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First record of *Drosophila incompta* Wheeler 1962, *flavopilosa* group, in the Brazilian state of Minas Gerais.

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Drosophila incompta belongs to the *flavopilosa* group, which comprises 17 species (Bächli, 2017), distinguished mainly by their internal male genitalia morphology (Wheeler *et al*., 1962). This group presents a remarkable characteristic, being ecologically specialized and totally dependent on flowers of *Cestrum sp* (Solanaceae) for both feeding and reproduction (Brncic, 1966). In this sense, these species developed several adaptations to their host, including their small to medium size, the yellowish color (cryptic to *Cestrum* flowers), and the presence of strong spines on the outer region of the female genitalia (Brncic, 1983; Ludwig *et al*., 2002).

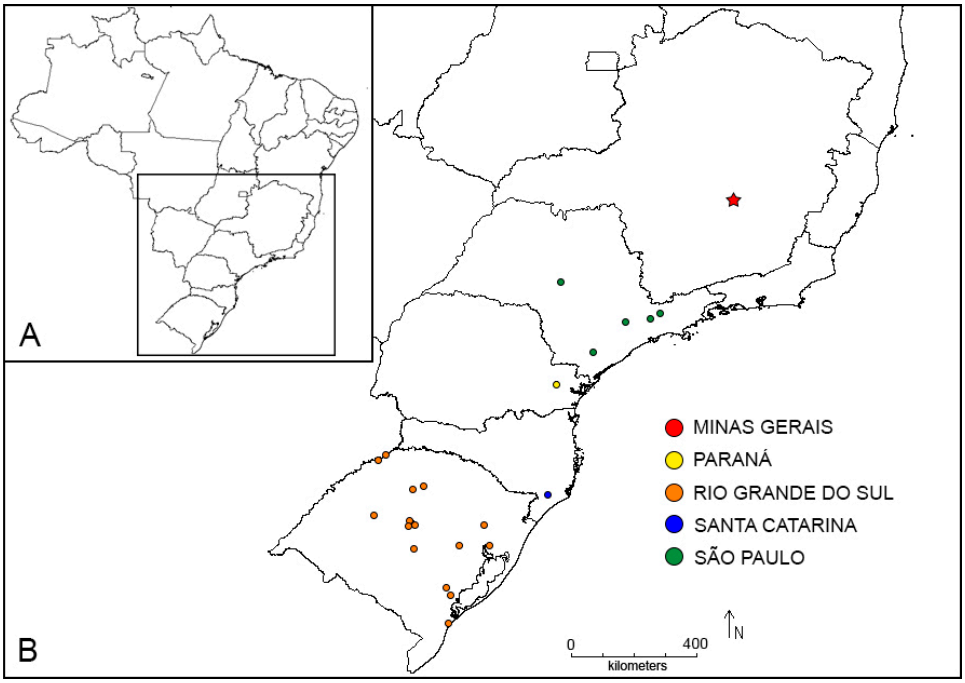

Figure 1. Known geographical distribution of *D. incompta* in Brazil, according to Bächli (2017). Orange, blue, yellow, and green circles correspond to sample locations in the states of Rio Grande do Sul, Santa Catarina, Paraná, and São Paulo, respectively. The red star corresponds to the first occurrence location of *D. incompta* in the state of Minas Gerais.

Due to their restricted ecology, the members of the *flavopilosa* group are geographically restricted to areas with *Cestrum* sp., which seems to be highly abundant in the Neotropics (Robe *et al*., 2013). Even so, most species are specialized to a small array of *Cestrum* species (Santos and Vilela, 2005) and are widely endemic to a restricted area (Robe *et al*., 2013). *Drosophila incompta* appears to have the widest distribution among the members of this group, being found from Mexico to northern Argentina (Bächli, 2017). Nonetheless, across this area, the distribution of the species is predominantly scattered, with registers encountered only for Antilles (1 record), Colombia (2 records), and Panama (2 records), besides Mexico (2 records), Brazil (22 records,

Figure 1), and Argentina (1 record) (Bächli, 2017). Despite this, Robe *et al*. (2013) emphasize this may reflect a bias of the sampling efforts. In this article, we report the first record of *D. incompta* in the state of Minas Gerais.

The flowers of *Cestrum* were collected in the municipality of Belo Horizonte (19°47′S, 43°57′21″W), taken to the laboratory and kept until the hatch of adult flies. These were captured using an entomological aspirator (Machado *et al*., 2014) and immediately fixed in absolute ethanol. The flies were separated by sex through their external morphology and further identified by the internal male genitalia morphology, as described by Wheeler *et al*. (1962). A total of 61 flies were collected, from which 27 were male. All male individuals were identified as *D. incompta*, according to their internal genitalia morphology patterns.

This report is congruent with the predictions based on Environmental Niche Modeling strategies performed by Robe *et al*. (2013), according to which the potential distribution of *D. incompta* would extend from the southern region of Brazil, in which it can be found in sympatry and even syntopy with *D. cestri*, *D. corderoi*, and *D. flavopilosa*, to the central region of the country. Nevertheless, although this report extends the known distribution range of *D. incompta* in Brazil, the wide area of unsuitable habitats that was projected to follow to the north of this area (Robe *et al*., 2013) remains to be further assessed.

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Effects of three common orange flavored drinks on survival and phenotype of *Drosophila melanogaster.*

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Abstract

In this study, *Drosophila melanogaster* flies were exposed to three local and common orange flavored drinks (Nutri-C, Sari-C, and Eve). The *Drosophila melanogaster* flies were fed on a Banana-Garri medium containing the test substances in varying concentrations (1, 2, 5, 10, 25, 50, and 100%). The flies were bred in the media in the ratio of a male to three females, left to mate and lay eggs for six days. The number of deaths of parent flies and phenotypic defects in F_1 flies were noted. It was observed that the drinks caused the death of some parent flies and that females were more affected than males. Phenotypic defects of the wings and abdomen were also observed in F_1 flies. Food products containing chemicals should be adequately tested before release into the market. Further research should be carried out to determine the mode of action of these substances on *D. melanogaster* and on mammalian test systems. Keywords: *Drosophila melanogaster*, F_1 flies, fruit drinks, survival, phenotypic defect

Introduction

Environmental toxins pose a constant challenge to the survival of living organisms. These toxins enter the body by physical contact, inhalation, or ingestion and can originate from a wide range of sources (Misra *et*