

New Hawaiian Plant Records for 2015¹

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Ongoing field work, collections, and research continue to produce new, previously unpublished distributional records for the Hawaiian flora. In this paper, 3 new naturalized and state records, and 13 new island records are reported. A total of 16 taxa in 14 plant families are discussed. One is a pteridophyte, nine are dicotyledonous angiosperms, and six are monocots. Three of the taxa are native. Collections were made on the islands of Moloka'i, Lāna'i, and Maui. Information regarding the formerly known distribution of flowering plants is based on the *Manual of the Flowering Plants of Hawai'i* (Wagner *et al.* 1999) and information subsequently published in the *Records of the Hawaii Biological Survey*. Distribution and taxonomy of ferns follows *Hawai'i's Ferns and Fern Allies* (Palmer 2003).

Voucher specimens are deposited at the Bernice Pauahi Bishop Museum *Herbarium Pacificum* (BISH), Honolulu, with duplicates at the National Tropical Botanical Garden (PTBG), Lāwa'i, Kaua'i. A few specimens may be at only one or more facilities; only in these cases will the herbarium acronym be cited.

Annonaceae

***Annona cherimola* Mill.**

New island record

The cherimoya was first documented as naturalized on Hawai'i Island (Staples *et al.* 2002: 4). This tree, cultivated for its fruit, is not uncommon in areas of upcountry Maui. The trees are quite common in Hālonā Gulch on West Maui, where they form a common element along an intermittent stream. Feral pigs and occasional stream flow are probably dispersing the seeds. The East Maui specimen is also cited since it seems this is sparingly naturalized, with many seedlings in and around mature trees planted in the 1950s at the bottom of the cinder cone, as well as occasional trees on the outer slopes. Feral pigs and humans are likely the dispersal agents.

Material examined. **MAUI:** West Maui, Lahaina Distr., West Maui Natural Area Reserve, Pana'ewa section, Hālonā Gulch, naturalized trees, common in gulch bottom, 610 m, 3 Sep 2015, Oppenheimer, K. Palolo & K. Alreck #H91501; East Maui, Makawao Distr., Pu'u Māhoe, 725 m, 6 Mar 2015, Oppenheimer H31503.

Asteraceae

***Parthenium hysterophorus* L.**

New island record

Known from Kaua'i, O'ahu, Moloka'i, Maui, and Hawai'i (Wagner *et al.* 1999: 347; Wagner & Herbst 1995: 16), false ragweed was recently found on Lāna'i. Pūlama Lāna'i, the landowner, responded immediately with control efforts, and will continue to monitor the infestation and respond appropriately. Although there were hundreds if not thousands of plants, it seems to be restricted to a few acres in extent. It is believed to have arrived as a contaminant in a container shipment of hay from upcountry Maui, where this is a common roadside weed.

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Material examined. **LĀNAʻI:** Kōʻele, across from stables, along unpaved road to Keahikawelo and Kānepuʻu, white-flowered shrubs in disturbed area, localized but dense infestation, 488 m, 24 Mar 2015, *Oppenheimer & Bustamente H31510*.

Costaceae

Costus malortieanus H. Wendl.

New naturalized record

Native to the forests and lowlands of Nicaragua and Costa Rica (Whistler 2000: 153; Staples & Herbst 2005: 652), stepladder plant differs from other Costaceae naturalized in Hawaiʻi by its short ligule and pubescent leaves, the adaxial surface with dark green bands converging from apex to base.

Material examined. **MAUI:** East Maui, Hāna Distr., Hāhālawe Gulch, 2 m tall herbs forming thickets in open gullies, with *Hedychium*; flowers white, distal end tinged red, 340 ft., 17 Dec 2005, *Oppenheimer H120505* (BISH).

Cyperaceae

Schoenoplectus tabernaemontani

New island record

(C.C. Gmel.) Palla

An indigenous sedge with a Hawaiian distribution of Niʻihau, Kauaʻi, Oʻahu, Molokaʻi, and Hawaiʻi (Wagner *et al.* 1999: 1432), its name was later changed from *S. lacustris* (L.) Palla subsp. *validus* (Vahl) T. Koyama (Kennedy *et al.* 2010:21). It was found on West Maui growing over several acres in saturated, muddy ground.

Material examined. **MAUI:** West Maui, Wailuku Distr., ʻĪao Valley, 543 m, 2 Apr 2014, *Oppenheimer, Bustamente & J. Nielsen H41402*.

Euphorbiaceae

Euphorbia degeneri Sherff

New island record

Scattered in coastal and strand vegetation on all of the main islands except Lānaʻi and Kahoʻolawe (Wagner *et al.* 1999: 607), this species was recently collected on Lānaʻi on the northeast coast.

Material examined. **LĀNAʻI:** Laewahie, rare, 10 m, 7 Apr 2015, *Oppenheimer & Bustamente H41517*.

Molluginaceae

Mollugo cerviana (L.) Ser.

New island record

This annual herb has been documented from Oʻahu, Lānaʻi, and Hawaiʻi (Herbst *et al.* 2004: 9; Imada *et al.* 2008: 13; Wagner *et al.* 1999: 922). Recently it was found on East Maui, in coastal vegetation.

Material examined. **MAUI:** East Maui, Makawao Distr., ½ mi. E of Māliko Gulch, locally common on soil ledges at base of bluffs, 6 m, 15 Apr 2015, *Oppenheimer & Bustamente H41527*.

Myrtaceae

Eucalyptus pulchella Desf.

New state record

Endemic to Tasmania and known as white peppermint or narrow-leaved peppermint, this tree was not previously documented from Hawaiʻi. This population was previously identified as *E. amygdalina* Labill. (Medeiros *et al.* 1998:113), which may or may not also occur in this area.

Material examined. **MAUI:** East Maui, Makawao Distr., Kāliālinui, growing in forestry plantings along road between Hosmer Grove and Waikamoi, 2042 m, 29 Nov 2001, *Oppenheimer H110159*.

Onagraceae***Epilobium billardierianum*** Ser.**New island record**subsp. *cinereum* (A. Rich) P.H. Raven & Engelhorn

This small herb is naturalized on the islands of Kauaʻi, Oʻahu, Maui, and Hawaiʻi (Wagner *et al.* 1999: 995). It was recently collected on Molokaʻi.

Material examined. **MOLOKAʻI:** Puaʻahala ahupuaʻa, upper drainage of Kua Gulch, W of Kalapamoa Ridge, single mature plant, many seedlings, all pulled, 1180 m, 19 May 2015, *Oppenheimer & Kallstrom H51516* (BISH); Wailau Valley, Pūlena Stream, S side tributary, 380 m, 14 Jul 2015, *Oppenheimer et al. H71515*.

Orchidaceae***Polystachya concreta*** (Jacq.) Garay & Sweet**New island record**

Previously known as a naturalized epiphyte on Oʻahu (Staples *et al.* 2003: 17) and West Maui (Oppenheimer 2013: 18), this orchid was found locally common in lowland wet forest on Molokaʻi. Consistent with the reports from Oʻahu and Maui, it seems to be an obligate epiphyte.

Material examined. **MOLOKAʻI:** Wailau Valley, Pūlena Stream, S side tributary, 406 m, 13 Jul 2015 *Oppenheimer et al. H71513*; *loc. cit.*, 391 m, 16 Jul 2015, *Oppenheimer et al. H71525*.

Poaceae***Axonopus compressus*** (Sw.) P. Beauv.**New island record**

This species of carpetgrass has been previously documented from Kauaʻi, Oʻahu, Molokaʻi, Maui, and Hawaiʻi (Oppenheimer 2003:19; 2004:15; Starr *et al.* 2004:26; Oppenheimer 2007: 29). It is now known from Lānaʻi.

Material examined. **LĀNAʻI:** in lawn near Mānele Harbor, 3 m, 22 Jan 2015, *Oppenheimer H1150*; Lānaʻi City, weed in residential lawn, 495 m., 26 Mar 2015, *Oppenheimer & Bustamente H31514*.

Elymus repens (L.) Gould**New naturalized record**

The genus *Elymus* L. has not been previously documented as an element of the naturalized flora in Hawaiʻi. In a note in the introduction to the Poaceae in Wagner *et al.* (1999: 1482), *E. triticoides* Buckley was mentioned as having been collected once in a pasture on Hawaiʻi Island in 1936. *Elymus repens* (couch grass or quackgrass), is a perennial native to most of Europe, Asia, the Arctic biome, and northwestern Africa, but has been introduced to other areas for forage or erosion control, but is often considered a weed.

Material examined. **MAUI:** East Maui, Makawao Distr., top of Olinda Rd. at gate to pasture, clumping grass, 1219 m, 9 May 2006, *Oppenheimer H50609* (BISH, K, PTBG)

Rubiaceae***Kadua fosbergii*****New island record**

(W.L. Wagner & D.R. Herbst) W.L. Wagner & Lorence

Occurring on windswept ridges and upper slopes in wet forest from 610–900 m on Lānaʻi, and 795–1000 m in the Koʻolau Mountains of Oʻahu (Wagner *et al.* 1999: 1146), plants referable to this species were recently found on East Maui at higher elevations. The plants here are also taller—up to 6m—and are on the leeward side of the island. They also differ in the denser pubescence and smaller calyx lobes (Dave Lorence, PTBG, pers. comm.), but share the characteristic rugose upper leaf surface, revolute leaf margins, and spreading calyx lobes. Only a half -dozen widely separated trees have been found so far.

Material examined. MAUI: East Maui, Hāna Distr., Kahikinui, upper Kepuni drainage basin, 1669 m, 17 Sep 2013, *Oppenheimer et al. H91313* (PTBG); west fork of Manawainui, 1585 m, 26 Aug 2014, *Oppenheimer et al. H81413*; central Manawainui drainage basin, 1521 m, 24 Jul 2015, *Oppenheimer et al. H71546*.

Scrophulariaceae

Castilleja arvensis Cham & Schldtl.

New island record

A small herb known from Kaua'i, O'ahu, Lāna'i, Maui, and Hawai'i (Wagner *et al.* 1999: 1240; Staples *et al.* 2003: 19; Oppenheimer 2007:31), it is not surprising it occurs on Moloka'i as well.

Material examined. MOLOKA'I: Wailau Valley, Pūlena Str., S side, 450 m, 14 Jul 2015, *Oppenheimer et al. H71517*.

Parentucellia viscosa (L.) Caruel

New island record

This species was treated in the *Manual* (Wagner *et al.* 1999: 1246) as occurring only on Hawai'i Island; it was found on Haleakalā, Maui after the cut off date (1987) prior to publication. There have been two colonies near each other—one east and one west of Pōhakupālahā. Medeiros *et al.* (1998:140) reported the following: “Single small population discovered in 1988 in southeast corner of grassland, east of Pōhakupālahā on the Kīpahulu side of ridgeline fence, 8050 ft. In 1989, all plants (305 individuals) in this small population were removed and site marked with pvc stakes to allow for monitoring of future germinants; annually, between 10 to 30 plants have been removed (P. Welton and W. Haus, pers. comm.). New island record. [Alien: native to Mediterranean region].” In July 2015 the colony west of Pōhakupālahā was encountered and again all plants (at least 50) were uprooted. It is unclear if the colony east is still extant and when it was last monitored. Vouchers collected by Stemmermann and Gagné were indicated as being deposited at BISH (Medeiros *et al.* 1998), but could not be located there during a recent search (B. Kennedy, pers. comm.).

Material examined. MAUI: East Maui, Hāna Distr., E of Pōhakupālahā, *L. Stemmermann & Luce 7205* (BISH?); *loc. cit., B.H. Gagné 1020* (BISH?); between Pōhakupālahā and Lau'ulu, 20 Jul 2015, *Oppenheimer et al. H71542* (BISH, HALE).

Thelypteridaceae

Macrothelypteris torresiana (Gaudich.) Ching

New island record

A naturalized, terrestrial fern documented in Hawai'i from Kaua'i, O'ahu, Maui, and Hawai'i, Palmer (2003: 178) speculated that it was likely present as well on Moloka'i and Lāna'i, but there were no specimens to document its occurrence. This species was recently found on Moloka'i.

Material examined. MOLOKA'I: Wailau Valley, Pūlena Stream, S side tributary, 475 m, 14 Jul 2015, *Oppenheimer et al. H71516*.

Zingiberaceae

Hedychium gardnerianum Sheppard

ex Ker Gawl.

New island record

Himalayan ginger was first discovered to be naturalized on Moloka'i on September 30, 2013 during a MoMISC aerial survey. The Division of Forestry and Wildlife began controlling ginger on October 30, 2013. Several trips have been made in 2014 and 2015 to search for all plants in the hopes this habitat modifier can be eradicated before it disperses into more pristine adjacent areas. Previously it was documented from Kaua'i, O'ahu, Lāna'i, Maui, and Hawai'i (Wagner *et al.* 1999:1623; Staples *et al.* 2006: 9).

Material examined. MOLOKAʻI: Wailau Valley, 4 Nov 2013, *W. Moses & S. Dunbar-Co s.n.* (BISH 763746); Pūlena Stream, S side, 405 m, 14 Jul 2015, *Oppenheimer et al. H71514; loc. cit.*, 413 m, 16 Jul 2015, *Oppenheimer et al. H71526.*

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