
New Hawaiian bryophyte records from Herbarium Pacificum for 2023: 106 new island records for Hawaiian liverworts and hornworts¹

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Abstract. We report 106 new island records for Hawaiian liverworts and hornworts, including 27 species from Kaua'i, 24 from O'ahu, 15 from Moloka'i, 16 from Maui, and 24 from Hawai'i Island, based upon examination of specimens at the Herbarium Pacificum, Bernice P. Bishop Museum; National Tropical Botanical Garden Herbarium; Hawaii Volcanoes National Park Herbarium; Joseph F. Rock Herbarium, UH-Mānoa (HAW); Haleakalā National Park Herbarium (HALE); and our own collections.

INTRODUCTION

These records represent island record updates from the Staples & Imada (2006) checklist; see Judziewicz & Freire 2023 for nomenclatural updates from this same checklist. The new records are based on collections examined at or deposited in the Herbarium Pacificum, Bernice P. Bishop Museum (BISH); the National Tropical Botanical Garden Herbarium (PTBG); the Hawaii Volcanoes National Park Herbarium (HAVO); the Joseph F. Rock Herbarium, University of Hawai'i at Mānoa (HAW), the Haleakalā National Park Herbarium (HALE), and our own collections. According to collection labels at BISH and PTBG, duplicates of specimens have been distributed (as noted in the text) to these herbaria: ASSAM (Botanical Survey of India, Eastern Regional Centre), C (University of Copenhagen), CANB (Australian National Herbarium), CAS (California Academy of Sciences), CBM (Natural History Museum and Institute, Chiba), COLO (University of Colorado Museum of Natural History), E (Royal Botanic Garden, Edinburgh), F (Field Museum of Natural History), HIRO (Hiroshima University), HSNU (East China Normal University), MSB (Ludwig-Maximilians-Universität München), NY (New York Botanical Garden), TALL (Tallinn Botanical Garden), and UBC (University of British Columbia). Thomas was principal collector during the 17 May and 9 November 2022 visits to Mt Ka'ala, O'ahu, and Judziewicz and Freire are among several co-collectors during these forays. We follow the synonymy of Staples & Imada (2006), updated through the Söderström *et al.* (2016) checklist of world liverworts, the current version of Tropicos.org (<https://www.tropicos.org/home>) through 16 October 2023, and Judziewicz & Freire (2023).

1. Contribution No. 2004-001 to the Hawaii Biological Survey.

2. Distinguished Affiliates, Herbarium Pacificum, Bernice Pauahi Bishop Museum, 1525 Bernice Street, Honolulu, Hawai'i 96817, USA.

RESULTS

We report 106 new island records for Hawaiian liverworts and hornworts, including 27 species from Kauaʻi, 24 from Oʻahu, 15 from Molokaʻi, 16 from Maui, and 24 from Hawaiʻi Island.

ANTHOCEROTOPHYTA

Anthocerotaceae

Folioceros fuciformis (Mont.) D.C. Bharadw. **New Island Records**

This indigenous, subcosmopolitan species has been previously documented from Oʻahu, Maui, and Hawaiʻi (Staples & Imada, 2006), as well as Lānaʻi (Judziewicz, Freire & Bogner, 2023).

Material examined. **KAUAʻI:** Lihuʻe, ditch north of Lihuʻe Gap, with *Marchantia crenata*, 8 Jul 1909, *C.N. Forbes s.n.* (BISH); Hiʻi Mts, 21 Oct 2016, *C.N. Forbes 645k* (BISH); Wainiha Dam Road, 27 Feb 1956, *R.D. Svihla 2125* (BISH); Lihuʻe District; Headwaters of the N fork of the Wailua River, scattered trees and shrubs of *Metrosideros*, *Diplazium*, *Cyrtandra* spp., and *Perrottetia* 1.0–1.5 m tall, mat-forming on decaying boulder along drainage course, thallus dark green, 600–670 m, 30 Oct 1992, *T. Flynn 5113* (BISH, COLO, NY, PTBG, UBC); Lihuʻe District; Blue Hole, headwaters North Fork Wailua River, 22.0645°N, 159.47311°W, disturbed lowland wet forest, shaded rock face, mat-forming over mosses, with *Adiantum*, *Sphenomeris*, *Blechnum*, and numerous bryophytes, 389 m, 18 Jan 2015, *T. Flynn 8276* (BISH, CANB, PTBG); Lihuʻe District; Blue Hole, headwaters North Fork Wailua River, 22.0653°N, 159.49152°W, low-statured wet shrubland over rubble, with *Perrottetia*, *Pipturus*, *Cyclosorus*, *Diplazium*, *Broussaisia*, growing on rocks of dripping watercourse with *Marchantia crenata*; thallus deep, bright green, 600–700 m, 19 Feb 2016, *T. Flynn 8276* (BISH, CANB, PTBG). **MOLOKAʻI:** Settlement Trail, 30 Mar 1975, *P.K. Higashino 505* (BISH); Kapuʻuʻiki, mixed native and exotic vegetation, 750 ft [229 m], 23 Jan 1983, *W.P. Char 83-10* (BISH).

Dendrocerotaceae

Megaceros flagellaris (Mitt.) Steph.

New Island Records

This indigenous species (also known from Asia, other places in Oceania, and Madagascar) has been previously documented from Kauaʻi, Oʻahu, and Hawaiʻi (Staples & Imada, 2006).

Material examined. **MAUI:** Haleakalā, Waikamoi Preserve, 20°46′16–47″N, 156°13′34″–14′11″W, 1,860–2,012 m, 23 Feb 2023, *A.V. Freire, E.J. Judziewicz, H. Oppenheimer & Z. Pezillo 23-129d, 23-151* (BISH).

MARCHANTIOPHYTA

Acrobolbaceae

Acrobolbus integrifolius (A. Evans) Briscoe. **New Island Records**

This endemic species has been previously documented from Molokaʻi and Maui (Staples & Imada (2006) as *Tylimanthus integrifolius*); see Judziewicz & Freire (2023). The Cooke collection from Kauaʻi may represent a different species of *Acrobolbus*.

Material examined. **KAUAʻI:** Kalalau Flats, 28 Oct 1903, *C.M. Cooke, Jr. 103* (BISH); Lihuʻe/Waimea District boundary, Kawaikini Summit region, 22.06253°N, 159.4982°W, *Metrosideros-Cheirodendron* short-statured wet forest with open bog habitat dissected by headwater drainages, with genera such as *Melicope*, *Myrsine*, *Dubautia*, *Cheirodendron*, *Metrosideros*, *Coprosma*, *Labordia*, *Psychotria*, *Vaccinium*, and *Kadua*, fern genera include *Asplenium*, *Adenophorus*, *Dryopteris*, *Sadleria*, *Elaphoglossum*, *Polypodium*, *Lycopodium*, and *Cibotium*, bogs, liverwort, light green, lithophytic on

stream bank walls, common, 1,573 m, 21 Jan 2015, *K.R. Wood, S. Perlman & M. Query 16249* (CAS, MSB, PTBG). **HAWAII:** Kīlauea East Rift, kīpuka NE of Kane Nui o Hamo, lowland wet *Metrosideros-Cibotium* forest, 2,950 ft [900 m], 26 Jan 1984, *L.W. Cuddihy [Pratt] 1748a* (HAVO).

Adelanthaceae

Cuspidatula labrifolia (H.A. Mill.)

A.V. Freire & Judz.

New Island Records

This endemic species has been previously documented from Molokaʻi, Maui, and Hawaiʻi (Staples & Imada (2006) as *Jamesoniella labrifolia*); see Judziewicz & Freire (2023).

Material examined. **KAUAI:** Waiʻaleʻale summit, montane bogs with riparian vegetation of *Metrosideros-Cheirodendron*, 22.07442°N, 159.4956°W, 1,524 m, 8 Mar 2007, *K.R. Wood 12311* (PTBG). **OʻAHU:** Waiʻanae Mts, forest trail from Mauna Kapu north to summit of Palikea, on *Metrosideros* bark, 2,660–3,020 ft [810–920 m], 4 Nov 2021, *E.J. Judziewicz 21-966a* (BISH); Waʻahila Ridge Trail, growing on fallen *Metrosideros* branch in partially shaded, dry area, 14 Apr 1979, *C.S. Futa 33, 37* (BISH); Punaluʻu, 4 Aug 1935, *R.D. Svihla 35-175* (BISH); Koʻolau Mountain Range: Puʻu Kōnāhuanui Trail, 1,600–3,000 ft [488–914 m], 5 Dec 1970, *L.E. Bishop 127033* (BISH); Mt Kaʻala, 21°30′18–30″N, 158°08′36–45″W, 1,200 m, *M.K. Thomas et al. 536a* (BISH).

Aytoniaceae

Asterella parva (Steph.) H.A. Mill.

New Island Record

This endemic species was previously known only from Molokaʻi (Staples & Imada, 2006).

Material examined. **MAUI:** Haleakalā, Kahikinui State Forest Reserve, W fork Manawainui Gulch, rocks and cliffs in gulch, 1,509 m [4,950 ft], 27 Aug 2014, *H. Oppenheimer & K. Bustamente H81414* (PTBG).

Calypogeiaceae

Mnioloma fuscum (Lehm. & Lindenb.)

R.M. Schust.

New Island Records

This indigenous species has been previously documented from Maui and Hawaiʻi (Staples & Imada, 2006), as well as Lānaʻi (Judziewicz, Freire & Bogner, 2023). It is also found in the Old World tropics, Macaronesia, east to New Zealand, but is not found in the Americas (Váña *et al.* 2014).

Material examined. **KAUAI:** Alakaʻi Wilderness Preserve, Alakaʻi Swamp, bog NW of Mohihi, Montane wet sedgelands, bog, 22.12667°N, 159.5745°W, growing mixed with various other liverworts, 1,281 m, 27 May 2015, *T. Flynn 8161a* (PTBG). **OʻAHU:** Mt Kaʻala, on wet dripping roadside rock embankment below summit, 21°30′28″N, 158°08′43″W, 1,198 m, 6 May 2023, *M.K. Thomas s.n.* (BISH). **MOLOKAʻI:** W of Pēpēʻōpae, wet, shaded canyon [mixed with *Dumortiera hirsuta*], 23 Apr 1928, *O. Degener & H. Wiebke s.n.* (BISH).

Cephaloziaceae

Cephalozia lucens (A. Evans) Steph.

New Island Records

This endemic species has been previously documented from Maui (Staples & Imada (2006), as *Metahygrobiella lucens*); see Judziewicz & Freire (2023). Also found on Lānaʻi (Judziewicz, Freire & Bogner, 2023).

Material examined. **KAUAI:** Alaka'i Swamp, Waimea Drainage, W side, 3 Jul–17 Aug 1917, *C.N. Forbes 1648k* (BISH); Kōke'e State Park, Kāua'ikinana Stream W of Pihea Trail, *Metrosideros*-dominated wet forest, on vertical, shaded dripping wet face, 1,097 m, 23 Jul 1992, *T. Flynn 5083* (COLO, NY, PTBG, UBC); Along trail to Blue Hole, following North Fork Wailua River from gauging station, 22.0645°N, 159.4731°W, degraded lowland wet forest, on dripping rock face, 389 m, 18 Feb 2016, *T. Flynn et al. 8257* (ASSAM, BISH, CANB, CAS, HSNU, PTBG); Kawaihau Dist, Makaleha Mountains, Keālia Forest Reserve, 22.11705°N, 159.408167°W, short-statured wet forest with open weedy grass areas, dominated by *Metrosideros* and *Dicranopteris*, on rocks in small drainage, bright lime green, 887 m, 23 Feb 2016, *T. Flynn et al. 8326* (BISH, PTBG); Hanalei Dist, Nāmoloakama Summit, *Metrosideros* mixed montane shrubland, epipetric on basalt stream walls, 22.14°N, 159.5°W, 1,305 m, 26 Feb 2019, *K.R. Wood 18105* (PTBG). **OAHU:** Mt Ka'ala, on wet dripping roadside rock embankment below summit, 21°30'18–30"N, 158°08'36–45"W, 1,200 m, 17 May 2022, *M.K. Thomas et al. 366, 385a* (BISH); same locality, 9 Nov 2021, *M.K. Thomas et al. 479, 480b, 522b, 540c* (BISH). **HAWAII:** Hawaii Volcanoes National Park, 'Ōla'a Trench, montane wet *Metrosideros* forest, mixed with *Leucobryum seemannii*, 3,600 ft [1,097 m], 10 Jul 2001, *M. Waite s.n.* (HAVO); Hawaii Volcanoes National Park, Kāhuku Unit, 19°14'46–52"N, 155°36'02–22"W, terrestrial in *Metrosideros* forest, 1,885 m, 19 Aug 2022, *A.V. Freire & E.J. Judziewicz 22-700* (HAVO); Hakalau Forest National Wildlife Refuge, Honohina Gulch, at the Refuge Administrative Site, just east of the boundary: 19°49'12"N, 155°19'57"W, 6,450 ft [1,965 m], 24 Mar 2023, *A.V. Freire & E.J. Judziewicz 23-192a* (BISH), *23-209c* (BISH), *23-210b* (BISH), *23-211b* (BISH); Hakalau Forest National Wildlife Refuge, road below Pua 'Ākala cabin, paralleling 'Āwehi Gulch, 19°47'12–21"N, 19°47'12–21"N, 5,750–6,200 ft [1,753–1,890 m], 26 Mar 2023, *A.V. Freire & E.J. Judziewicz 23-239b* (BISH), *23-250b* (BISH); Pu'u O 'Umi Natural Area Reserve, forest of *Metrosideros polymorpha* and *Cibotium glaucum*, trail from 'Eke gate NE to 'Eke summit and then down steep slope to margin of sedge bog, 20°04'55"–05'00"N, 155°43'30–50"W, 5,000–5,300 ft [1,525–1,615 m], 5 Sep 2023, *A.V. Freire & E.J. Judziewicz 23-595* (BISH).

Cephaloziellaceae

Cephaloziella heteroica (C.M. Cooke) Douin. **New Island Records**

This endemic species has been previously documented from Kaua'i, Moloka'i, and Maui (Staples & Imada, 2006), as well as Lāna'i (Judziewicz, Freire & Bogner, 2023). It is common in the Ka'ū Desert of Hawai'i Island, often growing with *Isopaches bicrenatus* (Hoffm.) H. Buch.

Material examined. **OAHU:** Pauoa Flats to Kōnāhuanui, Castle Trail, 11 Mar 1915, *C.N. Forbes 2155bO* (BISH). **HAWAII:** Hawaii Volcanoes National Park, Kāhuku Unit, 19°06'13"N, 155°41'04"W, terrestrial on embankment along road in open *Metrosideros* forest, 960 m, 12 Feb 2021, *A.V. Freire & E.J. Judziewicz 21-220* (HAVO); Hawaii Volcanoes National Park, Kāhuku Unit, 19°10'37"N, 155°41'17"W, terrestrial in koa forest, 1,600 m, 9 Aug 2022, *A.V. Freire & E.J. Judziewicz 22-632* (HAVO); Hawaii Volcanoes National Park, Chain of Craters road, 19°18'53"N, 155°07'45"W, shaded embankment on hairpin turn, 400 m, 9 Aug 2022, *A.V. Freire & E.J. Judziewicz 21-229* (HAVO); Hawaii Volcanoes National Park, trail 0.8 mi N of end of Mauna Loa Road, in shaded pit on moist shelf, 19°30'02"N, 155°23'15"W, 2,120 m, 20 Apr 2021, *A.V. Freire & E.J. Judziewicz 21-475a* (HAVO); Hawaii Volcanoes National Park, off Firebreak Road off Mauna Loa Road, in shaded pit on moist shelf, 19°26'22"N, 155°17'12"W, 1,220 m, 25 Apr 2021, *A.V. Freire & E.J. Judziewicz 21-483* (HAVO); Hawaii Volcanoes National Park, Footprints Trail, in moist ash embankment in full sun, 19°21'11"N, 155°21'39"W, 888 m, 22 Oct 2020, *A.V. Freire & E.J. Judziewicz 20-886* (HAVO); Hawaii Volcanoes National Park, near Kulanaokuaiki Campground, in desert in moist ash embankment in full sun, 19°20'34"N, 155°16'42"W, 972 m, 24 Oct 2020, *A.V. Freire & E.J.*

Judziewicz 20-909 (HAVO); Hawaii Volcanoes National Park, Mauna Loa Road, Kīpukakulalio, terrestrial in koa forest, 19°28'35"N, 155°21'55"W, 1,725 m, 13 Nov 2020, *A.V. Freire & E.J. Judziewicz 20-963* (HAVO).

Cephaloziella kiaeri (Austin) Pearson

New Island Records

This indigenous, nearly pantropical species has been previously documented from Kauaʻi and Oʻahu (Staples & Imada (2006), as *Cephaloziella lilae*); see Judziewicz & Freire (2023).

Material examined. **MAUI:** Haleakalā, Waikamoi Preserve, 20°46'16–47"N, 156°13'34"–14°11"W, 1,860–2,012 m, 23 Feb 2023, *A.V. Freire, E.J. Judziewicz, H. Oppenheimer & Z. Pezzillo 23-68b, 23-69c, 23-103, 23-106* (BISH). **HAWAII:** Hawaii Volcanoes National Park, ʻŌlaʻa Trench, montane wet *Metrosideros* forest, 3,600 ft [1,097 m], 5 June 2001, *M. Waite s.n.* (HAVO); Hawaii Volcanoes National Park, Halemaʻumaʻu Trail, 19°25'32"N, 155°15'30"W, on large rock on side of trail, 1,140 m, 23 Nov 2021, *A.V. Freire & E.J. Judziewicz 21-987* (HAVO); Puʻu Makaʻala N.A.R., near old Mauna Loa Boys School, *Metrosideros-Cibotium* kīpuka, 19°34'45"N, 155°20'03"W, 1,760 m, 19 Aug 2021, *A.V. Freire & E.J. Judziewicz 21-664* (BISH); Puʻu Makaʻala N.A.R., near old Mauna Loa Boys School, *Metrosideros-Cibotium* kīpuka, 19°35'38"N, 155°20'28"W, 1,750 m, 25 Aug 2021, *A.V. Freire & E.J. Judziewicz 21-683a* (BISH); Hakalau Forest National Wildlife Refuge, road below Pua ʻĀkala cabin, paralleling ʻĀwehi Gulch, 19°47'12–21"N, 19°47'12–21"W, elevation 5,750–6,200 ft [1,753–1,890 m], 26 Mar 2023, *A.V. Freire & E.J. Judziewicz 23-224* (BISH).

Cephaloziella kilohanensis (C.M. Cooke) Douin **New Island Records**

This endemic species has been previously documented from Kauaʻi and Maui (Staples & Imada, 2006).

Material examined. **OʻAHU:** Mt. Tantalus, 17 Mar 1919, *C.N. Forbes 25390* (BISH). **HAWAII:** Volcano Guest House, 19°25'31"N, 155°12'25"W, shaded open ground next to cabin, in mats with *Kurzia hawaïca* and *Telaranea nematodes*, 1,050 m, 30 Apr 2021, *A.V. Freire & E.J. Judziewicz 21-493a* (BISH).

Fossombroniaceae

Fossombronia pusilla (L.) Nees

New Island Records

This indigenous species has been previously documented from Maui (Staples & Imada, 2006). It is known from Europe, Australia, and is scattered in the north and south temperate zones and Oceania. These Maui collections (from Kraysky *et al.*, 2005) were not examined by us: Haleakalā National Park, near Lelewi overlook, on W-facing slope, on soil at exposed place, 2,550 m, 5 June 1998, *T. Furuki 14735* (CBM); Haleakalā National Park, near Palikū Cabin, along trail on cliff of crater, on rock, 2,050 m, 23 June 1998, *T. Furuki 15083* (CBM). Observed and photographed in Haleakalā National Park on 25 Feb 2023 by Zach Pezzillo in the company of A.V. Freire & E.J. Judziewicz.

Material examined. **KAUAI:** Poʻomau Canyon, on damp, shaded soil, 1,400–1,800 ft [460–590 m], 19 Jan 1993, *T. Flynn 5207* (PTBG). **HAWAII:** Hawaii Volcanoes National Park, trail 0.8 mi N of end of Mauna Loa Road, in shaded pit on moist shelf, patch 10 cm across, 19°30'02"N, 155°23'15"W, 2,120 m, 20 Apr 2021, *A.V. Freire & E.J. Judziewicz 21-474* (HAVO); same locality, 17 May 2021, *A.V. Freire & E.J. Judziewicz 21-509* (HAVO); Mauna Kea, Mānā Road at Wailuku River crossing, 2,085 m, 26 Mar 2023, *A.V. Freire & E.J. Judziewicz 23-328* (BISH); Hawaii Volcanoes National Park, Mauna Loa Road, spur road on NE side of second cattleguard, 19°27'42"N,

155°20'23"W, 1,502 m, 23 Apr 2022, *A.V. Freire & E.J. Judziewicz 23-321* (BISH); Amaumau Road, roadside soil embankment next to agricultural experiment station, 19°28'23"N, 155°14'14"W, 1,242 m, 11 May 2023, *A.V. Freire & E.J. Judziewicz 23-345* (BISH).

Herbertaceae

Herbertus hawaiiensis H.A. Mill.

New Island Records

This indigenous species, also known from Canada (British Columbia) has been previously documented from Maui (Staples & Imada, 2006).

Material examined. **KAUA'I:** Lihu'e Dist, Blue Hole, headwaters North Fork Wailua River, low-statured wet shrubland over rubble, clump-forming; leaves dark reddish-brown, 600 m, 19 Feb 2016, *T. Flynn 8271, 8278* (BISH, PTBG); same locality, 23 Feb 2016, *T. Flynn 8316* (BISH, PTBG). **O'AHU:** Wai'anae Mountain Range, summit of Mt. Ka'ala, 1,219 m, 23 Jul 1977, *G.Y. Daida 57* (BISH).

Lejeuneaceae

Acrolejeunea sandvicensis (Gottsche) Steph. **New Island Records**

This indigenous, mainly subtropical Asian species has been previously documented from O'ahu and Hawai'i (Staples & Imada (2006) as *Trocholejeunea sandvicensis*); see Judziewicz & Freire (2023).

Also found on Lāna'i (Judziewicz, Freire & Bogner, 2023). It is common and weedy in wet lowland areas.

Material examined. **KAUA'I:** Kipu, Aug 1897, *C.M. Cooke, Jr. 7 CB a6* (BISH); Keahu, 25 Oct 1903, *C.M. Cooke, Jr. 55* (BISH); Lehuamakanoi [Kōke'e area], 25 Oct 1903, *C.M. Cooke, Jr. 78* (BISH); Hā'ena, end of road, along Nā Pali Trail, 28 Feb 1956, *R.D. Svihla 2127* (BISH); Waimea Dist, Wai'alaie Ridge, N-facing slopes, *Metrosideros-Acacia* mesic forest, on *Euphorbia atrococca*, green-yellow or tinged purple-red, common, 1,100 m, *K.R. Wood, S. Walsh & S. Perlman 18178* (BISH, E, F, PTBG). **MOLOKA'I:** Honomuni, 23 Dec 1953, *E.T. Ozaki 709* (BISH); Hālawā Stream, 100 ft [30 m], 26 Dec 1953, *E.T. Ozaki 836* (BISH); Wailau, Mapulehu Trail, 29 Dec 1953, *E.T. Ozaki 911, 936* (BISH); gulch S of Pakuwoaku Ridge, Wailau Valley, 500 ft [152 m], 7 Apr 1977, *R.L. Stemmermann 2069* (BISH); far eastern Moloka'i, just before end of road (Kamehameha V Hwy or 450), secondary vegetation with *Syzygium cumini*, *Syzygium uniflora*, *Aleurites*, *Furcraea*, *Leucaena*, on rock in full sun, 19 Jan 2020, *T. Flynn 9075* (BISH, PTBG). **MAUI:** Kīpahulu Valley, E of Palikea, partial shade, moist forest; on rock, 1,400 ft [430 m], 19 Jul 1980, *G.Y. Daida 704* (BISH); East Maui, Makawao District, Kaupakulua ahu, W side of 'Ōpana Point, northing: 2818297, easting: 782302, 7 May 2021, *H.K. Oppenheimer H72113* (BISH); West Maui, road to Kahakulua, wet bank of gully, 31 Dec 1955, *R.D. Svihla 1748, 1755* (BISH); Haleakalā, Waikamoi Preserve, 20°46'16–47"N, 156°13'34"–14'11"W, 1,860–2,012 m, 23 Feb 2023, *A.V. Freire, E.J. Judziewicz, H. Oppenheimer & Z. Pezzillo 23-143* (BISH).

Cheilolejeunea decursiva (Sande Lac.)

New Island Record

R.M. Schust.

This indigenous species, also found in tropical Asia and Africa, has previously been documented from Kaua'i, O'ahu, Moloka'i, and Maui (Staples & Imada, 2006), as well as Lāna'i (Judziewicz, Freire & Bogner, 2023).

Material examined. **HAWAII:** Hawaii Volcanoes National Park, 'Ōla'a Trench, montane wet *Metrosideros-Cibotium* forest, 1,050 m, 5 Jun 2001, *M. Waite s.n.* (HAVO); Forest N of Nāpau Crater, closed wet *Metrosideros* forest, 2,680 ft [816 m], 27 Apr 1984, *L.W. Cuddihy [Pratt] 1524c* (HAVO); South Kona Dist, Kona Unit, Hakalau National Wildlife Refuge, closed *Metrosideros* forest, epiphyll on *Adenophorus pinnatifidus*, 21 Aug 2003, *L.W. Pratt 3356a* (HAVO).

***Cheilelejeunea stenoschiza* (Ångstr.) A. Evans New Island Record**

This endemic species has been previously documented from Kauaʻi, Oʻahu, Molokaʻi, and Maui (Staples & Imada, 2006), as well as Lānaʻi (Judziewicz, Freire & Bogner, 2023).

Material examined. **HAWAII:** Hawaii Volcanoes National Park, *A.V. Freire & E.J. Judziewicz 21-822a* (HAVO); Volcano Guest House, 19°25'31"N, 155°12'25"W, on upper canopy branches of 15 m tall koa tree, 1,050 m, 22 May 2022, *A.V. Freire & E.J. Judziewicz 22-548* (BISH), same location, 1 Oct 2021, *A.V. Freire & E.J. Judziewicz 22-822* (BISH); Volcano, Akatsuka Gardens, 19°27'15"N, 155°10'35"W, 2,800 ft [855 m], 8 Feb 2022, *A.V. Freire & E.J. Judziewicz 22-239* (BISH).

***Cololejeunea obcordata* (Austin) A. Evans New Island Records**

This endemic species has been previously documented from Oʻahu, Molokaʻi, and Maui (Staples & Imada, 2006).

Material examined. **KAUAI:** Kilohana, 20 Oct 1903, *C.M. Cooke, Jr. 145, 146* (BISH); Waimea drainage basin, W side, 3 Jul 1917, *C.N. Forbes 1509K* (BISH); Keʻāku, cave near Waiʻaleʻale, 4,500 ft [1,372 m], 25 Oct 1903, *C.M. Cooke, Jr. 47* (BISH). **HAWAII:** Halealoha to Wailuku River, 6 Jun 1915, *C.N. Forbes 736fH, 743H* (BISH); Hawaii Volcanoes National Park, pit crater W of Nāpau Crater, epiphyte on *Elaphoglossum pellucidum*, 2,650 ft [808 m], 21 Nov 1995, *T. Belfield 11b* (HAVO); Puʻu Makaʻala N.A.R., ca. 1 mi N of end of Amaumau Road, 19°27–28"N, 155°16'W, 1,325 m, 25 Jan 2022, *A.V. Freire & E.J. Judziewicz 22-177* (BISH); Hawaii Volcanoes National Park, Nāhuku Lava Tube, 19°24'50"N, 155°14'17"W, 1,190 m, 18 Apr 2021, *A.V. Freire & E.J. Judziewicz 21-468a* (HAVO).

***Cololejeunea planissima* (Mitt.) Abeyw. New Island Records**

This indigenous species (also found in Asia, Australia, and elsewhere in Oceania) has been previously documented from Kauaʻi and Oʻahu (Staples & Imada (2006), as *Cololejeunea lanciloba*); see Judziewicz & Freire (2023). Also found on Lānaʻi (Judziewicz, Freire & Bogner, 2023).

Material examined. **MOLOKAʻI:** Pelekunu Valley: Molokaʻi Forest Reserve, on leaves of Myrtaceous tree; common, 10 m, 10 Jan 1975, *P.K. Higashino s.n.* (BISH); Molokaʻi Forest Reserve, on *Pelekium*, 10 Jan 1975, *P.K. Higashino 75-706* (BISH). **MAUI:** Haʻikū, Maui Ranch Estates, 20°54'05"N, 156°16'49"W, on trunk of planted palm, 285 m, 25 Feb 2023, *A.V. Freire & E.J. Judziewicz 23-170* (BISH). **HAWAII:** Waiʻpio Valley, epiphyte on leaves of *Syzygium cuminii*, 29 Dec 1971, *L. Yoshida s.n.* (BISH); Pohoku [sic] Valley Road, streambed, 7 Jan 1956, *R.D. Svihla 1908* (BISH); Waiʻpio Valley, on *Syzygium cuminii*, 29 Dec 1971, *L. Yoshida s.n.* (BISH); 550 Lama Street, Hilo, epiphytic on cultivated *Camellia* sp., 53 m, 26 Jan 2023, *A.V. Freire & E.J. Judziewicz 23-46* (BISH); Ala Road, Kurtistown, 275 m, 12 Jan 2023, 19°35'12"N, 155°04'30"W, *A.V. Freire & E.J. Judziewicz 23-24a* (BISH); Hanawī Stream NW of Hilo, 25 m, 23 Aug 2023, 19°48'15–30"N, 155°05'35–40"W, *A.V. Freire & E.J. Judziewicz 22-813a* (BISH); Manukā Park loop trail, on living leaves of exotic shrub *Ochna serrulata*, 550 m, 19°06.5–07.0'N, 155°49.0–49.5'W, 9 Jan 2022, *A.V. Freire & E.J. Judziewicz 22-58, 63, 65b* (BISH); Captain Cook, Amy Greenwell Ethnobotanical Garden, 19°29'30"N, 155°54'44"W, on trunk of *Calophyllum inophyllum*, 445 m, 9 Oct 2021, *A.V. Freire & E.J. Judziewicz 21-908* (BISH).

***Lejeunea pacifica* Mont. New Island Record**

This indigenous species, also found in Asia, has been previously documented from Kauaʻi, Oʻahu, Molokaʻi, and Hawaiʻi (Staples & Imada, 2006), as well as Lānaʻi (Judziewicz, Freire & Bogner, 2023).

Material examined. **MAUI:** Honokahau Drainage Basin, 25 Sep 1917, *C.N. Forbes 612aM* (BISH); East Maui, Waikamoi, 7 Jul 1935, *R.D. Svihla 35-274* (BISH); Wailua to Hāna, 1 Jan 1956, *R.D. Svihla 1858* (BISH); Ko‘olau Dist, Pi‘ina‘au at “pig camp”, *Metrosideros* wet forest, 20.797°N, 156.197°W, 2,800 ft [853 m], 21 Oct 2021, *K. Severson 038* (BISH).

***Microlejeunea lunulatiloba* Horik.**

New Island Record

This indigenous species, also found elsewhere in Oceania, has been previously documented from O‘ahu, Moloka‘i, Maui, and Hawai‘i (Staples & Imada, 2006), as well as Lāna‘i (Judziewicz, Freire & Bogner, 2023).

Material examined. **KAUAI:** Waiakoali, 27 Oct 1903, *C.M. Cooke, Jr. 89* (BISH) [mixed with *Radula cordata*]; Kōke‘e State Park, 300 m W of Kalalau Overlook, 22°08'55"N, 159°38'10"W, 1,220 m, 4 Apr 2022, *A.V. Freire, E.J. Judziewicz & T. Flynn 22-532d* (PTBG).

***Myriocoleopsis minutissima* (Sm.) R.L. Zhu,**

Y. Yu & Pócs subspecies *minutissima*

New Island Records

This indigenous, pantropical subspecies has been previously documented from Hawai‘i Island (Judziewicz & Freire, 2023), as well as Lāna‘i (Judziewicz, Freire & Bogner, 2023).

Material examined. **MOLOKA‘I:** Between Maunahui and Waikolu Canyon, 3,000–3,500 ft [914–1,067 m], Jul 1903, *C.M. Cooke, Jr. 14, 15* (BISH). **MAUI:** West Maui, Maunaho‘oma, Jun 1910, *C.N. Forbes s.n.* (BISH); East Maui, Hāna, 7 Jul 1935, *R.D. Svihla 35-243* (BISH).

***Spruceanthus planiusculus* (Mitt.)**

X.Q. Shi, R.L. Zhu & Gradst.

New Island Records

This indigenous species, also found in Asia, has been previously documented from O‘ahu (Staples & Imada (2006) as *Archilejeunea planiuscula*; see Judziewicz & Freire (2023). Also found on Lāna‘i (Judziewicz, Freire & Bogner, 2023).

Material examined. **MAUI:** Honokahau Drainage Basin, 25 Sep 1917, *C.N. Forbes 603m* (BISH); West Maui, road to Kahakuloa, 31 Dec 1955, *R.D. Svihla 1759* (BISH); Wailua near Kīpahulu, 2 Jan 1956, *R.D. Svihla 1828* (BISH); road to Hāna, Waikamoi Stream, 1 Jan 1956, *R.D. Svihla 1836* (BISH). **HAWAI‘I:** Honoka‘a, mouth of old lava tube, 7 Jan 1956, *R.D. Svihla 1907* (BISH); ‘Akaka Falls, 9 Jan 1956, *R.D. Svihla 1937* (BISH); Kāhuku Ranch, Ka‘ū silversword area, 20 Aug 1977, *R.L. Stemmermann 2508* (BISH); Onomea, on bark of exotic tree, 19°40'22"N, 155°03'09"W, 25 m, 14 Dec 2022, *A.V. Freire & E.J. Judziewicz 22-989* (BISH); 4 mi NW of Hilo, along Honoli‘i Stream, 19°45'30"N, 155°04'44"W, 18 m, 4 Mar 2022, *A.V. Freire & E.J. Judziewicz 22-244* (BISH),

***Spruceanthus polymorphus* (Sande Lac.) Verd. New Island Records**

This indigenous species, also found in Asia, has been previously documented from Kaua‘i and O‘ahu (Staples & Imada, 2006), as well as Lāna‘i (Judziewicz, Freire & Bogner, 2023).

Material examined. **MOLOKA‘I:** Far eastern Moloka‘i, just before end of road (Kamehameha V Hwy or Hwy 450), secondary vegetation with *Syzygium cuminii*, *Syzygium uniflora*, *Aleurites*, *Furcraea*, *Leucaena*, on rocks, 61 m, 19 Jan 2020, *T. Flynn 9072a* (BISH, PTBG). **MAUI:** West Maui, road to Kahakuloa, wet bank of gully, 31 Dec 1955, *R.D. Svihla 1756* (BISH). **HAWAI‘I:** Hilo, Nani Mau Gardens, Makalika Street, 19°40'22"N, 155°03'09"W, on exotic tree trunk, 50 m, 22 Oct 2022, *A.V. Freire & E.J. Judziewicz 22-893.5a* (BISH); Manukā Park loop trail, on bark, common, 500–600 m, 19°06.5–07.0'N, 155°49.0–49.5'W, *A.V. Freire & E.J. Judziewicz 22-62, 82, 83a* (BISH).

Lepidoziaceae***Bazzania baldwinii*** A. Evans**New Island Records**

This endemic species has been previously documented from Kauaʻi, Molokaʻi, and Maui (Staples & Imada, 2006).

Material examined. **OʻAHU:** Mt Kaʻala, on wet dripping roadside rock embankment below summit, 21°30'18–30"N, 158°08'36–45"W, 1,200 m, 17 May 2022, *M.K. Thomas et al. 369c, 388c* (BISH).

Bazzania inaequalis C.M. Cooke**New Island Records**

This indigenous species (Miller, 1983) has been previously documented from Kauaʻi and Oʻahu (Staples & Imada, 2006), as well as Lānaʻi (Judziewicz, Freire & Bogner, 2023).

Material examined. **MAUI:** West Maui, ridge, tree trunk, 4,000 ft [1,219 m], anno 1875, *D.D. Baldwin 68* (BISH). **HAWAII:** Hilo, Territory Veterinary Quarantine Station, 19 May 1915, *C.N. Forbes 577h, 593h* (BISH); Laupahoehoe, 1,040 m, 4 Feb 1982, *L.W. Pratt 967-2* (HAVO); Hawaii Volcanoes National Park, Boundary Kīpuka, 2,350 ft [715 m], 1984, *P.K. Higashino 9978a* (HAVO); Volcano, Niaulani Forest, 19°25'35"N, 155°14'23"W, 1,160 m, 2 Feb 2022, *A.V. Freire & E.J. Judziewicz 22-188* (BISH).

Bazzania nuuanuensis C.M. Cooke**New Island Records**

This endemic species has been previously documented from Oʻahu and Hawaiʻi (Staples & Imada, 2006).

Material examined. **KAUAI:** W Waimea drainage basin, 3 Jul 1917, *C.N. Forbes 1479K, 1579K* (BISH). **MAUI:** ʻUkulele, Jul 1919, *C.N. Forbes 1468M, 1579aM* (BISH); N Haleakalā, 15 Aug 1919, *C.N. Forbes 1468M* (BISH); West Maui, Maunahoʻoma, Jun 1910, *C.N. Forbes s.n.* (BISH), N Haleakalā, below Waiʻānapanapa, Aug 1919, *C.N. Forbes 1451M* (BISH); Kīpahulu Valley, Transect 6, closed low *Metrosideros* forest, on trunk, 6,700 ft [2,042 m], 17 Jul 1983, *L.W. Cuddihy [Pratt] 1418* (HAVO).

Lepidozia australis (Lehm. & Lindenb.) Mitt. **New Island Record**

This endemic species has been previously documented from Kauaʻi and Maui (Staples & Imada, 2006).

Material examined. **HAWAII:** Palakea fence line, 29 Jun 1915, *C.N. Forbes 1013aH* (BISH); Launaiʻa, in koa-lehua forest, 6,000–6,500 ft [1,830–1,980 m], 17 Aug 1935, *M.C. Neal 838* (BISH); Hawaii Volcanoes National Park, lava tube trail, 3,900 ft [1,189 m], 6 Jan 1956, *R.D. Svihla 2055* (BISH); ʻŌlaʻa Forest Tract; 1 km NE of the first bend in Wright Road, 1,150 m, 28 Mar 1979, *P.J. Burton 414* (BISH); Hawaii Volcanoes National Park, Volcano House, 19°25'53"N, 155°16'49"W, 1,219 m, 25 Jan 2020, *Freire & E.J. Judziewicz 20-22a* (HAVO); Hawaii Volcanoes National Park, Large ʻŌlaʻa Forest Tract, Wright Road, 19°25'53"N, 155°16'49"W, 1,170 m, 19 Feb 2021, *A.V. Freire & E.J. Judziewicz 21-271* (HAVO); Volcano, Niaulani Forest, 19°25'35"N, 155°14'23"W, 1,160 m, 13 Mar 2021, *Freire & E.J. Judziewicz 21-337* (BISH); Hawaii Volcanoes National Park, Volcano House, 19°25'53"N, 155°16'49"W, 1,219 m, 25 Jan 2020, *Freire & E.J. Judziewicz 20-22a* (HAVO); Hawaii Volcanoes National Park, Kāhuku Unit, near small waterholes along road, 19°13'36"N, 155°38'00"W, 1,865 m, 9 Aug 2022, *A.V. Freire & E.J. Judziewicz 22-682* (HAVO); Puʻu Makaʻala N.A.R., near old Mauna Loa Boys School, *Metrosideros-Cibotium* kīpuka, 19°34'45"N, 155°20'03"W, 1,760 m, 19 Aug 2021, *A.V. Freire & E.J. Judziewicz 21-648* (BISH); Puʻu Makaʻala N.A.R., ca. 1 mi N of end of Amaumau Road, 19°27–28"N, 155°16"W, 1,325 m, 16 June 2022, *A.V. Freire & E.J. Judziewicz 22-613b, 22-616b, 22-618b* (BISH); Hakalau Forest National Wildlife Refuge, road below Pua ʻĀkala

cabin, paralleling 'Āwehi Gulch, 19°47'12–21"N, 19°47'12–21"W, elevation 5,750–6,200 ft [1,753–1,890 m], 26 Mar 2023, *A.V. Freire & E.J. Judziewicz 23-228b* (BISH), *23-237a* (BISH); *23-246b* (BISH); *23-279* (BISH); Pu'u O 'Umi Natural Area Reserve, forest of *Metrosideros polymorpha* and *Cibotium glaucum*, trail from 'Eke gate NE to 'Eke summit and then down steep slope to margin of sedge bog, 20°04'55"–05'00"N, 155°43'30–50"W, 5,000–5,300 ft [1,525–1,615 m], 5 Sep 2023, *A.V. Freire & E.J. Judziewicz 23-573a* (BISH).

Lepidozia sandvicensis Lindenb.

ex Gottsche, Lindenb. & Nees

New Island Records

This indigenous species, also found in Alaska and Canada (British Columbia) has been previously documented from Kaua'i, Moloka'i, and Maui (Staples & Imada, 2006).

Material examined. **O'AHU:** Mt. Ka'ala, May 1924, *O.H. Swezey D89* (BISH); same locality, 1 Sep 1929, *F.C. Hadden s.n.* (BISH); same locality, 22 Feb 1975, *C.W. Smith 1507* (BISH); same locality, 6–8 Feb 1954, *E.T. Ozaki 982* (BISH); same locality, 4,000 ft [1,219 m], 23 July 1977, *G.Y. Daida 66* (BISH); same locality, 17 May 2022, *M.K. Thomas et al. 375a, 379* (BISH). **HAWAII:** Saddle Road silversword bog; Mauna Loa off Powerline Road, ca. 5,000 ft [1,515 m], 21 Aug 1977, *R.L. Stemmermann 2553* (BISH); headwaters of Alakahi Valley, Kohala, 3,800 ft [1,158 m], 27 Aug 1949, *O. Degener 19861* (BISH); Kaiholena, Old Plantation Springs, closed to open *Metrosideros* forest, matting terrestrial along stream banks, leaves light green, common, 914 m, 12 Mar 2008, *K.R. Wood 12894* (BISH, PTBG).

Lophocoleaceae

Chiloscyphus lambertonii H.A. Mill.

New Island Records

This endemic species has been previously documented from Moloka'i and Maui (Staples & Imada, 2006).

Material examined. **O'AHU:** Mt Ka'ala, 21°30'18–30"N, 158°08'36–45"W, 1,200 m, dripping roadside embankment below summit, 9 Nov 2022, *M.K. Thomas et al. 527* (BISH). **HAWAII:** Hawaii Volcanoes National Park, Old Kalapana Trail, 2,900 ft [884 m], *W.J. Hoe 1335.1* (BISH); Hawaii Volcanoes National Park, Kāhuku Unit, near TMA/CCC cabin, 19°14'46–52"N, 155°36'02–22"W, terrestrial in *Metrosideros* forest, 1,885 m, 9 Aug 2022, *A.V. Freire & E.J. Judziewicz 22-749* (HAVO); Hakalau Forest National Wildlife Refuge, road below Pua 'Ākala cabin, paralleling 'Āwehi Gulch, 19°47'12–21"N, 19°47'12–21"W, elevation 5,750–6,200 ft [1,753–1,890 m], 24 Mar 2023, *A.V. Freire & E.J. Judziewicz 23-226* (BISH); Nāuhi Gulch (above the cabin, but below the tent frames), 19°51'22"N, 155°17'56"–18'06"W, elevation 5,200–5,300 ft [1,585–1,615 m], 25 Mar 2023, *A.V. Freire & E.J. Judziewicz 23-303b* (BISH).

Cryptolophocolea bartlettii (H.A. Mill.)

Judz. & A.V. Freire

New Island Record

This endemic species has been previously documented from Moloka'i, Maui, and Hawai'i (Staples & Imada (2006) as *Chiloscyphus bartlettii*); see Judziewicz & Freire (2023). Also on Lāna'i (Judziewicz, Freire & Bogner, 2023).

Material examined. **O'AHU:** Mt Ka'ala, 21°30'18–30"N, 158°08'36–45"W, 1,200 m, on bark, 9 Nov 2022, *M.K. Thomas et al. 496* (BISH).

Heteroscyphus argutus (Reinw., Blume & Nees)

Schiffn.

New Island Record/Correction

This indigenous, mainly Asian species has been previously documented (by Miller, 1963, as *Chiloscyphus argutus*). Staples & Imada (2006) list it as a dubious record, but we can confirm its presence on Hawai'i Island.

Material examined. **HAWAI'I:** 11-3733 Ala 'Ōhi'a Street, Volcano, on bark of cultivated *Camellia* in *Metrosideros polymorpha* wet forest, 1,050 m, 5 Jan 2023, 19°25'29"N, 155°12'26"W, A.V. Freire & E.J. Judziewicz 23-1 (BISH).

Lophocolea autoica Steph.**New Island Records**

This indigenous species (reportedly also found in New Caledonia) has been previously documented from O'ahu and Hawai'i (Staples & Imada (2006) as *Chiloscyphus autoicus*); see Judziewicz & Freire (2023). Also found on Lāna'i (Judziewicz, Freire & Bogner, 2023).

Material examined. **KAUA'I:** W side, Waimea drainage basin, 3 Jul–18 Aug 1917, C.N. Forbes 1516K (BISH).

Lophocolea biscuspidata Steph.**New Island Records**

This endemic species has been previously documented from Maui and Hawai'i (Staples & Imada, 2006).

Material examined. **KAUA'I:** Ke'āku, 25 Oct 1903, C.M. Cooke, Jr. 54 (BISH); Kōke'e camps, road to YWCA camp, 3,000 ft [914 m], 10 Feb 1956, R.D. Svihla 2063 (BISH). **O'AHU:** Mt. Ka'ala, 4,000 ft [1,219 m], 28 Jun 1934, R.D. Svihla 34-47, 34-56 (BISH); Wai'anae Mountain Range: Wai'anae Kai, 1,580 ft [482 m], 15 Mar 1975, P.K. Higashino 331 (BISH); Wai'anae Mts, forest trail from Mauna Kapu north to summit of Palikea, 2,660–3,020 ft [820–910 m], 4 Nov 2021, E.J. Judziewicz 21-965, 21-970 (BISH). **MOLOKA'I:** Settlement Trail, 29 Mar 1915, C.N. Forbes 678aMo (BISH).

Lophocolea hawaica Steph.**New Island Records**

This endemic species has been previously documented from Kaua'i, Moloka'i, and Hawai'i (Staples & Imada (2006) as *Chiloscyphus hawaicus*); see Judziewicz & Freire (2023). Also found on Lāna'i (Judziewicz, Freire & Bogner, 2023).

Material examined. **O'AHU:** Mt Ka'ala, 1,200 m, 28 Jun 1934, R.D. Svihla 34-34 (BISH). **MAUI:** Haleakalā, Kīpahulu, 1984, P.K. Higashino 10042 (HAVO).

Lophocolea kilauensis (Steph.) H.A. Mill.**New Island Record**

This endemic species has been previously documented from O'ahu and Hawai'i (Staples & Imada (2006) as *Chiloscyphus kilauensis*); see Judziewicz & Freire (2023). Also found on Lāna'i (Judziewicz, Freire & Bogner, 2023).

Material examined. **MOLOKA'I:** Settlement Trail, 29 Mar 1915, C.N. Forbes 670 Mo (BISH).

Lophocolea spinosa Gottsche**New Island Record**

This endemic species has been previously documented from Kaua'i, O'ahu, Maui and Hawai'i (Staples & Imada (2006)).

Material examined. **MOLOKA'I:** Kilohana, summit of Wailau Trail, cloud forest, mixed in collection of *Herbertus*, 2,800 ft [853 m], 10 Apr 1977, *R.L. Stemmermann 2108* (BISH).

Lunulariaceae

Lunularia cruciata (L.) Dumort. Ex Lindenb. **New Naturalized Island Record**

Material examined. **KAUA'I:** Kōloa Distr., Kōloa, common weedy bryophyte in nursery pots, said to have come in on nursery stock purchased from North Carolina, 200 ft [61 m], 7 Sep 2011, *D. Boucher s.n.* (PTBG).

Marchantiaceae

Dumortiera hirsuta (Sw.) Nees **New Island Record**

This indigenous, cosmopolitan species has been previously documented from Kaua'i, O'ahu, Maui, and Hawai'i (Staples & Imada, 2006), as well as Lāna'i (Judziewicz, Freire & Bogner, 2023).

Material examined. **MOLOKA'I:** Wailau Valley: Mālama, Wailau Trail, 6 Apr 1977, *R.L. Stemmermann 2036* (BISH); Spring to lee of summit of Wailau Trail, 9 Apr 1977, *R.L. Stemmermann 2116* (BISH); W of Pēpē'ōpae, 24 Apr 1928, *H. Wiebke 2782* (BISH); Hanalilolilo pipeline, end, 24 Apr 1928, *H. Wiebke 2854* (BISH).

Marchantia crenata Austin **New Island Record**

This endemic species has been previously documented from Kaua'i, O'ahu, Maui, and Hawai'i (Staples & Imada, 2006), as well as Lāna'i (Judziewicz, Freire & Bogner, 2023).

Material examined. **MOLOKA'I:** Hīpuapua Falls, Moa'ula Falls, Hālawa Stream, Hālawa, 0–250 ft [0–82 m], 26 Dec 1953, *E.T. Ozaki 848* (BISH); Kaunakakai Gulch, 28 Mar 1915, *C.N. Forbes 644Mo* (BISH).

Notoscyphaceae

Notoscyphus lutescens (Lehm. & Lindenb.) Mitt. **New Island Record**

This indigenous species (nearly pantropical but not found in the Americas) has been previously documented from Kaua'i, O'ahu, Maui, and Hawai'i (Staples & Imada, 2006), as well as Lāna'i (Judziewicz, Freire & Bogner, 2023).

Material examined. **MOLOKA'I:** Settlement Trail, 29 Mar 1915, *C.N. Forbes 654, 666 Mo* (BISH); Edge of Waihānau, 31 Mar 1915, *C.N. Forbes 707 Mo* (BISH).

Pallaviciniaceae

Pallavicinia lyellii (Hook.) Carruth. **New Island Records**

This indigenous, cosmopolitan species has been previously documented from Moloka'i, Maui, and Hawai'i (Staples & Imada, 2006).

Material examined. **KAUA'I:** Kōloa Dist, Lihu'e-Kōloa Forest Reserve, Wahiawā Stream and mountains, up unnamed tributary and ridge flank E towards ridge connecting Kāhili and Kapalaoa peaks, lowland wet forest, growing on very moist and shady vertical stream bank, thallus translucent, light clear green, occasional, 680–770 m, 28 Mar 1991, *D.H. Lorence et al. 6746* (PTBG, UBS, TALL); Hanalei Dist, Wai'ahu'akua, upper drainage, Hono o Nā Pali N.A.R., 22.183788°N, 159.606749°W, *Metrosideros-Cheirodendron* montane wet forest and riparian habitat, liverwort on basalt walls along stream, thallus light green, common, 1,021 m, 28 Sept 2016, *K.R. Wood, S. Perlman & M. Query 17127* (PTBG); Along trail to Blue Hole, following North Fork Wailua River

from gauging station, degraded lowland forest, 18 Feb 2016, *T. Flynn 8259* (BISH, PTBG); Lihue Dist, Kawaikini summit area, small, protected gully, 1,572 m, 2 Oct 2020, *T. Flynn 9144* (BISH, PTBG); Hanalei Dist, Lumaha'i Valley, back, E side, slopes, *Metrosideros-Cheirodendron* montane wet forest, 723 m, 4 Jul 2018, *S.K. Walsh SKW597* (BISH, PTBG). **O'AHU:** Mt. Ka'ala, roadside, 3,800 ft [1,158 m], 2 Aug 1967, *A.Y. Yoshinaga 111* (BISH); Wai'anae Mts, forest trail from Mauna Kapu north to summit of Palikea, locally abundant on soil of trailside embankment in one place; with the hornwort *Megaceros flagellaris*, 2,660–3,020 ft [810–920 m], 4 Nov 2021, *E.J. Judziewicz 21-959* (BISH).

Plagiochilaceae

Plagiochila baldwinii Austin ex A. Evans **New Island Record**

This endemic species has been previously documented only from Maui (Staples & Imada, 2006).

Material examined. **HAWAII:** Forest N of Nāpau Crater, 2,660 ft [810 m], 27 Apr 1984, *L.W. Cuddihy [Pratt] s.n.* (HAVO).

Plagiochila conduplicata Steph. **New Island Records**

This endemic species has been previously documented from Kaua'i, O'ahu, Moloka'i, and Hawai'i (Staples & Imada, 2006), as well as Lāna'i (Judziewicz, Freire & Bogner, 2023).

Material examined. **MAUI:** Ko'olau Gap, east side. 20.7727°N, 156.1875°W, 1,463 m, 4 Oct 2017, *H.K. Oppenheimer H101708* (CAS, MSB, PTBG).

Plagiochila convoluta Steph. **New Island Records**

This endemic species has been previously documented from Kaua'i, O'ahu, and Hawai'i (Staples & Imada, 2006), as well as Lāna'i (Judziewicz, Freire & Bogner, 2023).

Material examined. **MOLOKA'I:** Moloka'i Forest Reserve, summit area of Kawela Gulch, near gaging station, 3,500 ft [1,067 m], *Cheirodendron-Metrosideros-Sadleria* rain forest, 29 Mar 1975, *K. Nagata s.n.* (BISH). **MAUI:** NW Haleakalā: Ahupua'a of Kalialinui S of Pu'u Ni'ani'au, on underside of rock ledge in gully floor, 6,600 ft [2,012 m], 1 Jun 1977, *W.J. Hoe 4405.0* (BISH); Ahupua'a of Kalialinui, between Pu'u o Kāka'e and Pu'u Ni'ani'au, along upper boundary of the Makawao Forest Reserve, closed *Metrosideros*-dominated mesic forest, on fallen log, 1,967 m, 15 Jun 1975, *W.J. Hoe 3586.0* (PTBG).

Plagiochila gracillima A. Evans **New Island Records**

This endemic species has been previously documented from Moloka'i, Maui, and Hawai'i (Staples & Imada, 2006), as well as Lāna'i (Judziewicz, Freire & Bogner, 2023).

Material examined. **KAUAI:** Awa'awapuhi, 2.25 miles down trail, north facing slopes, 22.150794°N, 159.67168°W, *Metrosideros-Acacia* montane mesic forest, liverwort, terrestrial or epiphytic, green-yellow, matting, common, 905 m, 28 Apr 2016, *K.R. Wood 16820* (E, MSB, PTBG).

Plagiochila grossispina Steph. **New Island Records**

This endemic species has been previously documented from O'ahu, Maui, and Hawai'i (Staples & Imada, 2006), as well as Lāna'i (Judziewicz, Freire & Bogner, 2023).

Material examined. **KAUAI:** Kalalau Valley, back of Huna [box canyon], with towering basalt mesic cliffs on all sides of narrow valley, *Diospyros sandwicensis*, *D. hillebrandii* mixed mesic forest, matting, epilithic, leaves light green, 610 m, 2 Oct 2008, *K.R. Wood 13322* (PTBG); Kawaikini

Summit region, 1,590 m, 2 Oct 2020, *K.R. Wood 18529* (BISH, CAS, E, F, PTBG). **MOLOKA'I:** Wailau, Mapulehu Trail, 29 Dec 1953, *E.T. Ozaki 910* (BISH).

***Plagiochila hawaica* Steph.**

New Island Record

This endemic species has been previously documented from Maui and Hawai'i (Staples & Imada, 2006), and on O'ahu (Thomas, 2022).

Material examined. **KAUA'I:** Alaka'i Swamp E of base camp at Kelekua and headwaters of Halepa'akai Stream, on large decorticated trunk in mossy *Metrosideros-Cheirodendron* forest, 4,600 ft [1,402 m], 9 Aug 1974, *W.J. Hoe 3189.0* (BISH); Kalalau Valley, in back of valley, diverse forest, terrestrial under fern canopy, leaves pale green, 1,700–2,500 ft [518–762 m], 10 Jun 1992, *T. Flynn 5059* (NY, PTBG); Kōke'e State Park, Honopū trail, north to Honopū Valley rim, *Acacia koa/Metrosideros polymorpha* mixed mesic forest, mat-forming on exposed roots, 1,129 m, 23 Jan 2015, *T. Flynn 8062* (CAS, MSB, PTBG, TALL).

***Plagiochila maunakeana* Steph.**

New Island Record

This endemic species has been previously documented from Kaua'i, Moloka'i, Maui, and Hawai'i (Staples & Imada, 2006).

Material examined. **O'AHU:** Mt. Ka'ala, arboreal, 1,300 m, 2 Aug 1967, *A.Y. Yoshinaga 99* (BISH).

Porellaceae

***Porella acutifolia* (Lehm. & Lindenb.) Trevis** **New Island Records**

This indigenous, mainly Asian species has been previously documented only from Maui (Staples & Imada, 2006).

Material examined. **KAUA'I:** Kōke'e, near stream, 3,500 ft [1,067 m], 18 Feb 1956, *R.D. Svihla 2099* (BISH); Nā Pali-Kona Forest Reserve, Awa'awapuhi Valley, N and below trail on S flank of valley to stream, *Acacia-Metrosideros* forest, epiphytic on base of tree, leaves medium green, 2,820–3,350 ft [859–1,021 m], 16 Oct 1991, *T. Flynn 4777* (BISH, C, COLO, F, MSB, UBC); Side gulch of Hanakāpī'ai stream that branches off to the left, right before Hanakāpī'ai Falls, about 0.25 mi up gulch side stream, 22.188059°N, 159.593195°W, on rock faces in stream amongst semi-native forest, 213 m, 1 Apr 2016, *S.M. Deans SMD115* (E, MSB, PTBG). **O'AHU:** Mt. Ka'ala, 28 Jun 1934, *R.D. Svihla 34-73, 74, 75, 76, 77* (BISH); Mt. Ka'ala, bog, 3,600 ft [1,097 m], 2 Aug 1967, *A.Y. Yoshinaga 99* (BISH). **MOLOKA'I:** without locality, trunks of trees, 3,500 ft [1,067 m], 1876, *D.D. Baldwin 213* (BISH). **HAWAI'I:** Mauna Loa, on trunks, 1,500 m, *J.F.C. Rock 2672* (BISH, F), the type of *Madotheca rockii* Steph.; Hakalau Forest National Wildlife Refuge, Nāuhi Gulch (above the cabin, but below the tent frames), 19°51'22"N, 155°17'56"–18°06"W, elevation 5,200–5,300 ft [1,585–1,615 m], 25 Mar 2023, *A.V. Freire & E.J. Judziewicz 23-298* (BISH), 23-306 (BISH).

Pseudolepicoleaceae

***Blepharostoma trichophyllum* (L.) Dumort** **New Island Records**

This indigenous species (mainly Holarctic but found in scattered sites throughout the tropics) has been previously documented only from Maui (Staples & Imada, 2006).

Material examined. **KAUA'I:** Waimea Dist, Mohihi, N-facing slopes below Mohihi-Wai'alaie trail, *Metrosideros-Cheirodendron-Dicranopteris* mixed montane wet forest, 22.113407°N, 159.588473°W, terrestrial herb, decumbent, leaves dark green above, pale light green below, fertile, occasional to common, 1,195 m, 29 Nov 2018, *K.R. Wood, M. Query & S. Perlman 17993* (BISH, CAS, MO, NY, PTBG). **HAWAI'I:** TNC Ka'ū Preserve, Kaiholena Unit, Old Plantation Springs area, closed to open

Metrosideros forest, 3,000 ft [914 m], 12 Mar 2008, *K.R. Wood 12902a* (PTBG); Hawaii Volcanoes National Park, Kāhuku Unit, near TMA/CCC cabin, 19°14'46–52"N, 155°36'02–22"W, terrestrial in *Metrosideros* forest, 1,885 m, 9 Aug 2022, *A.V. Freire & E.J. Judziewicz 22-696a, 22-697a* (HAVO).

Temnoma setigerum (Lindenb.) R.M. Schust.

var. *hawaiicum* Inoue

New Island Record

This endemic subspecies has been previously documented only from Maui (Staples & Imada, 2006).

Material examined. **KAUA'I:** Hanalei Dist, Wai'oli, hanging valley on N face of Nāmōlokama, prominent ridge to east of main falls, *Metrosideros-Cheirodendron* windswept forest and shrubland, with *Chiloscyphus greenwelliae*, 930 m, 18 Oct 2006, *K.R. Wood, N. Tangalin & D. Hodel 12192a* (PTBG).

Radulaceae

Radula cavifolia Gottsche, Lindenb., & Nees **New Island Records**

This indigenous species (also found in eastern Asia and Malesia) has been previously documented from Kaua'i, Maui, and Hawai'i (Staples & Imada, 2006), as well as Lāna'i (Judziewicz, Freire & Bogner, 2023).

Material examined. **O'AHU:** Lanihuli, Mar 1902, *C.M. Cooke, Jr. 22* (BISH) [mixed with *Metzgeria furcata*]; Mt Ka'ala, 21°30'18–30"N, 158°08'36–45"W, on wet dripping roadside rock embankment below summit, 1,200 m, 17 May 2022, *M.K. Thomas et al. 388f* (BISH), same location, 9 Nov 2022, *M.K. Thomas et al. 538* (BISH).

Radula curvilobula M.L. So

New Island Record

This endemic species has been previously documented only from Maui (Staples & Imada, 2006).

Material examined. **KAUA'I:** Waimea Dist, Ku'ia Natural Area Reserve, forests between headwaters of Ku'ia and Mahanaloa, *Metrosideros-Acacia* montane mesic forest, 22.13°N, 159.67°W, epiphyte creeping and matting on *Psychotria mariniana*, leaves medium green, common, 1,050 m, 13 Dec 2018, *K.R. Wood 18016* (BISH, E, F, NY); Kawaiikini Summit area, 22.058°N, 159.497°W, small protected gully, epiphylls on stems of *Labordia*, 1,573 m, 2 Oct 2020, *T. Flynn 9129* (BISH, PTBG) [mixed with *Pleurozia subinflata*]; Kōke'e State Park, 300 m W of Kalalau Overlook, 22°08'55"N, 159°38'10"W, 1,220 m, 4 Apr 2022, *A.V. Freire, E.J. Judziewicz & T. Flynn 22-530g* (PTBG).

Radula javanica Gottsche

New Island Record

This indigenous, pantropical species has been previously documented from O'ahu, Moloka'i, Lāna'i, Maui, and Hawai'i (Staples & Imada, 2006).

Material examined. **KAUA'I:** end of road, ca. 3 mi from Kalalau Lookout, 4,000 ft [1,219 m], 23 Feb 1956, *R.D. Svihla 2117* (BISH); Kōke'e State Park, along Hwy 550 at mile 18.2, *Metrosideros*-dominated forest, epiphyte, 1,219 m, 1 Mar 1990, *T. Flynn 3801* (COLO, PTBG); Hā'ena Dist, Wai'ahu'akua Valley, *Aleurites* non-native forest associated with mesic *Diospyros-Nestegis* relic forest, lithophyte, leaves thickly matting in layers, dark green, common, 113 m, 8 May 2008, *K.R. Wood 13011* (PTBG).

Radula mauriensis* M.L. So*New Island Records**

This endemic species has been previously documented only from Maui (Staples & Imada, 2006).

Material examined. **KAUAI:** Border of Lihue and Waimea Dist, Kawaikini summit region, 22.056627°N, 159.496052°W, *Metrosideros-Cheirodendron* short-statured wet forest with open bog habitat dissected by headwater drainages, epiphytic on *Metrosideros*, matting and creeping, 1,590 m, 29 Jan 2018, *K.R. Wood 17774* (E, F, PTBG), 17779 (BISH, E, F, PTBG); Kōke'e State Park, 300 m W of Kalalau Overlook, 22°08'55"N, 159°38'10"W, 1,220 m, 4 Apr 2022, *A.V. Freire, E.J. Judziewicz & T. Flynn 22-510* (PTBG). **OAHU:** Mt Ka'ala, on wet dripping roadside rock embankment below summit, 21°30'18–30"N, 158°08'36–45"W, 1,200 m, 17 May 2022, *M.K. Thomas et al. 402* (BISH).

Ricciaceae***Riccia hawaiiensis* Hürl.****New Island Records**

This endemic has been previously documented only from Hawai'i (Staples & Imada, 2006). Perhaps naturalized on Kaua'i.

Material examined. **KAUAI:** Puhī, Kaua'i Nursery and Landscaping, 3-1550 Kaumuali'i Hwy., maintained nursery area with secondary vegetation along margins, 109 m, 30 Aug 2016, *T. Flynn & K. Brock 8684* (BISH, CANB, F, PTBG) [det. By Christine Cargill (CANB)]. **OAHU:** East side, Nu'uuanu Valley, Cooke Trail, 11 Mar 1915, *C.N. Forbes 2139.O* (BISH); south ridge, Kīpapa Gulch, 1,200 ft [366 m], 15 May 1932, *E.H. Bryan, Jr. s.n.* (BISH); without locality, 1 Nov 2021, *M. Waite & M.K. Thomas s.n.* (BISH). **MAUI:** Honokohau Drainage Basin, 17 Oct 1917, *C.N. Forbes 614.M* (BISH); Wailua, East Maui, 7 Jul 1935, *R.D. Svihla 35-211* (BISH).

Scapaniaceae***Anastrepta orcadensis* (Hook.) Schiffn.****New Island Records**

This indigenous, Holarctic species has been previously documented only from Kaua'i (Staples & Imada, 2006).

Material examined. **OAHU:** Mt Ka'ala, on wet dripping roadside rock embankment below summit, 21°30'29"N, 158°08'43"W, 1,200 m, 17 May 2022, *M.K. Thomas et al. 361, 362, 384, 387a, 401* (BISH). **MAUI:** Makawao Dist, Honomanū drainage basin, TNC Waikamoi Preserve and Haleakalā Ranch, E 788357, N 2299783, along trail and unpaved road in forestry plantings of *Pinus*, *Cryptomeria*, *Cupressus*, 6,300–6,500 ft [1,920–1,981 m], 7 May 2021, *H.K. Oppenheimer H52109* (BISH); Hāna Dist, Hāna Forest Reserve, Helele'iki'ona drainage basin, 20.737°N, 156.109°E, *Metrosideros* montane wet forest, 5,375 ft [1,638 m], 10 May 2022, *H.K. Oppenheimer H52205* (BISH); Honomanū Stream headwaters, TNC Waikamoi Preserve, E 785467, N 2300220, 5,000–5,600 ft [1,524–1,707 m], 13 Apr 2021, *H.K. Oppenheimer H42117* (BISH) [in matrix of moss *Leucobryum*]; same location, 23 Feb 2023, *A.V. Freire, E.J. Judziewicz, H.K. Oppenheimer & Z. Pezillo 23-49, 23-113, 23-121, 23-126* (BISH); Ko'olau-Hāna Dist, Helele'iki'ona, montane *Metrosideros* forest, 1,890 m, 4 Nov 2021, *K. Severson 045* (BISH). **HAWAII:** Hakalau Forest National Wildlife Refuge, road below Pua 'Ākala cabin, paralleling 'Āwehi Gulch, 19°47'12–21"N, 19°47'12–21"N, elevation 5,750–6,200 ft [1,753–1,890 m], 24, 26 Mar 2023, *A.V. Freire & E.J. Judziewicz 23-215a, 23-216, 23-217a, 23-218a, 23-219* (BISH).

Anastrophyllum esenbeckii* (Mont.) Steph.*New Island Record**

This endemic species has been previously documented from Kaua'i, Moloka'i, Maui, and Hawai'i (Staples & Imada, 2006), as well as Lāna'i (Judziewicz, Freire & Bogner, 2023).

Material examined. **OAHU:** Kīpapa Gulch, S, ridge, on tree trunk, 2,000 ft [610 m], 4 Jul

1932, *E.Y. Hosaka 8* (BISH), Pu'u Kōnāhuanui Trail, Ko'olau Mts, 1,600–3,000 ft [488–914 m], 5 Dec 1970, *L.E. Bishop 127002, 127013* (BISH); Ko'olau Mts, Kāhuku Military Training Area, 1,600 ft [500 m], 10 May 1979, *J. Sorenson H-10* (BISH); Wai'anae Mts, forest trail from Mauna Kapu north to summit of Palikea, uncommon on soil of trailside embankment, 2,660–3,020 ft [810–920 m], 4 Nov 2021, *E.J. Judziewicz 21-974* (BISH).

***Anastrophyllum fissum* Steph.**

New Island Record

This indigenous species, also known from New Caledonia (Thouvenot *et al.*, 2011) and French Polynesia (Bardat *et al.*, 2021) has been previously documented from Kaua'i and Maui (Staples & Imada, 2006).

Material examined. **O'AHU:** Kaipapau Valley, Ko'olau Mts, 31 Jan 1953, *E.T. Ozaki 216* (BISH); Waikāne, Schofield Trail, 3 May 1954, *E.T. Ozaki 1140* (BISH); Pu'u Kōnāhuanui Trail, 5 Dec 1970, *L.E. Bishop 127040* (BISH); Poamoho, Northern Ko'olau Mountains, ahupua'a of Pa'ala'a uka, 21.53°N, 157.92015°W, epiphytic on *Metrosideros rugosa* in mostly native cloud/wet forest, 820 m, 29 Jan 2022, *M.K. Thomas 231* (BISH); Mt Ka'ala, bog boardwalk trail, 21°30'18–30"N, 158°08'36–45"W, 1,200 m, 17 May 2022, *M.K. Thomas et al. 381* (BISH).

***Scapania ciliata* Sande Lac.**

subsp. *hawaiiica* (Müll. Frib.) Potemkin

New Island Records

This endemic subspecies has been previously documented from Kaua'i and Maui (Staples & Imada (2006) as *Scapania hawaiiica*); see Judziewicz & Freire (2023).

Material examined. **O'AHU:** Mt Ka'ala, on wet dripping roadside rock embankment below summit, 21°30'18–30"N, 158°08'36–45"W, 1,200 m, 17 May 2022, *M.K. Thomas et al. 365* (BISH); same location, 9 Nov 2022, *M.K. Thomas et al. 491* (BISH). **HAWAII:** Hawaii Volcanoes National Park, Nāhuku Lava Tube, 19°24'50"N, 155°14'17"W, on old trailside stone wall, 1,190 m, 1 Apr 2021, *A.V. Freire & E.J. Judziewicz 21-359* (HAVO). Hawaii Volcanoes National Park, Kāhuku Unit, 19°11'34"N, 155°39'35"W, terrestrial in koa forest, 1,670 m, 9 Aug 2022, *A.V. Freire & E.J. Judziewicz 22-640a* (HAVO); Hawaii Volcanoes National Park, Kāhuku Unit, near TMA/CCC cabin, 19°14'46–52"N, 155°36'02–22"W, terrestrial in *Metrosideros* forest, 1,885 m, 9 Aug 2022, *A.V. Freire & E.J. Judziewicz 22-723a* (HAVO); Pu'u O 'Umi Natural Area Reserve, forest of *Metrosideros polymorpha* and *Cibotium glaucum*, trail from 'Eke gate NE to 'Eke summit and then down steep slope to margin of sedge bog, 20°04'55"–05'00"N, 155°43'30–50"W, 5,000–5,300 ft [1,525–1,615 m], 5 Sep 2023, *A.V. Freire & E.J. Judziewicz 23-532a* (BISH).

***Scapania grossidens* Steph.**

New Island Records

This endemic species has been previously documented only from Maui (Staples & Imada, 2006).

Material examined. **KAUAI:** Hanalei Distr., Upper Limahuli Preserve, Hanakāpī'ai side in upper back bowl, terrestrial on streambank, olive green leaflets with dark brown to black stipe, 989 m, 23 Feb 2012, *N. Tangolin 3030* (PTBG); Hanalei Distr., Hanalei Valley, terrestrial; leaves very pale translucent green, rachis reddish-brown, 2,220–2,340 ft [677–713 m], 22 Mar 1993, *T. Flynn 5341* (PTBG); Waimea Distr., Nā Pali-Kona Forest Reserve, Kohua Ridge, on slope to north of Mohihi-Wai'alaie Trail, ca 60 ft below trail, N facing slope of Mohihi Stream, about 1.25 mi in on Mohihi-Wai'alaie Trail, terrestrial on detritus, 1,143 m, 30 Jan 1995, *T. Flynn 5705* (PTBG). **HAWAII:** TNC Ka'ū Preserve, Kaiholena Unit, Old Plantation Springs area, closed to open *Metrosideros* forest, terrestrial, matting, leaves green, rachis brown-red, common, 975 m, 12 Mar 2008, *K.R. Wood 12878* [in matrix of *Acroporium fuscoflavum*], 12879 (PTBG); Hawaii Volcanoes National Park, Kāhuku Unit, near TMA/CCC cabin, 19°14'46–52"N,

155°36'02–22"W, terrestrial in *Metrosideros* forest, covering large rock, orangish, 1,885 m, 25 Aug 2022, *A.V. Freire & E.J. Judziewicz 22-726* (HAVO); Pu'u Maka'ala N.A.R., near old Mauna Loa Boys School, 19°35'29"N, 155°20'34"W, old growth *Metrosideros-Cibotium* kīpuka, 1,770 m, 19 Aug 2021, *A.V. Freire & E.J. Judziewicz 21-709* (BISH); Hakalau Forest National Wildlife Refuge, the road below Pua 'Ākala cabin, paralleling 'Āwehi Gulch, 19°47'12–21"N, 19°47'12–21"W, elevation 5,750–6,200 ft [1,753–1,890 m], on 24 Mar 2023, *A.V. Freire & E.J. Judziewicz 23-250a* (BISH); Nāuhi Gulch (above the cabin, but below the tent frames), 19°51'22"N, 155°17'56"–18°06"W, elevation 5,200–5,300 ft [1,585–1,615 m], 25 Mar 2023, *A.V. Freire & E.J. Judziewicz 23-304* (BISH); Pu'u O 'Umi Natural Area Reserve, forest of *Metrosideros polymorpha* and *Cibotium glaucum*, trail from 'Eke gate NE to 'Eke summit and then down steep slope to margin of sedge bog, 20°04'55"–05°00"N, 155°43'30"–50"W, 5,000–5,300 ft [1,525–1,615 m], 5 Sep 2023, *A.V. Freire & E.J. Judziewicz 23-594a* (BISH).

Scapania javanica Gottsche

New Island Records

This indigenous, pantropical species has been previously documented from Moloka'i and Hawai'i (Staples & Imada (2006) as *Scapania paucidens*); see Judziewicz & Freire (2023).

Material examined. **KAUA'I:** Lihu'e Dist, Blue Hole, headwaters North Fork, Wailua River, 22.065332°N, 159.491517°W, *Metrosideros-Cheirodendron* short-statured wet forest with open bog habitat, 600 m, 19 Feb 2016, *T. Flynn 8262* (BISH, CAS, HIRO, MSB, NY, PTBG, TALL); same location, 21 Feb 2017, *K.R. Wood 17286* (BISH, F, NY, PTBG, US); Hanalei Dist, Nāmōlokama summit, closed to open *Metrosideros* forest, 1,286 m, 19 Feb 2019, *K.R. Wood 18090* (BISH, E, F, PTBG). **O'AHU:** Mt Ka'ala, on wet dripping roadside rock embankment below summit, 21°30'18–30"N, 158°08'36–45"W, 1,200 m, 17 May 2022, *M.K. Thomas et al. 397, 399* (BISH); same location, 9 Nov 2022, *M.K. Thomas et al. 510, 514a* (BISH). **MAUI:** Waikamoi, Pipeline Trail, ca. 3,000 ft [914 m], 3 Jan 1956, *R.D. Svihla 1809* (BISH); Haleakalā, Waikamoi Preserve, 20°46'16–47"N, 156°13'34"–14°11"W, 1,860–2,012 m, 23 Feb 2023, *A.V. Freire, E.J. Judziewicz, H. Oppenheimer & Z. Pezillo 23-61* (BISH); Hāna Dist, Haleakalā National Park, Kuiki planeze, Alelele drainage basin, along perennial stream, *Metrosideros* montane wet forest, 5,000–5,100 ft [1,524–1,554 m], N 2290721, E 801173, 12 Jan 2022, *H.K. Oppenheimer 12220* (BISH); Hāna Dist, Hāna Forest Reserve, Helele'iki'ona stream, vicinity of State Camp, N 2296083, E 801815, *Metrosideros* montane wet forest, 5,400 ft [1,646 m], 25 Sep 2022, *H.K. Oppenheimer et al. 92220* (BISH); Hāna Dist, Ko'olau Forest Reserve, headwaters of Helele'iki'ona stream, vicinity of State Camp, N 2296083, E 801815, *Metrosideros* montane wet forest, 5,400 ft [1,646 m], 25 Sep 2022, *H.K. Oppenheimer et al. 92242* (BISH); Ko'olau Dist, Pi'ina'au at "pig camp", 20.797°N, 156.197°W, *Metrosideros* wet forests with invading *Psidium cattleianum* and *Hedychium gardnerianum*, 2,800 ft [853 m], 21 Oct 2021, *K. Severson 034* (BISH).

Scapania verrucosa Steph.

New Island Records

This indigenous species (also found in Eurasia) has been previously documented only from Maui (Staples & Imada (2006) as *Scapania mauina*); see Judziewicz & Freire (2023).

Material examined. **KAUA'I:** Hanalei Dist, Nāmōlokama summit, 1,286 m, *Metrosideros* mixed montane wet shrubland and forest, epipetric on basalt, common, 1,244 m, 26 Feb 2019, *K.R. Wood 18095* (BISH, PTBG). **O'AHU:** Mt. Ka'ala, along the road that turns off to the left off the main road as you leave the summit, rainforest, growing on ground, 4,000 ft [1,219 m], 22 Feb 1975, *E.J. Funk s.n.* (BISH); Mt Ka'ala, on wet dripping roadside rock embankment below summit, 21°30'18–30"N, 158°08'36–45"W, 1,200 m, 17 May 2022, *M.K. Thomas et al. 370* (BISH). **HAWAII:**

Metrosideros polymorpha forest at Punalu'u Kahawai, CCC Cabin east to plant enclosure at Park boundary, Upper Kāhuku Unit, Hawaii Volcanoes National Park, 19°14'46–52"N, 155°36'02–22"W, El. 6,075–6,185 ft [1,852–1,885 m], 10 Aug 2022, *A.V. Freire & E.J. Judziewicz 22-737a* (HAVO).

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