



## **Anomaloterga mantiqueirae: A New Genus and Species of Strogulomorphini from the Mantiqueira Fault Escarpment, Brazil (Orthoptera, Phalangopsidae, Strogulomorphini)**

Authors: Bolfarini, Marcio Perez, and De A. G. De Mello, Francisco

Source: Journal of Orthoptera Research, 19(1) : 19-24

Published By: Orthopterists' Society

URL: <https://doi.org/10.1665/034.019.0104>

---

BioOne Complete ([complete.BioOne.org](https://complete.BioOne.org)) is a full-text database of 200 subscribed and open-access titles in the biological, ecological, and environmental sciences published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Complete website, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at [www.bioone.org/terms-of-use](http://www.bioone.org/terms-of-use).

Usage of BioOne Complete content is strictly limited to personal, educational, and non - commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

---

BioOne sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

# Anomaloterga mantiqueirae: a new genus and species of Strogulomorphini from the Mantiqueira fault escarpment, Brazil (Orthoptera, Phalangopsidae, Strogulomorphini)

Submitted January 27, accepted March 13, 2010

MARCIO PEREZ BOLFARINI AND FRANCISCO DE A. G. DE MELLO

Departamento de Zoologia, Instituto de Biociências, São Paulo State University (UNESP). 18618-000 Botucatu, São Paulo, Brazil.  
Email: framello@ibb.unesp.br

## Abstract

A new genus and species of cricket, *Anomaloterga mantiqueirae*, here described, is the first representative of Strogulomorphini to be reported from Brazil. The specimens were collected at night from the lower portions of live tree trunks in a summit forest located on the Mantiqueira Fault Escarpment, State of São Paulo.

## Key words

Orthoptera, Grylloidea, Strogulomorphini, Atlantic Forest, Mantiqueira fault escarpment, new taxa, description

## Introduction

Desutter (1990) moved the Neoacolini and Strogulomorphini from the Neoacilidae to Phalangopsinae and extinguished the former family. In 1991, that author redefined the tribe Strogulomorphini and presented an identification key for the five genera of the tribe: 1) *Strogulomorpha* Desutter, 1988, with four species from West Amazonia (Loreto, Peru); 2) *Loretana* Desutter-Grandcolas, 1991, with one species from the same place; 3) *Nigrothema* Desutter-Grandcolas, 1991, one species from the same place; 4) *Unithema* Desutter-Grandcolas, 1991, one species from Guadalupe and two from French Guiana; 5) *Eugryllina* Hebard, 1928, with one species from northwest Colombia and another from Panama.

Here we describe the first genus of Strogulomorphini from Brazil and provide an identification key for the genera. We employ the terminology of Desutter (1990) for the phallic elements, with the corrections that author proposed in a more recent publication (Desutter-Grandcolas, 2003). The classification scheme proposed by Desutter (1990) is followed.

*ANOMALOTERGA* de Mello & Bolfarini, *gen. n.*

Type-species: *A. mantiqueirae*, *sp. n.*

(Figs 1-4)

*Etymology*.— The genus name refers to the abnormal shape of the male abdominal tergites.

*Diagnosis*.— 1) Intra-ocular space furnished with a dense cluster of thick bristles (not as dense on females); 2) dorsum of male abdomen bearing a distinctive specialization (see type species description below); 3) pseudepiphallus semitubular, dorsally bearing a pair of longitudinal carinae which delimit a broad and shallow sulcus; 4) each pseudepiphallic paramere with a pair of spines, the smaller one

(spine 1) located anteriorly and juxtaposed to the longer, posterior one (spine 2), the latter with its median-ventral portion expanded, touching its equivalent of the opposite side

*Description*.— **Male**: Head clearly triangular as seen from the front, its largest breadth at eye level; interantennal space much broader than scape; eyes large, bulbous, narrowing ventrally, without depigmented area on dorso-internal margin; three ocelli present, intra-ocular space furnished with a dense cluster of thick bristles; 5<sup>th</sup> joint of maxillary palpi expanded at the base of apical truncation, 4<sup>th</sup> joint short. Pronotum wider than long, covered with bristles, anterior and posterior margins of disk straight; lateral lobes shorter posteriorly, anterior angle subacute, the posterior rounded; wings absent. Legs velvety, setose; tibia I without auditory tympana, furnished with a pair of ventral spurs, the external one longer and thicker than the internal; tibia II similar to tibia I, but with the internal apical spur longer than the outer; inner face of tibia III with three dorsal spurs and two apical ones, the inferior slightly longer; outer face of tibia III with 4-5 dorsal spurs and 3 apical ones, the median the longest. Dorsum of abdomen with a remarkable specialization (Figs 1E, F; 2E); tergite 3 with concave posterior margin and a pair of dorsolateral projections; tergite 4 with an even more concave posterior margin, without dorsolateral projections, but with a semicircular transverse carina; presence of a conspicuous tergal membrane between tergites 4 and 5; tergite 5 with a pair of lateral projections and a median bulbous hump, garnished with a cluster of delicate bristles; tergite 6 poorly differentiated from the posterior ones, but somewhat inflated laterally. Supra-anal plate short, rounded distally; subgenital plate subpentagonal, acuminate. Phallic complex elongate (Figs 3A, B, C, D); main lobe of pseudepiphallus semitubular, dorsally furnished with a pair of longitudinal carinae which delimit a broad and shallow sulcus; each pseudepiphallic paramere shaped as a pair of spurs, the smaller one (spur 1) located anteriorly and juxtaposed to the longer, posterior one (spur 2), the latter with its midventral portion expanded, touching its equivalent of the opposite side; ectophallic apodemes long, rod-shaped, the arc located distally; endophallic sclerite elongate and poorly visible (little pigmented), its apodemes inconspicuous.

**Female**: Similar to male but somewhat larger. Dorsum of abdomen without specializations. Ovipositor stout, laterally compressed, up-curved distally, the apical valves tall.

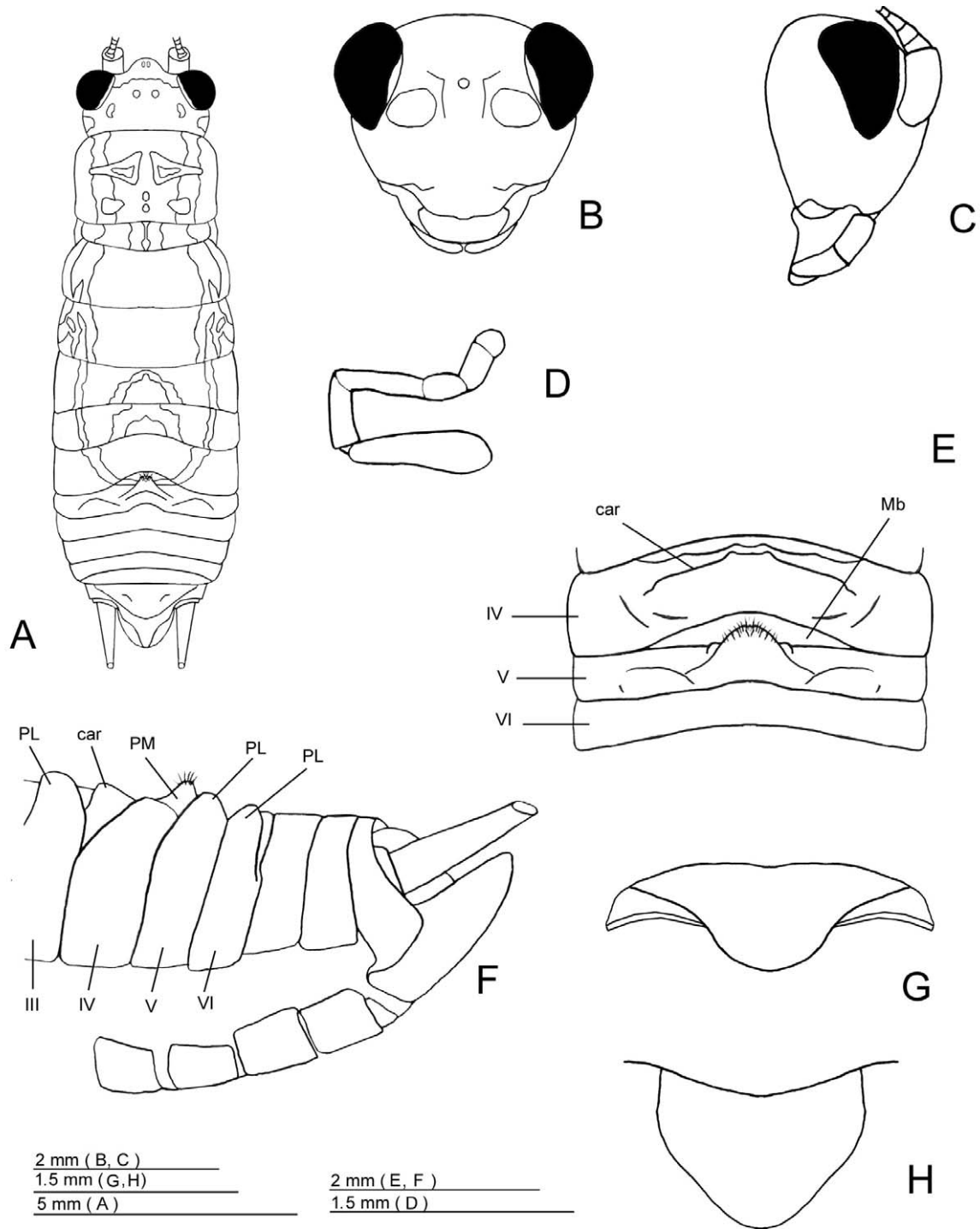


Fig. 1. *Anomaloterga mantiqueirae* n. sp. A, male habitus, dorsal, showing color markings; B, front view of male head; C, male head lateral; D, maxillary palpi; E, male dorsal abdomen; F, male terminalia, lateral; G, male supra-anal plate; H, male subgenital plate.

*Anomaloterga mantiqueirae* de Mello & Bolfarini, *sp.n.*  
(Figs 1 to 4)

*Etymology*.—Toponymic, allusive to the Mantiqueira fault escarpment in southeastern Brazil.

*Description*.—**Male**: General aspect marmorate, with marbles in various shades of brown on a yellowish background; dorsum of head yellowish, glabrous, with four poorly defined light yellow maculae;

eyes black; interocular space with a broad, blackish transverse band, garnished with a dense cluster of black bristles; frons yellow with a brown line running from the inferior margin of each eye to the epistomal suture, and a pair of shorter brown lines originating on the sides of median ocellus (Fig. 2C); gena yellowish, with a light brown blurring along its posterior border and a brown, subfiliform, vertical macula, located between the posterior margin of the eye and the referred-to brown blurring; antennal scape yellow with brown blurring near its apex; clypeus, labrum and base of mandibles

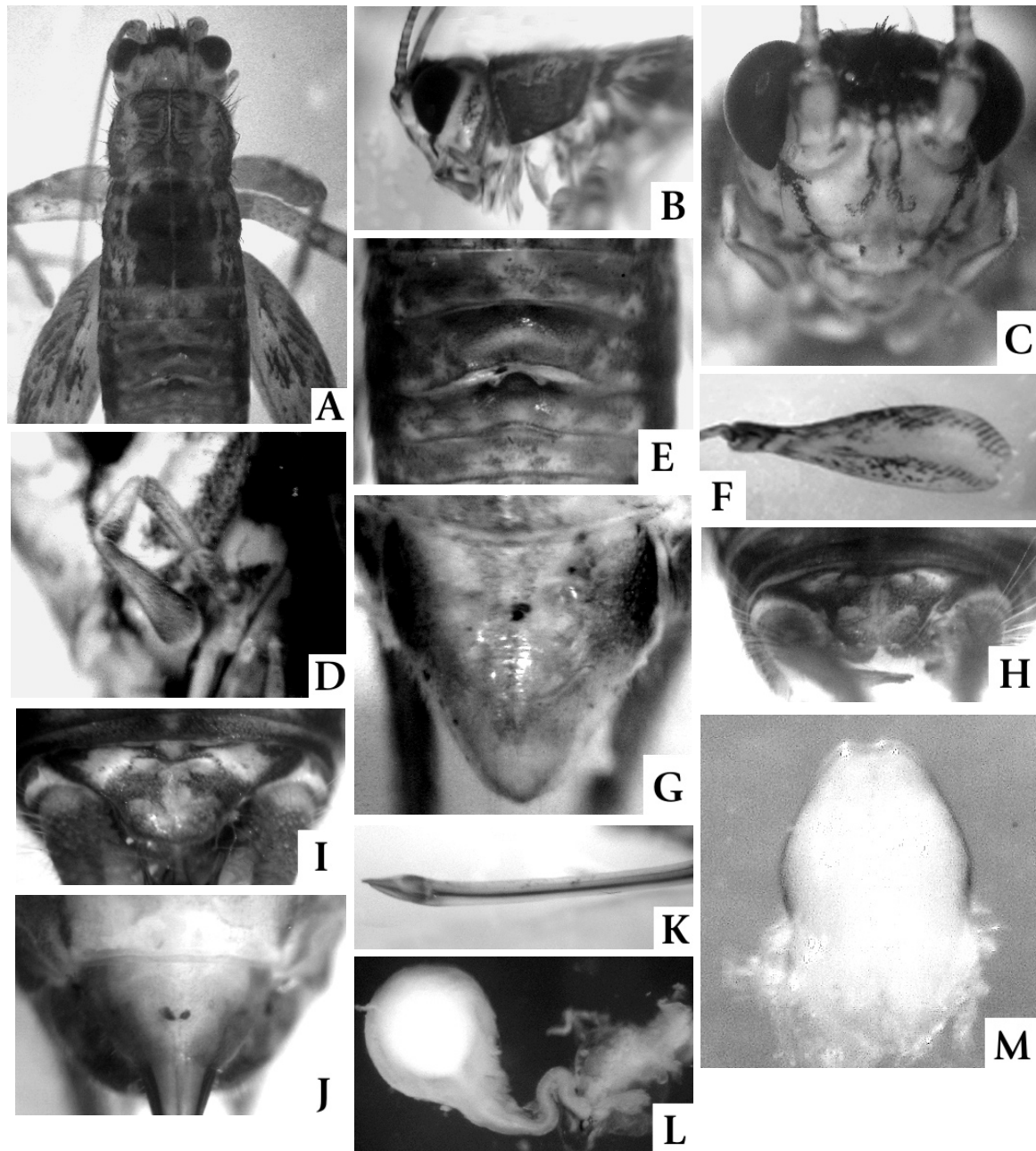


Fig. 2. *Anomaloterga mantiqueirae* n. sp. A, male head and pronotum, dorsal, showing color markings; B, male head and pronotum, lateral; C, front view of male head; D, maxillary palpi; E, male dorsum abdomen with specialization; F, male lateral hind femur; G, male subgenital plate; H, male supra-anal plate; I, female supra-anal plate; J, female subgenital plate; K, ovipositor, lateral; L, spermatheca; M, copulatory papilla, dorsal.

yellow; 5<sup>th</sup> joint of maxillary palpi brown-blurred, mainly on the sides. Dorsum of pronotum, mesonotum, metanotum, abdominal tergites 1 and 2 irregularly mottled in several shades of brown, a thin, yellow median line (Fig. 2A) running along all these segments longitudinally; femora I and II yellow with brown maculae; tibia I and II with broad brown bands; femur III yellow with irregular brown bands on outer face (Fig. 2F). Dorsal and lateral faces of abdomen marbled, darker than sternites; supra-anal plate yellowish cephalad, its mid-distal portion blurred. **Female:** color patterns similar to that of male but somewhat more defined; dorsum of head with the four light brown maculae garnished with dark setae pointing to the front (setae absent on males); cluster of bristles

on inter-ocular space not as dense as for the male; supra-anal and subgenital plates as in Figs 4B, C; ovipositor medium brown with darker apical valves; spermatheca as in Fig. 4E.

*Material examined.*— Brazil, São Paulo state, São José dos Campos, São Francisco Xavier district, Kolibri farm, ca 1,300 m alt., 10-23. iii. 2006, M. P. Bolfarini leg. Holotype male, 2 male, 9 female paratypes. Paratypes with same data as holotype. Holotype male and four female paratypes deposited at the Museu de Zoologia da Universidade de São Paulo (MZSP); remaining paratypes kept at Departamento de Zoologia, Botucatu Campus of São Paulo State University (UNESP), Brazil.



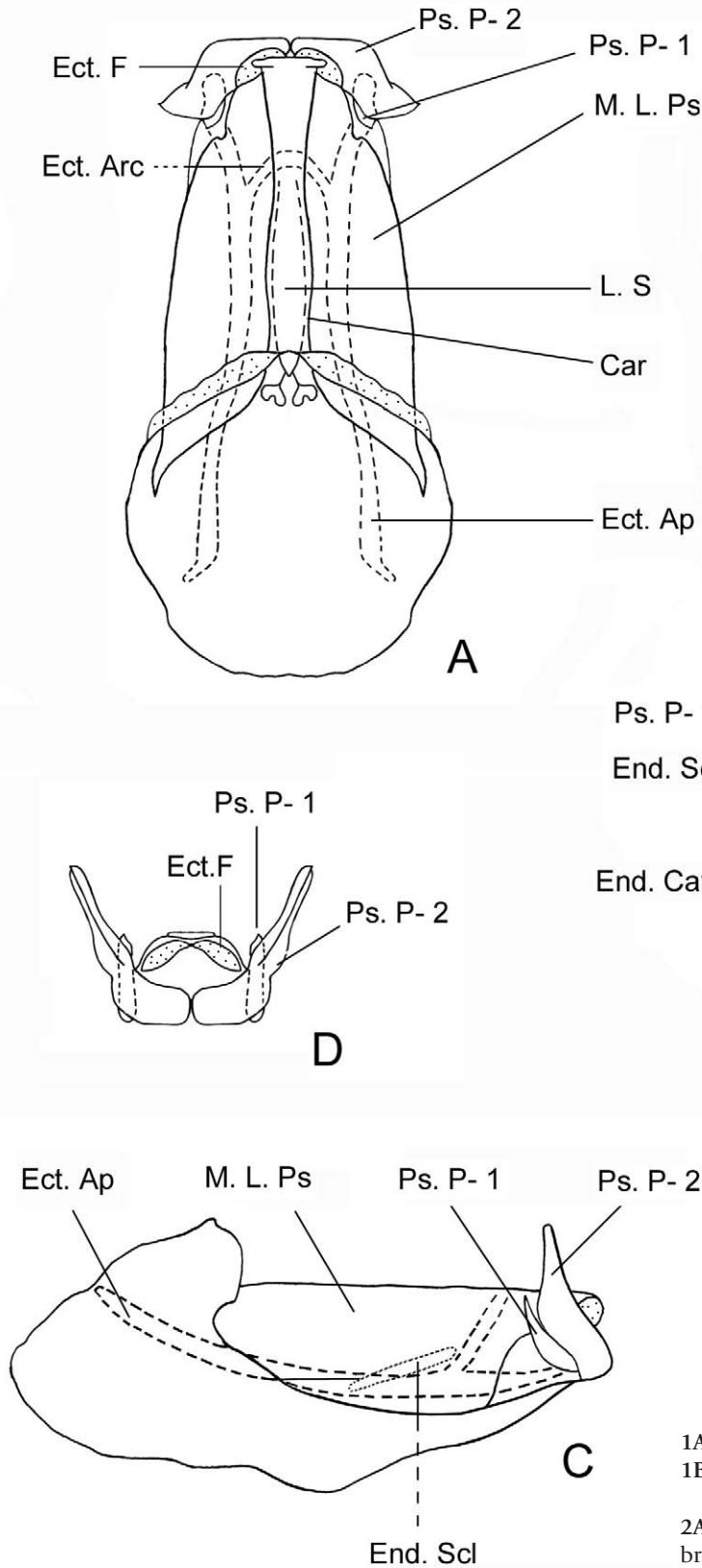


Fig. 3. Phallic complex of *Anomaloterga mantiqueirae* n. sp. A, dorsal view; B, *idem*, ventral; C, *idem*, lateral; D, *idem*, posterior. Conventions: Ect.F, ectophallic fold; Ps.P-1 & Ps.P- 2, pseudepiphallus; Ect. Arc, ectophallic arc; L.S, longitudinal sulcus; Car, carina; Ect.Ap, ectophallic apodeme; End.Scl, endophallic sclerite; M.L.Ps, main lobe of pseudepiphallus.

**Key to Genera of Strogulomorphini**  
(modified from Desutter, 1991)

- 1A-Both sexes apterous . . . . . 2
- 1B-Forewings present at least on males (even if reduced). . . . . 4
  
- 2A-Male fastigium with an abnormally dense cluster of heavy, black bristles; male abdomen with peculiar dorsal structures (Figs 1E, F; 2E). Phallic complex semitubular, elongate (not as much as in *Unithema xanthochosmea*); main sclerified piece of pseudepiphallus with a broad and shallow longitudinal sulcus delimited by a pair of parallel carinae on dorsum; pseudepiphallic parameres composed of two unequally sized, spiniform elements pointing to the dorsum;

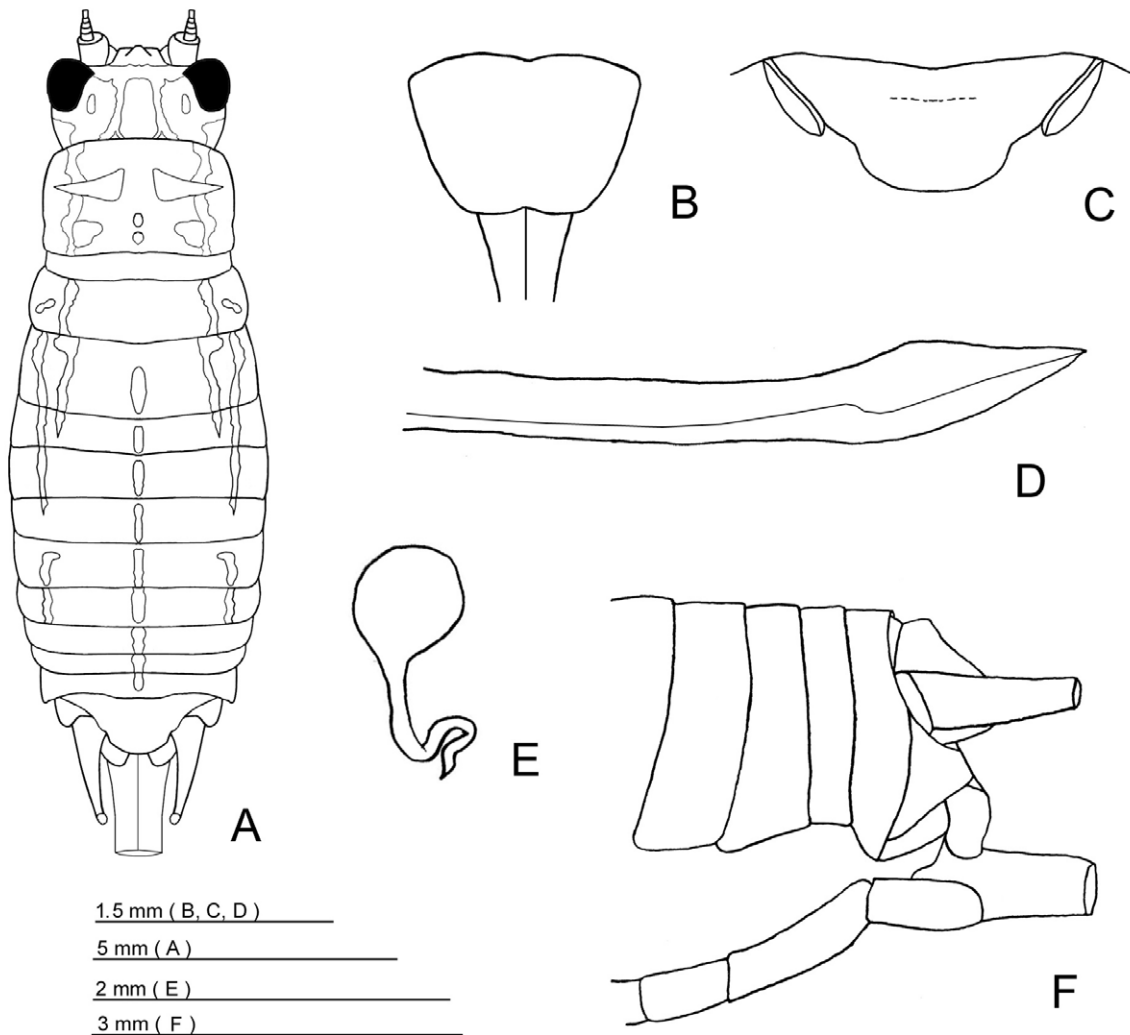


Fig. 4. *Anomaloterga mantiqueirae* n. sp. A, female habitus, dorsal; B, female subgenital plate; C, female supra-anal plate; D, ovipositor, lateral; E, spermatheca; F, female lateral terminália.

median lobe of pseudepiphallus present; ectophallic fold inconspicuous, not at all visible from the dorsum; endophallic sclerite elongate but poorly pigmented, its apodemes poorly detected . . . . . *Anomaloterga*, n. gen.  
 2B-Without the above combination of characters . . . . . 3  
 3A- Male subgenital plate very long, narrowing toward apex. Relatively large species (hind femora longer than 7 mm in both sexes; ovipositor longer than 5 mm). Male genitalia: median lobes of pseudepiphallus elongate and pedunculated, running along the internal face of the pseudepiphallic parameres; ectophallic fold as long as the pseudepiphallic parameres; ectophallic apodemes not regressed, but pseudepiphallic-ectophallic invagination not sclerified in its median portion; endophallic sclerite and apodemes not forming an internal crucible . . . . . *Loretana* Desutter  
 3B- Male subgenital plate not as above. Smaller species (hind femora shorter than 7 mm in both sexes; ovipositor not reaching 4.5 mm length). Median lobes of pseudepiphallus not separated from the pseudepiphallic sclerite, shaped as two corneous lobes . . . . . *Strogulomorpha* Desutter

4A- Male forewing longer than pronotum, covering one third the abdominal length, its posterior margin with a characteristic arrowhead-shaped projection. Male genitalia: dorsal cavity absent; median process of pseudepiphallus imperfectly fused . . . . . *Eugryllina* Hebard  
 4B- Male forewings shorter than pronotum, their posterior margin not pointed as an arrowhead . . . . . 5  
 5A- Forewings present in both sexes; dorsal field of male right forewing leaving a portion of the dorsal field of left one uncovered; lateral field pale yellow, separated from the dorsal field by a vein in high relief. General coloration very dark, nearly black. Male genitalia: median process (not the main lobe) of pseudepiphallus paired; dorsal cavity absent; endophallic apodemes regressed . . . . . *Nigrothema* Desutter  
 5B- Forewings present only in males; dorsal field of right forewing completely covering dorsal field of left one, its hind margin convex; lateral field not as clearly separated from dorsal field, and with the same coloration. Male genitalia: dorsal cavity present; median process of pseudepiphallus unpaired, endophallic apodemes present . . . . . *Unithema* Desutter

**Table I.** Measurements (mm) of *Anomaloterga mantiqueirae* n. sp. **BL**, body length; **HW**, head width; **IOD**, interocular distance; **PL**, pronotum length; **PW**, pronotum width; **HFL**, hind femora length; **HTL**, hind tibia length; **OL**, ovipositor length.

	BL	HW	IOD	PL	PW	HFL	HTL	OL
<b>Males (n=3)</b>								
Range	9.56-10	2.48-2.55	0.99-1.08	1.58-1.65	2.45-2.60	6.44-6.69	5.50-5.75	//
Mean	9.75	2.51	1.03	1.62	2.53	6.56	5.63	//
<b>Females (n=10)</b>								
Range	10.25- 1.75	2.66-2.85	1.11-1.26	1.73-1.94	2.85-3.16	7.13-7.96	6.16-8.38	5.88-6.44
Mean	10.74	2.76	1.19	1.82	2.96	6.88	6.35	6.21

### Acknowledgements

We are indebted to the "Conselho Nacional de Desenvolvimento Científico e Tecnológico-CNPq" for financial support. We also thank Mr. Heiko Poehlemanl and Mrs. Friedericke Mundt for permission to collect inside their property in São Francisco Xavier. Leandro de Andrade Freire provided invaluable logistical help. This article is part of the Master's degree dissertation of the senior author.

### References

- Desutter L. 1987. Structure et evolution du complexe phallique des Gryllidea (Orthopteres) et classification des genres néotropicaux de grylloidea. Deuxième Partie. Annales de la Société Entomologique de France (nouvelle séries) 23: 233.
- Desutter L. 1988. Structure et evolution du complexe phallique des Gryllidea (Orthopteres) et classification des genres néotropicaux de grylloidea. Première Partie. Annales de la Société Entomologique de France (nouvelle séries) 24: 343-373.
- Desutter L. 1990. Estude phylogénétique, biogéographique et écologique des Grylloidea néotropicaux (Insectes, Orthoptères). Tese de Doutorado. Université de Paris- Sud, Centre d'Orsay. 347 pp.
- Desutter-Grandcolas L. 1991. Les Phalangopsidae Néotropicaux (Ensifera: Phalangopsidae) I. Les Strogulomorphini. Annales de la Société Entomologique de France (nouvelle séries) 27: 465-481.
- Desutter-Grandcolas L. 2003. Phylogeny and the evolution of acoustic communication in extant Ensifera (Insecta, Orthoptera). Zoologica Scripta 32: 525-561.
- Hebard M. 1928. Studies on Dermaptera and Orthoptera of Colombia. Transactions American Entomological Society 54: 79-124.