

Annotated Insect Distribution Records for the Island of Kauai¹

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ABSTRACT. Thirty five new distribution records are presented for the island of Kauai. *Cardiastethus minutissimus* Usinger (Heteroptera: Anthocoridae) is reported for the first time from the state of Hawaii.

In response to the USDA-ARS pilot tests for tephritid fruit fly eradication on the island of Kauai, and to eventually meet the requirements for an Environmental Impact Statement, effects of fruit fly control measures on nontarget arthropods are being investigated (Messing et al., in press). As a critical first step in this process, we conducted an extensive arthropod survey of the Moloaa agricultural area in northeast Kauai; the site of a large-scale pilot test on oriental fruit fly and melon fly control (Asquith and Messing, in press). The Moloaa survey and additional general collecting of nontargets resulted in the discovery of numerous new state and island distribution records. We present here an annotated list of some of these new records.

Species recorded from Moloaa were collected between February 1 and February 22, 1990. Dates of previous reports of species refer only to publication dates, not dates of first collection. References that appeared as Notes and Exhibitions in the Proceedings of the Hawaiian Entomological Society are listed only by author, and the volume and page on which they appeared; all other references are given full citations.

Odonata

Libellulidae

Orthemis ferruginea (F.). First recorded from Oahu in 1977 (Beardsley, PHES 23:183) and previously known only from that island. Mike Kido collected a single adult flying along a stream near the Wailua Agricultural Station in April, 1991.

Dermaptera

Forficulidae

Forficula auricularia L. First reported in 1976 from Maui (Beardsley, PHES 23:5-6) and Oahu (Beardsley, PHES 23:19). We collected a single specimen that was crawling across the Pihea Trail in Kokee State Park on the night of April 6, 1991.

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Heteroptera

Anthocoridae

Cardiastethus minutissimus Usinger. Originally described from Guam, this species is native to the Marianas and Caroline Islands (Herring, 1967). Three specimens were collected while beating vegetation in a fallow field in Moloaa and a single specimen was collected from a pine tree near the Agricultural Research Station at Wailua, on 29 September, 1990. This species was not previously recorded in Hawaii.

Paratriphleps laevisculus Champion. First reported from Oahu in 1975 (Beardsley, PHEs 22:392) and Molokai in 1978 (Nakahara, PHEs 23:332). Several specimens were collected by sweeping corn at the Agricultural Research Station, July and August, 1990. This species was also found to be abundant on *Myoporum* trees at Poli Hale State Park, 20 April, 1991.

Lygaeidae

Appolonius sp. First reported from Oahu in 1976 (Gagne, PHEs 23:5). We found a single specimen while general collecting in Moloaa.

Cligenes marianensis Usinger. First reported from Oahu in 1974 (Beardsley, PHEs 22:160-161), and also known from Maui (Gagne, PHEs 22:167) and Hawaii island (PHEs 22:410). Four specimens of this species were collected from pitfall traps near the Kalalau Lookout, Kokee State Park, 5-27 April, 1991.

Nysius caledoniae Distant. First reported from Oahu in 1964 (Beardsley, PHEs 19:14) and subsequently found on Hawaii island (Beardsley, PHEs 19:19) and Lanai (Ashlock 1966). Several specimens were collected while sweeping a pasture in Moloaa.

Nysius sp. nr. *vinitor* Bergroth. This species was first discovered on Oahu in 1970 (Beardsley, PHEs 21:12) and was also recorded from Hawaii island (Beardsley 1979). It was abundant on *Amaranthus* in Moloaa.

Miridae

Talorilygus pallidulus (Blanchard). First reported from Oahu, Hawaii and Maui in 1984 (Gagne, PHEs 26:6-7), this species was common on corn at Moloaa and at Agricultural Research Station. It was also found breeding on *Myoporum* at Poli Hale State Park on 20 April, 1991.

Termtatophyloides sp. This mirid was first collected in Honolulu in 1981 and is believed to be associated with *Clidemia hirta* (J.W. Beardsley, pers. comm.). Both adults and nymphs of this species were collected in pitfall traps placed in a fallow field in Moloaa. This constitutes the first report of this species from an island other than Oahu.

Tingidae

Leptodictya tabida (Herrich-Schaffer). First reported from Maui in 1985 (Heu, PHEs 27:10), Molokai in 1986 (Conant, PHEs 28:10) and Oahu in 1987 (Ota & Heu, PHEs 29:9). We collected this species from sugarcane and corn in Moloaa and corn at the Wailua Agricultural Research Station.

Homoptera

Flatidae

Melormenis antillarum (Kirkaldy). First reported from Hawaii island in 1967 (Shiroma, PHEs 20:264), Oahu, 1970 (Beardsley, PHEs 21:28), Maui, 1978 (Miyahira & Nakahara, PHEs 23:318) and Molokai, 1979 (Nakahara, PHEs 24:2). This is a common insect on Kauai and was collected at low to mid elevations throughout the island.

Coleoptera

Coccinellidae

Olla abdominalis (Say). This species has been in Hawaii since 1906, although not previously recorded from Kauai (Leeper 1976). We collected 2 specimens while sweeping an abandoned field in Moloaa.

Diptera

Anthomyzidae

Mumetopia nigrimana (Coquillett). First recorded from the island of Hawaii in 1963 (Hardy, PHEs 19:7), Hardy and Delfinado (1980) also reported this species from Oahu, Molokai and Maui. We recovered 2 specimens while general collecting in the Moloaa area.

Ceratopogonidae

Forcipomyia (Phytohelea) brevis (Johannsen). This endemic species was previously reported only from Oahu and Lanai (Hardy 1960). In the Moloaa area, we collected numerous specimens in a light trap adjacent to a crop of pineapple.

Chloropidae

Gampsocera hardyi Kanmiya. This immigrant was first reported in Hawaii in 1984 (Hardy, PFES 26:14) as an unidentified species and subsequently described based on specimens from Oahu (Kanmiya 1989). We collected 2 specimens when sweeping corn in Moloaa.

Rhodesiella sauteri (Duda). First recorded in Hawaii from specimens collected on Oahu in 1966 (Joyce, PHEs 22:7; Hardy and Delfinado 1980). We collected several specimens from a variety of habitats in Moloaa.

Semaranga dorsocentralis Becker. Previously recorded only from Oahu in 1969 (Joyce, PHES 22:409; Hardy and Delfinado 1980). We collected a single specimen from cultivated fields in Moloaa.

Dolichopodidae

Medetera atrata Van Duzee. Previously thought to be endemic to Oahu (Hardy 1964). We collected 2 specimens from yellow pan traps in cultivated fields in Moloaa.

Paraphrosylus acrosticalis (Parent). Recorded previously from all the major islands except Lanai, Kauai and Niihau (Hardy 1964). This species was abundant on algae covered rocks along the beach at Moloaa.

Empidiidae

Hemerodromia stellaris Melander. This species was first reported from Oahu in 1983 (PHES 25:20), but the larvae were known from that island for 6-8 years previously. This fly is apparently widely distributed on Kauai, as we collected adults or immatures from Hanakapiai, Anahola and Makaleha Streams, and Waipoo Falls in Kokee.

Otitidae

Notogramma cimiciforme Loew. Previously known only from Oahu and Maui (Hardy and Delfinado 1980). We collected numerous specimens from cultivated fields in Moloaa.

Piophilidae

Piophila australis (Harrison). First reported (as *Protopiophila*) from Oahu in 1971 (PHES 21:151) and previously known only from that island (Hardy and Delfinado 1980). We recovered 7 specimens while general collecting in Moloaa.

Scatopsidae

Holoplagia guamensis (Johannson). Previously known only from Oahu, but Hardy (1960) noted that it was probably present on all the islands. We collected several specimens in pitfall traps placed in a pasture in Moloaa.

Sepsidae

Sepsis lateralis Wiedemann. First reported from Oahu (Hardy, PHES 22:13), this species was previously known only from that island (Hardy and Delfinado 1980). We collected several specimens resting on grass around cow dung in Moloaa.

Syrphidae

Eristalinus (Lathrophythalmus) arvorum (F.). This species is widely distributed throughout islands, although Hardy (1964) reported no specimens from Kauai. We recovered a single specimen from Moloaa.

Simosyrphus grandicornis (Macquart). This species is widespread in Hawaii, but Hardy (1964) reported no specimens from Kauai or Lanai. We collected one specimen while sweeping vegetation in Moloaa.

Syritta hackeri Klocker. Known previously only from Oahu and possibly Molokai (Hardy 1964), a single specimen was collected in a fallow field in Moloaa.

Tephritidae

Dioxya sororcula (Wiedmann). First recorded from Oahu in 1966 (Hardy, PHES 19:333) and also known from Molokai (Hardy and Delfinado 1980), this species was common in sweep net samples, particularly on corn in Moloaa. A single specimen was also collected resting on the flower of a native *Bidens* in Manoa Valley, in March, 1991.

Hymenoptera

Braconidae

Apanteles galleriae Wilkinson. This parasite of the greater wax moth *Galleria mellonella* (L.) was first reported from Hawaii in 1982 from a beehive on Lanai (Beardsley, PHES 25:8). Our specimens came from bee hives infested with *G. mellonella* on the grounds of the Kauai Agricultural Research Station at Wailua. This constitutes the second record of this species from the state and the first report from Kauai.

Apanteles opacus Ashmead. This recent immigrant lepidopteran parasite was previously reported only from Oahu, in 1988 (Kumashiro, PHES 30:12). A single specimen was collected in guava forest at Moloaa.

Encyrtidae

Adelencyrtus odonaspidis Fullaway. Described from specimens collected on Oahu in 1913, it is also known from Molokai, Maui and Hawaii (Beardsley 1976). We collected 2 specimens in a yellow pan trap placed in a fallow field at Moloaa.

Blepyrus insularis (Cameron). Known in Hawaii since 1886, it was previously reported from Oahu, Maui and Hawaii (Beardsley 1976). We recovered a single specimen while general collecting in cultivated fields in Moloaa.

Caenohomalopoda guamensis (Fullaway). First reported from Oahu in 1952, this species was previously known only from that island (Beardsley 1976). We recovered a single specimen from a guava forest at Moloaa.

Eulophidae

Aprostecetus sp. A. First reported in Hawaii in 1988 when it was reared from the tephritid *Dioxya sororcula* (Wiedmann) on Oahu (Beardsley, PHES 30:6). We recovered 4 specimens from yellow pan traps in pineapple and papaya fields in Moloaa.

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