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Parasitoids of *Ophyra aenescens* (Wiedemann) (Diptera: Muscidae): fly of medical-sanitary importance collected in State of Goiás, Brazil

Parasitoides de *Ophyra aenescens* (Wiedemann) (Diptera: Muscidae): mosca de importância médico-sanitária coletado no Estado de Goiás, Brasil

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Abstract *The objective of the study was to report the first occurrence of the parasitoid Brachymeria podagrica in pupae of Ophyra aenescens, a fly of medical-sanitary importance. Human feces was used as bait to collect the insects. In the study 20 pupae of Ophyra aenescens (Wiedemann) (Diptera: Muscidae) were obtained, of which 20% of the total yielded the parasitoid Brachymeria podagrica (Hymenoptera: Chalcididae).*

Key-words: *Medical-sanitary importance. Synanthropy. Parasitoid. Muscoid fly.*

Resumo *O objetivo do presente estudo é relatar a primeira ocorrência do parasitóide Brachymeria podagrica como inimigo natural de Ophyra aenescens, mosca de importância médico-sanitária. Para coleta dos insetos foi utilizado como isca fezes humanas. Obtiveram-se 20 pupas de Ophyra aenescens (Wiedemann) (Diptera: Muscidae), das quais 4 emergiram parasitóides pertencentes à espécie Brachymeria podagrica (Hymenoptera: Chalcididae), apresentando uma incidência de parasitismo de 20,0%.*

Palavras-chaves: *Importância médico-sanitária. Sinantropia. Parasitóide. Mosca.*

Diptera is an optimal model to study synanthropy, not only for its ecological importance, but also due to the medical-veterinary aspects, as vectors of etiological agents, such as amoeba cysts, helminth eggs, pathogenic enterobacteria, viruses and fungi[2 5].

According to D'Almeida[3] *Ophyra aenescens* (Wiedemann) (Diptera: Muscidae) possesses great capacity for colonizing a wide range of habitats and has an ecological versatility, that contributes to its geographic distribution, as such it as a very successful biological colonizer species.

All the representatives of Chalcididae behave as parasites and most involve Lepidoptera, Diptera, Hymenoptera and Coleoptera[6]. The Chalcididae are cosmopolitan insects[1] with a high diversity in the tropics[4] including approximately 1500 species. They are predominantly solitary endoparasitoids[4].

Species of genus *Brachymeria* Westwood are important primary parasitoids of muscoid Diptera, such as species of the Sarcophagidae family[6] and Calliphoridae. Some species are of economical importance, since they attack insect pests[4]. The aim of this paper was to report a new host for *Brachymeria podagrica* in Brazil.

This study was conducted at *the Agriculture Faculty* (Itumbiara, GO, 18º25´S – 49º13´W), Brazil. The flies were attracted to 19x9cm opaque dark can traps, constructed with two openings like blinders, located in the third inferior part to permit the entrance of the flies. Nylon funnels were coupled to the upper part of the cans, opened in the ends, with bases pointing down and wrapped with plastic bags, enabling the collection of flies and parasitoids (Figure 1). Human feces were used as bait inside the cans, over a layer of sand. Five traps hanging on eucalyptus trees were placed one meter above the ground two meters apart from each other and 50 meters from domestic garbage cans. The collected insects were taken to the laboratory, killed with ethyl ether and kept in 70% alcohol for

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Figure 1- General aspects of the trap.

further identification. The contents of the traps were placed in plastic containers with 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 gelatin capsules (number 00) to obtain flies and/or the parasitoids.

The prevalence of parasitism was calculated by the following formula: P = (parasite pupae/total of pupae) x100.

Through March to December 2001, four specimens of *Brachymeria podagrica* (Fabricius) were collected in 20 pupae of *Ophyra aenescens* (Wiedemann) (Diptera: Calliphoridae) demonstrating a 20% parasitism. The high prevalence of parasitism can also be related to the type of methodology used. The species *B. podagrica* occurs almost everywhere around the world and lives associated to synanthropic dipterous and other Diptera, emerging from their pupae.

According to Roberts[8] *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)[8].

This species occurred as a dipterous parasitoid, developed in rat carcasses in areas of tropical woods in the State of Goiás, Brazil. Its preferred host was *Patonella intermutans* (Walker) (Sarcophagidae) from which the predominantly female parasitoid pupae emerged[9]. The decomposition and colonies of insects in the carcasses of rats during the summer and winter in South Carolina (EUA) collected *B. podagrica* in pupae of *Sarcophaga* sp (Sarcophagidae)[10].

Fly control using insecticides usually selects resistant populations, albeit just a palliative measure. Some investigations[7] believe that research into new methods of fly control are needed. Natural regulators, such as parasitoids are agents responsible for reduction of fly populations[7]. The aim of this communication is to report a new host for *B. podagrica* species in Brazil.

This is the first report of *B. podagrica* in pupae of *O. aenescens* in Brazil.

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