INSECTA MUNDI

A Journal of World Insect Systematics

0171

A second species of *Lucanobium* Howden and Lawrence from South America (Coleoptera: Lucanidae: Aesalinae)

> M.J. Paulsen Systematics Research Collections University of Nebraska State Museum W436 Nebraska Hall Lincoln, NE 68588-0546, USA

> > Date of Issue: April 15, 2011

M.J. Paulsen A second species of *Lucanobium* Howden and Lawrence from South America (Coleoptera: Lucanidae: Aesalinae) Insecta Mundi 0171: 1-3

Published in 2011 by Center for Systematic Entomology, Inc. P. O. Box 141874 Gainesville, FL 32614-1874 U. S. A. http://www.centerforsystematicentomology.org/

Insecta Mundi is a journal primarily devoted to insect systematics, but articles can be published on any non-marine arthropod. Topics considered for publication include systematics, taxonomy, nomenclature, checklists, faunal works, and natural history. **Insecta Mundi** will not consider works in the applied sciences (i.e. medical entomology, pest control research, etc.), and no longer publishes book reviews or editorials. **Insecta Mundi** publishes original research or discoveries in an inexpensive and timely manner, distributing them free via open access on the internet on the date of publication.

Insecta Mundi is referenced or abstracted by several sources including the Zoological Record, CAB Abstracts, etc. **Insecta Mundi** is published irregularly throughout the year, with completed manuscripts assigned an individual number. Manuscripts must be peer reviewed prior to submission, after which they are reviewed by the editorial board to ensure quality. One author of each submitted manuscript must be a current member of the Center for Systematic Entomology.

Managing editor: Paul E. Skelley, e-mail: insectamundi@gmail.com

Production editor: Michael C. Thomas & Ian Stocks, e-mail: insectamundi@gmail.com

Editorial board: J. H. Frank, M. J. Paulsen

Subject editors: G.B. Edwards, J. Eger, A. Rasmussen, F. Shockley, G. Steck, Ian Stocks, A. Van Pelt, J. Zaspel

Printed copies deposited in libraries of:

CSIRO, Canberra, ACT, Australia Museu de Zoologia, São Paulo, Brazil Agriculture and Agrifood Canada, Ottawa, ON, Canada The Natural History Museum, London, Great Britain Muzeum i Instytut Zoologiczny PAN, Warsaw, Poland National Taiwan University, Taipei, Taiwan California Academy of Sciences, San Francisco, CA, USA Florida Department of Agriculture and Consumer Services, Gainesville, FL, USA Field Museum of Natural History, Chicago, IL, USA National Museum of Natural History, Smithsonian Institution, Washington, DC, USA Zoological Institute of Russian Academy of Sciences, Saint-Petersburg, Russia

Electronic copies in PDF format:

Printed CD mailed to all members at end of year. Florida Center for Library Automation: http://purl.fcla.edu/fcla/insectamundi University of Nebraska-Lincoln, Digital Commons: http://digitalcommons.unl.edu/insectamundi/ Goethe-Universität, Frankfurt am Main: http://edocs.ub.uni-frankfurt.de/volltexte/2010/14363/

Author instructions available on the Insecta Mundi page at: http://www.centerforsystematicentomology.org/insectamundi/

Printed copies deposited in libraries (ISSN 0749-6737) Electronic copies in PDF format (On-Line ISSN 1942-1354, CDROM ISSN 1942-1362)

Copyright held by the author(s). This is an open access article distributed under the terms of the Creative Commons, Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original author(s) and source are credited. http://creativecommons.org/licenses/by-nc/3.0/

A second species of *Lucanobium* Howden and Lawrence from South America (Coleoptera: Lucanidae: Aesalinae)

M.J. Paulsen

Systematics Research Collections University of Nebraska State Museum W436 Nebraska Hall Lincoln, NE 68588-0546, USA mpaulsen@unlserve.unl.edu

Abstract. The monotypic aesaline genus *Lucanobium* Howden and Lawrence (Coleoptera: Lucanidae) was previously known only from Venezuela. A second species is here described as new from French Guiana, extending the range of the genus approximately 1800 km to the southeast. The generic description of *Lucanobium* is updated with respect to the discovery of a second species.

Introduction

Howden and Lawrence (1974) described *Lucanobium squamosum* as a new genus and species of aesaline stag beetle from Venezuela. The genus is readily distinguished from the Central American Aesalini by the flat, disc-like scales and clumps of erect bristles on the dorsal surface; step-like projection on the posterior face of the prosternal process and the accompanying cavity on the mesosternum; and characters of the mouthparts (Howden and Lawrence 1974). Until now, *L. squamosum* has been the only known member of the tribe Aesalini in South America.

In 2007, I examined two specimens of the genus that were collected by Dr. Joseph Eger in French Guiana and subsequently deposited in the Florida State Collection of Arthropods (FSCA), Gainesville, Florida, USA. Although the specimens were smaller than *L. squamosum*, they were not immediately distinguishable from that species externally. Both specimens were female, which precluded the use of male genitalic characters that are extremely useful in aesaline taxonomy. In 2010, two additional specimens were donated by Dr. Eger from a more recent collecting trip, and this material included a male specimen (Fig. 1). The genitalia of this specimen differ significantly from that of *L. squamosum*, and thus the species is described here as new. The species becomes only the second stag beetle species occurring in French Guiana, along with *Brasilucanus alvarengai* Vulcano and Pereira.

Specimens of *Lucanobium* are rarely encountered, although this is probably due to a lack of collecting effort. Only six specimens of *L. squamosum* (Howden and Lawrence 1974, Araya 2000) and four specimens of the new species are known. The original type series of *L. squamosum* were collected at light (H. Howden, pers. comm.). The labels on all specimens of the new species indicate that they were collected at mercury vapor light or at ultraviolet light as well. Other than being attracted to light, the life history of these beetles remains unknown.

Lucanobium Howden and Lawrence 1974

Type species: Lucanobium squamosum Howden and Lawrence 1974, by original designation.

Description. Coleoptera: Scarabaeoidea: Lucanidae: Aesalinae: Aesalini. Characters as described by Howden and Lawrence (1974), except for the following modifications. *Length*: 3.5-5.0 mm. *Width*: 2.5-3.3 mm. *Head*: Antenna straight, appearing partially geniculate (pseudogeniculate), pedicel arising from end of scape but bent anteriorly. Labrum relatively large for tribe, about 1/3 clypeal length, distinct in anterior view. *Legs*: Protibia with small (relative to other aesalines), curved apical tooth; subapical teeth small and obscured by longer, thick scale-like bristles along protibial margin (Fig. 2). Metatibia in ventral view with apex not as strongly sexually dimorphic as in other genera (not as acute in males or obtusely expanded in females). *Ventral surface*: Metasternum lacking furrows, foveae or pits to receive legs. *Male genitalia*: Basal piece and parameres short, 1/10 to 1/5 as long as median lobe. Median lobe slightly to strongly curved, expanded apically or not.





Figures 1-4. Lucanobium spp. 1-3) Lucanobium guianense n. sp., male holotype: 1) Dorsal habitus; 2) Head and protibiae; 3) Male genitalia, a) dorsal and b) lateral views. 4) Lucanobium squamosum, male genitalia from Howden and Lawrence 1974, a) dorsal and b) lateral views (reproduced with permission).

Lucanobium guianense Paulsen, new species

Type specimens. Holotype male (FSCA) labeled: a) "FRENCH GUIANA: / Amazone Nature Lodge / 30 km SE Roura on / Kaw Rd. 5-19-II-2010 / J. E. Eger, coll., 300 m"; b) "N04°33.570' / W052°12.433' / UV Light Trap"; c) on red paper, "*Lucanobium guianense* / Paulsen [male symbol] / HOLOTYPE". Allotype female (FSCA) labeled: a) "FRENCH GUIANA: Ama- / zone Nature Lodge, 30 / km SE Roura on Kaw / Rd. 10-18-IV-2007, D / G Hall & J E Eger, coll."; b) "N04°34.135' / W052°11.150' / 227m MV Light"; c) on red paper, "*Lucanobium guianense* / Paulsen [female symbol] / ALLOTYPE". Female paratype (in the collection of the author) labeled: a) FRENCH GUIANA: 28 / km SE Roura on Kaw / Rd., 17-II-2010, J. E. / Eger, coll., MV Light"; b) "N04°34.252' / W052°12.797'; 306 m elev."; c) on yellow paper, "*Lucanobium guianense* / Paulsen [female paratype (FSCA) labeled: a) "FRENCH GUIANA: 27 / Km SE Roura on Kaw / Rd. 21-IV-2007, J. E. / Eger, coll. MV Light", b) "[female symbol]"; c) as preceding paratype.

Holotype description. Length: 4.2 mm. Width: 2.9 mm. Color/Vestiture: Surface dark brown, mostly obscured by flat, disc-like whitish or tan scales and erect, dark and light brown scale-like bristles. Head: Surface as in L. squamosum. Mentum rectangular, elongate (distinctly wider than long). Base of maxilla (stipes/cardo) distinctly protruding from beneath mentum. Pronotum: Form half as long as wide, moderately convex. Posterior margin bisinuate, anterior angles acute. Surface covered with disk-like scales and scattered, erect bristles; middle with transverse band of 4 poorly-defined clumps of dark bristles. Elytra: Surface as in L. squamosum, but overall scale and bristle color darker. Legs: Apex of metatibia not tumid in ventral view. Male genitalia: Aedeagus with basal piece and parameres fused to median

lobe; basal piece and parameres short, parameres about 1/10 as long as median lobe. Median lobe strongly curved (Fig. 3), not expanded or sclerotized at apex as in *L. squamosum* (Fig. 4).

Variation. Female allotype and paratypes differ in the following characters. *Length*: 3.5-4.2 mm. *Width*: 2.5-2.9 mm. *Head*: Mentum not elongate (about as wide as long). Base of maxilla (stipes/cardo) not as large and protuberant as in male. *Pronotum*: Transverse clumps of scales more defined. *Legs*: Apex of metatibia tumidly produced ventrally. *Female genitalia*: Dissection of the female genitalia will be completed by Hao Huang (Shanghai, China) for his detailed morphological study of aesaline genera that is currently in progress.

Diagnosis. This species is recognizable due to its distinct male genitalia and smaller overall size, as well as its disparate geographic distribution. The parameres of the male genitalia are broader, and short (only about $1/10^{\text{th}}$ as long as the median lobe). The median lobe is more strongly curved and not inflated at the apex as in that of *L. squamosum*.

Etymology. The species is named for the geographic origin of the specimens, French Guiana, and the epithet is neuter in gender.

Acknowledgments

Much appreciation goes to Joe Eger (Dow Agrosciences, Tampa, Florida), a specialist on stink bugs, for taking the time to collect and mount the Coleoptera 'dregs' from his light sheet. By doing so he became the first to make the study of this species possible, even though the number of light traps deployed annually in French Guiana by collectors is probably quite large. I also thank Paul Skelley (FSCA) for bringing the most recent specimens to my attention. Thanks to Andrew Smith (Canadian Museum of Nature) and Brett Ratcliffe (University of Nebraska State Museum) for reviewing the manuscript.

Literature Cited

- Araya, K. 2000. An account of a visit to European museums. 2. The lucanid specimens in the van Roon and Siebold collections deposited in the Rijksmuseum van Natuurlijke Historie, Leiden. Gekkan-Mushi 350: 4-16.
- Howden, H. F., and J. F. Lawrence. 1974. The New World Aesalinae, with notes on the North American lucanid subfamilies (Coleoptera, Lucanidae). Canadian Journal of Zoology 52: 1505-1510.

Received March 14, 2011; Accepted April 1, 2011.