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New species of *Eudiospilus* (Braconidae, Brachistinae) from Madagascar with a review of the genus and key to species

Y. MILES ZHANG[1] & BARBARA J. SHARANOWSKI[2]
Department of Entomology, Faculty of Agricultural and Food Sciences, University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2. E-mail: [1]yuanmeng.zhang@gmail.com, [2]barb.sharanowski@gmail.com

Abstract

A second species of *Eudiospilus* Szépligeti collected from Madagascar, *E. rubrumbarus* **sp.n.**, is described with an illustrated key to the two known species. *Eudiospilus rubrumbarus* can be distinguished from *E. conradti* Szépligeti by the presence of fore wing vein 2a, hind wing with 2-1A short and not reaching wing margin, propodeum without median furrow, ovipositor longer than total length of body, and differences in the coloration of antennal flagellomeres, head, and metasoma. The evolutionary relationship between *Eudiospilus* and other diospiline genera is discussed.

Key words: Diospilini, Helconinae, Afrotropical, *Diospilus*, description, new species

Introduction

The genus *Eudiospilus* was first described by Szépligeti (1914), which originally included two Afrotropical species found in Cameroon: *E. conradti* Szépligeti 1914 and *E. tricolor* Szépligeti (1914). Both species were redescribed by Papp (2005), and *E. tricolor* was moved to *Diospilus* Haliday, rendering *E. conradti* as the sole species within the genus. *Eudiospilus* can be recognized by the shape of the second submarginal cell of the fore wing (Figs. 1, 7): with 3RSa at least 1.2x longer than 2RS; 2M equal to 2RS; and the *r-m* crossvein is slightly incurved at the posterior end. This combination of characters separates *Eudiospilus* from all other diospiline genera. While some members of Diospilini are recorded as solitary endoparasitoids of phytophagous beetles such as Curculionidae and Nitidulidae (Billqvist & Ekbom 2001; Kuhlmann *et al.* 2001; Sharkey 1997), the biology of *Eudiospilus* is unknown. Diospilini has been moved from Helconinae to the newly elevated subfamily Brachistinae based on molecular evidence by Sharanowski *et al.* (2011), however, the relationships within the tribe and among other Members of the subfamily remains unclear as taxonomic revisions are needed. The objective of this study was to describe and illustrate a new species of *Eudiospilus* from Madagascar, and provide an updated identification key for the two known *Eudiospilus* species.

Material and methods

The holotype of *E. conradti* was borrowed from Museum für Naturkunde der Humboldt Universität, Berlin (MNHU) and compared with newly collected material from recent biodiversity surveys in Madagascar. Morphological terms are based on (Sharkey & Wharton 1997). Measurement data were taken from the average of 3 separate measurements, and are given in millimeters or ratios. Photos were taken with a Nikon 5200 digital camera mounted on an Olympus SZX16 stereomicroscope. Multiple images with different focal planes were combined using the software CombineZP (Hadley 2013), to produce a single, focused image. Adobe Illustrator® was used to create line drawings by tracing the outline of the character on the image. These line drawings were added as insets to some photographic images to clarify character states.

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