

ACRIDIDÆ (ORTHOPTERA) FROM SÃO PAULO, BRAZIL, WITH DESCRIPTIONS  
OF ONE NEW GENUS AND THREE NEW SPECIES.

BY JAMES A. G. REHN.

The material treated in the following paper represents the Pyrgomorphinæ and Locustinæ of a collection of Orthoptera made at several localities in the State of São Paulo, Brazil, by Mr. Adolph Hempel, and presented to the Academy by the author.

The Acridinæ belonging to this collection has already been treated, in conjunction with other South American material of that subfamily, in a paper in these Proceedings.<sup>1</sup>

PYRGOMORPHINÆ.

**OMMEXECHA** Serville.

*Ommexecha servillei* Blanchard.

1837. *Ommexecha Servillei* Blanchard, Ann. Soc. Entom. France, V, p. 613, Pl. XXII, figs. 2 and 3. [Province of Corrientes, Argentina.]

São Paulo. September 13 and 19, 1900. (Hempel.) Three ♂, three ♀.

Reboucas. September 26, 1900. (Hempel.) One ♂, one ♀.

Previous records for this species are Porto Alegre, Rio Grande do Sul (Karsch), Sierra Geral, Santa Catharina (Karsch), São Paulo (Bruner), Matto Grosso (Karsch), Brazil, Asuncion and San Bernardino, Paraguay (Bruner).

LOCUSTINÆ.

**TROPINOTUS** Serville.

*Tropinotus affinis* Bruner.

1906. *Tropinotus affinis* Bruner, Proc. U. S. Nat. Mus., XXX, p. 646. [Sapucay, Paraguay.]

Jundiahy. April 17, 1898; September 10, 1899. (Schrottky.) Two ♂, two ♀.

The bowed lateral carinæ of the pronotum appear to be the chief diagnostic character of this species, unless this is also shared by *T. scabripes* Stål, which has not been examined.

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<sup>1</sup> *Proc. Acad. Nat. Sci. Phila.*, 1906, pp. 10-50.



**ELÆOCHLORA** Stål.***Elæochlora arcuata*** n. sp.

Types: ♂ and ♀; Jundiahy, State of São Paulo, Brazil. March 1, 1899 (♂). (Schrottky.) [A. N. S. Phila.]

This peculiar species belongs to the section of the genus containing *E. trilineata* and *viridicata* (Serville) and *humilis* and *pulchella* Rehn, as well as the rather aberrant *picticollis* (Gerstaecker). It is readily separated from any of these species by the well elevated and longitudinally arcuate median carina of the pronotum, the tubercles of the pronotum also being blunter and fewer than in the allied species. The male can also be immediately separated from the above species, except *picticollis*, by the short acute tegmina.

Size rather large; form of the female quite robust, of the male slen-

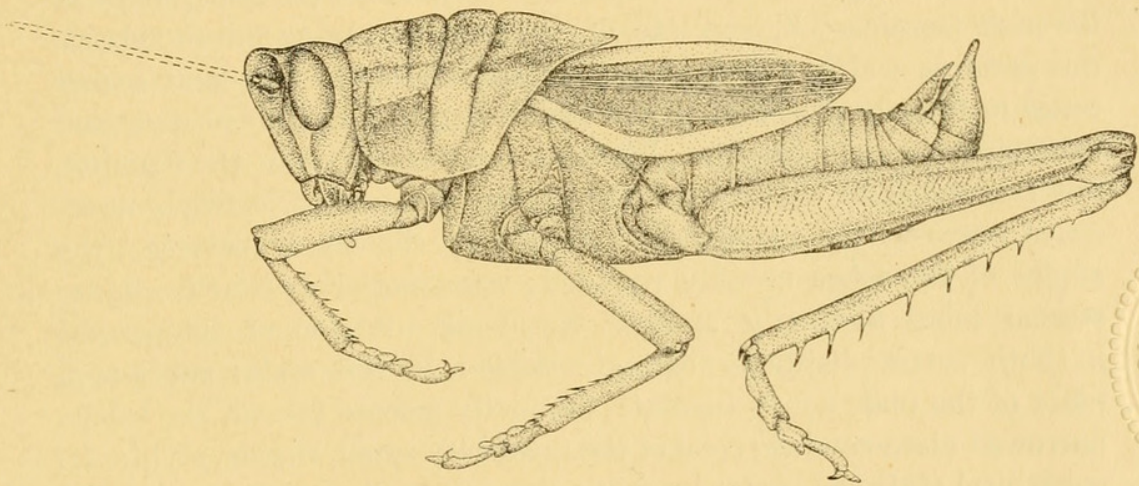


Fig. 1.—*Elæochlora arcuata* n. sp. Lateral view of male type. ( $\times 2\frac{1}{2}$ .)

derer. Head with the occiput rounded; fastigium subhorizontal, very slightly excavated, longer than broad, the apex slightly acute-angulate, the apical margins slightly arcuate in the male; angle of the fastigium when viewed from the lateral aspect narrowly rounded into the moderately (♀) or considerably (♂) retreating face; frontal costa very much narrowed at its junction with the fastigium, slightly but regularly expanding ventrad to the clypeus, sulcate except in the very narrow dorsal portion; eyes of the male elliptical, oval, of the female ovate; antennæ not complete. Pronotum rugoso-punctate, with the prozona tectate, the metazona with the disk flattened and the carina considerably elevated, the outline of the carina when viewed from the lateral aspect being very slightly arcuate in the female, very con-



siderably so in the male; cephalic margin obtuse-angulate, slightly more marked in the male than in the female; caudal angle acute-angulate, the apex sharp and the margins slightly arcuato-emarginate; lateral shoulders marked on the metazona, a continuation descending obliquely ventro-cephalad on the prozonal portion of the lateral lobes prozona of the disk with accessory lateral shoulders, which are less marked than the primary ones, converging from the principal transverse sulcus to the cephalic margin, all the lateral shoulders more marked in the male than in the female; transverse sulci three in number, all cutting the median ridge, but only the caudal one doing so deeply; greatest median width of the pronotal disk contained about twice in the length; lateral lobes of the pronotum with the ventral margin obtuse-angulate. Tegmina of the male exceeding the length of the pronotum by about half the length of the head, of the female about equal to the length of the metazona and half of the prozona; shape of the male tegmina sublanceolate, of the female tegmina sub-rhomboid, the greatest width of the male tegmina contained two and a half times in their length, that of the female tegmina contained once and two-thirds in their length. Wings much smaller than the tegmina, not functional in either sex. Prosternal spine erect, conical; interspace between the mesosternal lobes very slightly transverse, the angles of the lobes broadly rounded; interspace between the metasternal lobes distinctly arcuate transverse. Abdomen compressed in both sexes, distinctly carinate dorsad in the male; supra-anal plate of the male acute-angulate, distinctly sulcate mesad, the sulcus narrowed meso-caudad; cerci of the male very small, simple, styliform; subgenital plate compressed, produced, rostrate, the apex elevated and slender. Cephalic and median limbs moderately robust in the male, rather weak in the female. Caudal femora about one and one-third ( $\text{♀}$ ) or one and two-thirds ( $\text{♂}$ ) the length of the pronotum, rather slender, tapering, no appreciable pregenicular constriction, dorso-median carina sparsely serrato-dentate, pattern of the pagina rather irregular and not deeply impressed; caudal tibiae about equal to the femora in length, armed on the external margin with ten to twelve spines, on the internal with nine to ten spines, those of the internal margin longer than those on the external; tarsi distinctly depressed.

General color olive-green becoming brownish on some areas and brighter green on others.  $\text{♂}$ . Face dull oil green, genæ and occiput of the general color aside from a dull broad subequal medio-longitudinal bar of russet on the vertex and occiput, bordered laterad by poorly defined blackish areas; eyes burnt umber. Pronotum very dull olive-



green dorsad, the median carina and angles marked obscurely with burnt sienna; lateral lobes with considerable parrot green mesad, the cephalic and ventral margins narrowly and the caudal margins rather broadly margined with ochraceous-buff, the marginal color blending into the general color. Tegmina blackish, broadly margined, except toward the apex where the paler color narrows until completely absent at the very apex, with ochraceous-buff, principal veins of the median portion of the tegmina apple green. Limbs distinctly brownish, the caudal tibiae and tarsi vinaceous-cinnamon, tibial spines wholly black on the internal margin, tipped with black on the external margin. ♀. Head bice-green with a very pale ochraceous-buff occipital and fastigial band as in the male, which band, however, has the lateral defining bars poorly indicated; eyes vandyke brown; antennae pansy purple with the proximal joint of the color of the head. Pronotum generally more oil green than olive-green; median carina marked with a bar of madder brown which narrows caudad and is poorly outlined cephalad; ventral and caudal margins of the lateral lobes with very faint and poorly defined light margins. Tegmina oil green with a pale margin similar to the male, in addition to which the green area is outlined by a heavy pencilling of black, quite distinct on all but the ventro-caudal portion, while the sutural margin has a very fine black edging to its proximal half; principal veins of the green area apple green. Limbs oil green tending toward apple green, caudal tarsi marked with maroon purple dorsad, caudal tibiae with the spines as in the male.

*Measurements.*

	♂	♀
Length of body, . . . . .	29.2 mm.	52 mm.
Length of pronotum, . . . . .	11.1 "	18.6 "
Median width of disk of pronotum, . . . . .	5.5 "	8.2 "
Length of tegmen, . . . . .	12.8 "	13.8 "
Greatest width of tegmen, . . . . .	5.4 "	8 "
Length of caudal femur, . . . . .	17.9 "	24.2 "

A paratype female has also been examined. It differs from the female type only in the tegmina being more produced and nearer to the type seen in the male.

**CHROMACRIS** Walker.

*Chromacris miles* (Drury).

Jundiahy. (Schrottky). One ♂.

This individual has the lighter color of the wings rich yellow.



**Chromacris nuptialis** (Gerstaecker).

1873. *Romalea nuptialis* Gerstaecker, Stett. Entom. Zeit., XXXIV, p. 185. [Salto Grande,<sup>2</sup> Brazil.]

Jundiahy. January 20, 1899 (♀). (Schrottky.) One ♂, one ♀.

The markings of the tegminal veins in this species remind one of the similar pattern noticed in the otherwise very different *C. icterus*.

**ZONIPODA** Stål.**Zoniopoda tarsata** (Serville).

Jundiahy. January 28, 1899. (Schrottky.) One ♂.

This specimen agrees fully with the original description and two Rio Grande do Sul specimens determined as *tarsata*, received from the late Dr. Saussure.

**LEPTYSMA** Stål.**Leptysma gracilis** Bruner.<sup>3</sup>

1906. [*Leptysma*] *gracilis* Bruner, Proc. U. S. Nat. Mus., XXX, p. 658. [São Paulo, Brazil.]

São Paulo. September 5-19, 1900. (Hempel.) Six ♂, four ♀.

This series shows an appreciable amount of variation in the form of the fastigium, some having the angle more acute than others.

**Leptysma filiformis** (Serville).

São Paulo. September 1 and 7, 1900. (Hempel.) Three ♀.

**PARACORNOPS** Giglio-Tos.**Paracornops longipenne** (De Geer)?

1773. *Acrydium longipenne* DeGeer, Mém. d'Hist. Ins., III, p. 501, Pl. 42, fig. 9. [Surinam.]

São Paulo. September 14, 1900. (Hempel.) Five ♂, one ♀.

We have followed Bruner<sup>4</sup> in considering this form the same as DeGeer's species, the correctness of which association can be determined definitely only by the examination of Surinam material.

The specimens in hand are brownish instead of greenish as described by DeGeer, but as far as can be determined from his figure they do not differ structurally, and in dimensions they fully agree with those given by him.

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<sup>2</sup> One of two localities, Salto Grande, Minas Geraes or Salto Grande, São Paulo, probably the latter.

<sup>3</sup> The five females from Sapucay, Paraguay, recorded by the author as *L. filiformis* (Proc. Acad. Nat. Sci. Phila., 1907, p. 180) are found on re-examination to be this species. The absence of male individuals accounts for the error in determination.

<sup>4</sup> Proc. U. S. Nat. Mus., XXX, p. 662.



**OMALOTETTIX** Bruner.**Omalotettix signatipes** Bruner.

São Paulo. September 1 to 14, 1900. (Hempel.) Nine ♀.

These specimens are uniformly, though slightly, smaller than Chapada, Brazil, and Sapucay, Paraguay, females, but in no other respect do they appear to differ from topotypes.

**HOMALOSAPARUS**<sup>5</sup> n. gen.

A member of the *Xiphiolæ* and related to *Saparus* Giglio-Tos and *Xiphiola* Bolivar, differing from the former in the less compressed general form, in the form of the frontal costa, the less produced head, the less compressed pronotum, the more rounded tegmina, the more robust limbs and the produced subgenital plate; differing from *Xiphiola* in the more compressed form, in the absence of distinct lateral angles to the pronotum, the absence of any costal projection between the antennæ, in the broader tegmina, in the narrower interspace between the mesosternal lobes and in the produced subgenital plate and slender cerci.

Vertex ascending; fastigium rectangulate; frontal costa not projecting between the antennæ, becoming obsolete ventrad of the ocellus; face declivent; eyes acute ovoid, hardly projecting; antennæ heavy, depressed, very slightly expanded proximad. Pronotum rugoso-punctate; dorsal transverse sulci three in number; median carina distinct; caudal angle of the disk subrectangulate; lateral angles without carinæ. Tegmina exceeding the apex of the abdomen, rather broad, greatest width in the distal third; intercalary vein absent. Prosternal spine erect, slender, apex blunt; interspace between the mesosternal lobes very distinctly longer than broad; interspace between the metasternal lobes very narrow. Subgenital plate of the male produced, acuminate, keeled. Caudal femora moderately inflated; caudal tibiae with nine spines on the lateral margins.

Type.—*H. canonicus* n. sp.**Homalosaparus canonicus** n. sp.

Type: ♂; São Paulo, Brazil. September 13, 1900. (Hempel.) [A. N. S. Phila.]

Size medium; form distinctly compressed; surface ruguloso-punctate. Head with the occiput regularly ascending to the interocular region which, with the fastigium, is subhorizontal; interocular region slightly more than twice the width of the interantennal portion of the frontal costa; fastigium broadly trigonal, the apex with a short, distinct, median, longitudinal sulcus; angle of the fastigium and vertex, when seen from the lateral aspect, rounded rectangulate, the facial line being

<sup>5</sup> Ὀμαλός, resembling, and *Saparus*, a generic name.



subperpendicular to a short distance ventrad of the insertion of the antennæ, then considerably declivent; lateral foveolæ indistinct, punctate; frontal costa slightly constricted dorsad and obsolete from a point ventrad of the ocellus where it is slightly narrowed, entire length impresso-punctate; eyes acute dorsad, strongly elongate-ovoid

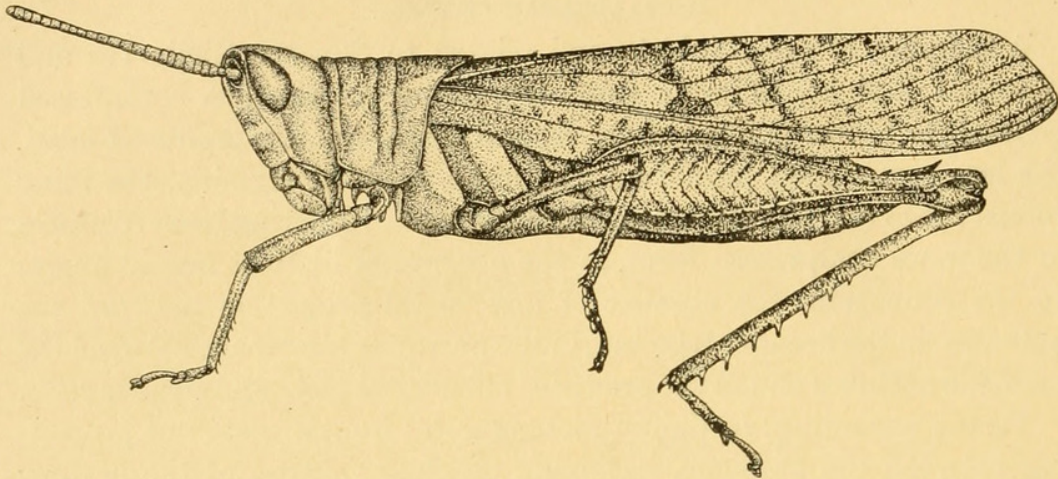


Fig. 2.—*Homalosaparus canonicus* n. gen. and sp. Lateral view of type. ( $\times 2\frac{1}{2}$ .)

and somewhat longer than the infraocular portion of the genæ, when viewed from the dorsum the eyes are seen to be very slightly prominent; antennæ about as long as the head and pronotum together, heavy, distinctly depressed, very slightly expanded proximad and with a very slight expanded distal clavation. Pronotum

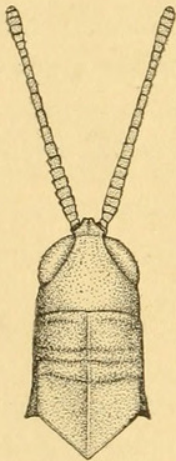


Fig. 3.—*Homalosaparus canonicus* n. gen. and sp. Dorsal view of head and pronotum. ( $\times 2\frac{1}{2}$ .)

about half again as long as the dorsal surface of the head; cephalic margin subtruncate with an extremely slight median emargination, caudal margin subrectangulate, apex finely angulate; median carina low, distinct, severed three times; lateral shoulders distinct on the metazona, rounded and descending ventro-cephalad on the prozona; lateral lobes about as deep on their greatest dorsal length, ventral margin rotundato-emarginate cephalad, arcuate caudad. Tegmina exceeding the tips of the caudal femora by about the length of the head; greatest width at about three-fourths the length from the proximal extremity and contained about four and a half times in the tegminal length; costal margin with a very considerable rounded lobe, distad of which the margin is straight to the point of greatest width and arcuate thence to the apex, sutural margin straight except for a slight proximal arcuation, apical region ob-



liquely truncate with the apex rounded rectangulate. Wings fully developed. Prosternal spine erect, rather slender, hardly tapering, bluntly pointed. Interspace between the mesosternal lobes broad cephalad, sharply narrowed to about a third the cephalic width, then slightly and regularly expanded with the caudal angles of the lobes rounded, the whole shape of the interspace being like a letter X with the upper portion abnormally expanded and the lower portion drawn out; interspace between the metasternal lobes narrow, inverted, cuneiform. Abdomen moderately compressed; supra-anal plate produced subequal in width in the proximal half, distinctly narrowed mesad and thence arcuate to the rather blunt apex; cerci slender, subequal in the proximal half, roundly emarginate on the dorsal margin in the distal half, the apex blunt, the distal fourth seen to be distinctly arcuate mesad when viewed from the dorsum; subgenital plate acute scaphiform, the apex acute-angulate, and the lateral portions of the plate distinctly constricted proximad, ventral aspect with a distinct median keel. Cephalic and median limbs rather slender. Caudal femora about two-thirds the length of the tegmina, the greatest width contained about four times in the length, dorsal carinæ serrato-dentate, pattern of the paginæ well impressed, genicular lobes acute; caudal tibiæ slightly shorter than the femora, lateral margin with nine spines one of which is quite small and apical, internal margin with ten spines, one apical; caudal tarsi comparatively short and with the pulvilli large.

General color prout's brown, tawny-olive ventrad and tending toward seal brown on the dorsum of the head, disk of the pronotum and proximal portion of the tegmina. Head with the face washed with walnut brown, several pale bars crossing between the labrum and median ocellus; labrum ochre; sides of the head ventro-caudad of the eyes washed with seal brown; eyes russet; antennæ wood brown dorsad, vandyke brown ventrad with the tip blackish. Pronotum slightly touched laterad with walnut brown. Tegmina sprinkled rather sparingly with small subquadrate maculations of seal brown; angle of the anal field rather pale. Wings transparent, tinted with pale brownish. Caudal femora with an obscure pregenicular annulus of seal brown, tubercles on the carinæ and pattern of the paginæ blackish; caudal tibiæ with the spines maize yellow with seal brown tips.

*Measurements.*

Length of body, . . . . .	28.2 mm.
Length of pronotum, . . . . .	6 "
Greatest caudal width of pronotum, . . . . .	4 "
Length of tegmen, . . . . .	24.8 "
Length of caudal femur, . . . . .	15.8 "



A series of five paratype males have also been examined, taken from the first to nineteenth of September, 1900. In size they show some little variation, and in color there is a tendency in some specimens to a more grayish coloration than in others, while in one specimen the color pattern is much more contrasted than in the type. Pale bars on the lateral angles of the pronotum are sometimes present, the ventral half of the eye also being suffused with seal brown in some specimens, while the small tegminal maculations frequently show a tendency to associate in oblique transverse bars well defined or much interrupted and from one to three in number.

**SCHISTOCERCA** Stål.

*Schistocerca gratissima* n. sp.

*Schistocerca lineata* (Stoll)? according to Bruner, Proc. U. S. Nat. Mus., XXX, pp. 675, 676 (1906).<sup>6</sup>

Type: ♂; São Paulo, Brazil. September 14, 1900. (Hempel.)  
[Acad. Nat. Sci. Phila.]

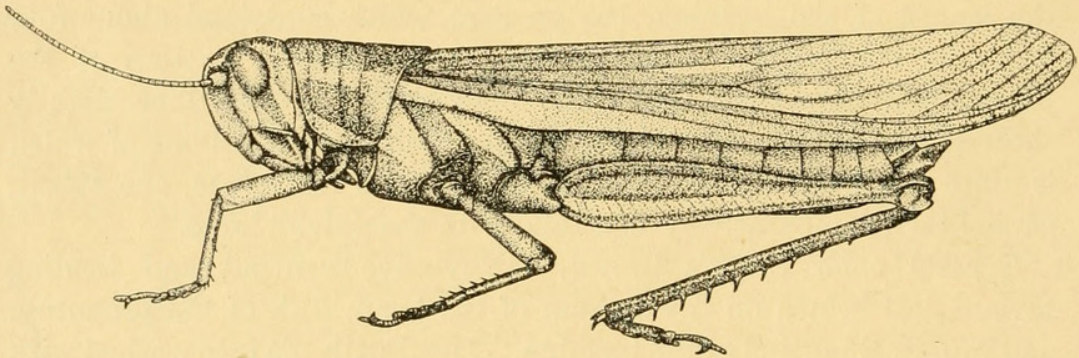


Fig. 4.—*Schistocerca gratissima* n. sp. Lateral view of type. ( $\times 1\frac{1}{2}$ .)

Allied to *S. pallens* (Thunberg) but differing in the shorter, blunter fastigium, the lesser space between the eyes, the broader and more truly elliptical eye, the more arcuate facial outline when viewed laterad and the anomalous pink and green coloration.

Size large; form rather slender. Head with the occiput considerably elevated and rounded, descending regularly to the fastigium and rounding into the frontal costa; interspace between the eyes slightly exceeding the greatest width of the fastigium; fastigium about as long as broad, considerably excavated; frontal costa slightly constricted

<sup>6</sup> We do not consider the resemblance of Stoll's figure of *Gryllus* (*Locusta*) *lineatus* (*Natuurl. Afbeeld. Besch. Springh.*, Pl. XV [B, fig. 57) close enough to specimens of this species to consider them the same. While in one or two points resemblance exists, in a number of others the discrepancies are very considerable. Stoll's figure appears to us to be a true *Locusta* (*Acridium* of authors).



dorsad, thence of a uniform width to the clypeus, deeply sulcate from between the antennæ to near the clypeus; facial outline when viewed from the lateral aspect slightly arcuate; eyes elliptical oval, distinctly longer than the infraocular sulcus; antennæ somewhat exceeding the length of the head and pronotum together. Pronotum rounded dorsad, hardly constricted, not tectate, disk of the metazona slightly flattened; cephalic margin of the disk very slightly angulate with a hardly appreciable median emargination, caudal margin of the disk nearly rectangulate, the apex very broadly rounded, median carina present but not high, cut by three transverse sulci, prozona and metazona subequal in length, the width of the metazona slightly greater than its length, lateral angles not apparent on the prozona, well rounded on the metazona; lateral lobes considerably longer than deep, narrowing ventrad, ventral margin truncate on the caudal half, obliquely emarginate on the cephalic half. Tegmina exceeding the apex of the abdomen by a distance about equal to the length of the pronotum; costal margin considerably arcuate in the distal third; apex broadly rounded. Prosternal spine stout, acute, very considerably retrorse; interspace between the mesosternal lobes longitudinal, subcuneate, the interspace cephalad being nearly as wide as the lobes; metasternal lobes contiguous. Abdomen somewhat compressed; cerci of moderate length, the apex somewhat narrower than the base, subtruncate; subgenital plate moderately produced, the apex rather deeply divided. Caudal femora about reaching to the apex of the abdomen, rather slender, medio-dorsal carina serrate, paginæ with the pattern distinctly but not very deeply impressed; caudal tibiæ with the spines quite long, nine in number on the external and eleven on the internal margins.

General colors oil green, liver brown and salmon-buff. Head with the face, an infraocular bar and the fastigium and occiput green, remainder salmon-buff; a poorly defined medio-longitudinal occipital pale band present, bordered laterad by poorly defined darker areas; eyes burnt umber; antennæ dull pinkish. Pronotum with the dorsum green with a subequal median bar of vinaceous-rufous; lateral lobes vinaceous-pink with a broad oblique bar of green. Mesothoracic and metathoracic epimera green, mesothoracic and metathoracic episterna and ventral portions of the thorax pinkish. Tegmina with a costal

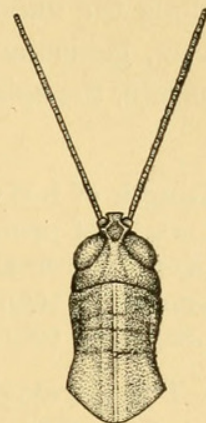


Fig. 5.—*Schistocerca gratisima* n. sp. Dorsal view of head and pronotum of type. ( $\times 1\frac{1}{2}$ .)



bar of primrose yellow extending over almost the whole of the costal half of the costal field, the greater portion of the margin of this pale area being narrowly edged with maroon, remainder of the tegmina liver brown, the principal veins maroon, several pale areas, caused by the coloration of adventitious veins, distributed over the median portion of the tegmen; anal field with a rather broad longitudinal band of vinaceous-cinnamon. Wings slightly infusate. Cephalic and median limbs buffy washed dorsad with greenish. Caudal femora with the dorsal half oil green, the ventral half salmon-buff, the division along the middle of the paginæ being indicated by a slightly blackish area, genicular arches chestnut; caudal tibiæ and tarsi pomegranate purple, the spines maize yellow tipped with black.

*Measurements.*

Length of body, . . . . .	49.5 mm.
Length of pronotum, . . . . .	9.5 "
Greatest dorsal width of pronotum, . . . . .	6 "
Length of tegmen, . . . . .	46.2 "
Length of caudal femur, . . . . .	25 "

Two paratypic males in the Academy Collection and one of the same sex from Surinam (V-IX; Fruhstorfer) in the Hebard Collection have been examined. This series shows a considerable amount of variation in size and some in color. One São Paulo male is about equal to the type in size, the other two specimens being appreciably smaller. The additional São Paulo individuals agree fully with the type in color, while the Surinam male has the greens much deeper, almost french green, and the pink shades almost replaced by yellowish-white, sometimes greenish-yellow, the purplish color of the caudal tibiæ being weaker and replaced on the ventral surface by oil greenish.

**DICHROPLUS** Stål.

**Dichroplus brasiliensis** Bruner.

1906. *Dichroplus brasiliensis* Bruner, Proc. U. S. Nat. Mus., XXX, pp. 678, 682. [Victoria, Brazil.]

Espirito Santo, Brazil. [Hebard Collection.] One ♀.

São Paulo. September 14, 1900. (Hempel.) One ♀.

The pale bars mentioned in the original description are but faintly indicated in these specimens.

**SCOTUSSA** Giglio-Tos.

**Scotussa brasiliensis** Bruner.

1906. [*Scotussa*] *brasiliensis* Bruner, Proc. U. S. Nat. Mus., XXX, p. 689. [São Paulo, Brazil.]

São Paulo. September 7-19, 1900. (Hempel.) Six ♂, four ♀.



These specimens agree fully with the original description except in the number of external tibial spines. In three of the males both tibiæ bear eight spines, and another male has eight on one tibiæ and nine on the other. In consequence the presence of nine spines cannot be considered diagnostic.





Rehn, James A. G. 1908. "Acrididae (Orthoptera) from São Paulo, Brazil, with descriptions of one new genus and three new species." *Proceedings of the Academy of Natural Sciences of Philadelphia* 60, 12–23.

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