (Gil et al. 2020)
Cheilolejeunea rigidula (Nees ex Mont.) R.M.Schust. - (Barbosa et al. 2007)
Cheilolejeunea xanthocarpa (Lehm. & Lindenb.) Malombe- (Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
Cololejeunea gracilis (Jovet-Ast) Pócs- (Gradstein & Uribe 2016, Gradstein 2021)
Cololejeunea microscopica (Taylor) Schiffn. - (Gil et al. 2020, Gradstein 2021)
Colura naumannii (Schiffn.) Steph. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
Colura stotleri J.C.Benavides, L.V.Campos & Uribe- (Benavides et al., 2020, Gradstein 2021)
Colura tenuicornis (A. Evans) Steph. - (Gil et al. 2020)
Cyclolejeunea peruviana (Lehm. & Lindenb.) A.Evans- (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
Dicranolejeunea axillaris (Nees & Mont.) Schiffn. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
Diplasiolejeunea cavifolia Steph. - (Gradstein & Uribe 2016, Gradstein 2021)
Diplasiolejeunea pauckertii (Nees) Steph. - (Gradstein & Uribe 2016, Gradstein 2021)
Diplasiolejeunea pellucida (C.F.W.Meissn. ex Spreng.) Schiffn. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
Diplasiolejeunea pluridentata Schäf. -Verw. - (Gradstein & Uribe 2016, Gradstein 2021)
Diplasiolejeunea unidentata (Lehm. & Lindenb.) Schiffn. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
Drepanolejeunea biocellata A.Evans - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
Drepanolejeunea campanulata (Spruce) Steph. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
Drepanolejeunea cutervoensis (Loitl.) Grolle- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
Drepanolejeunea inchoata (C.F.W.Meissn.) Steph. - (Álvaro et al. 2004, Gradstein 2021)
Drepanolejeunea lichenicola (Spruce) Steph. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
Drepanolejeunea orthophylla (Nees & Mont.) Bischl. subsp. *orthophylla*- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
Drepanolejeunea ramentiflora Steph. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
Drepanolejeunea spinosa Herzog- (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
Frullanoides densifolia Raddi subsp. *densifolia*- (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Álvaro et al. 2019b, Gradstein 2021)
Harpalejeunea cinchonae (Nees) Schiffn. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2007, Gradstein & Uribe 2016)
Harpalejeunea grandis Grolle & M.E.Reiner- (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
Harpalejeunea stricta (Lindenb. & Gottsche) Steph. - (Gradstein 2021)
Lejeunea angusta (Lehm. & Lindenb.) Mont. - (Gradstein 2021)
Lejeunea cancellata Nees & Mont. - (Gradstein & Uribe 2016, Gradstein 2021)
Lejeunea capensis Gottsche- (Ellis et al. 2019, Gradstein 2021)
Lejeunea concinnula Spruce & Steph. - (Gradstein 2021)
Lejeunea deplanata Nees- (Gradstein & Uribe 2016, Gradstein 2021)
Lejeunea elongella Gottsche - (Gil et al. 2020, Gradstein 2021)
Lejeunea flaccida Lindenb. & Gottsche- (Gradstein 2021)

- Lejeunea flava* (Sw.) Nees- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2004, Barbosa et al. 2007, Vargas & Morales 2014, Gil et al. 2015, Gradstein & Uribe 2016, Simijaca & Vargas 2016, Álvaro et al. 2019a, 2019b, Becerra et al. 2020, Gil et al. 2020, Gradstein 2021)
- Lejeunea laeta* (Lehm. & Lindenb.) Lehm. & Lindenb. - (Álvaro et al. 2019a, Becerra et al. 2020, Gradstein 2021)
- Lejeunea laetevirens* Nees & Mont. - (Gil & Morales 2016)
- Lejeunea pallescens* Mitt. - (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
- Lejeunea pterigonia* (Lehm. & Lindenb.) Mont. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Barbosa et al. 2007, Vargas & Morales 2014, Gradstein & Uribe 2016, Gil & Morales 2016, Moreno et al. 2018, Gradstein 2021)
- Lejeunea raddiana* Lindenb. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Lejeunea ramulosa* Spruce- (Gradstein 2021)
- Lejeunea reflexistipula* (Lehm. & Lindenb.) Spruce- (Gradstein & Uribe 2016, Gradstein 2021)
- Lejeunea rotundifolia* Mitt. - (Gradstein & Uribe 2016)
- Lejeunea subsessilis* Spruce- (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Lejeunea sulphurea* (Lehm. & Lindenb.) Spruce- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
- Lopholejeunea nigricans* (Lindenb.) Schiffn. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Marchesinia brachiata* (Sw.) Schiffn. var. *brachiata*- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
- Marchesinia brachiata* var. *robusta* (Mitt.) Gradst. & Uribe- (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Microlejeunea bullata* (Taylor) Steph. - (Gradstein 2021)
- Microlejeunea capillaris* (Gottsche) Steph. - (Gradstein & Uribe 2016, Gradstein 2021)
- Microlejeunea diversiloba* (Spruce) Müll.Frib. - (Álvaro et al. 2019b)
- Myriocoleopsis tixieri* Pócs & Gradst. - (Gradstein 2021)
- Neurolejeunea breutelii* (Gottsche) A.Evans- (Barbosa et al. 2007, Gradstein 2021)
- Odontolejeunea lunulata* (F.Weber) Schiffn. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Prionolejeunea denticulata* (F.Weber) Schiffn. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Pycnolejeunea decurviloba* Steph. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Becerra et al. 2020, Gradstein 2021)
- Rectolejeunea versifolia* (Schiffn.) L.Söderstr. & A.Hagborg- (Gradstein & Uribe 2016, Gradstein 2021)
- Symbiezidium transversale* (Sw.) Trevis. - (Barbosa et al. 2007, Gradstein 2021)

LEPICOLEACEAE

- Lepicolea pruinosa* (Taylor) Spruce- (Álvaro et al. 2004, 2006, 2007, Morales et al. 2012, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)

LEPIDOZIACEAE

- Bazzania affinis* (Lindenb. & Gottsche) Trevis. - (Morales et al. 2012, Gil et al. 2020)
- Bazzania chilensis* (Steph.) Spruce- (Álvaro et al. 2007, Gradstein 2021)
- Bazzania cuneistipula* (Gottsche & Lindenb.) Trevis. - (Gradstein & Uribe 2016, Gradstein 2021)
- Bazzania falcata* (Lindenb.) Trevis. - (Álvaro et al. 2004, 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Bazzania gracilis* (Hampe & Gottsche) Steph. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gil & Morales 2016)

- Bazzania hookeri* (Lindenb.) Trevis. var. *hookeri*- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2004, 2007, Morales et al. 2012, Gradstein & Uribe 2016, Moreno et al. 2018, Gradstein 2021)
- Bazzania jamaicensis* (Lehm. & Lindenb.) Trevis. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2007, Barbosa et al. 2007, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
- Bazzania longistipula* (Lindenb.) Trevis. - (Álvaro et al. 2004, 2006, Gradstein & Uribe 2016, Gradstein 2021)
- Bazzania pallidevirens* (Steph.) Fulford- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Morales et al. 2012, Vargas & Morales 2014, Gradstein & Uribe 2016, Gil & Morales 2016, Gil et al. 2020, Gradstein 2021)
- Bazzania serrata* Fulford. - (Álvaro et al. 2007, Gil & Morales 2016, Gradstein 2021)
- Bazzania spruceana* Steph. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Bazzania stolonifera* (Sw.) Trevis. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2004, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
- Kurzia brasiliensis* (Steph.) Grolle- (Gradstein 2021)
- Kurzia capillaris* (Sw.) Grolle subsp. *capillaris*- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2007, Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Kurzia capillaris* subsp. *paramicola* Pócs- (Gradstein 2021)
- Lepidozia alstonii* Fulford- (Gradstein 2021)
- Lepidozia andicola* Beauverd- (Álvaro et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Lepidozia auriculata* Mitt. ex Steph. - (Gil et al. 2020, Gradstein 2021)
- Lepidozia cupressina* (Sw.) Lindenb. - (Uribe & Gradstein 1998, Álvaro et al. 2004, 2007, Barbosa et al. 2007, Morales et al. 2012, Vargas & Morales 2014, Gradstein & Uribe 2016, Gil & Morales 2016, Simijaca & Vargas 2016, Moreno et al. 2018, Gil et al. 2020, Gradstein 2021)
- Lepidozia dendritica* Spruce- (Gradstein & Hekking 1979, Álvaro et al. 2004, 2006, Gradstein 2021)
- Lepidozia incurvata* Lindenb. - (Álvaro et al. 2004, 2007, Lagos & Morales 2008, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
- Lepidozia macrocolea* Spruce- (Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
- Lepidozia patens* Lindenb. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Lepidozia reptans* (L.) Dumort. - (Barbosa et al. 2007)
- Lepidozia squarrosa* Steph. - (Álvaro et al. 2007, Gil et al. 2020, Gradstein 2021)
- Micropterygium lechleri* Reimers- (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Pseudocephalozia quadriloba* (Steph.) R.M.Schust. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Telaranea nematodes* (Gottsche ex Austin) M.Howe- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)

LOPHOCOLEACEAE

- Clasmatocolea vermicularis* (Lehm.) Grolle- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Becerra et al. 2017, Álvaro et al. 2019a, Becerra et al. 2020, Gradstein 2021)
- Cryptolophocolea connata* (Sw.) L.Söderstr. & Váña- (Barbosa et al. 2007)
- Cryptolophocolea guadalupensis* (Steph.) L.Söderstr. & Váña- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
- Cryptolophocolea martiana* (Sw.) L.Söderstr., Crand-Stotl. & Stotler var. *martiana*- (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Cryptolophocolea martiana* var. *perissodonta* (Spruce) Gradst. - (Barbosa et al. 2007)
- Heteroscyphus contortuplicatus* (Nees & Mont.) Grolle- (Gradstein & Uribe 2016, Álvaro et al. 2019a, Becerra et al. 2020, Gradstein 2021)

- Heteroscyphus marginatus* (Steph.) Fulford- (Álvaro et al. 2007, Barbosa et al. 2007, Gil et al. 2020, Gradstein 2021)
- Heteroscyphus polyblepharis* (Spruce) Schiffn. - (Álvaro et al. 2004, 2007, 2019a, Becerra et al. 2017, 2020, Gil et al. 2020, Gradstein 2021)
- Heteroscyphus thraustus* (Spruce) Fulford- (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Leptoscyphus amphibolius* (Nees) Grolle- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2004, 2007, 2019a, Barbosa et al. 2007, Vargas & Morales 2014, Gradstein & Uribe 2016, Becerra et al. 2020, Gil et al. 2020, Gradstein 2021)
- Leptoscyphus cleefii* Fulford- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2004, 2007, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
- Leptoscyphus cuneifolius* (Hook.) Mitt. subsp. fragilis (J.B.Jack & Steph.) Grolle- (Gradstein 2021)
- Leptoscyphus physocalyx* (Hampe & Gottsche) Gottsche- (Álvaro et al. 2007, Gil et al. 2020, Gradstein 2021)
- Leptoscyphus porphyrius* (Nees) Grolle- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2007, Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Leptoscyphus trapezoides* (Mont.) L.Söderstr. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
- Lophocolea aberrans* Lindenb. & Gottsche- (Gradstein 2021)
- Lophocolea bidentata* (L.) Dumort. - (Álvaro et al. 2007, Vargas & Morales 2014, Gradstein & Uribe 2016, Simijaca & Vargas 2016, Gil et al. 2020, Gradstein 2021)
- Lophocolea fragmentissima* R.M.Schust. - (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
- Lophocolea muricata* (Lehm.) Nees- (Vargas & Morales 2014, Gradstein & Uribe 2016, Gil & Morales 2016, Simijaca & Vargas 2016, Gradstein 2021)
- Platycaulis renifolia* R.M.Schust. - (Ellis et al. 2015, Gil et al. 2020, Gradstein 2021)

LUNULARIACEAE

- Lunularia cruciata* (L.) Dumort. ex Lindb. - (Becerra et al. 2017, Álvaro et al. 2019a, 2019b, Becerra et al. 2020, Gradstein 2021)

MARCHANTIACEAE

- Marchantia berteroaana* Lehm. & Lindenb. - (Uribe & Gradstein 1998, Bischler et al. 2005, Álvaro et al. 2007, 2019a, Gradstein & Uribe 2016, Becerra et al. 2020, Gil et al. 2020, Gradstein 2021)
- Marchantia breviloba* A.Evans- (Uribe & Gradstein 1998, Bischler et al. 2005, Gradstein & Uribe 2016, Gradstein 2021)
- Marchantia chenopoda* L. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Marchantia plicata* Nees & Mont. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Bischler et al. 2005, Gradstein & Uribe 2016, Gradstein 2021)
- Marchantia polymorpha* L. - (Uribe & Gradstein 1998, Álvaro et al. 2004, 2006, 2019a, Bischler et al. 2005, Barbosa et al. 2007, Lagos & Morales 2008, Gradstein & Uribe 2016, Becerra et al. 2017, Gradstein 2021)

METZGERIACEAE

- Metzgeria agnewiae* Kuwah. - (Uribe & Gradstein 1998, Costa 2008, Gradstein & Uribe 2016, Álvaro et al. 2019b, Gradstein 2021)
- Metzgeria albinea* Spruce var. *albinea*- (Barbosa et al. 2007, Costa 2008, Gradstein & Uribe 2016, Moreno et al. 2018, Gil et al. 2020, Gradstein 2021)
- Metzgeria bischlerae* Kuwah. - (Gradstein & Uribe 2016, Gradstein 2021)
- Metzgeria ciliata* Raddi- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gil et al. 2020)

- Metzgeria claviflora* Spruce- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
- Metzgeria conjugata* Lindb. - (Gradstein 2021)
- Metzgeria consanguinea* Schiffn. - (Vargas & Morales 2014, Gil & Morales 2016, Gradstein 2021)
- Metzgeria crassipilis* (Lindb.) A.Evans- (Álvaro et al. 2019a, Becerra et al. 2020)
- Metzgeria dorsipara* (Herzog) Kuwah. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2007, Costa 2008, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)
- Metzgeria filicina* Mitt. - (Uribe & Gradstein 1998, Lagos & Morales 2008, Vargas & Morales 2014, Gradstein & Uribe 2016, Gil & Morales 2016, Gradstein 2021)
- Metzgeria fruticola* Spruce- (Costa 2008, Gradstein & Uribe 2016, Gradstein 2021)
- Metzgeria furcata* (L.) Corda- (Gradstein & Hekking 1979, Uribe & Gradstein 1998)
- Metzgeria lechleri* Steph. - (Uribe & Gradstein 1998, Costa 2008, Gradstein & Uribe 2016, Gradstein 2021)
- Metzgeria leptoneura* Spruce- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Costa 2008, Gradstein & Uribe 2016, Gradstein 2021)
- Metzgeria liebmanniana* Lindenb. & Gottsche- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2007, Costa 2008, Gradstein & Uribe 2016, Gradstein 2021)
- Metzgeria lindbergii* Schiffn. - (Gradstein 2019, Gradstein 2021)
- Metzgeria mexicana* Steph. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Metzgeria myriopoda* Lindb. - (Gradstein & Uribe 2016, Gradstein 2021)
- Metzgeria polytricha* Spruce- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Metzgeria rufula* Spruce- (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Metzgeria scyphigera* A.Evans- (Costa 2008, Gradstein & Uribe 2016, Gradstein 2021)
- Metzgeria violacea* (Ach.) Dumort. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Costa 2008, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)

MONOCLEACEAE

- Monoclea gottschei* Lindb. subsp. *gottschei*- (Barbosa et al. 2007, Lagos & Morales 2008, Vargas & Morales 2014, Gradstein & Uribe 2016, Gradstein 2021)

NOTEROCLADACEAE

- Noteroclada confluens* Taylor- (Uribe & Gradstein 1998, Lagos & Morales 2008, Gradstein & Uribe 2016, Becerra et al. 2017, Álvaro et al. 2019a, Becerra et al. 2020, Gil et al. 2020, Gradstein 2021)

PALLAVICINIACEAE

- Jensenia difformis* (Nees) Grolle- (Gradstein & Uribe 2016, Gradstein 2021)
- Jensenia lorschuetzii* Gronde- (Gradstein & Uribe 2016, Gradstein 2021)
- Jensenia spinosa* (Lindenb. & Gottsche) Grolle- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)
- Pallavicinia lyellii* (Hook.) Gray- (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)
- Symphyogyna apiculispina* Steph. - (Uribe & Gradstein 1998, Álvaro et al. 2004, 2006, Gradstein & Uribe 2016, Gradstein 2021)
- Symphyogyna aspera* Steph. ex F.A.McCormick- (Barbosa et al. 2007, Gradstein & Uribe 2016, Moreno et al. 2018, Gradstein 2021)
- Symphyogyna brasiliensis* Nees & Mont. - (Uribe & Gradstein 1998, Barbosa et al. 2007, Lagos & Morales 2008, Gradstein & Uribe 2016, Becerra et al. 2017, 2020, Álvaro et al. 2019a, Gradstein 2021)

Symphyogyna brongniartii Mont. - (Álvaro et al. 2007, Barbosa et al. 2007, Lagos & Morales 2008, Morales et al. 2012, Vargas & Morales 2014, Gil & Morales 2016, Álvaro et al. 2019a, Becerra et al. 2020, Gradstein 2021)

Symphyogyna marginata Steph. - (Álvaro et al. 2007, Gradstein 2021)

Symphyogyna podophylla (Thunb.) Nees & Mont. - (Uribe & Gradstein 1998, Álvaro et al. 2007, 2019a, Lagos & Morales 2008, Morales et al. 2012, Gradstein & Uribe 2016, Becerra et al. 2017, 2020, Gradstein 2021)

Symphyogyna trivittata Spruce- (Álvaro et al. 2019a, Becerra et al. 2020)

PLAGIOCHILACEAE

Plagiochila adianthoides (Sw.) Lindenb. - (Gradstein & Uribe 2016, Gradstein 2016, Gradstein 2021)

Plagiochila aerea Taylor- (Álvaro et al. 2004, 2007, Barbosa et al. 2007, Lagos & Morales 2008, Morales et al. 2012, Vargas & Morales 2014, Gradstein & Uribe 2016, Gil & Morales 2016, Gradstein 2016, 2021, Moreno et al. 2018)

Plagiochila alternans Lindenb. & Gottsche- (Robinson 1967, Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2007, 2019a, Gradstein & Uribe 2016, Gradstein 2016, 2021, Becerra et al. 2017, 2020)

Plagiochila amicta Steph. - (Gil & Morales 2016)

Plagiochila bifaria (Sw.) Lindenb. - (Gradstein & Uribe 2016, Gradstein 2016, 2021, Gil et al. 2020)

Plagiochila breuteliana Lindenb. - (Gradstein & Uribe 2016, Gradstein 2016, 2021)

Plagiochila cleefii Inoue- (Gradstein 2021)

Plagiochila cuatrecasii H. Rob. - (Robinson 1967, Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2016, 2021)

Plagiochila deflexirama Taylor- (Gradstein & Uribe 2016, Gradstein 2016, 2021)

Plagiochila diversifolia Lindenb. & Gottsche- (Álvaro et al. 2007, Vargas & Morales 2014, Gradstein 2021)

Plagiochila ensiformis Taylor- (Gradstein & Uribe 2016, Gradstein 2016, 2021)

Plagiochila exigua (Taylor) Taylor- (Gradstein 2021)

Plagiochila fuscolutea Taylor- (Robinson 1967, Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2004, 2006, 2007, Gradstein & Uribe 2016, Gradstein 2016, 2021, Gil et al. 2020)

Plagiochila husnotii Steph. - (Gil & Morales 2016)

Plagiochila laetevirens Lindenb. - (Gradstein 2016, Álvaro et al. 2019a, Becerra et al. 2020, Gradstein 2021)

Plagiochila longispina Lindenb. & Gottsche- (Álvaro et al. 2007, Vargas & Morales 2014, Gradstein & Uribe 2016, Gradstein 2016, Simijaca & Vargas 2016, Gil et al. 2020, Gradstein 2021)

Plagiochila macra Taylor- (Gradstein & Uribe 2016, Gradstein 2016, 2021, Álvaro et al. 2019b)

Plagiochila macrostachya Lindenb. - (Gradstein & Uribe 2016, Gradstein 2016, 2021)

Plagiochila ovata Lindenb. & Gottsche- (Gradstein & Uribe 2016, Gradstein 2016, 2021, Gil et al. 2020)

Plagiochila pachyloma Taylor- (Gradstein & Uribe 2016, Gradstein 2016, 2021)

Plagiochila papillifolia Steph. - (Gradstein 2021)

Plagiochila punctata (Taylor) Taylor- (Gil et al. 2020, Gradstein 2021)

Plagiochila raddiana Lindenb. - (Gradstein & Uribe 2016, Gradstein 2016, 2021)

Plagiochila rutilans Lindenb. - (Gil et al. 2020)

Plagiochila subplana Lindenb. - (Gradstein & Uribe 2016, Gradstein 2016, 2021)

Plagiochila tabinensis Steph. - (Álvaro et al. 2004, 2007, Gradstein & Uribe 2016, Gradstein 2016, 2021)

Plagiochila tamariscina Steph. - (Gradstein 2016, 2021)

Plagiochila trichostoma Gottsche- (Gradstein 2021)

Plagiochila vincentina Lindenb. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2016, 2021)

PORELLACEAE

Porella brachiata (Taylor) Spruce- (Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)

Porella crispata (Hook.) Trevis. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)

Porella leiboldii (Lehm.) Trevis. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)

Porella squamulifera (Taylor) Trevis. - (Gradstein 2021)

RADULACEAE

Radula bischlerae Gradst. & Ilk. -Borg. - (Gradstein 2021)

Radula episcia Spruce- (Álvaro et al. 2004, 2019a, Lagos & Morales 2008, Gradstein & Uribe 2016, Becerra et al. 2020, Gradstein 2021)

Radula gottscheana Taylor- (Barbosa et al. 2007, Morales et al. 2012, Gradstein & Uribe 2016, Gradstein 2021)

Radula javanica Gottsche- (Gradstein & Uribe 2016, Gradstein 2021)

Radula mexicana Lindenb. & Gottsche- (Gradstein & Uribe 2016, Gradstein 2021)

Radula nudicaulis Steph. - (Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)

Radula pallens (Sw.) Mont. - (Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)

Radula quadrata Gottsche- (Gradstein & Uribe 2016, Gradstein 2021)

Radula schaefer-verwimpii K.Yamada- (Gradstein 2021)

Radula sonsonensis Steph. - (Uribe & Gradstein 1998, Álvaro et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)

Radula voluta Taylor- (Uribe & Gradstein 1998, Álvaro et al. 2004, 2007, Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)

SCAPANIACEAE

Scapania portoricensis Hampe & Gottsche- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Álvaro et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)

Schistochilopsis incisa (Schrad.) Konstant. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)

SOLENOTOMATACEAE

Solenostoma callithrix (Lindenb. & Gottsche) Steph. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Barbosa et al. 2007, Gradstein & Uribe 2016, Gradstein 2021)

Solenostoma hyalinum (Lydell) Mitt. - (Lagos & Morales 2008, Gradstein & Uribe 2016, Gradstein 2021)

Solenostoma sphaerocarpum (Hook.) Steph. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)

SOUTHBYACEAE

Gongylanthus granatensis (Gottsche) Steph. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)

Gongylanthus liebmanianus (Lindenb. & Gottsche) Steph. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gil et al. 2020, Gradstein 2021)

Gongylanthus limbatus (Herzog) Grolle & Vána- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)

Gongylanthus muelleri (Gottsche) Steph. - (Gradstein 2021)

STEPHANIACEAE

Stephaniella paraphyllina J.B.Jack- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Juárez & Delgadillo, 2017, Gradstein 2021)

Stephaniella rostrata U.Schmitt- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)

Stephaniella uncifolia S.Winkl. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)

TARGIONIACEAE

Targionia hypophylla L. - (Gil et al. 2020)

TRICHOCOLEACEAE

Leiomitra flaccida Spruce- (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)

Leiomitra robusta (Steph.) R.M. Schust. - (Gradstein & Hekking 1979, Uribe & Gradstein 1998, Gradstein & Uribe 2016, Gradstein 2021)

Leiomitra tomentosa (Sw.) Lindb. - (Uribe & Gradstein 1998, Álvaro et al. 2004, 2006, 2007, Barbosa et al. 2007, Lagos & Morales 2008, Morales et al. 2012, Vargas & Morales 2014, Gradstein & Uribe 2016, Simijaca & Vargas 2016, Moreno et al. 2018, Gil et al. 2020, Gradstein 2021)

MOSSES

AMBLYSTEGIACEAE

Amblystegium serpens (Hedw.) Schimp. - (Gil & Morales 2016, Gil et al. 2020)

Campylium chrysophyllum (Brid.) Lange- (Churchill 2016, Martínez et al. 2019)

Cratoneuron filicinum (Hedw.) Spruce- (Churchill 1989, Aguirre 2008, Churchill 2016)

Drepanocladus longifolius (Wilson ex Mitt.) Broth. ex Paris- (Churchill 2016)

Drepanocladus polygamus (Schimp.) Hedenäs- (Aguirre 2008, Becerra et al. 2020)

Drepanocladus sordidus (Müll.Hal.) Hedenäs- (Aguirre 2008)

Hygrohypnum luridum (Hedw.) Jenn. - (Aguirre 2008)

Pseudocalliergon trifarium (F.Weber & D.Mohr) Loeske- (Churchill 2016)

Sanionia uncinata (Hedw.) Loeske- (Aguirre 2008, Churchill 2016)

Scorpidium cossonii (Schimp.) Hedenäs- (Churchill 2016)

Scorpidium scorpioides (Hedw.) Limpr. - (Aguirre 2008, Churchill 2016)

ANDREAEACEAE

Andreaea nitida Hook.f. & Wilson- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Lagos & Morales 2008, Gil et al. 2020)

Andreaea rupestris Hedw. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019, Mejía et al. 2020)

Andreaea subulata Harv. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995)

BARTRAMIACEAE

Anacolia laevisphaera (Taylor) Flowers- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Álvaro et al. 2019b, Mejía et al. 2020)

Bartramia angustifolia Mitt. - (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil et al. 2020)

- Bartramia brevifolia* Brid. - (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil et al. 2020)
- Bartramia longifolia* Hook. - (Churchill & Linares 1995, Aguirre 2008, Lagos & Morales 2008, Churchill 2016)
- Bartramia mathewsii* Mitt. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil et al. 2020)
- Bartramia potosica* Mont. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
- Bartramia strumosa* (Hampe) Mitt. - (Churchill & Linares 1995, Aguirre 2008)
- Breutelia austro-arcuata* (Müll.Hal.) Paris- (Churchill 1989, 2016, Churchill & Linares 1995, Martínez et al. 2019)
- Breutelia brevifolia* Herzog- (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
- Breutelia brittoniae* Renauld & Cardot- (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Moreno et al. 2018, Martínez et al. 2019, Gil et al. 2020)
- Breutelia chrysea* (Müll.Hal.) A.Jaeger- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019, Gil et al. 2020)
- Breutelia inclinata* (Hampe & Lorentz) A.Jaeger- (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
- Breutelia integrifolia* (Taylor) A.Jaeger - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil et al. 2020)
- Breutelia karsteniana* (Müll.Hal.) A.Jaeger- (Gil et al. 2020)
- Breutelia polygastrica* (Müll.Hal.) Broth. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Martínez et al. 2019, Mejía et al. 2020, Gil et al. 2020)
- Breutelia rhythidioides* Herzog- (Churchill 1989, Churchill & Linares 1995, Aguirre 2008)
- Breutelia squarrosa* A.Jaeger- (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019, Gil et al. 2020)
- Breutelia subarcuata* (Müll. Hal.) Schimp. - (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Medina 2006, Aguirre 2008, Gil et al. 2020)
- Breutelia subdisticha* (Hampe) A.Jaeger- (Aguirre 2008, Churchill 2016, Martínez et al. 2019, Gil et al. 2020)
- Breutelia tomentosa* (Sw. ex Brid.) A.Jaeger - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
- Breutelia trianae* (Hampe) A.Jaeger- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019, Gil et al. 2020)
- Conostomum tetragonum* (Hedw.) Lindb. - (Aguirre 2008)
- Leiomela aristifolia* (A.Jaeger) Wijk & Margad. - (Mejía et al. 2020, Gil et al. 2020)
- Leiomela bartramioides* (Hook.) Paris- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Mejía et al. 2020)
- Philonotis andina* (Mitt.) A.Jaeger- (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil et al. 2020)
- Philonotis elongata* (Dism.) H.A. Crum & Steere- (Aguirre 2008)
- Philonotis scabrifolia* (Hook.f. & Wilson) Braithw. - (Lagos & Morales 2008)
- Philonotis sphaericarpa* (Hedw.) Brid. - (Avendaño & Aguirre 2007, Aguirre 2008, Churchill 2016)
- Philonotis thwaitesii* Mitt. - (Lagos & Morales 2008, Santos & Aguirre 2010)
- Philonotis uncinata* (Schwägr.) Brid. - (Avendaño & Aguirre 2007, Aguirre 2008, Lagos & Morales 2008, Santos & Aguirre 2010, Becerra et al. 2017, 2020, Álvaro et al. 2019a)

BRACHYTHECIACEAE

- Aerolindigia capillacea* (Hornsch.) M.Menzel- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Moreno et al. 2018)
- Brachythecium austroglareosum* (Müll. Hal.) Paris- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)
- Brachythecium chocayae* Herzog- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)
- Brachythecium cirriphyloides* McFarland- (Churchill & Linares 1995, Aguirre 2008, Lagos & Morales 2008, Churchill 2016, Gil et al. 2020)
- Brachythecium conostomum* (Taylor) A.Jaeger- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Mejía et al. 2020)
- Brachythecium occidentale* (Hampe) A.Jaeger- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Lagos & Morales 2008, Álvaro et al. 2019a, Martínez et al. 2019, Becerra et al. 2020, Gil et al. 2020)
- Brachythecium plumosum* (Hedw.) Schimp. - (Álvaro et al. 2019a, Martínez et al. 2019, Becerra et al. 2020, Mejía et al. 2020)
- Brachythecium poadelphus* Müll.Hal. - (Mejía et al. 2020)
- Brachythecium praelongum* Schimp. ex Müll.Hal. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)
- Brachythecium ruderale* (Brid.) W.R.Buck- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Álvaro et al. 2019a, 2019b, Becerra et al. 2020, Mejía et al. 2020, Gil et al. 2020)
- Brachythecium rutabulum* (Hedw.) Schimp. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Álvaro et al. 2019b, Mejía et al. 2020, Gil et al. 2020)
- Helicodontium capillare* (Hedw.) A.Jaeger- (Álvaro et al. 2019a, Becerra et al. 2020)
- Kindbergia praelonga* (Hedw.) Ochyra- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Becerra et al. 2017, Álvaro et al. 2019a, Martínez et al. 2019, Becerra et al. 2020)
- Lindigia debilis* (Mitt.) A.Jaeger- (Moreno et al. 2018)
- Meteoridium remotifolium* (Müll.Hal.) Manuel- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Santos & Aguirre 2010, Álvaro et al. 2019b, Martínez et al. 2019, Mejía et al. 2020, Gil et al. 2020)
- Meteoridium tenuissimum* (Hook. & Wilson) M.A.Lewis- (Morales et al. 2012, Mejía et al. 2020)
- Palamocladium leskeoides* (Hook.) E.Britton- (Aguirre 2008, Mejía et al. 2020)
- Platyhypnidium aquaticum* (A.Jaeger) M.Fleisch. - (Aguirre 2008, Lagos & Morales 2008, Churchill 2016, Becerra et al. 2017, 2020, Álvaro et al. 2019a, Gil et al. 2020)
- Rhynchostegium conchophyllum* (Taylor) A.Jaeger- (Churchill 1989, 2016, Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Mejía et al. 2020, Gil et al. 2020)
- Rhynchostegium serrulatum* (Hedw.) A.Jaeger- (Avendaño & Aguirre 2007, Aguirre 2008, Álvaro et al. 2019a, Becerra et al. 2020, Mejía et al. 2020)
- Squamidium leucotrichum* (Taylor) Broth. - (Álvaro et al. 2004, 2006, Santos & Aguirre 2010, Morales et al. 2012, Martínez et al. 2019)
- Squamidium macrocarpum* (Spruce ex Mitt.) Broth. - (Churchill 1989, 2016, Churchill & Linares 1995, Avendaño & Aguirre 2007)
- Squamidium nigricans* (Hook.) Broth. - (Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Churchill 2016)
- Zelometeorium patulum* (Hedw.) Manuel- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Santos & Aguirre 2010, Morales et al. 2012)
- Zelometeorium recurvifolium* (Hornsch.) Manuel- (Aguirre 2008, Simijaca et al. 2014, Churchill 2016)

BRUCHIACEAE

- Trematodon longicollis* Michx. - (Churchill 2016)

BRYACEAE

- Acidodontium megalocarpum* (Hook.) Renauld & Cardot- (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Moreno et al. 2018)
- Anomobryum julaceum* (Schrad. ex G. Gaertn., B. Mey. & Scherb.) Schimp. - (Churchill & Linares 1995, Álvaro et al. 2004, 2019b, Aguirre 2008, Churchill 2016)
- Anomobryum prostratum* (Müll.Hal.) Besch. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Mejía et al. 2020)
- Anomobryum robustum* Broth. - (Álvaro et al. 2019a, Becerra et al. 2020)
- Brachymenium consimile* (Mitt.) A.Jaeger- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)
- Brachymenium klotzschii* (Schwägr.) Paris- (Mejía et al. 2020)
- Brachymenium speciosum* (Hook. & Wilson) Steere- (Martínez et al. 2019)
- Brachymenium systylium* (Müll.Hal.) A.Jaeger- (Martínez et al. 2019)
- Bryum argenteum* Hedw. - (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Simijaca et al. 2014, Álvaro et al. 2019b, Mejía et al. 2020, Gil et al. 2020)
- Bryum billarderi* Schwägr. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Uribe & Gradstein 1998, Álvaro et al. 2004, 2019b, Bischler et al. 2005, Aguirre 2008, Gil et al. 2015, Moreno et al. 2018, Martínez et al. 2019, Mejía et al. 2020, Gil et al. 2020)
- Bryum capillare* Hedw. - (Churchill 1989, Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Churchill 2016, Gil et al. 2020)
- Bryum chryseum* Mitt. - (Álvaro et al. 2019b)
- Bryum densifolium* Brid. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019)
- Bryum dichotomum* Hedw. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Álvaro et al. 2019a, Becerra et al. 2020)
- Bryum ellipsifolium* Müll.Hal. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
- Bryum laevigatum* Hook.f. & Wilson- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Álvaro et al. 2019a, Becerra et al. 2020, Gil et al. 2020)
- Bryum limbatum* Müll.Hal. - (Avendaño & Aguirre 2007, Álvaro et al. 2019a, Becerra et al. 2020)
- Bryum procerum* Schimp. ex Besch. - (Robinson 1967, Florschütz-de Waard & Florschütz 1979)
- Bryum pseudotriquetrum* (Hedw.) P. Gaertn., B. Mey. & Scherb. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
- Bryum renauldii* Roll ex Renauld & Cardot- (Álvaro et al. 2019a, Becerra et al. 2020)
- Rhodobryum beyrichianum* (Hornsch.) Müll.Hal. - (Avendaño & Aguirre 2007, Gil et al. 2020)
- Rhodobryum grandifolium* (Taylor) Schimp. - (Churchill 1989, 2016, Churchill & Linares 1995, Álvaro et al. 2004, 2006, Aguirre 2008, Martínez et al. 2019, Gil et al. 2020)
- Rhodobryum perspinidens* (Broth.) Pócs- (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil et al. 2020)
- Rhodobryum roseodens* (Müll.Hal.) Paris- (Gil et al. 2020)

CALLIERGONACEAE

- Hamatocaulis vernicosus* (Mitt.) Hedenäs- (Aguirre 2008, Churchill 2016)
- Straminergon stramineum* (Dicks. ex Brid.) Hedenäs- (Churchill 2016)
- Warnstorfia exannulata* (Schimp.) Loeske- (Aguirre 2008, Churchill 2016, Gil et al. 2020)
- Warnstorfia fluitans* (Hedw.) Loeske- (Aguirre 2008, Churchill 2016)
- Warnstorfia sarmentosa* (Wahlenb.) Hedenäs- (Churchill 2016)

CALYMPERACEAE

- Calymperes afzelii* Sw. - (Santos & Aguirre 2010)
Calymperes bartramii W.D. Reese- (Santos & Aguirre 2010)
Calymperes erosum Müll.Hal. - (Avendaño & Aguirre 2007)
Calymperes levyanum Besch. - (Gil & Morales 2016)
Calymperes palisotii Schwägr. - (Santos & Aguirre 2010)
Syrrhopodon africanus (Mitt.) Paris subsp. *graminicola* (R.S.Williams) W.D.Reese- (Churchill 2016)
Syrrhopodon circinatus (Brid.) Mitt. - (Santos & Aguirre 2010)
Syrrhopodon cryptocarpus Dozy & Molk. - (Gil & Morales 2016)
Syrrhopodon gaudichaudii Mont. - (Aguirre 2008, Gil & Morales 2016, Martínez et al. 2019)
Syrrhopodon incompletus Schwägr. - (Avendaño & Aguirre 2007, Aguirre 2008, Santos & Aguirre 2010, Churchill 2016, Gil & Morales 2016)
Syrrhopodon ligulatus Mont. - (Aguirre 2008)
Syrrhopodon lycopodioides (Brid.) Müll.Hal. - (Aguirre 2008, Santos & Aguirre 2010, Churchill 2016)
Syrrhopodon parasiticus (Brid.) Besch. - (Avendaño & Aguirre 2007)
Syrrhopodon prolifer Schwägr. - (Florschütz-de Waard & Florschütz 1979, Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Santos & Aguirre 2010, Churchill 2016)
Syrrhopodon rigidus Hook. & Grev. - (Santos & Aguirre 2010)
Syrrhopodon simmondsii Steere- (Santos & Aguirre 2010)

CATAGONIACEAE

- Catagonium brevicaudatum* Müll.Hal. ex Broth. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Álvaro et al. 2019a, Becerra et al. 2020, Mejía et al. 2020, Gil et al. 2020)

CRYPHAEACEAE

- Cryphaea patens* Hornsch. ex Müll.Hal. - (Churchill 2016, Álvaro et al. 2019b, Mejía et al. 2020)
Cryphaea pilifera Mitt. - (Álvaro et al. 2004)
Cryphaea ramosa (Mitt.) Wilson- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Mejía et al. 2020)
Schoenobryum concavifolium (Griff.) Gangulee- (Avendaño & Aguirre 2007)
Sphaerotheciella pachycarpa (Schimp. ex Besch.) Manuel- (Aguirre 2008, Churchill 2016)

DALTONIACEAE

- Adelothecium bogotense* (Hampe) Mitt. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil & Morales 2016, Martínez et al. 2019)
Daltonia bilimbata Hampe- (Aguirre 2008, Churchill 2016, Gil et al. 2020)
Daltonia gracilis Mitt. - (Churchill & Linares 1995, Aguirre 2008)
Daltonia jamesonii Taylor- (Churchill 2016)
Daltonia lindigiana Hampe- (Churchill 2016)
Daltonia ovalis Taylor- (Churchill 2016)
Daltonia pulvinata Mitt. - (Churchill 2016, Gil & Morales 2016, Mejía et al. 2020, Gil et al. 2020)
Daltonia splachnoides (Sm.) Hook. & Taylor- (Churchill 2016)
Daltonia stenophylla Mitt. - (Aguirre 2008)
Leskeodon andicola (Spruce ex Mitt.) Broth. - (Avendaño & Aguirre 2007)

DICRANACEAE

- Aongstroemia filiformis* (P. Beauv.) Wijk & Margad. - (Aguirre 2008, Churchill 2016, Gil et al. 2020)
Aongstroemia julacea (Hook.) Mitt. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)

- Chorisodontium mittenii* (Müll.Hal.) Broth. - (Churchill & Linares 1995, Álvaro et al. 2004, 2006, Aguirre 2008, Churchill 2016, Moreno et al. 2018, Martínez et al. 2019, Gil et al. 2020)
Chorisodontium speciosum (Hook.f. & Wilson) Broth. - (Churchill 1989, 2016, Gil et al. 2020)
Chorisodontium wallisii (Müll.Hal.) Broth. - (Churchill & Linares 1995, Aguirre 2008)
Dicranella callosa (Hampe) Mitt. - (Santos & Aguirre 2010)
Dicranella densa (Hook.) Mitt. - (Santos & Aguirre 2010)
Dicranella ditissima (Hampe) Mitt. - (Aguirre 2008)
Dicranella heteromalla (Hedw.) Schimp. - (Álvaro et al. 2019b)
Dicranella hilariana (Mont.) Mitt. - (Avendaño & Aguirre 2007, Aguirre 2008, Gil & Morales 2016, Álvaro et al. 2019a, Becerra et al. 2020)
Dicranella lindigiana (Hampe) Mitt. - (Santos & Aguirre 2010)
Dicranella vaginata (Hook.) Cardot- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Álvaro et al. 2019a, Becerra et al. 2020, Gil et al. 2020)
Dicranum frigidum Müll.Hal. - (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Santos & Aguirre 2010, Gil & Morales 2016, Martínez et al. 2019, Mejía et al. 2020, Gil et al. 2020)
Dicranum peruvianum H.Rob. - (Gil et al. 2020)
Holomitrium moritzianum Hampe- (Aguirre 2008, Churchill 2016)
Holomitrium pulchellum Mitt. - (Gil & Morales 2016)
Holomitrium sinuosum B.H.Allen- (Gil & Morales 2016)
Leucoloma cruegerianum (Müll.Hal.) A.Jaeger- (Aguirre 2008, Churchill 2016)
Leucoloma serrulatum Brid. - (Avendaño & Aguirre 2007)
Orthodicranum flagellare (Hedw.) Loeske- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil & Morales 2016, Martínez et al. 2019)

DIPHYSCIACEAE

- Diphyscium fendleri* Müll.Hal. - (Santos & Aguirre 2010)

DITRICHACEAE

- Ceratodon purpureus* (Hedw.) Brid. - (Churchill 2016)
Ceratodon purpureus subsp. *stenocarpus* (Bruch & Schimp.) Dixon- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Álvaro et al. 2004, 2019b, Aguirre 2008, Gil et al. 2020)
Distichium capillaceum (Hedw.) Bruch & Schimp. - (Aguirre 2008, Churchill 2016)
Ditrichum crinale (Taylor) Kuntze- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
Ditrichum difficile (Duby) M.Fleisch. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)
Ditrichum gracile (Mitt.) Kuntze- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
Ditrichum submersum Cardot & Herzog- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
Pleuridium lindigianum (Hampe) S.P.Churchill- (Aguirre 2008, Churchill 2016)
Tristichium lorentzii Müll.Hal. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)

ENTODONTACEAE

- Entodon beyrichii* (Schwägr.) Müll.Hal. - (Avendaño & Aguirre 2007)
Entodon jamesonii (Taylor) Mitt. - (Churchill & Linares 1995, Aguirre 2008, Santos & Aguirre 2010, Churchill 2016, Álvaro et al. 2019b, Mejía et al. 2020)
Entodon macropodus (Hedw.) Müll.Hal. - (Avendaño & Aguirre 2007, Aguirre 2008)
Erythrodontium longisetum (Hook.) Paris- (Aguirre 2008, Churchill 2016, Álvaro et al. 2019b, Mejía et al. 2020)

ERPODIACEAE

Tricherpodium beccarii (Müll. Hal.) Pursell- (Mejía et al. 2020)

FABRONIACEAE

Fabronia ciliaris (Brid.) Brid. - (Aguirre 2008, Álvaro et al. 2019b, Mejía et al. 2020)

FISSIDENTACEAE

Fissidens angustelimbatus Mitt. - (Santos & Aguirre 2010, Mejía et al. 2020)

Fissidens asplenioides Hedw. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Avendaño & Aguirre 2007, Pursell 2007, Aguirre 2008, Becerra et al. 2017, 2020, Álvaro et al. 2019a)

Fissidens bryoides Hedw. - (Mejía et al. 2020)

Fissidens crispus Mont. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Avendaño & Aguirre 2007, Pursell 2007, Aguirre 2008, Santos & Aguirre 2010, Álvaro et al. 2019a, Becerra et al. 2020)

Fissidens curvatus Hornsch. - (Aguirre 2008, Santos & Aguirre 2010, Álvaro et al. 2019a, Becerra et al. 2020, Mejía et al. 2020)

Fissidens elegans Brid. - (Avendaño & Aguirre 2007)

Fissidens flaccidus Mitt. - (Avendaño & Aguirre 2007, Santos & Aguirre 2010)

Fissidens inaequalis Mitt. - (Morales et al. 2012, Becerra et al. 2017, Álvaro et al. 2019a, Becerra et al. 2020)

Fissidens palmatus Hedw. - (Mejía et al. 2020)

Fissidens pellucidus Hornsch. - (Santos & Aguirre 2010)

Fissidens perfalcatus Broth. - (Aguirre 2008, Santos & Aguirre 2010)

Fissidens polypodioides Hedw. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Pursell 2007, Aguirre 2008)

Fissidens prionodes Mont. - (Avendaño & Aguirre 2007, Santos & Aguirre 2010)

Fissidens rigidulus Hook.f. & Wilson- (Álvaro et al. 2019a, 2019b, Becerra et al. 2020)

Fissidens serratus Müll.Hal. - (Santos & Aguirre 2010)

Fissidens steerei Grout- (Avendaño & Aguirre 2007, Santos & Aguirre 2010)

Fissidens submarginatus Bruch- (Santos & Aguirre 2010)

Fissidens wallisii Müll.Hal. - (Pursell 2007, Aguirre 2008, Churchill 2016)

Fissidens weirii Mitt. - (Álvaro et al. 2004, Lagos & Morales 2008, Mejía et al. 2020, Gil et al. 2020)

Fissidens zollingeri Mont. - (Santos & Aguirre 2010, Mejía et al. 2020)

FONTINALACEAE

Fontinalis bogotensis Hampe- (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Lagos & Morales 2008, Becerra et al. 2017, 2020, Álvaro et al. 2019a, Gil et al. 2020)

FUNARIACEAE

Entosthodon bonplandii (Hook.) Mitt. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)

Funaria calvescens Schwägr. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Santos & Aguirre 2010, Álvaro et al. 2019b)

Funaria hygrometrica Hedw. - (Álvaro et al. 2004, Churchill 2016)

GRIMMIACEAE

Grimmia austrofunalis Müll.Hal. - (Aguirre 2008, Delgadillo, 2015)

Grimmia donniana Sm. - (Mejía et al. 2020)

Grimmia elongata Kaulf. - (Aguirre 2008, Delgadillo, 2015, Mejía et al. 2020)

Grimmia fuscolutea Hook. - (Mejía et al. 2020)

- Grimmia longirostris* Hook. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Delgadillo, 2015, Martínez et al. 2019)
Grimmia navicularis Herzog- (Aguirre 2008, Delgadillo, 2015, Churchill 2016)
Racomitrium crispipilum (Taylor) A.Jaeger- (Churchill 1989, 2016, Churchill & Linares 1995, Medina 2006, Aguirre 2008, Martínez et al. 2019, Mejía et al. 2020, Gil et al. 2020)
Racomitrium geronticum Müll. Hal. - (como *R. lanuginosum* (Hedw.) Brid., Aguirre 2008, Churchill 1989, 2016, Churchill & Linares 1995)
Racomitrium molle Cardot- (Churchill 2016)
Racomitrium subsecundum (Hook. & Grev. ex Harv.) Mitt. & Wilson- (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Lagos & Morales 2008, Martínez et al. 2019, Gil et al. 2020)
Streptocolea atrata (Hornsch.) Ochyra & Żarnowiec - (Ellis *et al.* 2012)

HEDWIGIACEAE

- Hedwigia ciliata* (Hedw.) P.Beauv. - (Churchill 1989, Churchill & Linares 1995, Aguirre 2008, Mejía et al. 2020)
Hedwigia nivalis (Müll.Hal.) Mitt. - (Churchill 2016)
Hedwigidium integrifolium (P.Beauv.) Dixon - (Churchill 1989, 2016, Churchill & Linares 1995, Medina 2006, Aguirre 2008, Martínez et al. 2019, Mejía et al. 2020, Gil et al. 2020)

HELICOPHYLLACEAE

- Helicophyllum torquatum* (Hook.) Brid. - (Santos & Aguirre 2010)

HOOKERIAACEAE

- Crossomitrium epiphyllum* (Mitt.) Müll.Hal. - (Avendaño & Aguirre 2007, Santos & Aguirre 2010)
Crossomitrium patrisiae (Brid.) Müll.Hal. - (Santos & Aguirre 2010)
Crossomitrium sintenisii Müll.Hal. - (Santos & Aguirre 2010)
Hookeria acutifolia Hook. & Grev. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)

HYLOCOMIACEAE

- Ctenidium malacodes* Mitt. - (Churchill 1989, 2016, Churchill & Linares 1995, Álvaro et al. 2004, Aguirre 2008, Ireland & Buck 2009, Moreno et al. 2018)
Pleurozium schreberi (Willd. ex Brid.) Mitt. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019, Gil et al. 2020)

HYPNACEAE

- Campylophyllum sommerfeltii* (Myrin) Hedenäs - (Morales et al. 2012, Gil & Morales 2016, Martínez et al. 2019, Gil et al. 2020)
Chryso-hypnum diminutivum (Hampe) W.R.Buck- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Santos & Aguirre 2010)
Chryso-hypnum elegantulum (Hook.) Hampe- (Churchill 2016, Mejía et al. 2020)
Ectropothecium leptochaeton (Schwägr.) W.R.Buck- (Avendaño & Aguirre 2007, Aguirre 2008)
Hypnum amabile (Mitt.) Hampe- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Álvaro et al. 2004, 2006, Medina 2006, Aguirre 2008, Morales et al. 2012, Moreno et al. 2018, Martínez et al. 2019, Gil et al. 2020)
Hypnum cupressiforme Hedw. - (Aguirre 2008, Churchill 2016, Martínez et al. 2019, Mejía et al. 2020)
Mittenothamnium reduncum (Schimp. ex Mitt.) Ochyra- (Churchill & Linares 1995, Churchill 2016, Álvaro et al. 2019a, Becerra et al. 2020, Gil et al. 2020)

Mittenothamnium reptans (Hedw.) Cardot- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Álvaro et al. 2004, 2019a, Avendaño & Aguirre 2007, Aguirre 2008, Santos & Aguirre 2010, Martínez et al. 2019, Becerra et al. 2020)

Mittenothamnium viscidulum (Hampe) Cardot- (Aguirre 2008)

Phyllocladon truncatulus (Müll.Hal.) W.R.Buck- (Avendaño & Aguirre 2007)

Pylaisia falcata Schimp. - (Churchill & Linares 1995, Álvaro et al. 2004, Aguirre 2008, Ireland & Buck 2009, Churchill 2016, Martínez et al. 2019, Gil et al. 2020)

Rhacopilopsis trinitensis (Müll.Hal.) E.Britton & Dixon- (Churchill 1989, 2016, Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Ireland & Buck 2009, Moreno et al. 2018, Martínez et al. 2019)

Taxiphyllum ligulifolium (E.B.Bartram) W.R.Buck- (Santos & Aguirre 2010)

Taxiphyllum taxirameum (Mitt.) M.Fleisch. - (Avendaño & Aguirre 2007, Martínez et al. 2019)

Vesicularia vesicularis (Schwägr.) Broth. - (Avendaño & Aguirre 2007, Santos & Aguirre 2010)

HYPOPTERYGIACEAE

Hypopterygium tamarisci Kindb. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019)

LEMBOPHYLLACEAE

Pilotrichella flexilis (Hedw.) Ångstr. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Álvaro et al. 2004, 2006, Avendaño & Aguirre 2007, Aguirre 2008, Morales et al. 2012, Gil & Morales 2016, Martínez et al. 2019)

Rigodium toxarion (Schwägr.) A.Jaeger- (Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019, Gil et al. 2020)

LEPYRODONTACEAE

Lepyrodon tomentosus (Hook.) Mitt. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019, Mejía et al. 2020)

LESKEACEAE

Haplocladium microphyllum (Sw. ex Hedw.) Broth. - (Aguirre 2008)

Leskeadelphus angustatus (Taylor) B.H.Allen- (Aguirre 2008, Álvaro et al. 2019b, Martínez et al. 2019, Mejía et al. 2020, Gil et al. 2020)

Rozea subjulacea Besch. - (Aguirre 2008, Churchill 2016)

LEUCOBRYACEAE

Atrectylocarpus longisetus (Hook.) E.B. Bartram- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008, Lagos & Morales 2008, Gil & Morales 2016, Gil et al. 2020)

Bryohumbertia filifolia (Hornsch.) J. -P.Frahm - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Santos & Aguirre 2010)

Campylopus albidovirens Herzog. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)

Campylopus anderssonii (Müll.Hal.) A.Jaeger - (Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008, Moreno et al. 2018, Martínez et al. 2019, Mejía et al. 2020, Gil et al. 2020)

Campylopus arctocarpus (Hornsch.) Mitt. - (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019, Gil et al. 2020)

Campylopus areodictyon (Müll.Hal.) Mitt. - (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008, Moreno et al. 2018, Gil et al. 2020)

- Campylopus argyrocaulon* (Müll.Hal.) Broth. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008, Gil & Morales 2016, Martínez et al. 2019, Gil et al. 2020)
- Campylopus asperifolius* Mitt. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil et al. 2020)
- Campylopus cavifolius* Mitt. - (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008, Moreno et al. 2018)
- Campylopus cleefii* J. -P.Frahm- (Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019)
- Campylopus concolor* (Hook.) Brid. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008)
- Campylopus cuspidatus* var. *dicnemioides* (Müll.Hal.) J. -P.Frahm- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil et al. 2020)
- Campylopus densicoma* (Müll.Hal.) Paris- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008, Gil et al. 2020)
- Campylopus edithae* Broth. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil et al. 2020)
- Campylopus flexuosus* (Hedw.) Brid. - (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Churchill 2016, Martínez et al. 2019, Gil et al. 2020)
- Campylopus fragilis* (Brid.) Bruch & Schimp. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008, Mejía et al. 2020, Gil et al. 2020)
- Campylopus heterostachys* (Hampe) A.Jaeger- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019)
- Campylopus huallagensis* Broth. var. *huallagensis*- (Martínez et al. 2019)
- Campylopus huallagensis* var. *weberbaueri* (Broth.) J. -P. Frahm- (Martínez et al. 2019)
- Campylopus incertus* Thér. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil et al. 2020)
- Campylopus jamesonii* (Hook.) A.Jaeger- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008, Morales et al. 2012, Gil & Morales 2016)
- Campylopus jugorum* Herzog- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019, Gil et al. 2020)
- Campylopus lamellinervis* (Müll.Hal.) Mitt. - (Aguirre 2008)
- Campylopus longicellularis* J. -P.Frahm- (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil & Morales 2016, Gil et al. 2020)
- Campylopus luteus* (Müll.Hal.) Paris- (Morales et al. 2012, Martínez et al. 2019)
- Campylopus nivalis* (Brid.) Brid. - (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019, Mejía et al. 2020, Gil et al. 2020)
- Campylopus oblongus* Thér. - (Aguirre 2008, Churchill 2016)
- Campylopus pauper* (Hampe) Mitt. var. *pauper* - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008, Álvaro et al. 2019b, Martínez et al. 2019)
- Campylopus pauper* var. *lamprodictyon* (Hampe) J. -P.Frahm- (Robinson 1967, Florschütz-de Waard & Florschütz 1979)
- Campylopus perexilis* (Müll.Hal.) Paris- (Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008, Lagos & Morales 2008)
- Campylopus pilifer* Brid. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil et al. 2020)

- Campylopus pittieri* R.S.Williams- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019, Gil et al. 2020)
- Campylopus reflexisetus* (Müll. Hal.) Broth. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019)
- Campylopus richardii* Brid. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Álvaro et al. 2004, 2006, Medina 2006, Aguirre 2008, Gil et al. 2020)
- Campylopus savannarum* (Müll.Hal.) Mitt. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
- Campylopus sharpii* J. -P.Frahm D.G.Horton & Vitt- (Gil et al. 2020)
- Campylopus subcuspidatus* (Hampe) A.Jaeger- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019)
- Campylopus subjugorum* Broth. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
- Campylopus surinamensis* Müll.Hal. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
- Campylopus tallulensis* Sull. & Lesq. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil et al. 2020)
- Campylopus trichophylloides* Thér. ex Herzog- (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
- Campylopus trivialis* Müll.Hal. ex E. Britton - (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Lagos & Morales 2008, Gil et al. 2020)
- Campylopus zygodonticarpus* (Müll.Hal.) Paris- (Gil & Morales 2016, Martínez et al. 2019)
- Dicranodontium denudatum* (Brid.) E.Britton- (Florschütz-de Waard & Florschütz 1979, Churchill 1989)
- Leucobryum albicans* (Schwägr.) Lindb. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
- Leucobryum antillarum* Schimp. ex Besch. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
- Leucobryum crispum* Müll.Hal. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil & Morales 2016, Martínez et al. 2019)
- Leucobryum giganteum* Müll.Hal. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
- Leucobryum martianum* (Hornsch.) Hampe ex Müll.Hal. - (Churchill 1989, 2016, Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Santos & Aguirre 2010, Morales et al. 2012, Gil & Morales 2016, Martínez et al. 2019, Gil et al. 2020)
- Pilopogon guadalupensis* (Brid.) J. -P.Frahm- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008, Santos & Aguirre 2010)
- Pilopogon laevis* (Taylor) Thér. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Frahm 1991, Churchill & Linares 1995, Aguirre 2008)

LEUCODONTACEAE

- Leucodon curvirostris* Hampe- (Churchill & Linares 1995, Aguirre 2008, Santos & Aguirre 2010, Churchill 2016, Martínez et al. 2019)

LEUCOMIACEAE

- Leucomium strumosum* (Hornsch.) Mitt. - (Aguirre 2008, Lagos & Morales 2008, Santos & Aguirre 2010, Martínez et al. 2019, Gil et al. 2020)
- Rhynchostegiopsis costaricensis* H.Rob. & D.G.Griffin- (Aguirre 2008)
- Rhynchostegiopsis flexuosa* (Sull.) Müll.Hal. - (Santos & Aguirre 2010)
- Rhynchostegiopsis tunguraguana* (Mitt.) Broth. - (Álvaro et al. 2004, 2006)

MEESIACEAE

Leptobryum pyriforme (Hedw.) Wilson- (Gil et al. 2020)

METEORACEAE

Cryptopapillaria penicillata (Dozy & Molk.) M.Menzel - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Santos & Aguirre 2010)

Floribundaria flaccida (Mitt.) Broth. - (Santos & Aguirre 2010)

Meteorium depei (Hornsch. ex Müll.Hal.) Mitt. - (Florschütz-de Waard & Florschütz 1979, Churchill & Linares 1995, Aguirre 2008, Churchill 2016)

Meteorium nigrescens (Sw. ex Hedw.) Dozy & Molk. - (Avendaño & Aguirre 2007, Aguirre 2008, Santos & Aguirre 2010)

Toloxis imponderosa (Taylor) W.R.Buck- (Churchill & Linares 1995, Aguirre 2008, Santos & Aguirre 2010, Churchill 2016)

Trachypus bicolor Reinw. & Hornsch. var. *viridulus* (Mitt.) Zanten- (Martínez et al. 2019)

MNIACEAE

Mielichhoferia megalocarpa (Arn.) Mitt. - (Santos & Aguirre 2010)

Plagiomnium rhynchophorum (Harv.) T.J.Kop. - (Aguirre 2008, Lagos & Morales 2008, Martínez et al. 2019, Gil et al. 2020)

Pohlia apolensis R.S.Williams- (Aguirre 2008, Churchill 2016)

Pohlia elongata Hedw. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Álvaro et al. 2019a, Becerra et al. 2020, Gil et al. 2020)

Pohlia nutans (Hedw.) Lindb. - (Martínez et al. 2019)

Pohlia papillosa (A.Jaeger) Broth. - (Aguirre 2008, Churchill 2016)

Pohlia wahlenbergii (F.Weber & D.Mohr) A.L.Andrews- (Álvaro et al. 2019a, Becerra et al. 2020)

Schizymenium andinum (Sull.) A.J.Shaw- (Álvaro et al. 2004, Aguirre 2008)

Schizymenium campylocarpum (Arn. & Hook.) A.J.Shaw- (Aguirre 2008, Churchill 2016)

Schizymenium gracilisetum (Hampe) A.J.Shaw- (Aguirre 2008)

Schizymenium lindigii (Hampe) A.J.Shaw- (Aguirre 2008)

NECKERACEAE

Neckera chilensis Schimp. - (Churchill 1989, 2016, Churchill & Linares 1995, Álvaro et al. 2004, Aguirre 2008, Moreno et al. 2018, Martínez et al. 2019)

Neckera ehrenbergii Müll.Hal. - (Aguirre 2008, Churchill 2016, Gil & Morales 2016, Martínez et al. 2019, Mejía et al. 2020)

Neckera obtusifolia Taylor- (Martínez et al. 2019)

Neckera scabridens Müll.Hal. - (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Martínez et al. 2019)

Neckeropsis disticha (Hedw.) Kindb. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Santos & Aguirre 2010)

Neckeropsis undulata (Hedw.) Reichardt- (Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Santos & Aguirre 2010, Morales et al. 2012, Churchill 2016)

Orthostichella pentasticha (Brid.) W.R.Buck- (Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Santos & Aguirre 2010)

Porotrichodendron lindigii (Hampe) W.R.Buck- (Aguirre 2008, Santos & Aguirre 2010, Churchill 2016, Moreno et al. 2018)

Porotrichodendron superbum (Taylor) Broth. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Álvaro et al. 2004, Aguirre 2008, Martínez et al. 2019, Gil et al. 2020)

- Porotrichopsis flacca* Herzog- (Martínez et al. 2019)
Porotrichum expansum (Taylor) Mitt. - (Álvaro et al. 2004, Martínez et al. 2019, Gil et al. 2020)
Porotrichum korthalsianum (Dozy & Molk.) Mitt. - (Aguirre 2008, Churchill 2016, Álvaro et al. 2019a, Becerra et al. 2020)
Porotrichum longirostre (Hook.) Mitt. - (Avendaño & Aguirre 2007, Aguirre 2008, Santos & Aguirre 2010, Churchill 2016)
Porotrichum mutabile Hampe- (Churchill 1989, 2016, Churchill & Linares 1995, Álvaro et al. 2004, Aguirre 2008, Martínez et al. 2019, Gil et al. 2020)
Porotrichum substriatum (Hampe) Mitt. - (Aguirre 2008)
Thamnobryum fasciculatum (Sw. ex Hedw.) I.Sastre - (Álvaro et al. 2004, 2019a Aguirre 2008, Lagos & Morales 2008, Martínez et al. 2019, Becerra et al. 2020)

OCTOBLEPHARACEAE

- Octoblepharum albidum* Hedw. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Santos & Aguirre 2010)
Octoblepharum cocuiense Mitt. - (Santos & Aguirre 2010)
Octoblepharum pulvinatum (Dozy & Molk.) Mitt. - (Avendaño & Aguirre 2007, Santos & Aguirre 2010, Morales et al. 2012)

ORTHODONTIACEAE

- Orthodontium pellucens* (Hook.) Bruch & Schimp. - (Aguirre 2008)

ORTHOTRICHACEAE

- Groutiella apiculata* (Hook.) H.A.Crum & Steere- (Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Churchill 2016)
Groutiella chimborazensis (Spruce ex Mitt.) Florsch. - (Mejía et al. 2020)
Groutiella husnotii (Schimp. ex Besch.) H.A.Crum & Steere- (Avendaño & Aguirre 2007)
Macrocoma tenuis (Hook. & Grev.) Vitt- (Aguirre 2008, Churchill 2016, Martínez et al. 2019, Mejía et al. 2020)
Macromitrium cirrosum (Hedw.) Brid. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Mejía et al. 2020)
Macromitrium guatemalense Müll.Hal. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)
Macromitrium longifolium (Hook.) Brid. - (Álvaro et al. 2004, Álvaro et al. 2006, Aguirre 2008, Mejía et al. 2020)
Macromitrium punctatum (Hook. & Grev.) Brid. - (Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Churchill 2016, Mejía et al. 2020)
Macromitrium scoparium Mitt. - (Mejía et al. 2020)
Macromitrium viticulosum (Raddi) Brid. - (Mejía et al. 2020)
Orthotrichum diaphanum Schrad. ex Brid. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Álvaro et al. 2019b)
Orthotrichum elongatum Taylor - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
Orthotrichum penicillatum Mitt. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
Orthotrichum pungens Mitt. - (Aguirre 2008, Martínez et al. 2019)
Orthotrichum pycnophyllum Schimp. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Álvaro et al. 2019b)
Orthotrichum trachymitrium Mitt. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
Zygodon campylophyllus Müll.Hal. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)
Zygodon fragilis H.Rob. - (Aguirre 2008, Churchill 2016)
Zygodon peruvianus Sull. - (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016 Churchill & Linares 1995, Aguirre 2008)

Zygodon pichinchensis (Taylor) Mitt. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Calabrese 2006, Aguirre 2008)

Zygodon reinwardtii (Hornsch.) A.Braun- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Calabrese 2006, Aguirre 2008, Santos & Aguirre 2010)

Zygodon stenocarpus Taylor- (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)

PHYLLOGONIACEAE

Phyllogonium fulgens (Hedw.) Brid. - (Martínez et al. 2019)

Phyllogonium viscosum (P.Beauv.) Mitt. - (Aguirre 2008)

PILOTRICHACEAE

Actinodontium sprucei (Mitt.) A.Jaeger- (Churchill & Linares 1995, Aguirre 2008, Santos & Aguirre 2010, Churchill 2016, Gil et al. 2020)

Callicostella pallida (Hornsch.) Ångstr. - (Avendaño & Aguirre 2007, Santos & Aguirre 2010, Morales et al. 2012)

Cyclodictyon albicans (Hedw.) Kuntze- (Avendaño & Aguirre 2007, Santos & Aguirre 2010)

Cyclodictyon bombonasicum (Mitt.) Kuntze- (Santos & Aguirre 2010)

Cyclodictyon humile (Mitt.) Kuntze- (Santos & Aguirre 2010)

Cyclodictyon roridum (Hampe) Kuntze- (Lagos & Morales 2008, Santos & Aguirre 2010, Becerra et al. 2017, Álvaro et al. 2019a, Becerra et al. 2020, Gil et al. 2020)

Cyclodictyon subtortifolium (E.B.Bartram) W.R.Buck- (Santos & Aguirre 2010)

Hypnella diversifolia (Mitt.) A.Jaeger- (Aguirre 2008)

Lepidopilum arcuatum Mitt. - (Santos & Aguirre 2010)

Lepidopilum longifolium Hampe- (Santos & Aguirre 2010, Álvaro et al. 2019a, Becerra et al. 2020, Gil et al. 2020)

Lepidopilum muelleri (Hampe) Hampe- (Churchill 1989, Avendaño & Aguirre 2007)

Lepidopilum pallidonitens (Müll.Hal.) Paris- (Aguirre 2008)

Lepidopilum polytrichoides (Hedw.) Brid. - (Aguirre 2008)

Lepidopilum scabrisetum (Schwägr.) Steere- (Avendaño & Aguirre 2007, Aguirre 2008, Santos & Aguirre 2010, Gil et al. 2020)

Lepidopilum surinamense Müll.Hal. - (Santos & Aguirre 2010)

Stenodictyon wrightii (Sull. & Lesq.) Crosby- (Gil et al. 2020)

Thamniopsis colombica (R.S.Williams) B.H.Allen- (Avendaño & Aguirre 2007, Santos & Aguirre 2010)

Thamniopsis cruegeriana (Müll.Hal.) W.R.Buck- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)

Thamniopsis glandulifera (Hampe) B.H. Allen- (Aguirre 2008, Santos & Aguirre 2010)

Thamniopsis rivularis (Mitt.) B.H.Allen- (Avendaño & Aguirre 2007, Santos & Aguirre 2010)

Thamniopsis undata (Hedw.) W.R.Buck- (Aguirre 2008)

Trachyxiphium steerei (D.G.Griffin) S.P.Churchill- (Churchill 2016)

Trachyxiphium subfalcatum (Hampe) W.R.Buck- (Santos & Aguirre 2010, Martínez et al. 2019)

Trachyxiphium variabile (Hornsch. ex Mitt.) W.R. Buck- (Álvaro et al. 2019a, Becerra et al. 2020)

PLAGIOTHECIACEAE

Herzogiella cylindricarpa (Cardot) Z. Iwats. - (Gil et al. 2020)

Plagiothecium lucidum (Hook.f. & Wilson) Paris- (Florschütz-de Waard & Florschütz 1979, Aguirre 2008, Churchill 2016)

Plagiothecium novogranatense (Hampe) Mitt. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Becerra et al. 2017, Álvaro et al. 2019a, Becerra et al. 2020)

Plagiothecium orthocarpum Mitt. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019)

Pseudotaxiphyllum distichaceum (Mitt.) Z.Iwats. - (Ireland & Buck 2009)

POLYTRICHACEAE

Atrichum androgynum (Müll.Hal.) A.Jaeger- (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Aponte & Uribe 2017, Becerra et al. 2017, Álvaro et al. 2019a, Becerra et al. 2020)

Pogonatum campylocarpum (Müll.Hal.) Mitt. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Aponte & Uribe 2017, Becerra et al. 2017, Álvaro et al. 2019a, Becerra et al. 2020)

Pogonatum pensilvanicum (Bartram ex Hedw.) P.Beauv. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)

Pogonatum perichaetiale (Mont.) A.Jaeger subsp. *oligodus* (Kunze ex Müll.Hal.) Hyvönen- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Aponte & Uribe 2017)

Polytrichadelphus ciliatus (Hook. & Wilson) Mitt. - (Gil et al. 2020)

Polytrichadelphus giganteus (Hook.) Mitt. - (Martínez et al. 2019, Gil et al. 2020)

Polytrichadelphus longisetus (Brid.) Mitt. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Aponte & Uribe 2017, Martínez et al. 2019, Gil et al. 2020)

Polytrichastrum tenellum (Müll.Hal.) G.L.Sm. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Aponte & Uribe 2017, Martínez et al. 2019, Gil et al. 2020)

Polytrichum commune Hedw. - (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989)

Polytrichum ericoides Hampe- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Santos & Aguirre 2010, Aponte & Uribe 2017, Martínez et al. 2019, Gil et al. 2020)

Polytrichum juniperinum Hedw. - (Robinson 1967, Churchill 1989, 2016, Churchill & Linares 1995, Álvaro et al. 2004, 2006, 2019b, Medina 2006, Aguirre 2008, Santos & Aguirre 2010, Aponte & Uribe 2017, Martínez et al. 2019, Mejía et al. 2020, Gil et al. 2020)

Steereobryon elamellosum (Herzog) M. Menzel- (Aponte & Uribe 2017)

POTTIACEAE

Anoetangium aestivum (Hedw.) Mitt. - (Cano & Jiménez, 2013, Churchill 2016, Gil et al. 2020)

Barbula indica (Hook.) Spreng. - (Avendaño & Aguirre 2007)

Barbula integrifolia (R.S. Williams) R.H. Zander- (Mejía et al. 2020)

Bryoerythrophyllum campylocarpum (Müll.Hal.) H.A.Crum- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Álvaro et al. 2019a, Martínez et al. 2019, Becerra et al. 2020)

Bryoerythrophyllum jamesonii (Taylor) H.A.Crum- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019)

Chionoloma angustatum (Mitt.) M.Menzel- (Aguirre 2008)

Chionoloma tenuirostre (Hook. & Taylor) M. Alonso M.J. Cano & J.A. Jiménez- (Gil et al. 2020)

Didymodon australasiae (Hook. & Grev.) R.H.Zander- (Gil et al. 2020)

Didymodon laevigatus (Mitt.) R.H.Zander- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Becerra et al. 2020, Gil et al. 2020)

Didymodon paramicola (H. Rob.) O.Werner, J.A.Jiménez & Ros- (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)

Didymodon rigidulus Hedw. - (Martínez et al. 2019, Gil et al. 2020)

Didymodon tophaceus (Brid.) Lisa- (Santos & Aguirre 2010, Álvaro et al. 2019b)

Dolotortula mniifolia (Sull.) R.H.Zander- (Santos & Aguirre 2010)

Hymenostylium aurantiacum Mitt. - (Cano & Jiménez, 2013)

- Hymenostylium recurvirostrum* (Hedw.) Dixon- (Churchill & Linares 1995, Aguirre 2008, Cano & Jiménez, 2013, Churchill 2016, Álvaro et al. 2019a, Becerra et al. 2020, Gil et al. 2020)
- Hyophila involuta* (Hook.) A. Jaeger- (Avendaño & Aguirre 2007, Santos & Aguirre 2010, Álvaro et al. 2019a, Becerra et al. 2020)
- Mironia ehrenbergiana* (Müll.Hal.) R.H.Zander- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)
- Molendoa sendtneriana* (Bruch & Schimp.) Limpr. - (Churchill 1989, Churchill & Linares 1995, Cano & Jiménez, 2013, Churchill 2016, Martínez et al. 2019)
- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Aguirre 2008)
- Pleurochaete luteola* (Besch.) Thér. - (Florschütz-de Waard & Florschütz 1979, Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Álvaro et al. 2019b, Mejía et al. 2020)
- Pseudocrossidium replicatum* (Taylor) R.H.Zander- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Álvaro et al. 2019b, Mejía et al. 2020, Gil et al. 2020)
- Splachnobryum obtusum* (Brid.) Müll.Hal. - (Santos & Aguirre 2010)
- Streptocalyptra lorentziana* Müll.Hal. - (Mejía et al. 2020)
- Streptopogon calymperes* Müll.Hal. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)
- Streptopogon erythrodontus* (Taylor) Wilson- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)
- Streptopogon lindigii* Hampe- (Churchill 1989, Churchill & Linares 1995, Aguirre 2008, Churchill 2016)
- Syntrichia amphidiacea* (Müll.Hal.) R.H.Zander- (Álvaro et al. 2019b)
- Syntrichia andicola* (Mont.) Ochyra- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019, Mejía et al. 2020)
- Syntrichia bogotensis* (Hampe) Mitt. ex R.H.Zander- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Gil et al. 2020)
- Syntrichia fragilis* (Taylor) Ochyra- (Aguirre 2008, Churchill 2016, Álvaro et al. 2019b, Mejía et al. 2020)
- Syntrichia lacerifolia* (R.S.Williams) R.H.Zander- (Mejía et al. 2020)
- Syntrichia laevipila* Brid. - (Mejía et al. 2020)
- Syntrichia pagorum* (Milde) J.J.Amann- (Aguirre 2008, Churchill 2016)
- Tortella alpicola* Dixon- (Gil et al. 2020)
- Tortula muralis* Hedw. - (Ellis et al. 2021)
- Trichostomum brachydontium* Bruch- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Santos & Aguirre 2010, Álvaro et al. 2019a, Becerra et al. 2020, Gil et al. 2020)

PRIONODONTACEAE

- Prionodon densus* (Sw. ex Hedw.) Müll.Hal. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Álvaro et al. 2004, Aguirre 2008, Martínez et al. 2019, Mejía et al. 2020, Gil et al. 2020)
- Prionodon fuscolutescens* Hampe- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Morales et al. 2012, Moreno et al. 2018, Gil et al. 2020)

PTEROBRYACEAE

- Henicodium geniculatum* (Mitt.) W.R.Buck- (Avendaño & Aguirre 2007)
- Orthostichopsis praetermissa* W.R.Buck- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)
- Pirella pohlii* (Schwägr.) Cardot- (Santos & Aguirre 2010)
- Pterobryon densum* Hornsch. - (Morales et al. 2012)

PYLAIASIACEAE

Calliergonella cuspidata (Hedw.) Loeske- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Martínez et al. 2019)

PYLAIADIDELPHACEAE

Aptychella prolifera (Broth.) Herzog - (Churchill & Linares 1995, Álvaro et al. 2004, Aguirre 2008, Churchill 2016, Gil & Morales 2016, Martínez et al. 2019, Gil et al. 2020)

Heterophyllum nemorosum (W.D.J. Koch ex Brid.) Kindb. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil & Morales 2016, Martínez et al. 2019)

Isopterygium tenerifolium Mitt. - (Álvaro et al. 2019a, Martínez et al. 2019, Becerra et al. 2020, Gil et al. 2020)

Isopterygium tenerum (Sw.) Mitt. - (Avendaño & Aguirre 2007, Santos & Aguirre 2010, Martínez et al. 2019, Gil et al. 2020)

Pterogonidium pulchellum (Hook.) Müll.Hal. ex Broth. - (Aguirre 2008, Gil & Morales 2016)

Taxithelium planum (Brid.) Mitt. - (Santos & Aguirre 2010)

Taxithelium pluripunctatum (Renauld & Cardot) W.R.Buck- (Gil & Morales 2016)

Taxithelium portoricense R.S.Williams- (Gil & Morales 2016)

RACOPIACEAE

Racopilum tomentosum (Hedw.) Brid. - (Churchill 1989, 2016, Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Santos & Aguirre 2010)

REGMATODONTACEAE

Regmatodon orthostegius Mont. - (Martínez et al. 2019)

RHABDOWEISIACEAE

Amphidium tortuosum (Hornsch.) Cufod. - (Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)

Oreoweisia brasiliensis Hampe- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)

Oreoweisia erosa (Hampe ex Müll.Hal.) Kindb. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)

Symblepharis lindigii Hampe- (Álvaro et al. 2004, Gil et al. 2020)

RHACOCARPACEAE

Rhacocarpus purpurascens (Brid.) Paris- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Mejía et al. 2020, Gil et al. 2020)

RHIZOGONIACEAE

Pyrrhobryum mnioides (Hook.) Manuel- (Churchill 1989, 2016, Churchill & Linares 1995, Álvaro et al. 2004, Aguirre 2008, Gil et al. 2020)

Pyrrhobryum spiniforme (Hedw.) Mitt. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Santos & Aguirre 2010, Martínez et al. 2019)

Rhizogonium novae-hollandiae (Brid.) Brid. - (Aguirre 2008, Moreno et al. 2018, Gil et al. 2020)

RUTENBERGIACEAE

Pseudocryphaea domingensis (Spreng.) W.R.Buck- (Santos & Aguirre 2010)

SELIGERIAACEAE

Blindia magellanica Schimp. - (Aguirre 2008, Churchill 2016)

SEMATOPHYLLACEAE

- Acroporium pungens* (Hedw.) Broth. - (Aguirre 2008, Santos & Aguirre 2010, Martínez et al. 2019)
Aptychopsis estrellae (Müll. Hal.) P.E.A.S. Cámara, W.R. Buck & Carv. -Silva- (Santos & Aguirre 2010, Gil & Morales 2016, Martínez et al. 2019, Gil et al. 2020)
Sematophyllum adnatum (Michx.) E.Britton- (Aguirre 2008, Santos & Aguirre 2010, Morales et al. 2012, Martínez et al. 2019)
Sematophyllum cuspidiferum Mitt. - (Álvaro et al. 2019b)
Sematophyllum erythropodium Mitt. - (Aguirre 2008)
Sematophyllum flavidum Mitt. - (Aguirre 2008)
Sematophyllum galipense (Müll.Hal.) Mitt. - (Avendaño & Aguirre 2007, Santos & Aguirre 2010, Álvaro et al. 2019a, Becerra et al. 2020)
Sematophyllum loxense (Hook.) Mitt. - (Churchill & Linares 1995, Aguirre 2008, Churchill 2016)
Sematophyllum subpinnatum (Brid.) E.Britton- (Churchill & Linares 1995, Avendaño & Aguirre 2007, Aguirre 2008, Santos & Aguirre 2010, Churchill 2016, Mejía et al. 2020)
Sematophyllum subsimplex (Hedw.) Mitt. - (Aguirre 2008, Santos & Aguirre 2010, Morales et al. 2012, Simijaca et al. 2014, Gil & Morales 2016, Martínez et al. 2019)
Sematophyllum swartzii (Schwägr.) W.H.Welch & H.A.Crum- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008, Gil & Morales 2016, Martínez et al. 2019, Gil et al. 2020)
Trichosteleum cyparissoides (Hornsch.) H.Rob. - (Gil et al. 2020)
Trichosteleum fluviale (Mitt.) A.Jaeger- (Lagos & Morales 2008)
Trichosteleum papillosum (Hornsch.) A.Jaeger- (Santos & Aguirre 2010)

SPHAGNACEAE

- Sphagnum boyacanum* H.A.Crum- (Churchill & Linares 1995, Ruiz et al. 2006, Aguirre 2008, Churchill 2016)
Sphagnum cleefii H.A.Crum- (Churchill 1989, 2016, Churchill & Linares 1995, Medina 2006, Aguirre 2008)
Sphagnum compactum DC. - (Ruiz et al. 2006, Aguirre 2008, Churchill 2016, Gil et al. 2020)
Sphagnum cundinamarcanum H.A.Crum- (Churchill & Linares 1995, Ruiz et al. 2006, Churchill 2016)
Sphagnum cuspidatum Ehrh. ex Hoffm. - (Churchill & Linares 1995, Medina 2006, Ruiz et al. 2006, Aguirre 2008, Churchill 2016, Martínez et al. 2019, Gil et al. 2020)
Sphagnum cyclophyllum Sull. & Lesq. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Ruiz et al. 2006, Aguirre 2008)
Sphagnum falcatulum Besch. - (Aguirre 2008)
Sphagnum flaccidum Besch. - (Ruiz et al. 2006)
Sphagnum limbatum Mitt. - (Álvaro et al. 2004, 2006, Medina 2006, Ruiz et al. 2006, Aguirre 2008, Churchill 2016)
Sphagnum magellanicum Brid. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Álvaro et al. 2004, Medina 2006, Ruiz et al. 2006, Aguirre 2008, Morales et al. 2012, Gil et al. 2020)
Sphagnum meridense (Hampe) Müll.Hal. - (Ruiz et al. 2006, Aguirre 2008, Churchill 2016, Gil et al. 2020)
Sphagnum oxyphyllum Warnst. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Ruiz et al. 2006, Aguirre 2008, Gil et al. 2020)
Sphagnum perichaetiale Hampe- (Álvaro et al. 2004, Ruiz et al. 2006, Gil et al. 2020)
Sphagnum recurvum P.Beauv. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, Churchill & Linares 1995, Medina 2006, Ruiz et al. 2006, Aguirre 2008, Churchill 2016, Gil et al. 2020)

Sphagnum sancto-josephense H.A.Crum & Crosby- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Álvaro et al. 2004, 2006, Ruiz et al. 2006, Aguirre 2008, Gil et al. 2020)

Sphagnum sparsum Hampe- (Churchill & Linares 1995, Álvaro et al. 2004, Medina 2006, Aguirre 2008, Gil et al. 2020)

Sphagnum subsecundum Nees var. *subsecundum*- (Ruiz et al. 2006, Avendaño & Aguirre 2007, Morales et al. 2012, Gil et al. 2020)

Sphagnum subsecundum Nees var. *rufescens* (Nees & Hornsch.) Huebener- (Aguirre 2008)

Sphagnum tenerum Sull. & Lesq. ex Sull. - (Gil et al. 2020)

SPLACHNACEAE

Tayloria jamesonii Taylor- (Gil et al. 2020)

Tayloria moritzianum (Müll.Hal.) A.K.Kop. - (Churchill 2016)

Splachnum weberbaueri Reimers- (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Aguirre 2008)

Tayloria scabriseta (Hook.) Mitt. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Álvaro et al. 2004, Aguirre 2008, Gil et al. 2020)

STEREOPHYLLACEAE

Eulacophyllum cultelliforme (Sull.) W.R. Buck & Ireland- (Santos & Aguirre 2010)

Pilosium chlorophyllum (Hornsch.) Müll.Hal. - (Churchill & Linares 1995, Aguirre 2008, Santos & Aguirre 2010, Churchill 2016)

Stereophyllum radiculosum (Hook.) Mitt. - (Aguirre 2008, Santos & Aguirre 2010)

STREPTOTRICHACEAE

Crassileptodontium pungens (Mitt.) R.H.Zander- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Gil et al. 2020)

Crassileptodontium wallisii (Müll.Hal.) R.H.Zander- (Florschütz-de Waard & Florschütz 1979, Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Gil et al. 2020)

Leptodontium excelsum (Sull.) E.Britton- (Aguirre 2008, Mejía et al. 2020)

Leptodontium viticulosoides (P.Beauv.) Wijk & Margad. - (Florschütz-de Waard & Florschütz 1979, Churchill & Linares 1995, Álvaro et al. 2004, Churchill 2016, Gil & Morales 2016, Moreno et al. 2018, Martínez et al. 2019, Mejía et al. 2020, Gil et al. 2020)

Microleptodontium flexifolium (Dicks.) R.H. Zander- (Florschütz-de Waard & Florschütz 1979, Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Mejía et al. 2020)

Microleptodontium stellaticuspis (E.B.Bartram) R.H.Zander- (Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Gil et al. 2020)

Microleptodontium umbrosum (Dusén) R.H.Zander- (Mejía et al. 2020)

Stephanoleptodontium brachyphyllum (Broth. & Thér.) R.H. Zander- (Florschütz-de Waard & Florschütz 1979, Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Martínez et al. 2019, Gil et al. 2020)

Stephanoleptodontium capituligerum (Müll. Hal.) R.H. Zander- (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Álvaro et al. 2019b, Martínez et al. 2019, Gil et al. 2020)

Stephanoleptodontium filicola (Herzog) R.H. Zander - (Florschütz-de Waard & Florschütz 1979, Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Gil et al. 2020)

Stephanoleptodontium longicaule (Mitt.) R.H. Zander- (Florschütz-de Waard & Florschütz 1979, Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Martínez et al. 2019, Gil et al. 2020)

Stephanoleptodontium syntrichioides (Müll. Hal.) R.H. Zander- (Mejía et al. 2020)

Williamsiella lutea (Taylor) R.H. Zander- (Florschütz-de Waard & Florschütz 1979, Churchill & Linares 1995, Aguirre 2008, Churchill 2016, Martínez et al. 2019, Gil et al. 2020)

THUIDIACEAE

Thuidium carantae (Müll.Hal.) A.Jaeger- (Morales et al. 2012)

Thuidium delicatulum (Hedw.) Schimp. - (Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Aguirre 2008, Becerra et al. 2020, Mejía et al. 2020)

Thuidium peruvianum Mitt. - (Robinson 1967, Florschütz-de Waard & Florschütz 1979, Churchill 1989, 2016, Churchill & Linares 1995, Álvaro et al. 2004, Álvaro et al. 2006, Aguirre 2008, Lagos & Morales 2008, Morales et al. 2012, Gil & Morales 2016, Martínez et al. 2019, Mejía et al. 2020, Gil et al. 2020)

Thuidium tomentosum Schimp. - (Avendaño & Aguirre 2007, Aguirre 2008, Santos & Aguirre 2010, Churchill 2016)

Thuidium urceolatum Lorentz- (Avendaño & Aguirre 2007, Aguirre 2008, Churchill 2016, Gil et al. 2020)

4. Statistical data

Richness

For the department of Boyacá 849 species of bryophytes are reported (Appendix 1), included into 295 genera and 102 families, organized into three groups Bryophyta, Marchantiophyta and Antocerothophyta (Table 1). The list of synonyms (Appendix 2) and doubtful or erroneous records (Appendix 3) is also presented.

Table 1: Diversity of bryophyte species reported for Boyacá.

DIVISION	Families	Genera	Species
Mosses	62	197	513
Liverworts	37	94	330
Hornworts	3	4	6
Total	102	295	849

The bryophyte families with the highest number of genera in the department are Lejeuneaceae, Pottiaceae, Brachytheciaceae, Hypnaceae, Amblystegiaceae, Pilotrichaceae, Dicranaceae, Neckeraceae, Lepidoziaceae y Lophocoleaceae, the remaining 92, representing 90,19%, have between 1 and 5 genera (Table 2).

Table 2: Bryophyte families with the highest number of genera in Boyacá

DIVISION	FAMILIES	GENERA
Liverworts	Lejeuneaceae	29
	Lepidoziaceae	6
	Lophocoleaceae	6
	Pottiaceae	18
Mosses	Brachytheciaceae	11
	Hypnaceae	10
	Amblystegiaceae	8
	Pilotrichaceae	8
	Dicranaceae	7
	Neckeraceae	7

At a specific level, the bryophyte families with the highest richness are Lejeuneaceae, Leucobryaceae, Pottiaceae and Bartramiaceae, the remaining 98, that is, 96,07%, have less than 30 species (Table 3).

Table 3: Bryophyte families with the highest number of species in Boyacá

DIVISION	FAMILIES	SPECIES
Liverworts	Lejeuneaceae	80
	Lepidoziaceae	28
	Plagiochilaceae	29
	Frullaniaceae	25
	Metzgeriaceae	22
	Lophocoleaceae	20
Mosses	Leucobryaceae	51
	Pottiaceae	35
	Bartramiaceae	30
	Brachytheciaceae	25
	Bryaceae	24
	Pilotrichaceae	24
	Orthotrichaceae	22
	Fissidentaceae	20
	Dicranaceae	20
	Sphagnaceae	19

The most frequently found genera in the literature are *Campylopus*, *Fissidens*, *Frullania*, *Plagiochila* y *Metzgeria* (Table 4), the remaining 290, that is, 98,3%, have less than 20 species.

Table 4: Bryophyte genera with the highest number of species in Boyacá

DIVISION	GENERA	SPECIES
Liverworts	<i>Plagiochila</i>	29
	<i>Frullania</i>	25
	<i>Metzgeria</i>	22
	<i>Lejeunea</i>	18
	<i>Bazzania</i>	12
Mosses	<i>Campylopus</i>	41
	<i>Fissidens</i>	20
	<i>Sphagnum</i>	19
	<i>Breutelia</i>	14

Table 5 summarizes the information on the department of Boyacá that has been presented in the national catalogs of bryophytes produced so far; From there several aspects stand out. Firstly, it is evident that the studies in bryophytes have been more abundant in mosses than in liverworts and / or hornworts for Colombia; second, it should be noted that the production of information has been continuous for the last 55 years; Finally, it is necessary to highlight the need for research on

hornworts in Colombia, given the recent information that has been found on their diversity, particularly considering that in their research Álvaro et al. (2006, 2019a, 2019b), Lagos et al. (2008), Becerra et al. (2017, 2020), have reported hornworts for the department; finally, the increase in the number of species known to the department with respect to the last national catalog stands out.

Table 5: Historical account related to Boyacá from the floristic bryophyte studies for Colombia.

REFERENCE	Mosses	Liverworts	Hornworts
Robinson (1967)	35	4	
Florschütz-de Waard y Florschütz (1979)	109		
Gradstein & Hekking (1979)		90	
Churchill (1989)	190		
Churchill y Linares (1995)	232		
Uribe & Gradstein (1998)		124	
Aguirre (2008)	327		
Gradstein & Uribe (2016)		235	
Churchill (2016)	291		
This work	513	330	6

At the national level, the department of Boyacá is where the greatest number of local studies on bryophytes have been carried out, of which at least 20 catalogs or floristic studies have been published as research papers or book chapters; of these, 11 or 55% were carried out in high Andean terrestrial ecosystems (paramo and forest), 4 or 20% in aquatic ecosystems, 3 representing 15% in tropical forest and one, that is, 10% in urban areas (Table 6).

Table 6: Floristical studies made in Boyacá.

REFERENCE	County	Ecosystem	Lower height	Top height
Álvaro et al. 2006/ 2007/ 2019a/ 2019b	Chinavita Samacá/ Ventaquemada/ Tunja/ Boyacá/ Ramiriquí/ Jenesano	paramo high andean forest urban river	2800	3350
Avendaño y Aguirre 2007	Santa María	tropical forest	600	1200
Barbosa et al. 2007	Santa María	tropical forest low to mountain	400	2950
Becerra et al. 2017/ 2020	Samacá/ Ventaquemada/ Tunja/ Boyacá/ Ramiriquí/ Jenesano	river	2100	3300
Gil y Morales 2016	Tipacoque	andean forest	2800	3300
Lagos et al. 2008	Chinavita	river	3050	3200
Martínez et al. 2019	Cerinza/ Paipa/ Tipacoque/ Belén/ Duitama	paramo andean forest	2800	3370
Medina 2006	Aquitania	paramo	3320	3550
Morales et al. 2012	Ramiriquí/ Zetaquirá/ Miraflores/ Páez	secondary forest	1000*	2970*
Moreno et al. 2018	Ventaquemada	paramo	3200	3500
Santos y Aguirre 2010	Puerto Boyacá/ Otanche	tropical forest	270	1450

Simijaca y Vargas 2016	Tipacoque	high andean forest	2800	3300
Simijaca et al. 2014	Tunja	urban	2782	3124
Vargas y Morales 2014	Tipacoque	andean forest	2800	3300
Porras y Morales 2020	Tipacoque	high andean forest	2800	3300
Mejía et al. 2020	Sierra Nevada del Cocuy	super paramo paramo andean forest	1200	4200
* Due to the way the data is presented, it was not possible to determine the precise altitudinal range				

5. Discussion

In this work, a compilation of works carried out for the department of Boyacá was made, and the presence of 849 species was obtained as a result, which represents almost half (51,14%) of the number of species reported for the country. In this sense, it is considered that this figure may increase, if one considers that at the departmental level it is still advisable to carry out floristic studies in strategic ecosystems such as super paramo, subxerophytic enclaves, wetlands, rivers and streams, as well as continuing with the studies in the other high Andean paramos and forest complexes of the department, and also include intermontane tropical forests or low zones, transformed areas and crops and urban areas.

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Appendix 1: LIST OF SYNONYMS

HORNWORTS

Megaceros vincentianus = *Nothoceros vincentianus* (Villarreal et al. 2010)

LIVERWORTS

Adelanthus crossii = *Pseudomarsupidium decipiens* (Gradstein & Uribe 2016)

Adelanthus decipiens = *Pseudomarsupidium decipiens* (Gradstein & Ilkiu-Borges 2015)

Anastrophyllum austroamericanum = *Sphenolobus austroamericanus* (Váña et al. 2013b)

Anastrophyllum crebrifolium = *Anastrophyllum auritum* (Gradstein & Costa 2003)

Anastrophyllum leucocephalum = *Anastrophyllum auritum* (Gradstein & Costa 2003)

Anastrophyllum leucostomum = *Anastrophyllum auritum* (Gradstein & Costa 2003)

Anastrophyllum pearcei = *Anastrophyllum tubulosum* (Gradstein et al. 2003)

Andrewsianthus jamesonii = *Lophonardia jamesonii* (Söderström et al. 2013a)

Archilejeunea porelloides = *Archilejeunea ludoviciana* (Gradstein & Costa 2003)

Austrofossombronia peruviana = *Fossombronia peruviana* (Gradstein et al. 2003)

Bazzania boliviana = *Bazzania falcata* (Gradstein et al. 2003)

Bazzania breuteliana = *Bazzania hookeri* (Gradstein et al. 2003)

Bazzania chimborazensis = *Bazzania hookeri* (Gradstein & Costa 2003)

Bazzania longa sensu Fulford = *Bazzania hookeri* (Gradstein 2017)

Brachiolejeunea nitidiuscula = *Blepharolejeunea incongrua* (van Slageren 1985)

Calypogeia cyclostipa = *Mnioloma cyclostipum* (Gradstein & Costa 2003)

Campanocolea fragmentissima = *Lophocolea fragmentissima* (Schuster 1978)

Cephalozia crassifolia = *Fuscocephalozia crassifolia* (Hodgetts et al. 2020)

Cephalozia dussi = *Cephalozia crossii* (Gradstein & Costa 2003)

Cephalozia pleniceps = *Fuscocephalozia pleniceps* (Stotler & Crandall-Stotler 2017)

Chiloscyphus connatus = *Cryptolophocolea connata* (Söderström et al. 2013b)

Chiloscyphus martianus = *Cryptolophocolea martiana* (Stotler & Crandall-Stotler 2017)

Chiloscyphus proteus = *Cryptolophocolea martiana* (Söderström et al. 2013b)

Colura patagonica = *Colura naumannii* (Gradstein & Uribe 2016)

Cryptochila grandiflora = *Syzygiella sonderi* (Gradstein & Uribe 2016)

Cryptolophocolea martiana subsp. *bidentula* = *Cryptolophocolea martiana* (Söderström et al. 2013b)

Cryptolophocolea proteus = *Cryptolophocolea martiana* (Gradstein & Uribe 2016)

Drepanolejeunea navicularis = *Drepanolejeunea cutervoensis* (Gradstein & Uribe 2016)

Frullania albertii = *Frullania standaertii* (Gradstein & Uribe 2016)

Frullania arecae = *Frullania obscura* (Gradstein 2012)

Gongylanthus innovans = *Gongylanthus limbatus* (Gradstein & Uribe 2016)

Gymnocoleopsis multiflora = *Gymnocoleopsis cylindriflora* (Váña et al. 2013a)

Gymnomitrium andinum = *Gymnomitrium bolivianum* (Gradstein & Uribe 2016)

- Herbertus acanthelius* = *Herbertus juniperoideus* ssp. *acanthelius* (Feldberg & Heinrichs 2006)
Herbertus divergens = *Herbertus bivittatus* (Gradstein & Uribe 2016)
Herbertus grossispinus = *Herbertus sendmeri* (Feldberg & Heinrichs 2006)
Herbertus pensilis = *Herbertus juniperoideus* spp. *pensilis* (Feldberg & Heinrichs 2006)
Herbertus subdentatus = *Herbertus juniperoideus* ssp. *acanthelius* (Feldberg & Heinrichs 2006)
Isotachis tenax = *Isotachis multiceps* (Gradstein & Uribe 2016)
Jamesoniella autumnalis = *Syzygiella autumnalis* (Stotler & Crandall-Stotler 2017)
Jamesoniella rubricaulis = *Syzygiella rubricaulis* (Hodgetts et al. 2020)
Jamesoniella undata = *Syzygiella undata* (Feldberg et al. 2010)
Jensenia erythropus = *Jensenia spinosa* (Schuette & Stotler 2005)
Jungermannia callithrix = *Solenostoma callithrix* (Stephani 1901)
Jungermannia hyalina = *Solenostoma hyalinum* (Stotler & Crandall-Stotler 2017)
Jungermannia sphaerocarpa = *Solenostoma sphaerocarpum* (Stotler & Crandall-Stotler 2017)
Lejeunea monimiae = *Lejeunea subsessilis* (Bastos & Gradstein 2020)
Lejeunea silvatica = *Lejeunea flava* (Stotler & Crandall-Stotler 2017)
Lepidozia brasiliensis = *Lepidozia cupressina* (Gradstein & Uribe 2016)
Lepidozia lindigiana = *Lepidozia cupressina* (Gradstein & Uribe 2016)
Lepidozia muenchiana = *Lepidozia cupressina* (Gradstein & Uribe 2016)
Lophocolea bidentula = *Cryptolophocolea martiana* (Söderström et al. 2013b)
Lophocolea guadalupensis = *Cryptolophocolea guadalupensis* (Söderström et al. 2013b)
Lophocolea proteus = *Cryptolophocolea martiana* (Gradstein & Uribe 2016)
Lophocolea trapezoides = *Leptoscyphus trapezoides* (Söderström et al. 2013b)
Lophozia incisa = *Schistochilopsis incisa* (Stotler & Crandall-Stotler 2017)
Macrolejeunea pallescens = *Lejeunea pallescens* (Söderström et al. 2015)
Marsupella involuta = *Gymnomitrium truncatoapiculatum* (Gradstein & Uribe 2016)
Metzgeria atramentaria = *Metzgeria violacea* (Costa 2008)
Metzgeria decipiens = *Metzgeria furcata* (So 2003)
Metzgeria gigantea = *Metzgeria claviflora* (Costa 2008)
Metzgeria papulosa = *Metzgeria leptoneura* (Costa 2008)
Metzgeria sandei = *Metzgeria leptoneura* (Costa 2008)
Odontoschisma atropurpureum = *Odontoschisma variabile* (Gradstein & Ilkiu-Borges 2015)
Omphalanthus filiformis = *Cheilolejeunea filiformis* (Ye et al. 2015)
Plagiochila bryopteoides = *Plagiochila deflexirama* (Gradstein 2015)
Plagiochila oblita = *Plagiochila alternans* (Gradstein & Uribe 2016)
Porella splendida = *Porella brachiata* (Gradstein & Uribe 2016)
Prionolejeunea microdonta = *Prionolejeunea denticulata* (Gradstein & Uribe 2016)
Rectolejeunea berteriana = *Rectolejeunea versifolia* (Söderström et al. 2015)
Riccardia amazonica = *Riccardia regnellii* (Gradstein & Reeb 2018a)
Riccardia andina = *Riccardia fucoidea* (Gradstein & Reeb 2018b)
Riccardia columbica = *Riccardia hans-meyeri* (Gradstein & Reeb 2018b)
Riccardia crassicaulis = *Riccardia fucoidea* (Gradstein & Reeb 2018b)
Riccardia herzogiana = *Riccardia pallida* (Gradstein & Reeb 2018b)
Riccardia judithae = *Riccardia wallisii* (Gradstein & Reeb 2018b)
Riccardia lepidomitra = *Riccardia fucoidea* (Gradstein & Reeb 2018b)
Riccardia paramorum = *Riccardia cataractarum* (Gradstein & Reeb 2018b)
Riccardia parasitans = *Riccardia latifrons* subsp. *parasitans* (Gradstein & Reeb 2018b)
Riccardia plumiformis = *Riccardia fucoidea* (Gradstein & Reeb 2018b)
Syzygiella liberata = *Syzygiella trigonifolia* (Vána et al. 2014)
Taxilejeunea pterigonia = *Lejeunea pterigonia* (Söderström et al. 2015)
Taxilejeunea sulphurea = *Lejeunea sulphurea* (Söderström et al. 2015)
Trachylejeunea decurviloba = *Pycnolejeunea decurviloba* (Gradstein & Costa 2003)

Trichocolea flaccida = *Leiomitra flaccida* (Katagiri 2019)
Trichocolea robusta = *Leiomitra robusta* (Katagiri 2019)
Trichocolea tomentosa = *Leiomitra tomentosa* (Katagiri 2019)
Trichocolea uleana = *Leiomitra tomentosa* (Katagiri 2019)
Tylimanthus laxus = *Acrobolbus laxus* (Briscoe 2015)
Tylimanthus setaceo-ciliatus = *Acrobolbus laxus* (Burghardt et al. 2008)

MOSSES

Acroporium estrellae = *Aptychopsis estrellae* (Cámara et al. 2015)
Actinodontium integrifolium = *Actinodontium sprucei* (Churchill 2016)
Anomobryum plicatum = *Anomobryum prostratum* (Churchill 2016)
Atrichum polycarpum = *Atrichum androgynum* (Aponte & Uribe 2017)
Barbula laevigata = *Didymodon laevigatus* (Zander 1978)
Barbula replicata = *Pseudocrossidium replicatum* (Zander 1979)
Bartramia flavicans = *Bartramia brevifolia* (Churchill 2016)
Bartramia subdisticha = *Breutelia subdisticha* (Costa et al. 2016)
Brachythecium prasophyllum = *Brachythecium occidentale* (Costa et al. 2016)
Brachythecium stereopoma = *Brachythecium ruderales* (Ignatov & Huttunen 2002)
Breutelia allionii = *Breutelia trianae* (Churchill 2016)
Bryum billardieri = *Bryum andicola* (Ochi 1978)
Callicostella colombica = *Thamniopsis colombica* (Allen 2010)
Callicostella rivularis = *Thamniopsis rivularis* (Allen 2010)
Campyliadelphus chrysophyllum = *Campylium chrysophyllum* (Crum & Anderson 1981)
Campyliadelphus polygamus = *Drepanocladus polygamus* (Hedenäs, 1997)
Campylium praegracile = *Campylophyllum sommerfeltii* (Allen 2018)
Campylopus annotinus = *Campylopus heterostachys* (Frahm 1991)
Campylopus apollinairei = *Campylopus cavifolius* (Frahm 1991)
Campylopus benedictii = *Campylopus reflexisetus* (Frahm 1991)
Campylopus breweri = *Campylopus areodictyon* (Frahm 1991)
Campylopus chionolophilus = *Dicranodontium denudatum* (Frahm 1991)
Campylopus chrismarii = *Campylopus nivalis* (Churchill 2016)
Campylopus cuatrecasii = *Campylopus trivialis* (Frahm 1991)
Campylopus cucullatifolius = *Campylopus cuspidatus* var. *dicnemoides* (Frahm 1991)
Campylopus dicnemoides = *Campylopus cuspidatus* var. *dicnemoides* (Frahm 1991)
Campylopus filicuspis = *Campylopus densicoma* (Frahm 1991)
Campylopus filifolius = *Bryohumbertia filifolia* (Frahm 1991)
Campylopus harpophyllum = *Campylopus edithae* (Frahm 1991)
Campylopus heterophyllum = *Campylopus flexuosus* (Frahm 1991)
Campylopus lamprodictyon = *Campylopus pauper* var. *lamprodictyon* (Frahm 1991)
Campylopus leucognodes = *Campylopus argyrocaulon* (Frahm 1991)
Campylopus paramoensis = *Campylopus subcuspidatus* (Churchill 2016)
Campylopus rosulatus = *Campylopus pauper* (Churchill 2016)
Campylopus strictulus = *Atractylocarpus longisetus* (Frahm 1991)
Campylopus subconcolor = *Campylopus areodictyon* (Frahm 1991)
Campylopus thysanomitrioides = *Campylopus edithae* (Frahm 1991)
Campylopus tunariensis = *Campylopus fragilis* (Frahm 1987)
Campylopus weberbaueri = *Campylopus huallagensis* var. *weberbaueri* (Frahm 1991)
Ceratodon stenocarpus = *Ceratodon purpureus* subsp. *Stenocarpus* (Allen 1994)
Chiloscyphus martianus = *Cryptolophocolea martiana* (Stotler & Crandall-Stotler 2017)
Conostomum pentastichum = *Conostomum tetragonum* (Frahm 1996)
Cryphaea fasciculosa = *Cryphaea ramosa* (León, 1999)

- Ditrichum rufescens* = *Ditrichum difficile* (Churchill 2016)
Eurhynchium praelongum = *Kindbergia praelonga* (Allen 2018)
Fissidens bryoides var. *pusillus* = *Fissidens bryoides* (Churchill 2016)
Fissidens intermedius = *Fissidens submarginatus* (Churchill 2016)
Fissidens mollis = *Fissidens flaccidus* (Pursell 2007)
Fissidens repandus = *Fissidens crispus* (Pursell 2007)
Floribundaria usneoides = *Floribundaria flaccida* (Churchill 2016)
Hedwigidium imberbe = *Hedwigidium integrifolium* (O'Shea 2006)
Heterophyllum affine = *Heterophyllum nemorosum* (Allen 2018)
Hygrohypnum reduncum = *Mittenothamnium reduncum* (Allen 2018)
Kingiobryum paramicola = *Didymodon paramicola* (Werner et al. 2004)
Leptodontium acutifolium = *Leptodontium pungens* (Zander 1972)
Leptodontium capituligerum = *Stephanoleptodontium capituligerum* (Zander 2018)
Leptodontium gracile = *Leptodontium capituligerum* (Churchill 2016)
Leptodontium pungens = *Crassileptodontium pungens* (Zander 2018)
Leskea angustata = *Leskeadelphus angustatus* (Allen 2018)
Leskeadelphus bolivianus = *Leskeadelphus angustatus* (Churchill 2016)
Meteorium illecebrum = *Meteorium deppei* (Churchill & Linares 1995)
Meteorium laevifolium = *Cryptopapillaria penicillata* (Buck 1998)
Meteorium sinuatum = *Meteorium deppei* (Churchill 2016)
Metzleria longiseta = *Atractylocarpus longisetus* (Frahm 1991)
Microdus densus = *Dicranella densa* (Mitten, 1869)
Microdus lindigianus = *Dicranella lindigiana* (Allen 1994)
Mittenothamnium diminutivum = *Chryso-hypnum diminutivum* (Nishimura & Ando 1986)
Neckera lindigii = *Neckera scabridens* (Churchill 1989)
Papillaria imponderosa = *Toloxis imponderosa* (Allen 2010)
Papillaria nigrescens = *Meteorium nigrescens* (Allen 2010)
Papillaria penicillata = *Cryptopapillaria penicillata* (Allen 2010)
Philonotis revolulta = *Philonotis thwaitesii* (Churchill 2016)
Pilopogon gracilis = *Pilopogon guadalupensis* (Frahm 1991)
Plagiothecium andinum = *Plagiothecium lucidum* (Churchill 2016)
Plagiothecium conostegium = *Plagiothecium orthocarpum* (Allen 2018)
Plagiothecium drepanophyllum = *Lepidopilum scabrisetum* (Churchill 2016)
Pogonatum neglectum = *Pogonatum campylocarpum* (Aponte & Uribe 2017)
Pohlia integridens = *Pohlia elongata* (Churchill 2016)
Pohlia leptodontia = *Pohlia elongata* (Churchill 2016)
Pohlia richardsii = *Pohlia apolensis* (Churchill 2016)
Polytrichadelphus aristatus = *Polytrichadelphus longisetus* (Aponte & Uribe 2017)
Polytrichadelphus purpureus = *Polytrichadelphus giganteus* (Aponte & Uribe 2017)
Polytrichadelphus rubiginosus = *Polytrichadelphus longisetus* (Aponte & Uribe 2017)
Porotrichodendron robustum = *Porotrichodendron superbum* (Churchill 2016)
Porotrichum lindigii = *Porotrichodendron lindigii* (Allen 2010)
Prionodon dichotomus = *Prionodon densus* (Allen 2010)
Prionodon luteovirens = *Prionodon densus* (Bowers 1974)
Pseudosymblypharis schimperiana = *Chionoloma angustatum* (Alonso-García et al. 2019)
Pylaisiella falcata = *Pylaisia falcata* (Allen 2018)
Racomitrium cucullatifolium = *Racomitrium subsecundum* (Allen 2002)
Regmatodon polycarpus = *Regmatodon orthostegius* (Churchill 2016)
Rhacocarpus humboldtii = *Rhacocarpus purpurascens* (Bowers 1974)
Rhaphidorrhynchium lindigii = *Sematophyllum swartzii* (Allen 2018)
Rhizogonium spiniforme = *Pyrrhobryum spiniforme* (Allen 2002)

- Rhodobryum procerum* = *Bryum procerum* (Allen 2002)
Rhynchostegium scariosum = *Rhynchostegium conchophyllum* (Churchill & Linares 1995)
Sematophyllum napoanum = *Sematophyllum swartzii* (Churchill 2016)
Sphagnum negrense = *Sphagnum perichaetiale* (Crum 1984)
Sphagnum strictum = *Sphagnum compactum* (Gao 1994)
Sphagnum subditivum = *Sphagnum falciculatum* (Karlin et al. 2013)
Thuidium recognitum = *Thuidium delicatulum* (Allen 2018)
Tortula andicola = *Syntrichia andicola* (Ochyra, 1992)
Trachypus viridulus = *Trachypus bicolor* var. *viridulus* (Churchill 2016)
Trachyxiphium glanduliferum = *Thamniopsis glandulifera* (Allen 2010)
Trichostomum tenuirostre = *Chionoloma tenuirostre* (Alonso-García et al. 2019)
Zygodon goudotii = *Zygodon peruvianus* (Churchill 2016)
Zygodon subdenticulatus = *Zygodon reinwardtii* (Churchill 2016)

Appendix 2: DOUBTFUL RECORDS

LIVERWORTS

- *Lophocolea leptantha* (Hook.f. & Taylor) Gottsche, Lindenb. & Nees cited in Barbosa et al. 2007. Engel (1978) establishes that the distribution of the species includes Patagonia, Tierra del Fuego, and the Falkland Islands. In Colombia this species does not exist, it probably corresponds to *L. bidentata* (L.) Dumort.

- *Metzgeria cleefii* Kuwah. cited in Álvaro et al. 2007
 Gradstein (2021) affirm that the species needs verification because the characteristic attenuate branches of this specie, are not shown in the illustrations in the paper.

- *Tylimanthus diversifolius* E.A. Hodgs. Cited in Gil & Morales (2016).
 This species corresponds to *Acrobolbus tenellus* var. *diversifolius* according to Briscoe et al. (2015). Additionally, when consulting GBIF (<https://www.gbif.org/species/9389285>) the distribution is restricted near its type locality in New Zealand.

MOSESSES

- *Acroporium longirostre* (Brid.) W.R. Buck cited in Gil & Morales (2016).
 Câmara et al. (2015) reviewed the genus for the Neotropics, the distribution of the species is restricted to Mexico and the Caribbean, however, they did not review material from Colombia.

- *Bryum truncorum* (Brid.) Brid. Cited in Robinson (1967).
 Mohamed (1979) affirm that the species is restricted to the Reunion Islands and Madagascar.

- *Calymperes rubiginosum* (Mitt.) W.D. Reese cited in Gil & Morales (2016).
 Churchill (2016) establishes that the distribution of the species is the Amazon in Colombia and cites specimens from Vichada, Guainía and Vaupés, for which it is considered necessary to confirm the determination given that the work where it is cited is about paramo flora.

- *Campylopus frigidus* Lesq. cited in Martínez et al. (2019).
 According to Müller & Frahm (1987) it corresponds to *Paraleucobryum sauteri* (Bruch & Schimp.) Loeske and they establish that the distribution of the species includes Europe, Russia and the United

States, for which it is considered necessary to confirm the determination given that the work where it is cited is about paramo flora.

- *Hypopterigyum tamariscinum* (Hedw.) Brid. cited in Churchill & Linares (1995) y Martínez (2019).

According to O'Shea (2006) it corresponds to *Canalohypopterygium tamariscinum* (Hedw.) Kruijer. Allen (2010) makes a clear explanation in which it is clear that the species does not have a distribution in the Neotropics.

- *Orthodontium lineare* Schwägr. cited in Aguirre (2008).

It is a species with distribution in Europe (Hasel & Söderström 2005) and Africa (O'Shea 2006). There are no reports for the neotropics, so it is suggested that the specimen be reviewed to verify its taxonomic identity.

- *Racomitrium crispulum* (Hook. f. & Wilson) Wilson cited en Robinson (1967) y Florschütz-de Waard y Florschütz (1979).

Churchill & Linares (1995) make the reference that this species is distributed in the Antarctic circle and that the specimens from Colombia correspond to *Racomitrium crispipilum* (Taylor) A. Jaeger. Additionally, Ochyra et al. (2008), affirm that *R. crispulum* is an endemic species of New Zealand.

- *Sphagnum pylaesii* Brid. cited in Aguirre (2008).

Crum & Anderson (1981) affirm that it is a synonym of *Sphagnum lindbergii* Schimp. whose distribution is the northern hemisphere.

- *Splachnum ampullaceum* Hedw. cited in Aguirre (2008).

Smith (2004) establishes that the distribution of the species is circumpolar, for which it is considered necessary to confirm the determination.

- *Syrrhopodon africanus* (Mitt.) Paris cited in Martínez et al. (2019).

Reese (1995) affirm that this species is present in Africa. For America, *S. africanus* subsp. *graminicola* (R.S. Williams) W.D. Reese included in this catalog from a specimen cited in Aguirre (2008) from lowland areas of the department, for this reason it is considered necessary to confirm the determination given that the work where it is cited deals with paramo flora.

- *Syrrhopodon rupestris* Mitt. cited in Martínez et al. (2019).

Churchill et al. (2000) and Reese (1977, 1993) establish that the distribution of the species is the Amazon in Colombia, Brazil and Venezuela, additionally specimens from Amazonas and Vaupés are cited, for which it is considered necessary to confirm the determination given that the work where it is cited it is paramo flora.

- *Syrrhopodon xanthophyllus* Mitt. cited in Gil & Morales (2016).

Churchill et al. (2000) and Reese (1977, 1993) establish that the distribution of the species is the Amazon in Colombia, Bolivia, Brazil and Venezuela, additionally specimens from Guainía are cited, for which it is considered necessary to confirm the determination given that the work where it is cited it is paramo flora.