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

M. J. Paulsen

University of Nebraska-Lincoln, mjpgaulsen@unl.edu

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

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M.J. Paulsen

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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.

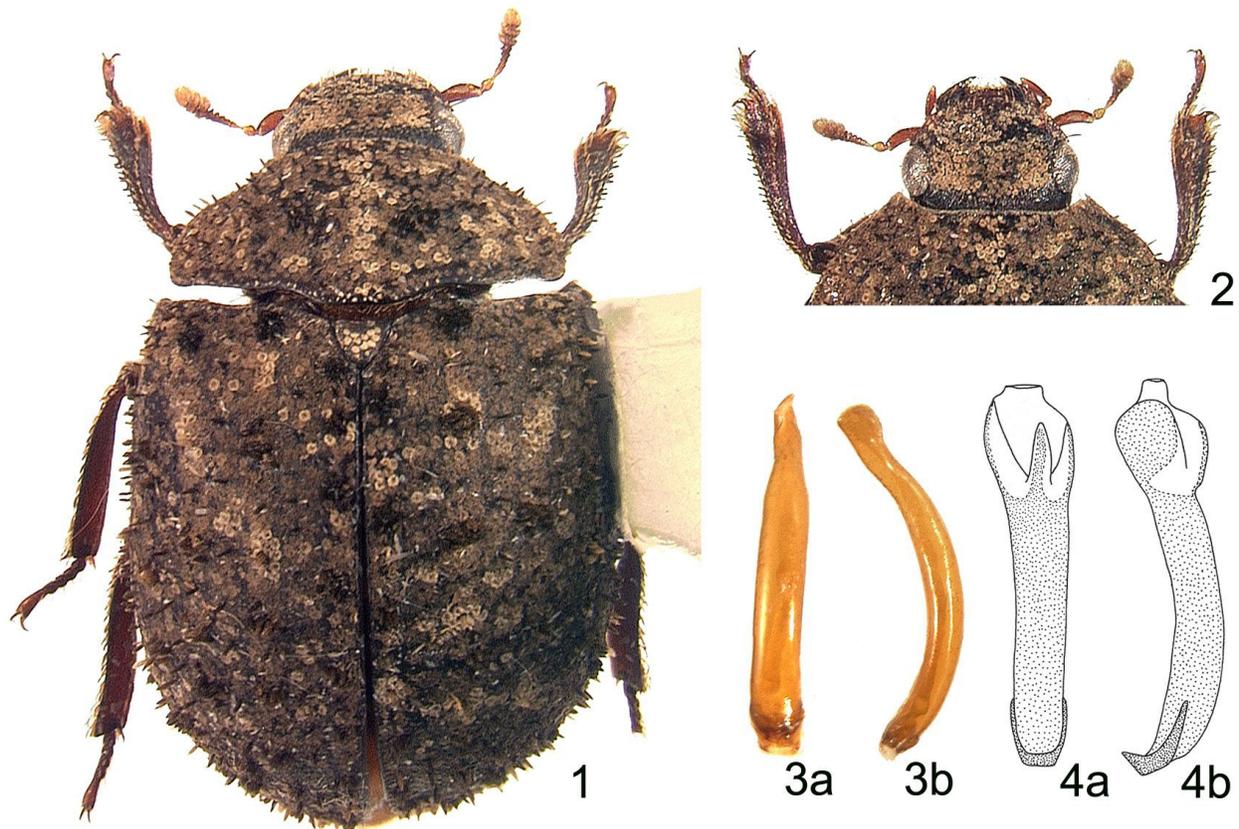
In 2007, I examined two specimens of the genus that were collected by Dr. Joseph Eger in French Guiana and subsequently deposited in the Florida State Collection of Arthropods (FSCA), Gainesville, Florida, USA. Although the specimens were smaller than *L. squamosum*, they were not immediately distinguishable 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) "N040°34.252' / W052°12.797'; 306 m elev."; c) on yellow paper, "*Lucanobium guianense* / Paulsen [female symbol] / PARATYPE". 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 1/10th 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.

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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.

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