First record of the association of a species of Lycaenidae (Lepidoptera) with Zornia latifolia Sm. (Fabaceae), and its parasitoid (Hymenoptera: Chalcididae) in Brazil

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Abstract. The family Lycaenidae (Lepidoptera) comprises over 6,000 described and widely distributed species. However, studies on interactions with other insects such as ants, parasitoids, and with food plants in the Neotropical region, are still scarce, even though such information are fundamental for better understanding the natural history of this taxonomic group. This study reports a new food plant to larvae of Lycaenidae species in the neotropics, as well as its parasitoid. Lycaenidae larva (n = 1) was found and collected for immature stage observation under laboratory conditions. The larva fed on petals and seeds of Zornia latifolia Sm. (Fabaceae). Nineteen days after pupation in laboratory one larvipupal parasitoid of the genus Conura (Chalcididae) had egressed. This is the first report of tritrophic relationship amongst Z. latifolia, a Lycaenidae larva and its larvipupal parasitoid of the genus Conura in a periurban area near remnants of the Atlantic Forest in Northeastern Brazil.

Keywords: Bioecology; Insect-plant interactions; Neotropical region; Parasitoidism.
PEREZ et al. 2015), occurring in Cerrado, rupestral fields, forest boundaries and in sandbanks; it has excellent forage capability and is also used in traditional medicine (LORENZI 2000; FERREIRA et al. 2015). In this study, Lycaenidae larva, with the color pattern uniformly light green and tegument covered with translucent short setae, attacked petals and green seeds (Figures 1B and 1C). Species of Zornia were recorded as food plants for Lycaenidae larvae: (1) Zornia diphylla (L.) Pers. for Freyeria putii (Kollar), Freyeria trochylus (Freyer) in India; to Zizeeria karsandra (Moore) in West Malaysia; and for Zizia ophis (Fabricius) in Hong Kong (ROBINSON et al. 2010); and Zornia gibbosa Span., for Zizeeria karsandara (Moore) in India (KANAGARAJ & KATHIRVELU 2018). In addition, Zornia latifolia was also recorded for Eurema elathea (Cramer) (Pieridae) in Brazil (FONTEs et al. 2007).

Nineteen days after pupation in laboratory, one parasitoid of the genus Conura egressed from a lycaenid through a circular opening in the lateral part of the thorax (Figures 1D and 1E). Larvae of the Cyanophrys bertha (Jones) and Strymon crambusa (Hewitson) collected in the field and reared in laboratory were also parasitized, and after pupation one Conura species egressed after 18 and 20 days, respectively (KAMINSKI et al. 2010; SILVA et al. 2016). Lycaenidae species have the pupal period between 5 and 13 days (SILVA et al. 2016; KUMAR et al. 2017; SONTAKKE 2018). Conura parasitoid species here recorded extended about 1,5 times this development stage of its host lycaenid.

This study reports, for the first time, the tritrophic relationship amongst Z. latifolia, a Lycaenidae larva and its larvipupal parasitoid of the genus Conura in a periurban area near remnants of the Atlantic Forest, in Northeastern Brazil. This also contributes with important basic information for understanding the dynamics of ecological interaction networks including this lepidopteran family.

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Figure 1. Bioecological aspects of Lycaenidae larva in Zornia latifolia. A. The study site and Z. latifolia (9°33’20” S 35º46’37” W). B. Lycaenidae larva feeding on the petal. C. Seeds with perforations (red arrows) caused by the larva. D. Larvipupal parasitoid Conura sp. (Hymenoptera: Chalcididae). E. Lycaenidae pupal exuviae with an oval opening at the correspondent lateral of the thorax. (Photos: Cajé, SOS.).
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