

Contributions to the knowledge on the darkling beetles  
(Coleoptera: Tenebrionidae)  
of Khorasan and Semnan Province, Iran

Materiały do poznania czarnuchowatych (Coleoptera:  
Tenebrionidae) prowincji Khorasan i Semnan w Iranie

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**ABSTRACT:** In this study 9 species of 8 genera belonging to 3 subfamilies of Tenebrionidae were collected in Khorasan and Semnan provinces of Iran. Three species: *Amnodeis milleri* REITT., *Stenosis (Stenosis) dilutipes* REITT. and *Alphitobius diaperinus* (PANZ.), have been recorded from Iran for the first time.

**KEY WORDS:** Coleoptera, Tenebrionidae, Iran, Khorasan prov., Semnan prov., new data.

## Introduction

Darkling beetles (Coleoptera, Tenebrionidae) are one of the most numerous and diverse families of beetles, with a world fauna of many thousands of species. With more than 15,000 known species, darkling beetles are one of the most common members of Coleoptera. These insects are mostly rather large, flightless beetles, although a few species living in rotten wood and in stored products are small. They live mainly in the soil, under logs, or in leaf litter, and feed on dead organic material. Many tenebrionids produce defensive secretions, which make them distasteful to would-be predators. These substances may stain the skin when live beetles are handled (NEPEŠOVA 1980, BOUCHARD & al. 2005, MATTHEWS & BOUCHARD 2008). Tenebrionids have a sophisticated system for retaining water in the body, which enables them to live in drier

habitats than most other beetles. These species are probably useful as indicators of environmental quality, in that their presence signifies that the places where they occur are relatively undisturbed. The relationships of Tenebrionidae to other families of beetles are still being debated, although the families Archaeocrypticidae and Chalcodryidae, which split off from the Tenebrionidae, are closely related (MEDVEDEV 1968, DOYEN & LAWRENCE 1979, WATT 1992).

The fauna of Iranian Tenebrionidae was poorly studied and many species have been reported lately (e.g. MODARRES AWAL 1997, MEDVEDEV & MERKL 2005, TARAVATI & FERRER 2007, SAKENIN & al. 2009, GHAHARI & al. 2010a, 2010b). The objective of this paper is to present a faunistic survey of tenebrionids from some regions of Iran to complete the fauna of Iranian Tenebrionidae.

### **Materials and methods**

The specimens were collected under stones and on the ground by hand and knock down, sweeping of vegetation and pitfall trap methods from the different regions of Khorasan and Semnan provinces. In addition to collecting the materials, several specimens of different insect collections of Iranian universities especially Islamic Azad University (Damghan and Garmsar Branches) were checked and their data have also been included in this paper. Subfamilies and tribes were given in phylogenetic order and species were listed alphabetically within each tribe. The information concerning specific name, describer and description date, locality and date of collection, place, plant on which the species were collected, determinant and number of species (in brackets) was given. Classification and nomenclature of darkling beetles suggested by LÖBL & SMETANA (2008) have been followed.

**Subfamily: Opatrinae BRULLÉ, 1832**

**Tribe: Opatrini BRULLÉ, 1832**

**Genus: *Mesomorpha* MIEDEL, 1880**

***Mesomorpha longulus* (REICHE et SAULCY, 1857)**

Distribution: Cyprus, Syrien, Lebanon, Jordanien, Israel, Turkey, Iran.

Material examined: Semnan prov., Semnan, (2), on the ground, April 2011.

**Subfamily: Pimeliinae LATREILLE, 1802****Tribe: Adesmiini LACORDAIRE, 1859****Genus: *Adesmia* FISCHER von WALDHEIM, 1822*****Adesmia (Adesmia) fischeri fischeri* FALDERMANN, 1837**

Distribution: Armenia, Iran, Turkey.

Material examined: Khorasan prov., Birjand, (3), on the ground, April 2009.

**Tribe: Erodiini BILLBERG, 1820****Genus: *Amnodeis* MILLER, 1858*****Amnodeis milleri* REITTER, 1914**

Distribution: Syrien, Turkey.

Material examined: Khorasan province: Sabzevar, (1), on the ground, May 2011.

Remarks: new to Iranian fauna.

**Tribe: Stenosini LACORDAIRE, 1859****Genus: *Stenosis* HERBST, 1799*****Stenosis (Stenosis) dilutipes* REITTER, 1887**

Distribution: Armenia, Israel, Lebanon, Turkey.

Material examined: Khorasan prov., Nehbandan, (1), on the ground, October 2006.

Remarks: new to Iranian fauna.

**Subfamily: Tenebrioninae LATREILLE, 1802****Tribe: Alphitobiini REITTER, 1917****Genus: *Alphitobius* STEPHENS, 1829*****Alphitobius diaperinus* (PANZER, 1797)**

Distribution: Cosmopolitan.

Material examined: Khorasan prov.: Gonabad, (1), under stone, August 2007; Sabzevar, (2), on weeds, September 2010.

Remarks: new to Iranian fauna.

**Tribe: Blaptini LEACH, 1815****Genus: *Blaps* FABRICIUS, 1775*****Blaps abbreviata abbreviata* MÉNÉTRIÉS, 1836**

Distribution: Balkans, Greece, Turkey, Syrien, Iran.

Material examined: Semnan prov., Shahrood, (2), on the ground, May 2010.

***Blaps lethifera pterotapha* FISCHER von WALDHEIM, 1832**

Distribution: Turkey, Iran, Armenia, Azarbaijan, Georgia, SE Russia, Turkmenistan.

Material examined: Khorasan prov., Quchan, (3), on the ground, September 2010.

**Tribe: Bolitophagini KIRBY, 1837****Genus: *Bolitophagus* ZETTERSTEDT, 1840*****Bolitophagus subinteger* REITTER, 1896**

Distribution: Azarbaijan, Iran.

Material examined: Khorasan prov., Sabzevar, (1), on the ground, May 2011.

**Tribe: Ulomini BLANCHARD, 1845****Genus: *Uloma* DEJEAN, 1821*****Uloma (Uloma) culinaris* (LINNAEUS, 1758)**

Distribution: Europe, Turkey, Iran, Southern Russia.

Material examined: Semnan prov., Semnan, (3), under bark, April 2011.

**Discussion**

Upon the results of this research the total of 9 tenebrionid species were collected from different areas of Khorasan and Semnan. Among the 3 collected subfamilies, Tenebrioninae with 5 species are more diverse than the other two. The samplings were partially conducted in some regions, and covering all the regions of the mentioned provinces surely will lead to further specimens and probably many other species as new records for the country. A great majority of tenebrionids are scavengers, and by nature, they are quite content to feed on dried or rotting plant residue (NEPEŠOVA 1980, MATTHEWS & BOUCHARD 2008). Therefore, these insects play an effective role in most ecosystems, especially in semi-arid areas. In spite of rather good faunistic studies on Iranian Tenebrionidae in recent years (e.g. TARAVATI & FERRER 2007, SAKENIN & all. 2009, GHAHARI & all. 2010a, 2010b, 2012; GHAHARI & BUNALSKI 2011, MAKHAN 2012a, 2012a b, 2013; MAKHAN & all. 2012, MAKHAN & SAEIZAD 2013, SAEIZAD & MAKHAN 2013a, 2013b; BUNALSKI & all. 2014), an exhaustive list of this taxon is lacking for Iranian fauna and this topic is absolutely necessary for the science.

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## STRESZCZENIE

Czarnuchowate (Tenebrionidae) należą do najliczniejszych i najbardziej zróżnicowanych rodzin chrząszczy, a zamieszkując różnorodne środowiska pełnią ważną rolę w prawidłowym funkcjonowaniu biocenozy. Niestety, stan poznania rozszedlenia poszczególnych gatunków jest nadal niewystarczający, nawet w skali Palearktyki. W powyższej pracy przedstawiono wyniki badań chorologicznych dotyczących Tenebrionidae stwierdzonych w prowincjach Khorasan i Semnan w północnym Iranie. Trzy spośród stwierdzonych gatunków – *Amnodeis milleri* REITT., *Stenosis dilutipes* REITT. i *Alphitobius diaperinus* (PANZ.) – zostały po raz pierwszy wykazane z terytorium Iranu.

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