A Review of the Hawaiian Coccinellidae[1,2]

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The Coccinellidae comprise a large family in the Coleoptera with about 490 genera and 4200 species (Sasaji, 1971). The majority of these species are predacious on insects and mites. Species of the subfamily Epilachninae are phytophagous and are pests themselves. To date, none of these occur in Hawaii.

The Coccinellidae are all thought to have been introduced into the Hawaiian Islands. Three species, *Scymnus discendens* (=*Diomus debilis* LeConte), *Scymnus ocellatus* and *Scymnus vividus* (=*Scymnus* (*Pullus*) *loewii* Mulsant) were described by Sharp (Blackburn and Sharp, 1885) from specimens collected in Hawaii. There are no records of their introductions. The first beneficial insect introduction into Hawaii was made by Koebele in 1890 when he introduced *Rodolia cardinalis* (Mulsant). Koebele is credited with the establishment of at least seventeen Coccinellidae in the state (Swezey, 1923; Williams, 1931). The early introductions were from Australia, the Orient, California and Mexico. Numerous coccinellids have been introduced since 1890. Those which have not become established are not covered in this paper.

The primary purposes of this paper are to provide a key to the known Hawaiian Coccinellidae and to provide their currently accepted names. Specimens from the University of Hawaii, the Hawaii State Department of Agriculture and the Bernice P. Bishop Museum collections were examined in constructing the key and in determining island distributions (Table 1). References in the Proceedings of the Hawaiian Entomological Society and Zimmerman (1948, 1957) were also used in determining island distributions, synonymy, introduction data and hosts. Undoubtedly some species have wider distributions and host ranges than given. Revisions of the key and text will be required as new species become established and more information on the currently established coccinellids becomes available.

The key is designed to facilitate the identification of the coccinellids currently found in Hawaii. I have composed the key using gross morphological characters and constant color patterns of the specimens examined. A dissecting microscope or good hand lens should be sufficient for running a specimen through the key. Sasaji (1971) was the basis for the morphological terminology used.

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TABLE 1. *Distribution of Hawaiian Coccinellidae*

Species	*Niihau*	*Kauai*	*Oahu*	*Molokai*	*Lanai*	*Maui*	*Hawaii*
1. *Azya orbigera*	X	X	X	X		X	
2. *Brumoides suturalis*			X				
3. *Chilocorus circumdatus*			X	X		X	X
4. *C. nigritus*			X				
5. *Coelophora inaequalis*	X	X	X	X	X	X	X
5a. *C. inaequalis* var. *novemmaculata*			X				
6. *C. pupillata*			X			X	X
7. *Coccinella septempunctata brucki*			X	X	X	X	X
8. *Cryptolaemus montrouzieri*	X	X	X	X	X	X	X
9. *Curinus coeruleus*	X	X	X			X	X
10. *Diomus debilis*			X	X	X	X	X
11. *D. notescens*		X	X	X	X	X	X
12. *D. pumilio**							X*
13. *D.* near *pumilio*			X	X			X
14. *D.* sp.			X				
15. *Harmonia conformis*							X
16. *Hippodamia convergens*			X			X	X
17. *H. quinquesignata punctulata*			X				
18. *Hyperaspis fimbriolata*			X			X	X
19. *H. jocosa*		X	X	X		X	X
20. *H. silvestrii*			X			X	X
21. *Lindorus lophanthae*			X	X	X	X	X
22. *Nephus bilucernarius*	X	X	X			X	X
23. *N. roepkei*			X			X	
24. *Olla abdominalis*			X	X	X	X	X
24a. *O. abdominalis* var. *plagiata*			X				
25. *Orcus chalybeus*		X	X	X			X
26. *Pseudoscymnus anomalus*			X				
27. *Rhizobius ventralis*	X	X	X	X	X	X	X
28. *Rodolia cardinalis*	X	X	X		X	X	X
29. *Scymnodes lividigaster*	X	X	X	X	X	X	X
30. *Scymnus ocellatus*			X	X	X	X	X
31. *S. varipes*			X				X
32. *S. (Pullus) dorcatomoides*			X				
33. *S. (Pullus) loewii*		X	X	X	X	X	X
34. *S. (Pullus) uncinatus*			X				X
35. *Serangium maculigerum*			X				
36. *Stethorus siphonulus*			X			X	X
37. *Sticholotis ruficeps*			X	X	X	X	X
38. *Telsimia nitida*		X	X				

*Introduced February 3, 1973; establishment uncertain.

Each species is listed under its currently accepted name, followed by the name and reference under which it was first described, the type locality when known, the first reference to the currently accepted name and a list of its name changes as found in Hawaiian literature, primarily in the Proceedings of the Hawaiian Entomological Society. This is followed by information on its introduction, its hosts in Hawaii and its worldwide distribution. Under distribution, Hawaiian Islands refers to the presence of the species on one or more of the seven major islands. No records were found for Kahoolawe. Other islands in the Hawaiian Chain are listed separately.

Crotch (1874), Korschefsky (1931, 1932), Chapin (1965), DeBach (1956) and Sasaji (1971) were the references other than the original descriptions used in determining correct nomenclature and distributions outside the state.

KEY TO SPECIES OF HAWAIIAN COCCINELLIDAE

1a. Elytral epipleura horizontal (fig. 1C-) or slightly inclined below 2
b. Elytral epipleura strongly inclined below (fig. 1B) 30

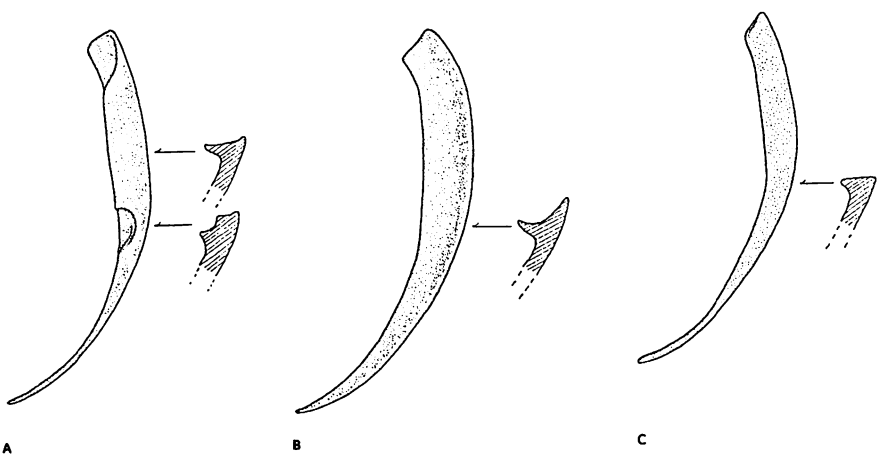

FIG. 1. Elytral epipleura, ventral aspects and cross sections illustrating: A, type with deep impressions for reception of legs two and three; B, type strongly inclined below; C, type horizontal below.

2a. Elytral pubescence lacking or sparse, when lacking elytra punctate, when sparse elytra smooth and shiny 3
b. Elytra densely pubescent.....11
3a. Dorsum dark, shiny, lacking punctation; short light hairs sparsely distributed on elytra 4
b. Elytra punctate 5

4a. Body hemispherical; dorsum strongly convex, elytral epipleura extending past first abdominal sternite; elytral epipleura with two notches, one for leg two the other for leg three; length 1.25-1.5 mm, width 1.0-1.25 mm ..... *Serangium maculigerum* Blackburn

b. Body elliptical; elytral epipleura not extending past first abdominal sternite; elytral epipleura lacking notches; length 1.25-1.5 mm, width 0.75-1.0 mm ..... *Diomus* sp.

5a. Outer margin of elytra distinctly expanded laterally 6

b. Outer margin of elytra not expanded or only slightly expanded 9

6a. Length 1.7-2.0 mm, width 1.2-1.5 mm; black with four orange-brown spots on elytra in a 2-2 pattern, first two spots may coalesce at elytral suture ..... *Sticholotis ruficeps* Weise

b. Larger species, length 2.5 mm or more; color pattern not as above 7

7a. Length 2.5-3.5 mm, width 1.5-2.5 mm; elytra black, each with two yellow-gold longitudinal stripes, one stripe along anterior (outer) margin, stripes meeting at apex; males with six abdominal sternites, females with five ..... *Brumoides suturalis* (Fabricius)

b. Larger species, length 5.0 mm or greater; markings not as above ... 8

8a. Pronotum black with two yellow commas, corners and anterior margin yellow; face about half black, half yellow; elytra orange, elytral markings extremely variable, most commonly with twelve spots arranged in a 2-4-2-2-2 pattern sometimes appearing as a 2-4-2-2 pattern ..... *Hippodamia convergens* Guerin

b. Pronotum black, commonly with two yellow dots, at least front corners yellow, anterior margin not yellow; face about two thirds black, one third yellow; elytra orange, elytral markings extremely variable, most commonly lacking spots ..... *Hippodamia quinquesignata punctata* LeConte

9a. Pronotum and elytra with yellow spots 10

b. Pronotum entirely dark or with yellow lateral margins; elytra with yellow stripe along anterior (outer) margins, not extending to elytral apex ..... *Hyperaspis fimbriolata* Melsheimer

10a. Elytra with four yellow spots in a 2-2 pattern ..... *Hyperaspis silvestrii Weise*

b. Elytra with ten yellow spots in a 4-4-2 pattern ..... *Hyperaspis jocosa* (Mulsant)

11a. Elytral pubescence of uniform length and appearance 12

b. Elytral pubescence of two lengths: short, fine golden-brown setae and longer erect seate ..... *Lindorus lophanthae* (Blaisdall)

12a. Abdomen with five visible sternites 13

b. Abodmen with six visible sternites 18

13a. Length 2.5 mm or more; elytra entirely black 14

b. Length 2.5 mm or less; elytra black with yellow-brown to orange mark on larger specimens; elytra entirely black on smaller specimens 15

14a. Legs darker than abdomen; elytral epipleura without distinct deep impressions for reception of legs (fig. 1c) ..... *Rhizobius ventralis* Erichson

b. Legs same orange-brown color as abdomen; deep impressions elytral epipleura for reception of legs two and three (fig. 1A); pubescence bicolored on elytra, black setae form a single large circular spot on each elytron ..... *Azya orbigera* Mulsant

15a. Length 1.75-2.5 mm, width 1.25-2.0 mm; a yellow-brown to orange band covering about one-third elytral area, but not reaching elytral margin; leg one and face black in females; leg one orange-brown, face yellow-brown to orange in males, legs two and three black in both sexes ..... *Diomus notescens* (Blackburn)

b. Not as above 16

16a. Entire body and legs tan to yellow-brown; length 1.25-1.5 mm, width 0.75-1.0 mm ..... *Diomus debilis* (LeConte)

b. Length 1.5-2.0 mm, width 1.0-1.25 mm; color entirely yellow brown 17

17a. Elytra dark brown to black; face black or yellow-brown, when yellow-brown hypomeron and anterior edge of pronotum yellow-brown; ventor black; legs black, legs one and two dark brown when face yellow-brown ..... *Diomus pumilio* Weise

b. Elytra brown to dark brown, face yellow-brown to dark brown, pronotum yellow-brown to dark brown, legs all lighter than ventor ..... *Diomus* near *pumilio*

18a. Clypeus distinctly expanded laterally in front of eyes; labrum and antennal insertion not visible from front ..... *Telsimia nitida* Chapin

b. Not as above 19

19a. Elytra unicolorous 20

b. Elytra bicolored 22

20a. Small insect, 1.5 mm long or shorter body dark brown to black; distal tip of femora, tibiae and tarsi yellow-brown; mouthparts and antennae yellow-brown; face black or yellow-brown ..... *Stethorus siphonulus* Kapur

b. Larger insect, 2.5-4.0 mm 21

21a. Prothorasic hypomera yellow-brown to orange-brown, remainder black ..... *Scymnodes lividigaster* (Mulsant)

b. Entire pronotum dark brown ..... *Scymnus varipes* (Blackburn)

22a. Head, prothorax and apical third or less of elytra yellow-brown to orange, remainder of elytra black 23

b. Not as above 25

23a. Legs one yellow-brown to orange in males, dark in females; legs two and three dark; length 3.8-5.0 mm, width 2.0-3.0 mm ..... *Cryptolaemus montrouzieri* Mulsant

b. All legs yellow-brown to orange; length 1.8-2.3 mm, width 1.1-1.5 mm 24

24a. Two sensory setae on terminal antennal segment longer than last three antennal segments ..... *Pseudoscymnus anomalus* Chapin

b. Antennae without long sensory setae ..... *Scymnus* (*Pullus*) *dorcatomoides* Weise

25a. Elytra orange-red; sutural stripe black, diamond shaped in second fifth; two black spots per elytron, anterior spot curving behind of humeral callus, posterior spot reaching elytral margin and extending to apex and sutural stripe ..... *Rodolia cardinalis* (Mulsant)

b. Not as above 26

26a. Elytra with two yellow-brown to orange spots or bands, majority of elytra dark brown to black 27

b. Elytra with two yellow-brown to orange longitudinal stripes, remainder of elytra brown to black, area covered by each color variable 28

27a. Elytra mostly dark brown, each with a single large yellow-brown to orange dot covering about one-third the total area; venter and legs orange-brown ..... *Nephus roepkei* (Fluiter)

b. Elytra mostly black, each with a yellow-brown to orange spot covering about one-fifth the total area, spot located on apical half of elytron; venter black; legs orange-brown to yellow-brown ..... *Nephus bilucernarius* Mulsant

28a. Elytra yellow-brown to orange-brown; sutural stripe brown to black, broad at base, narrowing apically, not reaching apex of elytron 29

b. Elytra brown with wide yellow-brown longitudinal band appearing notched; apical elytral margin yellow-brown ..... *Scymnus* (*Pullus*) *uncinatus* Sicard

29a. Coxal arch of first abdominal sternite incomplete, directed toward basal margin of sternite near lateral margin but failing to reach basal margin (Fig. 2A) ..... *Scymnus ocellatus* Sharp

b. Coxal arch complete, joining basal margin of sternite near lateral margin (Fig. 2B) ..... *Scymnus* (*Pullus*) *loewii* Mulsant

30a. Clypeus extended in front of eyes; antennal insertion not visible from front *31*

b. Clypeus not extended in front of eyes; antennal insertion variable 33

31a. Tibial spurs present on legs two and three; prothoracic hypomera without setae; body dark blue with prothoracic hypomera orange-brown ..... *Curinus coeruleus* Mulsant

b. Tibial spurs absent; prothoracic hypomera with fine setae; coloration not as above 32

32a. Dorsum orange-brown with lateral elytral edge black ..... *Chilorcorus circumdatus* (Schonherr)

b. Dorsum black with prothoracic hypomera orange-brown to brown ..... *Chilocorus nigritus* (Fabricius)

33a. Tibial spurs absent 34

b. Tibial spurs on legs two and three 35

34a. Metallic blue to green; males with prothoracic hypomera yellow ..... *Orcus chalybeus* (Boisduval)

b. Orange to yellow-brown; eighteen black spots on elytra arranged in a 5-6-5-2 pattern ..... *Harmonia conformis* (Boisduval)

35a. Pronotum orange-brown to yellow-brown without markings; elytra orange-brown to yellow-brown with ten black spots encircled by lighter orange-brown to yellow-brown rings, spots arranged in a 4-4-2 pattern ..... *Coelophora pupillata* (Schonherr)

b. Not as above 36

36a. Prothoracic hypomera with round shallow depressions at anterior inner portions 37

b. Prothoracic hypomera without such depressions 38

37a. Pronotum black with orange-brown to yellow-brown markings across anterior margin; elytra orange-brown to yellow-brown; elytral suture black; elytra with nine irregular spots which may coalesce with each other or with elytral margins ..... *Coelophora inaequalis* (Fabricius)

b. Pronotum orange-brown to yellow-brown with two black spots; elytra orange-brown to yellow-brown; elytral suture not black; elytra with eight or nine spots in a 2-4-2 or 2-4-2-1 pattern ..... *Coelophora inaequalis* var. *novemmaculata* (Fabricius)

38a. Pronotum black with yellow hypomera; elytra orange-brown to yellow-brown with seven black spots in a 1-2-2-2 pattern, sometimes appearing as a 1-4-2 pattern, spot one located on elytral suture behind two yellow areas ..... *Coccinella septempunctata brucki* Mulsant

b. Not as above 39

39a. Gray to tan; pronotum with seven black spots; elytra with sixteen black spots in a 8-6-2 pattern ..... *Olla abdominalis* (Say)

b. Black; yellow markings across anterior pronotal margin; two yellow spots on elytra ..... *Olla abdominalis* var. *plagiata* (Casey)

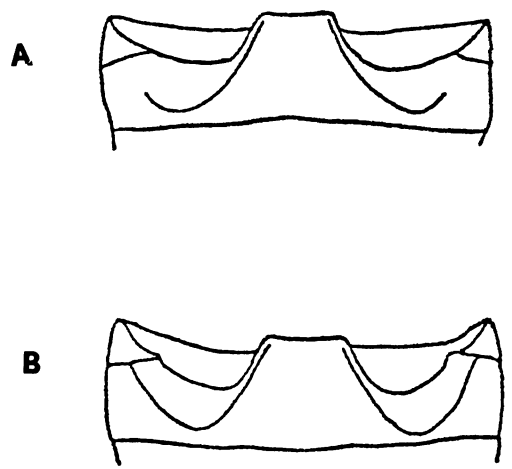

FIG. 2. First abdominal sternites illustrating: A, type with coxal arch incomplete; B, type with coxal arch complete.

Genus **AZYA** Mulsant

Azya Mulsant, 1850, Spec. Trim. Securipalp. :928.
Type species: *Azya luteipes* Mulsant, 1850. By subsequent designation of Crotch (1874, Revis. Coccinellidae :279).

Azya orbigera Mulsant.
Azya orbigera Mulsant, 1850, Spec. Trip. Securipalp. :930.
Ayza luteipes Mulsant; Fullaway, 1914, Proc. Hawaii. Entomol. Soc. 3(1):8. Misidentification.
Ayza orbigera Mulsant; Funasaki and Beardsley, 1975, Proc. Hawaii. Entomol. Soc. 22:8.
Introduced from Mexico in 1908 by Koebele (Ehrhorn, 1916, Proc. Hawaii. Entomol. Soc. 3(3):144.
Hosts: Lecaniine scales; Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):241.
Coccus viridis (Green); Hartung, 1932, Proc. Hawaii. Entomol. Soc. 8(1):26.
Ferrisiana virgata (Cockerell); Zimmerman, 1948, Insects of Hawaii 5:271. (=*Ferrisia virgata* (Cockerell); Beardsley, 1960, Insects of Micronesia 6(7):414.
Distribution: California, Central and South America, Guam, Hawaiian Is.

Charanasri and Nishida (1975) studied predation of *A. orbigera* on green scale, *Coccus viridis*, on Plumeria trees in Honolulu.

Genus **BRUMOIDES** Chapin

Brumoides Chapin, 1965, Bull. Mus. Comp. Zool. Harv. Univ. 133(4):237.
Type species: *Coccinella suturalis* Fabricius, 1798, Suppl. Ent. Syst.:78. By original designation.

Brumoides suturalis (Fabricius).
Coccinella suturalis Fabricius 1798, Suppl. Entomol. Syst.:78.
Brumoides suturalis (Fabricius); Chapin, 1965, Bull. Mus. Comp. Zool. Harv. Univ. 133(4):237.
Brumoides suturalis (Fabricius); Mau, 1976, Proc. Hawaii. Entomol. Soc. 22(2): (in press).
Introduced in 1974 (accidental). Found at Hickam Air Force Base (Mau, 1976, Proc. Hawaii. Entomol. Soc. 22(2):
Hosts: Not known.
Distribution: Ceylon, Hawaiian Is., India, Luzon.

Genus **CHILOCORUS** Leach

Chilocorus Leach, 1815, *In* Brewster, Edinbur. Encycl. 9:116.
Type species: *Coccinella cacti* Linnaeus, 1767, Syst. Nat. ed. 12:584. Monobasic.

Chilocorus circumdatus (Schonherr).

Coccinella circumdata Schonherr, 1808, Syn. Ins. 2:152.

Chilocorus circumdatus: Mulsant, 1850, Spec. Trim. Securipalp. :454.

Chilocorus circumdatus: Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):243.

Introduced from S. China in 1895 by Koebele (Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):243; Timberlake, 1927, Proc. Hawaii. Entomol. Soc. 6(3):532.

Hosts: Diaspine scales; Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):243.

Coccus viridis (Green); Illingworth, 1929, Proc. Hawaii. Entomol. Soc. 7(2):248.

Pinnaspis buxi (Bouche); Illingworth, 1938, Proc. Hawaii. Entomol. Soc. 10(1):24.

Lepidosaphes beckii (Newman); Zimmerman, 1948, Insects of Hawaii 5:418.

Distribution: Ceylon, China, Hawaiian Is., India, Sumatra.

Chilocorus nigritus (Fabricius).

Coccinella nigrita Fabricius, 1798, Suppl. Entomol. Syst. :79.

Chilocorus nigritus: Mulsant, 1850, Spec. Trim. Securipalp. :463.

Chilocorus nigritus (Fabricius); Davis, 1959, Proc. Hawaii. Entomol. Soc. 17(1):65

Introduced from Ceylon in 1958 by Krauss (Davis, 1959). Reintroduced from Guam in 1971 (Davis, 1972, Proc. Hawaii. Entomol. Soc. 21:188). First recovered in 1972.

Hosts: *Aspidiotus* spp.; Davis, 1959, Proc. Hawaii. Entomol. Soc. 17(1):65.

Aspidiotus destructor Signoret (Davis, 1972, Proc. Hawaii. Entomol. Soc. 21:188).

Distribution: Burma, Ceylon, China, Hawaiian Is., India, Java, Mauritius, Seychelles, Sumatra.

Genus **COCCINELLA** Linnaeus

Coccinella Linnaeus, 1758, Syst. Nat. 10:364.

Type species: *Coccinella 7-punctata* Linnaeus, 1758. By subsequent designation of Crotch (1874. Revis. Coccinellidae :105).

Coccinella septempunctata brucki Mulsant[4].

Coccinella brucki Mulsant, 1866, Monogr. Cocc. :90-91.

Type locality: Japan.

Coccinella septempuntata brucki: Mader, 1930, Evidenz pal. Cocc. :148.

Coccinella septempunctata bruckii Mulsant; Van Zwaluwenburg, 1947, Proc. Hawaii. Entomol. Soc. 13(1):19. Misspelling of *Coccinella septempunctata brucki* Mulsant.

[4]Authorities differ as to raising this varietal name to subspecies level or not. I follow Sasaji (1971) and raise it.

Coccinella 7-puntata var. *brucki* Mulsant; Nakao, 1970, Proc. Hawaii. Entomol. Soc. 20(3):503. Misspelling of *Coccinella 7-punctata* var. *brucki* Mulsant.

Introduced from Okinawa in 1958 (Nakao, 1970, Proc. Hawaii. Entomol. Soc. 20(3):503).

Hosts: Aphids; Nakao, 1970, Proc. Hawaii. Entomol. Soc. 20(3):503.

Distribution: China, Hawaiian Is., India, Iwo Jima, Japan, Korea, Okinawa.

Genus **COELOPHORA** Mulsant

Coelophora Mulsant, 1850. Spec. Trim. Securipalp. :390.

Type species: *Coccinella inaequalis* Fabricius, 1775, Syst. Entomol. :80. By subsequent designation of Crotch (1874. Revis. Coccinellidae :148).

Coelophora inaequalis (Fabricius).

Coccinella inaequalis Fabricius, 1775, Syst. Entomol. :80.

Coelophora inaequalis: Mulsant, 1850, Spec. Trim. Securipalp. :404.

Coccinella repanda: Kotinsky, 1906, Proc. Hawaii. Entomol. Soc. 1(1):8.

Coelophora inaequalis Fab.; Giffard, 1908, Proc. Hawaii. Entomol. Soc. 1(5):173.

Coccinella inaequalis Fab.; Illingworth, 1929, Proc. Hawaii. Entomol. Soc. 7(2):249.

Coelophora inaequalis (Fab.); Swezey and Bryan, 1929, Proc. Hawaii. Entomol. Soc. 7(2):298.

Introduced from Ceylon, Australia and China in 1894 by Koebele (Fullaway, Swezey and Giffard, 1922, Proc. Hawaii. Entomol. Soc. 5(1):26; Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):301).

Hosts: Aphids and young leaf hoppers; Swezey, 1906, Proc. Hawaii. Entomol. Soc. 1(1):18.

Aphis sacchari Zehntner; Kirkaldy, 1907, Proc. Hawaii. Entomol. Soc. 1(3):100.

Myzus citricidus Kirdaldy; 1907, Proc. Hawaii. Entomol. Soc. 1(3):101. (=*Aphis citricidus* (Kirkaldy); Zimmerman, 1948, Insects of Hawaii 5:75).

Aphis maidis Fitch; Swezey, 1928, Proc. Hawaii. Entomol. Soc. 7(1):181. (=*Rhopalosiphum maidis* (Fitch), Zimmerman, 1948, Insects of Hawaii 5:80).

Toxoptera aurantiae Koch; Illingworth, 1929, Proc. Hawaii. Entomol. Soc. 7(2):249.

Neophyllaphis araucariae Takahashi; Zimmerman, 1948, Insects of Hawaii 5:66.

Aphis gossypii Glover; Zimmerman, 1948, Insects of Hawaii 5:77.

Aphis medicaginis Koch; Peterson, 1957, Proc. Hawaii. Entomol. Soc. 16(2):204.

Myzus persicae (Sulzer); Peterson, 1957, Proc. Hawaii. Entomol. Soc. 16(2):204.

Rhopalosiphum pseudobrassicae (Davis); Peterson, 1957, Proc. Hawaii. Entomol. Soc. 16(2):204.

Aphis nerii Boyer de Fonscolombe; Beardsley, 1966, Proc. Hawaii. Entomol. Soc. 19(2):124.

Distribution: Australia, Borneo, Celebes, Ceylon, China, Christmas Is., Formosa, Hawaiian Is., India, Japan, Java, Johnson Is., Kure Is., Malaysian Archipelago, Marianas, Micronesia, Midway Atoll, New Caledonia, New Guinea, Nihoa Is., Palmyra Atoll, Philippines, Sumatra, Tasmania.

Coelophora inaequalis var. **novemmaculata** (Fabricius).

Coccinella novemmaculata Fabricius, 1781, Spec. Ins. 1:97.

Coelophora inaequalis var. *novemmaculata* (Fabricius); Chapin, 1956. Insects of Micronesia 16(5):215-216.

See *Coelophora inaequalis* (Fabricius).

See Timberlake (1922) for a discussion of the hereditary basis of the color variants of this species.

Coelophora pupillata (Swartz).

Coccinella pupillata Swartz, in Schonherr, 1808, Syn. Ins. 2:184.

Coelophora pupillata: Mulsant, 1850, Spec. Trim. Securipalp. :397.

Coelophora pupillata: Kirkaldy, 1907, Proc. Hawaii. Entomol. Soc. 1(3):101.

Introduced from Hong Kong in 1895 by Koebele (Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):301; Timberlake, 1927, Proc. Hawaii. Entomol. Soc. 6(3):532.

Hosts: *Myzus citricidus* Kirkaldy; Kirkaldy, 1907, Proc. Hawaii. Entomol. Soc. 1(3):101. (=*Aphis citricidus* (Kirkaldy); Zimmerman, 1948, Insects of Hawaii 5:75).

Thoracaphis fici (Takahashi); Zimmerman, 1948, Insects of Hawaii 5:128.

Selenothrips rubrocinctus (Giard)[5].

Distribution: China, Hawaiian Is., Java.

Genus **CRYPTOLAEMUS** Mulsant

Cryptolaemus Mulsant, 1853. Soc. Linn. Lyon. Ann. 1:268.

Type species: *Cryptolaemus montrouzieri* Mulsant, 1853. Monobasic.

Cryptolaemus montrouzieri Mulsant.

Cryptolaemus montrouzieri Mulsant, 1853, Soc. Linn. Lyon. Ann. 1:268.

Type locality: Australia.

Cryptolaemus montrouzieri: Swezey, 1906, Proc. Hawaii. Entomol. Soc. 1(1):18.

Introduced from Australia via California (Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):300) by Koebele (Timberlake, 1907, Proc. Hawaii. Entomol. Soc. 6(3):532).

Hosts: *Myzus citricidus* Kirkaldy; Kirkaldy, 1907, Proc. Hawaii. Entomol. Soc. 1(3):101. (=*Aphis citricidus* (Kirkaldy); Zimmerman, 1948, Insects of Hawaii 5:75).

[5]I first collected *Coelophora pupillata* larvae feeding on *Selenothrips rubrocinctus* on May 19, 1974 on mango in Honolulu, Oahu. This is a new host record for Hawaii.

Pseudococcus calceolariae Maskell; Ehrhorn, 1914, Proc. Hawaii. Entomol. Soc. 3(1):1. (Misidentification of *Dysmicoccus boninsis* (Kuwana); Zimmerman, 1957, Insects of Hawaii 6:197; Zimmerman, 1948, Insects of Hawaii 5:188).

Pseudococcus bromeliae; Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2);:240. (=*Dysmicoccus brevipes* (Cockerell); Zimmerman, 1957, Insects of Hawaii 6:197; Zimmerman, 1948, Insects of Hawaii 5:189).

Pseudococcus sacchari; Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):241. (=*Saccharicoccus sacchari* (Cockerell); Zimmerman, 1957, Insects of Hawaii 6:198; Zimmerman, 1948, Insects ofHawaii 5:266).

Pulvinaria psidii Mask.; Fullaway, Swezey & Gifford, 1922, Proc. Hawaii. Entomol. Soc. 5(1):26.

Pseudococcus filamentosus (Cockerell); Fullaway, 1923, Proc. Hawaii. Entomol. Soc. 5(2):319. (=*Nipaecoccus vasator* (Maskell); Beardsley, 1960, Proc. Hawaii. Entomol. Soc. 17(2):235; Zimmerman, 1948, Insects of Hawaii 5:245).

Pseudococcus brevipes Cockerell; Illingworth, 1929, Proc. Hawaii. Entomol. Soc. 7(2):248. (=*Dysmicoccus brevipes* (Cockerell); Zimmerman, 1957, Insects of Hawaii 6:197).

Coccus viridis (Green); Illingworth, 1928, Proc. Hawaii. Entomol. Soc. 10(1):3.

Eriococcus araucariae Maskell; Swezey, 1946, Proc. Hawaii. Entomol. Soc. 12(3):470.

Pseudococcus boninsis (Kuwana); Zimmerman, 1948, Insects of Hawaii 5:185. (=*Dysmicoccus boninsis* (Kuwana); Zimmerman, 1957, Insects of Hawaii 6:197).

Pseudococcus nipae (Maskell); Zimmerman, 1948, Insects of Hawaii 5:229. (=*Nipaecoccus nipae* (Maskell); Zimmerman, 1957, Insects of Hawaii 6:197).

Trionymus insularis Ehrhorn; Zimmerman, 1948, Insects of Hawaii 5:260.

Ferrisiana virgata (Cockerell); Zimmerman, 1948, Insects of Hawaii 5:271. (=*Ferrisia virgata* (Cockerell); Beardsley, 1960, Insects of Micronesia 6(7):414).

Pseudococcus adonidum (L.); Carter, 1950, Proc. Hawaii. Entomol. Soc. 14(1):8. (=*Pseudococcus longispinus* Targioni-Tozzetti; DeLotto, 1965, J. Entomol. Soc. S. Africa 27(2):228).

Dactylopius opuntiae (Cockerell); Bess, 1951, Proc. Hawaii. Entomol. Soc. 14(2):207.

Spodoptera mauritia (Boisduval), eggs; Tanada & Beardsley, 1958, Proc. Hawaii. Entomol. Soc. 16(3):431.

Pseudococcus obscurus Essig; Davis & Chong, 1968, Proc. Hawaii. Entomol. Soc. 20(1):26.

Distribution: Aitutaki (Cook Is.), Australia, Algeria, California, Celebes, Central America, China, Egypt, Formosa, Hawaiian Is., Italy, Java, Micronesia, New Caledonia, New Zealand, Puerto Rico, South Africa, Southern France, Spain, Tasmania.

Charanasri and Nishida (1975) studied predation by *Cryptolaemus montrouzieri* on *Coccus viridis* on Plumeria trees.

Genus **CURINUS** Mulsant

Orcus (*Curinus*) Mulsant, 1850, Spec. Trim. Securipalp. :472.
Curinus, Crotch, 1874, Revis. Coccinellidae :190.
Type species: *Orcus* (*Curinus*) *coeruleus* Mulsant, 1850, Monobasic.

Curinus coeruleus Mulsant.
Orcus (*Curinus*) *coeruleus* Mulsant, 1850, Spec. Trim. Securipalp. :472.
Curinus coeruleus: Crotch, 1874, Revis. Coccinellidae :190.
Curinus coeruleus Muls.; Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):300.
Introduced from Mexico in 1922 (Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):300).
Hosts: *Pseudococcus nipae* (Maskell); Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):300. (= *Nipaecoccus nipae* (Maskell); Zimmerman, 1957, Insects of Hawaii 6:197).
Chrysomphalus aonidum; Swezey, 1928, Proc. Hawaii. Entomol. Soc. 7(1):27. (= *Chrysomphalus ficus* Ashmead; Zimmerman, 1948, Insects of Hawaii 5:369).
Chrysomphalus ficus Ashmead; Zimmerman, 1948, Insects of Hawaii 5:369.
Distribution: Brazil, Chile, Christmas Is., Guatemala, Hawaiian Is., Mexico.

Genus **DIOMUS** Mulsant

Diomus Mulsant, 1850, Spec. Trim. Securipalp. :951.
Type species: *Coccinella thoracica* Fabricius, 1801, Syst. Eleuth. 1:378. By unknown subsequent designation. Reference taken from Korschefsky (1931, Col. Cat. 118:116).

Diomus debilis (LeConte).
Scymnus debilis LeConte, 1852, Proc. Acad. Phila. 6:137.
Type locality: San Jose, California.
Scymnus discendens Sharp; Blackburn and Sharp, 1885, Sci. Trans. Roy. Dublin Soc. 3(2):147. Junior synonym.
Type locality: Oahu, Hawaii.
Diomus debilis Lec.; Casey, 1899, J.N. York Ent. Soc. 7:159.
Scymnus debilis:Ehrhorn, 1914, Proc. Hawaii. Entomol. Soc. 3(1):1.
Diomus discendens (Sharp); Bridwell, 1920, Proc. Hawaii. Entomol. Soc. 4(2):279.
Scymnus debilis Lec.; Swezey, 1928, Proc. Hawaii. Entomol. Soc. 7(1):182.
Introduction data not available.
Hosts: Dactylopiinae species; Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):240.
Pseudococcus insularis Ehrhorn; Swezey, 1928, Proc. Hawaii. Entomol. Soc. 7(1):182. (= *Trionymus insularis* Ehrhorn; Zimmerman, 1948, Insects of Hawaii 5:260).
Saccharicoccus sacchari Ckll.; Bianchi, 1968, Proc. Hawaii. Entomol. Soc. 20(1):11-12.

Distribution: California, Hawaiian Is.

Dizon (1964) studied the biology of this species in Hawaii.

Diomus notescens (Blackburn).

Scymnus notescens Blackburn, 1889, Trans. Roy. Soc. S. Austr. 11:197. Type locality: Port Lincoln, Australia.

Scymnus notescens Blackburn; Giffard, 1908, Proc. Hawaii. Entomol. Soc. 1(5):174.

Diomus notescens (Blkb.); Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):301.

Scymnus notescens (Blackburn); Bryan, 1926, Proc. Hawaii. Entomol. Soc. 6(2):282.

Diomus notescens (Blackburn); Illingworth, 1927, Proc. Hawaii Entomol. Soc. 6(3):393.

Scymnus notescens Blackburn; Swezey and Bryan, 1927, Proc. Hawaii. Entomol. Soc. 6(3):416.

Diomus notescens (Blackburn); Swezey and Bryan, 1929, Proc. Hawaii. Entomol. Soc. 7(2):298.

Scymnus notescens (Blkb.); Swezey, 1934, Proc. Hawaii. Entomol. Soc. 8(3):534.

Diomus notescens (Blackburn); Holdaway and Look, 1942, Proc. Hawaii. Entomol. Soc. 11(2):258.

Scymnus notescens Blackburn; Krauss, 1944, Proc. Hawaii. Entomol. Soc. 12(1):11.

Diomus notescens (Blackburn); Krauss, 1953, Proc. Hawaii Entomol. Soc. 15(1):219.

Scymnus notescens (Blackburn); Suehiro, 1960, Proc. Hawaii. Entomol. Soc. 17(2):295.

Introduced from Australia in 1894 by Koebele (Giffard, 1908. Proc. Hawaii. Entomol. Soc. 1(5):174).

Hosts: Aphids; Giffard, 1908, Proc. Hawaii. Entomol. Soc. 1(5):174.

Aphis citricidus (Kirkaldy); Zimmerman, 1948, Insects of Hawaii 5:75.

Pseudocuccus citri (Risso); Zimmerman, 1948, Insects of Hawaii 5:201. (=*Planococcus citri* (Risso); Zimmerman, 1957, Insects of Hawaii 6:197).

Distribution: Australia, Hawaiian Is., Johnston Is., Kure Atoll, Midway Atoll, Palmyra Atoll.

Diomus pumilio Weise.

Diomus pumilio Weise, 1885. Stett. Entomol. Zeit. 46:237.

Diomus sp., Leeper and Beardsley, 1975, Proc. Hawaii. Entomol. Soc. 22(1):7.

Introduced from Australia via California on February 5, 1973 (Leeper and Beardsley, 1975, Proc. Hawaii. Entomol. Soc. 22(1):7.

Host: *Psylla uncatoides* (Ferris & Klyver), Leeper and Beardsley, 1975.

Distribution: Australia, California?, Hawaiian Is.?

This species is the only one listed for which establishment is uncertain. Establishment is also uncertain in California.

Diomus sp. near **pumilio** Weise.

Introduction data not available; first collected on Oahu in 1932.

The following hosts are given with specimens in the University of Hawaii collection; specimens collected by J.W. Beardsley.

Hosts: *Pseudococcus* sp., *Pseudococcus montanus, Trionymus rostellum.*
Distribution: Hawaiian Is.

Diomus sp.

This species was first collected by Mr. Ken Kawamura at Hickam Air Force Base, Oahu in August, 1973; in grass sweepings. Its hosts are not known. The specific name has not been determined.

Genus **HARMONIA** Mulsant

Harmonia Mulsant, 1846, Hist. Nat. Coleop. France, Securipalp. :108.
Type species: *Coccinella marginepunctata* Schaller, 1783, Abh. Naturf. Ges. Halle 1:260. (= *Coccinella quadripunctata* Pontoppidan, 1763, Danske Atlas 1:669, t. 29). By subsequent designation of Timberlake (1943, Bull. Expt. St. Hawaii. Sugar Plant. Ass. Entomol. Series 22:17).

Harmonia conformis (Boisduval).
Coccinella conformis Boisduval, 1835, Voyage Astrolabe: 604.
Type locality: Australia.
Coccinella conformis: Kirkaldy, 1907, Proc. Hawaii. Entomol. Soc. 1(3):101.
Callineda conformis (Boisd.); Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):301.
Harmonia conformis (Boisduval); Timberlake, 1943, Bull. Expt. St. Hawaii. Sugar Plant. Ass. Entomol. Series 22:17.
Leis conformis (Boisduval); Zimmerman, 1948, Insects of Hawaii 5:75.
Harmonia conformis (Boisduval); Leeper and Beardsley, 1975, Proc. Hawaii. Entomol. Soc. 22(1):7.
Introduced from Australia in 1894 by Koebele; reintroduced in 1904 but disappeared after 1906 (Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):301; Timberlake, 1943, Bull. Expt. St. Hawaii. Sugar Planters' Assoc. Entomol. Series 22:17). Reintroduced from Australia via California in January 1973 (Leeper and Beardsley, 1975. Proc. Hawaii. Entomol. Soc. 22(1):7.
Hosts: *Myzus citricidus* Kirkaldy; Kirkaldy, 1907, Proc. Hawaii. Entomol. Soc. 1(3):101. (= *Aphis citridicus* (Kirkaldy); Zimmerman, 1948, Insects of Hawaii 5:75).
Psylla uncatoides (Ferris & Klyver); Leeper and Beardsley, 1975, Proc. Hawaii. Entomol. Soc. 22(1):7.

Distribution: Australia, California?, Hawaiian Is.

I worked with this species in the laboratory and found that it would feed on a wide range of aphids but did not survive more than three generations feeding solely on aphids. This is probably why *Harmonia conformis* did not become established prior to the accidental introduction of *Psylla uncatoides.*

Genus **HIPPODAMIA** DeJean

Hippodamia DeJean, 1835, Cat. Col. :460.
Type species: *Coccinella tredecimpunctata* Linnaeus, 1758, Syst. Nat. ed. 10:366. By subsequent designation of Crotch (1874, Revis. Coccinellidae :94).

Hippodamia convergens Guerin.

Hippodamia convergens Guerin, 1842, Icon. Regne Animal 7:321.

Hippodamia convergens Guerin; Lopez 1931, Proc. Hawaii. Entomol. Soc. 7(3):345.

Introduced from California in 1896, 1905, 1910, 1952 (Weber, 1953, Proc. Hawaii. Entomol. Soc. 15(1):129) and in 1963 (Davis & Krauss, 1964, Proc. Hawaii. Entomol. Soc. 18(3):396). Establishment was not confirmed until 1964 and only at the higher altitudes on Maui and Hawaii (Beardsley, 1965, Proc. Hawaii. Entomol. Soc. 19(1):25-26, 34; Bianchi, 1965, Proc. Hawaii. Entomol. Soc. 19(1):27; Chong, 1965, Proc. Hawaii. Entomol. Soc. 19(1):38. This species is a chance immigrant occassionally collected on Oahu.

Hosts: Aphids; Weber, 1953, Proc. Hawaii. Entomol. Soc. 15(1):129. *Amphoraphora sonchi* (Oestlund)[6], *Macrosiphum avenae* (Fabricius)[6].

Distribution: Central America, Cuba, Hawaii, Italy, North America, Southern France.

Hippodamia quinquesignata punctulata LeConte.[7]

Hippodamia punctulata LeConte, 1852, Proc. Acad. Nat. Sci. Phila. 6:131. Type locality: San Francisco, California.

Hippodamia 5-signata punctulata LeConte; Williams, 1948, Proc. Hawaii. Entomol. Soc. 13(2):203.

Introduced from California in 1952 (Weber, 1953, Proc. Hawaii. Entomol. Soc. 15(1):129).

Chance immigrants reported in 1947 (Williams, 1948, Proc. Hawaii Entomol. Soc. 13(2):203) and 1951 (Adachi, 1952, Proc. Hawaii. Entomol. Soc. 14(3):361. This species has not become permanently established but is occasionally collected as a chance immigrant on Oahu.

Hosts: Aphids; Weber, 1953, Proc. Hawaii. Entomol. Soc. 15(1):129.

Distribution: Hawaii, North America.

Genus **HYPERASPIS** Redtenbacher

Hyperaspis Redtenbacher, 1843, Tentamen. Dispos. Gen. :8, 12.

Type species: *Coccinella reppensis* Herbest, 1783, Arch. Insectengesch 4:48. By subsequent designation of Crotch (1874, Revis. Coccinellidae :213).

Hyperaspis fimbriolata Melsheimer.

Hyperaspis fimbriolata Melsheimer, 1847, Proc. Acad. Phila. 3:180. Type locality: Pennsylvania.

Hyperaspis limbalis Casey, 1899, J.N. York Entomol. Soc. 7:126. Synonym (see Dobzhansky, 1941, Smithson. Misc. Coll. 10:54.).

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[6]*Amphoraphora sonchi* (Oestlund) and *Macrosiphum avenae* (Fabricius) are new host records for the state. On April 9, 1974 John W. Beardsley, Larry Nakahara and John R. Leeper collected *Hippodamia convergens* Guerin from Pohakuloa, Hawaii feeding on the above aphids.

[7]Both *Hippodamia* species listed above are extremely variable in their color patterns. Only one color pattern of each has been found in the state. See Chapin (1946) on color pattern variations.

Hyperaspis limbatus Casey; Beardsley, 1955, Proc. Hawaii. Entomol. Soc. 15(3):385. Misspelling of *Hyperaspis limbalis* Casey.

Hyperaspis limbalis Casey; Beardsley, 1967, Proc. Hawaii. Entomol. Soc. 19(3):338.

Introduced from California in 1906 by Koebele (Beardsley, 1955, Proc. Hawaii. Entomol. Soc. 15(3):385).

Host: *Trionymus insularis* Ehrhorn; Beardsley, 1967, Proc. Hawaii. Entomol. Soc. 19(3):338.

Distribution: Hawaiian Is., North America.

Hyperaspis jocosa (Mulsant).

Cleothera jocosa Mulsant, 1850. Spec. Trim. Securipalp. 632, 634. Type locality: Mexico.

Hyperaspis jocosa: Crotch, 1874. Revis. Coccinellidae :222.

Hyperaspis jocosa (Mulsant); Ehrhorn, 1914, Proc. Hawaii. Entomol. Soc. 4(2):240.

Introduced from Mexico in 1907 by Koebele (Ehrhorn, 1914, Proc. Hawaii. Entomol. Soc. 3(1):8.

Host: *Orthezia insignis* Browne; Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):240.

Distribution: Central and South America, Hawaiian Is., Kenya.

Hyperaspis silvestrii Weise.

Hyperaspia silvestrii Weise, 1909, Boll. Lab. Zool. Portici 3:205.

Hyperaspis silvestrii Weise; Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):300.

Introduced from Mexico in 1922 by Osborn (Fullaway, 1923, Proc. Hawaii. Entomol. Soc. 5(2):305).

Hosts: *Pseudococcus nipae* (Maskell); Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):300. (= *Nipaecoccus nipae* (Maskell); Zimmerman, 1948, Insects of Hawaii 5:229; Zimmerman, 1957, Insects of Hawaii 6:197). Avocado mealy bug; Swezey, 1925, Proc. Hawaii. Entomol. Soc. 6(1):47. *Pseudococcus pseudonipae* (Cockerell); Swezey, 1948, Proc. Hawaii. Entomol. Soc. 13(2):204. (= *Nipaecoccus nipae* (Maskell); Zimmerman, 1948, Insects of Hawaii 5:229; Zimmerman, 1957, Insects of Hawaii 6:197).

Distribution: Mexico, Hawaiian Is.

Fullaway (1929. Proc. Hawaii. Entomol. Soc. 5(3):373-374) described the immature stages.

Genus **LINDORUS** Casey

Lindorus Casey, 1899, J.N. York Entomol. Soc. 7:162.

Type species: *Scymnus lophanthae* Blaisdell, 1892, Entomol. News 3:51. By original designation of Casey.

Lindorus lophanthae (Blaisdell).

Scymnus lophanthae Blaisdell, 1892, Entomol. News 3:51. Type locality: Coronado, California.

Lindorus lophanthae: Fullaway, 1919, Proc. Hawaii. Entomol. Soc. 4(1):2.

Introduced from California in about 1894 (Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):300) by Koebele (Timberlake, 1927, Proc. Hawaii. Entomol. Soc. 6(3):532).

Hosts: *Phenacaspis eugeniae*; Fullaway, 1919, Proc. Hawaii. Entomol. Soc. 4(1):2. (=*Phenacaspis cockerelli* (Cooley), Zimmerman, 1948, Insects of Hawaii 5:386; Beardsley, 1957, Proc. Hawaii. Entomol. Soc. 16(2):184).

Lepidosaphes beckii; Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):245.

Saissetia oleae (Bernard); Zimmerman, 1948, Insects of Hawaii 5:328.

Aulacaspis rosae (Bouche); Zimmerman, 1948, Insects of Hawaii 5:381. (=*Aulacaspis rosarum* Borchsenius; Beardsley, 1975, Proc. Hawaii. Entomol. Soc. 22(1):14.

Phenacaspis sandwicensis (Fullaway); Swezey, 1952. Proc. Hawaii. Entomol. Soc. 14(3):378. (=*Phenacaspis cockerelli* (Cooley); Beardsley, 1957, Proc. Hawaii. Entomol. Soc. 16(2):184).

Aspidiotus destructor Signoret; Beardsley, 1970, Proc. Hawaii. Entomol. Soc. 20(3):508.

Distribution: Australia, California, Hawaii, Palmyra Atoll.

Genus **NEPHUS** Mulsant

Scymnus (*Nephus*) Mulsant, 1846, Hist. Nat. Coleopt. France Securipalp. :237.

Type species: *Sphaeridium quadrimaculatus* Herbst; *in* Fuessly, 1783, Arch. Ins. 4:30. By subsequent designation of Korschefsky (1931. Col. Cat. 118:116).

Nephus bilucernarius Mulsant.

Scymnus (*Nephus*) *bilucernarius* Mulsant, 1850, Spec. Trim. Securipalp. :997.

Nephus bilucernarius (Muls.); Swezey, 1935, Proc. Hawaii. Entomol. Soc. 9(1):32.

Scymnus bilucernarius: Browne, 1939, Proc. Hawaii. Entomol. Soc. 10(2):177.

Nephus bilucernarius Muls.; Swezey et al., 1939, Proc. Hawaii. Entomol. Soc. 10(2):350.

scymnus bilucernarius (Mulsant); Beardsley, 1959, Proc. Hawaii. Entomol. Soc. 17(1):59.

Introduced from Mexico in 1930 (Swezey et al., 1939, Proc. Hawaii. Entomol. Soc. 10(2):350.

Hosts: Pineapple mealybugs; Swezey, 1935, Proc. Hawaii. Entomol. Soc. 9(1):32.

Pseudococcus brevipes (Cockerell); Zimmerman, 1948, Insects of Hawaii 5:189. (=*Dysmicoccus brevipes* (Cockerell); Zimmerman, 1957, Insects of Hawaii 6:197).

Distribution: Hawaiian Is., Mexico.

Nephus roepkei (Fluiter).

Scymnus roepkei Fluiter, 1938, Arch. Koffiecultuur Ned.-Ind. 12(1):49. Type locality: Java.

Nephus roepkei (Fluiter); Chapin, 1965, Insects of Micronesia 16(5):201.
Scymnus bipunctatus, Fullaway; 1920, Proc. Hawaii. Entomol. Soc. 4(2):240. Misidentified.
Nephus sp. near *bipunctatus* Kugel.; Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):300.
Scymnus bipunctatus: Fullaway, 1923, Proc. Hawaii. Entomol. Soc. 5(2):319. Misidentified.
Nephus sp. near *bipunctatus*: Swezey, 1935, Proc. Hawaii. Entomol. Soc. 9(1):97.
Scymnus roepkei Fluiter; Beardsley, 1956, Proc. Hawaii. Entomol. Soc. 16(1):18.
Introduced from Japan in 1895, S. China in 1906, the Philippines in 1914 (Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):241).
Hosts: *Pseudococcus kraunhiae*; Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):241.
Pseudococcus filamentosus; Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):241. (=*Nipaecoccus vastator* (Maskell); Zimmerman, 1957, Insects of Hawaii 6:197; Zimmerman, 1948, Insects of Hawaii 5:245).
Pseudococcus virgatus; Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):241.
Spodoptera mauritia (Boisduval), eggs; Tanada and Beardsley, 1958, Proc. Hawaii. Entomol. Soc. 16(3):431.
Distribution: California, China, Hawaiian Is., Japan, Java, Micronesia, Nihoa I., Philippines.

Genus **OLLA** Casey

Olla Casey, 1899, J.N. York Entomol. Soc. 7:84, 93.
Type species: *Coccinella abdominalis* Say, 1824, J. Acad. Sci. Phila. 4:95. By subsequent designation of Korchefsky (1932, Coleopterorum Catalogus pars 120, Coccinellidae 2:288).

Olla abdominalis (Say).
Coccinella abcominalis Say, 1824, J. Acad. Sci. Phila. 4:95.
Type locality: Arkansas.
Coccinella abdominalis: Kotinsky, 1906, Proc. Hawaii. Entomol. Soc. 1(1):8.
Olla abdominalis (Say); Timberlake, 1918, Proc. Hawaii. Entomol. Soc. 3(5):401.
Coccinella abdominalis Mulsant; Krauss, 1944, Proc. Hawaii. Entomol. Soc. 12(1):86.
Olla abdominalis (Say); Suehiro, 1960, Proc. Hawaii. Entomol. Soc. 17(2):295.
Introduced from Mexico in 1908 (Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):241).
Hosts: *Aphis sacchari* Zehntner; Kirkaldy, 1907, Proc. Hawaii. Entomol. Soc. 1(3):100.
Ferrisiana virgata (Cockerell); Zimmerman, 1948, Insects of Hawaii 5:271. (=*Ferrisia virgata* (Cockerell); Beardsley, 1960, Insects of Micronesia 6(7):414).
Saisettia oleae (Bernard); Zimmerman, 1948, Insects of Hawaii 5:328.

Distribution: Central America, North America, northern South America, Guam, Hawaii, Midway Atoll.

Olla abdominalis var. ***plagiata*** (Casey).

Olla plagiata Casey 1899, J.N. York Entomol. Soc. 7:94.

This variety of *O. abdominalis,* which has a strikingly different color pattern from that of the typical form, has been collected only once in Hawaii; during March 1971, by D.M. Tsuda, in Honolulu.

Genus **ORCUS** Mulsant

Orcus Mulsant, 1850, Spec. Trim. Securipalp. 465.

Tye species: *Orcus janthinus* Mulsant, 1850. By subsequent designation of Crotch (1874, Revis. Coccinellidae :188).

Orcus chalybeus (Boisduval).

Coccinella chalybea Boisduval, 1835, Voyage Astrolabe :595.

Type locality: Australia.

Orcus chalybeus: Mulsant, 1850, Spec. Trim. Securipalp. :471.

Orcus chalybeus: Perkins, 1906, Proc. Hawaii. Entomol. Soc. 1(1):9.

Introduced from Australia in 1894 by Koebele (Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):246; Timberlake, 1927, Proc. Hawaii. Entomol. Soc. 6(3):532.

Hosts: *Macrosiphum rosae* (Linne): Kirkaldy, 1907, Proc. Hawaii. Entomol. Soc. 1(3):100.

Parlatoria ziziphus: Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):246.

Diaspine scales: Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):300.

Coccus viridis (Green): Illingworth, 1929, Proc. Hawaii. Entomol. Soc. 7(2):248.

Saissetia oleae (Bernard): Zimmerman, 1948, Insects of Hawaii 5:328.

Spodoptera mauritia, eggs: Tanada & Beardsley, 1958, Proc. Hawaii. Entomol. Soc. 16(3):431.

Distribution: Australia, Hawaiian Is.

Charanasri and Nishida (1975) studied *Orcus chalybeus* during research on coccinellid predators of *Coccus viridis.*

Genus **PSEUDOSCYMNUS** Chapin

Pseudoscymnus Chapin, 1962, Psyche 69(1):50.

Type species: *Scymnus hareja* Weise, 1879, Deutsche Entomol. Zeitschr. 23:150. By original designation.

Pseudoscymnus anomalus Chapin.

Pseudoscymnus anomalus Chapin, 1965, Insects of Micronesia 16(5):210.

Type locality: Wena (Moen), Truk, Caroline Is.

Pseudoscymnus anomalus Chapin: Beardsley, 1970, Proc. Hawaii. Entomol. Soc. 20(3):508.

Introduced from Guam in 1970 (Davis, 1972, Proc. Hawaii. Entomol. Soc. 21(1):61).

Host: *Aspidiotus destructor* Signoret: Davis, 1972, Proc. Hawaii. Entomol. Soc. 21(2):188.

Distribution: Hawaii, Micronesia.

Genus **RHIZOBIUS** Stephens

Rhizobius Stephens, 1831, Ill. Brit. Entomol. Mand. 4:396.
Type species: *Nitidula litura* Fabricius, 1787, Mant. Ins. 1:52, 75. Monobasic.

Rhizobius ventralis (Erichson).
Scymnus ventralis Erichson, 1843, Arch. Naturgesch. 9:239.
Rhizobius ventralis: Mulsant, 1850, Spec. Trim. Securipalp.:1005.
Rhizobius ventralis Erichson; Swezey, 1906, Proc. Hawaii. Entomol. Soc. 1(1):18.
Lindorus sp.; Fullaway, 1923, Proc. Hawaii. Entomol. Soc. 5(2):181.
Lindorus ventralis (Erichson); Timberlake, 1927, Proc. Hawaii. Entomol. Soc. 6(3):532.
Rhizobius ventralis (Erichson); Illingworth, 1928, Proc. Hawaii. Entomol. Soc. 7(1):44.
Introduced from California in 1894 by Koebele (Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):300; Timberlake, 1927, Proc. Hawaii. Entomol. Soc. 6(3):532).
Hosts: *Pseudococcus citri*; Swezey, 1912, Proc. Hawaii. Entomol. Soc. 2(4):158. (=*Planococcus citri* (Risso); Zimmerman, 1957, Insects of Hawaii 6:197).
Pseudococcus nipae (Maskell); Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):158. (=*Nipaecoccus nipae* (Maskell); Zimmerman, 1957, Insects of Hawaii 6:197.
Saisettia oleae (Bernard); anonymous, 1922, Proc. Hawaii. Entomol. Soc. 5(1):25.
Pseudococcus brevipes (Cockerell); Illingworth, 1929, Proc. Hawaii. Entomol. Soc. 7(2):248. (=*Dysmioccus brevipes* (Cockerell); Zimmerman, 1957, Insects of Hawaii. 6:197).
Pseudococcus filamentosus; Illingworth, 1929, Proc. Hawaii. Entomol. Soc. 7(2):249. (=*Nipaecoccus vastator* (Maskell); Beardsley, 1960, Proc. Hawaii. Entomol. Soc. 17(2):235; Zimmerman, 1948, Insects of Hawaii 5:245).
Spodoptera mauritia, eggs; Rosa, 1933, Proc. Hawaii. Entomol. Soc. 8(2):226.
Aphis citricidus (Kirkaldy); Zimmerman, 1948, Insects of Hawaii 5:75.
Distribution: Australia, California, Hawaiian Is., Midway Atoll, New Zealand.

Genus **RQDOLIA** Mulsant

Rodolia Mulsant, 1850, Spec. Trim. Securipalp. :902.
Type species: *Rodolia ruficollis* Mulsant, 1850, By subsequent designation of Crotch (1874. Revis. Coccinellidae :280).

Rodolia cardinalis (Mulsant).
Vedalia cardinalis Mulsant, 1850, Spec. Trim. Securipalp. :906.
Rodolia (*Macronovius*) *cardinalis* (Mulsant); Weise, 1905, Deutsche ent. Zeitschr. :220.
Vedalia cardinalis: Swezey, 1905, Proc. Hawaii. Entomol. Soc. 1(1):18.
Novius cardinalis: Kotinsky, 1908, Proc. Hawaii. Entomol. Soc. 2(1):25.

Vedalia (*Novius*) *cardinalis* Muls.; Fullaway, Swezey & Giffard, 1922, Proc. Hawaii. Entomol. Soc. 5(1):22.

Novius cardinalis: Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):299.

Rodolia cardinalis Mulsant; Holdaway & Look, 1942, Proc. Hawaii. Entomol. Soc. 11(2):258.

Introduced from Australia via California in 1890 by Koebele (Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):299).

Hosts: Cottony cushion scale; Swezey, 1905, Proc. Hawaii. Entomol. Soc. 1(1):18.

Pulvinaria mammeae Maskell; Zimmerman, 1948, Insects of Hawaii 5:333.

Distribution: Aitutaki (Cook Is.), Argentina, Australia, Bahamas, Bermuda, Chile, Cyprus, Ecuador, Egypt, Formosa, France, Greece, Guam, Hawaiian Is., India, Israel, Italy, Japan, Kwajalein (Marshall Is.), Madeira, Malta, Midway Atoll, Morocco, New Zealand, Palestine, Peru, Portugal, Puerto Rico, Samoa, South Africa, Spain, Tripoli, Tunisia, Turkey, Uruguay, U.S.A., U.S.S.R., Venezuela.

Hale (1970) discussed the biology of this species in Hawaii.

Genus **SCYMNODES** Blackburn

Scymnodes Blackburn, 1899, Trans. Roy. Soc. S. Austr. 11:187-190.

Type species: *Scymnodes difficilis* Blackburn, 1899. Monobasic.

Scymnodes lividigaster (Mulsant).

Platyomus lividigaster Mulsant, 1853, Ann. Soc. Linn. Lyon 1(3):101. Type locality: Australia.

Scymnodes lividigaster Mulsant; Weise, 1917, Tijdschr. Entomol. 60:222.

Platyomus lividigaster: Kirkaldy, 1907, Proc. Hawaii. Entomol. Soc. 1(3):101.

Scymnodes lividigaster (Muls.); Timberlake, 1927, Proc. Hawaii. Entomol. Soc. 6(3):532.

Platyomus lividigaster Muls.; Illingworth, 1929, Proc. Hawaii. Entomol. Soc. 7(2):249.

Scymnodes lividigaster (Mulsant); Ford, 1961, Proc. Hawaii. Entomol. Soc. 17(3):318.

Introduced from Australia in 1894 by Koebele (Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):301; Illingworth, 1927, Proc. Hawaii. Entomol. Soc. 6(3):393).

Hosts: *Myzus citricidus* Kirdaldy; Kirkaldy, 1907, Proc. Hawaii. Entomol. Soc. 1(3):101. (=*Aphis citricidus* (Kirkaldy); Zimmerman, 1948, Insects of Hawaii 5:75).

Toxoptera aurantiae Koch; Illingworth, 1929, Proc. Hawaii. Entomol. Soc. 7(2):249.

Aphis gossypii Glover; Illingworth, 1929, Proc. Hawaii. Entomol. Soc. 7(2):251.

Distribution: Australia, Hawaiian Is., Midway.

Genus SCYMNUS Kugelann

Scymnus Kugelann, 1794, Neues Mag. Liebh. Entomol. 1(5):545.
Type species: *Scymnus nigrinus* Kugelann, 1794. By subsequent designation of Korschefsky (1931, Col. Cat. 118:115).

Scymnus ocellatus Sharp.
Scymnus ocellatus Sharp, 1885, Sci. Trans. Dublin Soc. 3(2):147.
Type locality: Hawaii.
Scymnus ocellatus: Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):240.
Introduction data not available.
Hosts: *Erioccus araucariae*; Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):240.
Pseudococcus insularis Ehrhorn; Swezey, 1928, Proc. Hawaii. Entomol. Soc. 7(1):182. (= *Trionymus insularis* Ehrhorn; Zimmerman, 1948, Insects of Hawaii 5:257).
Distribution: Hawaiian Is.

Scymnus varipes (Blackburn).
Scymnodes koebeli var. *varipes* Blackburn, 1892, Trans. Roy. Soc. S. Austr. 15:243.
Scymnus varipes: Blackburn, 1895, Trans. Roy. Soc. S. Austr. 19:252.
Scymnus varipes (Blackburn); Timberlake, 1923, Proc. Hawaii. Entomol. Soc. 5(2):181.
Introduction data not available, probably by Koebele; first specimens collected January 1, 1905 (Fullaway, 1923, Proc. Hawaii. Entomol. Soc. 5(2):181).
Host: Unknown.
Distribution: Australia, Hawaiian Is.

Subgenus *PULLUS* Mulsant

Scymnus (*Pullus*) Mulsant, 1846, Hist. Nat. Coleopt. France Securipalp. :241.
Type species: *Scymnus subvillosus* Goeze, 1777, Entomol. Beytr. 1:247. (= *Scymnus fasciatus* Fourc., 1785, Entomol. Paris 1:149). By subsequent designation of Korschefsky (1931, Col. Cat. 118:116 & 137).

Scymnus (Pullus) dorcatomoides Weise.
Scymnus dorcatomoides Weise, 1879, Deutsche Entomol. Zeitschr. 32:151-152.
Scymnus (*Pullus*) *dorcatomoides* Weise; Kurisaki, 1923, Ins. World, Gifu 27:16.
Scymnus dorcatomoides Weise; Swezey, 1925, Proc. Hawaii. Entomol. Soc. 6(1):26.
Scymnus sp. near *dorcatomoides* Weise; Beardsley, 1957, Proc. Hawaii. Entomol. Soc. 16(2):210.
Introduction data not available, probably by Koebele (Swezey, 1925, Proc. Hawaii. Entomol. Soc. 6(1):26).
Host: *Trionymus rostellum* Lobdell; Beardsley, 1957, Proc. Hawaii. Entomol. Soc. 16(2):210.
Distribution: China, Formosa, Hawaiian Is., Japan.

Scymnus (Pullus) loewii Mulsant.
Scymnus (*Pullus*) *loewii* Mulsant, 1850, Spec. Trim. Securipalp. :980.
Type locality: Mexico.

Scymnus vividus Sharp; Blackburn and Sharp, 1885, Sci. Trans. Roy. Dublin Soc. 3(2):146-147. Junior synonym. Type locality: Hawaii.
Scymnus vividus: Swezey, 1906, Proc. Hawaii. Entomol. Soc. 1(1):18.
Scymnus lowewii Muls.; Fullaway, 1914, Proc. Hawaii. Entomol. Soc. 3(1):21.
Scymnus kinbergi Boh.; Muir, 1924, Proc. Hawaii. Entomol. Soc. 5(3): 353. Misidentification.
Pullus kinbergi (Boh.); Swezey and Williams, 1932, Proc. Hawaii. Entomol. Soc. 8(1):184. Misidentification.
Scymnus kinbergi Boh.; Bryan, 1933, Proc. Hawaii. Entomol. Soc. 8(2):245. Misidentification.
Pullus kinbergi (Boh.); Sakimura and Linford, 1940, Proc. Hawaii. Entomol. Soc. 10(3):452. Misidentification.
Pullus loewii Mulsant; Holdaway and Look, 1942, Proc. Hawaii. Entomol. Soc. 11(2):258.
Scymnus vividus Sharp; Krauss, 1944, Proc. Hawaii. Entomol. Soc. 12(1):86.
Pullus kinbergi (Boh.); Krauss, 1945, Proc. Hawaii. Entomol. Soc. 12(2):314. Misidentification.
Scymnus loewii Mulsant; Chilson, 1953, Proc. Hawaii. Entomol. Soc. 15(1):83.
Pullus kinbergi (Bogeman); Butler, 1961, Proc. Hawaii. Entomol. Soc. 17(3):384. Misidentification.
Scymnus loewii Mulsant; Butler, 1961, Proc. Hawaii. Entomol. Soc. 17(3):384.
Scymnus loweii Mulsant; Beardsley, 1966, Proc. Hawaii. Entomol. Soc. 19(2):174. Misspelling of *Scymnus loewii* Mulsant.
Scymnus loewi Mulsant; Beardsley, 1966, Proc. Hawaii. Entomol. Soc. 19(2):184. Misspelling of *Scymnus loewii* Mulsant.
Introduction data not available.
Hosts: Aphids; Swezey, 1906, Proc. Hawaii. Entomol. Soc. 1(1):18.
Platycoccus; Beardsley, 1966, Proc. Hawaii. Entomol. Soc. 19(2):164.
Trionymus insularis; Beardsley, 1966, Proc. Hawaii. Entomol. Soc. 19(2):177.
Distribution: French Frigate Shoal (Trig. Is., Whale-Skate Is.), Hawaiian Is., Johnston Is., Kaula Is., Laysan Is., Lisianski Is., Micronesia, Necker Is., Nihoa Is., Pearl and Hermes Atoll (North Is., Southeast Is.), Southern U.S.A. to Colombia.

Scymnus (Pullus) uncinatus Sicard.
Pullus uncinatus Sicard, 1924, Ann. Mag. Nat. Hist. (9) 14:532.
Scymnus uncinatus: Schilder, 1928, Arb. Biol. Reichsant. Dahlem 14:244.
Pullus uncinatus: Swezey, 1940, Proc. Hawaii. Entomol. Soc. 10(3):362.
Scymnus (Pullus) unicinctus Sicard; Swezey, 1945, Proc. Hawaii. Entomol. Soc. 12(2):225-226. Misspelling of *Scymnus (Pullus) uncinatus* Sicard.
Scymnus (Pullus) uncinatus Sic.; Krauss, 1945, Proc. Hawaii. Entomol. Soc. 12(2):314.
Introduced from Mexico in 1922 by Osborn (Swezey, 1945, Proc. Hawaii. Entomol. Soc. 12(2):225-226).

Hosts: *Pseudococcus brevipes* (Cockerell); Swezey, 1945, Proc. Hawaii. Entomol. Soc. 12(2):226. (= *Dysmicoccus brevipes* (Cockerell); Zimmerman, 1957, Insects of Hawaii 6:197).

Pseudococcus filamentosus (Cockerell); Swezey, 1945, Proc. Hawaii. Entomol. Soc. 12(2):226. (= *Nipaecoccus vastator* (Maskell); Zimmerman, 1957, Insects of Hawaii 6:197; Zimmerman, 1948, Insects of Hawaii 5:245).

Distribution: Hawaiian Is., Mexico.

Genus **SERANGIUM** Blackburn

Serangium Blackburn, 1889, Trans. Roy. Soc. S. Austr. 11:210.

Type species: *Serangium mysticum* Blackburn, 1889. By monotypy.

Serangium maculigerum Blackburn.

Serangium maculigerum Blackburn, 1892, Roy. Soc. S. Austr. 15(2):73. Type locality: near Toowooba, Queensland, Australia.

Serangium maculigerum: Giffard, 1908, Proc. Hawaii. Entomol. Soc. 1(5):173.

Cyrema nigellum: Fullaway, 1919, Proc. Hawaii. Entomol. Soc. 4(1):5. Misidentification.

Serangium maculiferum: Fullaway, 1919, Proc. Hawaii. Entomol. Sco. 4(1):5. Misspelling of *Serangium maculigerum*.

Introduced from Australia in 1894 by Koebele (Giffard, 1908, Proc. Hawaii. Entomol. Soc. 1(5):173).

Hosts: Diaspine scales; Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):300.

Aleurocanthus spiniferus (Quaintance); Mau, Proc. Hawaii. Entomol. Soc. 22(2):

Distribution: Australia, Hawaii.

Genus **STETHORUS** Weise

Scymnus (*Stethorus*) Weise, 1885 Best.-Tab. Europ. Col. 2 (ed. 2):65.

Stethorus Weise, 1899, Arch. Naturg. 65(1):64.

Type species: *Coccinella minimus* Rossi, 1794 (preoccupied). (= *Stethorus punctillum* Weise, 1891, Cat. Col. Europ. :781). By subsequent designation of Sicard (1909, Ann. Soc. Entomol. France 78:146).

Stethorus siphonulus Kapur.

Stethorus siphonulus Kapur, 1948, Bull. Entomol. Res. 39:314. Type locality: Penang, Malaya.

Stethorus vagans Blackburn; Fullaway, 1922, Proc. Hawaii. Entomol. Soc. 5(1):80. Misidentification.

Scymnus vagans (Blackb.); Krauss, 1944, Proc. Hawaii. Entomol. Soc. 12(1):86. Misidentification.

Stethorus vagans: Garnett & Haramoto, 1967, Proc. Hawaii. Entomol. Soc. 19(3):405. Misidentification.

Stethorus siphonulus Kapur; Beardsley, 1975, Proc. Hawaii. Entomol. Soc. 22(1):6.

Introduction data not available. This species was first collected in Hawaii in 1904 (Fullaway, 1922, Proc. Hawaii. Entomol. Soc. 5(1):80).
Hosts: leaf mites; Swezey, 1923, Proc. Hawaii. Entomol. Soc. 5(2):304.
Distribution: Hawaiian Is., Orient.

Determination of this species as *Stethorus siphonulus* was made by Dr. E.B. Britton. Raros and Haramoto (1974) studies the biology of this species.

Genus **STICHOLOTIS** Crotch

Sticholotis Crotch, 1874, Revis. Coccinellidae :200.
Type species: *Sticholotis substriatus* Crotch, 1874. By original designation.

Sticholotis ruficeps Weise.
Sticholotis ruficeps Weise, 1902, Term. Fuzetek 25:511.
Sticholotis punctatus: Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):243. Misidentification.
Sticholotis punctata Crotch; Illingworth, 1938, Proc. Hawaii. Entomol. Soc. 10(1):24. Misidentification.
Sticholotis punctatus Crotch; Zimmerman, 1948, Insects of Hawaii 5:283.
Introduction data not available.
Hosts: Diaspine scales; Fullaway, 1920, Proc. Hawaii. Entomol. Soc. 4(2):243.
Eriococcus araucariae Maskell; Zimmerman, 1948, Insects of Hawaii 5:283.
Pinnaspis buxi (Bouche); Zimmerman, 1948, Insects of Hawaii 5:390.
Distribution: China, Hawaii, Japan, Malaya, Mariana Is.

Sticholotis punctata Crotch was introduced from China and Japan in 1895 (Giffard, 1908, Proc. Hawaii. Entomol. Soc. 1(5):174) but was never recovered. *Sticholotis ruficeps* Weise was collected and misidentified as *S. punctata*. George Funasaki informed me that Chapin determined specimens from Maui as *S. ruficeps* in 1964. This has not been previously reported in Hawaiian literature.

Genus **TELSIMIA** Casey

Telsimia Casey, 1899, J.N. York Entomol. Soc. 7:109-110, 1165.
Type *Telsimia tetrastica* Casey, 1899. By subsequent designation of Chapin (1926, Proc. Biol. Soc. Washington 39:129).

Telsimia nitida Chapin.
Telsimia nitida Chapin, 1926, Proc. Biol. Soc. Washington 39:130-131. Type locality: Guam.
Cryptogonus nigripennis Weise; Fullaway, 1928, Proc. Hawaii. Entomol. Soc. 7(1):6. Misidentification.
Telsimia nitida Chapin; Swezey, 1941, Proc. Hawaii. Entomol. Soc. 11(1):11.
Introduced from Guam in 1936 by Swezey (Swezey, 1939, Proc. Hawaii. Entomol. Soc. 10(2):180).
Hosts: *Pinnaspis buxi* (Bouche); Swezey, 1939, Proc. Hawaii. Entomol. Soc. 10(2):180.
Diaspis boisduvalii Signoret; Swezey, 1951, Proc. Hawaii. Entomol. Soc. 14(2):223.

Aspidiotus destructor Signoret; Beardsley, 1970. Proc. Hawaii. Entomol. Soc. 20(3):508.
Distribution: Hawaii, Japan, Micronesia.

APPENDIX 1. *Coccinellids Found in Hawaii Volcanoes National Park*

Species	*Elevation (ft)*											
	50	100	2500	3500	3800	3900	4000	4200	5400	6700	7000	8000
1. *Coelophora inaequalis*		X		X			X			X		
2. *Cryptolaemus montrouzieri*	X	X		X			X		X	X	X	X
3. *Curinus coeruleus*	X	X	X									
4. *Diomus* near *pumilio*							X					
5. *Harmonia conformis*								i	i			
6. *Hippodamia convergens*										X	X	X
7. *Hyperaspis jocosa*		X										
8. *H. silvestrii*		X										
9. *Lindorus lophanthae*									X			
10. *Nephus bilucernarius*	X	X	X	X					X			
11. *N. roepkei*	X	X										
12. *Rhizobius ventralis*				X		X			X		X	
13. *Rodolia cardinalis*		X							X	X	X	
14. *Scymnus varipes*					X				X	X	X	X
15. *S. (Pullus) loewii*						X			X			
16. *Sticholotis ruficepes*	X											
17. *Telsimia nitida*	X											

i: introduced, establishment uncertain.

On January 14, 1975 students under Dr. Dougald G. Scott of Cabrillo College, California found *Coccinella septempunctata brucki* in Kilauea Crater (3640 ft).

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