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A study on Miridae (Hemiptera: Heteroptera) from Golestan National Park, Northern Iran

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Abstract: This paper deals with the faunistic study on the family Miridae (Heteroptera) in Golestan National Park, northern Iran. Totally 17 species from 13 genera (*Adelphocoris* REUTER, *Amblytulus* FIEBER, *Atomoscelis* REUTER, *Badezorus* DISTANT, *Blepharidopterus* KOLENATI, *Brachynotocoris* REUTER, *Campylomma* REUTER, *Campyloneuropsis* POPPIUS, *Creontiades* DISTANT, *Deraeocoris* KIRSCHBAUM, *Macrolophus* FIEBER, *Nesidiocoris* KIRKALDY, *Pilophorus* HAHN) were collected and identified.

Key words: Heteroptera, Miridae, Fauna, Golestan National Park, Iran.

Introduction

Plant bugs (Hemiptera: Heteroptera: Miridae) are one of the most important and diverse families of insects, with over than 11.000 world wide species (CASSIS & SCHUH 2012). Miridae include 8 subfamilies, Isometopinae, Psallopiniae, Cylapinae, Orthotyliniae, Bryocorinae, Deraeocorinae, Mirinae, and Phylinae (SCHUH 1995; HENRY 2009). The Miridae of Iran were studied rather well in a number of scattered contributions (e.g. KERZHNER 1996; LINNAVUORI & HOSSEINI 1998, 1999, 2000; LINNAVUORI 1997, 1998, 1999, 2000a, b, 2006, 2007, 2009, 2010; ARKANI et al. 2011; LASHKARI et al. 2011; LASHKARI & HOSSEINI 2012; EBRAHIMI et al. 2012; HOSSEINI 2013a, b, c). Almost heteropteran families of Iran were catalogued by the author (GHAHARI et al. 2009a, b, 2010a, b, 2012, 2013; GHAHARI & HEISS 2012; GHAHARI & MOULET 2012, 2013) and of the Miridae, the catalogue is under completing by the author. Therefore, the aim of this paper is faunistic survey of Miridae in Golestan National Park.

The Golestan National Park was the first area in Iran to be designated as a national park. It is located at 37,16' to 37,36' north latitude and 55,44' to 56,17' east longitude and has an area of about 91000 hectares. The terrain is mountainous with altitude varying between 380 and 2819 meters. The park contains a rich diversity of flora and fauna, unique in many respects. Although the animal fauna of Golestan National Park was studied rather well (HASSAN ZADEH et al. 1994; AKHANI 1996), the insects fauna was not studied so far, exception Ichneumonidae and Braconidae (Hymenoptera) (GHAHARI & JUSSILA 2010; GHAHARI & FISCHER 2011).

1984

Materials and Methods

The specimens of this research were collected by sweeping net during author's trips to some regions of Golestan National Park in April and June 2012. The collected specimens were killed with ethyl acetate and mounted on triangular labels. The materials were identified by relevant taxonomic keys (WAGNER 1973, 1974; WAGNER & WEBER 1964). Classification, nomenclature and distribution data of Miridae suggested by AUKEMA & RIEGER (1999) and AUKEMA et al. (2013) have been followed.

Results

In total 17 species of Miridae from 13 genera were collected from Golestan National Park, which the list of species is given below alphabetically with distribution data.

Genus *Adelphocoris* REUTER 1896

Adelphocoris lineolatus (GOEZE 1778)

Material examined: Golestan National Park, Yakhtikalan (1887 m), 2 ♀ ♀, 1 ♂, 26 June 2012; Cheshmeh-Khan (1547 m), 1 ♀, 15 April 2012; Soolegerd (1586 m), 2 ♀ ♀, 2 ♂, 15 April 2012.

General distribution: Holopalaearctic.

Adelphocoris vandalicus (ROSSI 1790)

Material examined: Golestan National Park, Ghoosh-Cheshmeh (1593 m), 2 ♀ ♀, 1 ♂, 27 June 2012.

General distribution: Holomediterranean.

Genus *Amblytylus* FIEBER 1858

Amblytylus concolor JAKOVLEV 1877

Material examined: Golestan National Park, Ghareh-Ghashli (1817 m), 2 ♀ ♀, 26 June 2012.

General distribution: Widely distributed species in Mediterranean region, Central Europe and Central Asia (MATOCQ & PLUOT-SIGWALT 2012).

Genus *Atomoscelis* REUTER 1875

Atomoscelis onusta (FIEBER 1861)

Material examined: Golestan National Park, Soolegerd (1586 m), 1 ♀, 2 ♂ ♂, 15 April 2012; Ghareh-Ghashli (1817 m), 1 ♂, 26 June 2012.

General distribution: West-Palaearctic (incl. Near East), extending to East Siberia and Northern China; introduced in North America.

1985

Genus *Badezorus* DISTANT 1910

***Badezorus signaticornis* (REUTER 1904)**

Material examined: Golestan National Park, Soolegerd (1586 m), 2 ♀ ♀, 15 April 2012.

General distribution: Eremian species, extending from North Africa to Iran; also widely distributed in the Ethiopian and Oriental regions.

Genus *Blepharidopterus* KOLENATI 1845

***Blepharidopterus diaphanus* (KIRSCHBAUM 1856)**

Material examined: Golestan National Park, Yakhtikalan (1887 m), 3 ♀ ♀, 2 ♂ ♂, 26 June 2012.

General distribution: Holarctic.

Genus *Brachynotocoris* REUTER 1880

***Brachynotocoris puncticornis* REUTER 1889**

Material examined: Golestan National Park, Almeh (1791 m), 1 ♀, 1 ♂, 15 April 2012.

General distribution: Europe, The Maghreb, Caucasus; introduced in north America and also probably in Chile and Argentina (AUKEMA et al. 2013).

Genus *Campylomma* REUTER 1878

***Campylomma diversicorne* REUTER 1878**

Material examined: Golestan National Park, Ghareh-Ghashli (1817 m), 4 ♀ ♀, 2 ♂ ♂, 26 June 2012; Yakhtikalan (1887 m), 3 ♀ ♀, 26 June 2012; Cheshmeh-Khan (1547 m), 2 ♀ ♀, 1 ♂, 15 April 2012.

General distribution: Irano-Turanian species, extending from the Balkan Peninsula to the Middle East, Central Asia, China and Pakistan.

Genus *Campyloneuropsis* POPPIUS 1914

***Campyloneuropsis pygmaea* (WAGNER 1956)**

Material examined: Golestan National Park, Dasht-e-Mirza-Bayloo (1589 m), 2 ♀ ♀, 27 June 2012.

General distribution: Eremian species, known from Egypt, Iran, Iraq, Israel, Saudi Arabia, the Sudan Syria and Yemen.

Genus *Creontiades* DISTANT 1883

***Creontiades pallidus* (RAMBUR 1839)**

Material examined: Golestan National Park, Yakhtikalan (1887 m), 1 ♀, 2 ♂ ♂, 26 June 2012.

General distribution: Holomediterranean; widely distributed in the Middle East, the Ethiopian region and tropical Africa; introduced in Brazil (AUKEMA et al. 2013).

1986

Genus *Deraeocoris* KIRSCHBAUM 1856

***Deraeocoris (Camptobrochis) pallens* (REUTER 1904)**

M a t e r i a l e x a m i n e d : Golestan National Park, Ghoosh-Cheshmeh (1593 m), 6 ♀ ♀, 3 ♂ ♂, 27 June 2012; Ghareh-Ghashli (1817 m), 3 ♀ ♀, 1 ♂, 26 June 2012.

G e n e r a l d i s t r i b u t i o n : Species known from Afghanistan, Iran, Iraq, Israel, Italy (doubtful data), Saudi Arabia, Syria, Turkey (Asian part) and Yemen.

***Deraeocoris (Camptobrochis) serenus* (DOUGLAS & SCOTT 1868)**

M a t e r i a l e x a m i n e d : Golestan National Park, Dasht-e-Mirza-Bayloo (1589 m), 2 ♀ ♀, 27 June 2012.

G e n e r a l d i s t r i b u t i o n : West-Palaeartic.

***Deraeocoris (Plexaris) pilipes* (REUTER 1879)**

M a t e r i a l e x a m i n e d : Golestan National Park, Dasht-e-Mirza-Bayloo (1589 m), 3 ♀ ♀, 27 June 2012.

G e n e r a l d i s t r i b u t i o n : Irano-Turanian.

Genus *Macrolophus* FIEBER 1858

***Macrolophus melanotoma* (A. COSTA 1853)**

M a t e r i a l e x a m i n e d : Golestan National Park, Cheshmeh-Khan (1547 m), 1 ♀, 2 ♂ ♂, 15 April 2012; Almeh (1791 m), 2 ♀ ♀, 15 April 2012.

G e n e r a l d i s t r i b u t i o n : Holomediterranean.

***Macrolophus pygmaeus* (RAMBUR 1839)**

M a t e r i a l e x a m i n e d : Golestan National Park, Ghareh-Ghashli (1817 m), 2 ♀ ♀, 26 June 2012.

G e n e r a l d i s t r i b u t i o n : Palaeotropical. More likely Euro Siberian because it is known in Scandinavia; introduced in New Zealand (AUKEMA et al. 2013).

Genus *Nesidiocoris* KIRKALDY 1902

***Nesidiocoris tenuis* (REUTER 1895)**

M a t e r i a l e x a m i n e d : Golestan National Park, Ghoosh-Cheshmeh (1593 m), 3 ♀ ♀, 2 ♂ ♂, 27 June 2012.

G e n e r a l d i s t r i b u t i o n : Paleotropical.

Genus *Pilophorus* HAHN 1826

***Pilophorus confusus* (KIRSCHBAUM 1856)**

M a t e r i a l e x a m i n e d : Golestan National Park, Almeh (1815 m), 2 ♀ ♀, 1 ♂, 15 April 2012; Soolegerd (1586 m), 1 ♀, 15 April 2012.

1987

General distribution: Holopalaearctic; introduced in North America (AUKEMA et al. 2013).

Discussion

This is the first faunistic survey on Miridae of Golestan National Park with totally 77 collected specimens. The samplings of this work were done in a few regions of the park, while this area is nearly 91.000 hectares. With attention to the high diversity of flora and fauna of this region (HASSAN ZADEH et al. 1993), surely there are several other mirids which will be discovered through the impressive samplings. Almost species of Miridae are the powerful predators of agricultural and forest pests which can have efficient role in biological control (DOLLING 1991; HENRY 2009).

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Zusammenfassung

Vorliegende Arbeit ist eine faunistische Studie der Familie Miridae (Heteroptera) des Golestan National Parks im Norden Irans. Insgesamt gelang der Nachweis von 17 Arten aus den 13 Gattungen *Adelphocoris* REUTER, *Amblytylus* FIEBER, *Atomoscelis* REUTER, *Badezorus* DISTANT, *Blepharidopterus* KOLENATI, *Brachynotocoris* REUTER, *Campylomma* REUTER, *Campyloneuropsis* POPPIUS, *Creontiades* DISTANT, *Deraeocoris* KIRSCHBAUM, *Macrolophus* FIEBER, *Nesidiocoris* KIRKALDY und *Pilophorus* HAHN.

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