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SOME HOMOPTERA FROM THE CAROLINE ISLANDS¹

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PLATES 1-3

The present paper is the result of the study of a collection sent to me by Dr. T. Esaki, Entomological Laboratory, Department of Agriculture, Kyushu University, Fukuoka, Japan. In addition there has been a small amount of material from other collections. Notable contributions to our knowledge of the Homoptera have been made through the study of some of the Pacific Islands, especially the Hawaiian Islands, Samoan Islands, and Fiji Islands, but many of the small islands have not been studied extensively; therefore, any contribution to the fauna of this great region is helpful in studying the zoogeographic development of this area and also for the study of the biology and taxonomy of the group.

CIXIIDAE Family

CIXIINAE Subfamily

CIXIINI Tribe

Oliarus Stål

In the number of described species, this is one of the largest genera in the fulgorids. Giffard (1925) gives keys to and descriptions of the species from the Hawaiian Islands. This includes a total of fifty-two species, all of which are assigned to the subgenus *Nesoliarus* except four previously described species which are not assigned by Giffard. A large number of species are known from India, a considerable number from southeast Asia and China, a large number from Japan, the East Indies, and Australia, only one from New Guinea, several from the Pacific Coast States, a few from Western Mexico and from Central America, but so far as I can discover, no species have been recorded from the west coast of South America. There is a single species recorded from the Galapagos Islands. Outside of the Hawaiian Islands which have already been referred to, only six species have been recorded from all of the Pacific islands. Five of these come from Fiji and one from the Marquesas Islands. There are two females in the present collection from Ponape which I describe as a new species in order to call it to the attention of others so that they may describe the males and thus define the species more completely.

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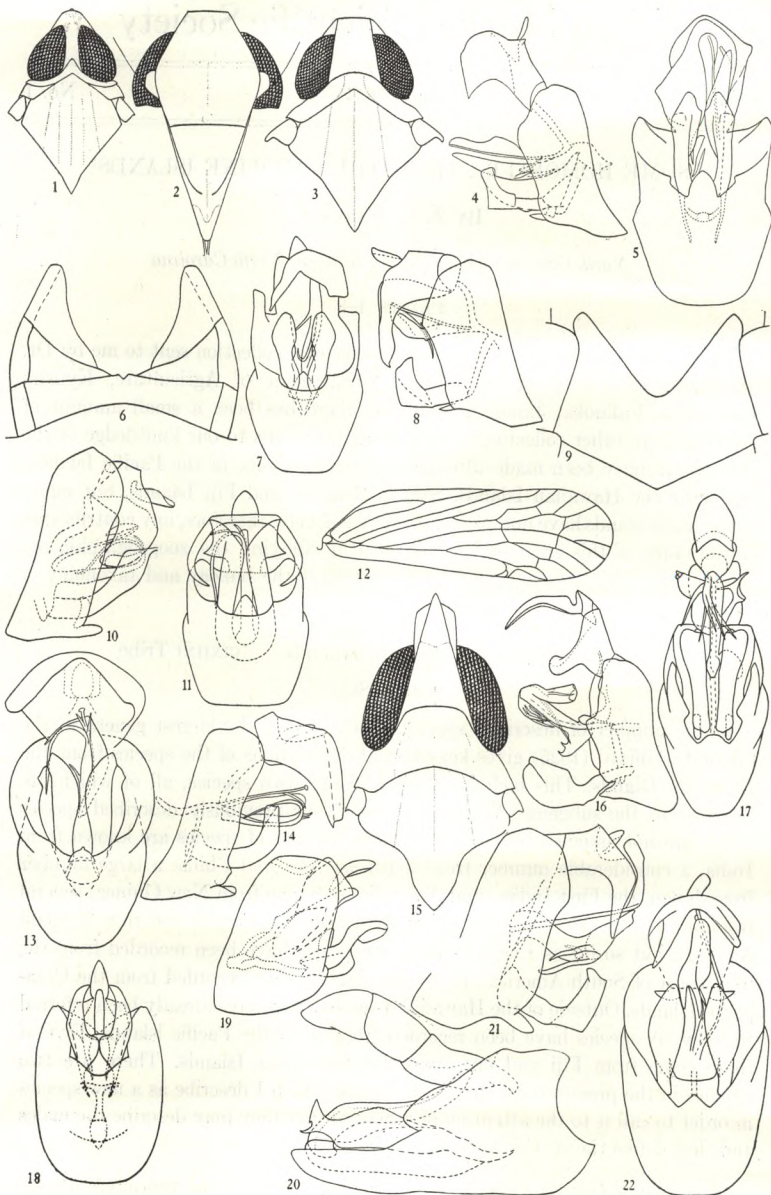


PLATE 1

Oliarus carolinensis sp. n. (Pl. 1, Fig. 1)

This is a rather small robust species with a narrow, elongate vertex. Typically the body is chiefly blackish fuscous; the tegmina are translucent, clouded with yellowish fuscous or blackish fuscous on the apical cells.

Head narrow; vertex narrow, elongate, nearly three times as long as its greatest width, lateral margins strongly elevate, carinate; lateral areolets narrow, elongate, almost half as long as the vertex; frons narrow dorsally, lateral margins rather strongly widened to below the antennae and then slightly narrowed to the clypeus; lateral margins carinate, median carina distinct, forked dorsally to make a small median areolet about twice as long as broad; median ocellus small; clypeus deeply inserted in the frons, median and lateral carinae distinct; anteclypeus with a strong median carina. Pronotum rather short, posterior margin deeply incised, median carina strongly elevated, lateral carinae strongly curved reaching the ventral lateral carinae of the pronotum. Mesonotum typical, carinae strongly elevated.

General color fuscous to blackish fuscous; carinae and most of the pronotum ochraceous; tegmina and wings translucent, veins chiefly ochraceous before the apical cells; pustules minute, veins set with short, slender setae; nodal cell and apical cells of the tegmina and wings in the darker colored specimens clouded with fuscous; venter chiefly fuscous with legs and genital segments ochraceous.

Length to apex of tegmina 6.4 mm.

Holotype: Female, Ponape Island, 18 Jan. 1938. Paratype: Female, Ponape Island, 8 Jan. 1938.

Myndorus gen. n.

Orthotype *Myndorus apicalis* sp. n.

Head slightly narrower than the pronotum; vertex somewhat longer than broad, lateral margins nearly straight, somewhat flaring posteriorly, anterior margin carinate, nearly straight or broadly triangularly produced on the median line, posterior margin shallowly, circularly incised, no median carina; frons longer than broad, dorsal margin nearly straight, narrower than the clypeal suture;

PLATE 1

FIG. 1. *Oliarus carolinensis* n. sp. Dorsal view of head and thorax.

FIGS. 2-6. *Myndorus apicalis* n. sp. FIG. 2. Facial view. FIG. 3. Dorsal view of head and thorax. FIG. 4. Lateral view of ♂ genitalia. FIG. 5. Ventral view of ♂ genitalia. FIG. 6. Last abdominal segment of ♀.

FIGS. 7-9. *Myndorus fusciterminalis* n. sp. FIG. 7. Ventral view of ♂ genitalia. FIG. 8. Lateral view of ♂ genitalia. FIG. 9. Last ventral segment of ♀.

FIGS. 10-12. *Myndorus marginatus* n. sp. FIG. 10. Lateral view of ♂ genitalia. FIG. 11. Ventral view of ♂ genitalia. FIG. 12. Venation of tegmen.

FIGS. 13-14. *Myndorus niger* n. sp. FIG. 13. Ventral view of ♂ genitalia. FIG. 14. Lateral view of ♂ genitalia.

FIGS. 15, 18-19. *Stenocranus carolinensis* n. sp. FIG. 15. Dorsal view of head and thorax. FIG. 18. Ventral view of ♂ genitalia. FIG. 19. Lateral view of ♂ genitalia.

FIGS. 16-17. *Myndorus palescens* n. sp. FIG. 16. Lateral view of ♂ genitalia. FIG. 17. Ventral view of ♂ genitalia.

FIG. 20. *Lallemandana spinifera* n. sp. Lateral view of ♂ genitalia.

FIGS. 21-22. *Myndorus uniformis* n. sp. FIG. 21. Lateral view of ♂ genitalia. FIG. 22. Ventral view of ♂ genitalia.

lateral margins carinate, gradually expanded to the level of the antennae and then rounding to the clypeal suture; median carina distinct on the dorsal three-fourths, indistinct or wanting ventrally; median ocellus indistinct; postclypeus with distinct lateral and median carinae; antennae short. Pronotum short and broad, deeply triangularly incised posteriorly; no median carina; intermediate carinae reaching the posterior border; a single lateral carina. Mesonotum with three carinae. Tegmina with the veins indistinctly granulate and with short setae; radius and subcosta united to near the middle of the tegmina; radius with two simple branches; media contiguous to the stem of subcosta-radius near the basal cell; media with five distinct branches; cubitus branching beyond the branching of subcosta-radius. Hind tibiae rather long, without spines.

***Myndorus apicalis* sp. n.** (Pl. 1, Figs. 2-6)

This is an ochraceous species with the pronotum fuscous and distinct genitalia.

General color of the head ochraceous, eyes brownish, heavily spotted with black; frons ochraceous, indistinctly and irregularly clouded with fuscous; postclypeus clouded with fuscous on the dorsal third; pronotum chiefly fuscous with the posterior border narrowly ochraceous; mesonotum ochraceous orange, irregularly and heavily clouded with fuscous; tegmina ochraceous with a broad transverse fascia on the basal area and the apical third more or less heavily clouded with fuscous; with irregular spots on the veins in the middle of the tegmina; legs chiefly ochraceous, irregularly marked with fuscous; venter of the abdomen chiefly fuscous.

Male genitalia with the ventral border of the pygofer fairly deeply incised, lateral margins shortly triangularly produced; median area strongly, somewhat triangularly produced; genital styles elongate, nearly as long as the median ventral line of the pygofer; inner and apical angles somewhat produced; apex strongly somewhat triangularly produced; aedeagus elongate with three spines on the basal half.

Holotype: Male, Kusaie Island, 4 Dec. 1937. Allotype: Female, Oleai Atol, 21 Jan. 1938. Paratypes: 3 females, Marshall Islands, Jaluit Atol, 27 Nov. 1937; 2 females, Ponape Island, 8 Jan. 1938; 1 female, Truk Island, 16 Sept. 1937.

***Myndorus palescens* sp. n.** (Pl. 1, Figs. 16-17)

This is a pale species with distinct male genitalia.

General color of head, thorax, venter, and legs ochraceous orange; tegmina translucent; apical and sutural margins faintly dusky, apical veins just before the apical margin blackish fuscous.

Vertex distinctly narrowed anteriorly, width at the base behind the compound eyes about twice as broad as at the apex; face nearly twice as broad across the antennae as on the dorsal margin; lateral and median carinae of the frons strongly elevated, median area of the frons below the middle of the eyes rather strongly protuberant; lateral and median carinae of the postclypeus strongly elevated.

Male genitalia with the median process of the pygofer short and broad, broadly rounded posteriorly; genital styles when viewed ventrally slightly broadened on the lateral margins, when viewed laterally strongly widened on the apical half, with two lobes; aedeagus very complex, when viewed laterally with the basal area strongly produced into a flat lobe ventrally with two short spines produced caudad; main body of aedeagus elongate, nearly uniform in width, strongly elbowed on the apical third; just before apex of the elbow with four elongate

acute spines directed cephalad; near the middle of the apical portion of the elbow with a strong acute spine directed cephalad; anal segment rather short; anal spines somewhat asymmetrical; anal style elongate, acute.

Holotype: Male, Koror Island, Palau Islands; 20 Feb. 1936.

***Myndorus fusciterminalis* sp. n. (Pl. 1, Figs. 7-9)**

Superficially this species resembles *apicalis* but differs in color and in the male and female genitalia.

General color of the head, pronotum, and mesonotum tawny; compound eyes black; general color of the venter, including the legs, light ochraceous buff; basal segments of the abdomen light ochraceous buff, terminal segments blackish; dorsum of abdomen similarly colored; tegmina and wings semitransparent, tinged with ochraceous, veins concolorous; apical angle of tegmina and wings clouded with blackish fuscous.

Vertex nearly as long as broad; frons slightly broader than long; postclypeus longer than broad; median carina rather indistinct on the postclypeus and the ventral area of the frons; distinct dorsad.

Male genitalia with the ventral median plate of the pygofer distinctly produced, triangular; pygofer asymmetrical, the left side produced into a rounded lobe, the right side not so produced; genital styles short, rather broad, the apical half elbowed dorsad and produced into a rather acute angle apically; tenth segment asymmetrical, produced into a long ventral process which is rather acute at the apex on the left side; aedeagus complex with an elongate spine at the apex, directed cephalad and ventrad. Female with the last ventral segment with a deep incision on the posterior margin which is V-shaped; this V-shaped notch reaching about half the length of the last abdominal segment, broadly rounded at the apex.

Holotype: Male, Ponape Island, 8 Jan. 1938. Allotype: Female, Ponape Island, 4 Jan. 1938. Paratype: Male, Ponape Island, 8 Jan. 1938.

***Myndorus marginatus* sp. n. (Pl. 1, Figs. 10-12)**

This species is distinctly colored and the male genitalia are very distinct from the other species described in this paper.

General color of the head, thorax, venter, including the legs, mars orange, somewhat clouded with fuscous; compound eyes brownish, frons clouded with pale fuscous; tegmina yellowish green, translucent, with the costal, apical, and commissural margins narrowly blackish fuscous; veins almost concolorous, with the apical veins blackish fuscous and the apical cells clouded with blackish fuscous.

Vertex about as broad as long, somewhat narrowed apically; frons about as broad as long, distinctly narrowed dorsally between the compound eyes and across the clypeal suture; lateral and median carinae fairly distinct; median ocellus distinct; postclypeus about half as long as the frons with a distinct median carina. Venation of the tegmina fairly characteristic with a distinct cross vein in the apical radial cell beyond the nodal cell and a distinct cross vein in the radiomedial cell at about the branching of media.

Male genitalia distinct; genital styles elongate, narrow, with the basal three-fourths elongate, nearly parallel-sided, the apical fourth bent at right angles to the base, gradually expanded to the apical angles with the apical margin indentate and the apical angles produced; aedeagus elongate, composed of an elongate, gradually attenuate, ventral recurved spine and a dorsal recurved spine with the apical portion recurved, broadened, and then narrowed to a rather acute apex;

anal segment short; anal spines when viewed ventrally elongate, gradually attenuated and incurved to the apex.

Holotype: Male, Ponape Island, 8 Jan. 1938.

***Myndorus niger* sp. n. (Pl. 1, Figs. 13-14)**

In the darker-colored specimens this species is almost completely blackish fuscous; in the lighter, perhaps teneral, specimens the general color is fuscous, and the tegmina have irregular, paler, translucent areas.

Male genitalia with the genital styles elongate, inner margins distant at the base gradually curving toward the median line and then gradually diverging to the obtuse apices; when viewed laterally, narrow, of nearly uniform width, apical third bent at a right angle and directed dorsally; aedeagus with three spines, the ventral one elongate, gradually attenuate, recurved for almost half its length with a short acute process at the bend, two elongate dorsal spines, one gradually attenuate, the other capitate with a distinct spine near the apex.

Holotype: Male, Ponape Island, 8 Jan. 1938. Allotype: Female, Ponape Island, 8 Jan. 1938. Paratypes: 1 male, 2 females, Ponape Island, 8 Jan. 1938; 1 female, Ponape Island, 4 Jan. 1938.

***Myndorus uniformis* sp. n. (Pl. 1, Figs. 21-22)**

This is another pale species with distinct male genitalia.

Head, thorax, venter, and legs light ochraceous buff; compound eyes brown with two rather large black spots on the anterior area; lateral carinae of the vertex narrowly blackish. Anterior lateral margins of the mesonotum blackish fuscous showing through the translucent prothorax. Apex of the clavus on the commissural margin narrowly blackish fuscous.

Posterior margin of the vertex slightly longer than the anterior margin, the lateral margins fairly straight, converging anteriorly.

Genital styles of the male when viewed ventrally gradually widening from the narrow base to about the apical third and then narrowed to obtuse rounded apices; when viewed laterally, distinctly elbowed just a little beyond the middle; apical portion nearly quadrangular with the anterior apical angle produced into a lobe-like process; aedeagus elongate, ventral process somewhat undulate with three distinct spines just beyond the middle; the dorsal part consisting of an elongated shaft, rather narrow, and an apical elbowed portion which is rather broad; anal segment somewhat elongate, anal spines somewhat asymmetrical; anal style very short.

Holotype: Male, Ponape Island, 2 Jan. 1938.

DELPHACIDAE Family ASIRACINAE Subfamily

Ugyops Guérin-Ménéville

I have previously expressed doubt (Metcalf, 1938; 1946) as to whether all of the forty-seven species which are now assigned to this genus are really congeneric, but the type of the genus is unknown to me and until it can be studied and the genitalia carefully described and illustrated, it is useless to try to separate the species into separate genera. The species at present assigned to this genus seem to have the following characters in common; vertex elongate, narrow; frons elongate, narrow, with a simple, or a furcate, median carina or two median

carinae sometimes joined into a single median carina at the base and the apex; mesonotum with five carinae; genitalia quite variable.

Ugyops kinbergi Stål

There is a long series of this species in the present collection. While it varies greatly in color markings, there are no appreciable differences in structural characters or in the details of the male genitalia. In color the species varies from forms which have a very distinct blackish fuscous vitta extending from the pronotum behind the compound eyes, across the sides of the mesonotum, to the apex of the tegmina where it is usually decidedly wider; to forms which have numerous, irregular, small fuscous spots, principally on the veins and cross veins; to forms which have few or no such fuscous markings.

This species has been collected from the following islands: Caroline Islands, Kusaie Island, Ponape Island, Oleai Atol, Anguar Island, Marianas Islands, Rota Island, Palau Islands, Babelthuap Island.

DELPHACIDAE Family

DELPHACINAE Subfamily

DELPHACINI Tribe

Stenocranus Fieber

This is a genus of world-wide distribution. However, only one species has been recorded from the Pacific region and that from the Fiji Islands, and one from Australia. The greater number of species have been recorded from the Palearctic and Nearctic Regions.

Vertex narrow, longer than the basal width, distinctly protuberant in front of the compound eyes; frons narrow, median carina forked before the apex; antennae elongate, second segment distinctly longer than first. Pronotum with median and intermediate carinae, the intermediate carinae nearly straight, reaching the hind margin. Mesonotum tricarinate. Venation fairly distinct; subcosta and radius united for at least one-half the length from the basal cell; medius arising from the basal cell; radius unbranched; media one plus two merging with radius for a considerable distance; media three plus four unbranched, sometimes merging and sometimes distinct from cubitus one-A. Hind tibiae elongate with a spine near the base and another near the middle; apex with a row of distinct spines; calcars foliaceous with a number of teeth on the margin; basal segment of the tarsi as long as or longer than second and third segments combined; tarsal claws small.

Male genital segment usually large, subglobular; genital styles elongate, sinuate, attenuate; apex very acute; aedeagus usually simple, tubular, sometimes with spines; anal segment usually short, tubular, without anal spines.

Stenocranus carolinensis sp. n. (Pl. 1, Figs. 15, 18-19)

This is a fuscous or blackish fuscous species in general color with the antennae and the legs chiefly pale ochraceous buff and some markings along the costal and sutural margins of the tegmina pale ochraceous buff.

The genitalia, however, are very distinct, and I place this species in this genus with considerable hesitation. But until someone can revise the genera of this family not only on the basis of the characters of the head, thorax and tegmina

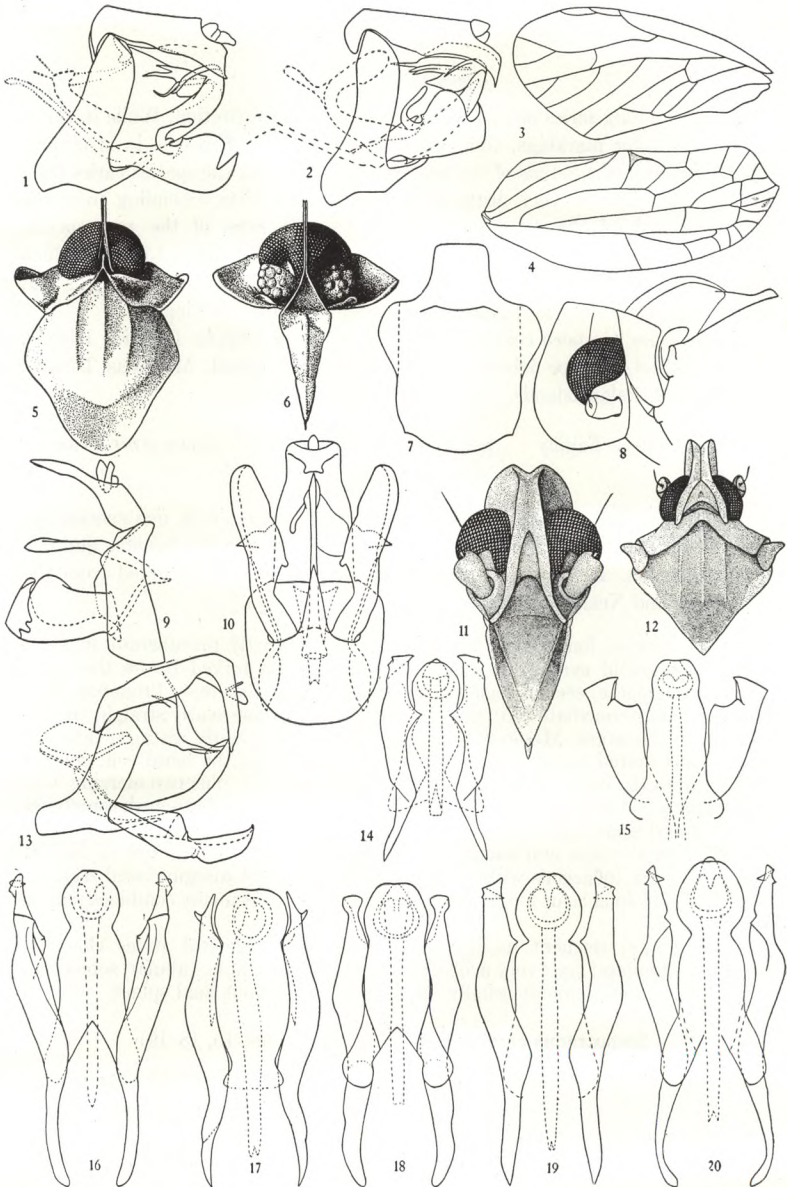


PLATE 2

but also on the basis of the characters of the genitalia, it is perhaps better to place it in this genus than erect a new genus for it.

Vertex elongate, about one and one-half times as long as the basal width, protruding in front of the eyes for about one-third of its length, rather acute anteriorly; frons elongate, narrow, more than four times as long as the median width; median carina branching about the middle of the compound eyes; antennae with the second segment about three times as long as the first. Pronotum about two and one-half times as broad as its median length, tricarinate; intermediate carinae not quite straight, broadly arched anteriorly, and united with each other and the median carina.

Male genitalia with the pygofer rather large, somewhat tubular; genital styles short with a distinct subapical tooth; apex rather obtuse; diaphragm deeply incised; aedeagus short, tubular, without processes; anal segment short, somewhat tubular, produced into elongate anal spines which reach to the base of the aedeagus; when viewed laterally, acute; when viewed posteriorly, obtuse at the apex; anal style somewhat ligulate, distinctly flattened when viewed laterally.

Length, macropterous form, 3.9 mm. to apex of tegmina.

Holotype: Male, Kusaie Island, 21 Dec. 1937. Allotype: Female, Kusaie Island, 21 Dec. 1937. Paratype: Female, Kusaie Island, 22 Dec. 1937.

DERBIDAE Family DERBINAE Subfamily CENCHREINI Tribe

Phaciocephalus Kirkaldy

This genus has a wide range in the Pacific Ocean. Species have been recorded from the Philippines, Borneo, Mysol, Larat, New Guinea, New Caledonia, Fiji, and Samoa. I know of no records from the Caroline Islands. The two species in the present collection belong to that rather large group of species in this genus which have milky or ochraceous translucent tegmina with a broad vitta,

PLATE 2

FIG. 1. *Phaciocephalus carolinensis* n. sp. Lateral view of ♂ genitalia.

FIG. 2. *Phaciocephalus onoi* n. sp. Lateral view of ♂ genitalia.

FIGS. 3, 5-7. *Malpa appressa* n. sp. FIG. 3. Venation of tegmen. FIG. 5. Dorsal view of head and thorax. FIG. 6. Facial view of head and thorax. FIG. 7. Last ventral segment of ♀.

FIGS. 4, 8, 10-13. *Ona perplexa* n. sp. FIG. 4. Venation of tegmen. FIG. 8. Lateral view of head and thorax. FIG. 10. Ventral view of ♂ genitalia. FIG. 11. Facial view of head. FIG. 12. Dorsal view of head and thorax. FIG. 13. Lateral view of ♂ genitalia.

FIG. 9. *Swezeyaria unicolor* n. sp. Lateral view of ♂ genitalia.

FIG. 14. *Lallemandana phalerata arcuata* n. var. Ventral view of genital styles and aedeagus.

FIG. 15. *Lallemandana phalerata ochracea* n. var. Ventral view of genital styles and aedeagus.

FIG. 16. *Lallemandana phalerata flavifrons* n. var. Ventral view of genital styles and aedeagus.

FIG. 17. *Lallemandana spinifera* n. sp. Ventral view of genital styles and aedeagus.

FIG. 18. *Lallemandana phalerata flavodorsalis* n. var. Ventral view of genital styles and aedeagus.

FIG. 19. *Lallemandana phalerata costalis* n. var. Ventral view of genital styles and aedeagus.

FIG. 20. *Lallemandana phalerata obscura* n. var. Ventral view of genital styles and aedeagus.

more or less complete, extending from the base on the clavus to near the apex of the clavus and then curving rather sharply to the anterior apical angle. They have distinct male and female genitalia, and I believe they are valid species.

Head rather narrow; vertex with the lateral margin distinctly pustulate; median area depressed; face elongate; frons and clypeus subequal in length; lateral margins of the frons elevated, distinctly pustulate; clypeus smooth without pustules; median carina more or less distinct. Pronotum short and broad; not distinctly carinate dorsally; lateral carinae strongly produced into a broad, laminate, subantennal process; mesonotum slightly broader than long; carinae indistinct. Tegmina with venation fairly constant; costal cell elongate; nodal cell nearly quadrate; subcostal cell elongate; radius usually with two branches only; media with five or more branches.

Phaciocephalus onoi sp. n. (Pl. 2, Fig. 2)

This species belongs to the group which contains *funebri* and *badius*, but it may be separated from these species by its distinctive coloration; the male and female genitalia also seem to be quite characteristic.

Vertex not quite as long on the median line as its extreme width at base; frons a little longer than the postclypeus. Pronotum a little more than half as long as the vertex. Mesonotum broader than long.

General color dorsally and ventrally light ochraceous buff; compound eyes blackish fuscous; disc of the vertex sometimes clouded with fuscous, lateral carinae usually narrowly blackish. Pronotum more or less clouded with blackish fuscous. Mesonotum chiefly blackish fuscous; clavus ochraceous orange; a rather broad vitta extending from the apical margin of the claval suture to the anterior apical angle; tegmina more or less translucent whitish; legs with the spines blackish; dorsal area of the abdomen clouded with fuscous.

Male genitalia with the ventral plate of the pygofer strongly produced; genital styles, when viewed laterally, with a strongly curved process at about the base of the apical half; this process with a distinct triangular basal tooth; beyond the process the genital styles broadly rounded produced dorsad with a triangular tooth at the anterior base of this process; apex of the genital styles produced in a strong acute dorsal tooth; aedeagus with the ventral arm rather narrow; dorsal arm short and broad with three pairs of subapical spines; anal segment elongate, strongly produced ventrad at the apex of the triangular tooth. Female genitalia with the last ventral segment about as long as broad basally; median area produced into a tooth that is subquadrate with the apex nearly truncate; lateral margins scarcely produced.

Holotype: Male, Truk Island, 9 Jan. 1936. Allotype: Female, Truk Island, 9 Jan. 1936. Paratypes: 8 males, Truk Island, 9 Jan. 1936; 7 females, Truk Island, 9 Jan. 1936.

Phaciocephalus carolinensis sp. n. (Pl. 2, Fig. 1)

This is a rather variable species as far as color is concerned. The more typical specimens seem to be light ochraceous buff with the eyes blackish and the vitta of the tegmina confined to the apical area and rather irregular in depth of color and in width; the male genitalia are of the typical spiniferous type.

Vertex rather short and broad, nearly twice as broad at the base as the median length; anterior and posterior incisions rather deep; frons longer than the post-

clypeus, rather narrow between the compound eyes and then gradually widened about as wide as the postclypeus. Pronotum nearly as long as the vertex, anterior margin rather obtuse. Mesonotum rather short and broad, its median length nearly three times the length of the pronotum. Venation regular.

Male genitalia when viewed laterally with the genital plate about as long as the dorsal width of the pygofer; genital styles relatively broad and short, the dorsal process rather elongate with a distinct triangular basal tooth; dorsal arm of the aedeagus produced into an elongate gradually acuminate apical process and two pairs of subapical spines; dorsal pair elongate, narrow, recurved; ventral pair trifid; anal segment elongate, anal spines acute; female genital segment relatively small, posterior lobe broad, apical margin broadly rounded.

General color dorsally and ventrally ochraceous buff, eyes black, vitta of the tegmina fuscous extending from the apical half of the claval suture to the anterior apical angle; dorsal segments of the abdomen blackish fuscous.

Holotype: Male, Truk Island, 9 Jan. 1936. Allotype: Female, Truk Island, 9 Jan. 1936. Paratypes: 10 males, Truk Island, 29 Dec. 1935 and 9 Jan. 1936; 9 females, Truk Island, 29 Dec. 1935 and 9 Jan. 1936.

OTIOCERINI Tribe

Malpa gen. n.

Orthotype *Malpa appressa* sp. n.

This genus may be readily recognized by the peculiar structures of the head; the vertex and the frons are composed chiefly of the closely appressed lateral carinae; the subantennal process is short but extends a considerable distance from the cheeks; the antennal foveae are strongly developed.

Head narrower than the pronotum; vertex broadly rounded to the frons; clypeus elongate, rather broad basally, gradually narrowed to a rather acute apex. Pronotum rather short on the median line, projecting distinctly between the compound eyes; posterior margin broadly incised, lateral margin strongly developed into antennal foveae. Mesonotum elongate, median and intermediate carinae rather indistinct. Tegmina rather short and broad; wings about as long as the tegmina, venation of the tegmina distinct; radius with two branches, medius with four, and cubitus with one.

Malpa appressa sp. n. (Pl. 2, Figs. 3, 5-7)

This is a rather inconspicuous species with the general color of the body and legs ochraceous buff.

Compound eyes blackish fuscous; tegmina semitransparent with a bright red nodal cell and a rather broad fascia extending across the cross veins of the tegmina to the posterior apical angle; a rather indefinite fuscous clouding about halfway between this fascia and the base of the wings.

Vertex elongate, about one and one-half times as long as the diameter of the compound eyes, lateral carinae closely appressed to near the middle of the compound eyes, then gradually diverging to the posterior border which is deeply incised to about the middle of the compound eyes; frons with the lateral carinae strongly appressed to near the lower border of the compound eyes and then diverging to the broader clypeus below the level of the subantennal process; clypeus about as long as the frons; lateral margins of the clypeus gradually tapering to the rather acute apex; compound eyes rather large with a deep ventral sinus;

antennae with the first segment very short and the second segment subglobose. Pronotum rather short on the median line, gradually widening laterally, anterior margin strongly projected between the compound eyes and the posterior margin deeply incised. Mesonotum about as long as broad, median and intermediate carinae indistinct. Tegmina short and broad, *Sc* and *R* united to about the middle; *R* with two branches; *M* united to *Sc-R* stem for a considerable distance with four branches; *Cu* with two branches; clavus open.

Female genitalia with the last ventral segment slightly longer than broad; slightly widened on the median third and then constricted and produced into a nearly quadrate process on the apex.

Length to apex of tegmina 3.2 mm.

Holotype: Female, Truk Island, 21 Dec. 1935.

Ona gen. n.

Orthotype *Ona perplexa* sp. n.

Head narrow, vertex elongate, projecting for nearly half its length in front of the compound eyes; lateral margins broad closely appressed to near the anterior margin of the eyes and then strongly divergent to the posterior margin; lateral margins slightly pustulate posteriorly; vertex meeting the frons at almost a right angle; lower margin of the frons when viewed laterally strongly rounded and directed posteriorly; lateral margins of the frons closely appressed to near the middle of the compound eyes and then diverging and broadly rounded posteriorly; clypeus broadly triangular; compound eyes rather large, ventral sinus fairly deep, no subantennal process. Pronotum short and broad, posterior margin deeply incised, nearly parallel to the anterior margin. Mesonotum nearly as long as broad; median and intermediate carinae fairly distinct. Tegmina with the costal cell broad, the subcostal cell short and narrow, the radial cell elongate; media with three branches before the subapical vein; cubitus ending in the subapical vein but the clavus nearly closed.

Ona perplexa sp. n. (Pl. 2, Figs. 4, 8, 10-13)

This is an inconspicuous dull greyish species with the dorsum of the abdomen and the venter chiefly blackish fuscous.

Pronotum marked with two pairs of rather broad brownish vittae; compound eyes and antennae brownish; anterior legs blackish fuscous, intermediate and hind legs greyish, with the tibiae indistinctly ringed with brownish and the tarsi more or less brownish or blackish fuscous; tegmina and the wings are semi-opaque, greyish, with the veins distinctly browner.

Vertex about one and one-half times as long as the greatest width; lateral margins closely appressed in front of the compound eyes; posterior margin broadly incised; discal area nearly twice as broad as long; frons nearly as long as the clypeus; clypeus broadly triangular. Pronotum short and broad, nearly eight times as broad as the average length; anterior and posterior margins subparallel. Mesonotum not quite as long as the greatest width.

Pygofer small and short; posterior process rather long, when viewed ventrally acutely triangular; genital styles when viewed ventrally rather irregular in outline with a distinct lobe on the apex of the basal half; aedeagus elongate, narrow; apex with two broad processes which have acute apices; anal segment elongate, the apical third bent ventrad at nearly a right angle.

Length to the apex of the tegmina 5.1 mm.

Holotype: Male, Ponape Island, 1 Jan. 1938. Allotype: Female, Ponape Island, 31 Dec. 1937.

TROPIDUCHIDAE Family TAMBINIINAE Subfamily TAMBINIINI Tribe
Swezeyaria Metcalf

This genus was recently described (Metcalf 1946) for a single species, *Swezeyaria viridana* Metcalf, from Guam. The present collection contains an additional species from the Caroline Islands.

Swezeyaria unicolor sp. n. (Pl. 2, Fig. 9)

This species is quite similar to *viridana* in color but differs in general characters as follows: Dorsal field of the pronotum decidedly longer than in *viridana*, projecting to the level of the anterior margin of the eyes; wing venation varying slightly, the most consistent difference being that there are only two cross veins between the branches of radius and media whereas in *viridana* there are four such cross veins. Male genitalia in *unicolor* asymmetrical; the processes of the genital plates differing decidedly from *viridana* in that the anterior process is short and obtuse; aedeagus quite similar except that in *unicolor* it increases gradually to the apical area and then is subacute to the apex.

This species averages larger than *viridana*. The largest of the females is 6.3 mm. to the apex of the abdomen and 8.4 mm. to the apex of the tegmina. The smallest male is 4.5 mm. to the apex of the abdomen and 6.9 mm. to the apex of the tegmina.

Holotype: Male, Ponape Island, 16 Jan. 1938. Allotype: Female, Ponape Island, 16 Jan. 1938. Paratypes: 3 males, 1 female, Ponape Island, Jan. 1938; 5 males, 3 females, Kusaie Island, Dec. 1937.

RICANIIDAE Family

Armacia Stål

Armacia clara Stål

There is a long series of this species in the present collections from the Caroline Islands, Ponape Island, the Truk Islands, Palau Islands, Angaur Island, Babelthuap Island, and Korrör Island.

Armacia clara pallescens Metcalf

There is a good series of this variety in the present collection with the characteristic coloration but with no important differences in structural characters and the characters of the male genitalia. They are all from the Caroline Islands, Kusaie Island, and Ponape Island.

APHROPHORIDAE Family

Lallemandana China and Myers

Since many of the earlier species of this genus were described chiefly on color characters, with very few outstanding structural characters, it is rather difficult to correlate these species. Unless species in the present collection agree in detail with previously described species, subspecies, or varieties, they have been described as new in the hope that future workers who have access to the types of these earlier species will make comparisons and studies and straighten out the details of the true relationship of the various forms. No description of the

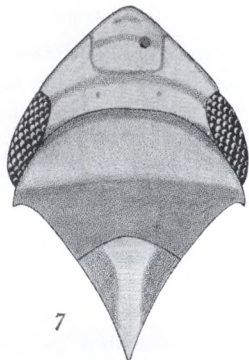
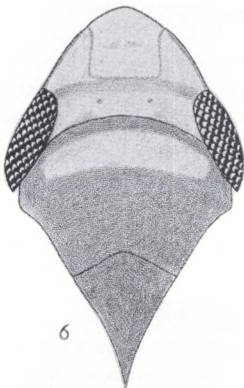
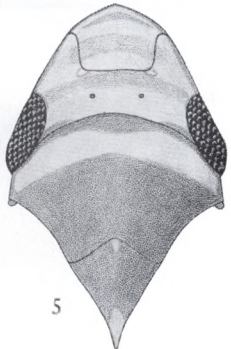
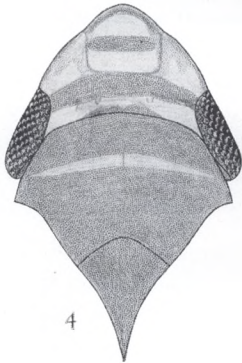
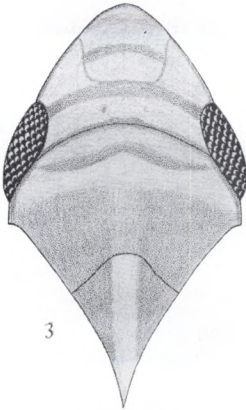
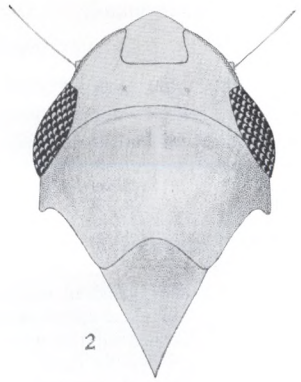
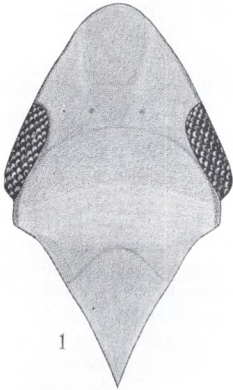


PLATE 3

genus is appended at this time because detailed descriptions have been published recently (China, 1933; China and Myers, 1934).

Lallemandana phalerata Stål

If all of the records are to be accepted this is also a widely distributed species. Previous writers have recorded it from Java and the Philippines to Guam, the Marianas, and the Caroline Islands. It was described originally without definite locality (Stål, 1854). Later, Stål (1859) recorded it from Guam, the Marianas, Ponape Island, and the Caroline Islands. Dohrn (1859) lists it from Java, perhaps because Stål described it originally, placing it between two species from Java, and Dohrn simply lists it with these two species. Melichar (1914) and Lallemand (1912) catalogue it from Java. China (1933) records it from Guam, the Marianas, the Caroline Islands, and Ponape Island. If I have determined the present material correctly this is also a very variable species; in this respect it is similar to *fenestrata* which has been studied in some detail by China. I describe below six varieties of this species based chiefly upon color characters and minor variations in the details of structural characters. The decision as to whether these are valid or not will have to await a restudy of the original type series and much more material than is at present available to me.

Lallemandana phalerata var. **obscura** var. n. (Pl. 2, Fig. 20;
Pl. 3, Fig. 4)

This variety is largely fuscous above and below.

Crown crossed by three rather narrow ochraceous buff fascia, one close to the anterior margin, another just in front of the compound eyes, and the third on the posterior border. Compound eyes ringed with ochraceous buff and pronotum with a narrow fascia on the anterior third. Tegmina fuscous on the base with the apical margin rather broadly ochraceous, translucent. Beneath, the head, thorax, and abdomen chiefly fuscous; with a broad yellowish ochraceous vitta extending from the lateral areas of the postclypeus across the cheeks and pronotum to the mesonotum; femora of all the legs chiefly ochraceous buff, tibiae and tarsi largely fuscous.

Male genitalia with the genital styles rather narrow when viewed ventrally; when viewed laterally gradually widening to about the apical third and then rather deeply and semicircularly incised both dorsally and ventrally with the dorsal and ventral angles about equally produced; dorsal arm of the aedeagus elongate with the apex upcurved, fairly obtuse.

PLATE 3

Dorsal view of the head and thorax of a new species and some new varieties of the genus *Lallemandana*

FIG. 1. *Lallemandana phalerata flavodorsalis* n. var.

FIG. 2. *Lallemandana spinifera* n. sp.

FIG. 3. *Lallemandana phalerata ochracea* n. var.

FIG. 4. *Lallemandana phalerata obscura* n. var.

FIG. 5. *Lallemandana phalerata flavifrons* n. var.

FIG. 6. *Lallemandana phalerata costalis* n. var.

FIG. 7. *Lallemandana phalerata arcuata* n. var.

Specimens are at hand from the Caroline Islands, Truk Island, Kusaie Island, the Mariana Islands, and Rota Island.

Lallemandana phalerata var. **ochracea** var. n. (Pl. 2, Fig. 15;
Pl. 3, Fig. 3)

In this variety the general color is ochraceous tawny, rather conspicuously marked with ochraceous buff and black or fuscous.

Crown chiefly ochraceous buff with the anterior narrowly margined with blackish or blackish fuscous; this widens out across the antennae and the compound eyes and becomes a rather broad vitta on the lateral margins of the thorax; coronoclypeus with a small spot of ochraceous tawny near the anterior margin and a fairly broad and distinct fascia just behind the middle; with another broad fascia between the coronoclypeus and the ocelli, extending between the compound eyes. Pronotum chiefly ochraceous tawny, anterior margin narrowly bordered with blackish and about the anterior third ochraceous buff with a rather distinct, transverse, ochraceous tawny fascia which is nearly complete. Mesonotum largely ochraceous tawny with an ochraceous yellow median vitta. Face chiefly ochraceous yellow with a distinct blackish vitta extending across the apical margin of the postclypeus and the lateral borders of the thorax to merge with the dorsal vitta which extends across the compound eyes and the lateral margins of the thorax; anteclypeus ochraceous yellow sometimes with a very distinct central area clouded with ochraceous tawny. Beneath, including the legs, chiefly ochraceous tawny with tibiae and tarsi blackish fuscous. Tegmina with three or four rather distinct ochraceous yellow spots, one at the base of the clavus, extending along the claval suture for a short distance, another extending from radius to media, near the center of the tegmina; nodal area semitranslucent, somewhat ochraceous in color.

Genital styles broad and short; lateral margins nearly straight; apical sinus nearly semicircular in outline, rather deep; outer angle nearly a right angle and the inner angle somewhat obtusely produced; aedeagus short and broad but little longer than the genital styles.

Specimens are at hand from Saipan, Mariana Islands.

Lallemandana phalerata var. **flavodorsalis** var. n. (Pl. 2, Fig. 18;
Pl. 3, Fig. 1)

In this variety the crown, pronotum, and mesonotum almost unicolorous ochraceous orange.

Narrow anterior margin of the crown and dorsal margin of the face blackish fuscous, extending as a broad blackish vitta across the lower margin of the eyes and the lateral margins of the thorax. Beneath, including most of the legs, ochraceous orange; legs irregularly marked with blackish or blackish fuscous. Basal area of the corium of the tegmina chiefly blackish to the apical cells; clavus chiefly semitranslucent, ochraceous buff in color; apical cells translucent; usually a broad ochraceous yellow vitta extending from the base of the clavus to the median area of the tegmina; this vitta sometimes interrupted and forming a distinct yellowish spot between radius and medius; with an oblique fascia extending from the costal margin across the subapical cells.

Male genitalia with the genital styles elongate, narrowed, when viewed ventrally, with the apex somewhat capitate, the outer and inner angles broadly rounded; when viewed laterally, genital styles somewhat broader with the apical sinus rather deep, semicircular; aedeagus short and broad.

Specimens are at hand from the Palau Islands, Anguar and Peliliou.

Lallemandana phalerata var. **arcuata** var. n. (Pl. 2, Fig. 14;
Pl. 3, Fig. 7)

In this variety the coloring is chiefly blackish fuscous, fuscous, and ochraceous tawny, heavily marked with pale ochraceous buff or whitish.

Crown chiefly ochraceous buff with the narrow anterior margin blackish fuscous and an incomplete transverse fascia near the middle of the coronoclypeus, and another fascia in front of the ocelli behind the coronoclypeus fuscous or blackish fuscous. Pronotum chiefly ochraceous tawny, anterior margin broadly blackish or blackish fuscous, bordered by a broad pale ochraceous fascia. Mesonotum chiefly blackish fuscous with a pale median vitta extending from anterior margin to the apex. Tegmina chiefly blackish fuscous, with a whitish arcuate vitta extending from the base across the basal half of the clavus and then curving sharply to the costal margin; posterior apical cells and the commissural margin chiefly pale translucent; a large nodal area whitish translucent. Beneath chiefly blackish fuscous and ochraceous tawny; frontal portion of the clypeus chiefly ochraceous yellow on the basal two-thirds with the dorsal margin narrowly black; ventral margin broadly blackish fuscous; the pale dorsal area extending as a short vitta beneath the compound eyes across the cheeks to the pronotum; legs chiefly ochraceous tawny, more or less marked with blackish or blackish fuscous.

Male genital styles rather narrow; inner margins with two broad shallow incisions, produced into a strong, rather acute tooth at about the middle; outer margin slightly widened from the base to the middle and then narrowing somewhat to the apex; outer apical angle produced into two small teeth, inner apical angle produced into an elongate, somewhat acute tooth; dorsal arm of the aedeagus longer than the basal arm, obtuse at the apex.

Specimens are at hand from Rota Island and Tinian Island in the Marianas.

Lallemandana phalerata var. **costalis** n. var. (Pl. 2, Fig. 19;
Pl. 3, Fig. 6)

This variety is chiefly fuscous or blackish fuscous in color, heavily marked with ochraceous yellow.

Crown chiefly ochraceous yellow with the anterior margin narrowly blackish; with a very indistinct cloud of fuscous on the coronoclypeus and a rather narrow fuscous fascia extending across the crown between the compound eyes, posterior to the coronoclypeus and in front of the ocelli. Pronotum chiefly blackish with a rather broad fascia extending behind the compound eyes, but not reaching the lateral margins. Mesonotum unicolorous, blackish fuscous.

Male genitalia with the subgenital plates shorter than the genital styles; when viewed laterally, genital styles rather short and broad with a distinct dorsal sinus broadly rounded and rather deep and a very shallow ventral sinus; genital styles shorter than the anal segment; dorsal arm of the aedeagus elongate, rather obtuse at the apex; when viewed ventrally the genital styles are narrow, elongate, with a distinct median tooth at the base of the apical third.

Lallemandana phalerata var. **flavifrons** var. n. (Pl. 2, Fig. 16;
Pl. 3, Fig. 5)

This variety is considerably larger than the average of the other varieties, measuring about 8.5 mm. to the apex of the tegmina. The color characters are decidedly different from the varieties described above, but I can find no good structural characters to separate this from *phalerata*.

Crown ochraceous buff, lateral margins in front of the compound eyes narrowly blackish; three distinct ochraceous tawny fascia, one immediately behind the anterior margin, another across the middle of the coronoclypeus and a third extending across the crown between the compound eyes posterior to the coronoclypeus and in front of the ocelli. Anterior margin of the pronotum blackish fuscous, with a broad, transverse, ochraceous buff fascia behind; posterior half of the pronotum blackish fuscous. Mesonotum brown without a median vitta; only a small spot on the anterior margin, and the posterior apex ochraceous buff. Tegmina brownish, costal margin anteriorly blackish fuscous; shoulders with a small elongate spot of ochraceous buff; a somewhat interrupted ochraceous fascia extending from the radius across the corium and to the first claval vein; a large ochraceous buff spot extending from the costal margin across the subapical cells to the medius. Entire face except the narrow dorsal margin, which is blackish fuscous, ochraceous buff; this color extending across the cheeks and across the lateral margins of the thorax as an ochraceous vitta bordered above and below by blackish fuscous.

Genital styles of the male when viewed ventrally rather narrow, when viewed laterally widened to the apical third with a rather deep, somewhat triangular sinus, dorsal angle strongly produced.

There is a single specimen in the present collection from Rota Island, Marianas.

Lallemandana spinifera sp. n. (Pl. 1, Fig. 20; Pl. 2, Fig. 17;
Pl. 3, Fig. 2)

As far as general structure is concerned this species resembles *phalerata* very closely except that the crown is much shorter than is typical in that species.

Crown short and broad, about one-half as long as the width between the compound eyes. Pronotum about one and one-fourth times as long as the crown. Mesonotum as long as the pronotum. Tegmina semicoriaceous; venation distinct, with six apical cells beyond the clavus.

When viewed laterally the male genital plates elongate, as long as the genital styles and the genital segments; apex rather obtuse; genital styles rather broad with distinct dorsal and ventral sinuses; apex obtuse; dorsal and ventral angles produced; with a strongly produced subapical spine anterior to the ventral angle; aedeagus with the dorsal arm somewhat sinuate, obtuse at the apex; when viewed ventrally the genital styles narrow, elongate.

General color of the crown, pronotum, and mesonotum ochraceous buff; compound eyes and lateral margins of the pronotum fuscous; tegmina fuscous with two irregular pairs of ochraceous spots, one near the apex of the basal half of the tegmina extending from costal margin to cubitus, the other in the nodal area extending from the costal margin to media. Venter, including the face, clypeus, labium, venter of the thorax, legs, and venter of the abdomen, light ochraceous buff; spines and claws of the legs blackish fuscous.

Length to apex of tegmina 5.7 mm.

Holotype: Male, Mariana Islands, Rota Island, 8 Sept. 1937.

LITERATURE CITED

- CHINA, W. E. 1933. Cercopidae of the Society Islands. Bull. Bernice P. Bishop Mus. **113**: 39-50.
- , AND MYERS, J. G. 1934. Critical notes on some neotropical species of *Tomaspis* (Homoptera, Cercopidae). Ann. Mag. Nat. Hist. (10) **14**: 448-466.
- DOHRN, F. A. 1859. Homoptera. Catalogus Hemipterorum. Pp. 1-102.
- FENNAH, R. G. 1950. Fulgoroidea of Fiji. Bull. Bernice P. Bishop Mus. **202**: 3-122.

- GIFFARD, W. M. 1925. A review of the Hawaiian Cixiidae, with descriptions of species (Homoptera). Proc. Hawaiian Ent. Soc. **6**: 51-171.
- LALLEMAND, V. 1912. Homoptera Fam. Cercopidae. Gen. Insect. **143**: 1-167.
- MELICHAR, L. 1914. Neue Homopteren von den Philippinen. Philippine Jour. Sci. **9**: 173-181.
- METCALF, Z. P. 1938. The Fulgorina of Barro Colorado and other parts of Panama. Bull. Mus. Comp. Zool. Harvard Coll. **82**: 277-423.
- . 1946. Homoptera. Fulgoroidea and Jassoidea of Guam. Bull. Bernice P. Bishop Mus. **189**: 105-148.
- . 1950. Homoptera from the Caroline Islands. Occ. Papers Bernice P. Bishop Mus. **20**: 59-76.
- STÅL, C. 1854. Nya Hemiptera. Öfv. Svenska Vet. Akad. Förh. **11**: 231-255.
- . 1859. Hemiptera. Species novas descripsit. Kongliga svenska Fregatten Eugénies resa **4**: 219-298.

THE STATUS OF THE NAMES *SCIURUS NIGER CINEREUS* LINNAEUS AND *SCIURUS NIGER VULPINUS* GMELIN

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PLATES 4-5

During the course of a taxonomic study of the fox squirrels, it was discovered that the name *Sciurus niger neglectus* Gray (1867:425), which is currently applied to the subspecies occupying the Eastern Shore of Maryland, should be superseded by *Sciurus niger cinereus* Linnaeus (1758:64).

The scantiness of the description of *Sciurus [niger] cinereus* in Linnaeus' tenth edition (1758:64) leaves much to be desired; although, in the author's opinion, two of his three references (Ray, 1693:215; Catesby, 1754:74; Kalm, 1753:409) clearly establish the identity of this form.

Ray's description of the squirrel's being the size of the common rabbit is somewhat extravagant, but his designation "*The great grey Virginia squirrel*" indicates that he was probably aware of the difference between this squirrel and the gray squirrel (*Sciurus carolinensis*), which occurs throughout Virginia.

Catesby's (1754: vol. II, p. 74, pl. 74) description fits the animal quite well, but it is sufficiently ambiguous to include the gray-white phase of *Sciurus niger niger* when his use of the word "body" is interpreted to include only the torso. The engraving, however, clearly depicts *Sciurus niger cinereus* rather than *Sciurus niger niger*. The whitish nasal and forehead patches usually found in *cinereus* (Plate 4, fig. 2) are clearly shown; and the black hood, invariably present in *niger*, is not in evidence (Fig. 3, left).

Catesby was aware of the presence of the gray squirrel, *Sciurus carolinensis*, for in Vol. II, page xxiv, he states:

"Besides the description of those particular beasts inhabiting the countries