



## Description of immatures of *Galeacius martini* Schouteden (Hemiptera: Heteroptera: Scutelleridae)

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### Abstract

Scutelleridae occur worldwide, and immature stages have been scarcely studied. *Galeacius* Distant is a Neotropical genus currently containing four species. Here the external morphology of immatures of *Galeacius martini* Schouteden is described. Adults and nymphs were maintained in laboratory and fed on branches of *Miconia sellowiana* with fruits. The egg of *G. martini* is semi-spherical, reddish brown, with reticulations surrounding smaller granulated sculpturing under scanning electron microscopy (S.E.M). The nymphs from first to fifth instar have a stridulitrum plus plectrum, and 2+2 trichobothria posterior to spiracles on abdominal sternites III–VII. The dorso-abdominal scent efferent system has an evaporatorium with two distinct mycoid sculpturing, and there are two types of peritreme on medial plates II and III in first and fifth instar. The color and chorion morphology may distinguish *G. martini* from other scutellerid eggs so far described. New descriptions of immatures of Scutelleridae are particularly desirable, mainly with emphasis on some structures on S.E.M., as stridulatory devices, dorso-abdominal scent efferent system, and trichobothria, thus improving the knowledge about the taxon.

**Key words:** chorion, morphology of nymphs, Pachycorinae, shield-bugs

### Introduction

The importance of knowledge about immatures in Heteroptera has long been recognized (Cobben 1968; Brailovsky *et al.* 1992; Matesco *et al.* 2009). Information of immatures can be used to improve ecological (Mendonça *et al.* 2009) and taxonomical studies (Brailovsky *et al.* 1992), pest control (Grazia and Frey-Da-Silva 2001), as well as providing characters for phylogenetic hypotheses (Grazia *et al.* 2008). The use of scanning electron microscopy (S.E.M.) has increased information about the ultrastructure of eggs and nymphs, such as chorion sculpture and aero-micropylar processes (Matesco *et al.* 2009; Williams III *et al.* 2005), number and placement of trichobothria, and dorsal abdominal scent glands (Schwertner *et al.* 2002; Matesco *et al.* 2009; Bianchi *et al.* 2011). Features of immatures can be useful to diagnose families, genera, and species (Candan *et al.* 2001), and immatures of Scutelleridae have been scarcely investigated. Most studies focus on subsocial behavior: the female oviposits on leaves, and guards the egg masses and early instars from natural enemies (Williams III *et al.* 2001; Peredo 2002; Santos *et al.* 2005; Williams III *et al.* 2005). Descriptions of immature stages are rare, even for species of economic importance.

*Galeacius* is a Neotropical genus described by Distant (1889) for *G. tessellatus* Distant, 1889. Others are *G. simplex* Breddin, 1904, *G. martini* Schouteden, 1904, and *G. crowleyi* Distant, 1911. Information except for geographical distribution and taxonomic status of *Galeacius* and its species, are absent in the literature.

The objective of this paper is to describe the external morphology of immature stages of *G. martini*, with emphasis on the ultrastructure of the chorion and external scent efferent system.