

SHORT NOTE

First record of the seed beetle *Merobruchus paquetae* (Chrysomelidae, Bruchinae) in the exotic tree *Leucaena leucocephala*

Primer registro del escarabajo *Merobruchus paquetae* (Chrysomelidae, Bruchinae) en el árbol exótico *Leucaena leucocephala*

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ABSTRACT

We record for the first time the host association of the seed beetle *Merobruchus paquetae* with the invasive legume tree *Leucaena leucocephala*. This species of beetle was associated in Colombia to the native legume tree *Pseudosamanea guachapele*.

Keywords. Bruchinae, Coleoptera, Colombia, host association, invasive plant

RESUMEN

Se registra por primera vez la asociación del escarabajo consumidor de semillas *Merobruchus paquetae* con el hospedero de leguminosa invasivo *Leucaena leucocephala*. Esta especie de escarabajo está asociada en Colombia con la leguminosa nativa *Pseudosamanea guachapele*.

Palabras clave. Asociación de hospedero, Bruchinae, Coleoptera, Colombia, planta invasora



The seed beetles in the Bruchinae subfamily (Coleoptera: Chrysomelidae) have a cosmopolitan distribution, although they are more diverse and abundant in the neotropics (Borowiec 1987). There are 17 genera of the subfamily in Colombia: *Acanthoscelides*, *Callosobruchus*, *Caryedes*, *Caryedon*, *Gibbobruchus*, *Megacerus*, *Meibomeus*, *Merobruchus*, *Mimosestes*, *Neobruchidius*, *Penthobruchus*, *Pygiopachymerus*, *Sennius*, *Speciomerus*, *Stator*, *Ripibruchus*, and *Zabrotes* (Velez 1972, Johnson and Kingsolver 1973, Whitehead and Kingsolver 1975, Terán and Kingsolver 1977, Udayagiri and Wadhi 1989, Silva and Riveiro-Costa 2001, Johnson and Romero-Napoles 2006, Silva and Riveiro-Costa 2008). We conducted fieldwork during April 2015, in the tropical dry forest areas of the Colombian departments of Tolima and Cundinamarca. We collected seed pods from five trees of *Leucaena leucocephala* (Lam.) de Wit (4°15' North; 74°44' West), at 320 m.a.s.l. We transported the seed pods to the laboratory, and once there we opened the pods and stored the seeds in plastic containers in growth chambers at 28 °C at 70 % RH. We inspected the containers twice a day, every day, and we preserved the emergent insects from the seeds

in alcohol for further identification. We identified specimens belonging to *Merobruchus* using the keys and descriptions found in Kingsolver (1980), Kingsolver (1988), Manfio and Ribeiro-Costa (2016). We dissected the male genitalia to confirm species identity. All specimens were deposited at the Entomology Collection of the Instituto de Ciencias Naturales of the Universidad Nacional de Colombia, Bogotá.

The following host association was recorded for the first time for the species *Merobruchus paquetae* (Kingsolver, 1980) in *Leucaena leucocephala*: Three individuals of the seed beetle *M. paquetae* from: COLOMBIA. Tolima. Highway from Melgar to El Espinal. 4°15' North; 74°44' 3 West, 320 m Apr. 23-2015 *M. Camacho and A. Amarillo-S, leg.* Traits of the adult specimens examined here agree with those described by Kingsolver (1980): Lateral margins of the elytra darker, and contrasting dark areas of the pygidium (Fig. 1a). The morphology of the genitalia of the specimens examined is also fully concordant with that of the original description (Fig. 1b-c); some of the main characteristics are as follow: Medial lobe with

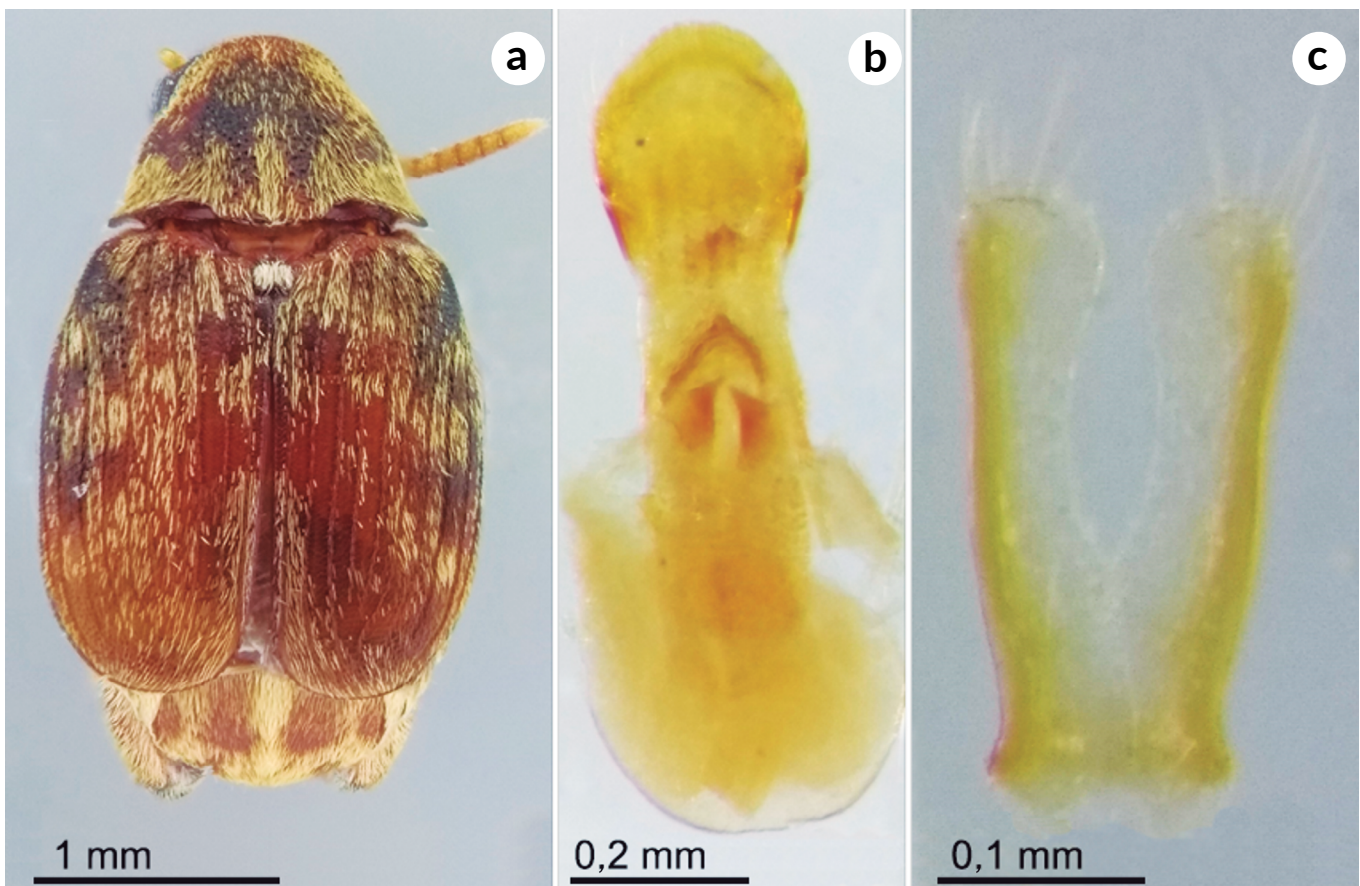


Figure 1. *Merobruchus paquetae* found in seeds of *Leucaena leucocephala*. **a.** Adult male; **b.** Male genitalia, median lobe; **c.** Male genitalia, lateral lobes.

internal sac with clusters of fine spicules at its base; a pair of large denticles near the base and “a wishbone-sclerite” on the top of these denticles. Lateral lobes broad, short with the gap between them about two-thirds their length.

This bruchine beetle has been recorded in Central and South America as a seed feeder of tropical leguminous trees from the genera *Albizia*, *Lysiloma*, *Mimosa*, and *Pseudosamanea* (Kingsolver 1988, Maes and Kingsolver 1991, Johnson and Siemens 1997), with a unique host in Colombia, *Pseudosamanea guachapele* (Kunth) Harms (Kingsolver 1980, 1988). Paratypes were described for the department of Antioquia in the municipality of Rio Frío, and for the department of Magdalena in the municipality of Sopetrán (Kingsolver 1980). Here we increased the distribution of this seed beetle in Colombia and to the new host plant, *L. leucocephala*, a species of legume considered in Colombia and worldwide as one of the most dangerous invasive plant (Lowe *et al.* 2004, Cárdenas *et al.* 2017), and for which the main associated seed beetle is *Acanthoscelides macrophthalmus* (Schaeffer, 1907). The ecological implications of the colonization of this new host are still unknown. Further examination of *L. leucocephala* seeds collected from other localities will allow us to determine the extent to which *M. paquetae* has been able to establish in other populations of this exotic host.

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AUTHOR'S CONTRIBUTION

Both authors collected the material. ARA-S took the photographs of adults and wrote the manuscript; MC-E dissected the male's genitalia and took their photographs. Both authors read, corrected and approved the final manuscript.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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