Zootaxa 3795 (5): 557–563
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://dx.doi.org/10.11646/zootaxa.3795.5.4
http://zoobank.org/urn:lsid:zoobank.org:pub:0A575F18-F1A8-492D-B54B-9AC1C379F518

Giesbertiolus curoei, a new species of flower chafer from Panama with transitional characters (Coleoptera: Scarabaeidae: Cetoniinae: Trichiini)

ANDRÉS RAMÍREZ-PONCE
Instituto de Biología. Departamento de Zoología. Universidad Nacional Autónoma de México. Circuito exterior s/n. Ciudad Universitaria, Copilco-Coyoacán, 04510, México D. F. E-mail: arponce110@hotmail.com; andres.ramirez@st.ib.unam.mx

Abstract

Giesbertiolus curoei, **new species** is described from a female specimen collected in northwestern Panama. This species is compared with the three known species of *Giesbertiolus* Howden and with the genus *Dialithus* Parry. The genera *Dialithus* and *Giesbertiolus* are redefined to include this new species, and new diagnostic characters are provided for both. Illustrations of diagnostic characters and an identification key for the species of *Giesbertiolus* are provided.

Key words: taxonomy, genera redefinition, scarab beetle

Introduction

Dialithus Parry and *Giesbertiolus* Howden species have nectar-feeding habits and are distributed from southern Mexico to Central America (Howden 1968, 1972; Delgado-Castillo & Morón 1991). Howden (1968) stated that the initially monotypic genus *Dialithus* could be easily separated from the other New World Trichiini by many unusual characters, and that it was difficult to decide which characters might be diagnostic at the generic level. Subsequently, *D. scintillans* Howden and *D. festivus* Howden were described (Howden 1972).

Howden (1972) pointed out that while all specimens, even from different species, were similar in external morphology, the form of their male and female genitalia was radically different. He also modified the diagnosis of *Dialithus* in order to include *D. festivus.* Howden (1988) transferred *D. festivus* to the new genus *Giesbertiolus*, where he also placed *G. ornatus* Howden (Table 1). After the review of the North and Central American Trichiinae (Howden 1968), some species with transitional characters were discovered whose generic position proved difficult to define or which generated or dispelled doubts about generic boundaries and validity (Howden 1988, Krikken 2008, Smith 2010).

Dialithus and *Giesbertiolus* have many similar characters but with clear diagnostic differences (Howden 1968, 1972, 1988; Krikken 2008), among which are: size, clypeal form and proportions, number of indented longitudinal bands on the pronotum, form of the metasternum, pygidial shape with presence/absence of transverse carinae, and length of the metatarsomeres. Other characters not previously considered and outlined here to redefine both genera are: form of the pronotal disc, form of the protibiae, form and ornamentation of the apex of the metatibiae, and presence/absence of transverse carinae on last abdominal sternite (Table 1).

The purpose of this paper is to describe a new species of *Giesbertiolus* that exhibits clearly transitional characters between *Giesbertiolus* and *Dialithus* (*sensu* Howden 1988) as well as characters previously considered diagnostic for each genus, thus also necessitating amended diagnoses for both genera that also include additional morphological characters. I prefer to maintain the two genera until both sexes of all species of *Giesbertiolus* are known.

Accepted by A.B.T. Smith: 10 Mar. 2014; published: 15 May 2014

If we retain only the neomorphic characters and ignore the transformational (and transitional ones such as iridescent markings, length of metatarsi, etc.), only the deeply emarginate clypeus (the most conspicuous character for separation of the two genera *sensu* Howden 1972) supports the placement of the new species in *Dialithus*. On the other hand, the form and number of indented bands on the pronotal disc (the other most conspicuous character for the diagnoses of these genera *sensu* Howden 1988), and other previously overlooked characters such as the transverse carinae on the pygidium and the last abdominal sternite, the emarginated apex of the metatibiae without conspicuous spines, and the proximity of the teeth on the external border of the protibiae, support the placement of this new species in *Giesbertiolus.*

Giesbertiolus, as opposed to *Dialithus*, has notable sexual dimorphism in the markings on the elytra, a condition that occurs in the males of distinct animal groups with ornate morphology, coloration, and/or behavioral patterns. As a result, some presumably plesiomorphic characters are present in the females and therefore it is possible to hypothesis about phylogenetic associations using female traits at deeper levels than in males using the conserved structures. In the female of *G. ornatus*, the iridescent markings on elytra are evidently more abundant, a condition that appears as a plesiomorphic trait because of its presence in similar number and pattern in both sexes of *Dialithus* species, but the male of *G. curoei* and *G. linnaei* and the female of *G. festivus* are unknown. It is possible that the males of the other species of *Giesbertiolus* lacks or present in a lesser intensity and number the iridescent spots in the elytra that are present in the females.

Acknowledgments

I thank Daniel Curoe (Mexico City, Mexico) for kindly allowing access to his private collection as well as for the English language review. I thank Miguel Angel Morón (Xalapa, Veracruz, Mexico) for the loan of specimens for morphological comparisons and for the constructive criticism of the manuscript and Susana Guzmán Gómez for her assistance in taking photographs in the Laboratorio de Microscopía y Fotografía de la Biodiversidad. Santigo Zaragoza Caballero (UNAM) is acknowledged for making equipment and space in his laboratory available. Finally I thank the Consejo Técnico de la Investigación Científica (CTIC, UNAM), the Dirección General de Asuntos del Personal Académico (DGAPA-UNAM), and the Instituto de Biología (UNAM) for the fellowship granted for a postdoctoral stay.

References cited

Delgado-Castillo, L. & Morón, M.A. (1991) A new genus and species of Trichiini from Mexico. *The Pan-Pacific Entomologist*, 67, 181–188.

Howden, H.F. (1968) A review of the Trichiinae of North and Central America (Coleoptera: Scarabaeidae). *Memoirs of the Entomological Society of Canada*, 54, 1–77.
http://dx.doi.org/10.4039/entm10054fv

Howden, H.F. (1972) New species of *Dialithus* Parry and a new synonymy of *Pantodinus* Burmeister (Coleoptera: Scarabaeidae: Trichiinae). *The Canadian Entomologist*, 104, 647–654.
http://dx.doi.org/10.4039/ent104647-5

Howden, H.F. (1988) A new genus and four new species of New World Trichinae (Coleoptera: Scarabaeidae). *The Coleopterist Bulletin*, 42, 241–250.

Krikken, J. (2008) A neglected Trichiine beetle from Costa Rica (Coleoptera: Cetoniidae). *Zoologische Mededelingen*, 82, 103–108.

Smith, A.B.T. (2010) Three new species of *Paragnorimus* Becker from Central America (Coleoptera: Scarabaeidae: Cetoniinae: Trichiini) with a redefinition of the genus. *Insecta Mundi*, 126, 1–8.