Short Communication

First occurrence of parasitoid *Spalangia endius* (Walker) (Hymenoptera: Pteromalidae) in pupae of *Peckia chrysostoma* (Wiedemann) (Diptera: Sarcophagidae) in Brazil

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Summary

The objective of the study is to report the first occurrence of the parasitoid *Spalangia endius* (Walker) (Hymenoptera: Pteromalidae) on pupae of *Peckia chrysostoma* (Wiedemann) (Diptera: Sarcophagidae), a fly of medical-sanitary importance. Bovine kidney was used as bait to collect the insects. In the study, 76 *Peckia chrysostoma* pupae were obtained, 6 (7.9%) of which yielded the parasitoid *Spalangia endius*.

Key words: Hymenoptera, Diptera, urban area, medical-sanitary importance.

Resumo

O objetivo do presente estudo é relatar a primeira ocorrência do parasitóide *Spalangia endius* (Walker) (Hymenoptera: Pteromalidae) como inimigo natural de *Peckia chrysostoma* (Wiedemann) (Diptera: Sarcophagidae), mosca de importância médico-sanitária. Para coleta dos insetos foi utilizado como isca rins bovino. Obtiveram-se 76 pupas de *Peckia chrysostoma*, das quais 6 emergiram parasitóides pertencentes à espécie *Spalangia endius*, apresentando uma incidência de parasitismo de 7,9%.

Unitermos: Hymenoptera, Diptera, área urbana, importância médico-sanitário.

Diptera is an optimal model for the study of synanthropy, not only because of its ecological importance, but also because of its medical-veterinary aspects, particularly vectors of etiological agents such as amoeba cysts, helminth eggs, pathogenic enterobacteria, viruses and fungi (Geenberg, 1971; D'Almeida, 1992).

Sarcophagidae are viviparous insects, or, rarely, they are ovoviviparous (Lopes and Leite 1989). Six hundreds species of Sarcophagidae of the Neotropical region have been recognized. These insects are of extreme importance in public health, since they are the vehicles of transmission of pathogenic microorganisms to human beings (Greenberg, 1971).

Peckia chrysostoma (Wiedemann) (Diptera: Sarcophagidae), a Neotropical and synanthropic species is widely spread (Ferraz, 1995). As demonstrated in Rio de Janeiro, the species has a preference for environments inhabited by man, and the bait that attracts it best is raw fish (D'Almeida, 1984). The aim of this paper was to report a new host for *Spalangia endius* in Brazil.

The study was conducted in an urban area of the College of Agronomy (Faculdade de Agronomia), located in Itumbiara County, State of Goias, Central Brazil (18°25' S; 49°13' W). Flies

were attracted to traps made of dull black tin-foil cans, measuring 19 cm in height and 9 cm in diameter, with two venetian blind type openings placed in the inferior third to allow the insects to enter. To the upper part of the cans, nylon funnels with open extremities and bases turned down were attached. These traps were then wrapped in plastic bags which, after later removal, would allow the capture of flies and parasitoids. Bovine kidney deposited on top of a soil layer was placed as bait inside the each can. Five of these traps were suspended on *Eucalyptus* sp. trees at 1 m above the soil level, 2 m apart from each other and 50 m away from a domestic garbage deposit. The specimens collected were taken to the laboratory, killed with ethyl ether, and preserved in 70% ethanol for further identification. After retrieval of insects, the traps contents were placed into plastic containers containing a layer of sand to serve as substrate for the larva population. After remaining 15 days in the field, the sand of these containers was sifted in order to extract the pupae produced in the natural environment. These pupae were than individually transferred to gelatin capsules (number 00) to obtain flies and/or parasitoids.

The prevalence of parasitism was computed by the following formula:

$$P = (\text{parasite pupae}/\text{total pupae}) \times 100.$$

During the period from March to December 2001, six specimens of *Spalangia endius* (Walker) (Hymenoptera: Pteromalidae) were collected in 76 pupae of *Chrysomya albiceps* (Diptera: Calliphoridae), showing 7.9% of parasitism. The high prevalence of parasitism can be related to the period or the number of the collections which were performed.

Spalangia are solitary, idiobiont ectoparasitoids of fly pupae, the most important of which are Muscidae, Calliphoridae and Sarcophagidae. Because of their economic importance, the biologies of several species have been fairly intensively studied.

Spalangia endius is widespread in the world as a parasitoid of Diptera, mostly in the form of muscoids and sarcophagids (Gauld and Bolton, 1988).

Fly control using insecticides usually selects resistant populations, acting merely as a palliative. Natural regulators, such as parasitoids, are agents which are responsible for the reduction of fly populations (Mendes and Linhares, 1993).

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