



First report of *Balgus rugosus* (Blanchard, 1843) (Coleoptera: Elateridae: Thylacosterninae) in Paraguay

Primer reporte de *Balgus rugosus* (Blanchard, 1843) (Coleoptera: Elateridae: Thylacosterninae) en Paraguay

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Abstract.- The species *Balgus rugosus* (Blanchard, 1843) (Coleoptera: Elateridae: Thylacosterninae) is recorded from Paraguay (new country record). This is also the first report of any species of *Balgus* Fleutiaux, 1920 in Paraguay (*sensu* Barbosa, 2016).

Key words: *new country record, distribution, size range, click beetle, aedeagus.*

Resumen.- Este es el primer registro de la especie *Balgus rugosus* (Blanchard, 1843) (Coleoptera: Elateridae: Thylacosterninae) para Paraguay (registro nuevo del país). Este es también el primer informe de cualquier especie de *Balgus* Fleutiaux, 1920 para Paraguay (*sensu* Barbosa, 2016).

Palabras clave: *primer reporte, distribución, variación de tamaño, edeago*

Recent expeditions to Paraguay are producing a tremendous amount of material that will contribute to the known fauna of the country. One such trip produced several specimens of *Balgus rugosus* (Blanchard, 1843) (Coleoptera: Elateridae: Thylacosterninae), a species and genus not yet recorded from Paraguay (Barbosa, 2016). Originally described as *Pterotarsus rugosus* Blanchard, 1843, this species was reassigned by Fleutiaux (1920) to his new genus *Balgus* Fleutiaux. The genus *Balgus* was recently revised by Barbosa (2016), who included a well-illustrated distribution (Barbosa, 2016; fig. 14) and bibliography for *B. rugosus*. Here we present and discuss a new country record for this species in Paraguay.

Materials and methods

Specimens were collected during a scientific expedition led by Dr. John B. Heppner (Lepidoptera Expeditions). Collections were made by beating foliage and light traps (sheets and bucket traps; mercury vapor and black light) during a three-week period in the field. Loca-

lity data are recorded verbatim and presented below under “Specimens Examined.” The GPS (Global Positioning System) coordinates are presented in the label data and can include a locality within one kilometer of our encampment. Specimens representing new distribution records were discovered by the first author and readily identified with the literature. Male specimens were dissected for examination of the genitalia.

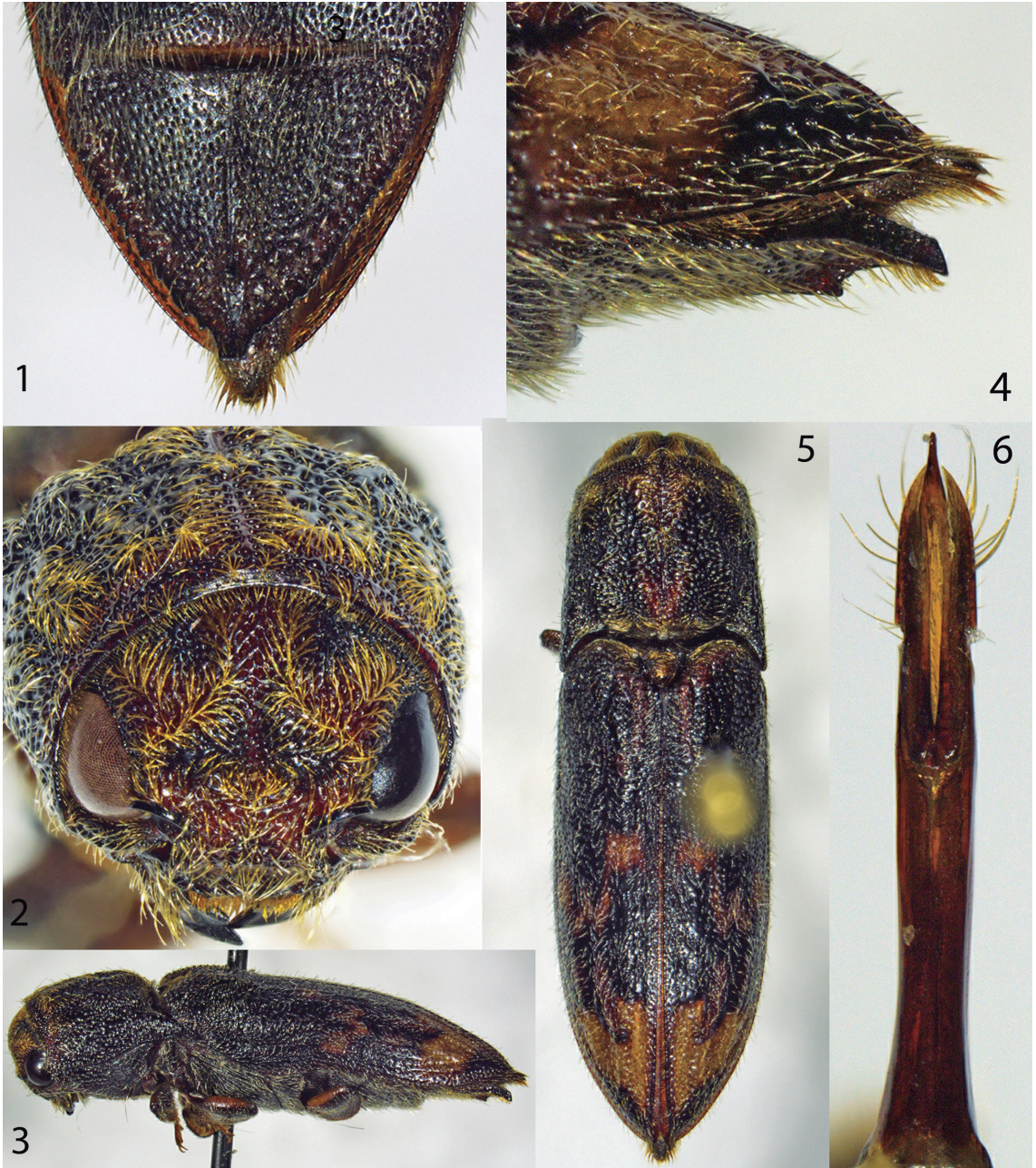
For this paper, five specimens from Paraguay were examined and deposited in the JMLC (John Leavengood, private collection, Brandon, Florida, USA) and IBNP (Inventario Biológico Nacional [Museo Nacional de Historia Natural del Paraguay], San Lorenzo, Paraguay). In addition, the Thylacosterninae of the FSCA (Florida State Collection of Arthropods, Gainesville, Florida, USA) were examined which included four species of *Balgus*, among them a series of *B. rugosus* from Bolivia. There were no specimens of *Balgus* in the IBNP prior to this study (*pers. comm.* Bolivar Garcete-Barrett).



Results and discussion

The collecting events recorded herein for *Balgus rugosus* (Blanchard, 1843) represent an extension of the known distribution of the species in a region that received little historical attention. Insect species may evade detection

(and subsequently, official report/publication), even in heavily collected areas, until a specific collecting method, season, site or host plant is targeted, or until a taxonomist recognizes such museum specimens as records of significance (e.g., Leavengood *et al.*, 2012; Leavengood *et*



Figures 1-6. *Balgus rugosus* (Blanchard, 1843). 1) Ventrite V. 2) Head. 3) Lateral habitus. 4) Lateral view of ventrite V. 5) Dorsal habitus. 6) Aedeagus.

al., 2017; Leavengood & McCoy, 2019). Of course, in many cases, certain taxa are ignored entirely by collectors.

Balgus rugosus (Blanchard, 1843)

Specimens Examined (5): PARAGUAY: GUAIRÁ DEPT.: Hotel Independencia, vic. Independencia, 10-20-XII-2019, JE Eger & JM Leavengood, 617 ft, S 25°43.069' W 56°16.443' (IBNP, 2; JMLC, 1); Hotel Independencia, vic. Independencia, 20-XII-2019, S 25°43.069' W 56°16.443', black light + mercury vapor, JE Eger & JM Leavengood (JMLC, 1); PARAGUARÍ DEPT.: vic. Hotel Gabriela, nr. Paraguari, S 25°35.630' W 057°07.495', Elevation 504 ft., MV + BL, Colls: W Tyson, JE Eger & JM Leavengood, 1-4-XII-2019 (JMLC, 1).

Distribution: This species was previously known from Belize, Bolivia, Brazil, Colombia, French Guiana, Mexico, Panama and Trinidad and Tobago (Chassain & Touroult, 2013; Barbosa, 2016). Paraguay is a **new country record** for the species as well as the genus *Balgus* (*sensu* Barbosa, 2016).

Remarks: The Guairá and Paraguari departments are in southeastern Paraguay. The nearest records previously published include Mato Grosso do Sul, Paraná, and Santa Catarina (Brazil) immediately to the north and east (Barbosa, 2016). Collections were made in both Atlantic Forest (Bosque Atlántico del Alto Paraná) and Humid Chaco Forest (Chaco Húmedo) ecoregions in highly fragmented natural habitats divided by extensive agricultural development (pastures and monocultures). Some of the specimens reported here are notably smaller than the size range presented by Barbosa (2016; 11.3-16.9 mm based on 25 individuals)—our five Paraguay specimens measure 9.1, 10.5, 11.2, 11.5, 12.1 mm. However, these measurements fall within the range reported by Chassain & Touroult (2013; 7.5-16.0 mm) and the morphology and color pattern (fig. 3, 5) are consistent with Barbosa's (2016) treatment of *B. rugosus*.

Diagnosis: Both sexes of *B. rugosus* are readily distinguished by the elytral color pattern (figs. 3, 5); the shape, apical process and central carina of ventrite V (figs. 1, 3, 4); and golden pubescence (figs. 2, 5). The male genitalia are also diagnostic (fig. 6).

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