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Plaumanniola simplicissima n. sp. from Bolivia (Coleoptera: Staphylinidae: Scydmaeninae)

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Abstract. *Plaumanniola simplicissima* n. sp. is described and illustrated. This is the third species of this unusual genus of the tribe Plaumanniolini, and the present finding extends the range of *Plaumanniola* to the central part of Bolivia (hitherto known only from southern and northern Brazil). The new species seems to be the least morphologically modified *Plaumanniola*, showing relatively weakly broadened head, only slightly flattened legs and long antennae, not so compact as in the previously known congeners.

Key words: entomology, taxonomy, Coleoptera, Staphylinidae, Scydmaeninae, Plaumanniolini, *Plaumanniola*, new species, Nearctic, Bolivia.

INTRODUCTION

The enigmatic genus *Plaumanniola* Costa Lima, 1962 was recently reviewed and the morphology of its only genus *Plaumanniola* Costa Lima, 1962 was described and discussed (Jałoszyński 2013). Costa Lima (1962) originally placed *Plaumanniola* in Ptinidae, in a new subfamily Plaumanniolinae. Lawrence & Reichardt (1966) re-examined a paratype of the type species of *Plaumanniola*, *P. sanctaecatharinae* Costa Lima, 1962, and recognized this taxon as a member of ant-like stone beetles (at that time a family Scydmaenidae), where it still belongs, in the tribe Plaumanniolini of Scydmaenitae (Newton & Franz 1998).

Plaumanniola sanctaecatharinae was initially known only from the type locality in the Brazilian state Santa Catarina. Later Lenko (1972) recorded the same species from São Paulo state, provided a habitus illustration of the beetle and gave some new ecological observations regarding a possible myrmecophily of *Plaumanniola* as a putative inquiline of the ant genus *Octostruma* Forel. Later Franz (1990) redescribed

P. sanctaecatharinae on the basis of specimens from Amazonas state. Jałoszyński (2013) found this redescription based on a misidentified new species, and described *P. regina* Jałoszyński, 2013. Another total habitus illustration presented by O'Keefe (2000, 2005) was also found to show a misidentified species and not *P. sanctaecatharinae* (Jałoszyński 2013).

In a sample of Scydmaeninae collected in Bolivia and sent to me for study I found a new species of *Plaumanniola*. It differs from the two previously described in much less compact body, which is not as strongly broadened as that of *P. sanctaecatharinae* and *P. regina*. The head is rather moderately modified, not extremely broadened as in those two species, and also the antennae are strikingly long. If the previously known species of this genus are indeed myrmecophiles, as postulated by Costa Lima (1962), Lenko (1972) and O'Keefe (2000), and their stout bodies with broad heads enabling them to curl into a ball, the short and compact antennae and broadened and flattened legs are adaptations toward living within ant colonies, then the new species may show an early stage of developing such modifications, or losing them. In any case, this discovery remarkably broadens the range of the morphological diversity of *Plaumanniola*.

METHODS

The studied specimen, originally preserved in ethanol, was dissected and dry-mounted. The aedeagus was mounted in Canada balsam. Habitus images were taken by a Nikon Coolpix 4500 camera mounted on a Nikon Eclipse 1500 stereoscopic microscope, translucent structures in transparent mounts were photographed by a KY-F75U (JVC) camera mounted on a Leica M205 C microscope. Image stacks were processed using COMBINE ZP (Hadley 2010). Details of morphology were figured by a freehand drawing, with exact proportions and general shapes sketched from photographs. Morphological terms are used after Jałoszyński (2013). The measurements and abbreviations used in the descriptive part are as follows:

AeL - length of aedeagus;

AnL - length of antennae measured in ventral view, to include antennal base concealed under anterior margin of frontoclypeal region;

BL - body length, a sum of lengths of head, pronotum and elytra measured separately;

EI - elytral index, length of elytra divided by their combined width;

EL - length of elytra measured along suture, from base to apex;

EW - maximum width of elytra, combined;

HW - width of head, including eyes;

HL - length of head measured in dorsal view from anterior margin of frontoclypeal region to the posterior margin of vertex;

PL - length of pronotum measured along midline;

PW - width of pronotum.

The type material is deposited in the private collection of S. B. Peck, Ottawa, Canada (cSBP; later it will be deposited in the Canadian Museum of Nature insect collection).

TAXONOMY

***Plaumanniola simplicissima* n. sp.**

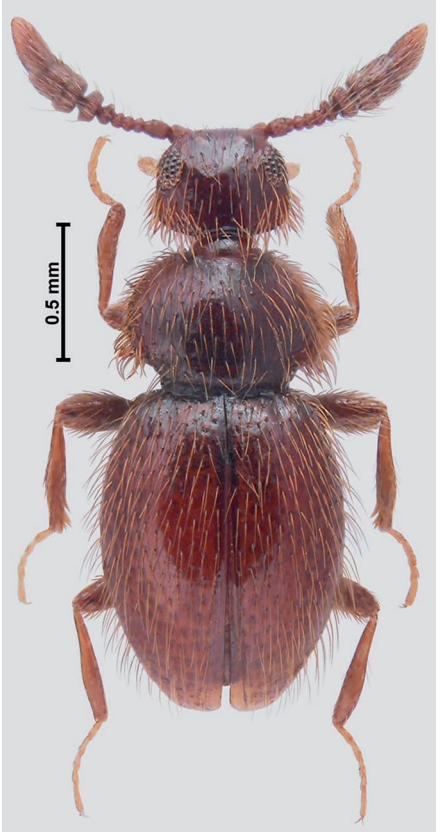
(Figs. 1-7)

Name derivation

The name *simplicissima* (Latin "the simplest") refers to the weakly modified body of the new species compared to previously known ones.

Diagnosis

Male: BL < 2 mm; antennae thickened from antennomere VII; tempora about as long as eyes; head in dorsal view weakly broadening posteriorly; each paramere with three setae.



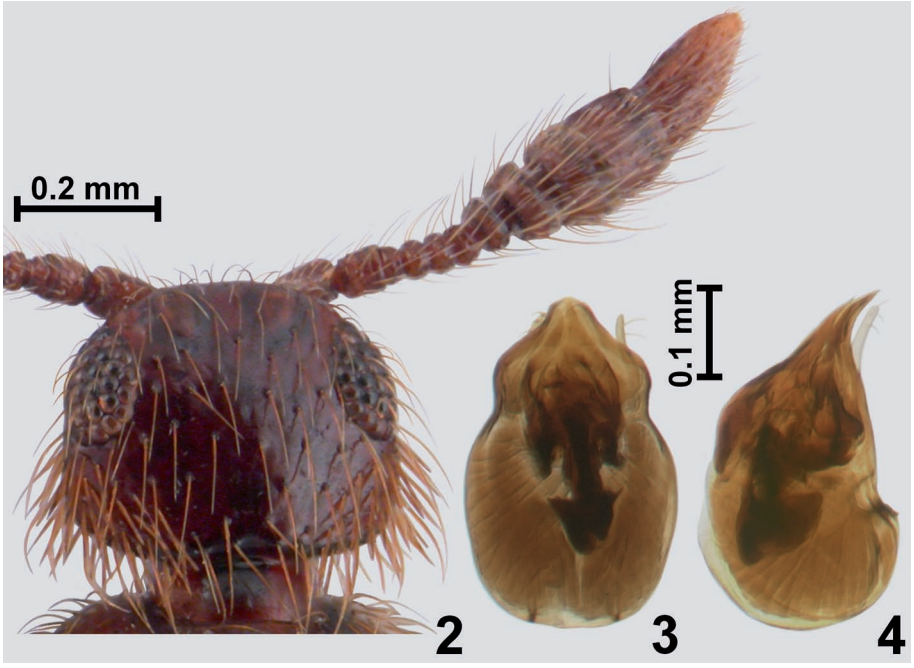
1. *Plaumanniola simplicissima* n. sp., dorsal habitus of holotype male

Description

Male (Figs. 1-6). Body (Fig. 1) moderately stout and convex, dark brown, covered with vestiture slightly lighter than cuticle. BL 1.80 mm.

Head (Fig. 2) in dorsal view subtrapezoidal but only slightly narrowing anteriorly, strongly flattened, broadest at posterior margin of vertex, HL 0.25 mm, HW 0.45 mm; vertex strongly transverse and only weakly, evenly convex with arcuate posterior margin; tempora about as long as eyes in dorsal view; frons posteriorly confluent with vertex, in middle between eyes slightly more convex than on side; supraantennal tubercles indistinctly demarcated from surrounding areas and low but distinct; compound eyes moderately large, with deeply emarginated posterior margin. Vertex and frons glossy, covered with sparse and small setiferous punctures with sharp and slightly raised margins, separated by spaces as long as 3-5 puncture diameters; punctures on tempora distinctly denser. Setae on head dorsum sparse and long, curved and suberect, directed posteriorly; tempora and posterior margin of vertex with dense bristles and setae. Antennae short, strongly thickening distally from antennomere VI, AnL 0.75, antennomeres as in Fig. 2. All antennomeres covered densely with long, suberect setae.

Pronotum distinctly more convex than head, approximately oval, broadest near middle; PL 0.48 mm, PW 0.70 mm. Anterior and lateral margins confluent, anterior pronotal corners not marked; anterior margin arcuate and slightly concave just behind head; lateral margins strongly rounded; posterior pronotal corners barely discernible,



2-4. *Plaumanniola simplicissima* n. sp., head in dorsal view (2); aedeagus in ventral (3) and lateral (4) views

strongly obtuse; base of pronotum in middle strongly and abruptly projecting posteriorly, forming short and broad subtrapezoidal lobe over base of elytra demarcated laterally by obtuse angles; posterior pronotal margin nearly straight. Punctures as small and distinct as those on vertex and frons but denser, separated by spaces 2-3 times as wide as puncture diameters; setae sparse in middle and distinctly denser on sides of pronotum, moderately long, suberect.

Elytra more convex than pronotum, oval, broadest slightly anterior to middle; EL 1.08 mm, EW 0.85 mm, EI 1.26. Punctures slightly larger and deeper than those on pronotum, separated by spaces 2-3 times as wide as puncture diameters; setae similar to those on head and pronotum but slightly longer and more erect.

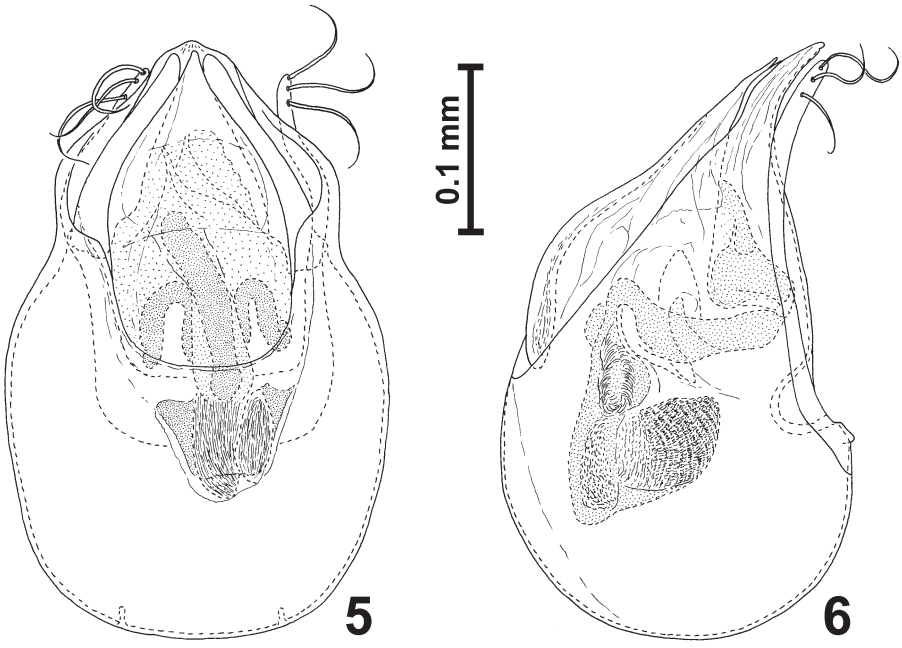
Legs short and robust; all tibiae broadest near distal third and slightly flattened only in proximal half or less; protibiae distinctly and mesotibiae slightly curved inwards in distal third; metatibiae nearly straight.

Aedeagus (Figs. 3-6) pear-shaped; AeL 0.35 mm; median lobe in ventral view with subtrapezoidal apical part; internal armature complex and partly asymmetrical, with darkly sclerotized and massive median structures; parameres slender, in lateral view curved, each with one apical and two subapical setae.

Female. Unknown.

Type material

Holotype (male), two labels: "**BOLIVIA:** Cochabamba Dept. / Est. Biol. Sacta, / Univ. Mayor S. Simeon, 300 m / S17º06.48' W64º46.94', 16-27.xii.2005 / rainforest

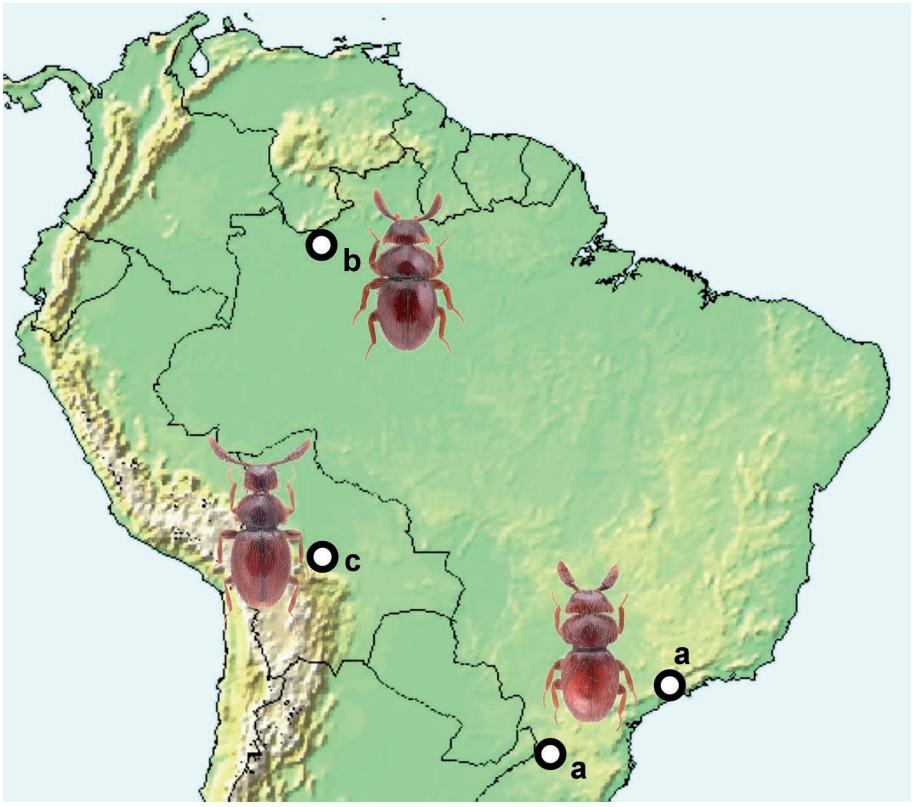


5-6. *Plaumanniola simplicissima* n. sp. Aedeagus in ventral (5) and lateral (6) views

FIT / leg. S. & J. Peck, 05-47" [white, printed], "*PLAUMANNIOLA* / *simplicissima* m. / det. P. JAŁOSZYŃSKI, '14 / HOLOTYPUS' [red, printed] (cSBP).

Distribution

Central Bolivia (Fig. 7).



7. Distribution of *Plaumanniola*. *Plaumanniola sanctaecatharinae* Costa Lima (a), *P. regina* Jałoszyński (b) and *P. simplicissima* n. sp. (c)

Remarks

This is the smallest and most slender species of *Plaumanniola*, readily identifiable on the basis of the general body shape, long antennae and weakly broadened head.

Acknowledgments

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