

New plant records for the Hawaiian Islands 2012–2013¹

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Here, O'ahu Early Detection documents two new state records, 13 new naturalized records, 11 new island records, and 3 range extensions found by us and other individuals and agencies. A total of 26 plant families are discussed.

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*. All supporting voucher specimens are deposited at Bernice Pauahi Bishop Museum's *Herbarium Pacificum* (BISH), Honolulu, Hawai'i.

Alismataceae

Sagittaria platyphylla (Engelm.) J.G.Sm.

New naturalized record

This perennial aquatic herb is native to southeastern North America and Central America, and is cultivated as an aquatic ornamental. It was first collected in Hawai'i in 1991, but has likely been in the aquarium trade here for some time before then. It was collected from a *lo'i kalo* in Waihe'e, O'ahu, where it was occasionally occurring in high density "thickets" over multiple *kalo* (*Colocasia esculenta*) patches, and appeared to be competing for resources and significantly reducing fitness of the planted *kalo*. It is unclear how it came to occur in this site, though local farmers believe it may have been transferred accidentally as seed in soil when sharing *huli* from infested *lo'i* elsewhere. This species can be distinguished from the congener *S. latifolia*, the only other species known to be naturalized in Hawai'i, by its generally larger size (to 150 cm tall); emerged leaves with petioles 21–71 cm long, blades linear-ovate to ovate; submersed leaves present; and flowers with pubescent filaments (*S. latifolia* grows to about 45 cm tall; emerged leaves with petioles 6–51 cm long, blades sagittate or sometimes hastate; submersed leaves absent; and flower filaments glabrous) (Haynes & Hellquist 2000).

Material examined. O'AHU: Windward O'ahu, Waihe'e, lowland cultivated taro patch, hundreds of individuals seen in patch, said to have been introduced from taro starters brought from Kaula'i, 20 Sep 2013, D. Frohlich, A. Lau & J. Beachy 2013092002.

Araceae

Anthurium schlectendalii Kunth hybrid

New naturalized record

This hybrid was found in a local botanical garden, spreading sparingly in two localized areas. Araceae experts consulted for an identification agreed that the plants fit within *Anthurium* section *Pachyneurium*, which is characterized by simple, unlobed, epunctate leaves with blades neither cordate nor subcordate at the base. The hybrid is believed to incorporate the species *A. schlectendalii*, as well as other species, which may include *A.*

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crenatum (L.) Kunth, *A. cowanii* Croat, *A. asplundii* Croat, *A. upalaense* Croat & R. Baker, and possibly others (L. Miyano, pers. comm., 2013) The full description of *Anthurium schlectendalii* can be found in a revision of the genus by Tom Croat (Croat 1983). *Anthurium schlectendalii* hybrids have been seen spreading in other botanical garden settings as well, growing epiphytically and epipetrically in deep or partial shade.

Material examined. O'AHU: Wahiawā Botanical Garden, growing on *Schefflera actinophylla* and *Ficus playpoda*, which were epiphytic on *Pritchardia* sp., 12 Jul 2012, OED 2012071202.

Asteraceae

Chromolaena odorata (L.) R.M.King & H.Rob. **Range extension**

This species was recently reported from *mauka* areas of Kahuku on O'ahu, with no other reported localities on the island (Frohlich & Lau 2012). Ongoing surveys and collections have revealed other populations on the island, including a small population in Schofield Barracks West Range, Kahana Valley, Pūpūkea, and a single individual growing on the coastal side of the highway near the Velzyland surf break access. This highly invasive species may be dispersing long distances, and ongoing eradication efforts continue. Given its apparent ease of dispersal to new locations through accidental introductions, governmental agencies, private landowners, and active land users such as the U.S. military, dirt bikers, and hikers need to be cognizant of the potential for dispersal when traversing infested sites or moving equipment or soil from known areas of infestation. Any suspected findings should be reported to the Hawai'i Department of Agriculture's Plant Pest Control Branch, the O'ahu Invasive Species Committee, or the authors.

Material examined. O'AHU: Schofield Barracks West Range, Lower Mohiākea Gulch along Area X, 25 May 2013, J. Beachy & J. Gustine-Lee US Army 312.

Begoniaceae

Begonia cucullata Willd.

New island record

This collection represents a new island record of naturalization for *Begonia cucullata*, which was previously collected on the islands of Kaua'i and Hawai'i (Lorence *et al.* 1995). This naturalized population of around 100 plants of multiple size classes (including seedlings) was found growing among *Acacia koa*, *Metrosideros polymorpha*, *Clidemia hirta*, and *Doodia kunthiana* in the Wai'ānae Range.

Material examined. O'AHU: Wai'ānae Mountains, Kalua'ā, 13 Mar 2013, US Army 308.

Boraginaceae

Carmona retusa (Vahl) Masam.

New island record

Carmona retusa has long been known to spread in residential settings on the island of O'ahu (Staples & Herbst 2005), but this collection marks the first time it was collected specifically to document its naturalization (see references to other collections in "Material examined"). Fukien tea, as it is commonly known, is frequently seen along roadsides, popping out of hedges and other home plantings. It was previously collected as naturalized on the islands of Kaua'i, Moloka'i, and Maui (Imada 2012).

Material examined. O'AHU: Pearl City, 1468 Kawelu Street, along roadside in residential area, growing in landscaped area but not planted, 6 Oct 2013, K. Kawelo US Army 326; Kailua, 209 Oneawa Kai Place, seedlings collected at drip-line from house roof, where birds defecate and seeds germinate on ground, 9 Oct 1997, G.W. Staples 1148; Waimānalo, naturalizing along roadsides, yards, fences, lowland mesic forest, along side of road, residential/agricultural area, 10 Aug 2006, D. Frohlich, A. Lau, F. Starr, & K. Starr OED 0608104; Kailua, Nā Pōhaku o Hauwahine, Kapa'a

Quarry Road, in previously cleared dryland restoration area, with *Citharexylum caudatum*, *Syzygium jambos*, *Schefflera actinophylla*, *Panicum maximum*, *Colubrina asiatica*, several seedlings removed from the area, 2 May 2010, S.A. James 2010_1; Honolulu, 1651 Young Street, residence of Tom Mukaida, several plants volunteering in yard, 7 Dec 1993, W. Kobayashi s.n. (BISH 635357)

Combretaceae

Quisqualis indica L.

New naturalized record

Quisqualis indica, a rampant climber native to Malaysia and possibly Africa (Staples & Herbst 2005), was found spreading sparingly outside a home site and at a nearby wetland, where it reached over 7 m into the canopy of a tree. This species can be differentiated from other members of the Combretaceae family in Hawai'i by its climbing habit and tube-shaped flowers, which start out white and turn red with age (Staples & Herbst 2005).

Material examined. O'AHU: Kailua, near 1659 Kanapu'u Dr., Jul 2013, US Army 319.

Fabaceae

Acacia auriculiformis A. Cunn. ex Benth.

New naturalized record

Acacia auriculiformis was originally collected as naturalized on O'ahu from Waimānala Agricultural Experiment Station (Frohlich & Lau 2007), but it was later decided this original collection warranted only "adventive" status, since the seedlings were found in the vicinity of the cultivated parent (Wagner *et al.* 2012). This most recent collection documents a true naturalization of this species, in that over 15 individuals of various sizes, including large mature trees, were found spreading over more than a mile on a major highway. It is unclear whether this species was originally planted along this highway, or if it spread here from the nearby Ho'omaluhia Botanical Garden.

Material examined. O'AHU: H-3 on-ramp from Likelike Highway, town-bound direction, 20 Nov 2013, US Army 329.

Flacourtiaceae

Dovyalis hebecarpa (Gardner) Warb.

New island record

Dovyalis hebecarpa, an infrequently cultivated plant already collected as naturalized on the island of Hawai'i (Herbst 1998), was found on O'ahu in Waimea Valley Botanical Garden, sparingly naturalized with a well-scattered distribution outside the maintained portions of the garden. This species has been eradicated from plantings in Florida, because of concerns regarding its invasive nature. It received a score of High Risk on the Hawai'i-Pacific Weed Risk Assessment, and is not recommended for cultivation in Hawai'i (Chimera 2011).

Material examined. O'AHU: Waimea Valley Botanical Garden, 11 Dec 2012, OED 2012121107.

Iridaceae

Gladiolus dalenii Van Geel

New island record

Gladiolus dalenii, native to parts of Africa (Staples & Herbst 2005) and previously collected as naturalized on the islands of Maui and Hawai'i (Imada 2012), was found in a disturbed mesic, non-native forest in Schofield Barracks, growing among *Citharexylum caudatum* and non-native grasses, including *Andropogon virginicus*. Over a hundred plants were found in the area.

Material examined. O'AHU: Schofield Barracks East Range, along centerline road, 20 Sep 2012, US Army 293.

***Trimezia steyermarkii* R.C. Foster**

New naturalized record

Trimezia steyermarkii, a popular species in O'ahu landscaping, was found on a survey of an O'ahu botanical garden, spreading along a seasonally flooded streambank. It is likely that this species spread vegetatively in this area, as it is known to produce plantlets in abundance. The extent of spread was notable—this species was occasional to common along a large portion of the stream, and it is implausible that it was planted in all the areas where it was found. *Trimezia steyermarkii* can be differentiated from the less commonly planted *T. martinicensis* by its larger flower size, persistent spent ovaries on threadlike pedicels, and keeled inflorescence bracts with undulate margins (Staples & Herbst 2005).

Material examined. O'AHU: Waimea Valley Botanical Garden, in unmaintained part of garden, streamside, 5 Aug 2013, OED 2013080505.

Juncaceae

***Juncus tenuis* Willd.**

New island record

This species, which is usually seen naturalized in wet sites along trails and other disturbed areas in Hawai'i, and was previously collected from the islands of Kaua'i, Moloka'i, Maui, and Hawai'i (Wagner *et al.* 1999), was recently collected from O'ahu along a roadside in Schofield Barracks East Range.

Material examined. O'AHU: Schofield Barracks East Range, along road, 10 Apr 2013, US Army 310.

Lindsaeaceae

×*Lindsaeosoria flynnii* W.H. Wagner

New island record

×*Lindsaeosoria flynnii*, a sterile hybrid of the naturalized fern species *Lindsaea ensifolia* Sw. and the native fern *Sphenomeris chinensis* (L.) Maxon (Palmer 2003), was noted on O'ahu at a landing zone inside Kawailoa Training Area. Three or four clumps of the hybrid were spotted, and both parent plant species were common in the area. This collection marks the first time this hybrid has been noted on the island of O'ahu; it had previously been documented only from Kaua'i (Palmer 2003).

Material examined. O'AHU: Kawailoa Training Area at the "Red" LZ, 12 Feb 2013, J. Gustine-Lee US Army 302.

Moraceae

***Castilla elastica* Sessé**

New naturalized record

This self-compatible species, which thrives in tropical climates and has already been noted as naturalized in Samoa, Puerto Rico, Australia, Tanzania, French Polynesia, and Singapore (Chimera 2012), has recently been found to be naturalizing in an O'ahu botanical garden. Surveys in the garden are not yet complete but as of 1 November 2013 there have been around 60 individuals found within the garden boundary, both in managed and unmanaged portions of the property. It is probable that this species is being spread by birds, and possibly by pigs. In its native range, it is able to establish itself in intact forest (Woodson & Schery 1960), and this has proven to be the case in Hawai'i as well, as immature individuals been found primarily in the understory of mature secondary forest. Mature naturalized individuals, on the other hand, were around 10 m tall and growing in

full sun. This species is considered an environmental weed in American Samoa, and received a score of High Risk on the Hawaii-Pacific Weed Risk Assessment (Chimera 2012). The garden plans to remove the accessioned individuals, in addition to controlling the naturalized plants.

Castilla elastica can reach up to 10 m in height, the young branches densely pubescent with spreading or appressed golden hairs, turning glabrate with age. Leaves are 20–30 cm long, 10–14 cm broad, oblong-ovate, and cordate at the base (the bases often somewhat unequal) with subcuspidate to acuminate tips; margins are minutely ciliate-dentate, and both surfaces are covered in golden spreading hairs. Inflorescences are in clusters of 2–4 in the upper leaf axils (occasionally solitary). The fruiting heads are thickly discoid and sessile, about 4–5 cm in diameter, and develop a fleshy orange or reddish pulp when mature (Woodson & Schery 1960).

Material examined. O'AHU: Waimea Arboretum, near old greenhouse, 11 Dec 2012, OED s.n. (BISH 757506).

Myrtaceae

Myrciaria floribunda (H. West ex Willd.)

O. Berg

New naturalized record

Myrciaria floribunda, or rumberry, a plant used for a popular liqueur in St. Martin and the Virgin Islands and native to southern Mexico through tropical America (Morton 1987), was apparently introduced to Hawai'i but never became popular as a fruit tree—there are only two other specimens of this species documented in the *Herbarium Pacificum*. Nonetheless, over 60 plants of varying size (including seedlings) were recently found naturalized in a non-native secondary forest. This species may have been originally planted in this area, but it has certainly spread well beyond the original planting site.

Myrciaria floribunda can be distinguished from *M. cauliflora*, the other *Myrciaria* species more commonly seen in Hawai'i, by its downy reddish brown branchlets and flaking bark; evergreen, opposite leaves with acute apices minutely dotted with oil glands; and round to oblate fruit borne in lateral or axillary clusters, or singly (the fruit of *M. cauliflora* is borne on the trunk and main branches) (Morton 1987).

Material examined. O'AHU: On the border of Kaukonahua and Waikakalaua, 19 Oct 2013, US Army 328; Kahana, along trail that branches from Schofield-Waikāne Trail to jump into Kahana at the saddle behind Pu'u 'Ōhulehule, growing with *Psidium cattleianum*, *Ficus* sp., *Bischofia* sp., *Syzygium jambos*, *Casuarina glauca*, 23 Mar 2006, US Army 38a.

Onagraceae

Oenothera curtiflora W.L. Wagner & Hoch **New state record**

This annual herb is probably native to some regions of central North America, though it is considered naturalized in certain states, including California. It is not a cultivated species, and appears to be an accidental arrival to Hawai'i. It was first noted in the spring of 2011 along Kalaniana'ole Highway near Bellows Air Force Base, and later collected from a nearby coastal city beach park in a lawn area where 70–100 individuals of various sizes were seen. It can be distinguished from other species of *Oenothera* by its relatively small (5–11 mm long), indehiscent fruits with a stalklike base. A full description of this species and a key to the genus in California can be found online at the *Jepson eFlora* page (Wagner 2012).

Material examined. O‘AHU: Windward side, Waimānalo Beach Park in lawn area just behind gate, area is mowed about every 2 months, 3 Jul 2013, *K. Stender s.n.* (BISH 757488).

Orchidaceae

Epidendrum nocturnum Jacq.

Range extension

This epiphytic species, previously documented as very sparingly naturalized on O‘ahu (Frohlich & Lau 2012), has now been found in several locations in both the Wai‘anae and central Ko‘olau Mountain ranges, where it has been seen spreading abundantly in various tree species in mid-elevation native forest areas. This species appears to be expanding its range, based on field observations from local resource management staff (K. Kawelo, O‘ahu Army Natural Resources Program, pers. comm., 2013).

Material examined. O‘AHU: Poamoho drainage, native-dominated area, canopy *Metrosideros polymorpha* and *Acacia koa*, understory *Dicranopteris linearis*, 10 Dec 2012, *US Army 301*.

Pittosporaceae

Pittosporum senacia Putt.

New naturalized record

Native to the Seychelles and Mascarene Islands, *Pittosporum senacia* is virtually unknown outside its native range. This species is only known from two botanical gardens on O‘ahu, and was collected as naturalized at one of them. Fifteen plants of various sizes were seen in the collection area, and many more were scattered upslope from the original planting site, growing in the understory of a non-native mesic forest in an unmanaged portion of the garden, presumably spread by birds.

Species description translated from French (Sarrailh *et al.* 2007):

“Shrub to small tree, glabrous, with many branches. Bark of older branches light-colored. [Leaves] simple, entire, alternate, petiolate, clustered at the ends of branches, forming false whorls or isolated and distant-lamina obovate or elliptical. [Inflorescences] grouped at the ends of branches, in umbels or panicles. Petals white, oblong. Male flowers with rudimentary ovary, and style not exceeding the stamens. Female flowers with staminodes resembling stamens, but shorter; ovary supported by a short gynophore with a robust style that exceeds staminodes. Capsules 4–10; red, viscous (often black when dry), 2–3 mm long.”

Material examined. O‘AHU: Waimea Valley Botanical Garden, in unmanaged part of garden, 3 Jun 2013, *OED 20130603*.

Poaceae

Saccharum spontaneum L.

Range extension

This species, which was previously documented as naturalized along the Pali Highway on O‘ahu (Wagner *et al.* 1999), has now been collected in a remote natural area in native forest, along and in a seasonal stream near the Schofield-Waikāne Trail in the Ko‘olau Mountain range, where it appears to be fairly well established.

Material examined. O‘AHU: Streamside near Schofield-Waikāne Trail, 12 Sep 2013, *G. Schuergel NARS s.n.* (BISH 757402).

Thysanolaena latifolia (Roxb. ex Hornem.) Honda

New naturalized record

Thysanolaena latifolia, an ornamental tropical grass with a bamboo-like habit, was first spotted on the Laie Trail in 2009, seemingly planted in an erosion-prone area along a pop-

ular hiking trail (J. Lau, pers. comm., 2013) In the years following, it has spread considerably from the original small, contained patches of cultivated culms, and has established itself in an area about 100 × 50 m. Hundreds of mature plants and numerous seedlings and immature plants were seen in the area.

Description from the *Flora of China Online* (Liu & Phillips 2006):

“Culms 1–3 m tall, hard, unbranched, often arching. Leaf sheaths smooth; leaf blades broadly lanceolate-oblong, leathery, up to 40 × 3–7 cm; ligule truncate, 1–2 mm. Panicle up to 60 cm, open or contracted; main branches 1–3 per node, pilose in axils, bare of spikelets in lower part, lowest branch up to 30 cm; pedicels ca. 2 mm. Spikelets 1.5–1.8 mm; glumes 1/5–1/4 spikelet length, ovate-lanceolate; lower lemma as long as spikelet; upper lemma slightly shorter than lower lemma, marginal hairs rigid, to 1 mm, spreading at maturity, apex slightly recurved. Anthers brown, 0.5–1 mm. Caryopsis oblong, ca. 0.5 mm. Fl. and fr. summer to autumn.”

Material examined. O‘AHU: Lā‘ie Falls Trail, 2 Aug 2013, *K. Kawelo US Army 325.*

***Urochloa distachya* (L.) T.Q. Nguyen**

New island record

Urochloa distachya, which is found in open disturbed sites in subtropical to tropical climates worldwide, was recently collected on a roadside in Schofield Barracks on O‘ahu. It is unclear how this species came to this area, but presumably, it was an accidental introduction. Under the now-synonymous name *Brachiaria subquadripata* (Trin.) Hitchc., O‘Connor (1990) noted that it was an escape and possibly naturalizing on O‘ahu, Moloka‘i, and Maui, and Lorence *et al.* (1995) confirmed its naturalization on Kaua‘i.

Description of this species from *Flora of Tropical East Africa* (Clayton & Renvoize 1982):

“Creeping annual; culms 5–20 cm high, ascending from a prostrate base. Leaf-blades broadly linear to narrowly lanceolate, 2–8 cm long, 3–7 mm wide. Inflorescence of 2–3 racemes on an axis 0.5–2 cm long; racemes 1–3 cm long, bearing the spikelets on a narrowly winged rachis. Spikelets narrowly elliptic, 2.4–3 mm long, glabrous, acute; lower glume 1/3–1/2 as long as the spikelet, clasping; upper glume separated from the lower by a short internode; upper lemma rugulose, bluntly acute.”

Material examined. O‘AHU: Schofield Barracks, Kolekole Range, 25 May 2013, *J. Gustine-Lee US Army 316.*

Polypodiaceae

***Pyrrhosia longifolia* (Burm. f.) C.V. Morton**

New naturalized record

This epiphytic fern has a somewhat wide native distribution in Southeast Asia, and is found in northern Australia, southern China, and India as well. It is unclear to what degree it is cultivated worldwide, though it was first collected as cultivated in Hawai‘i in 1985 in Foster Botanical Garden on O‘ahu. It is documented here as naturalized in a different botanical garden, probably having escaped cultivation there. It was forming thick, complete, extensive coverings of whole palm trunks and large tree branches, growing in both full sun and deep shade. It can be distinguished from other *Pyrrhosia* species in Hawai‘i by rhizomes with dense, distinctly bi-colored scales with subentire (rather than ciliate) margins; and linear, erect or pendulous fronds ranging from 9–70 cm long by 1–2(–4) cm wide (Lindsay & Middleton 2012). A full description of this and other species of *Pyrrhosia*

can be found at the *Ferns of Thailand* site referenced above. A monograph of the genus is also available (Hovenkamp 1986).

Material examined. O'AHU: Wahiawā Botanical Garden Hawaiian section, epiphyte on *Pritchardia* sp., ca 8 plants in the vicinity, but species is occasionally naturalized in garden, sometimes forming thick carpet on branches, 12 Jul 2012, A. Lau & D. Frohlich 2012071203.

Pontederiaceae

Heteranthera reniformis Ruiz & Pav.

New state record

Also known as kidneyleaf mudplantain, this aquatic species from a broad native range of climates in North, Central, and South America has been introduced outside that range for ornamental purposes and has subsequently become naturalized and weedy in Australia and Europe. This species, with documented negative impacts to agricultural yields in rice fields (Ferrero 1996), has now been documented on O'ahu from a *lo'i kalo* in Waihe'e. Local farmers estimated significant reductions in yield at the site, where it was found in multiple *kalo* (*Colocasia esculenta*) patches on two farms in the area. Control of the species has been difficult, and one current strategy has been to dry, then flood, individual patches to induce germination out of the seed bank, then removing the plants before they set new seed. This species has been rated as High Risk by the Hawai'i-Pacific Weed Risk Assessment (Anonymous 2013), and should be monitored for and controlled throughout the state, where possible. One potential vector for long term dispersal of this species could be seeds or other propagules hitchhiking on shared *huli* between farms within and between islands. It can be distinguished from other Pontederiaceae in Hawai'i by its leaves with petioles 2–13 cm long; reniform blades 1–4 × 1–5 cm; inconspicuous inflorescences of 2–8 flowers that elongate in one day; and flowers opening in the morning and wilting by afternoon, composed of a white, salverform perianth, the tube 5–10 mm long, the lobes narrowly elliptic, 3–7 mm long. A full description and keys to similar species can be found in the *Flora of North America* (Horn 2002).

Material examined. O'AHU: Waihe'e Valley off of Waihe'e Road, mauka of Ahilama Road, lowland wet to mesic residential and agricultural area, 20 Jul 2013, J. Beachy & J. Gustine-Lee US Army 320.

Rosaceae

Rosa laevigata Michx.

New island record

This rampant, aggressive climber has previously been collected as naturalized on Hawai'i Island and at the Lāna'ihale summit on Lāna'i (Imada 2012), and is spreading profusely from plantings in Kōke'e on Kaua'i. It was recently found on O'ahu outside an abandoned homesite, spreading from a probable cultivated plant. Over 30 individuals of all sizes, including seedlings, were seen in the area.

Material examined. O'AHU: Wai'anae Range, Pālehua, in yard of abandoned house, 16 Aug 2012, OISC 2012081601..

Rubiaceae

Cyclophyllum barbatum (G. Forst.)

N. Hallé & J. Florence

New naturalized record

Cyclophyllum barbatum, a species very rarely cultivated in Hawai'i and previously known only from two locations on O'ahu, was found spreading sparingly, with a rather

widely scattered distribution, in the understory of established secondary forest in Waimea Valley Botanical Garden. Little is known about this species outside its native range in the Caroline and Solomon Islands, and Fiji through to the South Pacific, where it is common in dry and coastal forests, forest patches in open country, and on crests and ridges (Smith & Darwin 1988). It is a slender tree, reaching 2–15 m in height; leaves opposite, with pocketlike domatia in the axils of the secondary veins (sometimes absent); flowers axillary, 5-merous, fragrant; corolla tube 2.5–5.0 mm long, white to cream-colored; stigmatic knob subcylindric-capitate; and fruit 8–15 mm wide, red turning black at maturity (Smith & Darwin 1988).

Material examined. O‘AHU: Waimea Valley Botanical Garden, along upper maintenance road, 15 Feb 2013, OED 2013021502.

Sapotaceae

Mimusops elengi L.

New naturalized record

Mimusops elengi, which can be differentiated from other *Mimusops* species present in Hawai‘i by its abruptly pointed leaf apices and sweetly fragrant flowers (Staples & Herbst 2005), was recently collected spreading near the Kaunala Trail in Pūpūkea, O‘ahu. Tens of individuals of varying size (including seedlings) were seen in the area.

Material examined. O‘AHU: Kaunala Trail, Pūpūkea, 24 Aug 2013, K. Kawelo US Army 325.

Sterculiaceae

Heritiera littoralis Aiton

New island record

Heritiera littoralis, a species occasionally seen as a street tree or feature plant in O‘ahu landscapes (Staples & Herbst 2005), was recently found spreading locally in a natural area on Round Top Drive on O‘ahu. Hundreds of seedlings and immature plants were seen in the area. It is probable that the largest plant seen in the collection site was planted there. Seedlings and immature plants were mostly seen near the parent plant, but some significant spread (40 m away) was also noted. The species was previously noted as naturalizing on Kaua‘i (Lorence & Flynn 2006).

Material examined. O‘AHU: Round Top Drive, next to Boy Scout camp facility, on side trail cutting across a loop of the road, 10 m off of trail, 5 Oct 2012, J. Beachy US Army 296.

Urticaceae

Laportea aestuans (L.) Chew.

New island record

Laportea aestuans was previously vouchered from an O‘ahu plant nursery, and noted but unvouchered from Big Island nurseries in Lau & Frohlich (2013), so this collection formally notes its naturalization on the island of Hawai‘i. This species, which is a weed of plantations in Central America and the West Indies (Clifford 2012), is believed to be spread through potting mix, but the original source of the planting medium is still unclear (B. Azama, Hawai‘i Department of Agriculture, pers. comm., 2012).

Material examined. HAWAI‘I: Kurtistown, plant nursery, 28 Nov 2012, K. Fujimoto s.n. (BISH 757458).

Zingiberaceae

Alpinia zerumbet (Gardner) Warb.

New island record

Alpinia zerumbet, a species widely cultivated in the tropics and previously collected as naturalized on the islands of Maui, Moloka‘i, and Kaua‘i (Imada 2012), was found scat-

tered along a periodically flooded streamside in Waimea Valley Botanical Garden.

Material examined. O'AHU: Waimea Valley, along stream in unmanaged area, 10 Jun 2013, OED 2013061005.

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