New plant records from the Big Island for 2009

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The Big Island Invasive Species Committee (BIISC) implemented its Early Detection program in May of 2008. Roadside Surveys were conducted on major, secondary, tertiary, and residential roads in the Ka‘ū, South Kona, North Kona, South Kohala, and Puna Districts. Here, BIISC Early Detection documents 17 new naturalized records and 14 new island records. A total of 20 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), A tropical garden flora (Staples & Herbst 2005) and information subsequently published in the Records of the Hawaii Biological Survey. Voucher specimens are deposited at Bishop Museum’s Herbarium Pacificum (BISH), Honolulu, Hawai‘i.

Acanthaceae

Megaskepasma erythrochlamys Lindau

First collected as naturalized on O‘ahu in 2008 (Frohlich & Lau 2010: 3), this popular ornamental has been seen successfully naturalizing at several locations throughout the dry side of the island. At this location, a large population dominated the understory on both sides of the highway with plants spreading over 100 m above the highway. This species is also reported naturalizing on Kaua‘i (Frohlich & Lau this volume).


Sanchezia parvibracteata Sprague & Hutch.

This popular hedge plant is common throughout the island, especially the wet side, and is often seen spreading from cultivation. This specimen was naturalizing in a drainage area off the highway under avocado and African tulip trees. Two Sanchezia species are grown in Hawai‘i, S. speciosa and S. parvibracteata (Staples & Herbst 2005). Sanchezia parvibracteata differs in having a yellow midvein and joined bracts that are shorter than the calyx.


Apocynaceae

Nerium oleander L.

This plant was found naturalizing between Pāhala and Nā‘ālehu on Ka‘alāiki Rd in the Ka‘ū Distr. This 9-ft tall, single specimen was growing on a hillside overgrown with tall Guinea grass. This species is popular in highway plantings (Staples & Herbst 2005) but that does not explain how this plant arrived as it was around 20 m off of a rural road that would not warrant highway plantings. Since identification, this specimen has been removed by an unknown entity. This is the only time this species was seen so obviously naturalized.
Material examined. HAWAI‘I: Ka‘ū Distr. Ka‘alāiki Rd, 2110174N, 228036E. Growing uphill 20 m off of road. There were no homes or other oleanders in the area; this specimen was 3 m tall with pink flowers, 18 Aug 2008, J. Parker & R. McGuire BIED23.

**Stemmadenia litoralis** (Kunth) L. Allorge New naturalized record
This popular ornamental shade and street tree is rarely seen spreading from cultivation on the island. However, this large population was dominated by a 10-m tall heavily fruiting tree with around 50 saplings growing underneath the canopy, many of them flowering and fruiting. This spread is unlikely to be attributed to root suckers as saplings were spreading a short way downhill into a coffee plantation. Only in a few other locations in the Kona districts was this success observed. Most other trees occurred in well-groomed properties, where seedling growth is most likely discouraged. This species is also reported naturalizing on O‘ahu (Frohlich & Lau this volume).


**Araliaceae**

**Schefflera arboricola** (Hayata) Merr. New island record
This plant is popular in cultivation in all areas of the island and large, dense hedges are frequently seen flowering and fruiting. This specimen was seen growing epiphytically in the crotch of an ‘ōhi‘a tree near Glenwood, representing the first naturalized specimen of this species on the Big Island. Large, heavily fruiting populations have been observed in the Kohala Mountains near Hāwī. This species has previously been recorded as naturalized on O‘ahu and Maui (Frohlich & Lau 2010: 4; Starr et al. 2003: 24), and on Kaua‘i (Frohlich & Lau this volume).

Material examined. HAWAI‘I: Puna Distr. Eden Roc subdivision, 2153406N, 280313E. Flowering specimen rooted halfway up an ‘ōhi‘a tree 5 ft off the ground, roots extending down the trunk to ground, possibly strangling ‘ōhi‘a, 1 Dec 2008, J. Parker & R. Parsons BIED51.

**Tetrapanax papyrifer** (Hook.) K. Koch New naturalized record
Rice-paper plant is widely grown in warm-temperate and tropical montane regions and sparingly naturalized elsewhere. This clump-forming, evergreen shrub may reach 20’ in height; each erect stem arises from the underground rhizome and possesses a terminal cluster of palmately 5–11-lobed, softly textured leaves with dull green upper sides and whitish-hairy undersides (Staples & Herbst 2005). Seen here naturalizing in a high elevation site in North Kona. Many seedlings were found along roadside apparently spreading from several large, flowering and fruiting cultivated plants. This species also successfully naturalizes at sea level, as in Ke‘anae, Maui (Starr: Plants of Hawaii photos/correspondence). This species is also reported naturalizing on O‘ahu (Lau & Frohlich this volume).


**Asclepiadaceae**

**Calotropis procera** (Aiton) W.T. Aiton New island record
Small crownflower differs from its more abundant relative C. gigantea in being a smaller shrub (up to 8 ft tall), having smaller flowers and larger fruit. It also readily sets fruit, and
with its seeds easily dispersed by their silky parachutes, this species has the potential to become a noxious weed in Hawai‘i, as it has elsewhere (Staples & Herbst 2005). Previously reported from Lehua, Kaua‘i, and Lāna‘i (Wood & LeGrande 2006: 19; Wood 2006: 15; Oppenheimer 2008: 23), and reported from East Maui, West Maui, and Kaho‘olawe (Starr & Starr this volume), this species readily naturalizes on the dry side of the Big Island and its use for landscape plantings should be discouraged. It also has been suggested as a possible hydrocarbon source for biofuels (Mabberley 2008).


Cryptostegia madagascariensis Bojer ex Decne. New island record
Previously reported from O‘ahu and Moloka‘i (Frohlich & Lau 2008: 3; Staples et al. 2006: 6), on the Big Island this plant was first found naturalizing between Pāhala and Nā‘ālehu on Highway 11 in the Ka‘u District. It is cultivated throughout the dry side of the island and sparingly naturalized from Ho‘okena Beach to Kawaihae. This species is being recommended for control and some control efforts have already taken place in Kekaha Kai State Park and around Kailua-Kona.


Stapelia gigantea N.E. Br. New island record
Seldom cultivated on the island of Hawai‘i, this plant is well suited to the dry climate of the Kona side and has been observed naturalizing a handful of times. The wind-dispersed seeds and ease of vegetative spread make S. gigantea a potentially invasive weed (Staples & Herbst 2005). The species was previously reported as naturalized on O‘ahu, Moloka‘i, West Maui, and East Maui (Wagner et al. 1999: 241; Wysong et al. 2007: 2; Oppenheimer et al. 1999: 7; Oppenheimer 2010: 33).


Asteraceae
Pseudogynoxys chenopodioides (Kunth) Cabrera New naturalized record
Mexican flame vine has long been known as Senecio confusus in the horticultural literature, even though the name P. chenopodioides has been applied to this species since 1950 (Staples & Herbst 2005). With its orange to red ray flowers, this attractive vine often escapes cultivation and spreads extensively over all vegetation, thriving in full sun and dry climates. This specimen was growing in a hedge of Thevetia peruviana. On our surveys this plant was seen naturalized more often than cultivated.


Bignoniaceae
Podranea ricasoliana (Tanfani) Sprague New island record
Pink trumpet vine has been previously recorded as naturalized on Maui (Starr et al. 2004: 21). This species is reported as naturalizing on Kaua‘i (Frohlich & Lau this volume). On the Big Island, this species is not common in cultivation but is naturalized throughout many parts of the island.
Boraginaceae

*Cordia lutea* Lam. New island record

The yellow-flowered Geiger tree is not well known from the Hawaiian Islands but reportedly grows in the living collections at the Koko Crater Botanical Garden on O‘ahu and the National Tropical Botanical Garden on Kaua‘i (C. Imada, pers. comm.). On the Big Island, this shrub was found naturalizing in a new subdivision on a hill in lava rock substrate. This species has only been observed once in our surveys and was found heavily fruiting and naturalizing downslope from a planting. This species is likely to gain in popularity with its ever-blooming habit and sandpapery leaves.


Combretaceae

*Conocarpus erectus* L. New island record

Button mangrove is very popular as a street and shade tree on the island, but we rarely see it naturalizing in cultivation as male trees are preferred in large plantings because they generate less litter than female trees (Staples & Herbst 2005). This specimen was brought to our attention by J.B. Friday and his son Nathan Friday who collected it on a shoreline in Keaukaha. The plant was a resprout from a large stump and had no flowers or fruit, but it was positively identified by Bishop Museum. This is the first record of this species naturalizing on the island. It was previously known from Kaua‘i (Lorence & Flynn 1997: 10), O‘ahu, Lāna‘i, and Maui (Wagner *et al.* 1999: 547).

**Material examined.** HAWAI‘I: South Hilo Dist. 4 mile beach, Keaukaha. Located adjacent to shoreline. No fruit or flowers. Growing next to *Casuarina* trees. Collection is a resprout, 1.5 m tall, from a trunk 8 cm in dia, 5 Jul 2009, N. Friday BIED92.

**Terminalia melanocarpa** F. Muell. New naturalized record

This large flowering tree was found growing with two younger flowering trees adjacent to an overgrown macadamia nut orchard. Also suitable for coastal gardens exposed to salt spray and trade winds (Staples & Herbst 2005), this tree was found thriving at ca 900 ft.


Convolvulaceae

*Poranopsis paniculata* (Roxb.) Roberty New island record

Bridal veil creeper is rarely cultivated on the island of Hawai‘i, but several naturalized populations have been found. This species has been previously recorded as naturalized from Maui (Starr *et al.* 2004: 21). It has been noted that fruit is not produced in Hawai‘i (Staples & Herbst 2005), but further study into this is warranted based primarily on the large scale of these localized infestations.

**Material examined.** HAWAI‘I: South Kona Dist. Hwy 11, Kealakekua, 2146988N, 197626E. White-flowered vine with heart-shaped leaves with silky, pale-white undersides. Large population covering approx. 3 acres. Could have spread from cultivation at abandoned homesite, 23 Sep 2008, J. Parker & R. Parsons BIED36.
Euphorbiaceae

Euphorbia tirucalli L. New island record
Previously documented as naturalized on Kaua‘i (Lorence et al. 1995: 35), pencil tree is widely cultivated in Hawai‘i and this specimen represents a new island record. This dense flowering population is located right off of Ali‘i Dr just south of Kailua and represents a hazard to pedestrians. Due to the ease of vegetative spread and poisonous nature of this plant, its use as a landscape tree should be discouraged.


Jatropha curcas L. New island record
Physic nut has a long history of naturalizing in tropical regions and has already been documented as naturalized on Maui (Wagner et al. 1999: 623). Its use as a biofuel is being heavily promoted by private and government entities. This specimen was located within a large naturalized population in scrubland dominated by Leucaena leucocephala.


Jatropha multifida L. New naturalized record
Coral plant is sparingly cultivated throughout the island and was observed naturalizing at only one location in our surveys. This small population of seedlings was growing in the proximity of a larger stump with suckering J. multifida sprouts. The seedlings were sufficiently spread out so as to suggest they sprouted from seed rather than suckering from roots.


Jatropha podagrica Hook. New naturalized record
Gout stalk is a commonly cultivated caudiciform and has been observed spreading from cultivation more often than not. This population of mature plants was growing in vacant land of poor, degraded rocky substrate across the street from cultivated specimens. This species is most often seen laden with fruit and it is recommended that the seeds be collected prior to maturation due to its seed viability and effective seed dispersal. A diplochorous dispersal system, in which autochory (ballistic discharge of seeds from explosively dehiscent capsules) is followed by myrmecochory (transport by ants), is a common feature in many euphorbs, particularly among Neotropical species (Leal, Wirth et al. 2007).


Phyllanthus acidus (L.) Skeels New naturalized record
This small fruiting tree is often cultivated by Filipinos and Southeast Asians, who use the tart fruit in cooking (Staples & Herbst 2005). This specimen was found on the roadside in an area unlikely to be planted. After speaking with the neighbors, it was confirmed that this tree spread from a larger planting in a private property across the street. The tree was around 15 ft tall and heavily fruiting.
Material examined. **HAWAIʻI**: South Kona Dist. Hwy 11 and Onouli Rd, Kealakekua, 2159435N, 193467E. Compound, alternate leaflets with pale yellow, 6–8 ridged berries growing from main stems and trunk. Tree was 20 ft tall, in between road and fence on easement, 22 Oct 2008, J. Parker & R. Parsons BIED44.

**Fabaceae**

*Derris elliptica* (Wall.) Benth. **New naturalized record**

Poison-vine is infrequently cultivated and sparingly naturalized on the dry side of the island (much more frequent in the vicinity of Hilo). Perhaps cultivated for its use in supplying the compound rotenone, which acts as insecticide or fish poison, poison-vine tends to become naturalized wherever it is planted (Staples & Herbst 2005). This specimen was growing in an abandoned property over tall mango and jackfruit trees flowering heavily in February and March. No fruit was found though the population was visited numerous times.


**Grossulariaceae**

*Escallonia rubra* (Ruiz & Pav.) Pers. var. *macrantha* (Hook. & Arn.) Reiche **New naturalized record**

This species is a 4–10 ft tall shrub with hairy, glandular shoots and inflorescence axes; broadly elliptic to obovate leaves 1–3 in long and up to 1.75 in wide, the margins serrate, the upper side glossy green, the underside gland-dotted; and racemes or panicles of bright rose red flowers 0.63" dia (Staples & Herbst 2005). A good indicator for this species is the persistent style. *Escallonia* is a garden escapee in New Zealand and is known to successfully colonize coastal cliffs (C. Buddenhagen, pers. comm.). In Hawaiʻi, escallonias thrive only at elevations above 2500 ft (Staples & Herbst 2005). References indicate that hummingbirds are its primary pollinator. Therefore, seed set in cultivation may be limited unless our native and/or introduced birds are visiting and pollinating it (C. Chimera, pers. comm.).


**Lythraceae**

*Cuphea subuligera* Kochne **New naturalized record**

This represents the fourth species of *Cuphea* naturalized in the Hawaiian Islands. This species is rare in cultivation and sparingly naturalized in the Volcano area. Its tubular, pale purple flowers are borne on terminal racemes and its leaves have a purple midvein extending most of the way through the leaf.

Material examined. **HAWAIʻI**: Puna District. Jungle King Rd, Fern Forest subdivision, 2153217N, 279751E. Tubular, pale purple flower borne on terminal racemes. Purple midvein extending most of the way through leaf, juvenile leaves have hairs on margins, 10 Dec 2008, J. Parker & R. Parsons BIED59.

**Papaveraceae**

*Hunnemania fumariifolia* Sweet **New island record**

Previously recorded as naturalized only on Maui (Wagner et al. 1999: 1007), this naturalized population was colonizing a disturbed roadside area in the dry southern portion of the island near Manukā State Park.

**Rosaceae**

*Rosa laevigata* Michx. **New island record**

Cherokee rose is a rampant climber with canes many yards in length, bearing stout, hooked prickles and leaves with 3 leaflets and sharp-serrate margins (Staples & Herbst 2005). Previously recorded as naturalized on Lāna‘i (Nagata 1995: 12), this population was one of several naturalizing in the Glenwood/Volcano area, climbing over *uluhe* and ‘ōhi‘a trees.

Material examined. **HAWAI‘I**: Puna Distr. Fern Forest subdivision, 2154739N, 275399E. Thick vine, armed with recurved spines, bearing fragrant white flowers with bristly hypanthium. Spreading ca 20 m off of Captain’s Dr over *uluhe* and ‘ōhi‘a trees, 10 Dec 2008, J. Parker & R. Parsons BIED58.

**Sapindaceae**

*Majidea zanquebarica* J. Kirk ex Oliv. **New naturalized record**

Mgambo, or velvet-seed, is a small, fast-growing tree that is cultivated sparingly on the Big Island for its attractive black, velvety seeds. This specimen was naturalizing in the Kealakehe area, near Kailua-Kona. Several seedlings and saplings, many flowering, were sprouting up near a large, fruiting cultivated tree.

Material examined. **HAWAI‘I**: North Kona Distr. Kealakehe, 2178898N, 187120E. Naturalized specimen found growing near large cultivated tree with many other *keiki* across a fence. This flowering specimen was approximately 4 ft tall, 6 Aug 2009, J. Parker & R. Parsons BIED95.

**Scrophulariaceae**

*Otocanthus azureus* (*Linden*) Ronse **New naturalized record**

This attractive groundcover, Amazon blue, is popular in the Volcano vicinity, and has become naturalized in the Puna District. With its rapid growth, tiny seeds, and ease of vegetative propagation, we expect this species to successfully colonize the ample suitable habitat in the district.


**Paulownia tomentosa** (Thunb.) Steud. **New naturalized record**

This well-known invasive tree is sometimes grown for its lightweight timber in the Hawaiian Islands. Plantations of *Paulownia* have been observed on the north shores of O‘ahu and Kaua‘i, though it is not known exactly which species was being grown (A. Lau, pers. comm.). Similar plantings have not been observed on the Big Island, and this specimen was the first and only time this tree was observed on our surveys. It has since been removed with approval by the landowner.


**Solanaceae**

*Streptosolen jamesonii* (Benth.) Miers **New island record**

Marmalade bush is sparingly cultivated in the Volcano area and was recently found naturalizing there. This species has previously been documented as naturalized on Kaua‘i (Lorence & Flynn 1997:12).

Urticaceae

Boehmeria nivea (L.) Gaudich. New naturalized record
This species is the source of the stem fiber called ramie, used in clothing and other fabrics. Ramie was attempted in Hawai‘i as a commercial crop, but it proved to be economically unfeasible (Staples & Herbst 2005). A couple of populations in the same area in North Kona were found naturalizing between coffee plantations. Though the plant has economic uses, these populations did not appear to be part of any formal planting.


Vitaceae

Cissus rotundifolia (Forssk.) Vahl New island record
Previously reported as naturalized on Kaua‘i, O‘ahu, and East Maui (Lorence & Flynn 1997: 12; Herbst 1998: 4; Starr et al. 2002: 26), this Cissus is ideally suited to the dry, sun-drenched leeward sides of our islands (Staples & Herbst 2005). This large population was climbing over Leucaena leucocephala in a dry, disturbed vacant lot in Kailua-Kona. The bird-dispersed seeds could easily be spread to the ample suitable habitat in the region.


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Literature Cited


