

Leaf Beetles (Coleoptera: Chrysomelidae) of Tehran, Alborz and Qazvin Provinces, Iran

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A faunistic survey of leaf beetles (Chrysomelidae) was accomplished in Tehran, Alborz and Qazvin provinces of Iran, during 2012 and 2013. In total, 30 species belong to five subfamilies (Chrysomelinae, Cryptocephalinae, Galerucinae, Cassidinae and Criocerinae) and 22 genera were identified.

Keywords: Coleoptera, Chrysomelidae, fauna, Iran.

Iran is one of the most diverse areas in the Palaearctic. Family Chrysomelidae with over 37,000 described species in the world is one of the largest groups of Coleoptera (Jolivet et al., 2009). Nonetheless, so many species remain to be described and can be reaching up to 60,000 species (Reid, 1995). All leaf beetles are phytophagous. In particular, so many species of them are regarded as agricultural and forest pest and some another one as biological control agents of certain weeds (Jolivet et al., 1988; Warchałowski, 1994). The Palaearctic Chrysomelidae fauna is known to comprise more than 3500 species (Jolivet and Verma, 2002; Gruev and Döberl, 2005; Konstantinov et al., 2009; Löbl and Smetana, 2010). In particular, in Turkey 770 species (81 endemic species) have been recorded (Ekiz et al., 2013). In the Balkan Peninsula, Republic of Macedonia and Romania 780, 213 and 571 species recorded, respectively (Maican, 2005; Gruev and Tomov, 2007; Rozner and Rozner, 2008). On the other hand Iranian leaf beetle fauna is poorly known. Despite of the several faunistic records based on museum, private collections and scientific expeditions that were published from Iran (Berti and Rapilly, 1973, 1976, 1977; Lopatin, 1977, 1979, 1980, 1981, 1985; Medvedev, 1983; Modarres Awal, 1997; Döberl, 2010) there are only about 500 species reported. Nevertheless, based on checklists of neighbour's countries, Iranian fauna is likely more complex and probably several species are still remaining unknown.

Materials and Methods

Based on the climate variability of Tehran, Alborz and Qazvin provinces, the area situated in Irano-Touranian semi-arid mountains, located in central part of Alborz Moun-

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Fig. 1. Specimens were collected from highlighted places in the map as Tehran, Alborz and Qazvin provinces, Iran

tains was selected. To achieve a good knowledge of leaf beetles inhabiting Tehran, Alborz and Qazvin provinces several field trips were recognized to collect specimens from 2012 to 2013. This area located between 34°55' to 36°45' N (Fig. 1). The localities belong to provinces of Iran are as follows (degree of latitude and longitude are in brackets): **Alborz province:** Abasabad city (35°57' N/51°02' E), Asara village, Karaj city (36°01' N/51°11' E), Eshtehard city (35°40' N/50°33' E), Hashtgerd city (35°58' N/50°39' E), Karaj city E); **Qazvin province:** Alamout region (36°57' N/50°51' E), Avaj city (35°34' N/49°14' E), Heiran village, Qazvin city (36°27' N/50°16' E), Qazvin city (36°20' N/50°03' E); **Tehran province:** Damavand city (35°41' N/52°10' E), Firuzkuh city (35°41' N/52°04' E), Lavasan city (36°03' N/50°37' E), Pakdasht city (35°29' N/51°43' E), Rey city (35°36' N/51°28' E), Shahriar city (35°39' N/51°02' E), Varamin city (35°20' N/51°36' E).

Specimens were sweep netted, beaten and singled. All specimens were collected by M. Mirzaei. Identification was made with the aid of the original descriptions and the other main references (including the collaboration with expert in systematic of this group) (Warchałowski 2010).

Results

In the present paper 30 species belong to 22 genera and five subfamilies (Chrysomelinae, Cryptocephalinae, Galerucinae, Cassidinae and Criocerinae) are identified, of which four, two and one species are new records for Alborz, Tehran and Qazvin provinces, respectively.

Chrysomelinae Latreille, 1802

***Chrysomela populi* Linnaeus 1758** — 2♂, 3♀ Karaj city, 26.VI.2012; 1♂, 5♀ Shahriar city, 30.V.2013; 4♀ Qazvin city, 30.VI.2013.

***Plagioderma versicolora* Laicharting, 1781** — 1♂, 2♀ Nazarabad city, 23.VII.2013; 2♀ Asara village, Karaj city, 12.VIII.2012.

***Gastrophysa polygona* Linnaeus, 1758** — 1♂, 8♀ Varamin city, 8.VI.2012; 5♀ Pakdasht city, 8.VI.2012; 1♀ Alamout region, 21.VII.2012.

***Chrysolina coeruleans* Scriba, 1791** — 1♂, 1♀ Nazarabad city, 23.VII.2013; 2♀ Asara village, Karaj city, 12.VIII.2012.

***Chrysolina herbacea* Duftschmid, 1825** — 1♂, 2♀ Taleqan city, 11.VII.2012. — This is the first record of this species for Alborz province.

***Chrysolina marginata* Linnaeus, 1767** — 1♂, 2♀ Rey city, 23.VII.2012; 3♀ Eshtehard city, 18.VI.2013, 1♂, 4♀ Nazarabad city, 23.VII.2013; 3♀ Asara village, Karaj city, 12.VIII.2012; 1♂, 1♀ Heiran village, Qazvin city, 28.VII.2013.

***Chrysolina hyrcana* Weise, 1884** — 1♂, 2♀ Firuzkuh city, 26.VI.2013. — This is the first record of this species for Tehran province.

***Entomoscelis adonidis* Pallas, 1771** — 2♂, 6♀ Karaj city, 26.VI.2012; 2♀ Abasabad city, 24.VI.2012; 3♂, 5♀ Qazvin city, 20.VII.2013; 2♀ Asara village, Karaj city, 12.VIII.2012; 1♂, 1♀ Heiran village, Qazvin city (Qazvin province), 36°27' N/50°16' E, 28.VII.2013; 5♂, 8♀ Taleqan city, 11.VII.2012.

***Entomoscelis suturalis* Weise, 1882** — 1♂, 5♀ Firuzkuh city, 26.VI.2012; 3♀ Avaj city, 17.VII.2013. — This is the first record of this species for Qazvin province.

***Colaphellus sophiae* Schaller, 1783** — 1♂, 1♀ Damavand city, 6.VIII.2012. — This is the first record of this species for Tehran province.

Cryptocephalinae Gyllenhal, 1813

***Cryptocephalus* sp.** — 1♀ Hashtgerd city, 15.VIII.2013.

***Pachybrachis scripticollis* Faldermann, 1837** — 1♂, 1♀ Eshtehard city, 12.VII.2013. — This is the first record of this species for Alborz province.

Galerucinae Latreille, 1802

***Galeruca armeniaca* Weise, 1886** — 1♂, 4♀ Taleqan city, 20.VI.2013; 3♂, 5♀ Shahriar city, 30.V.2013; 3♂, 4♀ Qazvin city, 30.VI.2013.

***Xanthogaleruca luteola* Müller, 1766** — 3♂, 6♀ Karaj city, 26.VI.2012; 2♂, 3♀ Nazarabad city, 23.VII.2013; 2♂, 1♀ Asara village, Karaj city, 12.VIII.2012.

***Agelastica alni* Linnaeus, 1758** — 1♂, 1♀ Nazarabad city, 23.VII.2013.

***Aulacophora foveicollis* Lucas, 1849** — 4♂, 5♀ Varamin city, 8.VI.2012; 4♂, 3♀ Pakdasht city, 8.VI.2012; 3♂, 7♀ Karaj city, 26.VI.2012; 2♂, 2♀ Abasabad city, 24.VI.2012; 5♂, 4♀ Qazvin city, 20.VII.2013; 1♂, 1♀ Heiran village, Qazvin city, 28.VII.2013; 3♂, 9♀ Taleqan city, 11.VII.2012.

***Falsoexosoma cyanipennis* Reitter, 1902** — 1♂, 2♀ Taleqan city, 11.VII.2012.

***Nymphius stylifer* Weise, 1899** — 1♂, 2♀ Nazarabad city, 23.VII.2013.

***Altica* sp.** — 5♀ Varamin city, 8.VI.2012; 3♀ Pakdasht city, 8.VI.2012.

***Chaetocnema hortensis* Geoffroy, 1785** — 1♂, 5♀ Karaj city, 26.VI.2012; 2♂, 4♀ Varamin city, 8.VI.2012; 3♀ Pakdasht city, 8.VI.2012; 2♀ Taleqan city, 11.VII.2012.

***Chaetocnema tibialis* Illiger, 1807** — 3♂, 3♀ Varamin city, 8.VI.2012; 3♂, 2♀ Pakdasht city, 8.VI.2012; 1♂, 3♀ Karaj city, 26.VI.2012; 3♂, 4♀ Abasabad city, 24.VI.2012;

3♂, 2♀ Qazvin city, 20.VII.2013; 2♂, 4♀ Heiran village, Qazvin city, 28.VII.2013; 3♂, 6♀ Taleqan city, 11.VII.2012.

Phyllotreta atra Fabricius, 1775 — 3♂, 4♀ Abasabad city, 24.VI.2012.

Psylliodes tricolor Weise, 1888 — 1♂, 2♀ Lavasan city, 22.VIII.2012. — This is the first record of this species for Alborz province.

Psylliodes persica Allard, 1867 — 2♂, 2♀ Varamin city, 8.VI.2012; 2♂, 3♀ Pakdasht city, 23.VII.2012. — This is the first record of this species for Alborz province.

Cassidinae

Cassida viridis Linnaeus, 1758 — 1♂, 1♀ Lavasan city, 22.VIII.2012; 2♀ Taleqan city, 11.VII.2013.

Cassida nebulosa Linnaeus, 1758 — 3♀ Taleqan city, 11.VII.2013.

Cassida transcaucasica Borowiec and Swietojanska, 2001 — 1♀ Damavand city, 6.VIII.2013.

Hypocassida subferruginea Schrank, 1776 — 1♂, 2♀ Eshtehard city, 18.VI.2013; 1♂, 2♀ Asara village, Karaj city, 12.VIII.2012; 3♀ Heiran village, Qazvin city, 28.VII.2013.

Criocerinae

Lilioceris faldermanni Guerin-Meneville, 1844 — 1♂, 2♀ Nazarabad city, 23.VII.2013.

Oulema melanopus Linnaeus, 1758 — 4♂, 8♀ Karaj city, 26.VI.2012; 2♂, 5♀ Abasabad city, 24.VI.2012; 5♂, 8♀ Varamin city, 8.VI.2012; 1♂, 3♀ Pakdasht city, 8.VI.2012; 3♂, 3♀ Qazvin city, 20.VII.2013; 2♂, 4♀ Heiran village, Qazvin city, 28.VII.2013; 5♂, 12♀ Taleqan city, 11.VII.2012.

Discussion

During 2012 and 2013 from 20 places belonging to three provinces in total 30 species were collected, of which Taleqan city with 10 species seemed to have the most diverse leaf beetle fauna. Regarding to recent changes in classification of some group in the family Chrysomelidae, the most diversity of leaf beetles was collected from subfamily Galerucinae (consists of four tribes Alticini and Galerucini, Hylaspini, Luperini) with 12 species. Previously, Alticinae, Clytrinae and Galerucinae were separated as a distinct subfamily (Bouchard et al., 2011). *Cassida transcaucasica* with only one specimen were lowest abundant in the area. Additionally *Aulacophora foveicollis*, *Chaetocnema tibialis* and *Oulema melanopus* with most abundant are important agricultural pests. According to this study, in total with 7 new records for Alborz, Tehran and Qazvin provinces were given and based on host plants and climate diversity in the mentioned area, we believe that in this area and also in other poorly known place this research should be continued for making a comprehensive data on Chrysomelidae of Iran and findings of new records or even new species for science.

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