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Scientific Note/Comunicação Científica

Aggregation of *Somatia aestiva* (Fabricius) (Diptera: Somatiidae) on leaves of *Solanum stramonifolium* Jacq.

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Abstract. This study reports the first observation of many specimens of *Somatia aestiva* (Fabricius), drinking at same time the aqueous sugar solution produced by leaves of *Solanum stramonifolium* Jacq. (Solanaceae) in the Brazilian Amazon.

Keywords: Acalyptratae; Brazilian Amazon; Fly; Insect; Solanaceae.

Agregação de *Somatia aestiva* (Fabricius) (Diptera: Somatiidae) em folhas de *Solanum stramonifolium* Jacq.

Resumo. Este estudo reporta a primeira observação de vários espécimes de *Somatia aestiva* (Fabricius) consumindo, na mesma ocasião, a solução líquida produzida por folhas de *Solanum stramonifolium* Jacq. (Solanaceae) na Amazônia Brasileira.

Palavras-Chave: Acalyptratae; Amazônia Brasileira; Inseto; Mosca; Solanaceae.

The order Diptera (true flies, mosquitoes, midges, gnats and horse-flies) is the fourth largest order of insects with about 159,294 described species worldwide (Pape *et al.* 2011). This diversity is not just numerical, since this order comprises species with a very diverse spectrum of biological habits, both as adults and larvae, ranging from phytophages to carnivores, making it the most biologically diverse order of insects (Marshall 2012). However, the biology of most species remains unknown. In some cases, the only information on the natural history about a given species is the habitat where it was collected.

The family Somatiidae comprises seven described species in only one genus, *Somatia*, restricted to the Neotropical Region (Papavero 2002; Lonsdale 2010; Pape *et al.* 2011). *Somatia aestiva* (Fabricius) is the only species of its genus and family found in the Amazon Basin (Papavero 2002). Information on the biology of this family is virtually unknown, except that one species, *Somatia schildi* Steyskal, was observed feeding on a dead caterpillar in Costa Rica (Lonsdale 2010; Marshall 2012). Some adult specimens have been reported as visitors to extra-floral nectaries of different plants (Hespenheide 1985; Grimaldi 2016). The larvae are unknown (Lonsdale 2010; Marshall 2012).

The observations reported herein were made in a secondary forest located at a private grange named "Sítio Sabiá" at km 61 of the Alça Viária highway in the municipality of Mojú and at the research campus of the Museu Paraense Emílio Goeldi (MPEG), in Belém, both in the state of Pará, northern Brazil. Voucher flies were collected and deposited in the entomological collection of MPEG.

On the border of dirt trail at Sítio Babiá I found two plants of *Solanum stramonifolium* Jacq. (Solanaceae) (Figure 1A) of about 1.70 m height, visited by many specimens of *S. aestiva* on the underside of the leaves (Figure 1B). In the first plant two leaves each contained about 25 individuals of *S. aestiva*, and in the second about 15 individuals on just one leaf. All the flies were drinking the liquid that emanated from the leaf (Figure 1C). A similar behavior was observed at the MPEG campus in the same species of plant, where only one specimen was found on two different occasions. At MPEG, *S. aestiva* was also observed licking the calyx of *Pleonotoma jasminifolia* (Kunth) Miers (Bignoniaceae).

Many species of flies from different families are known to visit flowers, extrafloral nectaries and leaves covered with honeydew produced by Auchenorrhyncha (Insecta: Hemiptera) for sugary secretions, the main source of carbohydrates that are required for flight (Hocking 1953). Until now, extrafloral nectaries have been reported only on the calyx of *S. stramonifolium* by Falcão *et al.* (2003). However, these authors did study the presence of extrafloral nectaries on flower buds, flowers, and green and ripe fruits of *S. stramonifolium*. Anderson & Symon (1985) reported the presence of extrafloral nectaries on leaves of *Solanum dioicum* W.Fitzg. The aqueous substance produced by leaves of *S. stramonifolium* has glucose, as indicated by testes performed with glucostrips (On Call® Plus, ACON Laboratories, Inc.).

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The type of secretory tissue that produces this aqueous sugar solution is under investigation.

Extrafloral nectaries present on the calyxes of *Solanum stramonifolium* are attractive to ants (Falcão *et al.* 2003), and the aqueous sugar solution produced by the leaves is attractive to many species from different families of Hymenoptera and Diptera, including *Somatia aestiva*, since many specimens of this uncommon family of flies were found in this plant. *Somatia aestiva* has also been recorded on the underside of leaves of Leguminosae (Lonsdale 2010; Marshall 2012), probably feeding on secretions of extrafloral nectaries present in plants of this family (Lersten & Brubaker 1987) and feeding on extrafloral nectaries in Fabaceae, Sterculiaceae, and Passifloraceae (Hespenheide 1985; Grimaldi 2016).

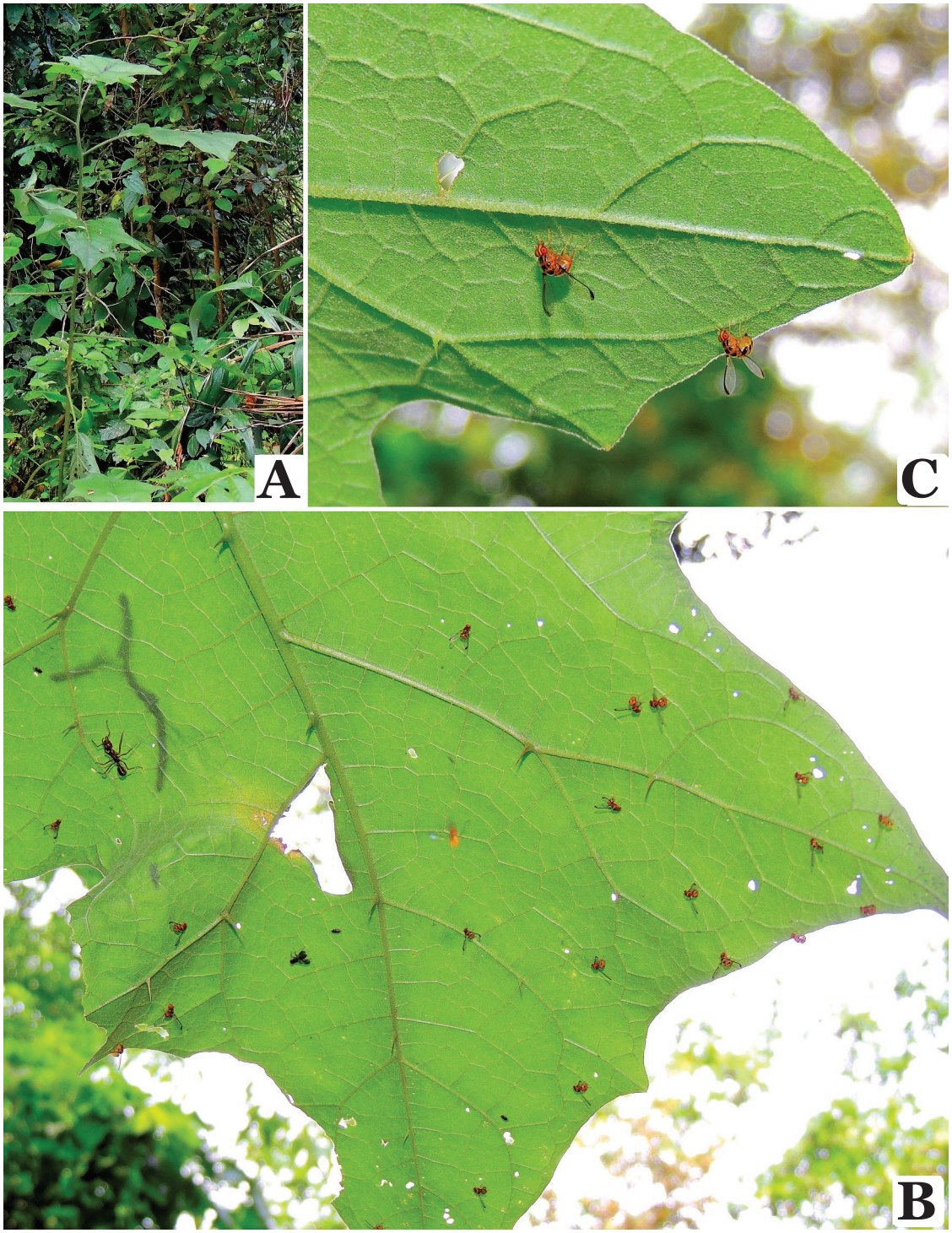

Figure 1. (A) Plant (*Solanum stramonifolium*) where the flies were found; (B) Two adults of *Somatia aestiva* on the underside of a leaf of *S. stramonifolium*; (C) Group of *Somatia aestiva* on the underside of a leaf of *S. stramonifolium*. Author: C. Favacho.

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