

## A contribution to the knowledge of Meloidae (Insecta: Coleoptera) fauna of Northeastern Iran

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**Abstract:** The Meloidae, known as blister beetles, a widespread family of Tenebrionoidea that includes approximately 2500 species, is still scarcely known faunistically in several areas of the world. Because of specific biogeographical feature, Iran harbors a rich diversity of meloids and due to the lack of basic and integrated studies, particularly in eastern parts of Iran, our current knowledge of Iranian meloids should be considered preliminary. In order to improve the knowledge of the meloidae species of north eastern Iran, faunistic investigations on blister beetles of this region were carried out during 2011-2012. Collected specimens as well as deposited specimens in Insect Museum of Ferdowsi University of Mashhad were examined, in detail. As a result, 31 species belonging to 11 genera from 2 subfamilies were identified. Among the identified specimens, 24 species were new for fauna of Khorasan provinces. *Ctenopus sinuatipennis* Fairmaire (1892) is reported for the first time from Iran.

**Keywords:** Meloidae, Blister beetle, Fauna, Khorasan, Iran.

### Introduction

The family Meloidae, the blister beetles (Coleoptera: Tenebrionoidea) contains approximately 120 genera and 2500 species (Bologna and Pinto, 1999 & 2002). Blister beetles are distributed in most regions of the world except of New Zealand and some parts of Oceania (Bologna, 2000a) and their diversity is greatest in temperate steppes, arid or semiarid regions (Bologna and Pinto, 2002). This family is one of the most interesting coleopterans, largely because of the remarkable biology (hypermetamorphosis), parasitic larval habits, their importance to pharmacology, veterinary and agriculture as well as their defensive attributes and diverse courtship behavior (Bologna, 2000a). The systematics, bionomics and biogeography of meloids were extensively studied by Bologna (1991).

Because of various zoogeographical elements, Iran harbors a rich diversity of meloids including some endemic and subendemic species. Several papers of Kaszab (1957, 1959, 1965 and 1968), Mirzayans (1970), Aksentjev (1984) have substantially contributed to our understanding of meloids in Iran. Kaszab in his several papers described many new species from different parts of Iran. The fauna of meloids were investigated in various parts of the country (Nikbakhtzadeh and Tirgari, 2002; Serri, 2004) and many species newly recorded.

The Meloidae fauna of Iran is poorly known, particularly in eastern parts of Iran which there are still several areas not well explored or not explored at all. Khorasan provinces with an area of 313, 335 sq km which are located in the northeast of Iran with cold winters whilst warm summers, bounded northward by Turkmenistan, eastward by Turkmenistan and Afghanistan, westward by Golestan, Semnan and Yazd and southward by Sistan and Baluchestan and

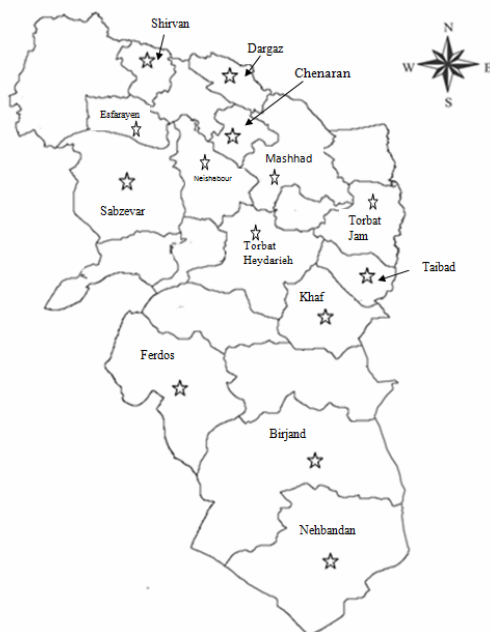
Handling Editor: Dr. Ali Asghar Talebi

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Received: 2 September 2012, Accepted: 8 October 2012

Kerman provinces. The temperature of this area increases from north to south, but annual rainfall decreases from north to south of it. These geographical characters causes proper habitat for the blister beetles. The aim of this study is to indicate the meloid diversity in these provinces.

### Material and Methods

This study is based mostly on the material stored in the Museum of Ferdowsi University of Mashhad and those collected by the first author from different locations in Khorasan provinces (Fig. 1). We collected meloids by netting them directly from flowers of their host-plants or via hand-catch and the materials transferred to a killing jar. The best time for collecting meloids was from 10:00 a.m. to 4:00 p.m., when the weather was sunny. The whole material is deposited in the Entomological Museum of Plant Protection Department, at Ferdowsi University, Mashhad, Iran. Marco Alberto Bologna confirmed the identification of the species studied in this paper during a study period in Roma (July 2012).



**Figure 1** Map of sampling Locations in Khorasan Provinces, where the blister beetles have been collected.

### Results

In this study, 31 species of 11 genera belonged to two subfamilies of Meloidae were reported.

#### Subfamily Nemognathinae Leporte, 1840

##### Tribe Nemognathini Laporte, 1840

##### Genus *Ctenopus* Fischer von Waldheim, 1823

##### *Ctenopus sinuatipennis* Fairmaire, 1892

Material examined: Khorasan Razavi province, Neishabour (Khiaran), 23. IV. 2012, 2♀, 1♂; Leg. L. Fekrat.

Distribution: Asia: Turkmenistan, Uzbekistan and China (Löbl & Smetana, 2008).

Diagnosis: Head capsule wider than long, sides of head after eyes are quite convex; antennae 11 segmented and short in both sexes, never reaching middle of body, usually extending only to base of elytra; elytra completely covering abdomen and wings; Hind tarsal segment I shorter than combined length of segments II and III; head and pronotum are orange, pronotum is quite shiny, antennal segments I-IV are orange but the rest antennal segments are dark brown, elytra are reddish-orange with dense yellow short setation, legs are quite orange, ventral side of the body is quite orange except for mesosternum which is dark brown (Fig. 2).

##### Genus *Euzonitis* Semenov, 1893

##### *Euzonitis terminata* Abeille de Perrina, 1880

Material examined: South Khorasan province, Ferdos, 15.V. 2010; 2♂, Leg. L. Fekrat.

Distribution: Europe: Greece, Hungary, Italy, Romania and Turkey; Asia: Afghanistan, Iran, Israel, Jordan, Syria and Turkmenistan; North Africa: Egypt (Löbl & Smetana, 2008).

#### Tribe Stenoderini

##### Genus *Stenoder* Eschscholtz, 1818

##### *Stenoder caucasica* Pallas, 1781

Material examined: Khorasan Razavi province, Chenaran (Gamab), 26.V. 2011, 1♂, Leg. M. Sorooshnia; North Khorasan province, Shirvan, 28.V. 2008, 1♀, Leg. H. Heidari.

Distribution: Europe: Albania, Armenia, Bulgaria, Croatia, Georgia, Greece, Macedonia,

Moldavia, Romania, South Russia, Turkey, Ukraine, Yugoslavia; Asia: Israel, Jordan, Lebanon, Syria, Turkmenistan, Turkey (Löbl & Smetana, 2008), Iran (Golestan) (Mirzayans, 1970).

#### Subfamily Meloinae Gyllenhal, 1810

#### Tribe Cercomini Leach, 1815

#### Genus *Cerocoma* Geoffroy, 1762

#### *Cerocoma (Meloidea) bodemeyeri* Reitter, 1909

Material examined: Khorasan Razavi province, Mashhad, 7.V. 2012, 2♀, 4♂, Leg. L. Fekrat; Mashhad, 11.V 2012, 5♀, 2♂, Leg. Sh. Saboori; North Khorasan province, Shirvan, 7.VI. 2009, 3♀, 7♂, Leg. H. Heidari; Esfarayen, 30.V. 2006, 4♀, 3♂, Leg. H. Najmi.

Distribution: Iran (Luristan), Iraq, Doubtful records from Turkey and Syria (Turco & Bologna, 2011).

#### Tribe Lyttini Solier, 1851

#### Genus *Eolydus* Denier, 1913

#### *Eolydus conspicuus* Waterhouse, 1889

Material examined: Khorasan Razavi province, Taibad, 19.V. 1988, 1♀, Leg. A. Abolhasani; Mashhad, 17.V. 2012, 1♀, Leg. L. Fekrat.

Distribution: Asia: Afghanistan, Pakistan, Turkestan (Löbl and Smetana, 2008), Iran (Balouchestan, Fars, Hormozgan, Kerman) (Mirzayans, 1970).

#### Genus *Lydomorphus* Fairmaire, 1882

#### *Lydomorphus angusticollis suturellus* Hagg-Rutenberg, 1880

Material examined: South Khorasan province, Birjand, 15.V. 2007; 1♂, Akbarzadeh; Nehbandan, 12.V. 2003, 1♀, Leg. M. Tabatabaee.

Distribution: Asia: United Arab Emirates, Iran, Oman, Saudi Arabia, Pakistan and Yemen (Löbl & Smetana, 2008).

#### Genus *Lytta* Fabricius, 1775

#### *Lytta (Mesolytta) coccinea* Ménétériés, 1849

Material examined: Khorasan Razavi province, Taibad, 8.IV. 1988, 1♀, Leg. F. Amirabadi.

Distribution: Asia: Afghanistan, Kazakhstan, Tajikstan, Turkmenistan and Uzbekistan (Löbl and Smetana, 2008), Iran (Khorasan) (Modarres Awal, 2012).

#### *Lytta (Lytta) menetriesi* Faldermann, 1832

Material examined: Khorasan Razavi province, Taibad, 25.IV. 2002, 1♀, Leg. F. Amirabadi.

Distribution: Europe: Azerbaijan, Armenia; Asia: Kazakhstan, Turkmenistan, Uzbekistan and Tajikstan (Löbl & Smetana, 2008), Iran (East Azarbaijan, Markazi, Tehran and other northern provinces) (Modaress Awal, 2012).



Figure 2 *Ctenopus sinuatipennis*, a. dorsal view, b. lateral view.

**Genus *Teratolytta* Semenov, 1894*****Teratolytta tricolor* Hagg-Rutenberg, 1880**

Material examined: Khorasan Razavi province, Mashhad, 19.V. 2012; 1♀, 2♂, Leg. H. Javanshir.

Distribution: Iran (Guilan, Mazandaran, Golestan, Khorasan, Kermanshah, Kerman), Uzbekistan (Löbl & Smetana, 2008).

**Tribe Mylabrini Laporte, 1840****Genus *Mylabris* Fabricius, 1775*****Mylabris (Argabris) klugi klugi* Redtenbacher, 1850**

Material examined: Khorasan Razavi province, Kalat, 28.V. 2004, 1♀, Leg. M. Hojabri; Dargaz, 17.V. 2008, 1♀, Leg. F. Amirabadi.

Distribution: Asia: Kazakhstan Turkmenistan, Tajikistan, China (Löbl and Smetana, 2008), Iran (Tehran).

***Mylabris (Micrabris) frolovi frolovi* Fischer von Waldheim, 1823**

Material examined: Khorasan Razavi province, Mashhad, 8.VI. 2001, 1♀, Leg. N. Zareh; 25.VI. 2012, 4♀, 1♂, Leg. L. Fekrat.

Distribution: Asia: Afghanistan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, West Siberia, East Siberia and China (Löbl and Smetana, 2008), Iran (Golestan, Khorasan, Mazandaran) (Mirzayans, 1970, Modarres Awal, 2012).

***Mylabris (Eumylabris) calida* Pallas, 1782**

Material examined: Khorasan Razavi province, Mashhad, 10.VI. 2011, 5♀, 1♂, Leg. L. Fekrat.

Distribution: Iran (East Azarbaijan, Esfahan, Fars, Gilan, Golestan, Hormozgan, Kerman, Kermanshah, Khorasan, Lorestan, Mazandaran, Tehran) (Mirzayans, 1970; Modarres Awal, 2012), Balkans (Greece, Macedonia, Bulgaria) north to Ukraine and central European territory of Russia, south to North Africa (Morocco, Tunis, Algeria, Libya and Egypt) east to Anatolia (Turkey) and Levant (Lebanon, Israel, Jordan, Syria), Iraq, Saudi Arabia, Yemen, Armenia, Azerbaijan, Afghanistan, Turkmenistan, Tajikistan, Uzbekistan, Kyrgyzstan, Kazakhstan, East and West Siberia, Mongolia, China, North and South Korea (Löbl and Smetana, 2008).

***Mylabris (Eumylabris) cincta* Olivier, 1811**

Material examined: Khorasan Razavi province, Sabzavar, 25.VI. 2011, 4♀, 1♂, Leg. L. Fekrat; Torbat Jam, 8.VI. 2009, 3♀, 1♂, Leg. N. Bahrami; Dargaz, 20.VI. 2008; Kakhak, 1. VI. 2007, 2♀, Leg. A. Zaroori; Mashhad, 19. VI. 2006, 2♀, Log. A. Kord.

Distribution: Europe: Azerbaijan, Armenia, Georgia, Greece, Macedonia, South Russia, Turkey, Ukraine; North Africa (Morocco, Tunis, Algeria, Libya and Egypt); Asia: Afghanistan, Israel, Jordan, Kazakhstan, Pakistan, Saudi Arabia, Syria, Turkey (Löbl and Smetana, 2008), Iran (East Azarbaijan, Esfahan, Fars, Gilan, Golestan, Hormozgan, Kerman, Kermanshah, Khorasan, Lorestan, Mazandaran, Tehran) (Mirzayans, 2012; Modarres Awal, 2012).

***Mylabris (Eumylabris) magnoguttata iranica* Kaszab, 1957**

Material examined: Khorasan Razavi province, Mashhad, 10.V. 1992, 1♀, Log. D. Jamshidian.

Distribution: Asia: Iran (Löbl and Smetana, 2008) (Balouchestan, Esfahan, Fars, Tehran) (Modarres Awal, 2012).

***Mylabris (Eumylabris) schrenki* Gebler, 1841**

Material examined: Khorasan Razavi province, Sabzevar, 25.VI. 2011, 4♀, Log. L. Fekrat; Mashhad, 16.VI. 2011, 1♀, Log. H. Saadat; Torbat Heidarieh, 19.V. 1992, 2♀, Log. M. Hoseini; South Khorasan province, Birjand, 4.VI. 1992, 1♂ Leg. M. Sharifi.

Distribution: Asia: Afghanistan, Kazakhstan, Turkmenistan, Uzbekistan, Tajikistan and China (Löbl and Smetana, 2008), Iran (Balouchestan, Esfahan, Fars, Golestan, Hormozgan, Kerman, Tehran) (Mirzayans, 1970; Modarres Awal, 2012).

***Mylabris (Mylabris) apicenigra* Sumakov, 1915**

Material examined: South Khorasan province, Nehbandan, 22.IV. 2004, 2♀, Leg. F. Moghadam, Khorasan Razavi province, Mashhad (Torghabeh), 15.VI. 2012, 2♀, 1♂, Leg. L. Fekrat.

Distribution: Asia: Turkey (Löbl and Smetana, 2008); Iran (Esfahan, Fars, Tehran) (Mirzayans, 1970).

***Mylabris (Mylabris) quadripunctata* (Linnaeus, 1767)**

Material examined: Khorasan Razavi province, Mashhad, 29.V. 1994, 15♀, 4♂, Leg. H. Afzali; Mashhad, 12.VI. 2012, 7♀, 9♂, Leg. L. Fekrat.

Distribution: Europe: Albania, Armenia, Bulgaria, Georgia, Greece, Italy, Macedonia, Turkey, Ukraine, Yugoslavia; Asia: Afghanistan, Iraq, Israel, Jordan, Kiribati, Kazakhstan, Syria, Turkmenistan, Turkey, Uzbekistan, China (Löbl and Smetana, 2008), Iran (Balouchestan, East Azarbaijan, Esfahan, Kermanshah, Mazandaran, Tehran) (Modarres Awal, 2012).

***Mylabris (Mylabris) variabilis* Pallas, 1781**

Material examined: Khorasan Razavi province, Sabzevar, 25.VI. 2011, 3♀, 1♂, Leg. L. Fekrat.

Distribution: Europe: Albania, Armenia, Bulgaria, Croatia, Georgia, Greece, Macedonia, Romania, Ukraine, Yugoslavia; Asia: Afghanistan, Kazakhstan, Turkmenistan, Turkey, Uzbekistan, China (Löbl and Smetana, 2008), Iran (Balouchestan, East Azarbaijan, Golestan, Kermanshah, Khorasan, Mazandaran, Tehran) (Mirzayans, 1970; Modarres Awal, 2012).

**Genus *Hycleus* Latreille, 1817**

***Hycleus colligatus* Redtenbacher, 1850**

Material examined: Khorasan Razavi province, Mashhad, 30.V. 2010, 3♀, 1♂, Leg. L. Fekrat; South Khorasan province, Birjand, 20.V. 1992, 5♀, 3♂, Leg. H. Afzali.

Distribution: Asia: Iran (Löbl & Smetana, 2008) (Balouchestan, Fars, Ghazvin, Hormozgan, Kerman, Kordestan, Zanjan) (Mirzayans, 1970; Modarres Awal, 2012).

***Hycleus fuscus* Olivier, 1811**

Material examined: South Khorasan province, Nehbandan, 10.V. 2008, 3♀, Leg. N. Ali Nejad; Sarbisheh, 15.V. 2003, 1♀, 1♂, Leg. T. Khorsshid poor.

Distribution: Europe: Armenia, South Russia; Asia: Iraq, Israel, Jordan, Kazakhstan, Syria, Turkmenistan, Turkey (Löbl and Smetana, 2008), Iran (Balouchestan, Boushehr, East Azarbaijan, Esfahan, Fars, Golestan, Hormozgan, Ilam, Kermanshah, Khorasan, Khuzestan, Kordestan, Tehran) (Modarres Awal, 2012).

***Hycleus javeti* Marseul, 1870**

Material examined: Khorasan Razavi province, Mashhad, 15.VI. 2012, 5♀, 1♂, Leg. L. Fekrat; South Khorasan province, Birjand, 4.V. 2010, 3♀, 2♂, Leg. N. Bahrami.

Distribution: Asia: Iraq, Turkmenistan, Turkestan (Löbl and Smetana, 2008), Iran (Balouchestan, Fars, Hormozgan, Kerman, Kermanshah, Khuzestan, Tehran) (Modarres Awal, 2012).

***Hycleus scabiosae* Olivier, 1811**

Material examined: Khorasan Razavi province, Sabzevar, 3.VI. 2012, 15♀, 8♂, Leg. L. Fekrat.

Distribution: Europe: Armenia, Bulgaria, Georgia, Greece, Romania, South Russia; Asia: Iraq, Mongolia, Syria, Tajikistan, Turkmenistan, Turkey, Uzbekistan, China (Löbl and Smetana, 2008), Iran (East Azarbaijan, Fars, Golestan, Kermanshah, Tehran and other northern provinces) (Modarres Awal, 2012).

***Hycleus schah shah* Reiche, 1866**

Material examined: South Khorasan province, Ferdos, 14.VI. 2012, Leg. H. Saadat Ghodsi, 2♀; Nehbandan, 15.VI. 2012, 1♀, Leg. J. Hafezian.

Distribution: Asia: Iran (Löbl and Smetana, 2008) (Balouchestan, Hormozgan, Kerman, Khorasan, Khuzestan, Tehran) (Mirzayans, 1970, Modarres Awal, 2012).

***Hycleus trianguliferus reitterioides* Mader, 1929**

Material examined: Khorasan Razavi province, Bajestan, 22.VI. 2007, 2♀, Leg. H. Moshtaghi.

Distribution: Asia: Iran (Löbl and Smetana, 2008) (Balouchestan, Hormozgan, Kerman,

Kermanshah, Khorasan, Tehran) (Modarres Awal, 2012).

***Hycleus zebraeus* Marseul, 1870**

Material examined: South Khorasan province, Nehbandan, 9.V. 2005, 3♀, Leg. A. Amini; 15.V. 2000, 3♀, 1♂, Leg. L. Mohammadi.

Distribution: Europe: Albania, Armenia, Bulgaria, Georgia, Macedonia, Turkey, Asia: Iraq, Israel, Jordan, Syria, Turkmenistan, Turkey (Löbl and Smetana, 2008), Iran (East Azarbaijan, Kermanshah, Khuzestan).

**Tribe Meloini Gyllenhal, 1810**

**Genus *Meloe* Linnaeus, 1758**

***Meloe (Coelomeloe) tuccius* Rossi, 1792**

Material examined: Khorasan Razavi province, Mashhad, 22.IV. 2012, 2♀, 1♂; Mashhad (Shandiz), 4.V. 2012, 1♀, 1♂, Leg. L. Fekrat.

Distribution: Widely distributed in the Macaronesian archipelago, from the Iberian Peninsula through southern Europe, Near East, Caucasus and Central Asia, East to Afghanistan, Tajikistan and western China, from Morocco through northern Africa, east to Egypt, Levant and Iran Bologna, 2009).

***Meloe (Lampromeloe) variegates* Donovan, 1793**

Material examined: Khorasan Razavi province, Dargaz, 1.VI. 2010, 1♀, 1♂, Leg. M. Hasani; North Khorasan province, Shirvan, 25.V. 2003, 1♂, Leg. M. Rezaee.

Distribution: Europe: Argentina, Belgium, Bosnia-Herzegovina, Britain, Bulgaria, Byzantine, Croatia, Czechoslovakia, Denmark, France, Georgia, Germany, Greece, Hungary, Italy, Romania, Slavic, Slovakia, Spain, South Russia, Ukrain, Yugoslavia; North Africa (Morocco, Tunis, Algeria); Asia: Afghanistan, Jordan, Kashmir, Kazakhstan, Lebanon, Turkmenistan, West of Siberia (Löbl and Smetana, 2008), Iran (Chahar Mahal & Bakhtiari, Guilan, Hamadan, West-Azarbaijan, Zanjan) (Modarres Awal, 2012).

***Meloe (Meloe) proscarabaeus* Linnaeus, 1758**

Material examined: Khorasan Razavi province, Mashhad, 15, VI. 1994, 2♀, 3♂; Mashhad, 29.VI. 1999, 2♀, Leg. H. Afzali; Toos, 11.V.

2007, 2♂, 1♀; Hossein Abad, 27.IV. 2012, 1♂; Torbat Jam, 29.V. 2012, 1♂, Leg. L. Fekrat.

Distribution: Polytypic species with widespread diffusion, from Japan to Siberia, throughout the central and western Asia, throughout Europe and in the Mediterranean lands (Bologna, 1995). Iran (Chahar Mahal & Bakhtiari, East Azarbaijan, Fars, Golestan, Hamadan, Kermanshah, Tehran, Zanjan and other northern provinces) (Modarres Awal, 2012).

***Meloe (Meloegonius) cicatricosus* Leach, 1815**

Material examined: Khorasan Razavi province, Mashhad (Torogh), 12.V. 1987, 2♀, 3♂, Leg. H. Afzali.

Distribution: Widely distributed throughout Europe, in the Near East and central Asia, from Kazakhstan to Afghanistan, Tajikistan and Kirghizstan (Löbl and Smetana, 2008). Iran (East Azarbaijan, Tehran) (Modarres Awal, 2012).

***Meloe (Meloegonius) rufiventris rufiventris* Germar, 1817**

Material examined: Khorasan Razavi province, Fariman, 15.IV. 2010, 1♂; 10.IV. 1995, 3♂, 2♀, Leg. H. Afzali.

Distribution: Widely distributed from East France (Alsace) through central Europe to Russia, south to northern Italy and northern Greece; in the Near East and central Asia, from Kazakhstan to Afghanistan, Tajikistan and Kirghizstan. In North Africa recorded in isolated localities from Algeria and Cyrenaica (Bologna, 2009)

***Meloe (Taphromeloe) erythrocnemus* Pallas, 1782**

Material examined: Khorasan Razavi, Khaf, 9.V. 2011, 2♀, Leg. L. Fekrat.

Distribution: Europe: Bosnia-Herzegovina, Bulgaria, Croatia, Greece, Italy, Romania, South Russia, Turkey, Ukraine; North Africa: Algeria, Morocco; Asia: Afghanistan, Kazakhstan, Tajikistan, Turkmenistan, Turkey, Uzbekistan, China (Löbl and Smetana, 2008); Iran (Fars, Kermanshah, East Azarbaijan, Tehran) (Modarres Awal, 2012).

## Discussion

Since the faunistic exploration of Iran is greatly incomplete, more investigations still result in discovering many new taxa for the fauna of our country. From an ecological point of view, Iran's geographical location and natural physical characteristics import a wide climatic diversity to the country. However, about 75 % of the total land area of Iran is dominated by an arid or semiarid climate (Kehl, 2009) and because arid and semiarid zones harbor a rich diversity of Meloidae at the generic and species level (Bologna, 2009), Iran is considered a suitable habitat for the meloids.

In our study, 31 species belonging to 11 genera (2 Nemagnathini, 1 Stenoderini, 1 Cercomini, 4 Lyttini, 2 Mylabrini and 1 Meloini) from 2 subfamilies (Nemagnathinae and Meloinae) were identified.

We have found 1 species of genus *Ctenopus* in our study for the first time in Iran; this genus is poorly known and its limits remain questionable. According to Reitter (1896) and Reichardt (1934) four of the central Asian species of this genus should be considered synonyms of *C. sinuatipennis* (Fairmaire, 1892). In our study, one species from genus *Euzonitis*, *E. Terminata*, was identified. This species has black head and pronotum with golden yellow setation. This genus needs complete revision based on characters other than coloration (Bologna and Pinto, 2002). There was one species of genus *Stenodera*, *S. caucasica*, in our samples. Selander (1964) separated this genus as the most primitive tribe of Nemagnathinae based on adult morphology. Phylogenetic analysis supported his placement (Bologna and Pinto, 2001).

One species of genus *Lydomorphus* was in our samples. The taxonomy of *L. angusticollis* is still debated, and the validity of six described subspecies needs to be confirmed. Color differences, which considered as constant characters by Kaszab (1955; 1983), are used to distinguish these subspecies; actually it seems that they form a cline (Bologna and Turco,

2007). This species needs a complete taxonomical revision to define the validity of subspecies.

Most of our samples belong to tribe Mylabrini. This tribe with approximately 750 described taxa, is the largest tribe of Meloinae subfamily (Bologna, 2000b). We have nine species of genus *Mylabris* and seven species of genus *Hycleus* in our study. Genus *Hycleus*, with more than 400 species, is the largest genus of Meloidae. Several authors have confused this group with *Mylabris* and other Mylabrini (Bologna and Pinto, 2002). *Hycleus* species usually have a furrow on pronotum but the species belong to genus *Mylabris* do not have such furrow. The only exception is the subgenus *Eumylabris*, which has a furrow on pronotum but unlike *Hycleus* species, the claws of this subspecies are dentate.

## Acknowledgements

We would like to express our sincere gratitude to Professor M. A. Bologna for being generous in determining and confirming meloid specimens during a scientific trip to University of Rome Tre, Italy and three anonymous reviewers for their valuable comments and suggestions on the earlier version of this paper.

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## کمک به ارتقای دانش در زمینه فون سوسک‌های خانواده Meloidae (Insecta: Coleoptera) در شمال شرق ایران

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دریافت: ۱۲ شهریور ۱۳۹۱، پذیرش: ۱۷ مهر ۱۳۹۱

**چکیده:** خانواده Meloidae، که به نام سوسک‌های تاول‌زا نیز معروف هستند، خانواده‌ای با پراکنش وسیع از بالاخانواده Tenebrionoidea با حدود ۲۵۰۰ گونه می‌باشد که در بسیاری از نقاط جهان مطالعات فونستیک محدودی روی آن صورت گرفته است. به دلیل ویژگی‌های خاص بیوجغرافیایی، ایران پناهگاهی برای طیف وسیعی از سوسک‌های تاول‌زا به‌شمار رفته و به دلیل فقدان مطالعات بنیادین و یکپارچه، خصوصاً در نواحی شرق ایران، دانش کنونی ما در مورد سوسک‌های تاول‌زا در ایران، باید بسیار مقدماتی و ابتدایی در نظر گرفته شود. به‌منظور ارتقای آگاهی در مورد گونه‌های تاول‌زا در نواحی شمال شرقی ایران، در طی سال‌های ۱۳۹۰-۱۳۹۱، بررسی فونستیک سوسک‌های تاول‌زا در این ناحیه انجام پذیرفت. گونه‌های جمع‌آوری شده همراه با نمونه‌های موجود در موزه حشرات دانشگاه فردوسی مشهد مورد بررسی قرار گرفتند. براساس نتایج به‌دست آمده، ۳۱ گونه متعلق به ۱۱ جنس از ۲ زیرخانواده شناسایی گردیدند. در بین گونه‌های شناسایی شده، ۲۴ گونه برای فون استان‌های خراسان جدید بودند. گونه (1892) *Ctenopus sinuatipennis* Fairmaire برای اولین بار از ایران گزارش می‌شود.

**واژگان کلیدی:** Meloidae، سوسک تاول‌زا، فون، خراسان، ایران.