

Linzer biol. Beitr.	44/2	1079-1085	28.12.2012
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A faunistic study on the Odonata (Insecta) from Kurdistan province and vicinity, western Iran

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A b s t r a c t : The fauna of Odonata (Anisoptera and Zygoptera) from Kurdistan province, western Iran is studied in this paper. In total 25 species from 18 genera and 9 families (including, Aeshnidae, Calopterygidae, Coenagrionidae, Cordulegastridae, Euphaeidae, Gomphidae, Lestidae, Libellulidae, Platycnemididae) were collected and identified.

K e y w o r d s : Odonata, Fauna, Kurdistan, Iran.

Introduction

Odonata is one of the oldest groups of winged insects found today. With 5680 extant species, dragonflies are a relatively small order of insects (KALKMAN et al. 2008). Adult odonates are medium to large in size, often conspicuous and/or brightly colored insects and are aerial predators hunting by sight. They generally are found at or near freshwater, although some species roam widely and may be found far from their breeding sites. The larvae are predatory, aquatic and occur in all manner of inland waters (BRINCK 1955; GLOYD & WRIGHT 1959; CORBET 1962; CARLE 1982; DUNKLE 1990). The fauna of Iranian Odonata was studied rather well (SCHMIDT 1954; BLOM 1982; LOHMANN 1990, 1992; HEIDARI & DUMONT 2002; KALKMAN et al. 2004; MAJIDI-SHILASAR et al. 1998; SAKENIN et al. 2008, 2011; EBRAHIMI et al. 2009; GHAHARI et al. 2009, AHMADI et al. 2011, 2012). The aim of this research is studying the fauna of Odonata in Kurdistan province where the odonate fauna has not been studied so far. Kurdistan province, 28,817 km² in area, is located in the west of Iran and bounded by Iraq on the west. Kurdistan is one of the most mountainous regions in Iran and has a generally mild and quite pleasant climate throughout the spring and summer. As a result of its elevation and mountains, Kurdistan province has many rivers, lakes, glaciers and caves, which render it rather picturesque.

Materials and Methods

The specimens for this research were collected from different habitats (especially close to freshwater bodies, mainly along canals, pools, streams, ponds and small seasonal rivers) of Kurdistan province and vicinity (western Iran). The adults of Odonata were

collected with long-handed aerial net with a net opening of at least 17 inches. The collected specimens were put in 75% alcohol or pinned and determined. Classification, nomenclature and identification as suggested by DUMONT (1991), DIJKSTRA & LEWINGTON (2006), KALKMAN (2006), and some other available articles have been followed.

Results

In total 25 species from 18 genera and 9 families of Odonata were collected from Kurdistan province and vicinity. The list of species is given below alphabetically.

Family *Aeshnidae* RAMBUR 1842

Genus *Aeshna* FABRICIUS 1775

Aeshna mixta LATREILLE 1805

Material examined: Kurdistan province: Ghorveh, 2♂♂, 2♀♀, unknown date.
Kurdistan province: Hassan-Abad, 1♂, 1♀, September 2007.

Genus *Anaciaeschna* SELYS 1878

Anaciaeschna isoceles (MÜLLER 1767)

Material examined: Kurdistan province: Baneh, 3♀♀, August 2007.

Genus *Anax* LEACH 1815

Anax ephippiger (BURMEISTER 1839)

Material examined: Kurdistan province: Sanandaj, 1♀, July 2007. Kermanshah province: Paveh, 1♀, September 2007.

Anax imperator LEACH 1815

Material examined: Kurdistan province: Dehkalan, 1♂, April 2007. Kurdistan province: Baneh, 2♂♂, August 2007. West Azarbaijan province: Piranshahr, 1♂, spring 2010.

Anax parthenope (SELYS 1839)

Material examined: Kurdistan province: Kamyaran, 1♀, July 2007.

Genus *Brachytron* EVANS 1845

Brachytron pratense (MÜLLER 1764)

Material examined: Kurdistan province: Saghez, 1♂, June 2007.

Genus *Caliaeschna* SELYS 1883

***Caliaeschna microstigma* (SCHNEIDER 1845)**

Material examined: Kurdistan province: Baneh, 1 ♀, August 2007.

Family Calopterygidae SELYS 1850

Genus *Calopteryx* LEACH 1815

***Calopteryx intermedia* SELYS 1887**

Material examined: Kurdistan province: Marivan, 1 ♂, August 2007. Kermanshah province: Songhor, 1 ♂, summer 2007. West Azarbaijan province: Piranshahr, 2 ♂, spring 2010.

Family Coenagrionidae KIRBY 1890

Genus *Enallagma* CHARPENTIER 1840

***Enallagma cyathigerum* CHARPENTIER 1840**

Material examined: Kurdistan province: Kamyaran, 1 ♂, July 2007.

Genus *Ischnura* CHARPENTIER 1840

***Ischnura elegans ebneri* SCHMIDT 1838**

Material examined: Kurdistan province: Saghez, 3 ♂, June 2007. Kurdistan province: Kamyaran, 2 ♂, July 2007. Kurdistan province: Ghorveh, 1 ♂, July 2007. Kermanshah province: Songhor, 3 ♂, August 2007. West Azarbaijan province: Piranshahr, 1 ♂, spring 2010. Kurdistan province: Divandarreh, 2 ♂, 2 ♀, unknown date.

***Ischnura intermedia* DUMONT 1974**

Material examined: Kurdistan province: Bijar, 2 ♀, June 2007. Kurdistan province: Baneh, 3 ♀, spring 2007.

Family Cordulegastriidae CALVERT 1893

Genus *Sonjagaster* LOHMANN 1992

***Sonjagaster insignis* (SCHNEIDER 1845)**

Material examined: Kurdistan province: Dehkalán, 2 ♂, April 2007. Kurdistan province: Divandarreh, 1 ♂, August 2007.

Family Euphaeidae SELYS 1853

Genus Epallage CHARPENTIER 1840

***Epallage fatime* (CHARPENTIER 1840)**

Material examined: Kurdistan province: Sanandaj, 1♀, July 2007.

Family Gomphidae RAMBUR 1842

Genus Onychogomphus SELYS 1854

***Onychogomphus assimilis* SCHNEIDER 1845**

Material examined: Kurdistan province: Divandarreh, 1♂, August 2007.

***Onychogomphus lefebvrii* (RAMBUR 1842)**

Material examined: Kermanshah province: Javanrood, 1♂, 2♀, April 2007.

Family Lestidae CALVERT 1901

Genus Sympecma BURMEISTER 1839

***Sympecma fusca* (VANDER LINDEN 1820)**

Material examined: Kurdistan province: Marivan, 1♀, unknown date.

Family Libellulidae LEACH 1815

Genus Crocothemis BRAUER 1868

***Crocothemis erythraea* (BRULLÉ 1832)**

Material examined: Kurdistan province: Hassan-Abad, 3♂♂, 1♀, September 2007.

***Crocothemis servilia* (DRURY 1773)**

Material examined: Kermanshah province: Paveh, 1♀, June 2007.

Genus Libellula LINNAEUS 1758

***Libellula depressa* LINNAEUS 1758**

Material examined: Kurdistan province: Kamyaran, 4♂♂, July 2007. Kurdistan province: Sanandaj, 3♂♂, July 2007. Kurdistan province: Saghez, 2♂♂, summer 2009.

***Libellula pontica* SELYS 1887**

Material examined: Kurdistan province: Marivan, 2♂♂, 1♀, August 2007.

Genus *Orthetrum* NEWMAN 1833

***Orthetrum brunneum* (FONSCOLOMBE 1837)**

Material examined: Kurdistan province: Saghez, 2♂♂, 2♀♀, June 2007. Kermanshah province: Javanrood, 3♀♀, July 2007. Kurdistan province: Bijar, 2♀♀, autumn 2008.

***Orthetrum sabina* (DRURY 1770)**

Material examined: Kurdistan province: Bijar, 2♀♀, June 2007. Kurdistan province: Sanandaj, 3♂♂, July 2007. Kurdistan province: Divandarreh, 3♀♀, August 2007. West Azarbaijan province: Piranshahr, 1♀, spring 2010.

Genus *Sympetrum* NEWMAN 1833

***Sympetrum fonscolombii* (SELYS 1840)**

Material examined: Kurdistan province: Ghorveh, 2♂♂, summer 2007.

Genus *Trithemis* BRAUER 1868

***Trithemis festiva* (RAMBUR 1842)**

Material examined: Kurdistan province: Dehkalan, 1♂, April 2007.

Family *Platycnemididae* JACOBSON & BIANCHI 1905

Genus *Platycnemis* BURMEISTER 1839

***Platycnemis dealbata* SELYS & HAGEN 1850**

Material examined: Kermanshah province: Songhor, 2♂♂, August 2007. Kurdistan province: Divandarreh, 2♀♀, August 2007. Kurdistan province: Baneh, 2♂♂, 3♀♀, spring 2009.

Discussion

The results of this research conducted in some areas of Kurdistan province indicate that the fauna of Odonata is rather diverse in this region of Iran, and it is necessary to continue these local faunistic works for determining the fauna of Iran step by step. HEIDARI & DUMONT (2002) presented an annotated checklist of the Odonata of Iran in which 95 species were reported, but with additional publications (see references), preparing a new checklist is necessary for Iranian Odonata. Since Odonata are beneficial insects, especially in agroecosystems such as paddy fields (GHAHARI et al. 2009), conservation of them is necessary to support natural biological control of agricultural and forest pests. Decreasing the application of pesticides and preserving aquatic ecosystems are the main strategies to ensure persistence of odonates.

Acknowledgments

The authors are grateful to Dr. G. De Knijf of Belgium, and Dr. V.J. Kalkman of the Netherlands for identification of some specimens for the first author in recent years, Dr. D. Paulson of USA for editing the manuscript, and Dr. M. Schorr of Germany for sending several necessary articles. We are also thank M. Shaabani for collecting some materials. The research was supported by Islamic Azad University (Shahre Rey and Garmsar Branches), and KURDI, Kasetsart University of Thailand.

Zusammenfassung

Vorliegende Arbeit behandelt die Auswertung der Odonaten-Fauna (Anisoptera and Zygoptera) der westiranischen Provinz Kurdistan. Insgesamt konnten 25 Arten aus 18 Gattungen und 9 Familien nachgewiesen werden.

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Zeitschrift/Journal: [Linzer biologische Beiträge](#)

Jahr/Year: 2012

Band/Volume: [0044_2](#)

Autor(en)/Author(s): Ghahari Hassan, Thipaksorn Apisit, Naderian Hamid, Sakenin Hamid, Tajali Ali Akbar

Artikel/Article: [A faunistic study on the Odonata \(Insecta\) from Kurdistan province and vicinity, western Iran 1079-1085](#)