
First Bryophyte collection, including substrate and distribution data, from the forests of Emalu, Province of Nadroga-Navosa, Viti Levu Island: A Contribution to the Bryophyte Flora of Fiji

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Abstract: Senilolia H. Tuiwawa (2022): First Bryophyte collection, including substrate and distribution data, from the forests of Emalu, Province of Nadroga-Navosa: A Contribution to the Bryophyte Flora of Fiji. *Frahmia* 27:1-27.³

The knowledge on the bryoflora of Fiji is far from complete and available literature is but a handful of accounts from scattered locations. The region of Emalu, is a remote location along the transitional zone of central Viti Levu that is botanically under-collected with no historical citations at all about cryptogamic plants. Provided here is an annotated checklist and the first accounts of mosses, liverworts, and hornwort collections from the area. Specimens were collected from six different substrates and processed for drying, preservation and identification. The collection resulted to a total of nine species of hornworts assigned to four genera and three families; 166 species of liverworts assigned to 57 genera and 22 families; 59 species of mosses assigned to 44 genera and 22 families. Substrate and distribution descriptions are provided as part of the annotated checklist.

1 Introduction

Checklists of bryophytes are key and a fundamental need across sites that are botanically poor in collection (von Konrat et al. 2011). They are an invaluable permanent record of taxa occurring at a specific place and time (Bean, 2016) and are also especially critical where site locations are isolated and inaccessible to reach (Müller 2012; von Konrat et al. 2011).

Fiji's inventory of bryophytes has been a pulse of collection dating to as far back as the early 18th century (von Konrat et al. 2011). Some of the more notable bryophyte work in Fiji were collections undertaken by Brackenridge in 1840, Schultze-Motel in 1974, Milne 1856, Jack and Stephani in 1894; Gibbs 1907,1909; Dixon and Greenwood 1930; Greenwood 1945; Campbell 1971, Miller et al. 1983, Higuchi and Iwatsuki 1982, 1991-92 (von Konrat et al. 2011). Key references in the early 20th century, comprises works by Fife and Naikatini (2011), von Konrat et al. (2011), Söderström et al. (2011), Pócs et al. (2011, 2018), Müller (2012). At present, the count of bryophytes in Fiji comprises 280 liverwort species and 11 hornworts (Söderström et al. 2011) and at least 306 species of mosses (Whittier 1975). In spite current inventory still in its infancy, there already is the strong realization of much needed work that requires completion particularly across areas that under-collected for various reasons (von Konrat et al. 2011; Müller 2012; Pócs et

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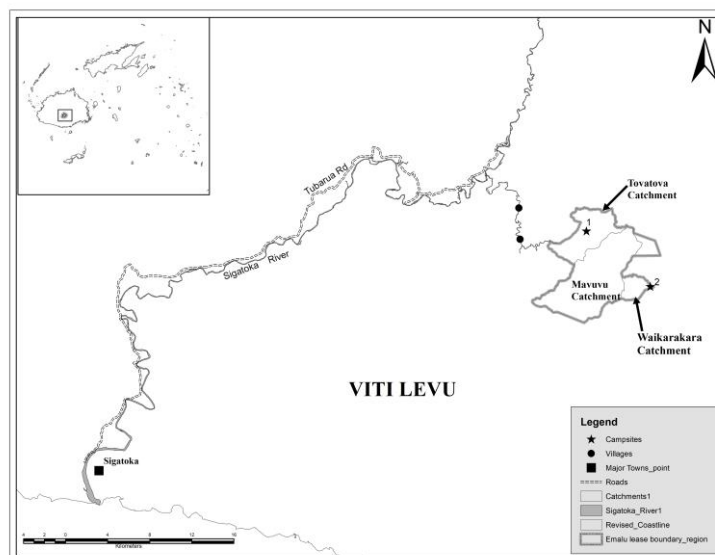
al. 2011). The paper presents the first collection records of bryophyte taxa from the terrestrial forests of Emalu, a botanically under-collected and unknown area located in the province of Nadroga-Navosa on the island of Viti Levu in Fiji.

Area of Survey

The Republic of Fiji is located in the South Pacific Ocean. It is an archipelago of 300+ islands of which 110 are inhabited. It is situated between Vanuatu and Tonga at geographic locations of 176.53 East and 178.12 West. The climate is tropical and warm throughout the year with the average temperature at 22°. Rain is more common along the southeastern parts of the larger islands compared to the northwestern parts. The island of Viti Levu is where the capital Suva resides, and it is one of the two largest islands of the Fijian archipelago (Figure 1). For more information, refer to: <https://www.nationsonline.org/oneworld/fiji.htm>

The area of collection is the region of Emalu. It is an important site location as it is a nationally established site for implementing REDD+ activities by the Fiji government. It is situated in the province of Nadroga-Navosa that lies adjunct to central Viti Levu. Apart from a few difficult back roads and tracks, the area is remote and inaccessible (Tuiwawa et al. 2013).

The 7347ha of Emalu comprises five principal vegetation types namely the: Grassland or Talasiga, Dry Forest, Lowland Rainforest, Upland Rainforest, and Cloud Forest (Mueller-Dombois and Fosberg, 1998; Tuiwawa et al. 2013). As rainfall is a key factor of vegetation systems, the area in a year receives an average rainfall of 2000-4000mm (Derrick 1951; Tuiwawa et al. 2013). Further, it's terrains are steep and rugged with the highest peak of Mt. Vonolevu at approximately 1111m a.s.l. in elevation. Its geology consists mainly of Tholo Plutonic Suite, an intrusive type of rock which is intruded into the Wainimala Group and dated to the Upper Miocene period (Tertiary) or later (Rodda 1967; 1976). The alluvial soils from the tributaries in Navosa region are the Wainibuka sandy clay loam (Twyford and Wright 1965; Tuiwawa et al. 2013).



[Figure 1: Map of Emalu on the island of Viti Levu, Fiji. Source: Conservation International (Fiji program) 2022. Derived from Tuiwawa et al. 2013 report]

Field Collection

The present collection cites the different substrate types that were encountered on site collection. Apart from the epiphyll substrate, specimens were collected from five other substrates: (1) tree branches of live trees, mostly those within reach of the collector (below 2m tall) (2) stones, rocks, and boulders along flowing river, creeks, and tributaries (3) tree trunks of mostly native trees irrespective of height and girth sizes (4) soil surface along the forest floor and along rivers, small streams, and tributaries (5) deadwood and debris on land and semi-aquatic surfaces. Together with the locality data in Table 1, the substrate types for each collection are defined as part of the annotated checklist. All five substrates are consistent and present in at least three of the principal vegetation types, namely the lowland rainforest, the upland vegetation, and cloud forest that lie across three water catchments (Figure 1): Tovatova Catchment Area (TCA), Waikarakarawa Catchment Area (WCA) and Mavuvu Catchment Area (MCA). There were no collections in the grassland or talasiga and dry forest area due to time constraints. Collections was undertaken in the periods of July 2012 and March 2013.

In the list of bryophytes section is the annotated checklist of the collection. Specimens were identified with the help of available literature and voucher collections. The nomenclature of each taxa uses the currently accepted taxonomic status available through TROPICOS, including referencing the global checklist of bryophytes (Söderström et al. 2016). It is hoped that the species listing will accurately still reflect current taxonomic revisions. All 235 vouchers are deposited by the author at the regional herbarium (SPRH) in Suva.

Bryophytes were found at 27 previously undocumented localities listed in Table 1. 11 of the sites were from the TCA, 6 of the sites were from the WCA, 9 of the sites from the Mavuvu catchment. These are detailed as annotated checklist in the list of bryophyte section of this paper.

Table 1: Site localities of the collection from the forests of Emalu

Catchment area	Locality	Latitude	Longitude
Tovatova Catchment Area (TCA)	near basecamp	17.9800	177.9520
	old settlements	17.9210	177.9501
	ridge towards upland forest	17.9551	177.9630
	track towards the upland forest	17.9410	177.9541
	ridge to the lowland rainforest	17.9401	177.9572
	in the lowland rainforest	17.9422	177.9550
	vicinity of old settlement	17.9581	177.9131
	along Wairovurovu stream	17.9440	177.9611
	along ridge in the upland forest	17.9721	177.9980
	vicinity of the upland forest	17.9531	177.0013
	ridges in the upland forest	17.9522	177.9630
Waikarakarawa Catchment Area (WCA)	near Waikarakarawa river	17.9821	178.0095
	old settlements near basecamp	17.9812	178.0091
	along Waikarakarawa river	17.9792	178.0062
	slope towards Waikarakarawa river	17.9781	178.0254

	embarkment near Waikarakarawa river	17.9801	178.0103
	side stream of Waikarakarawa river	17.9811	178.0111
Mavuvu Catchment Area (MCA)	vicinity of Mt. Vonolevu	17.9492	178.0054
	vicinity of upland forest	17.9623	177.9871
	near Waikarakarawa river	17.9791	178.0103
	vicinity of old settlement	17.9505	177.9933
	on ridge	17.9744	178.0000
	slopes of the upland forest	17.9672	177.9851
	slope to old settlement	17.9571	177.9662
	ridge to the lowland rainforest	17.9694	178.9861
	slope to Mt. Vonolevu	17.9470	178.0032

2. List of Bryophytes

The list of species is arranged alphabetically under each Family and Genera. Locations are abbreviated followed by locality, elevation (recorded in meters above sea level), type of substrate, collector's numbers (denoted by SHT), collectors' number of the specimen examined (where available), and the herbarium voucher number.

HORNWORTS

Anthocerotaceae

1. *Folioceros amboinensis* (Schiffn.) Piippo. – (Hasegawa 1986)
WCA, near Waikarakarawa river; 350m; Soil surface; SHT 5255/2013. Herbarium No.: 37230
2. *Folioceros fuciformis* (Mont.) D.C. Bharadwaj. – (Campbell 1971)
TCA, near basecamp; 130-200m; Soil surface; SHT 5256/2012. Herbarium No.: 37231
3. *Folioceros gladulosus* (Lehm. et Lindenb.) D.C. Bharadwaj. – (Schiffner 1890)
TCA, near basecamp; 130-200m; Soil surface; SHT 5257/2012. Herbarium No.: 37232
4. *Folioceros pinnilobus* (Steph.) D.C. Bharadwaj. – (Hasegawa 1986)
TCA, near basecamp; 130-200m; Rocks; SHT 5262/2012. Herbarium No.: 37233

Dendrocerotaceae

5. *Dendroceros cavernosus* J. Haseg. – (Hasegawa 1986)
TCA, near basecamp; 130-200m; Deadwood and debris; SHT 5259/2012. Herbarium No.: 37234
6. *Dendroceros granulatus* Mitt. – (Hasegawa 1986)
TCA, near basecamp; 130-200m; Soil surface; SHT 5260/2012. Herbarium No.: 37235
7. *Dendroceros javanicus* (Nees) Nees. – (Gibbs 1909)
WCA, near Waikarakarawa river; 350m; Rocks; SHT 5261/2013. Herbarium No.: 37236
8. *Megaceros flagellaris* (Mitt.) Steph. – (Hasegawa 1986)

WCA, near Waikarakarawa river; 350m; Soil surface; SHT 5262/2013. Herbarium No.: 37237

Notothyladaceae

9. *Phaeoceros carolinianus* (Michx.) Prosk. – (Campbell 1971)

TCA, near basecamp; 130-200m; Soil surface; SHT 5263/2012. Herbarium No.: 37238

LIVERWORTS

Anastrophyllaceae

10. *Plicanthus birmensis* (Steph.) R.M. Schust. – (Campbell 1971)

TCA, near basecamp; 130-200m; Tree trunk; SHT 5264/2012. Herbarium No.: 37239

11. *Plicanthus hirtellus* (F. Weber) R.M. Schust. – (Miller et al. 1983)

WCA, old settlements near basecamp; 230m; Tree trunk; SHT 5265/2013. Herbarium No.: 37240

Aneuraceae

12. *Aneura maxima* (Schiffn.) Steph. – (Gibbs 1909)

TCA, old settlements near basecamp; 100m; Soil surface; SHT 5266/2012. Herbarium No.: 37241

13. *Lobatirricardia coronopus* (De Not. ex Steph.) Furuki. – (Campbell 1971)

TCA, old settlements near basecamp; 100m; Soil surface; SHT 5267/2012. Herbarium No.: 37242

14. *Riccardia alba* (Colenso) E.A.Br. – (Campbell 1971)

TCA, old settlements near basecamp; 100m; Soil surface; SHT 5268/2012. Herbarium No.: 37243

15. *Riccardia graeffei* (Steph.) Hewson. – (Furuki 1991)

TCA, ridge towards upland forest; 800m; Deadwood and debris; SHT 5269/2012. Herbarium No.: 37244

Dumortieraceae

16. *Dumortiera hirsuta* (Sw.) Nees. – (Gibbs 1909)

TCA, ridge towards upland forest; 820m; Rocks; SHT 5270/2012. Herbarium No.: 37245

Geocalycaceae

17. *Heteroscyphus argutus* (Reinw., Blume et Nees) Schiffn. – (Gibbs 1909)

TCA, ridge towards upland forest; 800m; Deadwood and debris; SHT 5271/2012. Herbarium No.: 37246

18. *Heteroscyphus aselliformis* (Reinw., Blume et Nees) Schiffn. – (Campbell 1971)

MCA, vicinity of Mt. Vonolevu; 900m; Tree trunk; SHT 5272/2012. Herbarium No.: 37247

19. *Heteroscyphus coalitus* (Hook.) Schiffn. – (Campbell 1971)

TCA, near basecamp; 130-200m; Deadwood and debris; SHT 5273/2012. Herbarium No.: 37248

20. *Heteroscyphus succulentus* (Gottsche) Schiffn. – (Campbell 1971)

TCA, near basecamp; 130m; Soil surface; SHT 5274/2012. Herbarium No.: 37249

21. *Notoscyphus lutescens* (Lehm. et Lindenb.) Mitt. – (Schuster 2002)
TCA, track towards the upland forest; 690m; Soil surface; SHT 5275/2012. Herbarium No.: 37250

Hymenophytaceae

22. *Hymenophyton flabellatum* (Labill.) Dumort. ex. Trevis. – (Evans 1925)
TCA, ridge to the lowland rainforest; 540m; Tree trunk; SHT 5276/2012. Herbarium No.: 37251

Jamesoniellaceae

23. *Cuspidatula contracta* (Reinw., Blume et Nees) Steph. – (Jack and Stephani 1984)
TCA, ridge to the lowland rainforest; 540m; Tree trunk; SHT 5276/2012. Herbarium No.: 37252

24. *Denotarisia linguifolia* (De Not.) Grolle. – (Hürlimann 1989)
WCA, along Waikarakarawa river; 330m; Boulder; SHT 5451/2013. Herbarium No.: 37253

Jubulaceae

25. *Frullania apiculata* (Reinw., Blume et Nees) Nees.
WCA, along Waikarakarawa river; 130-200m; Tree trunk; SHT 5278/2013; Specimen Examined: S.&T. Pócs 03304/F. Herbarium No.: 37254

26. *Frullania arecae* (Spreng.) Gottsche – (Yuzawa 1991)
TCA, in the lowland rainforest; 250m; Tree trunk; SHT 5279/2012; Herbarium No.: 37255

27. *Frullania capillaris* Steph. – (Hattori 1985)
TCA, in the lowland rainforest; 200m; Tree trunk; SHT 5280/2012; Herbarium No.: 37256

28. *Frullania chevalieri* (R.M. Schust.) R.M. Schust. – (Pócs 2008)
TCA, in the lowland rainforest; 200m; Tree branches; SHT 5281/2012; Herbarium No.: 37257

29. *Frullania cordistipula* (Reinw., Blume et Nees) Dumort. – (Mitten 1862)
TCA, near basecamp; 100m; Soil surface; SHT 5282/2012; Herbarium No.: 37258

30. *Frullania ericoides* (Nees) Mont. – (Pócs 2008b)
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Deadwood and debris; SHT 5283/2012;
Herbarium No.: 37259

31. *Frullania gaudichaudii* (Nees et Mont.) Nees et Mont. – (Hattori 1985)
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Tree branches; SHT 5394/2012; Herbarium No.: 37261

32. *Frullania gracilis* (Reinw., Blume et Nees) Gottsche, Lindenb. et Nees.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Deadwood and debris; SHT 5085/2012; Specimen Examined: S.&T. Pócs 03288/AQ. Herbarium No.: 37262

33. *Frullania intermedia* (Reinw., Blume et Nees) Gottsche.
MCA, vicinity of upland forest; 870m; Tree branches; SHT 5287/2012; Specimen Examined: S.&T. Pócs 03281/L. Herbarium No.: 37262

34. *Frullania meyeniana* Lindenb. – (Hentschel et al. 2009)
MCA, vicinity of Mt. Vonolevu; 1000-1100m; Rocks; SHT 5288/2012. Herbarium No.: 37264

35. *Frullania neurota* Taylor – (Campbell 1971)
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Deadwood and debris; SHT 5289/2012.
Herbarium No.: 37265
36. *Frullania nodulosa* (Reinw., Blume et Nees) Nees.
TCA, track towards the upland forest; 840-870m; Rocks; SHT 5290/2012; Specimen Examined:
S.&T. Pócs 03721/B, 2003. Herbarium No.: 37266
37. *Frullania ramuligera* (Nees) Mont. – (Pócs 2008a)
TCA, track towards the upland forest; 800m; Deadwood and debris; SHT 5291/2012. Herbarium
No.: 37267
38. *Frullania ternatensis* Gottsche.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Deadwood and debris; SHT 5448/2012; Specimen
Examined: S.&T. Pócs 03728/E. Herbarium No.: 37268
- Jungermanniaceae**
39. *Conoscyphus trapezioides* (Sande Lac.) Schiffn. – (Hürlimann 1998)
MCA, vicinity of old settlement; 200m; Tree branches; SHT 5293/2012. Herbarium No.: 37269
40. *Jamesoniella flexicaulis* (Nees) Schiffn. – (Campbell 1971)
MCA, near Waikarakarawa river; 130-200m; Soil surface; SHT 5292/2012. Herbarium No.:
37270
- Lejeuneaceae**
41. *Archilejeunea planiuscula* (Mitt.) Steph.
MCA, on ridge, lowland rainforest; 330m; Tree branches; SHT 5294/2012; Specimen Examined:
S.&T. Pócs 03310/D. Herbarium No.: 37272
42. *Acrolejeunea pycnoclada* (Taylor) Schiffn.
MCA, vicinity of old settlement; 200m; Tree branches; SHT 5295/2012; Specimen Examined:
S.&T. Pócs 03289/T. Herbarium No. 37271.
43. *Caudalejeunea reniloba* (Gottsche) Steph. – (Campbell 1971)
TCA, near basecamp; 130-200m; Tree trunk; SHT 5296/2012. Herbarium No.: 37273
44. *Ceratolejeunea belangeriana* (Gottsche) Steph.
TCA, near basecamp; 100m; Deadwood and debris; SHT 5297/2012; Specimen Examined: T.
Pócs 08037/H. Herbarium No.: 37274
45. *Ceratolejeunea vitiensis* Steph. – (Bonner 1963)
TCA, near basecamp; 130m; Soil surface; SHT 5298/2012. Herbarium No.: 37275
46. *Cheilolejeunea decursiva* Steph. – (Zhu and Lai 2005)
TCA, near basecamp; 130m; Deadwood and debris; SHT 5299/2012. Herbarium No.: 37276
47. *Cheilolejeunea falsinervis* (Sande Lac.) R.M. Schust. et Kachroo – (Campbell 1971)
WCA, near Waikarakarawa river; 130m; Deadwood and debris; SHT 5300/2013. Herbarium No.:
37277

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48. *Cheilolejeunea intertexta* (Lindenb.) Steph.
TCA, near basecamp; 200m; Boulder. SHT 5301/2012; Specimen Examined: S.&T. Pócs 03285/E. Herbarium No.: 37278
49. *Cheilolejeunea lindenbergii* (Gottsche) Mizut. – (Pócs et al. 2011)
TCA, vicinity of old settlement; 150m; Deadwood and debris; SHT 5302/2012. Herbarium No.: 37279
50. *Cheilolejeunea trapezia* (Nees, Lindenb. et. Gottsche) R.M. Schutst et Kachroo
TCA, vicinity of old settlement; 150m; Rocks; SHT 5303/2012. Specimen Examined: S.&T. Pócs 03285/E. Herbarium No.: 37280
51. *Cheilolejeunea trifaria* (Reinw., Blume et Nees) Mizut.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Tree trunk; SHT 5304/2012; Specimen Examined: S.&T. Pócs 03307/K. Herbarium No.: 37281
52. *Cololejeunea aequabilis* (Sande Lac.) Schiffn.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Tree branches; SHT 5305/2012; Specimen Examined: S.&T. Pócs 03289/EP. Herbarium No.: 37282
53. *Cololejeunea amphibola* B. Thiers – (Pócs et al. 2011)
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Tree branches; SHT 5306/2012. Herbarium No.: 37283
54. *Cololejeunea augustiflora* (Steph.) Mizut. – (Pócs et al. 2011)
TCA, in lowland rainforest; 500-600m; Deadwood and debris; SHT 5307/2012. Herbarium No.: 37284
55. *Cololejeunea cardiocarpa* (Mont.) A. Evans. – (Pócs et al. 2011)
TCA, in lowland rainforest; 500-550m; Rocks; SHT 5308/2012. Herbarium No.: 37285
56. *Cololejeunea cocoscola* (Angstr.) Steph.
TCA, in lowland rainforest; 500-550m; Boulder; SHT 5309/2012; Specimen Examined: T. Pócs 1173/E. Herbarium No.: 37286
57. *Cololejeunea diaphana* A. Evans
WCA, embarkment near Waikarakarawa river; 130-200m; Rocks; SHT 5310/2013; Specimen Examined: S.&T. Pócs 03288/CY. Herbarium No.: 37287
58. *Cololejeunea equialbi* Tixier
TCA, near basecamp; 100m; Soil surface; SHT 5311/2012; Specimen Examined: S.&T. Pócs 03281/AC. Herbarium No.: 37288
59. *Cololejeunea falcata* (Horik.) Benedix.
TCA, ridge of the upland forest; 850m; Deadwood and debris; SHT 5312/2012; Specimen Examined: S.&T. Pócs 03729/BC. Herbarium No.: 37289
60. *Cololejeunea floccosa* (Lehm. et Lindenb.) Schiffn. – (Pócs et al. 2011)
TCA, ridge of the upland forest; 850m; Tree branches; SHT 5453/2012. Herbarium No.: 37290

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61. *Cololejeunea huerlimannii* (Austin) Steph. – (Pócs et al. 2011)
MCA, vicinity of Mt. Vonolevu; 890-900m; Tree trunk; SHT 5454/2012. Herbarium No.: 37291
62. *Cololejeunea inflectens* Tixier. – (Pócs et al. 2011)
MCA, near Mt. Vonolevu; 890-900m; Tree trunk; SHT 5455/2012. Herbarium No.: 37292
63. *Cololejeunea kulenensis* (Mitt.) Benedix. – (Pócs et al. 2011)
MCA, slopes of the upland forest; 810m; Soil surface; SHT 5456/2012. Herbarium No.: 37293
64. *Cololejeunea longifolia* (Mitt.) Benedix ex Mizut. – (Pócs et al. 2011)
MCA, slopes of the upland forest; 820m; Soil surface; SHT 5457/2012. Herbarium No.: 37294
65. *Cololejeunea metzgeriopsis* (K.I. Goebel) Gradst. – (Campbell 1971)
TCA, ridge in the upland forest; 800m; Soil surface; SHT 5313/2012. Herbarium No.: 37295
66. *Cololejeunea minutissima* (Sm.) Schiffn. – (Hürlimann 1987)
TCA, near basecamp; 130-200m; Rocks; SHT 5314/2012. Herbarium No.: 37296
67. *Cololejeunea obliqua* (Nees et Mont.) Schiffn. – (Pócs et al. 2011)
TCA, near basecamp; 130-200m; Rocks; SHT 5315/2012. Herbarium No.: 37297
68. *Cololejeunea peraffinis* (Schiffn.) Schiffn. – (Campbell 1971)
TCA, near basecamp; 130-200m; Rocks; SHT 5316/2012. Herbarium No.: 37298
69. *Cololejeunea pseudoserrata* Tixier.
TCA, near basecamp; 130-200m; Rocks; SHT 5317/2012; Specimen Examined: S.&T. Pócs 03729/CA. Herbarium No.: 37299
70. *Cololejeunea raduliloba* Steph. (Pócs et al. 2011)
WCA, slope to old settlement; 50m; Soil surface; SHT 5318/2013. Herbarium No.: 37300
71. *Cololejeunea schmidtii* Steph.
MCA, slope to old settlement; 150m; Soil surface; SHT 5319/2012; Specimen Examined: S.&T. Pócs 03280/CD. Herbarium No.: 37301
72. *Cololejeunea sintenisii* (Steph.) Pócs. – (Pócs et al. 2011)
TCA, near basecamp; 130-200m; Rocks; SHT 5320/2012. Herbarium No.: 37302
73. *Cololejeunea societatis* Tixier.
TCA, near basecamp; 130-200m; Rocks; SHT 5321/2012; Specimen Examined: S.&T. Pócs 03289/BO. Herbarium No.: 37303
74. *Cololejeunea stylosa* (Steph.) Steph.ex Mizut.
MCA, vicinity of old settlement; 130-200m; Rocks; SHT 5322/2012; Specimen Examined: S.&T. Pócs 03726/H. Herbarium No.: 37304
75. *Cololejeunea wightii* Steph.
MCA, vicinity of old settlement; 80m; Deadwood and debris; SHT 5323/2012. Specimen Examined: S.&T. Pócs 03293/D. Herbarium No.: 37305

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76. *Colura acroloba* (Mont. ex Steph.) Ast. – (Pócs et al. 2011)
TCA, old settlement; 100m; Rocks; SHT 5324/2012. Herbarium No.: 37306
77. *Colura ari* (Steph.) Steph.
WCA, slope towards Waikarakarawa river; 250m; Soil surface; SHT 5325/2013; Sass-Gyarmati 1153/BA. Herbarium No.: 37307
78. *Colura brevistyla* Herzog. – (Pócs et al. 2011)
WCA, slope towards Waikarakarawa river; 250m; Tree trunk; SHT 5326/2013. Herbarium No.: 37308
79. *Colura conica* (Sande Lac.) K.I. Goebel.
WCA, slope towards Waikarakarawa river; 250m; Rocks; SHT 5327/2013; Specimen Examined: S.&T. Pócs 03288/CT. Herbarium No.: 37309
80. *Colura corynophora* (Nees, Lindeb. et. Gottsche) Trevis. – (Campbell 1971)
WCA, slope towards Waikarakarawa river; 250m; Rocks; SHT 5328/2013. Herbarium No.: 37310
81. *Colura crispiloba* Ast. – (Pócs and Eggers 2007)
WCA, slope towards Waikarakarawa river; 250m; Rocks; SHT 5329/2013. Herbarium No.: 37311
82. *Colura cristata* Ast.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Deadwood and debris; SHT 5414/2012; Specimen Examined: S.&T. Pócs 03304/AA. Herbarium No.: 37312
83. *Colura leratii* Ast.
MCA, vicinity of old settlement; alt. 130-200m; Rocks; SHT 5415/2012; Specimen Examined: S.&T. Pócs 03721/AD. Herbarium No.: 37313
84. *Colura pluridentata* Ast. – (Campbell 1971)
WCA, old settlements near basecamp; 130-200m; Soil surface; SHT 5330/2013; Herbarium No.: 37314
85. *Colura queenslandica* B.M. Thiers. – (Pócs and Eggers 2007)
TCA, near basecamp; 400m; Soil surface; SHT 5331/2012. Herbarium No.: 37315
86. *Colura superba* (Mont.) Steph. – (Hürlimann 1987)
TCA, near basecamp; 130-200m; Soil surface; SHT 5332/2012. Herbarium No.: 37316
87. *Colura tenuicornis* (A. Evans) Steph. - (Pócs et al. 2011)
TCA, near basecamp; 130-200m; Soil surface; SHT 2333/2012. Herbarium No.: 37317
88. *Colura vitiensis* Pócs et J. Eggers.
TCA, in lowland rainforest; 230m; Tree branches; SHT 5334/2012; Specimen Examined: S.&T. Pócs 03729/AT. Herbarium No.: 37318

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89. *Dendrolejeunea fruticosa* (Lindenb. et Gottsche) Lacout. - (Jack and Stephani 1984)
TCA, near basecamp; 130-200m; Deadwood and debris; SHT 5335/2012. Herbarium No.: 37319
90. *Diplasiolejeunea cavifolia* Steph. - (Campbell 1971)
MCA, vicinity of old settlement; 100m; Tree trunk; SHT 5416/2012. Herbarium No.: 37320
91. *Drepanolejeunea angustifolia* (Mitt.) Grolle. - (Hürlimann 1995)
MCA, vicinity of old settlement; 95m; Tree branches; SHT 5417/2012. Herbarium No.: 37321
92. *Drepanolejeunea dactylophora* (Nees, Lindend. et Gottsche) Schiffn. - (Campbell 1971)
MCA, near Waikarakarawa river; 330m; Soil surface; SHT 5418/2012. Herbarium No.: 37322
93. *Drepanolejeunea ternatensis* (Gottsche) Spruce ex Schiffn. - (Campbell 1971)
TCA, ridge towards upland forest; 750m; Tree trunk; SHT 5336/2012. Herbarium No.: 37323
94. *Drepanolejeunea vesiculosa* (Mitt.) Steph.
TCA, near basecamp; 130-200m; Tree branches; SHT 5337/2012; Specimen Examined:
S.&T.Pócs 03283/K. Herbarium No.: 37324
95. *Harpalejeunea filicuspis* (Steph.) Mizut.
TCA, vicinity of old settlement; 150m; Soil surface; SHT 5338/2012; Specimen Examined:
S.&T.Pócs 03280/CS. Herbarium No.: 37325
96. *Lejeunea alata* Gottsche.
TCA, ridge towards upland forest; 820-900m; Rocks; SHT 5339/2012; Specimen Examined:
S.&T.Pócs 03280/CS. Herbarium No.: 37326
97. *Lejeunea anisophylla* Mont.
TCA, ridge to the lowland rainforest; 200m; Deadwood and debris; Specimen Examined: SHT
5340/2012. S.&T.Pócs 03289/CB. Herbarium No.: 37327
98. *Lejeunea capensis* Gottsche. - (Jones 1972)
TCA, ridge to the lowland rainforest; 220m; Rocks; SHT 5341/2012. Herbarium No.: 37328
99. *Lejeunea discreta* Lindenb. - (Hürlimann 1993)
WCA, ridge to the lowland rainforest; 220m; Deadwood and debris; SHT 5342/2013. Herbarium
No.: 37329
100. *Lejeunea exilis* (Reinw., Blume et Nees) Grolle.
MCA, ridge to the lowland rainforest; 220m; Deadwood and debris; SHT 5491/2012. S.&T. Pócs
03289/BY. Herbarium No.: 37330
101. *Lejeunea flava* (Sw.) Nees.
MCA, ridge to the lowland rainforest; 280m; Tree trunk; SHT 5420/2012; Specimen Examined:
S.&T.Pócs 03261/B. Herbarium No.: 37331
102. *Lejeunea lumbricoides* (Nees) Nees.
MCA, ridge to the lowland rainforest; 280m; Tree trunk; SHT 5421/2012; Specimen Examined:
S.&T.Pócs 1164/B. Herbarium No.: 37332

103. *Lejeunea sordida* (Nees) Nees.
MCA, vicinity of upland rainforest; 900m; Tree branches; SHT 5422/2012; Specimen Examined: S.&T.Pócs 03306/J. Herbarium No.: 37333
104. *Lejeunea umbilicata* (Nees) Nees.
TCA, ridge towards upland forest; 900m; Tree branches; SHT 5343/2012; Specimen Examined: S.&T.Pócs 03288/BE. Herbarium No.: 37334
105. *Lepidolejeunea bidentula* (Steph.) R.M. Schust. – (Campbell 1971)
WCA, slope in a lowland rainforest; 320m; Tree branches; SHT 5344/2013; Specimen Examined: S.&T.Pócs 03309/K. Herbarium No.: 37325
106. *Lepidolejeunea borneensis* (Steph.) R.M. Schust. – (Pócs et al. 2011)
TCA, ridge to the lowland rainforest; 320m; Rocks; SHT 5345/2012. Herbarium No.: 37336
107. *Lepidolejeunea graeffei* (J.B. Jack et Steph.) R.M. Schust. – (Hürlimann 1995)
TCA, vicinity of old settlement; 240m; Rocks; SHT 5346/2012. Herbarium No.: 37337
108. *Lepidolejeunea integristipula* (J.B. Jack et Steph.) R.M. Schust.
WCA, near Waikarakarawa river; 300m; Soil surface; SHT 5347/2013. Specimen Examined: S.&T.Pócs 03305/B. Herbarium No.: 37338
109. *Lepidolejeunea involuta* (Gottsche) Grolle. – (Mitten 1873)
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Rocks; SHT 5432/2012. Herbarium No.: 37339
110. *Leptolejeunea elliptica* (Lehm. et Lindenb.) Schiffn. – (Campbell 1971)
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Soil surface; SHT 5340/2012. Herbarium No.: 37340
111. *Leptolejeunea epiphylla* (Mitt.) Steph. – (Campbell 1971)
TCA, near basecamp; 130-200m; Deadwood and debris; SHT 5348/2012. Herbarium No.: 37341
112. *Lopholejeunea eulopha* (Taylor) Schiffn.
TCA, ridge towards upland forest; 750m; Tree branches; SHT 5349/2012; Specimen Examined: S.&T.Pócs 03729/AP. Herbarium No.: 37342
113. *Lopholejeunea hispidissima* Steph. – (Pócs et al. 2011)
TCA, ridge towards upland forest; 800m; Tree branches; SHT 5350/2012. Herbarium No.: 37343
114. *Lopholejeunea nigricans* (Lindenb.) Schiffn.
MCA, ridge to the lowland rainforest; 650m; Deadwood and debris; SHT 5425/2012. Specimen Examined: S.&T.Pócs 03300/AS. Herbarium No.: 37344
115. *Lopholejeunea subfusca* (Nees) Schiffn.
MCA, slope to upland forest; 800m; Deadwood and debris; SHT 5426/2012; Specimen Examined: S.&T. Pócs 03729/P. Herbarium No.: 37345
116. *Lopholejeunea zollingeri* (Steph.) Schiffn. – (Sass-Gyarmati 2005, 2008)
TCA, near basecamp; 130-200m; Soil surface; SHT 5351/2012. Herbarium No.: 37346

117. *Mastigolejeunea auriculata* (Wilson) Schiffn. – (Jack and Stephani 1894)
WCA, embarkment near Waikarakarawa river; 320m; Soil surface; SHT 5352/2013. Herbarium No.: 37347

118. *Mastigolejeunea calcarata* (Mitt. ex Steph.) Verd.
TCA, near basecamp; 130-200m; Soil surface; SHT 5353/2012; Specimen Examined: S.&T.Pócs 03309/F. Herbarium No.: 37348

119. *Metalejeunea cucullata* (Reinw., Blume et Nees) Grolle.
TCA, near basecamp; 130-200m; Rocks; SHT 5354/2012; Specimen Examined: S.&T.Pócs 03289/C. Herbarium No.: 37349

120. *Phaeolejeunea amicornum* (Hurl.) Pócs.
TCA, ridge to the lowland rainforest; 460m; Soil surface; SHT 5355/2012; Specimen Examined: S.&T.Pócs 03307/F. Herbarium No.: 37350

121. *Ptychanthus striatus* (Lehm. Et Lindenb.) Nees.
TCA, in lowland rainforest; 500m; Deadwood and debris; SHT 5356/2012. Specimen Examined: S.&T.Pócs 03288/O. Herbarium No.: 37351

122. *Spruceanthus polymorphus* (Sande Lac.) Verd.
TCA, ridge in the upland forest; 800m; Soil surface; SHT 5357/2012; Specimen Examined: S.&T.Pócs 03252/N. Herbarium No.: 37352

123. *Thysananthus retusus* (Reinw., Blume et Nees) B.M. Thiers et Gradst.
TCA, slope to lowland rainforest; 460m; Tree trunk; SHT 5358/2012; Specimen Examined: S.&T.Pócs 03303/AE.
Herbarium No.: 37353

Lepicoleaceae

124. *Lepicolea rara* (Steph.) R.M. Schust. – (Hürlimann 1983)
WCA, slopes towards Waikarakarawa river; 500m; Deadwood and debris; SHT 5359/2013.
Herbarium No.: 37354

125. *Mastigophora diclados* (Brid. ex F. Weber) Nees. – (Campbell 1971)
MCA, slopes of the upland forest; 880m; Tree branches; SHT 5427/2012. Herbarium No.: 37355

Lepidoziaceae

126. *Bazzania erosa* (Reinw. Blume et Nees) Trevis. – (Campbell 1971)
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Tree trunk; SHT 5428/2012. Herbarium No.: 37356

127. *Bazzania falcifolia* (Steph.) H.A. Mill. – (Pócs et al. 2011)
MCA, vicinity of Mt. Vonolevu; 1111m; Deadwood and debris; SHT 5429/2012. Herbarium No.: 37357

128. *Bazzania tridens* (Reinw. Blume et Nees) Trevis. – (Campbell 1971)
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Tree branches; SHT 5430/2012. Herbarium No.: 37358

129. *Bazzania uncegera* (Reinw. Blume et Nees) Trevis. – (Jack and Stephani 1894)
MCA, vicinity of Mt. Vonolevu; 900-1000m; Deadwood and debris; SHT 5431/2012. Herbarium No.: 37359

130. *Bazzania vittata* (Gottsche) Trevis. – (Campbell 1971)
MCA, vicinity of old settlement; 130-200m; Rocks; SHT 5432/2012. Herbarium No.: 37360

131. *Kurzia gonyotricha* (Sande Lac.) Grolle. – (Pócs et al. 2011)
TCA, near basecamp; 130-200m; Deadwood and debris; SHT 5360/2012. Herbarium No.: 37361

132. *Psiloclada clandestina* Mitt. – (Campbell 1971)
TCA, near basecamp; 130-200m; Deadwood and debris; SHT 5361/2012. Herbarium No.: 37362

133. *Telaranea lindenberghii* (Gottsche) J.J. Engel et G.L. Merr. – (Gibbs 1909)
WCA, near basecamp; 130-200m; Deadwood and debris; SHT 5362/2013. Herbarium No.: 37363

134. *Telaranea pruinosa* (Herzog) J.J. Engel et G.L. Merr. – (Engel and Smith Merrill 2004)
WCA, old settlements near basecamp; 130-200m; Rocks; SHT 5363/2013. Herbarium No.: 37364

135. *Telaranea rosarioana* H.A. Mill. – (Pócs et al. 2011)
TCA, near basecamp; 180m; Rocks; SHT 5364/2012. Herbarium No.: 37365

136. *Zoopsidella caledonica* (Steph.) R.M. Schust. – (Schuster 1999)
TCA, near basecamp; 140m; Deadwood and debris; SHT 5365/2012. Herbarium No.: 37366

Marchantiaceae

137. *Marchantia vitiensis* Steph. – (Campbell 1971)
WCA, near Waikarakarawa river; 200m; Soil surface; SHT 5366/2013. Herbarium No.: 37367

Metzgeriaceae

138. *Metzgeria ciliata* Raddi. – (Campbell 1971)
TCA, near basecamp; 130-200m; Boulder; SHT 5367/2012. Herbarium No.: 37368

139. *Metzgeria furcata* (L.) Corda. – (Campbell 1971)
TCA, near basecamp; 130-200m; Rocks; SHT 5368/2012. Herbarium No.: 37369

140. *Metzgeria leptoneura* Spruce. – (Campbell 1971)
WCA, near Waikarakarawa river; 200m; Deadwood and debris; SHT 5369/2013. Herbarium No.: 37370

Pallaviciniaceae

141. *Pallavicinia lyellii* (Hook.) Carruth. – (Stephani 1900)
WCA, near Waikarakarawa river; 200m; Soil surface; SHT 5370/2013. Herbarium No.: 37371

142. *Symphyogynopsis gottscheana* (Mont. et Nees) Grolle. – (Campbell 1971)
TCA, vicinity of old settlement; 100m; Deadwood and debris; SHT 5371/2012. Herbarium No.: 37372

Plagiochilaceae

143. *Chiastocaulon dendroides* (Nees) Carl. – (Inoue 1970; Hürlimann 1974)
TCA, old settlement; 100m; Tree branches; SHT 5372/2012. Herbarium No.: 37373
144. *Chiloscyphus muricatus* (Lehm.) J.J. Engel et R.M. Schust. – (Gibbs 1909)
TCA, near basecamp; 130-200m; Soil surface; SHT 5373/2012. Herbarium No.: 37374
145. *Plagiochila abietina* (Nees) Nees et Mont. – (Hürlimann 1974)
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Deadwood and debris; SHT 5433/2012.
Herbarium No.: 37375
146. *Plagiochila arbuscula* (Brid. ex Lehm. et Lindenb.) Lindenb. – (Campbell 1971)
TCA, ridge towards upland forest; 800-900m; Deadwood and debris; SHT 5374/2012. Herbarium
No.: 37376
147. *Plagiochila bantamensis* (Reinw., Blume et Nees) Mont. – (Campbell 1971)
TCA, ridge towards upland forest; 800-900m; Rocks; SHT 5375/2012. Herbarium No.: 37377
148. *Plagiochila hampeana* Gottsche. – (Hürlimann 1974)
MCA, vicinity of Mt. Vonolevu; 900-1000m; Deadwood and debris; SHT 5434/2012. Herbarium
No.: 37378
149. *Plagiochila javanica* (Sw.) Nees et Mont. – (Gibbs 1909)
MCA, vicinity of Mt. Vonolevu; 900-1000m; Rocks; SHT 5435/2012. Herbarium No.: 37379
150. *Plagiochila sandei* Sande. – (Campbell 1971)
MCA, vicinity of Mt. Vonolevu; 900-1000m; Tree trunk; SHT 5394/2013. Herbarium No.: 37380
151. *Plagiochila teysmannii* Sande. – (Geissler and Bischler 1989)
MCA, vicinity of old settlement; 130-200m; Tree branches; SHT 5437/2012. Herbarium No.:
37381
152. *Plagiochilion braunianum* (Nees) S. Hatt. – (Hürlimann 1974)
TCA, near basecamp; 130-200m; Tree trunk; SHT 5376/2012. Herbarium No.: 37382
153. *Plagiochilion oppositum* Dozy ex Sande Lac. – (Hürlimann 1974)
MCA, vicinity of Mt. Vonolevu; 900-1000m; Tree branches; SHT 5438/2012. Herbarium No.:
37383
- Pleuroziaceae**
154. *Pleurozia gigantea* (F. Weber) Lindb.
TCA, ridges towards upland forest; 700m; Tree trunk; SHT 5277/2012. Specimen Examined:
A.Fife 12306. Herbarium No.: 37384
- Porellaceae**
155. *Porella elegantula* (Mont.) E.A. Hodgs. – (Campbell 1971)
TCA, ridge towards upland forest; 900m; Tree branches; SHT 5378/2012. Herbarium No.: 37385
- Pseudolepicoleaceae**
156. *Temnoma setigerum* (Lindenb.) R.M. Schust. – (Schuster 1968)
TCA, near basecamp; 200m; Tree trunk; SHT 5379/2012. Herbarium No.: 37386

Radulaceae

157. *Radula javanica* Gottsche.

TCA, along Wairovurovu stream; 130-200m; Tree branches; SHT 5380/2012; Specimen Examined: S.&T.Pócs 03269/A. Herbarium No.: 37387

158. *Radula lingulata* Gottsche. – (Yamada 1984)

WCA, old settlements near basecamp; 130-200m; Tree branches; SHT 5381/2013. Herbarium No.: 37388

159. *Radula protensa* Lindenb.

MCA, vicinity of old settlement; 130-200m; Rocks; SHT 5439/2012; Specimen Examined: S.&T.Pócs 03261/P. Herbarium No.: 37389

160. *Radula reflexa* Nees et Mont. – (So 2006)

TCA, near basecamp; alt. 130-200m; Deadwood and debris; SHT 5382/2012. Herbarium No.: 37390

161. *Radula retroflexa* Taylor.

TCA, ridge towards upland forest; 910m; Deadwood and debris; SHT 5383/2012; Specimen Examined: S.&T.Pócs 03729/V. Herbarium No.: 37391

162. *Radula scariosa* Mitt. – (So 2006)

TCA, near basecamp; 130-200m; Tree trunk; SHT 5384/2012. Herbarium No.: 37392

163. *Radula tjibodensis* K.I. Goebel. – (Campbell 1971)

TCA, near basecamp; 130-200m; Rocks; SHT 5385/2012. Herbarium No.: 37393

Schistochilaceae

164. *Schistochila aligera* (Nees et Blume) J.B. Jack et Steph. – (Campbell 1971)

TCA, ridge towards upland forest; 800m; Soil surface; SHT 5386/2012. Herbarium No.: 37394

165. *Schistochila blumei* (Nees) Trevis. – (Hürlimann 1998)

TCA, ridge towards upland forest; 890m; Deadwood and debris; SHT 5387/2012. Herbarium No.: 37395

166. *Schistochila caledonica* Steph. – (Campbell 1971)

WCA, old settlements near basecamp; 80m; Rocks; SHT 5388/2013. Herbarium No.: 37396

167. *Schistochila fijiensis* H. Buch et Herzog. – (Campbell 1971)

WCA, old settlements near basecamp; 130-200m; Soil surface; SHT 5389/2013. Herbarium No.: 37397

168. *Schistochila repleta* (Hook.f.et Taylor) Steph. – (Gibbs 1909)

WCA, stream of Waikarakarawa river; 200m; Soil surface; SHT 5390/2013. Herbarium No.: 37398

169. *Schistochila sciurea* (Nees) Schiffn. – (Hürlimann 1998)

MCA, slope to Mt. Vonolevu; 900m; Tree branches; SHT 5440/2012. Herbarium No.: 37399

170. *Solenostoma ariadne* (Taylor ex Lehm.) R.M. Schust. ex Vana et D.G. Long. – (Vana 1973)
MCA, vicinity of Mt. Vonolevu; 900m; Deadwood and debris; SHT 5441/2012. Herbarium No.:
37400

171. *Solenostoma haskarlianum* (Nees) R.M. Schust. ex Vana et D.G. Long. – (Campbell 1971)
MCA, vicinity of Mt. Vonolevu; 900m; Deadwood and debris; SHT 5442/2012. Herbarium No.:
37401

172. *Solenostoma tetragonum* (Lindenb.) R.M. Schust. ex Vana. – (Campbell 1971)
MCA, vicinity of Mt. Vonolevu; 900m; Deadwood and debris; SHT 5443/2012. Herbarium No.:
37402

173. *Solenostoma truncatum* (Nees) R.M. Schust. Ex Vana et D.G. Long. – (Vana and Piippo
1989)
TCA, vicinity of old settlement; 80m; Rocks; SHT 5391/2012. Herbarium No.: 37403

Treubiaceae

174. *Treubia lacunosa* (Colenso) Prosk. – (Gibbs 1909)
TCA, near basecamp; 130-200m; Deadwood and debris; SHT 5392/2012. Herbarium No.: 37404

Trichocoleaceae

176. *Trichocolea tomentella* (Ehrh.) Dumort. – (Mitten 1861)
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Deadwood and debris; SHT 5444/2012.
Herbarium No.: 37405

MOSSES

Brachytheciaceae

177. *Eurhynchium asperipes* (Mitt.) Dixon.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Rocks; SHT 5105/2012. Specimen Examined:
D.H.Norris 45172. Herbarium No.: 37406

178. *Trismegistia rigida* (Mitt.) Broth. 2
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Deadwood and debris; SHT 5447/2012. Specimen
Examined: A.Fife 12399. Herbarium No.: 37407

Calymperaceae

179. *Calymperes fasciculatum* Dozy & Molkenboer
TCA, ridge towards upland forest; 800m; Deadwood and debris; SHT 5129/2012. Specimen
Examined: D.H.Norris 45076. Herbarium No.: 37408

180. *Calymperes tahitense* (Sull.) Mitt.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Rocks; SHT 5102/2012. Specimen Examined:
D.H.Norris 44941. Herbarium No.: 37409

181. *Leucophanes octoblepharoides* Bridel
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Deadwood and debris; SHT 5106/2012. Specimen
Examined: D.H.Norris 45026. Herbarium No.: 37410

182. *Mitthyridium luteum* (Mitt.) H. Rob.
WCA, along Waikarakarawa river; 200m; Rocks; SHT 5507/2013; Specimen Examined: A.Fife
12394. Herbarium No.: 37411

183. *Mitthyridium obtusifolium* (Lindb.) H. Rob.
TCA, ridge in the upland forest; 800m; Soil surface; SHT 5231/2012; Specimen Examined:
D.H.Norris 44794. Herbarium No.: 37412

184. *Syrrhopodon albo-vaginatus* Schwaegrichen
TCA, ridge in the upland forest; 800m; Tree trunk; SHT 5119/2012; Specimen Examined:
D.H.Norris 44923. Herbarium No.: 37413

185. *Syrrhopodon tristichus* Nees ex Schwägr.
TCA, ridge in the upland forest; 700m; Tree trunk; SHT 5220/2012; Specimen Examined: A.Fife
12414. Herbarium No.: 37414

Cyrtopodaceae

186. *Bescherellia cryphaeoides* (Müll. Hal.) M. Fleisch.
TCA, ridge in the upland forest; 800m; Tree branches; SHT 5120/2012; Specimen Examined:
A.Fife 12383. Herbarium No.: 37415

Daltoniaceae

187. *Bryobrothera crenulata* (Broth. & Paris) Thér.
TCA, near basecamp; 200m; Rocks; SHT 5225/2012; Specimen Examined: D.H.Norris 45055.
Herbarium No.: 37416

188. *Daltonia contorta* Müll. Hal.
TCA, near basecamp; 130-200m; Tree branches; SHT 5235/2012; Specimen Examined:
D.H.Norris 44533. Herbarium No.: 37425

Dicranaceae

189. *Campylopodium euphorocladum* (Müll. Hal.) Besch.
MCA, near Waikarakarawa river; 200m; Soil surface; SHT 5228/2012; Specimen Examined:
A.Fife 12622. Herbarium No.: 37417

190. *Campylopus introflexus* (Hedw.) Brid.
TCA, near basecamp; 200m; Tree trunk; SHT 5230/2012; Specimen Examined: D.H.Norris
44570. Herbarium No.: 37418

191. *Campylopus umbellatus* (Schwägr. & Gaudich. ex Arn.) Paris.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Rocks; SHT 5232/2012; Specimen Examined:
D.H.Norris 44415. Herbarium No.: 37419

192. *Leucoloma tenuifolium* Mitt.
TCA, near basecamp; 400m; Soil surface; SHT 5506/2012; Specimen Examined: D.H.Norris
45190. Herbarium No.: 5506/2012

Entodontaceae

193. *Entodon solanderi* (Ångström) A. Jaeger.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Tree branches; Specimen Examined: SHT 5450/2012. D.H.Norris 44559. Herbarium No.: 37421

Garovagliaceae

194. *Euptychium setigerum* (Sull.) Broth.
TCA, near basecamp; 750m; Tree branches; SHT 5232/2012; Specimen Examined: D.H.Norris 45077. Herbarium No.: 37422

195. *Euptychium vitiense* Dixon.
TCA, ridge in the upland forest; 750m; Tree branches; SHT 5233/2012; Specimen Examined: D.H.Norris 44447. Herbarium No.: 37423

Hookeriaceae

196. *Cyathophorum tahitense* Besch
TCA, near basecamp; 130-200m; Rocks; SHT 5234/2012; Specimen Examined: A.Fife 12696. Herbarium No.: 37424

197. *Distichophyllum cuspidatum* (Dozy & Molke.) Dozy & Molke.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Deadwood and debris; SHT 5086/2012; Specimen Examined: A.Fife 12720. Herbarium No.: 37426

198. *Distichophyllum vitianum* (Sull.) Mitt
MCA, vicinity of Mt. Vonolevu; 200m; Tree trunk; SHT 5080/2012; Specimen Examined: D.H.Norris 45025. Herbarium No.: 37427

Hypnaceae

199. *Ectropothecium arcuatum* Mitt.
WCA, embankments of Waikarakarawa river; 350m; Rocks; SHT 5140/2013; Specimen Examined: A.Fife 12309. Herbarium No.: 37428

Hypnodendraceae

200. *Hypnodendron dendroides* (Brid.) Touw.
TCA, in the lowland rainforest; 350m; Tree trunk; SHT 5236/2012; Specimen Examined: A.Fife 12534. Herbarium No.: 37429

201. *Hypnodendron subspininervium* (Müll. Hal.) A. Jaeger
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Deadwood and debris; SHT 5000/2012; Specimen Examined: A.Fife 12337. Herbarium No.: 37430

Hypopterygiaceae

202. *Hypopterygium vriesei* Bosch & Sande Lac.
TCA, ridge towards upland forest; 850m; Rocks; SHT 5237/2012; Specimen Examined: D.H.Norris 45157. Herbarium No.: 37431

Lembophyllaceae

203. *Camptochaete porotrichoides* (Besch.) Broth.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Tree branches; SHT 5238/2012; Specimen

Examined: D.H.Norris 4482. Herbarium No.: 37432

204. *Camptochaete subporotrichoides* (Broth. & Geh.) Broth.
TCA, ridge towards upland forest; 800m; Rocks; SHT 5239/2012. Specimen Examined: A.Fife 12747. Herbarium No.: 37433

Leucobryaceae

205. *Leucobryum aduncum* Dozy & Molk.
TCA, vicinity of the upland forest; 800-900m; Rocks; SHT 5240/2012; Specimen Examined: D.H.Norris 44456. Herbarium No.: 37435

206. *Leucobryum candidum* (Brid. ex P. Beauv.) Wilson.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Soil surface; SHT 5241/2012; Specimen Examined: D.H.Norris 44819. Herbarium No.: 37436

207. *Leucobryum sanctum* (Brid.) Hampe.
TCA, vicinity of the upland forest; 800-900m; Soil surface; SHT 5445/2012; Specimen Examined: D.H.Norris 45099. Herbarium No.: 37434

208. *Leucobryum scalare* Müll. Hal. ex M. Fleisch.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Rocks; SHT 5242/2012; Specimen Examined: D.H.Norris 44452. Herbarium No.: 37437

Meteoriaceae

209. *Aerobryopsis longissima* (Dozy & Molk.) M.Fleisch.
WCA, near basecamp; 130-200m; Tree trunk; SHT 5243/2013; Specimen Examined: D.H.Norris 44260. Herbarium No.: 37438

210. *Aerobryopsis vitianus* (Sull.) M. Fleisch.
WCA; slopes towards Waikarakarawa river; 560m; Tree trunk; SHT 5244/2013; Specimen Examined: D.H.Norris 45491. Herbarium No.: 37439

211. *Aerobryopsis wallichii* (Brid.) M. Fleisch.
MCA; slopes of the upland forest, 900m; Rocks; SHT5245/2013; Specimen Examined: A.Fife 12685. Herbarium No.: 37440

212. *Floribundaria aeruginosa* (Mitt.) M. Fleisch.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Deadwood and debris; SHT 5107/2012; Specimen Examined: A.Fife 12705. Herbarium No.: 37441

213. *Meteorium buchananii* (Brid.) Broth.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Tree trunk; SHT 5049/2012; Specimen Examined: A.Fife 12746. Herbarium No.: 37442

214. *Papillaria helictophylla* (Mont.) Broth.
TCA, near basecamp; 275m; Tree branches; SHT 5246/2012; Specimen Examined: D.H.Norris 45451. Herbarium No.: 37443

215. *Papillaria leuconeura* (Müll. Hal.) A. Jaeger.
TCA, near basecamp; 1000-1100m; Rocks; SHT 5247/2012; Specimen Examined: D.H.Norris 44739. Herbarium No.: 37444

Neckeraceae

216. *Himantocladium plumula* (Nees) M. Fleisch.
TCA, track towards the upland forest; 750m; Deadwood and debris; SHT 5248/2012. Specimen Examined: D.H.Norris 45503. Herbarium No.: 37445

217. *Neckeropsis lepineana* (Mont.) M. Fleisch.
TCA, old settlement; 300m; Tree trunk; SHT 2059/2012; Specimen Examined: D.H.Norris 44454. Herbarium No.: 37446

218. *Pinnatella kuehliana* (Bosch & Sande Lac.) M. Fleisch.
TCA, near basecamp; 130-200m; Rocks; SHT 5249/2012; Specimen Examined: D.H.Norris 45270. Herbarium No.: 37447

219. *Thamnobryum sublatifolium* (Dixon) W. Schultze-Motel
MCA, vicinity of Mt. Vonolevu; 500m; Deadwood and debris; SHT 5452/2012; Specimen Examined: A.Fife 12363. Herbarium No.: 37448

Orthotrichaceae

220. *Macromitrium incurvifolium* (Hook. & Grev.) Schwägr.
WCA, side stream of Waikararawa river; 130-200m; Soil surface; SHT 5139/2013; Specimen Examined: A.Fife 12545. Herbarium No.: 37449

Polytrichaceae

221. *Pogonatum graeffeanum* (Mull.Hal.) A. Jaeger
WCA, side stream of Waikararawa river; 200m; Soil surface; SHT 5116/2013; Specimen Examined: A.Fife 12321. Herbarium No.: 37450

Pterobryaceae

222. *Calyptothecium seminerve* E.B. Bartram
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Deadwood and debris; SHT 5446/2012; Specimen Examined: D.H.Norris 44553. Herbarium No.: 37451

223. *Garovaglia elegans* (Dozy & Molk.) Hampe ex Bosch & Sande Lac.
TCA, ridge in the upland forest; 800m; Tree branches; SHT 5130/2012; Specimen Examined: A.Fife 12564. Herbarium No.: 37452

224. *Garovaglia powellii* Mitt.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Tree trunk; SHT 5081/2012; Specimen Examined: A.Fife 12546. Herbarium No.: 37453

225. *Symphysodon vitianus* (Sull.) Broth.
MCA, vicinity of Mt. Vonolevu; 1000-1111m; Deadwood and debris; SHT 5015/2012; Specimen Examined: D.H.Norris 45486. Herbarium No.: 5015/2012

226. *Symphysodontella cylindracea* (Mont.) M. Fleisch.
TCA, near basecamp; 130-200m; Deadwood and debris; SHT 5252/2012. Specimen Examined: D.H.Norris 44788. Herbarium No.: 37455

Ptychomniaceae

227. *Ptychomnion aciculare* (Brid.) Mitt.

TCA, ridges in the upland forest; 750-800m; Rocks; SHT 5253/2012; Specimen Examined: D.H.Norris 44788. Herbarium No.: 37456

Rhizogoniaceae

228. *Pyrrhobryum spiniforme* (Hedw.) Mitt.

MCA; vicinity of Mt. Vonolevu, 1000-1110m; Deadwood and debris; SHT 5111/2012; Specimen Examined: A.Fife 12709. Herbarium No.: 37457

229. *Rhizogonium graeffeanum* (Müll. Hal.) A. Jaeger.

WCA, side stream of Waikarakarawa river; 400m; Deadwood and debris; SHT 5251/2013; Specimen Examined: A.Fife 12729b. Herbarium No.: 37458

Sematophyllaceae

230. *Meiothecium hamatum* (Müll. Hal.) Broth.

TCA, near basecamp; alt. 130-200m; Tree branches; SHT 5254/2012; Specimen Examined: A.Fife 12631. Herbarium No.: 37459

231. *Rhapidorrhynchium amoenum* (Hedw.) M. Fleisch.

TCA, ridge in the upland forest; 800m; Deadwood and debris; SHT 5132/2012; Specimen Examined: A.Fife 12343. Herbarium No.: 37460

Spiridentaceae

232. *Himantocladium cyclophyllum* (C. Muell.) Fleisch.

WCA, near Waikarakarawa river; 400m; Tree trunk; SHT 5113/2013; Specimen Examined: D.H.Norris 44951. Herbarium No.: 37461

233. *Pelekium velatum* Mitt.

MCA, vicinity of Mt. Vonolevu; 1000-1111m; Deadwood and debris; SHT 5449/2012. Specimen Examined: D.H.Norris 45145. Herbarium No.: 37462

234. *Spiridens aristifolius* Mitt.

MCA, vicinity of Mt. Vonolevu; 1000-1111m; Rocks; SHT 5074/2012; Specimen Examined: A.Fife 12388. Herbarium No.: 37463

235. *Thuidium cymbifolium* (Dozy & Molkenboer) Dozy & Molkenboer.

WCA, side stream of Waikarakarawa river; 250m; Soil surface; SHT 5143/2013; Specimen Examined: D.H.Norris 45015. Herbarium No.: 37464

3. Discussion

The rapid bryophyte collection of the area led to the resulting data presented under the list of bryophyte section comprising, a total of 235 species assigned to 47 families and 105 genera. The percentage collection compositions are near the same significance percentages at all substrate types: deadwood and debris (26%) followed by the substrates of stones, rocks, and boulders (24%) and soil surface (21%). There was a total of 59 species of mosses in 44 genera and 22 families; 166 species of liverworts in 57 genera and 22 families; nine species of hornworts in four genera and three families. The largest families for each of the groups are the: Calymperaceae and Meteoriaceae (for mosses), Lejeuneaceae (for liverworts) and Folioceros (for hornworts). The data also showed that there were only a few genera with 1 species with the majority having a higher diversity e.g. *Radula* with 11 species, *Cololejeunea* with 24 species, *Leucobryum* with 4 species, *Aerobryopsis* with 3 species, *Folioceros* with 4 species. In spite of the discrepancies of recorded species, these are the first and initial accounts of the bryophyte flora and preliminary analysis of the diversity of bryophytes in Emalu. Overall, the taxa are an incredible find towards the limited information about the local diversity of bryophyte species of the area relative to the rest of Viti Levu and more so, broadening our current understanding about the bryophyte flora for Fiji.

In addition, there is a non-existing knowledge of cryptogamic plants specifically for the area of Emalu. The study by Campbell (1971) provides the closest other referenced collection from the Nadroga-Navosa provincial corridor on Viti Levu whereby the collection of A. C. Smith and W. Greenwood are annotated and documented. The location of their collections however lies south of the Emalu forest block. More so, collections from the other parts of Viti Levu and across Fiji are short lived surveys and expeditions from relatively accessible sites, and so this opportunity to list and annotate species collections even at the opportunistic level particularly in areas that are remote and inaccessible, is invaluable. Further, these findings support the region of Emalu as an extended location of the currently known distribution range of bryophytes on Viti Levu and other parts of Fiji.

Beyond the scope of the initial collection, the area of Emalu presents a unique and an incredible location with the opportunity to further existing collection.

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