



Article

urn:lsid:zoobank.org:pub:8CFDEEE8-EDD1-49FA-8562-4551D5DCFAF5

Description of the immature stages of *Glypheapomis spinosa* Campos & Grazia (Hemiptera: Pentatomidae: Pentatominae: Carpocorini)

PIETRO POLLO¹, CAROLINE GREVE^{1,2}, VIVIANA CAUDURO MATESCO^{1,3} & JOCELIA GRAZIA^{1,2}

¹Departamento de Zoologia, Universidade Federal do Rio Grande do Sul, Av. Bento Gonçalves, 9500, Bloco IV, Prédio 43435, 91501-970, Porto Alegre, RS, Brazil. E-mail: pietro_pollo@hotmail.com

²CNPq fellowship. E-mail: carolinegreve@yahoo.com.br; jocelia@ufrgs.br

³CAPES fellowship. E-mail: vimatesco@yahoo.com.br

Abstract

The study of immature stages is important in phylogeny, as well to the recognition and control of pest species. *Glypheapomis* Berg is included in the tribe Carpocorini. This paper describes the morphology of eggs and nymphs of *Glypheapomis spinosa* Campos & Grazia. Adult specimens were collected on rice plants in Formoso do Araguaia, Tocantins, Brazil, and they were reared in the laboratory. The immatures obtained were analyzed with a light stereomicroscope and scanning electron microscope. Eggs and nymphs were measured and illustrated and/or photographed. Eggs are barrel-shaped, light green; operculum round and convex; chorion translucent, bright and granulated; aero-micropylar processes clubbed, 68 on average. All instars have oval body and obtuse tylus, surpassing jugae. In the 1st instar, head, thorax and abdominal plates are black, and abdomen is reddish brown; punctures are absent. From 2nd instar on, head and thorax are grayish with dark punctures, and the abdomen is whitish with dark-red punctures. In relation to other Carpocorini species that occur on rice, the eggs of *G. spinosa* resemble those of *Oebalus poecilus* (Dallas), a major rice pest in South America. However, nymphs of both species can be easily differentiated by their general color: in *O. poecilus* all instars have a dark head and thorax and red abdomen.

Key words: eggs, nymphs, Pentatomoidea, rice bugs, scanning electron microscopy

Introduction

The study of the immature stages is highly valuable in insect phylogeny and cladistic analysis, as well to the recognition and control of pest species (Brailovsky *et al.* 1992; Costa *et al.* 2006). Eggs and/or nymphs of 146 species of the Pentatomidae have already been studied, although eggs of only 57 pentatomid species have been investigated by scanning electron microscopy (Matesco *et al.* 2009; Campos *et al.* 2010; Candan & Suludere 2010; Lopes & Cervantes 2010; Bianchi *et al.* 2011; Bundy & McPherson 2011).

Glypheapomis Berg is included in the tribe Carpocorini (Rider 2011), whose morphology of immatures is relatively well known in comparison to other pentatomid tribes (Matesco *et al.* 2009). This is the first contribution to the knowledge of *Glypheapomis* immatures. The four species of *Glypheapomis* occur in Brazil. *Glypheapomis spinosa* Campos & Grazia is distributed in the states of São Paulo, Mato Grosso, Tocantins, and Goiás (Campos & Grazia 1998). Rice (*Oryza sativa* L.) is the only host plant known for the species (Campos & Grazia 1998); time of development of the immature stages on this food resource has already been studied (Alves & Barrigossi 2011).

Material and methods

Adults of *G. spinosa* were collected on rice plants (*O. sativa*) in Formoso do Araguaia (state of Tocantins, Brazil). They were maintained in a greenhouse at “Embrapa Arroz e Feijão,” Santo Antônio de Goiás municipality, state of Goiás, from March to April 2011.