



First record of *Macroductylus impressus* (Coleoptera: Scarabaeidae: Melolonthinae) from Veracruz, Mexico

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Abstract

Macroductylus impressus Bates, 1887 is a rare Mexican species, reported in the states of Puebla (municipality of Guadalupe Victoria) and Durango (La Michilía Biosphere Reserve). During an excursion to collect Melolonthinae specimens from the Cofre de Perote Volcano, a total of four adults of *Macroductylus impressus* were collected, which constitutes the first record of the species in the state of Veracruz. This new state record also reaches a new record in altitude, as samples were collected at 3270 m. a. s. l., and in latitude, since it represents the southernmost record of the species.

Keywords: Cofre de Perote Volcano, Macroductylini, new geographic record, rose chafers

Introduction

The American genus *Macroductylus* Dejean, 1821 (Melolonthinae: Macroductylini) includes 122 species, distributed from southeast Canada to south central Argentina and Chile (Arce-Pérez and Morón 2005; 2009; 2010; 2011; 2014; 2018; 2020; Evans and Smith 2009) [1-8]. In Mexico, 28 species have been registered (Arce-Pérez and Morón 2010) [3], with the highest diversity found in the states of México (12), Oaxaca (12), Chiapas (11), Michoacán (11), Puebla (9) and Durango (8) (Arce-Pérez and Morón 2000; 2009; 2010) [9, 2, 3]. *Macroductylus impressus* Bates, 1887 is a rare Mexican species, reported in the states of Puebla (Guadalupe Victoria municipality) and Durango (La Michilía Biosphere Reserve) in sub-humid temperate and cold environments, located between 2000 and 2500 m. a. s. l.; collected in rye crops (*Secale cereal* L.) and pine and oak vegetation (Arce-Pérez and Morón 2000) [9].

Materials and Methods

During an excursion to collect Melolonthinae from high mountains in Mexico, a pine-oak forest of the locality El Conejo, in the Cofre de Perote Volcano, Veracruz, was sampled, using entomological nets, between 10:00 am and 12:10 pm.

Results

A total of four adults of *Macroductylus impressus* (Fig. 1 a, b) were collected in a pine-oak forest, within the limits of the Cofre de Perote National Park.

Material examined: (2 ♂, 2 ♀, Fig. 1) MEXICO: Veracruz (First record), Cofre de Perote Volcano, El Conejo, “near

the cabins”, 19°31'24.6''N, and 97°09'37.1'' W, to 3270 m. a. s. l. 18-19/V/2018. Collected with entomological net, S. L. Rivera-Gasperín, A. Ramírez-Ponce, A. Ardila-Camacho, Y. Marquez-López, F. Escobar-Hernández collectors. The specimens are deposited in the Entomological Collection of the Institute of Ecology, A.C. (IEXA, 1 ♂, 2 ♀) and F. Escobar-Hernández Collection, Veracruz, Mexico (FEHC, 1 ♂).

Discussion

Macroductylus impressus (Figs. 1 a-d) belongs to the group IV of species (*M. subspinosus* species group) that is characterized by having clypeus flattened with truncated apex and sinuous, metasternum with rows of long setae running from the base of the mesocoxae to the base of the metacoxae, the largest spur of the mesotibiae recurved at the apex; the tarsi with rings of white setae on basal half, and parameres semicircular shaped, with rows of setae on the lateral edges of the apical half (Arce-Pérez and Morón 2000) [9].

In addition *M. impressus*, is separated from its sister species *M. lineatocollis* Bates, 1887 [in square brackets *M. lineatocollis*] for having a prosternal process bifid at the apex [not bifid at the apex], elytra reddish yellow [elytra yellow brown], with two wide bands of vestiture that run from the base to the apex, flanked by other narrower lateral bands [elytra without bands], mesotibiae with the largest spur lightly recurved at the apex [spur strongly curved at the apex], parameres semicircular shaped with scarce rows of setae on the lateral edges of the apical half [parameres oval shaped with abundant rows of sharp setae].



Fig 1: *Macroductylus impressus* collected in El Conejo, Cofre de Perote Volcano, Veracruz, Mexico. a) Dorsal habitus, b) Lateral view, c) Aedeagus in lateral view, d) Parameres in frontal view. Scale lines= 1 mm



Fig 2: Records of *Macroductylus impressus* in Durango (solid triangle), Puebla (solid square) and Veracruz (solid circle).

Conclusions

The origin of the genus is Neotropical and the species established in the Mexican Transition Zone correspond to the Mexican High Plateau distributional pattern and the Mesoamerican Mountain distributional pattern (Arce-Pérez and Morón 2000) ^[9]. Considering the records of Durango, Puebla and Veracruz, the distribution of *M. impressus* corresponds to the Mexican High Plateau distributional pattern (Halffter and Morrone, 2017) ^[10] (Fig. 2). *Macroductylus impressus* was collected in a pine-oak forest, within the limits of the Cofre de Perote National Park, which constitutes the first record of the species in the state of Veracruz. This new state registry also reaches a new record in altitude, as the specimens were collected at 3270 m. a. s. l., and in latitude, as it represents the southernmost distribution record of the species.

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