

# INSECTA MUNDI

A Journal of World Insect Systematics

---

0313

A Remarkable New *Anomiopus* Westwood from Peru  
(Coleoptera: Scarabaeidae: Scarabaeinae)

W. D. Edmonds  
P.O. Box 426  
Marfa, Texas 79843, USA

Luis Figueroa  
Departamento de Entomología  
Museo de Historia Natural de la Universidad Nacional Mayor de San Marcos  
Apartado Postal 14-0434  
Lima, Peru

Date of Issue: June 28, 2013

W. D. Edmonds and Luis Figueroa  
A Remarkable New *Anomiopus* Westwood from Peru (Coleoptera: Scarabaeidae:  
Scarabaeinae)  
Insecta Mundi 0313: 1-4

ZooBank Registered: urn:lsid:zoobank.org:pub:845665BE-16F9-4391-A361-FA74183A1ED0

**Published in 2013 by**

Center for Systematic Entomology, Inc.  
P. O. Box 141874  
Gainesville, FL 32614-1874 USA  
<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. Manuscript preparation guidelines are available at the CSE website.

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

**Production editor:** Michael C. Thomas, Brian Armitage, Ian Stocks

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

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

**Spanish editors:** Julieta Brambila, Angélico Asenjo

**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, Great Britain  
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 (On-Line 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://edocs.ub.uni-frankfurt.de/volltexte/2010/14363/>

**Author instructions** available on the Insecta Mundi page at:

<http://www.centerforsystematicentomology.org/insectamundi/>

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 Remarkable New *Anomiopus* Westwood from Peru (Coleoptera:  
Scarabaeidae: Scarabaeinae)

W. D. Edmonds  
P.O. Box 426  
Marfa, Texas 79843, USA  
wdedmonds@sbcglobal.net

Luis Figueroa  
Departamento de Entomología  
Museo de Historia Natural de la Universidad Nacional Mayor de San Marcos  
Apartado Postal 14-0434  
Lima, Peru  
luis\_thecell@hotmail.com

**Abstract.** Described and illustrated is a strikingly distinct **new species** of the scarabaeine genus *Anomiopus* Westwood, *A. pishtaco* (Coleoptera: Scarabaeidae), from the Amazonian lowlands of eastern Peru.

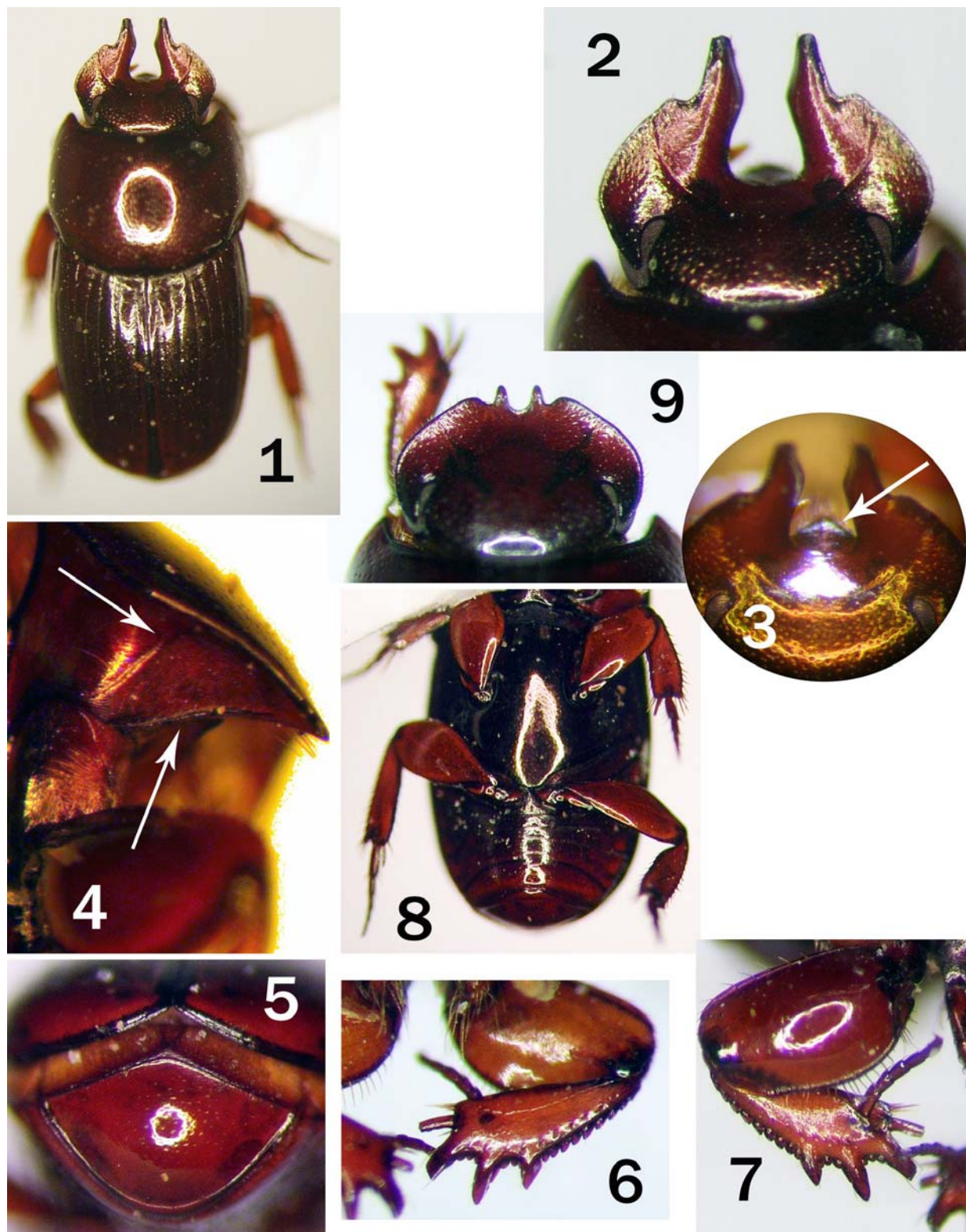
**Introduction**

The purpose of this paper is to describe and discuss a remarkable new species of the scarabaeine dung-beetle genus *Anomiopus* Westwood (Coleoptera Scarabaeidae) from the Ucayali region of eastern Peru. It is a contribution to an ongoing study of the Peruvian scarabaeine dung-beetle fauna based at the Museo de Historia Natural de la Universidad Mayor de San Marcos in Lima. *Anomiopus* (once referred to as *Onthocharis* Westwood) comprises approximately 60 species of small, often elongate and somewhat flattened, dichotomiine dung beetles that can superficially resemble certain species of *Dendropaemon* Perty. The Peruvian fauna includes about one dozen described species, but recent fieldwork suggests that there are more. The genus is exclusively Neotropical and collected from a wide variety of habitats, including humid lowland forest, cloud forest, cerrado and grassland from zero to 1200 m elevation (Canhedo 2006). The biology is essentially unknown. Most specimens with precise collecting data were attracted to light traps of various types. Other collecting methods include flight-intercept traps, dung-baited pitfall traps, sweep nets, and direct capture near newly excavated nests of *Acromyrmex* Mayr (Hymenoptera; Formicidae). The general consensus is that at least some species are myrmecophilous. The taxonomy of *Anomiopus* is the subject of a series of recent papers by the late Virginia Luzia Canhedo (Canhedo 2004a, 2004b, 2006).

***Anomiopus pishtaco*, new species**  
(Fig. 1-8)

**Type Series.** Holotype (sex unknown) - **Peru:** Región Ucayali, Prov. Coronel Portillo, Callería (8°18'43" S 73°40'57" W) 224 m, March 2012, M. Vilchez col. Paratype (sex unknown) - **Peru:** Región Ucayali, Prov. Coronel Portillo (8°26'09" S 73°42'35" W) 227 m, 15-17 October 2012, B. Medina col. The paratype is in three pieces (head, prothorax and pterothorax + abdomen), each pointed and labeled on a separate pin. Both holotype and paratype are deposited in the collection of the Departamento de Entomología, Museo de Historia Natural de la Universidad Nacional Mayor de San Marcos (Lima, Peru).

**Description. Holotype (sex unknown):** *Color* - Head and pronotum dark shining reddish brown, elytra dark shining brown. *Head:* Clypeus (Fig. 2) grossly excised medially for nearly entire length, emargination broadly rounded posteriorly, angulate on each side and extended anteriorly as blunt, wedge-shaped clypeal teeth; posterior edge of emargination separated by fine suture from ventrally directed, triangular sclerite (Fig. 3, arrow) here interpreted as labrum (see Comments below). Frontoclypeal sutures (Fig. 2, arrow) strongly arched anteriorly, together forming a semicircle; surface of head poste-



**Figures 1–8.** *Anomiopus pishtaco* new species, holotype. **1)** Habitus, dorsal view. **2)** Head, dorsal view. **3)** Head, partial dorsal view (arrow indicates labrum). **4)** Prothorax, ventrolateral view (upper arrow indicates transverse propleural carina; lower arrow indicates pleurosternal carina). **5)** Abdomen, caudal view. **6)** Left proleg, anterior view. **7)** Same, posterior view. **8)** Pterothorax and abdomen, ventral view. **Figure 9.** *Anomiopus smaragdinus* (Westwood), dorsal view of head.

rior to (and including) emargination strongly concave. Clypeus lacking distinct puncturing; parietals (genae) roughened by coarse punctures; frons smooth with moderate puncturing, punctures separated by at least two puncture diameters. Frons completely margined posteriorly by fine carina. *Prothorax*: Pronotum evenly, broadly convex, completely punctate, punctures separated by at least two puncture diameters, becoming larger and more clearly umbilicate on disk. Circumnotal ridge effaced along posterior margin, otherwise sharp and distinct. Anterolateral angles acute (Fig. 1). Transverse propleural carina (Fig. 4, upper arrow) present and complete, extending from middle of coxal margin to near lateral margin where it bends abruptly and extends anteriorly to merge into circumnotal ridge; pleural surface posterior to transverse carina smooth, anterior to carina finely transversely striate. *Pterothorax*: Upper portion of metasternum, mesepimeron, metasternum and adjacent surfaces of meso- and metacoxae very finely reticulate. *Elytra*: Striae obscure, indicated by narrow grooves separated by convex interstriae; seventh stria evident only medially, basal and apical thirds effaced. *Legs*: Protibia (Fig. 6–7) tridentate; teeth collectively occupying less than one-half length, narrow, acute, separated by small denticles that continue along lateral margin from third tooth to base; protarsus inserted subapically on posterior (ventral) surface, longer than one-half of tibia along inner margin, claws small, only slightly curved. Profemur globose, strong carina marking both upper and lower margins. Protibial spur acute, almost straight. Meso- and metatibiae (Fig. 8) scarcely widened apically; tarsomeres elongate, scarcely widened apically; claws small, almost straight. *Pygidium*: Very large (Fig. 5), strongly convex, its greatest width amounts to about three-fourths of combined elytral apices; dorsal margin strongly margined and angulate medially, received by upwardly curved apical elytral margins. *Body length* (including head): ~ 4 mm. (Paratype does not differ from holotype in any significant detail.)

**Etymology.** The species name *pishtaco* (from Quechua “*pistay*”; masculine noun in apposition) refers to an Andean mythological bogeyman said to terrorize indigenous communities often brandishing a dagger, here a metaphor for the formidable clypeal teeth of the new species.

**Comments.** This new species will key to *Anomiopus* with little difficulty in Vaz-de-Mello et al. (2011). In her revision of the genus, Canhedo (2006) recognized the *virescens*, the *smaragdinus* and the *cuprarius* species groups. *Anomiopus pishtaco* is assignable to the latter group on the basis of two characters: lack of a subapical tubercle on the lateral margin of the metatibia; and the presence of a complete transverse propleural carina (Fig. 4, upper arrow). It is immediately distinguished from other known species of *Anomiopus* by the grotesque shape of the head (Fig. 1–2). The clypeal shape of its congeners, while variable, is always similar to that depicted in Figure 9. Both holotype and paratype were collected in human-feces-baited pitfall traps in evergreen forest about 95 km east of Pucallpa; the collecting sites are separated by about 15 km.

The following emendation of Canhedo’s (2006) key to species groups will separate *A. pishtaco* from its known congeners:

1. Lateral margin of metatibia simple, not interrupted by teeth or carina ..... **2**  
— Metatibia with one or more transverse teeth on lateral margin .....  
..... **virescens group** (see Canhedo 2004b, 2006)
2. Transverse propleural carina complete, reaching lateral margin and turning anteriorly to border episternum). Apices of metatarsomeres 1–4 transversally truncated ..... (cuprarius group) **3**  
— Transverse propleural carina semicomplete (reaching lateral margin but not turning anteriorly to border episternum) or incomplete (not reaching lateral margin). At least basal (often all) metatarsomere emarginate or obliquely truncate apically .....  
..... **smaragdinus group** (see Canhedo 2004b, 2006)
3. Clypeus deeply excised medially and medial teeth prolonged anteriorly as a pair of knife-like processes (Fig. 1); labrum exposed as triangular sclerite at base of clypeal emargination (Fig. 3, arrow) ..... ***Anomiopus pishtaco*, new species**  
— Clypeal emargination small, medial teeth not prolonged; labrum not exposed .....  
..... **cuprarius group** (remaining species, see Canhedo 2006: 359)

The extreme emargination of the clypeus, which reaches the labro-clypeal suture, has had the consequence of exposing the upper surface of the labrum, which in dung beetles is usually tilted upward beneath and against the lower surface of the clypeus. What we here interpret as the labrum appears in Figure 3 (arrow) as an obtusely angulate sclerite separated from the clypeus by a faint suture. A similar modification occurs in the Afrotropical deltochiline genus *Dicranocara* Frolov and Scholtz. *Dicranocara* species (Frolov and Scholtz 2003, and Deschodt and Scholtz, 2007) inhabit the Namib Desert, where they utilize rock hyrax middens as refugial habitats. They possess a similarly deeply emarginate clypeus and exposed labrum, along with specializations of the other mouthparts interpreted as adaptations for manipulating hard food.

So as not to risk extensive damage to either type specimen, we have elected not to attempt dissection of genitalia to determine their sex or to examine details of mouthpart structure. Canhedo's (2006) indicators of sexual dimorphism are generally imprecise and not definitive for the specimens of *A. pishtaco* at our disposal.

### Acknowledgments

We extend our sincere appreciation to Malena Vilchez and Brenda Medina, who collected the specimens described here; to Darren Mann, who brought to our attention the case of *Dicranocara* and reviewed a preliminary version of the manuscript; to Jiri Zidek for his review of the manuscript; to Domus Consultoria Ambiental SAC and Pacific Stratus Energy SA, who provided logistical support for field work; and to the Dirección General Forestal y de Fauna Silvestre, which issued our scientific collection permit RD N°008-2013-AG-DGFFS-DGEFFS.

### Literature Cited

- Canhedo, V. L. 2004a.** Novas espécies do gênero *Anomiopus*, grupo *smaragdinus* (Coleoptera, Scarabaeidae). Iheringia, Série Zoologia 94: 187–204.
- Canhedo, V. L. 2004b.** *Anomiopus* Westwood (Coleoptera: Scarabaeidae): Novas espécies do grupo *virescens* (Coleoptera, Scarabaeidae). Revista Brasileira de Entomologia 48: 449–458.
- Canhedo, V. L. 2006.** Revisão taxonômico do gênero *Anomiopus* Westwood, 1842 (Coleoptera, Scarabaeidae, Scarabaeinae). Archivos de Zoologia 37: 349–502.
- Deschodt, C. M., U. Kryger and C. H. Scholtz. 2007.** New taxa of relictual Canthonini dung beetles (Scarabaeidae: Scarabaeinae) utilizing rock hyrax middens as refuges in South-western Africa. Insect Systematics and Evolution 38: 361–376.
- Frolov, A. V. and C. H. Scholtz. 2003.** A new genus and species of dung beetle from southern Namibia (Coleoptera: Scarabaeidae: Scarabaeinae). African Entomology 11: 297–299.
- Vaz-de-Mello, F. Z., W. D. Edmonds, F. C. Ocampo, and P. Schoolmeesters. 2011.** A multilingual key to the genera and subgenera of the subfamily Scarabaeinae of the New World (Coleoptera: Scarabaeidae). Zootaxa 2854: 1–73.

Received May 26, 2013; Accepted May 28, 2013.