

5-4-2016

## A new species of *Dinonigidius* de Lisle from Sri Lanka (Coleoptera: Lucanidae)

M. J. Paulsen

University of Nebraska-Lincoln, mjpaulsen@unl.edu

Follow this and additional works at: <http://digitalcommons.unl.edu/insectamundi>



Part of the [Ecology and Evolutionary Biology Commons](#), and the [Entomology Commons](#)

---

Paulsen, M. J., "A new species of *Dinonigidius* de Lisle from Sri Lanka (Coleoptera: Lucanidae)" (2016). *Insecta Mundi*. 955.  
<http://digitalcommons.unl.edu/insectamundi/955>

This Article is brought to you for free and open access by the Center for Systematic Entomology, Gainesville, Florida at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Insecta Mundi by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

# INSECTA MUNDI

A Journal of World Insect Systematics

---

0484

A new species of *Dinonigidius* de Lisle from Sri Lanka  
(Coleoptera: Lucanidae)

M. J. Paulsen  
Systematic Research Collections  
University of Nebraska State Museum  
W436 Nebraska Hall  
Lincoln, NE 68588-0514 USA

Date of Issue: May 4, 2016

M. J. Paulsen

A new species of *Dinonigidius* de Lisle from Sri Lanka (Coleoptera: Lucanidae)

Insecta Mundi 0484: 1–4

ZooBank Registered: urn:lsid:zoobank.org:pub:5A3A8AB7-CC4D-476E-9351-7D41830FEEA5

**Published in 2016 by**

Center for Systematic Entomology, Inc.

P. O. Box 141874

Gainesville, FL 32614-1874 USA

<http://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.

**Chief Editor:** Paul E. Skelley, e-mail: [insectamundi@gmail.com](mailto:insectamundi@gmail.com)

**Assistant Editor:** David Plotkin, e-mail: [insectamundi@gmail.com](mailto:insectamundi@gmail.com)

**Head Layout Editor:** Eugenio H. Nearn

**Editorial Board:** J. H. Frank, M. J. Paulsen, Michael C. Thomas

**Review Editors:** Listed on the **Insecta Mundi** webpage

**Manuscript Preparation Guidelines** and **Submission Requirements** available on the **Insecta Mundi** webpage at: <http://centerforsystematicentomology.org/insectamundi/>

**Printed copies (ISSN 0749-6737) annually deposited in libraries:**

CSIRO, Canberra, ACT, Australia

Museu de Zoologia, São Paulo, Brazil

Agriculture and Agrifood Canada, Ottawa, ON, Canada

The Natural History Museum, London, UK

Muzeum i Instytut Zoologii 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 (Online ISSN 1942-1354, CDROM ISSN 1942-1362) in PDF format:**

Printed CD or DVD mailed to all members at end of year. Archived digitally by Portico.

Florida Virtual Campus: <http://purl.fcla.edu/fcla/insectamundi>

University of Nebraska-Lincoln, Digital Commons: <http://digitalcommons.unl.edu/insectamundi/>

Goethe-Universität, Frankfurt am Main: <http://nbn-resolving.de/urn/resolver.pl?urn:nbn:de:hebis:30:3-135240>

**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/>

**Layout Editor for this article:** Eugenio H. Nearn

## A new species of *Dinonigidius* de Lisle from Sri Lanka (Coleoptera: Lucanidae)

M. J. Paulsen

Systematic Research Collections  
University of Nebraska State Museum  
W436 Nebraska Hall  
Lincoln, NE 68588-0514 USA  
mjpaulsen@unl.edu

**Abstract.** *Dinonigidius bartolozzii* Paulsen, **new species**, (Coleoptera: Lucanidae) is described from Sri Lanka, and compared with the only other species of the genus, *D. ahenobarbus* de Lisle from India.

### Introduction

Melchior O. de Lisle (1974) created the genus *Dinonigidius* (Coleoptera: Lucanidae: Lucaninae) for his new species, *D. ahenobarbus*. This moderately large species (24–29 mm) is distributed in the Palni Hills (type locality) and Anamalai Hills, Tamil Nadu, India. Males are distinctive in possessing a large, emarginate process on the pronotum. Very few specimens are known to exist in collections.

Bartolozzi and Bomans (1988) provided an excellent treatment of the stag beetle fauna of Sri Lanka, but did not discuss the presence of *Dinonigidius*. Based on label data, specimens of *Dinonigidius* began to be collected in Sri Lanka shortly after that publication. These Sri Lankan specimens were treated as *D. ahenobarbus* by all subsequent authors (Bomans 1994; Mizunuma and Nagai 1994; Mizunuma 2000; Fujita 2010), but based on clear morphological differences, not the least of which is the lack of a pronotal process in males, they belong to a second, undescribed species. The impediments to recognition of the species' distinctness have been that few specimens of the true *D. ahenobarbus* exist in collections and that the holotype of *D. ahenobarbus* (MHNG) and many Sri Lankan specimens (NHM) have been on a delinquent loan for more than a decade and so have been unavailable for study for many years. Despite this, comparison of the Sri Lankan material with the available Indian specimens and the detailed original description and illustration of the holotype by de Lisle indicates unequivocally that two species are present. The Sri Lankan species is therefore described here as new.

### Materials and Methods

**Specimens and Taxonomic Material.** The following institutions and private collections provided specimens examined for this study. A total of 29 *Dinonigidius* specimens formed the basis of this research.

CASC California Academy of Sciences, San Francisco, CA, USA (J. Schweikert)  
EPGC Everardo & Paschoal Grossi Collection, Nova Friburgo, Brazil  
FMNH Field Museum of Natural History, Chicago, IL, USA (J. Boone)  
FSCA Florida State Collection of Arthropods, Gainesville, FL, USA (P. Skelley)  
GBC Guy Bruyey Collection, Hemet, CA, USA  
LBC Luca Bartolozzi Collection, Florence, Italy  
MHNG Muséum d'Histoire Naturelle, Geneva, Switzerland (G. Cuccodoro)  
MJPC M. J. Paulsen Collection, Lincoln, NE, USA  
MZUF Museo di Storia Naturale, Zoologia- "La Specola", University of Florence, Italy  
NHM The Natural History Museum, London, UK (M. Barclay, B. Garner, M. Kerley)  
TFC Takaaki Fujii collection, Kobe, Japan

## Taxonomic Treatment

### *Dinonigidius bartolozzii* Paulsen, new species

**Materials Examined.** Holotype male, deposited at MZUF, labeled: a) “SRI LANKA / Kandy, 1.I.1990 / Rautenstrauch leg.”; b) on red paper, “*Dinonigidius bartolozzii* / [male symbol] Paulsen / HOLOTYPE”. Paratypes (3 male, 1 female; LBC) labeled: a) as holotype. Paratypes (5 male, 3 female; NHM, LBC, PGC, GBC) labeled: a) “SRI LANKA / Kandy / 1.I.1990 leg. / Rautenstrauch”; NHM specimens with additional handwritten labels “12954-a”, “12954-b”, “17540a”, and “17540b”. Paratype female (PGC) labeled: a) “SRI LANKA / Kandy / 1.I.1990”. Paratype male (MJPC) labeled: a) “SRI LANKA / Kandy / 12.I.2001”. Paratype female (MJPC) labeled: a) “SRI LANKA / Kandy / 12.I.2001”; b) on orange paper “DNA VOUCHER / P466 2014 / MJ Paulsen – UNSM”. Paratypes (1 male, 1 female; MJPC) labeled: a) “SRI LANKA / II.1995”. Paratypes (3 male, 2 female; NHM, MJPC) labeled: a) Sri Lanka / Kandy / 5.1994 / leg. A. Maier”; NHM specimens with additional handwritten labels “18129-a”, “18129-b”, and “18129-c”. Paratype male (FSCA) labeled: a) “SRI LANKA / Kandy / January 1999”. Paratype male (MJPC) labeled: a) “SRI LANKA / Central Province / Kandy District / February 1995”. Paratype male (TFC) with handwritten label: a) “Kandy / Sri Lanka / 14.05.94”. All paratypes with paratype label, on yellow paper: “*Dinonigidius bartolozzii* / [male or female symbol] Paulsen / PARATYPE”.

**Description, holotype (Fig. 1).** Coleoptera: Scarabaeoidea: Lucanidae. *Length*: 19.0 mm. *Width*: 7.0 mm (elytra). *Color*: Piceous, with clypeus, mandibles, legs, and venter lighter red. *Head*: Surface shiny, punctate, punctures with short setae; punctures coarse and dense (distance between punctures about 1 diameter) on frons, fine and sparse (punctures separated by distinctly more than 1 diameter) on clypeus. Clypeus declivous, narrowing between mandibles to subtruncate apex; apex subdentate medially. Eyes completely divided by ocular canthus; canthus rounded, narrow and uniform in width, reaching temporal process at distinct suture. Temporal process large, projecting posteriorly as a triangular lobe; lobe divided into anterolateral and posterior faces by an impunctate ridge; both faces coarsely, contiguously punctate. Antennal club small, short (shorter than scape), antennomeres 8–10 (club) entirely tomentose. Mandibles (to true apex) shorter than head, apex acute, internally tridentate (right) or quadridentate (left), teeth abraded; dorsal surface produced into long, vertical curved ramus (false apex); ramus with apex obtuse. Mentum broad, three times wider than long, bilobed, surface coarsely but irregularly densely punctate. *Pronotum*: Form short, as wide as elytra, with anterior tumosity but lacking anteriorly bifurcate projection. Anterior angles emarginate. Surface variable, disc sparsely punctate, area laterad of disc with areas of coarse, dense to contiguous punctures. *Elytra*: Form parallel-sided. Surface striate; striae impressed with coarse, oval, almost contiguous punctures; striae distinct on disc, becoming obsolete laterally; interstriae 1–3 with fine (smaller than stria punctures) punctures in 2–3 irregular rows; interstriae 4 and greater with punctures subequal in size to stria punctures, obscuring striae. *Legs*: Protibia with acute apex and with 5 acute teeth decreasing in size proximally. Mesotibiae with 1 large external tooth below middle with 1–2 smaller accessory teeth proximally. Metatibiae with 1 small tooth medially. *Thorax*: Prosternal process behind procoxae strongly pointed. Metasternum entirely punctate, lacking glabrous area anteriorly just behind metacoxae. *Abdomen*: Male genitalia as in (Fig. 2), flagellum asymmetrical and curved at apex, shorter than basal piece and parameres combined; median lobe narrow.

**Paratype variation, males.** Length: 15.5–21.4 mm. Width: 6.0–7.2 mm. Males with color varying from red (teneral) to almost black.

**Paratype variation, females.** Length: 14.7–18.6 mm. Width: 5.9–7.2 mm. Females with simple mandibles lacking vertical ramus of male or any vertical development (small dorsal projection at base present in *D. ahenobarbus*); apex acute, internally with 1–2 teeth. Females with anterior pronotal tumosity weakly indicated, lateral contiguously punctate areas subfoveate. Females with temporal process not strongly produced posteriorly, instead narrow, rounded and similar in shape to the canthus.

**Etymology.** The species is named in honor of my friend and colleague Luca Bartolozzi, Natural History Museum “La Specola”, University of Florence, Italy, who provided an excellent treatment of the Sri Lankan stag beetle fauna with H. E. Bomans just before specimens of this species began to be discovered. His knowledge, insights, and generous loans of material have contributed greatly to my research on Lucanidae.

**Distribution.** Almost all specimens known are from Kandy, Sri Lanka. A photograph of one specimen from Elpitiya in southern Sri Lanka is considered to be referable to *D. bartolozzii*, but the specimen was not physically examined and because it is from a locality distinct from the remainder of the type series it was not included as a paratype.

**Remarks.** The new species differs from *D. ahenobarbus* (Fig. 3) in the following ways: anterior pronotal process lacking in males; male genitalia with a shorter, asymmetrical flagellum and much narrower median lobe (flagellum longer than parameres + basal piece, median lobe broad in *D. ahenobarbus* (Fig. 4)); prosternal process acute in both sexes, not bluntly rounded; metasternum lacking anterior glabrous area in both sexes; temporal process in males with posterior face distinctly punctate, not glabrous.

### Acknowledgments

I thank Max Barclay and Keita Matsumoto (NHM) for retrieving the NHM specimens from a long overdue loan in Japan and providing images and measurements of the specimens allowing them to be included in the type series; I also thank Takaaki Fujii (Kobe, Japan) for assisting with the measurements. Brett Ratcliffe (University of Nebraska State Museum) and Andrew Smith (Canadian Museum of Nature) are acknowledged for providing constructive reviews of the manuscript.

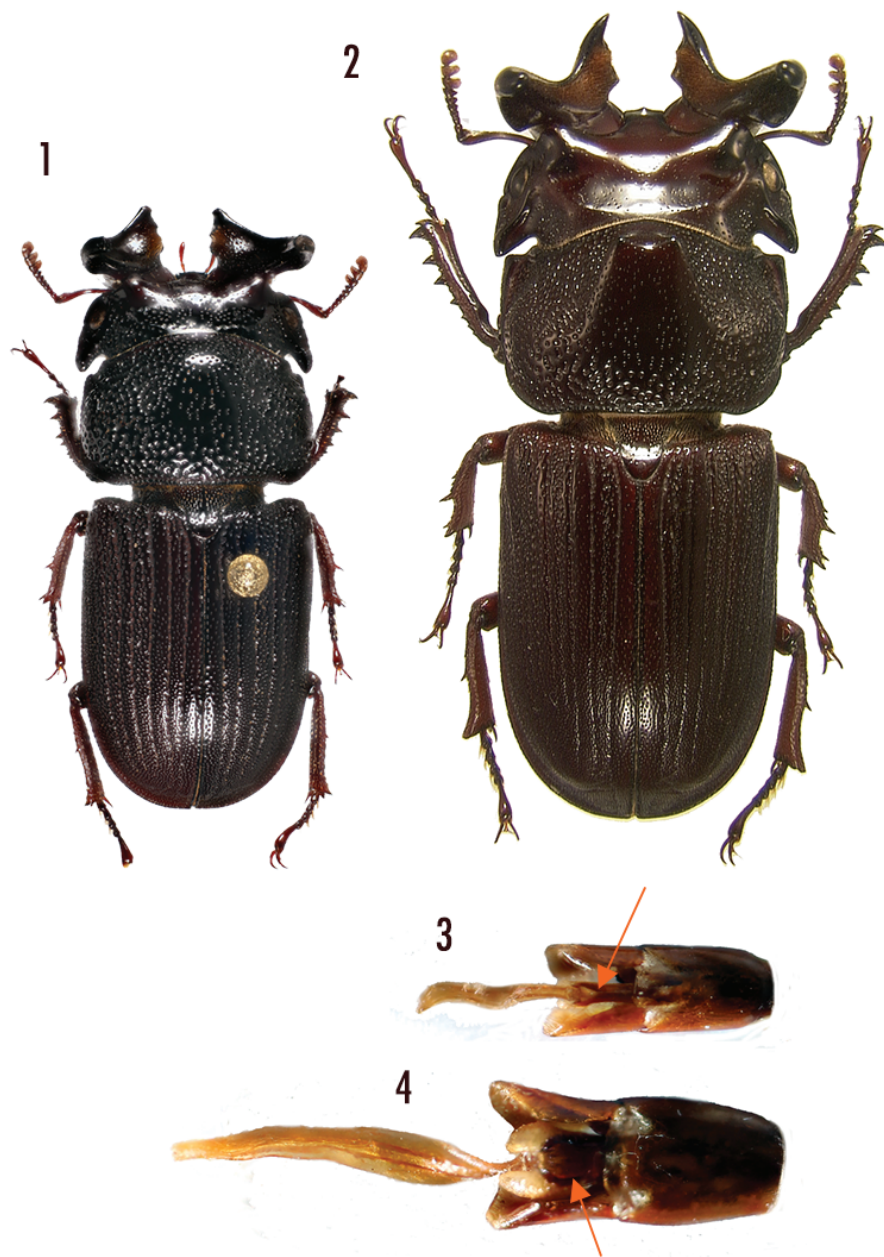
### Literature Cited

- Bartolozzi, L., and H. E. Bomans. 1988.** The Lucanidae of Sri Lanka. - *Entomologica Scandinavica* 30: 77–92.
- Bomans, H. E. 1994.** Signalisation de quelques espèces intéressantes de Lucanidae (86<sup>ème</sup> contribution à l'étude des Coléoptères Lucanides). *Lambillionea* 94(4): 487–497.
- de Lisle, M. O. 1974.** Troisième note sur quelques Coleoptera Lucanidae nouveaux ou peu connus. *Revue Suisse de Zoologie* 80(4): 785–804.
- Fujita, H. 2010.** The lucanid beetles of the world. Mushi-Sha's iconographic series of insects, 6. Mushi-Sha; Tokyo. 472 p.
- Mizunuma, T. 2000.** Stag beetles II (Lucanidae). Endless Collection Series 5. Toshitsugu Endo; Tokyo, Japan. 55 plates, 101 p.
- Mizunuma, T., and S. Nagai. 1994.** The Lucanid beetles of the world. Mushi-sha Iconographic series of Insects. Volume 1. Mushi-Sha; Tokyo, Japan. 338 p.

Received May 4, 2016; Accepted May 4, 2016.

Review Editor Paul Skelley.





**Figures 1–4.** Dorsal habitus and male genitalia of *Dinonigidius* species, ventral view. Arrows indicate median lobe. 1, 3) *D. bartolozzii* Paulsen, n.sp. 2, 4) *D. ahenobarbus* de Lisle.