

Faunistic Note on the Braconidae (Hymenoptera: Ichneumonoidea) in Iranian Cotton Fields and Surrounding Grasslands

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ABSTRACT

The Braconidae (Hymenoptera) constitutes one of the most species-rich families of insects. The fauna of these beneficial insects was studied in some Iranian cotton fields and surrounding grasslands through 2004-2007. A total of eight braconid species from seven genera (*Agathis* Latreille, 1804, *Bassus* Fabricius, 1804, *Bracon* Fabricius, 1804, *Vipio* Latreille, 1804, *Spathius* Nees, 1819, *Glyptapanteles* Ashmead, 1905, and *Elasmosoma* (Ruthe, 1858) and five subfamilies (Agathidinae, Braconinae, Doryctinae, Microgastrinae and Neoneurinae) were determined as new records for Iran.

Key words: Braconidae, cotton fields, fauna, recent record, Iran.

INTRODUCTION

Family Braconidae is the second largest family (after the Ichneumonidae) in the order Hymenoptera, containing more than 15000 valid species (Quicke and Achterberg, 1990), from an estimated total world fauna of at least 40.000 (Achterberg, 1984). Although, Achterberg (1984) recognized 35 subfamilies of Braconidae, later, this number raised to 39 (Shaw & Huddleston, 1991), and most recently to 44 (Achterberg, 1993).

Cotton is an important economic and fiber crop, grown in more than 60 countries in the world. This crop is of great commercial importance as it sustains livelihood of a large number of rural people through cultivation, picking and a large work force employed in both small and large scale industrial units. Over 180 million people are associated with the fiber industry that produces 20 to 30 billion dollars worth of raw cotton. It is one of the most important cash crops which play a significant role in national economy. Insect pest management by chemical pesticides obviously has brought about considerable protection to crop yields over the past five decades. Unfortunately, extensive and very often indiscriminate use of chemical pesticides has resulted in environmental degradation, adverse effects on human health and other organisms and suppressing beneficial insects (Rude, 1984 and Williams *et al.*, 2000).

Identification of insects' fauna in cotton fields is the first step for successful establishment of biological control and IPM programs (Robinson *et*

al., 1972 and Xia, 1999). With attention to the efficient role of Braconidae for biological control of several important pests in most of the agroecosystems (Ghahari *et al.*, 2006), the fauna of these beneficial insects was studied in cotton fields of some regions in Iran.

MATERIALS AND METHODS

Specimens were collected by sweep net and malaise traps from cotton fields of different regions in Iran. Sampled regions were; Arasbaran (East Azarbayjan province), Behshahr (Mazandaran province), Garmsar (Semnan province), Gorgan, (Golestan province), Kashmar (Khorasan province) and Moghan (Ardabil province). The samplings were conducted randomly during the three successive seasons 2004 – 2007. Collected specimens were killed by ethyl acetate and mounted on triangular labels and were examined by a stereoscopic binocular microscope. The collected specimens were identified by the third and fourth authors.

RESULTS AND DISCUSSION

Totally 8 braconid species in 7 genera and 5 subfamilies were collected from Iranian cotton fields and surrounding grasslands. A list of the species, which all of them were newly recorded from Iran, is given together with their general distribution. Table (1) represents collected species, their numbers, sites of collection, dates of collection and hosts recorded for each species according to Yu *et al.* (2005).