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Description of immatures of *Mesomphalia gibbosa* (Fabricius, 1781) and *Mesomphalia turrita* (Illiger, 1801) (Coleoptera: Chrysomelidae: Cassidinae: Mesomphaliini)

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Abstract

Immatures of *Mesomphalia gibbosa* (Fabricius, 1781) and *Mesomphalia turrita* (Illiger, 1801) (Coleoptera, Chrysomelidae, Cassidinae, Mesomphaliini) are described based on specimen collections from Rio de Janeiro state, Brazil. The last-instar larva and pupal exuviae of *M. gibbosa* (Fabricius, 1781) and the eggs, first-instar larva, and pupa of *M. turrita* (Illiger, 1801) are described, photographed and illustrated, with emphasis on chaetotaxy. Additional notes on their biology are presented.

Key words: Morphology, egg, first- and last-instar larva, pupa

Resumo

Imaturos de *Mesomphalia gibbosa* (Fabricius, 1781) e *Mesomphalia turrita* (Illiger, 1801) (Coleoptera, Chrysomelidae, Cassidinae, Mesomphaliini) são descritos pela primeira vez, com base em espécimes coletados no Rio de Janeiro, Brasil. O último instar larval e pupa de *M. gibbosa* (Fabricius, 1781) e ovos, primeiro instar larval, e pupa de *M. turrita* são descritos, fotografados e ilustrados pela primeira vez, com ênfase na quetotaxia. Além disso, notas sobre a biologia são apresentadas.

Palavras-chave: Morfologia, ovos, larva de primeiro e último instar, pupa

Introduction

Mesomphaliini Hope, 1840 (=Stolaini Hincks, 1952; Bouchard *et al.* 2011) is the second-largest tribe in the subfamily Cassidinae, comprising 24 genera and 507 species (Borowiec 1999) in the Neotropical region (Borowiec & Świętojańska 2014). However, the immatures of only 32 species have been described or illustrated (Świętojańska 2009) and the information is limited to figures and descriptions of the last-instar larva or pupa, with little reference to their chaetotaxy.

In Mesomphaliini, the only species with known detailed description of immature stages is *Cyrtanota lateralis* (Linnaeus, 1758): Świętojańska (2008) described details of the egg, first- and last-instar larvae, and pupa.

Hope (1839) described *Mesomphalia*, designating *Cassida gibbosa* Fabricius, 1781 as its type species. According to the latest catalogs (Borowiec 1999, Borowiec & Świętojańska 2014), *Mesomphalia* currently includes 16 species, which occur only in South America. The adults are easily distinguished from other genera in the tribe by having a black integument without metallic coloration; deep coronal suture; basal antennomeres with short sparse setae; pronotum and elytra usually with distinct patches of yellow setae; prosternal collar sinuous medially, with divergent laterals followed by a transverse groove and a conical gibbosity on the elytral disc, acuminate toward the apex.

on vertex and five frontal rows of setae; labrum with five setae on each side; four long setae and two pairs of campaniform sensilla medially and two setae on anterior margin; stipes with three long pointed setae, and supra-anal process two or three times longer than longest scoli, apically armed with one long pointed seta.

The last-instar larva of *M. gibbosa* differs from the last-instar larva of *C. lateralis* mainly in color, presence/absence of campaniform sensilla, and chaetotaxy. The tergites are yellow or brownish yellow with brown patches; scoli brown to brownish yellow; labrum with two short setae medially and eight to nine long setae on each side of anterior margin; dorsal side of mandibles with three campaniform sensilla at the base; stipes with two campaniform sensilla, or none; palpiger with five long pointed setae, one short seta and three campaniform sensilla; first segment of maxillary palp with two or three setae; labial palp with group of peg-like sensilla dorsally and one campaniform sensillum laterally; prementum with six long and two short setae at base; inner side of femur with group of eight campaniform sensilla. *Cyrtanota lateralis* has tergites that are whitish yellow with yellowish-brown patches and tubercles bearing setae on the protuberances at the postero-medial border; scoli yellow to yellowish brown; anterior margin of labrum with eight short medial setae and five setae on each side; dorsal side of mandibles with two campaniform sensilla at base; first segment of maxillary palp with two setae and one campaniform sensillum; prementum with two long and two short setae; internal side of femur with group of campaniform sensilla: six in group at base of femur and one at a distance; eight campaniform sensilla at base but on outer side.

The pupa and pupal exuvia of the species of *Mesomphalia* have lateral scoli abruptly tapered toward the apex with smooth surfaces. *Cyrtanota lateralis* has lateral scoli gradually tapered towards apex with numerous short setae, each placed on a distinct tubercle.

According to the data assembled thus far for the known first-instar larvae of Mesomphaliini (Świętojańska 2009), members of the tribe have the apices of the supra-anal process with one long pointed seta and no remarks on the micropylar area elevation. In *Mesomphalia*, the apices of the supra-anal process bear no or two setae and the micropylar area is elevated. This character should be explored further in future studies.

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