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Homoptera from the Caroline Islands¹

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Through Mr. E. C. Zimmerman, Bernice P. Bishop Museum sent me a small but exceedingly interesting collection of Homoptera made in the Caroline Islands by Z. Ono. The descriptions of the species in this report should be of help to students of the zoogeographic distribution of insects in the Pacific area. These insects—which are small or medium-sized and rather fragile and which have, for the most part, rather poor powers of locomotion—are good zoogeographic indices, hence reports from small collections from the Pacific area are often of relatively more importance than larger collections from other regions of the world.

FAMILY ARAEOPIDAE

Genus **Coronacella**, new genus

Head broad, nearly as broad as pronotum; crown quadrangular; lateral carinae strongly elevated; median carina forked at apex of head; intermediate carinae forming a small cell; frons elongate, narrow, lateral margin strongly elevated, median carina fine. Antennae short, terete, first segment longer than broad, about half as long as the second segment. Pronotum short and broad, intermediate carinae somewhat divergent. Mesonotum tricarinate. Hind basitarsi rather stout, about twice as long as the apical segments combined; calcars thin and foliaceous with a row of fine teeth on posterior margin, not as long as the basitarsi. Outer genital chamber very shallow; genital styles small.

Orthotype, *Coronacella bella*, new species.

This genus is close to the genus *Delphacodes* Fieber.

¹ Micronesian Expedition Publication 5.

1. *Coronacella bella*, new species (fig. 1, a-d).

This is a small species, blackish or blackish fuscous in color with lateral margins of face, posterior half of pronotum, and apex of mesonotum white.

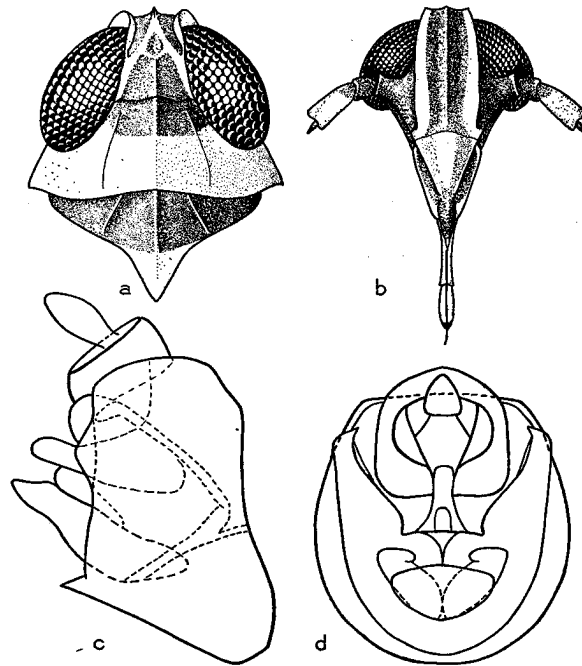


FIGURE 1.—*Coronacella bella*: a, head and thorax; b, face; c, lateral view of male genitalia; d, full view of male genitalia.

Head short and broad; vertex about one and one-half times as long as its greatest width; compound eyes large; frons elongate, narrow, nearly twice as long as its greatest width, slightly narrowed between eyes; lateral margins strongly elevated, broadly curved; median carina fine but distinct, postclypeal margin broader than dorsal margin; postclypeus short, triangular, about half as long as frons; lateral margins distinctly carinate, median carina broad. Antennae short, terete, first segment about one and one-half times as long as its greatest width, about half as long as the second segment. Pronotum short and broad, nearly three times as broad as its median length; posterior margin shallowly and broadly incised. Mesonotum elongate, slightly longer than pronotum, tricarinate. Tegmina brachypterous or macropterous; venation as characteristic of the family. Male genitalia with the pygofer elongate, narrow; anal segment short, terete; anal style elongate, sagittate; outer genital chamber shallow; genital styles small, obtuse at the apex with the inner angle roundly produced; connective elongate, L-shaped; aedeagus short, broad, obtuse at the apex.

General color black and fuscous, heavily marked with white or light ochraceous buff as follows: median carina and lateral margins of postclypeus,

lateral margins of frons, carinae of vertex, posterior half of pronotum, apex of mesonotum, lateral areas of thorax, dorsum of abdomen chiefly, except the basal areas of the segments, ventral lateral areas of abdomen, posterior tibiae and tarsi.

Length to apex of tegmina: macropterous male, 2.8 mm.; brachypterous male, 1.8-2.0 mm.; brachypterous female, 1.9-2.2 mm.

Holotype male, Truk Islands: Tarik Island, January 7, 1936.

Allotype female, Truk Islands: Dublon Island, near sea level, December 29, 1935.

Paratypes, Truk Islands: 1 male, 1 female, Tarik Island, January 7, 1936; 1 male, 1 female, Dublon Island, near sea level, December 29, 1935.

Genus *Euidellana*, new genus

This species does not apparently belong to any of the well-known genera. Head fairly broad; crown elongate, parallel-sided; frons elongate, slightly broader below; median carina furcate above middle. Antennae short, both segments terete. Pronotum short, intermediate carinae strongly divergent. Mesonotum large, tricarinate. Tegmina rather narrow; venation normal, cells mostly elongate and narrow. Calcar thin with numerous fine teeth on posterior margin. Genitalia relatively simple; genital styles simple; anal segment with a single pair of anal spines. Hind basitarsi more than twice as long as apical segments.

Orthotype, *Euidellana carolinensis*, new species.

1. *Euidellana carolinensis*, new species (fig. 2, a-c).

Head relatively broad, not as wide as pronotum, slightly wider than mesonotum; crown about one and one-half times as long as its greatest width, distinctly produced in front of compound eyes; carinae very distinct over apex of head, forks of the median frontal carina merging with the lateral carinae on the posterior half of the crown; frons elongate, narrow, slightly constricted between the eyes, and slightly broadened below; lateral margins strongly carinate; median carina forked just above the level of the compound eyes; postclypeus triangular, lateral margins strongly carinate, median carina indistinct. Antennae short, first segment about half as long as the second segment, second segment somewhat enlarged apically. Compound eyes large with a distinct ventral sinus. Pronotum short and broad, posterior margin distinctly incised; median and intermediate carinae strongly developed, the intermediate carinae curving laterad, parallel with posterior border of compound eyes. Mesonotum large, distinctly tricarinate.

Male genitalia with pygofer rather short and broad; genital opening elongate, narrow; diaphragm very broad; dorsal margin simple, genital styles when viewed posteriorly rather simple with the apical angles produced, their bases surrounded by a collar-like projection of the diaphragm; when viewed laterally rather broad; apex truncate; apical angles somewhat produced; connectives elongate, tubular; aedeagus elongate, slightly curved, when viewed laterad slender, when viewed ventrad rather broad; apex attenuate, decurved; anal segment small with a pair of median long anal spines; anal style when viewed ventrad somewhat triangular, rather broad and flat.

General color light ochraceous buff; compound eyes blackish fuscous; tegmina milky subhyaline, veins ochraceous buff.
Length to apex of tegmina: 3.6 mm.

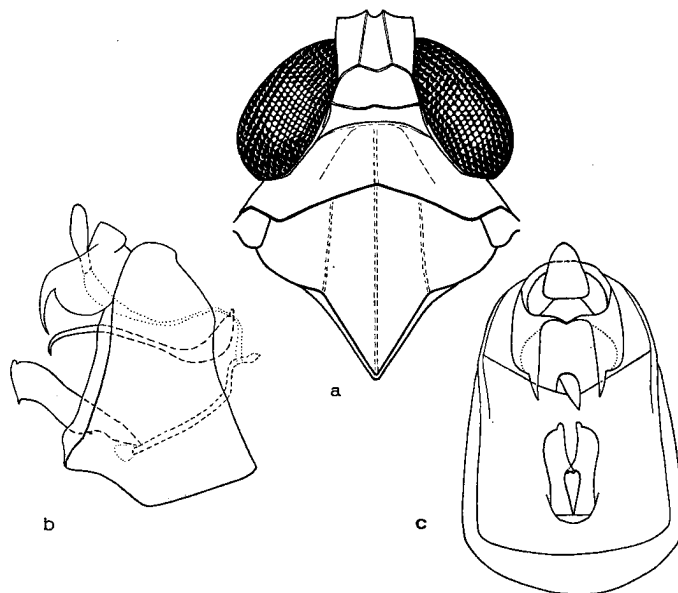


FIGURE 2.—*Euidellana carolinensis*: a, head and thorax; b, lateral view of male genitalia; c, full view of male genitalia.

Holotype male, allotype female, Ponape Island, March 14, 1936.
Paratypes: 8 males, 5 females, Ponape Island, March 14, 1936.

Genus *Ugyops* Guérin-Ménéville

Ugyops Guérin-Ménéville, Zoologie, Insectes, 477, 1834. Haplotype,
Ugyops percheronii Guérin-Ménéville.

This is a genus of the subfamily Asiracinae, with the calcar subulate or awl-like. *Ugyops* belongs to a group of genera in this subfamily which has elongate antennae with the first and second segments about equal and the mesonotum quinquecarinate; the median facial carina is most variable: sometimes single, sometimes forked at the middle of the face or below, and sometimes forked from the clypeal border. The genitalia of the various species are frequently quite different. I suspect that this genus represents a complex of genera, but it is impossible to distinguish the different forms without more material.

Thirty-nine species have been described from various parts of the world, chiefly from the Eastern Hemisphere. In the Western Hemisphere, there are only two known species, both from Puerto Rico. Species have been recorded from the Seychelles, eastward across the Malay Peninsula to Indo-China, northward to Japan, southward through the larger East Indies and New Guinea, south to Lord Howe Island, and eastward to Fiji and Samoa. They seem to be strangely absent from India, Ceylon, Australia, and the Hawaiian Islands. There is only one species of this interesting genus in the present collection.

1. **Ugyops kinbergi** Stål, Hemiptera, Kongl. Sven. Freg. Eugenies Resa, Zoologi 2(1):274, pl. 4, fig. 2, 2 a, b, 1859.—Metcalf, B. P. Bishop Mus., Bull. 189:107, fig. 2, a-d, 1946.

This species was described originally from Ponape in the Caroline Islands, from Java, and from Guam. The present collection contains an extensive series from the Truk Islands.

FAMILY DERBIDAE

Genus **Lamenia** Stål

Lamenia Stål, Kongl. Sven. Freg. Eugenies Resa, Zoologi 2(1):277, 1859. Haplotype, *Delphax caliginosa* Stål.

Head narrow, usually somewhat produced; crown flat; lateral margins distinctly pustulate, separated from the face by a distinct transverse carina; frons narrow, distinctly flaring below; lateral margin strongly elevated and pustulate; sub-antennal process conspicuous. Antennae small, second segment subglobose. Pronotum short and broad. Mesonotum large; carinae indistinct. Venation distinct, medius branching from radius near the basal cell; cubitus two branching from cubitus one on the basal third, both cubital veins continued to the marginal vein. Legs small and slender.

This very distinct genus of the tribe Cenchreini has a wide range in the Pacific area, extending eastward from Java and Borneo across New Guinea and the New Hebrides to Tahiti and northward through the Philippines and Formosa to Japan and throughout the Caroline Islands. Southward, it ranges to Queensland at least.

Lamenia onoensis, new species (fig. 3, a-c).

Crown distinctly produced, its greatest length about three-fourths of the width between the eyes; posterior margin covered by the projecting pronotum, broadly rounded; frons about one and one-half times as long as its greatest width; lateral margins strongly elevated, distinctly pustulate; clypeus nearly as long as the frons, about one and one-half times as long as its greatest width;

lateral margins distinctly elevate, median carina distinct. Pronotum very short and broad; posterior margin deeply incised, nearly parallel to the anterior margin; median carina distinct, intermediate carina fairly distinct; lateral margins distinctly carinate. Mesonotum large, slightly longer than broad. Venation of tegmina regular; claval vein and costal border distinctly pustulate.

Male genitalia with the pygofer short and broad; genital styles elongate, slender, apical area curved dorsad and produced into a slender spine-like process; aedeagus elongate, complex, nearly half again as long as the genital styles; apical third distinctly elbowed, provided with a pair of elongate lateral spines and a slender apical spine; anal segment elongate, shorter than the genital styles; apical area rounded and distinctly produced ventrad.

General color blackish or blackish fuscous; lateral margins of the crown and the face, the posterior margin of the pronotum, the antennae, the legs, the venter, and the lateral margins of the abdomen ochraceous yellow; anterior tibiae twice ringed with fuscous.

Length to apex of tegmina: 5.0 to 5.5 mm.

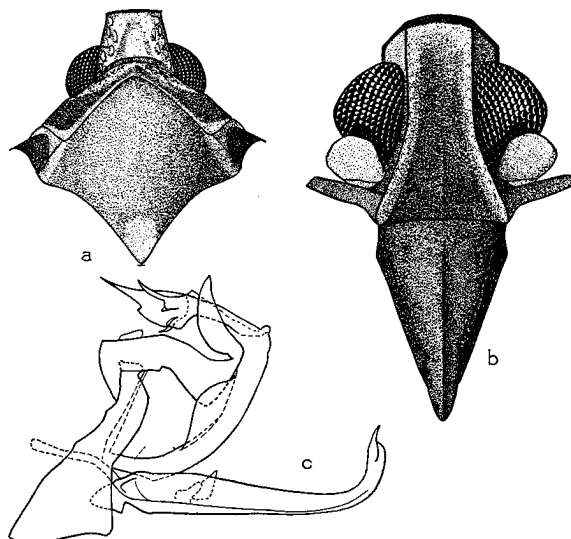


FIGURE 3.—*Lamenia onoensis*: a, head and thorax; b, face; c, lateral view of male genitalia.

Holotype male, Kusaie Island, January 24, 1936.

Allotype female, Palao [Palau] Islands, April 23, 1936.

Paratypes: 1 male, Kusaie Island, January 24, 1936; 1 female, Truk Islands, December 25, 1936.

This is one of the blackish fuscous species with the lateral margins of the crown, the transverse carina separating the crown from the face, and the lateral margins of the frons and antennae distinctly

paler; the costal margin is narrowly pale, widening into a distinct pale spot in the nodal area of the tegmina.

FAMILY RICANIIDAE

Genus *Armacia* Stål

Armacia Stål, Kongl. Sven. Vet.-Akad., Handl. 3(6):70, 1862. Orthotype *Ricania clara* Stål.

Head is large and the crown is almost completely concealed by the pronotum and distinctly separated from the frons by a transverse carina; frons broad and short, distinctly broader than the median length, lateral margins nearly straight to lower margin of compound eyes and then suddenly constricted to the narrower postclypeus, median carina distinct, about half the length of frons, intermediate carina short; postclypeus narrower than frons, shallowly inserted. Pronotum short and broad. Mesonotum large. Tegmina large, subcosta narrowly separated from the costal border with several indistinct cross veins before the nodal cell; radius branched near the basal cell, radial sector with several branches before the apex; media with three branches arising close to the basal cell; cubitus one with three branches just before the apical margin; several very distinct cross veins connecting the main veins and most of their branches. Wings small, venation simple; radius with two branches, medius unbranched, and cubitus one with three branches before the apical margin. Abdomen short, not as long as head and thorax combined.

This genus has a wide distribution in the Pacific area, ranging from the Celebes through the intermediate islands across New Guinea to the Solomon Islands, south to New South Wales, and north to the Caroline Islands. So as far as the records show, no species are recorded from the Sunda Islands, Borneo, the Philippines, or from the east in Polynesia.

1. *Armacia clara* Stål, Hemiptera, Kongl. Sven. Freg. Eugenies Resa 2(1):281, 1859.—Melichar, Nat. Hofmus. Wien, Ann. 13:287, 1898. (See figure 4.)

This species belongs to that group of the genus *Armacia* which has radius one contiguous to subcosta to the nodal cell. The general color is ochraceous buff with the face clouded with fuscous. The pronotum light greenish yellow, fading to creamy. Tegmina and wings transparent. In heavily marked specimens, costal and apical margins are broadly blackish fuscous with most of the cross veins clouded with fuscous. In the lighter colored specimens the fuscous clouding on the tegmina may be greatly reduced. In the variety described below the tegmina are without any fuscous border whatsoever.

Head including compound eyes slightly wider than pronotum; crown broad and short with a straight distinct transverse carina anteriorly, the posterior border broadly incised; frons broader than long, the lateral margins distinctly curved, strongly carinate, median and intermediate carinae indistinct; post-

clypeus triangular, about as broad as long; anteclypeus narrow, elongate, about twice as long as broad. Pronotum short and broad, anterior margin distinctly projecting, the anterior lateral margins incised behind the compound eyes; posterior margin broadly incised; median carina distinct, two impressed points either side, rather indistinct. Mesonotum large, longer than broad. Venation of tegmina somewhat irregular. Subapical cross veins making a fairly distinct and continuous row. Legs fairly stout; hind tibia about twice as long as hind femora with a distinct spine at the base of the apical third.

Male genitalia when viewed laterad with the pygofer short and high, quadrangular; genital styles elongate, nearly twice as long as broad; the apical dorsal angle distinctly produced; aedeagus short, thick, apex with four irregular lobes and an elongate decurved spine; on basal third is an elongate, slender, straight spine; anal style bilobed; when viewed ventrad the pygofer slightly broader than long, with the posterior border rather deeply and quadrately incised; the genital styles elongate, nearly four times as long as broad, divergent; the outer margin broadly curved to the obtuse apex and the inner margin broadly sinuate.

Length to apex of abdomen: 5.0-6.0 mm.; wing expanse 16.0 mm.

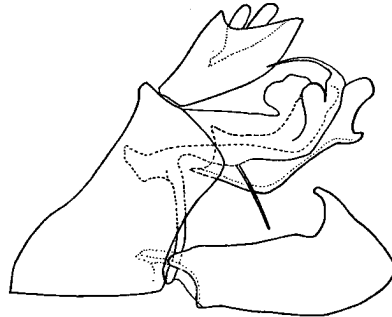


FIGURE 4.—*Armacia clara*, lateral view of male genitalia.

This species was described originally from Ponape Island in the Carolines. There is an extensive series in the present collection, not only from Ponape Island but from the Truk Islands. Since there is no modern description and no illustration of the male genitalia of this species, it is described and illustrated fully here.

2. *Armacia clara* variety *pallescens*, new variety (fig. 5, a).

There are, so far as I can discover, absolutely no structural characteristics which would distinguish this variety from *A. clara*. The general color above and below is warm buff, except for the compound eyes, which are tawny. In a few specimens the frons, crown, pronotum, and mesonotum are pale yellowish green. The tegmina are transparent, sometimes the costal and apical borders faintly tinged with warm buff or pale yellowish green.

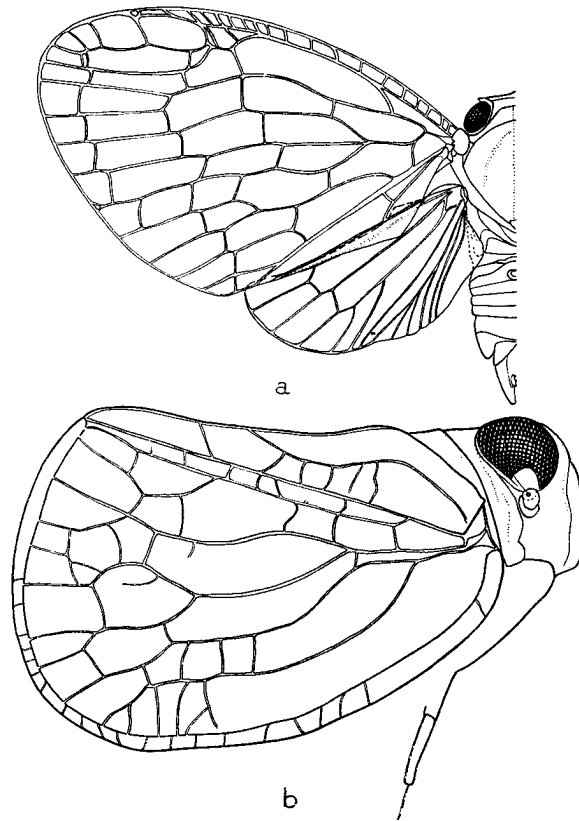


FIGURE 5.— a, *Armacia clara* variety *pallescens*, dorsal view; b, *Issarius carolinensis*, lateral view.

FAMILY ISSIDAE

Genus *Issarius*, new genus

Head, including compound eyes, not quite as broad as the pronotum; compound eyes large; crown broader than long, lateral margins strongly elevated and overlapping compound eyes; frons elongate, narrow, somewhat narrowed between compound eyes, dorsal margin strongly incised with a broad, V-shaped depression just ventrad, narrower than the clypeus on the ventral border, with lateral margin strongly elevated, a very distinct median carina and a pair of curved intermediate carinae; clypeus ecarinate. Tegmina elongate, nearly twice as long as broad; costal margin broadly curved; apical margin somewhat obtuse with costal angle broadly rounded, the claval angle somewhat acute; venation rather simple and irregular, a distinct costal margin with numerous indistinct

cross veins; apical margin with a submarginal vein close to and parallel to apical margin with numerous rather distinct cross veins; clavus rather irregular with a distinct hemispherical callosity near claval suture; commissural margin strongly elevated on basal third.

Orthotype, *Issarius carolinensis*, new species.

This genus belongs to that group of genera of the subfamily Issinae which have the head, including the compound eyes, slightly narrower than the pronotum, with the frons longer than broad, with median and intermediate carinae, the crown broader than its median length.

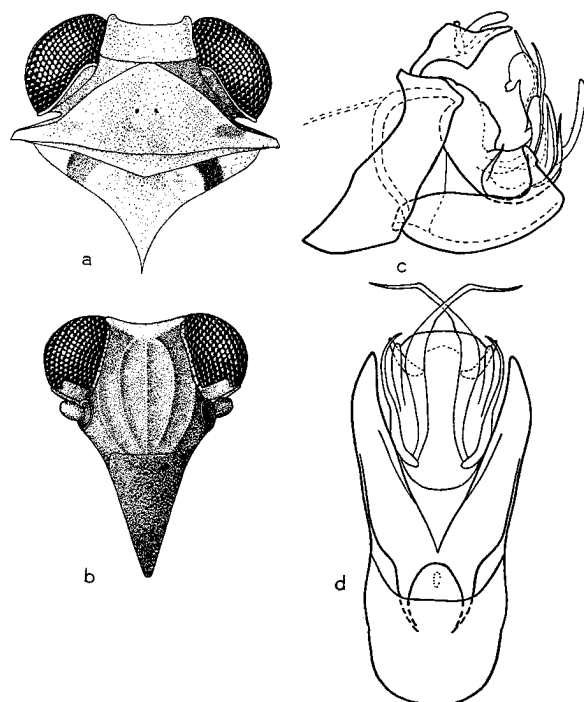


FIGURE 6.—*Issarius carolinensis*: a, head and thorax; b, face; c, lateral view of male genitalia; d, ventral view of male genitalia.

1. *Issarius carolinensis*, new species (figs. 5, *b*; 6, *a-d*).

Head, including compound eyes, narrower than pronotum; compound eyes large; crown about one and one-half times as broad as its median length, anterior and posterior margins nearly parallel, lateral margins nearly straight; frons nearly twice as long as its greatest width, distinctly narrowed between compound eyes, dorsal margin distinctly incised, with a V-shaped impression just

below dorsal border, lateral margins distinctly carinate, intermediate carinae fairly distinct, median carina strongly produced; postclypeus fairly large, ecarinate, very finely but distinctly transversely rugulose. Pronotum more than twice as broad as long; disk of pronotum distinctly triangular with a faint median carina and two impressed points just cephalad of the middle. Mesonotum broadly triangular, more than twice as broad as the median length with distinct submarginal carinae on anterior border and two distinctly impressed points. Tegmina longer than broad with the costal margin broadly curved, apical margin truncate, apical angle broadly rounded, claval angle fairly acute; with a distinct subcostal area crossed by numerous cross veins and a distinct submarginal apical vein; venation distinct and fairly regular; subcostal vein parallel to costal vein; radius with one branch; media width with two distinct branches basad, each branch branched just before the apex where the venation becomes somewhat irregular due to irregular cross veins; cubitus one distinctly branched before the apex; first claval vein distinctly sinuate, united with second claval vein just beyond middle, second claval vein close to and parallel to commissural margin, claval angle distinctly produced.

Male genitalia with pygofer short, terete; when viewed ventrad, short and broad, about twice as broad as the median length; genital styles elongate, lateral margins broadly curved to rounded apices, the median margins nearly straight; when viewed laterad, genital styles rather broad at base, somewhat incurved; apical fourth bent dorsad with caudal margin with a minute tooth; aedeagus complex, with three pairs of spine-like processes; the basal pair with recurved acutely pointed apices; basad there is a rather large obtuse lobe, and beyond this a small, triangular tooth; near the base there is an elongate, somewhat capitate lobe and at the apex a short acute tooth; anal segment with a distinct ventral lobe.

General color of body, except compound eyes and postclypeus, tawny; compound eyes and clypeus blackish fuscous; tegmina grayish ochraceous.

Length to apex of tegmina: 5.0 mm.

Holotype male, Truk Islands, Tarik Island, January 7, 1936.

Paratypes, 2 males, Kusaie Island, January 24, 1936.

FAMILY CERCOPIDAE

Genus *Lallemandana* China and Myers

Lallemandana China and Myers, Ann. Mag. Nat. Hist. X, 14: 466, 1934. Orthotype, *Cicada fenestrata* Fabricius.

Lallemandia China, B. P. Bishop Mus., Bull. 113: 39, 1933. Orthotype, *Cicada fenestrata* Fabricius.

This genus was described originally as follows:

Head as wide as pronotum, angularly rounded anteriorly, slightly shorter than wide between the eyes; ocelli about as far from one another as from eyes; eyes more transverse than in *Clovia*; vertex flattened; frons moderately convex, smooth and shining; clypeus not carinate medianly. Disk of pronotum moderately convex, distinctly more so than in *Clovia*, the surface moderately

strongly rugosely striate; lateral margins relatively longer than in *Clovia*. Tegmina apically rounded, not subacute as in *Clovia*, five apical cells instead of four; branching of outer sector invisible, making only one complete subapical cell instead of two as in *Clovia*, although a transverse fold of the surface tends to delimit two further subapical cells. Surface of tegmen shining, but much less finely punctate than in *Clovia*, the pubescence also coarser and more sparse. Venation of hind wings as in *Clovia*. Hind tibiae with two spurs. Male genitalia of different type; parameres not bifurcate apically, aedeagus directed anteriorly instead of vertically, its apex simple instead of complex. This genus resembles the Fijian *Nesaphrestes* Kirkaldy in general appearance, but differs in the noncarinate clypeus. Apart from the characters mentioned above, the species of this genus show a definite color pattern which is very distinct from that typical of true *Clovia* species which show longitudinal stripes on vertex and pronotum and subarcuate pale stripes on the tegmina.

This genus, comprising about 26 species and varieties, is confined to the smaller islands of the Pacific area. The exact, specific, sub-specific, and varietal limitations in this genus and their geographic distribution should be studied more thoroughly, especially with regard to the many small islands in this area.

The present small collection contains two species which I cannot correlate with previously described species. Unfortunately, the male genitalia have not as yet been described for all species.

1. *Lallemandana carolinensis*, new species (fig. 7, *a-c*).

Head, including compound eyes, broader than pronotum; crown broad, about one and two-thirds times as broad as its median length; posterior border broadly curved; anterior border broadly parabolic, finely but sharply carinate, the whole surface finely punctate; ocelli about as far from each other as from compound eyes; coronoclypeus nearly quadrate, about one and one-half times as broad as its median length; posterior border straight, carinate; whole surface finely punctate; whole face rather smooth and flat; antennal pockets rather deep; lateral striae of the facioclypeus barely perceptible; juga elongate, about twice as long as broad. Pronotum broad and flat, about twice as broad as its median length; anterior margin broadly curved; anterior lateral margins short, only about a fourth as long as posterior lateral margins; posterior margin triangularly incised; whole surface transversely rugulose, with short spines. Mesonotum flat, slightly longer than pronotum, whole surface finely punctulate, with short, hairlike spines. Tegmina with whole surface finely punctulate and with short, hairlike spines; venation regular. Pygofer, when viewed ventrad, elongate, narrow, nearly twice as long as its greatest width, slightly narrowed on the apical third and with the posterior border parabolically produced; when viewed laterad, dorsal margin short, posterior lateral margin with a quadrate tooth; genital styles rather broad; apex truncate with apical angles triangularly produced; aedeagus tubular, elongate with a pair of apical processes which curve broadly enclosing a nearly circular area; anal segment and anal style elongate, the two together nearly as long as the pygofer. Female genitalia with the last ventral segment about as long as the penultimate, nearly four

times as broad as its median length; posterior border broadly incised with the median third slightly triangularly produced.

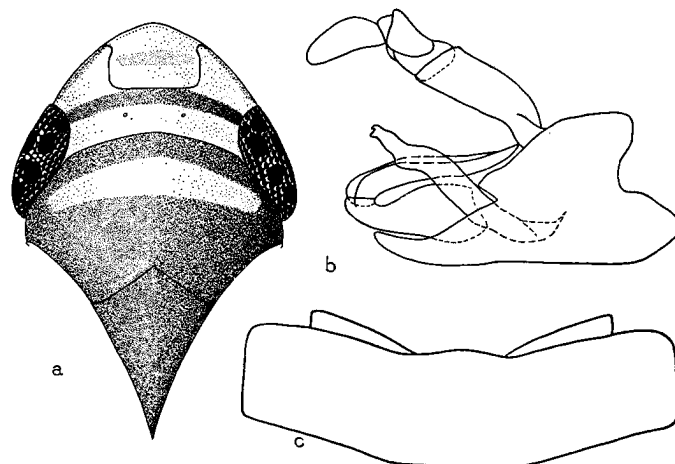


FIGURE 7.—*Lallemandana carolinensis*: a, head and thorax; b, lateral view of male genitalia; c, last ventral segment of female.

General color of crown ochraceous yellow; anterior margin narrowly blackish fuscous; coronoclypeus crossed with a broad faint fuscous fascia. There is a broad fuscous fascia extending from the compound eyes just back of the posterior border of the coronoclypeus and in front of the ocelli. Anterior border of pronotum fuscous, bordered by a transverse pale ochraceous yellow fascia which does not reach the lateral margins; posterior half of pronotum blackish fuscous. Mesonotum entirely blackish fuscous. Tegmina with corium blackish fuscous; the narrow margin of the costa pale ochraceous yellow; this narrow margin broadens to a large nodal spot which covers about half of corium; clavus chiefly brownish fuscous. Beneath the face is chiefly blackish with a bright yellow vitta extending from the face across the pro- and mesopleura. Legs and central area of thorax and abdomen chiefly brownish testaceous; fore femora fuscous; lateral margins of abdomen blackish.

Length to apex of tegmina: 6.5-7.0 mm.

Holotype male, allotype female, and paratype male, Palao [Palau] Islands, Babelthuap Island, Melokeiok [Melekeiok], April 7, 1936.

This species bears a superficial resemblance to Stål's short description of *phalerata* (Kongl. Sven. Freg. Eugenies Resa, Zoologi 2(1): 287, 1859), which has been recorded from the Caroline Islands, the Marianas Islands, Java, and the Philippines; but unfortunately, there are no descriptions or illustrations of the genitalia. Since, however, the tegmina of *phalerata* are described as heavily marked with paler, I describe the specimens included in this collection as a new species.

2. *Lallemandana zimmermani*, new species (fig. 8, a-c).

Crown relatively long, about one and one-half times as broad as the median length; whole surface finely rugulose; posterior margin broadly curved; anterior margin parabolic; coronoclypeus distinctly produced, broader than long; ocelli rather close to the posterior border, much nearer to each other than to the compound eyes; facioclypeus rather broad, distinctly impressed at the apex; lateral striae fairly distinct; juga elongate, narrow, more than twice as long as their greatest width. Pronotum broad and flat; rather coarsely rugulose; about twice as broad as median length. Mesonotum shorter than pronotum, about as broad as long.

Male genitalia with pygofer distinctly but narrowly incised ventrad, the pygofer almost as long as the genital styles; genital styles rather slender; apices truncate and quadrately expanded internally; aedeagus shorter than pygofer, obtuse at the apex with a pair of elongate curved spines near the apex; anal segment short, quadrate.

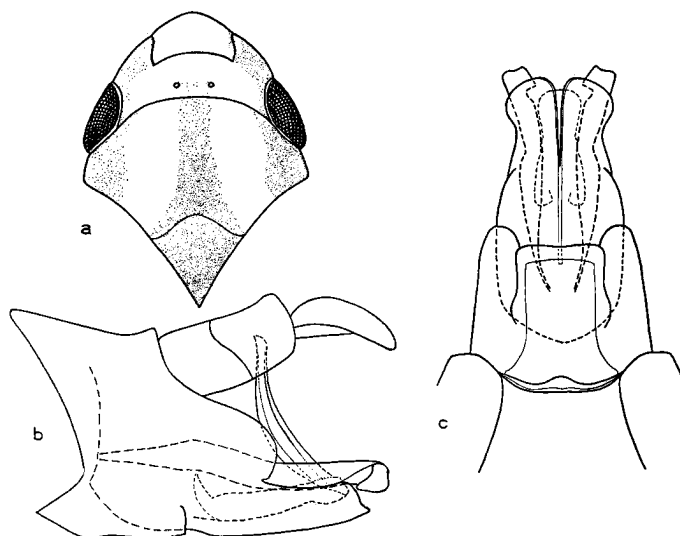


FIGURE 8.—*Lallemandana zimmermani*: a, head and thorax; b, lateral view of male genitalia; c, ventral view of male genitalia.

General color ochraceous tawny with a median vitta of russet brown from the anterior margin of the pronotum expanding posteriorly and covering the mesonotum and fading out toward the apex of the clavus; a somewhat darker vitta starts at the apex of the crown and runs across the compound eyes, the lateral margins of the pronotum and the basal area of the clavus and corium and the median area of the apical part of the corium to the apex of the tegmina. Beneath this there is a yellowish ochraceous vitta which extends across the face, the sides of the head beneath the compound eyes and the lateral areas of the pro- and mesonotum to near the coxa of the hind leg. Below this the general color of the face and anterior and intermediate coxae is tawny. Legs chiefly

ochraceous tawny with the apices of the spines and the tarsi blackish or blackish fuscous.

Length to apex of tegmina: 5.5-5.7 mm.

Holotype male, Truk Islands, January 7, 1936.

Paratypes, 4 males, Ponape Island, March 14, 1936.

This species bears a superficial resemblance to *L. mareana* Lallemand (Mus. Hist. Nat. Paris II, Bull. 14:430, 1942) but differs apparently in essential details.

It is named in honor of E. C. Zimmerman, Entomologist at Bishop Museum.

FAMILY COELIIDAE

Genus *Tharra* Stål

Tharra Kirkaldy, Haw. Sugar Plant. Assoc. Expt. Sta., Ent. Bull. 1 (9): 324, 1906. Haplotype, *Tharra labena* Kirkaldy.

Head, including compound eyes, narrower than pronotum; crown longer than its greatest width; anterior margin distinctly projecting in front of compound eyes, broadly rounded; ocelli near anterior margin; postclypeus narrow on the clypeal suture, widened but distinctly incised at level of antennae; broadened dorsad; anteclypeus elongate, broadened on ventral border; tempora elongate, narrow, reaching below middle of compound eyes; antennae inserted above lower interior angle of compound eyes; juga elongate, narrow; genae rather broad and flat. Pronotum broad and short. Mesonotum large. Tegmina elongate, narrow, with a distinct but narrow appendix; five apical and three subapical cells. Wings with a distinct submarginal vein and four apical cells. Legs elongate slender, the hind tibiae about twice as long as hind femora, with distinct rows of stout spines on anterior and posterior outer margins and a row of hairlike spines on inner anterior margin.

This genus was described originally to contain a single species from Queensland. In 1907 Kirkaldy (Haw. Sugar Plant. Assoc. Expt. Sta., Ent. Bull. 3:75) added four new species from Viti Levu; and in 1915 Baker (Philippine Jour. Sci. 10:58) added another species from Luzon. As pointed out by Baker, the characters of the venation on which this genus was originally described are not correct. Based on other characters, however, this genus seems to be a valid one; and with the addition of the new species described below it would seem that the genus must have a widespread distribution in the eastern Pacific islands.

Tharra flavomaculata, new species (fig. 9, *a-d*).

This species may be recognized by its general ochraceous buff color dorsad; more or less marked with fuscous on the crown, thorax, and tegmina, with the tegmina with several spots of bright, golden yellow.

Crown distinctly longer than broad, distinctly broader on anterior margin than on posterior margin, broadly rounding into face; median line and lateral margins finely carinate, distinctly impressed either side of the median carina; ocelli on anterior margin much closer to compound eyes than to each other; dorsal part above antennae distinctly widened; anteclypeus longer than its greatest width, distinctly broader on ventral margin than on dorsal margin; juga nearly twice as long as broad, the outer margin distinctly curved; tempora narrow, elongate, reaching below middle of compound eyes; genae rather broad and flat. Pronotum more than twice as broad as long, the anterior margin distinctly curved; anterior lateral margins and posterior lateral margins about equal in length; posterior margin nearly straight. Mesonotum about as broad as long. Female last ventral segment more than three times as long as the penultimate, distinctly and somewhat roundly produced beyond posterior lateral angles.

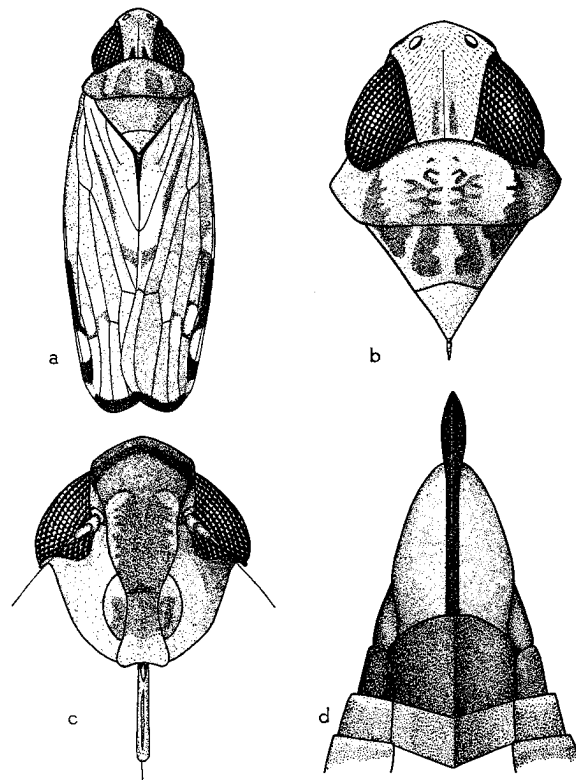


FIGURE 9.—*Tharra flavomaculata*: a, dorsal view; b, head and thorax; c, face; d, female genitalia.

General color above ochraceous buff. Compound eyes blackish fuscous, the crown with a pair of elongate dashes on posterior border; a distinct blackish fascia on dorsal margin of postclypeus; postclypeus and anteclypeus clouded

with fuscous. Pronotum with two pairs of vittae, the median pair broader. Mesonotum with the lateral angles and a pair of median vittae blackish fuscous. Posterior tibia tipped with blackish fuscous; claws and tips of intermediate and posterior tarsi blackish. Tegmina with the venation blackish fuscous and most of the apical area clouded with blackish fuscous; there is a large golden yellow elongate oval spot covering posterior half of clavus; two pairs of oval spots of same color on costal margin and three large oval spots of same color in apical cells. Wings translucent, fuscous. Abdomen above blackish fuscous, below chiefly ochraceous buff.

Length to apex of tegmina: 5.0 mm.

Holotype female, Truk Islands, Dublon Island, December 23, 1935.

Paratype female, Truk Islands, Tarik Island, January 7, 1936.

Tharra rubrovittata, new species (fig. 10, a-c).

In general structure this species resembles *flavomaculata* but the tegmina are vittate with rufous orange and the last ventral segment is deeply excavated, not parabolically produced.

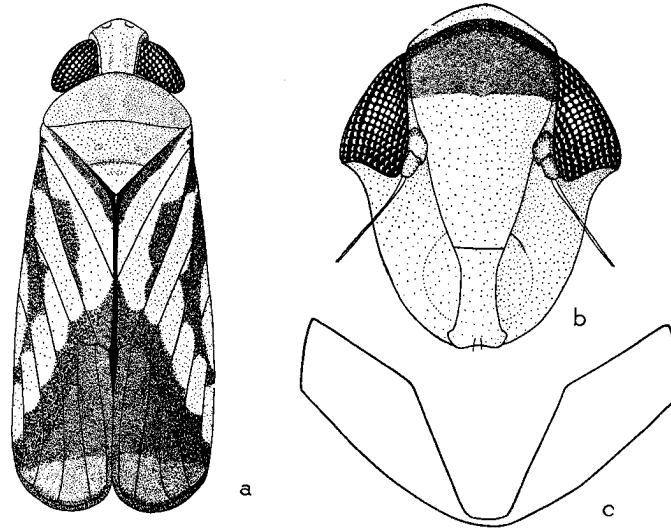


FIGURE 10.—*Tharra rubrovittata*: a, dorsal view; b, face; c, last ventral segment of female.

Head, including compound eyes, narrower than pronotum; crown nearly twice as long as its basal width, distinctly flaring toward the apex; ocelli large; face elongate. Pronotum short and broad, broadly curving from the posterior lateral angles; posterior margin nearly straight. Scutellum longer than pronotum. Tegmina coriaceous, the apical area beyond apex of clavus translucent, clouded with blackish fuscous. Female last ventral segment short and broad with a broad V-shaped notch on the posterior border which extends almost to base of segment.

General color of head and thorax above and below, including the legs and abdomen, ochraceous buff; compound eyes black; a narrow blackish vitta on the crown either side of the median carina; face with the basal area beyond ocelli transversely vittate with blackish. Pronotum irregularly marked with blackish fuscous. Mesonotum with a pair of blackish dots either side of the middle. Tegmina chiefly rufous orange on the coriaceous basal area; an indistinct vitta on the basal margin of clavus and along claval suture; a fairly distinct and regular vitta extending from base of clavus curving inward and covering most of medial cell and then curving broadly to the costal margin at the base of the subapical cells, blackish fuscous; apical area translucent with a broad transverse blackish fuscous fascia from the apex of clavus to costal border, and a narrow fuscous fascia at the apex of tegmina. Claws of tarsi black.

Length to apex of tegmina: 5.0 mm.

Holotype female, Palau Islands, Babelthuap Island, Melekeiok, April 7, 1936.