

A contribution to the Bryophyte flora of Jamaica

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Abstract – 377 bryophyte species (four hornworts, 198 liverworts, and 175 mosses) are reported from Jamaica, among these 57 new records for the island (two hornworts, 53 liverworts and two mosses). Eight species are for the first time attributed to the West Indies, and eight genera (*Notothylas*, *Alobiellopsis*, *Colura*, *Fossombronina*, *Jensenia*, *Otigoniolejeunea*, *Leptophascum*, and *Rauielella*) are added to the bryophyte flora of Jamaica. A total of 692 species of bryophytes are now known to occur in Jamaica (367 liverwort and hornwort species; 325 moss species).

Neotropics / Jamaica / new records / West Indies

INTRODUCTION

The island of Jamaica is the third largest island in the Caribbean, with a land mass of about 11.000 km². It is situated south of Cuba and west of Hispaniola the two largest islands in this region. Jamaica is a member of the Commonwealth of Nations (a 53 member state organisation that previously were mostly territories of the former British Empire). The island is politically divided into 3 counties and 14 parishes.

Originally Jamaica was completely forested (Berke & Beatly, 1995) and supported a great diversity of ecosystems. Large areas that were suitable for bryophytes have disappeared in favour of agricultural activities, mainly coffee plantations, especially on the southern slopes of the Blue Mountains. In spite of its large loss in woodland area Jamaica still has a remarkably rich bryophyte flora.

There is a recent checklist of the liverworts and hornworts of Jamaica (Söderström *et al.*, 2011) that reported 332 taxa in 314 species, 14 of which are invalid, illegitimate or in orphaned genera. The last published report of any significance on the mosses of Jamaica was “A survey of the moss flora of Jamaica” by H.Crum and E.B. Bartram (1958).

In order to address the apparent knowledge gaps in the bryophyte flora of Jamaica the authors investigated the bryophyte flora of Jamaica for three weeks focusing mainly on the montane cloud forests as well as scrublands, coffee plantations and ruderal sites. Field work was conducted from the end of November to middle of December 2013. The field work began near Montego Bay in the north-west part of the island and continued clockwise to the bryophyte-rich Blue Mountains (including Blue Mt-Peak, 2257 meters).

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During this trip more than 1500 samples were collected. At first analysis these collections appeared to belong to about 200 liverwort and hornwort species and 175 moss species.

In the following treatment notes are given on the geographical distribution of the species reported new to Jamaica with special reference to their range in the West Indies.

Nomenclature follows Söderström *et al.* (2016) for liverworts and hornworts, Buck (1998) for pleurocarpous and recent treatments or generally accepted names for acrocarpous mosses (Allen, 1994, 2002; Pursell, 2007). Additional names given in brackets are used in the Jamaican checklist by Söderström *et al.* (2011) or have been in use for a long time.

List of collection sites (the coordinates are based on WGS 84).

Cornwall County, Parish of Trelawny

- 1 Cockpit Country, region around Windsor southeast of Falmouth, coffee plantation and secondary woody vegetation, 120 m alt., 18°22.0' S, 77°38.8' W, 28 Nov. 2013.
- 2 Cockpit Country, surroundings of The Alps north of Albert Town, steep limestone formations, secondary vegetation along road, 360 m alt., 18°20.1' N, 77°30.8' W, 29 Nov. 2013.
- 3 Small brook in wooded valley north of Jackson Town, 235-250 m alt., 18°25.6' N, 77°29.1' W, 29 Nov. 2013.

Middlesex County, Parish of Saint Ann

- 4 Ocho Rios, secondary vegetation along road to Shaw Park Botanical Garden, 80-120 m alt., 18°24.0' N, 77°06.4' W, 30 Nov. 2013.
- 5 Road between Ocho Rios and Ewarton, secondary woody vegetation north of Moneague, 440-480 m alt., 18°18.7' N, 77°05.6' W, 30 Nov. 2013.
- 6 Road between Ocho Rios and Ewarton, secondary vegetation along edge of forest and cattle fence, 410 m alt., 18°18.5' N, 77°06.1' W, 30 Nov. 2013.

Middlesex County, Parish of Saint Mary

- 7 Road (A 3) between Annotto Bay and Castleton, park-like vegetation around Hotel Tapioca Village, 65-70 m alt., 18°12.5' N, 76°48.8' W, 1 Dec. 2013.

Surrey County, Parish of Saint Andrew

- 8 Castleton Botanical Garden, 150 m alt., 18°10.2' N, 76°49.3' W, 1 Dec. 2013.

Surrey County, Parish of Portland

- 9 Northwestern part of Blue Mountains, humid secondary vegetation along road (B 1) from Buff Bay to Newcastle, shortly above Silver Hill, 680-700 m alt., 18°06.2' N, 76°43.0' W, 2 Dec. 2013.
- 10 Northwestern part of Blue Mountains, humid secondary vegetation along road (B 1) from Buff Bay to Newcastle, shortly above Silver Hill, 1150-1170 m alt., 18°05.3' N, 76°43.0' W, 2 Dec. 2013.

Surrey County, Parish of Saint Andrew

- 11 Blue Mountains, road B 1 between Buff Bay and Newcastle, rocky slopes at Gap Cafe, 1220 m alt., 18°04.991' N, 76°43.517' W, 2 Dec. 2013.

Surrey County, Parish of Portland

- 12 Blue Mountains, rocky slopes, road cuts and rain forest north of Hardwar Gap, 1200-1240 m alt., 18°05.2' N, 76°43.3' W, 3 Dec. 2013.

Surrey County, Parish of Saint Andrew

13 Blue Mountains, Newcastle, secondary (open and woody) vegetation along road to the top of Catherine's Peak, 1140-1525 m alt., 18°04.5-7' N, 76°42.2-9' W, 4 Dec. 2013.

14 Blue Mountains, Hollywell Recreation Area northwest of Hardwar Gap, low forest and shrubby vegetation along Oatley Mountain Trail, 1250-1345 m alt., 18°05.2-3' N, 76°43.6-7' W, and primary rain forest along (upper part of) trail to waterfall, 1200-1250 m, 5 Dec. 2013.

15 Southern slopes of Blue Mountains between Gordon Town and Worlds End, secondary vegetation along road, 540 m alt., 18°02.256' N, 76°42.243' W, 6 Dec. 2013.

16 Southern slopes of Blue Mountains, N-exposed slope along road at Content Gap, 1100 m alt., 18°02.366' N, 76°40.912' W, 6 Dec. 2013.

17 Southern slopes of Blue Mountains, boulders along road near Mavis Bank, 730 m alt., 18°01.521' N, 76°39.854' W, 6 Dec. 2013.

Surrey County, Parish of Portland

18 Blue Mountains, northern slopes between Section and Silver Hill Gap, rain forest, 1080 m alt., 18°05.2' N, 76°41.8' W, 7 Dec. 2013.

19 Blue Mountains, secondary vegetation around Silver Hill Gap, 1065 m alt., 18°05.3' N, 76°41.3' W, 7 Dec. 2013.

Surrey County, Parish of Saint Andrew

20 Blue Mountains, rocky slopes along road B 1 near (below) Newcastle, 1100 m alt., 18°04.5' N, 76°42.6' W, 8 Dec. 2013.

21 Blue Mountains, rocky slopes along road B 1 near (above) Newcastle, 1170 m alt., 18°04.7' N, 76°42.9' W, 8 Dec. 2013.

22 Blue Mountains, rocky slopes along road B 1 near south of Hardwar Gap (including Greenwich Drive), 1170-1220 m alt., 18°04.6' N, 76°43.3' W, 8 Dec. 2013.

Surrey County, Parish of Portland

23 Blue Mountains, road B 1 S of Buff Bay, secondary vegetation around Birnamwood Primary School, 400-410 m alt., 18°07.9' N, 76°43.0' W, 9 Dec. 2013.

24 Rio Grande Valley S of Port Antonio, Moore Town, *Citrus* trees and ornamental shrubs along road, 140 m alt., 18°03.948' N, 76°25.226' W, 10 Dec. 2013.

25 Port Antonio, Titchfield Peninsula, old walls and trees, 20 m alt., 18°10.0' N, 76°27.1' W, 10 Dec. 2013.

26 Port Antonio, peninsula E of the town, solitary trees, 2 m alt., 18°11.1' N, 76°26.5' W, 11 Dec. 2013.

27 Fairy Hill SE of Port Antonio, forest trees, 80 m alt., 18°08.200' N, 76°27.023' W, 11 Dec. 2013.

28 NE coast, Sherwood Forest above Fairy Hill, secondary vegetation, 210 m alt., 18°08.4' N, 76°22.3' W, 11 Dec. 2013.

29 Rio Grande Valley S of Port Antonio, secondary vegetation around Alligator Church, 90-100 m alt., 18°04.8' N, 76°27.0' W, 12 Dec. 2013.

30 Blue Mountains, humid rocky slopes along road B 1 between Buff Bay and Hardwar Gap, 800 m alt., 18°05.785' N, 76°43.001' W, 13 Dec. 2013.

Surrey County, Parish of Saint Thomas

31 Blue Mountains, secondary vegetation and rain forest on southern slopes between Wildflower Lodge above Epping Farm and Portland Gap, 1220-1675 m alt., 18°02.9-03.2' N, 76°36.0-37.3' W, 14 Dec. 2013.

32 Blue Mountains, primary rain forest around Portland Gap, 1675 m alt., 18°03.215' N, 76°35.982' W, 15 Dec. 2013.

33 Blue Mountains, primary rain forest and elfin forest between Portland Gap and Blue Mountain Peak, 1675-2250 m alt., 18°03.215-02.785' N, 76°34.770-35.982' W, 15 Dec. 2013.

Surrey County, Parish of Saint Andrew

34 Blue Mountains, rocky slopes along road B 1 between Newcastle and Hardwar Gap, 1200 m alt., 18°04.765' N, 76°43.479' W, 17 Dec. 2013.

LIST OF SPECIES (* = new to Jamaica)

LIVERWORTS AND HORNWORTS

ANTHOCEROTOPHYTA

***Anthoceros punctatus* L.**

St. Andrew: Loc. 13, on soil, *HvM* 216599.

Nothoceros vincentianus (Lehm. & Lindenb.) J.C.Villarreal [= *Megaceros vincentianus* (Lehm. & Lindenb.) Campb.; = *Megaceros jamaicensis* Steph.]

St. Andrew: Loc. 14, on soil, *HvM* 216688.

A widespread tropical American species. In Jamaica previously known only from the type of *Megaceros jamaicensis* Steph. which was recently synonymized with *Nothoceros vincentianus* (Villarreal *et al.*, 2015).

****Notothylas breutelii*** (Gottsche) Gottsche

St. Ann: Loc. 4, on soil, *HvM* 216474. **St. Mary:** Loc. 7, on soil, *HvM* 216508.

A widespread tropical American species, reaching as far north as Mexico and Louisiana (Pagán, 1939; Schuster, 1992). Also reported from Hawaii (Miller, 1967) and the Philippines (Hasegawa & Tan, 1986) where it probably has been introduced by man. From the West Indies known from St. Croix, Virgin Islands (type), Puerto Rico, Cuba (also as *N. cubana* Steph.), Dominican Republic, and Guadeloupe (Frahm, 2012; Lavocat Bernard & Schäfer-Verwimp, 2011; Pagán, 1939).

****Phaeoceros carolinianus*** (Michx.) Prosk. [= *Phaeoceros laevis* subsp. *carolinianus* (Michx.) Prosk.]

St. Andrew: Loc. 11, *ASV* 34957; Loc. 13, *HvM* 216637; Loc. 16, *HvM* 216383, *ASV* 35160. **Portland:** Loc. 19, *HvM* 216771. **St. Thomas:** Loc. 31, *HvM* 216892 – all on soil.

A nearly cosmopolitan species, widespread also in the West Indies.

MARCHANTIOPHYTA

Acanthocoleus aberrans (Lindenb. & Gottsche) Kruijt

St. Ann: Loc. 6, epiphytic, *ASV* 34884. **St. Andrew:** Loc. 15, on rocky slope, *ASV* 35160. **Portland:** Loc. 19, on shady wall, *ASV* 35213/B.

The above cited specimens are without perianth, assignment to varietal level was therefore not possible.

Acanthocoleus aberrans (Lindenb. & Gottsche) Kruijt var. ***aberrans***

St. Thomas: Loc. 31, on rock, c. per., 1220 m, *ASV* 35316, *HvM* 216860.

****Acrobolbus antillanus*** R.M.Schust.

St. Thomas: Loc. **33**, epiphytic in elfin forest, 2250 m, *ASV 35420*.

An uncommon Caribbean-Andean species, known from Dominica (type), Costa Rica, Venezuela, northern Andes (Schuster, 1983: 567), Colombia (Gradstein & Uribe, 2015); new to the Greater Antilles.

Acrobolbus laxus (Lehm. & Lindenb.) Briscoe [= *Tylimanthus laxus* (Lehm. & Lindenb.) Spruce]

St. Thomas: Loc. **31**, on soil, 1580 m, *HvM 216915*, *ASV 35350*; Loc. **32**, on soil, *HvM 216947*.

****Adelanthus carabayensis*** (Mont.) Grolle

St. Thomas: Loc. **33**, on humid slope, 1950 m, *ASV 35381/A*.

A widespread tropical American species (Costa Rica to Bolivia and Brazil), from the West Indies reported from Cuba, Dominica and the Dominican Republic (Schäfer-Verwimp & Pócs, 2009).

Adelanthus pittieri (Steph.) Grolle

St. Thomas: Loc. **33**, epiphytic, with *Bazzania* sp., *HvM 216916*, on soil, 1850 m, *ASV 35369*.

****Alobiellopsis dominicensis*** (Spruce) Fulford

Portland: Loc. **10**, on rocky slope over soil, only a few plants mixed with *Paracromastigum bifidum*, *ASV 34947* p.p.

A scattered tropical American species (Costa Rica to Ecuador including Galápagos Islands); known in the West Indies from Cuba, Puerto Rico, Dominica, Martinique and Guadeloupe as well as Trinidad (Fulford, 1968; Gradstein, 1993; Grolle, 1975).

Anoplolejeunea conferta (C.F.W.Meissn. ex Spreng.) A.Evans

Portland: Loc. **12**, epiphytic, *HvM 216556*, epiphytic, *ASV 34977* (c. per.); Loc. **19**, on bark of *Pinus*, *ASV 35199/B*. **St. Andrew:** Loc. **14**, epiphytic, *HvM 216659*. **St. Thomas:** Loc. **33**, epiphyllous, 1675 m, *ASV 35449/C* (c. per.).

Observations of Evans (1908) concerning the occurrence of ocelli in *Anoplolejeunea* (mentioned also by Gradstein & Costa, 2003) could not be confirmed.

Bazzania aurescens Spruce

St. Andrew: Loc. **14**, epiphytic, *HvM 216279*, conf. S.R. Gradstein.

Bazzania* aff. *cubensis (Gottsche ex Steph.) Pagán

St. Andrew: Loc. **14**, epiphytic, *HvM 216713*.

Bazzania cuneistipula (Gottsche & Lindenb.) Trevis.

St. Andrew: Loc. **14**, *HvM 216661*. **St. Thomas:** Loc. **31**, *HvM 216862*; Loc. **32**, *HvM 216918*; Loc. **33**, 2250 m, *ASV 35416/A*. All collections epiphytic.

Bazzania gracilis (Hampe & Gottsche) Steph.

St. Andrew: Loc. **13**, at base of tree fern and on forest floor, *ASV 35062*, *35065*. **St. Thomas:** Loc. **32**, epiphytic, *HvM 216919*; Loc. **33**, on humid slope, 1950 m, *ASV 35381/B*, pendent from *Podocarpus* branches, 2240 m, *ASV 35401/B*.

Bazzania hookeri (Lindenb.) Trevis.

St. Andrew: Loc. **14**, epiphytic, on rotting wood, *HvM 216662*, *ASV 35112*.

Brachiolejeunea laxifolia (Taylor) Schiffn.

St. Thomas: Loc. **33**, epiphytic, c. per., 2250 m, *ASV 35411/A*.

Brachiolejeunea leiboldiana (Gottsche & Lindenb.) Schiffn.**Portland:** Loc. 30, on ornamental shrub, c. per., ASV 35314/B.***Bryopteris diffusa*** (Sw.) Nees**St. Ann:** Loc. 5, epiphytic, HvM 216489, ASV 34868.***Calypogeia peruviana*** Nees & Mont.**Portland:** Loc. 12, on shady soil, ASV 34976. **St. Andrew:** Loc. 13, on soil, HvM 216603, ASV 35061, 35067, 35073, on rocky slope, ASV 35037; Loc. 22, on soil, ASV 35243/A. **St. Thomas:** Loc. 31, on soil, HvM 216865, ASV 35352, 35364; Loc. 33, on rotting wood, mixed with *Leptoscyphus amphibolius*, 1950 m, ASV 35439 p.p.***Caudalejeunea lehmanniana*** (Gottsche) A.Evans**Trelawny:** Loc. 1, epiphytic, HvM 216397, ASV 34808/A, on branchlets in crown of fallen tree, ASV 34816 (c. per.).***Cephaloziella granatensis*** (J.B.Jack ex Steph.) Fulford**St. Andrew:** Loc. 22, on shady soil, ASV 35243/B. **Portland:** Loc. 23, epiphytic, HvM 216777.***Ceratolejeunea brevinervis*** (Spruce) A.Evans**St. Andrew:** Loc. 14, epiphytic, on root and rotting wood, HvM 216667, ASV 35088/B, 35110/A.***Ceratolejeunea cornuta*** (Lindenb.) Steph.**Portland:** Loc. 12, epiphytic, HvM 216557, ASV 34971; Loc. 18, epiphytic, ASV 35178.***Ceratolejeunea cubensis*** (Mont.) Schiffn.**St. Andrew:** Loc. 14, epiphytic, HvM 216668, ASV 35110/B, 35143.****Ceratolejeunea filaria*** (Taylor) Steph.**St. Andrew:** Loc. 14, epiphytic, HvM 216669, ASV 35123.

A widespread neotropical species known from Mexico to Bolivia and Brazil; in the West Indies reported from Cuba, Haiti, Puerto Rico, Dominica, Guadeloupe, Martinique, St. Kitts (Dauphin, 2003).

****Ceratolejeunea laetefusca*** (Austin) R.M.Schust.**St. Andrew:** Loc. 8, epiphytic, HvM 216416, ASV 34907.

Widely distributed in the Neotropics: southeastern United States to Bolivia and Brazil. In the West Indies known from Cuba and Guadeloupe (Dauphin, 2003).

****Ceratolejeunea rubiginosa*** Steph.**St. Andrew:** Loc. 13, epiphytic, 1400 m, ASV 35079/A, mixed with *Cyclolejeunea luteola*.

A widely distributed Caribbean species: Florida, Bahamas, Costa Rica, Cocos Island, Cuba (type), Puerto Rico (Dauphin 2003), and Guyana (Gradstein 1997).

Ceratolejeunea spinosa (Gottsche) Steph.**St. Andrew:** Loc. 14, epiphytic, HvM 216281, ASV 35111/A.***Cheilolejeunea adnata*** (Kunze ex Lehm.) Grolle**Portland:** Loc. 12, epiphyllous on fern frond, ASV 34994/B (mixed with *Cololejeunea papilliloba*, *Microlejeunea epiphylla* and *M. acutifolia*). **St. Andrew:** Loc. 13, epiphyllous of fern frond, 1420 m, ASV 35047, and on rotting root, ASV 35063; Loc. 14, epiphytic, ASV 35152/A. **St. Thomas:** Loc. 31, epiphytic and epiphyllous on fern frond,

1550-1600 m, ASV 35343/B, 35351, 35356/A (with caducous leaves and marginal rhizoides, mixed with *Radula grevilleana* and *Lejeunea laetevirens*).

**Cheilolejeunea aneogyna* (Spruce) A.Evans

Trelawny: Loc. 1, in crown of fallen tree, ASV 34818/A (with caducous leaves). **St. Andrew:** Loc. 8, epiphytic, HvM 216442, ASV 34914/B. **Portland:** Loc. 19, on bark of solitary tree, HvM 216751, ASV 35221 (c. per. + andr., autoicous).

Widespread but scattered in the Neotropics (Brazil, Surinam, Venezuela), recently reported from Colombia, Bolivia, Ecuador, and Panama (Bastos, 2012; Campos *et al.*, 2014; Schäfer-Verwimp, 2014; Schäfer-Verwimp *et al.*, 2013); new to the West Indies.

Cheilolejeunea clausa (Nees & Mont.) R.M.Schust.

Trelawny: Loc. 2, on limestone, ASV 34825/A, det. C. J. P. Bastos. **St. Andrew:** Loc. 34, epilithic, on rock, HvM 216261. **St. Ann:** Loc. 5, on limestone in forest, ASV 34863/A.

Cheilolejeunea filiformis (Sw.) W.Ye, R.L.Zhu & Gradst. [= *Omphalanthus filiformis* (Sw.) Nees]

Portland: Loc. 10, epiphytic, HvM 216544. **St. Andrew:** Loc. 13, epiphytic, HvM 216628, ASV 35042 (c. per.); Loc. 34, epiphytic, HvM 216953, on rock, ASV 35466.

**Cheilolejeunea inflexa* (Hampe) Grolle

St. Andrew: Loc. 14, epiphytic and on slope, ASV 35093, 35111/B, 35117/B, 35146.

A widespread but scattered tropical American species; in the West Indies known from Cuba, Guadeloupe, Dominica, Martinique, and St. Kitts (Grolle, 1979; Lavocat Bernard & Schäfer-Verwimp, 2011; Mustelier Martínez, 2012).

Cheilolejeunea oncophylla (Ångstr.) Grolle & M.E.Reiner

St. Thomas: Loc. 33, on dead *Pogonatum*, c. per., 1900 m, ASV 35442.

**Cheilolejeunea ovalis* (Lindenb. & Gottsche) W.Ye, R.L.Zhu & Gradst. [= *Omphalanthus ovalis* (Lindenb. & Gottsche) Gradst.]

Portland: Loc. 10, epiphytic, HvM 216545, on rock, ASV 34953. **St. Andrew:** Loc. 14, epiphytic, HvM 216697, on slope, ASV 35144.

Widespread in Central America and northern Andes (Costa Rica and Guatemala to Bolivia). There is a single record from the West Indies (Bartram & Arnell, 1961, as *Peltolejeunea ovalis*), however, no collection was cited.

**Cheilolejeunea quinquecarinata* (R.M.Schust.) W.Ye, R.L.Zhu & Gradst. [= *Aureolejeunea quinquecarinata* R.M.Schust.]

St. Thomas: Loc. 33, epiphytic in elfin forest, 2240 m, c. per., ASV 35400/B.

A scattered high Andean species known from Venezuela (type), Colombia, Ecuador, and from the Dominican Republic (Schäfer-Verwimp & Pócs, 2009; Schäfer-Verwimp *et al.*, 2013; Uribe & Gradstein, 1998).

Recent phylogenetic investigations show that *Aureolejeunea* is nested in *Cheilolejeunea* (Schäfer-Verwimp *et al.*, 2014; Ye *et al.*, 2015).

Cheilolejeunea rigidula (Nees ex Mont.) R.M.Schust.

Trelawny: Loc. 2, epiphytic, HvM 216443. **St. Andrew:** Loc. 8, epiphytic, HvM 216417; Loc. 14, epiphytic, HvM 216670. **Portland:** Loc. 12, epiphytic, ASV 34980/B, conf. C. J. P. Bastos; Loc. 19, on bark of *Pinus*, HvM 216288, epiphytic, ASV 35208. **St. Thomas:** Loc. 31, epiphytic, ASV 35334, and on rock, HvM 216867, ASV 35336 (c. per. + andr., dioicous).

**Cheilolejeunea trifaria* (Reinw., Blume & Nees) Mizut.

Trelawny: Loc. 2, epiphytic, *HvM* 216444. **St. Ann:** Loc. 6, epiphytic, *HvM* 216490, ASV 34879 (c. per. + andr., autoicous). **St. Andrew:** Loc. 14, epiphytic, *HvM* 216671, and on dead wood partly covered with soil, ASV 35088/C (c. per. + andr., autoicous). **Portland:** Loc. 9, epiphytic, *HvM* 216491; Loc. 19, epiphytic, *HvM* 216752.

This appears to be the first confirmed report of this common pantropical species from Jamaica (Söderström *et al.*, 2011).

**Cheilolejeunea uncioba* (Lindenb.) Malombe [= *Leucolejeunea uncioba* (Lindenb.) A.Evans]

St. Andrew: Loc. 13, epiphytic, 1525 m, ASV 35058/B. **St. Thomas:** Loc. 33, epiphytic, 2200 m, ASV 35397/B.

A widespread but scattered Afro-American species; in the West Indies known from Cuba, Dominican Republic, and Guadeloupe (Grolle, 1975; Schäfer-Verwimp & Pócs, 2009; Schäfer-Verwimp & Reiner-Drehwald, 2009; all as *Leucolejeunea*).

Cheilolejeunea xanthocarpa (Lehm. & Lindenb.) Malombe [= *Leucolejeunea xanthocarpa* (Lehm. & Lindenb.) A.Evans]

St. Andrew: Loc. 14, epiphytic, ASV 35103/A. **St. Thomas:** Loc. 31, epiphytic, *HvM* 216868; Loc. 33, epiphytic in elfin forest, 2250 m, ASV 35413.

Cololejeunea appressa (A.Evans) Benedix

Portland: Loc. 12, epiphyllous, ASV 34997/C, 35006/C; Loc. 18, epiphyllous, ASV 35197/C.

Cololejeunea camillii (Lehm.) A.Evans

Trelawny: Loc. 1, ASV 34813/C. **Portland:** Loc. 9, ASV 34932/B; Loc. 28, ASV 35296/A, all epiphyllous.

Cololejeunea cardiocarpa (Mont.) A.Evans

Trelawny: Loc. 2, epiphyllous, ASV 34843. **St. Ann:** Loc. 5, epiphyllous, ASV 34867/B; Loc. 6, epiphyllous, ASV 34877/A (c. per.). **St. Andrew:** Loc. 8, epiphyllous, ASV 34903; Loc. 22, on bark of solitary tree, ASV 35259. **Portland:** Loc. 19, on bark of planted trees, ASV 35202/B; Loc. 28, epiphyllous, ASV 35299/A; Loc. 30, epiphyllous on fern frond, ASV 35309/B.

**Cololejeunea diaphana* A.Evans

St. Andrew: Loc. 14, epiphyllous on fern frond, ASV 35140/A. **St. Thomas:** Loc. 31, epiphyllous on fern frond, 1640 m, ASV 35362/E; Loc. 33, epiphyllous, 1675 m, ASV 35449/A, 35452/C.

Nearly pantropical and widespread in tropical America and Asia; in Oceania reported from Samoa, often known as *Aphanolejeunea truncatifolia* Horik. (Eggers & Pócs, 2010; Pócs & Bernecker, 2009); in the West Indies known from Cuba, Guadeloupe, Martinique, and (questionably) Puerto Rico (Grolle, 1975; Lavocat Bernard & Schäfer-Verwimp, 2011; Evans, 1911).

Cololejeunea microscopica (Taylor) Schiffn. var. *africana* (Pócs) Pócs & Bernecker

St. Andrew: Loc. 14, on shrub in summit region, ASV 35101/A.

Cololejeunea obliqua (Nees & Mont.) Schiffn.

Portland: Loc. 28, epiphyllous, ASV 35296/B.

**Cololejeunea papilliloba* (Steph.) Steph.

Portland: Loc. 12, epiphyllous, mixed with *Anoplolejeunea conferta* and *Cololejeunea papillosa*, ASV 34995/A, epiphyllous on fern frond, ASV 35006/B, 35007/B;

Loc. **18**, epiphyllous, c. per., *ASV 35198/C*. **St. Andrew:** Loc. **14**, epiphyllous, *ASV 35129/C*. **St. Thomas:** Loc. **31**, epiphyllous on fern frond, 1620 m, *ASV 35357/A*; Loc. **33**, epiphyllous on fern frond, 1850 m, c. spor., *ASV 35371/A*, epiphyllous, 1675 m, *ASV 35452/A*.

An Afro-American species, widespread but scattered in the Neotropics: Mexico, Costa Rica, Panama, Colombia, Ecuador, Brazil (Eggers in Eggers *et al.*, 2001, as *Aphanolejeunea pustulosa* (Ast) Bernecker & Pócs; Equihua & Pócs, 1999, as *A. pustulosa*; Parolly *et al.*, 2003, as *Aphanolejeunea kunertiana* Steph.; Schäfer-Verwimp, 2014; Uribe & Gradstein, 1998, as *A. kunertiana*). Recently reported from Africa: Bioko Island (Müller & Pócs, 2007). This is the first record for the species in the West Indies.

Cololejeunea papillosa (K.I.Goebel) Mizut.

Portland: Loc. **12**, epiphyllous, *HvM 216559, ASV 34996, 35005*; Loc. **18**, epiphyllous, *ASV 35197/A*. **St. Thomas:** Loc. **31**, epiphyllous of fern frond, 1600 m, *ASV 35356/C*.

Cololejeunea sicifolia (Gottsche *ex* A.Evans) Pócs & Bernecker subsp. *jamaicensis* (R.M.Schust.) Bernecker & Pócs

St. Thomas: Loc. **31**, 1620 m, *ASV 35357/D*; Loc. **33**, 1850 m, *ASV 35371/C*, both epiphyllous on fern frond.

****Cololejeunea sintenisii*** (Steph.) Pócs

St. Andrew: Loc. **14**, epiphyllous on fern frond, *ASV 35140/C*.

A nearly pantropical species, known from Asia, Australia, Réunion, Macaronesia, and the Neotropics: Florida and Costa Rica to Ecuador and Brazil (Pócs & Bernecker, 2009; Ah-Peng *et al.*, 2010). In the West Indies reported from Cuba, Haiti, Dominican Republic, Puerto Rico, Guadeloupe, and Dominica (Schäfer-Verwimp & Pócs, 2009).

Cololejeunea spathulata Jovet-Ast [= *Cololejeunea parallelifolia* R.M.Schust.]

St. Thomas: Loc. **31**, epiphyllous on fern frond, 1640 m, *ASV 35362/D*; Loc. **33**, epiphyllous on fern frond, 1850 m, *ASV 35371/D*, and on living leaves, 2150 m, *ASV 35393/C*, 1675 m, *ASV 35449/B*.

****Cololejeunea subcardiocalpa*** Tixier

St. Andrew: Loc. **14**, epiphyllous on fern frond, *ASV 35140/B*.

A widespread but scattered tropical American species (Mexico, Panama, Ecuador, French Guiana, Brazil) with only a few recent records from the West Indies: Guadeloupe and the Dominican Republic (Schäfer-Verwimp & Reiner-Drehwald, 2009; Schäfer-Verwimp & Pócs, 2009).

****Colura calyptrifolia*** (Hook.) Dumort.

St. Thomas: Loc. **33**, epiphyllous and epiphytic, 2100-2150 m, c. per., *ASV 35392/B*, 35426.

Widespread but scattered bipolar species, known from South America, Africa including East African Islands, Subantarctic, atlantic Europe up to Scandinavia, and Asia (Sri Lanka, Nepal); in the West Indies known only from Cuba and the Dominican Republic (Hassel *et al.*, 2014; Mustelier Martínez, 2012; Schäfer-Verwimp & Pócs, 2009; Cykowska *et al.* in Ellis *et al.*, 2012, with detailed distribution).

****Colura rhynchophora*** Jovet-Ast

St. Andrew: Loc. **14**, epiphyllous on bromeliad, c. per., mixed with *Drepanolejeunea inchoata*, *ASV 35108*.

Known from Cuba, the Lesser Antilles (Guadeloupe, Dominica, Martinique), Guyana, Suriname, and Costa Rica (Mustelier Martínez, 2005; Eggers in Eggers *et al.*, 2004; Gradstein, 1997; Schäfer-Verwimp, 1999).

****Colura tenuicornis*** (A.Evans) Steph.

St. Andrew: Loc. 14, epiphytic, *HvM 216673*. **Portland:** Loc. 30, epiphytic, *HvM 216817*, and epiphyllous on fern frond, *ASV 35309/A*.

A widespread and common pantropical species, in the West Indies reported from Puerto Rico, Cuba, Dominican Republic, Martinique, Dominica, and Guadeloupe (Lücking, 1995; Schäfer-Verwimp & Pócs, 2009; Schubert, 1978).

****Colura tortifolia*** (Nees & Mont.) Trevis.

Trelawny: Loc. 1, epiphytic on shrub in coffee plantation, *HvM 216398*, *ASV 34804*; Loc. 2, epiphytic, *HvM 216445* (with *Leptolejeunea elliptica*), *ASV 34828*, and epiphyllous, *ASV 34834/B*. **St. Ann:** Loc. 5, epiphyllous, *HvM 216477*, *ASV 34861/A*, *34870/A*; Loc. 6, on branches of shrub and epiphyllous, *ASV 34873/A*, *34875/A*. **St. Andrew:** Loc. 8, at base of tree fern, *HvM 216418*, *ASV 34895*. **Portland:** Loc. 28, epiphytic on edge of fence, *HvM 216799* (with *Diplasiolejeunea rudolphiana*), *ASV 35291*, on burnt ferns, *ASV 35292/B*, and epiphyllous, *ASV 35297/B*.

A widespread neotropical species (Mexico to Peru and Brazil, Caribbean Islands); the most common member of *Colura* in Jamaica.

Cryptolophocolea martiana (Nees) L.Söderstr., Crand.-Stotl. & Stotler
[= *Chiloscyphus martianus* (Nees) J.J.Engel & R.M.Schust.]

St. Andrew: Loc. 13, epiphytic, *HvM 216605*. **St. Thomas:** Loc. 31, on rotting wood, *HvM 216869*.

Cyclolejeunea chitonia (Taylor) A.Evans

Portland: Loc. 28, epiphyllous, *ASV 35299/B*.

Cyclolejeunea convexistipa (Lehm. & Lindenb.) A.Evans

St. Andrew: Loc. 14, epiphyllous on bromeliad, *ASV 35107/A*.

Cyclolejeunea luteola (Spruce) Grolle

Portland: Loc. 12, epiphytic, *HvM 216561*, *ASV 34973*, *35010*; Loc. 13, epiphytic, *HvM 216607*, *ASV 35079*. **St. Thomas:** Loc. 31, epiphyllous on fern frond, 1630 m, *ASV 35361/C*; Loc. 33, epiphytic, 1675 m, *ASV 35450*.

Dicranolejeunea axillaris (Nees & Mont.) Schiffn.

Portland: Loc. 10, epiphytic, *HvM 216537*, on shady wall, *ASV 34939*; Loc. 12, epiphytic, *HvM 216563*.

Diplasiolejeunea brunnea Steph.

St. Thomas: Loc. 31, epiphyllous on fern frond, *ASV 35361/A*; Loc. 33, epiphyllous, 1675 m, *ASV 35448/A*.

Diplasiolejeunea cavifolia Steph.

Portland: Loc. 12, epiphyllous on fern frond, *ASV 34994/D*; Loc. 19, on bark of solitary tree, *ASV 35225/C*.

****Diplasiolejeunea grolleana*** Reyes Montoya

Portland: Loc. 19, on bark of planted trees, *ASV 35201/A*, and epiphytic on solitary tree, *ASV 35225/B*. **St. Andrew:** Loc. 14, on shrub in summit region, with *Cheilolejeunea xanthocarpa* and *Colura tenuicornis*, *ASV 35101*. **St. Thomas:** Loc. 31, epiphytic at edge of coffee plantation, 1300 m, *ASV 35327*.

Known only from the type (Cuba) and a collection from Costa Rica (Eggers in Eggers *et al.*, 2001; Reyes, 1983).

Diplasiolejeunea johnsonii A.Evans

St. Thomas: Loc. 31, epiphytic, 1550 m, ASV 35343/A.

Diplasiolejeunea pellucida (C.F.W.Meissn. ex Spreng.) Schiffn.

Portland: Loc. 18, epiphyllous, *HvM* 216738, ASV 35196/A. **St. Thomas:** Loc. 31, epiphyllous on fern frond, 1600 m, ASV 35356/B; Loc. 32, epiphyllous, *HvM* 216922.

Diplasiolejeunea rudolphiana Steph.

Trelawny: Loc. 1, in crown of fallen tree, ASV 34817; Loc. 2, epiphytic, *HvM* 216447, epiphyllous, ASV 34831, ASV 34834/A, 34842 (c. per. + andr., autoicous), on dead branchlets, ASV 34835/A (c. per. + andr., autoicous); Loc. 3, epiphytic, ASV 34849/C. **St. Ann:** Loc. 5, epiphytic, *HvM* 216478, ASV 34859/A; Loc. 6, on branchlets, ASV 34874 (c. per.), on palm stem, ASV 34880/B. **St. Mary:** Loc. 7, epiphytic, *HvM* 216502, ASV 34887. **Portland:** Loc. 28, epiphytic, *HvM* 216813, ASV 35285, on burnt ferns, ASV 35293 (c. per. + andr., autoicous), epiphyllous, ASV 35299/C.

Diplasiolejeunea unidentata (Lehm. & Lindenb.) Schiffn.

Portland: Loc. 12, epiphytic, ASV 34974; Loc. 19, epiphytic, *HvM* 216754, 216755, 216756, ASV 35201/B, 35203/B, 35205, 35225/A; Loc. 30, on ornamental shrub, ASV 35314/A. **St. Andrew:** Loc. 14, epiphytic, ASV 35103/B, 35153; Loc. 22, epiphytic, *HvM* 216842, ASV 35258.

Drepanolejeunea anoplantha (Spruce) Steph.

Portland: Loc. 12, epiphytic, *HvM* 216564, ASV 34972 (+ *Rectolejeunea versifolia*). **St. Thomas:** Loc. 33, epiphytic, 2150 m, ASV 35391/C, epiphytic in elfin forest, 2240 m, ASV 35402, on rotting wood, 1950 m, ASV 35440.

**Drepanolejeunea araucariae* Steph.

St. Thomas: Loc. 33, epiphytic, 2150 m, ASV 35424/B.

A widespread neotropical species; in the West Indies reported from Puerto Rico and the Dominican Republic (Evans, 1903; Schäfer-Verwimp & Pócs, 2009).

Drepanolejeunea bidens (Prantl) A.Evans

Trelawny: Loc. 2, epiphyllous, *HvM* 216448, ASV 34834/C. **St. Ann:** Loc. 5, epiphyllous, ASV 34861/B; Loc. 6, epiphyllous, ASV 34876/B. **Portland:** Loc. 9, epiphyllous, ASV 34932/C. **St. Andrew:** Loc. 14, on shrub in summit region, ASV 35104/B (+ *Lejeunea bermudiana*). **St. Thomas:** Loc. 31, epiphyllous, *HvM* 216873, on root, 1320 m, ASV 35328; Loc. 33, epiphyllous, 2150 m, ASV 35393/A (c. per.).

Drepanolejeunea biocellata A.Evans

St. Andrew: Loc. 14, epiphytic in summit region, ASV 35102/B, and on dead wood, ASV 35125/B; Loc. 34, on shady rocky slope, ASV 35465. **Portland:** Loc. 19, epilithic, *HvM* 216757, 216758, on bark of planted tree, ASV 35202/A.

Drepanolejeunea fragilis Bischl. ex L.Söderstr., A.Hagborg & von Konrat

St. Thomas: Loc. 33, epiphyllous in elfin forest, 2150 m, ASV 35393/B.

Drepanolejeunea inchoata (C.F.W.Meissn.) Steph.

Portland: Loc. 18, epiphyllous, *HvM* 216740; Loc. 30, epiphyllous on fern frond, ASV 35310/B.

Drepanolejeunea lichenicola (Spruce) Steph.

St. Andrew: Loc. 14, epiphytic, ASV 35083/B (+ *Prionolejeunea decora*), 35102/A. **St. Thomas:** Loc. 31, epiphyllous on fern frond, 1600-1640 m, ASV 35356/D, 35362/A; Loc. 33, epiphyllous, 1675 m, ASV 35449/D, 35452/B (c. per.).

Drepanolejeunea mosenii (Steph.) Bischl.

St. Ann: Loc. 5, epiphyllous, *HvM* 216268; Loc. 6, epiphyllous, *HvM* 216493. **Portland:** Loc. 10, epiphyllous on fern frond, *ASV* 34951/A; Loc. 19, epiphyllous, *HvM* 216759, *ASV* 35212/A; Loc. 24, on leaves of *Citrus*, *ASV* 35278/B; Loc. 30, epiphyllous on fern frond, *ASV* 35309/C. **St. Andrew:** Loc. 14, epiphyllous on fern frond, *ASV* 35139; Loc. 20, epiphyllous, *ASV* 35236/A.

Drepanolejeunea orthophylla (Nees & Mont.) Bischl.

Portland: Loc. 9, on dead branchlets, *ASV* 34925/D.

****Drepanolejeunea submuricata*** R.M.Schust. ex L.Söderstr. & A.Hagborg

Portland: Loc. 18, epiphytic, *ASV* 35187; Loc. 19, on bark of *Pinus*, *ASV* 35200/A. **St. Thomas:** Loc. 31, epiphyllous on fern frond, 1640 m, *ASV* 35362/B.

A scattered Caribbean species, known from Venezuela, Costa Rica, Dominica (type), Guadeloupe, and the Dominican Republic (Dauphin & Ilkiu-Borges, 2002; Morales *et al.*, 2007; Schäfer-Verwimp in Blockeel *et al.*, 2009; Schäfer-Verwimp & Pócs, 2009; Schäfer-Verwimp & Reiner-Drehwald, 2009).

****Drepanolejeunea valiae*** Jovet-Ast

St. Thomas: Loc. 33, epiphytic in elfin forest, 2150 m, *ASV* 35391/A.

An uncommon species reported so far from Guadeloupe (type), Dominica, and Venezuela (Schuster, 1996). However, there is some confusion with the Venezuelan record. Schuster (1996: 44) in the text refers his “Venezuelan material” to “Fig. 9: 13-14”, “Fig. 10: 7”, and “Fig. 10: 12”, but the legends of these figures indicate the collections came from Dominica. Further on, there is an unpublished record from Peru (Romanski, 2007). First record of the species for the Greater Antilles.

Dumortiera hirsuta (Sw.) Nees

Portland: Loc. 12, epilithic, *HvM* 216565; Loc. 18, epilithic, *HvM* 216741, *ASV* 35177.

****Fossombronina porphyrorhiza*** (Nees) Prosk.

Portland: Loc. 12, *HvM* 216567; Loc. 19, *HvM* 216760; **St. Andrew:** Loc. 11, *ASV* 34954; Loc. 16, *HvM* 216723, *ASV* 35164; Loc. 21, *HvM* 216835; Loc. 22, *ASV* 35264. **St. Thomas:** Loc. 31, 1390 m, *ASV* 35331 – all on soil, and all c. spor.

It is surprising that this widespread and rather common neotropical species which is frequent in the Blue Mountains area has not previously been reported from Jamaica. Further records from the West Indies include Cuba, Haiti, Dominican Republic, Puerto Rico, Guadeloupe, Martinique, Trinidad, and Dominica (Lavocat Bernard & Schäfer-Verwimp, 2011; Schäfer-Verwimp & Pócs, 2009).

Frullania atrata (Sw.) Nees ex Mont.

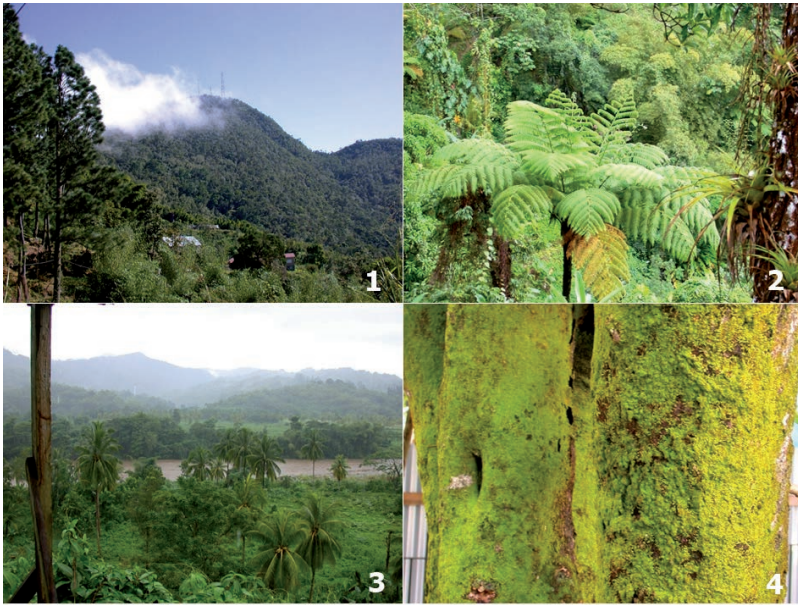
St. Andrew: Loc. 14, epiphytic, *HvM* 216678. **St. Thomas:** Loc. 33, elfin forest in summit region, pending from *Podocarpus* branches, 2240 m, *ASV* 35401/A.

Frullania brasiliensis Raddi

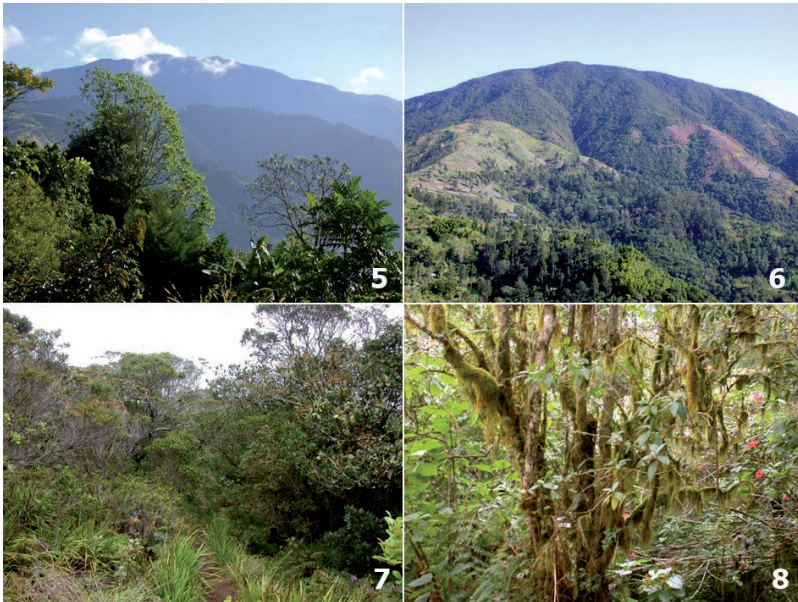
St. Andrew: Loc. 22, epiphytic, *HvM* 216846. **St. Thomas:** Loc. 33, on exposed rock, 1950-2000 m, *ASV* 35387, 35438/A, both c. per.

Frullania caulisequa (Nees) Nees

St. Ann: Loc. 5, epiphytic, *HvM* 216479, *ASV* 34860, 34872. **Portland:** Loc. 19, on branchlets of planted *Rhododendron*, c. per., *ASV* 35203/C. **St. Thomas:** Loc. 33, epiphytic in elfin forest, c. per., 2250 m, *ASV* 35409.



Figs 1-4. **1.** Adams Peak with easy access by military road. **2.** Portland: humid secondary vegetation at base of John Crow Mountains south of Port Antonio. **3.** Degraded woodland south of Port Antonio. **4.** Large epiphytic mats of *Erpodium dominghense* in Port Antonio. (Photographed by A. Schäfer-Verwimp, December 2013).



Figs 5-8. **5.** View from Mavis Bank to Blue Mountain Peak. **6.** Cleared and degraded forest high up the southern slopes of Blue Mountains. **7.** Elfin forest at Blue Mountain Peak, 2250 m altitude. **8.** Cloud forest at Portland Gap, 1675 m altitude. (Photographed by A. Schäfer-Verwimp, December 2013).

***Frullania convoluta** Lindenb. & Hampe

St. Thomas: Loc. 33, pendent from branches in elfin forest, 2250 m, *ASV 35410*.

Widely distributed from Mexico to Bolivia, Galapagos Islands, and the Dominican Republic (Uribe, 2008).

***Frullania dulimensis** Uribe

St. Thomas: Loc. 33, pendent from branchlets in elfin forest, 2250 m, *ASV 35419*.

Previously known only from the type collection from Colombia, Tolima, from 3200 m altitude (Uribe, 2008); this is the first record for it in the West Indies.

Frullania ericoides (Nees) Mont.

Trelawny: Loc. 3, epiphytic, *HvM 216464, ASV 34849/A*. **St. Mary:** Loc. 7, epiphytic, *HvM 216503*. **St. Andrew:** Loc. 16, on bark of tree, *HvM 216730*; Loc. 21, epiphytic, *HvM 216290*; Loc. 22, on bark of solitary tree, *HvM 216847, ASV 35263* (c. per.). **Portland:** Loc. 19, epiphytic, *HvM 216761*. **St. Thomas:** Loc. 31, epiphytic, *HvM 216876*; Loc. 32, epiphytic, *HvM 216303*; Loc. 34, on exposed rock, *HvM 216950, ASV 35455* (c. per.).

Frullania gibbosa Nees

Trelawny: Loc. 2, *HvM 216450*. **St. Mary:** Loc. 7, c. per., *ASV 34888*. **St. Andrew:** Loc. 8, *HvM 216421*; Loc. 23, *HvM 216779, 216780, ASV 35265/A* (c. per.) – all epiphytic.

Frullania intumescens (Lehm. & Lindenb.) Lehm. & Lindenb.

St. Andrew: Loc. 21, epilithic, *HvM 216836, ASV 35238* (c. per.); Loc. 34, on exposed rock, c. per., *ASV 35454*. **St. Thomas:** Loc. 31, on rock, 1480 m, *ASV 35338*.

Frullania kunzei (Lehm. & Lindenb.) Lehm. & Lindenb.

St. Ann: Loc. 5, *ASV 34866*; Loc. 7, *HvM 216504* (with *Frullania gibbosa*), *ASV 34890*. **St. Andrew:** Loc. 8, *HvM 216422, ASV 34910* (c. per.); Loc. 13, *HvM 216611, ASV 35024* (c. per.); Loc. 14, *HvM 216282, 216679*; Loc. 22, *HvM 216292, 216848, ASV 35248, 35253* (c. per. + andr., dioicous); **Portland:** Loc. 19, *HvM 216289, 216762, ASV 35206, 35220* (c. per.); Loc. 23, *HvM 216781, ASV 35265, 35268* (both c. per. + andr., dioicous). **St. Thomas:** Loc. 31, 1240 m, c. per., *ASV 35322*; Loc. 33, elfin forest, 2200 m, *ASV 35397/A*; Loc. 34, on exposed rock, *ASV 35456* – all others epiphytic.

Frullania obscura (Sw.) Mont. [= *Frullania arecae* (Spreng.) Gottsche]

Portland: Loc. 12, on rotting branchlets, c. per., *ASV 35017*; Loc. 28, epiphytic, *HvM 216801*.

Frullania rio-janeirensis (Raddi) Ångstr.

Trelawny: Loc. 2, *HvM 216451, ASV 34833* (c. per.); **St. Ann:** Loc. 5, *HvM 216480*; Loc. 6, *HvM 216494*; **St. Andrew:** Loc. 20, *HvM 216825*; Loc. 22, *HvM 216849, ASV 35262* (c. per.), all epiphytic.

Frullania subtilissima (Mont. ex Nees) Lindenb.

St. Andrew: Loc. 13, on bark of tree, c. per. + andr., autoicous, *ASV 35026*; Loc. 14, epiphytic, *ASV 35133, 35136* (c. per. + andr., autoicous). **St. Thomas:** Loc. 33, on exposed rock, c. per., 1950 m, *ASV 35438/B*, epiphytic in elfin forest, 2250 m, *ASV 35414/A*.

Frullanoides corticalis (Lehm. & Lindenb.) van Slageren

Portland: Loc. 25, on bark of old tree, c. per., *ASV 35281*; Loc. 26, epiphytic, *HvM 216793, ASV 35283* (c. per. + andr., dioicous).

Frullanoides liebmaniana (Lindenb. & Gottsche) van Slageren

St. Andrew: Loc. 17, on rock, *HvM 216736, ASV 35175* (c. spor.).

Frullanoides tristis (Steph.) van Slageren

Trelawny: Loc. 1, epiphytic in coffee plantation, c. per., ASV 34807. **St. Mary:** Loc. 7, on palm tree, c. andr., ASV 34886. **Portland:** Loc. 19, on bark of solitary tree, c. per., ASV 35222; Loc. 23, epiphytic at edge of coffee plantation, c. per., ASV 35270. **St. Andrew:** Loc. 22, epiphytic, *HvM* 216850, ASV 35249 (c. per.).

****Fuscocephaloziopsis catenulata*** (Huebener) Váňa & L.Söderstr.

St. Andrew: Loc. 14, on rotting wood, c. per., ASV 35124, conf. J. Váňa.

A suboceanic montane boreo-subtropical species, known from Europe, Caucasus, Russian Far East, NE China, North America including Mexico, from Japan, Thailand and the Philippines known as *Cephalozia catenulata* subsp. *nipponica* (Potemkin & Sofronova, 2013, as *Cephalozia*; Váňa, 1988, as *Cephalozia*); further on reported from Costa Rica and the Dominican Republic (Holz *et al.*, 2001; Schäfer-Verwimp & Pócs, 2009, both as *Cephalozia*). This is the second collection from the West Indies.

Fuscocephaloziopsis crassifolia (Lindenb. & Gottsche) Váňa & L.Söderstr.

[= *Cephalozia crassifolia* (Lindenb. & Gottsche) Fulford]

St. Thomas: Loc. 33, on rotten wood, 1675 m, ASV 35451.

Harpalejeunea reflexula A.Evans

St. Andrew: Loc. 14, epiphytic, ASV 35089, det. J. Heinrichs & ASV, 35126.

A poorly known species known only from the type from Jamaica (Evans, 1908a; Grolle & Reiner-Drehwald, 1999). It is one of the few species of *Harpalejeunea* with numerous dispersed ocelli which are very conspicuous in fresh material.

Harpalejeunea tridens (Besch. & Spruce) Steph.

St. Andrew: Loc. 14, epiphytic, *HvM* 216283.

Herbertus juniperoideus (Sw.) Grolle subsp. ***juniperoideus***

St. Andrew: Loc. 14, epiphytic, *HvM* 216680, ASV 35118. **St. Thomas:** Loc. 32, epiphytic, *HvM* 216924; Loc. 33, epiphytic, 1960 m, ASV 35384, on stem of tree fern in elfin forest, 2250 m, ASV 35418.

Herbertus juniperoideus subsp. ****acanthelium*** (Spruce) K.Feldberg & Heinrichs

St. Thomas: Loc. 33, epiphytic in elfin forest, 2200 m, ASV 35399.

Herbertus juniperoideus subsp. ***pensilis*** (Taylor) K.Feldberg & Heinrichs

St. Thomas: Loc. 33, epiphytic in elfin forest, ASV 35398.

Isotachis multiceps (Lindenb. & Gottsche) Gottsche

St. Thomas: Loc. 33, on soil in summit region, 2250 m, ASV 35407.

****Jensenia wallisii*** (J.B.Jack & Steph.) Grolle

St. Thomas: Loc. 32, on soil, *HvM* 216375.

Known from Costa Rica, Panama, Colombia, Venezuela, and Guyana (Schuette & Stotler, 2005); this is the first record for the West Indies.

This species is very similar to *Jensenia difformis* (Nees) Grolle and is sometimes included in the latter. Schuette & Stotler (2005) kept it as a separate species, however, in our opinion the size of the plant seems not to be a reliable character for separation of the two. Future phylogenetic studies may prove (or reject) the distinctness of the two taxa. Nevertheless, also *J. difformis*, a south-pantemperate species reaching southeast Brazil, would be a new record for the West Indies.

Söderström *et al.* (2016) accepted *Jensenia wallisii* as a good species.

Kurzia capillaris (Sw.) Grolle

Portland: Loc. 10, on soil, *HvM* 216541, *ASV* 34952. **St. Andrew:** Loc. 13, on slope, 1480 m, *ASV* 35053; Loc. 14, on soil, *HvM* 216683.

Leiolejeunea grandiflora A.Evans

St. Thomas: Loc. 33, epiphytic in elfin forest, 2150 m, *ASV* 35394, 35423 (both c. per.), creeping on *Herbertus* and *Bazzania*, 2200 m, *ASV* 35398/A, epiphytic in summit region, 2200-2250 m, *ASV* 35405, 35422, epiphytic in cloud forest, c. per., 1800 m, *ASV* 35443.

A very rare species (and genus) previously known only from the type collections where it now has been recollected after more than 100 years. A second record from Venezuela (Fulford, 1972) should be confirmed (Dauphin *et al.*, 2008). Robinson (1976) lists the same specimen as Fulford (1972). The specimens *ASV* 35394 and 35422 have been used for phylogenetic studies and consequently *Leiolejeunea* was placed in its own subtribe of Lejeuneaceae (Schäfer-Verwimp *et al.*, 2014).

Leiomitra elliottii (Steph.) R.M.Schust. [= *Trichocolea elliottii* Steph.]

St. Andrew: Loc. 13, epiphytic, *HvM* 216627, on forest floor, 1525 m, *ASV* 35064; Loc. 14, epiphytic, *HvM* 216711, on slope, *ASV* 35145.

Leiomitra tomentosa (Sw.) Lindb.

St. Andrew: Loc. 14, epiphytic, *HvM* 216712.

Lejeunea adpressa Nees

Trelawny: Loc. 2, on dead branchlets, c. per. + andr., autoicous, with marginal rhizoids, *ASV* 34835/B. **St. Andrew:** Loc. 8, on root, c. spor., *ASV* 34906. **Portland:** Loc. 9, on shrub, c. per., *ASV* 34918/A, 34925/B; Loc. 12, epiphyllous, *ASV* 34997/B; Loc. 19, epiphytic on shrub, c. per. + andr., autoicous, *ASV* 35204/B; Loc. 28, epiphytic at edge of fence, c. per., *ASV* 35286.

****Lejeunea aphanes*** Spruce

Portland: Loc. 28, epiphyllous and on dead branch, *ASV* 35296/C, 35298.

A widespread Afro-American species (for a long time known as *L. filipes* Spruce and *L. autoica* R.M.Schust.); in the West Indies known from Guadeloupe (Schäfer-Verwimp & Reiner-Drehwald 2009), Martinique (Eggers in Eggers *et al.*, 2004), Dominica (Schäfer-Verwimp, 1999, as *L. filipes*, with detailed distribution), and Cuba (Reiner-Drehwald, 1995).

****Lejeunea bermudiana*** (A.Evans) R.M.Schust.

St. Andrew: Loc. 14, on shrub in summit region, c. per., *ASV* 35099/A, 35104/A. **St. Thomas:** Loc. 31, epiphyllous on fern frond, 1620 m, c. per., *ASV* 35357/B.

A scattered tropical and subtropical American species, reported from Bermuda, southeastern United States, Panama, Brazil; in the West Indies known from Puerto Rico, Dominica, and Guadeloupe (Reiner-Drehwald & Goda, 2000; Schäfer-Verwimp, 2014; Schäfer-Verwimp & Reiner-Drehwald, 2009).

****Lejeunea cancellata*** Nees & Mont.

Trelawny: Loc. 1, epiphytic in coffee plantation, *ASV* 34806/B; Loc. 2, epiphytic, *HvM* 216463, *ASV* 34824, 34840/A. **St. Ann:** Loc. 5, epiphytic, *HvM* 216482, *ASV* 34864. **Portland:** Loc. 9, epiphytic, *HvM* 216518; Loc. 10, epiphyllous on fern frond, *ASV* 34951/C; Loc. 19, epiphytic, *ASV* 35204/A, 35209 (c. per.), 35215/B (c. per.), 35218 (nearly exclusively flagelliferous branches); Loc. 30, epiphytic, *HvM* 216818, on ornamental shrub, *ASV* 35315. **St. Andrew:** Loc. 16, epiphytic, with *Lejeunea laetevirens*, *HvM* 216724; Loc. 20, on dead branchlet, *ASV* 35232/B. **St. Thomas:** Loc. 31, epiphytic, *HvM* 216298, 216882.

A widespread tropical American species: Florida, Costa Rica, Panama, Ecuador, Argentina, Brazil, Surinam; records from Hawaii and Africa have been rejected (Grolle, 1985); in the West Indies known from Cuba (type), and the Dominican Republic (Schäfer-Verwimp & Pócs, 2009).

****Lejeunea caulicalyx*** (Steph.) M.E.Reiner & Goda

St. Andrew: Loc. 13, epiphyllous on fern frond, 1420 m, ASV 35045/B.

A widely distributed species in tropical America (Guatemala, Panama, Ecuador, Bolivia, Brazil, French Guiana); in the West Indies known from Cuba (type), Dominican Republic, and Guadeloupe (Reiner-Drehwald & Goda, 2000; Reiner-Drehwald in Gradstein & Ilkiu-Borges, 2009; Schäfer-Verwimp & Reiner-Drehwald, 2009; Schäfer-Verwimp & Pócs, 2009).

Lejeunea cerina (Lehm. & Lindenb.) Lehm. & Lindenb.

Portland: Loc. 9, epiphytic, HvM 216519; Loc. 12, at tree base, c. per., ASV 35008.

St. Andrew: Loc. 13, on soil and epiphyllous on fern frond, 1270-1420 m, ASV 35021, 35041, 35046/A; Loc. 22, on shady slope, HvM 216293, ASV 35255. **St. Thomas:** Loc. 31, epiphytic, HvM 216883, 216884; Loc. 32, epiphytic, HvM 216925.

****Lejeunea controversa*** Gottsche

St. Andrew: Loc. 20, on shady rock, ASV 35227. **Portland:** Loc. 30, epiphytic, HvM 216297, on shady slope, ASV 35311. **St. Thomas:** Loc. 31, on root of tree, 1220 m, ASV 35320/A.

A widespread species in Central and South America; in the West Indies known from Cuba, Guadeloupe, and Dominica (Reiner-Drehwald & Goda, 2000).

Lejeunea deplanata Nees [= *Lejeunea maxonii* (A.Evans) Xiao L.He]

Portland: Loc. 19, on bark of solitary tree, ASV 35223. **St. Andrew:** Loc. 20, on dead branchlet, ASV 35232/C; Loc. 21, on bark of old tree, ASV 35244 – all c. per.

Lejeunea flava (Sw.) Nees

Trelawny: Loc. 1, epiphytic, HvM 216178; Loc. 2, on dead plants, c. spor. ASV 34844. **St. Ann:** Loc. 5, epiphytic, HvM 216483, ASV 34859/B (c. per.), 34871 (c. spor.), epiphyllous on fern frond, c. per., ASV 34862, on burnt ferns, c. per., ASV 34865, on rotting wood, c. spor., ASV 34869, epiphyllous, ASV 34870/B; Loc. 6, on palm tree, c. spor., ASV 34878. **St. Mary:** Loc. 7, epiphytic, HvM 216179. **St. Andrew:** Loc. 13, epiphytic, HvM 216615, epiphyllous on fern frond, 1420-1480 m, c. per., ASV 35046/B, 35077; Loc. 14, epiphyllous, c. per. + andr., autoicous, ASV 35129/B. **Portland:** Loc. 9, on rotting branchlets, c. per., ASV 34925/A, and epiphyllous, c. per. + andr., autoicous, ASV 34932/A; Loc. 12, epiphyllous, c. per. + andr., autoicous, ASV 34995/B; Loc. 19, on bark of *Pinus*, c. per., ASV 35200/B, on branchlets of *Rhododendron*, c. per., ASV 35203/A, on root of tree, c. per. + andr., autoicous, ASV 35215/A, on bark of solitary tree, c. per. + andr., autoicous, ASV 35225/D; Loc. 28, epiphytic, HvM 216804, ASV 35290 (c. spor.), on burnt ferns, c. per., ASV 35292/A. **St. Thomas:** Loc. 31, epiphyllous on fern fronds, c. per. + andr., autoicous, ASV 35355.

Lejeunea glaucescens Gottsche

St. Andrew: Loc. 8, epiphytic, HvM 216424, on root, c. per. + andr., autoicous, HvM 216269; Loc. 14, epiphyllous, c. per. + andr., autoicous, ASV 35129/A. **St. Thomas:** Loc. 31, epiphyllous on fern frond, c. per., 1620 m, ASV 35357/C.

****Lejeunea laeta*** (Lehm. & Lindenb.) Lehm. & Lindenb.

Trelawny: Loc. 1, on humid soil, HvM 216403, ASV 34810 (c. spor.). **St. Andrew:** Loc. 8, on humid stone, HvM 216425, ASV 34898 (c. andr.), 34904. **Portland:** Loc. 9, on humid rocky slope, ASV 34934. **St. Thomas:** Loc. 31, on soil in coffee plantation, 1270-1350 m, HvM 216885, ASV 35324, 35329.

A widespread but scattered tropical American species (Mexico to Argentina and Brazil); in the West Indies known from the Dominican Republic and Guadeloupe (Lavocat Bernard & Schäfer-Verwimp, 2011; Schäfer-Verwimp & Pócs, 2009).

Lejeunea laetevirens Nees & Mont.

Trelawny: Loc. 1, epiphytic, *HvM* 216262, *ASV* 34806/A; Loc. 2, epiphytic, *HvM* 216453, on limestone, *ASV* 34826/B; Loc. 3, epiphytic, *HvM* 216467, on shady concrete wall, *ASV* 34846/B. **St. Ann:** Loc. 4, epiphytic, *HvM* 216471, *ASV* 34855/A, on shady limestone wall, *ASV* 34854/B; **St. Mary:** Loc. 7, on bark of solitary tree, *HvM* 216781, *ASV* 34892; **Portland:** Loc. 9, epiphytic, *HvM* 216395; Loc. 23, epiphytic, *HvM* 216725, *ASV* 35266/A; Loc. 24, epiphyllous on *Citrus*, *ASV* 35278/D; Loc. 26, epiphytic, *HvM* 216794, 216795, *ASV* 35284; Loc. 28, epiphytic, *HvM* 216805. **St. Andrew:** Loc. 16, epiphytic, *HvM* 216520, on rock, *ASV* 35168.

**Lejeunea paucidentata* (Steph.) Grolle

St. Andrew: Loc. 16, on soil, *HvM* 216726, *ASV* 35166, both c. per.

An Antillean endemic species, known from Cuba, Dominican Republic, Puerto Rico, Guadeloupe, and Dominica (Reiner-Drehwald & Goda, 2000; Schäfer-Verwimp & Pócs, 2009; Schäfer-Verwimp & Reiner-Drehwald, 2009).

Lejeunea phyllobola Nees & Mont.

Portland: Loc. 23, epiphytic, *HvM* 216294, *ASV* 35269 (c. andr., dioicous). **St. Andrew:** Loc. 16, epiphytic, c. andr. (dioicous), *ASV* 35170. **St. Thomas:** Loc. 31, epiphytic, c. per. + andr., 1450 m, *ASV* 35453.

**Lejeunea sporadica* Besch. & Spruce

St. Andrew: Loc. 14, on rotting wood, c. per. + andr. (autoicous), *ASV* 35087. **St. Thomas:** Loc. 33, epiphyllous on fern frond, c. per., 1850 m, *ASV* 35371/B, and epiphytic in cloud forest, c. per. + andr. (autoicous), 1950 m, *ASV* 35383/B.

A very scattered neotropical species: Guyana, Brazil, Panama, Costa Rica (Bastos & Yano, 2004, as *L. elliottii*; Herzog, 1951, as *Harpalejeunea sporadica*; Reiner-Drehwald & Goda, 2000, as *L. elliottii*; Schäfer-Verwimp, 2014); in the West Indies known from Dominica, Guadeloupe, St. Vincent, and Cuba (Schäfer-Verwimp & Reiner-Drehwald, 2009).

**Lejeunea tapajosensis* Spruce

Trelawny: Loc. 1, in crown of fallen tree, *ASV* 34819; Loc. 3, epiphytic, *HvM* 216267. **Portland:** Loc. 9, on rotting stem, *ASV* 34924 (with numerous caducous leaves).

Widespread but scattered in tropical America: Panama to Peru, Argentina, and Brazil; in the West Indies known only from the Lesser Antilles (Dominica, Guadeloupe; Schäfer-Verwimp, 1999; Schäfer-Verwimp & Reiner-Drehwald, 2009); new to the Greater Antilles.

Lejeunea trinitensis Lindenb.

Trelawny: Loc. 1, on dead plants, c. per., *ASV* 34815; Loc. 3, epiphytic, *HvM* 216468. **St. Ann:** Loc. 4, epiphytic, *HvM* 216472, *ASV* 34855/B, on shady limestone wall, *ASV* 34854/A. **St. Andrew:** Loc. 15, epiphytic, *HvM* 216720, *ASV* 35159/B.

Lejeunea spec. – 38 further specimens (mainly *Hetero-* and *Taxilejeunea*) which could not be determined to species level.

Lepidolejeunea cuspidata (Gottsche) Heinrichs & Schäf.-Verw. [= *Lepidolejeunea punctata* (Herzog) R.M.Schust.]

Portland: Loc. 9, on soil, *HvM* 216521, *ASV* 34931; Loc. 12, epiphytic, *HvM* 216275, *ASV* 34984, 34987, 35009. **St. Andrew:** Loc. 13, epiphytic, 1380 m, *ASV* 35036;

Loc. **20**, on dead branchlet, mixed with *Lejeunea controversa* and *Lejeunea laetevirens*, ASV 35232/A, epiphyllous, ASV 35236/B.

This species was previously known under different names in synonymy of *Lepidolejeunea involuta* (as *L. punctata* from Jamaica) until Heinrichs *et al.* (2015) could demonstrate the taxon to be a good species. *Lepidolejeunea cuspidata* is best distinguished from the similar *L. involuta* by the occurrence of ocelli mostly smaller than surrounding cells (in *L. involuta*, the ocelli are more or less of the same size as surrounding cells and not or hardly recognizable in old herbarium material).

Lepidolejeunea involuta (Gottsche) Grolle

Portland: Loc. **12**, epiphyllous, with *Microlejeunea epiphylla* and *Cololejeunea papillosa*, ASV 34995/C; Loc. **18**, on liana, ASV 35195. **St. Andrew:** Loc. **13**, epiphytic, HvM 216616, on slope, 1480 m, ASV 35052.

See note under the preceding species.

Lepidozia cupressina (Sw.) Lindenb.

St. Thomas: Loc. **33**, on root in cloud forest, 1900 m, ASV 35377/A.

Lepidozia patens Lindenb.

St. Thomas: Loc. **33**, on humid slope in cloud forest, 1880 m, ASV 35372.

****Leptolejeunea convexistipa*** Bischl.

Portland: Loc. **18**, epiphyllous, ASV 35198/A.

Previously known from Brazil (type), Costa Rica (Lücking, 1995, as *L. cf. convexistipa*), Ecuador, and Panama (Heinrichs *et al.*, 2014); however, its distribution is incompletely known since it was included in the polymorphous *L. maculata* (Mitt.) Schiffn. (Grolle, 1976). Recent molecular studies provided some evidence that this complex may include several species, and therefore *L. convexistipa* was kept separately (Heinrichs *et al.*, 2014).

Leptolejeunea elliptica (Lehm. & Lindenb.) Besch.

Trelawny: Loc. **1**, epiphytic on shrub in coffee plantation, HvM 216404, ASV 34801, epiphyllous in secondary forest, ASV 34813/A; Loc. **2**, epiphyllous, HvM 216454, ASV 34834/E. **St. Ann:** Loc. **5**, epiphyllous, HvM 216484, ASV 34867/A, 34870/C; Loc. **6**, epiphyllous, HvM 216495, 216496, ASV 34876/A. **St. Andrew:** Loc. **8**, epiphyllous, ASV 34902/A. **Portland:** Loc. **9**, epiphyllous, ASV 34932/D; Loc. **24**, on leaves of *Citrus*, ASV 35278/A.

Leptolejeunea exocellata (Spruce) A.Evans

Trelawny: Loc. **2**, epiphyllous, ASV 34834/D.

****Leptoscyphus amphibolius*** (Nees) Grolle

St. Thomas: Loc. **33**, on rotting wood, 1950 m, ASV 35439.

A widespread tropical American species ranging from Mexico to Bolivia and Brazil (Grolle 1963, with map); in the West Indies known only from Cuba (Fulford, 1976).

Leptoscyphus trapezoides (Mont.) L.Söderstr. [= *Chiloscyphus breutelii* (Gottsche) J.J.Engel & R.M.Schust.]

St. Andrew: Loc. **14**, epiphytic, HvM 216672.

Lophocolea bidentata (L.) Dumort. [= *Chiloscyphus coadunatus* (Sw.) J.J.Engel & R.M.Schust.]

Portland: Loc. **12**, epiphytic, HvM 216574. **St. Andrew:** Loc. **13**, on rocky slope, 1380 m, ASV 35035. **St. Thomas:** Loc. **31**, epiphytic, HvM 216886.

The specimen ASV 35035 was used in a phylogenetic study (Patzak *et al.*, 2016, as *Chiloscyphus coadunatus*).

Lophocolea muricata (Lehm.) Nees [= *Chiloscyphus muricatus* (Lehm.) J.J.Engel & R.M.Schust.]

Portland: Loc. 12, epiphytic, *HvM* 216558. **St. Thomas:** Loc. 32, epiphytic, *HvM* 216921.

Lopholejeunea subfusca (Nees) Schiffn.

Trelawny: Loc. 1, *HvM* 216405. **St. Ann:** Loc. 5, *HvM* 216485. **St. Mary:** Loc. 7, *HvM* 216506. **St. Andrew:** Loc. 8, *HvM* 216428. **Portland:** Loc. 28, *HvM* 216806 – all epiphytic.

Marchantia chenopoda L.

Portland: Loc. 10, on soil, *HvM* 216543; Loc. 12, on soil, *HvM* 216576.

Marchesinia* cf. *brachiata (Sw.) Schiffn.

Trelawny: Loc. 2, on soil, *HvM* 216455, on limestone, 360 m; Loc. 3, on soil, *HvM* 216621. **St. Andrew:** Loc. 13, on shady wall near military base, ASV 35080; Loc. 21, on soil, *HvM* 216838; Loc. 22, on soil, *HvM* 216852; on rock, ASV 35257; Loc. 34, on soil, *HvM* 216952, on rocky slope, ASV 35462. **Portland:** Loc. 19, epiphytic on *Coffea* shrub, ASV 35224/A. **St. Thomas:** Loc. 31, on soil, *HvM* 216887.

Surprisingly, perianths, which should not be rare in this species, have not been seen in any of the specimens. The underleaf bases are variably decurrent, often asymmetrically so, or even not decurrent as in *M. robusta*, however, with smooth margin. Also, no caducous leaves could be observed, indicating *M. bongardiana* which may be expected at altitudes below 500 m (localities 2 and 3).

Mastigolejeunea auriculata (Wilson & Hook.) Steph.

Trelawny: Loc. 2, on limestone, c. per., ASV 34841; Loc. 3, on shady limestone, *HvM* 216469, ASV 34850 (c. per.). **St. Ann:** Loc. 4, epiphytic, *HvM* 216473, ASV 34856 (c. per.).

Metzgeria albinea Spruce var. *albinea*

St. Andrew: Loc. 13, epiphytic, *HvM* 216994; Loc. 20, on dead branch, ASV 35234.

****Metzgeria attenuata*** Steph.

St. Thomas: Loc. 33, epiphyllous in cloud forest, ASV 35448/B.

An Afro-American species, in the Neotropics known from Mexico, Costa Rica, Panama, Colombia, Ecuador, and Bolivia (Costa 2008); new to the West Indies.

Metzgeria ciliata Raddi

Portland: Loc. 12, on forest floor, ASV 34985, epiphyllous on fern frond, ASV 35006/A. **St. Thomas:** Loc. 31, epiphytic, *HvM* 216888.

****Metzgeria crassipilis*** (Lindb.) A.Evans

Portland: Loc. 19, epiphytic on *Coffea* shrub, creeping on and between *Marchesinia brachiata*, ASV 35224/B.

A nearly worldwide distributed species, known from North America, Mexico, Panama, Colombia, Madagascar, Burundi, Malawi, Uganda, India, Sri Lanka, China, Indonesia, Japan, Australia, and New Zealand (Costa, 2008; Grolle, 1995; Schäfer-Verwimp, 2014; So, 2003, 2004); in the West Indies reported from Guadeloupe, Cuba, and the Dominican Republic (Costa, 2008; Lavocat-Bernard & Schäfer-Verwimp, 2011; Mustelier Martínez, 2005, 2006).

Metzgeria leptoneura Spruce

St. Thomas: Loc. **32**, on soil, *HvM* 216930; Loc. **33**, on humid slope in cloud forest, 1880 m, *ASV* 35374.

Metzgeria procera Mitt.

St. Thomas: Loc. **33**, on humid slope in cloud forest, 1950 m, *ASV* 35378.

**Metzgeria scyphigera* A.Evans

St. Thomas: Loc. **31**, epiphyllous on fern frond, 1630 m, *ASV* 35361/B.

An Afro-American species, widely distributed in tropical and temperate America from Mexico to Bolivia and Brazil with isolated stations in Tierra del Fuego of Chile and Argentina (Costa, 2008); recently reported from Rwanda, Central Africa (Bednarek-Ochyra & Ochyra in Ellis *et al.*, 2013). This is the first record for the West Indies.

Microlejeunea acutifolia Steph.

Portland: Loc. **12**, epiphytic, *ASV* 34970/B.

Microlejeunea bullata (Taylor) Steph.

Portland: Loc. **19**, on bark of solitary tree, *ASV* 35223/A. **St. Andrew:** Loc. **22**, creeping on *Frullania kunzei*, *ASV* 35248/A.

**Microlejeunea capillaris* (Gottsche) Steph.

Portland: Loc. **19**, epiphytic, creeping on *Frullania kunzei* and *Odontolejeunea lunulata*, *ASV* 35207/B.

A widespread but scattered tropical American species (Costa Rica to Peru and Brazil), in the West Indies previously known only from the Dominican Republic (Schäfer-Verwimp & Pócs, 2009).

**Microlejeunea colombiana* Bischl.

St. Thomas: Loc. **33**, epiphyllous in elfin forest, growing with *Colura calyptrofolia*, *Drepanolejeunea araucariae* and *D. bidens*, 2150 m, *ASV* 35392/A.

A scattered neotropical species ranging from Mexico to Peru with a few records from Panama, Colombia, Ecuador, and Venezuela (Bischler *et al.*, 1963; Parolly *et al.*, 2004; Schäfer-Verwimp, 2014); in the West Indies known only from the Dominican Republic (Schäfer-Verwimp & Pócs, 2009).

**Microlejeunea diversiloba* (Spruce) Müll.Frib. [= *Microlejeunea stricta* (Gottsche, Lindenb. & Nees) Steph.]

Portland: Loc. **12**, epiphyllous, *HvM* 216580, *ASV* 34997/A, epiphytic, *ASV* 34982/B, creeping on *Pilotrichum bipinnatum*, *ASV* 34991/A.

A widespread tropical American species ranging from Mexico to Ecuador and Brazil; in the West Indies known from Guadeloupe and the Dominican Republic (Bischler *et al.*, 1963; see also note in Schäfer-Verwimp, 2010).

**Microlejeunea epiphylla* Bischl.

St. Mary: Loc. **7**, epiphytic, *HvM* 216507, *ASV* 34891. **Portland:** Loc. **12**, epiphytic and epiphyllous on fern frond, *ASV* 34978, 34994/C; Loc. **23**, epiphytic, *HvM* 216784, *ASV* 35267. **St. Thomas:** Loc. **32**, epiphytic, *HvM* 216931.

A widespread neotropical species, known from Florida and Costa Rica to Ecuador and Brazil; in the West Indies reported from Guadeloupe, Martinique, Dominica, Cuba, and the Dominican Republic (Bischler *et al.*, 1963; Mustelier Martínez, 2012; Schäfer-Verwimp, 2010; Schäfer-Verwimp & Pócs, 2009).

Micropterygium trachyphyllum Reimers

St. Andrew: Loc. **14**, epiphytic in cloud forest, *HvM* 216691, *ASV* 35120.

Mnioloma cyclostipum (Spruce) R.M.Schust.

St. Andrew: Loc. **13**, epiphytic, *HvM* 216622, on humus in summit region, 1525 m, ASV 35069.

Monoclea gottschei Lindb. subsp. *elongata* Gradst. & Mues

Portland: Loc. **12**, on stone in brook, *HvM* 216581, ASV 35004.

Myriocoleopsis minutissima (Sm.) R.L.Zhu, Y.Yu & Pócs subsp. *myriocarpa* (Nees & Mont.) R.L.Zhu, Y.Yu & Pócs [= *Cololejeunea minutissima* (Sm.) Steph. subsp. *myriocarpa* (Nees & Mont.) R.M.Schust.]

Trelawny: Loc. **2**, on branchlets, c. per., ASV 34829. **St. Ann:** Loc. **6**, on branchlets, c. per., ASV 34873/B. **St. Andrew:** Loc. **8**, epiphyllous, c. per., ASV 34902/B. **St. Mary:** Loc. **7**, epiphytic, *HvM* 216501, **Portland:** Loc. **28**, epiphytic, *HvM* 216798, ASV 35287 (c. per.). **St. Thomas:** Loc. **31**, epiphytic at edge of coffee plantation, 1300 m, c. per., ASV 35326.

Neesioscyphus bicuspidatus (Steph.) Grolle

St. Andrew: Loc. **14**, on soil, *HvM* 216692, ASV 35147.

Neurolejeunea breutelii (Gottsche) A.Evans

St. Andrew: Loc. **14**, epiphytic and on soil, *HvM* 216693, ASV 35149. **Portland:** Loc. **29**, epiphytic, *HvM* 216295.

****Nowellia wrightii*** (Gottsche ex Spruce) Steph. ex Duss

St. Andrew: Loc. **14**, epiphytic, on rotting log, *HvM* 216694, ASV 35095, 35125/A (c. per.).

Grolle (1968) considered this species to be a Cuban endemic; however, the plants from Jamaica and also a specimen from Dominica (*Schäfer-Verwimp & Verwimp* 17764 from Morne Trois Pitons, 22 May 1996), originally determined as *N. wrightii*, but redetermined by Grolle as “luxuriant phase” of *N. dominicensis* Steph. (Grolle in litt. 1997), seem inseparable from *N. wrightii*; possibly *N. dominicensis* represents only a weak phase of *N. wrightii*. This is the first record of the species for Jamaica.

Odontolejeunea lunulata (F.Weber) Schiffn.

St. Ann: Loc. **6**, epiphytic, *HvM* 216497, epiphyllous, ASV 34877/B. **Portland:** Loc. **12**, epiphytic, ASV 34975; Loc. **19**, epiphytic, *HvM* 216769, 216770, ASV 35207/A, epiphyllous, ASV 35211; Loc. **28**, epiphytic, *HvM* 216808, 216809.

Odontoschisma longiflorum (Taylor) Trevis.

St. Andrew: Loc. **13**, epiphytic, *HvM* 216624, on humus in summit region, 1525 m, ASV 35070. **St. Thomas:** Loc. **32**, on rotting wood, *HvM* 216933.

Odontoschisma sphagni (Dicks.) Dumort. [= *Odontoschisma prostratum* (Sw.) Trevis.]

St. Andrew: Loc. **14**, on rotting log, *HvM* 216696, ASV 35090.

****Otigoniolejeunea huctumalcensis*** (Lindenb. & Gottsche) Y.M.Wei, R.L.Zhu & Gradst.

St. Andrew: Loc. **14**, epiphytic, ASV 35109, 35132.

Widely distributed in tropical America, ranging from Mexico to Bolivia and Brazil (including the Cocos and Galápagos Islands); in the West Indies reported from Cuba, Guadeloupe, and Dominica (Reiner-Drehwald & Ilkiu-Borges, 2007; Schäfer-Verwimp, 2010, both as *Lejeunea*).

Paracromastigum bifidum (Steph.) R.M.Schust.

Portland: Loc. **10**, on rocky slope over soil, *HvM* 216546, ASV 34947. **St. Andrew:** Loc. **13**, on soil, *HvM* 216636, ASV 39018; Loc. **14**, on soil, *HvM* 216698, ASV 35134;

Loc. **22**, on rocky slope, ASV 35250. **St. Thomas:** Loc. **31**, on soil, HvM 216891; Loc. **33**, on soil, 1750 m, ASV 35368.

There is a single report of *P. bifidum* subsp. *densum* (Pears.) R.M.Schust., nom. inval., from Jamaica; however, we would refer our specimens to *P. bifidum* (subsp. *bifidum*) and keep it separate from the Brazilian *P. pachyrhizum* (Nees) Fulford until phylogenetic studies may prove its synonymy with the latter species.

Plagiochila aerea Taylor

St. Andrew: Loc. **31**, on shady slope, ASV 35359.

Plagiochila bifaria (Sw.) Lindenb.

St. Andrew: Loc. **13**, on slope, 1500 m, ASV 35056.

Plagiochila cristata (Sw.) Lindenb.

St. Thomas: Loc. **31**, epilithic, HvM 216895, 216896, 216935, ASV 35353 (at 1600 m alt.).

Plagiochila dominicensis Taylor

St. Andrew: Loc. **13**, epiphytic, 1400 m, ASV 35078. **St. Thomas:** Loc. **31**, epiphytic, HvM 216897.

****Plagiochila heterophylla*** Lindenb.

St. Thomas: Loc. **33**, epiphytic in elfin forest, 2250 m, ASV 35404, det. J. Heinrichs.

A widespread neotropical species, ranging from Mexico to Ecuador with a single record from the Dominican Republic; further records are from the British Isles and northwestern France (Heinrichs, 2002). This is the second record of the species for the West Indies.

The specimen was used in a phylogenetic study (Patzak *et al.*, 2016).

Plagiochila patula (Sw.) Lindenb.

Portland: Loc. **9**, on humid slope, ASV 34919, det. J. Heinrichs.

Porella swartziana (F.Weber) Trevis.

St. Thomas: Loc. **31**, on soil, HvM 216905, 216906, ASV 35342.

Prionolejeunea decora (Taylor) Steph.

St. Andrew: Loc. **14**, on tree fern, c. per., ASV 35083/A, on rotting log, ASV 35088/A, on root, ASV 35092, 35135, on bark of tree, c. per., ASV 35117/A, on shady stone, c. per. + andr. (dioicous) + caducous leaves, ASV 35122.

Pycnolejeunea schwaneckeii (Steph.) Schiffn. ex P.Syd.

St. Andrew: Loc. **14**, epiphytic, HvM 216703, ASV 35113, 35128, 35152. **St. Thomas:** Loc. **33**, epiphytic in cloud forest, 1800-1950 m, ASV 35383/A (with *Leiolejeunea grandiflora*), 35444.

Radula antilleana Castle

Portland: Loc. **9**, on humid slope, ASV 34933. **St. Andrew:** Loc. **13**, on soil, 1270 m, ASV 35020; Loc. **20**, on rocky slope, ASV 35231/A. **St. Thomas:** Loc. **31**, on soil, HvM 216303.

****Radula cubensis*** K.Yamada

Portland: Loc. **12**, on humid slope, numerous caducous leaves, ASV 35012.

A rather scattered neotropical species (Ecuador, Bolivia, Brazil); in the West Indies known only from Cuba (type) and the Dominican Republic (Yamada, 1983; Schäfer-Verwimp & Pócs, 2009).

Radula flaccida Lindenb. & Gottsche

Trelawny: Loc. 1, epiphyllous, ASV 34813/B.

Radula grevilleana Taylor

Portland: Loc. 12, *HvM* 216586, ASV 34994/A, 35007/A. **St. Andrew:** Loc. 13, 1420 m, ASV 35045/A; Loc. 14, ASV 35130. **St. Thomas:** Loc. 31, 1620 m, ASV 35358; Loc. 33, 1850 m, ASV 35370 – all epiphyllous.

Radula javanica Gottsche

Portland: Loc. 9, on rotting stem, ASV 34923, partly with caducous leaves; Loc. 29, epiphytic, *HvM* 216296, on shady slope, c. per. + caducous leaves, ASV 35301. **St. Andrew:** Loc. 13, on rock, 1270 m, with caducous leaves, ASV 35022; Loc. 20, epiphytic, *HvM* 216828, 216829, on dead branch, with caducous leaves, ASV 35235; Loc. 34, on rocky slope, ASV 35461.

Radula mexicana Lindenb. & Gottsche

Portland: Loc. 12, on branchlets, ASV 34965. **St. Andrew:** Loc. 13, on humid rocky slope, 1370-1440 m, ASV 35033, 35048. **St. Thomas:** Loc. 31, on rock, *HvM* 216301, ASV 35337 – all collections except ASV 35337 c. per. + andr., autoicous.

Radula pallens (Sw.) Nees *ex* Mont.

St. Andrew: Loc. 13, on slope, 1500 m, c. per., ASV 35075; Loc. 34, on rock, *HvM* 216955. **St. Thomas:** Loc. 31, on rock, *HvM* 216300, on soil, 1580 m, c. per., ASV 35348; Loc. 32, on rock, *HvM* 216306.

Radula quadrata Gottsche

St. Andrew: Loc. 20, epilithic, *HvM* 216830, ASV 35229.

Radula tectiloba Steph.

Trelawny: Loc. 1, in crown of fallen tree, ASV 34818/B. **Portland:** Loc. 19, on shady wall, ASV 35213/A.

Radula underwoodii Castle

Portland: Loc. 12, on humid slope, ASV 34963; Loc. 18, epilithic, on boulder, *HvM* 216285, ASV 35179.

Reboulia hemisphaerica (L.) Raddi

St. Andrew: Loc. 15, on rocky steep slope, *HvM* 216261, 216262, ASV 35161, 35162; Loc. 16, on slope, ASV 35169.

****Rectolejeunea versifolia*** (Schiffn.) L.Söderstr. & A.Hagborg [= *Rectolejeunea berteriana* A.Evans]

Portland: Loc. 18, epiphyllous, ASV 35197/B. **St. Thomas:** Loc. 32, epiphytic, *HvM* 216307; Loc. 33, epiphytic, 1675 m, ASV 35447.

A widespread neotropical species, in the West Indies known from Puerto Rico (type), Cuba (Reiner-Drehwald & Grolle, 2012), Guadeloupe (Eggers in Eggers *et al.*, 2004), and Dominica (Schäfer-Verwimp, 2010).

****Riccardia digitiloba*** (Spruce) Pagán

St. Andrew: Loc. 22, on soil, *HvM* 216855, on rocky slope, ASV 35251.

A widespread neotropical species, in the West Indies known from Cuba, Puerto Rico, Dominican Republic, Guadeloupe, Martinique, Dominica (Lavocat-Bernard & Schäfer-Verwimp, 2011; Mustelier Martínez, 2006; Pagán, 1939; Schäfer-Verwimp & Pócs, 2009).

Riccardia fucoidea (Sw.) C.Massal.

Portland: Loc. 12, on humid slope, *HvM* 216590, ASV 34962. **St. Andrew:** Loc. 13, on slope, 1525 m, ASV 35060; Loc. 14, on shady slope, ASV 35142. **St. Thomas:** Loc. 33, on humid slope, 1880 m, ASV 35373.

Scapania portoricensis Hampe & Gottsche

St. Thomas: Loc. 32, on soil, *HvM* 216943; Loc. 33, on shady slope, 1950 m, ASV 35380.

Schiffneriolejeunea polycarpa (Nees) Gradst.

St. Mary: Loc. 7, on bark of solitary tree, *HvM* 216509, 216440, ASV 34889 (c. per.). **Portland:** Loc. 19, on bark of solitary tree, *HvM* 216775, ASV 35219 (c. spor.); Loc. 23, epiphytic at edge of coffee plantation, *HvM* 216786, ASV 35266 (c. per.); Loc. 27, epiphytic, *HvM* 216811.

Solenostoma callithrix (Lindenb. & Gottsche) Steph.

Portland: Loc. 12, on soil, ASV 34961. **St. Andrew:** Loc. 13, on soil, *HvM* 216382, ASV 35030. **St. Thomas:** Loc. 31, on soil, *HvM* 216881.

Symbiezidium barbiflorum (Lindenb. & Gottsche) A.Evans

Trelawny: Loc. 1, epiphytic in coffee plantation, ASV 34800 (c. per. + andr.). **St. Andrew:** Loc. 14, epiphytic, *HvM* 216706, ASV 35127 (c. per.). **Portland:** Loc. 18, epiphyllous, ASV 35196/B.

**Symphyogyna brasiliensis* Nees & Mont.

St. Andrew: Loc. 14, on soil, *HvM* 216707.

Widespread in tropical America and Africa including the West Indies: Cuba, Guadeloupe, Grenada (Evans, 1927; Mustelier Martínez, 2006; Pagán, 1942).

**Symphyogyna bronniartii* Mont.

Portland: Loc. 12, on soil, *HvM* 216592; Loc. 18, on soil, *HvM* 216747.

A widespread tropical American species (Costa Rica to Bolivia and Brazil); in the West Indies known from Cuba, Puerto Rico, Guadeloupe, Dominica, Martinique, St. Lucia, Grenada (Evans, 1925; Pagán, 1939).

Symphyogyna fuscovirens A.Evans

St. Thomas: Loc. 32, on soil, *HvM* 216377; Loc. 33, on soil, 1960 m, ASV 35385 (c. spor.).

Symphyogyna sinuata (Sw.) Nees & Mont.

St. Andrew: Loc. 13, on soil, *HvM* 216649, ASV 35057. **Portland:** Loc. 18, on humid soil, ASV 35186.

Syzygiella perfoliata (Sw.) Spruce

St. Andrew: Loc. 14, on soil, *HvM* 216710, at base of tree, ASV 35091 (c. per.); Loc. 34, on soil, *HvM* 216958, on rocky slope, ASV 35460. **St. Thomas:** Loc. 31, on rock, 1600 m, ASV 35354; Loc. 32, on soil, *HvM* 216945.

Syzygiella rubricaulis (Nees) Steph.

St. Thomas: Loc. 32, on soil, *HvM* 216948; Loc. 33, on root and epiphytic, 1900-2250 m, ASV 35377/B, 35400/A, 35412, 35427.

Telaranea nematodes (Gottsche ex Austin) M.Howe

St. Andrew: Loc. 13, on rotting tree fern, 1525 m, ASV 35061/A. **St. Thomas:** Loc. 31, on rotting root, 1500 m, ASV 35339/A, both c. per.

Trichocolea brevifissa Steph.

St. Andrew: Loc. 13, epiphytic, *HvM* 216653, on stem of old tree fern, ASV 35044. **St. Thomas:** Loc. 31, epiphytic, *HvM* 216913, on root, 1540 m, ASV 35341; Loc. 32, epiphytic, *HvM* 216946.

***Trichocolea floccosa** Herzog & Hatcher

St. Thomas: Loc. **31**, epilithic, *HvM 216914*, on shady root, 1220 m, *ASV 35321*.

Portland: Loc. **18**, on shady rock, *HvM 216748*, *ASV 35192*.

Scattered throughout its neotropical range (Costa Rica, Panama, Colombia, Ecuador), in the West Indies known only from Cuba (Mustelier Martínez, 2012) and Guadeloupe (Jovet-Ast, 1960).

MOSESSES

Acroporium estrellae (Müll. Hal.) W.R.Buck & Schäf.-Verw.

Portland: Loc. **10**, epiphytic, *HvM 216380*.

Acroporium longirostre (Brid.) W.R.Buck

Portland: Loc. **23**, on rotting log, *ASV 35271*; Loc. **29**, on node of bamboo, *ASV 35302*. **St. Thomas:** Loc. **31**, on root, 1220 m, *ASV 35320/B* – all c. spor.

Acroporium pungens (Hedw.) Broth.

Portland: Loc. **12**, *HvM 216273*. **St. Andrew:** Loc. **14**, *HvM 216658*. **St. Thomas:** Loc. **32**, *HvM 216373* – all on soil.

Adelothecium bogotense (Hampe) Mitt.

Portland: Loc. **12**, *HvM 216555*. **St. Thomas:** Loc. **32**, *HvM 216917* – both epiphytic.

Anoetangium euchloron (Schwägr.) Mitt.

St. Andrew: Loc. **13**, on soil, *HvM 216589*; Loc. **21**, on soil, *HvM 216196*, and on limestone, *HvM 216256*, all conf. Sollman, *ASV 35240*.

Anomodon rostratus (Hedw.) Schimp.

St. Andrew: Loc. **21**, epilithic, *HvM 216831*, *ASV 35239*; Loc. **22**, on wall, *ASV 35247*. **St. Thomas:** Loc. **31**, epilithic, on limestone, *HvM 216861*, *ASV 35318*.

Aongstroemia filiformis (P.Beauv.) Wijk & Marg.

St. Andrew: Loc. **13**, *HvM 216600*, *ASV 35050*; Loc. **14**, *HvM 216660*, *ASV 35134/A*. **St. Thomas:** Loc. **33**, *ASV 35390* – all on soil.

Aptychella prolifera (Broth.) Herzog

St. Thomas: Loc. **33**, hanging from branches in cloud forest, 1950 m, *ASV 35379*, and epiphytic in elfin forest at summit region, 2240-2250 m, *ASV 35401*, *35408*.

The specimen *ASV 35401* was used in a phylogenetic study of the genus *Aptychella* (Akiyama *et al.*, 2015).

Atrichum muelleri Schimp. *ex* Besch.

St. Andrew: Loc. **13**, on soil, *HvM 216601*, *216629*, *ASV 35032*.

Barbula arcuata Griff.

Portland: Loc. **18**, on wet soil, *ASV 35191*; Loc. **19**, on soil, *HvM 216200*.

Barbula indica (Hook.) Spreng.

Trelawny: Loc. **2**, on soil, *HvM 216239*. **St. Ann:** Loc. **6**, on soil, *HvM 216249*. **St. Andrew:** Loc. **13**, epilithic, *HvM 216197* – all conf. Sollman.

Barbula orizabensis Müll.Hal.

St. Ann: Loc. **4**, on small limestones in garden, *ASV 34851*. **Portland:** Loc. **9**, on soil, with *Dolotortula mniifolia*, *HvM 216510*, det. Sollman. **St. Andrew:** Loc. **13**, on soil, *HvM 216186*; Loc. **15**, on soil, *HvM 216175*, *ASV 35155*.

Brachythecium ruderale (Brid.) W.R.Buck

St. Andrew: Loc. 13, *HvM* 216602; Loc. 15, *HvM* 216714; Loc. 16, *HvM* 216721.
Portland: Loc. 19, *HvM* 216750. **St. Thomas:** Loc. 31, *HvM* 216863, ASV 35325 – all on soil.

Breutelia jamaicensis (Mitt.) A.Jaeger

Portland: Loc. 10, on soil, *HvM* 216532; Loc. 30, on soil, *HvM* 216816, ASV 35308.

Breutelia tomentosa (Brid.) A.Jaeger

Portland: Loc. 10, on soil, *HvM* 216533. **St. Andrew:** Loc. 14, on soil, *HvM* 216663.

Brymela websteri (H.A.Crum & Bartr.) W.R.Buck

St. Andrew: Loc. 14, epiphytic, *HvM* 216664, ASV 35151.

Bryum argenteum Hedw.

St. Andrew: Loc. 20, on soil, *HvM* 216824.

Bryum billarderi Schwägr.

Portland: Loc. 19, on soil, ASV 35210. **St. Thomas:** Loc. 32, on soil, *HvM* 216920.

Bryum lanatum (P.Beauv.) Brid.

St. Andrew: Loc. 22, epilithic, on concrete, *HvM* 216841, ASV 35261, on sunny rocky slope, ASV 35245.

Callicostella depressa (Hedw.) A.Jaeger

St. Andrew: Loc. 14, epiphytic, on rotting wood, *HvM* 216665.

Callicostella pallida (Hornsch.) Ångstr.

St. Ann: Loc. 6, on soil, *HvM* 216476. **Portland:** Loc. 12, on humid rotting log, ASV 35000/B.

Calliergonella cuspidata (Hedw.) Loeske

Portland: Loc. 10, on soil, *HvM* 216534.

Calymperes afzelii Sw.

St. Andrew: Loc. 8, epiphytic, *HvM* 216415.

Calymperes cf. *guldinii* Hook. & Grev.

St. Thomas: Loc. 31, epiphytic, *HvM* 216864.

Calymperes palisotii Schwägr.

St. Mary: Loc. 7, *HvM* 216500. **Portland:** Loc. 25, *HvM* 216790, ASV 35282; Loc. 26, *HvM* 216792; Loc. 27, *HvM* 216796 – all epiphytic.

Campyliadelphus chrysophyllus (Brid.) R.S.Chopra

Portland: Loc. 10, epilithic, *HvM* 216535, on shady wall, ASV 34943.

Campylopus cygneus (Hedw.) Brid.

Portland: Loc. 10, on soil, *HvM* 216536, ASV 34949. **St. Andrew:** Loc. 22, on shady slope, ASV 35260. **St. Thomas:** Loc. 33, on soil and exposed rock in cloud forest, 2000 m, ASV 35386 (c. spor.), 35436.

Campylopus shawii Wilson *in* Hunt.

St. Thomas: Loc. 33, on soil in elfin forest, 2250 m, ASV 35406.

Caribaeohypnum polypterum (Mitt.) Ando & Higuchi

St. Thomas: Loc. 31, on soil, 1450 m, *HvM* 216866, ASV 35335/A; Loc. 33, beside trail in rain forest, 1800 m, c. spor., ASV 35445.

Crossomitrium epiphyllum (Mitt.) Müll.Hal.

Trelawny: Loc. 1, epiphytic on shrub in coffee plantation, ASV 34802/B. **Portland:** Loc. 24, epiphyllous, HvM 216788, epiphytic on ornamental shrub, ASV 35277.

Crossomitrium patrisiae (Brid.) Müll.Hal.

Trelawny: Loc. 1, HvM 216399, ASV 34802/A; Loc. 2, HvM 216446. **St. Ann:** Loc. 6, HvM 216492, ASV 34880/A. **St. Andrew:** Loc. 14, HvM 216674 – all epiphytic.

Cyclodictyon albicans (Hedw.) Kuntze

Portland: Loc. 12, epilithic, HvM 216560, ASV 34990, on rotting wood, ASV 34999/A; Loc. 18, epilithic, HvM 216737. **St. Andrew:** Loc. 13, epilithic, HvM 216606, on soil, 1380 m, ASV 35038. **St. Thomas:** Loc. 31, on root in rain forest, 1550 m, ASV 35344/B.

Cyclodictyon bicolor (Besch.) Kuntze

Portland: Loc. 12, on root, ASV 35002.

Cyclodictyon roridum (Hampe) Kuntze

St. Thomas: Loc. 31, on soil, HvM 216870, 216871, ASV 35345.

Cyclodictyon varians (Sull.) Kuntze

Portland: Loc. 18, on shady rock in brook, ASV 35185.

Cyrto-hypnum involvens (Hedw.) W.R.Buck & H.A.Crum

Trelawny: Loc. 3, on shady limestone, c. spor., ASV 34848. **Portland:** Loc. 9, epilithic, HvM 216511, ASV 34938; Loc. 18, on dead wood, c. spor., ASV 35188; Loc. 19, epilithic, HvM 216753, ASV 35216 (c. spor.); Loc. 28, epilithic, HvM 216800, at base of tree, c. spor., ASV 35289.

Daltonia longifolia Taylor

Portland: Loc. 12, epiphytic, HvM 216562. **St. Thomas:** Loc. 33, epiphytic in elfin forest, c. spor., mixed with *Cheilolejeunea xanthocarpa* and *Brachiolejeunea laxifolia*, ASV 35411/B.

Daltonia stenophylla Mitt.

Portland: Loc. 10, epiphytic, HvM 216381.

Didymodon australasiae (Hook. & Grev.) R.H.Zander

St. Andrew: Loc. 16, on soil, HvM 216199.

Diphyscium foliosum (Hedw.) Mohr

St. Thomas: Loc. 33, on soil, 2050 m, c. spor., ASV 35429.

Ditrichum difficile (Dub.) M.Fleisch.

St. Andrew: Loc. 14, on soil, HvM 216676. **St. Thomas:** Loc. 33, on humid slope, 2000 m, c. spor., ASV 35389.

Dolotortula mniifolia (Sull.) R.H.Zander

Portland: Loc. 9, on soil, HvM 216512, ASV 34921; Loc. 18, on soil, HvM 216738, on dripping wall, ASV 35190.

Ectropothecium leptochaeton (Schwägr.) W.R.Buck

Trelawny: Loc. 2, epiphytic, HvM 216449.

Entodon macropodus (Hedw.) Müll.Hal.

Portland: Loc. 12, on soil, HvM 216566, ASV 35014. **St. Andrew:** Loc. 13, on soil, HvM 21630, on shady wall, c. spor., 1500 m, ASV 35054; Loc. 20, on rocky slope, ASV 35230; Loc. 21, on soil, HvM, 216832; Loc. 22, on soil, HvM 216833, on rocky slope,

c. spor., ASV 35252. Loc. **23**, on soil, *HvM* 216843. **St. Thomas:** Loc. **31**, on soil, *HvM* 216874, on rock, c. spor., 1580 m, ASV 35347.

Entosthodon bonplandii (Hook.) Mitt.

St. Andrew: Loc. **14**, on soil, *HvM* 216677, ASV 35131, both c. spor.

Epipterygium wrightii (Sull.) Lindb.

Portland: Loc. **9**, *HvM* 216513, ASV 34935; Loc. **23**, *HvM* 216778, ASV 35272. **St. Andrew:** Loc. **13**, *HvM* 216608, ASV 35027 – all on soil.

Erpodium domingense (Spreng.) Brid. ex Müll.Hal.

St. Ann: Loc. **4**, epiphytic, *HvM* 216470, c. spor., ASV 34857. **St. Andrew:** Loc. **8**, epiphytic, *HvM* 216419, c. spor., ASV 34913; Loc. **17**, epiphytic, *HvM* 216731, c. spor., ASV 35176. **Portland:** Loc. **23**, epiphytic, *HvM* 216787; Loc. **25**, on concrete wall in town, *HvM* 216791, c. spor., ASV 35280; solitary tree along road A 4 at western edge of Hope Bay, ASV 35275.

Eulacophyllum cultelliforme (Sull.) W.R.Buck & Irel.

St. Andrew: Loc. **8**, epiphytic, *HvM* 216420, on shady stone, ASV 34897; Loc. **17**, epiphytic, *HvM* 216732.

Eurhynchium clinocarpum (Taylor) Paris

Portland: Loc. **12**, on shady stone, ASV 34983/B.

Fabronia ciliaris (Brid.) Brid. var. *polycarpa* (Hook.) W.R.Buck

St. Andrew: Loc. **15**, epilithic, *HvM* 216715, on root, ASV 35159/A; Loc. **22**, limestone rock, *HvM* 216844.

Fabronia ciliaris var. *wrightii* (Sull.) W.R.Buck

St. Andrew: Loc. **17**, epiphytic, *HvM* 216733, ASV 35171; Loc. **21**, epiphytic, *HvM* 216834; Loc. **22**, epiphytic, *HvM* 216845.

Fabronia macroblepharis Schwägr.

Portland: Loc. **9**, epilithic, *HvM* 216514, ASV 34930.

Fissidens angustelimbatus Mitt.

Portland: Loc. **9**, on soil, with *Fissidens serratus*, *HvM* 216515, det. Bruggeman-Nannenga.

Fissidens angustifolius Sull.

Trelawny: Loc. **1**, on soil, *HvM* 216181, det. Bruggeman-Nannenga.

Fissidens asplenioides Hedw.

Portland: Loc. **10**, *HvM* 216538; Loc. **18**, *HvM* 216949. **St. Andrew:** Loc. **11**, *HvM* 216609; Loc. **13**, *HvM* 216722; Loc. **16**, *HvM* 216742 – all on soil.

Fissidens crispus Mont.

St. Andrew: Loc. **15**, on soil, *HvM* 216716; Loc. **17**, on soil, ASV 35172; Loc. **34**, on soil, *HvM* 216183, on rocky slope, ASV 35463. **Portland:** Loc. **18**, on soil, *HvM* 216182, on irrigated wall, ASV 35189, det. Bruggeman-Nannenga.

Fissidens dissitifolius Sull.

St. Mary: Loc. **7**, epilithic, *HvM* 216201, conf. Bruggeman-Nannenga.

Fissidens flaccidus Mitt.

St. Andrew: Loc. **11**, epilithic, *HvM* 216194; **Portland:** Loc. **18**, epilithic, *HvM* 216185, submerged on rock in brook, ASV 35183, all det. Bruggeman-Nannenga.

Fissidens pallidinervis Mitt.

Trelawny: Loc. 2, epilithic, on shaded limestone rock, *HvM* 216189, det. Bruggeman-Nannenga.

Fissidens palmatus Hedw.

Portland: Loc. 9, on soil, *HvM* 216516, det. Bruggeman-Nannenga, *ASV* 34929.

Fissidens polyodioides Hedw.

Portland: Loc. 12, *HvM* 216187. **St. Andrew:** Loc. 13, *HvM* 216610. **St. Thomas:** Loc. 31, *HvM* 216875; Loc. 32, *HvM* 216923 – all on soil.

Fissidens serratus Müll.Hal.

Portland: Loc. 9, on soil, admixed to *Fissidens angustelimbatus*, *HvM* 216515 p.p., det. Bruggeman-Nannenga.

Fissidens taylorii Müll.Hal.

St. Andrew: Loc. 8, on soil, *HvM* 216193, det. Bruggeman-Nannenga.

Fissidens weirii Mitt.

St. Andrew: Loc. 34, on soil, *HvM* 216198, conf. Bruggeman-Nannenga.

Fissidens yucatanensis Steere

St. Ann: Loc. 4, on soil, *HvM* 216190, conf. Bruggeman-Nannenga.

Fissidens zollingerii Mont.

St. Andrew: Loc. 11, on soil, *HvM* 216191, det. Bruggeman-Nannenga.

Groustiella mucronifolia (Hook. & Grev.) H.A.Crum & Steere

Portland: Loc. 10, epiphytic, *HvM* 216539.

Gymnostomiella vernicosa (Hook. ex Harv.) M.Fleisch.

St. Andrew: Loc. 15, epilithic, *HvM* 216717, *ASV* 35158.

Haplocladium microphyllum (Hedw.) Broth.

Trelawny: Loc. 3, *HvM* 216465, *ASV* 34845. **St. Mary:** Loc. 7, *HvM* 216505. **St. Andrew:** Loc. 15, *HvM* 216718. **Portland:** Loc. 28, *HvM* 216802. **St. Thomas:** Loc. 31, *HvM* 216877 – all on soil.

Helicodontium capillare (Hedw.) A.Jaeger

Trelawny: Loc. 2, on shaded limestone rock, *HvM* 216452, *ASV* 34826/A; Loc. 3, on concrete wall, *HvM* 216466; Albert town, exposed limestone in urban area, *ASV* 34823. **St. Ann:** Loc. 5, epiphytic, *HvM* 216481. **St. Andrew:** Loc. 8, on limestone rock, *HvM* 216423; Loc. 21, on rock, *HvM* 216837. **Portland:** Loc. 9, on soil, *HvM* 216517, on concrete wall, c. spor., *ASV* 34937; Loc. 19, epiphytic, *HvM* 216763; Loc. 23, **epiphytic**, *HvM* 216781. **St. Thomas:** Loc. 31, on roots, *HvM* 216878.

Helicophyllum torquatum (Hook.) Brid.

St. Andrew: Loc. 17, epilithic, on boulder, *HvM* 216734, *ASV* 35173. **Portland:** Loc. 22, on boulder, *HvM* 216851.

Henicodium geniculatum (Mitt.) W.R.Buck

Trelawny: Loc. 1, epiphytic, *HvM* 216400.

Holomitrium calycinum (Hedw.) Mitt.

St. Andrew: Loc. 14, epiphytic, *HvM* 216681, *ASV* 35082. **St. Thomas:** Loc. 33, on tree stump in rain forest, 1900 m, c. spor., *ASV* 35376.

Homalia glabella (Hedw.) Schimp.

Portland: Loc. 12, *HvM* 216568. **St. Andrew:** Loc. 14, *HvM* 216682. **St. Thomas:** Loc. 31, *HvM* 216879 – all epiphytic.

Homaliodendron flabellatum (Sm.) M.Fleisch.

St. Thomas: Loc. 32, epiphytic, *HvM* 216374.

Hydrogonium gregarium (Mitt.) Kučera [= *Barbula indica* var. *gregaria* (Mitt.) R.H.Zander]

Trelawny: Loc. 2, on calcareous rocky slope, *ASV* 34827/A.

Hymenodon reggaeus Kartt. & S.Bäck

St. Andrew: Loc. 13, epiphytic, *HvM* 216612, at base of tree fern, *ASV* 35040; Loc. 14, on stem of tree fern, *ASV* 35084. **Portland:** Loc. 29, epiphytic, *HvM* 216815, *ASV* 35305. **St. Thomas:** Loc. 31, epiphytic, *HvM* 216880; Loc. 33, on humus over rock in rain forest, 1700 m, *ASV* 35365.

Hymenostylium recurvirostrum (Hedw.) Dix.

Trelawny: Loc. 1, on soil, *HvM* 216401. **Portland:** Loc. 10, on shady wall, *ASV* 34942. **St. Andrew:** Loc. 13, on soil, *HvM* 216631; Loc. 17, on shady rock, *HvM* 216174, det. Sollman, *ASV* 35174.

Hyophila involuta (Hook.) A.Jaeger

Trelawny: Loc. 1, on soil, *HvM* 216402; Loc. 2, on limestone rock, *HvM* 216240; Loc. 3, on concrete wall, *HvM* 216243. **St. Ann:** Loc. 4, on brick wall, *HvM* 216246; Loc. 9, on wet limestone wall, *HvM* 216540. **Portland:** Loc. 18, on limestone rock, *HvM* 216255; Loc. 25, on soil, *HvM* 216258.

Hyophiladelphus agrarius (Hedw.) R.H.Zander

Trelawny: Loc. 2, epilithic, on shaded limestone rock, with *Barbula indica* and *Hyophila involuta*, *HvM* 216203.

Hypopterygium tamarisci (Sw.) Brid.

St. Andrew: Loc. 13, on soil, *HvM* 216276.

Isodrepanium lentulum (Wilson) E.Britton

St. Andrew: Loc. 13, epiphytic, *HvM* 216613, 216632, on shrub in summit region, 1525 m, *ASV* 35072.

Isopterygium jamaicense (E.B.Bartram) W.R.Buck

Portland: Loc. 29, epiphytic, *HvM* 216381.

Isopterygium subbrevisetum (Hampe) Broth.

Trelawny: Loc. 2, at base of tree, *ASV* 34840/B. **Portland:** Loc. 28, epiphytic, *HvM* 216803.

Leiomela bartramioides (Hook.) Par.

St. Andrew: Loc. 13, on soil, *HvM* 216614.

Lepidopilum muelleri (Hampe) Hampe

Portland: Loc. 12, epiphytic, *HvM* 216569, *ASV* 35015, both c. spor.

Note: Determination follows Allen (2010); Buck (1998) included *L. muelleri* from the West Indies in *L. scabrisetum*.

Lepidopilum tortifolium Mitt.

Portland: Loc. 12, epilithic, *HvM* 216570, *ASV* 35003, on humid rotten log, *ASV* 34999/B.

Leptodontium viticulosoides (P.Beauv.) Wijk & Marg. var. ***panamense*** (Lor.) R.H.Zander

St. Thomas: Loc. 33, on sunny slope, 2000 m, *ASV* 35437.

**Leptopascum leptophyllum* (Müll.Hal.) J.Guerra & M.J.Cano
[= *Chenia leptophylla* (Müll.Hal.) R.H.Zander]

St. Andrew: Loc. 16, on soil, *HvM* 216727. **St. Thomas:** Loc. 31, on soil in urban area, 1220 m, *HvM* 216893, *ASV* 35317.

Nearly cosmopolitan in range (Arts & Sollman, 1991, as *Phascum leptophyllum*) but previously not reported from the West Indies.

Lepyrodontopsis trichophlla (Sw. ex Hedw.) Broth.

Portland: Loc. 10, on soil, *HvM* 216542, on humid rocky slope, *ASV* 34946; Loc. 12, on soil, *HvM* 216571. **St. Andrew:** Loc. 13, on soil, *HvM* 216617, 216633.

Leskeodon auratus (Müll.Hal.) Broth.

St. Andrew: Loc. 13, epiphytic, on rotting wood, *HvM* 216618, *ASV* 35066.

Leucobryum albidum (Brid.) Lindb.

St. Mary: Loc. 7, epiphytic, *HvM* 216426.

Leucobryum antillarum Schimp. ex Besch.

St. Andrew: Loc. 34, on shady rocky slope, *ASV* 35458.

Leucobryum giganteum Müll.Hal.

St. Andrew: Loc. 14, on soil, *HvM* 216684, *ASV* 35105.

Leucobryum martianum (Hornsch.) Hampe ex Müll.Hal.

St. Andrew: Loc. 13, 14, epiphytic, on rotting wood, *HvM* 216619, 216685.

Leucobryum polakowskyi (Müll.Hal. ex Besch.) Card.

St. Andrew: Loc. 8, epiphytic, *HvM* 216427, in lawn and at base of fern, *ASV* 34901.

Leucoloma cruegerianum (Müll.Hal.) A.Jaeger

Portland: Loc. 12, *HvM* 216572, *ASV* 34979. **St. Andrew:** Loc. 13, *HvM* 216620, *ASV* 35051; Loc. 14, *HvM* 216634, 216686. **St. Thomas:** Loc. 32, *HvM* 216926 – all epiphytic.

Leucomium strumosum (Hornsch.) Mitt.

Portland: Loc. 12, epiphytic, *HvM* 216573.

Macromitrium cirrosum (Hedw.) Brid.

St. Andrew: Loc. 14, epiphytic, *HvM* 216687.

Macromitrium richardii Schwägr.

St. Andrew: Loc. 22, on rock, c. spor., *ASV* 35254.

Macromitrium schwaneckeanum Hampe

Portland: Loc. 10, on rock, c. spor., *ASV* 34944; Loc. 12, epilithic, *HvM* 216575, *ASV* 34981 (c. spor.). **St. Thomas:** Loc. 33, on exposed rock, 2000 m, c. spor., *ASV* 35388. **St. Andrew:** Loc. 34, on exposed rock, *HvM* 216951, *ASV* 35468.

Meteoridium remotifolium (Müll.Hal.) Mitt.

Portland: Loc. 12, *HvM* 216578; Loc. 19, *HvM* 216764. **St. Thomas:** Loc. 32, *HvM* 216927 – all epiphytic.

Meteorium deppei (Hornsch. ex Müll.Hal.) Mitt.

Portland: Loc. 10, on soil, *HvM* 216272; Loc. 12, on soil, *HvM* 216579. **St. Andrew:** Loc. 13, epiphytic at summit region, 1500 m, *ASV* 35074; Loc. 14, on soil, *HvM* 216689; Loc. 20, on soil, *HvM* 216826. **St. Thomas:** Loc. 32, on soil, *HvM* 216928.

Meteorium nigrescens (Sw. ex Hedw.) Dozy & Molk. [= *Papillaria nigrescens* (Sw. ex Hedw.) A.Jaeg.]

Trelawny: Loc. 1, *HvM* 216406. **Portland:** Loc. 19, *HvM* 216429, 216765. **St. Thomas:** Loc. 32, *HvM* 216929 – all epiphytic. **St. Andrew:** Loc. 34, on concrete wall, *ASV* 35467.

Mittenothamnium reptans (Hedw.) Card.

St. Thomas: Loc. 32, epiphytic, *HvM* 216932.

Mittenothamnium substriatum (Mitt.) Card.

Portland: Loc. 19, epilithic, *HvM* 216766, on shady earth covered wall, *ASV* 35217.

Neckeropsis disticha (Hedw.) Kindb.

Trelawny: Loc. 1, *HvM* 216407. **Portland:** Loc. 27, *HvM* 216797; Loc. 28, *HvM* 216807 – all epiphytic.

Neckeropsis undulata (Hedw.) Reichardt

Portland: Loc. 18, *HvM* 216744; Loc. 19, *HvM* 216767. **St. Andrew:** Loc. 21, *HvM* 216839 – all epiphytic.

Octoblepharum albidum Hedw.

Portland: Loc. 18, epiphytic, *HvM* 216768.

Octoblepharum erectifolium Mitt.

St. Andrew: Loc. 13, epiphytic, *HvM* 216623; Loc. 14, on rotting wood, *HvM* 216695, *ASV* 35119.

Orthostichopsis tetragona (Hedw.) Broth.

Trelawny: Loc. 1, epiphytic, *ASV* 34814.

Palamocladium leskeoides (Hook.) E.Britton

St. Andrew: Loc. 13, on soil, *HvM* 216635. **St. Thomas:** Loc. 31, on soil, *HvM* 216889, 216890.

Philonotis elongata (Dism.) H.A.Crum & Steere

Portland: Loc. 28, on soil, *HvM* 216814, *ASV* 35295.

Philonotis sphaericarpa (Hedw.) Brid.

St. Andrew: Loc. 11, on soil, *ASV* 34956.

Philonotis uncinata (Schwägr.) Brid. [incl. *var. *gracillima* (Ångstr.) Florsch.]

Trelawny: Loc. 2, *HvM* 216457, **ASV*34827/B. **Portland:** Loc. 9, *HvM* 216522, **ASV* 34936; Loc. 23, *HvM* 216785; Loc. 24, *HvM* 216789. **St. Andrew:** Loc. 15, *HvM* 216547, **ASV* 35156; Loc. 16, *HvM* 216719, **HvM* 216728 – all on soil.

Phyllogonium fulgens (Hedw.) Brid.

Portland: Loc. 10, *HvM* 216548. **St. Andrew:** Loc. 13, *HvM* 216638; Loc. 14, *HvM* 216699. **St. Thomas:** Loc. 32, *HvM* 216934 – all epiphytic.

Phyllogonium viride Brid.

Portland: Loc. 10, epiphytic, *HvM* 216277. **St. Andrew:** Loc. 13, epiphytic, *HvM* 216639; Loc. 34, epiphytic, *HvM* 216954, on shady rocky slope, with *Cheilolejeunea filiformis*, *ASV* 35466/A.

Pilopogon guadalupensis (Brid.) J.-P.Frahm

St. Thomas: Loc. 33, on soil in summit region, c. spor., 2250 m, *ASV* 35421.

Pilotrichella flexilis (Hedw.) Ångstr.

Portland: Loc. 10, epiphytic, *HvM* 216549. **St. Thomas:** Loc. 31, epiphytic, *HvM* 216894.

Pilotrichidium callicostatum (Müll.Hal.) A.Jaeger

Portland: Loc. 12, on rotten wood, *HvM* 216380.

Pilotrichum bipinnatum (Schwägr.) Brid.

Portland: Loc. 12, epiphytic, *HvM* 216582, *ASV* 34991.

Plagiomnium rhynchophorum (Harv.) T.J.Kop.

Portland: Loc. 12, *HvM* 216584. **St. Andrew:** Loc. 13, *HvM* 216642. **St. Thomas:** Loc. 31, *HvM* 216899 – all on soil.

Plagiothecium drepanophyllum Ren. & Card.

St. Thomas: Loc. 31, on soil, *HvM* 216900, 216901, *ASV* 35349.

Plaubelia sprengelii (Schwägr.) R.H.Zander

Trelawny: Loc. 2, on limestone, *HvM* 216188. **St. Ann:** Loc. 4, on shady limestone, *ASV* 34853. **St. Mary:** Loc. 7, on limestone, *HvM* 216250.

Pogonatum procerum (Lindb.) Schimp.

St. Thomas: Loc. 31, on soil, *HvM* 216937, *ASV* 35360; Loc. 32, on soil, *HvM* 216938.

Pogonatum tortile (Sw.) Brid.

St. Andrew: Loc. 13, *HvM* 216643, *ASV* 35025; Loc. 14, *HvM* 216702. **St. Thomas:** Loc. 31, *HvM* 216902, 216903 – all on soil.

Pohlia papillosa (Müll.Hal.) Broth.

St. Mary: Loc. 7, on soil, *ASV* 34893. **Portland:** Loc. 12, on road cut, c. spor., *ASV* 34960. **St. Thomas:** Loc. 31, on soil, *HvM* 216904.

Porotrichodendron lindigii (Hampe) W.R.Buck

Portland: Loc. 12, epiphytic, *HvM* 216263; Loc. 18, epiphytic, *HvM* 216745. **St. Andrew:** Loc. 20, on dead branch, *ASV* 35233.

Porotrichum mutabile Hampe

St. Thomas: Loc. 33, epiphytic in rain forest, 1675 m, *ASV* 35446.

Prionodon densus (Hedw.) Müll.Hal.

St. Andrew: Loc. 13, *HvM* 216656; Loc. 20, *HvM* 216827, *ASV* 35231. **St. Thomas:** Loc. 32, *HvM* 216939 – all epiphytic.

Pseudocryphaea domingensis (Spreng.) W.R.Buck

Trelawny: Loc. 1, epiphytic in coffee plantation, *ASV* 34821.

Pseudoscleropodium purum (Hedw.) M.Fleisch. ex Broth.

St. Andrew: Loc. 13, on soil, *HvM* 216644.

Pseudosymblepharis schimperiana (Par.) H.A.Crum

St. Andrew: Loc. 21, on shady rock, *ASV* 35241.

Pterogonidium pulchellum (Hook.) Müll.Hal.

St. Andrew: Loc. 8, *HvM* 216432, *ASV* 34900, 34914/A. **Portland:** Loc. 12, *HvM* 216433; Loc. 28, *HvM* 216810, *ASV* 35288. **St. Thomas:** Loc. 31, *ASV* 35339/B – all epiphytic.

Pyrrhobryum spiniforme (Hedw.) Mitt.

Portland: Loc. 12, on soil, *HvM* 216586. **St. Thomas:** Loc. 32, on soil, *HvM* 216940.

Racopilum tomentosum (Hedw.) Brid.

Trelawny: Loc. 1, on soil, *HvM* 216409. **St. Ann:** Loc. 4, on roots, *HvM* 216475. **St. Mary:** Loc. 7, on roots, *HvM* 216434. **Portland:** Loc. 9, on soil, *HvM* 216525; Loc. 18, on soil, *HvM* 216746.

**Raiiella praelonga* (Schimp. ex Besch.) Wijk & Margad.

St. Andrew: Loc. 22, epilithic, on boulder, *HvM* 216291.

A widespread species known from the southwestern United States and Mexico to Argentina, eastern and southern Africa; in the West Indies known only from two collections, one from Cuba and one from Haiti (Buck, 1998).

Rhamphidium dicranoides (Müll.Hal.) Par.

Portland: Loc. 12, on rocky slope, *ASV* 34969. **St. Andrew:** Loc. 13, on soil, *HvM* 216655, *ASV* 35018A.

Rhodobryum grandifolium (Taylor) Schimp.

Portland: Loc. 19, *HvM* 216773. **St. Thomas:** Loc. 31, *HvM* 216907; Loc. 32, *HvM* 216376 – all on soil.

Rhynchostegiopsis flexuosa (Sull.) Müll.Hal.

Portland: Loc. 12, epiphytic, *HvM* 216589, *ASV* 34986, on rotting wood, *ASV* 35000A. **St. Andrew:** Loc. 13, on rotting wood, *ASV* 35068; Loc. 14, on rotten wood, *ASV* 35085. **St. Thomas:** Loc. 32, on rotting wood, *HvM* 216941.

Rhynchostegium serrulatum A.Jaeg. & Sauerb.

St. Andrew: Loc. 13, on slope, c. spor., *ASV* 35019. **St. Thomas:** Loc. 31, epiphytic, *HvM* 216908, on root in rain forest, 1550 m, *ASV* 35344A.

Schlotheimia jamesonii (Arnott) Brid.

St. Thomas: Loc. 33, on tree fern in cloud forest, c. spor., 2000 m, *ASV* 35433.

Schlotheimia rugifolia (Hook.) Schwägr.

Portland: Loc. 10, epiphytic, *HvM* 216551. **St. Andrew:** Loc. 34, epiphytic, *HvM* 216956, on partially exposed rock, c. spor., *ASV* 35457.

Schlotheimia tecta Hook.f. & Wilson

St. Andrew: Loc. 14, epiphytic, *HvM* 216704.

Schoenobryum julaceum Dozy & Molk.

Trelawny: Loc. 1, *HvM* 216410, *ASV* 34808/B; Loc. 2, *ASV* 34836; Loc. 3, *ASV* 34849/B. **St. Ann:** Loc. 6, *HvM* 216498, *ASV* 34883, 34885 – all c. spor. and epiphytic.

Note: Following Álvarez & León Vargas (2013) there is only one species of *Schoenobryum* in the Neotropics which has to be called *S. julaceum*.

Sematophyllum adnatum (Michx.) E.Britton

Trelawny: Loc. 1, *HvM* 216411; Loc. 2, *HvM* 216379, 216458a. **St. Andrew:** Loc. 22, *HvM* 216856. **St. Thomas:** Loc. 31, *HvM* 216910 – all epiphytic.

Sematophyllum galipense (Müll.Hal.) Mitt.

St. Ann: Loc. 6, epiphytic, *HvM* 216499. **St. Andrew:** Loc. 8, epiphytic, *HvM* 216436; Loc. 22, epiphytic, *HvM* 216857. **Portland:** Loc. 23, on humid soil, c. spor., *ASV* 35274. **St. Thomas:** Loc. 33, on rock in rain forest, 2050 m, *ASV* 35430/B.

Sematophyllum subpinnatum (Brid.) E.Britton

Trelawny: Loc. 2, *HvM* 216459. **St. Ann:** Loc. 5, *HvM* 216488. **St. Andrew:** Loc. 8, *HvM* 216441. **Portland:** Loc. 19, *HvM* 216776; Loc. 24, *ASV* 35276; Loc. 29, *ASV* 35303/A. **St. Thomas:** Loc. 32, *HvM* 216944 – all epiphytic.

Sematophyllum swartzii (Schwägr.) Welch & H.A.Crum

St. Andrew: Loc. 13, *HvM* 216647; Loc. 34, *HvM* 216957. **St. Thomas:** Loc. 31, *HvM* 216911 – all epiphytic.

Sphagnum meridense (Hampe) Müll.Hal.

St. Thomas: Loc. 33, on floor in rain forest, 1700 m, *ASV* 35367.

Squamidium leucotrichum (Taylor) Broth.

St. Andrew: Loc. 14, epiphytic, *HvM* 216705.

Squamidium nigricans (Hook.) Broth.

St. Andrew: Loc. 13, epilithic, *HvM* 216648, on shady wall, 1500 m, *ASV* 35055; Loc. 21, epilithic, *HvM* 216840, on concrete wall, *ASV* 35242.

Steereobryon subulirostrum (Schimp.) G.L.Sm.

St. Thomas: Loc. 31, on shady earth cut, 1230 m, *ASV* 35323.

Stereophyllum radiculosum (Hook.) Mitt.

St. Ann: Loc. 4, on root, *ASV* 34858. **St. Andrew:** Loc. 17, epilithic, on a boulder, *HvM* 216735.

Syrrhopodon gaudichaudii Mont.

St. Andrew: Loc. 14, epiphytic, *HvM* 216708.

Syrrhopodon incompletus Schwägr. var. *incompletus*

Trelawny: Loc. 1, epiphytic, *HvM* 216412. **St. Andrew:** Loc. 8, epiphytic, *HvM* 216438, *ASV* 34899.

Syrrhopodon incompletus var. *berteroanus* (Brid.) Reese

Portland: Loc. 12, epiphytic, *HvM* 216593, *ASV* 34993.

Syrrhopodon lycopodioides (Sw.) Müll.Hal.

St. Andrew: Loc. 13, epiphytic, *HvM* 216650. **St. Thomas:** Loc. 33, epiphytic in rain forest, 1950 m, *ASV* 35382, and in elfin forest at summit region, 2250 m, *ASV* 35417.

Syrrhopodon parasiticus (Brid.) Besch.

Trelawny: Loc. 1, on shrub in coffee plantation, c. spor., *ASV* 34803. **St. Ann:** Loc. 6, epiphytic, c. spor., *ASV* 34881. **Portland:** Loc. 29, epiphytic, *ASV* 35303/B.

Syrrhopodon prolifer Schwägr. var. *prolifer*

Portland: Loc. 12, epiphytic, *HvM* 216594. **St. Andrew:** Loc. 13, epiphytic, *HvM* 216651.

Syrrhopodon prolifer var. *tenuifolius* (Sull.) Reese

St. Andrew: Loc. 14, epiphytic, *HvM* 216709, on rotting wood, *ASV* 35121.

Taxiphyllum taxirameum (Mitt.) M.Fleisch.

Portland: Loc. 9, *HvM* 216529, *ASV* 34915; Loc. 10, *HvM* 216552. **St. Andrew:** Loc. 13, *HvM* 216652, *ASV* 35081 – all on soil.

Taxithelium planum (Brid.) Mitt.

Trelawny: Loc. 1, epiphytic, *HvM* 216413. **St. Andrew:** Loc. 8, epiphytic, *HvM* 216439, *ASV* 34905.

Thamnobryum fasciculatum (Sw. ex Hedw.) I.Sastre**Portland:** Loc. 12, on soil, *HvM* 216596, on rock, *ASV* 34992.***Thuidium urceolatum*** Lorentz**Trelawny:** Loc. 2, on soil, *HvM* 216460. **Portland:** Loc. 9, on soil, *HvM* 216530; Loc. 10, on soil, *HvM* 216553; Loc. 12, on soil, *HvM* 216597. **St. Andrew:** Loc. 34, on concrete wall, *ASV* 35464.***Toloxis impondorosa*** (Taylor) W.R.Buck**St. Andrew:** Loc. 22, on boulder, *HvM* 216859. **St. Thomas:** Loc. 31, on rock, *ASV* 35335/B.***Tortella humilis*** (Hedw.) Jennings**St. Thomas:** Loc. 31, epilithic, on boulder, *HvM* 216260.***Trachypus viridulus*** (Mitt.) Broth.**St. Thomas:** Loc. 33, on rock in rain forest, 2050 m, *ASV* 35430/A.***Trichosteleum sentosum*** (Sull.) A.Jaeger**Portland:** Loc. 12, on rotting wood, *ASV* 35000/C.***Trichostomum brachydontium*** Bruch**Portland:** Loc. 12, on shady rock, *ASV* 35013. **St. Thomas:** Loc. 32, on soil, *HvM* 216202.***Vesicularia vesicularis*** (Schwägr.) Broth.**Trelawny:** Loc. 1, on soil, *HvM* 216414; Loc. 2, epiphytic, *HvM* 216461. **Portland:** Loc. 10, on soil, *HvM* 216554; Loc. 18, on shaded boulder, *HvM* 216749; Loc. 28, on bark, *HvM* 216812.***Weissia controversa*** Hedw.**St. Andrew:** Loc. 21, on soil, *HvM* 216257.***Weissia jamaicensis*** (Mitt.) Grout**Trelawny:** Loc. 1, on soil, *HvM* 216238; Loc. 2, on limestone, *HvM* 26242. **St. Ann:** Loc. 4, on limestone wall, *ASV* 34852/A; Loc. 5, on soil, *HvM* 216247. **Portland:** Loc. 9, on limestone, *HvM* 216253. **St. Andrew:** Loc. 11, on rock, *HvM* 216251; Loc. 13, on shaded brick wall, *HvM* 216254. **St. Thomas:** Loc. 31, on soil, *HvM* 216261.***Wijkia flagellifera*** (Broth.) H.A.Crum**St. Thomas:** Loc. 33, on rotting wood in rain forest, *ASV* 35441.***Zelometeorium patulum*** (Hedw.) Manuel**Trelawny:** Loc. 2, *HvM* 216462. **St. Ann:** Loc. 5, *HvM* 216487. **Portland:** Loc. 9, *HvM* 216531; Loc. 29, *ASV* 35304 – all epiphytic.**DISCUSSION**

As outlined by Söderström *et al.* (2011), the most significant liverwort collections of Jamaica remain those of Swartz in 1783, Evans in 1903 and Schuster in 1967. It is therefore not surprising that we now report 53 species of liverworts and two species of hornworts as new to the island (see Table 1). Eight of these represent new records for the West Indies and an additional three species are new to

the Greater Antilles. One genus of hornworts and five genera of liverworts are firstly recorded for Jamaica: *Notothylas*, *Albiellopsis*, *Colura*, *Fossombronia*, *Jensenia*, and *Otigoniolejeunea*. The number of liverwort and hornwort species raised from 314 (Söderström *et al.*, 2011) to 369 species, reaching now nearly the 377 species so far known from Cuba (Pócs, 1988), and considerably surpassing the number of known liverworts and hornworts from the Dominican Republic (250 species; Schäfer-Verwimp & Pócs, 2009; Frahm, 2012).

Table 1. Species new to Jamaica; * = new to the Greater Antilles; ** = new to the West Indies

Hornworts	** <i>Jensenia wallisii</i>
<i>Notothylas breutelii</i>	<i>Lejeunea aphanes</i>
<i>Phaeoceros carolinianus</i>	<i>Lejeunea bermudiana</i>
	<i>Lejeunea cancellata</i>
Liverworts	<i>Lejeunea caulicalyx</i>
* <i>Acrobolbus antillanus</i>	<i>Lejeunea controversa</i>
<i>Adelanthus carabayensis</i>	<i>Lejeunea laeta</i>
<i>Albiellopsis dominicensis</i>	<i>Lejeunea paucidentata</i>
<i>Ceratolejeunea rubiginosa</i>	<i>Lejeunea sporadica</i>
** <i>Cheilolejeunea aneogyna</i>	* <i>Lejeunea tapajosensis</i>
<i>Cheilolejeunea inflexa</i>	** <i>Leptolejeunea convexistipa</i>
<i>Cheilolejeunea ovalis</i>	<i>Leptoscyphus amphibolius</i>
<i>Cheilolejeunea quinquecarinata</i>	** <i>Metzgeria attenuata</i>
<i>Cheilolejeunea trifaria</i>	<i>Metzgeria crassipilis</i>
<i>Cheilolejeunea uncioloba</i>	** <i>Metzgeria scyphigera</i>
<i>Cololejeunea diaphana</i>	<i>Microlejeunea colombiana</i>
<i>Cololejeunea sintenisii</i>	<i>Microlejeunea diversiloba</i>
** <i>Cololejeunea papilliloba</i>	<i>Microlejeunea epiphylla</i>
<i>Cololejeunea subcardiocarpa</i>	<i>Nowellia wrightii</i>
<i>Colura calyptrifolia</i>	<i>Otigoniolejeunea huctumalcensis</i>
<i>Colura rhyrachophora</i>	<i>Plagiochila heterophylla</i>
<i>Colura tenuicornis</i>	<i>Radula cubensis</i>
<i>Colura tortifolia</i>	<i>Rectolejeunea versifolia</i>
<i>Diplasiolejeunea grolleana</i>	<i>Riccardia digitiloba</i>
<i>Drepanolejeunea araucariae</i>	<i>Symphyogyna brasiliensis</i>
<i>Drepanolejeunea submuricata</i>	<i>Symphyogyna brongniartii</i>
* <i>Drepanolejeunea valiae</i>	<i>Trichocolea floccosa</i>
<i>Fossombronia porphyrorrhiza</i>	
<i>Frullania convoluta</i>	Mosses
** <i>Frullania dulimensis</i>	** <i>Leptophascum leptophyllum</i>
<i>Fuscocephaloziopsis catenulata</i>	<i>Raiiella praelonga</i>

To the most remarkable finds belong *Acrobolbus antillanus*, *Cheilolejeunea ovalis*, *Ch. quinquecarinata*, *Diplasiolejeunea grolleana*, *Drepanolejeunea valiae*, *Frullania dulimensis*, *Fuscocephaloziopsis catenulata*, *Harpalejeunea reflexula*, *Jensenia wallisii*, *Leiolejeunea grandiflora*, *Lejeunea paucidentata*, *Metzgeria scyphigera*, and *Nowellia wrightii*. Two of these, *Harpalejeunea reflexula* and *Leiolejeunea grandiflora*, have so far been known only from the type collections from Jamaica made more than 100 years ago. *Frullania dulimensis* has been known only from the type from Colombia and was discovered in the elfin forest at summit region of the Blue Mountain Peak. Further remarkable species found only in the undisturbed rain and elfin forests around Portland Gap and from there up to the Blue Mountain Peak are *Acrobolbus antillanus*, *Adelanthus carabayensis*, *A. pittieri*, *Brachiolejeunea laxifolia*, *Cheilolejeunea quinquecarinata*, *Cololejeunea sicifolia*

subsp. *jamaicensis*, *C. spathulata*, *Colura calyptrifolia*, *Drepanolejeunea araucariae*, *D. fragilis*, *D. valiae*, *Frullania convoluta*, *Fuscocephaloziopsis crassifolia*, *Herbertus juniperoideus* subsp. *acanthelium* and subsp. *pensilis*, *Isotachis multiceps*, *Leiolejeunea grandiflora*, *Lepidozia cupressina*, *L. patens*, *Leptoscyphus amphibolius*, *Metzgeria attenuata*, *M. leptoneura*, *M. procera*, *Microlejeunea colombiana*, *Plagiochila heterophylla*, *Scapania portoricensis*, *Syzygiella rubricaulis*, and among the mosses *Aptychella prolifera*, *Campylopus cygneus*, *C. shawii*, *Ditrichum difficile*, *Daltonia longifolia*, *Leptodontium viticulosoides* var. *panamense*, *Pilopogon guadalupensis*, *Sphagnum meridense*, *Trachypus viridulus*, and *Wijkia flagellifera*.

Surprisingly, for some species frequently found by us as for example *Colura tortifolia* and *Fossombronina porphyrorhiza* records in literature are missing, even for the whole genus *Colura* of which we report four species. On the other hand, such conspicuous species as *Bryopteris filicina*, *Plagiochila adianthoides*, and others could not be relocated though searched for. This may be due to the great loss of forests in large parts of the Blue Mountains area where the southern slopes are nearly completely cleared; however, these species and others not found by us may still occur in forests on the currently hardly accessible steep northern slopes of the Blue Mountains.

We present here the first floristic list of liverworts and hornworts from Jamaica based on the occurrence in parishes as it earlier was done by Crum & Bartram (1958) for the mosses. Only six of the fourteen parishes have been visited, for the recorded species see Table 2.

Table 2. Numbers of recorded species of hornworts, liverworts and mosses for each parish visited

Parish	Portland	St. Andrew	St. Ann	St. Mary	St. Thomas	Trelawny
Hornworts	1	3	0	1	1	0
Liverworts	94	115	22	10	96	30
Mosses	88	95	17	7	63	32

Crum & Bartram (1958) considered, that “a surprisingly large number of mosses have already been reported from Jamaica”. Their survey of the Jamaican moss flora contains 316 species “plus a number of trivial taxa”. Only the pleurocarpous mosses from the West Indies have been treated recently (Buck, 1998); this treatment has added 26 (+ 2 doubtful) new records for Jamaica. However, 21 species listed in Crum & Bartram (1958) in the meantime have been synonymized. The actual number of moss species of Jamaica may therefore be about 325. Considering this high number it is not too surprising that only two mosses were added to the moss flora of Jamaica: *Leptophascum leptophyllum* and *Rauiella praelonga*. Both represent new genus records, and *Leptophascum* is new to the West Indies.

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