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New Naturalized Plant Records for Kaua'i

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The following collections represent new records based on information published in Wagner *et al.* (1990), Imada *et al.* (1989), and supplemental information from papers published in *Records of the Hawaii Biological Survey for 1994, part 2* (Evenhuis & Miller, 1995) and *Records of the Hawaii Biological Survey for 1995, parts 1 & 2* (Evenhuis & Miller, 1996). Ten new island records for naturalized species as well as new state records for 4 species previously unrecorded as being naturalized in the Hawaiian Islands are reported. All of the identifications have been made by the authors.

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Chenopodiaceae

Chenopodium carinatum R. Br. **New island record**

Also naturalized on Niʻihau, Molokaʻi, Lanaʻi, Maui, Kahoʻolawe, and Hawaiʻi, this is the first record of *Chenopodium carinatum* from Kauaʻi. It was found growing as an aggressive weed in a garden.

Material examined. KAUAʻI: Waimea District, Kekaha, from garden at 8597 Kaumualii Hwy., ca. 10 ft [3 m], 15 May 1994, *Carroll 2* (PTBG).

Combretaceae

Conocarpus erectus L. **New island record**

The button mangrove or buttonwood was recorded as sparingly naturalized in coastal areas on Oʻahu, Lanaʻi, and Maui by Wagner *et al*. (1990). The following collection represents a new island record for Kauaʻi, where this species is naturalized locally forming a small population.

Material examined. KAUAʻI: Koloa District, Kukuiula small boat harbor, littoral vegetation on lava flow, near sea level, 18 Apr 1996, *Lorence 7767* (PTBG).

Commelinaceae

Tradescantia zebrina Hort. ex Bosse **New state record**

The following collection represents a new state record for the commonly cultivated wandering Jew or *honohono*. This creeping, nodally-rooting herb is represented by the color form having the leaves mostly purple with two silvery white bands above and purple-pink flowers. Probably an escape from cultivation, it is now naturalized and covers large areas of ground in secondary forest.

Material examined. KAUAʻI: Koloa District, W side of Lawai Valley, along Lawai Stream above NTBG's Lawai Garden and waterfall near convergence of two streams, in secondary vegetation of *Hibiscus tiliaceus, Samanea saman, Aleurites moluccana,* and *Epipremnum pinnatum,* ca. 300 ft [91 m], 30 Dec 1995, *Lorence & Lorence 7743* (PTBG).

Fabaceae

Medicago rugosa Desr. **New island record**

The following collection represents a new island record for Kauaʻi. This species is also naturalized on Hawaiʻi and Oʻahu.

Material examined. KAUAʻI: Waimea District, Hanapepe, Port Allen just north of Burns Field [airport] at junction of Lokokai Road and Lele Road; secondary vegetation dominated by *Cenchrus ciliarus* with *Eragrostis*, *Eleusine*, and *Echinochloa*, ca. 35 ft [11 m], 11 Jan 1996, *Flynn 5922* (PTBG).

Heliconiaceae

Heliconia latispatha Benth. **New island record**

Previously recorded as naturalized on Hawaiʻi and Maui, the following collection represents a new island record for Kauaʻi. This collection represents the color form of this species with orange-yellow bracts.

Material examined. KAUAʻI: Lihue District, on bank of east branch of Wailua River, collected in May 1988 by L. Hume and grown to flowering at Queen's Acres (Wailua), 27 Jul 1989, *Hume 398* (BISH, PTBG).

Malvaceae

Sida spinosa L. **New island record**

The following collections represent a new island record for Kauaʻi. *Sida spinosa* is

also naturalized on Hawai‘i and O‘ahu.

Material examined. KAUA‘I: Waimea District, Public Hunting Area #1 above Waimea; along road just off of Waimea Canyon Drive, 1 Apr 1985, *Flynn 1047* (PTBG); Mana, Lio Road at boundary of the Pacific Missile Range Facility (Barking Sands), elev. ca 30 ft [9 m]; weedy roadside vegetation with *Boerhavia coccinea* and *Cenchrus ciliaris*, 23 Mar 1996, *Flynn & Fosberg 3296* (PTBG); Hanapepe, Port Allen, just north of Burns Field [airport] at junction of Lokokai Road and Lele Road; secondary vegetation dominated by *Cenchrus ciliaris*, with *Eragrostis, Eleusine*, and *Echinochloa*, ca. 35 ft [11 m], 11 Jan 1996, *Flynn 5927* (PTBG).

Poaceae

Aira caryophyllea L. **New island record**

The following collection represents a new record for Kaua‘i. This species is locally common and probably was introduced unintentionally by visitors who frequent this popular viewpoint. A number of weed records have been recorded from this site in recent years.

Material examined. KAUA‘I: Hanalei District, Koke‘e State Park, Pu‘u O Kila lookout along path just below viewing area, secondary vegetation of small herbs and grasses, i.e.. *Hypocharis, Poa annua, Veronica*, and *Epilobium*, 4100 ft [1250 m], 15 Sep 1995 *Flynn 5843* (PTBG).

Bromus wildenowii Kunth **New island record**

The following collection represents a new record for Kaua‘i. *Bromus willdenowii* is widespread in the islands, having previously been recorded from Midway, O‘ahu, Moloka‘i, Maui, and Hawai‘i.

Material examined. KAUA‘I: Waimea District, Waimea Canyon State Park. Hwy 550 near mile 9, ca 2900 ft [884 m], locally common along roadside, 4 May 1987, *Flynn 2180* (PTBG).

Dactyloctenium aegyptium (L.) Willd. **New island record**

Previously recorded as naturalized on five of the main islands (Hawai‘i, Maui, Moloka‘i, Kaho‘olawe, and O‘ahu), the following collections represent a new island record for Kaua‘i.

Material examined. KAUA‘I: Waimea District, Barking Sands, Pacific Missile Range Facility, 22 Jul 1974, *Willett 14* (PTBG); Hanapepe, Port Allen, just north of Burns Field [airport] at junction of Lokokai Road and Lele Road; secondary vegetation dominated by *Cenchrus ciliaris*, with *Eragrostis, Eleusine*, and *Echinochloa*, ca. 35 ft [11 m], 11 Jan 1996, *Flynn 5924* (PTBG).

Sporobolus diander (Retz.) P. Beauv. **New island record**

This perennial grass was previously known from the islands of O‘ahu, Lana‘i, and Hawai‘i. It is apparently quite common in the lower, dryer areas of Lawai valley.

Material examined. KAUA‘I: Koloa District, Lawai Valley, the Allerton Estate at Lawai-Kai, weed in lawn behind and between main house and guest house, ca 5 ft [1.5 m], 25 Aug 1995, *Flynn 5833* (PTBG).

Panicum miliaceum L. **New island record**

This erect annual grass grows as an adventive from spilled bird seed (“Feeder’s Choice Gourmet Wild Bird Food Mixture™”) and represents a new island record for Kaua‘i. It has been recorded as naturalized on O‘ahu and Maui, and cultivated on Hawai‘i.

Material examined. KAUA‘I: Koloa District, Kalaheo, plants from yard at 4543A Puuwai Road, growing from seed spilled from bird feeder, commercial bird food mix, ca. 700 ft, 12 Jul 1996, *Flynn 5989* (PTBG).

Solanaceae

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

This collection represents a new state record for the naturalized flora of the Hawaiian Islands. Native to Andean South America, *Streptosolen jamesonii* is an unarmed shrub up to 2 m tall with arching branches, a pubescence of simple hairs, simple alternate leaves with elliptic blades 2.5-5 cm long, showy, salverform corollas with a yellow tube 2.5 cm long and red-orange lobes 1.5-2 cm long, and dry, capsular fruits with numerous minute seeds. It is occasionally cultivated as an ornamental in the Koke‘e area and has become naturalized along the roadside with other weedy species at least in Halemanu Valley.

Material examined. KAUA‘I: Waimea District, Koke‘e State Park, Halemanu Valley Road ca. 0.4 miles NE of turnoff from NASA tracking station on Hwy. 550; mesic forest with *Acacia koa* dominant, invaded by *Morus, Corynocarpus, Rubus, Myrica, Hedychium, Fuchsia* and other weeds, 1040 m, 12 Aug 1996, *Lorence , Endress & Endress 7801* (PTBG).

Verbenaceae

Clerodendrum macrostegium Schauer **New state record**

This collection represents the record for a second species of *Clerodendrum* naturalized in the Hawaiian Islands, the other being *C. chinense* (Osbeck) Mabberly (syn. *C. philippinum* Schauer). *Clerodendrum macrostegium* is a large shrub or tree of up to 20 ft tall with large, velvety leaves, white and lilac flowers subtended by large, showy, lilac and pale green bracts. As the fruit matures the calyx becomes engorged, thickens and turns a dark glossy purple, splitting into a star shape that presents the glossy, blue-black fruits. This collection was made from a naturalized plant that “appeared” at Alexander’s Nursery in Wailua some time after Hurricane Iniki struck Kaua‘i in Nov. 1992. It seems to be spreading locally by root suckers (as does *C. quadriloculare* (Blanco) Merrill in cultivation). Similar naturalized plants of *C. macrostegium* have been found throughout Olu Pua Gardens in the years since the hurricane, although a parent plant is known to occur there. The Olu Pua plants seem to be multiplying at least in part by seed, perhaps spread by birds.

Material examined. KAUA’I: Kawaihau District, Wailua Homesteads, Kuamo‘o road, Alexander’s Nursery, ornamental escape, 31 May 1995, *Nishek s.n.* (PTBG).

Vitaceae

Cissus rotundifolia (Forssk.) Vahl **New state record**

The following collection represents the first naturalized record of this species from the Hawaiian Islands. It differs from *C. nodosa* Blume, the only other naturalized species of *Cissus* in the archipelago, in having older stems with four thick, corky wings, circular to ovate, brittle, fleshy, waxy leaves up to 8 x 8 cm with crenate margins, flowers with green petals, and smaller berries ca. 15 x 13 mm.

Material examined. KAUA‘I: Waimea District, Waimea, along Hwy. 550 just beyond the 1 mile marker on either side of the road, in secondary vegetation dominated by *Leucaena leucocephala* and *Cenchrus ciliaris* with *Abutilon incanum* and *Acacia farnesiana*, ca. 400 ft [122 m], 3 Jul 1995, *Flynn & Hanna 5810* (PTBG).

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An Overlooked Naturalized Aroid for the Hawaiian Flora

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Introduction

In 1990 the Bishop Museum published (with the University of Hawaii Press) the *Manual of the Flowering Plants of Hawai‘i* (Wagner *et al.*, 1990) and thereby ushered in a new era of botanical endeavor in the Hawaiian Islands. The publication of any definitive reference work seems inevitably to result in an outpouring of information not included in the reference. This has certainly been the case with the *Manual*. From many quarters botanists, conservationists, and land stewards came forward with information not contained in the *Manual* concerning the occurrence, identity, abundance, distribution, ecology, and reproductive biology of native and naturalized plant species. The principal authors are now compiling these new data in preparation for a revised second edition of the *Manual* (D. Herbst, pers. comm.).

In particular, a number of taxa were pointed out as “missing” from the *Manual* or at least not recorded from islands where they are well known to occur. Some of these seeming omissions are attributable to the criterion for inclusion in the *Manual* that was established by the authors at the start of their work. In deciding the scope of coverage, they adopted a conservative approach: they included taxa only if they were supported by voucher specimens deposited in herbaria. Thus, absence of a plant taxon from the *Manual* may be an artifact based on the paucity of that taxon in the herbaria that were consulted and bears no relation to the taxon’s abundance in the environment.

This note reports a naturalized aroid common in the Hawaiian flora that was omitted from the *Manual*, apparently because there were no voucher specimens for it in the herbarium of the Bishop Museum (BISH), the principal repository for the vouchers on which the *Manual* was based. While it seems incredible that a conspicuous and widespread species, present in the Hawaiian Islands for at least half a century, has never previously been vouchered for the BISH herbarium, that is the case insofar as we can determine.

Statement of the Problem

As early as 1993, one of us (KW) pointed out that a large aroid of the “elephant ear” type, widespread in the Hawaiian Islands as a naturalized plant, was missing from the *Manual*. Two similar-sized aroid species having this habit of growth are abundant in sunny places along roadsides, in pastures, wet meadows, and forest margins in mesic habi-

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