

**THE MEXICAN SPECIES OF PHLEPSIUS (Homoptera:
Cicadellidae)**

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An attempt was made in 1939 to bring together all the records for Mexican species of the genus *Phlepsius*, at which time a list was compiled and published and the new species then at hand were described. Six species belonging to this genus were recorded for Mexico. In 1941, the writer spent several weeks in field collecting in Mexico together with C. C. Plummer, J. S. Caldwell, and E. E. Good. As a result this list has been increased to thirteen by including the seven new species described in the following pages. This is a rather small number as compared to a list of some seventy species occurring in the United States.

The *costomaculatus* group contains a number of closely related species which resemble each other very closely superficially but the male and female genitalia are different and furnish characters for easy separation of the species.

***Phlepsius utahnus* Ball**

Phlepsius utahnus Ball. Can. Ent. 41:79, 1909.

No specimens of this species from Mexico have been examined but Dr. Ball has reported it from Comondu, Lower California, Mexico.

***Phlepsius lascivius* Ball**

Phlepsius lascivius Ball. Can. Ent. 32:200, 1900.

Phlepsius micronotatus Osborn & Lathrop Ann. Ent. Soc. Amer. 16:321, 1923.

This species has been previously reported from the states of Michoacan and Jalisco by the author. Additional Mexican material has been collected at Guadalajara, Jalisco (5,051 ft.) Zamora, Michoacan (5,800 ft.) Lake Chapala, Michoacan (5,500 ft.) and Valles, San Luis Potosi, Mexico (300 ft.). It is apparent from these records that it is common at altitudes of 5,000 to 6,000 feet and also occurs in the low tropical portion of the Gulf region. It is common in the southwestern portion of the United States.

Phlepsius continuus* DeLongPhlepsius continuus* DeLong. *Lloydia* 1:239, 1938.

The species is apparently limited in its distribution to the lower, more tropical areas of Mexico. It has been collected at several localities in the State of Vera Cruz, in Nuevo Leon at low elevations and in the State of San Luis Potosi at Valles (300 ft.) and at Tamazunchale (350 ft.) from grass along the Moctozuma River. It closely resembles *fuscipennis* the common plains grass species of the northern Mississippi Valley States.

***Phlepsius ventosus*, new species**

Resembling *continuus* in form and general appearance but darker in color and with distinct male genitalia. Length 6-7 mm.

Vertex short and bluntly angled or rounded, more than three times as wide between eyes as median length in male and four times as wide as length in female.

Color tawny yellow, heavily marked with dark brown pigment lines and irrorations. The vertex and scutellum are usually less heavily marked. The scutellum bears two black marginal spots on each side.

Genitalia: Female last ventral segment with three distinct notches on posterior margin. A deep narrow notch is formed on each side between the lateral margin and a produced black tooth either side of the broader median V-shaped notch which extends farther basally. The median notch is black margined. Male plates long, only slightly narrowed to apex which is blunt, rounded on outer margins and obliquely sloping to inner margin. Styles narrow, elongate, apical portion narrow, fingerlike. The pygofer slopes rapidly from dorsal to ventral portion. Aedeagus with a narrow basal portion which extends dorsally and caudally. The ventral portion extends caudally and curves dorsally bearing a pair of barb-like teeth just before apex.

Holotype male, allotype female and male and female paratypes collected at Tepetzlan, Morelos, Mexico, September 11, 1941, by Plummer, Caldwell, Good and DeLong. A paratype male was collected at Cuernavaca, Morelos, Mexico, October 21, 1941 by Good and DeLong.

***Phlepsius cirrus*, new species**

Closely related to *slossoni* which it resembles in form and appearance but the genitalia are distinct. Length male 5.5 mm.

Vertex short, scarcely produced, apex blunt, rounded, almost three times as wide at base as median length. Median portion depressed behind margin which is sharp but not foliaceous.

Color: Pale, heavily marked with brownish pigment. Ocelli encircled by a pale spot and with four prominent white spots on margin of vertex, a median pale spot just back of apex and a pale spot either side of middle at base. Elytra rather uniformly marked except for two small round brown spots on clavus along commissure at about one-third and two-thirds the distance from apex of

scutellum to apex of clavus. There are several small dark spots along posterior portion of costa and apical margin. Face mottled with brown.

Genitalia: Male plates rather long, convexly rounded to pointed apices. Style broad at base abruptly narrowed at half its length, the much narrower portion bearing a pointed apex which curves outwardly. Aedeagus rather large at base with a blunt portion protruding dorsally, then narrowed to form a long rather slender apical portion which extends dorsally and bears a pair of slender apical processes, one is directed dorsally and the longer process curves cephalad and ventrally.

Holotype male collected by the author near Mexico City, D. F., Mexico (9000 ft.), from pine, September 1, 1939.

***Phlepsius dampfi* DeLong**

Phlepsius dampfi DeL. Anal. Esc. Nac. de Cien. Biol. 1:381, 1939.

Records to date show this species to occur in two states on desert vegetation. In the State of Nuevo Leon it was collected at the Granja Experimental Bodriguez and in the State of Coahuila at Saltillo (5,000 ft.). Since the difference in elevation of these two localities is some 4,000 feet, the similar desert condition is probably the most important of the environmental factor.

***Phlepsius extremus* Ball**

Phlepsius extremus Ball. Can. Ent. 33:10, 1901.

The only available records for this species are those obtained by Ball from Tijuana, Baja California, Mexico.

Subgenus **TROPICANUS**, new subgenus

The members of this subgenus might be designated as the *costomaculatus* group. The subgenus is related to *Dixianus* Ball but the species are more Phlepsoid in general appearance.

The vertex is short and bluntly angled and gradually rounded to the front without a definite margin. The head is wider than the pronotum. The middle ante-apical cell is long, decidedly exceeding the outer antepical cell both anteriorly and posteriorly. The elytra are usually conspicuously marked with brown ramosc pigment lines which appear as cross nervures.

Genotype: *Phlepsius costomaculatus* (Van Duzee).

For several years we have placed a number of species, similar in color but apparently distinct, under the species name *costomaculatus*. This is the common species described from material from the southern United States and redescribed by Baker as *pulchripennis* from material collected in the same region. All of the species of the group resemble each other in general appearance and in color pattern which is pale, with brown elong-

gated mottling on the elytra. Among these species there is a difference in size, slight differences in color pattern and distinct differences in male and female genitalia.

***Phlepsius costumaculatus* (Van Duzee)**

Allygus costumaculatus Van Duzee, Bull. Buf. Soc. Nat. Hist. 5:207, 1894.

Phlepsius pulchripennis Baker. Ent. News 9:65, 1898.

This is the common *Phlepsus* with the mottled brown pattern of a *Eutettix* on the elytra which occurs throughout the southern and a portion of the southwestern United States. It is the only known species of this group of closely related species which has been taken in the United States. It can be separated from the Central and South American species by distinct male and female genital characters.

The female last ventral segment is shallowly trisinate. The male plates are long and slender, concavely narrowed to slender pointed apices. Pygofer exceeding plates in length, produced and pointed on dorsal caudal portion. Aedeagus with a narrow anterior and a narrow posterior process extending from basal portion. The anterior process is short, the posterior process is more than twice as long and is narrowed to a pointed tip which is directed anteriorly at the end of the long dorsal portion. Style with a rather long finger-like portion on inner apical margin.

Both Dr. Ball and the writer have reported this species for Mexico common in many areas. Since more extensive collecting has been done and a more detailed study has been made of this material it is quite clear that this species was reported in error. It does occur in Texas and undoubtedly occurs along the border, at least, in Mexico but no definite records are at hand. It would seem at the present time that the common species in the United States does not occur in Mexico and the common species in Mexico do not occur in the United States. This pattern of distribution will undoubtedly be changed when sufficient collecting is completed.

Specimens of this species have been examined from Florida, Alabama, Louisiana, Mississippi and Texas. It may occur in northern Mexico but no specimens have been examined which are this species.

***Phlepsius flectus*, new species**

Resembling *costomaculatus* in form and appearance but with distinct male and female genitalia. Length 5 mm.

Vertex bluntly angled, twice as wide between eyes as median length in female, less than twice as wide as long in male.

Color similar to *costomaculatus*, dull yellow with dark markings. Vertex with a round black spot just back of each ocellus and a small spot each side on basal margin. Four short transverse dash lines on margin between ocelli. Prong-

tum mottled with brown and with a round black spot just back of inner margin of each eye. Pronotum pale with two small black spots along each side. Elytra with a pale band along scutellum and inner clavus pale. Four black spots along costal margin. Median portion marked with brown pigment lines and dark spots from base to apex. Face brownish, mottled.

Genitalia: Female last ventral segment with rounded, produced lateral angles, between which the posterior margin is broadly, angularly excavated. The excavation is brown margined. Male plates elongate triangular, tapered to long slender apices. Styles long, apices blunt. Aedeagus with a long thick basal process which extends dorsally and a long curved apical process which extends caudally. The latter has a small apical hook which curves dorsally and anteriorly.

Holotype male and allotype female collected at Mexcala, Guerrero, Mexico (1,700 ft. elevation), October 22, 1941, by E. E. Good and the author. Male and female paratypes were collected at Valles, San Luis Potosi, Mexico (300 ft. elevation), September 29, 1941, by Caldwell, Good and the author; at Iguala, Guerrero, Mexico (2,500 ft. elevation), September 11, 1939 by Plummer and the author; at Acapulca, Guerrero, Mexico (sea level), September 10, 1939 by Plummer and the author; at Yazalaxi, Oaxaca, Mexico, November 29, 1932 (M. F. 2358) by A. Dampf; and at La Forestal, Vera Cruz, Mexico, November 12, 1920 by A. Dampf.

Phlepsius digitus new species

Resembling *costomaculatus* in form and appearance but with distinct genital structures. Length 5-5.5 mm.

Vertex short, blunt, more than twice as wide between eyes at base as median length.

Color dirty white with dark markings. Vertex darker at apex, a pale spot on inner side of each ocellus and a black spot posterior to each ocellus. Pronotum with three black spots behind each eye. Scutellum with two marginal spots each side along clavus of elytra. The elytra are pale, mottled with brown. There are four dark spots on costal margin, a dark area on base of clavus next claval vein, a pale brown area on corium and the middle ante-apical cell brown. Face mottled with brown.

Genitalia: Female last ventral segment with produced lateral angles, between which the posterior margin is rather deeply excavated, the central half of excavation with margin truncate or slightly convexly rounded with a slight notch at middle. Male plates long, tapered to pointed apices, concavely rounded on inner margins. Style elongate, curved, gradually narrowing to bluntly pointed apices. Aedeagus rather thick at base with three dorsal processes. The anterior process is broad and extends dorsally, the middle process is narrow, longer than either of the others and extends dorso-caudally; the posterior process is short, narrowed to apex and extends caudally.

Holotype male, allotype female and male and female paratypes collected at Jiutepec, Morelos, Mexico (4,500 ft. elev.), September 6, 1939, by Dr. C. C. Plummer and the author. Paratype females collected at Uruapan, Michoacan (5,500 ft. elev.), October 1, 1941, by Plummer, Good, Caldwell and the author and at Tuxpan, Michoacan (4,000 ft. elev.), October 5, 1941, by Caldwell, Plummer, Good and the author.

***Phlepsius calidus* new species**

Resembling *costomaculatus* in form, size and general appearance but with distinct male and female genitalia. Length 5.5-6 mm.

Vertex broad and blunt, rounded at apex, more than twice as wide between eyes at base as median length.

Color pale with dark markings. Vertex with faint marks along margin between ocelli, a black spot behind each ocellus and two small merged spots on posterior margin at either side. Pronotum with three dark spots on anterior margin, either side; two behind each eye and one behind the basal markings of the vertex on either side. Scutellum with the two black marginal spots on either side. Elytra with a black spot about the middle of clavus on either side and a brownish longitudinal band composed of ramose brown pigment lines extending from corium to middle of apex of each elytron. Face pale brown.

Genitalia: Female last ventral segment with posterior margin slightly produced from lateral angles to middle which is slightly notched and with a brown wedge-shaped mark on middle. Male plates narrow, elongate, tapered to narrow, attenuated, pointed apices which are surpassed in length by the pygofer. Style rather broad at base, rapidly narrowed at half its length to form a long narrow finger-like portion on inner margin which is sharp pointed at apex. Aedeagus in lateral view rather broad at base with a short basal process extending dorso-caudally. From its apex a pair of conspicuous curved processes with an apical hook bent caudally extend ventrally and laterally. Apical portion long and narrow, extending caudally, apex bluntly pointed.

Holotype male from Santa Engracia, Tamaulipas, Mexico (1,000 ft. elev.), collected November 8, 1938, by J. S. Caldwell, Allotype female collected at Valles, San Luis Potosi, Mexico (300 ft. elev.), September 24, 1941, by Caldwell, Good and DeLong. Male and female paratypes from Cordoba, Vera Cruz, Mexico (3,000 ft. elev.), October 8, 1941, Orizaba, Vera Cruz (3,500 ft. elev.), October 8, 1941. Tehuantepec, Oaxaca, Mexico (75 ft. elev.), October 13, 1941, all collected by Plummer, Caldwell, Good and DeLong. A large number of paratypes are also at hand collected by Dr. Dampf at La Forestal, Vera Cruz, October 15, 1926 (M. F. 1106B), December 23, 1926 (M. F. 1134), and November 12, 1926 (M. F. 1108); Loma Oaxaca, June 8, 1937 (M. F. 6070); Nainari, Sonora, August 11, 1927 (M. F. 245), Peten, Guatemala, October 28, 1925 (M. F. 753), Yaxha, Guatemala, October 25, 1925 (M. F. 764),

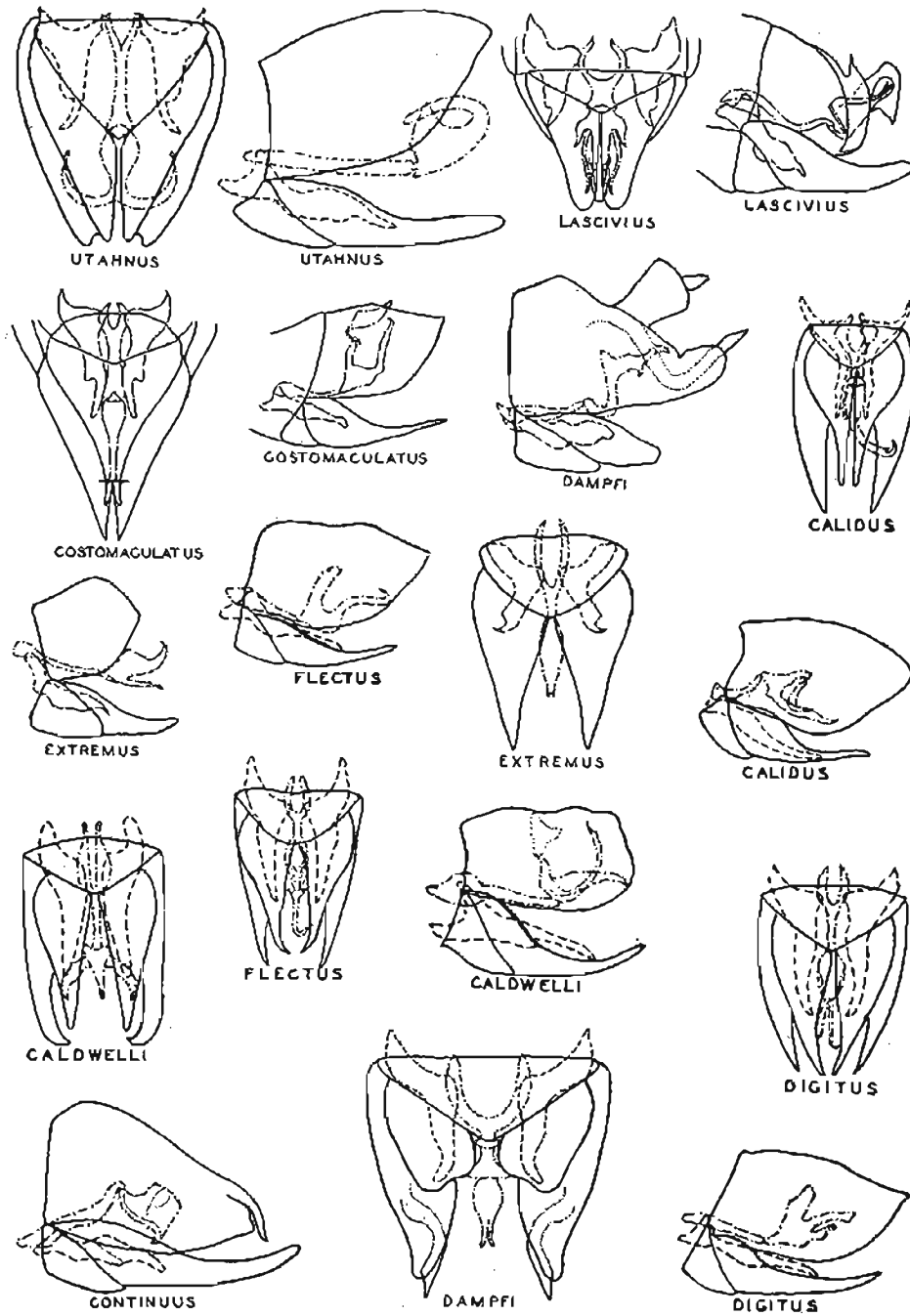


Plate 8—Ventral and lateral views of male genital structures as labeled.

San Jose, Guatemala, November 13, 1925 (M. F. 797), shores of Lake Peten, Guatemala, November 14, 1925 (M. F. 801), Flores, Lake Peten, Guatemala, December 6, 1925 (M. F. 866), Vera Cruz, Vera Cruz, October 14, 1926 (M. F. 1066), October 26, 1926 (M. F. 1112), December 13, 1926 (M. F. 1119), December 13, 1926 (M. F. 1125), May 1, 1927 (M. F. 1160), Centinela, Colima, January 28, 1930 (M. F. 1598), El Mante, Tamaulipas, October 26, 1930 (M. F. 1775), Tolosa, Oaxaca, December 31, 1932 (M. F. 2511) Tierra Blanca, Vera Cruz, July 29, 1932 (M. F. 2655), Tonalá, Chiapas, November 3, 1932 (M. F. 2722).

This species is apparently one occurring primarily at low altitudes and it is essentially tropical; A few specimens have been taken at altitudes of from 3,000 to 5,000 feet.

***Phlepsius caldwelli*, new species**

Resembling *costomaculatus* in form and general appearance but with different color markings and distinct male and female genitalia. Length 5-5.5 mm.

Vertex broad, bluntly angled, about twice as wide between eyes at base as median length.

Color, vertex pale with faint brownish mottling. A small round black spot just back of each ocellus and a small spot along basal margin either side of middle. Pronotum rather heavily mottled with dark brown. Scutellum with the two marginal spots on either side. Elytra more heavily marked than most of the species of this group. Four dark brown spots on costa, a large oblique spot on clavus just before middle, a small spot at apex of clavus, and a small triangular spot on corium. Raricose pigment lines are rather uniform on elytra except the anterior portion of costa. Face mottled with brown.

Genitalia: Female last ventral segment with lateral margins produced, between which the posterior margin is broadly concavely rounded to a slight median notch. The entire posterior margin except for the lateral angles is broadly bordered with brown. Male plates elongate, triangular, as long as pygofer, apices bluntly pointed. Style elongate, gradually narrowed to a blunt apex. Aedeagus in lateral view "U"-shaped with a narrow basal portion extending dorsally and a longer more slender apical portion extending dorsally and tapered to a sharply pointed, attenuated apex.

Holotype male, allotype female and male and female paratypes collected at Tamazunchale, San Luis Potosi, Mexico (600 ft. elev.), November 15, 1938 by Dr. J. S. Caldwell. I take pleasure in naming this species for Dr. Caldwell who has collected and described many interesting species of North American Homoptera.

***Phlepsius singularis*, new species**

Resembling *costomaculatus* in form and coloration but larger and with distinct male genitalia. Length male 6.5 mm.

Vertex produced and bluntly angled, rounded at apex, more than twice as wide between eyes at base as median length.

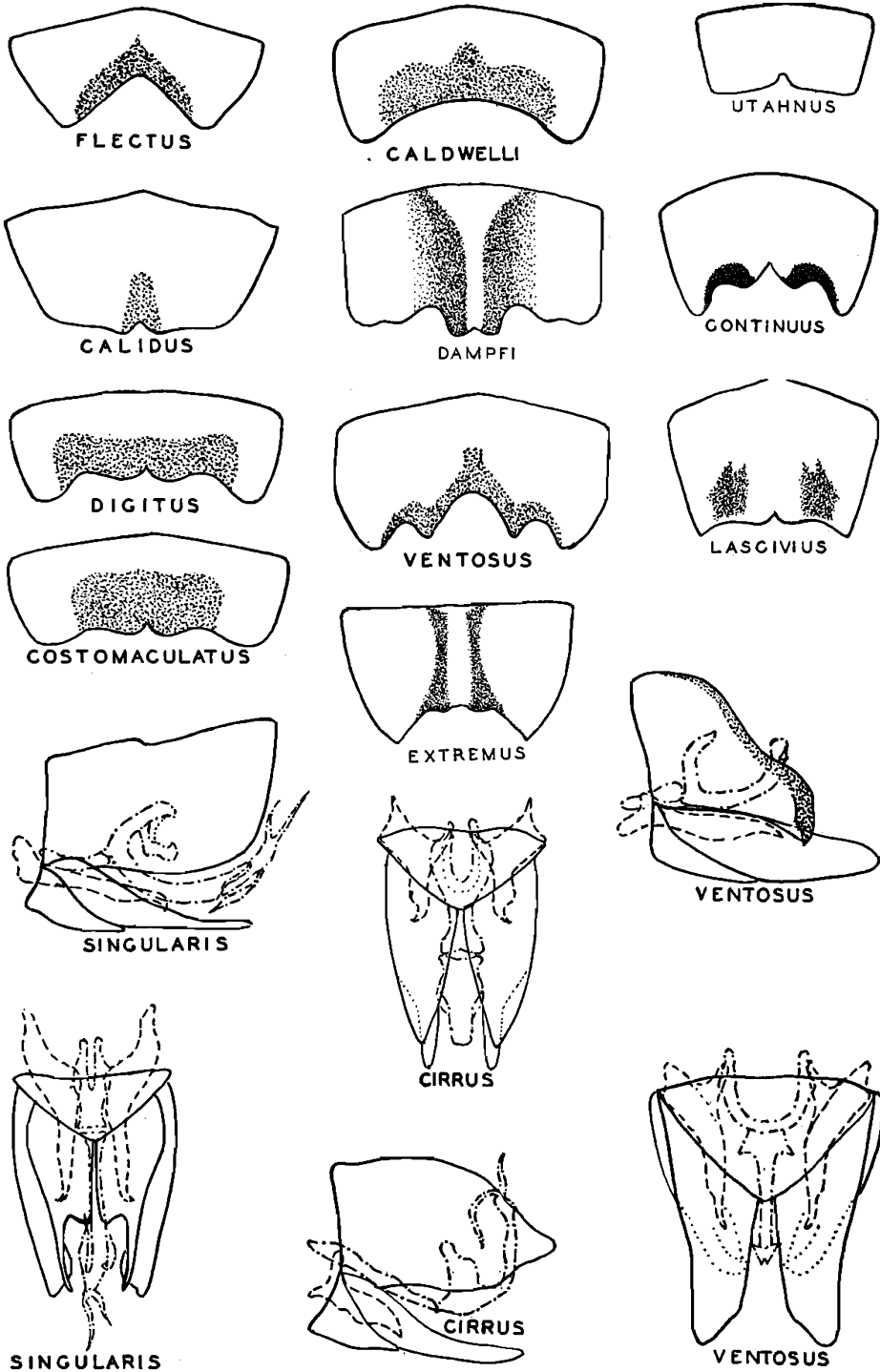


Plate 9—Upper portion—last ventral segment of female abdomen of species as labeled. Lower portion ventral and lateral views of male genital structures as labeled.

Color: Vertex pale with faint spots along margin. A small dark brown spot behind each ocellus and close to the eye near its middle. A semicircular brown line passes through this spot and is open at basal margin. Pronotum mottled with darker brown. Scutellum with basal angles dark brown. Elytra pale brown marked with dark brown spots and whitish blotches. Veins dark brown and four large brown spots on costal margin, an elongated spot on corium and a few smaller spots on outer clavus. Face pale brown with darker brown markings.

Genitalia: Male plates unique in type. They are concavely excavated from inner margin at about two-thirds their length then produced to form pointed apices on the outer margins. Style elongate, narrow, tapered to a narrow blunt apex. Aedeagus with a long basal process extending dorsally and caudally. The main portion of aedeagus is long and rather narrow, extending dorso caudally with a pair of separated styles at apex. The ventro caudal style is the longer and both project caudally as a continuation at the apex. Just before the apex a curious flap-like structure arises which extends basally along the aedeagus and is pointed at the apex. On the opposite side and a little anterior a slender style-like process arises which is twisted and then extends basally.

Holotype male collected at Vergel, Chiapas, May 19, 1935, by Dr. A. Dampf (M. F. 4207).

The large size and the bizarre genital structures mark this as a unique form among this group of closely related species.
