

TROPIDUCHIDÆ AND KINNARIDÆ FROM THE
GREATER ANTILLES¹
(HOMOPTERA: FULGOROIDEA)

BY R. G. FENNAH

Entomologist, Food-crop Pests Investigation,
Windward and Leeward Islands

The material on which this paper is based was collected a few years ago by Dr. P. J. Darlington in the hilly country of Hispaniola and Puerto Rico, and is deposited in the Museum of Comparative Zoölogy. The two groups discussed — the Neotropical Paricanine *Tropiduchidæ* and the *Kinnaridæ* — appear to have their maximum number of genera and species in the western Caribbean area and to be comparatively poorly represented in the Americas outside this region. Whether the Paricanini of the Old World form a natural group, and whether they are truly co-tribal with the Caribbean generic complex are problems which must wait for solution until the Asiatic species have been critically studied. For the time being the writer proposes to regard the tribe as extending to America, and lists the following characters as being common to the Neotropical genera that are assigned to it: vertex usually longer than wide, posterior margin deeply concave, disc depressed, ecarinate, or with median carina very prominent in the depressed area, or replaced by a vertical plate; frons much longer than wide (1.5 to 1 or longer) with a broad longitudinal median raised band, lateral margins sinuately expanding to near fronto-clypeal suture that incurved; head in profile usually with lateral margins curving evenly from vertex into frons; pronotum short, median carina prominent, disc not bounded by lateral carinæ, or if so bounded then narrow and strongly eminent; mesonotum short, flattened, scarcely half as wide as long; tegmina with a nodal and an apical line of transverse veins, apex of clavus situated near or basad of middle of commissural margin, subapical cells not exceeding six, apical rarely exceeding twelve; post-

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tibiæ trispinose. All the species known to the writer in this tribe are boldly marked on the frons, lateral fields of the pronotum, carinæ, etc., with black, orange, or red, or a combination of these colors, usually in vittæ.

The types of all species described as new are deposited in the Museum of Comparative Zoölogy. The writer's thanks are rendered to the Curator, Prof. N. Banks for permission to examine the collection and to him and to Prof. F. M. Carpenter for assistance in the preparation and publishing of this paper.

Family TROPIDUCHIDÆ
Subfamily Tambiniinæ
Tribe Paricanini

Achilorma Metcalf and Bruner

Metcalf and Bruner, 1930, *Psyche* 37:400

Vertex nearly twice as broad as long, anterior margin moderately convex, evenly rounded, posterior margin rectangularly excavate, lateral margins parallel, disc strongly depressed, anterior border of depression strongly convex, slightly extending before anterior margin of eyes, strongly carinate medially, frons longer than broad (about 1.3 to 1), lateral margins diverging and straight to just below level of antennæ, then incurved to fronto-clypeal suture, a broad longitudinal raised band medially with a shallowly impressed trough on each side; these medially-raised and medio-lateral impressed areas continuing on to clypeus; clypeus laterally carinate. Pronotum subequal in length at middle to vertex, disc strongly eminent, tricarinate, with a small round impression on each side of middle line, lateral carinæ of disc diverging posteriorly at 45° to medial carina, posterior margin obtusely angularly excavated in middle, curving cephalad near sides; mesonotum broader than long, tricarinate, lateral carinæ convex, disc about 1.5 times as long as wide (excluding scutellar apex). Hind tibiæ with three spines.

Tegmina about 3.2 times as long as broad, costal and commissural margins subparallel, apical margin symmetrically and almost semicircularly rounded; Sc+R and M not forked before nodal line, Cu1 forked a short distance before level of apex of clavus, M and Cu1a rather shorter than Sc+R; fourteen apical cells, six subapical; apex of clavus distad of middle of commis-

sural margin, area of membrane much less than that of corium (by approximately a third).

Genotype, *Achilius bicinctus* Spinola 1839, Ann. Soc. Ent. France, 8:321.

A. bicincta Spinola

Female. Length, 5.0 mm.; tegmen, 6.0 mm.

Pallid stramineous, possibly green in life, carinæ of head and thorax, a stripe at sides of abdomen and a suffusion on post-femora red, sometimes concolorous, the carinæ probably also piceous in some specimens; a spot on ventrolateral margin of pronotum on each side, a spot on pleurite immediately beneath the base of each tegmen piceous.

Tegmina ivory hyaline, a fuscous band from costa to anal angle just distad of basal cell, a fuscous band lying along nodal line on its distal side, and accordingly arcuately curved basad, veins of apical line of cross veins narrowly fuscous, a broad slightly paler fuscous border along apical margin, becoming paler at Cu and evanescent before apex of clavus; veins testaceous. Wings with apical lobe faintly suffused fuscous, R-M and M-Cu cross veins dark fuscous, veins otherwise testaceous, slightly tinged fuscous at apical margin.

Ovipositor with third valvulæ each bearing eight spines on margin.

Described from two females collected at Tonalá, Chiapas, Mexico (July 31, 1909) in the collection of the A. M. N. H. They agree with Spinola's description and differ from his figures only in the slightly longer sunken disc of the vertex, the forking of Cu1 before the nodal line and in having one or two more apical veins. The shape of the tegmina is identical. Though this species should fall into the Tambiniinæ on the position of the nodal line, it undoubtedly belongs to the group of Neotropical Paricanine forms. *Achilorma fowleriana* Kirk. is not congeneric with *bicincta*.

Arenasella Schmidt
(figs. 17-19)

Vertex as long as broad, anterior margin strongly convex, lateral margins parallel, posterior margin deeply concave; most of disc of vertex much depressed, anterior margin of sunken area strongly convex almost subangularly so, reaching beyond

eyes for half their length; sunken area traversed by a strong median carina; anterior margin curving uninterruptedly on to frons; frons much longer than broad (1.5 to 1), lateral margins sinuately expanding to near apex, thence incurved to suture; median carina forming a distinct raised band; clypeus medially and laterally carinate. Pronotum in middle scarcely two-thirds as long as vertex, anterior margin of disc convex, heavily carinate; disc narrow, subtriangular, sides not strongly diverging posteriorly; median carina very thick; lateral carinae of disc less so, a pair of carinae on each side of pronotum near and at lateral margins; mesonotum about twice as wide as long, flattened, tricarinate, lateral carinae not converging posteriorly. Post-tibiae trispinose.

Tegmina with Sc+R+M stalk very short, Sc+R and M not forked before nodal line, Cu1 forked a short distance before nodal line; fourteen apical cells, six subapical; apex of clavus not reaching to middle of commissural margin, membrane distinctly larger than corium.

Genotype, *A. rubrovittata* Schmidt 1932 *Stett. Ent. Zeit.* 93:39.

Achilorma fowleriana Kirk. is placed in this genus. The type locality of *fowleriana* is given as Teapa in Tabasco, Mexico. Specimens examined by the writer came from Teapa, Mexico. Specimens examined by the writer came from Teapa, Mexico and Cerro Zunil, Guatemala. The small fork of Cu1 before the nodal line is variable.

Cyphoceratops Uhler

Uhler 1901, *Proc. Ent. Soc. Wash.* 4:510.

Genotype, *C. furcata* Uhler *loc. cit.* 511.

This genus must be placed in the Paricanini as the structure of the frons, vertex, pro- and mesonotum and the tegminal venation are characteristic, though the apex of the clavus is distad of the middle of the commissural margin.

Parahydriena Muir

Muir, 1924, *Proc. Haw. Ent. Soc.* 3:464.

Genotype, *P. hyalina* Muir *ibid.*

Vertex twice as long as broad, lateral margins parallel, anterior margin convex, posterior margin deeply excavated, middle of vertex produced dorsally in a vertical triangular plate

with its anterior twin borders convex and posterior border straight or slightly concave; anterior margin with a median groove; frons longer than wide (2.3 to 1), lateral margins sinuately expanding to near apex, then incurved, carinate; median carina in form of a raised band terminating basally against cephalic horn, from which it is separated by a slight groove; clypeus one-third length of frons with a strong median carina, lateral margins carinate. Pronotum short, sloping anteriorly, median carina distinct, lateral carinae of disc absent, lateral margins carinate between eye and tegula. Mesonotum tricarinate, lateral carinae meeting medial carina near its anterior end. Hind tibiae with three spines before apex.

Tegmina devoid of costal area, M leaving Sc+R near base, Sc+R and M not forked before nodal line, Cu forked just distad of middle of corium; a single subapical line of cross veins in membrane, forming six subapical cells and fourteen apical.

P. hyalina Muir

(figs. 14, 15, 27, 31)

Female. Length, 6.0 mm.; tegmen, 6.5 mm.

Green; margins and carinae of front and vertex, sides of cephalic horn and head above eyes, a stripe on each lateral field of pronotum, a transverse stripe at apex of femora, two spots on mesothoracic pleurites piceous, often bordered red; a spot on metapleurites, postcoxæ, a suffusion on legs, patches on pronotum and mesonotum, abdominal tergites and lateral fields of abdominal ventrites greenish fuscous.

Ovipositor with eight teeth on third valvulae.

Described from a single female taken between 1,000 and 2,000 ft., San José de las Matas, Dominican Republic, by P. J. Darlington (June, 1938). This specimen has a higher cephalic crest than that of the Puerto Rican type.

Family KINNARIDÆ .

Subfamily Kinnarinæ

Southia Kirkaldy

Kirkaldy, 1904, *Ent.* 37:279.

Genotype, *Delphax opposita* F. 1803, *Syst. Rhynch.* 84.

Head with eyes scarcely more than half width of pronotum. Vertex very narrow, anterior margin very short, curving into

frons; lateral margins concave, diverging basally, raised; posterior margin rectangularly excavated, a transverse carina before level of anterior margin of eyes, disc deeply depressed; frons narrow, four times as long as wide at widest part, lateral margins much raised, gradually diverging to level of median ocellus, thence gradually curving inward to suture, median carina absent, median ocellus distinct; frons curving at base uninterruptedly into vertex; clypeus narrow with a strong median carina, lateral margins carinate; genæ slightly tumid below antennæ; antennæ with basal joint conspicuous, one third length of second joint, second joint cylindrical. Pronotum with anterior margin concave behind eyes, acutely produced at middle, posterior margin shallowly angularly emarginate, median carina prominent, lateral carinae of disc absent, lateral margins distinctly carinate between eye and tegula. Mesonotum feebly convex, posteriorly flattened, not depressed, tricarinate, tip of scutellum pointed. Legs slender, hind tibiae unarmed. Abdomen with wax-bearing plates very prominent on segments 6, 7 and 8.

Tegmina with Sc+R+M stalk as long as basal cell, Sc+R forking near stigma. Nine apical cells, four subapical.

Southia iridescens n.sp.
(figs. 11-13, 33)

Female. Length, 3.1 mm.; tegmen, 5.5 mm.

Vertex, frons, except on lateral margins, genæ, pro- and meso-coxæ and postfemora, and abdomen fuscous; mesonotum fuscous with a dark green iridescence; clypeus, lateral margins of frons, and pronotum testaceous; rostrum, legs, except pro- and meso-coxæ and postfemora, basal joint of antennæ, anterior and posterior margins of pronotum, and tegulae stramineous; second joint of antennæ reddish brown; membrane of abdomen pallid.

Tegmina hyaline, ivory-yellow, a small dark spot at stigma bordered with pale, a minute fuscous spot beyond apex of clavus, apex of M faintly smoky; veins testaceous. Wings hyaline, veins fuscous.

Ovipositor with third valvulæ bluntly triangular, thickened.

Described from one female collected on El Tucuche, Trinidad, B. W. I. by P. J. Darlington (April, 1929). The genus

Southia differs from *Paroecleidius* Myers (type, *P. luizi* Myers, seen) in the shape of the vertex, in the length of the first segment of the antenna and in the number of subapical cells; from *Oecleidius* Van Duzee in the lower lateral carinae of the frons, in the more prominent median carina on the clypeus, and in the less slender legs, as well as in the characters mentioned previously. In superficial appearance this insect is like *Oecleidius fulgidus* Van Duzee (type seen) though it lacks the pallid scutellar apex.

Subfamily Prosotropinæ

Quilessa Fennah

Fennah, 1942, Proc. Ent. Soc. Wash., 44, 5:103.
Genotype, *Q. lutea* Fenn. loc. cit. 104.

Quilessa tristis sp. nov.
(figs. 1, 20, 38, 39)

Female. Length, 2.1 mm.; tegmen, 2.7 mm.

Piceous; rostrum, fore and middle legs and hind tarsi pale testaceous, antennal collar and apical margin of first antennal joint narrowly pallid, postfemora fuscous, posttibiae suffused fuscous, pale at apex, membrane of abdomen red.

Tegmina hyaline, heavily suffused smoky-brown on basal third, between posterior claval vein and commissural margin, in distal part of costal cell, in a broad band around apical margin extending inward as far as subapical cells, and slightly at Cu, in the posterior subapical cell; veins piceous, wings hyaline, faintly clouded fuscous distally, veins dark.

Pregenital plate large, quadrate, slightly broader than long, in ventral view with lateral margins slightly diverging distally; posterior margin shallowly concave, interrupted in middle by an almost semicircular plate directed caudad.

Ventral (3rd) valvulæ of ovipositor broad, expanding distally, apical margin oblique, minutely crenulate; dorsal (1st) valvulæ with more sclerotized portion sinuately tapering to a bluntly rounded apex, a large semilunate translucent lobe pendant from its lower border.

Described from a single female taken in Maricao forest, 2,000-3,000 ft., Puerto Rico, by P. J. Darlington (May 30-June 2, 1938). This species differs from others of the genus in the shape of the pregenital plate and in the tegminal coloration.

Quilessa fasciata sp. nov.
(figs. 2, 28, 35, 36)

Female. Length, 1.8 mm.; tegmen, 2.0 mm.

Lateral carinae very feebly present on margins of disc of pronotum.

Vertex and frons fuscous, frons rather paler; median carina throughout and lateral margins at base of vertex pale testaceous, genae fuscous below antennae, antennae fuscous; pronotum fuscous, median carina, lateral carinate margins, posterior and ventro-lateral borders pale; mesonotum fuscous, scutellum pale; tegulae fuscous, pale along inner posterior margin; sternum pale, lightly suffused fuscous; legs pallid yellow; abdomen fuscous, membrane red.

Tegmina yellowish, hyaline, clouded brown near base, and with a broad band of brown from middle of costa to commissural margin just basad of claval apex; veins pale distad of nodal line. Wings hyaline, veins testaceous, distally pallid.

Pregenital plate large, almost square, anterior margin shallowly convex, lateral margins in ventral view parallel, posterior margin transverse.

Third valvulae of ovipositor moderately narrow, tapering distally; dorsal margin straight, ventral margin convex: first valvulae narrower, porrect, tapering distally to a blunt point, dorsal margin slightly convex, ventral margin straight.

Described from two females taken in Maricao forest, 2,000–3,000 ft., Puerto Rico, by P. J. Darlington (May 30–June 2, 1938). This species is distinguished by the shape of the pregenital plate and the tegminal coloration.

Quilessa pellucida sp. nov.
(figs. 3, 21, 40, 41)

Male. Length, 1.7 mm.; tegmen, 2.0 mm.

Piceous, legs fuscous near joints, membrane of abdomen red.

Tegmina hyaline, lightly suffused brown on basal fifth, veins and margin testaceous to fuscous. Wings hyaline, veins testaceous.

Anal segment with lateral lobes prominent, produced distally. Perianthrium thin, scoop-like, incompletely divided into two unequal lobes by a deep notch passing medio-ventrally from apex; lobe of left side very broad, ventral margin in profile

strongly convex, dorsal margin straight, turning upward near apex; lobe of right side much narrower, curving dorsally and tapering evenly to an acute point. Penis with a long sinuate spinose process arising one-third from base on left side directed dorsally and caudad, apical portion of penis lobate, in profile with dorsal margin shallowly convex, apical margin oblique, minutely denticulate, apical process a stout, curved spine directed dorsally and posteriorly.

Genital styles in profile expanding from base, ventral margin almost straight, curving distally into a narrow lobe, dorsal margin concave, rising steeply and curving mesally to meet vertical apical margin in a blunt point.

Described from a single male taken in Maricao forest, 2,000–3,000 ft., Puerto Rico, by P. J. Darlington (May 30–June 2, 1938). This species is distinguished by the genitalia and the tegminal coloration. It differs from all the lesser Antillean species in not having a lateral process projecting from the hind margin of the pygofer, a difference which may prove to be of generic value if other forms like *pellucida* are found with a generally similar aedeagal armature.

Quilessa funebris sp. nov.
(figs. 4, 30, 42, 43)

Female. Length, 1.7 mm.; tegmen, 2.1 mm.

Piceous; rostrum, legs excluding pro- and meso-coxae testaceous, slightly suffused fuscous; membrane of abdomen red.

Tegmina smoky brown, a hyaline spot in middle of corium between M and Cu1 extending slightly beyond M towards R, a smaller hyaline spot at base of longest apical cell (M2), a pale line just distad of nodal line; first subapical and inner margin of posterior subapical cell almost hyaline; veins fuscous. Wings hyaline, very slightly tinged fuscous; veins fuscous.

Pregenital plate subquadrate, twice as broad as long, anterior margin straight, lateral margins in ventral view parallel, posterior margin rather strongly convex. Ovipositor with third valvulae fairly broad, dorsal and ventral margins almost parallel, apical margin very oblique, first valvulae about two and a half times as long as broad, bluntly rounded distally, dorsal and ventral margins weakly convex.

Described from a single female taken on El Yunque, Puerto

Rico, at about 3,000 ft., by P. J. Darlington (May, 1938). This species is distinguished by the shape of the pregenital plate and of the valvulae of the ovipositor, and by the coloration.

Atopocixius Muir

Muir 1926 Proc. Haw. Ent. Soc. VI, 2:335.

Genotype, *A. ornatus* Muir *loc. cit.* 336.

Head with eyes a little more than half width of pronotum. Vertex longer than wide expanding to base which is shallowly emarginate; median and lateral carinae well developed, curving uninterruptedly on to frons; no transverse carina. Frons longer than its widest part (1.4 to 1), base scarcely half as wide as apex, sides expanding to nine-elevenths from base, then evenly converging to apex, median carina distinct, lateral margins slightly raised. Clypeus at base four-fifths as wide as widest part of frons, tapering acutely to apex, median carina distinct, lateral margins slightly raised. Frons in profile slightly convex sloping into vertex in a somewhat acutely angulate curve; clypeus almost flat; no median ocellus; genae slightly tumid below antennae; no subantennal process; antennae with basal segment very short, second segment slightly longer than broad, eyes widely emarginate ventrally. Pronotum three-quarters as long as vertex, anterior margin of disc convex, posterior margin shallowly excavated, curving anteriorly at sides, median carina prominent, lateral carinae of disc present, incurved anteriorly, lateral margins carinate between eye and tegula. Mesonotum feebly convex, tricarinate, hind portion only slightly depressed, tip of scutellum acute. Hind tibiae unarmed. Tegmina with sides expanding distally for three-quarters of length, almost symmetrically rounded at apex; clavus not granulate; apex of clavus situated three-quarters from base of tegmen; costal cell wide, slightly expanding apically, Sc+R joined to near stigma, common stalk Sc+R+M half as long as basal cell; typically seven or eight apical cells, the first two (or three) with curved sides, followed by a smaller triangular cell; second cell of M long with lateral margins decurving distally; distal portion of M curving posteriorly; third cell of M curved, subtrapezoidal, first cubital triangular or even semilunate, posterior cell pentagonal; a subapical series of four cells, the anterior forming a quarter circle, second rectangular, third pentagonal, fourth quadrangu-

lar. Wings with four apical cell elongate-triangular with a very short basal stalk.

This genus is near *Quilessa*, but differs in the shape of the vertex and of the frons, in the presence of a distinct pronotal disc bounded by carinae, in the pronounced curvature of the veining at the apex in the tegmina, in the relatively more elongated and shorter-stalked fourth apical cell in the wings, in the wider lateral lobes of the male anal segment and in the basic form of the aedeagal armature. The four known species of this genus agree in possessing a small dark spot at the basal end of the stigma and a second dark spot in the third apical cell of M, but this character may not be of significance in identifying the genus.

Atopocixius collaris sp. nov.

(figs. 7, 26, 29, 44-46)

Male. Length, 1-8 mm.; tegmen, 2.0 mm.

Female. Length, 1-9 mm.; tegmen, 2.1 mm.

Scutellar portion of mesonotum scarcely depressed.

Vertex, frons, clypeus, anterior margin medially and lateral fields of pronotum, tegulae, mesonotum except on lateral margins and scutellum, postfemora except at base and apex, and abdominal sclerites piceous; lateral margins of vertex at base, lateral margins of frons in apical half, genae below antennae, rostrum, upper surface of pronotum, tip of scutellum and legs whitish yellow; lateral margins of mesonotum orange brown; membrane of abdomen red.

Tegmina fuscous; distal half of costal cell except for an oblique fuscous band, middle portion of first subapical and apical cells from stigma as far as M2, a narrow spot overlying vein forming base of second apical cell of M, hyaline, the intervening veins heavily infuscate except at node; base of tegmen, scutellar margin and a small triangular spot at apex of clavus pallid yellow; a dark fuscous spot at base of stigma and another at base of third apical cell of M. Wings hyaline, veins fuscous.

Anal segment of male with lateral lobes broad produced beyond anal margin scarcely or not incurved distally. Aedeagus with a slender sclerotised rod in middle line dorsally, a sinuate distally bifurcate spinose process arising near middle of ventrolateral margin on each side, directed obliquely backward and outward; a pair of vertical spinose processes at apex, slightly

curved anteriorly near tip. Genital styles in profile fairly narrow, dorsal margin convex basally, concave in middle, slightly convex distally, distal lateral process shallowly emarginate, distal and proximal protuberances of equal height; apex of each style curved posteriorly, lip-like.

Pregenital plate of female twice as wide as long, subquadrate; anterior and posterior margins transverse, lateral margins in ventral view distinctly convex.

Described from one male taken at Constanza, Dominican Republic, at 3,000–4,000 ft. (August, 1938) and one female from Mt. Diego de Ocampo, Dominican Republic, at the same altitude (July, 1938), both collected by P. J. Darlington. This species is distinguished by the shape of the genitalia, and by the body and tegminal coloration.

Atopocixius melanocephalus sp. nov.
(figs. 5, 10, 37, 49, 50)

Male. Length, 1.9 mm.; tegmen, 2.0 mm.

Piceous; rostrum, legs, and anterior portion of discal carinae of pronotum fuscous.

Tegmina hyaline, fuscous or brown in corium between Sc+R and commissural margin, costal cell infusate at base, traversed by a very oblique fuscous band in distal quarter; first subapical cell mostly hyaline and a hyaline area in each apical cell from stigma as far as M2 a clear spot overlying the cross vein at base of second apical cell of M; common vein of clavus pale just distad of junction, and a small pale area at apex of clavus; a small fuscous spot at base of stigma and another at base of third apical cell of M. Wings hyaline.

Anal segment of male with lateral lobes produced, broad, not incurved. Aedeagus almost straight, slightly tapering distally; perianthrium with a pair of minute teeth on each side ventrolaterally two-thirds from base; narrowing abruptly at apex and produced into a pair of long recurved thin processes, each of which gives off a short spine dorsally towards the apex, and at tip is laterally compressed into a flat lobe continued dorsally in a short horizontal spine directed anteriorly; penis with a pair of narrow sclerotised arms tapering distally, each bearing on its inner face dorsally a series of five short teeth directed mesally and posteriorly. Genital styles in profile fairly narrow, dorsal margin slightly convex at base, strongly concave distally, dorso-

lateral process of each side slightly notched, distal lobe very much larger than proximal; ventral margin convex, apical margin deflexed, in profile minutely excavated.

Described from a single male taken at 1,000–2,000 ft., San José de las Matas, Dominican Republic (June, 1938), by P. J. Darlington. This species is distinguished by the shape of the male genitalia and by the coloration.

Atopocixius major sp. nov.
(figs. 6, 22, 25, 34, 47, 48)

Male. Length, 2.0 mm.; tegmen, 2.5 mm.

Female. Length, 2.2 mm.; tegmen, 2.7 mm.

Frons, except on lateral margins distally, clypeus, sides of head before eyes, lateral fields of pronotum, mesonotum, except on margins and scutellum, tegulae, pro- and meso-coxae, basal two-thirds of postfemora, and abdomen piceous; vertex, lateral margins of frons distally, genae, rostrum, upper surface of pronotum, mesothoracic pleurites below tegulae, tip of scutellum and legs, except basal part of postfemora, sulphur yellow; margins of mesonotum reddish brown; membrane of abdomen red.

Tegmina fuscous; a spot covering apex of costal and base of first subapical cells, middle and distal areas of apical cells from stigma to M2, a small spot overlying M cross vein in membrane, and a small area at apex of clavus hyaline; a spot at base of stigma and another at base of third apical cell of M dark fuscous; base of tegmen and scutellar margin pallid yellow; veins fuscous. Wings hyaline, slightly smoky at base, veins fuscous.

Anal segment of male short, lateral lobes broad, produced distally, not incurved. Aedeagus with perianthrium tapering distally, somewhat oblique and expanded near apex, the two sides together assuming a shallow scoop-like form; dorsal margin of each side at apex with three or four minute teeth and a short almost horizontal apical spine. Penis slightly curved, ventral margin weakly convex, dorsal margin sinuate, subparallel to near apex, then abruptly decurved to meet ventral margin in a short spine directed posteriorly and outward, continuing outward curvature of each lateral arm of penis. Genital styles in profile rather narrow, dorsal margin slightly convex at base, thence strongly concave, dorso-lateral apical process deeply excavated, distal protuberance narrowly lobate, much

longer than proximal; ventral margin convex, apical margin deflexed, lip-like.

Pregenital plate of female twice as wide as long, subquadrate, anterior and posterior margins parallel, lateral margins in ventral view slightly convex.

Described from one male and one female taken between 3,000 and 7,000 ft. in Valle Nuevo, S. E. Constanza, Dominican Republic, by P. J. Darlington (August, 1938). This species is distinguished by its size, by the shape of the male genitalia, and by the coloration.

Lomagenes gen. nov.

Head with eyes scarcely two-thirds width of pronotum. Vertex as long as wide, lateral margins expanding to base, which is shallowly emarginate; anteriorly a broad transverse ill-defined ridge or obsolete carina separating vertex from frons; about midway between this and base a prominent transverse carina, angulate at middle with apex cephalad, with a median carina passing forward from it to curve on to frons; vertex basad of this angulate carina depressed, the depressed part being two and a half times as wide as long. Frons longer than its widest part (1.4 to 1), base slightly more than half as wide as apex, lateral margins sinuately expanding to three-quarters from base then curving inward to suture; median carina distinct, lateral margins carinate, slightly raised. Clypeus at base three-quarters as wide as widest part of frons, tapering acutely to apex; median carina absent, lateral margins carinate; clypeus and apical half of frons only slightly convex in profile, suture impressed, frons at base subangularly rounded into vertex; no median ocellus, genæ rather tumid below antennæ; no subantennal process; antennæ with basal segment very short, second segment slightly longer than broad; eyes widely emarginate ventrally. Pronotum as long as vertex, anterior margin medially convex, shallowly emarginate behind eyes, posterior border shallowly emarginate, curving anteriorly at sides; median carina distinct, lateral carinae of disc obsolete or absent, lateral margins strongly carinate between eyes and tegulae; mesonotum feebly convex, distinctly tricarinate, scutellar area depressed, tip of scutellum acute. Hind tibiae unarmed.

Tegmina with sides expanding apically for two-thirds of

length, almost symmetrically rounded at tip; clavus not granulate. Costal cell wide, slightly expanding apically, Sc+R joined to near stigma, common stalk Sc+R+M half as long as basal cell. Typically eight apical cells, the anterior trapezoidal, second quadrilateral with straight sides, third small, triangular, fourth elongate, rectangular, fifth triangular, sixth elongate, wedge-shaped, seventh triangular, eighth pentagonal; a sub-apical series of three cells, the first forming a quarter circle, second subrectangular and third quadrilateral; clavus joining commissural margin about two-thirds from base of tegmen. Genotype, *Lomagenes delphacoides* sp. nov.

This genus is near *Quilessa* but differs in possessing no median carina on the clypeus and an angulate carina on the vertex with a sunken area behind it.

Lomagenes delphacoides sp. nov.

(figs. 8, 9, 23, 24, 32)

Female. Length 2.0 mm.; tegmen, 2.7 mm.

Vertex, except carinae, base of frons, upper surface of pronotum except anterior margin, fuscous; carinae of vertex, basal half of frons, clypeus, thoracic pleurites, anterior margin of pronotum, margins of mesonotum, tegulae, reddish-brown; apical portion of frons, genæ below antennæ, legs, valvulae of ovipositor, testaceous; mesonotum and scutellum fuscous-piceous with a faint greenish iridescence; abdomen piceous.

Tegmina hyaline, slightly suffused yellowish-brown on clavus in basal third and apical quarter; veins and margin testaceous-fuscous. Wings hyaline, veins fuscous.

Pregenital plate quadrate, slightly more than twice as broad as long, anterior margin transverse, minutely crenulate, lateral margins in ventral view slightly diverging posteriorly, feebly convex, posterior margin transverse or very shallowly concave. Third valvulae of ovipositor broad, tapering distally to a blunt point, dorsal margin almost straight, ventro-apical margin oblique. First valvulae narrow, bluntly rounded distally.

Described from one female taken at about 6,000 ft. at Loma Vieja, S. Constanza, Dominican Republic, by P. J. Darlington (August, 1938).

Dineparmene gen. nov.

(fig. 16)

Vertex a little longer than wide, lateral margins diverging basally, posterior margin very shallowly excavate, anterior margin transverse curving uninterruptedly into frons; lateral margins carinate, median carina distinct to base and passing anteriorly into median carina of frons, no transverse carina; frons longer than broad (1.4 to 1), lateral margins expanding distally not narrowing to suture, or scarcely so; greatest width of frons below level of antennæ; width at base slightly more than half width at apex; median carina present throughout, no median ocellus; clypeus at base scarcely as wide as widest part of frons, flattened, weakly carinate medially, lateral margins carinate; vertex and basal half of frons forming in profile an even curve, apical half of frons feebly convex, suture impressed; genæ somewhat tumid; antennæ with basal segment very short, ring-like, second segment slightly longer than broad. Pronotum as long as vertex, posterior border shallowly excavated, sloping obliquely anteriorly near sides; median carina distinct, no lateral carinae on disc, lateral margins carinate between eye and tegula; mesonotum convex, strongly tricarinate, scutellar area much depressed; posttibiae unarmed. Abdomen with wax-bearing plates rather prominent.

Tegmina with sides subparallel; Sc+R forking near stigma, a short Sc+R+M stem basally, nine cells on apical margin. Wings with fourth apical cell about three times as long as its basal stalk.

Genotype, *Eparmene cubana* Myers 1928, Studies on Cuban Insects: 20.

This genus has the wax-bearing surfaces of the abdomen developed to a larger size than seems to be usual in Prosotropinæ. It differs from *Eparmene* Fowler in having the frons reaching its greatest width below the level of the antennæ, the maximum width in *Eparmene* being reached at the upper level of the antennæ; in having the basal joint of the antennæ very short, this being unusually long in *Eparmene*, and in not having a tricarinate pronotum. The description has been drawn up from the monotype with the original description at hand. It is worth recording that the waxy secretion of *D. cubana* is unusual in taking the form of curved thick parallel rods, which are translucent and opalescent.

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EXPLANATION OF PLATES

1. *Quilessa tristis* Fenn. Head and prothorax, dorsal view.
2. *Q. fasciata* Fenn. Head and thorax.
3. *Q. pellucida* Fenn. Do.
4. *Q. junebris* Fenn. Do.
5. *Atopocixius melanocephalus* Fenn. Do.
6. *A. major* Fenn. Do.
7. *A. collaris* Fenn. Do.
8. *Lomagenes delphacoides* Fenn. Do.
9. *L. delphacoides* Fenn. Head, facial view.
10. *Atopocixius melanocephalus* Fenn. Do.
11. *Southia iridescens* Fenn. Head and prothorax, dorsal view.
12. *S. iridescens* Fenn. Head, facial view. (Right side omitted.)
13. *S. iridescens* Fenn. Vertex and basal part of frons in profile.
14. *Parahydriena hyalina* Muir. Head and pronotum, side view.
15. *P. hyalina* Muir. Base of frons and process of vertex, anterior view.
16. *Dineparmene cubana* Myers. Head, facial view.
17. *Arenasella fowleriana* Kirk. Head and thorax, dorsal view.
18. *A. fowleriana* Kirk. Tegmen.
19. *A. fowleriana* Kirk. Apical portion of wing.

20. *Quilessa tristis* Fenn. Tegmen.
21. *Q. pellucida* Fenn. Tegmen.
22. *Atopocixius major* Fenn. Apical portion of wing.
23. *Lomagenes delphacoides* Fenn. Pregenital plate of female, ventral view.
24. *L. delphacoides* Fenn. Valvulæ of right side of ovipositor, lateral view.
25. *Atopocixius major* Fenn. Pregenital plate of female, ventral view.
26. *Atopocixius collaris* Fenn. Do.
27. *Parahydriena hyalina* Muir. Tegmen.
28. *Quilessa fasciata* Fenn. Do.
29. *Atopocixius collaris* Fenn. Do.
30. *Quilessa funebris* Fenn. Do.
31. *Parahydriena hyalina* Muir. Apical portion of wing.
32. *Lomagenes delphacoides* Fenn. Tegmen.
33. *Southia iridescens* Fenn. Do.
34. *Atopocixius major* Fenn. Do.
35. *Quilessa fasciata* Fenn. Valvulæ of ovipositor, left side, lateral view (figured upside down).
36. *Q. fasciata* Fenn. Pregenital plate of female and valvulæ of right side, ventral view.
37. *Atopocixius melanocephalus* Fenn. Tegmen.
38. *Quilessa tristis* Fenn. Pregenital plate of female, ventral view.
39. *Q. tristis* Fenn. Valvulæ of ovipositor, right side, lateral view.
40. *Q. pellucida* Fenn. Left genital style, lateral view.
41. *Q. pellucida* Fenn. Ædeagus, left side, lateral view.
42. *Q. funebris* Fenn. Valvulæ of ovipositor, right side, lateral view.
43. *Q. funebris* Fenn. Pregenital plate of female, ventral view.
44. *Atopocixius collaris* Fenn. Ædeagus, right side, lateral view.
45. *A. collaris* Fenn. Ædeagal spine of right side, dorsal view.
46. *A. collaris* Fenn. Right genital style, lateral view.
47. *A. major* Fenn. Ædeagus, right side, lateral view.
48. *A. major* Fenn. Right genital style, lateral view.
49. *A. melanocephalus* Fenn. Ædeagus, left side, lateral view.
50. *A. melanocephalus* Fenn. Left genital style, lateral view.



