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A new species of *Sicoderus* Vanin from Bolivia (Coleoptera: Curculionidae: Curculioninae: Otidocephalini)

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Abstract

Sicoderus robini sp. nov. (type locality: Bolivia, Santa Cruz de la Sierra, Buena Vista, El Cairo) is described and illustrated. The new species is assigned to the *Sicoderus appendiculatus* species group, compared with similar species of the group and with the two other species of *Sicoderus* that occur in Bolivia. The previously published key for species identification of the *S. appendiculatus* group is updated to include the new species.

Key words: Erodiscina, Neotropical Region, weevil, key

Introduction

During a trip to Santa Cruz de la Sierra (Buena Vista), Bolivia, carried out in November 2008 by Maria Helena M. Galileo (Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul), Sergio A. Vanin (Instituto de Biociências, Universidade de São Paulo) and Ubirajara R. Martins (Museu de Zoologia, Universidade de São Paulo - MZSP), to collect weevils and long-horned beetles, a single specimen belonging to *Sicoderus* Vanin, 1986 was captured by using a beating sheet in the locality of "El Cairo", an area with patches of tropical humid forest. At the time of manuscript submission, Dr. Robert S. Anderson (Canadian Museum of Nature, Ottawa, Canada - CMNC) told us about similar specimens deposited in his museum and in the Florida State Collection of Arthropods (FSCA), Gainesville, FL, USA. Dr. Paul Skelley and François Génier, collection managers of FSCA and CMNC, respectively, promptly sent us these specimens of *Sicoderus*, all collected in the neighborhood of Santa Cruz (Bolivia). Among the received material, 4 males and 1 female proved to be conspecific, which led us to improve the original description of the new species by adding the female characters and the variation in the male.

Since the last revision of the tribe Erodiscini (Alonso-Zarazaga and Lyal 1999, Bouchard *et al.* 2011) by Vanin (1986), three additional species of *Sicoderus* were described by Anderson (1998) from the Virgin Islands of the West Indies. The Bolivian specimens reported herein were recognized to represent a new species of *Sicoderus*, which is assigned to the *S. appendiculatus* group and described below. Including the new species, *Sicoderus* now comprises 61 species and 17 species groups (Vanin 1986, 1989; Wibmer & O'Brien 1986, 1989; Anderson 1998).

Material and methods

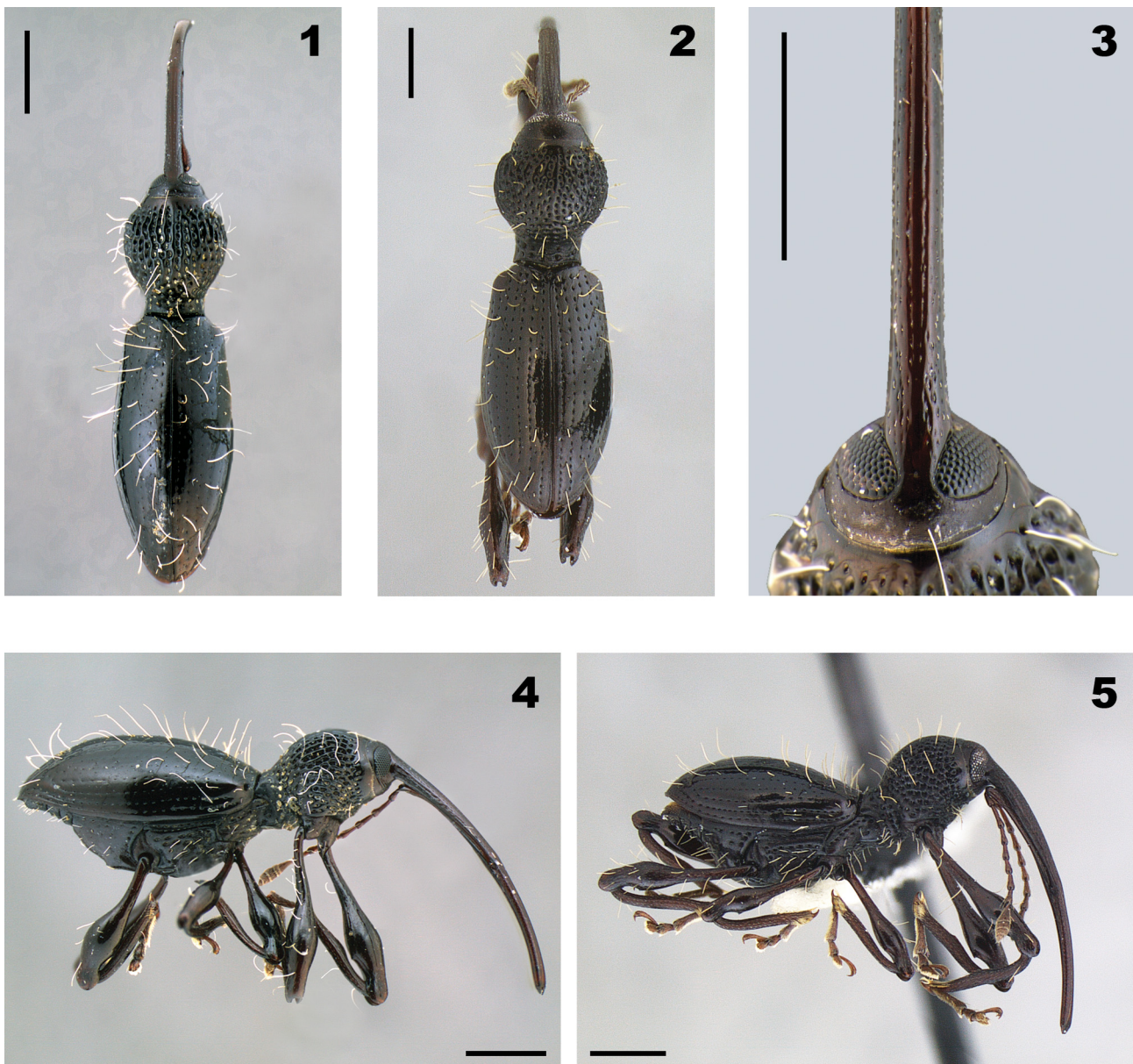
In compliance with Bolivian laws, the holotype will be deposited at the "Museu Noel Kempf Mercado", Santa Cruz de la Sierra, Bolivia (MNKM). Paratypes will be deposited in CNMC, FSCA and MZSP. Measurements and proportions, preparation of male genitalia, line drawings and the taxonomic description follow Vanin (1986); the morphological terminology was updated, according to Lawrence *et al.* (2010). Photographs of the adult were taken in a stereomicroscope Leica M125 with coupled Magnifier in DV camera Leica DFC. The label data of types are reported exactly as were originally printed; each line in the label is separated by one slash (/).

Sicoderus robini, sp. nov.

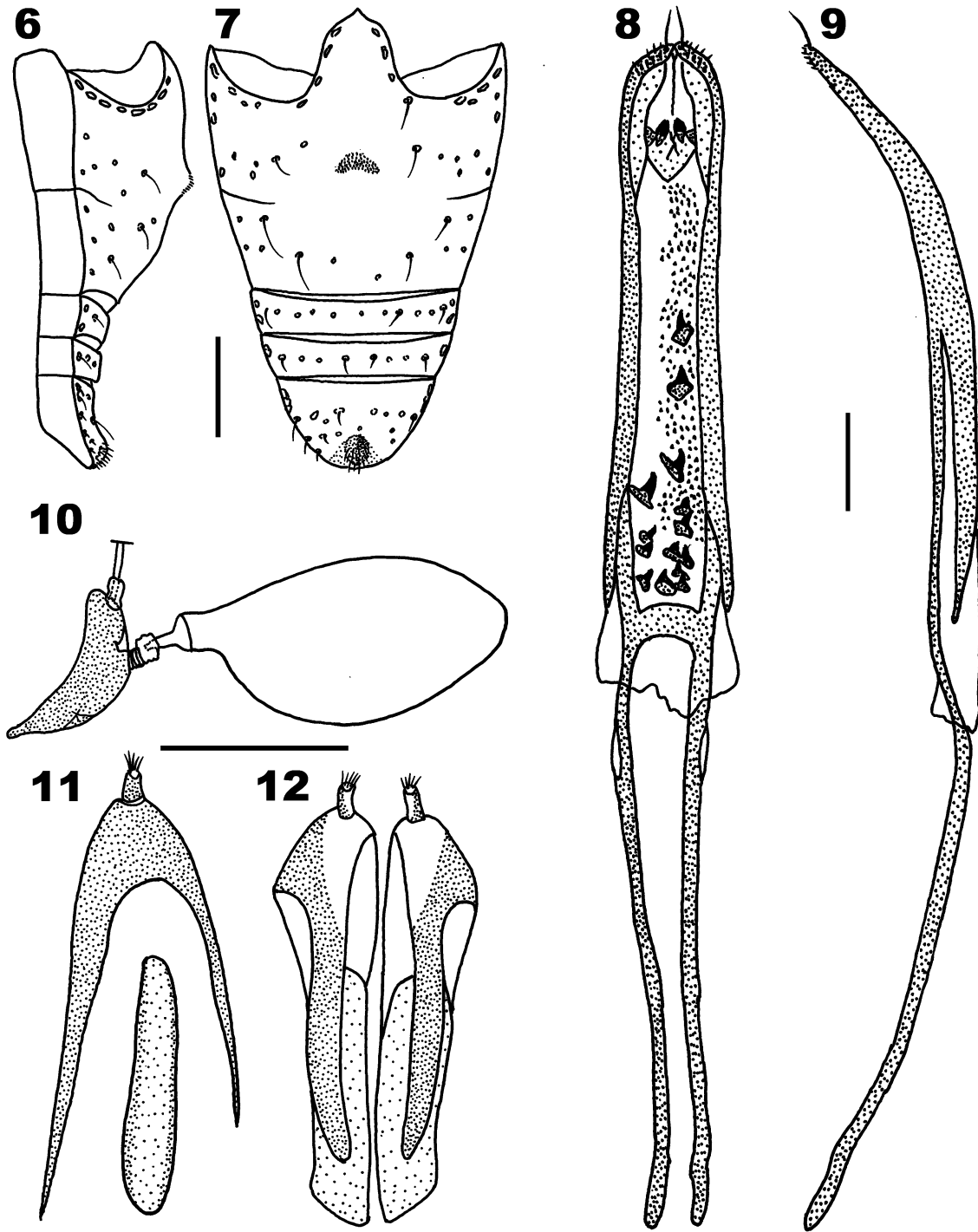
(Figs 1–12)

Type material. Male holotype, "Bolivia Santa Cruz/ BuenaVista (El Cairo)/ 19.XI.2008/ Galileo, Vanin & Martins col." (MNKM, dissected). Paratypes: "BOLIVIA Santa Cruz/ 4-6k SSE Buena Vista/ F & F Hotel Oct 22-31/ 2002 Wappes & Morris" (1 male, FSCA). Same data but "October; 2004" (1 male, FSCA); same data but "5-8 May; 2004 Wappes & Cline" (1 male, MZSP); same locality, but "Reserva Nat. Potrelillos d/ Guenda 16-22 Oct 2006;/ Wappes, Nearn & Eya; Snake Farm/ 17° 40. 26S, 063° 27. 43W/ Elevation 400 meters" (1 female, dissected, FSCA); "Bolivia: Santa Cruz Dept.; 3.7 km SSE Buena Vista/ Hotel Flora y Fauna, ~400m/ 17°29'S, 63°33'W; 8.V.2004, A. Cline & J. Wappes/ ex. beating veg" (1 male, CMNC).

Description of holotype (male). Length (rostrum excluded): 5.2 mm. Integument shiny, dark reddish brown, rostrum, antennae and tarsi reddish brown; body vestiture formed by long, curved, white setae on prothorax, elytra, femora, meso-, metaventrite and ventrites.



FIGURES 1–5. *Sicoderus robini* sp. nov. 1, 3, 4 male holotype (length: 5.2 mm, rostrum excluded). 1, habitus, dorsal view; 3, head and base of rostrum; 4, habitus, lateral view. 2, 5 female paratype (length: 4.7 mm, rostrum excluded). 2, habitus, dorsal view; 5, habitus, lateral view. Scale = 1 mm.



FIGURES 6–12. *Sicoderus robini* sp. nov. 6–9, male holotype. 6, ventrites, lateral view; 7, ventrites, ventral view (scale = 0.2 mm); 8, aedeagus, dorsal view; 9, aedeagus, lateral view (scale = 0.2 mm). 10–12, female paratype. 10, spermatheca with gland; 11, coxites and style, lateral view; 12, coxites and style, dorsal view (scale = 0.2 mm).

Head (Plate 1). Eyes separated by distance equal to 5 diameters of one ommatidium; greatest diameter of eye 1.9 times height of rostrum at base. Rostrum evenly curved, 1.2 times as long as elytra, sulcate above scrobes; antennal insertion slightly pre-median (0.49). Antenna with article II of funicle 1.7 times length of article I and 1.2 times length of article III.

Prothorax (Plate 1) 1.1 times as long as wide, feebly constricted anteriorly, globose between anterior and posterior constrictions; globose portion with deep and coarse punctures, very approximate and forming striolae; dorsal carina absent in middle of pronotal disc; setae distributed over entire prothorax.

Elytra (Plate 1) about 2.0 times as long as wide, constricted before prominent humeral angle; in dorsal view widest slightly before middle, lateral margins convergent both anteriorly and posteriorly, apices conjointly rounded; strial punctures shallow, moderately fine; stria I on elytral disc formed by elongate punctures, separate from each other by distance of about 2 to 3 times length of one puncture; elytral setae aligned forming row on even-numbered striae 2 to 10. Hind wings fully developed.

Abdomen (Figs 6 and 7). Suture between ventrites I and II moderately sinuous. Ventrite I raised in middle near distal margin forming tuberculiform process with small, curved, subtriangular setiferous pit; ventrite V convex, with rounded subapical tubercle bearing patch of short erect setae.

Legs (Figs. 4 and 5). Pro-, meso- and metafemora with minute, triangular, ventral tooth. Tarsal claws appendiculate.

Aedeagus (Figs 8 and 9). Median lobe long and slender, about 4.3 times as long as wide (length considered from apex to basal margins which contains endophallus, apophysis excluded), slightly shorter than basal apophysis (0.93X); anterior margin rounded, notched apically, with microsetae and one pair of long setae; median lobe slightly shorter (0.96X) than basal apodemes; endophallus bearing 14 dentiform sclerites and numerous microtrichiae.

Variation. The female paratype (Figs. 2 and 5) differs from males by the rostrum slightly longer (1.3 times as long as elytra) and less curved; abdominal ventrite I in middle near distal margin moderately swollen, but not tuberculate and setose as in male; ventrite V of female uniformly convex. The female pronotum is very similar to male in shape, setation and coarse punctuation, deep on disc and lateral sides. Female genitalia (Figs 10-12): coxite elongate (Fig. 11 and 12), about 4.25 times as long as wide; stylus apical, elongate, cylindrical, apex rounded and setulose; spermatheca (Fig. 10) C- shaped, slightly curved, ramus and collum well separated.

The length of the four male paratypes (rostrum excluded) varied from 4.5 to 5.4 mm and in the female paratype is 4.7 mm. The male paratypes have the rostrum similarly elongate as in the holotype (holotype 1.2 X, male paratypes 1.20–1.25 X, female paratype 1.3 times as long as elytra). The length proportions between antennomeres II/ I and II/III varied between the six specimens of the type-series. II/I: holotype 1.7 X, male paratypes 1.5–1.6 X, female paratype 1.5 X; II/III: holotype 1.2 X, male paratypes 1.3–1.6 X, female paratype 1.4 X.

Etymology. It is a great pleasure to name this species after the entomologist and ornithologist Robin Clarke, who was very hospitable, provided assistance in fieldwork and helped in various ways during our stay in Buena Vista.

Geographic distribution. Only known from the type locality.

Type locality. BOLIVIA. Santa Cruz de la Sierra: Buena Vista (El Cairo).

Remarks. The new species is easily included in the *Sicoderus appendiculatus* group of species by the following combination of characters: elytral stria 10 complete; body with long erect setae present on prothorax and elytra; sexual dimorphism conspicuous on male ventrite I, raised in middle near distal margin and forming tubercle with setiferous pit; median lobe of aedeagus slender.

Sicoderus robini is very similar to *S. apicalis*, a member of the *S. appendiculatus* species group distributed from southeastern Bahia to northeastern Minas Gerais (Brazil). Both species share the same sexual dimorphism in the male ventrites I and V: ventrite I raised in middle near distal margin forming a tuberculiform process with a small, subtriangular setiferous pit; ventrite V convex, with a rounded subapical tubercle bearing a patch of short erect setae. However, the two species can be distinguished by the following (characters of *S. apicalis* parenthesized): humeri produced and hind wings fully developed (humeri reduced and hind wings very reduced, scale-like); eyes separate by a distance equal to 5 diameters of one ommatidium (eyes more widely separated, distance equal to 6–7 diameters of one ommatidium); rostrum of male about 1.1 times as long as elytra (rostrum proportionately longer, about 1.3 times as long as elytra); endophallus of aedeagus with 14 dentiform sclerites (endophallus bearing smaller and more numerous sclerites); median lobe and basal apophysis of subequal length (median lobe proportionately shorter, basal apophysis 1.3X longer than median lobe).

Only two other species of *Sicoderus* have been reported to occur in Bolivia (Wibmer & O'Brien, 1986, 1989; Vanin, 1986): *S. antilope* (Fabricius, 1801) and *S. bolivianus* (Hustache, 1936). The former species belongs to the *S. antilope* species group, which is well characterized by the aedeagus with cylindrical median lobe, while the median lobe is slender in the species of the *S. appendiculatus* group. However, *S. antilope* resembles and may be confused with *S. robini* by the prothorax globose and striolate, by the body vestiture formed by long, curved, white setae present on prothorax, elytra, femora, meso-, metaventrite and ventrites. Nevertheless, *S. antilope* may be promptly distinguished by the eyes subcontiguous (widely separated in *S. apicalis*), the carinate pronotum (not

carinate in *S. apicalis*); and, by the protibiae toothed ventrally (not toothed in *S. apicalis*). The latter species, *S. bolivianus*, belongs to the *S. convexipennis* species group, but it is easily differentiated from *S. robini* by the rostrum much shorter than the elytra (longer in *S. apicalis*), by the smooth pronotum (striolate in *S. apicalis*), and by the glabrous prothorax and elytra (with erect setae in *S. apicalis*).

In the material received from CMNC and FSCA, besides the specimens of *S. robini*, we have found 4 females of another species of *Sicoderus* (2 exs CMNC, 2 exs FSCA), to which it was not possible to associate a male. The latter species also has the eyes separated by a distance equal to 5 diameters of one ommatidium, the elytral striae 10 complete and the body with long erect setae present on prothorax and elytra, differing mainly by the middle area of pronotal disk impunctate, and a slender pronotum and elytra. These females probably belong to an undescribed species of the *S. appendiculatus* group but are not described herein and await association with a male specimen.

The key to species of the *S. appendiculatus* group (Vanin 1986: 571) should be modified as follows to include the new species:

- 3(1) Male ventrite V flattened at middle. 4
 - Male ventrite V convex, tumid at apex. 6
 6(3) Rostrum of male about 1.1 times as long as elytra. Humeri reduced. Brachypterous, hind wings scale-like. Brazil
 *S. apicalis* Vanin
 - Rostrum of male proportionally longer, 1.20–1.25 times as long as elytra. Humeri rounded, prominent. Macropterous, hind wings fully developed. Bolivia *S. robini*, **sp. nov.**

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