

INSECTS OF MICRONESIA

Homoptera: Fulgoroidea, Supplement

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This report deals with fulgoroid Homoptera collected in the course of a survey of the insects of Micronesia carried out principally under the auspices of the Pacific Science Board, and is supplementary to my paper published in 1956 (*Ins. Micronesia* 6(3): 38-211). Collections available are from the Palau Islands, made by B. McDaniel in 1956, C.W. Sabrosky in 1957, F.A. Bianchi in 1963 and J.A. Tenorio in 1963; from the Yap group, made by R.J. Goss in 1950, J.W. Beardsley in 1954 and Sabrosky in 1957; from the southern Mariana Islands, made by G.E. Bohart and J.L. Gressitt in 1945, C.E. Pemberton in 1947, C.J. Davis in 1955, C.F. Clagg in 1956 and N.L.H. Krauss in 1958; from the Bonin Is., made by Clagg in 1956, and F.M. Snyder and W. Mitchell in 1958; from the smaller Caroline atolls, made by W.A. Niering in 1954, by Beardsley in 1954 and McDaniel in 1956; from Ponape, made by S. Uchiyama in 1927; from Wake Island and the Marshall Islands, made by L.D. Tuthill in 1956, Krauss in 1956, Gressitt in 1958, Y. Oshiro in 1959, F.R. Fosberg in 1960 and B.D. Perkins in 1964; and from the Gilbert Islands, made by Krauss in 1957 and Perkins in 1964.

Field research was aided by a contract between the Office of Naval Research, Department of the Navy and the National Academy of Sciences, NR 160-175. In my earlier report I acknowledged my indebtedness, direct or indirect, to the sponsors and administrators of the survey of the insects of Micronesia: the United States Office of Naval Research, the Invertebrate Consultants Committee for the Pacific of the Pacific Science Board (National Research Council); and to the authorities of the museums that loaned specimens; which include, in the present instance, the United States National Museum, and the Bernice P. Bishop Museum. To all, this acknowledgement is here most sincerely renewed.

The material examined comprised more than 1000 specimens and in-

1. Printing costs for this issue were provided from grant GN-160 from the National Science Foundation.

cludes about 83 species, 11 of which are described here as new. In my earlier report, 54 genera and 135 species were listed in the Micronesian fauna. These totals are now raised to 64 genera and 154 species, partly by additional records and partly by changes resulting from revisionary work on some of the taxa involved.

The material in this present collection which came from the Palau Islands, the Marianas, the Carolines and the Marshall Islands was almost wholly repetitive of what had been taken before. This indicates that the early sampling of these populations was fairly comprehensive. The portions of the collection that came from the Gilbert Islands and the Bonin Islands had no such earlier counterpart and are accordingly of considerable interest. Both groups of islands, the former at the southeast extremity of Micronesia and the latter at the northwest, lie open to invasion by insect species occurring outside Micronesia. The only Fulgoroidea represented in the material from the Gilbert Islands included a few species of Delphacidae widespread in the Pacific, with the unexpected addition of one that is new, as well as a new species of *Swezeyia* not far removed from the Fijian *S. lyricen* Kirkaldy. Whether the Fulgoroid fauna of the Gilbert Islands is as depauperate as this collection suggests remains to be ascertained by further collecting.

The material from the Bonin Islands was also small in amount, but of unexpected specific diversity. The record of *Perkinsiella saccharicida* from Haha Jima is apparently new: the species has undoubtedly been introduced by man and its presence is of little significance to the zoogeographer. It is possible that *Epeurysa nawaii* Matsumura also has been introduced by man, but it is native to Japan and may have reached the Bonin Islands by natural means. With the exception of the endemic *Ugyops vittatus* Matsumura, the remaining Delphacid species occur in Japan and on the eastern Asiatic seaboard, and most of them are widespread in the Pacific. It is on the Tropiduchid and Ricaniid genera that interest must center, since the two of each that occur in the islands show marked speciation, and none of the species occur elsewhere in Micronesia. The inference that is to be drawn from the sum of evidence is that a number of species have moved, by natural means, from Japan to the Bonin Islands, and speciated there, but their descendants have so far been unable to penetrate further into the Pacific. Conversely, Tropiduchid and Ricaniid genera that have endemic species or subspecies in the Palau Islands, Mariana Islands or Caroline Islands have not reached the Bonin Islands.

The Fulgoroidea of the Bonin Islands would seem to be more Japanese in character than Micronesian, but more collecting will have to be done

before it is possible to assess the magnitude of the faunal discontinuity between these islands and the archipelagoes to the south.

The following symbols indicate the museum in which specimens are deposited: US (United States National Museum), BISHOP (Bishop Museum).

Numbers preceding species headings are those used in the main article (Fennah, 1956, *Ins. Micronesia* vol. 6, no. 3), or relate to them.

FAMILY CIXIIDAE SPINOLA

Genus **Bennaria** Melichar

Bennaria Melichar, 1914, *Philippine Jour. Sci.* **9**: 175 (orthotype: *Bennaria bimacula* Melichar, op. cit.).

1. *Bennaria consul* Fennah.

Bennaria consul Fennah, 1956, *Ins. Micronesia* **6**(3): 56.

DISTRIBUTION: Western Caroline Is. (Palau).

PALAU. BABELTHUAP: One female, Ngerehelong, May 1957, Sabrosky.

2. *Bennaria praetor* Fennah.

Bennaria praetor Fennah, 1956, *Ins. Micronesia* **6**(3): 57.

DISTRIBUTION: Western Caroline Is. (Yap, Caroline Atolls).

YAP. YAP: One female, Colonia, June 1950, Goss.

Genus **Myndus** Stål

Myndus Stål, 1962, *Berliner Ent. Zeitschr.* **6**: 307 (logotype: *Flata musiva* Germar, 1825, *Fauna Ins. Europae* **2**: pl. 21).

17,19. *Myndus apicalis* (Metcalf).

Myndorus apicalis Metcalf, 1954, *Elisha Mitchell Sci. Soc., Jour.* **70**(1): 4.

Myndus aphrodite Fennah, 1956, *Ins. Micronesia* **6**(3): 72, NEW SYNONYMY.

DISTRIBUTION: Eastern Caroline Is. (Kusaie), Marshall Is.

MARSHALL IS. JALUIT: Six males and 17 females, Elizabeth I., Nov. 1964, Perkins; one male and one female, Jaluit, Nov. 1964, Perkins; one female, Enybor I., Nov. 1964, Perkins; one female, Jibu I., Apr. 1958, Gressitt; one female, Majurirok I., Apr. 1958, Gressitt.

No specimens have been seen from Kusaie or the Marshall Is. that agree with Metcalf's figures of *M. apicalis*. All male specimens so far examined by me differ from the figures of *M. apicalis* in the proportions of the vertex, and in the shape of its anterior margin, in the presence of a transverse carina on the vertex and a median carina on the pronotum, and, in the male genitalia, in the shape of the anal segment (which is shown as strongly asymmetrical), in the relatively greater length and more pronounced curvature

of the spinose processes on the left side of the aedeagus and the rather more elevated position of the spine on the right side. However, on account of the broad agreement in both the armature of the aedeagus and the shape of the genital styles, and the occurrence of both typical populations on Kusaie, it is now concluded that *M. aphrodite* must be the same as *M. apicalis*.

21a. *Myndus balatro* Fennah, n. sp. (fig. 1, a-e).

Vertex longer in middle line than broad at level of midpoint of posterior margin (nearly 1.6:1). Median carina of frons feebly salient in profile, basal margin of frons in anterior view transverse.

Pale orange-brown; frons and legs stramineous, protibiae apically and abdominal terga, light fuscous; clypeus pallid. Tegmina uniformly yellowish-hyaline, veins concolorous, stigma stramineous. Wings hyaline, veins concolorous.

Anal segment of male deeply hood-like, with right margin more deeply produced ventrad than left, apical margin moderately concave. Pygofer with lateral margins strongly sinuate, dorsolateral angle of left side in the form of a broadly convex lobe, that of right side produced further caudad, and obtusely angulate; medioventral process broader than long, with distal margin shallowly convex, slightly indented medially. Aedeagus with a short sclerotised vertical plate ventrally in basal third, the lower margin of this plate produced ventrad in a peg-like process; a long slender limb arising at apex of aedeagus, and extending along its left side to base, this process pigmented and flattened in its distal third; a relatively short, delicate submembranous process arising at apex of aedeagus, reflected cephalad and extending basad for about one-third of length of aedeagus. Genital styles relatively narrow, in side view slightly curved upward distally, and with dorsal margin feebly produced dorsad in an obtuse lobe at one-quarter from apex, which is acute.

Male: length, 2.3 mm.; tegmen, 2.6 mm.

Holotype, male (US 70986) Yap, South Map, Aug. 1950, R.J. Goss.

DISTRIBUTION: Western Caroline Is. (Yap).

This species is distinguished by the proportions of the vertex, by coloration, and by the shape of every element of the male genitalia.

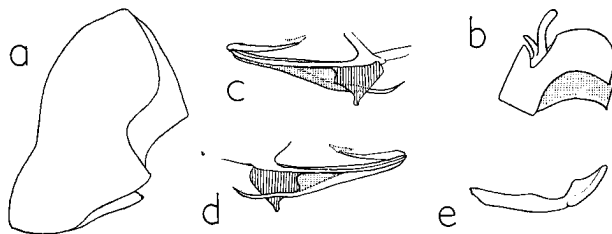


FIGURE 1. *Myndus balatro*: a, pygofer, left side; b, anal segment of male, left side; c, aedeagus, right side; d, aedeagus, left side; e, genital style, lateral view.

Genus **Euryphlepsia** Muir

Euryphlepsia Muir, 1922, Philippine Jour. Sci. **20**: 114 (orthotype: *Euryphlepsia amboinensis* Muir, op. cit.; 115).

22. Euryphlepsia palescens (Metcalf).

Myndorus palescens Metcalf, 1954, Elisha Mitchell Sci. Soc., Jour. **70**(1): 4.
DISTRIBUTION: Western Caroline Is. (Palau).

PALAU. BABELTHUAP: One male, Ngarehelong, May 1957, Sabrosky; four males and seven females, Ngiwal, May 1957, Sabrosky; a long series of males and females, Imeliik, Netkeng, June 1957, Sabrosky. KOROR: one male and one female, northeast Koror, southeast of limestone ridge, May 1957, Sabrosky.

There is no evidence in the original publication of an inadvertent error in the form of the specific name, and in consequence the original orthography must be retained.

FAMILY DELPHACIDAE LEACH

Genus **Ugyops** Guérin-Ménéville

Ugyops Guérin-Ménéville, 1834, Voy. aux Indes Belanger **1**: 477 (haplotype: *Ugyops percheronii* Guérin-Ménéville, op. cit.).

34. Ugyops kinbergi magas Fennah.

Ugyops kinbergi magas Fennah, 1956, Ins. Micronesia **6**(3): 92.

DISTRIBUTION: Marshall Is.

MARSHALL IS. JALUIT: Twelve males, eight females and five nymphs, Elizabeth I., Nov. 1964, Perkins; Enybor I., Nov. 1964, Perkins; Kinajon I. Apr. 1958, Gressitt; Pinlap I., Oct. 1960, Fosberg.

33. Ugyops kinbergi civilis Fennah.

Ugyops kinbergi civilis Fennah, 1956, Ins. Micronesia **6**(3): 91.

DISTRIBUTION: Caroline Is. (Yap, Caroline Atolls, Truk).

YAP. YAP: One male and one female, Weloy, June 1957, Sabrosky; Giliman, June 1957, Sabrosky. MAP: One male and two females, Chol, June 1957, Sabrosky.

CAROLINE ATOLLS. NOMWIN: One male and two females, Fananu I., Feb. 1954, Beardsley. ULITHI: One male and one female, Sept. 1956, McDaniel.

32. Ugyops kinbergi palauanus Fennah.

Ugyops kinbergi palauana Fennah, 1956, Ins. Micronesia **6**(3): 90.

DISTRIBUTION: Western Caroline Is. (Palau).

PALAU. NGAIANGL: Two males and three females, May 1957, Sabrosky. BABELTHUAP: Eight males and five females, Ngiwal, May 1957, Sabrosky; Ngaremlengui, June 1957, Sabrosky; Melekeiok, on mangrove, May 1957, Sabrosky. KOROR: One male and one female, northeast Koror, limestone ridge, Apr. 1957, Sabrosky. ANGAUR: Two females, Apr. 1957, Sabrosky.

As a result of the decision by the International Commission for Zoological Nomenclature that generic names ending in 'ops' shall be regarded as of masculine gender, it has been necessary to change the ending of some adjectival specific or subspecific names that have been proposed in this genus. In the Micronesian fauna, apart from species considered separately below, the species and subspecies concerned include *Ugyops kinbergi kusaieanus* Fennah, *U. annulipes pisanus* Fennah, *U. rotanus* Fennah and *Melanugyops erebeus* Fennah.

37. *Ugyops superciliatus* Fennah.

Ugyops superciliata Fennah, 1956, Ins. Micronesia **6**(3): 94.

DISTRIBUTION: Marshall Is., eastern Caroline Is.

MARSHALL IS. JALUIT: six males, 16 females and two nymphs, Elizabeth I., Nov. 1964, Perkins; Enybor I., Nov. 1964, Perkins; Jibu I., Apr. 1958, Gressitt; Jabor I., Sydney Pier, Apr. 1958, Gressitt.

41. *Ugyops ariadne* Fennah.

Ugyops ariadne Fennah, 1956, Ins. Micronesia **6**(3): 98.

DISTRIBUTION: Western Caroline Is.

CAROLINE ATOLLS. ULITHI: Two females, Falalop I., Sept. 1956, McDaniel.

YAP. YAP: One male, Colonia, June.

39. *Ugyops annulipes annulipes* (Stål).

Delphax annulipes Stål, 1854, Öfv. K. Vet.—Akad., Förh. **11**: 245.

DISTRIBUTION: Southern Mariana Is.

S. MARIANA IS. GUAM: One male and one female, Umatac, Mar. 1958, Krauss; Mt. Lamlam, Feb. 1958, Krauss.

45. *Ugyops eos* Fennah.

Ugyops eos Fennah, 1956, Ins. Micronesia **6**(3): 102.

DISTRIBUTION: Eastern Caroline Is. (Kapingamarangi).

CAROLINE ATOLLS. KAPINGAMARANGI: Three males, four females and three nymphs, Ringutoru I., Aug. 1954, on *Nephrolepis* and grasses, Nunukita I., Aug. 1954, in grass, *Stenotaphrum* and *Asplenium*, Hare I., Aug. 1954, on *Vigna* and *Ipomoea* along lagoon shore, all by Niering.

38. *Ugyops vittatus* (Matsumura).

Bidis vittatus Matsumura, 1906, Sapporo Nat. Hist. Soc., Trans. **1**: 31, pl.

1, fig. 5.

DISTRIBUTION: Okinawa, Bonin Is.

BONIN IS. CHICHI JIMA: One female, Ototo Jima, Kammuri-iwa (southwest bay). Mar. 1958, Snyder and Mitchell. HANA JIMA: One male and one nymph, Okimura, Apr.—May 1958, Snyder.

45a. *Ugyops cercyo* Fennah, n. sp. (fig. 2, a-e).

Vertex longer medially than broad at base (2.7:1), broadly and subacutely rounding into frons, slightly wider at base than at apex, lateral margins sinuate, apical margin transverse with submedian carinae prominent on a common eminence, submedian carinae not uniting on vertex, median compartment of vertex narrower at hind margin than median length (1:2), frons in middle line longer than wide at widest part (about 2.3:1), widest at about five-sixths from base, lateral margins diverging and almost straight in basal half, convex in apical half, submedian carinae distinctly separated throughout by a broad V-shaped trough. Rostrum reaching to post-trochanters, antennae reaching to apex of clypeus, basal segment longer than broad (4.5:1), second segment longer than first (1.5:1); ocelli obsolete. Pronotum with two distinct, incomplete, oblique carinae at each lateral margin. Tegmina reaching to apex of abdomen. Wings almost as long as tegmina. Post-tibiae laterally with three spines.

Stramineous; all carinae and margins of head and thorax finely reddish brown, area of frons between submedian carinae, an oblique suffusion on tumid area of genae below antennae, orange-red; an oblique suffusion on lateral lobes of pronotum and a small suffusion at base of median carinae, yellowish brown, tergites of abdomen, except at posterior margin, light fuscous; tarsi of fore and middle legs, and ovipositor, darker fuscous. Tegmina milky yellowish hyaline, veins yellowish brown, transverse veinlets a little darker. Wings milky hyaline, veins pale yellowish brown.

Anal segment of female short, in side view longer than broad. *Female* (coelopterous): length, 5.8 mm., tegmen, 4.8 mm.

Holotype, female (Bishop 9121), Ocean I. (Banaba) lat. 0° 52' S; Long. 169° 35' E, Dec. 1957, Krauss.

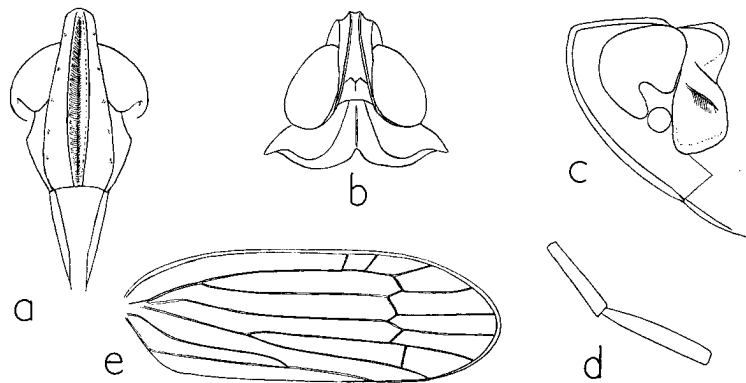


FIGURE 2. *Ugyops cercyo*: a, frons and clypeus; b, vertex and pronotum; c, head and pronotum, side view; d, antenna; e, tegmen.

DISTRIBUTION: Ocean I.

This species is distinguished by the shape of the vertex, of the head in profile, and of the frons, by the proportions of the antennae, and by the form of the submedian carinae of the frons. In the writer's key to Micronesian species of *Ugyops* it runs to couplet 9, but does not fulfil either condition. It is possibly most closely allied to *U. superciliatus* but differs from this species in the complete separation of the submedian carinae of the frons, and in the obsolete ocelli.

Genus **Perkinsiella** Kirkaldy

Perkinsiella Kirkaldy, 1903, Entomologist **36**: 179 (orthotype: *Perkinsiella saccharicida* Kirkaldy, op. cit.).

49a. Perkinsiella saccharicida Kirkaldy.

Perkinsiella saccharicida Kirkaldy, 1903, Entomologist **36**: 179.

DISTRIBUTION: Australia, Oriental region, Mauritius, Madagascar, S. Africa, Fiji, Hawaii, Bonin Is.

BONIN IS. HAHA JIMA: One male and one female, Okimura, Apr.—May 1958, Snyder.

50. Perkinsiella bakeri Muir.

Perkinsiella bakeri Muir, 1916, Philippine Jour Sci. **11**: 379.

DISTRIBUTION: Philippines, western Caroline Is.

PALAU. NGERKABESANG: Two males, Apr. 1957, Sabrosky. MALAKAL: One male, May 1957, Sabrosky.

51. Perkinsiella thompsoni Muir.

Perkinsiella thompsoni Muir, 1913, Hawaiian Ent. Soc., Proc. **2**(5): 240.

DISTRIBUTION: Java, western Micronesia.

PALAU. KOROR: One male, three females and one mutilated specimen, Oct. 1963, on sugar cane, Bianchi. PELELIU: One male, northern part, May 1957, Sabrosky.

Genus **Peregrinus** Kirkaldy

Peregrinus Kirkaldy, 1904, Entomologist **37**: 175 (orthotype: *Delphax maidis* Ashmead).

52. Peregrinus maidis (Ashmead).

Delphax maidis Ashmead, 1890, Psyche **5**: 323.

DISTRIBUTION: Tropicopolitan.

S. MARIANA IS. GUAM: A series of both sexes, Apra Hgts., Jan., Feb. 1959, Krauss; Mt. Lamlam, Jan. 1959, Krauss; Pt. Oca, May 1945.

Genus **Tarophagus** Zimmerman

Tarophagus Zimmerman, 1948, Insects of Hawaii **4**: 245 (orthotype: *Megamelus proserpina* Kirkaldy).

53. Tarophagus proserpina (Kirkaldy).

Megamelus proserpina Kirkaldy, 1907, Hawaiian Sugar Planters' Assoc. Exper. Sta., Ent. Bull. **3**(1): 147.

DISTRIBUTION: Indonesia, Pacific Islands.

YAP. YAP: Three males and three females, Kolonia, June 1957, Sabrosky.

PALAU. BABELTHUAP: Two males, Ngerehelong, May 1957, Sabrosky.

KOROR: one male and one female, Aug. 1956, McDaniel.

Genus **Nycheuma** Fennah

Nycheuma Fennah, 1964, Trans. R. ent. Soc. Lond. **116**: (orthotype: *Dicranotropis capensis* Muir, 1926, Ann. Mag. nat. Hist. **17**(9): 28.

54. Nycheuma cognatum (Muir)

Dicranotropis cognata Muir, 1917, Hawaiian Ent. Soc., Proc. **3**: 317.

DISTRIBUTION: South Pacific, western Caroline Is., Bonin Is.

S. MARIANA IS. GUAM: A long series of males and females, Nimitz Hill, May 1956, Clagg.

PALAU. BABELTHUAP: Three males, Ngaremlengui, Jan. 1957, Sabrosky; Ngiwal, May. 1957, Sabrosky. MALAKAI: Three males and four females, June 1957, Sabrosky. KOROR: Two males, Apr. 1957, north-eastern part, Sabrosky.

YAP. YAP: One female, central Yap, Mar. 1950, Goss. MAP: One male, east Map, Mar. 1950, Goss.

BONIN IS. CHICHI JIMA: Sixteen males and 14 females, Yoake Yama, Apr. 1958, Snyder, Okumura, 'Yankee Town', May 1958, Snyder; Omura, Camp Beach, Apr. 1958, Snyder; May-June, 1958, Snyder and Mitchell; Ogiura, Apr., May 1958, Snyder; Futami-ko, May 1956, Clagg; Sakai-ura, 'Bull Beach', May 1958, Snyder; Miyanohama, 'Jack Wm's beach', May, June 1958, Snyder.

Genus **Cemus** Fennah

Cemus Fennah, 1964, Trans. R. ent. Soc. Lond. **116**: 147 (orthotype, *Cemus leviculus* Fennah, op. cit.).

55. Cemus granulinervis (Stål).

Delphax granulinervis Stål, 1854, Öfv. K. Vet.-Akad., Förh. **11**: 246.

DISTRIBUTION: Formosa, S. Mariana Is., W. Caroline Is.

PALAU. NGAIANGL: Two males and one female, May 1957, Sabrosky.
 YAP. YAP: Five males and five females, Kolonia, June 1957, Sabrosky;
 Dugor, Aug. 1950, Goss; Gagil Dist., July 1950, Goss; Ruul Dist., July 1950,
 Goss. MAP: a series of males and females, east Map, Aug. 1950, Goss.

CAROLINE ATOLLS. ULITHI: One male and one female, Falalop I.,
 Nov. 1956, McDaniel.

56. *Cemus nigromaculosus* (Muir).

Phyllocladus nigromaculosus Muir, 1917, Hawaiian Ent. Soc., Proc., **3**(4): 317.

DISTRIBUTION: Philippines, western Micronesia.

YAP. YAP: One male and two females, Dugor, Aug. 1950, Goss.

Genus ***Euidellana*** Metcalf

Euidellana Metcalf, 1950, B.P. Bishop Mus., Occ. Papers **20**(5): 61 (orthotype:
Euidellana carolinensis Metcalf, op. cit.).

57. *Euidellana carolinensis* Metcalf.

Euidellana carolinensis Metcalf, 1950, B.P. Bishop Mus., Occ. Papers **20**(5):
 61.

DISTRIBUTION: Mariana and Caroline Is.

PALAU. BABELTHUAP: Three males and three females, Imeliik, Netkeng,
 June 1957, Sabrosky; Ngiwal, May 1957, Sabrosky. MALAKAL: Two males,
 May 1957, Sabrosky. KOROR: One male, Apr. 1957, Sabrosky.

Genus ***Sardia*** Melichar

Sardia Melichar, 1903, Homopteren-Fauna von Ceylon, 96 (haplotype: *Sardia*
rostrata Melichar, op. cit.).

60. *Sardia rostrata pluto* (Kirkaldy).

Hadeodelphax pluto Kirkaldy, 1906, Hawaiian Sugar Planters' Assoc. Exper.
 Sta., Ent. Bull. **1**(9): 313.

DISTRIBUTION: Eastern Australia, New Caledonia, Fiji, Samoa,
 Tahiti, Philippines, Formosa, western Caroline Is., Marshall Is., Gilbert Is.,
 Bonin Is.

BONIN IS. CHICHI JIMA: Two males and two females, Omura, Camp
 Beach, Apr. 1958, Snyder; Yatsuse R. (Minato-ko), Gen.'s Beach, Apr. 1958,
 Snyder.

MARSHALL IS. JALUIT: Two males, Jaluit I., Nov. 1964, Perkins; Jabor
 I. Apr. 1958, Gressitt.

GILBERT IS. BUTARITARI: Two males, Butaritari I., Dec. 1957, Krauss.
 OCEAN I. (Banaba): One female, Dec. 1957, Krauss.

In 1956, I suppressed *Stenocranus carolinensis* Metcalf (Elisha Mitchell Sci. Soc., Jour. **70**(1): 7, 1954) in synonymy under *Sardia pluto* (Kirk.). Since recognising the typical (Australian) population of *pluto* as representing only a subspecies of the Singhalese *S. rostrata* Mel., I have examined the Micronesia material of this species to see if it represented a further subspecies. However, it agrees closely with Australian samples and accordingly is here placed in the same subspecies.

60a. *Sardia melichari* (Kirkaldy), NEW COMBINATION

Delphacodes melichari Kirkaldy, 1906, Canad. Ent. **38**: 156, n. nov. for *Liburnia fumipennis* Melichar.

Hadeodelphax persephone Kirkaldy, 1907, Hawaiian Sugar Planters' Assoc. Exper. Sta. Ent. Bull. **3**: 141, NEW SYNONYMY.

Sardia pronotalis Distant, 1916, Fauna of British India **6**: 141.

DISTRIBUTION: Ceylon, eastern Australia.

PALAU. BABELTHUAP: Five males and four females, Ngiwal, May 1957, Sabrosky; KOROR: One male, Ngerabad, Apr. 1957, Sabrosky.

YAP. YAP: One female, Dugor, Aug. 1950, Goss.

Genus ***Sogatella*** Fennah

Sogatella Fennah, 1956, California Acad. Sci., Proc. IV, **28**(13): 471 (orthotype, *Delphax furcifera* Horváth) (subgenus; 1963 Bull. ent. Res. **54**: 48. (genus).

61. *Sogatella furcifera* (Horváth).

Delphax furcifera Horváth, 1899, Term. Füzetek. **22**: 372.

DISTRIBUTION: India, Oriental region to Japan, northern Australia, New Hebrides, Micronesia.

PALAU. KOROR: One male, July 1956, McDaniel.

62. *Sogatella kolophon* (Kirkaldy).

"*Delphax*" *kolophon* Kirkaldy, 1907, Hawaiian Sugar Planters' Assoc. Exper. Sta., Ent. Bull. **3**(1): 157.

DISTRIBUTION: Australia, Philippines, Micronesia.

BONIN IS. CHICHI JIMA: One male, Omura, 'Camp Beach', Apr. 1958, Snyder. HAHA JIMA: One male, Okimura, Apr.-May. 1958, Snyder.

PALAU. PELELIU: One female, north end, May 1957, Sabrosky. KOROR: One male, Apr. 1957, Sabrosky.

YAP. MAP: A long series of both sexes, east Map, Aug. 1950, Goss.

MARSHALL IS. ENIWETOK: Japtan I., a long series of both sexes, Aug. 1956, Tuthill.

GILBERT IS. MARAKEI: One female, Dec. 1957, Krauss.

62a. *Sogatella pusana* (Distant).

Sogata pusana Distant, 1912, Ann. Mag. nat. Hist. Ser. 8, **9**: 191.

Kelisia fieberi Muir, 1917, Hawaiian Ent. Soc., Proc. **3**(4): 331. NEW SYNONYMY.

Unkana formosella Matsumura, 1935, Ins. Matsumurana, **10**: 72. NEW SYNONYMY.

DISTRIBUTION: India, Ceylon, Philippines, Formosa, western Micronesia.

PALAU. BABELTHUAP: One male, Ngiwal, May 1957, Sabrosky. MALAKAL: Thirteen males, May 1957, Sabrosky.

YAP. YAP: Two males and two females, Giliman, June 1957, Sabrosky; Kanif, July 1950, Goss; Dugor, Aug. 1950, Goss.

62b. *Sogatella longifurcifera* (Esaki & Ishihara).

Delphacodes longifurcifera Esaki & Ishihara, 1947, Mushi **17**: 41.

DISTRIBUTION: Japan, northern Australia, Bonin Is.

BONIN IS. CHICHI JIMA: One male, Omura, 'Camp Beach', Apr. 1958, Snyder.

67. *Sogatella geranor* (Kirk.).

Delphax geranor Kirkaldy, 1907, Hawaiian Sugar Planters' Assoc. Exper. Sta., Ent. Bull. **3**(1): 158.

DISTRIBUTION: Queensland, western Micronesia.

PALAU. NGAIANGL: Nine males and one female, May 1957, Sabrosky. BABELTHUAP: Seven males and three females, Ngaremlengui, June 1957, Sabrosky; Ngiwal, Airai, Ngarsung, Ngardmau, May 1957, Sabrosky; Netkeng, June 1957, Sabrosky.

YAP. YAP: One male, central Yap, July 1950, Goss.

Genus ***Sogatodes*** Fennah

Sogatodes Fennah, 1963, Bull. ent. Res. **54**: 71 (orthotype, *Sogatodes molinus* Fennah op. cit.: 72).

65. *Sogatodes placitus* (Van Duzee).

Sogata placita Van Duzee, 1937, Proc. California Acad. Sci. Ser. 4, **22**: 120.

Chloriona (Sogatella) euterpe Fennah, 1956, Ins. Micronesia **6**(3): 118.

DISTRIBUTION: Mariana Is., western Caroline Is., eastern Polynesia.

S. MARIANA IS. GUAM: Four males, June 1956, McDaniel; Mt. Lam-lam, Feb. 1958, Krauss; Apra Heights, Feb. 1959, Krauss; Cocos I., Oct. 1957, Krauss.

PALAU. BABELTHUAP: Four males, Airai, Ngarsung, May 1957, Sabrosky; Ngeremlengui, June 1957, Sabrosky; Imeliik, Netkeng, June 1957, Sabrosky. KOROR: One male, Apr. 1957, Sabrosky.

YAP. YAP: One male and one female, Dugor, July, Aug. 1950, Goss.

Through the kindness of Dr. Paul Arnaud I have been able to examine the type specimen of *Sogata placita* V.D. and establish the above synonymy.

Genus **Corbulo** Fennah

Corbulo Fennah, 1965, Bull. Brit. Mus. (Nat. Hist.) **17**: 48 (orthotype: "*Delphax*" *dilpa* Kirkaldy, 1907, Hawaiian Sugar Planters' Assoc. Expt. Sta., Ent. Bull. **3**(1): 162.

68. *Corbulo guamensis* (Metcalf), NEW COMBINATION (fig. 3, a-f).
Kelisia paludum Swezey (not Kirkaldy), 1946, B.P. Bishop Mus., Bull. **189**: 153.
Delphacodes guamensis Metcalf, 1946, B.P. Bishop Mus., Bull. **189**: 111,
NEW SYNONYMY.

Liburnia / :/

DISTRIBUTION: Hawaii, Micronesia.

PALAU. BABELTHUAP: One male, Ngaremlengui, Jan. 1957, Sabrosky.

YAP. RUMUNG: One male, western part, Aug. 1950, Goss.

CAROLINE ATOLLS. KAPINGAMARANGI: Ten males and eight females, Werua I. June 1954, in grass and on vegetation under breadfruit; Nunukita I. Aug. 1954, in grass, *Stenotaphrum* and *Asplenium*; Ringutoru I. June 1954, on *Nephrolepis* and grasses, Niering.

MARSHALL IS. KWAJALEIN: One male, Feb. 1956, Krauss. JALUIT: One

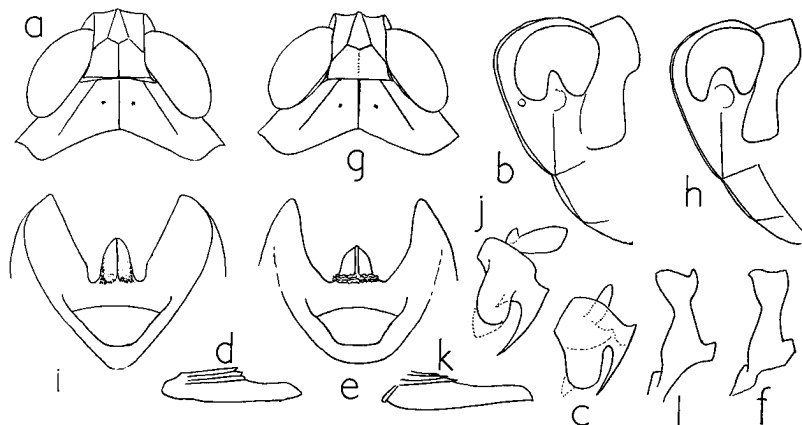


FIGURE 3. a-f, *Corbulo guamensis*: a, vertex and pronotum; b, head and pronotum, side view; c, anal segment of male, left side; d, aedeagus; e, diaphragm of pygofer; f, genital style, side view. g-l, *Corbulo dodona*: g, vertex and pronotum; h, head and pronotum, side view; i, diaphragm of pygofer; j, anal segment of male, left side; k, aedeagus; l, genital style, side view.

female, Pinlep I., Apr. 1958, Gressitt.

GILBERT IS. BUTARITARI: Seven males and one female, Butaritari I., Dec. 1957, Krauss. MARAKEI: One male, Dec. 1957, Krauss. TARAWA: One male and one female, Taborio, Dec. 1957, Krauss.

Corbulo paludum Kirkaldy, *C. guamensis* Metcalf and *C. dodona* Fennah (fig. 3, g-l) appear to be distinct species, though closely allied. The first differs from the other two in the shape of the vertex, and in having fewer teeth on the margin of the post-tibial spur. *C. dodona* is dark fuscous and white where *C. guamensis* is ochraceous and brown, and the two differ slightly in the shape of the head. The differences are best appreciated from the figures. In the male abdomen the seventh sternite tends to have straight sides in *C. dodona* and weakly convex sides in *C. guamensis* and *C. paludum*, though this difference is not constant. In the male anal segment the lateral lobes in *C. dodona* are carried obliquely to the axial line of the body, and are easily seen in dorsal view; in the other two species they are parallel to the axial line, and are not visible in dorsal view. In *C. paludum* the apical processes of the anal segment, in side view, are strongly and rather abruptly widened in their basal half; in the other two species they are more slender, and widen gradually from apex to base. The excavation of the dorsal margin of the pygofer of *C. dodona*, as seen from above, is distinctly wider than in *C. guamensis*. The median portion of the diaphragm is set apart from the side portions by a deep excavation of the margin on each side in *C. dodona* but not in the other two species. The median armature is more acutely convex, and more inclined caudad, in *C. dodona* than in the other species. The granular ornamentation is thin in *C. dodona* and *C. paludum*, and sometimes invests the sides of the armature, but is thick in *C. guamensis* and only forms a broad horizontal ridge. The ventral margin of the posterior opening of the pygofer is almost angulate in *C. dodona*, and rounded in the other two species. The aedeagus is similar in *C. dodona* and *C. guamensis*, with the terminal orifice only slightly obliquely truncate in side view. In *C. paludum*, however, it is so strongly oblique as to be almost dorsal in position. In *C. dodona* the inner apical angle of the genital styles is more prominent than in the other two species, and the outer apical angle is not recurved, whereas it is slightly so in *C. guamensis*. It has not yet been possible to re-examine all the known Pacific populations in the light of this interpretation, but, as so far known, *C. paludum* is restricted to Hawaii and *C. dodona* to Indonesia, Australia and the most southerly groups of the Pacific islands.

71a. *Corbulo brontes* Fennah, n. sp. (Fig. 4, a-i).

Vertex longer medially than broad at base (1.1:1), subacutely rounding into frons, slightly narrower at apex than at base, lateral margins straight or very feebly concave,

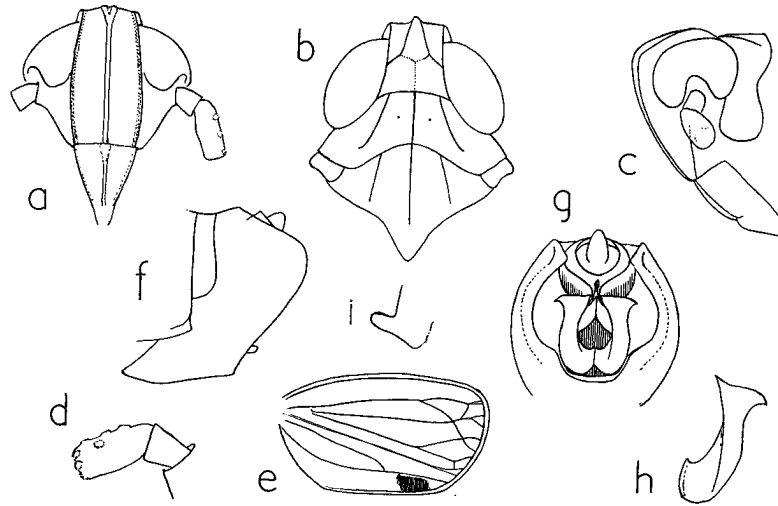


FIGURE 4. *Corbulo brontes*: a, frons and clypeus; b, vertex, pronotum and mesonotum, dorsal view; c, head and pronotum, side view; d, antenna; e, tegmen; f, pygofer, left side; g, male genitalia, posterior view; h, genital style, side view; i, genital style at base, lateral view.

apical margin transverse with submedian carinae distinctly prominent, Y-shaped carina distinct, submedian carinae uniting at base of frons, basal compartment of vertex wider at hind margin than greatest length (1.8:1), and than median length (2:1), frons in middle line longer than wide at widest part (2:1), widest at three-quarters from base, lateral margins shallowly arcuate, median carina simple, or forked at base, clypeus at base markedly wider than frons at apex, postclypeal disc as long medially as broad at base, in profile very shallowly convex, anteclypeus in profile strongly convex; entire clypeus in profile moderately convex; rostrum reaching to level of mesotrochanters, antennae reaching to level of frontoclypeal suture, basal segment as long as broad at apex, second segment longer than first (2.3:1); ocelli small, blemmata present but obscure. Pronotum with disc as long in middle line as broad at anterior margin, lateral carinae straight, not attaining hind margin. Mesonotum with intercarinal areas of disc flat right up to carinae; total length of mesonotum greater than that of scutellum (2.3:1). Post-tibial spur with 13 small even teeth laterally and a small tooth apically. Tegmina coelopterous. Wings vestigial.

Male: Pale ochraceous; all margins and carinae of head, thorax and legs paler; intercarinal areas of postclypeus slightly darker; apical margin of first antennal segment dorsally, pleurites in part, abdominal terga towards lateral margins, with the exception of pale spots, and ventrites except near lateral and posterior margins, dilute fuscous; pygofer ventrally and laterally orange-brown to light castaneous, median portion of diaphragm dark fuscous-castaneous. Tegmina yellowish hyaline, veins concolorous, a spot on commissural margin at apex of clavus, castaneous.

Female: Almost uniformly pale ochraceous, with head slightly darker. A faint reddish-brown suffusion near commissural margin at apex of clavus.

Anal segment of male short, cylindrical, lateroapical angles not distinct, a pair of processes apposed basally in middle line, each produced ventrobasally as a laterally compressed spine. Pygofer rather long, posterior opening subrhomboidal, about as broad as long,

dorsolateral angles subrectangulate, slightly inflected, diaphragm produced caudad at middle, medially carinate, dorsal margin angulately convex, ventral margin weakly concave, medio-ventral process absent. Aedeagus tubular, short, porrect caudad, with dorsal margin slightly elevated in basal half, the elevated area finely longitudinally striate; orifice terminal at apex. Genital styles as figured, moderately long, with inner margin concave, outer margin convex, dilated distally, apical margin truncate with inner and outer angles acutely produced; a small narrow lobe arising on inner margin near base, directed caudad.

Male (coelopterous): length 2.1 mm., tegmen, 1.0 mm.; *female*: length, 2.3 mm., tegmen, 1.0 mm.

Holotype, male (Bishop 9122), Marenanuka, Tarawa Atoll, Gilbert Is., Dec. 1957, N. L.H. Krauss. Three males and 2 females same data; Eret, 1 female, Dec. 9157. Krauss; Butaritari I., Butaritari Atoll; one male, 3 females, Dec. 1957, Krauss.

DISTRIBUTION: Gilbert Is.

This species most closely resembles *Corbulo guamensis* Metc., but can readily be distinguished by the more acutely angulate profile of the head and the fewer teeth on the post-tibial spur. It can also be separated from *Corbulo paludum* Kirkaldy by the more acutely angulate profile of the head, as well as by the obtusely angulate dorsolateral angles of the pygofer. The Gilbert Island populations of these two species are readily separable by color, the ground color of *C. guamensis* being reddish brown and that of *C. brontes* being stramineous.

71b. *Corbulo messalina* Fennah, n. sp. (fig. 5, a-f).

Vertex as long medially as broad at base, in profile rather obtusely rounding into frons, as wide at apex as at base, lateral margins straight, apical margin convex with submedian

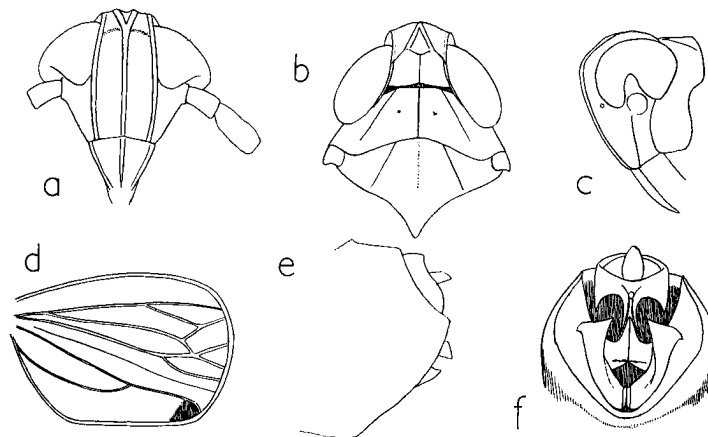


FIGURE 5. *Corbulo messalina*: a, frons and clypeus; b, vertex, pronotum and mesonotum; c, head and pronotum, side view; d, tegmen; e, pygofer and anal segment, left side; f, male genitalia, posterior view.

carinae only very little prominent, Y-shaped carina strongly developed, submedian carinae uniting at base of frons, basal compartment of vertex wider at hind margin than greatest length (2:1); and than median length (2.2:1), frons in middle line longer than wide at widest part (1.8:1), widest two-fifths from base, lateral margins diverging to level of middle of eyes, thence straight, weakly converging to apex, median carina forked at base, frons at apex overhanging base of clypeus; clypeus at base distinctly wider than frons at apex, postclypeal disc shorter medially than broad at base, in profile shallowly convex, anteclypeus in profile shallowly convex; entire clypeus in profile moderately convex; rostrum apparently not quite attaining post-trochanters; antennae extending to level of frontoclypeal suture, basal segment longer than broad (1.2:1), second segment longer than first (1.7:1); ocelli small. Pronotum with disc as long in middle line as broad at anterior margin, lateral carinae straight, not quite, or only obscurely, attaining hind margin. Post-tibial spur with 13 teeth.

Ochraceous buff; carinae a little lighter; a dilute suffusion on legs, abdominal ventrites entirely, and tergites at sides, and male genitalia, dark yellowish brown.

Brachypterous tegmen longer than broad (1.5:1), subquadrate, apical margin shallowly convex, apical and anal angles subequally rounded, yellowish hyaline, a brown spot on margin at apex of common claval vein.

Anal segment of male short, collar-like, with a pair of laterally compressed spinose processes contiguous basally, directed ventrocephalad. Pygofer long, dorsally longer than anal segment, posterior opening as broad as long, dorsolateral angles distinctly produced caudad, in profile obtuse, diaphragm with dorsal margin V-shaped, medially formed as in *C. paludum* (Kirkaldy), but more strongly produced caudad; medioventral process absent. Aedeagus only moderately long, porrect caudad, apparently a few longitudinal striae on basally elevated dorsal margin, orifice terminal at apex.

Genital styles moderately long, each with lateral margin convex, and inner margin concave, distally widening with inner margin produced mesad, distal angles acute, the distal margin between them feebly sinuate. Male (brachypterous): length, 2.8 mm.

Holotype male, (BISHOP 9123), Wake Atoll, Peale Islet, on Ilima (*Sida*), Dec. 21, 1959, Y. Oshiro.

DISTRIBUTION: Wake Atoll.

This species is distinguished by the broad vertex, with a strongly developed Y-shaped carina, by the lateral carinae of the pronotum extending close to the hind margin, if not actually reaching it, by the rather small number of teeth on the post-tibial spur, by the quadrate form of the brachypterous tegmina, and by the shape of the genital styles at the base. These have only a narrow thickened flange which is reflected caudad, whereas in species such as *C. paludum* and *C. dodona* a prominent subtriangular lobe is present in this position.

Genus **Sogata** Distant

Sogata Distant, 1906, Fauna of British India **3**: 471 (orthotype: *Sogata dohertyi* Distant 1906 op. cit.).

Hosunka Matsumura, 1935, Ins. Matsumurana **10**: 76 (orthotype: *Hosunka pallidula* Matsumura 1935 op. cit.), NEW SYNONYMY.

Unkanella Esaki and Ishihara, 1943, Cat. Araeopid. Imp. Japan, 20 (orthotype, *Unkana hakonensis* Matsumura, 1935, Ins. Matsumurana 9: 132).

I follow Ishihara (1949, Sci. Repts. Matsuyama Agric. Coll. 2: 38) in suppressing *Unkanella* under *Hosunka*. The suppression here of the latter under *Sogata* is based on an examination of the type specimen of *S. doherlyi* Dist. in the British Museum (Nat. Hist.) The genus *Numata* Matsumura, which is listed in the General Catalogue of the Hemiptera as a synonym of *Unkana* (Metcalf, 1943, 4(3): 156), is entirely distinct, and, indeed, rather remote.

72a. *Sogata hakonensis* (Matsumura), NEW COMBINATION

Unkana hakonensis Matsumura, 1935, Ins. Matsumurana 9: 133.

DISTRIBUTION: Japan, Bonin Is.

BONIN IS. HAAHA JIMA: One male and one female, Okimura, Apr.-May, 1958, Snyder.

Genus **Epeuryrsa** Matsumura

Epeuryrsa Matsumura, 1900, Ent. Nachr. 26: 261. (haplotype: *Epeuryrsa nawaii* Matsumura 1900 op. cit.).

72b. *Epeuryrsa nawaii* Matsumura.

Epeuryrsa nawaii Matsumura, 1900, Ent. Nachr. 26: 261.

DISTRIBUTION: Japan, China, Formosa, Bonin Is.

BONIN IS. CHICHI JIMA: Twelve males and 26 females, Omura 'Camp Beach', Apr.-June 1958, Snyder; Sakai-ura, 'Bull Beach', May 1958, Snyder; Miyano-hama, 'Jack Wm.'s Beach', May-June, 1958, Snyder and Mitchell. One male, Ani Jima, Southwest Bay, May 1958, Snyder.

Genus **Laodelphax** Fennah

Laodelphax Fennah, 1963, Proc. R. ent. Soc. Lond. (B) 32: 15 (orthotype: *Delphax striatella* Fallén, 1826, Hemipt. Sueciae: 75).

75. *Laodelphax striatella* (Fallén).

Delphax striatella Fallén, 1826, Hemipt. Sueciae: 75.

DISTRIBUTION: Palaearctic Region, Philippine Is., Formosa, Indonesia, Micronesia.

PALAU. KOROR: Two males and two females, July 1956, McDaniel; May 1957, Sabrosky.

Genus **Syndelphax** Fennah

Syndelphax Fennah, 1963, Proc. R. ent. Soc. Lond. (B) 32: 15 (orthotype: '*Delphax*' *matanitu* Kirkaldy, 1907).

74. *Syndelphax matanitu* (Kirkaldy).

'*Delphax*' *matanitu* Kirkaldy, 1907, Hawaiian Sugar Planters' Assoc. Exper. Sta., Ent. Bull. 3(1): 155.

DISTRIBUTION: Queensland, south Pacific.

S. MARIANA IS. GUAM: One male, Apra Heights, Jan.-Feb. 1959, Krauss.

PALAU. MALAKAL: Two males, May 1957, Sabrosky.

Genus **Toya** Distant

Toya Distant, 1906, Fauna of British India **3**: 472 (orthotype: *Toya attenuata* Distant, 1906, op. cit.).

73. *Toya propinqua* (Fieber).

Delphax propinqua Fieber, 1866, Zool. bot. Ges. Wien, Verh. **16**: 525.

DISTRIBUTION: Japan, Philippines, western Micronesia.

BONIN IS. CHICHI JIMA: A long series of both sexes, Omura, 'Camp Beach', Apr., May, 1958, Snyder; Miyano-hama, 'Jack Wm's Beach', May, June, 1958, Snyder; Okumura, 'Yankee Town', May, Sept. 1958, Snyder; Yatsuse R. (Minato-ko), 'Gen.'s Beach', Apr. 1958, Snyder; Sakai-ura, Bull Beach, May 1958, Snyder and Mitchell; Ogiura, Apr., May 1958, Snyder; Futami-ko, May 1956, Clagg. HAHA JIMA: Okimura, Apr.-May 1958, Snyder.

S. MARIANA IS. SAIPAN: One female, Kobler Field, Sept. 1958, Krauss. GUAM: Eleven males and 10 females, Mt. Lam-lam, Merizo, Umatac, Anderson AFB, on Bermuda grass, Oct. 1957, Krauss; Yigo, Talofof, Feb. 1958, Krauss; Ylig Bay, Dec. 1958, Krauss; Apra Heights, Jan., Feb. 1959, Krauss.

PALAU IS. BABELTHUAP: One male and one female, Ngiwal, May 1957, Sabrosky. NGERKABESANG: one female, Apr. 1957, Sabrosky. MALAKAL: Two males and six females, May 1957, Sabrosky. KOROR: a long series of both sexes, July 1956, McDaniel; Apr. 1957, in pans of fish preserved in formalin, Sabrosky.

76. *Toya lyraeformis* (Matsumura), NEW COMBINATION

Liburnia lyraeformis Matsumura, 1900, Ent. Nachr. **26**: 267.

DISTRIBUTION: Japan, southern Mariana Is., western Caroline Is.

S. MARIANA IS. GUAM: Five males and one female, Yigo, Dec. 1958, Krauss; Cocos I., Oct. 1957, Krauss.

YAP. MAP: One male, eastern part, Aug. 1950, Goss.

CAROLINE ATOLLS. ULITHI: One male and one female, Falalop I. Sept. 1956, McDaniel.

Genus **Coronacella** Metcalf

Coronacella Metcalf, 1950, B.P. Bishop Mus., Occ. Papers **20**(5): 59 (orthotype: *Coronacella kirkaldyi* (Muir)).

83. Coronacella kirkaldyi (Muir).

Kelisia kirkaldyi Muir, 1917, Hawaiian Ent. Soc., Proc. **3**(4): 329.

Coronacella bella Metcalf, 1950, B.P. Bishop Mus., Occ. Papers **20**(5): 59.

DISTRIBUTION: Queensland, Philippines, Formosa, Micronesia, Fiji, Samoa, Tahiti.

S. MARIANA IS. GUAM: One male and one female, Pt. Oca, May 1945, Bohart and Gressitt.

PALAU. BABELTHUAP: Five males, Ngiwal, May 1957, Sabrosky. MALAKAL: A long series of both sexes, Feb. 1957, Sabrosky. KOROR: One male, May 1957, Sabrosky.

YAP. YAP: Two females, Dugor, central part, Aug. 1950, Goss.

MARSHALL IS. JALUIT: One male, Jabor I., Apr. 1958, Gressitt.

GILBERT IS. BUTARITARI (MAKIN): Seven males and five females, Butaritari, Dec. 1957, Krauss; Nov. 1964, Perkins. TARAWA: Five males and two females, Betio I., Nov. 1957, Krauss.

Genus **Horcoma** Fennah

Horcoma Fennah, 1969, Pacif. Ins. Monogr. **21**: 36 (orthotype: *Delphacodes lacteipennis* Muir, 1917, Hawaiian Ent. Soc., Proc. **3**: 337).

81. Horcoma lacteipennis (Muir).

Delphacodes lacteipennis Muir, 1917, Hawaiian Ent. Soc., Proc. **3**: 337.

Delphacodes celaeno Fennah, 1956, Ins. Micronesia **6**(3): 126. NEW SYNONYMY.

DISTRIBUTION: Ceylon, Palau, Caroline Atolls.

PALAU. BABELTHUAP: One male, Ngiwal, May 1957, Sabrosky.

D. celaeno was described as having three teeth on the distal margin of the second metatarsal segment. It has since been established that the usual number in this position is four.

Genus **Harmalia** Fennah

Harmalia Fennah, 1969, Pacif. Ins. Monogr. **21**: 37 (orthotype: *Sogata thoracica* Distant, 1916, Fauna of Brit. India 6: 140).

82a. Harmalia sameshimae (Matsumura and Ishihara), NEW COMBINATION

Kakuna sameshimae Matsumura and Ishihara, 1945, Mushi **16**(10): 68.

Delphacodes sameshimae (Matsumura and Ishihara), 1949, Sci. Repts Matsuyama Agric. Coll. **2**: 54.

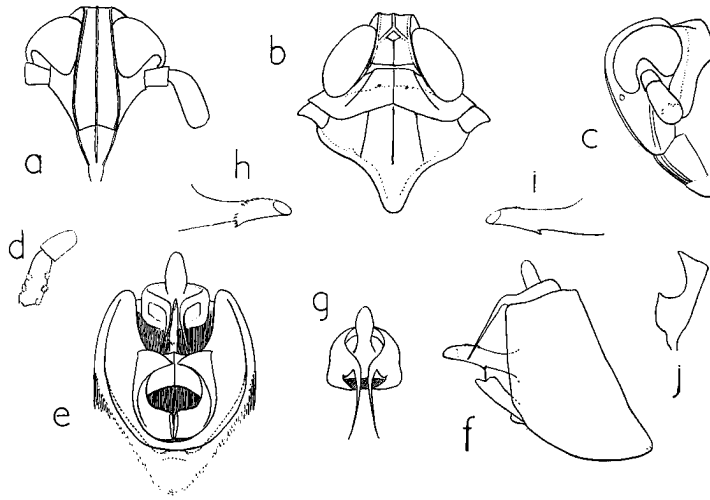


FIGURE 6. *Harmalia tiphys*: a, frons and clypeus; b, vertex, pronotum and mesonotum; c, head and pronotum, side view; d, antenna; e, male genitalia, posterior view; f, male genitalia, right side; g, anal segment of male, posterior view; h, aedeagus, left side; i, aedeagus, right side; j, genital style, side view.

DISTRIBUTION: Japan, Southern Mariana Is.

S. MARIANA IS. GUAM: One male, Apra Heights, Jan., Feb., 1959, Krauss.

77. *Harmalia tiphys* Fennah, n. sp. (fig. 6, a-j).

Delphacodes albicollis Fennah (not Motschulsky), 1956. Ins. Micronesia 6(3): 123. [^]

Vertex longer medially than broad at base (nearly 1.2:1), obtusely rounding into frons, a little narrower at apex than at base, lateral margins shallowly concave, apical margin transverse, with median carina weakly prominent, Y-shaped carina feeble, submedian carinae uniting before level of anterior margin of eyes, basal compartment of vertex wider at hind margin than greatest length (1.5:1); and than median length (1.7:1), frons in middle line longer than wide at widest part (2.3:1), widest at two-thirds from base, lateral margins shallowly sinuately convex, median carina simple, clypeus at base slightly wider than frons at apex, postclypeal disc a little shorter than broad at base, in profile almost straight, anteclypeus in profile shallowly convex, entire clypeus in profile moderately convex; rostrum scarcely reaching as far as postcoxae; antennae reaching level of frontoclypeal suture, basal segment slightly longer than broad (1.1:1), second segment longer than first (2:1); ocelli distinct. Pronotum with disc almost as long in middle line as broad at anterior margin (1:1.1), lateral carinae weakly concave, not attaining hind margin. Total length of mesonotum greater than that of scutellum (2.2:1). Post-tibial spur with 22 teeth.

Dark fuscous; carinae and margins of head, antennae, rostrum, tegulae, posterolateral margins of mesonotum, and legs, light yellowish brown; pronotum in posterior half, ivory white; anal segment of male and of female, dorsal third of pygofer in male and gonoplas at apex in female, pallid stramineous. Anal segment of male short, collar-like, lateroapical

angles each produced mesad in a long spinose process, the two processes meeting in middle line, then curving ventrad and diverging. Pygofer moderately long, posterior opening slightly longer than broad, dorsolateral angles distinctly produced caudad, acute, not inflected or decurved, diaphragm with dorsal margin shallowly sinuate, median portion strongly produced caudad, more so on dorsal margin than ventrally, and with a distinct vertical median carina; medioventral process absent. Aedeagus moderately long, tubular, in side view narrowing distad, moderately laterally compressed, orifice on left at apex, an oblique row of about eight teeth from dorsal margin near apex across left side to ventral margin near middle, with two or three teeth extending under ventral margin to right side. Genital styles moderately long, strongly curved, meeting at base, where they are produced caudad, then diverging, then twisted and converging almost to meet apically, each terminating in a triangular lobe.

Male: length, 1.8 mm., tegmen, 2.4 mm.;

Female: length, 2.1 mm., tegmen, 2.9 mm.

Holotype, male (US 70987) Babelthuap I., Palau Is.: Airai, Ngarsung, May 16, 1957, Sabrosky. Paratypes, one male and two females, Koror I., Ngerabad, Apr. 17, 1957, Sabrosky.

DISTRIBUTION: W. Caroline Is. (Palau).

This species can readily be distinguished from other Delphacids of Micronesia that have a white pronotum by the elongate frons in combination with the shortly triangular median areolet on the vertex made by the sublateral carinae uniting much before the apex of the vertex.

FAMILY MEENOPLIDAE FIEBER

Genus *Nisia* Melichar

Nisia Melichar, 1903, Homopteren-Fauna von Ceylon, 53 (haplotype: *Meenoplus atrovenosus* Lethierry, 1888, Mus. Civ. Stor. Nat. Genova, Ann. 11, 6: 466).

84. *Nisia atrovenosa* (Lethierry) (fig. 7, a-k).

Meenoplus atrovenosus Lethierry, 1888, Mus. Civ. Stor. Nat. Genova, Ann. 11, 6: 466.

DISTRIBUTION: Old World tropics.

The type locality of this species is Nias, and the Micronesian populations differ from the Indonesian, as interpreted from a male from Sebesi, in the form of the dorsal and ventral marginal lobes of the genital styles. A new subspecies is here proposed to accommodate them.

84a. *Nisia atrovenosa carolinensis* Fennah, n. subsp. (fig. 7, h-k)

Size and coloration as in typical subspecies. Triangular occipital areolets more elongate than in typical subspecies. Post-tibiae with 8 or 9 spines apically, basal metatarsal segment with eight teeth, second segment with five. Anal segment of male dorsolaterally slightly more tumid and elevated than in typical subspecies. Aedeagus in lateral view almost as broad as long, apex of phallus level with margin of phallobase. Genital styles obtusely angulately

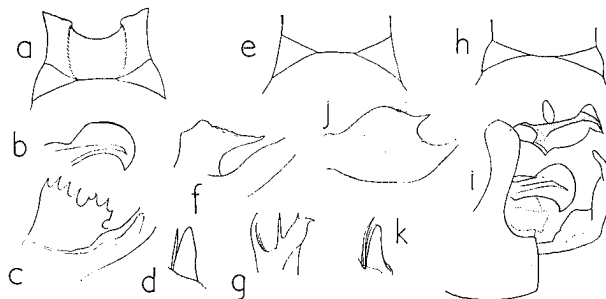


FIGURE 7. a-c, *Nisia atrovenosa atrovenosa*: a, vertex, posterodorsal view; b, aedeagus, left side; c, lobe on dorsal margin of genital style; d, lobe and process on inner surface of genital style, mesoventral view (specimen from Sebesi); e, posterolateral areolets at base of vertex (specimen from Mentawai). f, g, *Nisia atrovenosa australis*: f, lobe on dorsal margin of genital style; g, lobe and process on inner surface of genital style, mesoventral view. h-k, *Nisia atrovenosa carolinensis*: h, posterolateral areolets at base of vertex; i, male genitalia, left side; j, lobe on dorsal margin of genital style (the point directed dorsocaudad); k, lobe and process on inner surface of genital style, mesoventral view.

bent upward at middle, in side view constricted in apical fifth, outer margin in basal half produced dorsad in a convex lobe which itself gives off distally a slender spinose process directed dorsocaudad, margin of lobe smooth; inner margin of style strongly produced mesad near base in a narrowly triangular lobe which on its distal margin gives off a curved spinose process that is not quite as long as itself.

Holotype, male of subspecies (DS 70988), Colonia, Dugor, July-Aug. 1950, Goss. Paratypes, five females, with same data.

One male, Giliman, Yap, June 1957, Sabrosky. Seven males and two females, Ngiwal, Babelthuap, May 1957, Sabrosky. One male and one female Malakal, May 1957, Sabrosky. One male, Ngesebus, May 1957, Sabrosky.

DISTRIBUTION: Caroline Is. (Palau, Yap).

This subspecies differs from the typical subspecies (fig. 7, a-e) in the relatively more elongate triangular occipital areolets and in the fewer spines on the post-tibiae and teeth on the hind tarsal segments, (the corresponding numbers of each found in specimens of *N. atrovenosa* from Sebesi and from Mentawai are 10, 9 and 5). In the male genitalia it differs in the more elevated apical angles of the anal segment, the more strongly rounding phallobase, the relatively longer aedeagus, which does not reach the margin of the phallobase in the typical subspecies, and in the angulately bent form of the genital styles (evenly curving in the typical subspecies), in their distal constriction and in the form of the lobes on the inner and outer surfaces, as shown in the figures. It is separable from *N. atrovenosa australiensis* Woodward (fig. 7, f, g) by the same genital characters, and these are here illustrated from a male specimen from New Britain.

FAMILY DERBIDAE SPINOLA

Genus **Zoraida** Kirkaldy

Zoraida Kirkaldy, 1900, Entomologist 33: 242 (orthotype: *Derbe sinuosa* Boheman, 1838, K. Sven. Vet.-Akad., Handl. **58**: 225).

85. Zoraida fistulator Fennah, NEW STATUS

Zoraida pterophoroides fistulator Fennah, 1956, Ins. Micronesia **6**(3): 130.

DISTRIBUTION: Western Caroline Is. (Palau).

PALAU. BABELTHUAP: Three males, Ngaremlengui, June 1957, Sabrosky.
KOROR: One female, May 1957, Sabrosky.

Examination of *Z. pterophoroides* from Ceylon in the British Museum (Nat. Hist.) has shown that *fistulator* is entirely distinct. In the form of the genitalia it is nearer to *Z. cydista* Distant, from Queensland, but the basal cell of M in the tegmina is larger and relatively broader than in *cydista*. *Z. fistulator* differs from *Z. mcgregori* Muir from Palawan in having broader tegmina, a female pregenital sternite with the posterior margin evenly rounded, not subangulate, and, in the male, a relatively shorter anal segment and genital styles.

Genus **Proutista** Kirkaldy

Proutista Kirkaldy, 1904, Entomologist 37: 279 (orthotype: *Derbe moesta* Westwood, 1851, Ann. Mag. nat. Hist. 11, **7**: 209).

86. Proutista moesta (Westwood).

Derbe (Phenice) moesta Westwood, 1851, Ann. Mag. nat. Hist. 11, **7**: 209.

DISTRIBUTION: Indonesia, Philippines, Formosa, Japan, western Micronesia.

S. MARIANA IS. GUAM: Two males and three females, Mt. Alifan, Apr. 1946, Krauss; Barrigada, Oct. 1947, on sugar cane, Pemberton.

Genus **Platocera** Muir

Platocera Muir, 1913, Hawaiian Sugar Planters' Assoc. Exper. Sta., Ent. Bull. **12**(1): 60 (orthotype: *Platocera annulipes* Muir, op. cit.).

89. Platocera calypso Fennah (fig. 8, a, b).

Platocera calypso Fennah, 1956, Ins. Micronesia **6**(3): 135.

DISTRIBUTION: Western Caroline Is. (Palau).

PALAU. BABELTHUAP: One female, Imeliik, Netkeng, June 1957, Sabrosky.
KOROR: One male, Aug. 1956, McDaniel.

The figures of the male anal segment are given for comparison with those of the species that follows.

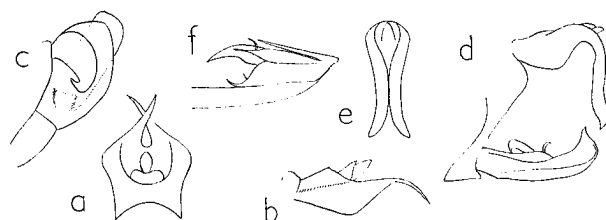


FIGURE 8. a, b, *Platocera calypso*: a, anal segment of male, dorsal view; b, anal segment of male, left side. c-f, *Platocera achilles*: c, head, left side, second antennal segment of right side shown in broken line; d, posterior margin of pygofer, anal segment and genital style, left side; e, anal segment of male, posterior view; f, aedeagus, left side.

90. *Platocera achilles* (Fennah), NEW COMBINATION (fig. 8, c-f).

Heronax achilles Fennah, 1956, Ins. Micronesia **6**(3): 137.

DISTRIBUTION: Western Caroline Is. (Palau).

PALAU. KOROR: One male, Apr. 1957, Sabrosky.

The generic characters of this species are evident in the male now available and figures are given of the genitalia of this specimen.

Genus **Paralyricen** Muir

Paralyricen Muir, 1913, Hawaiian Sugar Planters' Assoc. Exper. Sta., Ent.

Bull. **12**(1): 52 (orthotype: *Paralyricen jepsoni* Muir, 1913, op. cit., p. 53).

92. *Paralyricen soranus* Fennah (fig. 9, a-g).

Paralyricen soranus Fennah, 1956, Ins. Micronesia **6**(3): 138.

Anal segment of male relatively long and narrow, straight, shortly deflexed at apex, ventral margin in lateral view shallowly sinuate, anal foramen close to apex. Pygofer with dorsolateral angles acutely and narrowly produced, ventral margin strongly produced caudad, truncate distally with a minute spine at each end of truncate portion of margin.

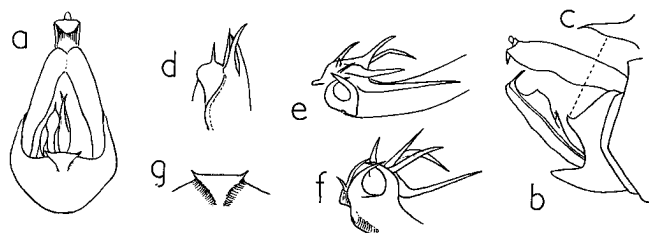


FIGURE 9. *Paralyricen soranus*: a, male genitalia, posterior view; b, male genitalia, right side; c, dorsolateral angle of pygofer, posterolateral view; d, apex of aedeagus, posterolateral view; e, apical half of aedeagus, posterodorsal view from right; f, apex of aedeagus, posterolateral view from right; g, medioventral process of pygofer, posterior view.

Aedeagus with a rather deep ventral flange distally, and with nine unequal spinose processes arranged as shown in figure. Genital styles rather long, in lateral view narrow, abruptly bent dorsad at apex, dorsal margin produced dorsocaudad in a small peg-like process near middle; distad of this margin convex, then abruptly and deeply excavate before apex.

DISTRIBUTION: Western Caroline Is. (Palau).

PALAU. BABELTHUAP: One male, Melekeiok, May 1957, Sabrosky.
KOROR: One female, north-east part, limestone cliff, Apr. 1957, Sabrosky.

Genus **Flaccia** Stål

Flaccia Stål, 1866, Hemipt. Africana **4**: 193 [logotype: *Lyricea imthurni* Kirkaldy, 1907, Hawaiian Sugar Planters' Assoc. Exper. Sta., Ent. Bull. **3**(1): 173].

93. Flaccia dione Fennah.

Flaccia dione Fennah, 1956, Ins. Micronesia **6**(3): 139.

DISTRIBUTION: Eastern Caroline Is. (Kusaie, Mokil, Pingelap), Marshall Is.

MARSHALL IS. JALUIT: One male and one female, Kabbenhok I., Oct. 1960, Fosberg; Elizabeth I., Nov. 1964, Perkins.

Genus **Kamendaka** Distant

Kamendaka Distant, 1906, Fauna of India **3**: 310.

Subgenus **Eosaccharissa** Kirkaldy

Eosaccharissa Kirkaldy, 1907, Soc. Ent. Belgique, Ann. **51**: 126 (haplotype: *Eosaccharissa javana* Kirkaldy op. cit.).

95. Kamendaka (Eosaccharissa) lar Fennah.

Kamendaka (Eosaccharissa) lar Fennah 1956 Ins. Micronesia **6**(3): 141.

DISTRIBUTION: Western Caroline Is. (Yap, Caroline Atolls).

YAP. YAP: Nine males, south Yap, July 1950, Goss; Giliman, Apr. 1957, Sabrosky.

Genus **Swezeyia** Kirkaldy

Swezeyia Kirkaldy, 1906, Hawaiian Sugar Planters' Assoc. Exper. Sta., Ent. Bull. **1**(9): 430 (haplotype, *Swezeyia lyricea* Kirkaldy, op. cit.).

99. Swezeyia zephyrus Fennah (fig. 10, g-i).

Swezeyia zephyrus Fennah, 1956, Ins. Micronesia **6**(3): 144.

DISTRIBUTION: Micronesia.

S. MARIANA IS. GUAM: Two males and two females, Palm Beach, Mt. Lamlam, Dec. 1958, Apra Heights, Jan., Feb. 1959, Krauss.

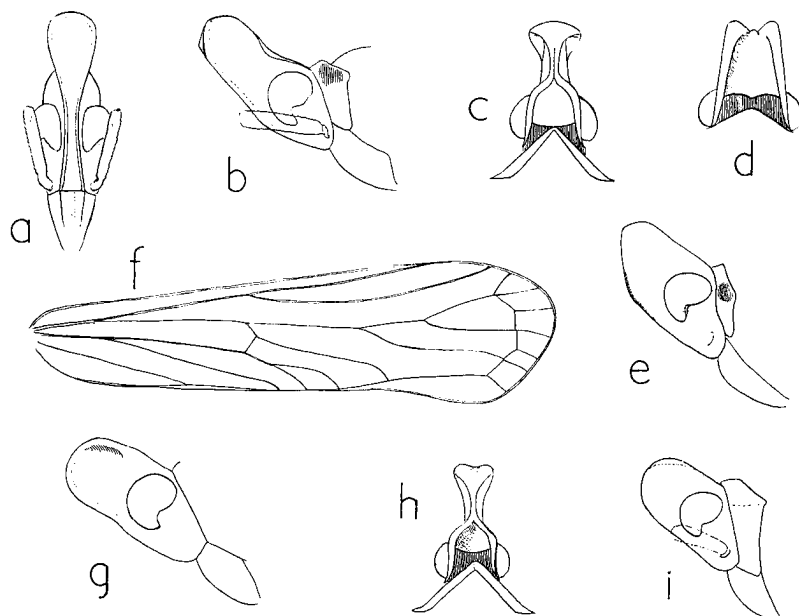


FIGURE 10. a-f, *Swezeyia maurelleii*: a, frons and postclypeus of male; b, head and pronotum of male, left side; c, vertex and pronotum of male, dorsal view; d, vertex of female, dorsal view; e, head of female, left side; f, tegmen. g-i, *Swezeyia zephyrus*: g, head of male, left side; h, vertex and pronotum of male, dorsal view; i, head of female, left side.

CAROLINE ATOLLS. NOMWIN: one male, Feb. 1954, Beardsley.

MARSHALL IS. KWAJALEIN: Two males and two females, Carlson I., Mar., Apr., 1964, North Loi I., Nov. 1964, Perkins.

100. *Swezeyia polyxo* Fennah.

Swezeyia polyxo Fennah, 1956, Ins. Micronesia **6**(3): 146.

DISTRIBUTION: Caroline Is.

YAP. YAP: Three males and one female, south Yap, July 1950, Goss; Rumu, center of Tageren Canal, Sept. 1956, McDaniel, Mar. 1954, Beardsley

CAROLINE ATOLLS. ULITHI: Two females, Falalop I., Sept. 1956, McDaniel.

103a. *Swezeyia maurelleii* Muir (fig. 10, a-f).

Swezeyia maurelleii Muir 1927, Ann. Mag. nat. Hist. Ser. 9, **20**: 89.

DISTRIBUTION: Ellice Is.

The figures are based on the male type from Nui and a female of the type series, and are given here for comparison with *S. zephyrus*.

103b. *Swezeyia pero* Fennah, n. sp. (fig. 11, a-g; fig. 12, b).

Vertex of male long, in dorsal view narrow at level of anterior margin of eyes, thence widening to apex; in profile with apical process strongly ascending, with dorsal margin deeply concave. Antennae of male about twice the length of an eye. Vertex of female in dorsal view rather broad throughout, lateral margins straight, markedly converging distad, each narrow at base, broadening to level of anterior margin of eyes, then of uniform width to apex; in profile produced before eyes for 1.5 times length of an eye, distal half of frons and dorsal margin parallel, basal half of frons oblique, subacutely rounding into vertex at apex of head.

Pallid stramineous; sides of head before eyes, lateral margins of antennae, pronotum behind eyes, fuscous; a faint suffusion on mesonotum laterally, a broad straight base, diffuse at edges, extending from base to apex of tegmen along its middle line, dilute yellowish brown, a small round spot on subapical cross vein in M, dark fuscous, veins pale yellow, M more or less suffused with red in distal half. Wings milky white with red veins.

Anal segment of male moderately long, porrect, in profile slightly narrowing distad to near apex, with ventral margin produced ventrad at apex, anal foramen at apex. Pygofer with lateral margins sinuate, broadly convex in dorsal half, ventral margin transverse, medioventral process absent. Aedeagus narrowly tubular, curved upward in basal half, almost straight in distal half, shallowly hollowed out on left side near apex, and closely similar to that of *S. polyxo*. Genital styles narrow at base, widening distally, bearing a minute pigmented pointed process near dorsal margin one-third from apex, with margin produced dorsad in a shallowly convex lobe just distad of this process, then feebly excavate before slightly incurved apex.

Pregenital sternite of female with posterior margin produced caudad, posterolateral margins almost straight, apex in ventral view medially notched, in posterior view produced

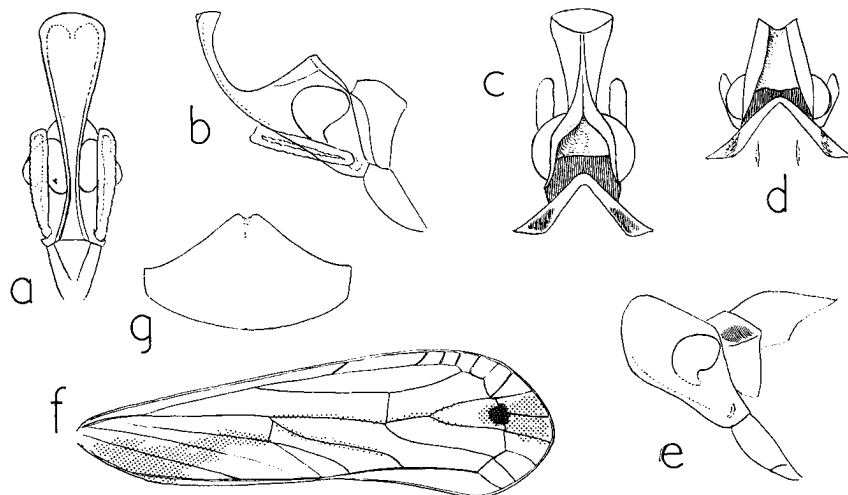


FIGURE 11. *Swezeyia pero*: a, head of male, anterior view; b, head and pronotum of male, left side; c, vertex and pronotum of male, dorsal view; d, vertex and pronotum of female; e, head, pronotum and mesonotum of female, left side; f, tegmen; g, pregenital sternite of female, ventral view.

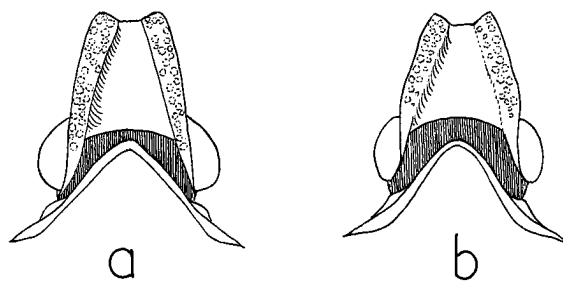


FIGURE 12. a, *Swezeyia lyricen*: vertex and pronotum of female, dorsal view. b, *Swezeyia pero*: vertex and pronotum of female, dorsal view.

dorsad, and medially with a linear groove.

Male: length 3.0 mm., tegmen 3.6 mm.; *female*: length 2.7 mm. tegmen 4.2 mm.

Holotype, male (Bishop 9124), Gilbert Is., Tarawa Atoll, Marenanuka, allotype, female, same locality, Dec. 1957, N.L.H. Krauss. One male, Butaritari (Makin), Gilbert Is. Nov. 1964, Perkins. Fifteen males and 28 females, Tarawa: Taborio, Naanikai, Bikenibeu, Bairiki, Nov. 1957; Marenanuka, Eret, Teoraereke, Dec. 1957, Krauss. One male, Buiartun I., Onotoa, June 1951, Moul. The last specimen was referred earlier to *S. ganesa* Fennah (Ins. Micronesia **6**(3): 150).

DISTRIBUTION: Gilbert Is.

This species differs from *S. ganesa* in the degree of curvature of the cephalic process. In this it resembles the Fijian *S. lyricen*, but differs in the form of the head of the female, as indicated in the figure (fig. 12, a).

Genus **Eusyphax** Fennah

Eusyphax Fennah, 1956, Ins. Micronesia **6**(3): 152 (orthotype: *Pyrrhoneura bivittata* Metcalf, 1946, B.P. Bishop Mus. Bull. 189: 113).

106. Eusyphax bivittatus (Metcalf).

Pyrrhoneura bivittata Metcalf, 1946, B.P. Bishop Mus., Bull **189**: 113.

DISTRIBUTION: Southern Mariana Is. (Guam).

S. MARIANA IS. GUAM: One female, near Yona, Apr. 1946, Krauss.

In this, the typical subspecies, the vertical triangular lobes on the pregenital sternite are less acute than in *E. bivittatus lineatus* Fennah.

Genus **Nesokaha** Muir

Nesokaha Muir, 1913, Hawaiian Sugar Planters' Assoc. Exper. Sta., Ent. Bull. **12**(1): 51 (orthotype: *Nesokaha piroensis* Muir, loc. cit.).

Subgenus **Tempora** Matsumura, NEW STATUS

Tempora Matsumura, 1914, Ann. Mus. Nat. Hungarici **12**: 290 (orthotype: *Tempora boninensis* Matsumura, loc. cit.).

Post tibiae with five spines apically, one set apart from remainder; basal metatarsal segment with five teeth apically, second segment also with five. Pregenital sternite of female with a strongly developed median ridge from base to apex.

109a. Nesokaha (Tempora) boninensis (Matsumura), NEW COMBINATION (fig. 13, a, b).

Tempora boninensis Matsumura, 1914, Ann. Mus. Nat. Hungarici **12**: 290.

DISTRIBUTION: Bonin Is.

BONIN IS. CHICHI JIMA: Nine males and five females, Omura, 'Camp Beach', Yoake Yama, Ogiura, Apr., May 1958, Snyder. ANI JIMA: Four males and one female, Southwest Bay, May 1958, Snyder. HANA JIMA: two males, Okimura, Apr., May, 1958, Snyder.

This species is close to *Nesokaha infuscata* Muir. It is of smaller bodily size, has a relatively smaller second antennal segment in the male, and lacks the sordid yellow areas on the tegmina found in *N. infuscata*, and the male genitalia show abundant small differences.

I have not seen *N. piroensis*, but *Nesokaha rubrinervis* (from the Philippines) has only four spines on the apical margin of the post tibiae and four on the second metatarsal segment, and the form of the pregenital sternite is more like that found in *Eusyphax* than in *N. boninensis*. I believe that these differences justify the retention of *Tempora* at least at subgeneric level. I am deeply indebted to Dr. Gressitt for the gift of a photograph of the type of *Tempora boninensis*.

Genus **Nesorhamma** Fennah

Nesorhamma Fennah, 1956, Ins. Micronesia **6**(3): 155 (orthotype: *Nesorhamma chalcas* Fennah 1956 op. cit.).

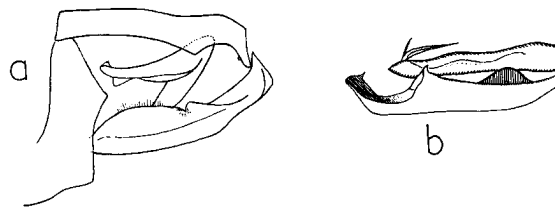


FIGURE 13. *Nesokaha boninensis*: a, male genitalia, left side; b, aedeagus and left genital style, ventral view.

110. Nesorhamma chalcas Fennah.

Nesorhamma chalcas Fennah, 1956, Ins. Micronesia **6**(3): 156.

DISTRIBUTION: Western Caroline Is. (Palau).

PALAU. BABELTHUAP: One male, Ngiwal, May 1957, Sabrosky. NGURUK-DABEL: One male, Ngaremediu, May 1957, Sabrosky.

Genus **Lamenia** Stål

Lamenia Stål, 1859, Freg. Eugenes Resa. Zool. **4**: 277 (haplotype: *Delphax caliginea* Stål, 1854, Öfv. K. Vet.-Akad., Förh. **11**: 246).

113. Lamenia caliginea charon Fennah.

Lamenia caliginea charon Fennah, 1956, Ins. Micronesia **6**(3): 158.

DISTRIBUTION: Marshall Is.

MARSHALL IS. JALUIT: One male, Enybor I., Nov. 1964, Perkins. KWAJALEIN: Twenty-four males and 16 females, Carlson I., North Loi, Oct. Nov. 1964, Perkins. ENIWETOK: Three males and one female, Igurin I., Japtan I. Aug. 1956, Tuthill.

GILBERT IS. TARAWA: Thirteen males and 12 females, Taborio, Bikenibeu, Nov. 1957, Eret, Dec. 1957, Krauss. BUTARITARI: One male and one female, Butaritari I., Dec. 1957, Krauss.

123. Lamenia numitor buto Fennah.

Lamenia numitor buto Fennah, 1956, Ins. Micronesia **6**(3): 164.

DISTRIBUTION: Western Caroline Is.

PALAU. BABELTHUAP: One female, Ngerehelong, on grass and *Pandanus*, May 1957, Sabrosky. KOROR: Two males and four females, Apr. May, 1957, Sabrosky. KAYANGEL: One male, Aug. 1956, McDaniel. MALAKAL: One male and two females, May 1957, Sabrosky.

126. Lamenia candida Fennah.

Lamenia candida Fennah, 1956, Ins. Micronesia **6**(3): 166.

DISTRIBUTION: Western Caroline Is., southern Mariana Is.

PALAU. KOROR: One female, Aug. 1956, McDaniel.

Genus **Phaciocephalus** Kirkaldy

Phaciocephalus Kirkaldy, 1906, Hawaiian Sugar Planters' Assoc. Exper. Sta., Ent. Bull. **1**(9): 426 (haplotype: *Phaciocephalus vitiensis* Kirkaldy op. cit., p. 428).

128. Phaciocephalus carolinensis Metcalf.

Phaciocephalus carolinensis Metcalf, 1954, Elisha Mitchell Sci. Soc., Jour. **70**(1): 10.

DISTRIBUTION: Caroline Is.

CAROLINE ATOLLS. NOMWIN: Four males and four females, Nomwin I., Feb. 1954, Beardsley. One male, Fananu I., Feb. 1954, Beardsley.

Genus **Levu** Kirkaldy

Levu Kirkaldy, 1906, Hawaiian Sugar Planters' Assoc. Exper. Sta. Ent. Bull. **1**(9): 434 (haplotype: *Levu vitiensis* Kirkaldy, op. cit.).

135. *Levu matsumurae palauensis* Fennah.

Levu matsumurae palauensis Fennah, 1956, Ins. Micronesia **6**(3): 176.

DISTRIBUTION: Western Caroline Is. (Palau).

PALAU. BABELTHUAP: Four males and three females, Ngaremlengui, Apr. 1957, Ngiwal, May 1957, Sabrosky.

136. *Levu pallescens pallescens* (Metcalf).

Muiralyricen pallescens Metcalf, 1946, B.P. Bishop Mus., Bull. **189**: 116.

DISTRIBUTION: Western Micronesia.

S. MARIANA IS. GUAM: One female, Mt. Lamlam, Oct. 1957, Krauss.

138. *Levu pallescens lactinea* Fennah.

Levu pallescens lactinea Fennah, 1956, Ins. Micronesia **6**(3): 178.

DISTRIBUTION: Western Caroline Is. (Palau).

PALAU. BABELTHUAP: One female, Airai, Ngarsung, May 1957, Sabrosky.

FAMILY ACHILIDAE STAL

Genus **Argeleusa** Kirkaldy

Argeleusa Kirkaldy, 1906, Hawaiian Sugar Planters' Assoc. Exper. Sta., Ent. Bull. **1**(9): 423 (haplotype: *Argeleusa kurandae* Kirkaldy, loc. cit.).

140. *Argeleusa rhanis* Fennah.

Argeleusa rhanis Fennah, 1956, Ins. Micronesia **6**(5): 181.

DISTRIBUTION: Western Caroline Is. (Palau).

PALAU. BABELTHUAP: One female, Ngiwal, May 1957, Sabrosky.

FAMILY DICTYOPHARIDAE SPINOLA

Genus **Doryphorina** Melichar

Doryphorina Melichar, 1912, Abh. Zool-Bot. Ges. Wien **7**(1): 99 (orthotype: *Doryphorina stali* Melichar, 1912, op. cit.: 100).

Eyes bordered posteriorly by a narrow callus of even width throughout. Post-tibiae with seven spines apically. Tegmina widening distally, stigma sub-triangular, relatively broad at widest part, pigmented and with very oblique parallel veins; forks of Sc+R, M, and Cul and

union of claval veins not lying in an oblique straight line, common claval vein longer than separate claval veins. Genital styles of male pigmented, each with stout setiferous eminence on inner surface at extreme base. Pre genital sternite of female usually with a piceous triangular area with its apex not quite reaching posterior margin; posterior margin transverse, tumid or thickened, not at all concave or impressed. Between this and base of first valvula a transverse line, sometimes forming two callused subparallel lip-like structures in its median portion.

This genus includes a number of Old World species that have been placed in *Dictyophara* and *Chanithus*, and the above characters should suffice to segregate them.

141. *Doryphorina sobrina* (Stål), NEW COMBINATION (fig. 14, a, b).

Pseudophana sobrina Stål, 1859, Fregatten Eugénies Resa **4**: 270.

Chanithus gramineus Fennah (not Fabricius), 1956, Ins. Micronesia **6**(3): 183.

DISTRIBUTION: Philippine Is., Caroline Is.

S. MARIANA IS. GUAM: Fourteen males and six females, Merizo, Yigo, Umatac, Agana, Mt. Lamlam, Oct. 1957, Palm Beach, Dec. 1958, Krauss: Pt. Oca, June 1945 Bohart and Gressitt.

PALAU: BABELTHUAP: One male, Airai, Ngarsung, May 1957, Sabrosky. KOROR. Four males and three females, Feb. 1964, from ramie, Bianchi; July 1956, McDaniel; north-east part, Apr. 1957, Sabrosky. MALAKAL: Three males and five females, May 1957, Sabrosky. NGERKABESANG: Two males, Apr. 1957, Sabrosky. NGESEBUS: six males and three females, May 1957, Sabrosky. PELELIU: One male, May 1957, Sabrosky.

YAP. YAP: One female, Weloy, Dugor, June 1957, Sabrosky.

There is slight variation in the numbers of spines on the membranous sacs of the aedeagus (cf. Ins. Micronesia **6**(3) fig. 52 f). The proportions of the male anal segment and its extremely short apical margin appear to be characteristic of this species.

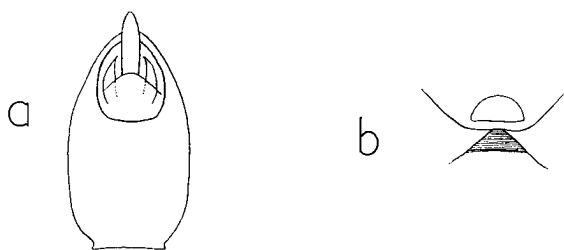


FIGURE 14. *Doryphorina sobrina*: a, anal segment of male, dorsal view; b, apical margin of anal segment of male, posterior view, with distal part of lateral margins and end-on view of anal style.

FAMILY TROPIDUCHIDAE STAL

Genus **Leptovanua** Melichar

Leptovanua Melichar, 1914, Nat. Ver. Brünn, Verh. **53**: 99 (orthotype: *Leptovanua suturalis* Melichar, op. cit., p. 100).

142. Leptovanua serapis Fennah.

Leptovanua serapis Fennah, 1956, Ins. Micronesia **6**(3): 185.

DISTRIBUTION: Eastern Caroline Is. (Ponape, Truk).

PONAPE. One male, Kolonia, July 1927, Uchiyama.

143. Leptovanua telamon telamon Fennah.

Leptovanua telamon telamon Fennah, 1956, Ins. Micronesia **6**(3): 187.

DISTRIBUTION: Western Caroline Is. (Yap).

YAP. YAP: Two males and three females, Kolonia, Weloy, Giliman, June 1957, Sabrosky. RUMUNG: One male, June 1957, Sabrosky.

144. Leptovanua telamon palauana Fennah.

Leptovanua telamon palauana Fennah, 1956, Ins. Micronesia **6**(3): 188.

DISTRIBUTION: Western Caroline Is. (Palau).

PALAU. BABELTHUAP: Fourteen males and two females, Melekeiok, Imeliik, Netkeng, Ngerehelong, Ngeremlengui, Apr. May, 1957, Sabrosky. KOROR: Twelve males and 21 females, July 1956, McDaniel, Apr. 1957, Sabrosky; on breadfruit, Dec. 1963, Tenorio. NGERKABESANG: One female, Apr. 1957, Sabrosky.

Genus **Swezeyaria** Metcalf

Swezeyaria Metcalf, 1946, B.P. Bishop Mus., Bull. **189**: 116 (orthotype:

Swezeyaria viridana Metcalf, op. cit., p. 117).

Basal metatarsal segment with five teeth apically.

150. Swezeyaria viridana constricta Fennah.

Swezeyaria viridana constricta Fennah, 1956, Ins. Micronesia **6**(3): 191.

DISTRIBUTION: Eastern Caroline Is.

CAROLINE ATOLLS. NOMWIN: One female, Fananu I., Feb. 1954, Beardsley.

Genus **Nesotemora** Fennah

Nesotemora Fennah, 1956, Ins. Micronesia **6**(3): 193 (orthotype: *Nesotemora cinyras* Fennah, 1956, op. cit., p. 194).

153. Nesotemora cinyras Fennah.

Nesotemora cinyras Fennah, 1956, Ins. Micronesia **6**(3): 194.

DISTRIBUTION: Western Caroline Is.

YAP. YAP: One male, Weloy, Dugor, June 1957, Sabrosky.

Genus **Mesepora** Matsumura

Mesepora Matsumura, 1914, Mus. Nat. Hungarici, Ann. **12**(1): 261 (orthotype: *Mesepora onukii* Matsumura, op. cit., p. 262).

The species found in the Bonin Islands differ from one another in the ratio of length (in middle line) to breadth of the frons: in *M. ogasawarana* this is just over 1.5: 1, in *M. issiformis* it is 1.7: 1, and in *M. boninensis* it is a little less than 1.5: 1. *M. ogasawarana* is a distinctly larger species than *M. boninensis*.

157. *Mesepora ogasawarana* Matsumura (fig. 15, d-f).

Mesepora ogasawarana Matsumura, 1914, Mus. Nat. Hungarici, Ann. **12**(1): 263.

DISTRIBUTION: Bonin Is.

BONIN IS. CHICHI JIMA: One male and one female, Miyanoama, Jack Wm.'s Beach, May 1958, Snyder; Omura, 'Camp Beach,' May, June 1958, Snyder. One female, Ani Jima, South West Bay, May 1958, Snyder.

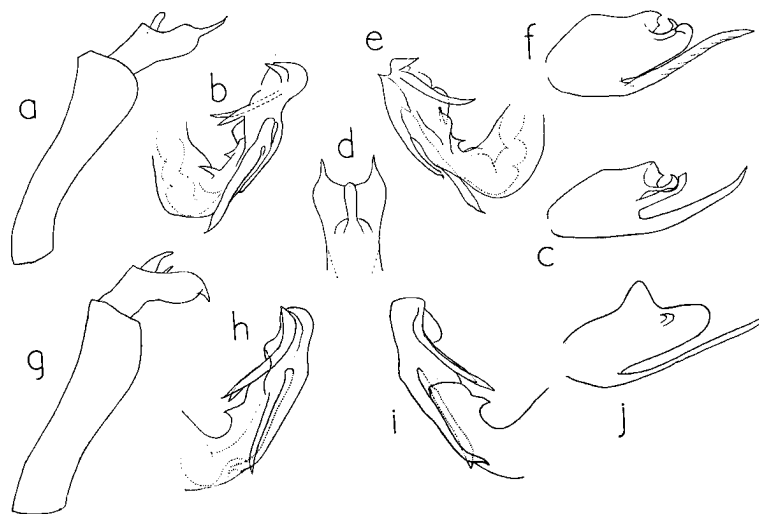


FIGURE 15. a-c, *Mesepora boninensis*: a, pygofer and anal segment, left side; b, aedeagus, left side; c, left genital style, ventral view. d-f, *Mesepora ogasawarana*: d, anal segment of male, dorsal view; e, aedeagus, right side, showing deflected apical dorsal process of left side mainly by transparency; f, right genital style, mesodorsal view. g-j, *Mesepora issiformis*: g, pygofer and anal segment, left side; h, aedeagus, left side; i, aedeagus, right side; j, left genital style, lateral view.

155. *Mesepora issiformis* Matsumura (fig. 15, g-j).

Mesepora issiformis Matsumura, 1914, Mus. Nat. Hungarici, Ann. **12**(1): 263.

DISTRIBUTION: Bonin Is.

BONIN IS. CHICHI JIMA: Eleven males and 13 females, Minami Jima, 'Long I.', Hitomaru Jima; Omura, 'Camp Beach'; Ani Jima, Sen-zan (north-east bay), Apr. May, 1958, Snyder. HAHA JIMA: One female, Okimura, Apr., May 1958, Snyder.

156. *Mesepora boninensis* Matsumura (fig. 15, a-c).

Mesepora boninensis Matsumura, 1914, Mus. Nat. Hungarici, Ann. **12**(1): 263.

DISTRIBUTION: Bonin Is.

BONIN IS. CHICHI JIMA: Four males and nine females, Ani Jima, Southwest Bay, May 1958, Snyder.

Genus ***Kallitaxila*** Kirkaldy

Kallitaxila Kirkaldy, 1901, Entomologist **34**: 6 (orthotype: *Kallitaxila granulata* Stål, 1870, Öfv. Svensk. Vet. Akad. Förh. 27: 750).

KEY TO SPECIES OF *KALLITAXILA* OF BONIN IS.

1. Two subcostal cells basad of oblique nodal line of transverse veinlets.....2
One subcostal cell present in this position, or none.....**auster**
2. Vertex more than 1.4 times as broad at base as long in middle.....**crini**
Vertex less than 1.3 times as broad as long in middle.....3
3. Frons more than 1.2 times longer than broad.....**boninensis**
Frons less than 1.2 times as long as broad.....**suturalis**

154. *Kallitaxila suturalis* (Matsumura) (fig. 16, a-e).

Taxila suturalis Matsumura, 1914, Ann. Mus. Nat. Hungarici **12**: 265.

DISTRIBUTION: Bonin Is.

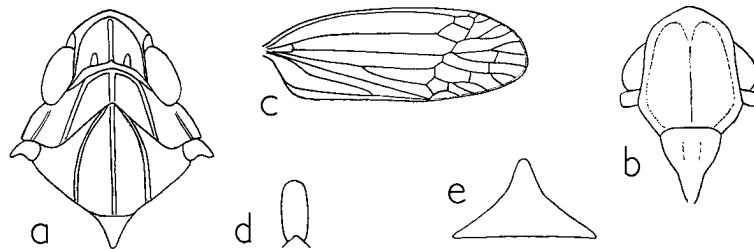


FIGURE 16. *Kallitaxila suturalis*: a, vertex, pronotum and mesonotum; b, frons and clypeus; c, tegmen; d, anal style of female, dorsal view; e, pregenital sternite of female.

BONIN IS. CHICHI JIMA: Three females, Ototo Jima, Kammuri-Iwa (Southwest Bay), June 1958, Snyder and Mitchell.

154a. *Kallitaxila boninensis* (Matsumura), NEW COMBINATION (fig. 17, a-e).

Tambinia boninensis Matsumura, 1914, Ann. Mus. Nat. Hungarici **12**: 264.

Anal segment of male with apical angles in side view acute, pointed. Phallobase of aedeagus with dorsal margin a little elevated distally, and thickened.

DISTRIBUTION: Bonin Is.

BONIN IS. CHICHI JIMA: One male and six females, Omura, 'Camp Beach', May, June, 1958; Ani Jima, Southwest Bay, Northeast Bay, May 1958, Snyder.

154b. *Kallitaxila crini* Matsumura, NEW COMBINATION (fig. 18, a-d).

Tambinia crini Matsumura, 1914, Ann. Mus. Nat. Hungarici **12**: 264.

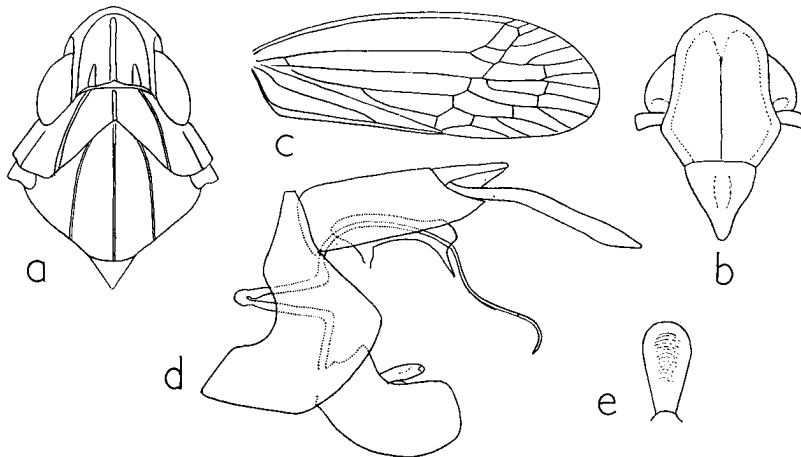


FIGURE 17. *Kallitaxila boninensis*: a, vertex, pronotum and mesonotum; b, frons and clypeus; c, tegmen; d, male genitalia, left side; e, anal style of female.

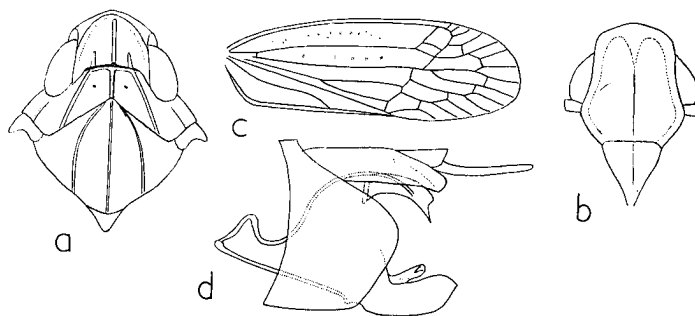


FIGURE 18. *Kallitaxila crini*: a, vertex, pronotum and mesonotum; b, frons and clypeus; c, tegmen; d, male genitalia, left side.

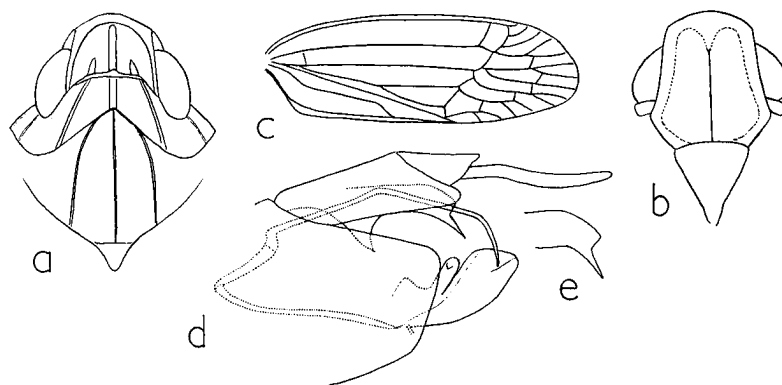


FIGURE 19. *Kallitaxila auster*: a, vertex, pronotum and mesonotum; b, frons and clypeus; c, tegmen; d, male genitalia, left side; e, apex of phallobase of aedeagus, left side.

Anal segment of male with apical angles, in side view, broadly subrect-angulately rounded. Phallobase of aedeagus not elevated distally.

DISTRIBUTION: Bonin Is.

BONIN IS. HAHHA JIMA: One male and two females, Okimura, Apr., May 1958, Snyder.

154c. *Kallitaxila auster* Fennah, n. sp. (fig. 19, a-e).

Vertex broader at level of posterior margin than long in middle line from apex of head to base (anterior end) of median notch on posterior margin (1.4 to 1.5:1), frons as long in middle line as broad at widest part, or a very little longer than broad, lateral margins rather distinctly angulate at level of antennae. Tegmina not granulate, or only obscurely so, costal cell a little wider than cell Sc+R.

Pale ochraceous below, light orange-brown dorsally; carinae of vertex and pronotum green, tegmina translucent, stramineous tinged with green; post-tibial and tarsal spines black.

Anal segment of male, in side view, with apical margins acutely rounded; anal style flattened, in dorsal view spatulate. Pygofer with lateral margins strongly produced caudad, dorsolateral (anal) angles subacutely rounded. Aedeagus with dorsal margin of phallobase deflexed at two-thirds from base, not elevated or thickened. Genital styles as figured, apical margin straight.

Male: length, 4.0 mm., tegmen, 4.7 mm.; *female*: length, 4.4 mm., tegmen, 4.4 mm.

Holotype, male (US 70989) Southwest Bay, Ani Jima, Chichi Jima group, Bonin Is., 17 May 1958, Snyder. One male and three females, Southwest Bay, Ani Jima, Chichi Jima group, 17 May 1958, Snyder.

DISTRIBUTION: Bonin Is.

This species is distinguished by the proportions of the vertex, the tegminal venation, the shape of the apical angles of the anal segment, and of the lateral margin of the pygofer, the angulate flexure of the phallobase and the straight apical margin of the genital styles. The coloration is probably more generally green in life.

154d. *Kallitaxila auster murcia* Fennah, n. subsp.

Vertex broader at level of posterior margin than long in middle line from apex of head to base (anterior end) of median notch on posterior margin (1.4:1), frons as long in middle line as wide at widest part, or a very little longer than broad, lateral margins rather distinctly angulate at level of antennae. Tegmina with costal and subcostal cells distinctly, though not strongly, granulate, costal cell not wider than cell Sc+R.

Orange-yellow (probably green in life). Tegmina translucent, veins orange-yellow tinged with green; post-tibial and tarsal spines black.

Male: length, 4.1 mm., tegmen, 4.3 mm. *Female*: length, 4.7 mm., tegmen, 5.0 mm.

Holotype of subspecies, male (US 70990) Camp Beach, Omura, Chichi Jima, May, June 1958, Snyder. One female, Southwest Bay, Ototo Jima, Kammuri-Iwa, Chichi Jima group, June 1958, Snyder and Mitchell, is tentatively placed in this subspecies.

DISTRIBUTION: Bonin Is.

This subspecies is distinguished from the typical subspecies by the distinctly granulate tegmina and the relative widths of the costal cell and cell Sc+R.

Genus ***Nesotaxila*** Fennah, new genus

Tambinia Metcalf (not Stål), 1946, B.P. Bishop Mus., Bull. **189**: 118. Fennah, 1956, *Ins. Micronesia* **6**(3): 188. : /

Vertex flattened, longer than broad, produced before eyes for at least length of an eye, and usually longer, basal margin truncate, lateral margins slightly converging distad, apical margin broadly rounded, median carina percurrent; frons longer than broad, finely medially carinate, at least in basal half, lateral margins diverging to level of apex of eyes, then concave to level of antennae, then incurved to frontoclypeal suture; clypeus short, less than half as long as frons, carinate medially and laterally; rostrum very short, not attaining mesotrochanters. Antennae short, second segment cylindrical, widening distad, eyes elongate oval, ocelli obsolete.

Pronotum with anterior margin transverse, posterior margin angulately excavate, two carinae on each side between eye and tegula and also an incomplete carina behind eye; mesonotum tricarinate, postcoxal process bluntly spinose; post-tibiae with two spines laterally and three apically, basal metatarsal segment with four spines. Tegmina with corium feebly granulate, Sc+R forking a little before nodal line of transverse veinlets, M simple to nodal line, Cu I forked near middle of tegmen, slightly distad of level of union of claval veins.

Wings reaching to level of node in tegmina, Sc+R with two branches at margin, M with two or three branches, Cu I with three branches.

Anal segment of male, and anal style, short. Pygofer with dorsolateral angles obtusely or subrectangulately rounded, posterior margin very shallowly convex. Aedeagus tubular, moderately long, subequal in length to genital styles. Genital styles moderately long with a small incurved lobe at apex, a curved acuminate process near middle of upper margin.

Anal style of female short, not nearly surpassing ovipositor. Ovipositor with five stout widely-spaced teeth on dorsal margin of first valvulae, and a compact cluster of six teeth at apex of third valvulae.

Type-species: *Tambinia baucis* Fennah, 1956, Ins. Micronesia **6**(3): 189.

Kallitaxila and *Nesotaxila* stand apart from *Mesepora*, *Leptovanua*, *Swezeyaria* and *Nesotemora* in having only two spines laterally on the post-tibiae instead of three. This character is shared with *Tambinia*, and the three genera may be distinguished as follows:

1. Ocelli absent or obsolete; two carinae on each side of pronotum between eye and tegula and an incomplete carina behind eye; post-coxal process bluntly spinose; post-tibiae with three spines apically, basal metatarsal segment with four spines **Nesotaxila** Fennah
 Ocelli present but apparently non-functional; at most only one complete and one incomplete carina on each side of pronotum between eye and tegula, post-coxal process thin, spatulate; post-tibiae with five spines apically, basal metatarsal segment with five or six spines.....2
2. Vertex with carinae callused. One complete and one incomplete carina on either side of pronotum between eye and tegula; tegmina with corium granulate. Anal style of female long, projecting caudad beyond ovipositor.....**Kallitaxila** Kirkaldy
 Vertex with carinae fine, not thickened. A single carina laterally on pronotum between eye and tegula; tegmina with corium not granulate. Anal style of female very small, not surpassing ovipositor.....**Tambinia** Stål
Tambinia, as now strictly interpreted, has not been found in Micronesia.

FAMILY ISSIDAE SPINOLA

Genus **Issarius** Metcalf

Issarius Metcalf, 1950, B.P. Bishop Mus., Occ. Papers **20**(5): 67 (orthotype: *Issarius carolinensis* Metcalf, loc. cit., p. 68).

161. Issarius doricha Fennah.

Issarius doricha Fennah, 1956, Ins. Micronesia **6**(3): 199.

DISTRIBUTION: Western Caroline Is. (Palau)

PALAU. BABELTHUAP: One male, Ngerehelong, May 1967, Sabrosky.
 KOROR: Two males and one female, north east part, limestone ridge, 100 ft., Apr. 1957, Sabrosky. NGARMALK: Two males, Apr. 1957, Sabrosky. NGERKABESANG: One female, Apr. 1957, Sabrosky. NGURUKDABEL: One female, Ngeremdin, Apr. 1957, Sabrosky.

163. Issarius tartarus Fennah.

Issarius tartarus Fennah, 1956, Ins. Micronesia **6**(3): 200.

DISTRIBUTION: Southern Mariana Is.

S. MARIANA IS. AGIGUAN: One male, Nov. 1955, Davis.

FAMILY RICANIIDAE STÅL

Genus **Armacia** Stål

Armacia Stål, 1862, K. Sven. Vet.-Akad., Handl. **3**(6): 70 (orthotype: *Ricania*

clara Stål, 1859, Freg. Eugenie Resa. Zool. **4**: 281).

172. *Armacia simaethis* Fennah.

Armacia simaethis Fennah, 1956, Ins. Micronesia **6**(3): 209.

DISTRIBUTION: Western Caroline Is. (Palau).

PALAU. NGAIANGL: One female, May 1957, Sabrosky. BABELTHUAP: Thirty-one males and 38 females. Ngiwal, Ngeremlengui, Ngerehelong, Airai, Ngerimal R., Ngardmau, Ngardok, Melekeiok, Imeliik, Netkeng, May, June 1957, Sabrosky. NGURUKDABEL: Three males and two females, Ngeremdin, May 1957, Sabrosky. KOROR: Four males and three females, northeastern part, limestone ridge, June 1956, McDaniel, Apr. 1957, Sabrosky. MALAKAL: Two males and one female Apr. 1957, Sabrosky. NGARMALK: Two males and two females, Apr. 1957, Sabrosky. NGERKABESANG: One male and two females, Apr. 1957, Sabrosky. ANGAUR: One female, Apr. 1957, Sabrosky.

Genus ***Nesomimas*** Fennah, new genus

Vertex about three times as broad as long at lateral margin, anterior margin weakly convex; rostrum reaching to mesotrochanters. Tegulae with ventral (inner) lobe elongate, subtriangular, narrowly rounded apically; mesocoxal process developed as a convex eminence; post-coxal process short, spinose; post-tibiae with two spines laterally and usually seven apically, one situated slightly basad of the others; basal metatarsal segment about three times as long as wide at narrowest part (in dorsal view) with five teeth in an arcuate row and a further tooth slightly basad of these, no setose pad present ventrally. Tegmina widening distad, costal margin about 1.5 times as long as apical margin, basal cell longer than broad, Sc and R leaving cell at same point and lying subparallel as far as node, M with a single stem basally, Cu 1 single at base, transverse fold, at its most basal point in M, separated from basal cell by twice the length of the latter; process on ventral surface of tegmen between M and Cu at base (wing-tucking process) triangular, vertical, pointed at apex; common claval vein about as long as anterior claval vein.

Anal segment of male short, anal style surpassing apical margin. Aedeagus relatively short and stout, with a pair of processes dorsally at apex and a median keel below. Genital styles in side view with dorsal margin straight, not excavate, apical process spinose.

Anal segment of female small, narrow, usually rather laterally compressed, anal style surpassing apical margin of segment. Ovipositor with third valvulae rather tumid distally, toothed on upper half of apical margin and not, or very little, on dorsal margin. Teeth narrow, forming two rows in an exposed marginal band. Posterior margin of pregenital sternite devoid of a median process.

Type-species, *Ricanoptera syrinx* Fennah.

This genus differs from *Ricanoptera* in the shape and attitude of the wing tucking process (which lies almost horizontally in *Ricanoptera*, and is rounded distally), and of the mesocoxal process (which is acutely angulate in *Ricanoptera*) and in the absence of a setose pad on the sole of the basal metatarsal segment. From *Ricanoides*, to which it is more nearly allied, it differs in the structure of the male and female anal segment, and of the male genitalia.

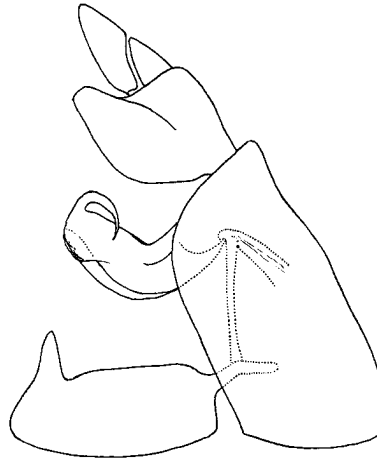


FIGURE 20. *Nesomimas syrinx*: male genitalia, right side.

Ricanoides was defined as having three branches of M emerging from the basal cell: this, however, is abnormal in the species concerned (*flabellum* Noualhier), and merely represents an extreme shortening of the common stalk: the number of veins of M commonly leaving the basal cell is one or two.

The gender of the generic name is masculine.

173. *Nesomimas syrinx* (Fennah), NEW COMBINATION (fig. 20).

Ricanoptera syrinx Fennah, 1956, *Ins. Micronesia* **6**(3): 210.

Frons broader at widest part than at apex (2.6:1), wider at base than at apex (2:1), disc smooth.

Anal segment of female with apical margin concave, apical angles acute. Third valvulae with about 13 teeth in each row, and indications of a rudimentary third row present exteriorly.

DISTRIBUTION: Western Caroline Is. (Yap).

YAP. YAP: Three males and four females, Kolonia, Giliman, June 1957, Sabrosky. RUMUNG: One male, June 1957, Sabrosky.

Genus **Orosanga** Fennah, new genus

Vertex rather more than three times as broad as long, anterior margin convex, subparallel to posterior margin; rostrum surpassing mesotrochanters by length of apical segment. Tegulae with ventral (inner) lobe rather narrowly triangular, acute at apex; mesocoxal process broadly triangular, apically acute; post-coxal process short, acute; post-tibae with two spines laterally, six apically, basal metatarsal segment about twice as long as broad at narrowest part, and distally with seven or eight teeth in a curved row, no setose pad present ventrally. Tegmina widening distad, costal margin about 1.5 times as long as apical margin, basal cell longer than broad. Sc and R emerging from basal cell in a short common stem,

then lying subparallel as far as node, M normally with a single stem basally, uncommonly with two, Cu 1 simple at base, transverse fold, at its most basal point in M, separated from basal cell by twice length of the latter; process on ventral surface of tegmen between M and Cu at base (wing-tucking process) subtriangular, oblique, apically subangulately rounded; common claval vein about as long as anterior claval vein.

Anal segment of male moderately long, apical margin narrow, anal style not nearly attaining apical margin. Aedeagus moderately long, with dorsal margin excavate sublaterally near middle; a pair of spinose processes dorsally at apex, followed distally by a pair of shorter processes or broad lobes; ventrally a pair of spinose processes arising on each side near apex. Genital styles moderately long, slightly incurved beyond middle, dorsal margin not excavate distally, apical process twisted near apex, directed dorsocephalad.

Anal segment of female rather small, elongate-ovate. Ovipositor with third valvulae not tumid distally, toothed on upper three-quarters of apical margin and distal half of dorsal margin. Posterior margin of pregenital sternite devoid of a median process. Teeth short, stout basally, forming three rows with about 24 teeth in each in an oblique marginal band. Posterior margin of pregenital sternite without a median process.

Type-species, *Orosanga xantho* n. sp.

This genus includes *Ricania episcopus* Walker and *R. japonica* Mel. It differs from *Ricania* in the relatively longer rostrum, in the transverse fold of the tegmen, at its most basal point, being separated from the basal cell by fully twice the length of the latter, and by the structure of the basal segment of the metatarsus.

The gender of the generic name is masculine.

173a. *Orosanga xantho* Fennah, n. sp. (fig. 21, a-f).

Vertex broader than long at lateral margin (3:1); frons broader than long in middle

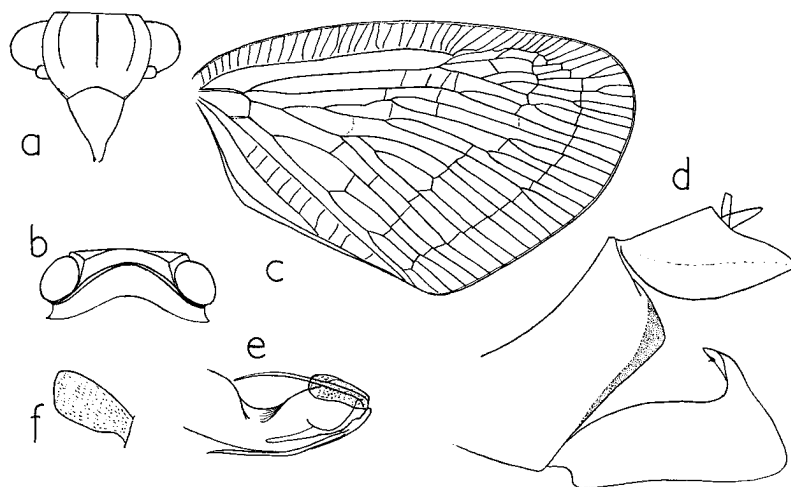


FIGURE 21. *Orosanga xantho*: a, frons and clypeus; b, vertex and pronotum; c, tegmen; d, pygofer, anal segment and genital style, left side; e, aedeagus, left side; f, one of pair of submembranous dorsoapical processes, dorsal view.

line (1.8:1), wider at widest part than at apex (2:1), wider at base than at apex (1.6:1), widest near level of ocelli disc tricarinate in basal two-thirds.

Light brownish yellow; frons, posterior half of pronotum and mesonotum, darker reddish brown. Tegmina milky yellowish or brownish hyaline, veins reddish brown, node (in cell Sc) unpigmented. Wings glassy, veins reddish-brown.

Pygofer with dorsolateral angles moderately produced caudad, obtusely angulate. Aedeagus with dorsolateral emargination broad, no narrow oblique channel laterally, the longer pair of dorsal processes subequal to ventral pair, slightly diverging distally; a posterior pair of dorsal processes broadly lobate, not much longer than broad, broadly rounded distally, granulate, directed cephalad and overlying base of longer dorsal processes. Genital styles in lateral view with dorsal margin shallowly convex, ventral margin feebly sinuate, apical process twisted distally and acutely rounded at tip.

Male: length 5.5 mm., tegmen, 8.7 mm.

Holotype, male (US 70991) Bull Beach, Sakai-ura, Chichi Jima, May 12–31, 1958, Snyder. Ani Jima, two males, Southwest Bay, May 1958, Snyder. Haha Jima, one male, Okimura, Apr.-May 1958, Snyder. Chichi Jima: One female, Omura, 'Camp Beach,' May, June, 1958, Snyder.

DISTRIBUTION: Bonin Is.

The most distinctive feature of this species is the coloration of the tegmina, on which the only element of color is that provided by the veins themselves and the outer margins. The dilute yellowish brown tinge in the tegmina is a very little darker in the costal area and the costal cell, but this is not evident at a glance. In the single female from Omura, the veins are concolorous (pallid) and the ground between them milky hyaline in two parallel bands, one from the node to near the union of the claval veins and the other between the two rows of transverse veinlets.

173b. *Orosanga triton* Fennah, n. sp. (fig. 22, a-g).

Vertex broader than long at lateral margin (3.4:1), frons broader than long in middle

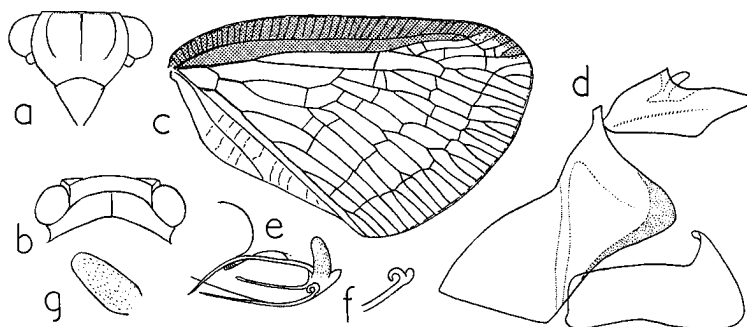


FIGURE 22. *Orosanga triton*: a, frons and clypeus; b, vertex and pronotum; c, tegmen; d, pygofer, anal segment and genital style, left side; e, aedeagus, left side; f, base of one of pair of ventrolateral spinose processes; g, one of pair of submembranous dorsoapical processes, dorsal view.

line (1.5:1), wider at widest part than at apex (2.3:1), wider at base than at apex (1.8:1), widest a little above level of ocelli, disc tricarinate in basal half.

Reddish brown; mesonotum, mesopleura, abdomen and genitalia, dark castaneous. Tegmina glassy, only slightly milky, costal area, costal cell, and anterior margin beyond node to apex, dark reddish brown; a suffusion between posterior claval vein and commissural margin more dilute to reddish brown; veins dark reddish brown. Wings glassy, veins dark reddish brown.

Pygofer with dorsolateral angles strongly produced caudad in an acutely triangular lobe rounded at its tip. Aedeagus with dorsal emargination not very broad, leading into an oblique channel on each side, the longer pair of dorsal processes as long as the ventral pair, or slightly longer, each curving laterad in distal two-thirds and evenly tapering to acuminate apex; posterior pair of dorsal processes membranous, broad at base, elongate-ovate, directed dorsad, rounded distally. Genital styles in lateral view with dorsal and ventral margins parallel, dorsal margin feebly convex, ventral margin feebly concave.

Male: length, 4.5 mm., tegmen, 7.2 mm. *Female*: length 5.5 mm., tegmen 7.6 mm.

Holotype, male (US 70992) Yoake Yama, Chichi Jima, Bonin Is. Apr. 21, 1958, Snyder. One male, Chichi Jima, Omura Camp Beach, May, June 1958, Snyder; one female, Ani Jima, Southwest Bay, May 1958, Snyder. One male, Haha Jima, Okimura, Apr., May 1958, Snyder.

DISTRIBUTION: Bonin Is.

This species is readily distinguishable by having glassy tegmina with a very dark band along the anterior margin. The aedeagus differs from that of the other species in the form of the posterior dorsal processes and the curvature of the dorsal process, and their length in comparison with that of the ventral processes.

173c. *Orosanga dido* Fennah, n. sp. (fig. 23, a-f).

Vertex broader than long at lateral margin (3.4:1), finely carinate medially, anterior

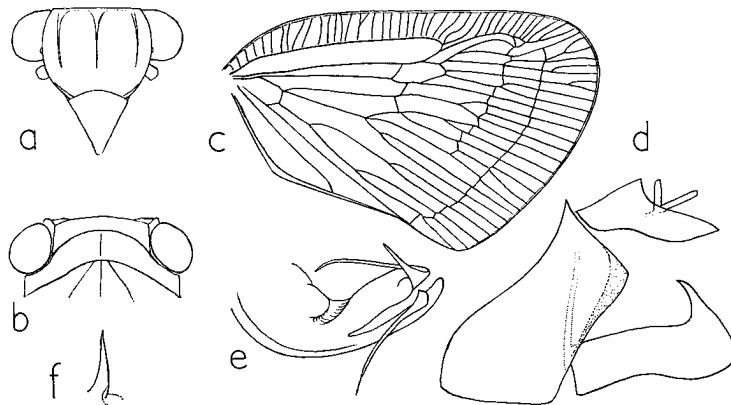


FIGURE 23. *Orosanga dido*: a, frons and clypeus; b, vertex and pronotum; c, tegmen; d, pygofer, anal segment and genital style, left side; e, aedeagus, left side; f, one of pair of submembranous dorsoapical processes, posterodorsal view.

margin in dorsal view obtusely angulately convex; frons broader than long in middle line (1.6:1), and broader at widest part than between lateral carinae at apex (2.3:1), wider at base than at apex (2:1), widest at level of ocelli.

Light reddish brown; frons and vertex apparently a little darker, posterior half of pronotum, and mesonotum, distinctly darker, castaneous. Tegmina rather dark reddish brown, a narrow diffuse band in corium between M and claval suture, and an even more indistinct band from R near node to apex of clavus, pearly grey, translucent; a narrow wedge-shaped spot in costal area at node, creamy white; a horizontal pear-shaped spot overlying veins of Sc distad of node, piceous or very dark brown, veins dark reddish brown. Wings hyaline, infuscate distally, veins dark brown.

Pygofer with dorsolateral angles moderately produced caudad, broadly rounded. Aedeagus with dorsal emargination broad, the longer pair of dorsal processes slightly shorter than the ventral pair, and abruptly curved mesad apically; posterior pair of dorsal processes narrowly triangular, broad at base, acuminate at apex. Genital styles in lateral view with dorsal and ventral margins parallel, almost straight, apical process twisted near apex, tapering abruptly to a minute point at apex.

Holotype, male (US 70993) 'Bull Beach,' Sakai-ura, Chichi Jima, May 12–31, 1958 Snyder. Paratypes, one male and one female, with same data; one female, Haha Jima, Okimura, Apr., May 1958, Snyder.

DISTRIBUTION: Bonin Is.

This species is distinguishable by its relatively large size and by the shape of the vertex and the frons. The angulate anterior margin of the former, and its relatively long disc contrast with the evenly convex margin and shorter disc found in other species in the Bonin Is. The lateral margins of the frons are more strongly convex, and more sharply incurved below the level of the antennae than in the other species.

173d. *Orosanga laaverna* Fennah, n. sp. (fig. 24, a-f).

Male: length, 6.0 mm., tegmen, 8.2 mm. *Female*: length, 7.0 mm., tegmen 10.0 mm.

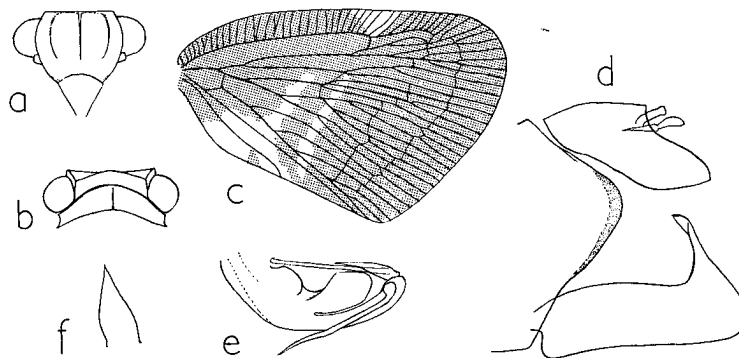


FIGURE 24. *Orosanga laaverna*: a, frons and clypeus; b, vertex and pronotum; c, tegmen; d, pygofer, anal segment and genital style, left side; e, aedeagus, left side; f, one of pair of submembranous dorsoapical processes, dorsal view.

Vertex broader than long at lateral margin (4:1), frons broader than long in middle line (1.5:1), broader at widest part than at apex (2.3:1), wider at base than at apex (1.6:1).

Light reddish brown; basal half of pronotum, and mesonotum dark reddish brown. Tegmina dark reddish brown, a subtriangular spot on costal margin at node and a diffuse band in corium between M and claval suture pallid, or sordid white, veins darker reddish brown than ground, but veinlets of costal area, and both rows of transverse veinlets, paler brown than ground.

Pygofer with dorsolateral angles distinctly produced caudad, subrectangularly rounded. Aedeagus with dorsal emargination broad, leading into a narrow oblique channel on each side, the longer pair of dorsal processes a little shorter than ventral pair, evenly curving laterad in their distal half and gradually tapering to acuminate apex; posterior pair of dorsal processes thin, almost spinose, directed dorsad. Genital styles with dorsal margin sinuate, ventral margin convex; apical process twisted near apex, acute at tip.

Male: length, 4.6 mm., tegmen, 6.9 mm.; *Female*: length, 5.5 mm., tegmen, 7.5 mm.

Holotype, male (US 70994), Southwest Bay, Ani Jima, Chichi Jima group, Bonin Is., May 17, 1958, Snyder. Paratypes, seven males and three females, with same data.

One female, Ototo Jima, Kammuri-Iwa, Southwest Bay, June 1958, Snyder and Mitchell is referred to this species, but not to the typical subspecies.

DISTRIBUTION: Bonin Is.

This species is superficially very similar to *O. dido*. It is, however, distinctly smaller, the ground color of the tegmina is more uniformly dark, and, in correlation with this difference, the diffusely pale region just basad of the inner line of transverse veinlets in *O. dido* is obliterated in the present species, whereas a sigmoidal band from the pale costal wedge to the hind margin just basad of the claval apex which is quite inconspicuous in *O. dido* is developed in *O. laverna* as a band as dark as the costal margin; the pear-shaped spot near the node, which is almost black in *O. dido*, is more ill-defined and less deeply pigmented in *O. laverna*. The two species differ markedly in the proportions of the head, and in the shape of the longer pair of dorsal processes of the aedeagus.

173e. *Orosanga laverna vicinalis* Fennah, n. subsp.

Vertex broader than long at lateral margin (4.2:1), frons broader than long in middle line (1.5:1), wider at widest part than at apex (2.2:1), wider at base than at apex (1.7:1), widest just above level of ocelli.

Coloration of body and tegmina as in typical subspecies.

Male: length, 5.0 mm., tegmen 7.0 mm. *Female*: length, 5.5 mm., tegmen, 7.6 mm.

Holotype of subspecies, male (US 70995), Camp Beach, Omura, Chichi Jima, May 5-June 9, 1958, Snyder. Paratype, one female, with same data.

DISTRIBUTION: Bonin Is.

This subspecies differs from the typical subspecies in the proportions of the head.