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New plant records from Midway Atoll for 1999

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The following contributions include new state and island records of plants located on Midway Atoll, Northwestern Hawaiian Islands, Hawai'i. Voucher specimens have been deposited in the Bishop Museum, Honolulu (BISH).

Aizoaceae

Tetragonia tetragonioides (Pallas) Kuntze **New island record**

Native to New Zealand, Tasmania, Australia, Japan, and South America; in Hawai'i, *Tetragonia tetragonioides* (New Zealand spinach) is known from scattered coastal sites on Nihoa, Kaua'i, O'ahu, Maui, and Hawai'i (Wagner *et al.*, 1990, Oppenheimer *et al.*, 1999). On Midway, it is restricted to 2 very small patches on Sand Island. It was found near the Dump Pond and near the cart trail on South Beach. This collection represents a new island record in the Hawaiian Islands.

Material examined: MIDWAY: Sand I, Dump Pond, small patch of plants on roadside, Ramachandran Sudharshan collector, 10 May 1999, *Starr & Martz 990510-5*.

Momordica charantia L.

New island record

Native from tropical Africa to Australia; in Hawai'i, *Momordica charantia* (balsam pear, bitter melon) is reported as widely naturalized in disturbed sites on all of the main islands (Wagner *et al.*, 1990). On Midway, this plant was commonly cultivated and often escaped the confines of the garden. This collection represents the new island record of Midway Atoll.

Material examined: MIDWAY: Sand I, spreading from residential vegetable garden, 21 Apr 1999, *Starr & Martz 990421-11*.

Malvaceae

Sida rhombifolia L.

New island record

A polymorphic, pantropical weed; in Hawai'i, *Sida rhombifolia* (Cuba jute) is naturalized in disturbed areas on all of the main islands (Wagner *et al.*, 1990). On Midway, this plant was restricted to a few individuals on Sand Island near the sea plane hangar. This collection represent the new island record of Midway Atoll.

Material examined: MIDWAY: Sand I, near sea plane hangar, 14 May 1999, *Starr & Martz 990514-2*.

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Poaceae***Bothriochloa pertusa* (L.) A. Camus New island record**

Native to the Paleotropics; in Hawai'i, *Bothriochloa pertusa* (pitted beardgrass) is naturalized in open, disturbed sites such as pastures, savannas, and along roadsides on all of the main islands (Wagner *et al.*, 1990). On Midway, it is localized and was found only on Sand Island in the mowed lawns on either side of the runway near the water catchment pond. This collection represents a new island record in the Hawaiian Islands.

Material examined: MIDWAY: Sand I, collected from lawn near water catchment pond, 7 May 1999, Starr & Martz 990507-4.

***Cenchrus ciliaris* L. New island record**

Native to Africa and tropical Asia; in Hawai'i, *Cenchrus ciliaris* (buffelgrass) is reported from dry areas and sandy soil in a wide variety of habitats on all of the main islands except Ni'ihau (Wagner *et al.*, 1990). On Midway, a few dozen patches were discovered on Sand Island in a grassy lawn area near the sea plane ramp by Turtle Beach. This collection represents the new Hawaiian Island record of Midway Atoll.

Material examined: MIDWAY: Sand I, naturalized in grassy lawn near Turtle Beach, 27 Apr 1999, Starr & Martz 990427-1.

***Chloris virgata* Sw. New island record**

Native to the neotropics, now widely naturalized; in Hawai'i, *Chloris virgata* (feather fingergrass) is naturalized and common along roadsides and dry pastures on Kure Atoll and all of the main islands except Ni'ihau and O'ahu (Wagner *et al.*, 1990). On Midway, it is restricted to a few plants in a lawn near the northwest corner of the inner harbor. This collection represents the new Hawaiian Island record of Midway Atoll.

Material examined: MIDWAY: Sand I, from a lawn near the NW corner of the inner harbor, 7 May 1999, Starr & Martz 990507-5.

***Chloris divaricata* R. Br. New island record**

Native to New Caledonia and Australia; in Hawai'i, *Chloris divaricata* (stargrass) is naturalized and common in lawns and dry, disturbed areas of all the main islands except Moloka'i and Hawai'i (Wagner *et al.*, 1990). On Midway, this species is restricted to a few dozen plants on Sand Island in a clearing in the ironwood grove. This collection represents the new Hawaiian Island record of Midway Atoll.

Material examined: MIDWAY: Sand I, collected from a clearing in the ironwoods (*Casuarina equisetifolia*) near rusty bucket, 8 May 1999, Starr & Martz 990508-1.

***Leptochloa uninervia* (K. Presl) Hitchc. & Chase New island record**

Native to warmer regions of the Americas; in Hawai'i, *Leptochloa uninervia* was first collected on O'ahu in 1967, was reported from Kaua'i, O'ahu, Moloka'i, and Hawai'i by Wagner *et al.* (1990), and has been observed by the authors on Maui. On Midway, a single plant was found on Sand Island in an open, moist site on a hill near the underground hospital. This collection represents a new island record for Midway Atoll.

Material examined: MIDWAY: Sand I, on a hill in a moist, grassy site, 7 May 1999, Starr & Martz 990507-3.

***Paspalum setaceum* Michx. New state record**

Native to Mexico and the southeastern U.S.; in the Pacific, *Paspalum setaceum* was first recorded from the Marshall Islands in 1956 and was later known from American Samoa, Guam, and the Carolines (Whistler, 1994). It was observed on Wake in 1994 by

Derral Herbst. Previously unknown from Hawai‘i, on Midway it is one of the most common species on the island, occurring wherever there are lawn areas. This collection represents a new state record.

Material examined: MIDWAY: Sand I, common grass collected from fuel farm, 22 Jun 1999, Starr & Martz 990622-1 (BISH).

Acknowledgments

We thank the staff of Bishop Museum’s Herbarium Pacificum, particularly George Staples, Derral Herbst, and Chris Puttock, for determination, verification, and curation of vouchers. We also thank Marie Bruegmann for providing information on previous botanical surveys; Robert Shallenberger, Ken Neithammer, and Nancy Hoffman for logistical support while on Midway Atoll; and Lloyd Loope and USGS-BRD for financial support to make the writing of this paper possible.

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Three adventive sphecid wasps new to the Hawaiian fauna (Hymenoptera)

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Specimens of 3 previously unreported adventive species of sphecid wasps were collected during surveys of terrestrial arthropods in disturbed environments that were carried out on several Hawaiian islands during 1994–1998. These specimens represent species in 3 cosmopolitan genera, 2 of which have not been reported previously from Hawai‘i (Nishida, 1994). It is clear that all 3 species represent relatively recent introductions as they are absent from all collections of Hawaiian insects made before 1994. Because all 3 of the genera to which these species belong are widely distributed and contain many described species, and because of our inadequate knowledge of the World sphecid fauna, we have been unable to identify these wasps to species. Their presence in Hawai‘i is recorded here in the hope that someone with the expertise necessary to provide more specific identifications may be inspired to study them. Voucher specimens have been placed in the Bishop Museum and the Hawaii State Department of Agriculture, in Honolulu. Identification to genus was made using keys and other information in Bohart and Menke (1976).

Subfamily Crabroninae

Tribe Crabronini

Rhopalum Stephens

Bohart & Menke (1976) listed 109 species in this cosmopolitan genus. Species of *Rhopalum* are known to use small Diptera and other small insects (Psocoptera, Aphididae, Psyllidae) as prey. Depending on the species, nest burrows are located in the soil or in hollow twigs, etc.

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