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## Spring-cleaning of African agathidines: new combinations for five species previously placed in *Cremnops* Förster (Hymenoptera: Braconidae)

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### Abstract

Little work has been done with the African species of *Cremnops* since their original descriptions. Herein we propose new combinations for five species that are currently placed in *Cremnops*, i.e., *C. atripennis* Szépligeti 1914 and *C. elegantissima* Szépligeti 1908 are moved to *Disophrys*; *C. borealis* (Szépligeti 1914) and *C. rubrigaster* Masi 1944 are moved to *Biroia*; and *C. pulchripennis* Szépligeti 1905 is moved to and renamed *Biroia neopulchripennis*. These changes result in *Disophrys atripennis* (Szépligeti 1915) becoming a jr. homonym, which we change to *Disophrys szatripennis*. Additionally, two species are proposed as *nomen dubia*: *C. rufitarsis* Szépligeti 1913 and *C. schubotzi* Szépligeti 1915.

**Key words:** Afrotropical, parasitic wasp, revision, taxonomy, *Biroia*, *Disophrys*

### Introduction

Africa is known for its rich insect biodiversity, yet, with the exception of South Africa, little taxonomic work has been done in this area (Scholtz & Mensell 2009). One of the taxa needing attention is the subfamily Agathidinae (Hymenoptera: Braconidae). Agathidines are parasitoid wasps using lepidopteran caterpillars as hosts. Members are found all over the world in a diverse range of habitats and some have been used in biological control (Sharkey *et al.* 2006). Including *Cremnops* Förster, there are 20 genera of Agathidinae recognized in Africa (Yu *et al.* 2011).

Members of the genus *Cremnops* may be distinguished from other genera of Agathidinae by the following combination of characters: malar length at least half the eye height, lateral carinae of the frons present, notaulus impressed, second submarginal cell of the fore wing quadrate, and hind tarsal claws bifid (see Tucker *et al.* 2015 for images). With 77 described species, *Cremnops* is the largest genus of Cremnoptini (Tucker *et al.* 2015; Yu *et al.* 2011). There are 11 species of *Cremnops* described from Africa (Yu *et al.* 2011), but no images or illustrations of specimens and no keys to species. Herein we move 5 of these species to other genera, which subsequently results in the necessity of renaming one species of *Disophrys* Förster. Additionally we recommend 2 species of *Cremnops* be considered *nomina dubia* as their descriptions are incomplete and the type specimens are missing and presumed lost.

### Methods

Holotype specimens of 9 of the 11 species of *Cremnops* described from Africa were examined and the original descriptions of all African *Cremnops* and the one species of *Disophrys* to be renamed were scrutinized. Holotypes with new combinations are illustrated below with color images taken with a JVC digital camera mounted on a Leica MZ16 microscope and Automontage® stacking software. Image composites were produced using Adobe Photoshop CS5.1.

## ***Disophrys szatripennis* NEW NAME. Female.**

*Disophrys atripennis* (Szépligeti 1915). Sharkey *et al.* 2006.  
*Pseudocremonops atripennis* Szépligeti 1915.

**Comments.** *Disophrys atripennis* (Szépligeti 1915) is a Jr. homonym of *Disophrys atripennis* (Szépligeti 1914) proposed herein. As such the Jr. Homonym is being renamed as *Disophrys szatripennis*, the "sz" at the beginning of the name for all of Szépligeti's descriptive works.

**Material examined.** LECTOTYPE: *Pseudocremonops atripennis*, Spanish Guinea, Uelleburg-Benitogebiet. (HNHM).

## **Nomen Dubia**

In addition to the five new combinations and one new name, two *Cremnops* species are proposed as nomina dubia. Species for nomina dubia consideration are as follows:

*Cremnops rufitarsis* Szépligeti 1913. The original description of this species is poor and could apply to any number of agathidine species. There is no mention in the original description as to where the type was deposited and no suggestion as to location in Taxapad (Yu *et al.* 2011). Museums known to hold other type specimens described by Szépligeti, including the NMHM, have been searched for the missing type to no avail.

*Cremnops schubotzi* Szépligeti 1915. The original description of this species is poor and could apply any number of Agathidinae species. The last documented location of the type specimen was at the NHRS (Yu *et al.* 2011), however the collection has been thoroughly searched and is no longer there. Other museums known to hold types described by Szépligeti have been checked for the missing type specimen to no avail.

As an additional note, van Achterberg previously proposed *C. testaceus* as nomen dubium (2011). The holotype specimen is still missing and only mentioned herein to provide a complete synopsis of the state of African *Cremnops*.

## **Conclusion**

Two *Cremnops* were moved to *Biroia* and three to *Disophrys*. Additionally, two *Cremnops* are nomina dubia. This leaves four African species of *Cremnops* still in good standing: *C. monochroa* Szépligeti, *C. fuscipennis* (Brullé), *C. obsolescens*, *C. zululandensis* Brues. There are undoubtedly more species that need to be described, and images and a key to species would greatly improve the state of African *Cremnops*.

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