

## Recent Liberations of Beneficial Insects in Hawaii—II

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The following liberations of beneficial insects have been made since the last previous listing was published.<sup>1</sup>

### Introductions by the Cooperative Fruitfly Project

#### **Syntomosphyrum indicum** Silvestri

The first liberation of this eulophid on Kauai was made at Wailua on Jan. 2, 1951, and on Maui at Kula on Jan. 3.

#### **Opius oophilus** Fullaway

Initial distribution of this braconid to the outside islands was made as follows: Pulehu, Maui, Sept. 29, 1950; Waimea Valley, Kauai, Aug. 23; Maalehua, Molokai, Sept. 25; Manakahau, Hawaii, Aug. 23.

#### **Opius compensans** (Silvestri)

This braconid from south India was released at Hawi, Hawaii, on Jan. 29, 1951; Makaha, Oahu, Jan. 31; Kalaupapa, Molokai, Feb. 5; Waiakoa, Maui, Feb. 23; and Lihue, Kauai, April 4.

#### **Opius makii** Sonan

*O. makii* was liberated at Lihue, Kauai, on Feb. 28, 1951; Waiakoa, Maui, Feb. 23; Huehue Ranch, Hawaii, March 1; and Makiki, Oahu, March 2.

#### **Opius phaeostigma** Wilkinson

A small number of this African species was released at Hawi, Hawaii, on March 16, 1951.

#### **Opius angaleti** Fullaway

This parasite of the melon fly from Borneo was first released at Hoo-kena, Hawaii, on May 2, 1951, and Waimanalo, Oahu, on May 3.

#### **Opius cereus** Gahan

First introduced in 1936, this Brazilian species was reintroduced in 1951 and liberated at Woodlawn, Oahu, Papohaku, Maui, and Kamuela, Hawaii, on June 15.

#### **Opius anastrephae** (Viereck)

Also first introduced in 1936, *O. anastrephae* was liberated in Kalihi Valley, Oahu, on June 13, 1951, and at Hilo, Hawaii, on June 16.

<sup>1</sup> The first paper in this series appeared in the "PROCEEDINGS," 14(2): pp. 327-330, 1951.

**Opius sp.**

This undescribed species, near *longicaudatus*, has been referred to in the records as "New Caledonia #3." It was first liberated at Lawai, Kauai, and Waiaha, Hawaii, on Dec. 13, 1950; Kamalo, Maui, on Dec. 22; Kalaupapa, Molokai, Feb. 19, 1951; and Kalihi Valley, Oahu, March 20.

**Introductions by the Board of Agriculture and Forestry****Apanteles expulsus** Turner**Apanteles ruficrus** Haliday

These braconids, imported from Fiji for control of phalaenids, were both released at Mokuleia and the Board grounds in Makiki, Oahu, on Feb. 20, 1951.

**Pachylister chinensis** Quensel

This histerid beetle was introduced from Fiji for control of flies that breed in dung, particularly the hornfly. It was liberated in Kaneohe, Oahu, on May 29, 1951.

**Lagocheirus funestus** Thomson

Brought from Australia to aid in the eradication of cactus, this cerambycid was first released at Waimea, Hawaii, in September, 1951.

**Orius insidiosus** (Say)

This anthocorid bug, predacious on eggs and young larvae, was introduced from Iowa and Missouri to help in control of corn earworm. It was first released at Mokuleia, Oahu, on Oct. 4, 1951.

**Cyrtorhinus lividipennis** Reuter

This mirid bug was introduced from Guam by Fullaway in 1939 to attack the eggs of the corn leafhopper. Apparently the bug failed to become established. It was reintroduced in 1951 and released at Mokuleia, Oahu, on Dec. 26; Omaopio, Maui, Jan. 10, 1952; Kapoho, Hawaii, April 7; Kaumakani, Kauai, April 30; and Honouliwai, Molokai, Sept. 17.

**Hister coenosus** Erichson**Hister confinis** Erichson

These histerid beetles were brought from Puerto Rico to aid in control of hornfly. *H. coenosus* was released at Waikii, Hawaii, on Jan. 16, 1952, and at Waianae, Oahu, on Jan. 22; *confinis* was released at the University of Hawaii dairy in Honolulu on Feb. 15 and at Waikii, Hawaii, on Oct. 7.

**Brachymeria robustella** (Wolcott)

This chalcid wasp, brought from Puerto Rico to attack phalaenid pupae, was liberated in Manoa, Oahu, on Feb. 15, 1952.

**Cycloneda limbifer** Casey**Coleomegilla cubensis** Casey

These coccinellids, predacious on aphids, were introduced from Cuba; they were released at Kahala, Oahu, on April 22, 1952.

**Egus platycephalus** Mulsant

This coccinellid is predacious on the bamboo and other scales; it also was introduced from Cuba. It was liberated in Makiki, Oahu, on April 29, 1952.

**Hippodamia quinquesignata punctulata** LeConte

This aphid predator was introduced from California; it was released at Mokuleia, Oahu, on May 6, 1952.

**Ceratomegilla vittigera** (Mannerheim)

Also an aphid predator, and introduced from California, this species was liberated at Waiakoa, Maui, on June 6, 1952.

**Stethorus picipes** Casey

This coccinellid is predacious on mites. It was obtained in California and first released in Foster Gardens, Oahu, on June 12, 1952.

**Chilocorus bipustulatus** L.

This scale predator was brought from California and was released in Makiki, Oahu, on June 12, 1952.

**Adalia bipunctata** (L.)**Hippodamia convergens** Guérin

These species were introduced many years ago, the first in 1909 and the second in 1896, 1905, and 1910, to prey on aphids but failed to become established. They were again introduced from California and released in Waikiki, Oahu, on June 18, 1952.

**Phorocera erecta** Coquillett

Obtained from *Amorbia essigana* Busck on avocado in California, this tachinid fly was introduced to attack *Amorbia emigratella* Busck and other tortricids here. It was first liberated on Round Top, Oahu, on June 19, 1952.

**Bracon xanthonotus** Ashmead

This braconid was obtained from *Sabulodes caberata* Guenée, also on avocado in California, and was released at Kahe Pt., Oahu, on June 27, 1952 in the hope that it might attack the recently established *Anacampodes*.

**Eretmocerus haldemani** Howard

This eulophid is a parasite of aleyrodids. It was introduced from California and was first released at Waialua, Oahu, on Aug. 19, 1952.

**Typhlodromus** sp.

A predacious mite belonging to this genus was introduced from California to attack *Tarsonemus* and other mites. It was first released in Makiki, Oahu, on Oct. 6, 1952.

**Teleonemia vanduzeei** Drake

This tingid bug was brought from Cuba to aid in the control of lantana. It was first liberated at Hookena, Hawaii, on May 26, 1952; Waimanalo, Oahu, July 1; and Kaupo, Maui, on Aug. 22.

**Gonaxis kibweziensis** (Smith)

This predacious snail, a member of the family Streptaxidae, was introduced from Kenya to feed on *Achatina fulica* Férrusac. A small number were liberated at Kaneohe, Oahu, on June 3, 1952.

**Tefflus hacquardi** de Chaudoir

This is a large carabid beetle which was found attacking *Achatina* in Kenya. It was liberated in Kaneohe some distance away from the *Gonaxis* on the same date.

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According to Alan P. Dodd, of the Queensland Department of Lands, who did the early work in biological control of cactus, the species of *Moneilema* introduced by the Board in 1950 should be *armata* LeConte, not *crassa* LeConte ("PROCEEDINGS," 14: 327, 1951).