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Psyllidae from Rapa, the Caroline, Society,  
and Austral Islands (Homoptera)

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Through the courtesy of E. C. Zimmerman of Bernice P. Bishop Museum, I have studied a small collection of psyllids from various islands of the Pacific. With two exceptions, they represent species heretofore unknown, and two of the forms are generically distinct. The two previously described species apparently have a very wide distribution throughout the Pacific area, as they have been more generally recorded from this region than any others. The wealth of new species in this collection is not surprising when it is noted that most of the material is from the more outlying islands. All holotypes are in Bishop Museum.

Three subfamilies are represented.

SUBFAMILY CARSIDARINAE

**Mesohomotoma hibisci** (Froggatt).

*Tyora hibisci* Froggatt, Linn. Soc. New South Wales, Proc. 26 (2) : 287-288, 1901.

*Udamostigma hibisci* Enderlein, Wissensch. Ergeb. Schw. Zool. Exped. nach dem Kilimandjaro, 1905-1906, Hemiptera (Psyllidae) : 138 [*fide* Crawford, 1925], 1910.

*Mesohomotoma hibisci* Crawford, Haw. Ent. Soc., Proc. 6 : 32, 1925. Klyver, B. P. Bishop Mus., Bull. 113 : 125-127, 1932.<sup>1</sup>

Society Islands: Raiatea, adults only, Wilder, Moore, Feb. 1, 1925; Tetaro Islet, alt. 3 ft., swept from grass and low herbage, Oct. 4, 1934, Zimmerman; Tahiti, many adults and nymphs from various

<sup>1</sup> 1932 is the date of the separate, 1935 the date of the Bulletin.

locations, 1.5 miles northeast of Papeete, alt. 25 ft., March 1, 1934; Arihiri, Pare, March 5, 1934; Tiupi Bay, Papeari, March 21, 1934, terminal shoot of *Hibiscus tiliaceus*, Zimmerman; Moorca, Tehua Point, adults, alt. 10 ft., Sept. 24, 1934, swept from grasses and low herbage, Zimmerman.

Austral Islands: Raiavavae: Raiurua, alt. 5 ft., Aug. 5, 1934, swept from grasses and low herbage; near Anatonu, alt. 5 ft., Aug. 12, 1934, swept from grasses and low herbage; south slope Pic Rouge, alt. 200-400 ft., Aug. 5, 1934, nymphs and adults, *Hibiscus tiliaceus*, Zimmerman; Tubuai, alt. 10 ft., July 1934, swept from grasses and low herbage, adults, Zimmerman.

Rapa Island: one fourth mile east of Area, nymphs and adults, alt. 10 ft., 50 ft., July 1, 1934, *Hibiscus tiliaceus*, Zimmerman.

This species is common and widely distributed throughout the Pacific area, feeding upon *Hibiscus*. It has been completely redescribed and figured by Klyver (B. P. Bishop Mus., Bull. 113: 125-127, 1932). In the material at hand it is represented by numerous specimens from various islands.

#### SUBFAMILY TRIOZINAE

#### *Triozia bimaculata*, new species (fig. 1, *d, e*; fig. 2, *a*).

Length to tip of folded wings 2.75 mm.

*Color*: General color of body dark brown, to black. Genal processes, coxae, tibiae, and parts of venter light brown. Lateral portions of prescutum bright yellow. Wings hyaline except anal angle of forewings dark.

*Structure*: Head, dorsum of thorax and abdomen with long sparse pubescence. Head large, almost as wide as thorax. Vertex deeply impressed discally, impressions extending nearly to anterior margin as sharp sulci; median suture very prominent; anterior margin bulging over median ocellus. Genal processes divergent, blunt, slightly over one half as long as vertex. Antennae twice as long as width of head, ten segmented, two apical segments flattened and enlarged. Thorax well arched. Pronotum narrow, below plane of vertex. Prescutum very narrow, strongly arched. Forewings two and one half times as long as wide, bluntly angulate; three marginal radular areas, one in each of marginal cells and one between; marginal cells equal in size;  $R_s$  evenly curved to costa, extending slightly farther than Cu. Hind tibiae with prominent serrate carinae basally, one outer and three inner small apical spines. Posterior metacoxal spurs large.

*Genitalia*: Male proctiger short, scarcely longer than forceps, produced caudad midway as a broadly rounded lobe. Forceps small, in lateral view broad, tapered apically to acute black tips, slightly bent caudad, in caudal view narrow basally, enlarged and very broad to near apices then narrowed to acute tips; caudo-medial margins with a fringe of short setae. Female genital segment as long as rest of abdomen, tapered, acute, dorsal valve straight, longer than ventral.

Society Islands: Tahiti, Mt. Aorai Trail, alt. 5,500-6,300 ft., Sept. 15, 1934, collected on dead leaves of *Freycinetia*, holotype male, allotype female, Zimmerman.

Two additional females preserved in alcohol from same locality, alt. 4,500-5,500 ft., Sept. 15, 1934, from a *Weinmannia* stump are apparently this species, but the coloration is not typical. Holotype and paratypes are in Bishop Museum, and allotype is in author's collection.

***Trioza bimaculata* var. *aura*, new variety.**

Similar to typical form, except in color and a few minor structural details. The vertex is much less deeply impressed, the antennae are proportionately a little shorter. Color a uniform golden orange, eyes darker, yellow spots visible but not prominent on prescutum.

Society Islands: Huahine, valley west of Mt. Turi, alt. 700-800 ft., Sept. 30, 1934, one female, Zimmerman.

This single specimen taken on another island of the Society group may represent a distinct but closely related species, but it seems to be merely a color variant. It is not a teneral specimen; at least none of the body parts exhibit any collapse.

***Trioza zimmermani*, new species (fig. 1, *f*, *g*; fig. 2, *b*).**

Length to tip of folded wings 3.5 mm.

*Color*: General color chocolate brown. Indistinct stripes dorsally. Parts of venter, legs, genitalia lighter. Wings hyaline, slightly embrowned, dark in anal angle.

*Structure*: Head narrower than thorax. Head and thorax with long sparse pubescence. Eyes small. Vertex with prominent, round discal impressions, bulging anteriorly. Genal processes blunt, scarcely divergent, two thirds as long as vertex. Antennae slender, twice as long as width of head. Thorax moderately arched. Pronotum long, depressed below plane of vertex. Hind tibiae with large serrate basal carina, one outer and three inner apical spines. Metacoxal spurs small, produced platelike anteriorly. Forewings two and one half times as long as wide, acutely angled;  $R_1$  short, arched to costa; marginal cells small, cubital larger than medial; 3 radular areas prominent. Hind wings slender, elongate, punctate or spinose. Abdomen with sparse silky pubescence.

*Genitalia*: Male genitalia small, pubescent. Proctiger twice as long as forceps, broad, very slightly produced on caudal margin. Forceps in lateral view, broad basally, tapered to acute black apices, curved caudad apically; in caudal view broad, strongly arched to acute black apices. Female genital segment about one half as long as rest of abdomen, stout, pubescent; dorsal valve straight, narrow dorso-ventrally, blunt; ventral valve nearly as long as dorsal, thick dorso-ventrally, ventral margin concave, then sharply turned dorsad to acute apex, dorsal margin rounded downward to apex.

Austral Islands: Raivavae, Mt. Hiro (southwest slope), August 10, 1934, alt. 1,000-1,300 feet, on *Metrosideros*, 2 males, 1 female,

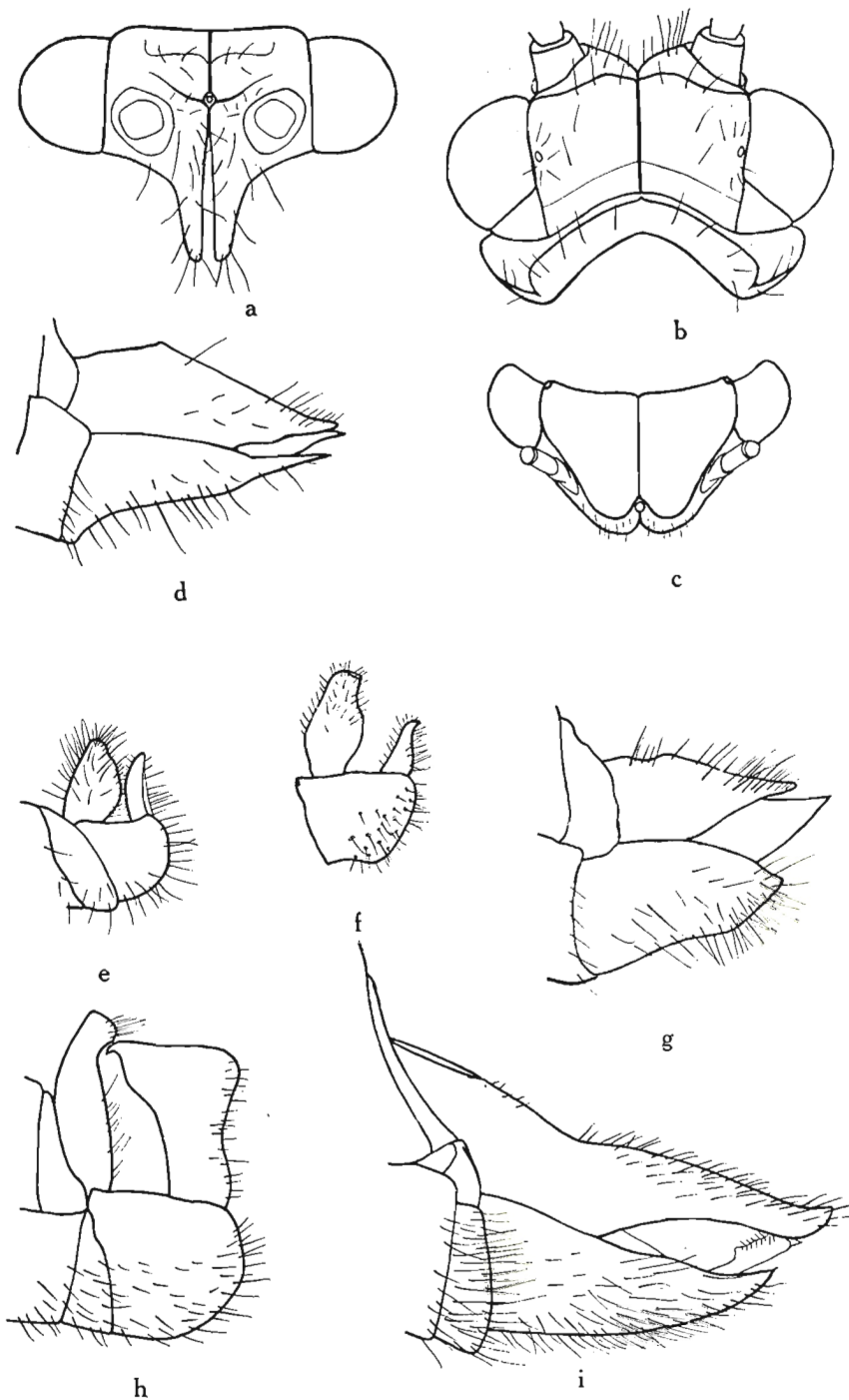


FIGURE 1.—a, *Anomocephala unica*, cephalic aspect of head; b, *A. unica* dorsal aspect of head; c, *Papiana lulla*, cephalic aspect of head; d, *Trioza bimaculata*, female genitalia; e, *T. bimaculata*, male genitalia; f, *T. zimmermani*, male genitalia; g, *T. zimmermani*, female genitalia; h, *Ataenia clara*, male genitalia; i, *A. clara*, female genitalia.

Zimmerman; Mt. Muanui, Aug. 5, 1934, alt. 400-600 ft., from what was thought to be (and so labeled at that time) a species of Celastraceae but what has proved to be *Xylosma suaveolens* in the Flacourtiaceae, one female, Zimmerman. Holotype male.

This species is dedicated to E. C. Zimmerman, the collector.

**Megatrioza vitiensis** (Kirkaldy).

*Triozia vitiensis* Kirkaldy, Haw. Ent. Soc., Proc. 1: 103, 1907.

*Triozia eugeniae* Crawford, Philip. Jour. Sci. 10: 265, 1915.

*Megatrioza vitiensis* Crawford, Philip. Jour. Sci. 15: 195, 1919;  
Insects of Samoa 2(1): 31, 1927.

*Phyllopecta vitiensis* Klyver, B. P. Bishop Mus., Bull. 98: 99-101,  
1932; 113: 27, 1932.

Society Islands: Moorea, Faatoai Valley, alt. 100-300 ft., Sept. 23, 1934, 3 specimens, Zimmerman.

Crawford (Philip. Jour. Sci. 15: 195, 1919) and Klyver (B. P. Bishop Mus., Bull. 98: 99-101, 1932) have both redescribed and figured this common form.

Genus **ANOMOCEPHALA** new genus

Body and wings elongate. Head large, as wide as thorax, slightly cleft anteriorly. Eyes very large, hemispherical. Genal processes slender, elongate, contiguous. Antennae slender, very long. Pronotum narrow, collarlike. Wings triozine. Hind tibiae with one outer, two inner apical spines.

Type of genus, *Anomocephala unica*, new species.

This genus is undoubtedly a member of the subfamily Triozinae near *Triozia* although the head is slightly produced anteriorly (cleft) as in the Carsidarinae.

**Anomocephala unica**, new species (fig. 1, *a, b*; fig. 2, *c*).

Length to tip of folded wings 4.5 mm.

*Color*: General color dark brown. Pronotum, abdomen, genal processes and tibiae lighter. Wings whitish, veins dark.

*Structure*: Head and thorax sparsely pubescent. Vertex strongly impressed discally, posterior margin sloping, anterior margin abrupt, emarginate medially. Postocular portion of genae very large. Anterior ocellus small, deeply imbedded between produced portions of genae, the antennae borne on latter. Genal processes very slender, elongate, contiguous, blunt, from ocellus to apices one and one third times as long as vertex. Antennae slender, almost three times as long as width of head. Thorax scarcely arched. Pronotum short, depressed below plane of vertex, slightly produced cephalad medially. Forewings very elongate, one and one half times as long as body, over three times as long as wide, acute; membrane very finely punctate, three small radular areas on margin; venation typically triozine,  $R_s$  long, marginal cells large, equal in size.

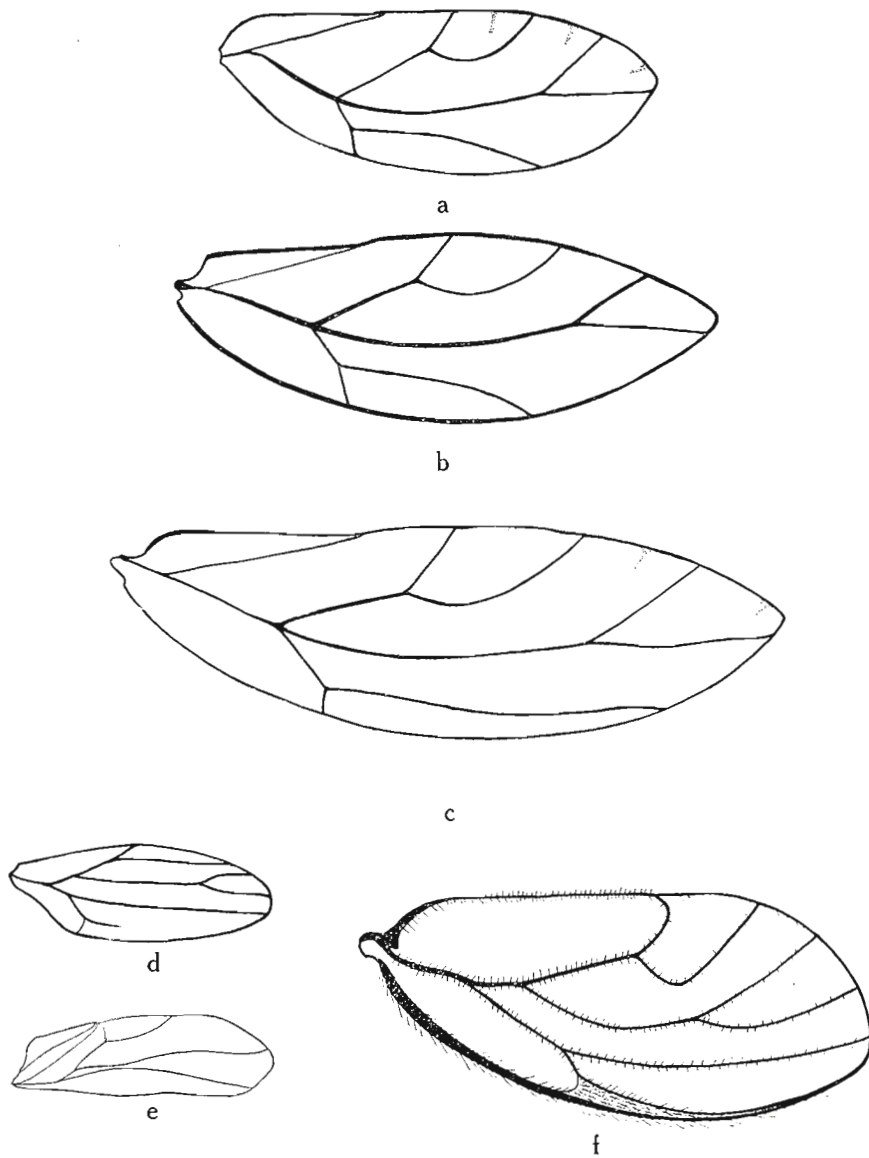


FIGURE 2.—a, *Trioza bimaculata*, forewing; b, *T. zimmermani*, forewing; c, *Anomocephala unica*, forewing; d, *Papiana lulla*, forewing; e, *P. lulla*, hind wing; f, *Ataenia clara*, forewing.

Hind wings long. Hind tibiae slender, enlarged apically, with a serrate basal carina, one outer and two inner apical spines. Metacoxal spurs large.

*Genitalia*: Male genitalia small. Proctiger short. Forceps straight, in lateral view broad, evenly converging apically to sharp points, apices black margined, caudal margins with a fringe of long setae.

Rapa Island: east ridge, Mt. Perahu, July 28, 1934, alt. 1,400-1,700 ft., type male, Zimmerman.

Described from a unique male, the proctiger of which is enclosed by the forceps. As this is the only known specimen I think it inadvisable to dissect it merely to determine the shape of the proctiger. This specimen was originally preserved in alcohol so the color description may be inaccurate.

#### SUBFAMILY PSYLLINAE

*Ataenia clara*, new species (fig. 1, *h, i*; fig. 2, *f*).

Length to tip of folded wings 3.5 mm.

*Color*: General color yellowish brown, including wing veins and antennae. A dark spot at apex of clavus. Entire body more or less pubescent, most prominently on vertex, pronotum, abdominal sternites and veins of forewings.

*Structure*: Head as broad as thorax, somewhat deflexed. Eyes large, hemispherical. Vertex slightly more than one half as long as wide, slightly depressed discally, rounded down in front, a prominent tubercle behind each antennal base next eye. Genal processes large, blunt, divergent, one half as long as vertex. Antennae very long and slender, about as long as body including folded wings, three and one half times as long as width of head. Thorax moderately arched, coarsely punctate. Pronotum long, straight, deflexed. Legs short, stout. Hind tibiae with a very prominent curved spur at base. Forewings rounded apically, slightly more than twice as long as wide; venation typical,  $M_1$  very strongly arched. Pterostigma large, prominent.

*Genitalia*: Male genital segment large, pubescent throughout. Proctiger in lateral view slender to near apex then sharply produced caudad. Forceps shorter than proctiger, very heavy; in lateral view parallel sided in basal half then dilated slightly on caudal margin, anteriorly produced into a large lobe, latter incurving and almost sharp at tip, apex obliquely truncate; in caudal view almost straight, medial sides densely set with heavy setae. Female genital segment longer than rest of abdomen, slender, hairy; ventral valve upcurved apically, dorsal valve longer than ventral; dorsal margin sinuate, apical portion attenuate, abruptly upcurved to acute tip.

Caroline Islands: Ponape, Wapar, Feb. 27, 1936, 20 specimens including holotype male, Z. Ono, collector.

This species is apparently quite close to *A. variabilis* (Crawford) from which it can be distinguished by the lack of the dark marginal band on the forewing, and longer antennae. The female genital segment is much longer than in *variabilis* and the male forceps are more enlarged and are flattened apically.

Genus **PAPIANA**, new genus

Head broader than thorax, vertical. Vertex scarcely emarginate posteriorly, rounded down anteriorly. Frons covered by genae. Genae produced as broad rounded contiguous processes. Antennae shorter than width of head. Eyes large, extending caudad over pronotum laterally. Thorax flat dorsally. Pronotum vertical. Pleurites of mesothorax swollen, very large. Basal vein in forewing ( $R + M + Cu$ ) extremely short.  $R_1$  merging into large pterostigma.  $R_4$  very long, straight. Medio-cubital petiole as short as basal vein. Marginal cells elongate. Venation of hind wings very prominent, medio-cubital petiole present, and cubital cell. Legs short. Hind tibiae without basal spur, with several small apical spines. Basal segment of metatarsi with two black claws.

Type of genus, *Papiana lulla*, new species.

The relationships of this genus within the subfamily are obscure, due to the incomplete knowledge of the forms in the Pacific area.

**Papiana lulla**, new species (fig. 1, *c*; fig. 2, *d*, *e*).

Length to tip of folded wings 1.5 mm.

*Color*: General color brown. Faint darker longitudinal stripes on dorsum. Vertex darker discally. Genae creamy. Forewings brownish, semitransparent.

*Structure*: Head large, broader than thorax, vertical. Head and thorax punctate. Vertex large, nearly plane, narrowed anteriorly, rounded down to and produced beyond anterior ocellus. Genal processes broad, rounded, very short, contiguous. Antennae short, thick, three fourths as long as width of head. Eyes elongate, extending back to base of forewings laterally. Thorax flat. Pronotum nearly vertical. Legs very short. Hind tibiae without basal spur, with two inner and three outer apical spines. Posterior metacoxal spurs small teat shaped. Membrane of both fore and hind wings netted in appearance. Forewing narrowly rounded apically, two and three fourths times as long as wide; setate on costal margin; basal vein ( $R + M + Cu$ ) of forewing very short, one seventh as long as  $R_4$ ;  $R_1$  short, fading into large, indefinite pterostigma;  $R_5$  straight, very long; cubital petiole as long as basal vein; media long, straight; medial cell elongate, narrow; cubital cell much elongate, much longer than medial. Venation of hind wings very prominent, as shown in figure.

*Genitalia*: Female genital segment longer than rest of abdomen, enlarged basally, apical portion broadly styliform in ventral view; dorsal valve longer than ventral, straight, acute, downcurved apically, ventral valve straight, acute, slightly upcurved.

Society Islands: Huahine, northwest ridge of Mt. Turi, alt. 1,700-2,100 ft., Oct. 1, 1934, Zimmerman.

Described from two female specimens, one of which is very teneral.