New habitat for Trichopria sp. (Hymenoptera: Diapriidae) in Brazil

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Abstract

This study reports new habitat for Trichopria sp. (Hymenoptera: Diapriidae) found in buffalos dung in Itumbiara, Goiás, Brazil. Manure samples, collected at two weeks intervals, were taken to the laboratory and the pupae were extracted by water flotation. Each pupa was placed in capsules of colorless gelatin until the emergence of flies or their parasitoids. The parasitism prevalence was 1.4%.

KEY-WORDS: Diptera, Hymenoptera, buffalo dung, first occurrence, new habitat.

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Introduction

Some species of flies included in the order Diptera are of fundamental medical and veterinary importance, since they can produce myiasis and act on the transmission of pathogens to humans and animals (CHOW, 1940; GREENBERG, 1971).

They have been found carrying more than 100 species of disease-causing organisms such as bacteria, protozoa and helminths (GREENBERG, 1971).

This association is due to these insects being exploiters of organic substances and residues produced by human and animal activity, especially feces and vegetal residues (MONTEIRO, 1995).

Chemical control of insects in urban and rural environment is complicate due to the danger of contamination of man, animals and environment. Therefore, the biological control of parasitoid flies meets the search for alternatives to the problem, as it is a safe method, easy to handle and low cost (ALESSANDRA et al., 2003).
According to ASKEW (1971), Diapriidae are mainly gregarious endoparasitoids of Diptera pupae, but in this study, *Trichopria* sp. presents as a solitary parasitoid. *Trichopria* species are usually immature parasitoids of Diptera (LEGNER et al., 1976).

*Trichopria* sp. is cited in the literature as an important parasitoid of Sarcophagidae, Sepsidae, Muscidae and Calliphoridae (FIGG et al., 1983; BLUME, 1984). DE SANTIS (1980) cites 11 species of *Trichopria* in Brazil found in the states of Rio de Janeiro, Sao Paulo, Pará and the Federal District.

MARCHIORI et al. (2000a) found *Trichopria* sp. in Minas Gerais and Goiás, with this, the knowledge of the geographic distribution of this species to Brazil was expanded. The objective of the study is to report a new habitat for *Trichopria* sp. in Brazil.

Material and Methods

Every fortnight, 10 plates of fecal cake (of approximately 3 kg each) were produced from fresh buffalo feces that were collected immediately after defecation in pastures of *Brachiaria brizantha* (Hochst ex. A. Rich) and in corrals. The material was collected in plastic buckets and was homogenized. It was then placed in 10 round plastic supports of 20 cm in diameter, with a hole to allow rainwater to drain away. This methodology was used for precise determination of the time between the emission of the fecal cake and its collection.

The feces remained exposed (five in the pastures and five in the corrals) for 15 days. After this period, the feces were taken to the laboratory for extraction of pupae by means of the flotation method. The pupae were removed with the aid of a sieve; they were counted and individually stored in gelatin capsules (number 00) until the flies and/or parasitoids emerged. The parasitoids and flies that emerged were identified with the aid of a stereoscopic microscope and were conserved in 70% alcohol.

The percentage parasitism of each parasitoid species was calculated by means of the number of pupae parasitized by each parasitoid species divided by the total number of pupae of that host, and multiplied by 100.

Results and Discussion

Overall, from May to December 2003, 929 pupae of *Sarcophagula occidua* Fabricius (Diptera: Sarcophagidae) were obtained, from which 13 specimens of the
parasitoid *Trichopria* sp. (Hymenoptera: Diapriidae). The percentage of parasitism obtained was 1.4%, probably due to variations in the quality and availability of food resources or host densities.

This percentage of parasitism may also be showing higher specificity or affinity of the parasitoid *Trichopria* sp. by pupae of *S. occidua*.

*Trichopria* sp., in Itumbiara-GO, Cachoeira Dourada-GO and Uberlândia-MG, was found parasitizing *Brontaea quadristigma* Thomsom, (Diptera: Muscidae), *Coproica* sp. (Diptera: Sphaeroceridae), *Haematobia irritans* L. (Diptera: Muscidae), *Palaeosepsis* spp. (Diptera: Sepsidae) and *S. occidua* in cattle pasture (MARCHIORI & LINHARES, 1999; MARCHIORI et al., 2000a; MARCHIORI et al., 2000b; MARCHIORI et al., 2001; MARCHIORI, 2002; MARCHIORI et al., 2002).

This study reports the first occurrence of *Trichopria* sp. in buffalo droppings in Brazil.

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