

## New Hawaiian Plant Records for 2004<sup>1</sup>

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These previously unpublished Hawaiian plant records report 3 new state records, 3 new island records, and 2 new naturalized records that affect the flora of Hawai'i. All identifications were made by the authors, except where noted in the acknowledgments, and all supporting voucher specimens are on deposit at BISH except as otherwise noted.

### Asclepiadaceae

#### *Cryptostegia madagascariensis* Decaisne **New naturalized record**

Field surveys by Moloka'i Invasive Species Committee personnel discovered a naturalized population of this Madagascan native along the south shore of Moloka'i, near Kamalō. Widely cultivated throughout the Hawaiian Islands for over a century, this is the first documented report of the Madagascar rubber vine being naturalized here. The population is reported to cover three acres of disturbed secondary vegetation near sea level, with thousands of plants in all size classes from seedlings to mature specimens.

According to the most recent revision of *Cryptostegia* (Marohasy & Forster 1991), there are only 2 species, both endemic to Madagascar and widely cultivated elsewhere. Both species are usually identified as *C. grandiflora* R. Br., but nearly all Hawaiian cultivated plants proved on careful inspection to be *C. madagascariensis*. The latter species can be distinguished by: stems with few, prominent, light-colored lenticels; leaf blades with 14–16 pairs of secondary veins; flowers with corolla 3.0–3.5 cm long; corona filaments entire (not bifid); and fruits that are spindle-shaped, 5.5–9.5 cm long.

*Material examined.* **MOLOKA'I:** South shore, Kamalō, at bridge, just past KSBE Quarry on ocean side of Kamehameha V Hwy, ca 21°04'N, 156°53'W, 5 Feb 2004, *L. Buchanan s.n.* (BISH 705004).

### Commelinaceae

#### *Tradescantia fluminensis* Vellozo **New naturalized record**

Variegated cultivars of *T. fluminensis* have been grown as ornamentals in the Hawaiian Islands for many years, but recently a form with dark green, non-variegated leaves has been found naturalized in sites on two islands. Plants have been found in shaded, moist situations along stream banks, and in shaded forest edges where they carpet the ground, forming a dense mat. The plants appear to be spreading vegetatively. This species was not listed as potentially invasive in the Hawaiian Islands (Staples *et al.* 2000) but 3 other taxa of Commelinaceae were included, all on the basis of their vegetative spread. It seems unlikely that *T. fluminensis* would be seriously invasive or capable of causing harm, but the naturalized plants should be eradicated before they spread.

Native to SE Brazil and N Argentina and widespread in cultivation, *T. fluminensis* is a sprawling herb with stems 1–2 m long that root at the nodes, the tips upturned, bearing alternate, dark green (or variegated white, pinkish, or golden yellow in cultivars) leaves

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with a sheathing base, fringed-hairy along the margin of the sheath, and paired inflorescences in the axils of the uppermost leaves. The inflorescences have 2 boat-shaped bracts from which a cluster of white, 3-parted flowers emerges; the 6 anthers have long-hairy filaments and the stigma is knob-shaped. The non-variegated form is more vigorous than the variegated ones, growing more rampantly and flowering more frequently. Like most Commelinaceae, the flowers of *T. fluminensis* are ephemeral, lasting but a few hours and liquefying as they fade.

*Material examined.* **MAUI:** Makawao Distr, Pu‘u Mahoe, 20°37'N, 156°23'W, 800 m, 6 Apr 2002, *H. Oppenheimer et al. H-40202.* **HAWAII:** Kamuela, along banks of Waikoloa Stream near Waimea-Kawaihae Rd bridge, 20°01'N, 155°40'W, ca 650 m, 23 May 2000, *D. Herbst 9877;* North Kohala Distr, Bond Historical Distr E of Kapa‘au, adjoining Pali Akamoa Gulch, 20°13'N, 155°47'W, 200 m, 1 Sep 1999, *Imada & Arakaki 99-48.*

## Fabaceae

### *Vigna hosei* (Craib) Backer

### New state record

This is the first report for this legume in the state. It is believed that *V. hosei* was introduced to the Islands from Australia more than twenty years ago for testing as cover crops (G. Sakamoto, pers. comm.). Plants were observed in 1999 in a pineapple field off Kaukonahua Road, where the vines trailed along the ground and spread over the pineapple crop in the field. In January 2005 there were still thriving populations in the same location as well as in old pineapple fields past Schofield Barracks on Wilikina Rd, and possibly another location nearer Waialua in fields opposite Hukilau Loop. The species appears to be established and is now expanding its range, perhaps aided by farming machinery.

*Vigna hosei* is similar to *V. luteola* and *V. marina*; it can be distinguished by the following features: prostrate or twining perennial vine, all parts pubescent with spreading hairs; leaflets mostly rounded and obtuse (rarely acute); flowers 0.5–1.0 cm, yellow-orange; peduncles filiform; legumes short, 1- or 2-seeded; seeds ca 5 mm long (Howard 1988: 533–534). Although first described from plants cultivated in Indonesia, Verdcourt (1971: 621) theorized that *V. hosei* was actually of African origin. The species is cultivated in various tropical countries as a cover crop (Marechal *et al.* 1978) and that may be why it was introduced to the Hawaiian Islands.

*Material examined.* **O‘AHU:** Waialua Distr, SE of Poamoho Experiment Farm, off Kaukonahua Rd in pineapple field, 23 Jun 1999, *G. Taniguchi s.n.* (BISH 657223).

### *Zornia* J. Gmelin

Two species of the genus *Zornia* have recently appeared in the Hawaiian Islands, the one reported here from O‘ahu and a second, as yet not conclusively identified, collected on Maui in 2000. There are no previous reports of the genus in cultivation (Neal 1965, St. John 1973) or as a naturalized element of the Hawaiian flora (Wagner *et al.* 1999).

The genus *Zornia* is taxonomically difficult and the keys for identification in the latest revision of the genus do not work particularly well (Mohlenbrock 1961). There is no one currently engaged in taxonomic study of the genus (G. Lewis, pers. comm. 2005). Collectors are urged to look out for taxa of *Zornia*, which may well be more widespread in the Hawaiian Islands than realized.

### *Zornia gemella* (Willd.) Vog.

### New state record

*Zornia gemella* has been collected twice from O‘ahu. Both specimens were collected from open grasslands on rocky substrate. Plants are sprawling herbs with a deep taproot, occasional in mixed alien-dominated grasslands with *Panicum maximum*. A full description of

the species, with diagnostic features of the legume illustrated, can be found in Mohlenbrock (1961). It is native to tropical America from southern Texas to Paraguay (Mohlenbrock 1961). How it came to be present in a field in Makakilo is unknown.

*Material examined.* O'AHU: 'Ewa Distr, upper Makakilo, adjacent to Palehua Heights subdivision, at end of Pueonani St, 21°22.024'N, 158°04.588'W, 670 ft [185 m], 9 Mar 2004, C. Imada & L. Crago 2004-29; *ibid.*, on slope above Kalo'i Gulch, 21°22.38'N, 158°05.013'W, 1007 ft [307 m], 30 Mar 2004, C. Imada & L. Crago 2004-32.

### Piperaceae

#### *Piper auritum* Kunth

#### New state record

False sakau is now a widespread weed in the Pacific and there is concern that it could become so in the Hawaiian Islands as well. *Piper auritum* is known to be cultivated in botanical gardens on Kaua'i and O'ahu and has also been documented in cultivation from Maui and Hawai'i islands. The following specimens document its spread out of cultivation and its naturalization on two islands; it is to be expected that it will become naturalized everywhere it has been planted. Vigorous control measures are in order to prevent this aggressive weed from spreading beyond the few places where it is now established. Both O'ahu populations are reported to be spreading rapidly from cultivated sources.

Native to tropical America, *P. auritum* is a vigorous herb that reaches 2 m or more in height from a suckering root system that spreads laterally through the soil. Leaves are large (to 50 cm long), horizontal and in 2 rows along the stem, the blades cordate with a deeply lobed, unequal-sided base and finely ciliate margins, on winged petioles to 6 cm long. Inflorescences are whitish or greenish spikes to 25 cm long, erect or drooping, borne singly opposite the leaves. Fruits are tiny, 3-angled, and densely packed on the fruiting axis. All parts of the plant have a sarsaparilla odor (smells like root beer) when bruised.

*Material examined.* KAUA'I: Kōloa Distr, Kahili Mountain Park, behind Cabin #11, 220 m, 4 Apr 2001, D.H. Lorence & B. Stevens 8521. O'AHU: Honolulu Distr, Kalihi Valley, lot at 3043 Numana Rd, 21 Jul 2004, T. Takemoto *s.n.* (BISH 712562); Ko'olau Poko Distr, Kahalu'u, residential backyard near highway, 15 Dec 2004, N. Matayoshi *s.n.* (BISH 713184, 713196).

### Solanaceae

#### *Physalis angulata* L.

#### New island record

First documented in the Hawaiian Islands in 1976 from Kaua'i (Wagner *et al.* 1999), this weedy alien species has quickly spread to other islands and become locally common in some places where it occurs. The following voucher documents its presence on Moloka'i.

*Material examined.* MOLOKA'I: locality not stated, in open pasture, ca 50 m, Feb 1997, V. Caraway 150.

### Theaceae

#### *Camellia sinensis* (L.) Kuntze

#### New island record

Tea has been cultivated in the Hawaiian Islands for over a century, experimentally as a commercial crop and as a home garden ornamental. Lorence & Flynn (this issue) recorded the first record of it being naturalized in the state (on Kaua'i). The record below marks the first naturalized record of *C. sinensis* on the island of Hawai'i. In Hauani Gulch *C. sinensis* is a dominant middle-story tree, with abundant plants present in all size classes.

*Material examined.* HAWAI'I: Kamuela, E of commercial center in Hauani Gulch above Pu'u Kakanihia, 20°2.08'N, 155°38.7'W, 900 m, 26 Sep 2004, C. Imada *et al.* 2004-54.

**Zingiberaceae*****Hedychium gardnerianum* Ker-Gawler**      **New island record**

Although known to be established on the islands of Kauaʻi, Lānaʻi, Maui, and Hawaiʻi (Wagner *et al.* 1999), kahili ginger has never been documented from Oʻahu as a naturalized plant. The following two specimens record its presence in Mānoa Valley in wet, mixed alien disturbed forest.

*Material examined.* OʻAHU: Honolulu Distr, Mānoa Valley, along Mānoa Cliff Trail, 13 Jan 1996, B. Kennedy *et al.* 42; *ibid.*, 21°20.059'N, 157°48.61'W, 530 m, 15 Dec 2004, C. Imada *et al.* 2004–58.

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