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## Assorted additions to the Hawaiian weed flora

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Between 2021 and 2023, extensive roadside plant surveys were conducted across the islands of Hawai'i. While the goal of these surveys was to identify and map grasses, many new non-grass records were also found. For further details about these surveys, see Faccenda (2023c). This paper includes records located during these surveys but not fitting into previous reports, which were largely thematic (Faccenda 2023a–c; Faccenda 2024; Faccenda & Daehler 2024).

This paper herein enumerates 14 new island records, 2 corrections of previously published misidentified plants, 2 confirmations of naturalization for species previously published as questionably naturalized, 1 new naturalization, and 1 new questionable naturalization across Kaua'i, O'ahu, Maui, and Hawai'i. All identifications were made by the author. Voucher collections mentioned are housed in Bishop Museum's Herbarium Pacificum (BISH), Honolulu, Hawai'i.

### Acanthaceae

#### *Asystasia gangetica*

subsp. *micrantha* (Nees) Ensermu

#### New island record

Previously documented on Kaua'i, Maui, and Hawai'i (Starr & Starr 2016; Starr & Starr 2022; Brock *et al.* 2023), *Asystasia gangetica* subsp. *micrantha* is now known to be naturalized on O'ahu, where it was found growing on a roadside in Waimānalo.

*Material examined.* O'AHU: Waimānalo, Mahiku Pl, partly sunny, moist area near houses, typical form of *Asystasia gangetica* also seen in this area, flowers white and more closed than typical variety, <10 plants seen on roadside, 39 m, 21.346510, -157.738430, 02 Aug 2022, K. Faccenda 2571.

### Araceae

#### *Philodendron hederaceum* (Jacq.)

#### New naturalized record;

Schott var. *hederaceum*

#### Nomenclatural note

*Philodendron scandens* was previously reported as naturalized on Kaua'i and Maui (Imada 2019) and adventive at Lyon Arboretum (Daehler & Baker 2006); however, this name has now been synonymized with *P. hederaceum* var. *hederaceum* (Croat 1997). *Philodendron hederaceum* is now also known to be naturalized on O'ahu, and Hawai'i, where large colonies have been seen spreading vegetatively far from cultivation, along with seedlings being found off of the Pu'u Pia Trail on O'ahu.

*Material examined.* O'AHU: Kalihi Valley, Kalihi St in back of valley, roadside, wet, full shade, appearing wild on side of road, climbing over 8 m up a tree, near houses but not directly in a yard, 21.363871, -157.844978, 19 May 2022, K. Faccenda & B. Najarian 2376; Mānoa, Pu'u Pia Trail at base of trail in stream bed, shady forest floor, small patch 1 m wide, separated by several hundred meters from large main patch further up trail, evidence of reproduction and dispersal of this species, 122 m, 21.322551, -157.797446, 27 Aug 2022, K. Faccenda 2690; Lyon Arboretum, Mānoa,

near Hawaiian plant section, in wet rainforest, common climbing vine in arboretum, growing over 20 m up trees into canopy, leaves almost satinlike in texture when young, 184 m, 21.335749, -157.803648, 29 Sep 2022, *K. Faccenda 2718*. **HAWAII**: Hāmākua Distr, ca mile marker 33 along Hwy 19, besides bridge over Mohuna Stream, sterile vine to 25 ft high, 20° 1.524' N, 155° 20.019' W, 03 Feb 2007, *G. Staples 1246*; South Hilo Distr, Waiākea Uka, along Hoaka Rd at telephone pole #13, just below intersection with Mala'ai Rd, 275 m, 19° 39.642' N, 155° 7.164' W, 17 Jan 2007, *G. Staples & E. Wilson 1238*; Hāmākua Distr, ca mile marker 25 along Hwy 19, 19° 58.941' N, 155° 13.761' W, 06 Feb 2007, *G. Staples 1249*.

***Philodendron lacerum* (Jacq.) Schott**

**New island record**

*Philodendron lacerum* was published as a taxon showing signs of naturalization at Lyon Arboretum, O'ahu (Daehler & Baker 2006). It is now showing evidence of naturalization on Kaua'i, where it was found roadside on a steep bank opposite from house lots, where it seemed unlikely to have been planted. *Philodendron lacerum* has also been reported as naturalizing on East Maui (Oppenheimer 2004).

*Material examined*. **KAUAI**: Wainiha, along road in valley about 2 km up from valley base, roadside, moist shady area, within several hundred feet of houses but not immediately adjacent to a house, on hillside above road, not in close proximity to any houses/gardens, climbing vine along forest understory and up trees, naturalized, 22.200367, -159.555496, 30 May 2022, *K. Faccenda 2467*.

***Philodendron pinnatifidum* (Jacq.) Schott**

**Correction**

*Philodendron pinnatifidum* was published as naturalized on Kaua'i by Flynn & Lorence (2002); however, the plant they collected was actually *P. radiatum*. As there are no other naturalized records of *Philodendron pinnatifidum* in Hawai'i, it should be removed from the naturalized checklist.

***Philodendron radiatum* Schott**

**New naturalized record**

*Philodendron radiatum* is now known to be naturalized on Kaua'i, where a colony was found on a roadside in Kalāheo not in close proximity to houses. After collecting this specimen, it was realized that the same population was collected 22 years prior, but was misidentified as *P. pinnatifidum* (see correction above). *Philodendron radiatum* was intentionally introduced as an ornamental into Hawai'i. It can be identified by its large leaves up to 80 cm long, which are deeply pinnately lobed to bipinnately lobed (Croat 1997), as opposed to *P. pinnatifidum*, which does not have bipinnately lobed leaves.

*Material examined*. **KAUAI**: Kalāheo, Pu'u Rd about 0.5 km S of Pu'u Lani Pl, near side of road with *Panicum maximum* and koa haole, naturalized on side of road, not in proximity to any houses, 21.914441, -159.536279, 02 Jun 2022, *K. Faccenda 2453*; Kōloa Distr, Kalāheo, along Pu'u Rd ca 0.9 mi from the northernmost junction with Papalina Rd, secondary vegetation of *Syzygium cuminii*, *Leucaena leucocephala*, *Grevillea robusta*, *Panicum maximum*, and *Scindapsus aureus*, ca 189 m, 14 Nov 2000, *T. Flynn 6762* (PTBG).

**Asteraceae**

***Pseudogynoxys chenopodioides***

(Kunth) Cabrera

**New island record**

*Pseudogynoxys chenopodioides*, a species formerly only known to grow in gardens on O'ahu, has now been documented growing in a naturalized context on the Crouching Lion Trail in Ka'a'awa, where two large patches about 3 m in diameter were found along the

trail. *Pseudogynoxys chenopodioides* has previously been reported as naturalized on Hawai'i Island (Wagner *et al.* 1990).

*Material examined.* O'AHU: Crouching Lion Trail N of Ka'a'awa, about 300 m up trail, along trail, open, moist sunny area, 2 large patches seen growing mostly on *Schinus*, each patch about 3 m long and of probably similar depth, 2 patches relatively close to each other, flowers red to orange, vine, 128 m, 21.557201, -157.863741, 23 Aug 2022, K. Faccenda & T. Chapin 2686; Kahana, trailside, woody vine ca 3 m high, unsure if naturalized, one mature plant with 7 immature plants, none found anywhere along trail except under mature plant, possibly beginning to naturalize in area, 21.55792, -157.86636, 16 Nov 2018, M. Cain & S. Pilman 1.

## Cactaceae

*Harrisia martinii* (Labour.) Britton

### New island record

*Harrisia martinii* was found naturalized along the road running through Mau'umae Nature Park as well as further into the park, almost 50 m away from the road. At least 2 colonies were found, but it was difficult to judge exactly how many plants were in each colony. The cactus was both sprawling on the ground and also climbing up trees. Unlike *Selenicereus undatus*, the other naturalized sprawling cactus in the area, this species has long spines exceeding 1 cm per node, as well as having swollen areoles (Figure 1). *Harrisia martinii* was previously published as naturalized on Kaua'i (Wagner *et al.* 1990).

*Material examined.* O'AHU: Honolulu, Mau'umae Nature Park, trail though upper portion of park, dry, sunny, scrubby area along road, climbing cactus like dragon fruit, fruits green, interior white, tepals greenish on outside and pure white on inside, stems vaguely circular, some stems with prominent areoles and others without areoles, 21.287182, -157.791873, 14 May 2022, K. Faccenda 2363.

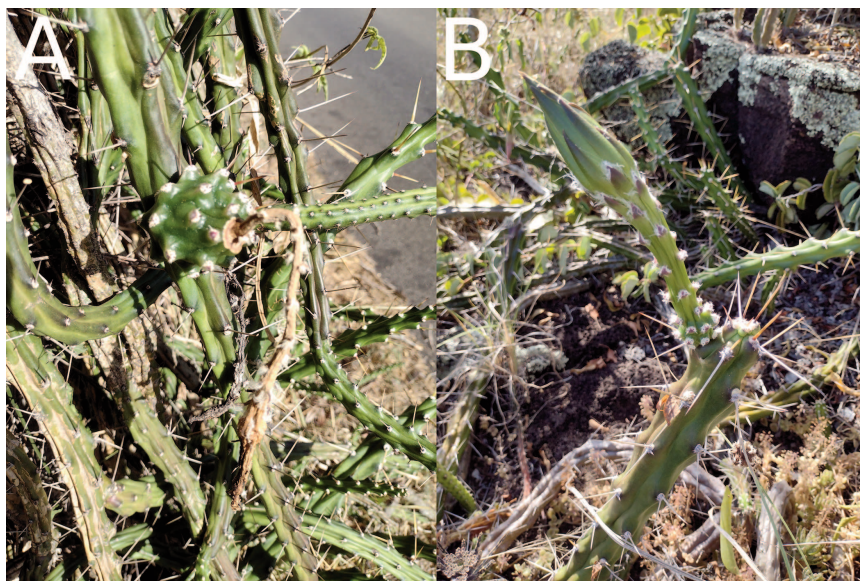


Figure 1. *Harrisia martinii* found in Mau'umae Nature Park, O'ahu. A, fruit. B, bud.

**Caryophyllaceae*****Cerastium glomeratum*** Thuill.**New island record**

*Cerastium glomeratum*, previously reported only from Maui (Starr *et al.* 2004), is now known to be naturalized on O‘ahu and Hawai‘i, where it was found growing from roadsides in moist, relatively cool areas at Pu‘u Ka‘ala and Hale‘iwa on O‘ahu and Hāmākua on Hawai‘i

*Material examined.* **O‘AHU:** Pu‘u Ka‘ala, summit, roadside, moist, cool, from gravel in open area, common, 1219 m, 21.507837, -158.143615, 21 Jan 2022, *K. Faccenda 2205*; Hale‘iwa, intersection of Kawailoa Dr. and Kamehameha Hwy, shady, moist roadside, common annual, 2 m, 21.608095, -158.094806, 22 Dec 2022, *K. Faccenda 2878*. **HAWAI‘I:** Hāmākua Distr, Kalaniai Rd about 1 km from Hwy 19, roadside, sunny, moist, uncommon, 359 m, 20.054118, -155.421904, 06 Mar 2022, *K. Faccenda 2345*.

**Crassulaceae*****Kalanchoe daigremontiana***

Raym.-Hamet & H. Perrier

**Correction**

*Kalanchoe daigremontiana* is no longer known to be naturalized on Maui, as the specimen published by Starr *et al.* (2006) has been reidentified as *K. ×houghtonii* (Faccenda 2024) and no other specimens document its naturalization on the island.

***Kalanchoe delagoensis*** Eckl. & Zeyh.**Nomenclatural note**

The name *Kalanchoe tubiflora*, first applied to Hawaiian plants by Wagner *et al.* (1990), has been reduced to a synonym of *Kalanchoe delagoensis* as *K. tubiflora*, due to priority (Shaw 2008).

**Fabaceae*****Kummerowia striata*** (Thunb.) Schindl.**Confirmation of naturalization**

*Kummerowia striata* was treated as adventive on Hawai‘i Island (Wagner *et al.* 1990) based on one collection from 1932. It has evidently persisted, as populations were found in Hawai‘i Volcanoes National Park along both the base of Mauna Loa Strip Road and along Chain of Craters Road (Figure 2). It was uncommon along roadsides and in total less than 50 plants were seen, all of which were on gravelly soil within 1 meter of the edge of the road. This species was introduced in 1929 for use as a forage legume (HAES n.d.). *Kummerowia striata* is now known to be naturalized on O‘ahu, Maui, and Hawai‘i (Imada 2019).

*Material examined.* **HAWAI‘I:** Hawaii Volcanoes National Park, base of Mauna Loa Strip Rd near Belt Rd, mowed roadside, dry sunny area, common along first 1 km or so of road, decumbent trailing herb growing only on gravel of roadbed and not seen further away from road, flowers pinkish purple, forming small mats about 40 cm in diameter, no plants seen growing erect, 1230 m, 19.430844, -155.284080, 12 Aug 2022, *K. Faccenda & J. Gross 2615*.

**Heliconiaceae*****Heliconia bihai*** (L.) L.**New island record**

Previously reported as naturalized on Maui (Wagner *et al.* 1990), *Heliconia bihai* is now also known to be naturalized on O‘ahu, where naturalized plants were found in Nu‘uanu and Kalihi Valleys along roadsides and far from gardens. In Kalihi Valley, there were over 20 clumps seen in wet, deeply shaded woods (Figure 3). Plants were also seen naturalized in Makiki Valley, but were not collected.



**Figure 2.** *Kummerowia striata* as seen at the base of Mauna Loa Strip Road, Hawai‘i Island.



**Figure 3.** *Heliconia bihai* naturalized in Kalihi Valley, O‘ahu.

*Material examined.* **O'AHU:** Nu'uuanu Pali Dr above where housing development ends, roadside, shaded, moist, 21.348822, -157.818839, 29 May 2021, *K. Faccenda 1929*; Kalihi Valley, Kalihi St in back of valley, roadside, wet, full shade, common, going over 50 ft into woods from edge of road, naturalized and abundant in this area, 21.362859, -157.846711, 19 May 2022, *K. Faccenda & B. Najarian 2375*.

### Malvaceae

*Malvastrum americanum* (L.) Torr.

#### New island record

*Malvastrum americanum* was found naturalized during roadside surveys on Maui, where large stands were found in pasture lands near Kaupō. *Malvastrum americanum* is now known to be naturalized on O'ahu, Moloka'i, and Maui (Imada 2019).

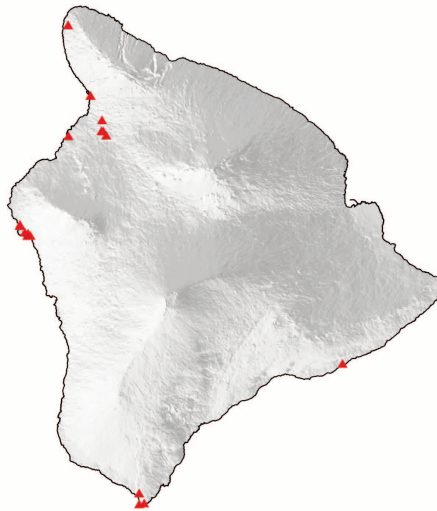
*Material examined.* **MAUI:** Kaupō, Pi'ilani Hwy, ca 3 km W of Kaupō town, roadside weed along edge of pasture, abundant shrubby weed to 1 m tall, forming large stands in areas where it is apparently avoided by cattle, flowers bright yellow, 100 m, 20.629782, -156.159367, 26 Oct 2022, *K. Faccenda 2794*.

*Sida ciliaris* L.

#### New island record

*Sida ciliaris*, a common weed throughout Hawai'i, is now reported to have colonized Hawai'i Island, making it known from all the main islands except Ni'ihau (Imada 2019). This species is widespread on the leeward side of Hawai'i and has likely been naturalized for some time before it was finally vouchered in 2022. This weed was seen at South Point, Kailua-Kona, Waikoloa, and Hāwī (Figure 4), although only the Hāwī population was vouchered.

*Material examined.* **HAWAII:** Kohala, Rt 270, about 7 km NW of Kawaihae, just N of Kohala Kai, dry sunny roadside, uncommon annual near roadside, one patch seen, 20.213527, -155.887168, 05 Mar 2022, *K. Faccenda 2330*; Hawaii Volcanoes National Park, Chain of Craters Rd, at parking lot for Holei sea arch, edge of parking lot, only seen on edge of parking lot, <20 plants, no flowers, 19 m, 19.295652, -155.097191, 19 Aug 2022, *K. Faccenda 2682*.



**Figure 4.** Distribution of *Sida ciliaris* on Hawai'i Island, based on iNaturalist data reviewed by the author.

**Mazaceae*****Mazus pumilus*** (Burm. f.) Steenis**Questionable naturalization**

*Mazus pumilus* has formerly been reported as naturalized on Maui, and as a questionable naturalization on O‘ahu (Imada 2019). A single plant was found growing as a weed in a potted plant for sale at Kauai Nursery & Landscaping. Given that no plants were found growing from the ground in the area, it should be considered a questionable naturalization, as it is likely to spread from the nursery.

*Material examined.* **KAUA‘I:** Kauai Nursery & Landscaping off of Kaunualii Hwy just W of Puhi, weed around garden center area, growing out of potted plant for sale, rare, only one plant seen, flowers purple and white, 102 m, 21.964674, -159.405269, 08 Jul 2022, *K. Faccenda & S. Vanaprucks 2518*.

**Plantaginaceae*****Veronica arvensis*** L.**New island record**

*Veronica arvensis*, recorded as naturalized on O‘ahu, Moloka‘i, Maui, and Hawai‘i (Imada 2019), is now also known to be naturalized on Kaua‘i, where it was seen between 580 and 1250 m elevation in the Kōke‘e area.

*Material examined.* **KAUA‘I:** Waimea Canyon Road, hunter check in station ca 10 km N of Waimea, mowed grass near check in station building, semi-moist, sunny area, flowers bright blue, rare, 799 m, 22.043643, -159.662802, 02 Jun 2022, *K. Faccenda 2455*; Mākaha Ridge, near Kōke‘e, Pacific Missile Testing Range, 1900 ft [580 m], 05 Mar 2011, *A. Whistler s.n.* (BISH 778991); Kōke‘e State Park, Pu‘u O Kila lookout, weed all around lookout, 4100 ft [1250 m], 09 Oct 1988, *T. Flynn 3101*.

**Proteaceae*****Macadamia tetraphylla*** L.A.S. Johnson**New island record**

Seedlings of *Macadamia tetraphylla* have been seen around O‘ahu, showing that this species is naturalizing in shady mesic sites near where trees had been planted and abandoned (Figure 5). These seedlings are reaching considerable size, with the larger ones up to 3 m tall and likely soon to reach reproductive size. So far three sites have been observed with seedlings. There were 25 seedlings counted at the Tantalus Arboretum Trail in close vicinity to what appeared to be a single parent tree. Five seedlings were found along the Pu‘u Kaua Trail about 500 m mauka of the trailhead. *Macadamia integrifolia* and *M. tetraphylla* were also seen planted nearby. Four seedlings were found at Pu‘u Pia about 200 m mauka of the trailhead and about 20 m off the trail. *Macadamia tetraphylla* is commonly called the rough-shelled macadamia nut and was introduced for nut production (Staples & Herbst 2005). It can be identified by its sessile or subsessile leaves with petioles up to 4 mm long, and leaves typically 4 per node, as opposed to 3 in *M. integrifolia*.

*Material examined.* **O‘AHU:** Tantalus, Tantalus Arboretum Trail, wet forest, full shade, 25 seedlings seen in area, plants of various sizes seemingly from just one parent tree, seedlings up to 2.5 m tall, along about 100 ft of trail surveyed for seedlings, 315 m, 21.325967, -157.827419, 19 Jan 2022, *K. Faccenda 2202*; Wai‘anae Mts, trail to Pu‘u Kaua, mesic forest, deep shade, 5 seedlings seen along trail, area not surveyed off trail, plantings of *M. tetraphylla* and *M. integrifolia* also seen in area, seedlings reaching about 3 m tall, healthy, 21.441886, -158.084946, 28 May 2023, *K. Faccenda 3111*.



Figure 5. *Macadamia tetraphylla* seedling along the Pu‘u Kaua Trail, O‘ahu.

### Rubiaceae

*Pentas lanceolata* (Forssk.) Deflers

**New island record**

*Pentas lanceolata*, a common garden ornamental, has already been documented as naturalized on Maui and Hawai‘i (Imada 2019). It is now also known to be naturalized on O‘ahu, where it was seen growing out of a rock wall along a stream in Pauoa (Figure 6) and also spreading along a roadside on Round Top, apparently from a nearby garden.



*Material examined.* O'AHU: Round Top Rd, 200 m mauka of Makiki St, shady roadside, relatively dry, probably persisting from planting, but spreading, many plants seen, 21.310339, -157.830046, 27 May 2022, K. Faccenda 2382.



**Figure 6.** *Pentas lanceolata* naturalized on a rock wall in Pauoa, O'ahu.

**Verbenaceae*****Verbena bonariensis* L.****Confirmation of naturalization**

*Verbena bonariensis* was published as a questionable naturalization on O‘ahu by Frohlich & Lau (2008), as the population was controlled by the O‘ahu Invasive Species Committee. However, the species was not successfully eradicated, as another plant was found in Waimānalo, confirming that it is naturalized on O‘ahu.

*Material examined.* **O‘AHU:** Waimānalo, at end of Mahailua St, moist, shady roadside, uncommon in this area, one plant seen, flowers very congested, light purple, 62 m, 21.333089, -157.735846, 02 Aug 2022, K. Faccenda & E. Peterson 2564.

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