

Notes and Comments

## Pupal parasitoids of *Antichloris eriphia* (Fabr.) (Lepidoptera: Erebidae) in the Agreste region of the Alagoas state, northeastern Brazil

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Brazil is the world's fourth largest producer of *Musa* spp. (Musaceae) with annual production of 6,953,747 tons (Pereira et al., 2022a) in a planted area of 457.910 ha, the second among cultivated fruits (IBGE, 2022). Insect defoliators, pseudostem and rhizome borers, and root, fruit and flower pests, and sucking insect vectors of diseases, damage banana plants, *Musa* spp. (Krishnan et al., 2020).

*Antichloris eriphia* Fabricius, 1777 (Lepidoptera: Erebidae) occurs in southeast Brazil, Colombia, Ecuador, Paraguay and Suriname damaging banana plants and has been reported in banana importing countries (Draudt, 1917; Schaus, 1938; Field, 1975; Chalumeau and Delplanque 1978; Gernaat, 2016).

Caterpillars of *A. eriphia* which perforate and destroy the leaf area of *Musa* spp. and use *Heliconia latispatha* Benth. (Heliconiaceae) in Brazil, as intermediate host (Watanabe, 2007), is one of the main moth species defoliator of banana plants reducing its photosynthetic area and assimilated material translocated from the rhizome to the fruit (Ostmark, 1974).

Biological control methods of *A. eriphia* are scarce and the egg parasitoid *Trichogramma* sp. (Hymenoptera: Trichogrammatidae) is the only natural enemy of this pest reported in *Musa* spp. plantations in Brazil (Souza et al., 2016). Parasitoids of the Hymenoptera order are efficient and more specific and, therefore, a sustainable method of biological control in the management of arthropod pest populations (Pinheiro et al., 2022).

The objective is to report, for the first time, the parasitism of *A. eriphia* by *Tetrastichus howardi* Olliff, 1893 and *Trichospilus diatraeae* Cherian & Margabandhu, 1942 (Hymenoptera: Eulophidae) pupae on *Heliconia psittacorum* L.F. and *Heliconia stricta* Huber (Heliconiaceae) plants in an urbanized area of the Agreste region of Alagoas state, Brazil.

Caterpillars and pupae of *A. eriphia* were collected on *H. psittacorum* and *H. stricta* plants in the garden of the Universidade Estadual do Alagoas (09°45'09"S; 36°39'40"W) *Campus I*, in the municipality of Arapiraca, Alagoas state, Brazil.

Twenty *A. eriphia* pupa were collected using a 50 ml falcon tube, placed in containers and taken to the

laboratory where they were individualized in Petri plates (60 x 15 mm area). Three pupae of the 20 collected were parasitized and 225 similar parasitoids emerged from two of them, while a second type emerged from the third parasitized pupa. The parasitoid wasps, emerged from *A. eriphia* pupae, were identified by one of the authors (VAC) as *Trichospilus diatraeae* Cherian & Margabandhu, 1942 and *T. howardi*. The identification of *T. diatraeae* was performed according to Bouček (1976) and Narendran (2011) and *T. howardi* based on La Salle and Polaszek (2007).

Two hundred and twenty-five individuals of *T. diatraeae* emerged from three pupae of *A. eriphia*, and ten *T. howardi* from one pupa of this insect host (Figure 1 A & B), among the 20 collected on *H. psittacorum* and *H. stricta* plants in Arapiraca, Agreste region of the Alagoas state, Brazil. Voucher specimens of the parasitoid wasps were deposited in the "Oscar Monte" Entomophagous Insect Collection at the Instituto Biológico in Campinas, São Paulo state, Brazil, under reference number IB-CBE-S-852 (curator: Valmir A. Costa).

Parasitism of *A. eriphia* pupae by *T. diatraeae* and *T. howardi* increases the number of natural enemies of *A. eriphia*, after the report of *Trichogramma* spp. (Hymenoptera: Trichogrammatidae) parasitizing eggs of this pest in the semi-arid region of the Minas Gerais state, Brazil (Souza et al., 2016). *Trichospilus diatraeae* was also reported from *Helicoverpa armigera* Hübner, 1805 (Lepidoptera: Noctuidae) and *Thyrinteina arnobia* Stoll & Cramer, 1782 (Lepidoptera: Geometridae) pupae (Pereira et al., 2008; Oliveira et al., 2016). *Tetrastichus howardi* parasitized pests in different crops, including the sugarcane stem borer *Diatraea saccharalis* Fabricius, 1794 (Lepidoptera: Crambidae), the crucifer moth *Plutella xylostella* Linnaeus, 1758 (Lepidoptera: Plutellidae) and the cassava moth *Erinnyis ello* Linnaeus, 1758 (Lepidoptera: Sphingidae) (Barbosa et al., 2015; Favero et al., 2015; Pereira et al., 2022b).

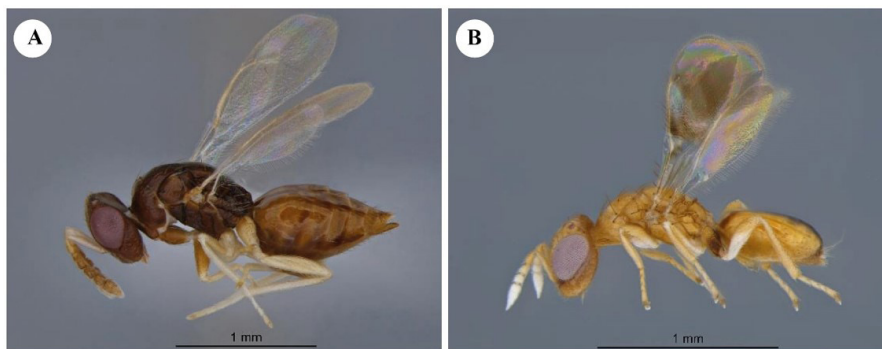
The record of *T. diatraeae* and *T. howardi* parasitizing *A. eriphia* pupae increases the number of natural enemies of this defoliating lepidopteran, being the first record of these parasitoids associated with *A. eriphia* in Brazil, as well as in the urbanized area of the Arapiraca municipality in the Agreste region of the Alagoas state, northeastern Brazil.

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**Figure 1.** Females of *Tetrastichus howardi* (A) and *Trichospilus diatraeae* (B) (Hymenoptera: Eulophidae).

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