Tibiodrepanus tagliaferri— a new Afrotropical Drepanocerina species (Coleoptera: Scarabaeidae: Oniticellini), with notes on phylogeny and distribution of the genus

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Abstract
We examined the genera Tibiodrepanus Krikken, 2009 (four Oriental and one Palaearctic species) and Sulcodrepanus Krikken, 2009 (one Afrotropical species), using type specimens and non-type specimens, in order to assess the systematic consistency of the two taxa. Within this framework, we also considered the genera Afrodrepanus Krikken, 2009 (two species) and Drepanocerus Kirby, 1828 (two species) employing sets of traits from external morphology, the genitalia of both sexes and the epipharynx. The genus Cyptochirus Lesne, 1900 was chosen as an outgroup. A new species—Tibiodrepanus tagliaferri sp. nov.—was described based on four females from Cameroon and Namibia. The phylogenetic analyses confirmed that the Tibiodrepanus and Sulcodrepanus species were closely related, yet it did not support the hypothesis of a generic or subgeneric separation of the two taxa. Hence, we establish Sulcodrepanus as a junior synonym of Tibiodrepanus, new synonymy. The genus Tibiodrepanus shows a disjunct Afrotropical-Oriental (common to many other Drepanocerina genera) and Southeastern Palaearctic (Hindu Kush, Afghanistan) distribution pattern.

Key words: Scarabaeoidea, Afrotropical, Oriental, Drepanocerus, new species, new synonymy, Sulcodrepanus

Introduction
The genus Tibiodrepanus was described by Krikken (2009) for four Oriental and one Palaearctic species (Fig. 1) previously assigned to the genus Drepanocerus Kirby, 1828, i.e. Tibiodrepanus setosus (Wiedemann, 1823), T. hircus (Wiedemann, 1823), T. sinicus (Harold, 1868), T. kazirangensis (Biswas, 1979) and T. simplex (Kabakov, 2006). All of these species share a unique feature within the Drepanocerina subtribe: a peculiar shape and insertion of the distal outer tooth of the protibiae (Krikken 2009: 15). Furthermore, Krikken (2009) also established the genus Sulcodrepanus for an Afrotropical species, S. sulcicollis (Laporte, 1840), which is very similar to the former species, but bearing an unmodified distal outer tooth of the protibiae. Since the author (Krikken 2009) claims that the two genera are “genuinely related, for instance in a paraphyletic way, rendering a joint subgeneric level classification perhaps more appropriate”, it remains unclear why he chose to assess two distinct genera.

However, the systematic statements proposed by Krikken (2009) were mainly founded on a set of characters that merely regarded the external morphology and were not supported by a phylogenetic analysis. A revision of such a complex taxon like Drepanocerus must have the aim of investigating the phylogenetic relationships among the groups of species, basing the analysis on an extensive set of characters (Figs. 2–9), dealing with external, genital and epipharyngeal morphology.

Material and methods
In the present paper, we mainly follow the latest taxonomy of Drepanocerina (Krikken 2009), in which the previous species groups of Janssens (1953) were elevated to the genus level, with some modifications to the classification scheme.