

A Contribution to the Knowledge of Leaf Beetles (Coleoptera: Chrysomelidae) from Arasbaran Biosphere Reserve and its Neighboring Areas (Northwestern Iran)

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Abstract: This paper deals with the fauna of Chrysomelidae (Coleoptera) from the Arasbaran biosphere reserve and its neighboring areas in the Northwestern Iran. In a total 34 species from 20 genera and 5 subfamilies (Alticinae, Clytrinae, Cryptocephalinae, Galerucinae, Chrysomelinae) were collected. Six species were identified as the new for the fauna of Iran.

Key words: Coleoptera, Chrysomelidae, fauna, Arasbaran, Iran

Introduction

Chrysomelidae is a very large family of phytophagous Coleoptera and widely distributed worldwide, having approximately 50 000 species in over 2000 genera (BOOTH *et al.* 1990; GRUEV 1992; WARCHALOWSKI 1994). Chrysomelidae feed on plants (leaves, flowers etc., and some of them are regarded as pests in agriculture and forestry (WARCHALOWSKI 2003; ÖZDIKMEN & ASLAN 2009).

The fauna of Iranian Chrysomelidae was studied by BARKHORDARI *et al.* (1981), MODARRES AWAL (1997), MORIDI *et al.* (2002), PADASHT DEHKAI & MOJIB HAGH-GHADAM (2006), SERRY (2006), ALAVI (2006), ALAVI & KHALILI (2006), HAGH GHADAM & PADASHT DAHKAI (2006), MOHAMMAD ZADE FARD (2007), SERRI & NASERZADEH (2007), MOHAGHEGH & ABARI (2008), MORADIAN *et al.* (2009), DÖBERL (2010), BARARI & SERRI (2010), KEYHANIAN AND TAGHADDOSI (2010). The aim of this paper is to present new data that contribute to the knowledge about the geographical distribution of leaf beetles recently collected in Arasbaran Biosphere Reserve and its neighboring areas in Northwestern Iran.

Materials and Methods

Arasbaran biosphere reserve is an important region in East Azarbaijan province, situated in the north of Iran at the border to Armenia and Azerbaijan and belongs to Caucasus Iranian Highlands. The area is located between Caspian, Caucasus and Mediterranean region, and covers mountains up to 2200 m (Fig. 1). The location of Arasbaran is 38°40' to 39°08'N; 46°39' to 47°02'E and its altitude is 250 to 2887 m.

The specimens were collected throughout the growing seasons from various vegetations using hand, sweep net and aspirator. The sampled regions include 4 provinces: Ardabil, East Azarbaijan, West Azarbaijan and Zanjan. Different plants, especially the plants with damaged leaves, were also examined carefully and the beetles on them were collected. Collected beetles were kept in ethyl acetate and taken to the laboratory for further analysis and dissection. Additionally, available entomological collections from different museums were examined by the authors. The specimens were identified to species under stereomicroscope using the taxonomic keys of PORTEVIN (1934), MOHR (1966, 1981), KASAP (1980),

LOPATIN (1984), DÖBERL (1994), and WARCHAŁOWSKI (1991, 1996, 1998, 2000, 2003).

Results

Totally 34 species from 20 genera and 5 subfamilies of Chrysomelidae were collected from Arasbaran biosphere reserve and its neighboring areas in Northwestern Iran. The list of species is given below.

Subfamily Alticinae KUTSCHERA 1859

Altica lythri AUBE 1843

Material examined: East Azarbaijan province: Khodafarin (824 m), 1♂, July 2006.

Distribution outside Iran: Central and South Europe as well as in Caucasian countries.

Altica quercetorum FOUDRAS 1860

Material examined: Ardabil province: Gergy (776 m), 2♀, summer 2006.

Distribution outside Iran: Known from whole Europe, Asia Minor and Caucasian countries.

Phyllotreta ganglbaueri HEIKERTINGER 1909

Material examined: West Azarbaijan province: Ourmieh (1376 m), 3♂, summer 2007.

Distribution outside Iran: Known from South and East Europe.

Material examined: West Azarbaijan province: Mahabad (1351 m), 3♂, 4♀, June 2007.

Distribution outside Iran: Southern and Central Europe.

Subfamily Clytrinae JACOBY & CLAVAREAU 1906

Antipa macropus (ILLIGER 1800)

Material examined: East Azarbaijan province: Harris (1903 m), 2♂, 2♀, August 2006. Ardabil province: Kolor (1549 m), 1♂, 3♀, July 2008.

Distribution outside Iran: South Europe and Caucasus to Iran, Turkmenistan, Uzbekistan.

Cheilotoma musciformis (GOEZE 1777)

Material examined: West Azarbaijan province: Not locality cited, 1♂, 1♀, spring 2007. **New record for Iran.**

Distribution outside Iran: South Europe, Caucasian countries, West and Middle Siberia, Transbaikalia.

Coptocephala unifasciata (SCOPOLI 1763)

Material examined: East Azarbaijan province: Ahar (1341 m), 1♂, 1♀, September 2005.

Distribution outside Iran: Europe, Transcaucasia, West Asia.

Labidostomis karamanica WEISE 1900

Material examined: East Azarbaijan province: Maragheh (1482 m), 1♂, 2♀, summer 2006. **New record for Iran.**

Distribution outside Iran: South Europe, Asia Minor and Northwest Siberia.

Labidostomis oertzeni WEISE 1889

Material examined: West Azarbaijan province: Maco (1722 m), 2♀, September 2007.

Distribution outside Iran: Bulgaria, Greece, Turkey.

Labidostomis rufa (WALTL 1838)

Material examined: East Azarbaijan province: Ahar (1356 m), 5♂, 6♀, September 2005. Ardabil province: Meshkinshahr (1334 m), 3♀, June 2008.

Distribution outside Iran: Asia Minor, Balkans.

Smaragdina biornata (LEFAVRE 1872)

Material examined: East Azarbaijan province: Shabestar (1428 m), 2♀, August 2006. **New record for Iran.**

Distribution outside Iran: Transcaucasia, Turkey.

Smaragdina (Monrosia) tibialis (BRULLE 1832)

Material examined: East Azarbaijan province: Maragheh (1509 m), 3♂, 2♀, August 2006.

Distribution outside Iran: West Asia.

Smaragdina (Monrosia) xanthaspis (GERMAR 1824)

Material examined: West Azarbaijan province: Qooshchi (1366 m), 2♂, June 2007. East Azarbaijan province: Qareh Aghaj (1917 m), 2♂, 1♀, July 2009.

Distribution outside Iran: Southeast and Central Europe, Transcaucasia, Turkey.

Tituboea macropus (ILLIGER 1800)

Material examined: Ardabil province: Not locality cited, 1♂, unknown date.

Distribution outside Iran: Southeast Europe, Asia Minor, Caucasian countries.

Subfamily Cryptocephalinae CHAPUIS 1874

Cryptocephalus sulphureus OLIVIER 1808

Material examined: East Azarbaijan province: Aynalo (1119 m), 1♂, June 2005.

Distribution outside Iran: Mediterranean area.

Cryptocephalus bipunctatus (LINNAEUS 1758)

Material examined: East Azarbaijan province: Tabriz (1382 m), 1♂, 1♀, June 2006.

Distribution outside Iran: Europe, Caucasian countries.

***Cryptocephalus fulvus* GOEZE 1777**

Material examined: Zanjan province: Abhar (967 m), 2♂, September 2009.

Distribution outside Iran: From Europe to China and Korea.

***Cryptocephalus peyroni* MARSEUL 1875**

Material examined: West Azarbaijan province: Ourmieh (1431 m), 2♀, August 2007. Ardabil province: Namin (1427 m), 2♂, 1♀, July 2008.

Distribution outside Iran: Anatolia, Israel, Jordan, Lebanon, Syria.

***Cryptocephalus sexpunctatus* (LINNAEUS 1758)**

Material examined: East Azarbaijan province: Harris (1903 m), 2♀, August 2006.

Distribution outside Iran: Palaearctic except Central Asia.

***Cryptocephalus violaceus* LAICHARTING 1781**

Material examined: Zanjan province: Zanjan (815 m), 1♀, on *Centaurea* sp. (Asteraceae), June 2009.

Distribution outside Iran: Central and South Europe, Ciscaucasia.

***Pachybrachis fimbriolatus* (SUFFRIAN 1848)**

Material examined: East Azarbaijan province: Tabriz (1533 m), 1♀, April 2010.

Distribution outside Iran: Central and South Europe, Northwest Caucasus, Turkey.

***Pachybrachis scripticollis* FALDERMAN 1837**

Material examined: East Azarbaijan province: Maragheh (1482 m), 1♂, August 2006.

Distribution outside Iran: Armenia, Near and Middle East, Turkmenistan.

Subfamily Galerucinae SEIDLITZ 1891

***Calomicrus pinicola* (DUFTSCHMIDT 1825)**

Material examined: Zanjan province: Khorramdarreh (953 m), 2♀, Unknown date. **New record for Iran.**

Distribution outside Iran: Known from whole Europe.

***Galeruca pomonae* (SCOPOLI 1763)**

Material examined: Ardabil province: Firozabad (1120 m), 2♂, September 2008.

Distribution outside Iran: Europe, Kazakhstan, Central Asia, Mongolia.

***Phyrrhalta (Galerucella) tenella* (LINNAEUS 1761)**

Material examined: Ardabil province: Ardabil (1339 m), 1♂, 4♀, April 2009.

Distribution outside Iran: Central and East Europe, Siberia, China.

Subfamily Chrysomelinae LATREILLE 1802

***Chrysolina herbacea* (DUFTSCHMIDT 1825)**

Material examined: East Azarbaijan province: Hoorand (1113 m), 2♂, 1♀, September 2005.

Distribution outside Iran: Europe, North Caucasus, Turkey, Middle East, Kazakhstan, Turkmenistan.

***Chrysolina sahlbergi* (MENETRIES 1832)**

Material examined: West Azarbaijan province: Oshnaviyeh (1454 m), 3♂, 2♀, June 2007.

Distribution outside Iran: Caucasus, Israel, Palestine, Syria, Turkey.

***Chrysolina vernalis ottomana* (WEISE 1906)**

Material examined: West Azarbaijan province: No locality cited, 1♀, unknown date.

Distribution outside Iran: South Europe.

***Chrysomela populi* LINNAEUS 1758**

Material examined: West Azarbaijan province: Ourmieh (1434 m), 1♀, August 2007. West Azarbaijan province: Myandoab (1348 m), 1♂, 1♀, July 2009.

Distribution outside Iran: Palaearctic except Middle Asia.

***Chrysomela tremulae* FABRICIUS 1787**

Material examined: West Azarbaijan province: No locality cited, 1♂, 1♀, June 2007. **New record for Iran.**

Distribution outside Iran: All over Palaearctic except Middle Asia.

***Entomoscelis suturalis* WEISE 1882**

Material examined: East Azarbaijan province: Kalibar (1137 m), 1♂, August 2006.

Distribution outside Iran: Caucasus, Middle East, Southeast Europe, Transcaucasia, Turkey.

***Gonioctena fornicata* BRUGGEMAN 1873**

Material examined: East Azarbaijan province: Kalibar (1137 m), 1♂, 2♀, August 2006. Ardabil province: Meshkinshahr (1550 m), 2♂, 4♀, June 2008. East Azarbaijan province: Miyaneh (1137 m), 3♀, July 2009.

Distribution outside Iran: Central and Southeast Europe, Caucasian countries, Asia Minor.

***Leptinotarsa decemlineata* (SAY 1824)**

Material examined: Ardabil province: Meshkinshahr (1550 m), 6♂, 4♀, June 2008. Ardabil

province: Hir (1543 m), 9♂, 11♀, July 2008. Ardabil province: Ardabil (1339 m), 7♂, 14♀, April 2009.

Distribution outside Iran: Introduced species of cosmopolitan distribution.

***Phaedon pyritosus* (Rossi 1792)**

Material examined: East Azarbaijan province: Bostan Abad (1734 m), 1♂, 1♀, Unknown date. **New record for Iran.**

Distribution outside Iran: South and East Europe, Caucasus, Kazakhstan, North Africa.

total number of Iranian Chrysomelidae reaches 107 species. The host plants of leaf beetle species were not studied in this work, so these researches must be continued both the species diversity of leaf beetles and their host plants in the mentioned area and other localities of Iran. Additionally, since some of the leaf beetles are important agricultural and forest pests, further studies should focus on collecting in little known areas and also study on the efficiency of their natural enemies.

Discussion

The finding 34 species of leaf beetles in this research, including 6 species new for the fauna of Iran, indicates that the fauna of Chrysomelidae in Arasbaran Biosphere Reserve and its neighboring areas (Northwestern Iran) is rather diverse. With attention to the six new records of this research, the

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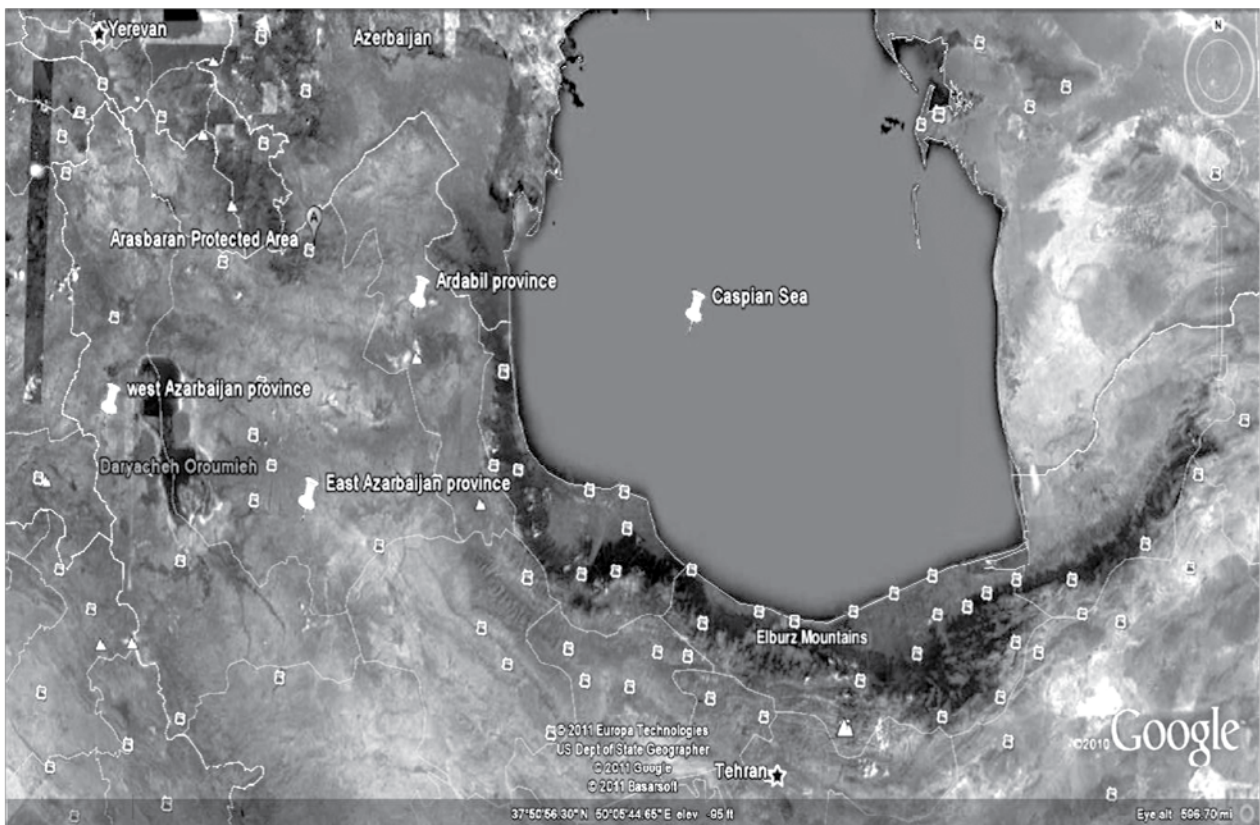


Fig. 1. Arasbaran Biosphere Reserve and its neighboring areas (Northwestern Iran).

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