SHORT COMMUNICATION

hppt/ urn:lsid:zoobank.org:pub: AD33AF8D-9FB0-4A25-807D-0D499DDD184A

A. Ebrahimi[1*)], H. Mohammadian[2)], S. M. Madjdzadeh[1)]. THE DRAGONFLIES OF FAMILY LIBELLULIDAE (ODONATA: ANISOPTERA) OF THE KHABR NATIONAL PARK (KERMAN PROVINCE, SOUTH-EAST IRAN). – Far Eastern Entomologist. 2013. N 270: 7-11.

Summary. The list of 12 species in five genera of family Libellulidae firstly collected in the Khabr National park in spring and summer is given. The majority of these species are common in Iran and other parts of Kerman province.

Key words: Odonata, Libellulidae, fauna, new records, Khabr National park, Iran.

А. Эбрахими[1*)], Х. Мохаммадян[2)], С. М. Мадиджадех[1)]. Стрекозы семейства Libellulidae (Odonata: Anisoptera) национального парка Хабр (провинция Керман, Юго-Восточный Иран) // Дальневосточный энтомолог. 2013. N 270. С. 7-11.

Резюме. Приведен список 12 видов из 5 родов стрекоз семейства Libellulidae, впервые обнаруженных в весенне-летний период в национальном парке Хабр. Большинство из этих видов обычны как в Иране, так и в провинции Керман.

INTRODUCTION

Odonata is one of the most common insect groups flying over forests, fields, meadows, ponds and rivers. About 6000 extant species are distributed all over the world (Subramanian, 2005; Kalkman *et al*., 2008). Family Libellulidae, one of the eleven families of suborder Anisoptera, is diverse, numerous and commonly observed in all over the world. This family has worldwide distribution and is represented by 1139 species (Subramanian, 2005). With respect to 95 recorded species of Odonata from Iran (Heidari & Dumont 2002), 35 species of them belongs to Libellulidae. On the basis of limited researches on the Odonata fauna of Iran (Schmidt, 1954; Blom, 1982; Lohmann, 1990, 1992; Heidari & Dumont 2002; Ghahari *et al*., 2009), Libellulidae is the most common group of Odonata in all over the country.

THE INVESTIGATED AREA

Covering a relatively vast extent of high and low lands, Khabr National Park (28º56´N, 56º0.2´E) is an area located in west of Kerman province. Its space is 149982 he and also Ruchoon wild life refuge with 5000 he space is adjacent the Park. In fact, existence of three kinds of climates: tropical, cold and temperate cause to form different habitats and ecologic systems in the region. Both Khabr small and big mountain have been situated in north-western of the Park separately. The other mountains of this region have extended from north-eastern to south-western as a chain. Snow and tree/shrub have covered mount Khabr and tropical plains in the park respectively. The altitude range of 1040-3860 m and mean annual precipitation and temperature of 200-300 mm and 9-21ºC respectively, have resulted in arid and cold semi-arid climates. The existence of rocky mountains with permanent snow cover, interlinked peaks, frequent springs, adjacency of tropical and cold sites, beautiful forests, rich wild life

and proper access roads encouraged scientific and research activities in the park. Though there was no information on Odonata fauna in this protected region. The importance of having complete biodiversity knowledge requires a survey on this subject. Herein the first data on the family Libellulidae from Khabr National Park are given.

MATERIALS AND METHODS

In spring and summer 2008 the second author collected the Odonata in Khabr National park during several field trips. The specimens were collected by net and transferred to the biological collection of Shahid Bahonar University of Kerman, Iran. They were dried and prepared for study. Each species was identified mainly based on wing venation and male genitalia.

Collecting sites: **site 1** – upper the Guard station, 28º48.7′N, 56º20.5′E, 2119 m a.s.l., stream; **site 2** – Khabr River in front of Guard station, 28º48.8′N, 56º20.7′E, 2101 m a.s.l., river; **site 3** – Khabr River lower than big pond, 28º49.3′N, 56º21′E, 2114 m, river; **site 4** – region between Khabr village and Deikhoieh village, 28º49.6′N, 56º17.5′E, 1973 m, river; **site 5** – river in the valley between Deikhoieh and Ghalatoieh, 28º48.8′N, 56º13.5′E, 1753 m, river; **site 6** – river between Deikhoieh and Ghalatoieh, 28º48.6′N, 56º12.3′E, 1723 m, river; **site 7** – Kaht, 28º43.4′N, 56º19.7′E, 1960 m, stream; **site 8** – Ruchoon, 28º39.8′N, 56º19.8′E, 1761 m, river; **site 9** – Qanat (a spring) Shekarabe Orzuiyeh Vakilabad, 28º31.9′N, 56º02.1′E, 1208 m, spring.

LIST OF SPECIES

Genus *Orthetrum* Newman, 1833

Orthetrum taeniolatum Schneider, 1845

LOCATIONS. **Site 5** – 10.VII 2008; 16.VIII 2008.

DISTRIBUTION. Middle East, Northern India, Nepal, Afghanistan, Pakistan, Northern Africa southwards to Nigeria and Ethiopia.

Orthetrum brunneum Fonsclombe, 1837

LOCATIONS. **Site 8** – 10.VII 2008; 13.VII 2008; 21.VIII 2008.

DISTRIBUTION. This species is most common in the Mediterranean region, local in Central Europe and absent in British Isles and Scandinavia. It also occurs in North Africa, the Middle East and in Asia eastwards to Kashmir, Gobi and Mongolia.

Orthetrum coerulescens anceps Schneider, 1845

LOCATIONS. **Site 3** – 14.VII 2008; **site 5** – 15.VII 2008; **site 7** – 2.VII 2008; **site 8** – 2.VII 2008, 6.VII 2008; **site 9 –** 13.VII 2008.

DISTRIBUTION. North Africa, Corsica, Sardinia, Sicily, Malta and Eastern Mediterranean from Hungary, Yugoslavia and Greece to the Middle East, Black Sea and Caucasus through to Northern India.

Orthetrum chrysostigma Burmeister, 1839

LOCATIONS. **Site 3** – 6.VII 2008; **site 5** – 16.VIII 2008; **site 7** – 2.VII 2008; **site 8** – 2.VII 2008.

DISTRIBUTION. It is one of the most widespread Anisoptera and occurs in most of Africa and extends through the Arabian Peninsula and the Levant to Iran, Anatolia, Iraq, and Afghanistan (Dumont, 1991).

***Orthetrum ransoneti* Brauer, 1865**

LOCATIONS. **Site 1** – 31.V 2008 (only one female is found in the studied area).

DISTRIBUTION. This is a species typical of the deserts and semidesert areas, found in Egypt, Sudan and Libyan Desert. In Asia it extends from Sinai, probably through Saudi Arabia and eastern Jordan, to eastern Anatolia, Iran and Afghanistan (Dumont, 1991).

Genus *Trithemis* Brauer, 1868

***Trithemis kirbyi* Selys, 1891**

LOCATIONS. **Site 6** – 10.VII 2008; **site 9** – 13.VII 2008.

DISTRIBUTION. Afrotropical and Oriental regions. This species is found in countries like Saudi Arabia, Oman and generally is found in dry lands from Africa to India.

***Trithemis festiva* Rambur, 1842**

LOCATIONS. **Site 1** – 31.V 2008; **site 6** – 10.VII 2008; **site 7** – 2.VII 2008; **site 8** – 9.VII 2008; **site 9** – 13.VII 2008.

DISTRIBUTION. This species has been reported from Iraq, Rhodes and Cyprus, eastwards to Turkmenistan, Afghanistan and Himalayas, southwards to New Guinea.

***Trithemis annulata* Palisot de Beauvois, 1807**

LOCATIONS. **Site 8** – 9.VII 2008.

DISTRIBUTION. This species is very common all over Africa, and also found in the Middle East, Arabia, Western Asia and the extreme south of Europe.

***Trithemis arteriosa* Burmeister, 1839**

LOCATIONS. **Site 7** – 2.VII 2008; **site 8** – 2.VII 2008; **site 9** – 13.VII 2008.

DISTRIBUTION. This is one of the most numerous African dragonflies, also known from Saudi Arabia, Iran and Iraq (Dumont, 1991).

Genus *Crocothemis* Brauer, 1868

***Crocothemis erythraea* Brullé, 1832**

LOCATIONS. **Site 8** – 9.VII 2008.

DISTRIBUTION. It is a widespread species in tropical regions, common in the South Europe, North Africa, Middle East, Saudi Arabia, Yemen, Oman, Assam, Tadzhikistan, Pakistan, Afghanistan.

Genus *Pantala* Hagen, 1861

***Pantala flavescens* Fabricius, 1798**

LOCATIONS. **Site 2** – 15.VII 2008; **site 4** – 3.VII 2008; **site 5** – 16.VII 2008.

DISTRIBUTION. This global tropical migrant, occurring in America, Africa, Asia and Australia, has been reported in Iran from south-eastern part of the country, even though the first author has collected it from southern slope of Elburz Mountain (northern parts of Iran) several times at the end of summer.

Genus *Zygonyx* Hagen, 1867

***Zygonyx torridus* Kirby, 1889**

LOCATIONS. **Site 5** – 15.VII 2008; **site 7** – 2.VII 2008; **site 8** – 9.VII 2008.

DISTRIBUTION. It is widespread in Africa, the Middle East, Arabia, eastwards to India (Dijkstra & Lewington, 2006), it has also been recorded from south of Spain (Askew, 1988).

DISCUSSION

Our studied area is located in arid climate but it is mountain refugia with temperate valleys. This kind of refugia can accommodate variety of Odonata as a genetic reservoir. Despite of the narrow space of Khabr National Park in respect to whole country, about 35% species of Libellulidae of Iran was found here. On the other hand this region involves some scarce species of Iran such as *T. artriosa* and *Z. torridus.* The latter species is very rare and had been reported only from Bandar Abbas in southern Iran (Heidari & Dumont, 2002).

The fauna of Libellulidae in the region is mainly composed of common Afrotropical and/or Palaearctic species that many of them have important characters to live in dry climate. Apart from scarcity of forest and aquatic habitats in the region, diversity of Libellulidae is remarkable. It seems that the existence of mountains is the main factor for this biodiversity. As a result this protected area is a natural reservoir for critically endangered species in the heart of the desert.

As stated before, this region doesn't have a lot of freshwater habitats and woodlands that they are important for breeding, maturing and feeding of Odonata. Also it has low annual precipitation and a long duration of hot and dry seasons. Consecutive droughts with low precipitation cause reduction of running and shallow waters. On the other hand, the region's people, cattle and wilds provide their needs from its underground waters. As a result of these, some of its animals and plants encounter to extinction. This threat is also visible for dragonflies because of their dependence on freshwaters. For instance *Z. torridus*, which is reported as a vulnerable taxon in European red list (Kalkman *et al*., 2010), is a very rare species in the country and the park and also is critically endangered in Iran. The easternmost record of Z. torridus within the Palaearctic region from Iran indicates Iran is a bridge to population on the Indian subcontinent (Kunz *et al*., 2006).

ACKNOWLEDGMENTS

We are indebted to Prof. H.J. Dumont for confirmation of identification of some species. We wish to thank Mr. R. Sharifzadeh and Mr. R. Raouf for help in collecting some specimens considered in this study. Financial support for this research provided by Shahid Bahonar University of Kerman, Iran.

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FAR EASTERN ENTOMOLOGIST
2013

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