SCIENTIFIC NOTE

Braconidae (Hymenoptera: Ichneumonoidea) Collected in a Native Forest Area in Itumbiara, Goiás, Brazil

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Braconidae (Hymenoptera: Ichneumonoidea) Coletados em Área de Mata Nativa em Itumbiara, Goiás

RESUMO - Com este trabalho pretendeu-se conhecer os gêneros de Braconidae (Hymenoptera) coletados num remanescente de mata nativa, em Itumbiara, Goiás, utilizando armadilha Malaise. A armadilha Malaise captura os insetos por interceptação. Após 24 coletas foram obtidos 49 espécimes pertencentes a 19 gêneros e 10 subfamílias. O gênero mais freqüente foi *Chelonus* com 34,7% de freqüência. Março e junho foram os meses de maior ocorrência de Braconidae.

PALAVRAS-CHAVE: Controle biológico, parasitoide, inimigo natural, armadilha Malaise

ABSTRACT - This research work was carried out in order to identify the genera of Braconidae (Hymenoptera) collected in a remnant area of native forest in Itumbiara County, State of Minas Gerais, Brazil, using Malaise traps. The Malaise trap captures the insects by interception. After 24 sample collections, a total of 49 specimens from 19 different genera and 10 subfamilies were obtained. The most frequent genus was *Chelomus* with 34.7% frequency. March and June were the months of highest occurrence of Braconidae.

KEY WORDS: Biocontrol, parasitoid, natural enemy, Malaise trap

Hymenoptera is one of the largest orders of insects comprising parasitoids that develop on immature stages of other arthropods. They are important elements on biological control of insect pests (Askew 1971).

The Braconidae is the second largest family in the Hymenoptera, comprising about 40,00 species, which are distributed throughout the world in several different habitats (Sharkey 1993). They are considered key-species for maintenance of the balance of the communities that include them (Scatolini & Penteado-Dias 1997). In their majority, they are primary parasitoids of other insects and are normally associated to a single host. They may be endoparasitoids or ectoparasitoids, koinobionts or idiobionts (Hanson & Gauld 1995).

The most common hosts of parasitoids from the Braconidae family are larvae of Lepidoptera, Coleoptera and Diptera. The family is divided into 43 subfamilies (Achterberg 1993). The Agathidinae are endobiont endoparasitoids of Lepidoptera larvae; the Doryctinae are, in their majority, solitaire idiobiont ectoparasites on larvae of Coleoptera; the Microgastrinae form the largest Braconidae sub-family, is very rich in number of species, many of which are considered important parasitoids of several species of Lepidoptera crop pests; the Opiinae are solitaire endoparasitoid of Cyclorrhapha (Diptera) larvae; the Origilinae behave as endoparasitoids of Lepidopetra larvae; and the Rogadinae are idiobiont ectoparasitoids of Lepidoptera, Diptera and Coleoptera (Braet & tignon 1992, Sharkey 1993). The objective of this research work was to identify the genera of Braconidae collected in a remnant area of native forest located in Itumbiara County, State of Goiás, Brazil, using Malaise traps.

The experiment was carried out at the College of Agronomy Farm (Fazenda da Faculdade de Agronomia) located near the Paranaíba river shore, 5 km distant from downtown Itumbiara. The farm has an approximate area of 12 alqueires (expressar em hectares). The sampling area has 1.5 alqueires (expressar em hectares) of forest composed of ciliary vegetation that follows the Paranaíba River, gradating to mesofile semideciduous vegetation and "cerradão". The area has a history of selective deforestation and forest burnings and is surrounded by sugar cane fields and grass pastures.

The Malaise trap captures insects by interception. They are built with black cloth bands that intercept the insects leading them through two white bands up to the upper part where two plastic flasks (20 ml) are attached and connected to each other by a screw cap. The lower flask contains a fixating liquid (Dietrich solution) where the insects drop and die. These flasks were positioned to the North to better attract the parasitoids. The attracted insects were collected every 15 days using a fine mesh sieve and were then stored in 70% ethanol for further identification.

The specimens collected were deposited in the

Entomological Collection of the Departmento de Ecologia and Biologia Evolutionária da Universidade Federal de São Carlos, State of São Paulo.

Twenty-four samplings were performed from January to December 200. From these collections, 49 specimens from 19 different genera and 10 subfamilies of Braconidae were obtained (Table 1). The subfamily Doryctinae had the highest diversity of genera. The number of specimens obtained was low considering the collection period. This was probably due to the type of trap used, to variations in the quality and availability of resources, to the densities of hosts, or to the size of the sampling area. According to Campos *et al*. (200) the Malaise traps have been indicated to capture insects of the orders Hymenoptera, Diptera and Thysanoptera. Noyes (1989), using yellow plastic bowls (containing water, formaldehyde and soap) as traps, found that they are important tools in collecting parasitic Hymenoptera.

Table 1. Specimens of Braconidae (Hymenoptera: Ichneumonoidea) collected with Malaise traps in a remnant area of native forest in Itumbiara County, State of Goiás, Brazil, from January to December 2000.

Taxonomic group	Frequency	Percentage
Agathidinae		
Coccygidium	4	8,2
Cardiochilinae		
Toxoneuron	1	2,0
Cheloninae		
Chelonus	17	34,8
Doryctinae		
Heterospilus	1	2,0
Megaloproctus	1	2,0
Moneuron	1	2,0
Notiospathius	1	2,0
Spathius	1	2,0
Euphorinae		
Leiophron	1	2,0
Macrocentinae		
Dolichozele	1	2,0
Macrocentrus	5	10,2
Microgastrinae		
Diolcogaster	1	2,0
Distatrix sp.	1	2,0
Hypomicrogaster	1	2,0
Opiinae		
Opius sp.	1	2,0
Orgilinae		
Bentonia	6	12,4
Stantonia	2	4,2
Rogadine		
Aleiodes	2	2,0
Rogas	1	4,2
Total	49	100

Despite the small number of specimens collected in the sampling area, it is believed that forest areas are important as sites of origin of parasitoids, which are natural enemies of other insects.

Chelonus was the most abundant genus comprising 34.7% of the specimens collected. This result probably demonstrates that species from that genus should be the most important as natural enemies of other insects in the Itumbiara area. *Chelonus* spp. behave as parasitoids of eggs and larvae of Lepidoptera that induce severe damages on leguminous plants, corn, wheat, had cabbage, leaf cabbage, melon and cotton, causing economical losses to agriculture (Hentz *et al*. 1998, Hochuli *et al*. 1999, Legaspi *et al*. 2000).

Most specimens were obtained in the months of March and June, with 20.4% and 24.5% occurrence frequency, respectively (Table 2). These results contribute to the knowledge of the entomological fauna occurring in the region of Itumbiara County, South of the State of Goiás.

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Table 2. Monthly frequency of Braconidae (Hymenoptera: Ichneumonoidea) collected with Malaise traps in a remnant area of native forest in Itumbiara County, State of Goiás, Brazil, from January to December 2000.

Taxonomic group	Months											
	Jan.	Fev.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Agathidinae												
Coccygidium	0	0	2	1	0	1	0	0	0	0	0	0
Cardiochilinae												
Toxoneuron	0	0	0	1	0	0	0	0	0	0	0	0
Cheloninae												
Chelonus	2	0	7	1	0	4	0	1	0	2	0	0
Doryctinae												
Heterospilus	0	0	0	0	0	1	0	0	0	0	0	0
Megaloproctus	0	0	0	0	0	0	0	0	0	0	1	0
Moneuron	0	0	0	0	0	0	0	1	0	0	0	0
Notiospathius	0	0	0	0	0	1	0	0	0	0	0	0
Spathius	0	0	0	0	0	1	0	0	0	0	0	0
Euphorinae												
Leiophron	0	0	0	0	1	0	0	0	0	0	0	0
Macrocentinae												
Dolichozele	0	0	0	0	0	1	0	0	0	0	0	0
Macrocentrus	0	0	0	1	0	1	2	1	0	0	0	0
Microgastrinae												
Diolcogaster	0	0	0	0	0	0	0	0	0	0	1	0
Distatrix sp.	0	0	0	0	0	0	0	0	0	0	1	0
Hypomicrogaster	0	0	0	1	0	0	0	0	0	0	0	0
Opiinae												
Opius sp.	0	0	0	0	0	0	0	1	0	0	0	0
Orgilinae												
Bentonia	2	2	0	0	1	1	0	0	0	0	0	0
Stantonia	0	0	0	0	0	1	0	0	1	0	0	0
Rogadine												
Aleiodes sp.	0	0	1	1	0	0	0	0	0	0	0	0
Rogas sp.	0	0	0	0	0	0	0	1	0	0	0	0
Total	4	2	10	6	2	12	2	5	1	2	3	0

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