

**A second species of the genus *Trichiopsammobius* Petrovitz, 1963
(Coleoptera: Scarabaeidae: Aphodiinae: Psammodiini: Psammodiina)**

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Abstract. A second species of the genus *Trichiopsammobius* Petrovitz, 1963 is described: *Trichiopsammobius drumonti* sp. nov. from Jamaica. It is illustrated and compared with the nominotypical species *Trichiopsammobius brasiliensis* Petrovitz, 1963. New faunistic data concerning the latter species are presented and the diagnosis of the genus is adjusted.

INTRODUCTION

In the course of a study of aphodiid specimens from the IRSNB (see below), the authors encountered a surprising finding: a new species of the genus *Trichiopsammobius* Petrovitz, 1963, which has still been known to contain a single species only: *Trichiopsammobius brasiliensis* Petrovitz, 1963 (reported by the author of the genus from Brazil). The status of the American species of Psammodiini including the consideration of the genus discussed here was treated by Gordon and Pitino (1992) who also reported the species from Venezuela. Principal information about the genus and species including appropriate illustrations can be found in the Generic Guide to New World Scarab Beetles by Skelley (2008). ESM photos of the species were also published by Chalumeau (1983).

Specimens of the two species were examined as described in Material and Methods. Results of examining the material and studying appropriate data from the literature are presented and discussed below.

MATERIAL AND METHODS

The MBS-10 and SZP 1120-T stereoscopic microscopes were employed in the observations. The photos published here were taken with the help of the Meopta laboratory microscope and CMOS 5 digital camera with the Helicon Focus programme.

The aedeagus was treated by boiling with a 10% sodium hydroxide solution.

The following abbreviations stand for collections, in which the specimens studied here are kept:

IRSNB Institut Royal des Sciences Naturelles de Belgique, Bruxelles, Belgium;

LM private collection of Ladislav Mencl, Týnec nad Labem, Czech Republic;

MR private collection of Miloslav Rakovič, Dobřichovice, Czech Republic;
NMPC National Museum, Praha, Czech Republic.

RESULTS

Genus *Trichiopsammobius* Petrovitz, 1963

Type species. *Trichiopsammobius brasiliensis* Petrovitz, 1963: 645, by original designation.

Diagnosis. Small (3.3 to 3.6 mm), elongate, dorsal surfaces with very fine microsculpture and thus only slightly shining, reddish brown to dark brown, setaceous. Head strongly convex, granulate, without posterior oblique ridges, clypeus either with a tooth or obtusely rounded each side of median emargination. Pronotum surface with rather dense, coarse, irregularly shaped and not very deep punctures. Pronotum without any traces of furrows or depressions. Elytral base margined. Elytral intervals transversely incised, small areas between the incisions producing more or less distinct hornlike, backward directed granules, each interval with a single row of particularly prominent, erect, pale setae. Metatibia widened at apex. Metatarsus elongate, basal metatarsite wider compared to remaining tarsites.

Distribution. Brazil, Jamaica, Paraguay, Venezuela.

Note. The genus diagnosis presented above was adjusted with taking into account characters of the new species described below (see also the part Discussion).

***Trichiopsammobius brasiliensis* Petrovitz, 1963**

(Figs 1, 3, 5, 7, 9-10)

Trichiopsammobius brasiliensis Petrovitz, 1963: 645.

Material studied. 1 specimen: Brazil-Mato Grosso, Juína env., 28.xi.-3.xii. 2012, F.Vaz-de-Mello lgt., (LM); 71 specimens: Brazil-Mato Grosso, 40 km NW Tangará da Serra, 3-9.xii.[20]12, F.Vaz-de-Mello lgt., (MR, LM, NMP); 5 specimens: Brazil-Mato Grosso, Diamantino, Vale da Solidão, 10-14.xii. [20]12, F.Vaz-de-Mello lgt., (LM); 1 specimen: Paraguay, Concepcion prov., 35 km E Concepcion, 1.ii.2008, J. Halada lgt., (MR).

Distribution. Brazil, Paraguay, Venezuela.

Notes. New to Paraguay. For a differentiation from the new species described here see the Key to *Trichiopsammobius* Species below. We did not feel need for any re-description, but many characters can be seen in Figs 1, 3, 5, 7, 9-10 (particularly when using their pdf version); a detailed analysis of certain characters is also available in the Key to *Trichiopsammobius* Species below. The aedeagus is first illustrated here (Figs 9-10).

***Trichiopsammobius drumonti* sp. nov.**

(Figs 2, 4, 6, 11-12)

Type specimen. Holotype (♂) bearing the following printed labels: 1) violet: Coll.I.R.Sc.N.B., Jamaica, Black River, beach, 23/25. IV. 1994, G. Haghebaert, 2) light green (referring to the photodocumentation system of the second author): 1642, Dok.L.Mencl, 2013; 3) red: HOLOTYPE, *Trichiopsammobius drumonti* sp. nov., M. Rakovič & L. Mencl det., 2013. Holotype deposited in (IRSNB).

Description. Small (3.35 mm), oblong oval, reddish brown (pronotum and head except clypeus margin darker than elytra), slightly shining, setaceous.

Head strongly convex, broadly obtusely rounded each side of median emargination, without distinct frontal suture; genae angulate (only very slightly rounded), their anterior margins aligned with clypeus margin. Head surface without posterior oblique ridges, mostly considerably granulate, vertex with medium-sized punctures; the granules together with the posteriorly situated punctures tending to form a not quite distinct concentric arrangement; granules decreasing in size from median gibbosity toward essentially smooth clypeus margin (Fig 2).

Pronotum (Fig. 2) wider than long, widest at about middle, lateral margins and corners continuously arcuate. Pronotum surface setaceous, with densely distributed, coarse, not very deep, rather irregularly shaped punctures throughout. Lateral margins and posterior corners with few moderately sharp, tough setae.

Scutellum small, triangular, its surface uneven.

Elytra elongate, broadest behind middle (Fig. 2), with ten striae and ten intervals, humeral teeth indistinct. Striae narrow, intervals wide, convex (but not costate), sculpture of intervals as mentioned above in the genus diagnosis.

Protibia normal, with three large teeth and indistinct denticles at base, the anterior tooth directed forward; upper face with few fine punctures at inner margin and row of few setigerous fine punctures along outer margin. Metatibia widened apically, with a longitudinal row of distinct teeth on outer face; basal metatarsite moderately dilated, superior terminal spur as long as first and second metatarsites combined.

Ventral side punctate and setaceous; for arrangement of the punctures and setae see Fig. 8.

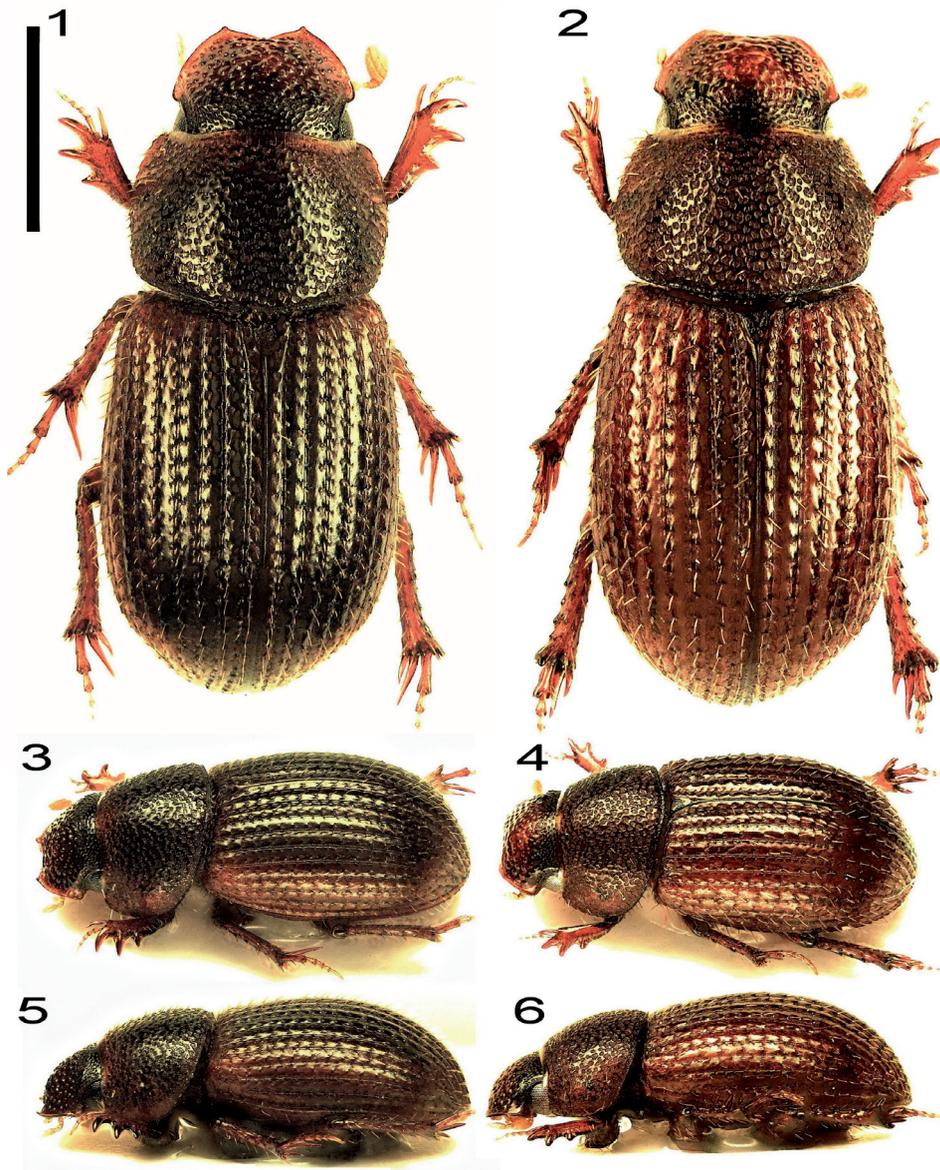
Aedeagus as in Figs 11-12.

Sexual dimorphism. Female unknown.

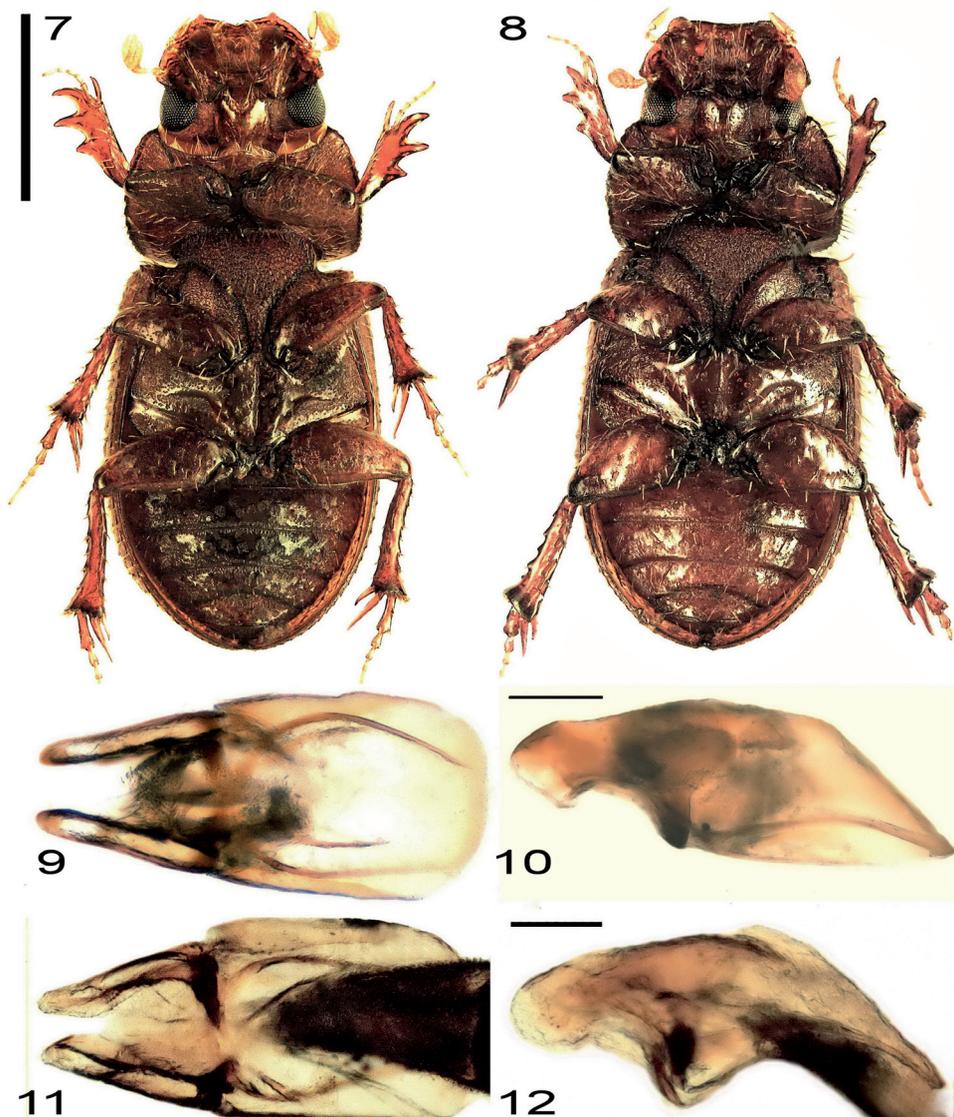
Differential diagnosis. For the differentiation from the species *Trichiopsammobius brasiliensis* Petrovitz, 1963 see the Key to *Trichiopsammobius* Species below.

Distribution. Jamaica.

Name derivation. Patronymic. Named after our friend and colleague Alain Drumont (IRSNB) who continues supplying the first author with interesting material for study and identification.



Figs 1-6. Habitus, dorsal, dorsolateral and lateral aspects: 1- *Trichiopsammobius brasiliensis* Petrovitz, 1963, ♂ from Brazil, dorsal view; 2- *Trichiopsammobius drumonti* sp. nov., ♂ holotype, dorsal view; 3- *Trichiopsammobius brasiliensis* Petrovitz, 1963, ♂ from Brazil, dorsolateral view; 4- *Trichiopsammobius drumonti* sp. nov., ♂ holotype, dorsolateral view; 5- *Trichiopsammobius brasiliensis* Petrovitz, 1963, ♂ from Brazil, lateral view; 6- *Trichiopsammobius drumonti* sp. nov., ♂ holotype, lateral view. Scale lines 1 mm.



Figs 7-12. Habitus (underside), aedeagus: 7- *Trichiopsammobius brasiliensis* Petrovitz, 1963, ♂ from Brazil, ventral view; 8- *Trichiopsammobius drumonti* sp. nov., ♂ holotype, ventral view; 9- *Trichiopsammobius brasiliensis* Petrovitz, 1963, ♂ from Brazil, aedeagus, dorsal view; 10- *Trichiopsammobius brasiliensis* Petrovitz, 1963, ♂ from Brazil, aedeagus, lateral view; 11- *Trichiopsammobius drumonti* sp. nov., ♂ holotype, aedeagus, dorsal view; 12- *Trichiopsammobius drumonti* sp. nov., ♂ holotype, aedeagus, lateral view. Scale lines 1 mm for underside, 0.1 mm for aedeagus.

KEY TO *TRICHIOPSAMMOBIUS* SPECIES

- 1(2) Clypeus with a distinct, sharp tooth each side of (relatively deeper and narrower) median emargination (Fig. 1). Genae angulate, but moderately rounded. Granules on head mostly round posteriorly and rather transversal anteriorly. Shape of punctures on pronotal surface as in Fig. 1. First tooth of protibia arcuate, directed sideward. Basal metatarsite moderately dilated apically. Metafemur slimmer (Fig. 7). Reddish brown to dark brown, 3.3-3.6 mm. Brazil, Paraguay, Venezuela *Trichiopsammobius brasiliensis* Petrovitz, 1963
- 2(1) Clypeus broadly rounded each side of (relatively shallower and broader) median emargination (Fig. 2). Genae angulate, only very slightly rounded. Granules on head rather transversal anteriorly and longitudinal posteriorly (with tendency to their concentric arrangement). Shape of punctures on pronotal surface as in Fig. 2. First tooth of protibia straight, directed forward. Basal metatarsite rather continuously widening from its base to its apex. Metafemur shorter and wider (Fig. 8). Reddish brown, 3.35 mm. Jamaica
..... *Trichiopsammobius drumonti* sp. nov.

DISCUSSION

Most genera of the tribe Psammodiini exert an either complete (five transverse ridges, five transverse furrows and posterior longitudinal furrow) or reduced (lateral impressions and sometimes also vestigial posterior longitudinal furrow) pronotal structure (Rakovič, 1987). Fifteen genera of the subfamily Psammodiinae are recognized from the Western Hemisphere (Skelley, 2008). Only three of them have setaceous dorsal surfaces: *Trichiorhyssemus* Clouët, 1901, *Mysarus* Petrovitz, 1962 and *Trichiopsammobius* Petrovitz, 1963. *Trichiorhyssemus* species have the complete pronotal structure and the single species of the genus *Mysarus* (*M. peruanus* Petrovitz, 1962) has weak transverse depressions. *Trichiopsammobius* can be thus easily separated from other genera (not only from the setaceous ones) due to the total absence of any depressed area on its pronotum (see the genus diagnosis above), which is a unique feature within Psammodiinae.

The study of the two currently known species shows that the genus is very homogeneous, but the species can be reliably separated each from other particularly based on the shape of the clypeus, but also by using further characters mentioned in the Key to *Trichiopsammobius* Species. Given knowledge of the new species described here, the presence of a tooth each side of the clypeus median emargination is no more applicable to the diagnosis of the genus.

In our previous works and also in works of some other European authors dealing with these groups, the concept of the family Aphodiidae, subfamily Psammodiinae and tribe Psammodiini was employed. In the present work, we speak about the family Scarabaeidae, subfamily Aphodiinae, tribe Psammodiini and subtribe Psammodiina, respectively, in accordance with the family group names as suggested by Bouchard et al. (2011) to reach formal agreement with other authors within the journal, although this approach does not strictly adhere to our opinions. We believe that “subfamilies” with exposed mandibles should not be put in one family together with those having mandibles completely covered by the clypeus. There is also a question of the formerly widely adopted concept of Srarabaeoidea laparosticti and Scarabaeoidea pleurosticti, which seems to be abandoned in the work quoted here, but the arrangement of the list of subfamilies (which is not alphabetical) actually reminds of this concept (the first part of the list includes laparostict groups and is followed by the second part, where pleurostict groups are kept together).

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