

A contribution to the knowledge of ichneumon wasps (Hymenoptera: Ichneumonidae) from Iranian cotton fields and surrounding grasslands

Материалы к фауне ихневмонид (Hymenoptera: Ichneumonidae), распространенных на полях хлопчатника и прилегающих пастбищах в Иране

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The fauna of Ichneumonidae (Hymenoptera) from Iranian cotton fields and surrounding grasslands is studied in this paper. In a total of 18 species from 15 genera (*Barycnemis*, *Colpotrochia*, *Ctenochira*, *Dichrogaster*, *Gelis*, *Iseropus*, *Itopectis*, *Lissonata*, *Neleges*, *Pristomerus*, *Rhyssa*, *Scambus*, *Schizopyga*, *Temelucha*, *Tromatobia*), and 8 subfamilies (Banchinae, Cremastinae, Cryptinae, Metopiinae, Pimplinae, Tersilochinae, Tryphoninae, Rhyssinae) were collected from this agro-ecosystem.

В работе приведен список ихневмонид (Hymenoptera), зарегистрированных на полях хлопчатника и окружающих пастбищах в Иране. В этой агросистеме авторами было собрано 18 видов 15 родов (*Barycnemis*, *Colpotrochia*, *Ctenochira*, *Dichrogaster*, *Gelis*, *Iseropus*, *Itopectis*, *Lissonata*, *Neleges*, *Pristomerus*, *Rhyssa*, *Scambus*, *Schizopyga*, *Temelucha*, *Tromatobia*) из 8 подсемейств (Banchinae, Cremastinae, Cryptinae, Metopiinae, Pimplinae, Tersilochinae, Tryphoninae, Rhyssinae).

Key word: parasitoid, fauna, Iran, new record, cotton field, Ichneumonidae

Ключевые слова: паразитоиды, фауна, таксономия, Иран, Ichneumonidae

INTRODUCTION

The Ichneumonidae is one of the most species rich families of all organisms with an estimated 60,000 species in the world (Townes, 1969). Ichneumonids utilize a diverse array of insects and arachnids as their hosts and play an essential role in the normal functioning of most ecosystems, underlining the need to inventory their diversity. Ichneumonids have been used successfully as biocontrol agents and given the largely undocumented fauna there is a huge potential for their utilization in managed biocontrol programs (Gupta 1987, 1991). The family Ichneumonidae is currently split into 37 subfamilies including, Acaenitinae,

Adelognathinae, Agriotypinae, Alomyinae, Anomaloninae, Banchinae, Brachycyrtinae, Campopleginae, Collyriinae, Cremastinae, Cryptinae, Ctenopelmatinae, Diplazontinae, Eucerotinae, Ichneumoninae, Labeninae, Lycorininae, Mesochorinae, Metopiinae, Microleptinae, Neorhacodinae, Ophiioninae, Orthopelmatinae, Orthocentrinae, Oxytorinae, Paxylommatinae, Phrudinae, Phygadeuontinae, Pimplinae, Rhyssinae, Stilbopinae, Tersilochinae, Tryphoninae and Xoridinae (Wahl & Sharkey, 1993; Yu et al., 2005).

Although the fauna of Iranian Ichneumonidae was studied rather well (Kolarov & Ghahari, 2005, 2006, 2007, 2008) but the fauna of these powerful parasitoids was not

studied in Iranian cotton fields so far. In this paper we present the result of a faunistic survey in this region of northeastern Iran.

MATERIALS AND METHODS

The materials were collected by sweep netting from cotton fields and surrounding grasslands in different regions of Iran (including, Ardabil, Golestan, Tehran, Semnan, Fars, Mazandaran provinces). Through the faunistic survey, in addition to the collecting of adult Ichneumonidae, some insect collections in Islamic Azad University (especially Ghaemshahr, Shahre Rey and Tehran Branches) were examined. Classification, nomenclature and distributional data of Ichneumonidae suggested by Kasparyan (1981), Yu & Horstmann (1997) and Yu et al. (2005) have been followed.

RESULTS

The result of this research indicated that there is interesting species in Iranian cotton fields and surrounding grasslands. Totally, eighteen species in fourteen genera and eight subfamilies were collected in this faunistic survey. The list of species is given below.

SUBFAMILY BANCHINAE

Lissonota Gravenhorst, 1829

Lissonota mediterranea Seyrig, 1927

Material. Mazandaran Province: Galogah (one male), July 2005.

SUBFAMILY CREMASTINAE

Pristomerus Curtis 1836

Pristomerus armatus (Lucas, 1849)

Material. Mazandaran Province: Behshahr (one female), April 2008.

Temelucha Förster, 1869

Temelucha arenosa Szépligeti, 1899

Material. Tehran Province: Varamin (one male), October 2006.

Temelucha discoidalis (Szépligeti, 1899)

Material. Mazandaran Province: Behshahr (one male), March 2008.

Temelucha lucida (Szépligeti, 1899)

Material. Fars Province: Darab (one female), June 2004.

Temelucha tricolorata Sedivy, 1968

Material. Mazandaran Province: Ghaemshahr (one female), May 2008.

SUBFAMILY CRYPTINAE

Dichrogaster Doumerc, 1855

Dichrogaster aestivalis (Gravenhorst, 1829)

Material. Khorasan Province: Kashmar (one male, one female), October 2003.

Gelis Thunberg, 1827

Gelis rufipes (Bridgman, 1883)

Material. Golestan Province: Bandar-Torkman (two males), July 2003.

SUBFAMILY METOPIINAE

Colpotrochia Holmgren, 1855

Colpotrochia triclitor (Aubert, 1979)

Material. Ardabil Province: Moghan (two females), June 2003.

SUBFAMILY PIMPLINAE

Iseropus Förster, 1869

Iseropus stercorator (Fabricius, 1793)

Material. Semnan Province: Garmsar (one male), September 2002.

Itoplectis Förster, 1869

Itoplectis aterrima Jussila, 1965

Material. Mazandaran Province: Behshahr (one male), July 2005.

Scambus Hartig, 1838

Scambus calobatus (Gravenhorst, 1829)

Material. Semnan Province: Garmsar (two females, one male), September 2001

Tromatobia Förster, 1869

Tromatobia oculatoria (Fabricius, 1798)

Material. Golestan Province: Gorgan (one female), June 2001.

Schizopyga Gravenhorst, 1829

Schizopyga podagrica Gravenhorst, 1829

Material. Mazandaran Province: Behshahr (one female), March 2008.

SUBFAMILY TERSILOCHINAE

Barycnemis Förster, 1869

Barycnemis alpina (Strobl, 1901)

Material. Golestan Province: Nokandeh (one female), July 2003.

SUBFAMILY TRYPHONINAE

Ctenochira Förster, 1855

Ctenochira marginata (Holmgren, 1855)

Material. Mazandaran province: Sari (two females), August 2007.

Neleges Förster, 1869

Neleges proditor (Gravenhorst, 1829)

Material. Mazandaran Province: Behshahr, Neka, Sari (six females), March 2008.

SUBFAMILY RHYSSINAE

Rhyssa Gravenhorst, 1829

Rhyssa persuasoria (Linnaeus, 1758)

Material. Mazandaran Province: Behshahr (one male, one female), April 2008.

DISCUSSION

The result of this survey indicates that there are the diverse and on the other hand

unknown fauna of Ichneumonidae in different regions of Iran especially in different agro-ecosystem. Base of the results of this research, the ichneumonoid parasitoids can have efficient and powerful role in biological control and IPM programs, if they are conserved in agro ecosystems (Godfray 1994; Austin & Dowton 2001). Pest management in cotton is a prime example of over-reliance of chemical control of pests, leading to unsustainable cotton production (Van den Bosch 1978). Due to many problems associated with sole reliance on chemical pest control, cotton pest management has evolved in recent decades to an integrated approach where biological control, cultural control and crop management play crucial roles (Sterling et al. 1989).

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