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## **To the knowledge of the Ensifera (Insecta: Orthoptera) fauna in Mashhad and vicinity, NE Iran**

**Nahid GHOLAMI, Lida FEKRAT, Mehdi MODARRES AWAL, Mojtaba HOSSEINI and Mustafa UNAL**

### **Abstract**

In 2013, several samplings were conducted in order to survey fauna of Ensifera (Insecta: Orthoptera) from Mashhad and vicinity. Totally 12 species belonging to 9 Genera and 3 families were collected and identified. Among them *Ceraeocerus fuscipennis fuscipennis* and *Platycleis fatima fatima* were newly recorded for the fauna of Iran.

Key words: Ensifera, Orthoptera, Fauna, Iran.

### **Zusammenfassung**

2013 wurden Aufsammlungen von Ensifera (Insecta: Orthoptera) in Mashhad und Umgebung im Nordosten des Irans durchgeführt. Insgesamt gelang der Nachweis von 12 Arten aus 9 Gattungen und 3 Familien. *Ceraeocerus fuscipennis fuscipennis* und *Platycleis fatima fatima* konnten erstmalig für den Iran nachgewiesen werden.

## Introduction

Thanks to the efforts of several Orthopterologists, the Orthoptera fauna of Iran is fairly well known. Studies of UVAROV (1921, 1922, 1929), BEY-BIENKO meanwhile 1958-1960, BEY-BIENKO & MISTSHENKO (1951) as well as surveys of SHUMAKOV (1963) provided a great amount of data on Iranian Orthoptera. The great role of some orthopteran experts such as MIRZAYANS (1951, 1959, 1969, 1990, 1991, 1998), HASHEMI (1976), SOLTANI (1978), NEYESTANAK (2000a, b, c; 2002, 2003), ÜNAL (2005, 2006, 2012), GARAI (2010, 2011) and HODJAT (2012) in advancement of knowledge should not be neglected. As the result of their scientific activities, some faunistic records and also description of newly discovered species were published. Despite the relatively great knowledge of Iranian Orthopteroids, more studies, even in well-explored areas, still result in new records.

Mashhad is located at 36.20° North latitude and 59.35° East longitude, in the valley of the Kashaf River near Turkmenistan, between the two mountain ranges of Binalood and Hezar-masjed. Mashhad features a steppe climate with hot summers and cool winters. In comparison to other parts of Iran, a little work has been done on the fauna of Ensifera from Mashhad and vicinity; so, the current research is thus focused on the mentioned area to determine species of Ensifera in this region.

## Material and Methods

The specimens were collected in different localities in Mashhad and vicinity during 2013. The samplings were conducted mainly by sweeping and also hand catching. The collected specimens were killed by Cyanide, wings were spread, pinned and properly labeled. The system, nomenclature, followed on useful Web Site of EADES et al. (2014). The material was deposited in the Insect Museum of Plant-Protection Department, at Ferdowsi University of Mashhad. The specimens were identified by Mustafa Ünal (Abant İzzet Baysal University, Turkey).

## Results

### Family *Tettigoniidae*

### Subfamily *Tettigoniinae* STOLL 1787

### Tribe *Drymadusini* UVAROV 1924

### Genus *Calopterus* UVAROV 1942

### *Calopterus werneri* (ADELUNG 1910)

**Material examined:** Khorasan-e-Razavi Prov., Fariman (35°42'N, 59°50'E), 2 ♀ ♀, 4 ♂ ♂; 15.VIII.2013, leg. N. Gholami.

**Distribution:** Asia-Temperate, Western Asia, Iran (EADES et al. 2014).

### **Genus *Ceraecercus* UVAROV 1910**

Diagnosis: Wings black or brown; last tergite of males with two broad down-curved lobes each ending in a very small acute spine; cercus with 2 branches; females without bi-concave plate between sternite VII and subgenital plate (KARABA 1961).

### ***Ceraecercus fuscipennis fuscipennis*\* UVAROV 1910 (Fig. 1)**

**M a t e r i a l e x a m i n e d :** Khorasan-e-Razavi Prov., Neishabour (36.2133° N, 58.7958° E), 3 ♀ ♀, 4 ♂ ♂; 11.VI.2013, leg. N. Gholami.

**D i s t r i b u t i o n :** Asia-Temperate, Middle Asia, Kazakhstan (EADES et al. 2014); This species is newly recorded for Iran.

### **Tribe *Tettigoniini* STOLL 1787**

### **Genus *Decticus* SERVILLE 1831**

### ***Decticus albifrons* (FABRICIUS 1775)**

**M a t e r i a l e x a m i n e d :** Khorasan-e-Razavi Prov., Binalood(36°12'N, 58°47'E), 4 ♀ ♀, 2 ♂ ♂; 11.VI.2013, leg. N. Gholami; Khorasan-e-Razavi Prov., Fariman (35°42', N 59°50'E), 2 ♀ ♀, 2 ♂ ♂; 24.VI.2013, leg. N. Gholami.

**D i s t r i b u t i o n :** Europe, from Spain to Turkey, Madeira N-Africa, Palestine, Caucasus, Iraq, Iran: Generally distributed (GARAI 2010; MODARRES AWAL 2012).

### **Genus *Tettigonia* LINNAEUS 1758**

### ***Tettigonia viridissima* LINNAEUS 1758**

**M a t e r i a l e x a m i n e d :** Khorasan-e-Razavi Prov., Binalood (36°12'N, 58°47'E), 4 ♀ ♀, 2 ♂ ♂; 6.VI.2013, leg. N. Gholami; Khorasan-e-Razavi Prov., Gochan (37°06'22"N, 58°30'34"E), 4 ♀ ♀, 1 ♂; 16.VI.2013, leg. N. Gholami.

**D i s t r i b u t i o n :** Palaearctic region, Iran: Generally distributed (MODARRES AWAL 2012).

### ***Tettigonia caudata* CHARPENTIER 1825**

**M a t e r i a l e x a m i n e d :** Khorasan-e-Razavi Prov., Kalat (29°1'N, 66°35'E), 3 ♀ ♀, 2 ♂ ♂; 18.VI.2013, leg. N. Gholami; Khorasan-e-Razavi Prov., Neishabour (36.2133° N, 58.7958° E), 4 ♀ ♀, 2 ♂ ♂; 24.VIII.2013, leg. N. Gholami.

**D i s t r i b u t i o n :** Middle, SE-, S-Europe, SW-Siberia, Caucasus range, Turkey, Levante, Iraq, Iran: Generally distributed (GARAI 2010; MODARRES AWAL 2012).

### **Genus *Uvarovistia* (UVAROV 1916)**

### ***Uvarovistia zebra* (UVAROV 1916)**

**M a t e r i a l e x a m i n e d :** Khorasan-e-Razavi Prov., Gochan (37°06'22"N, 58°30'34"E), 6 ♀ ♀, 5 ♂ ♂; 9.VII.2013, leg. N. Gholami.

**D i s t r i b u t i o n :** Lebanon, Syria, E-Turkey, N-Iraq, Iran: Ghazvin, Kohkilouye, Tehran, Zanjan (GARAI 2010; MODARRES AWAL 2012).

## Tribe *Platycleidini* HARZ 1969

### Genus *Platycleis* FIEBER 1853

The shape of the pronotum, the ovipositor as well as subgenital plate are very characteristic in this genus.

**D i a g n o s i s :** Pronotum depressed, with clear humeral excision at  $\frac{3}{4}$  of its length, median keel raised on metazona; Females: subgenital plate with two lobes separated by a furrow; ovipositor regularly curved upwards; Males: tergite X with two short pointed processes (MASSA & FONTANA 2011).

### *Platycleis intermedia intermedia* (SERVILLE 1838)

**M a t e r i a l e x a m i n e d :** Khorasan-e-Razavi Prov., Binalood (36°12'N, 58°47'E), 4 ♀ ♀, 1 ♂; 15.VI.2013, leg. N. Gholami; Khorasan-e-Razavi Prov., Fariman (35°42'N, 59°50'E), 1 ♀, 1 ♂; 3.VIII.2013, leg. N. Gholami.

**D i s t r i b u t i o n :** Iraq, Iran:Fars, Ilam, Kermanshah, northern provinces (GARAI 2010; MODARRES AWAL 2012).

### *Platycleis fatima fatima*\* UVAROV 1912 (Fig. 2)

**M a t e r i a l e x a m i n e d :** Khorasan-e-Razavi Prov., Neishabour (36.2133° N, 58.7958° E), 1 ♀ ♀, 1 ♂; 15.VI.2013, leg. N. Gholami.

**D i s t r i b u t i o n :** Asia-Temperate, Middle Asia, Turkestan (EADES et al. 2014); This species is newly recorded for Iran.

### *Platycleis affinis affinis* FIEBER 1853

**M a t e r i a l e x a m i n e d :** Khorasan-e-Razavi Prov., Binalood (36°12'N, 58°47'E), 2 ♀ ♀, 1 ♂; 2.VII.2013, leg. N. Gholami; Khorasan-e-Razavi Prov., Gochan (37°06'22"N, 58°30'34"E), 4 ♀ ♀, 3 ♂ ♂; 18.VII.2013, leg. N. Gholami.

**D i s t r i b u t i o n :** Europe (Southwestern Europe, Southeastern Europe, East Europe); Asia-Temperate (EADES et al. 2014); Iran: Caspian sea area, Fars, Tehran, and central provinces (MODARRES AWAL 2012).

## Family *Gryllidae*

### Subfamily *Gryllinae* LAICHARTING 1781

### Tribe *Gryllini* LAICHARTING 1781

### Genus *Gryllus* LINNAEUS 1758

### *Gryllus bimaculatus* DE GEER 1773

**M a t e r i a l e x a m i n e d :** Khorasan-e-Razavi Prov., Mashhad (36°18'N, 59°36'E), 6 ♀ ♀, 3 ♂ ♂; 28. VIII.2013, 5 ♀ ♀, 2 ♂ ♂; 9.VI.2013, leg. N. Gholami; Khorasan-e-Razavi Prov., Neishabour (36.2133° N, 58.7958° E), 2 ♀ ♀, 3 ♂ ♂; 12.VII.2013, leg. N. Gholami.

**D i s t r i b u t i o n :** S-Europe, Africa, tropical Asia, Iran: Generally distributed (GARAI 2010; MODARRES AWAL 2012).

## **Genus *Acheta* FABRICIUS 1775**

### ***Acheta domesticus* (LINNAEUS 1758)**

**M a t e r i a l e x a m i n e d :** Khorasan-e-Razavi Prov., Neishabour (36.2133° N, 58.7958° E), 5 ♀♀, 3♂♂; 5.V.2013, leg. N. Gholami; Khorasan-e-Razavi Prov., Mashhad (36°18'N 59°36'E), 4♀♀, 3♂♂; 22.VI.2013, leg. N. Gholami.

**D i s t r i b u t i o n :** Worldwide distribution; Iran: Generally Distributed (MODARRES AWAL 2012).

## **Family *Gryllotalpidae***

### **Subfamily *Gryllotalpinae* LEACH 1815**

## **Genus *Gryllotalpa* LATREILLE 1802**

### ***Gryllotalpa unispina* SAUSSURE 1874**

**M a t e r i a l e x a m i n e d :** Khorasan-e-Razavi Prov., Mashhad (36°18'N, 59°36'E), 2♀♀, 4♂♂; 20.V.2013, leg. N. Gholami; Khorasan-e-Razavi Prov., Binalood (36°12'N, 58°47'E), 5♀♀, 3♂♂; 14.VI.2013, leg. N. Gholami.

**D i s t r i b u t i o n :** Iran: Caspian Sea area, Fars, Kermanshah, Khuzestan, Persian Gulf Islands, Tehran and other southern provinces (MODARRES AWAL 2012).

## **Discussion**

In our study, 12 species were identified within the material collected from various localities in Mashhad and vicinity. Among these, *Ceraeocerus fuscipennis fuscipennis* and *Platycleis fatima fatima* species are new records for Iranian Orthoptera fauna. Based on GARAI (2010) and MODARRES AWAL (2012), the total number of recorded Orthoptera from Iran is approximately 421. As our study shows and since Iran is a large country with various geographical climates, it is quite likely that several other unknown species of these taxa existed which are waiting to be discovered and identifies. Following more zoological expeditions and more detailed studies might result in more and more new species will be discovered. So, continuing of these faunistic surveys are necessary for determining and completing the fauna of Iranian Orthoptera.

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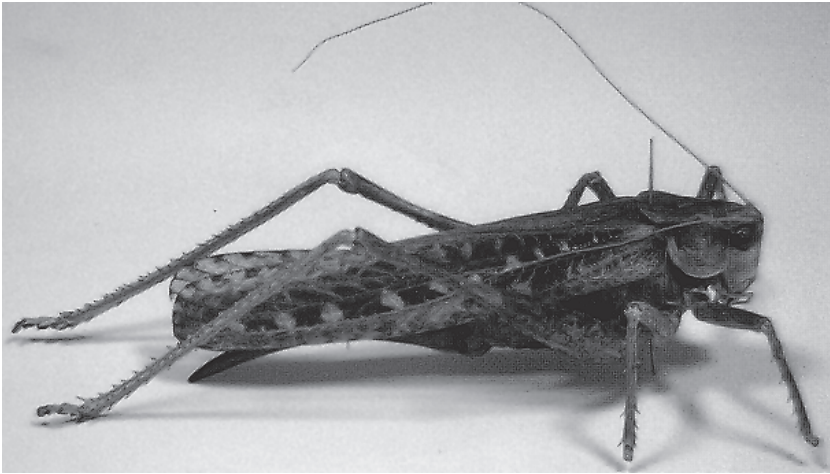
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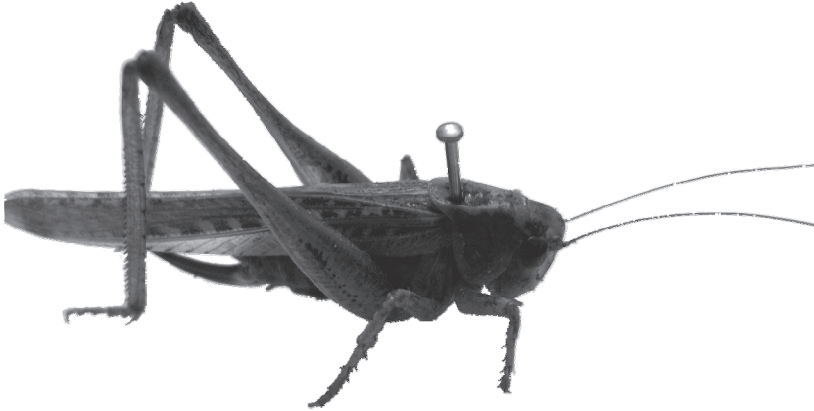
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**Fig. 1.** *Ceraeocercus fuscipennis fuscipennis* (lateral view).



**Fig. 2.** *Platycleis fatima fatima* (lateral view).

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