

## More Hawaiian bryophyte records from Herbarium Pacificum for 2025: 30 new island records including seven new state records for Hawaiian liverworts and hornworts<sup>1</sup>

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**Abstract.** We report 30 new island records of liverworts and hornworts and seven state records: the hornwort *Notothylas orbicularis* and the liverworts *Cololejeunea raduliloba*, *Lejeunea cocoes*, *Lepidozia holorrhiza*, *Plagiochasma cordatum*, *Riccardia* aff. *digitiloba*, and *Schistochila aligera*. We also report the first documentation of a liverwort (*Frullania sandwicensis*) from Kaho'olawe, and the first report of the endemic liverwort genus *Kahakuloa* from Haleakalā (East Maui).

### INTRODUCTION

Further fieldwork, research, and visits to the Bernice P. Pauahi Bishop Museum (BISH) and the Willard Turrell Sherman Herbarium (MU) at Miami University in Oxford, Ohio in March 2024 (by Judziewicz and Freire) have led to the discovery of more bryophyte records for the Hawaiian Islands. This is the fifth in a series of papers updating and further documenting the liverwort and hornwort flora of Hawai'i: a survey of Lāna'i (Judziewicz, Freire & Bogner 2023); new state records and name changes for all islands (Judziewicz & Freire 2023); 106 new island records (Judziewicz, Freire & Thomas 2024); and the flora of the Kaua'i summits (Judziewicz, Faccenda & Freire 2025). All are part of a projected five-volume identification guide to Hawaiian liverworts and hornworts (Freire & Judziewicz 2025).

### ANTHOCEROTOPHYTA

#### Anthocerotaceae

##### *Anthoceros punctatus* L.

##### New island record

This cosmopolitan naturalized species was previously known in Hawai'i from Hawai'i Island (Judziewicz & Freire 2023: 158).

**Material examined.** **MAUI:** Coastal Haleakalā, Lower Kanaio, Old Army National Guard Enclosure, on state lands west of windmills, a single patch of plants coming up on hardpan soil with buffel grass (*Cenchrus ciliaris*), ca 150 m, 2 Feb 2024, Z. Pezillo, H. Oppenheimer & R. Henderson 578 (BISH).

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**Dendrocerotaceae*****Megaceros flagellaris*** (Mitt.) Steph.**New island record**

This indigenous species (also known from Asia, other places in Oceania, and Madagascar) has been previously documented from Kaua'i, O'ahu, Maui, and Hawai'i (Staples & Imada 2006; Judziewicz, Freire & Bogner 2023: 4).

*Material examined.* **MOLOKA'I:** Upper Waikolu Valley, pipeline trail, 4,000 ft [1,219 m], 2 Jun 1953, *H.A. Miller & A.R.H. Lamberton 3847* (MU).

**Notothyladaceae*****Notothylas orbicularis*** (Schwein.) Sull.**New state record**

This is a weedy subcosmopolitan species with many records from Japan, eastern North America, and central Europe. In Hawai'i it is represented by two mid-twentieth century collections. It differs from the similarly weedy *N. breutelii* (Gottsche) Gottsche (known in Hawai'i only from O'ahu) in its yellowish orange rather than black spores.

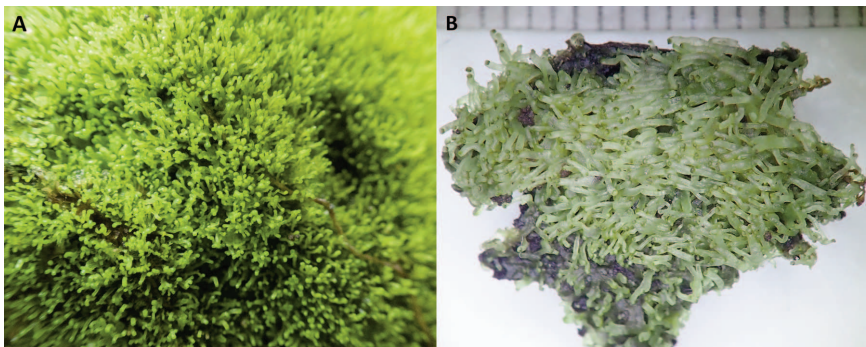
*Material examined.* **KAUA'I:** Hanalei, Tasa path, 2 Jan 1948, *M.L. Lohman L-K-55* (MU). **MAUI:** Hanakalua [sic, locality and its spelling uncertain] Valley trail to Pu'u 'Eke, on soil, 1,500–1,600 ft [457–488 m], 6 Jun 1953, *H.A. Miller & A.R.H. Lamberton 3926* (MU).

**MARCHANTIOPHYTA****Aneuraceae*****Riccardia* aff. *digitiloba*** (Spruce) Pagán**New state record**

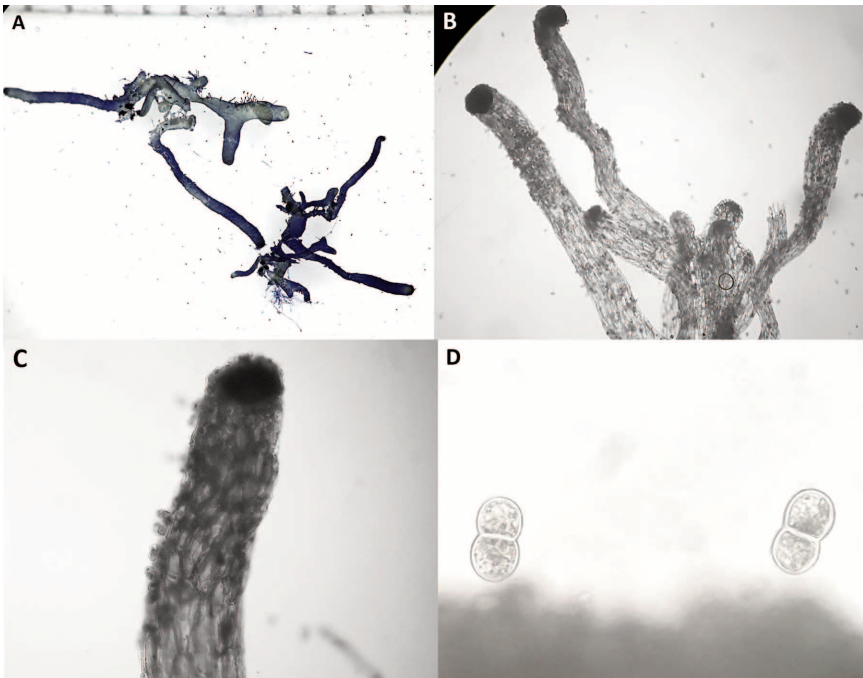
(Figs. 1–2)

This *Riccardia* species is noteworthy for its very small size, with filamentous thalli only 0.2–0.8 mm wide (mostly 0.3 mm wide) and clusters of abundant bicellular gemmae (30 × 20 µm) produced at the (often curved) apices of the thalli. From our search of the literature, it appears that it could be close to *R. digitiloba*, a widespread tropical American species (Gradstein & Reeb 2018: 525), or perhaps a group of filamentous New Zealand species (Glenny 2025).

*Material examined.* **MAUI:** West Maui, Hana'ula, wet mesic forest above windmills, 1,100 m, 15 Mar 2024, *Z. Pezzillo, H. Oppenheimer & R. Henderson 788* (BISH).



**Figure 1.** *Riccardia* aff. *digitiloba*. Hana'ula, West Maui, note the small size of plants, *Z. Pezzillo et al.* 788 (BISH). **A.** *Z. Pezzillo* photo: <https://www.inaturalist.org/observations/202835859>. **B.** Scale in mm. Photo by A.V. Freire.



**Figure 2.** *Riccardia* aff. *digitiloba*. Hana‘ula, West Maui, Z. Pezzillo et al. 788 (BISH). **A–B**, Tiny plants with abundant gemmae clustered at the ends of thalli filaments with curved apices (scale in mm). **C**, Detail of gemmiferous branch. **D**, Bicellular gemmae ( $30 \times 20 \mu\text{m}$ ). Photos by A.V. Freire.

### Aytoniaceae

#### *Plagiochasma cordatum* Lehm. & Lindenb.      **New state record**

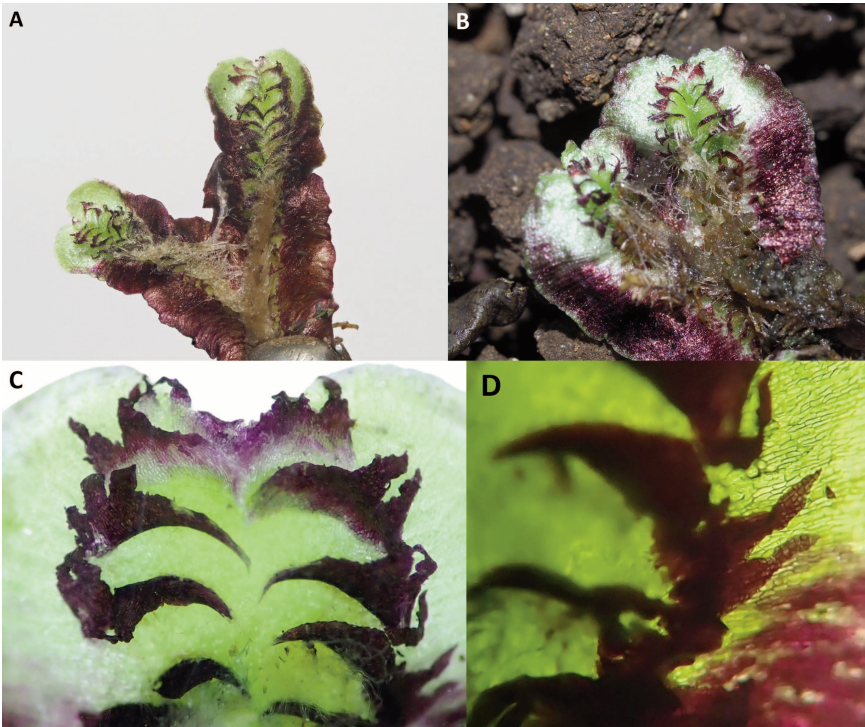
(Figs. 3–4)

This indigenous species (also found in eastern Asia) is a new record for Hawai‘i. A previous report from O‘ahu (Miller 1963: 529), apparently the basis of the report by Staples and Imada (2006), was later re-identified by Miller as *P. japonicum*. Miller (1959 annotation of BISH specimen) initially identified *Olsen 81* (BISH) from Maui as *P. cordatum* but later changed this determination to *P. japonicum* (we agree with his latter determination). Bischler-Causse (1979: 45) cites the occurrence of *P. japonicum* in Hawai‘i (based on Skottsberg 1192 (S), from O‘ahu), as well as the possible occurrence of *P. cordatum* there (Austin 1874), but without citing any specimens. Finally, Long and Grolle (1990) cite the occurrence in Hawai‘i of *P. japonicum*, without citing specimens. Staples and Imada (2006) recognize the presence of *P. japonicum* but do not list *P. cordatum*. Therefore, the following is the only verified Hawaiian collection of the latter species.

**Material examined.** **O‘AHU:** Ko‘olau Range, Tantalus area, Nā Ala Hele Moleka Trail, terrestrial, 1 sq m trailside patch, 21.322749°N, 157.817816°W, 375 m, 28 Apr 2024, *K. Faccenda 3383* (BISH). <https://www.inaturalist.org/observations/254927808>, <https://www.inaturalist.org/observations/211450908>, <https://www.inaturalist.org/observations/200984279>.



**Figure 3.** *Plagiochasma cordatum*. Ko‘olau Range, O‘ahu, K. Faccenda 3383 (BISH). **A**, Growing on rocks, forming dense mats. Photo by K. Faccenda, <https://www.inaturalist.org/observations/211450908>. **B**, Serial female receptacles along the dorsal midline of the thallus; note the purple margins of thalli. Photo by A.V. Freire. **C**, Ventral scales will occasionally project and bend onto the dorsal surface of the thallus apex, forming a “mustache” (above); antheridia are produced in heart-shaped receptacles. Photo by A.V. Freire.



**Figure 4.** *Plagiochasma cordatum*. Ko‘olau Range, O‘ahu, K. Faccenda 3383 (BISH), ventral surface of thallus. **A–B**, Showing purple color of older portions of thallus, and the two rows of purple ventral scales; note the long and narrow scale appendages. Photos by K. Faccenda, <https://www.inaturalist.org/observations/211450908>. **C**, Lunate, purple ventral scales with 2–3 appendages. Photo by A.V. Freire. **D**, Detail of long, narrow, triangular scale appendages. Photo by A.V. Freire.



***Plagiochasma japonicum* (Steph.) C.Massal. New island records**

This indigenous species (also found in eastern Asia) was previously known only from O‘ahu (see discussion under *P. cordatum*).

*Material examined.* **KAUAI:** Koai‘e Canyon, 1–2 miles above Lonomea Camp, on either side of Koai‘e Stream, in soil pockets on dripping wet rock face, locally common, 1,700–1,900 ft [518–579 m], 16 Apr 1991, *T. Flynn et al.* 4544 (PTBG); headwaters of N fork of Wailua River, on wet shaded rock face, thallus long creeping, glossy medium green, 2,000–2,300 ft [600–700 m], 11 Mar 1993, *T. Flynn* 5286 (PTBG). **MAUI:** Haleakalā, Kaupō Trail, in very wet cave on dirt and rocks, associated with *Hillebrandia sandwicensis*, 25 Aug 1937, *G.E. Olsen* 81 (BISH).

**Calypogeiaceae*****Metacalypogeia alternifolia* (Nees) Grolle****Corrections; confirmation of island record; new island record**

*Metacalypogeia* is an indigenous temperate Asian and North American genus (Lee & Gradstein 2021: 55) related to *Calypogeia*. *Metacalypogeia alternifolia* supposedly occurs on all major islands except Lāna‘i (Miller *et al.* 1983, later cited by Staples & Imada 2006). We had not collected or examined any Hawaiian material prior to the collections from Maui cited below, and it appears (based on his unpublished drawings housed at BISH) that Miller confounded this species with *Mnioloma fuscum* and that his reports (Miller 1963: 499–500) of *Calypogeia alternifolia* (= *Metacalypogeia alternifolia*) from many islands should be referred to *Mnioloma fuscum*. Therefore, the island records for Kaua‘i, O‘ahu, and Moloka‘i, cited by Miller *et al.* (1983) without citing vouchers, must be rejected; new records for Maui were confirmed (below), and the Hawai‘i Island records tentatively accepted.

However, there are two previous possible authentic Hawaiian records of this species from Kohala, Hawai‘i Island, reported by Miller (1963: 500–501) as *Metacalypogeia montana* (Horik.) Inoue var. *verruculosa* (Hatt.) H.A.Mill.: “Upper Hāmākua Ditch Trail between Koiawe and Waima Valleys, *O. Selling* 5405; above Waima, in cave, *O. Selling* 5371” (both collections in Stockholm Herbarium (S), and not examined by us). Miller cites Yukinobu Kuwahara as the determiner of these specimens, and presumably Kuwahara would have been familiar with this species, which is common in Japan (Yamada & Iwatsuki 2006).

*Metacalypogeia alternifolia* resembles the related *Mnioloma fuscum* but is greenish (not brownish) in color and has pointed leaves. The underleaves of *Metacalypogeia* are perfectly rounded at the apex, whereas in *Mnioloma* the apex is often very slightly and irregularly retuse. *Metacalypogeia* is also easily confused with some of the smaller species of *Bazzania*, such as *B. baldwinii* A.Evans or *B. minuta* (Austin) A.Evans, but it lacks the ventral microphyllous branches of the latter genus.

*Material examined.* **MAUI:** Waikamoi Preserve, above end of Waikamoi Flume on TNC side of fence, forested ridges and riparian zones, wet forest, *Metrosideros*, *Cheirodendron*, *Vaccinium*, *Leptocophylla*, *Melicope*, *Myrsine*, *Rubus*, *Coprosma*, *Dryopteris wallichiana*, *Pteris*, *Athyrium*, *Elaphoglossum*, *Sadleria*, *Carex*, and *Astelia*, 4,600 ft [1,400 m], 17 Sep 2024, *Z. Pezillo & R. Henderson* 995 (BISH); West Maui, summit of Pu‘u Kukui, bogs, wet, riparian, with *Trichocolea gracillima*, 5,500 ft [1,676 m], 9 Dec 2024, *Z. Pezillo* 1074 (BISH).

**Cephaloziaceae*****Cephalozia lucens*** (A.Evans) Steph.**New island record**

An endemic species previously documented on Kauaʻi, Molokaʻi, Lānaʻi, Maui, and Hawaiʻi (Judziewicz, Freire & Thomas 2024: 6–7).

*Material examined.* **MOLOKAʻI:** Molokaʻi Swamp below Kaunuohua, 4,200 ft [1,280 m], 30 May 1953, *H.A. Miller & A.R.H. Lamberton 3593* (MU).

**Frullaniaceae*****Frullania sandvicensis*** Ångstr.**New island record**

(Fig. 5)

This indigenous species has been previously documented from Kauaʻi, Oʻahu, Molokaʻi, Lānaʻi, Maui, and Hawaiʻi (Staples & Imada (2006), as *F. ericoides* and *F. neurota*); see Judziewicz and Freire (2023). The Kahoʻolawe record below is the first documentation of a liverwort from that island.

*Material examined.* **KAHOʻOLAWA:** Island summit near Puʻuomoaʻula Iki, 450 m, Mar 2022, noted by D.W. Beilman, W.C. Bleeker, and P. Higashino; photo by W.C. Bleeker.



**Figures 5–6.** 5, *Frullania sandvicensis*. Summit of Kahoʻolawe, 2022; note inflated, helmet-shaped lobules. Photo by W. Cuyler Bleeker. 6, *Geocalyx graveolens*. Kula Forest Reserve, Haleakalā, Maui, *Z. Pezzillo 589* (BISH). Photo by E.J. Judziewicz.

**Geocalycaceae*****Geocalyx graveolens*** (Schrad.) Nees**New island record**

This widespread Holarctic species is either indigenous or more likely naturalized. It had been previously documented from Hawaiʻi Island in 1953 from an “exposed gulch” at 6,500 ft [2,000 m] on the Mauna Kea Truck Trail (*H.A. Miller & A.R.H. Lamberton 5162*, MU).

*Material examined.* **MAUI:** Haleakalā, Kula Forest Reserve, between Plum Trail and lower boundary, 0, Aspect: W, very remnant mesic forest mostly filled in by introduced forestry plantings and introduced understory species, with *Frullania sandwicensis* and *Lophocolea bicuspidata*, N2287872, E779949, [ca. 2,000 m], 6 Mar 2024, Z. Pezzillo & R. Henderson 589, 592 (BISH).

### Kahakuloaceae

**Kahakuloa** aff. *operculispora* A.V.Freire, Judz.,

Cargill, L.L.Forrest & Gradst.

#### New island record

An endemic species, genus, and family, previously known only from West Maui (Freire *et al.* 2023). We can report its occurrence from East Maui (Haleakalā), about 35 km east of the type locality, based on the following collection, for which no habitat or elevation information is given. Incidental bryophytes occurring with it include the mosses “*Campylopus purpureoflavescens*” (= *Campylopus hawaiiicus* (Müll.Hal.) A.Jaeger) and *Leucobryum* species, and the liverworts *Asperifolia arguta*, *Bazzania cordistipula*, *Calypogeia cuspidata*, *Cephalozia lucens*, *Cephaloziella* species, *Fuscocephaloziopsis connivens*, *Kurzia hawaica*, *Mnioloma fuscum*, and *Marchantia* species.

*Material examined.* **MAUI:** Olinda Ditch Trail [the Olinda flume runs from ca 20°48'13–32"N, 156°13'14–47"W, 4,265–4,315 ft [1,300–1,315 m], between Waikamoi and Ha'ipua'ena Streams, presumably near where Miller and Lamberton collected it], 12 Jun 1953, H.A. Miller & A.R.H. Lamberton 4478 (BISH, MU).

### Lejeuneaceae

**Cololejeunea hillebrandii** (Austin) Steph.

#### Nomenclatural note; new island record

This endemic species has been previously documented from Kaua'i, O'ahu, Moloka'i, and Maui (Staples & Imada 2006). Sass-Gyarmati *et al.* (2023: 349) note that correcting Austin's original spelling “*hildebrandii*” (as was done by Staples & Imada 2006) is allowable under the International Code of Nomenclature since he intended to honor botanist William Hillebrand (1821–1886). Some specimens cited below vary somewhat from typical material and may represent a separate taxon.

*Material examined.* **HAWAII:** *Cibotium-Metrosideros* rainforest above Thurston Lava Tube, on flaking bark of *Metrosideros*, 3,900 ft [1,189 m], 1 Aug 1966, W.J. Hoe 1073.0 (MU); Niallani rainforest, Volcano, on dead *Cibotium* stipe, 19°25'35"N, 155°14'23"W, 1,158 m, 4 Oct 2020, A.V. Freire & E.J. Judziewicz 20-771 (BISH); Small 'Ōla'a Tract, Hawai'i Volcanoes National Park, 19°27'42"N, 155°14'54"W, 1,170 m, 24 May 2021, A.V. Freire & E.J. Judziewicz 21-583a (HAVO); Upper Kāhuku Unit, CCC/TNA cabin forest, Hawai'i Volcanoes National Park, 19°14'46–52"N, 155°36'02–22"W, 1,852–1,885 m, 10 Aug 2022, A.V. Freire & E.J. Judziewicz 22-701 (HAVO); Hakalau Forest National Wildlife Refuge, Pua 'Ākala road makai, paralleling 'Āwehi Gulch, 19°47'12–21"N, 155°18'56"–19°32"N, 1,753–1,905 m, 26 Mar 2023, A.V. Freire & E.J. Judziewicz 23-252f (BISH); Kohala, Pu'u O 'Umi Natural Area Reserve, 'Eke gate NE to 'Eke Summit and then down steep slope to sedge bog, 20°04'55"–05°00"N, 155°43'30–50"W, 1,524–1,615 m, 5 Sep 2023, A.V. Freire & E.J. Judziewicz 23-359d (BISH); Laupāhoehoe Natural Area Reserve, along Blair Road on perimeter of “Scowcroft Exclosure”; *Acacia koa* (dominant)- *Metrosideros polymorpha*-*Cibotium glaucum* forest, 19°54'50–55"N, 155°18'25–30"W, 1,402–1,433 m, 4 Jan 2024, E.J. Judziewicz & K. Faccenda 17,211 (BISH).

**Cololejeunea raduliloba** Steph.

#### New state record

This indigenous or possibly naturalized species is mainly tropical Asian in distribution, ranging east to New Caledonia (Thouvenot *et al.* 2011: 313), Fiji (Söderström *et al.* 2011:

412), and Tonga (Söderström *et al.* 2012: 131). It is characterized by its small, narrow, erect lobules with two asymmetrical teeth; the lobes lack a hyaline margin (Tixier 1985). Plants are 0.8–0.9 mm wide, and perianths and discoid gemmae are abundantly produced. Although maintained as a member of subgenus *Pedinolejeunea* Benedix ex Mizut. by Söderström *et al.* (2016: 336), these authors also note (2016: 320) that molecular evidence presented by Yu *et al.* (2013) instead support its placement in subgenus *Chlorolejeunea* Benedix.

*Material examined.* **HAWAII:** South Kona Distr, Amy B.H. Greenwell Ethnobotanical Garden, Ka‘awaloa (Captain Cook), bark epiphyte on cultivated indigenous trees, 450 m, 9 Oct 2021, *A.V. Freire & E.J. Judziewicz* 21-912, 21-916 (BISH). **KAUAI:** Waimea Distr, Pu‘u ka Pele Forest Reserve, along Kawai‘iki Stream, with large boulders above Koai‘e Canyon Trail, below Lonomea Campsite, about 2.75 mi above junction with Waimea Canyon Trail, 22°05′18.1″N, 159°37′26.2″W, 1,500 ft. [457 m], fused to surface of volcanic boulder in filtered light, dry, mixed non-native forest, 22 Feb 2016, *J.R. Shevock, T. Flynn, J. Game & W. Ma* 48203 (CAS).

***Drepanolejeunea pentadactyla* (Mont.) Steph.    New island record**

This indigenous species is found in tropical Asia, Australasia, New Caledonia, and O‘ahu (Judziewicz & Freire 2023: 163).

*Material examined.* **KAUAI:** Līhu‘e Distr, summit area of Hā‘upu, degraded mesic shrubland, on branches of *Syzygium*, growing mixed with *Acroporium* in bryophyte mat, 21.924°N, 159.401°W, 681–685 m, 19 Sep. 2023, *T. Flynn, K.R. Wood & B.G. Baldwin* 9847b, 9855c (PTBG).

***Lejeunea cocoes* Mitt.**

**New state record**

(Fig. 7)

A tropical Asian species ranging east to Fiji and French Polynesia; presumably naturalized in Hawai‘i.

*Material examined.* **HAWAII:** Hilo Nursery Arboretum, on bark of cultivated *Brownea macrophylla* and several other cultivated exotic tree species, growing in dense mats with occasional plants of *Lejeunea flava*, 19°42′22″N, 155°04′24″W, 11 m, 25 Aug 2023, *A.V. Freire & E.J. Judziewicz* 23-500 (BISH).

***Lopholejeunea proxima* Steph., syn. nov.    Taxonomic note**

**Basionym:** *Lopholejeunea proxima* Steph., Sp. Hepat. (Steph.) 5: 89. 1912.

[= *Lopholejeunea nigricans* (Lindenb.) Steph. ex Schiffn., Consp. Hepat. Arch. Ind. 293. 1898.]

Apparently known only from the type collection made by Urbain Faurie in 1909 from the vicinity of Hanalei, Kaua‘i. We believe that this species is synonymous with *Lopholejeunea nigricans* (Lindenb.) Schiffn. (found on all major Hawaiian Islands), based on our examination of the following isotype; the holotype is reportedly in the Geneva Herbarium (G):

<https://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=137371&base=img&lang=en>

<https://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=162929&base=img&lang=en>

*Material examined.* **KAUAI:** Hanalei, 1910, *U. Faurie s.n.* (MU-B-52274).

***Vitalianthus pseudoneurus* (A.Evans) Judz. &**

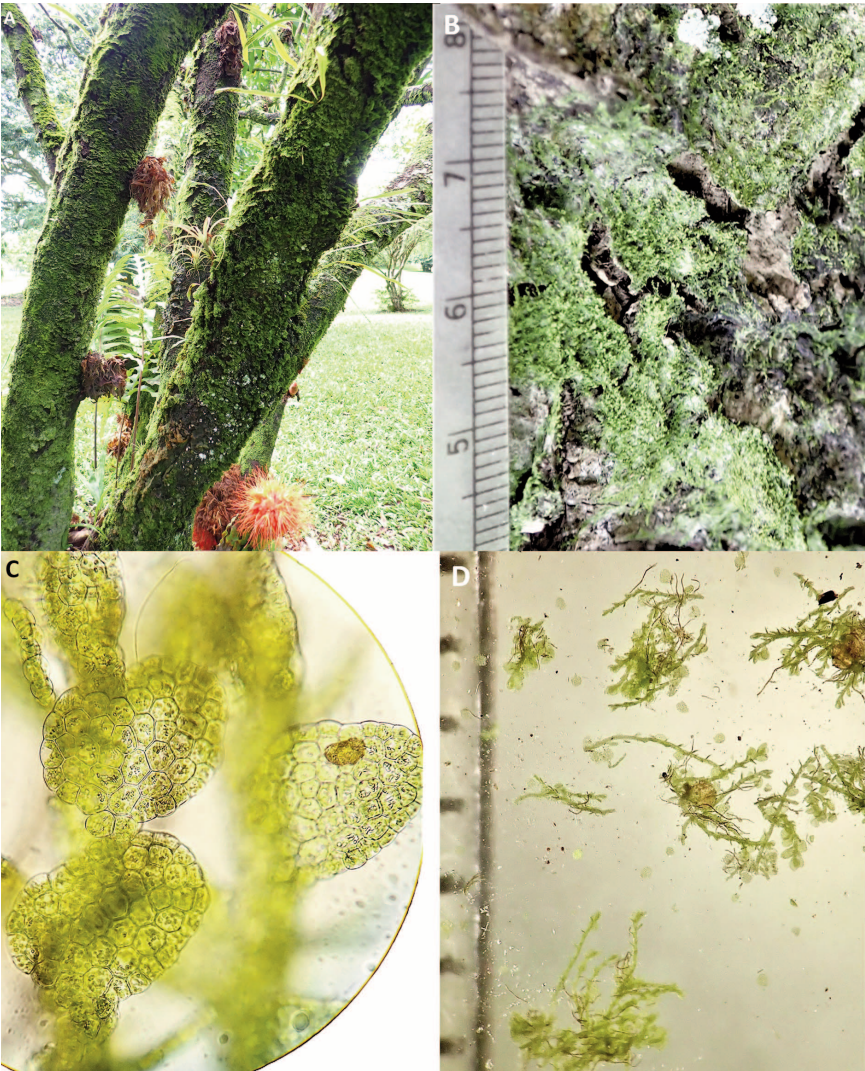
**A.V.Freire**

**New island record**

This endemic species has been previously documented from O‘ahu, Maui, and Hawai‘i (Judziewicz & Freire 2023: 165–166).

*Material examined.* **KAUAI:** Nā Pali-Kona Forest Reserve, Kalua Puhi Trail, tropical hardwood forest with guava and planted stand of *Cryptomeria japonica*, on hardwood trunk in filtered





**Figure 7.** *Lejeunea cocoens*. **A–D**, Hilo Arboretum Nursery, Hawai‘i Island, A.V. Freire & E.J. Judziewicz 23-500 (BISH), tiny, mat-forming bark epiphyte on exotic tree *Brownea macrophylla*. Associates include *Lejeunea flava* and the ferns *Crepidomanes parvulum* and *Lepisorus thunbergianus*. Photos by E.J. Judziewicz.

light, 20°08'30.7"N, 159°38'16.6"W, 4,220 ft [1,286 m], 18 Sep 2024, J.R. Shevock & T. Flynn 63972 (CAS, PTBG, UWSP).

**Lepidoziaceae*****Bazzania patens*** (Mont.) Trevis.**New island record**

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

*Material examined.* **HAWAII:** 12 miles below Kulani Prison [ca 500 m], 24 Jun 1953, *H.A. Miller & A.R.H. Lamberton* 5219, 5221 (MU).

***Lepidozia australis*** (Lehm. & Lindenb.) Mitt. **New island record**

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

*Material examined.* **MOLOKAʻI:** NW of Puʻu Kolekole, 3,800 ft [1,159 m], 29 May 1953, *H.A. Miller & A.R.H. Lamberton* 3419 (MU).

***Lepidozia holorrhiza*** (Reinw., Blume & Nees)

Nees

**New state record**

Miller *et al.* (1983) include this tropical Asian species, based on a Baldwin specimen, as “probably from Maui.” Staples and Imada (2006) list it as a dubious record, but we found a specimen at the Miami University herbarium (MU).

*Material examined.* **MAUI:** without locality, “ex hb. Stephani ex hb. Farlow,” *Baldwin s.n.* (MU-B-043377).

**Lophocoleaceae*****Chiloscyphus greenwelliae*** H.A.Mill.**New island record**

(Fig. 8)

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

*Material examined.* **MOLOKAʻI:** NW of Puʻu Kolekole, 3,800 ft [1,158 m], 29 May 1953, *H.A. Miller & A.R.H. Lamberton* 3410 (MU); Upper Waikolu Valley, pipeline trail, 4,000 ft [1,219 m], 2 Jun 1953, *H.A. Miller & A.R.H. Lamberton* 3798, 3827 (MU).

***Chiloscyphus laceratus*** (Steph.) J.J.Engel &

R.M.Schust.

**New island record**

This endemic species has previously been documented from Oʻahu (Thomas 2022), Molokaʻi, Lānaʻi (Judziewicz, Freire & Bogner 2023), Maui, and Kohala, Hawaiʻi (Miller 1963: 506). It may be misplaced in this genus; it appears to be close to *Heteroscyphus splendens* (Lehm & Lindenb.) Grolle, a widespread species that ranges from tropical East Africa, Madagascar, and tropical Asia to New Guinea, New Caledonia, Aotearoa-New Zealand, and Sāmoa (Pócs 1976; Piippo 1985; Thouvenot 2023). Both taxa share opposite entire leaves with large trigones, and broad, many-toothed underleaves. Unlike *Heteroscyphus splendens*, however, Hawaiian plants produce abundant leaf marginal gemmae; these are spherical, unicellular, and 20–25 µm in diameter.

*Material examined.* **KAUAI:** Hanalei Distr, Upper Limahuli Preserve, on tree bark in a sheltered valley in diverse wet forest, 1,095 m, Nov 2024, Susan Fawcett photo: (<https://www.inaturalist.org/observations/253460930>); ʻIole, northern headwaters, *Metrosideros-Cheirodendron* mixed forest, epiphytic on *Melicope degeneri*, medium green, occasional, 22.042327°N, 159.498744°W, 900 m, 16 Jan 2025, *K.R. Wood* 19703 (PTBG).



**Figure 8.** *Chiloscyphus laceratus*. Kauaʻi, Note the abundant leaf marginal gemmae. Photo by Susan Fawcett: <https://www.inaturalist.org/observations/253460930>.

***Lophocolea bicuspidata* Steph.**

**New island record**

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

*Material examined.* **LĀNAʻI:** Lānaʻihale, 2,600 ft [792 m], May 2024, Z. Pezzillo photo (<https://www.inaturalist.org/observations/235045949>).

**Plagiochilaceae**

***Plagiochila caduciloba* H.L.Blomq.**

**New island record**

This indigenous species, disjunct from the southern Appalachian, U.S., was previously documented from Kauaʻi (Judziewicz, Faccenda & Freire 2025) and Hawaiʻi (Judziewicz & Freire 2023: 169).

*Material examined.* **OʻAHU:** ʻŌpaeʻula, northern Koʻolau Range, 2 Oct 2024, M.K. Thomas 786 (BISH).

**Pleuroziaceae**

***Pleurozia conchifolia* (Hook. & Arn.) Austin**

**New island record**

(Fig. 9)

This indigenous species has been previously documented from Kauaʻi, Oʻahu, Molokaʻi, Maui, and, purportedly, Hawaiʻi (Staples & Imada 2006: 34). The latter island record is based on Miller *et al.* (1983), who does not cite any vouchers; Thiers (1993) does not cite any specimens from Hawaiʻi Island, and we did not examine any Hawaiʻi Island material





**Figure 9.** *Pleurozia conchifolia*. Near Mauga Cabin, Kohala Mountain, Hawai'i Island, 8 Jan 2024, photo by Pono Christianson.

of this species from either BISH, MU, or PTBG. Therefore, the following is the first documentation of the species there.

*Material examined.* **HAWAII:** Kohala, Pu'u O 'Umi Natural Area Reserve, near "Mauga Cabin," near Waipo'o fence line, 20.098°N, 155.695°W, 1,400 m, 24 Jan 2024, P. Christianson photograph (Fig. 9); 20.100532°N, 155.694187°W, 4,500 ft [1,372 m], 25 Feb 2025, *A. Cullison s.n.* (BISH); 'Eke fence line east, 20.08006°N, 155.72332° W, 5,280 ft [1,609 m], 25 Feb 2025, *P. Christianson s.n.* (BISH).

***Pleurozia inflata* (Austin) Austin**

**New island record**

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

*Material examined.* **MOLOKA'I:** Kamakou Preserve boardwalk, 4,160 ft [1,268 m], 18 Oct 2024, Z. Pezzillo photo (<https://www.inaturalist.org/observations/248417003>).

**Radulaceae*****Radula gracilis*** Mitt. ex Steph.**Taxonomic note**[= *Radula javanica* Gottsche]

*Radula gracilis* was recognized by So (2005) and Staples & Imada (2006) but relegated to synonymy under *R. javanica* by Gradstein (2021: 630); the latter is a species that occurs on all main Hawaiian Islands (Judziewicz, Freire & Thomas 2024: 17).

**Scapaniaceae*****Anastrophyllum fissum*** Steph.**New island record**

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

*Material examined.* **HAWAII:** Kohala Mountains Forest Reserve, 19 Jun 1953, 4,000 ft [1,219 m], H.A. Miller & A.R.H. Lamberton 4881 (MU); Kohala, near “Mauga Cabin,” near Waipo‘o fence-line, 20.098°N, 155.695°W, 1,400 m, 24 Jan 2024, P. Christianson s.n. (BISH-797581, 797776).

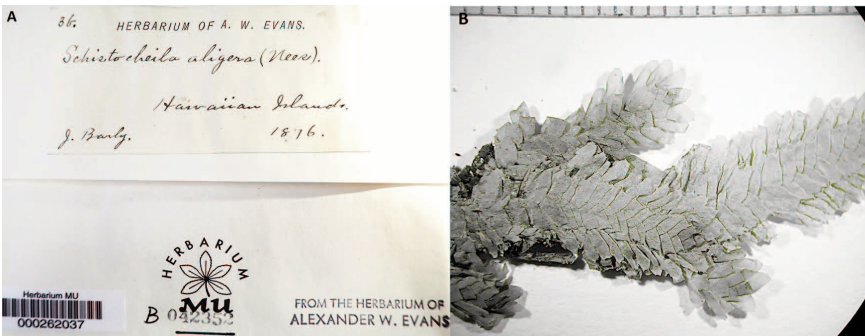
**Schistochilaceae*****Schistochila aligera*** (Nees et Blume)**New state record**

J.B. Jack &amp; Steph.

(Fig. 10)

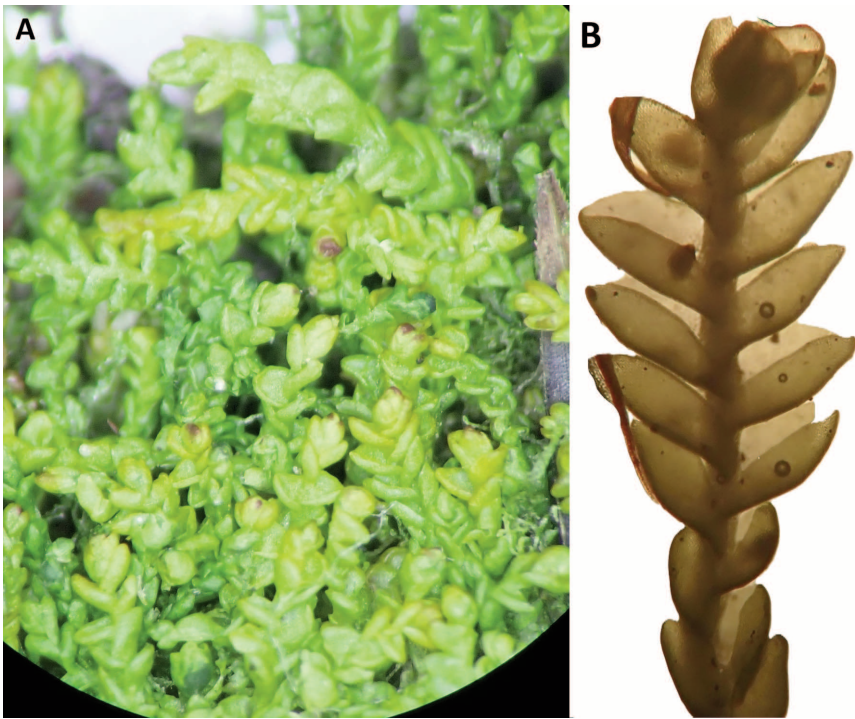
*Schistochila aligera* is a widespread species of tropical Asia and Oceania, but only the following record is known from Hawai‘i. We were unable to learn anything about the collector or their itinerary. One other species of this genus is known from Hawai‘i, the Moloka‘i endemic *Schistochila cookei* (H.A. Mill.) R.M. Schust. (Judziewicz & Freire 2023: 172); based on our examination of the Cooke isotype at MU, the latter species has leaf trigones and lamellae and is quite distinct from *S. aligera*.

*Material examined.* “Hawaiian Islands,” without further location, 1876, J. Barly s.n. (MU 42352).



**Figure 10.** *Schistochila aligera*. **A–B,** From unknown Hawaiian locality, J. Barly s.n., 1876 (MU). Photos by E.J. Judziewicz.





**Figure 11.** *Solenostoma hawaicum*. **A–B**, Pu'u Kukui, West Maui, Z. Pezillo 1051 (BISH), Maui. Photos by E.J. Judziewicz.

### Solenostomaceae

*Solenostoma hawaicum* H.A.Mill.

### Taxonomic note

(Fig. 11)

*Solenostoma hawaicum* was reduced to a synonym of *S. exsertum* (A. Evans) Steph. (an endemic species found on all major islands; Judziewicz & Freire 2023: 172). However, upon examination of recent West Maui collections, we agree with Miller (1963: 513–514) that it is easily distinguished from *S. exsertum* by its smaller size, concave rather than plane leaves, and evident leaf trigones. Treated as *Jungermannia hawaica* (H.A.Mill.) Váňa by Váňa (1975: 362–364) and Staples and Imada (2006). Söderström *et al.* (2016: 131) cite *S. exsertum* as an accepted species, but neglects to account for *S. hawaicum*. The type of *Solenostoma hawaicum*, from O'ahu (Ko'olau Range, south ridge of Kīpapa Gulch, 1,800–2,500 ft [549–762 m], 23 Nov. 1952, *H.A. Miller 2701*, MU), was not examined. Miller (1963) also cites three collections (paratypes) from the summit of Pu'u Kukui, West Maui (*O. Selling 5027, 5033.5, and 5255*, all from S (Stockholm Herbarium), also not examined by us. However, two 2024 Pezillo collections from the latter locality match Miller's drawing and description of this species.

*Material examined. MAUI:* West Maui, summit of Pu'u Kukui, high elevation bog, 5,600 ft [1,707 m], 9 Dec 2024, Z. Pezillo 1048, 1051 (BISH).

**Southbyaceae*****Southbya organensis* Herzog****New island record**

This indigenous species has been previously documented from Maui (Staples & Imada 2006) and Kaua'i (Judziewicz, Faccenda & Freire 2025).

*Material examined.* **MOLOKA'I:** West rim of Waikolu Canyon, 4,000 ft [1,219 m], 1 Jun 1953, H.A. Miller & A.R.H. Lamberton 3708 (MU).

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