

## II. NEOTROPICAL HOMOPTERA OF THE CARNEGIE MUSEUM.

### PART 2. RECORDS AND DESCRIPTIONS OF FIVE NEW GENERA AND SIXTY-FIVE NEW SPECIES OF THE SUBFAMILY JASSINÆ.

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The records and descriptions of new species here included all pertain to the subfamily *Jassinæ* of the Cicadellidæ (formerly *Jassidæ*). Practically all are from the interior basin of the Amazon in Western Brazil, from eastern Bolivia, and from Colombia. The material described indicates a great wealth of peculiar forms. The species collected by H. H. Smith, Dr. John D. Haseaman, Jr., and Señor José Steinbach are of particular interest. They are from the Amazonian watershed east of the Andes, and in the descriptions given are duly credited to the collectors. A number of species occur, which have a wide distribution in the tropics, some of which extend even into temperate regions both to the north and the south. It seems evident that the region from which the material has been derived may present as great a variety of species as occurs in the plains-region of our western Mississippi Valley.

Family **CICADELLIDÆ**.

Subfamily **JASSINÆ**.

Genus **HECALUS** Stål. (1864).

*Hecalus* Stål, Ann. Soc. Ent. France, (4) IV, 1864, p. 65.

1. *Hecalus notatus* sp. nov.

Head scarcely as wide as pronotum, flattened, sub-angulate; vertex scarcely as long as wide, twice as long at middle as next the eye; front slightly convex; clypeus narrow, nearly twice as long as wide; eyes large; cheek margin sub-angulate, the lower border concave and the margin faintly reflexed; antennæ small, scarcely longer than head; pronotum broad, uniformly rounded in front, deeply concave behind; scutellum large; clavus with two veins. *Genitalia: female*, last ventral segment nearly twice as long as preceding, outer angles rounded, produced into a short tooth and distinctly carinate; *male*, valve small,

produced into a blunt tooth behind; plates short, thick, one-half longer than the valve, tips rounded.

Brown-gray; two large discal patches on the vertex; the anterior border and four somewhat obscure spots across the base of the pronotum, the basal portion and apex of scutellum, a dot on outer and inner margin of clavus, and a deep spot at base of anteapical areoles, the veins and outer part of apical areoles, fuscous. Beneath, disk of the front, base of clypeus, most of loræ, and the femora of hind legs, dark fuscous.

Length: female, 4.5 mm; male, 4 mm.

A small, broad, depressed species; the head margins thin and acute, with fuscous patches or dots on vertex, pronotum, scutellum, and elytra.

Described from two specimens; one female (*type*) from Santarem, Brazil, Dec. 28, 1909, C. M., Acc. 4043 (Haseman, *coll.*); and male (*allotype*) from Province del Sara, Bolivia, Nov. 1912, C. M., Acc. 5064 (Steinbach *coll.*).

HECALOIDIA gen. nov.

Head moderately expanded, not widely foliaceous, sub-angulate in front; vertex depressed; front in profile concave at base, nearly flat; cheeks broad; pronotum with carinate lateral margins; clavus with two veins united by two cross-veinlets; costa with reflexed veinlets beyond the middle. Type of genus *Hecaloidia nervosa* sp. nov.

2. *Hecaloidia nervosa* sp. nov.

Head distinctly flattened, wider than pronotum, margin acute, but slightly foliaceous, obtusely angulate; vertex nearly twice as long at middle as next the eye; ocelli on the margin about their diameter from the eye; antennæ short, scarcely longer than the head; front broad, margins nearly parallel, narrowing rapidly below antennæ; clypeus twice as long as broad, scarcely widened toward the apex; loræ not reaching margin of cheeks; margins of cheek distinctly sinuate; pronotum one-fourth longer than vertex; lateral margins short, carinate; hind border concave; scutellum wider than long; clavus with two veins joined by two cross-veinlets and the outer one joined to the claval suture by one or two veinlets; one cross-vein between inner and outer sector; about five or six cross-veinlets in the costa beyond the middle.

Dull brown; vertex with broad patches of fuscous; pronotum with four broken divergent fuscous stripes; scutellum with a median line and transverse impression, fuscous; elytral veins dark fuscous; areoles sub-hyaline; claval and discal areoles milky; and, including dusky patches, the costal-veinlets and narrow apical border, blackish;

face brown, with yellowish arcs on front and darker sutures; legs obscurely banded, tarsal claws black.

Length: ♂ 6 mm.

This species is prevalently brownish, with patches of fuscous on head, pronotum, scutellum and elytra; costa with numerous cross-veins beyond the middle. It appears to belong near *Hecalus* or *Huleria*, but differs in too many important characters to be placed in either of these genera. The head is less foliaceous than in *Hecalus*, but more so than in *Parabolocratus*.

Described from one specimen (*holotype*) from Villa Bella, Bolivia, October 6, 1909, C. M., Acc. No. 4043 (Hasegan coll.).

#### Genus SPANGBERGIELLA Signoret.

*Spangbergiella* Signoret, Annales Soc. Ent. France (V) IX, p. 273.

#### 3. *Spangbergiella fasciata* sp. nov.

Head wider than pronotum; hind border strongly arched; vertex as long as wide, acutely angular, convex; ocelli minute, distant from the eye; front narrow, constricted toward the tip; clypeus longer than broad, rounded at apex; loræ small, scarcely touching the front, but merging into the cheek-border; cheek-margin strongly sinuate beneath the eye; pronotum scarcely as long as vertex, wide, margin very short, postero-lateral margin short, angle rounded, behind deeply concave; scutellum longer than wide, acuminate at tip; distinct claval vein near the center and apparent second vein merging with the border at the inner angle; veins of corium obsolete. *Genitalia: male*, valve large, nearly semi-circular behind; plates thick, compressed toward the tips, the base reddish, disc yellowish, and the tips dark brown.

Above, vertex, pronotum, and scutellum with alternating ocher-fulvous and olive-gray stripes, the former converging and uniting toward the tip of the vertex, the outer ones terminating at the postero-lateral angle of the pronotum, the inner ones continuing across the scutellum, and the median stripe occupying the disc of the scutellum; another ocher-red stripe borders the base of the face, and the black of the face is narrowly bordered with the same color; the tip of the clypeus brownish; legs brownish; the fuscous bands on the femora and the tips of tibiae and tarsi smoky; elytral veins hyaline; abdominal segments fuscous, bordered with reddish yellow; the terminal segment more distinctly reddish.

Length: 5.5 mm.

Elongate, head strongly angled; four broad ocher-fulvous stripes merging on sides of vertex and nearly meeting at the tip, diverging across the pronotum, the inner pair extending across the scutellum

where they form the lateral spots and are separated by a narrow olive-gray stripe from a broad median stripe; elytra transparent; lower part of face and sternum, black; abdomen dark brown, segments with yellowish margins.

In the apparent single vein of the clavus this species agrees with *Spangbergiella*, but, if the female agrees with the male in the blunt border of the head, it would perhaps more properly constitute a new genus. It appears to be distinct from *Bergiella* Baker, which agrees with *Spangbergiella* in the single claval vein, but according to Berg's description the head is foliaceous even in the male.

Described from fourteen males (*type* and *paratypes*), labelled "S. Antonio de Guaporé, Brazil, July and August, 1909, Haseman."

#### 4. *Spangbergiella vulnerata* (Uhler).

*Glossocratus vulnerata* UHLER, Bull. U. S. Geol. Survey, III, 1877, p. 464.

Head narrower than pronotum; vertex obtusely angled, nearly twice as wide as long, rounded to front; front somewhat swollen; clypeus nearly twice as long as wide; loræ close to margin of cheek; border of cheek distinctly sinuate. Pronotum a little longer than vertex, hind margin concave. *Genitalia: male*, the valve very small, almost concealed; plates narrow, tapering to acute slightly upturned tips; pygofer strongly setose.

Light green; vertex and pronotum with orange-red converging stripes, nearly meeting anteriorly; a fainter short median stripe on pronotum; elytral veins greenish-yellow; beneath dull greenish.

Length: male 4.75 mm.

Head short, margin obtuse, the orange-red stripes strongly convergent, median stripe on pronotum reaching two-thirds of the distance from the base. The male specimens are much smaller than stated for *S. lynchii* Berg, and agree with *S. vulnerata* ♂ in the obtuse border of the head. The female specimens are a little smaller than average specimens of *S. vulnerata*, but I believe come easily within the range of variation for this species.

Two males and five females from Province del Sara, Bolivia, November, 1912, C. M., Acc. No. 5064 (*Steinbach coll.*); one female, Santarem, Brazil, December 10, 1909, C. M., Acc. No. 4043 (*Haseman coll.*); and one female from Puerto Suarez, Bolivia, elev. 150 M. (*Steinbach coll.*). The species ranges from the southern United States to Brazil.

## LUHERIA gen. nov.

Allied to *Hulcria*. Head short, broad; pronotum with strong carina on the rather long side margin; claval veins approximately at middle; middle anteapical cell strongly constricted behind the middle; outer anteapical broad, pedunculate at base; apical areoles short; type of genus *Luheria constricta* sp. nov.

5. *Luheria constricta* sp. nov.

Head distinctly wider than pronotum, broadly arched; vertex twice as wide as length of pronotum, one-third longer at middle than next the eye, flattened, depressed anteriorly; margin acute; front as wide as long; ocelli small, little more than their diameter from the margin of the eye; clypeus twice as long as width at base, enlarged toward the tip; apex truncate; loræ large, nearly touching cheek-margin; cheeks distinctly sinuate below the eye. Pronotum nearly twice as long as vertex; side margins prominent, about one-third the length of pronotum at middle, strongly carinate; hind margin distinctly concave; scutellum moderately large; clavus with two distinct nervures nearly fused or with short connecting vein at middle; corium hyaline; veins conspicuous; a very short or rudimentary second cross-vein forming a short angular inner anteapical; the middle anteapical much constricted, the veins almost touching and forming two angular divisions; outer anteapical short; apical areoles short and angular; apex obliquely rounded; abdomen slender, reaching beyond tip of clavus. *Genitalia: male*, valve broad, short, rounded behind; plates narrow, tapering gradually to upturned blunt tips; the ventral surface swollen and sparsely setose.

Gray-fulvous above; yellow beneath; vertex with narrow anterior border of black; scutellum with three brown stripes; the elytral veins brown, somewhat infuscated, and with distinct fuscous margins in the apical areoles; face unmarked; legs brownish yellow; abdominal segments with fulvous brown laterally.

Length: male 7 mm.

Fulvous gray above, the vertex margined with black; face yellow; elytra sub-hyaline with brown veins margined apically with fuscous. This is a striking species, apparently most nearly related to *Hulcria*, but with different shape of head, and distinctly different venation.

Described from five specimens, males, (*type* and *paratypes*) labelled "Barra, Bahia, Brazil, December 9, 1907, C. M., Acc. No. 3533" (Haseman coll.)

Genus NIONIA Ball.

*Nionia* BALL, Proc. Biol. Soc. Washington, XXVIII, 1915, p. 165.

6. *Nionia* (?) *rugosa* sp. nov.

Body broad; head wider than pronotum, very short, about half as long at middle as next to eye, coarsely punctate; ocelli on the border of vertex, about half way between eye and middle; front wider than long, margin rounded to clypeus, roughly punctate and rugose; clypeus short, slightly longer than broad, coarsely punctate and rugose; loræ wide, not reaching margin of cheek; margins of cheeks excavated under eye, convexly rounded to clypeus; pronotum nearly twice as wide as long, produced forward, the apex slightly in advance of the eyes; lateral margin carinate, surface coarsely transversely striate and rugose, especially on anterior portion; scutellum punctate; elytra punctate, veins elevated. *Genitalia: female*, last ventral segment elongate, longer than four preceding segments, hind border dentate, a broad tooth at lateral angle a broad central produced tooth, truncate at apex; pygofer short, not quite reaching tip of elytra.

Dark brown, the coxæ and femora darker and the abdomen beneath lighter.

Length: female, 7 mm; width, 2.75 mm.

Dark brown, broad; pronotum coarsely striate; front and clypeus rugulose. Much larger and pronotum less produced than in *Bythoscopus gagatinus* Breddin, but evidently nearly related to *Nionia*, to which I refer Breddin's species. It may require the erection of a new genus, especially if additional species emphasize its separation from that group.

Described from one specimen "Sta. Cruz de la Sierra, Bolivia, elev. 450 M., November 1910, Car Mus., Acc. No. 4549" (Steinbach coll).

Genus *PARABOLOCRATUS* Fieber.

*Parabolocratus* FIEBER, Verh. Zool.-Bot. Gesellsch. Wien, XVI, 1866, pp. 502, 513.

7. *Parabolocratus bolivianus* sp. nov.

Head as wide as pronotum; vertex flat with a faint transverse elevation before the eyes, a little longer than width at base; front rounded, subangulate, in front slightly convex, minutely punctate; clypeus longer than broad, apex truncate; loræ lobate; margin of face marginate to below the eye, broadly angulate; pronotum short, broadly rounding in front, hind border scarcely concave; the middle anteapical cell narrowed toward the tip, forming a nearly hexagonal cell in end, outer anteapical widened apically, its base nearly touching the costa. *Genitalia: female*, last ventral segment a little longer than the preceding, the hind margin notched at the center, the center slightly elevated and blackish.

Whitish; scutellum and elytra marked with yellowish, especially on the veins. A broad spot on the disk of pronotum and inner angle of clavus; apex of clavus, spot across the middle of the corium, and anteapical cells, dark brown or fuscous. Beneath: face and legs, light brownish yellow; the base of the front with a broad yellowish band, margined with fuscous; abdomen beneath yellowish with fuscous sutures; the last ventral segment with a black spot in the center.

Length: 4 mm.

Light yellowish and whitish, with nearly hyaline elytra; dark fuscous patches on disk of pronotum, disk of clavus, middle of the elytra, apex of clavus, and across the apical cells.

Described from several specimens (*type*, *allotype*, and *paratypes*) from Province del Sara, Bolivia, elev. 450 M., November 1909, C. M., Acc. No. 4549 (Steinbach *coll.*). Specimens from Puerto Suarez, Bolivia, elev. 150 C. M., Acc. No. 3844 (Steinbach *coll.*) differ from the typical form in being slightly smaller, less distinctly maculate, and with the pronotal spot obsolete or very faint. If constant, it may be known as variety *pallida*.

#### Genus PLATYMETOPIUS Burmeister.

*Platymetopius* BURMEISTER, Genera Insectorum, I, 1838, Subgenus 4, Pl. 14.

#### 8. *Platymetopius lineolatus* sp. nov.

Head scarcely as wide as pronotum; vertex a little longer than width at base, about twice as long at the middle as next the eye, flattened and slightly depressed, margins acute; front faintly concave in profile, strongly convex transversely; clypeus nearly twice as long as basal width; loræ long, almost touching margin of cheek; cheek convex, scarcely emarginate under eye; pronotum about three-fourths the length of vertex, strongly arched, deeply concave behind; scutellum wide; elytral veins distinct; claval veins closely approximate at cross-vein; costal veinlets strongly reflexed. *Genitalia: male*, valve triangular, distinctly angulate behind; plates widening at base, then contracting rapidly to compressed tips, the united plates forming a sharp keel on the median line.

Olive-green, marked with light stripes and dark lines; vertex with two stripes slightly divergent extending to near the apex, slightly passing the origin of the apical median wedge; pronotum with five longitudinal stripes bordered with fuscous; scutellum with two slightly divergent stripes bordered with fuscous, their origin midway between the median and inner lateral stripe of pronotum; veins of elytra black, mostly margined with light olive; areoles hyaline, partly

occupied with blackish lines. Beneath: face light fuscous; a sub-basal stripe on the front bordered with blackish; clypeus and loræ lighter; abdomen black with the narrow margin of segments light yellowish; legs dull yellowish; hind tibiae with black dots, and the tarsi with tips of segments blackish.

Length: 4 mm.

Distinctly marked on vertex, pronotum, and scutellum with whitish stripes bordered with blackish; and with the elytral veins lined with black, margined with whitish; the costal areoles with numerous oblique black veinlets.

This quite unusual species is described from a single specimen (*holotype*) from Villa Bella, Bolivia, October 6, 1909, Car. Mus., Acc. No. 4043 (Haseman *coll.*).

#### 9. *Platymetopius fuliginosus* sp. nov.

Head scarcely as wide as pronotum; vertex nearly twice as wide in front of eyes as at base, bluntly angulate; margin acute; front narrow, sloping uniformly to the narrow clypeal base; clypeus widening toward the tip; loræ elongate, but not reaching outer third of clypeus; pronotum short, anterior border somewhat sinuate for the reception of the eyes; the elytral venation indistinct, but normal. *Genitalia: female*, last ventral segment one-half longer than preceding, narrowed and sub-truncate behind, with a broad shallow notch at middle; *male*, valve long, broad at base, rounded at apex; the plate short, the part beyond the valve scarcely as long as the valve, broad at base narrowing sharply to near the middle and tapering to rather sharp, slightly divergent, and upturned tips.

Vertex dark fuscous with a spot at the tip, a transverse row of six elliptic spots forming a light band in front of the eyes, and two spots at base, yellow; eyes yellowish transparent; face and legs yellow; pronotum, scutellum, and elytra uniformly dark chocolate-brown or fuscous, with five very faint lines of yellow dots on pronotum; tip of scutellum and faint oblique yellowish lines along the costal border and a small triangular spot and narrow margin of second apical cell yellow; abdomen above and below black, with tip of valve and plate yellowish.

Length: female 4 mm.; male, 3.75 mm.

Above dark smoky or chocolate, the vertex with a transverse row of yellow spots; the eyes, face, and legs yellow.

This species comes very close to *P. nanus* Van Duzee, described from Jamaica, but, aside from the larger size, there are sufficient differences in the marking to preclude its reference to that species, unless intermediate forms are found.



Described from one specimen, male (*type*) from Minca, Colombia, June, 19, C. M., Acc. No. 1999 (H. H. Smith *coll.*); and one female (*allotype*) in author's collection from Costa Rica.

10. *Platymetopius sulphureus* sp. nov.

Head as wide as pronotum; vertex longer than wide, bluntly angular at tip, with a median and two lateral impressed lines; front narrow, convex; clypeus narrow; loræ elongate, reaching almost to tip of clypeus; pronotum short, strongly arched in front, slightly concave behind, lateral margins short. *Genitalia: male*, valve long, rounded behind; plates rather short, about the length of the valve, angulate at tip.

Vertex yellow, little more whitish than the pronotum, with faint brownish lines near the apex and in the depressed lateral lines; face brown, becoming blacker toward the margin; base of the front with alternating brown and yellow lines and one or two faint arcs on each side; pronotum, scutellum, and clavus with broad yellow stripe and bordered with whitish; the outer part of pronotum, angle of scutellum, outer base of clavus, and corium and membrane dark brown with fuscous and blackish patches; the costal cell with about six oblique angular milky bars. Beneath blackish; hind tibiae whitish, with black dots at base of black spines.

Length: 4 mm.

A fuscous and smoky-black species with vertex, disk of pronotum, scutellum, and most of clavus sulphur-yellow with a whitish border.

Described from a single specimen (*holotype*) from Province de Sara, Bolivia, C. M., Acc. No. 5064 (Steinbach *coll.*).

11. *Platymetopius loricatus* Van Duzee.

*Platymetopius loricatus* VAN DUZEE, Bull. Buffalo Soc. Nat. Sci., V, 1894, p. 205.

Head narrower than pronotum; vertex one and one-half times as long as broad; apex bluntly angular, margin sub-acute; front narrow; clypeus widening to tip; loræ elongate; margin of cheeks nearly straight from eye to clypeus; pronotum sharp, distinctly sinuate behind the eyes, while on margin slightly concave; venation of elytra of the typical form. *Genitalia: male*, valve rather short; hind margin rounding; plates broad at base; outer margins straight; tips acute, each plate forming half of an equilateral triangle.

Yellowish gray above, the vertex slightly brownish, with light lines running from the margin on to the disk; the pronotum with five faint whitish longitudinal lines; scutellum with whitish dots; elytra with rounded whitish hyaline spots on a ground-work of brownish with

minute fuscous dots; costal margin with about ten oblique fuscous veinlets; face yellowish with minute fuscous dots and a pale spot at base; legs and abdomen yellowish, dotted with fuscous.

Length: 3.60 mm.

This species bears some resemblance to the *verecundus*-group, but is minutely dotted on the face, and the male plates are short, almost equilaterally triangular.

Two males and one female from Cacagualito, Colombia, May 19, 1898; two females from Bonda, Colombia, June and July 1898, C. M., Acc. No. 1999 (H. H. Smith *coll.*).

These, with previous records from the southern United States and Guatemala, give a wide range for the species.

Genus SCAPHOIDEUS Uhler.

*Scaphoideus* UHLER, Trans. Maryland Acad. Sci., I, 1889, p. 33.

12. *Scaphoideus bicolor* sp. nov.

Head as wide as pronotum; antennæ very long; vertex bluntly angulate, about twice as long at middle as next to eye, margin bluntly angulate; front slightly convex, lateral border sinuate; clypeus nearly twice as wide as long, truncate at apex; loræ large, reaching margin of cheek; margin of cheek slightly sinuate; pronotum a little longer than vertex, strongly arched, hind border slightly concave. *Genitalia:* *female*, last ventral segment produced at middle into a blunt tooth, this and the bristles of pygofer fuscous; *male*, valve small, tubular, resembling small terminal segment, with broad triangular tooth on tip; plates narrow, strongly upcurved into slender tips with long delicate setæ.

Above entirely dark chocolate-brown, except a white dot at end of each claval vein and a whitish hyaline spot on the costa at middle, another including a cross-vein below outer anteapical cell and a few whitish dots on veins. Beneath whitish, the apex of hind tibiæ and tarsal joints fuscous.

Length: female 4.5 mm.; male, 4 mm.

The species is dark chocolate-brown or fuscous above; white or soiled whitish below, tips of hind tibiæ and bands on tarsal joints and tarsal claws fuscous.

It is a handsome species, quite similar in size and coloration to *Platymetopius fuliginosus* sp. nov., but with very different details of structure.

Described from a series of fourteen specimens, two females, twelve

males. One female (*type*) labelled "Las Juntas, Bolivia, J. Steinbach, December 1913, Car. Mus., Acc. No 5066." Another female (*paratype*) "J. Steinbach Cuatro Ojos, Bolivia, November 1913; Car. Mus., Acc. No. 5056." The males (*allotype*) and (*paratypes*) are all but one from the Province del Sara, Bolivia, December 1912, C. M., Acc. No. 5064 (J. Steinbach *coll.*). One is from Province del Sara, Bolivia, elev. 450 M., Car. Mus., Acc. No. 6443 (J. Steinbach *coll.*).

13. *Scaphoideus punctulatus* sp. nov.

Head wider than pronotum; vertex one-half longer at middle than next to eye; ocelli half-way between margin of eye and apex; vertex with margin obtuse; front narrow, nearly twice as long as width between antennæ, margin sinuate, apex truncate; loræ large, extending to margin of cheeks; cheeks narrow, margin scarcely sinuate; pronotum slightly longer than vertex, hind margin almost straight. *Genitalia: male*, valve triangular, plates narrow, apices long and upcurved, closely appressed to pygofer, densely ciliate, fuscous at base and tip.

Light fuscous; vertex with very minute or obsolete dots and a median line forked at the apex, whitish; ocelli included in whitish marginal band; pronotum minutely dotted with whitish; scutellum whitish toward apex; elytral veins fuscous, with numerous whitish dots, the areoles brownish white. Beneath dirty white, legs darker toward the tips.

Length: 4 mm.

Dark brown or fuscous above with minute whitish dots on pronotum and elytral veins. Beneath dirty or soiled whitish.

Described from six specimens, males, three from Province del Sara, C. M., Acc. No. 5064 (*type* and *paratypes*) (Steinbach *coll.*); two from Ft. Principe, Rio Guaporé, Brazil, August 1909, C. M., Acc. No. 4043 (Haseman *coll.*); one from Bahia, Brazil, Dec. 8, 1907, C. M., Acc. No. 3702 (Haseman *coll.*).

14. *Scaphoideus longicornis* sp. nov.

Head as wide as pronotum, vertex rather narrow, as long as width between the eyes, nearly twice as long at middle as next to eye; ocelli half-way to apex a little above the usual position, conspicuous from above; front narrow, nearly twice as long as width between antennal pits, margin sinuate; clypeus nearly twice as long as wide, sides nearly parallel, and very slightly widened to apex; apex truncate, loræ very large, reaching margin of cheek; cheek-margin rounded, slightly sinuate beneath eye; pronotum a little longer than vertex,

hind margin slightly concave. *Genitalia: male*, valve small; plates elongate, densely ciliate toward the tips, and with rather strong dark bristles on the disk.

Dull brown and fuscous, minutely dotted with yellowish white and white on the vertex, front, scutellum, and veins of elytra, with a more pronounced whitish spot behind eye; base of clavus, ends of claval veins, side margins of scutellum, whitish; a whitish semitransparent band behind the middle including a zigzag fuscous line on basal cross-veins of anteapical cells. The cross-veins at base of apical cells and outer part of areoles smoky. Beneath dull brownish white, abdominal segments brown with whitish margin. Tarsal claws darker.

Length: male, 5.5 mm.

Antennæ extremely long, almost as long as body; front, vertex, pronotum, scutellum, and veins of elytra, minutely dotted with white.

Described from three specimens, males (*type* and *paratypes*) from Province del Sara, Bolivia, December 1912, C. M., Acc. No. 5064, (Steinbach *coll.*).

15. *Scaphoideus hyalinus* sp. nov.

Head as wide as pronotum; vertex more than half longer at middle than next to the eye, obtusely angulate; front narrow, tapering nearly uniformly from base to clypeus; clypeus nearly twice as long as wide, truncate at apex; loræ large, reaching margin of cheek; cheek-margin distinctly sinuate; pronotum little longer than vertex, hind margin slightly concave; elytra transparent, the veins more opaque. *Genitalia: female*, last ventral segment twice as long as preceding, lateral angles rounded, slightly produced at middle; *male*, valve short; plates narrow, elevated on the disk, tips very slender and extended into large ciliated filaments.

Light straw-color, with fuscous dots along the commissure, one at end of each claval vein, one at apical angle of clavus, usually one at each cross-vein against outer anteapical, and in some specimens a discal cross-vein and base of fork with fuscous dot.

Length: female, 5 mm.; male, 4.25 mm. to 4.5 mm.

Uniformly light straw-color. Elytra hyaline, with black points at tips of claval veins, apex of clavus, and two cross-veins of costa at outer anteapical cell.

Described from twelve specimens: five from Province del Sara, Bolivia, elev. 450 M. (Steinbach *coll.*); three males, one female (*type*) from Province del Sara, C. M., Acc. No. 5064, November-December 1912, and February 1913, (Steinbach *coll.*); one male (*para-type*) Barra, Brazil, December 6, 1907, Car. Mus., Acc. No. 3533 (Haseman *coll.*).

16. *Scaphoideus affinis* sp. nov.

Head as wide as pronotum; vertex one-third longer at middle than next to eye; front narrowing uniformly to clypeus; clypeus long, widening to apex; loræ large, reaching margin of cheek; cheek-margins sinuate; pronotum one-fourth longer than vertex, hind margin concave; elytra transparent. *Genitalia: female*, last ventral segment produced into a long acute tooth, nearly as long as the segment at the side; *male*, valve broad and short; plates narrowing rapidly to very slender tips and extended into delicate filaments.

Light to straw-color; the vertex, pronotum, and scutellum somewhat suffused with yellow. Dots at end of claval nerves and apex of clavus, faint, almost obsolete; cross-nervures not infuscated.

Length: female, 4.5 mm.; male, 4 mm.

Very similar to *S. hyalinus* Osborn (No. 15) but with distinctly produced ventral segment.

One specimen, female (*type*) from Las Juntas, Bolivia, December 1913, C. M., Acc. No. 5066 (Steinbach *coll.*); one female (*paratype*) and one male (*allotype*) from Minca, Colombia, May 1898, C. M., Acc. No. 1909 (H. H. Smith *coll.*).

17. *Scaphoideus fulvomaculatus* sp. nov.

Head little wider than pronotum, strongly angulate; vertex as wide as long, nearly half longer at middle than next to eye; ocelli close to the eye; front convex, narrowing evenly to clypeus; clypeus nearly twice longer than width at base, distinctly wider toward apex; loræ nearly touching margin of cheek; cheek-margin distinctly sinuate; pronotum one-half longer than vertex, hind margin faintly concave; elytral veins distinct, two cross-veins in costa, one at each end of outer anteapical cell. *Genitalia: male*, valve short, transverse, hind margin nearly straight; plates wide at base, narrowing to slender tips, which are extended into delicate filaments; pygofers long, expanded, and with dense coarse dark bristles.

Gray-brown; vertex with anterior border including ocelli, a transverse spot within the apex, and the basal third, whitish; a submarginal band and the borders of the transverse fulvous band, fuscous; pronotum gray, somewhat suffused with brown, a conspicuous spot anteriorly, two rather faint spots on disk, fulvous; scutellum with four spots on the basal margin and two on lateral margin, ivory-white; central area yellowish bordered with brown; elytra transparent, with milky patches on clavus; veins and spots at end of claval veins, claval apex, cross-nervures, costa, and apical border, infuscate. Beneath dull straw-color, the venter infuscate with margin whitish; legs dull straw-color. Hind tibiae and joints of tarsi with fuscous dots and bands.

Length: male, 4 mm.

This species is very close to our North American *S. auronitens* Provancher, but smaller. It is characterized by the fulvous band on vertex margined with fuscous and the fulvous spots on pronotum and scutellum. It is doubtless derived from the same stock as *S. auronitens*, but, besides the much smaller size, there are differences in detail, which must separate this form, unless intermediate forms are found to connect them.

One specimen, male (*holotype*) from Minca, Colombia, May 1898, C. M., Acc. No. 1999 (H. H. Smith *coll.*).

18. *Scaphoideus obliquus* sp. nov.

Head as wide as pronotum, distinctly angulate; vertex somewhat depressed, margins obtusely angulate, one-half longer at middle than next the eye; front narrow, tapering nearly uniformly to clypeus; clypeus slightly widening toward the tip, one-half longer than wide; loræ large, long, almost touching margin of cheek; cheek-margin slightly sinuate below the eye; pronotum one-half longer than vertex; hind border distinctly concave; elytral venation of the usual pattern, except that the cross-veinlets in the discal areole are distinct and so located that one of them appears like a second cross-vein. Two nodal veins from lower border of outer anteapical. *Genitalia: male*, valve obtusely angulate behind; plates elongate, outer borders slightly sinuate with delicate setæ, somewhat spoon-shaped, the tips acute.

Yellowish fulvous, two roundish spots on vertex, two on anterior border of pronotum and two large spots at sides of scutellum orange-fulvous; elytra light brownish with milky and hyaline areas, a conspicuous black dot below the claval cross-vein, a large discal spot in the inner-discal areole, an oblique line from end of clypeus across the ends of anteapical cells, and following the first apical veinlet the cross-veinlets, fuscous; the veins mostly brownish and the membrane bordering the oblique fuscous line, smoky. Face dark fuscous with a faint purplish bloom, the cheeks somewhat darker and the front with narrow yellow arcs; legs yellowish white; femora with broad fuscous bands; a dot near the apex, and a series of dots on the tibiæ, and bands of the tarsal joints, fuscous.

Length: male, 5 mm.

Somewhat resembling *S. jucundus* Uhler, but with the face entirely dark, and the orange-fulvous spots of vertex and pronotum and scutellum differently arranged. Discal areole of elytra with a number of cross-veinlets. This species presents a distinct facies for the genus, apparently belonging to the *jucundus*-group with which it agrees in the nodal veins and the type of the genitalia.

Described from a single male specimen (*holotype*) from Chapada, Brazil, C. M., Acc. No. 2966 (H. H. Smith *coll.*).

SCAPHOIDULA gen. nov.

Somewhat like *Scaphoidcus*; head broad; vertex rounded to the front; ocelli large, scarcely their diameter from margin of the eye; pronotum short, as long as vertex; side margin short; hind margin emarginate; scutellum large; elytra with two strongly oblique cross-veinlets below anteapical cell. Type of the genus *Scaphoidula cingulata* sp. nov.

19. *Scaphoidula cingulata* sp. nov.

Head wider than pronotum, sub-angulate; vertex as wide as length at middle, half longer at middle than next the eye, convex, rounded to front; ocelli large, conspicuous, less than their diameter from the eye; front longer than broad, tapering evenly to the clypeus; clypeus widening slightly toward tips, twice as long as width at base; loræ large, margins rounded; cheek-margins sinuate; pronotum short, as long as vertex; hind border distinctly concave; elytral veins obscure. *Genitalia: female*, last ventral segment with the angles produced and the hind border nearly truncate; lateral angles produced into teeth.

Milky white; vertex with a central and basal band; pronotum with a central band; scutellum with a basal and sub-apical band; most of the clavus, oblique stripes on apical part of the corium, and borders of the apical veins, fuscous; three black lines on the border of vertex and front, one just above and two below the ocelli; face and underside white, except a band on the femora and dots on the middle and hind tibiae and bands on the hind tarsi, which are black.

Length: female, 5.5 mm.

This species is characterized by being milky white with bands, stripes, and lines of fuscous. It shows affinity to *Scaphoidcus*, but the rounded border of the vertex and the picturing of the apex of the wing seem to make it fall into a group different from any of the known species.

One female specimen, (*holotype*) from Province del Sara, Bolivia, November, 1912, C. M., Acc. No. 5064 (Steinbach *coll.*).

Genus DELTOCEPHALUS Burmeister.

*Deltocephalus* BURMEISTER, Genera Insectorum, I, 1838, Subgenus 3, Pl. 14.

20. *Deltocephalus marginellus* sp. nov.

Head slightly wider than pronotum, subangular; vertex wider than long, half longer at middle than next the eye; margin sub-acute:

front as broad as long; clypeus with sides nearly parallel, one-half longer than broad; cheek-margins nearly straight. Pronotum slightly longer than vertex, faintly concave behind; elytra with two cross-veins and a cross-vein in the middle anteapical cell. *Genitalia: female*, last ventral segment slightly longer than preceding, truncate; pygofer short, set with short stiff bristles toward the apex.

Light brown or dull straw-color; the eyes brown; border of vertex ivory-white, with a black line above and below; elytral veins dull whitish, faintly bordered with darker brown.

Length: female, 3.75 mm.

Somewhat flattened; vertex broad, subangulate, light brown, edge of vertex ivory-white margined with black above and below.

Described from two females (*type* and *paratype*) from Province del Sara, Bolivia, elev. 450 M., Nov. 1909, C. M., Acc. No. 4549 (Steinbach *coll.*).

21. *Deltocephalus tumidus* sp. nov.

Head wider than pronotum, strongly angulate; margin obtuse; vertex as long as wide, nearly twice as long at middle as next the eye; front tumid; clypeus one-half longer than wide, slightly expanded at tip; loræ large; cheek-margin rounded; pronotum as long as vertex, almost truncate behind; costa narrow; outer anteapical long. *Genitalia: male*, valve triangular; plates narrow, compressed; tips acute and upturned, scarcely exceeded by the pygofer.

Dull whitish; vertex with two oblique spots; front at base with two stripes almost meeting at middle, dark orange. Pronotum with four brown stripes; scutellum with brown spots at base and before the apex; elytra smoky, the inner border of clavus with white patches, the costa with a broad hyaline patch, the anteapical and apical areoles partially hyaline, the nervures darker. Beneath: face below the middle of front dusky; pectus and venter blackish; legs and borders of abdomen whitish; tibiæ dusky toward the tip and the tarsal joints tipped with dusky.

Length: male, 3.75 mm.

White, with conspicuous orange spots on vertex; fuscous stripes on pronotum; and elytra irregularly smoky with hyaline patches.

Described from five male specimens (*type* and *paratypes*), four from Province del Sara, Bolivia, elev. 450 M., December, 1912–February, 1913, C. M., Acc. No. 5064; and one from the same region, taken November 1909, C. M., Acc. No. 4549 (Steinbach *coll.*).



## Genus EUSCELIS Brullé.

*Euscelis* BRULLÉ, Exped. Scientif. de Morée, III, 1832, p. 109 (?).20. *Euscelis quadrimaculata*<sup>1</sup> sp. nov.

Head distinctly wider than pronotum, broadly arched; vertex short, scarcely longer at middle than next to eye; front longer than broad, margins scarcely sinuate; clypeus half longer than wide; loræ small, scarcely touching front, distant from margin of cheek; cheek-margin faintly sinuate; pronotum twice as long as vertex; side margin reduced to angle, hind border rather deeply concave; scutellum with deep transverse depression; elytra hyaline, veins narrow, becoming obscure toward the apex. *Genitalia: male*, valve large, longer than preceding segment; hind border broadly rounded; plates compressed, narrowing to acute upturned tips, sparsely setose, distinctly spoon-shaped, a white band across base of the median part.

Dark gray; vertex with black spot next the eye, and three red lines merging into a rather indefinite reddish patch on each side of the median fuscous spot; front broadly bordered with fuscous, enclosing a central lance-shaped spot; clypeus entirely black, an oblique spot below ocellus; lobe above antenna, outer part of loræ, and lower part of cheek, whitish. Pronotum gray, darker on disk, with four large rounded black spots nearly touching the border anteriorly; scutellum black at base and on transverse impression, with an orange-yellow band before impression, connected at sides with light yellowish apex; elytra transparent milky, the veins fuscous, except the costal and outer apical, which are whitish hyaline; thorax black, pleural pieces bordered with whitish, legs dirty white, distal part of tibiæ and tarsal joints somewhat brown; abdomen black, segments narrowly margined with whitish.

Length: male 5 mm.

This species is characterized by being dark gray, the pronotum having four large round black spots anteriorly; the face being black with a central lance-shaped spot on front, and the oblique spots next ocelli, the lobe above antenna, the outer margins of loræ, and outer margins of cheek being whitish.

Two male specimens (*type* and *paratype*) from Chapada, Brazil, November C. M., Acc. No. 2966 (H. H. Smith coll.).

<sup>1</sup> *Σχελis* or *σκελIs*, *η*, being a feminine noun, the adjective qualifying it should have a feminine ending, a fact hitherto overlooked by numerous writers, who have named species in this genus. *W. J. Holland.*

23. *Euscelis quinquemaculata* sp. nov.

Head wider than pronotum, broadly rounded; vertex scarcely as long at middle as next to eye, rounded evenly to front; front as wide as long, minutely punctate; clypeus with sides parallel, apex convex, with a broad median carina; loræ faintly tumid at upper angle, small, not reaching margin of cheek; cheek-margin nearly straight; pronotum more than twice as long as vertex, deeply concave behind; elytra longer than abdomen. *Genitalia: male*, valve small, angular; plates compressed, tips strongly upcurved, sparsely hairy.

Dark fuscous and black, vertex whitish with six dark fulvous spots, one on each side near eye, two oblique, touching hind border, and two anteriorly, which send branches to unite on the median line below, enclosing an angular whitish spot; eyes bordered with black; front, clypeus, loræ, and cheeks all black; pronotum fuscous, the anterior border with three large roundish spots, and the lateral angles whitish and separated with brown; scutellum black, apex yellowish; elytra milky hyaline, veins whitish, apex broadly fuscous. Beneath: thorax and femora and venter black; a spot on anterior pleural piece, tips of femora, anterior and middle tibiæ and tarsi, narrow margin of abdominal segments, whitish.

Length: male, 4.5 mm.

Very similar to *E. quadrimaculata* (No. 22), but with five whitish spots bordering pronotum anteriorly. The face black, and elytra broadly fuscous at apex.

One specimen, male (*holotype*) from Chapada, Brazil, January 10th, C. M., Acc. No. 2966 (H. H. Smith coll.).

24. *Euscelis quadratula* sp. nov.

Head wider than pronotum, vertex broad and short, slightly broader at middle than next eye, rounding to front; front broad, polished at the sides, minutely punctate and somewhat flattened on the disk; clypeus with nearly parallel sides, about half longer than wide, with elevated ridge; loræ large, reaching nearly to margin of cheek; cheek-margin subangulate under the eye, then nearly straight to clypeus; pronotum short, broadly arched in front, faintly concave behind; elytral veins distinct; no cross-veins in clavus or costa. *Genitalia: female*, last ventral segment about twice as long as preceding, hind border produced medially, slightly carinate; *male*, valve short, rounded behind; plates short, narrowed rather abruptly to middle, then tapering to slender upturned tips.

Milky-white, the vertex with white quadrate spots; border, middle, and posterior band on pronotum, edge of scutellum, arcs on front, margins of clypeus, spots on loræ, and inner angle of cheek, tips of femora, base of tarsal joints, white; the broad band on vertex median

stripe, large included areas in the white quadrant, front, median stripe on clypeus, borders of loræ and inner angle of cheek, median transverse band anteriorly, and a broad band across base of pronotum, most of scutellum and elytral veins, femora, apex, and parts of tarsi, black; elytra hyaline, with veins dark fuscous or blackish, the apex very faintly smoky.

Length: female, 4.5 mm.; male, 4 mm.

Milky-white with shiny black bars and spots, forming two large squares on the vertex and basal front; the white quadrate areas separated by a broad median stripe and enclosing two shiny squarish spots, which merge below into a transverse basal band on the front.

One specimen, female (*type*), and one male (*allotype*), from Boqueirão, Rio Grande, Brazil, January 8, 1898, C. M., Acc. No. 3533 (Haseman *coll.*). A second female (*paratype*) from Province del Sara, Bolivia, elev. 450 M., C. M., Acc. No. 6443 (Steinbach *coll.*), differs in being lighter colored, but appears to be structurally identical. The black included spots on the vertex are not as angular, with basal band on front broken on lower edge; the lower part of front is white, and there is less black on clypeus and loræ; the legs mostly white, beneath tinged with fuscous; pronotum with anterior cross-band faint, posterior cross-band narrow, and all elytral veins more narrowly lineate with black or fuscous. This specimen may represent a distinct species, or a variety, but has the appearance of being immature or teneral, and the fainter coloration may be due to this condition. In size and color-pattern they agree closely with and resemble *E. exitiosa* (Uhler) in general appearance, but the color-pattern of the vertex and front are decidedly different. The male closely agrees with the light female in color, although from the same locality as the darker female.

#### 25. *Euscelis lineata* sp. nov.

Head broad, wider than pronotum, with a strongly arched vertex, twice as wide as long, slightly longer at middle than next the eye, somewhat depressed, margin bluntly angulate; front broad, narrowing sharply to clypeus; clypeus half longer than wide; cheeks gently sinuate; pronotum half longer than vertex, hind border nearly straight; clavus with inner vein close to the angle, no cross-veins. *Genitalia: female*, last ventral segment about twice as long as preceding, slightly concave behind; pygofers with whitish cilia toward the tip; *male*, valve transverse, rounded behind; plates long, triangular, with acute tips.

Above olive-brown; vertex with anterior border yellow, basal

margin whitish; a black sub-marginal line between ocelli; front black, with faint arcs; a short central line on apical half, margins of clypeus, a band across the loræ, margins of cheeks, yellowish; pronotum with a basal margin of yellowish; the elytral vein and costa whitish. Beneath black; the beak, tibiæ, tarsi, and hind margins of ventral segments dull whitish.

Length: female 3.75 mm.

A small olive-gray species, with yellowish bands on vertex and pronotum, and yellowish lines on elytra; beneath black; tibiæ and tarsi light.

Described from three specimens, a female (*type*) and male (*allotype*) from Province del Sara, Bolivia, elev. 450 M., November 1912, C. M., Acc. No. 5064; and one female (*paratype*) from the same locality, December 1918, C. M., Acc. No. 6443 (Steinbach *coll.*).

EUSCELOIDIA gen. nov.

Venation similar to that of *Euscelis*; the vertex strongly sloping, and with the front forming a prominent almost snout-like expansion, which angles bluntly to the clypeus; the loræ rather small, wedge-shaped; cheeks narrow; scutellum large, acuminate at tip; claval veins obscure, with the cross-vein, no cross-vein over the middle anteapical; outer anteapical short, less than half of middle anteapical, and located toward its end; apical areoles indistinct, leaving the apex apparently membranous, somewhat as in *Clastoptera* Germar; (the membranous part is bent downward, but apparently by accident). Type of genus *E. nitida* sp. nov.

26. *Eusceloidia nitida*.

Head wider than pronotum, strongly arched; vertex declivous and merging directly with front; front strongly convex, narrowed below the antennæ, lower part bluntly produced; clypeus oblong, faintly carinate; loræ nearly touching margin of cheek; cheek narrow, border nearly straight from back part of eye to clypeus; ocelli nearly halfway from eye to middle line; antennæ with rather deep sockets overhung by a blunt ridge at the side of the front; pronotum concave behind, lateral border very short; elytra with three anteapical areoles, one cross-vein; the veins of corium conspicuous. *Genitalia: male*, valve short, apparently rounded behind; the plates broad, rounded to a blunt apex, the central part spoon-shaped.

Ivory-white on lateral part of vertex and front; central part of pronotum and scutellum, lower part of the face and femora, except at tip, the central part of vertex and front, jet-black, with black or piceous lines running into the white area; the lower pair touching the inner border of ocellus; the cheek below the eye and including

the antennal pit, black; apex of front, all of clypeus, loræ, and lower part of cheek, white; pronotum with a narrow black line paralleling the anterior border on the middle, the sides with a piceous patch and the entire pronotum tinged with greenish; scutellum ivory-white, except for the lateral angles, which are greenish; elytra whitish semi-transparent, with the nervures and lines in the areoles broadly fuscous; membrane smoky; base and tip of femora and the tibiæ blackish; abdomen beneath black.

Length: 3.5 mm.

Polished; vertex and front ivory-white, with brilliant jet-black median stripe; pronotum and scutellum ivory-white, suffused with greenish or olive, especially toward the sides.

One male specimen (*holotype*) from Las Juntas, Bolivia, December 1913, C. M., Acc. No. 5066 (Steinbach *coll.*).

Genus MESAMIA Ball.

*Mesamia* BALL, Proc. Davenport Acad. Sci., 1907, pp. 31, 59, 75. (As subgenus of *Eutettix*.)

27. *Mesamia fasciata* sp. nov.

Head broad, distinctly wider than pronotum, strongly arched; vertex one-third longer at middle than next to eye, flattened on disk, angulate to front; front about as broad as long, narrowing from antenna to clypeus which is broad, nearly as wide as long; loræ narrow, not reaching border of cheek; cheek broadly sinuate; pronotum half longer than vertex, broadly concave behind; three or four reflexed nodal veins, outer anteapical narrowed toward tip, first veinlet arising from its end. *Genitalia: male*, valve short evenly rounded; plates narrowing to bluntly acuminate tips; compressed to form a ventral keel.

Gray suffused with brown, vertex with narrow border of yellow; transverse bands of vertex fuscous, white, brown, and white; pronotum gray, faintly irrorate with fuscous, darkening into two rather faint broken transverse bands; elytra brownish sub-hyaline, with milky spots, the claval areoles, and ends of inner and outer apical cells, and veins, fuscous; costal and apical veins blacker; front with lightish arcs above clypeus; loræ and cheek dirty white; legs whitish with dots on tibiæ and bands on same, fuscous. Abdomen yellow with fuscous bands, margined with whitish.

Length: male, 5 mm.

About size and general appearance of *M. straminea* (Osborn), but distinct black, brown, and whitish bands on the vertex; front with distinct whitish arcs; abdomen yellowish, segments banded with fuscous and edged with white.

Described from one specimen, male (*type*) from Province del Saraj, Bolivia, C. M., Acc. No. 5064 (Steinbach *coll.*).

28. *Mesamia hyalina* sp. nov.

Head slightly wider than pronotum, sub-angulate; vertex at middle twice as wide as length; about one-fourth longer at middle than next eye, obtusely angulate to front; front longer than wide, narrowing from antenna to clypeus; clypeus one-half longer than wide; cheeks slightly sinuate; pronotum one-half longer than vertex, scarcely concave behind; elytra hyaline, veins faint, a single costal veinlet near base of outer anteapical, first apical arising from end of anteapical three apical cells. *Genitalia: female*, last ventral segment a little longer than preceding, somewhat produced on the hind border and with a blunt median tooth; *male*, valve nearly semicircular; plates short, not as long as pygofer, broad at base, sinuate on margin and acuminate at tips.

Bright yellow, somewhat tinged with fulvous; vertex on anterior border and base ivory-white with six black dots on the margin and one on each side touching eye; pronotum with milky whitish median line, a broader stripe on each side, and lateral borders; scutellum with lighter dot near apex and dusky dot near end on each side; elytra hyaline with milky spots in clavus; veins faint, the costal and apical veinlets fuscous. Beneath: yellowish; front with faint whitish arcs; tarsi tipped with fuscous.

Length: female, 4 mm.; male, 4 mm.

With many resemblances to *M. johnsoni* Van Duzee, but smaller. Elytra more hyaline. Abdominal segments of female above punctate at spiracles.

Described from one female (*type*) Cacaqualito, Colombia, May, C. M., Acc. No. 1909, and three specimens, including one male (*allotype*) Minca, Colombia, C. M., Acc. No. 1999. Two specimens with abdomens lost. (H. H. Smith *coll.*). A damaged specimen in the author's collection "W. Ind. (?) Summers" seems to belong here also, although the vertex is a little more produced.

Genus EUTETTIX Van Duzee.

*Eutettix* VAN DUZEE, Psyche, VI, 1892, p. 307.

29. *Eutettix cinctus* Osborn and Ball.

Head wider than pronotum, subangulate; vertex a little longer at middle than next the eye; front about as broad as long; clypeus one-third longer than broad; loræ large, touching margin of cheek; pronotum nearly twice as long as vertex, distinctly concave. *Genitalia:*

*female*, last ventral segment long, hind border sinuate and produced at the middle; *male*, valve short; plates with margins sinuate; tips acute and upturned.

Light gray, faintly irrorate with fuscous; base of elytra milky, white, except an oblique irregular spot on clavus; the anteapical cells infuscated and about four triangular black spots on the apical part of the costa. Beneath: dark fuscous; front with lighter arcs; the clypeus, loræ, and cheeks bordered with light fuscous; legs annulate with fuscous.

Length: female, 5.25 mm.; male, 4.5 to 5 mm.

Light gray, irrorate; a broad broken fuscous band crossing the anteapical cells, contrasting with the milky white band back of the scutellum.

Specimens of this species are in hand from Pará, Bahia, and from Januaria, Minas Geraes, Brazil, December 1907 (Haseman *coll.*); also from Province del Sara, Bolivia, elev. 450 M. (Steinbach *coll.*). They agree very closely with North American specimens of this species, but are uniformly a little smaller and in some specimens, especially the males, the bands are less distinct. Probably they might be regarded as representing a geographical variety, but it is probable that a sufficient number of specimens from intermediate localities would connect the two extremes. The range of the species is extensive, running from Iowa and Ohio in the north, to central Brazil and Bolivia in the south.

### 30. *Eutettix neocinctus* sp. nov.

Head wider than pronotum, broadly rounded; vertex three times as wide as long, slightly longer at middle than next to eye, faintly depressed, rounded to front; front about as wide as long, narrowing abruptly to clypeus; clypeus half longer than wide, widening slightly toward tip, faintly carinate; loræ reaching nearly to margin of cheek; cheek-margin distinctly sinuate; pronotum twice as long as vertex, concave behind; costal veinlets slightly reflexed, three or four in number, two or three arising from outer anteapical; first apical arising from end of anteapical cell. *Genitalia: female*, last ventral segment about twice as long as preceding, with three distinct lobes formed by a shallow incision; *male*, valve short, rounded behind; plates broad at base, narrowing to beyond the middle, then tapering to acute tips. Dark gray; vertex, pronotum, and scutellum rather faintly irrorate with gray and fuscous; elytra sub-hyaline; areoles of clavus and inner areoles of corium milky; veins brown; costal and apical veinlets fuscous. Beneath darker; face, legs and abdomen infuscate; front

with faint whitish arcs; base of clypeus, inner part of cheeks, tips of femora, and bases of tarsi, dirty white.

Length: female, 5.5 mm; male, 5 mm.

Very similar to *Eutettix cinctus* Osborn and Ball, but lacking the distinct band of that species, and with the female segment more deeply incised, and the bands of femora not distinct. The male seems properly placed here, but differs somewhat in the markings, the elytral areoles, especially next to claval sutures, rather distinctly punctate with fuscous dots. The markings throughout are more distinct, nevertheless there seems no sufficient character for separation, and the differences are no greater than are found in the sexes of some other species.

One female (*type*) from Province del Sara, Bolivia, December 1911, C. M., Acc. No. 5064; male (*allotype*) from same locality, November 1909, C. M., Acc. No. 4549 (Steinbach *coll.*).

31. *Eutettix punctatus* sp. nov.

Head a little wider than pronotum; vertex one-fourth longer at middle than next the eye, convex, rounded to front; front narrow, tapering almost uniformly from base to clypeus; clypeus nearly twice as long as width at base, slightly widened beyond the middle; lora elongate, distinctly angled above and below, and reaching the margin of the cheek; cheek-margin distinctly sinuous; pronotum a little more than one-half longer than vertex, broadly arched in front, hind margin truncate; elytra with reticulations of pigment-lines on discal and anteapical areoles. *Genitalia: female*, last ventral segment slightly concave.

Light gray; vertex irrorate dusky; scutellum ivory-whitish, with a black point on each side and a minute dot on each side of apex; elytra milky-white, the basal part next scutellum tinged with yellow, a smoky oblique band from near the base to inner margin next to scutellum; a point at base of clavus, a large spot on the center covering the cross-veins, another large spot on discal cell, the veins and the costal transverse veinlets near base and at either end of outer anteapical cell, fuscous or brownish; a patch at tip of the first apical vein, black; face yellowish white, with rather faint brownish arcs; legs light yellowish, with black spots and dots; abdomen dull yellowish white.

Length: female, 5.5 mm.

This appears to be a very distinct species, and, though similar to *Eutettix cinctus* Osborn and Ball, has a different color-pattern. The elytra are milky white with a faint oblique smoky band just be-



hind the scutellum, a large fuscous spot covers the claval cross-vein, another is seen on the inner discal cell, and a broad black cross-vein occurs at each end of outer anteapical cell. Beneath yellowish, legs dotted with black.

Described from a single female specimen (*holotype*) from Quatro Ojos, Bolivia, November 1913, C. M., Acc. No. 5065 (Steinbach coll.).

32. *Eutettix irroratus* sp. nov.

Head scarcely wider than pronotum, short; vertex nearly four times as wide as long, scarcely longer at middle than next eye, evenly rounded at front, a distinct transverse furrow in front of the middle, margin distinctly angular; front broad, slightly convex, lateral margins narrowing from the antennal pits to base of clypeus; clypeus long, about twice as long as broad; loræ ovate, nearly reaching the margin of the cheek; pronotum about four times the length of the vertex, broadly rounded in front, scarcely concave behind. lateral border carinate; elytra broad, claval veins connected by a single cross-vein, outer anteapical cells small, narrowing behind the reflected costal veins, apical cells short. *Genitalia: female*, last ventral segment long, about three times as long as preceding, truncate or slightly concave and faintly sinuate behind with distinct median carina from base to the faintly notched hind margin; *male*, valve short, narrow, apparently mostly hidden by preceding segment; plates broad at base, narrowing to behind middle and extending into slender acute up-curved tips; disk of the valve and a large spot on each plate yellowish.

Brownish fuscous, with whitish or yellowish white patches; vertex with fuscous margin and transverse spots in anterior disk; front black, with light brown spots; clypeus black; loræ black, with yellowish spots on disk; outer margins of cheek yellow; pronotum irrorate with fuscous, yellowish, and brownish; scutellum yellowish on the disk with fuscous spots on each side of base with a black spot on the border near the base, and on each side of the yellow pointed apex; elytra milky-subhyaline with the fuscous veins brownish on their borders; reflex costal veins blackish. Beneath: blackish, with yellowish bands and stripes on the legs and at the sides of the abdominal segments and the connexivum.

Length: 7.5 mm.

This is a striking species, larger and darker colored than *Eutettix cinctus*, Osborn and Ball, and without the distinct transverse band, but with the terminal third of clavus white, or grayish whitish, forming a small angular saddle. With one or two other species it would seem to form a group closely related to *E. cinctus*.

Four females (*type* and *paratypes*) six males (*allotype* and *paratypes*) from Province del Sara, Bolivia, elev. 450 M., C. M., Acc. No. 5064 (Steinbach *coll.*).

33. *Eutettix infuscatus* sp. nov.

Head wider than pronotum, very short; vertex rounded in front, as long as middle as next eye, with a deep transverse furrow just at the anterior margin, striate and angular; front broad and short, narrowing sharply from antenna to clypeus; clypeus long, narrowing slightly to the tip, central part slightly tumid; loræ nearly touching the margin of cheeks; pronotum short, distinctly concave behind; scutellum large, broad at base, deeply impressed at center; elytra with claval veins joined by a distinct cross-vein, also a cross-vein to the claval suture, discal veins distinct, anteapical cells small, nodal cell broad, with about three strongly reflexed veinlets in costa. *Genitalia: female*, last ventral segment long, lateral angles rounded, hind border truncate, a strong carina extending from base to apex.

Mainly fuscous; the posterior part of vertex brown, with fuscous spots on hind margin; face nearly black; the front with a faint brown arc, and the suture between loræ and cheek light brown; legs fuscous, touched with brown; front tarsus soiled whitish; pronotum dark fuscous with light brown irrorations; scutellum fuscous, with brownish patches on disks, four light spots on base and three on the apical part; elytra brownish, with dark fuscous nerves and patches in the cells; a whitish angulate spot in the clavus at tip, forming with the spot on opposite vein a short angulate saddle.

Length: female, 5 mm.

This is a handsome species smaller and darker than *E. irrordatus*, with a banded vertex, and very strongly carinate female segment. Its occurrence in the two somewhat widely separated localities, would give it a rather extended distribution, although both localities belong to the Amazon basin. There are two males, which probably should be associated with this species, one (*allotype*) from Puerto Suarez, Bolivia, elev. 150 M. (Steinbach *coll.*) and the other (*paratype*) from Asunción, Paraguay. These agree very closely in all characters with the females, but are only 4.5 mm. long. The genitalia are peculiar in that the valve appears trilobate, the tips of the three small lobes being obtusely angular. The plates are small, sides nearly straight, closely setose, the tips acute and up-turned. The trilobate appearance is probably due to the valve being very small and narrow and to triangular elevations on base of plates.

Described from two females, one (*type*) from Chapada, Brazil, C. M., Acc. No. 2966 (H. H. Smith *coll.*); and the other (*paratype*) from Province del Sara, Bolivia, C. M., Acc. No. 5064 (Steinbach *coll.*).

34. *Eutettix femoratus* sp. nov.

Head wider than pronotum, short; vertex about four times as wide as long, slightly longer at middle than next to eye, margin angular, rather distinctly striate, approaching the transverse frontal furrow of *Selenocephalus* (Germar); front broader than long, convex, narrowing very abruptly to base of clypeus; clypeus longer than wide, with a broad ridge on the middle; loræ large, reaching nearly to the margin of cheek; cheek-margin distinctly sinuate; pronotum short, about three times as long as vertex, hind margin distinctly concave; outer anteapical cell not narrowed apically; three or four reflexed nodal veins; the first apical vein arising from end of outer anteapical cell. *Genitalia: female*, last ventral segment elongate, nearly four times as long as preceding segment; sides narrowing, lateral angles rounded, hind border sinuate, central part elevated, the surface uneven.

Brown; vertex with yellowish marginal lines, a transverse fuscous line reaching border of eye, behind which the disk is fulvous brown; face brown, with light fuscous transverse stripe near base of front; apex of clypeus fuscous; pronotum irrorate with light yellowish brown and fuscous; scutellum brown, with yellow spots on margin; elytra subhyaline, with brown veins; ivory spots in clavus forming the small saddle; inner angle of clavus, reflexed veins of costa, apical veins, and margin of apical cells, fuscous; legs brown, more or less fuscate, especially the femora.

Length: female 6 mm.

Resembling *E. irroratus* and *E. infuscatus* spp. nov.; body broad; three or four prominent reflexed nodal veins; anterior femora enlarged on basal two-thirds; female segment narrowed toward tip and sinuate behind.

One female specimen (*type*) from Las Juntas, Bolivia, December, 1913, C. M., Acc. No. 5066 (Steinbach *coll.*).

35. *Eutettix elegans* sp. nov.

Head broad, wider than pronotum; vertex wide, three times as wide as long, slightly longer at middle than next to the eye, not depressed, obtusely angled to front; front broad, short; clypeus one-half longer than wide; loræ large, almost touching margin of cheek; cheek-margin sinuate; pronotum short, about twice the length of vertex, side margin distinctly carinate, hind margin distinctly concave; elytra with dis-

tinct cross-nervure, three conspicuous cross-nervures on the costa. *Genitalia: male*, valve short, hind border broadly convex; plates narrowing to rather cone-like acute tips, their borders finely ciliate.

Grayish brown with fulvous tinge; broad transverse band on vertex, front border, and behind the middle, fulvous, a light yellow band bordered with black on the anterior edge; hind border yellow; face uniformly light yellow, with trace of brown at the base of front; scutellum brownish, with yellow spots on the margin and two dark dots on the disk; elytra with whitish spots; the vein and spots in areoles brown; reflexed veins of costa and apical veins, black. Beneath: legs yellowish, basal part of abdomen mostly blackish.

Length: male 4.5 mm.

Light fulvous; vertex banded with fulvous and yellow; anterior yellow band margined with black. This handsome little species is represented only by males, and with *E. laticeps* forms a rather distinct type for the genus.

Described from four specimens, males, two (*type* and *paratype*) from Puerto Suarez, Bolivia, elev. 150 M., C. M., Acc. No. 3844 (Steinbach *coll.*); and one specimen (*paratype*) from Villa Bella, Bolivia, October 6, 1909, C. M., Acc. No. 4043 (Haseman *coll.*); and one (*paratype*) from Province del Sara, Bolivia, C. M., Acc. No. 5064 (Steinbach *coll.*).

### 36. *Eutettix laticeps* sp. nov.

Head very broad and strongly arched; vertex scarcely longer at middle than next the eye, a distinct depressed furrow anteriorly, margin subacute; front broader than long, narrowing abruptly to clypeus; clypeus short, tumid; loræ reaching margin of cheek; cheek-margin excavated under the eye, slightly sinuate; pronotum short, strongly arched, side margins short, distinctly concave behind; elytra transparent, with a golden lustre, costal cross-veins distinct, reflexed. *Genitalia: male*, valve narrow, obtusely angulate behind; plates narrowed abruptly at about one-third their length, then tapering gradually to blunt tips, together somewhat spoon-shaped.

Fulvous with golden reflections; vertex with broad fulvous band on basal half, narrow yellow bands margined with black on anterior and posterior borders; face yellow, narrow line at base of front and clypeal sutures, brown; pronotum irrorate with fulvous-brown; scutellum fulvous, with four yellow spots on base and one on each side near apex; elytra golden iridescent, with some milky-white patches, veins in part brownish, and the costal and apical veins fuscous. Beneath: pale yellowish brown, spots on tibiae and tips of tarsal joints darker.

Length: male, 5 mm.

This is a striking species related to *E. elegans* sp. nov. (No. 35) but the vertex is more distinctly depressed. The fulvous band is farther back and hind border margined with black, while the pronotum is irrorate and the elytra more nearly transparent and golden.

Male (*holotype*) labelled "Brazil, along Rio Guaporé, below Rio S. Miguel, VIII, 22, 1909," C. M., Acc. No. 4043 (Haseman *coll.*).

37. *Eutettix reflexus* sp. nov.

Head broad, distinctly wider than pronotum, strongly arched; vertex short, scarcely longer at middle than at eye, faintly depressed near front margin; front broad, wider than long, narrowing rapidly to clypeus; clypeus short, tumid; loræ broad, not reaching margin of cheek; cheeks wide, slightly sinuate; pronotum twice as long as vertex, slightly concave behind; elytral veins obscured by color-marking; the outer anteapical cell distinctly narrowed toward apex, with three broad reflexed costal veinlets arising from its base; first apical veinlet separate from outer anteapical. *Genitalia: male*, valve narrow, subangular; plates short, broad spoon-shaped with bluntly rounded tips.

Light gray, marked with olive-brown and fuscous; vertex olive, with transverse fuscous spots on the disk, two small fuscous dots on the front margin near the center; pronotum with four large fuscous spots across the disk; scutellum with two basal spots, lateral angles and apex ivory-white; clavus whitish at base, a broad oblique fuscous patch from inner angle to end of second vein, including two narrow oblique whitish lines, apical part beyond second vein white, followed by triangular fuscous patch; corium with brownish and fuscous veins, fuscous patches in the areoles, two large fuscous spots near the base, and broad fuscous spots on the reflexed costal veinlets, apical veins, and apical margin. The general effect is that of three whitish bands, one at base, one at middle (including the claval cell), and one at apex, and two brownish fuscous bands, the forward one from tip of scutellum to claval saddle, the outer one including the reflexed veinlets and most of the anteapical cells. Beneath: front olive, base and apex fuscous; clypeus dark fuscous or blackish, polished; loræ and cheeks yellowish, the former embrowned toward tips; femora polished black, with white apices; tibiæ and tarsi whitish, the hind ones with black lines and dots, and with the tarsi ringed with black; abdomen blackish, bordered with ivory-white.

Length: male, 5 mm.

Light gray with two brownish fuscous bands on the elytra. The venation of this species resembles that of the Hawaiian genus *Nesophrosyne* in the shape of the outer anteapical cell and the position of the reflexed veins. Otherwise it agrees with the *laticeps*-group.

One specimen (*holotype*) from Puerto Suarez, Bolivia, elev. 150 M., C. M., Acc. No. 3844 (Steinbach *coll.*).

38. *Eutettix fulvulus* sp. nov.

Head slightly broader than pronotum; vertex more than twice as wide as long, slightly longer at middle than next the eye; front longer than broad, convex; clypeus one-half longer than broad; loræ wide, almost reaching margin of cheek; cheek-margin sinuate; pronotum twice as long as vertex, hind margin slightly concave; cross-veins in costal areoles slightly reflexed, outer anteapical with two faint cross-veinlets. *Genitalia: male*, valve short, polished black; plates tapering uniformly to acute tips.

Gray, mostly suffused with fulvous above; narrow front margin of vertex with alternating black and yellow; pronotum rather faintly irrorate with brown; scutellum with five brown dots; elytra nearly uniformly fulvous, with a golden sheen, the veins darker, the costal and apical veinlets nearly black. Beneath: face yellowish, with fuscous transverse lines and arcs; the apical part of clypeus deeply fuscous; loræ and cheeks yellowish; legs light brown, with dots on tibiae, and tips of tarsal joints and claws fuscous.

Length: male, 4 mm.

In general gray, suffused with fulvous, a broad fulvous band on vertex; vertex scarcely depressed.

Two male specimens (*type* and *paratype*) from Bahia, Brazil, December 1907, C. M., Acc. No. 3533 (Haseman *coll.*).

39. *Eutettix tessellatus* sp. nov.

Head wider than pronotum, subangulate; vertex a little longer at middle than next the eye; front rather long, sides tapering nearly uniformly to clypeus; clypeus widened at tip, one-half longer than wide; loræ large, nearly touching margin of cheek; cheek-margin sinuate; pronotum one-half longer than vertex; hind border slightly concave. *Genitalia: female*, last ventral segment about twice the length of preceding, hind border slightly produced, and minutely dentate at middle.

Olive-gray, tinged with yellow and fulvous; vertex whitish fulvous, with yellowish areas on base and two faintly fuscous spots near apex; face yellowish, the arcs faintly indicated; pronotum with about six faint fuscous dots near the anterior border; scutellum with two fuscous dots on the disk; elytra hyaline, tinged with golden yellowish; clavus with two milky spots; abdomen distinctly checkered with black on the anterior five segments, showing plainly through the transparent elytra. Beneath: yellowish brown; the tibiae dotted with

black; abdomen somewhat infuscated on the sides of the abdominal segments.

Length: female, 4 mm.

Olive-gray; clavus with milky spots; elytra hyaline; abdomen above tessellate at sides. This is a beautiful little species very distinctly marked by the checkerboard dorsum of abdomen.

Described from two females (*type* and *paratype*) from Chapada, Brazil, November, C. M., Acc. No. 2966 (H. H. Smith *coll.*).

40. *Eutettix dentatus* sp. nov.

Head wider than pronotum; vertex rounded, slightly longer at middle than next the eye, not depressed, rounded to the front; front longer than broad, slightly sinuate; clypeus nearly twice as long as broad; loræ not reaching border of cheek; cheek-margins nearly straight; pronotum one-half longer than vertex; hind border rather deeply concave; claval veins approximate near the middle. *Genitalia: female*, last ventral segment long; posterior angles rounded, hind border produced at center into a rather broad prominent tooth.

Olive-green, tinged with yellow; vertex irregular; faint fuscous markings; front with faint arcs; a distinct black point on the cheek just outside the border of loræ; elytra sub-hyaline; the claval areoles with milky elongate spots, bordered with fuscous; veins of corium mostly fuscous; apical cells a little smoky.

Length: female, 3.75 mm.

This species is prevalently greenish-yellow, marked with light fuscous; the female segment provided with a prominent median tooth. It approaches *tessalatus* sp. nov. (No. 39), but the checkerboard marking of the abdomen is much less regular, and the female segment is distinctly produced at the middle.

Two female specimens from Province del Sara, Bolivia, C. M., Acc. No. 5064, one taken February 1913, (*type*); and the other taken November 1911 (*paratype*) (Steinbach *coll.*).

Genus PHLEPSIUS Fieber.

*Phlepsius* FIEBER, Verh. Zoöl.-Bot. Gesellsch. Wien, XVI, 1866, p. 503.

41. *Phlepsius gracilis* sp. nov.

Head scarcely as wide as the pronotum; vertex twice as wide as long, slightly wider at the middle than next the eye; front rather narrow; clypeus distinctly widened at tip; loræ broad, with the clypeus forming a nearly complete circle interrupted by the apex of the front; pronotum more than twice as long as vertex, hind margin

truncate; elytra narrow, the apices somewhat compressed. *Genitalia: female*, with a short tooth on the penultimate segment overlying a broad thin plate of the ultimate segment, occupying the central two-thirds, central part black.

Light gray; vertex with four spots on the anterior border, two large squarish spots near base, median line fuscous; face dirty yellow, with fuscous lines and sutures, the frontal arcs being yellow on fuscous base and a central elongate yellowish area nearly touching the base of the apex; cheeks yellowish; pronotum gray, minutely irrorate with fuscous; clavus with a square black dot near the base on the claval suture; elytra with the ramose lines more conspicuous on the inner half, a distinct fuscous spot at the first cross-vein, and the middle anteapical and second apical cells with a fuscous stripe; the costa with four distinct black dots arranged below outer anteapical and before first apical. Beneath: gray, spotted with fuscous.

Length: female, 6.5 mm.

This species is to be recognized particularly by its long slender form with narrow wings and by the peculiar lobate expansion of the last ventral segment. It is light gray, with rather faint ramose lines and distinct fuscous spot on vertex, clavus, and elytra.

Described from a single female specimen (*holotype*) from Province del Sara, Bolivia, C. M., Acc. No. 5064 (Steinbach coll.).

#### 42. *Phlepsius hasemani* sp. nov.

Head wider than pronotum; vertex about one-third longer at the middle than next the eye, slightly depressed, anterior third horizontal; front broad, about as wide as long; clypeus with parallel sides, about one and one-half times as long as wide; cheeks broadly sinuate; pronotum strongly arched in front, slightly concave behind; elytral veins distinct; the ramose lines, especially on the clavus, forming rather distinct reticulations; corium next to clavus with numerous cross-veinlets; costa with veinlets of the outer anteapical cell reflexed. *Genitalia: male*, valve a little longer than the preceding segment, distinctly rounded behind; plates broad at base, narrowing rather uniformly, with elongate acute tips, a deep submarginal furrough, and the sutural margin, blackish.

Light gray, with dark fuscous dots and ramose lines; anterior border of vertex with two black spots, and with lighter fuscous spots at ocellus; front irrorate with fuscous and whitish; border of eyes whitish, antennal pits black; clypeus yellowish, with a median brown line; loræ yellow, brownish on the inner apical part; cheeks yellowish; above generally gray; pronotum and scutellum with fuscous irrorations; elytra with the veins and ramose lines dark fuscous; the reflexed veins of the costal border black; tip of elytra smoky;



second and third apical cells, including a fuscous spot beneath pectus, black; legs yellowish, dotted with black; abdomen yellowish with submarginal lines blackish.

Length: male, 4.75 mm.

Gray, irrorate with fuscous; the ramose lines of elytra rather scant, and mostly merged into reticulations; front strongly convex.

Described from one male specimen (*holotype*) from Brazil, "along Rio Guaporé, below Rio S. Miguel, VII, 22, 1909," C. M., Acc. No. 4043 (Haseman coll.).

43. *Phlepsius saranensis* sp. nov.

Head wider than pronotum; vertex one-fourth longer in middle than next the eye, sloping, slightly depressed before middle; margin subacute; front broad, rather short; clypeus nearly twice as long as broad; margin of cheeks strongly sinuate; pronotum short, about two and one-half times as long as vertex, front margin semi-circular, hind margin concave, lateral angles broadly rounded; elytral venation distinct; ramose lines rather scant, about five veinlets in the outer costal cell, three of which spring from the outer anteapical. *Genitalia: male*, valve short; plates broad at base, tapering evenly to the slightly acuminate upturned tips; margins with dense cilia.

Dark gray; vertex yellow, with brownish irregular patches; pronotum, scutellum, and elytra uniformly light gray, with fuscous or light brown irrorations, veins, and ramose lines; the scutellum with a yellowish band across the apical part, broken at center with fuscous; face yellowish; the front with fine fuscous irrorations, somewhat arranged in series, but not in regular arcs; tip of clypeus fuscous; femora fuscous; tibiae yellowish with blackish spots.

Length: male, 5 mm.

Dark gray with light fuscous irrorations and lines; apex of clypeus fuscous.

Described from one male specimen (*holotype*) from Province del Sara, Bolivia, December 1912, C. M., Acc. No. 5064 (Steinbach coll.).

44. *Phlepsius sparsus* sp. nov.

Head distinctly wider than pronotum; the eyes large and very oblique; vertex nearly twice as wide as length at middle, nearly twice longer at middle than next the eye, distinctly angulate; margin acute at tip; ocelli close to the eye; front wide at base, narrowing sharply from antennal pits; clypeus twice as long as wide, gradually widened to tip; loræ wide, almost touching margin of cheeks; cheeks broadly rounded and rather deeply sinuate beneath the eyes; pronotum short, lateral margin reduced to an angle, anterior border semi-

circular, hind border nearly straight; elytra with distinct veins, but with very scant ramose lines or dots. *Genitalia: female*, last ventral segment rather long, more than twice as long as preceding; lateral angles rounded; hind margin truncate with elevated polished fuscous area each side of middle; *male*, valve small, about half as long as preceding segment, plates narrow, tapering nearly uniformly from base to acute slightly convergent upturned tips.

Light gray; the vertex with fuscous spots on each side of tip and a rather large brownish fuscous patch on each side on disk; face darker above antennal pits; the base of front with light arcs on a fuscous ground; base of front fulvous; border of central part with light arcs on fuscous ground; apical portion dull whitish; clypeus with a central smoky patch; loræ with basal angles fuscous; pronotum sparsely irrorate with fuscous; elytra milky, the veins brownish, the sub-basal dot, oblique dash, dots, the sparse ramose lines and the costal expansions of reflexed veins, dark fuscous or blackish; apical veins and border smoky; bands of femora, basal spots of tibial spines, median stripe, and posterior border of abdominal segments, fuscous.

Length: male and female, 5 mm.

Light gray, sparsely marked with ramose lines and dots, the costa with four rather widely separated reflexed veins and black spots. This species falls into the group with produced acute vertex, but differs decidedly from any of the North American forms of this group.

Two specimens, one female (*type*) and one male (*allotype*) from Province del Sara, Bolivia, elev., 450 M., C. M., Acc. No. 6443 (Steinbach coll.).

#### 45. *Phlepsius loricatus* sp. nov.

Head wider than pronotum, broadly subangulate; vertex broad, nearly three times as wide as long, about one-fourth longer at middle than next the eye, transversely depressed behind apex; apex subacute; front strongly convex, wide at base, narrowing from antennal pits; clypeus about half longer than broad; loræ broad, short, not reaching margin of cheeks; cheeks deeply excavated beneath the eye; broadly rounded below; pronotum twice as long as vertex, hind border slightly concave; elytra rather densely reticulate, three reflexed veins in region of the nodal cell. *Genitalia: male*, valve and plates small, the valve short, obtusely angled; plates triangular, tips acute and upturned.

Dark fuscous on milky or whitish ground; vertex with two black spots on the anterior border, a pair of white lines next the median depressed line; face dark fuscous; the front with a few light arcs and dots; clypeus black, or black with a yellow base; loræ with a large

round light yellow spot; cheeks below yellowish; pronotum coarsely irrorate with fuscous and whitish; scutellum with two dark dots on disk, ivory-whitish spots at basal angle, middle margin, and apex; elytra milky-white, largely occupied by dark fuscous or black lineations and dots, the veins mostly brown; costal veinlets black; apical cells with discal spots and margin smoky; legs black, with tips of femur, tibial spines, and base of tarsal segments, whitish.

Length: male, 4.5 mm

Dark fuscous; rather densely reticulate; loræ with a large yellowish spot.

Three male specimens, from Province del Sara, Bolivia, C. M., Acc. No. 5064, two (*type* and *paratype*) taken November, 1912; one (*paratype*) taken December, 1912 (Steinbach *coll.*).

46. *Phlepsius costomaculatus* Van Duzee.

*Phlepsius costomaculatus* VAN DUZEE, Bull. Buffalo Soc. Nat. Sci., V, 1894, p. 207.

Head wider than pronotum, obtusely angulate; vertex slightly longer at middle than next the eye, rounded to front; front long, narrowed evenly from antenna to clypeus; clypeus one-third longer than broad; loræ large, reaching margin of cheek; cheeks broadly rounded, sinuate beneath the eye; pronotum nearly twice as long as vertex. *Genitalia: female*, last ventral segment truncate; *male*, valve rounded behind; plates short, triangular; apex acute.

Ashy gray; vertex and front minutely mottled with fuscous; pronotum irrorate with whitish; elytra milky-white, sub-hyaline, a conspicuous oblique spot on clavus, and three or four distinct spots on costa, dark fuscous or black.

Length: male 4 mm.

It is characterized by being light gray with fuscous ramose lines on the elytra, and rather conspicuous black spots on clavus and along the costa. The records give the species a distribution from the southern United States through Mexico and Central America to central Brazil.

Specimens referred to this species are at hand from Ft. Principe, Rio Guaporé, August 26, 1909, C. M., Acc. No. 4043; from Santarem, Brazil, December 11, 1909, C. M., Acc. No. 4043; and from Pará, Brazil (Haseman *coll.*).

47. *Phlepsius annulatus* sp. nov.

Head wider than pronotum, distinctly angulate; vertex about one-half longer at middle than at eye; front long; sides sinuate; clypeus

nearly twice as long as wide; loræ large, reaching nearly to border of cheek; cheek-margin rather deeply sinuate under eye; pronotum one-half longer than vertex, sub-angulate in front, scarcely concave behind. *Genitalia: female*, last ventral segment longer than the preceding, lateral angles somewhat produced, hind border nearly straight, an elevated median black polished patch on the border.

Light gray; irrorate with fuscous; vertex with pale brown spots near apex; a small fuscous dot between this and the ocellus; pronotum faintly irrorate, and with a double spot enclosed in a lighter area just behind each eye; scutellum with two fuscous dots on each side; elytra milky subhyaline; the veins and cross-veinlets black; costal space whitish hyaline; a spot below the cross-vein, one at each end of outer anteapical, and one at the end of the first apical vein, black. Beneath: light gray; front with faint brownish arcs; anterior and middle femora and the tarsi annulate with black.

Length: female, 4 mm.

Light gray; elytra with heavy black veins and nervures, and three large spots in the costa, one at the apex; the legs annulate with black.

Two female specimens (*type* and *paratype*), Pará, Brazil, December 6, 1907, C. M., Acc. No. 3533 (Hasemann coll.).

#### 48. *Phlepsius clypeatus* sp. nov.

Head wider than pronotum, distinctly angulate; vertex one-fourth longer at middle than next to eye, scarcely depressed, margin sub-acute; front broad at base, narrowing nearly uniformly to base of clypeus, scarcely sinuate at antennal pits; clypeus nearly twice as long as wide, sides nearly parallel, apex slightly convex; loræ broad, nearly reaching to margin of cheeks; cheek-margin broadly sinuate; pronotum twice as long as vertex, side margin very short, hind margin distinctly concave; elytral venation distinct, with cross-veins between claval veins; numerous cross-veins in the inner areole of corium and outer half of costal areole, the latter of which are slightly reflexed, one or two in front of the outer anteapical cell, three from its border, and one at the apical end. *Genitalia: male*, valve short, broadly rounded behind; plates broad at base, narrowing rapidly to middle, tapering to narrow acute slightly upturned tips.

Grayish brown, somewhat mottled with yellow on head, pronotum, and scutellum; vertex anteriorly light yellow with two brownish patches connected with a narrow line extending to the ocellus; pronotum irrorate with whitish fuscous and yellow, anterior border with about six fairly distinct yellow spots; scutellum with four basal, one marginal on each side, and apical spots, yellow; elytra gray, with dark brown or fuscous veins and pigment-lines, and about five opaque

whitish spots, three of which form an oblique line from tip of claval vein to base of middle anteapical cell; the costal cross-veins, and margin of apical areoles, blackish; face yellowish, with brownish dots, forming arcs on the front; apical half of clypeus fuscous; legs yellowish, banded with obscure fuscous. Beneath: abdomen obscure fuscous, somewhat marked with yellow, especially on the fifth and sixth segments; all segments with a narrow whitish border.

Length: male, 4.25 mm.

Size and general color of *signatus*, sp. nov. (No. 49) but without white spot on front, distinct black spots on the margin of vertex or oblique fuscous mark on clavus. The markings on face are also different and the male plates more slender, elongated, and acute, approaching closely to the form of *P. irroratus* (Say).

Described from a male specimen (*type*) from Province del Sara, Bolivia, elev. 450 M., taken December, 1918, C. M., Acc. No. 6443 (Steinbach coll.); one male (*paratype*) from Pará, Brazil, December 6, 1907, C. M., Acc. No. 3533; two males (*paratypes*) from Rio Guaporé, near Porto Principe, Brazil, (Haseaman coll.); and a fifth male (*paratype*) from Province del Sara, Bolivia, C. M., Acc. No. 6064 (Steinbach coll.).

#### 49. *Phlepsius signatus* sp. nov.

Head wider than pronotum; vertex twice as wide as long, one-third longer at middle than next the eye, slightly depressed, nearly horizontal, margin sub-acute; front slightly convex, flattened toward the tip; clypeus narrow at base, widening toward apex, about one-half longer than wide; loræ large, nearly touching margin of cheeks; cheeks notched beneath the eye, broadly rounded laterally; pronotum about twice as long as vertex, uniformly rounded in front, distinctly concave behind; elytral ramose lines rather coarse, costal reflexed veinlets distinct. *Genitalia: female*, last ventral segment about one-half longer than preceding, the outer angles slightly extended in rounded lobes, the central part broadly notched, with an elevated carina on the middle, a slight indentation just within the lateral lobe; *male*, valve short, rounded behind; plates short, broad at base, acute at tip.

Above generally ivory-whitish; the vertex with two large marginal spots, a dot on each side on the hind border, and the disk of posterior portion, fuscous; pronotum irrorate with brown and fuscous; scutellum with two dark spots on the disk, four basal and three apical spots ivory-white; elytral veins and ramose lines fuscous; reflexed veins of costa expanded on the costal border, black. Beneath: light gray and fuscous; the front with a series of dots at base; about seven

or eight arcs, a broken median line connecting with the distinct round spot below the middle, yellowish; clypeus, loræ, and cheeks yellowish, with fuscous spots; abdomen on the underside yellowish with fuscous patches.

Length: males and females 5 mm.

In general gray, with distinct fuscous irrorations and lines; two dark fuscous spots on front border of vertex; the front with distinct light arcs and a round spot below middle.

Described from one female specimen (*type*) from Barra, Bahia, Brazil, December 6, 1907, C. M., Acc. No. 3533; male (*allotype*) and three females (*paratypes*) from Bahia, C. M., Acc. No. 3702 (Haseman *coll.*); and also six specimens (*paratypes*) from Pará, Brazil (Haseman *coll.*).

Genus THAMNOTETTIX Zetterstedt.

*Thamnotettix* ZETTERSTEDT, Ins. Lapponica, 1840, Column 292.

#### 50. *Thamnotettix hyalinipennis* Stål.

(*Thamnotettix*) *hyalinipennis* STÅL, Bidrag til Rio Janeiro Traktens Hemiptera Fauna, 1858, p. 52.

Head wider than pronotum; vertex slightly longer at middle than at eye, rounded to front; front narrow, convex; clypeus widened at tip, tumid on disk; loræ reaching margin of cheek; pronotum twice the length of the vertex, hind border scarcely concave; elytral veins faint. *Genitalia: female*, last ventral segment elongated at sides, obliquely truncate, and deeply notched or cleft in the middle nearly to base.

Light yellowish, vertex with two large oval black spots; front with two broad light brown stripes on outer border, enclosing a lance-shaped yellow median area and with faint transverse arcs; clypeus mostly brown; pronotum with brownish fuscous transverse band near base, more or less obscure or interrupted at middle; scutellum yellowish brown at base, with a transverse curved line across the disk, the apical portion light yellow; elytra transparent, with the claval nerves, claval suture, discal and costal nerves, fuscous; abdomen black on the dorsum, beneath yellowish, with two black spots on mesopleuræ.

Length: female, 5.5 mm.

Light yellowish with transparent elytra, marked with brownish or fuscous stripes; two broad stripes on front merging on clypeus; two large spots on vertex, subbasal band on pronotum, curved line on disk of scutellum, and part of the elytral veins, fuscous. The specimens at hand agree closely with Stål's description, but he gives no details as to the genitalia. They extend the distribution over a much wider

territory, the original description having been based on specimens from Rio Janeiro, Brazil.

Three female specimens, one from Minca, Colombia, March, 1898. C. M., Acc. No. 1999 (H. H. Smith *coll.*); one from Chapada, Brazil, C. M., Acc. No. 2966 (H. H. Smith *coll.*); one from Bahia, Brazil, December, 1907, C. M., Acc. No. 3533 (Haseman *coll.*).

51. *Thamnotettix amazonensis* sp. nov.

Head wider than pronotum, subangulate; vertex nearly three times as wide as long, scarcely longer at middle than next to eye, rounded to front; front narrow, slightly sinuate; clypeus twice as long as width at base, widening distinctly toward tip; loræ long, reaching margin of cheek; cheeks wide, broadly sinuate; pronotum about three times as long as vertex, minutely punctate, hind border slightly concave; elytral veins very indistinct, except those marked with fuscous. *Genitalia: male*, valve minute or wanting; plates elongate, rather deeply spoon-shaped, tips upcurved, reaching tip of pygofer.

Dull yellowish; three transverse spots on vertex, two oblique spots on front, two oval oblique spots on pronotum, and transverse curved spot on disc of scutellum, fuscous; claval veins suture, discal veins, and costa, smoky or fuscous; abdomen blackish on disk of tergum; beneath dull yellowish, with black spots on propleura.

Length: male, 5.5 mm.

Recognized by its being yellowish gray, with blackish spots on vertex, front, pronotum, and scutellum; elytra transparent, with part of nerves fuscous. The species somewhat resembles *T. hyalinipennis* Stål, but differs distinctly in the markings of the vertex and front. The genital segment is of very distinct form and should readily distinguish the species.

Described from one male (*holotype*) from Chapada, Brazil, January 10, C. M., Acc. No. 2966 (H. H. Smith *coll.*).

52. *Thamnotettix braziliensis* sp. nov.

Head wider than pronotum; vertex twice as wide as length at middle, one-fourth longer at middle than next to eye; front narrow, convex; clypeus widened at tip, distinctly tumid on basal two-thirds; loræ large, reaching to the margin of cheek, outer suture very indistinct; cheek-margins nearly straight; pronotum strongly arched, nearly twice as long as vertex, hind border slightly concave; elytral venation obscure. *Genitalia: female*, last ventral segment short, lateral angles rounded, a broad median notch extending nearly half-way to base, bordered with fuscous.

Dull yellowish, vertex with two large oval black spots; front with broad stripes at sides, merging on the clypeus; a broad transverse band occupying disk of pronotum; basal half of scutellum, broad lines on claval veins, suture, discal vein, and costa, dark fuscous or blackish; central expanded line of front, cheeks, anterior border of pronotum, apical half of scutellum, light yellow. Elytra semitransparent, slightly milky, especially on claval suture; apical portion somewhat smoky.

Length: female, 4.5 mm.

Dull yellowish, with brown or fuscous stripes on front and elytra; transverse bands on pronotum and scutellum; female segment with shallow median notch. This species is evidently closely related to *hyalinipennis* Stål, and, were it not for the very different genital segment, I would be inclined to call it a variety of that species. However, it is much smaller and the fuscous color is more pronounced.

Three female specimens (*type* and *paratypes*), all from Chapada, Brazil, C. M., Acc. No. 2966, two labelled November, and one January 19 (H. H. Smith coll.).

53. *Thamnotettix marginalis* sp. nov.

Head as wide as pronotum; vertex nearly twice as wide as long and nearly one-third longer at middle than at eye, subangulate, convex; front widening to antennal pits, then narrowing to clypeus; clypeus long, sides nearly parallel; loræ short; pronotum nearly twice as long as vertex, depressed behind the eyes; elytral veins indistinct. *Genitalia: female*, last ventral segment short, hind border sinuate and slightly dentate.

Above olive-gray, tinged with testaceous; vertex a little lighter with two large black spots on each side of the margin and two spots at apex; front with a series of distinct arcs enclosed within a black margin, leaving a light expanded line in middle; clypeus light, margin blackish; cheeks sinuate; elytra with claval veins, suture, and inner vein, whitish; costa yellowish, margined within with fuscous. Beneath: black, last ventral segment and pygofer yellowish.

Length: female, 4 mm.

Dull olive-gray; costal margin yellowish white, two large spots and two large dots at apex of vertex.

One female specimen (*holotype*) from Chapada, Brazil, January 10, C. M., Acc. No. 2966 (H. H. Smith coll.).

54. *Thamnotettix sordidus* sp. nov.

Head broad, much wider than pronotum, short, angulate; vertex long at middle as next to eye, rounded to front; front as broad as



long, margin rounded to clypeus; clypeus short, one-half longer than wide, moderately tumid; loræ small, not reaching margin of cheeks; cheek-margins nearly straight; pronotum nearly three times as long as vertex, distinctly rugulose, hind border concave, lateral margin very short; elytral veins obscure. *Genitalia: male*, last ventral segment deeply excavated; valve triangular; plates elongate, rough, hairy, with acute tips, a broad yellow band across base.

Vertex in front mostly orange; three spots touching base of vertex, two on margin connected by curved line, two on each side of front, one next eye, and a median elongate spot at apex of front, lavender or light purplish; four orange stripes on pronotum, separated by greenish stripes; scutellum orange, with two purplish stripes; lower margin of front, clypeus (except small basal spot), loræ (except small basal margin), basal part of femora, pleural pieces, inner surface of hind tibiae and most of elytra, soiled whitish; the claval suture, inner sector, and inner part of apical area, smoky.

Length: male, 5.5 mm. to 6 mm.

Head orange-red, with purplish spots; pronotum striped with orange; elytra dirty whitish, with part of nerves fuscous, and costa black. This is a striking species, and, while not distinctly a *Thamnotettix* in facies, seems to fit in this genus as far as the structural parts are concerned.

Described from three males, one (*type*) labelled as from Brazil "along Rio Guaporé below Rio S. Miguel, VII, 22, 1909"; another, "S. Antonio de Guaporé, VII, 26, 1909, sweeping on island in Rio Guaporé"; the third from Ft. Principe, Rio Guaporé, Brazil, August 20, 1909. They all belong to C. M., Acc. No. 4043 (Haseman coll.).

##### 55. *Thamnotettix pallidus* sp. nov.

Head distinctly wider than pronotum, strongly arched; vertex scarcely wider at middle than next to eye, broadly rounded to front; front convex, not as wide as long; clypeus one-half longer than wide, apex truncate; loræ small, distant from margin of cheek; cheek-margin faintly sinuate; pronotum more than twice as long as vertex, lateral margin very short, hind margin distinctly concave; elytral veins very obscure. *Genitalia: male*, last ventral segment entire; valve short, subangulate behind; plates narrow, elongate, deeply spoon-shaped, blunt at tip, with white band across base; pygofer with a broad orange spot.

Vertex and pronotum greenish white; a narrow median line, a dot on each side next to eye, two large spots on border next to vertex, two transverse spots at base of front, two at sides of apex on front, central apical spot on clypeus, spot on antennal pit, two large spots

anteriorly on pronotum, base of clavus next to scutellum, disc of tergum and venter, black; a smoky stripe starting at the inner angle of clavus and running obliquely to center of corium thence to border of apex and widening on apical cells, the commissure and membrane smoky. In the second specimen (*paratype*) the apex of front and all of clypeus black; an additional spot at sides on pronotum and scutellum, except apical border, black.

Length: male, 4.75 mm. to 5 mm.

In general whitish, with numerous black spots; two on vertex; two on base of front; two large ones on anterior part of pronotum; elytra milky-hyaline.

One specimen (*type*) from Province del Sara, Bolivia, elev. 450 M. C. M., Acc. No. 6443 (Steinbach *coll.*); a second darker specimen (*paratype*) from Chapada, Brazil, January 19, C. M., Acc. No. 2966 (H. H. Smith *coll.*).

#### 56. *Thamnotettix pictus* sp. nov.

Head slightly wider than pronotum, short, angulate; vertex a little longer at middle than next eye; front longer than broad; clypeus nearly twice as long as wide, apex slightly expanded and faintly emarginate; loræ small, not reaching margin of cheeks; cheek-margin distinctly sinuate; pronotum about three times as long as vertex, side margin faintly carinate, hind border deeply concave; elytra mostly hyaline, veins delicate. *Genitalia: female*, last ventral segment long, more than twice as long as preceding, rounded behind, with deep central notch bordered with yellow; *male*, valve very small, almost hidden; plates broad at base, narrowing rapidly to middle, then extended in acute upturned tips.

Vertex, four large spots on pronotum (the inner ones reniform); most of the scutellum and dislocated stripe on clavus, orange-red; three large spots on margin of vertex (one median, and one on each side of the eye), tip of scutellum, inner margin of cheek, loræ, outer margin of clypeus, pectus and abdomen (except lateral margin), black; front and cheeks (except a narrow inner margin), legs, margin of abdomen, margin of last ventral segment, pygofer, and tip of ovipositor, yellowish or faintly testaceous; pronotum, except orange-red spots, three basal triangles, two discal spots on scutellum, and clavus, olive-green; elytra mostly hyaline, veins unicolorous, or very faintly fuscous.

Length: female, 5 mm.; male, 3.5 mm.

In general olive-gray, marked with red and black. Front, central line of clypeus, and cheeks, yellow. The male (*allotype*) differs from

the female in being much smaller in size, in having two conspicuous dark fuscous stripes separated by a narrow yellow line on the front, and a very narrow yellow line on the clypeus, with faint lateral arcs. The abdomen of the male is black above and beneath (except the apical parts of the plates below). There is a large yellow stripe on clavus, completely broken, composed of a short basal stripe, and a longer stripe lying between the claval veins.

The female (*type*) and male (*allotype*) are from Chapada, Brazil, collected respectively in November and October, C. M., Acc. No. 2966 (H. H. Smith). There is a second male (*paratype*) which certainly seems to belong to this species. It is labelled "Prov. del Sara, Bol., J. Steinbach, C. M., Acc. No. 5064, Feb. 1913." In this last specimen the dislocated stripe on clavus is almost completely broken, while in the female (*type*) there is a connecting line. These stripes occupy the basal outer part and the space between the claval veins.

57. *Thamnotettix bifasciatus* sp. nov.

Head scarcely as wide as pronotum, bluntly angulate; vertex as long as basal width, one-half longer at middle than next to eye; front narrow, nearly twice as long as wide; clypeus with sides parallel, apex convex; loræ rather short, scarcely touching front, but reaching margin of cheek; cheek broad, margin rounded; pronotum a little longer than vertex; outer anteapical cell elongate, small, costal cross-vein at its base. *Genitalia: female*, last ventral segment twice as long as preceding, hind border rounded, with a median tooth apparently rising from base; *male*, valve rather large, transverse hind border sinuate; plates broad at base, narrowing very abruptly and with rather slender acuminate upturned tips.

Head, pronotum, scutellum, and elytra milky-white, with orange stripes from anterior margin of vertex bordering eye, continued on pronotum and, a trifle more separated, on scutellum; also a yellowish lateral stripe on each side of pronotum; anterior border of vertex with broken blackish line, the outer part encircling the ocelli, which touch the margin of the eye; a fuscous spot on disc of clavus, another on disc of corium on inner sector before the fork, and another beyond clavus at base of membrane extended obliquely, but faintly, across the anteapical cells, and merging into the smoky border of apical areoles; face dark fuscous above, whitish below, apical third of front, all of clypeus, loræ (except outer margin), and lower part of cheeks, white; legs white; femora banded with black; elytra milky-white, veins opaque whitish.

Length: male, 3.5 mm.; female, 4.5 mm.

Milky-white, with two orange stripes running from margin of vertex across pronotum and scutellum; elytra with fuscous patches on cross-vein of clavus and corium and at base of membrane. This species appears to be related to the *shermani*-group, but has only a faint trace of a second cross-nervure and the middle anteapical cell has no cross-vein.

Two female specimens (*type* and *paratype*), from Province del Sara, Bolivia, C. M., Acc. No. 5064 (Steinbach *coll.*); male (*allotype*) from Province del Sara, Bolivia, elev. 450 M., November 1909, C. M., Acc. No. 4549 (Steinbach *coll.*).

58. *Thamnotettix lineiceps* sp. nov.

Head wider than pronotum, vertex a little wider than long, obtusely angulate, one-third longer at middle than next to eye; front broad at base, narrowing sharply from antennal pits; clypeus long, widened slightly at the tip, basal suture indistinct, or wanting; loræ rather small, not reaching cheek-margin; cheek-margin excavate below eye, broadly rounded to clypeus; pronotum one-fourth longer than vertex, side margin faintly carinate, hind border slightly concave; elytra with second cross-vein and a cross-vein in middle of anteapical cell. *Genitalia: female*, last ventral segment nearly as long as preceding, lateral angles rounded, posterior margin distinctly convex, thin, almost hyaline.

Light ocher; sides of vertex orange; a yellowish white median stripe starting at apex of vertex, widening to tip of scutellum and continued as a narrow border of commissure to tip of clavus; sides of pronotum and elytral veins also white; front orange, with central whitish expanded line; cheeks yellowish; under side of body light yellowish; tarsal claws black.

Length: female, 4.5 mm.

Ocher-yellow to orange above; sides of vertex fulvous, narrowly margined with white, bordered with black line.

Similar to *T. shermani* Ball in the elytral venation and orange stripes, but differing in details of markings and the genitalia.

Described from three female specimens from Province del Sara, Bolivia, elev. 450 M.: one labelled "Dec. 1918, C. M., Acc. No. 6443 (*type*)"; two labelled "Nov. 1909, C. M., Acc. No. 4549" (*paratypes*) (Steinbach *coll.*).

59. *Thamnotettix pulchellus* sp. nov.

Head wider than pronotum, subangulate; vertex twice as wide as long, about one-third longer at middle than at eye; margin obtusely

angulate; front longer than broad, margin sinuate; clypeus twice as long as width at base, margin widened toward tip, apex truncate; loræ large, almost touching margin of cheek; cheek-margin sinuate; pronotum one-half longer than vertex, hind margin concave; elytral veins very indistinct. *Genitalia: female*, last ventral segment half longer than preceding; lateral lobes and a conspicuous median tooth, bordered with brown.

Mostly golden yellow; the borders of vertex lighter yellow, enclosing a broad fulvous band; face light yellow, with triangular fulvous patches between eyes connected by narrow fulvous line; clypeus and cheeks sulphur-yellow; elytra entirely transparent; legs light yellow; tarsi tinged with greenish.

Length: female, 4.5 mm.

This species is bright golden yellow with a broad fulvous band on vertex and fulvous patches on base of front.

Described from a single female (*holotype*) from Chapada, Brazil, May, C. M., Acc. No. 2966 (H. H. Smith *coll.*).

60. *Thamnotettix lobatus* sp. nov.

Head wider than pronotum, sub-angulate; vertex nearly twice as wide as length at middle, one-fourth longer at middle than next the eye, obtusely angulate to front; ocelli close to the eye; front longer than broad, slightly convex; clypeus widened to tip, nearly twice as long as width at base; loræ broad, nearly touching margin of cheek; cheek-margin sinuate; pronotum one-third longer than vertex, faintly concave behind; middle anteapical cell much constricted behind the middle; two cross-veins in costa from edge of outer anteapical. *Genitalia: male*, valve short, broadly rounded behind; plates wide at base, contracting rapidly to about the middle with slender up-curved acute tips.

Light-gray or whitish; vertex with lobate fuscous spots on disk and four dots on the margin, two near the center and one just above ocellus; pronotum with fuscous irrorations, darker on the anterior half; scutellum with brownish spots margined with fuscous; clavus with dark patches near the inner margin; two conspicuous milky spots behind the veins; veins of corium fuscous; a fuscous patch in the discal cell; milky hyaline patches form an irregular band across the outer part of anteapicals and base of apicals; tip of apicals dusky; front olive-gray with short whitish arcs and a central whitish line; clypeus, loræ, and cheeks yellowish white, with the sutures dusky; legs dirty white; tarsal claws dark.

Length: male, 4 mm.

In general light-gray, marked with fuscous; elytra with milky hyaline spots.

Described from one male specimen (*holotype*) from Province del Sara, Bolivia, elev. 450 M., November 1909, C. M., Acc. No. 4549 (Steinbach *coll.*).

Genus CHLOROTETTIX Van Duzee

*Chlorotettix* VAN DUZEE, *Psyche*, VI, 1892, p. 306.

61. *Chlorotettix breviceps* Baker.

*Chlorotettix breviceps* BAKER, *Canadian Entomologist*, XXX, 1898, pp. 220.

Head rounded, faintly subangulate; vertex scarcely longer at middle than next eye; pronotum arched in front, slightly emarginate behind. *Genitalia: female*, last ventral segment greatly elongated, four or five times as long as the preceding segment, lateral angles bluntly angulate, central part produced, forming a broad tooth; *male*, valve narrow, long, bluntly angulate behind; the plates elongate, broad at base, tapering evenly to the truncate tips; disk somewhat inflated and the tips upcurved, forming a rather narrow spoon-shaped structure.

Dried specimens are dull yellowish or straw-color, with a faint iridescence; probably in life the insect is greenish and distinctly iridescent.

Length: female, 6.25 mm.; male, 6 mm.

Similar in appearance to *C. galbanatus*, Van Duzee, but with an extremely long female segment and elongate male plates. Baker's description is based on specimens from the same locality, Chapada, Brazil, and, while his description of the female genitalia does not agree with these specimens, all other characters are evidently identical. The male has not hitherto been described.

Three specimens, two females and one male, from Chapada, Brazil. C. M., Acc. No. 2966 (H. H. Smith *coll.*).

62. *Chlorotettix aberrans* sp. nov.

Head scarcely wider than pronotum, subangulate; vertex slightly longer at middle than next the eye; margin of front sinuate; clypeus scarcely widened at tip; sides parallel, one-half longer than wide; loræ almost touching margin of cheek; margin of cheek sinuate; pronotum twice as long as vertex. *Genitalia: male*, valve very broad, apparently fused with the plates at the middle; plates very broad, narrowing abruptly to near the broad bluntly rounded tips. The inner basal part of plates appears to be fused with the valve, but the outer part shows a very distinct suture between the two plates.

Light testaceous or pale straw-color, apparently somewhat faded; eyes brown; tarsal claws fuscous; elytra hyaline, the veins in part milky opaque.

Length: male, 5.5 mm.

Generally light testaceous, elytra transparent, male valve broad.

Described from one specimen, (*holotype*) from Januaria, Minas Geraes, Brazil, December 17, 1907, C. M., No. 3702 (Haseman coll.).

63. *Chlorotettix delicatus* sp. nov.

Head broad, subangulate, slightly longer at middle than next the eye; sides of front sinuate; clypeus nearly twice as long as width at base; loræ nearly touching the cheek; cheek-margin swollen beneath the eye, broadly sinuate; pronotum about twice as long as vertex, hind border concave. *Genitalia: female*, last ventral segment long, overhung by preceding segment, bearing brownish bars, hind border produced at the middle; *male*, valve small, angled behind; plates small, narrowing to blunt tips, scarcely reaching end of pygofer.

Almost uniformly light green, with deeper tints of yellowish on vertex and claval veins, sides of front, the clypeus, and the pleural pieces and margins of the abdomen; the faint fuscous spot on each side of the last ventral segment of the female and the tips of the elytra, faintly smoky.

Length: female, 5 mm.; male, 4-5 mm.

In general light green, tinged with yellow; eyes brown, elytra transparent.

One female specimen (*type*) and one male (*allotype*) from Bahia, Brazil, December 1907, C. M., Acc. No. 3702 (Haseman coll.); one female, (*paratype*) from Pará, Brazil, December 1907, C. M., Acc. No. 3533 (Haseman coll.); one male (*paratype*) from Province del Sara, Bolivia, C. M., Acc. No. 5064 (Steinbach coll.); and one male (*paratype*) from Paraguay River, Matto Grosso, Brazil, May 17, 1909, C. M., Acc. No. 4043 (Haseman coll.).

64. *Chlorotettix dilutus* sp. nov.

Head wider than pronotum, sub-angulate; vertex a little longer at middle than next the eye; front longer than wide, narrowing uniformly to clypeus; clypeus one-half longer than wide; loræ long, reaching nearly to the border of cheek; cheeks slightly sinuate; pronotum twice as long as vertex, faintly concave behind. *Genitalia: female*, last ventral segment slightly longer than the preceding, hind border concave; narrowly bordered with fuscous at center.

Pale straw-color; elytra hyaline, veins whitish; disc of abdomen above, dusky.

Length: female, 4.5 mm.

Small, pale; elytra transparent. This appears to be almost identical with *C. minimus* Baker, but the dusky markings on the tergum and the different female segment will distinguish it.

One female specimen (*type*) from Bonda, Colombia, June 10, C. M., Acc. No. 1999 (H. H. Smith *coll.*).

#### 65. *Chlorotettix minimus* Baker.

*Chlorotettix minimus* BAKER, Canadian Entomologist, XXX, 1898, p. 220.

Head wider than pronotum, sub-angulate; vertex a little longer at middle than next the eye; front longer than wide, narrowing uniformly to clypeus; clypeus one-half longer than wide; loræ long, reaching nearly to the border of cheek; cheeks slightly sinuate; pronotum twice as long as vertex, faintly concave behind. *Genitalia: female*, last ventral segment slightly longer than the preceding, hind border concave; a deep incision at the center; *male*, valve broad, sub-angulate behind; plates broad at base, tapering uniformly to acute tips.

Pale straw-color; elytra hyaline, veins whitish.

Length: female, 4.5 mm.

In general small, pale, elytra transparent.

One female specimen from Pará, Brazil, December 6, 1907, C. M., Acc. No. 3533 (Haseman *coll.*); one male specimen Cachoeira, E. Santos, Brazil, June 19, 1908, C. M., Acc. No. 3579 (Haseman *coll.*).

#### 66. *Chlorotettix bakeri* Sand and DeLong.

*Chlorotettix bakeri* SAND and DELONG, Proc. Ent. Soc. Wash., XXIV, 1922, p. 97.

"This species resembles *Ch. minimus* Baker in size and form, but differs strikingly in the genital characters.

"Female: last ventral segment about twice as long as preceding segment; lateral angles broadly rounded to posterior margin which is broadly and roundly notched one-third distance to base of segment. Male valve equals preceding segment in length, broadly and evenly rounded; plates about four times as long as valve, broadly and convexly expanded toward the base, then abruptly and concavely narrowed two-thirds their distance to apex forming narrow rounded tips." (S. & DeL.).

"A male (*holotype*) and female specimen in the Baker collection, United States National Museum, labelled 'Corumba, Brazil, May.' U. S. Nat. Mus. Type No. 24951."

"The male specimen was labelled originally '*Chlorotettix minima*'; and the female as '*Ch. minima*, var' by C. F. Baker."



I refer to this species a specimen labelled "Pará, Brazil, Dec. 6, 1907, C. M., Acc. No. 3533" (Haseman *coll.*).

67. *Chlorotettix truncatus* sp. nov.

Head broader than pronotum, sub-angulate; vertex one-fourth longer at middle than next the eye; front long, sides sinuate; clypeus one-half longer than wide, widening slightly at tip; loræ reaching margin of cheek; sutures faint; cheek-margin sub-angulate; pronotum nearly twice as long as vertex. *Genitalia: female*, last ventral segment long, about twice as long as the preceding segment; hind border truncate, faintly notched at the middle; *male*, last segment long; valve wanting, or concealed; plates triangular; tips acute.

Pale greenish-white; eyes brown; elytra hyaline, faintly milky; tarsal claws fuscous.

Length: female, 4.75 mm.; male, 4.87 mm.

Pale greenish; elytra hyaline; female segment truncate. The male agrees in general with the female, but is a trifle larger, and a little darker in color.

One female specimen (*type*) from Province del Sara, Bolivia, December 1911, C. M., Acc. No. 5064 (Steinbach *coll.*); and one male specimen (*allotype*) same locality and collector, November 1912.

EXOLIDIA gen. nov.

Head broader than pronotum; vertex broad and rounded to the front; ocelli minute, about four times their diameter from border of the eye; front short, convex; antenna short, the setæ very slender; pronotum narrowing posteriorly; scutellum small; elytra opaque, nervures indistinct to tip of clavus; the apical portion transparent, with three conspicuous apical veins; two anteapical cells; the costa broad without cross-veinlets. Type of genus *E. picta* sp. nov.

68. *Exolidia picta* sp. nov.

Head wider than pronotum; vertex short, rounded to front; front short, convex; pronotum narrowing posteriorly; scutellum small; elytra broad, longer than abdomen, tips rounded, veins indistinct, except the three broadly fuscous apical veins. *Genitalia: male*, plates compressed, narrowing to a blunt tip behind.

White, three transverse rows of orange spots between eyes, the middle one including the ocelli at the ends; elytra mottled with white and fuscous to base of apical cells; the costa with two whitish transparent spots, some fuscous dots in the basal spot, and a broad fuscous band next the apical cells; apex of elytra milky hyaline, with three

broad curved fuscous stripes apparently covering the apical veins. Beneath: face white; the lower border of front, clypeus, and most of loræ, black; legs white; outer border of tibiæ and the tarsi blackish; abdomen black; margins of the segments and genitalia whitish.

Length: male, 5 mm.

A handsome whitish species, with three transverse rows of oblong orange spots between the eyes, the middle one including the ocelli at the outer ends. This is a very striking species, apparently distinct from any hitherto known genus, but apparently belonging with the *Jassina* and remotely related to *Jassus* and *Neocalidia*, but approaching *Tinobregmus* in the smallness of the scutellum.

Described from one male, *type*, taken "near Forte Principe, Rio Guaporé, Brazil, Aug. 26, 1909," C. M., Acc. 4043 (Haseman coll.).

#### Genus *CICADULA* Zetterstedt.

*Cicadula* ZETTERSTEDT, Ins. Lapponica, 1840, Column 296.

#### 69. *Cicadula* (?) *valvata* sp. nov.

Head wider than pronotum; vertex narrow, scarcely longer at middle than next the eye, rounded to front; ocelli midway between eye and center; front narrow, tapering uniformly to clypeus; clypeus short, narrowing to the rounded apex; loræ and cheeks narrow; pronotum with sides nearly parallel, twice as long as vertex, hind border faintly concave; elytral venation obscure. *Genitalia: male*, valve extremely large, extending to borders of preceding segment, rounded behind; plates narrow, elongate, acute, densely set with fine whitish setæ.

Milky-white above; eyes fuscous; ocelli brownish; beneath yellowish white, tarsi and tips of plates, greenish. The colors are indistinct and the specimen may not be fully colored, but the structures seem mature.

Length: male, 4.5 mm.

In general elongate, head broadly rounded; elytra milky-hyaline; male valve very large, twice as long as preceding segment, rounded behind. This insect resembles *Chlorotettix*, but appears slenderer. The head is more transverse and the elytral venation, although very indistinct, appears to place it in *Cicadula*. The costa bears an extended patch of whitish waxy secretion.

Described from a single male specimen, (*type*) from Province del Sara, Bolivia, C. M., Acc. No. 5064 (Steinbach coll.).

## Genus NEOCÆLIDIA Gillette and Baker.

*Neocalidia* GILLETTE and BAKER, Hemiptera of Colorado, 1895, p. 103.70. *Neocœlidia inflata* sp. nov.

Head narrower than pronotum; vertex widening forward; front somewhat tumid, rather narrow; clypeus elongate, about twice as long as wide; loræ elongate, but not reaching to margin of cheeks; border of cheek faintly sinuate; pronotum short, scarcely longer than vertex, rounded in front, slightly sinuate behind eyes, posterior border distinctly concave; scutellum large, with a distinct transverse impression behind the middle; elytral venation obscure. *Genitalia: male*, valve invisible; plates elongate, deeply spoon-shaped, closely appressed, with short tooth-like upturned apices; pygofer compressed, apex rounded, inferior border near tip with a sharp recurved tooth on each side.

Light yellowish, or pale straw-color; the vertex with two oval oblique orange spots; anteriorly two orange spots at base of front; basal joint of antennæ, basal patch on the scutellum, central part of the apical third, orange; pronotum with two large round black spots behind the inner angle of the eye, bordered with orange and a black spot on each side of the scutellum at the ends of the transverse impressed lines; commissure smoky brown; elytra hyaline, faintly suffused with milky white; the veins scarcely visible.

Length: male, 6 mm.

In general a light yellowish species, with orange spots on the vertex and front, and two conspicuous black spots on front border of pronotum and sides of the scutellum. The peculiar expanded plates and form of pygofer will at once distinguish this species.

Two male specimens (*type* and *paratype*) taken at "San Antonio de Guaporé, Brazil, 7-26-1909, sweeping on island in Rio Guaporé," C. M., Acc. No. 4043 (Haseman coll.).

71. *Neocœlidia punctata* sp. nov.

Head considerably narrower than pronotum; vertex short, rounded in front, anterior border bluntly rounded; front slightly swollen; pronotum broad at base, hind border scarcely concave; scutellum broader than long; elytral veins indistinct, except towards the tip. *Genitalia: male*, valve elongate triangular, about one-third as long as plates; plates slender, elongate, very slightly sinuate, tips acute, margins densely set with whitish cilia.

Light yellowish, almost whitish; with two conspicuous spots on the margin of the front; lateral posterior angles of pronotum, two dots on the disk of scutellum, apical parts of claval veins, and the large roundish spots on the cross-nerve, black; the basal margin of the

clavus also dark fuscous or blackish, and the inner margin of clavus, the apical part of claval suture and the appendix, smoky; the veins of inner anteapical cell brownish; elytra transparent, faintly milky. Beneath: greenish white, unmarked, except the tarsal claws, which are embrowned.

Length: male, 6.75 mm.

Light yellowish with two conspicuous spots on the margin of vertex, lateral angles of pronotum on the disk of scutellum of elytra and tips of claval nerves, black; the basal and inner margin of clavus smoky.

Male specimen (*type*) from Province del Sara, Bolivia, C. M., Acc. No. 5064 (Steinbach *coll.*); a second specimen (*paratype*), labelled "Feb. 1913" agrees entirely with the above description, except for lacking the dark spots on the scutellum.

72. *Neocœlidia croceata* sp. nov.

Head rather broad, but not as wide as pronotum, hind border evenly arched; vertex broad, wider than long, lateral margins nearly parallel, anterior border rounded and subangulate, the disk slightly sloping, flattened, anterior border angulate; front convex; clypeus elongate, narrowed at base; loræ long, nearly touching border of cheek; margin of cheek slightly sinuate; pronotum short, nearly as long as vertex, evenly arched in front, hind border angularly emarginate; elytral veins obscure. *Genitalia: female*, last ventral segment slightly convex; *male*, valve hidden; plates fused, spoon-shaped, about twice as long as broad tips.

Quite uniformly light yellowish, or straw-color, with croceous stripes on vertex continued on the pronotum, with a croceous submarginal band in front of the eyes; elytra hyaline.

Length: female, 5.5 mm.; male, 5.25 mm.

In general pale yellowish, with faint croceous stripes on vertex and pronotum, those on the vertex connected by the curved band bordering the margin of the vertex; vertex subangulate, somewhat flattened above.

Described from a female (*type*) collected at Barra, State of Bahia, Brazil, Dec. 6, 1907, C. M., Acc. No. 3533 (Haseman, *coll.*); and a male (*allotype*) taken at Cachoeira, State of Santos, June 19, 1908, C. M., Acc. No. 3579 (Haseman *coll.*), which evidently goes with this species, but differs in having the croceous color more intense. There is a third specimen, a female (*paratype*) before me from the Province del Sara, Bolivia, C. M., Acc. No. 5064 (Steinbach *coll.*).

73. *Neocœlidia crenulata* sp. nov.

Head much narrower than pronotum; vertex somewhat narrower at base, about one and one-third times as long as width at base, widening before the eyes; the apex nearly rectangular, the whole surface nearly pentagonal; front convex, narrow, abruptly narrowed at clypeus; clypeus nearly twice as long as wide; loræ narrowed toward the tip, not extending to the margin of cheek; cheek-margin extending beyond tip of clypeus in a rounded lobe, lateral border nearly straight. *Genitalia: male*, valve wanting; plates slightly tumid, spoon-shaped, the outer part narrowed, and with blunt tips reaching to tip of pygofer.

Light yellow; a dark stripe running from apex of vertex to end of elytra, the border crenulate, four lobes on vertex, three on clavus, and one at base of membrane; elytra milky, transparent, more opaque next the dark stripe.

Length: male, 4.25 mm.

Very similar to *N. fuscodorsata* (Fowler), but smaller, with a longer, more acute vertex, and without the distinct black spot on margin of scutellum. It may prove to be one of a series of variations of the species described by Fowler. He, however, gives no description of the genitalia, and does not even mention the sex. His reference of the species to *Tettigonia* seems to indicate that he disregarded the position of the ocelli and other characters, which separate the species from that group.

Described from one male specimen (*type*) taken at Minca, Colombia, May 1898, C. M., Acc. No. 1999 (H. H. Smith coll.).