

New Plant Records from Maui Nui

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The following contributions include new plant records from the islands of Maui and Moloka‘i. All records are for nonindigenous species. Voucher collections mentioned are housed in Bishop Museum’s *Herbarium Pacificum* (BISH), Honolulu, Hawai‘i.

Combretaceae

Conocarpus erectus L.

New island record

Conocarpus erectus, button mangrove, is previously known in Hawai‘i from all the main islands except Kaho‘olawe and Moloka‘i (Wagner *et al.* 1999; Staples *et al.* 2002; Oppenheimer & Bartlett 2002; Staples & Herbst 2005; Parker & Parsons 2012). Recently, it was found by Arleone Dibben-Young to be naturalized on the south shore of Moloka‘i at Puko‘o Lagoon, where it was growing along the high-water mark.

Material examined. **MOLOKA‘I:** Puko‘o Lagoon, at high water mark, coastal strand in association with coconut (*Cocos nucifera*) and ironwood (*Casuarina equisetifolia*), many saplings and seedlings, 1 ft [0.3 m], 21.07063°N, 156.79941°W, 03 Sep 2019, *A. Dibben-Young sub Starr & Starr 190903-01*.

Fabaceae

Desmodium intortum (Mill.) Urb.

New island record

Desmodium intortum, tick clover, is previously known in Hawai‘i from the islands of Kaua‘i, O‘ahu, and Hawai‘i (Wagner *et al.* 1999; Herbarium Pacificum Staff 1998; Imada *et al.* 2000; Staples *et al.* 2003). Tick clover was first introduced to the state of Hawai‘i by the Hawai‘i Agriculture Experiment Station in 1947 (USDA-NRCS 2012). Several cultivars were considered outstanding in the field and were further developed and increased. Most are adapted to areas in Hawai‘i with rainfall greater than 60 inches (152 cm), ranging from sea level to 2,500 ft (762 m) (USDA-NRCS 2012). On Maui, this robust sprawling vine is dominant in pastures and found in nearby areas, such as parks, gulches, and house lots. In addition to the collections below, it grows vigorously at the author’s house in Olinda, elevation 2,700 ft (823 m).

Material examined. **MAUI:** East Maui, Makawao, Kahakapao Rd. near Makawao Forest Reserve, scrub pasture/roadside, in association with gorse (*Ulex europaeus*), Guinea grass (*Megathyrsus maximus*), and guava (*Psidium guajava*), 2,500 ft [762 m], 20.8372°N, 156.2797°W, 30 Oct 2001, *Starr & Martz 011030-02*; East Maui, Pukalani, Pukalani Community Center, crawling aggressively on vegetation and in lawn, urban landscaping, in association with Kikuyu grass (*Cenchrus clandestinus*) and Formosan koa (*Acacia confusa*), 1,375 ft [419 m], 20.8383°N 156.3427° W, 15 Feb 2002, *Starr & Martz 020215-01*; East Maui, Makawao, Eddie Tam Park, growing on fence and in abandoned pasture, urban scrub and pasture, in association with Kikuyu grass and glycine (*Neonotonia wightii*), 1,600 ft [488 m], 20.8508°N, 156.3161°W, 15 Feb 2002, *Starr & Martz 020215-02*.

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Rubiaceae***Galium divaricatum*** Pourr. ex Lam.**High elevation record**

Galium divaricatum, bedstraw, is previously known from the islands of Hawai‘i and Maui (Wagner & Herbst 1995; Wagner *et al.* 1999). On Maui, *G. divaricatum* is previously known from the Kanaio, Kula, and Olinda areas. The previous highest known collection on Maui was made by the authors in Pōhakuokalā Gulch at 4,500 ft (1,372 m). On Hawai‘i Island, *G. divaricatum* has been collected in the Pōhakuloa Training Area, along Saddle Road (Wagner & Herbst 1995). Though there is no elevation specified for the Hawai‘i Island collection, the highest point along Saddle Road is 6,600 ft (2,012 m). In 2013, this low-growing, mat-forming herb was located on the island of Maui during invasive species early detection surveys at Haleakalā National Park, Lelewi Overlook parking lot at an elevation of 8,800 ft (2,680 m), where a few small plants were found growing in a crack in the road. The plants were pulled, though they had already gone to seed. This is the highest elevation at which *G. divaricatum* has been found in the state of Hawai‘i.

Material examined. **MAUI:** East Maui, Haleakalā National Park, growing in a crack between the sidewalk and the road, in subalpine shrubland in association with māmane (*Sophora chrysophylla*) and pilo (*Coprosma montana*), 8800 ft [2680 m], 2296279N, 788413W, 01 Aug 2013, *Starr & Starr 130801-05*; East Maui, Pōhakuokalā Gulch, scrub forest consisting of native koa (*Acacia koa*), and ‘ama‘u (*Sadleria* sp.), and non-natives including St. John’s wort (*Hypericum canariense*), faya tree (*Morella faya*), and daisy fleabane (*Erigeron karvinskianus*), 4,500 ft [1,372 m], 05 Aug 2003, *Starr & Starr 030805-01*.

Galium parisiense L.**New state record**

The low-growing annual herb, *Galium parisiense*, was recently found at Haleakalā National Park, Haleakalā Visitor Center (HVC), near the summit of the East Maui. Wall bedstraw is native to the Mediterranean area and has naturalized in North America, mostly in coastal states. This species is typically found in rocky disturbed sites and is a wall specialist, hence its common name, wall bedstraw (Wikipedia 2020). On Maui, a few small plants were initially found during invasive species early detection surveys in 2013 just off the parking lot at HVC. The plants were pulled, but seeds had spread to nearby areas, especially above the visitor center septic system. Control has been ongoing by Park staff for years, and this species is currently thought to be restricted to very few individuals, or at times just a seed bank. *Galium parisiense* has previously not been recorded from Hawai‘i. It is similar in appearance to other *Galium* species, but can be distinguished by the following characters—Habit: annual, erect, 15–68 cm tall, the stems slender, often retrorse-scabrous on the angles. Leaves: in whorls of 5–8, often 6, 4–9 mm long, linear to lanceolate to oblanceolate, generally reflexed in age, 1-nerved, antrorsely scabrous on the margins. Inflorescence: flowers in small cymes ending the mostly numerous branches, panicle open, few-flowered, pedicels threadlike. Flowers: minute, bisexual, corolla basally rotate, white to purple, lobes erect, glabrous to sparsely hairy. Fruit: nutlet hairs short, hooked, or granular roughened (Soza 2012; Gleason *et al.* 1991). The hooked hairs on the fruit of *G. parisiense* help distinguish it from the similar *G. divaricatum*, which has no hairs on the fruit.

Material examined. **MAUI:** East Maui, Haleakalā National Park, Haleakalā Visitor Center, near parking lot, a few small patches by the recycling bins, in sparse subalpine rock land, in association with ‘āhinahina (*Argyroxiphium sandwicense* subsp. *macrocephalum*) and kūpaoa (*Dubautia menziesii*), 9,730 ft [2,966 m], 2293043°N, 786363°W, 23 Jul 2013 (*Starr & Starr 130723-02*) & 01 Aug 2013 (*Starr & Starr 130801-03*).

ACKNOWLEDGEMENTS

We thank the Maui Invasive Species Committee for financial support, Haleakalā National Park for access, and the Bishop Museum Herbarium Pacificum staff and volunteers for determining and confirming species, curating vouchers, and publishing new records.

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