

ORTHOPTERA OF THE FAMILIES TETTIGONIDÆ AND GRILLIDÆ FROM  
SAPUCAY, PARAGUAY.

BY JAMES A. G. REHN.

This paper completes the study of the Sapucay collection of Orthoptera made by William T. Foster and now the property of Mr. Morgan Hebard. Five of the families of the order were treated in a recent paper in these *Proceedings*,<sup>1</sup> to which the reader is referred for the titles of previous papers on Sapucay Orthoptera. The asterisk is used here, as in the previous paper, to designate species not previously recorded from Sapucay.

In previous papers forty-one species of the two families here treated were recorded from Sapucay; thirty-six are here recorded, but of this number six are new species and twelve previously known species are recorded from the locality for the first time.

The author wishes to thank Mr. Hebard for the privilege of studying this valuable collection.

## TETTIGONIDÆ.

## PHANEROPTERINÆ.

## ISOPHYA Brunner.

1878. *Isophya* Brunner, Monogr. der Phaneropt., pp. 13, 59.

Type.—*I. brasiliensis* Brunner.

*Isophya borellii* Giglio-Tos.

1894. *I[sophya] Borellii* Giglio-Tos, Bollett. Mus. Zool. Anat. Comp. Torino, IX, No. 184, p. 37. [Province of San Pedro and Asuncion, Paraguay; Santa Rosa, Salta, Argentina.]

March, 1905; two males, ten females.

These individuals are clearly referable to *borellii*, the males having the cercal tooth distinctly before the apex, the females having but the apical third of the dorsal margin of the ovipositor crenulate.

*Isophya hamata* Giglio-Tos.

1894. *I[sophya] hamata* Giglio-Tos, Bollett. Mus. Zool. Anat. Comp. Torino, IX, No. 184, p. 37. [Province of San Pedro, Asuncion and Colonia Risso on the Rio Apa, Paraguay.]

August, 1901; one male.

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<sup>1</sup> *Proc. Acad. Nat. Sci. Phila.*, 1907, pp. 151-192.



The apical cercal tooth and the more transverse plicate vein readily distinguish the males of this species from those of *borellii*. The range of this species is from Corumbá, Matto Grosso, Brazil, south to Sapucay.

**HYPEROPHORA** Brunner.

1878. *Hyperophora* Brunner, Monogr. der Phaneropt., pp. 16, 125.

Type.—*H. brasiliensis* Brunner.

*Hyperophora brasiliensis* Brunner.

1878. *H[yperophora] Brasiliensis* Brunner, Monogr. der Phaneropt., p. 126. [Brazil.]

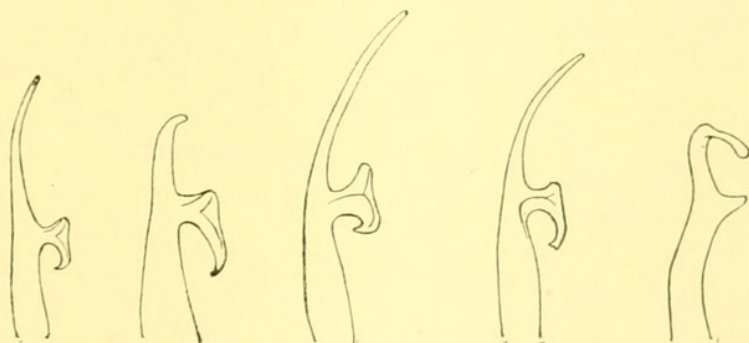
December, 1904, March, 1905; three males, two females.

There is considerable variation in these individuals in the depth of the coloration of the tegmina; in several specimens the green being very much richer and deeper than in the others. The male cercus of this species is represented by fig. 1.

This species ranges from Brazil to Buenos Ayres, Argentina.

\**Hyperophora cerviformis* n. sp.

Type: ♂; Sapucay, Paraguay. February 27, 1905. (William Foster.) [Hebard Collection.]



Figs. 1-5.—Male cercus of species of *Hyperophora* (viewed from the dorsum).

1. *H. brasiliensis* Brunner. 2. *H. cerviformis* n. sp. 3. *H. major* Brunner.  
4. *H. gracilis* n. sp. 5. *H. minor* Brunner. (× 8.)

Allied to *H. brasiliensis*, but differing in the slenderer form, the more elongate tegmina and the shorter cerci, which are moderately recurved distad, and with the proximal portion of the median process elongate and spined.

Size medium; form distinctly elongate, slender, compressed. Head short and deep, very considerably broader than the pronotum; occiput rounded; vertex moderately declivent, fastigium narrow, compressed, low, margins elevated, depressed mesad, at the extreme apex not touching the frontal fastigium which is trigonal; eyes ovate, prominent; antennæ rather thick, fragile, not perfect in the type, proximal joint



about as broad as the eye. Pronotum with the disk subdeplanate, slightly sellate; lateral margins subparallel, acute, the width of the disk contained about once and a half in the length, cephalic margin moderately concave, caudal margin moderately arcuate, a distinct rectangulate impressed line mesad; lateral lobes distinctly longitudinal, the greatest depth, which is caudad, contained once and a half in the length, cephalic margin slightly sinuate oblique, ventral margin slightly emarginate over the coxæ and very slightly angulate caudad of this, caudal margin with a distinct rectangulate humeral sinus, otherwise rounded. Tegmina reaching about to the tips of the caudal femora, narrow, lanceolate, the greatest width contained about six and a half times in the length, costal field well rounded proximad, otherwise the margins taper almost imperceptibly to the rounded apex; discoidal vein with three rami which are connected by diagonal supple-

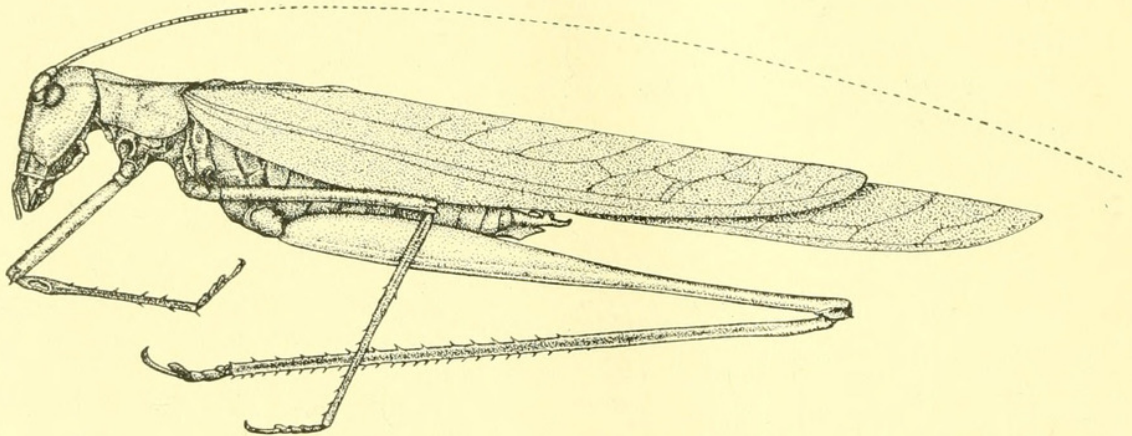


Fig. 6.—*Hyperophora cerviformis* n. sp. Lateral view of male type. ( $\times 2\frac{1}{2}$ .)

mentary veins; anterior ulnar vein fusing slightly distad of the apical third and with two principal rami; tympanum distinctly longer than broad. Wings with apex acute, exceeding the tegmina by a length equal to that of the head and pronotum together. Terminal dorsal abdominal segment produced mesad into a subtrigonal process which is somewhat bullate; cerci, produced moderately tapering, apex blunt, somewhat depressed, narrowly recurved dorso-mesad, median process strongly produced in a proximal direction parallel with the shaft, acute, no development distad; subgenital plate with a rotundato-angulate emargination, lateral apical angles rather blunt, ventral surface with three subparallel carinæ. Cephalic femora but slightly shorter than the head and pronotum together; median femora twice as long as the pronotum. Caudal femora once and one-third the



length of the body, slender; caudal tibiae slightly longer than the femora.

General color apple green turning to olive-yellow and Naples yellow on the head, pronotum and limbs. Eyes prouts' brown, a weak narrow postocular line and the more distinct continuation of the same on the angle of the pronotum liver brown, the tympanum very broadly margined laterad with the same; tibiae oil green, the caudal becoming olive-green distad.

*Measurements.*

Length of body, . . . . .	17 mm.
Length of pronotum, . . . . .	4 "
Length of tegmen, . . . . .	27.5 "
Length of caudal femur, . . . . .	22.7 "

The type is the only specimen seen by the author.

***Hyperophora major* Brunner.**

1878. *H[yperophora] major* Brunner, Monogr. der Phaneropt., p. 126, tab. II, fig. 24. [Buenos Ayres, Argentina.]

March and May, 1902; two males, two females.

These specimens are slightly smaller than the measurements given for this form by Brunner, but as far as can be determined from his brief description they represent this species. The measurements of a Sapucay male and female are as follows:

	♂	♀
Length of body (exclusive of ovipositor), . . . . .	20 mm.	22.5 mm.
Length of pronotum, . . . . .	4.6 "	4.6 "
Length of tegmen, . . . . .	29.5 "	30.5 "
Length of wing beyond tegmen, . . . . .	6.5 "	6.1 "
Length of caudal femur, . . . . .	24 "	24.5 "
Length of ovipositor (apex to ventral base), . . . . .		5.5 "

The male cercus of this species is represented in fig. 3. This species has been recorded from Buenos Ayres and Santa Rosa, Salta, Argentina, and Urucum, Matto Grosso, Brazil.

**\**Hyperophora gracilis* n. sp.**

Types: ♂ and ♀; Sapucay, Paraguay. February 27 (♀) and March 7 (♂), 1905. (William Foster.) [Hebard Collection.]

In a way this species connects certain previously known species of the genus, but in the form of the ovipositor it appears to be close to *H. angustipennis* Brunner, while the strongly lamellato-carinate ninth dorsal abdominal segment of the male is apparently peculiar to the new species. In possessing lateral lobes of the pronotum of equal depth



and in having the mediastine vein by no means as well marked as in the *major-peruviana* group it occupies a rather intermediate position.

Size medium; form elongate, slender, somewhat compressed. Head distinctly broader than the pronotum, the occiput rounded, vertex declivent, fastigium narrow, longitudinally sulcate, apex blunt and in contact with the blunt apex of the facial fastigium; eyes subovate, strongly exserted; antennæ elongate, proximal joint as broad as the eye. Pronotum with the dorsum deplanate, slightly sellate; lateral

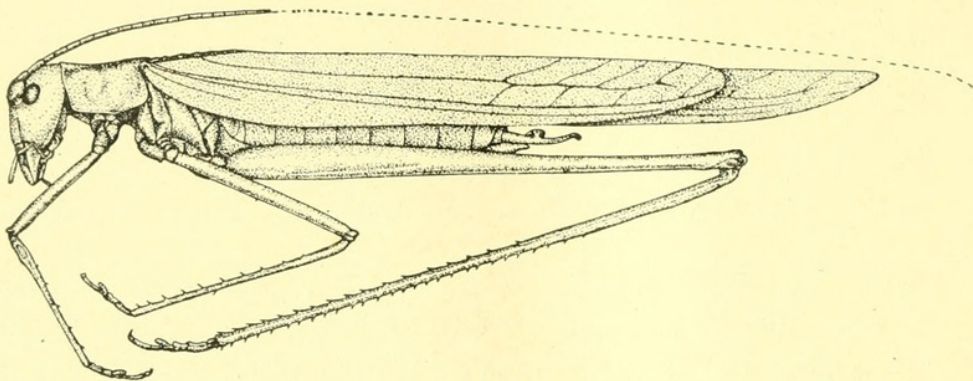


Fig. 7.—*Hyperophora gracilis* n. sp. Lateral view of male type. ( $\times 2\frac{1}{2}$ .)

margins subparallel, angulate, subcarinate, the breadth of the disk contained about once and a half in the length, cephalic margin very slightly emarginate, caudal margin arcuate, a distinct but low median carina present on the extreme caudal section of the disk, cephalad of this there is an indication of the same but no carina, rectangulate impressed pattern slightly caudad of the middle; lateral lobes with the greatest depth contained nearly twice in the length, caudal margin subsinuate with a faint trace of a supra-coxal emargination, humeral sinus distinct, rectangulate, the remainder of the caudal margin slightly arcuate and the ventro-caudal angle rather narrowly rounded. Tegmina exceeding the length of the body by about that of the pronotum, the greatest width contained about seven times in the length, margins approximating little, except in the apical fifth where the costal margin arches distinctly to the narrowly rounded apex; discoidal vein with four rami, all of which are distinctly sublongitudinal in their middle course, diagonal in the remainder; anterior ulnar vein with no distinct rami in the male, one to two in the female, the vein itself being connected by a short vein with the proximal rami of the discoidal vein. Wings exceeding the tegmina by nearly twice the length of the pronotum, the apex tapering and acute. Terminal dorsal abdominal segment of the male with a short acute process over the base of each cercus and a



larger median trigonal process bearing a high rounded lamellate ridge; cerci elongate (see fig. 4), moderately robust in the proximal section, slender in the distal section which is strongly curved mesad with the apex blunt and somewhat recurved, median process on the distal side of its internal face with only a minute spine, the proximal side with a slender recurved appendage with a slightly expanded emarginato-truncate apex; subgenital plate moderately produced, apex rectangulate emarginate. Ovipositor of the female about half the length of the tegmina, slightly but regularly curved, rather broad, tapering very slightly except toward the immediate apex, dorsal margin slightly and ventral margin distinctly crenulate in the distal third; subgenital plate of the femora very slightly produced with a narrow median emargination. Cephalic femora as long as the pronotum and half of the head; median femora about a third the length of the tegmina. Caudal femora very slender, reaching to the apex of the tegmina.

General color apple green becoming greenish yellow on the proximal portion of the tegmina, pronotum and head; postocular line and angles of the pronotum brick red, the male tympanum marked laterad not very strongly with the same color; eyes chestnut; caudal tibiae becoming purplish brown distad.

#### Measurements.

	♂	♀
Length of body, . . . . .	21 mm.	— <sup>2</sup> mm.
Length of pronotum, . . . . .	3.7 "	— <sup>2</sup> "
Length of tegmen, . . . . .	23.8 "	25.5 "
Length of caudal femur, . . . . .	21 "	22 "
Length of ovipositor, . . . . .		11.5 "

Three paratypic males, taken in February and March, 1905, have also been examined. These specimens fully agree with the type in all essential characters. From these specimens it is seen that the male in some cases possesses at least a single ramus to the anterior ulnar vein of the tegmen.

#### *Hyperophora minor* Brunner.

1891. *Hyperophora minor* Brunner, Verhandl. K.-K. Zool.-bot. Gesell. Wien, XLI, p. 59. [Paraguay; Cordoba, Argentina.]

February and March, 1905; fourteen males, thirteen females.

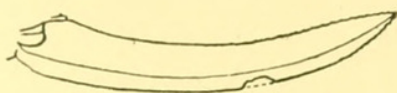


Fig. 8.—*Hyperophora gracilis* n. sp. Lateral view of ovipositor. (× 3.)

<sup>2</sup> The head and cephalic portion of the pronotum is missing in the female type.



The cercus of the male of this species is represented by fig. 5. There is an appreciable amount of variation in size in this species, the extremes of the present series measuring as follows:

		♂		♀	
Length of tegmen, . . .	24 mm.	25.5 mm.	23.8 mm.	27 mm.	
Length of caudal femur,	21.2 "	23 "	22 "	23.6 "	
Length of ovipositor,			7.2 "	7.8 "	

#### LIGOCATINUS Rehn.

1878. *Amaura* Brunner, Monogr. der Phaneropt., pp. 25, 247. (Not of Moller, 1842.)

1901. *Ligocatinus* Rehn, Canad. Entom., XXXIII, p. 272.

Type.—*Amaura spinata* Brunner.

#### *Ligocatinus olivaceus* (Brunner).

1891. *Amaura olivacea* Brunner, Verhandl. K.-K. Zool.-bot. Gesell. Wien XLI, p. 123. [Rio Grande do Sul, Brazil.]

February, 1903 and 1905; three females.

Terminal spines are present on the external dorsal margin of the cephalic tibiae in all three specimens.<sup>3</sup>

#### HOMOTOICHA Brunner.

1891. *Homotoicha* Brunner, Verhandl. K.-K. Zool.-bot. Gesell. Wien, XLI, pp. 17, 124.

Type.—*H. minor* (Brunner).

#### *Homotoicha fuscopunctata* Caudell.

1906. *Homotoicha fuscopunctata* Caudell, Proc. U. S. Nat. Mus., XXX, p. 236. [Sapucay, Paraguay.]

March, 1905; one male.

This specimen has been examined by Caudell, who states there is no doubt in his mind but that it represents the male of his species. As the appendages are undescribed a few notes may be of interest.

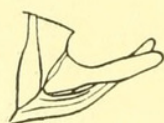


Fig. 9.—*Homotoicha fuscopunctata* Caudell. Lateral view of apex of male abdomen. (× 5.)

Terminal dorsal abdominal segment with the apical margin broadly subtruncate. Cerci with the proximal third very stout, scabrous and bearing on the internal margin a lamellate ridge developed into a falciform process, curving dorsad, the base broad, apex acute and normally touching the base of the opposite cercus; median third of the cercus compressed; apex thickened, obliquely truncate and with a small spine placed in the middle of the truncation, beyond the proximal third the cerci are curved inward.

<sup>3</sup> Vide Caudell, Proc. U. S. Nat. Mus., XXX, p. 236.



Subgenital plate produced, tapering, bent considerably dorsad<sup>\*</sup> near the base, deeply and narrowly divided, short styles present.

**CERAIA** Brunner.

1891. *Ceraia* Brunner, Verhandl. K.-K. Zool.-bot. Gesell. Wien, XLI, pp. 18, 127.

Type.—*C. tibialis* Brunner.

**Ceraia cornutoides** Caudell.

1906. *Ceraia cornutoides* Caudell, Proc. U. S. Nat. Mus., XXX, p. 237. [Sapucay, Paraguay.]

January, 1903, March, 1905; two females.

**SCAPHURA** Kirby.

1825. *Scaphura* Kirby, Zool. Journ., I, p. 432.

Type.—*S. vigorsii* Kirby.

**Scaphura nigra** (Thunberg).

1824. *Gr[yllus] niger* Thunberg, Mém. l'Acad. Imp. des Sciences, St. Pétersb., IX, p. 415. [Brazil.]

January and March, 1903 and 1905; one male, three females.

These specimens do not fully agree with any of the numerous color forms of this species, being closer to *vigorsii* Kirby and *chalybea* Marschall than to the others. From the former they differ in the absence of pale markings on the median femora and in the more brownish wings, these latter being distinctly red-brown with a pre-apical portion infusate. From *chalybea* they differ in the chalybeous proximal portion of the antennæ comprising eight to thirteen joints, instead of only reaching the third. However they are closer to *chalybea* than to the type called *vigorsii* by Kirby.

I have provisionally considered all the nominal species as forms of *nigra*, which is the oldest name, the probability being that the various forms are geographic and restricted to definite areas. The variation noted in the four specimens in hand is slight, and from this one may infer that variation in one locality is generally no greater.

The resemblance of this species to a Sphegid wasp is very striking, as has already been noticed by Westwood, the similarity to species of the genus *Pepsis* being particularly true of the specimens examined.

**GRAMMADERA** Brunner.

1878. *Grammadera* Brunner, Monogr. der Phaneropt., pp. 27, 297.

Type.—*G. clara* Brunner.

**\*Grammadera albida** Brunner.

1878. *G[rammadera] albida* Brunner, Monogr. der Phaneropt., p. 298. [Brazil.]

November and December, 1904; two males, one female.



As the ovipositor was mutilated in the female type, I have described the appendages of the available female.

Ventral length of the ovipositor two and one-half times that of the disk of the pronotum, slightly falcate, greatest width immediately distad of the middle and contained about four times in the length, apex acute, both margins crenulate for about a third their length. Subgenital plate small, apex broadly emarginate.

\**Grammadera rostrata* n. sp.

Type: ♀; Sapucay, Paraguay. February 10, 1905. (William Foster.) [Hebard Collection.]

Allied to *G. clara* and *albida*, differing from the former in the more arcuate ovipositor, the less quadrate lateral lobes of the pronotum

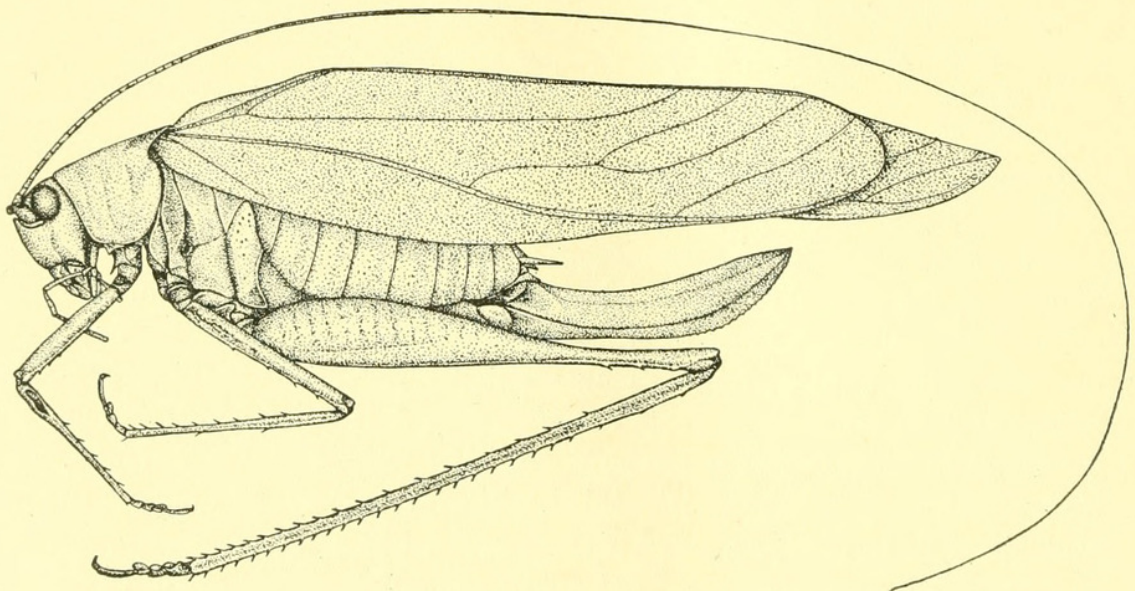


Fig. 10.—*Grammadera rostrata* n. sp. Lateral view of type. ( $\times 2\frac{1}{2}$ .)

and the slenderer limbs. From *G. albida* it differs in the smaller eyes, the more produced and subequal fastigium, the more distinctly disto-median insertion of the median vein and the less quadrate lateral lobes of the pronotum. From *G. hastata* Brunner and *pellucida* and *rosea* Giglio-Tos it is separated by a number of characters, the chief of which is the sulcate fastigium (not sulcate in *hastata*) and the emarginate subgenital plate (entire or rotundate in *pellucida* and *rosea*).

Size medium; form moderately elongate, distinctly compressed. Head with the occiput, vertex and fastigium on much the same plane, fastigium considerably produced, the margins slightly converging, the apex blunt and extending distinctly beyond the facial fastigium, reaching to the margin of the proximal antennal joint when that por-



tion is in a vertical position, dorsum of the fastigium broadly but not very deeply sulcate; facial fastigium acute, distinctly separated from the fastigium of the vertex; eyes subglobose, prominent; antennæ about three times the length of the body (exclusive of the ovipositor), filiform, proximal joint rather large. Pronotum with the disk flattened only in the caudal section, the cephalic and median sections being rounded into the lateral lobes with a scarcely perceptible median angle, the greatest caudal width being continued about once and a half in the length, cephalic margin of the disk and lateral lobes truncate, caudal margin of the disk arcuate; lateral lobes about as long as deep, humeral sinus broad, shallow, the remainder of the caudal margin gently arcuate, cephalic section of the ventral margin sinuate with the ventro-cephalic angle obtuse. Tegmina about once and a half the length of the body (exclusive of the ovipositor), extending beyond the caudal femora by about the length of the pronotum, lanceolate, the greatest width contained nearly four and a half times in the length, costal margin very slightly arcuate, sutural margin straight in the distal three-fourths, apex rounded; median vein diverging two-fifths the length from the base and furcate with the rami reaching the sutural margin. Wings extending beyond the tegmina a distance nearly equal to the length of the pronotum. Supra-anal plate trigonal, acute; ovipositor about two-fifths the length of the tegmina and slightly more than half that of the caudal femora, moderately arcuate in the distal two-thirds, straight in the proximal third, the greatest width at about the distal third, dorsal margin not sinuate, ventral margin slightly sinuate in the proximal half, apex acute, distal half with the dorsal margin very slightly crenulate, ventral margin distinctly crenulate; subgenital plate short, slightly inflated, the margin with a broad shallow triangular emargination. Cephalic femora about equal to the pronotum in length, armed on the distal section of the ventro-cephalic margin with three spines; median femora slightly longer than the head and pronotum together, armed on the ventro-cephalic margin with three spines. Caudal femora equal to the body in length, considerably inflated distad, ventral margins armed with one or two spines near the apex; tibiæ exceeding the femora by near the length of the pronotum.

General color maize yellow washed with greenish on the head, pronotum, pleura and limbs; a distinct gamboge yellow line extends from

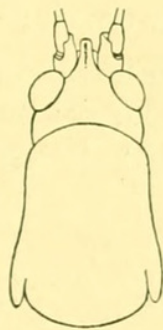


Fig. 11. — *Gram-madera rostrata* n. sp. Dorsal view of head and pronotum. ( $\times 4$ .)



the apex of the fastigium to the caudal margin of the pronotum and is also indicated on the distal portion of the sutural margin of the tegmina; pronotum regularly sprinkled with red-brown dots; eyes vandyke brown; antennæ greenish proximad, yellowish, greenish and blackish distad. Tegmina and wings pale chromium green. Ovipositor with the distal two-fifths paris green, the apex and margins narrowly red-brown. Caudal femora ochraceous on the inflated portion, lined dorsad on the same and with distal section buffy, the whole speckled with red-brown as on the pronotum; caudal tibiæ greenish, much stronger distad.

*Measurements.*

Length of body (exclusive of ovipositor), . . . . .	19 mm.
Length of pronotum, . . . . .	5 "
Length of tegmen, . . . . .	29.5 "
Length of caudal femur, . . . . .	18.3 "
Length of ovipositor, . . . . .	11.5 "

The type is unique.

\**Grammadera forcipata* n. sp.

Type: ♂; Sapucay, Paraguay. February 27, 1905. (William Foster.) [Hebard Collection.]

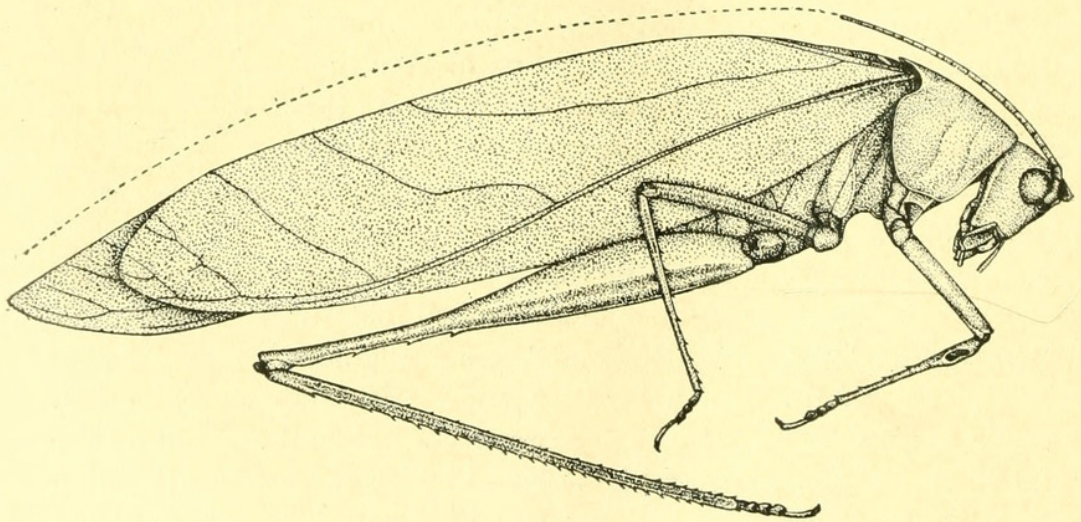


Fig. 12.—*Grammadera forcipata* n. sp. Lateral view of type. (× 3.)

Allied to *G. pellucida* Giglio-Tos, agreeing in the sulcate pronotum and the long slender incurved cerci, but differing in the absence of mucronations on the apex of the cerci, in the longer, strongly divided subgenital plate and the subequally broad as high lateral lobes of the pronotum. There is hardly any possibility of this species being the



male of *G. rostrata* as the venation is much more irregular, the fastigium is longer and the limbs shorter and weaker.

Size medium; form considerably compressed. Head with the fastigium much narrower than the proximal joint of the antennæ, subequal, apex blunt, moderately sulcate dorsad, the apex when viewed laterad distinctly exceeding the margin of the proximal antennal joint when the latter is in a vertical position; facial fastigium produced into a slender projecting process directed dorso-cephalad and touching the ventral surface of the apex of the fastigium of the vertex; eyes subglobose, moderately prominent; antennæ slender, broken in the type. Pronotum with the disk as in *G. rostrata* except that the median section bears a distinct longitudinal sulcus more apparent caudad than cephalad, while a rectangulate impressed pattern is placed slightly caudad of the middle; lateral lobes as in *rostrata*. Tegmina about three and a half times as long as the combined length of the head and pronotum, moderately lanceolate, the greatest width contained nearly four times in the length; costal margin regularly but slightly arcuate, sutural margin straight except where it curves to the narrowly rounded apex; median vein diverging very slightly distad of the middle and reaching the sutural margin well before the apex, discoidal vein bearing three rami in the distal section; the whole venation is peculiar in character, the principal veins irregular and connected by numerous adventitious veins. Wings extending beyond the tegmina a distance about equal to the length of the cephalic femora, apex moderately acute. Terminal abdominal segment truncate; supra-anal plate hastate, slightly constricted mesad; cerci simple, tapering, apex acute, the distal section moderately incurved and also with a distinct dorsal curve; subgenital plate strongly produced, reaching about to the end of the cerci, bearing three converging ventral carinæ, narrowly incised distad with the lateral portions of the apex of the plate moderately long, sharp and tapering. Cephalic femora slightly shorter than the pronotum, unarmed ventrad; median femora slightly less than half the length of the caudal femora, unarmed ventrad. Caudal femora very slightly shorter than the body, not strongly inflated proximad, armed with several small spines on the ventro-lateral margin; caudal tibiæ exceeding the femora by nearly the length of the head.

General color pale chromium green touched with yellowish on the

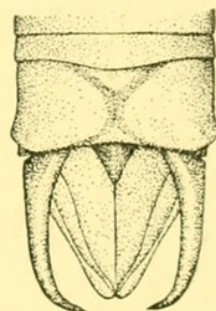


Fig. 13. — *Gramma-dera forcipata* n. sp. Dorsal view of apex of male abdomen. ( $\times 7$ .)



abdomen and proximal portion of the tegmina and somewhat hoary on the pleura, coxæ and lateral lobes of the pronotum. Eyes hazel; tympanum of the tegmina with the principal veins strongly marked with bistre.

*Measurements.*

Length of body, . . . . .	17 mm.
Length of pronotum, . . . . .	4.9 "
Length of tegmen, . . . . .	27 "
Length of caudal femur, . . . . .	14.5 "

The type is the only specimen of this species seen by the author.

**PHYLLOPTERA** Serville.

1831. *Phylloptera* Serville, Ann. Sci. Nat., XXII, p. 142.

Type.—As designated by Kirby, *P. cassinæfolia*.

**Phylloptera allieidea** Caudell.

1906. *Phylloptera allieidea* Caudell, Proc. U. S. Nat. Mus., XXX, p. 238. [Sapucay, Paraguay.]

February, 1902 and 1905, May, 1902; two males, one female.

**Phylloptera spinulosa** Brunner.

1878. *Ph[ylloptera] spinulosa* Brunner, Monogr. der Phaneropt., p. 314. [Ypamena, São Paulo, Brazil.]

February, 1905; one male, one female.

The female individual has the tegmina with an ocellus as mentioned by Caudell. In neither specimen are the cephalic tibiæ sulcate dorsad.

The ovipositor of this species is very short and robust, the apex rectangulate, the distal half of the margins crenulate and the faces of the same portion tessellato-granulate. The ventral length of the ovipositor is six millimeters. Subgenital plate small, very strongly produced, divided to the base.

**HYPERPHRONA** Brunner.

1878. *Hyperphrona* Brunner, Monogr. der Phaneropt., pp. 28, 315.

Type.—*H. angusta* Brunner.

**\*Hyperphrona signata** n. sp.

Types: ♂ and ♀; Sapucay, Paraguay. December 19, 1904 (♂); February 24, 1905 (♀). (William Foster.) [Hebard Collection.]

Allied to *H. binotata* Brunner from the upper Amazon, agreeing with it in the coloration of the proximal joints of the antennæ, the proportions of the tegmina and the point of contact of the median vein, but differing in the absence of black from the remainder of the antennæ, the spiniform apex of the male cerci, the shorter ovipositor and the peculiar



ocelliform marking of the margin of the tympanal field of the male tegmina.

Size rather small; form somewhat compressed. Head with the occiput very slightly rounded, vertex slightly declivent; fastigium trigonal, the margins slightly concave and the apex roundly tuberculate, the proximal portion having the margins roundly elevated and the middle sulcate, when viewed laterad the fastigium is seen to be strongly depressed mesad, with the apex somewhat elevated and not extending

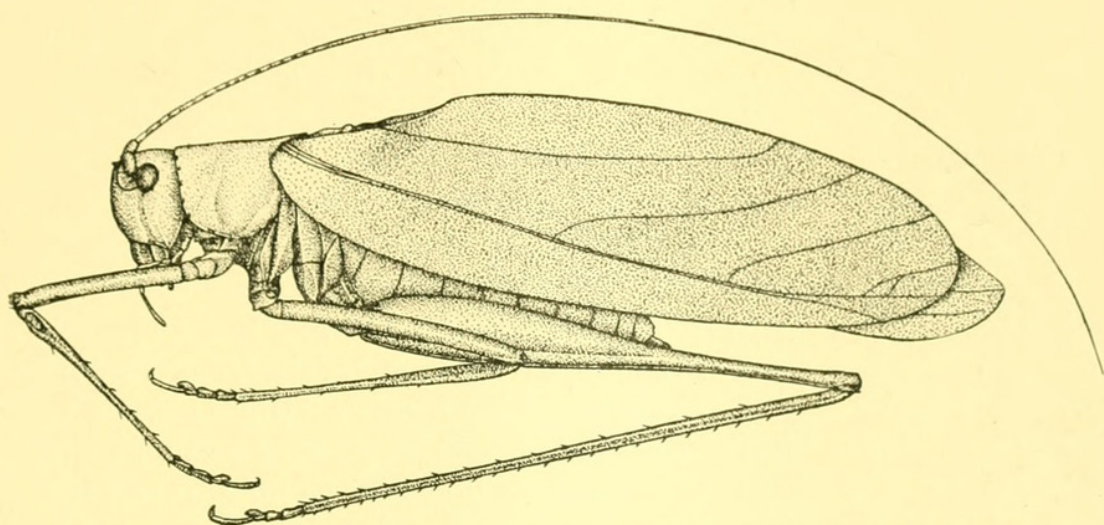


Fig. 14.—*Hyperphrona signata* n. sp. Lateral view of male type. ( $\times 3$ .)

cephalad of the proximal joint of the antennæ; facial fastigium acute; eyes subglobose; antennæ half again as long as the greatest length, slender. Pronotum with the disk subdeplanate, laterad with the angles rounded and the greatest caudal width contained once and a half in the length, cephalic margin slightly emarginate, caudal margin strongly arcuate; lateral lobes slightly longer than deep, cephalic margin slightly sinuate, ventral margin rounded obtuse-angulate, caudal margin moderately arcuate with the humeral sinus moderately deep and broad. Tegmina slightly more than three times as long as the head and pronotum together, ovate-lanceolate, the greatest width contained about three and a third times in the length; costal and sutural margins regularly but not strongly arcuate, apex rounded; median vein diverging slightly proximad of the middle, simple or furcate,<sup>4</sup> reaching the sutural margin shortly proximad of the apex; anterior ulnar vein almost straight; tympanum of the male with the stridulating vein very stout. Wings extending beyond the tegmina a very short distance, narrowly rounded

<sup>4</sup> In the types furcate only on the left tegmen of the female.



at the apex. Terminal dorsal abdominal segment of the male with a very slight and broad median emargination; supra-anal plate reflexed, roughly semicircular; cerci stout at the base, short, tapering, the tips

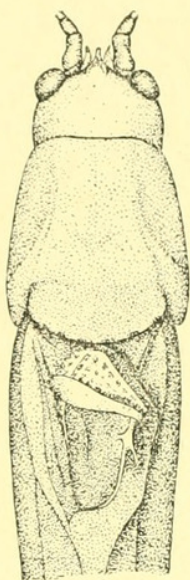


Fig. 15.—*Hyperphrona signata* n. sp. Dorsal view of head, pronotum and tympanum of male type. ( $\times 5$ .)

moderately hooked, acute; subgenital plate moderately produced, the apical portion much narrower than the base, apical margin truncate, false styles short and dentiform. Ovipositor about as long as the pronotum and half of the head, bent arcuate, broad, apex moderately acute, distal half of the dorsal margin distinctly crenulate, of the ventral margin obsoletely crenulate; subgenital plate small, rectangulate with the apex minutely rectangulate emarginate. Cephalic femora but little shorter than the head and pronotum together, unarmed; dorso-caudal margin of the tibiae with four to five spines, one of which is placed at the distal extremity of the proximal inflation. Median femora equal to about half the length of the caudal femora, armed on the ventro-cephalic margin with two to three small, recumbent spines. Caudal femora slightly shorter than the length of the body, moderately inflated distad and with spines none or one on the ventro-cephalic margin; caudal tibiae distinctly exceeding the femora.

General color buff-yellow becoming apple green on the tegmina, exposed portion of the wings and limbs. Eyes chestnut; antennae very broadly and irregularly annulate with dragon's blood red. Pronotum with the disk regularly and the lateral lobes sparingly dotted

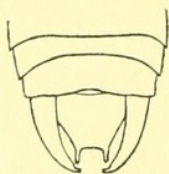


Fig. 16.—*Hyperphrona signata* n. sp. Dorsal view of apex of male abdomen. ( $\times 6$ .)

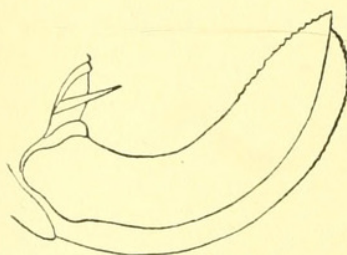


Fig. 17.—*Hyperphrona signata* n. sp. Lateral view of ovipositor. ( $\times 5$ .)

with dragon's blood red, the margins being rather regularly checked with the same.

Tegmina sometimes<sup>5</sup> with an ochraceous premedian desiccated spot,

<sup>5</sup> On the left tegmen of the female type.



margined on all but the caudal face with brown; tympanum of the male with an irregular median blotch of very pale greenish surrounded by a very irregular ring of liver brown; sutural margin narrowed touched mesad with liver brown.

*Measurements.*

	♂	♀
Length of body (exclusive of ovipositor), . . . . .	17.3 mm.	18.3 mm.
Length of pronotum, . . . . .	4.3 "	4.3 "
Length of tegmen, . . . . .	23.2 "	21 "
Length of caudal femur, . . . . .	17 "	16 "
Length of ovipositor, . . . . .		5.5 "

A series of four male and six female paratype individuals have also been examined. The months represented in the series are December, 1904, and January, February and March, 1905.

In size there is an appreciable amount of variation, in addition to which there also appears to be two forms irrespective of sex, one with the tegmina short as in the female type, the other with the tegmina longer and correspondingly slenderer as in the male type. The series also shows that the forking of the median vein is purely a variation not even individual, one tegmen in a number of specimens having the unbranched type, the other the reverse. The female type is the only specimen with the premedian tegminal spot, while the tympanal spot of the male with its surrounding ring is also seen to vary greatly in depth, though always present in that sex. In a number of specimens the tegmina are distinctly yellow proximad, and in one male the whole tegmina are of that color.

**TURPILIA** Stål.

\**Turpilia paraguayensis* n. sp.

Types: ♂ and ♀; March 12 (♀) and 21 (♂), 1905. (William Foster.) [Hebard Collection.]

Closely allied to *T. mexicana* Brunner from Oaxaca and *T. linearis* Rehn from Costa Rica. From *mexicana* it differs in the general smaller size, the spined dorsal margin of the median femora and the acute subgenital plate of the femora. From *linearis* it differs in the lateral lobes of the pronotum being as long as deep, the tegmina slightly shorter and the cerci with a distinct apical spine.

Size moderately large; form elongate. Head with the occiput slightly rounded; fastigium strongly compressed, narrowly sulcate, apex blunt, separated from the blunt apex of the acute angulate facial fastigium by a very slight space; eyes large, subglobose, moderately



prominent; antennæ probably exceeding the tips of the wings (slightly defective in the types), filiform. Pronotum with the disk strongly deplanate, slightly expanding in width caudad, the greatest caudal width contained slightly less than once and a half in the length; cephalic margin truncate, caudal margin arcuate, lateral angles distinct but narrowly rounded, a fine impressed longitudinal median line present on the disk; lateral lobes about as long as deep, ventro-cephalic angle very broadly rounded, humeral sulcus marked but shallowly, the caudal margin ventrad of this with a rounded obtuse angle from which the ventro-caudal margin is diagonally subtruncate. Tegmina elongate lanceolate, about four times as long as the combined length of the head and pronotum, the greatest width contained nearly five times in the length; costal and sutural margins slightly approximating, the

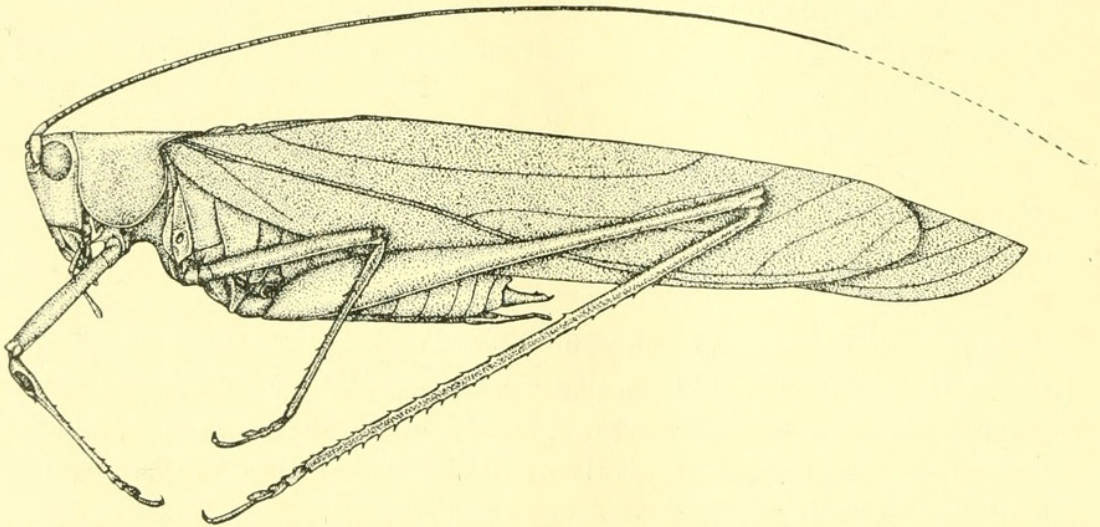


Fig. 18.—*Turpilia paraguayensis* n. sp. Lateral view of male type. ( $\times 2\frac{1}{2}$ .)

apex rounded; discoidal vein with two rami in the distal section, both of which reach the apical margin; median vein diverging two-fifths the distance from the base, furcate. Wings extending beyond the tegmina a distance very nearly equal to the length of the pronotum, immediate apex rectangulate. Terminal dorsal abdominal segment of the male broadly and shallowly emarginate mesad and also on the lateral faces; cerci short, stout at the base, tapering, with the immediate apex sharply narrowed, hooked and spiniform, internal margin slightly before the middle provided with a thick, blunt, peg-like process; subgenital plate of the male produced, narrowed with a median ventral carina and lateral thickened rods which extend to the base of the short, slender styles, narrow distad margin of the plate with a rounded V-shaped emargination. Ovipositor as long as the head and half of



the pronotum, considerably bent proximad, very slightly curved distad, the greatest width mesad and contained two and one-half times in the length, dorsal margin nearly straight and entirely crenulate, ventral margin considerably arcuate and crenulate in the distal fourth, apex slightly narrowed, rounded; subgenital plate of the female produced trigonal with slightly concave sides, apex narrowly truncate. Cephalic femora about equal to the pronotum in length, unarmed ventrad; the proximal inflation of the tibiæ supplied with a distal spine on the caudal margin. Median femora as long as the head and pronotum together, unarmed ventrad. Caudal femora about equal to the body in length, moderately inflated proximad, ventro-lateral margin with three to five spines distad, internal margin with six to seven spines; caudal tibiæ slightly longer than the femora.

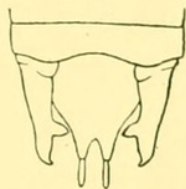


Fig. 19.—*Turpilia paraguayensis* n. sp.  
Dorsal view of apex of male abdomen. ( $\times 6$ .)

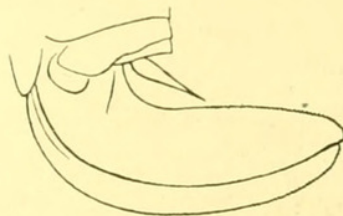


Fig. 20.—*Turpilia paraguayensis* n. sp.  
Lateral view of ovipositor. ( $\times 5$ .)

General color dull greenish-yellow, the tegmina and wings apple green. Head with the eyes chestnut, antennæ with all except the two proximal joints vinaceous-cinnamon; pronotum with the caudal section of the disk apple green, the lateral angles sometimes marked with vinaceous; tegmina with the anal vein and sutural margin more or less distinctly marked with buff-pink; tibial foramina marked with dark brown, distal extremities of the tibiæ and the tarsi ochraceous buff; ovipositor orange-rufous.

#### Measurements.

	♂	♀
Length of body, . . . . .	20 mm.	22.7 mm.
Length of pronotum, . . . . .	5 "	5.5 "
Length of tegmen, . . . . .	31 "	31.2 "
Length of caudal femur, . . . . .	20.8 "	21.8 "
Length of ovipositor, . . . . .		6.5 "

A paratypic series of five males and five females, taken in March, 1903, have also been examined and found to differ in no important characters from the type.



**MICROCENTRUM** Seudder.

\**Microcentrum lanceolatum* (Burmeister).

1838. *Ph[y]lloptera* *lanceolata* Burmeister, Handb. der Entom., II, Abth. II, pt. I, p. 692. [Brazil.]

March, 1905; one female.

This individual is rather smaller than the Brazilian or Surinam material measured by Brunner,<sup>6</sup> but otherwise it is perfectly typical of the species.

*Measurements.*

Length of pronotum, . . . . .	6.5 mm.
Length of tegmen, . . . . .	42 "
Greatest width of tegmen, . . . . .	13.5 "
Length of caudal femur, . . . . .	22.2 "
Length of ovipositor, . . . . .	6 "

This species has been recorded from Villa Rica, Paraguay, and Urucum, Matto Grosso, Brazil, by Giglio-Tos.

**PSEUDOPHYLLINÆ.****DASYSCELUS** Brunner.

1895. *Dasyscelus* Brunner, Monogr. der Pseudophyll., pp. 15, 118.

Type.—*D. atrifrons* Brunner.

*Dasyscelus normalis* Brunner.

1895. *Dasyscelus normalis* Brunner, Monogr. der Pseudophyll., p. 119. [Uruguay; Buenos Ayres.]

November, December and January, 1903 and 1905, April, 1903; six males, twelve females.

This species appears to have as a synonym *D. demigratus* Brunner, over which *normalis* has line priority. The differences cited are in the color of the face and in the length of the tegmina and limbs. The former of these characters is at once discredited by the fact that two types, one with a black face and the other with a pale face, are present in this series, the two extremes being connected by a number of intermediates. The length of the limbs varies with the general size and the present series shows more difference in size in the extremes than the typical measurements of *normalis* and *demigratus*, although the Sapucay individuals average larger than Brunner's material, which came in part at least from Buenos Ayres. The original localities given for *demigratus* are "Gabun, Buenos Ayres," but the former is unquestionably erroneous.

<sup>6</sup>Monogr. der Phaneropt., p. 336.



## CONOCEPHALINÆ.

## LAMNICEPS Bolivar.

1903. *Lamniceps* Bolivar, Revista Chilena de Hist. Nat., VII, núm. 3, p. 144

Type.—*L. giglio-tosi* Bolivar.

\**Lamniceps giglio-tosi* Bolivar.

1903. *Lamniceps Giglio-Tosi* Bolivar, Revista Chilena de Hist. Nat., VII, núm. 3, p. 145. [Central Paraguay.]

November and December, 1904, February, 1905; four females.

These individuals are perfectly typical of Bolivar's genus and species, which is clearly, as stated by him, intermediate in position between *Copiphora* and *Lirometopum*.

One specimen is slightly smaller than the others, but otherwise no differences are noted.

The description of *Copiphora borellii* Giglio-Tos<sup>7</sup> appears to be that of a form closely related to this species.

CONOCEPHALOIDES Perkins.<sup>8</sup>

1899. *Conocephaloides* Perkins, Fauna Hawaiiensis, Orth., p. 13.

Type.—*C. hawaiiensis* Perkins = *Conocephalus remotus* Walker.

\**Conocephaloides ichneumoneus* (Bolivar).

1884. *Conocephalus ichneumoneus* Bolivar, Artópod. Viaje al Pacífico, Neuropt. y Ortópt., p. 90, lám. 2, fig. 10. [Apiahy, Brazil.]

December, 1904; two females.

This specimen fully agrees with Bolivar's description, except that the pronotum and tegmina are very slightly longer and the ovipositor slightly shorter.

The type locality in the State of São Paulo and this record constitute the known localities for the species.

\**Conocephaloides pichinchæ* (Bolivar).

1881. *Conocephalus Pichinchæ* Bolivar, Anales Soc. Españ. Hist. Nat., X, p. 498. [Pichincha, Ecuador.]

November, 1904; one male.

This individual is referred here with considerable doubt, but it is clearly related to this species and *guttatus*, with a number of which

<sup>7</sup> Bollett. Mus. Zool. Anat. Comp. Torino, IX, No. 184, p. 40. [Luque, Paraguay.]

<sup>8</sup> The author is compelled with considerable reluctance to adopt this name, based on an aberrant form of the genus, in preference to the familiar application of *Conocephalus* Thunberg. After examining the literature involved it is evident, as has been shown by Kirby (*Synonym. Catal. Orthopt.*, II, pp. 241, 274 and 279), that Thunberg's *hemipterus* is identical with *Gryllus conocephalus* Linnæus, which by the rule of tautonymy is the type of *Conocephalus* Thunberg. The latter genus, however, is not cancelled by the fact that it is based on a specific name, as Kirby so treats it, but instead it replaces *Anisoptera* Latreille and *Xiphidion* Serville.



latter species it has been compared. From the original description of *pichinchæ* it differs in its apparently broader tegmina, its unarmed cephalic femora and slightly longer caudal femora. The tibiæ bear the very apparent distal blackish-fuscous markings originally described.

***Conocephaloides pustulatus* (Redtenbacher).**

1891. *Conocephalus pustulatus* Redtenbacher, Verhandl. K.-K. Zool.-botan. Gesell. Wien, XLI, p. 395. [Theresopolis, Brazil.]

November and December, 1904, January, 1905; seven males, five females.

This series shows a moderate amount of variation in size, chiefly in the length of the tegmina. Both color phases are in the series at hand, the green, however, predominating.

Kirby has recently<sup>9</sup> applied the name *exaltatus* Walker<sup>10</sup> to this species, but Walker's description does not agree in several details with the material before us and Redtenbacher's diagnosis perfectly characterizes the species. In consequence we prefer to use Redtenbacher's name for the Paraguayan and south Brazilian form until its relationship to Walker's species is more clearly understood.

**\**Conocephaloides maxillosus* (Fabricius).**

1794. *Locusta maxillosa* Fabricius, Entom. Syst., II, p. 37. [America.]

March, 1905; one female.

The range of this species to the south now appears to be limited by southern Brazil (Rio Janeiro, Theresopolis), Paraguay and Bolivia.

**\**Conocephaloides maculosus* (Redtenbacher).**

1891. *Conocephalus maculosus* Redtenbacher, Verhandl. K.-K. Zool.-bot. Gesell. Wien, XLI, p. 396. [Lages, Santa Catharina, Brazil.]

December, 1904; one male.

This individual differs somewhat in its measurements from the original female type, but such differences may be sexual, and as far as can otherwise be determined from the original description it represents this species. The measurements may be of interest:

Length of body, . . . . .	27.5 mm.
Length of pronotum, . . . . .	8.1 "
Length of tegmen, . . . . .	37.5 "
Length of caudal femur, . . . . .	21.5 "

**\**Conocephaloides saturatus* (Griffini).**

1891. *Conocephalus infuscatus* Redtenbacher (not of Scudder, 1875), Verhandl. K.-K. Zool.-bot. Gesell. Wien, XLI, p. 398. [Medellin; St. Vincent, Lesser Antilles; Cuba; Venezuela; Surinam; Cayenne; Brazil; Rio Grande and Theresopolis, Brazil; Peru.]

1899. *Conocephalus saturatus* Griffini, Miscell. Entom., VII, p. 5.

<sup>9</sup> *Synon. Catal. Orth.*, II, p. 243.

<sup>10</sup> *Catal. Derm. Salt. Brit. Mus.*, II, p. 311. [Venezuela.]



March, 1905; three females.

In these specimens the length of the tegmina varies from 33 to 38 millimeters, the caudal femora from 24 to 25.5 and the ovipositor from 34 to 34.5. The ovipositor is appreciably longer than the measurements given by Redtenbacher (26-28 mm.), but otherwise the specimens are perfectly typical.

**\*Conocephaloides brachypterus** (Redtenbacher).

1891. *Conocephalus brachypterus* Redtenbacher, Verhandl. K.-K. Zool.-bot. Gesell. Wien, XLI, p. 400. [Brazil.]

February, 1903; one female.

This individual has several spines on each of the cephalic and median femora, but otherwise it fully agrees with the original description.

**\*Conocephaloides rugosicollis** (Bolivar).

1881. *Conocephalus rugosicollis* Bolivar, Anales Soc. Españ. Hist. Nat., X, p. 496. [Huasco, Chile.]

November and December, 1904, January, February and March, 1905; seven males, six females.

As far as can be determined from the several published descriptions of this species the Paraguayan series before us is referable to *rugosicollis*. In the degree of contiguity of the vertex and frontal fastigium there is, however, considerable variation, ranging from individuals with the two distinctly touching to others in which they are slightly but appreciably separated. In no other character, however, can the material be separated, and the majority of the series is rather intermediate between the two.

The figure of the tegmen given by Redtenbacher<sup>11</sup> is not exactly as seen in the Paraguayan specimens, as the obliquely truncate apex of the tegmen is not sinuate in the latter series.

As the female of this species has never been described a few notes may be of interest.

Ovipositor less than half the length of the tegmina, slightly bent proximad, straight otherwise, thick distad, the greatest width at about a fourth the length from the apex, latter acute; subgenital plate with a deep median sinuate V-shaped emargination.

*Measurements.*

Length of body (exclusive of ovipositor),	. . . . .	31	mm.
Length of pronotum,	. . . . .	7.9	"
Length of tegmen,	. . . . .	41	"
Length of caudal femur,	. . . . .	24.2	"
Length of ovipositor,	. . . . .	18.3	"

<sup>11</sup> *Verhandl. K.-K. Zool.-bot. Gesell. Wien*, XLI, taf. III, fig. 44.



**AGRÆCIA** Serville.

1831. *Agræcia* Serville, Ann. Sci. Nat., XXII, p. 152.

Type.—*Locusta punctata* Serville.

\***Agræcia maculata** Redtenbacher.

1891. *Agræcia maculata* Redtenbacher, Verhandl. K.-K. Zool.-bot. Gesell. Wien, XLI, p. 455, taf. IV, fig. 63. [Theresopolis, Brazil.]

November and December, 1904; nine males, eleven females.

These individuals are perfectly typical of the species except for their smaller size. Considerable variation in size is noticed in the female sex, but no specimen is as large as the measurements given by Redtenbacher.

The cerci of the male are short, stout and with the apex abruptly tapering; subgenital plate with the apex broad, truncate and with considerable sized lateral false styles.

The measurements of an average male and the extremes of the female sex are here given:

	♂	♀	♀
Length of body, . . . . .	26 mm.	28.5 mm.	33.5 mm.
Length of pronotum, . . . . .	7 "	7 "	7.6 "
Length of tegmen, . . . . .	31 "	30.5 "	36.5 "
Length of caudal femur, . . . . .	16.5 "	17.2 "	18.5 "
Length of ovipositor, . . . . .		14.5 "	15.7 "

**XIPHELIUM** Caudell.

1906. *Xiphelimum* Caudell, Proc. U. S. Nat. Mus., XXX, p. 241.

Type. *X. amplipennis* Caudell.

**Xiphelimum amplipennis** Caudell.

1906. *Xiphelimum amplipennis* Caudell, Proc. U. S. Nat. Mus., XXX, p. 241. [Sapucay, Paraguay.]

March, 1905; seven males.

These specimens fully agree with the original description of this beautiful species.

**CONOCEPHALUS** Thunberg.<sup>12</sup>

1815. *Conocephalus* Thunberg, Mém. l'Acad. Imp. Sci. St. Pétersb., V, pp. 214, 271.

Type by tautonomy *C. hemipterus* Thunberg = *Locusta conocephalus* Linnæus.

1831. *Xiphidion* Serville, Ann. Sci. Nat., XXII, p. 159.

**Conocephalus longipes** (Redtenbacher).

1891. *Xiphidium longipes* Redtenbacher, Verhandl. K.-K. Zool.-bot. Gesell. Wien, XLI, p. 505, taf. IV, fig. 81. [Buenos Ayres, Argentina; Montevideo, Uruguay; Rio Grande do Sul and Santa Catharina, Brazil; Peru(?).]

<sup>12</sup> See note on page — under *Conocephaloides*.



March, 1905; one male.

This specimen has been compared with a pair from Carcaraña, Argentina.

**Conocephalus saltator** (Saussure).

1859. *Xiphidium saltator* Saussure, Revue et Magasin de Zoologie, 2e ser XI, p. 208. [Guiana.]

March, 1905; one male, four females.

The ovipositor is practically straight in all the females and about thirteen millimeters in length.

The species ranges from Cuba to Montevideo, Uruguay.

**Conocephalus strictoides** (Caudell).

1906. *Xiphidium strictoides* Caudell, Proc. U. S. Nat. Mus., XXX, p. 242. [Sapucay, Paraguay.]

April, 1902; one female.

This specimen has the tegmina, caudal femora and ovipositor somewhat smaller than in the type measurements, but in all other characters the individual agrees perfectly with the original description, except that the dorsum of the abdomen is marked in purplish brown with a pattern resembling that of *C. strictum*.

#### GRYLLACRINÆ.

##### **CAMPTONOTUS** Uhler.

1864. *Camptonotus* Uhler, Proc. Entom. Soc. Phila., II, p. 548.

Type.—*C. scudderi* Uhler (= *Gryllacris carolinensis* Gerstaecker).

\***Camptonotus australis** n. sp.

Types: ♂ and ♀; Sapucay, Paraguay. November 10 (♂) and December 19 (♀), 1905. (William Foster.) [Hebard Collection.]

Allied to *C. carolinensis* (Gerstaecker) and *affinis* Rehn, but differing from both in the very robust caudal femora and the heavy, more regularly arcuate and less attenuate ovipositor.

Size medium; form as usual in the genus; surface glabrous. Head with the occiput well arched, longitudinally and transversely; vertex very broad and evenly rounding into the front; face somewhat flattened; eyes elongate reniform; antennæ about four times as long as the body. Pronotum with the dorsal length slightly shorter than the greatest width, the dorsal outline when viewed laterad slightly convex; cephalic margin of the disk truncate, caudal margin very broadly and shallowly triangular emarginate; lateral lobes broadly rounding into the disk, longer than deep, ventral margin truncate, ventro-cephalic angle obliquely rounded, ventro-caudal angle obliquely subtruncate. Mesonotum and metanotum with their caudal margins very slightly



arcuate. Abdomen somewhat compressed; terminal dorsal abdominal segment of the male moderately inflated, the apical margin rotundate emarginate, a median longitudinal carina present on the distal half;

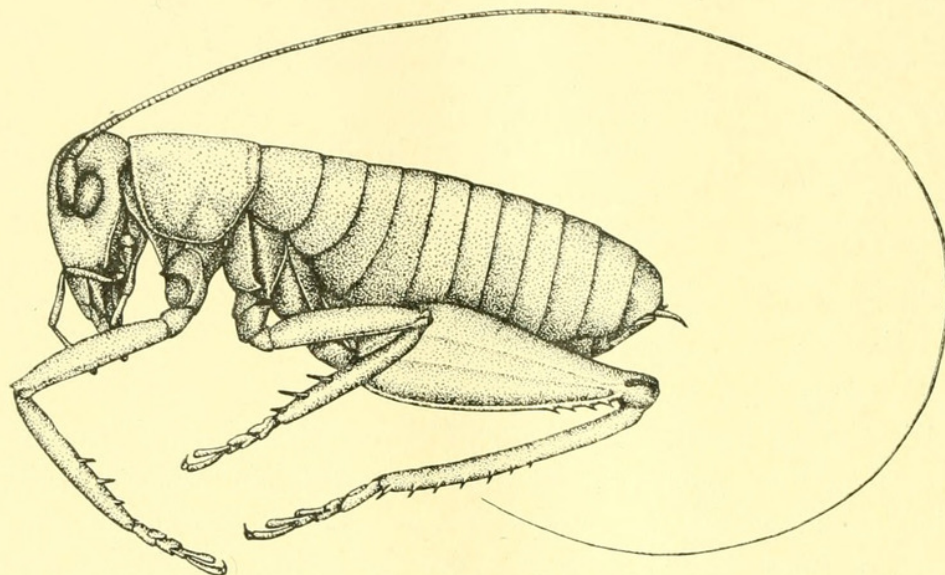


Fig. 21.—*Camptonotus australis* n. sp. Lateral view of male type. ( $\times 4$ .)

male cerci simple, terete, acute, the length about equal to that of the terminal abdominal segment; subgenital plate of the male short; apical margin obtuse-angulate emarginate; ovipositor nearly equal to

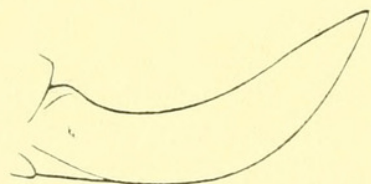


Fig. 22.—*Camptonotus australis* n. sp. Lateral view of ovipositor. ( $\times 5$ .)

half the length of the body, regularly arcuate, moderately stout proximad and regularly tapering to the acute apex; subgenital plate of the female broad trigonal, apex narrowly and shallowly emarginate. Cephalic and median limbs moderately robust. Caudal femora nearly two and a half times the length of the pronotum, strongly inflated,

the greatest width contained nearly two and a half times in the length, ventro-lateral margin with three to four spines, internal margin armed distad with two spines; tibiae not exceeding the femora in length.

General color ochraceous becoming buffy on the limbs, particularly the caudal tibiae which also have a faint wash of green distad. Eyes bistre.

#### Measurements.

	♂	♀
Length of body, . . . . .	13.5 mm.	16 mm.
Length of pronotum, . . . . .	3.2 "	3.3 "
Length of caudal femur, . . . . .	7.3 "	8.9 "
Length of ovipositor, . . . . .		7 "



A paratype series of four males and three females, taken November, 1904, have also been examined. Aside from a considerable amount of variation in size no differences worthy of note are apparent.

### GRYLLIDÆ.

#### GRYLLOTALPINÆ.

##### SCAPTERISCUS Scudder.

*Scapteriscus camerani* Giglio-Tos.

1894. *[Scapteriscus] Camerani* Giglio-Tos, Bollett. Mus. Zool. Anat. Comp. Torino, IX, No. 184, p. 45, plate figs. 13 and 16. [Province of San Pedro, Asuncion, Paraguay.]

January, 1903; one female.

This individual is slightly smaller than the original measurements for the same sex, but otherwise is perfectly typical.

#### GRYLLINÆ.

##### GRYLLUS Linnæus.

*Gryllus assimilis* (Fabricius).

1775. *Acheta assimilis* Fabricius, Syst. Entom., p. 280. [Jamaica.]

February, 1905; one male, three females.

These specimens are much paler than Mexican individuals of this species, three of them being especially light in color.

*Gryllus argentinus* Saussure.

1874. *Gryllus Argentinus* Saussure, Miss. Scientif. au Mex. et l'Amér. Cent., Orth., p. 399. [Southern Brazil; Argentine Republic; the north of Patagonia; Buenos Ayres; Bahia Blanca; Rio Negro of Patagonia.]

July, 1902, February and March, 1905; two males, two females.

These specimens agree very well with an authentic pair of this species from Buenos Ayres and Rio Grande do Sul, Brazil, received from Dr. Saussure.

#### ENEOPTERINÆ.

##### ENEOPTERA Burmeister.

1838. *Eneoptera* Burmeister, Handb. d. Entom., II, Abth. II, pt. I, p. 736.

Type.—*Acheta brasiliensis* Fabricius (= *Gryllus surinamensis* De Geer).

*Eneoptera surinamensis* (De Geer).

1773. *Gryllus Surinamensis* De Geer, Mém. Ins., III, p. 519, pl. 43, fig. 1 [Surinam.]

March, 1905; three males, two females.





Rehn, James A. G. 1907. "Orthoptera of the families Tettigoniidae and Gryllidae from Sapucay, Paraguay." *Proceedings of the Academy of Natural Sciences of Philadelphia* 59, 370–395.

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