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New Hawaiian Plant Records. III

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Asteraceae

Bidens campylotheca Schultz-Bip. subsp. ***pentamera*** (Sherff) Ganders & Nagata.

MAUI: A population of about 20 plants of *Bidens campylotheca* subsp. *pentamera* was found in Papalaua Gulch on West Maui at an elevation of about 885 m. This represents a range extension of the taxon to West Maui. It was previously known only from East Maui [Ganders, F.R. & K.M. Nagata, 1990, p. 273. *In*: Wagner, W.L. *et al*., *Manual of the flowering plants of Hawai'i*. Univ. Hawaii Press & Bishop Museum Press, Honolulu]. The new West Maui population is in mesic forest, whereas the East Maui populations are in wet forests.

Material examined. 13 Mar 1988, det. F. R. Ganders, 28 Dec 1990, *J. Lau 3210* (BISH).

Rhamnaceae

Colubrina oppositifolia Brogn. ex H. Mann.

MAUI: *Colubrina oppositifolia* was recently found on West Maui in the land section of Honokowai at 500 m. Only a single tree has been located (P. Bily, pers. comm., 1995). This find represents the first record of a naturally-occurring plant of *C. oppositifolia* on the island of Maui. The species was previously recorded only from the islands of Oahu and Hawaii (Wagner *et al*. 1990, *loc. cit*., p.1094).

Material examined. 1 Dec 1992, det. J. Lau, 12 Jan 1995, *P. Bily & T. Cashman s.n.* (BISH).

New Hawaiian Plant Records. IV

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New records of naturalized plant species and the spread of several established alien species have been documented in 2 prior publications (Nagata 1987, 1988). Similar information on several additional species are here presented. These records are updates to Wagner *et al*. (1990).

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Annonaceae

Artabotrys hexapetalus (L. f.) Bhandari

HAWAII: The ylang-ylang, a woody liana, has been long cultivated in Hawaii for its fragrant flowers. In January 1988 a naturalized population was discovered on Oahu along Waikane Stream in disturbed forest, *Nagata 3787*, 18 Jan 1988 (BISH, HLA). Later that year, a large population was found on Hawaii in Waimanu Valley approximately 1 mile from shore in a kukui forest, *Nagata 3891*, 24 Sep 1988 (BISH). No evidence of habitation was observed on either site and the occurrence of this species in such remote areas is somewhat enigmatic.

Asteraceae

Crassocephalum crepidioides (Benth.) S. Moore

LANAI: Naturalized in the Palawai Basin, Lanai, *Nagata 4011*, 8 Sep 1989 (BISH). **New island record.**

Erigeron bellioides DC

OAHU: This diminutive species was first collected on Oahu in 1984 in Honolulu and in Kaneohe (Nagata 1987). By 1988 it had spread to Laie, Oahu, *Nagata 3941*, 27 Dec 1988 (BISH, HLA) and Makawao, Maui, *Wagner, Imada & Takeuchi 5797*, 3 Mar 1988 (BISH). The following year it was collected at Honolulu International Airport. *Hoe, s.n.*, 1 Dec 1989 (BISH). In 1992 it was discovered as a weed in the landscaping at Hilton Hawaiian Village, *Nagata 4245*, 25 Apr 1992 (BISH). In 1993 it was found at Barbers Point Naval Air Station, Ewa, *Nagata 4261*, 5 Feb 1993 (BISH). *Erigeron bellioides* is a very low-growing species with minute achenes. Wind does not appear to be a long-distance dispersal mechanism, yet it has spread far and wide in a relatively short time. It is possible that it is spread through the movement of soil or as a hitchhiker on footwear or on the feet of birds.

Kalimeris indica (L.) Schultz-Bip.

KAUAI: Roadside near Limahuli Gardens, Kauai, escape from cultivation (W.L. Wagner, pers. comm., 1995), *Wagner, Mill, B. & C. Petersen & Flynn 5162*, 21 Dec 1983 (BISH). Naturalized in lawn and secondary road near Haena, Kauai, *Nagata 3914*, 28 May 1988 (HLA). **New island record.**

Basellaceae

Anredera cordifolia (Ten.) Steenis

LANAI: At edge of pineapple fields northwest of Lanai City, Lanai, *Nagata 3502*, 3 Jun 1986 (HLA). **New island record.**

Basella alba L.

OAHU: Although several colonies have been documented along the roadways in Waimanalo, Oahu, these have been considered as escapes from cultivation (Wagner *et al.* 1990: 381). In 1988 a population was discovered in the hills above Pupukea far removed from human habitation, *Nagata 3948*, 27 Dec 1988 (BISH, HLA). It appears that the

Malabar spinach is slowly becoming naturalized at least on Oahu.

Melastomataceae

Oxyspora paniculata (D. Don) DC

OAHU: This species is known to be naturalized in the wet forest behind Honolulu. Until recently it was confined to the western portion and the W rim of Manoa Valley from Tantalus to Konahuanui. Small populations now occur on Waahila Ridge, the E rim of the valley, *Nagata 2490*, 6 Jul 1982 (HLA). It is probably just a matter of time before it spreads into the wet forests throughout the southern Koolau Range.

Moraceae

Ficus rubiginosa Desf.

OAHU: The pollinator wasps for 4 species of *Ficus* (*F. macrophylla* Desf., *F. carica* L., *F. rubiginosa*, *F. microcarpa* L. f.) have been introduced into Hawaii. Until now only *F. microcarpa* was definitely known to be naturalized. In 1988 a naturalized colony of *F. rubiginosa* was documented from a limestone ridge in the hills above Punamano, Koolauloa District, Oahu, *Nagata 3946*, 27 Dec 1988 (BISH, HLA). Included in this colony were several saplings and seedlings, confirming reproduction by seed of a second species of *Ficus* in Hawaii.

Rosaceae

Rosa laevigata Michx.

LANAI: In Hawaii, the Cherokee rose is known to occur on 3 islands. On Hawaii island, cultivated plants were known to occur in residential areas in Hawaii Volcanoes National Park as early as 1943, *Fagerlund & Mitchell 284*, 27 Jan 1943 (BISH). More recently, it has been collected along the roadside in Kokee State Park on Kauai, *Lorence 5255*, 21 May 1987 (BISH). These plants were considered remnants of an early planting and not naturalized. The earliest collection was made in 1938 on Lanai near the summit cabin at Lanaihale, doubtless from cultivated plants, *St. John & Hosaka 18854*, 15 Apr 1938 (BISH). This species is now locally common on Lanaihale especially on the west end at about 2800 ft elevation, *Nagata 2630*, 20 Mar 1983 (BISH, HLA). The spread of this species in the summit area of Lanai should be closely monitored.

Rubus niveus Thunb.

HAWAII: This species has been previously reported from the Kula area on Maui and at Volcano Transfer Station on the E side of Hawaii island (Wagner *et al*. 1990: 1110). It now occurs in the mesic open scrub at 4800 ft (1463 m) in N Kona on the W side of Hawaii, *Nagata 4233*, 25 Jan 1992 (BISH, HLA, US). As its seeds are bird dispersed, this species probably occurs in other mesic mid-elevation sites as well.

Rubiaceae

Pentas lanceolata (Forssk.) K. Schum.

HAWAII: A common garden plant, this species is naturalized along the Hwy between Laupahoehoe and Hilo, Hawaii Island, *Nagata 2650*, 2651, 2 Apr 1983 (HLA). Lavender

and white flowered forms occur in this population.

Scrophulariaceae

Veronica serpyllifolia L.

LANAI: Naturalized at Lanaihale at 3000 ft (914 m) elevation, Lanai, *Nagata 2658*, 20 Mar 1983 (HLA). **New island record.**

Solanaceae

Physalis ixocarpa Brot. ex Hornem.

MOLOKAI: Known from a single shrub in the arid scrubland in W Molokai, *Nagata 2547*, 11 Sep 1982 (K). This is something of an anomaly since this solitary individual was far from the nearest cultivated area. **New state record.**

Verbenaceae

Citharexylum caudatum L.

OAHU: This species is well-documented from the forests behind Honolulu especially in the Manoa-Pauoa Flats area (Wagner *et al*. 1990: 1317), but it has also been recorded from central Oahu. In 1966 it was documented as naturalized behind Schofield on the Wahiawa end of the Schofield-Waikane Trail at 1200 ft (365 m) elevation, *Nagata 46*, 5 Mar 1966 (HLA). Ten years later it was collected along the Poamoho Ridge Trail at 1800–2500 ft (548–762 m) elevation, *Little 31191*, 10 Sep 1976 (BISH). The seeds of *C. caudatum* are easily dispersed by birds and it is likely that the distributional range of this species is far wider than once believed.

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Contributions to the Flora of Hawai'i. IV. New Records and Name Changes

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Publication of the *Manual of the flowering plants of Hawai'i* (Wagner *et al.* 1990) has provided a modern accurate account of the angiosperms occurring indigenously and naturalized after introduction by humans directly or indirectly. Collecting efforts after the cut-off date for the *Manual* project (September 1987) have resulted in a substantial number of new distributional records and detection of additional naturalized species. Also,

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