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Description of a new species of the stag beetle genus *Altitatiayus* Weinreich (Coleoptera, Lucanidae, Lucaninae)

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Abstract. The brachypterous Brazilian stag beetle genus *Altitatiayus* Weinreich (Coleoptera, Lucanidae, Lucaninae) was previously known only from states of Minas Gerais and Rio de Janeiro. *Altitatiayus campoi*, a **new species** from São Paulo, the southernmost in distribution, is described here and apparently represents a new species group with some exclusive characters. It is compared with other species of the genus and a key to species of *Altitatiayus* is provided.

Key words. *Altitatiayus*, brachypterous species, Brazil, Pico dos Marins, taxonomy.

Resumo. O gênero braquíptero de lucanídeo brasileiro *Altitatiayus* Weinreich (Coleoptera, Lucanidae, Lucaninae) era conhecido somente dos estados de Minas Gerais e Rio de Janeiro. *Altitatiayus campoi*, uma **nova espécie** do estado de São Paulo, a distribuição mais ao Sul, é descrita e aparentemente representa um novo grupo de espécies com alguns caracteres exclusivos. A nova espécie é comparada com as outras do gênero e uma chave de identificação é fornecida.

Palavras chave. *Altitatiayus*, Brasil, espécies braquípteras, Pico dos Marins, taxonomia.

Introduction

The genus *Altitatiayus* Weinreich, 1960 (Coleoptera, Lucanidae, Lucaninae) was recently revised and is represented by six species, all found in the Serra da Mantiqueira Mountains near Minas Gerais, Rio de Janeiro, and São Paulo States borders (Grossi and Almeida 2011). Members of the genus can be readily distinguished from other South American genera by their strongly convex body combined with the glabrous surface, flattened wide anterior tibiae, and elytra with punctate striae and non carinate interstriae (Grossi and Paulsen 2009).

The specimens described here were only recently discovered by RMK on the highest peak in São Paulo State, collaborating observations that members of *Altitatiayus* only occur above 2000 meters in elevation. This constitutes a new state record and is the southernmost distribution for the genus, confirming that more new species may be found in this poorly sampled region. The new species was found walking on the ground (Fig. 3) and is expected to have the same natural history as described by Nagel (1934) for *A. ruficollis* (Lüderwaldt). Now the genus has seven known species. Efforts should be made to correctly determine the full distribution of *Altitatiayus*.

Materials

Specimens studied are deposited in the following collections:

DZUP Coleção Entomológica Padre Jesús Santiago Moure, Universidade Federal do Paraná, Curitiba, Paraná, Brazil (L. M. Almeida)

EPGC Everardo and Paschoal Grossi Collection, Nova Friburgo, Rio de Janeiro, Brazil
RMKC Ricardo Mitsumiro Koike Collection, São Paulo, Brazil

Key to the species of *Altitatiayus* (modified from Grossi and Almeida 2011)

1 Male mandibles with bifurcate or trifurcate apex **2**
— Male mandibles with simple apex, not bifurcate or trifurcate. São Paulo, Piquete (Pico dos Marins) ..... ***A. campoi* sp. nov.**

2(1). Male mandibles longer than head in lateral view. Female head slightly convex on disc; pronotum entirely punctate, punctures moderate to coarse. Clean specimens without blue iridescence **3**
— Male mandibles shorter than head in lateral view. Female head concave on disc; pronotum smooth, finely punctate. Clean specimens with blue iridescence **6**

3(2). Male head near anterior margin at middle with a conspicuous process. Mandibles with apex trilobed. Female unknown. Minas Gerais, Passa Quatro (Serra Fina) ..... ***A. trifurcatus* (Grossi and Racca-Filho)**
— Male head simple, without any process. Mandibles with apex bilobed. **4**

4(3). Male mandibles robust, with apical bifurcation wide and with at most 3 internal teeth. Female canthi projected laterally; internally with a strong and hollowed dorsal concavity; pronotal disc moderately densely punctate; puncture size moderate. Elytra with lines of moderately sized punctures. Rio de Janeiro, Itatiaia (Vale das Prateleiras) ..... ***A. rotundatus* (Boileau)**
— Male mandibles slender with apical bifurcation narrow. Female without the combination of characters listed above **5**

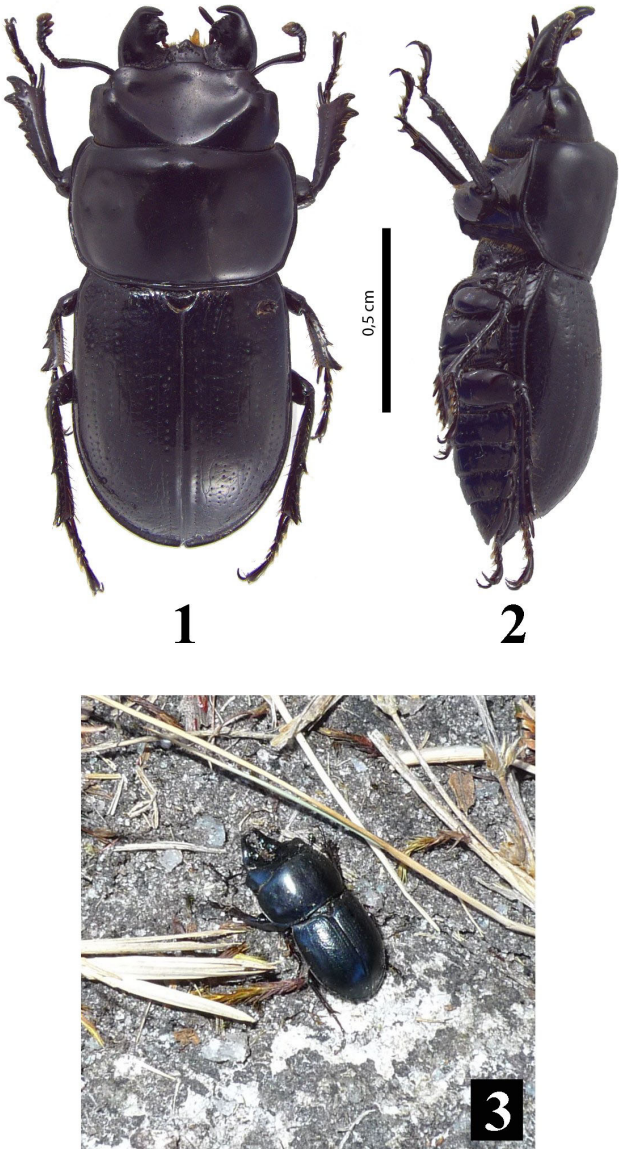
5(4). Male pronotum projecting forward and with a small pit at middle. Female canthi not projected, in the same plane as eye surface, concavity when present situated more laterally; pronotal disc densely punctate; puncture size large. Elytra with lines of large to coarse punctures. Minas Gerais, Itamonte (Serra Negra) ..... ***A. dulceae* (Bomans and Arnaud)**
— Male pronotum not projecting forward, widely concave anteriorly. Female canthi less concave than *A. dulceae*; pronotal disc moderately punctate; punctures moderate. Elytra with lines of fine to moderate punctures. Rio de Janeiro, Itatiaia (Morro do Couto) ..... ***A. godinhorum* (Bomans and Arnaud)**

6(2). Male mandibles with a strong upturned basal tooth; pronotum in both sexes reddish, with anterior margin slightly concave. Elytra black; elytral punctures fine. Rio de Janeiro, Itatiaia (Pico das Agulhas Negras) ..... ***A. ruficollis* (Lüderwaldt)**
— Male unknown. Female pronotum and elytra totally red. Anterior pronotal margin simply convex. Elytral punctures moderate to large. Minas Gerais, Passa Quatro (Serra Fina) ..... ***A. koikei* Grossi**

***Altitatiayus campoi* Grossi and Koike, new species**

Type material examined. (4 males, and the following fragments: 2 male heads, 3 male elytra, and one female pronotum and elytra). Holotype male labeled: a) "BRASIL, São Paulo, Piquete/ Pico dos Marins, Próx. Maciço/ do Ribeirão, 19-V-2008, 2300 m/ R. C. G. da Costa leg."; b) red label "*Altitatiayus campoi* / HOLOTYPUS/ Grossi & Koike", (ex. EPGC deposited at DZUP). Paratype male labeled as holotype except by 2420 m, 24-vi-2011 (EPGC). Two paratypes male labeled as holotype except by 10-VII-2011, 2380 m, K. M. Koike leg. (EPGC and RMKC). Paratype males (2 heads) 10-VII-2011, 2380 m, K. M. Koike leg. (EPGC). Paratype males (3 elytra) 10-VII-2011, 2380 m, K.M. Koike leg. (DZUP). Paratype female (pronotum and elytra glued together on the same label) 10-VII-2011, 2380 m, K.M. Koike leg. (DZUP). All paratypes labeled as holotype except by the yellow label and "PARATYPUS".

Holotype male description. ***Length*****:** 14.7 mm. ***Width*****:** 6.1 mm. ***Color*****:** Body entirely black, except for lightened areas on femora and tibiae (Fig. 1-2). ***Head*****:** Shape transverse, 2.2 times wider than long; anterior margin bisinuate; ocular canthi subquadrate, anteriorly with an elevated vertical carina; canthi 1/2 half width of eye; surface finely punctate, punctures fine; disc declivous and weakly concave, vertex nearly parabolic; temporal process weakly developed. Mandibles symmetrical, upturned with apex incurved, apex rounded, not bifurcate; internal margin with 1 large irregular subtriangular tooth bearing 3 smaller teeth, anterior 2 teeth obtuse to rounded, basal tooth acute; at base from internal to external margins with a weak dorsal convex process. Labrum with a triangular median projection, dorsal surface with two convergent rows of setae. Mentum elliptical, anterior margin emarginate; surface punctate, punctures moderate, setose, and concentrated at margins. ***Pronotum*****:** Shape transverse, 1.5 times wider than long, weakly convex; punctate as on head; anterior margin with two obsolete tubercles; border incomplete anteriorly at middle; anterior lateral angles rounded; lateral margin sinuate; posterior angles weakly produced, rounded. ***Scutellum*****:** Form crescent-shaped, fine punctures concentrated on disc. ***Elytra*****:** Shape moderate, as long as head and pronotum together; sides parallel; anteriorly and posteriorly convergent; humeri angulate; disc with 7 strial lines of small punctures, with some scratched longitudinal lines in intervals. ***Legs*****:** Anterior tibiae with 4–5 external teeth, teeth increasing in size distally; mesotibiae with one median large tooth and 2–3 smaller teeth near base; metatibiae with 1 external tooth at middle. ***Male genitalia*****:** Aedeagus symmetrical, median lobe elongate with parallel sides and a narrow emargination reaching the end of the first basal half, in lateral view apex upturned with convex ventral process; internal sac as long as aedeagus with apex globosely enlarged.



Figures 1-3. *Altitatiayus campoi* n. sp., male habitus. **1-2)** Male holotype, dorsal and lateral views. **3)** Male paratype walking on the ground near the peak of Pico dos Marins.

Female. Only a pronotum and elytra known. ***Pronotum*****:** Shape less transverse; anterior margin complete, with no tubercles; anterior margin at middle rounded; lateral margins more distinctly rounded. ***Elytra*****:** Shape less elongate with sides more distinctly rounded.

Variation. Paratype males differ in the following characters. ***Length*****:** 14.5-18.0 mm. ***Width*****:** 6.0-7.5 mm. ***Head*****:** Disc deeply concave; temporal process can be distinctly developed on major males. Mandibles with large subtriangular tooth bearing 0-4 smaller teeth; dorsal process transversely carinate. ***Legs*****:** All tibiae can be red colored.

Diagnosis. Males of the new species can be easily distinguished from males of the remaining species of the genus by their mandibular shape with a simply rounded (not bifurcate or trifurcate) apex. In addition

they have slightly backwardly curved mandibles; pronotum with the anterior margin weakly lobed, and nearly obsolete elytral striae consisting of only small punctures. The simple mandibular apex is the main character differentiating this species from the others. This makes it a weak generic character.

Etymology. The specific epithet is to honor the collector of the first specimens, Rafael Campo Gomes da Costa, who accompanies RMK on collecting trips.

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Literature Cited

Grossi, P. C., and L. M. Almeida. 2011. Revision of the genus *Altitatiayus* Weinreich (Coleoptera, Lucanidae, Lucaninae). Revista Brasileira de Entomologia 54(4): 588-600.

Grossi, P. C., and M. J. Paulsen. 2009. Generic limits in South American stag beetles: taxa currently misplaced in *Sclerostomus* Burmeister (Coleoptera: Lucanidae: Lucaninae: Sclerostomini). Zootaxa 2139: 23-42.

Nagel, P. 1934. Zur Systematik und Biologie von *Sclerostomus ruficollis* Luederwaldt, nebst Beschreibung der Larve (Col. Lucanidae). Revista de Entomologia, Rio de Janeiro, 4: 429-435.

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