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SCIENTIFIC COMMUNICATION

BRACHYMERIA PODAGRICA (FABRICIUS) (HYMENOPTERA: CHALCIDIDAE) AS PARASITOIDS OF *SARCODEXIA LAMBENS* (WIEDEMANN) (DIPTERA: SARCOPHAGIDAE) IN BRAZIL

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ABSTRACT

The objective of the study is to report the first occurrence of the parasitoid *Brachymeria podagrica* on pupae of *Sarcodexia lambens*. Human feces was used as bait to collect the insects. In the study, 33 pupae of *Sarcodexia lambens* (Wiedemann) (Diptera: Sarcophagidae) were obtained, 3 of which yielded the parasitoid *Brachymeria podagrica* (Hymenoptera: Chalcididae).

KEY WORDS: Diptera, Hymenoptera, urban area, parasitoid, fly.

RESUMO

BRACHYMERIA PODAGRICA (FABRICIUS) (HYMENOPTERA: CHALCIDIDAE) COMO PARASITÓIDE DE *SARCODEXIA LAMBENS* (WIEDEMANN) (DIPTERA: SARCOPHAGIDAE) NO BRASIL. O objetivo do presente estudo é relatar a primeira ocorrência do parasitóide *Brachymeria podagrica* como inimigo natural de *Sarcodexia lambens*. Para coleta dos insetos foi utilizado como isca, fezes humanas. Obteve-se 33 pupas de *Sarcodexia lambens* (Wiedemann) (Diptera: Sarcophagidae), das quais 3 emergiram parasitóides pertencentes à espécie *Brachymeria podagrica* (Hymenoptera: Chalcididae).

PALAVRAS-CHAVES: Diptera, Hymenoptera, área urbana, parasitóide, mosca.

Diptera is one of the largest order of insects, comprising an abundant number of species as well as individuals. Besides, these dipterous are of great medical and veterinarian importance since they may produce myiasis and may be vectors of microorganisms pathogenic to men and animals (GREENBERG, 1971). Flies have been found to carry disease-causing organisms such as: bacteria, protozoa and helminthes (GEENBERG, 1971; D'ALMEIDA, 1992).

The Chalcididae are cosmopolitan in distribution, but particularly diverse in lowland tropical areas. The family presently comprises about 1,500 species in nearly 90 genera. All chalcidids are parasitoids of larvae or pupae of Lepidoptera, Diptera, Hymenoptera, Coleoptera, Strepsiptera and Neuroptera (GAULD & BOLTON, 1988, ASKEW, 1994; HANSON & GAULD, 1995). Chalcididae may be ecto or endoparasitoids. Most appear to be idiobionts although some are koinobionts (HANSON & GAULD, 1995). Some species of Chalcididae are of economical importance, for they attack insect pests (GAULD & BOLTON, 1988). Some species may be locally effective in controlling certain pest insects, especially Lepidoptera (HANSON & GAULD, 1995).

Species of genus *Brachymeria* Westwood are important primary parasitoid of muscoid Diptera, such as Sarcophagidae (GRISSEL & SCHAUFF, 1990) and Calliphoridae.

The aim of this paper was to report the first occurrence for *Brachymeria podagrica* on pupae of *Sarcodexia lambens* in Brazil.

This study was conducted at "Faculdade de Agronomia" (Itumbiara, GO, 18º25'S – 49º13'W), Brazil. The flies were attracted to traps built with 19 x 19 cm opaque dark cans, with two openings like blinders located in the third inferior part to permit the entrance of the flies. Nylon funnels were coupled in the upper part the cans, opened in the ends, with bases pointing down and wrapped with plastic bags, enabling the collection of flies and parasitoids (Fig. 1).

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Fig. 1 - General aspect of the trap.

Human feces were used as baits inside the cans, over a layer of sand. Five traps hanging on eucalyptus trees one meter above the ground and two meters apart from each other, near domestic garbage cans were used. The collected insects were taken to the laboratory, killed with ethyl ether and kept in 70% ethanol for further identification. The contents of the traps were placed in plastic containers having a layer of sand to be used as a substratum for larvae to pupate. The sand was sifted after 15 days and pupae were extracted and placed individually in gelatine capsules (00 number) to obtain flies and / or the parasitoids. The prevalence of parasitism was calculated by the following formula: P = (parasite pupae / total of pupae) x100.

During the period from March of 2001 to March of 2002 three specimens of *Brachymeria podagrica* (Fabricius) were collected in 33 pupae of *Sarcodexia lambens* (Wiedemann) (Diptera: Sarcophagidae) showing 9.0% of parasitism. The species *B. Podagrica* occurs almost everywhere around the world and lives associated to synanthropic dipterous and other Diptera, emerging from their pupae (SILVA, 1991).

According to ROBERTS (1933) and SILVA (1991) *B. podagrica* was collected as a solitary parasitoid of *Sinthesiomyia* larvae (Muscidae), *Cochliomyia*, *Lucilia*, *Calliphora* sp., *Calliphora coloradensis* Hough, *Callitroga macellaria* (Fab.) *Phaenicia sericata* (Meig.) *Phaenicia mexicana* (Macq.), *Phormia regina* (Meig.) (Calliphoridae), *Sarcophaga carnaria* Linné, *Sarcophaga haemorrhoidalis* Fallén, *Sarcophaga impar* Aldrich and *Sarcophaga peregtina* Robineau-Desvoidy (Sarcophagidae).

Fly control using insecticides usually selects resistant populations, being just a palliative. MENDES & LINHARES (1993) believed that research on new methods concerning fly control are needed. Natural regulators, such as parasitoids, are agents responsible for reduction of fly populations (MENDES & LINHARES, 1993).

The aim of this note is to report the first occurrence for *Brachymeria podagrica* on pupae of *Sarcodexia lambens* in Brazil.

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