

## AN INVESTIGATION TO THE SUBFAMILY OF LIXINAE FROM KHORASAN JUNOUBI AND RAZAVI PROVINCES OF IRAN (COLEOPTERA: CURCULIONIDAE)

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**ABSTRACT:** During 2006-2008 subfamily of Lixinae was surveyed in North eastern and east provinces of Iran. In total, 27 species belonging to 15 genera were determined. Among them three species including of *Larinus sericatus* (Boheman, 1834), *Bangasternus provincialis* (Fairmaire, 1863) and *Conorhynchus verucundus* (Faust, 1883) are new record for Iran fauna.

**KEY WORDS:** Curculionidae, Lixinae, Khorasan, Iran, new records.

Khorasan is the widest region in Iran (with total area 315686 Km<sup>2</sup>) that is divided in three provinces concern Khorasan Junoubi, Razavi and Shomali. This area surrounded by Turkmenistan and Afghanistan, also linked with four provinces include Kerman, Balouchestan, Yazd and Semnan. Curculionidae is currently the largest family of insects in the world with at least 3600 genera and 41000 species. Lixinae is a subfamily of true weevils, included three tribes Cleonini, Lixini and Rhinocyllini. Main characteristic of this subfamily include tarsal claws are fused at the base, and labial palps are short and telescoping. In addition, their body is elongated shape as for some other weevils, tibiae bear and uncus on its distal end and the rostrum is forwardly directed (Boothe et al., 1990). The species of Lixinae are mainly root feeders and thus several of those are used in biological control of invasive weeds, namely knapweeds (*Centaurea*) (Hoffmann, 1950). Regardless of Lixinae species potential for biological control of weeds, there is no information on these fauna in mentioned provinces. Therefore, the objective of this study was the identification of Lixinae species in Khorasan Junoubi and Razavi provinces of Iran.

### MATERIALS AND METHODS

The material was collected during 2006 - 2008 on the different plant hosts in the pastures, gardens, agriculture fields and grasslands. The specimens were collected either by sweeping net or directly by forceps. All samples were lodge in killing jar (Ethanol 70%) and transferred to the laboratory and then pinned as well labeled. The specimens were sent to Dr. Fabio Talamelli in Centro Studi Naturalistici Valconca San Giovanni in Marignano, Italy to identify or confirm. All species are deposited in the Entomology Collection of Plant Protection Department College of Agriculture, Ferdowsi University of Mashhad, Iran.

### RESULTS

In this research 27 species belonging to 15 genera and 3 tribes are presented. Among them three ones including *Larinus sericatus*, *Bangasternus provincialis*

and *Conorhynchus verucundus* are new for Iran fauna and those were showed by an asterisk. List of species give in below.

**Family: Curculionidae Latreille, 1802**

**Subfamily: Lixinae Schönherr, 1823**

**Tribe: Lixini Schönherr, 1823**

***Larinus latus* (Herbst, 1783)**

Material studied: Mashhad: 3 specimens, May 2006. On grasses.

Note: This species has been reported from Ardabil, East Azarbaijan, Esfahan, Fars, Ghazvin, Ghom, Hormozgan, Kermanshah, Kordestan, Lorestan, Mazandaran and Tehran provinces (Afshar, 1994, Balachowsky, 1963, Baroughi, 1977, Broumand, 1998).

***Larinus mellificus* Jekel, 1859**

Material studied: Mashhad: 1 specimen, April, 1 specimen, June 2006; 1 specimen, June 2007. On grasses.

Note: This species has been reported from Ilam, Khorasan and Tehran provinces (Modarres Awal, 1997).

**\**Larinus sericatus* Boheman, 1843**

Material studied: Mashhad: 3 Specimens, May 2007. On grasses.

***Lixus desertorum* Gebler, 1830**

Material studied: Mashhad: 3 Specimens, May 2007. On grasses.

Note: This species has been reported from Khorasan and Semnan provinces Modarres Awal, 1997).

***Lixus cardui* Olivier, 1807**

Material studied: Mashhad: 10 Specimens, June 2008; Torbat Jam: 1 Specimen, April 2007. On grasses.

Note: This species is distributed in Ardabil, East Azarbaijan, Esfahan, Fars, Ghom, Golestan, Kermanshah, Khuzestan, Kohkilouyeh and Boyerahmad and Tehran provinces (Afshar, 1994, Broumand, 1998, Modarres Awal, 1997).

***Lixus angustatus* (Fabricius, 1775)**

Material studied: Fariman: 2 Specimens, June 2007. On grasses.

Note: This species found in large area of Iran (Modarres Awal, 1997).

***Lixus incanescens* Boheman, 1835**

Material studied: Mashhad: 2 Specimens, July 2006. On grasses.

Note: This species has been reported from East Azarbaijan, Esfahan, Fars, Kerman, Kermanshah and Tehran provinces on sugar beet, red root, black-weed, kali and mountain spinach (Esmaili et al., 1991, Farahbakhsh, 1961, Gardenhire, 1959, Kheyri, 1989, Kheyri and Davatchi, 1966, Modarres Awal, 1997, Parvizi and Javan Moghaddam, 1988 ).

**Tribe: Rhinocyllini Lacordaire, 1863**

**\**Bangasternus provincialis* (Fairmaire, 1863)**

Material studied: Mashhad: 4 Specimens, May 2007. On grasses.

***Bangasternus planifrons* (Brullé, 1832)**

Material studied: Mashhad: 3 Specimens, April 2008. On grasses.

**Tribe: Cleonini Schönherr, 1826**

***Chromosomus persicus* Fermuth, 1987**

Material studied: Ghaen: 5 Specimens, May 2006. On grasses.

Note: This species has been reported from Sistan and Balouchestan provinces (Modarres Awal, 1997).

***Xanthochelus cinctiventris* (Fahraeus, 1842)**

Material studied: Mashhad: 5 Specimens, April 2008. On grasses.

***Temnorhinus subfuscus* (Faust, 1883)**

Material studied: Mashhad: 3 Specimens, June 2007. On grasses.

***Temnorhinus pilipes*** Gebien, 1917

Material studied: Kashmar: 5 Specimens, July 2007. On grasses.

***Temnorhinus strabus*** (Gyllenhal, 1834)

Material studied: Mashhad: 3 Specimens, May 2006. On grasses.

***Pachycerus cordiger*** (Germar, 1818)

Material studied: Mashhad (Torghabeh): 2 Specimens, June 2007. On grasses.

Note: This species is distributed in East Azarbaijan, Fars, Ghazvin, Hormozgan, Kermanshah, Khorasan, Khuzestan and Tehran provinces on sugar beet (Broumand, 1998, Modarres Awal, 1997).

***Leucomigus candidatus*** (Pallas, 1771)

Material studied: Mashhad: 4 Specimens, April 2008. On grasses.

Note: This species has been reported from Ardabil, Kerman, Mazandaran and Tehran provinces (Modarres Awal, 1997).

***Coniocleonus nigrosuturatus*** (Goeze, 1777)

Material studied: Mashhad: 4 Specimens, May 2007. On grasses.

Note: This species has been reported from East Azarbaijan, Fars, Kermanshah, Lorestan, Mazandaran, Sistan and Balouchestan and Tehran provinces on sugar beet (Broumand, 1998, Modarres Awal, 1997).

***Entymetopus klapperichi*** Voss, 1959

Material studied: Mashhad: 4 Specimens, May 2008. On grasses.

Note: This species has been reported from Kerman and Sistan and Balouchestan provinces (Modarres Awal, 1997).

***Conorhynchus nigrivittis*** (Pallas, 1781)

Material studied: Farouj: 1 Specimen, July 2008; Mashhad: 4 Specimens, April, June and July 2008. On grasses.

Note: This species without defining its hosts has been reported from East Azarbaijan, Khorasan and Tehran provinces (Modarres Awal, 1997).

**\**Conorhynchus verucundus*** (Faust, 1883)

Material studied: Mashhad: 3 Specimens, May 2007. On grasses.

***Conorhynchus brevirostris*** (Gyllenhal, 1834)

Material studied: Mashhad: 4 Specimens, June 2006. On grasses.

Note: This species is distributed in East Azarbaijan, Fars, Kerman, Khorasan and Tehran provinces on sugar beet, black-weed, anabasis, purslane and salicornia (Asadeh and Mosaddegh, 1991, Davatchi and Kheyri, 1964, Hoffmann, 1950, Kheyri, 1989, Modarres Awal, 1997).

***Conorhynchus hololeucus*** (Pallas, 1781)

Material studied: Mashhad: 2 Specimens, April 2006. On grasses.

***Conorhynchus lacerta*** Chevrolat, 1873

Material studied: Mashhad: 3 Specimens, May 2007. On grasses.

Notes: This species has been reported from Ardabil, East Azarbaijan, Esfahan, Fars, Khorasan, Markazi, Semnan and Tehran provinces (Broumand, 1976, 1998).

***Ammocleonus aschabadensis*** (Faust, 1884)

Material studied: Esfarayen: 1 Specimen, May 2007; Sarakhs: 2 Specimens, July 2006. On grasses.

Note: This species has been reported from Boushehr, East Azarbaijan, Fars, Ghom, Gilan, Hormozgan, Ilam, Kerman, Khorasan, Kohkilouyeh and Boyerahmad, Khuzestan, Markazi, Sistan and Balouchestan and Tehran provinces on sugar beet (Broumand, 1998, Modarres Awal, 1997).

***Trichocleonus leucophyllus*** (Fischer de Waldheim, 1821)

Material studied: Mashhad: 4 Specimens, June 2007. On grasses.

***Asproparthenis obsoletefasciatus*** (Menetries, 1842)

Material studied: Chenaran: 1 Specimen, April 2006; Mashhad: 1 Specimen, May 2007. On grasses.

***Bothynoderes* (= *Asproparthenis*) *nubeculosus*** (Schöenherr, 1834)

Material studied: Mashhad: 3 Specimens, June 2008. On grasses.

***Mecaspis darwini*** Faust, 1883

Material studied: Mashhad: 4 Specimens, April 2006. On grasses.

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