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Description of the immature stages of *Pentacomia (Mesochila) smaragdula* (Dejean 1825) (Coleoptera: Carabidae, Cicindelinae), with notes on the species distribution

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Abstract

The Atlantic Rainforest is one of the most threatened biomes of the world, with only 11–12 % of its original cover. The Cicindelinae are present in this biome with a relatively high diversity, but data of their immature forms are few. On the basis of six larvae and four pupae of *Pentacomia (Mesochila) smaragdula* we describe and illustrate the third larval instar of the larva and the pupa of this species. Notes on the species distribution are also given.

Key words: Atlantic Rainforest, larvae, Neotropical Region, pupae, tiger beetle

Resumo

A Mata Atlântica é um dos biomas mais ameaçados do mundo, com apenas 11–12 % da sua cobertura original. Cicindelinae apresenta uma alta diversidade com representação significativa nesse bioma, porém os estudos dos imaturos ainda são negligenciados. Seis larvas e quatro pupas de *Pentacomia (Mesochila) smaragdula* foram coletados em uma porção de solo recentemente revirada por uma raiz de árvore caída. O terceiro instar da larva e a pupa são descritas e ilustradas. Notas sobre a distribuição da espécie também são fornecidas.

Palavras-chave: Mata Atlântica, larva, Região Neotropical, pupa, besouro tigre

Introduction

Tiger beetles (Carabidae: Cicindelinae) include about 2,700 species and 120 genera around the world (Cassola & Pearson 2001). Within the Neotropical Region 537 species are known, 242 species of which are recorded from Brazil. Of the Brazilian species, 141 (58.3%) are known from the Atlantic Rainforest, which makes this biome the most species-rich for tiger beetles in Brazil (Cassola & Pearson 2001).

The Atlantic Rainforest is one of the 25 hotspots of biodiversity and has one of the five highest rates of endemism (Myers, *et al.* 2000). It is also one of the most threatened tropical biomes. Originally it included 1,48 million km², representing 17% of the Brazilian territory. However, by the year 2005, only 160,000 km² of this forest remained, an area that corresponds to 11–12% of its original forest cover (Fundação SOS Mata Atlântica and INPE 2014; Ribeiro *et al.* 2009).

Notably, larvae of only 34 genera of Cicindelinae are known (Putchkov & Arndt 1994), or about 28% of the world genera. Considering the importance of the immature stages for understanding beetle biology (Costa *et al.* 1988), increased attention to studying and describing these immature stages is of high priority.

The Neotropical genus *Pentacomia* (Bates, 1872) includes about 40 species distributed from Mexico to Argentina (Moravec & Brzoska 2014a; Cassola & Pearson 2001). The complex taxonomy of this group has recently been advanced in a series of studies (Moravec 2012a, b, c, and 2013; Duran & Moravec 2013; Moravec & Brzoska 2013; Moravec & Duran 2013; Moravec & Brzoska 2014a, b, c; and Moravec 2015).