

New Hawaiian plant records for 2009

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Ongoing field work, collections, and research continue to produce new, previously unpublished distributional records for the Hawaiian flora.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, one new naturalized record, 17 new island records, two notable rediscoveries, and three range extensions are reported. A single correction is made regarding previous records. A total of 21 taxa in 17 plant families are discussed. Fourteen are dicotyledonous angiosperms, eight are monocots, and one is a pteridophyte. Four of the taxa are endemic. Collections were made on Kaua'i, O'ahu, Moloka'i, Lāna'i, and Maui. Information regarding the formerly known distribution of flowering plants is based on the *Manual of 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 Bishop Museum *Herbarium Pacificum* (BISH), Honolulu, with duplicates at the National Tropical Botanical Garden (PTBG), Lawa'i, Kaua'i. A few specimens may be at only one facility; only in these cases will the herbarium acronym be cited.

Aloaceae

Aloe vera (L.) Burm.f.

New island record

Cultivated in tropical areas worldwide including Hawai'i, this succulent spreads both vegetatively and produces seeds on Kaua'i (Lorence *et al.* 1995: 21), O'ahu (Herbarium Pacificum staff 1999: 3), Maui (Oppenheimer 2003: 4–5), and Moloka'i (Wysong *et al.* 2007: 1). On Lāna'i it was found scattered in an arid, rocky area, escaping from nearby older residences with other succulents such as *Kalanchoë tubiflorum*, *K. daigremontianum*, and *Hylocereus undatus*.

Material examined. LĀNA'I: N side of Kaumalapau Gulch, 65 m, 19 Mar 2009, Oppenheimer H30922.

Apocynaceae

Thevetia peruviana (Pers.) K. Schum.

New island record

An ornamental small tree naturalized in Hawai'i on the islands of Kaua'i, O'ahu, Moloka'i, and Maui, and probably on the other main islands (Wagner *et al.* 1999: 215; Wysong *et al.* 2007: 2). The change in name from *Cascabela thevetia* (L.) Lippold was reported by Wagner *et al.* (1999: 1858). This species is poisonous to humans (Staples & Herbst 2005: 127), and apparently at least axis deer, based on observations on Moloka'i and Lana'i, where the plants are not browsed.

Material examined. LĀNA'I: due N of Kanepu'u, near road at Lapa Iki, in *Diospyros/Nestegis* Forest, 520 m, 27 Oct 2009, Oppenheimer & J. Penniman H100911.

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Araceae***Syngonium podophyllum* Schott****New island record**

Commonly cultivated on most of the main islands and naturalized on Maui (Oppenheimer 2006:10); this aroid was recently found outside of cultivation on O'ahu. Plants were apparently escaping from discarded yard waste, and climbing trees, as well as sprawling on the ground and covering large areas.

Material examined. O'AHU: Waialua Distr, Kauwalu Gulch, 315 m, 22 Jul 2009, *Oppenheimer H70914*.

Arecaceae***Archontophoenix alexandrae*****New island record**

(F.v. Muell.) H.A. Wendl. & Drude

Commonly cultivated in Hawai'i, the King Palm has been found naturalized on Hawai'i Island from Hilo to Hamakua (Wagner *et al.* 1999: 1362) and on O'ahu (Daehler & Baker 2006: 4–5). On East Maui it is spreading from cultivated specimens into low elevation mesic to wet, alien dominated forest.

Material examined. MAUI: East Maui, Hana Distr, N of Pu'u Hinai, 312 m, 14 Mar 2009, *Oppenheimer H30910* (BISH).

Livistona chinensis* (Jacq.) R.Br. ex Mart.*New island record**

Widely cultivated, and in Hawai'i persisting and sparingly naturalized where previously cultivated on O'ahu and West Maui but perhaps elsewhere (Wagner *et al.* 1999: 1364; Oppenheimer 2003: 5 ; Daehler & Baker 2006: 12). These observations are consistent with its occurrence on Kaua'i, where all size classes were observed, including large plants, on nearly vertical gulch walls.

Material examined. KAUA'I: Hanalei Distr, Kīlauea Str., 79 m, 12 Nov 2008, *Oppenheimer H110819*.

Asteraceae***Cotula australis* (Sieber ex Spreng.) Hook.f.****New island record**

This delicate annual herb is known from relatively dry areas on Kaua'i, O'ahu, Maui, and Hawai'i islands (Wagner *et al.* 1999: 289; Lorence *et al.* 1995: 23; Oppenheimer 2003: 6). On Lāna'i it was found growing in a newly landscaped area in a dry coastal area.

Material examined. LĀNA'I: Manele Harbor, 10 m, 16 Apr 2009, *Oppenheimer H40920*.

Galinisoga parviflora* Carv.*New island record**

A slender annual herb known to be naturalized on Kaua'i, O'ahu, Lāna'i, Maui, Kaho'olawe, and Hawai'i (Wagner *et al.* 1999: 319–320; Oppenheimer 2008: 24) now known from Moloka'i as well.

Material examined. MOLOKA'I: along road to Pu'u Kolekole, on E side of E Kawela, 700 m. Locally common in rocky goat-ravaged area, appearing with winter rains, 13 Jan 2009, *Oppenheimer & Perlman H10906*.

Caricaceae***Carica papaya* L.****New island record**

Commonly cultivated for its edible fruit, the papaya has been previously found to be sparingly naturalized on Kaua'i, Moloka'i, Lāna'i, Maui, and Hawai'i (Wagner *et al.* 1999: 497; Oppenheimer & Bartlett 2000: 3; Oppenheimer 2010: 34).

Material examined. O'AHU: Waialua Distr, Kauwalu Gulch, 315 m, 22 Jul 2009, *Oppenheimer H70915*.

Casuarinaceae***Casuarina glauca*** Siebold ex Spreng.**New island record**

A forestry tree, planted on all the main islands except Ni‘ihau, but spreading vegetatively via root suckers on O‘ahu, Moloka‘i, Lāna‘i, Maui, and Hawai‘i Islands (Wagner *et al.* 1999: 529; Oppenheimer & Bartlett 2000:3; Oppenheimer 2008: 26). On Kaua‘i it was found forming locally dense thickets, mixed with *C. equisetifolia* L.

Material examined. **KAUA‘I:** Hanalei Distr, Kilauea Str., 72 m, 12 Nov 2008, *Oppenheimer H110818.*

Cuscutaceae***Cuscuta campestris*** Yunker**New island record**

This parasitic vine has been previously documented on O‘ahu, Maui, and Hawai‘i (Wagner *et al.* 1999: 582; Oppenheimer 2003: 10; Starr *et al.* 2004: 22). On Lana‘i it was found in a landscaped area; the host was a cultivated hedge of the indigenous strand plant *Vitex rotundifolia* L. fil. (Verbenaceae). This dodder has also been found in Hawai‘i on Acanthaceae, Asteraceae, Euphorbiaceae, and Fabaceae.

Material examined. **LĀNA‘I:** Hulopoe, 60 m, 11 Dec 2008, *Oppenheimer & Perlman H120821.*

Dryopteridaceae***Dryopteris fusco-atra*** (Hillebr.) W.J. Rob**Range extension**var. *lamoureuxii* Fraser-Jenk.

A rare taxon previously known only from Makawao and Ko‘olau Forest Reserves on windward East Maui (Palmer 2003: 140), a small population of this terrestrial fern was found recently on leeward West Maui. The nominate variety is common in the area.

Material examined. **MAUI:** West Maui, Lahaina Distr, Kaua‘ula Valley, 1034 m, local and rare terrestrial fern in dense shade in gulch bottom, 4 Dec 2008, *Oppenheimer & Perlman H120815* (BISH).

Fabaceae***Senna obtusifolia*** (L.) H. Irwin & Barneby**New island record**

Used medicinally and the roasted seeds are used by Japanese for tea, *habucha* is naturalized on the Big Island (Wagner *et al.* 1999: 700) and O‘ahu (Staples *et al.* 2003: 12). On Lāna‘i it was found growing in sandy soil near sea level. There were hundreds of plants scattered in dense patches along several hundred meters of roadside. It did not appear that *Axis* deer were browsing the plants, nor were plants observed in shady habitat directly adjacent.

Material examined. **LĀNA‘I:** Keomuku Rd, Nahoko, 5 m. Locally common yellow flowered herbs, growing in sandy soil at edge of unpaved road and dense *Prosopis* thickets, 20 Jan 2009, *Oppenheimer H10919.*

Lamiaceae***Phyllostegia haliakalae*** Wawra**Notable rediscovery**

In the most recent review of *Phyllostegia* Benth. (Wagner 1999), populations of *P. mollis* Benth. from Maui and Moloka‘i were treated as synonyms for *P. haliakalae*, a much older name. It was thought to be extinct, with the last collections cited made in 1928. Recent fieldwork in Haleakalā National Park resulted in the discovery of a single individual of this species. Seeds were collected and are in cultivation in the Park’s nursery.

Material examined. **MAUI:** East Maui, Hana Distr, Kīpahulu Valley, Palikea Str. 1050 m. Single subshrub on disturbed talus slope on S side, above perennial stream near waterfall, 11 May 2009, *Oppenheimer, Wood, Welton, & Haus H50912* (BISH).

Liliaceae***Zephyranthes grandiflora* Lindley****New naturalized record**

Only *Zephyranthes citrina* Baker has been documented outside of cultivation in the Hawaiian Islands (Lorence *et al.* 1995: 40; Staples *et al.* 2002: 12). However, *Z. grandiflora* (large pink rain lily) was listed as potentially invasive (Staples *et al.* 2000: 23). Native to Mexico and Guatemala, it is naturalized in the West Indies, South America, and China (Staples & Herbst 2005: 694). This species is somewhat ephemeral, but plants have been observed scattered in this general area of Lānaʻi for more than a decade. It differs from *Z. citrina* with its large pink flowers, taller stature, and longer leaves.

Material examined. **LĀNAʻI:** Kanepuʻu, 525 m. Sparingly naturalized and local herbs from underground bulbs, 29 May 2008, *Oppenheimer & Perlman H50817*.

Lythraceae***Cuphea hyssopifolia* Kunth****New island record**

A common landscaping ornamental, used as a ground cover and bedding plant, false heather has been collected outside of cultivation on Maui and Hawaiʻi islands (Wagner *et al.* 1999: 866; Imada 2007: 37).

Material examined. **OʻAHU:** Koʻolauloa Distr, Pūpūkea, 312 m, naturalized in wet lawns and pastures, 22 Jul 2009, *Oppenheimer H70912*.

Malvaceae***Abutilon menziesii* Seem.****Range extension**

An endangered species previously documented from dry forest on Lānaʻi, East Maui, Hawaiʻi and possibly Oʻahu (Wagner *et al.* 1999: 873; Herbarium Pacificum staff 1999: 4). On West Maui, a single population was discovered in 2001 by Joel Q.C. Lau. It was recently relocated and consists of two patches totaling approximately 25 plants, consistent with initial observations and a site visit in March 2002. Threats include fire, axis deer, goats, extended drought, landslides, rats, and alien plant species such as *Leucaena leucocephala*, *Panicum maximum*, *Cenchrus ciliaris*, *Lantana camara*, and *Neonotonia wightii*.

Material examined. **MAUI:** West Maui, Wailuku Distr, Pohakea Gulch, 1400 ft [ca 425 m], 17 Apr 2009, *Oppenheimer & D. Ting H40924*.

Malvaviscus penduliflorus* DC*New island record**

Cultivated throughout the tropics and sparingly naturalized in Hawaiʻi in disturbed mesic sites on the islands of Kauaʻi, Molokaʻi, Maui, and Hawaiʻi (Wagner *et al.* 1999: 895; Oppenheimer 2007: 26). Turks cap was recently found on Oʻahu under similar conditions.

Material examined. **OʻAHU:** Waialua Distr, Kauwalu Gulch, 315 m, 22 Jul 2009, *Oppenheimer H70913*.

Sidastrum paniculatum* (L.) Fryxell*New island record**

Known only from Hawaiʻi Island (Wagner *et al.* 1999: 901), this small shrub was found to be locally naturalized on windward Lānaʻi.

Material examined. **LĀNAʻI:** Keomuku, 5 m, naturalized shrubs to 1.5 m tall, in sandy substrate along roadside, at sunny edges of *Prosopis* forest, 18 Mar 2009, *Oppenheimer H30917*.

Onagraceae***Epilobium ciliatum* Raf.****Range extension**

A weedy species known from Hawaiʻi Island (Wagner *et al.* 1999: 995) and more recently East Maui (Wood 2007: 16), this species was found in a highly disturbed riparian area on West Maui.

Material examined. **MAUI:** West Maui, Lahaina Distr, Kauaʻula Valley, 1053 m, common weed

along perennial stream in NW fork of valley, among boulders, in open disturbed areas, 3 Dec 2008, *Oppenheimer & Perlman H120813*.

Poaceae

Festuca rubra L.

Correction

Reported in error as new island records for Kauaʻi (Wagner *et al.* 1997: 60) and Molokaʻi (Oppenheimer 2008: 33), *F. rubra* should be considered naturalized only on Maui and Hawaiʻi islands. Closer examination of the specimens cited reveals them to represent two endemic species, newly described as *Festuca aloha* Catalán, Soreng, & P.M. Peterson, and *F. molokaiensis* Soreng, P.M. Peterson, & Catalán, from Kauaʻi and Molokaʻi respectively. The latter is known only from the type location in mesic forest (Catalán *et al.* 2009).

Phyllostachys nigra (Lodd. ex Lindl.) Munro **New island records** var. *henionis* (Mitford) Stapf ex Rendle

An aggressive “running” bamboo, native to China and forming extensive, dense stands on moist, shaded slopes and stream banks, 0–400 m on Oʻahu, Molokaʻi, and Maui (Wagner *et al.* 1999:1582). On Kauaʻi, this species was commonly found under similar conditions along Kīlauea Stream. Although first collected in Hawaiʻi on Oʻahu in 1951 (*ibid*) it has undoubtedly occurred on Kauaʻi for quite some time, judging by the extent and size of the stands. On Lānaʻi it is found in several additional areas, including below the old fog-drip station and Maunalei Valley. It is surprising this conspicuous species has not been documented from other islands in the 20+ years since the original publication of the *Manual*.

Material examined. **KAUAʻI:** Hanalei Distr, Kīlauea Str., 49 m, 12 Nov 2008, *Oppenheimer H110816*; **LĀNAʻI:** between Waiakeakua and Haʻalelepaʻakai, 980 m, running bamboo forming thickets, culms <1m apart, to 6 m tall, green, 6 Jan 2009, *Oppenheimer H10901*.

Pontederiaceae

Monochoria vaginalis (N.L. Burm.) K. Presl **New island record**

This aquatic plant is known from the islands of Kauaʻi, Oʻahu (Wagner *et al.* 1999: 1606), and Hawaiʻi (Wagner & Herbst 1995: 23). On Molokaʻi it was found in a dormant *loʻi kalo*, and growing in standing water and adjacent muddy areas, forming patches.

Material examined. **MOLOKAʻI:** Wailau Valley, 90 m, 11 Oct 2009, *Oppenheimer & Perlman H100903*.

Thymelaeaceae

Wikstroemia villosa Hillebr.

Notable rediscovery

A Maui endemic, this species has not been documented for several decades. Recently a single tree was discovered on East Maui; seeds have been collected and a few plants have been outplanted nearby in The Nature Conservancy Waikamoi Preserve.

Material examined. **Maui:** East Maui, Koʻolau FR, W headwater of Haipuaena Str, 1329 m, single 4-m tree, 30 Jan 2007, *Oppenheimer H10719* (BISH).

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