

NOTES AND COMMENTS

PARASITOIDS OF THE FAMILY CHALCIDIDAE COLLECTED IN PASTURES AND FORESTS USING YELLOW TRAPS, IN ITUMBIARA, GOIÁS, BRAZIL

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Received May 20, 2002 – Accepted September 11, 2002 – Distributed May 31, 2003

ABSTRACT

The objective of this study was to appraise the occurrence of parasitoids of the family Chalcididae in Itumbiara County, State of Goiás, central Brazil. Insect samples were collected in pastures and native forest areas using pan traps, from January to December 1998. The traps consisted of circular yellow plastic containers (30 cm in diameter and 12 cm in height) containing a mixture of 2 L of water, 2 ml of detergent, and 2 ml of formaldehyde. Samplings were performed weekly by placing 10 traps at soil level (5 traps in the pasture and 5 in the woods). During 1998, 121 specimens of Chalcididae were collected. *Haltichella* sp.4 was the most abundant species collected (15.7%).

Key words: Insecta, Hymenoptera, parasitoid, savanna forest, natural enemy.

RESUMO

Parasitóides da família Chalcididae coletados em pastagens e mata utilizando-se armadilhas de bacias amarelas, em Itumbiara, Goiás, Brasil

O objetivo do presente estudo foi relatar a primeira ocorrência de parasitóides da família Chalcididae em Itumbiara, GO. O material estudado foi coletado em áreas de pastagem e de mata nativa, usando-se bacias amarelas contendo água, no período de janeiro a dezembro de 1998. Foram realizadas coletas semanais com 10 armadilhas amarelas, colocadas no nível do solo (5 bacias foram colocadas nos pastos e 5, na mata). As armadilhas constavam de bacias plásticas amarelas com aproximadamente 30 cm de diâmetro e 12 cm de altura, nas quais se depositou uma mistura de 2 litros de água, 2 ml de detergente e 2 ml de formol. Durante o ano de 1998 foram coletados 121 exemplares de Chalcididae. A espécie mais abundante foi *Haltichella* sp.4, com 15,7%.

Palavras-chave: Insecta, Hymenoptera, parasitóide, mata de cerrado, inimigos naturais.

The family Chalcididae is cosmopolitan in distribution, and particularly diverse in tropical lowland areas. The family presently comprises about 1500 species distributed in nearly 90 genera (Burks, 1960; Habu, 1960; Gauld & Bolton, 1988; Askew, 1994; Pujade, 1994). All Chalcididae are parasitoids of larvae or pupae of other insects, mostly Lepidoptera and Diptera, but also Coleoptera, Neuroptera, and Hymenoptera (Clausen, 1940; Burks, 1960; Grissell & Schauff, 1990).

Chalcididae may be ectoparasitoids or endoparasitoids. Most appear to be idiobionts; some are koinobionts. Many chalcidids are strictly primary parasitoids, but others are facultative or obligatory hyperparasitoids. Most chalcidids are solitary parasitoids but a few are gregarious (Hanson & Gauld, 1995). About 200 species of *Brachymeria* exist worldwide, with 42 described from the Neotropics.

They develop as parasitoids in the pupae of a wide range of Lepidoptera, Coleoptera, and Diptera hosts (Boucek, 1963). *Conura* is primarily a New World genus with probably over 1000 species in the Neotropics which are parasitoids of pupae of Lepidoptera, Diptera, Coleoptera, and Hymenoptera (Hanson & Gauld, 1995). *Melanosmicra* is restricted to the Neotropics where there are about 30 species (biology unknown) (Hanson & Gauld, 1995). The genus *Dirhinus* consists of about 15 species in the Neotropics region which are parasitoids in puparia of various Diptera (Calliphoridae, Muscidae, Sarcophagidae, and Tephritidae). The genus *Haltichella* is represented in the Neotropics by five species; there are currently about 20 species of this genus parasitizing Lepidoptera pupae (Hanson & Gauld, 1995).

The objective was to identify species of Chalcididae (Hymenoptera: Chalcidoidea) collected in the savanna forests and pastures in Itumbiara County, State of Goiás, central Brazil, using yellow pan traps.

The experiment was carried out at the Agronomy College Farm, located near the Paranaíba River shore, 5 km from the center of the city of Itumbiara (18°25'S; 49°13'W). The farm

has approximately 12 hectares. The 1.5 hectare sampling area is constituted of ciliary forest along the Paranaíba River, gradating to mesophytic semi-deciduous forest and savanna.

Areas close by have been the site of selective deforestation and forest burning, while the sampling area itself was circled by sugar cane croppings and pastures. The samplings were conducted weekly using 10 traps randomly placed at the soil level, totaling five traps in the pasture and five traps in the woods for each sampling. These traps consisted of circular yellow plastic containers approximately 30 cm in diameter and 12 cm in height, containing a mixture of 2 L of water, 2 ml detergent, and 2 ml formaldehyde.

Dr. Marcelo Teixeira Tavares, from the Universidade Federal do Espírito Santo, Vitória, State of Espírito Santo, identified the Chalcididae species. The proof material is deposited in the Biodiversity Laboratory of the Centro Universitário de Araraquara.

Of 520 samplings performed in January-December 1998, 121 specimens of Chalcididae from five different genera and 25 different species were collected. Of these individuals 73.6% were collected in the pastures and 26.4% in the forests (Table 1). The higher number of specimens collected in the pastures was probably due to an increase in attraction promoted by the traps in this area. In the woods, the tree canopies may have reduced incidence of sunlight, thus reducing the reflection of the yellow color of the containers, found by Noyes (1989) to be very useful tools in collecting parasitoids. Marchiori *et al.* (1998) reported that forest areas are important as sites of origin for parasitoids that are natural enemies of other insects.

The Chalcididae fauna in the pastures and forest were similar. Collection site proximity may explain the similarity of species obtained in these areas.

Among the Chalcididae specimens collected, the species most frequently found was *Haltichella* sp.4 (15.7%), followed by *Conura* sp.1 (13.2%) (Table 1). These data are important since they add to what is known about parasitoids in Brazil.

TABLE 1
Specimens of Chalcididae (Hymenoptera: Chalcidoidea) collected from January to December 1998 in pastures and forests in Itumbiara County, State of Goiás, central Brazil, using yellow pan traps.

Taxonomic group	Forest	Pasture	Total
<i>Brachymeria annulata</i>	01	08	09
<i>Brachymeria pandora</i>	01	11	12
<i>Brachymeria</i> sp.1	00	04	04
<i>Conura</i> sp.1	02	14	16
<i>Conura</i> sp.2	00	01	01
<i>Conura</i> sp.3	00	01	01
<i>Conura</i> sp.4	00	02	02
<i>Conura</i> sp.5	00	01	01
<i>Conura</i> sp.6	00	01	01
<i>Conura</i> sp.7	00	01	01
<i>Conura</i> sp.8	00	02	02
<i>Conura</i> sp.9	00	02	02
<i>Conura</i> sp.10	01	01	02
<i>Haltichella perpulchra</i>	03	07	10
<i>Haltichella rhyacioniae</i>	04	03	07
<i>Haltichella ornaticorniae</i>	04	02	06
<i>Haltichella</i> sp.1	00	04	04
<i>Haltichella</i> sp.2	02	00	02
<i>Haltichella</i> sp.3	01	02	03
<i>Haltichella</i> sp.4	04	15	19
<i>Haltichella</i> sp.5	03	00	03
<i>Haltichella</i> sp.6	03	01	04
<i>Dirhinus</i> sp.	02	03	05
<i>Melanosmicra</i> sp.1	00	01	01
<i>Melanosmicra</i> sp.2	01	02	03
Total	32	89	121

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