New Records of Flea Beetles (Coleoptera: Chrysomelidae: Galerucinae: Alticini) from Iran

Hassan Ghahari

Department of Plant Protection, Yadegar-e-Imam Khomeini (RAH) Shahre Rey Branch, Islamic Azad University, Tehran, Iran; E-mail: hghahari@yahoo.com

Abstract: The species diversity of flea beetles (Coleoptera: Chrysomelidae: Galerucinae: Alticini) from some regions of Iran is studied in this paper. We collected and identified as new records for the fauna of Iran a total of 16 species belonging to nine genera: Altica Geoffroy (2 species), Aphthon Chevrolat (2), Chaetocnema Stephens (2), Dibolia Latreille (3), Epitrix Foundras (1), Longitarsus Latreille (1), Mantura Stephens (1), Phyllotreta Chevrolat (3) and Psylliodes Latreille (1).

Key words: Alticini, fauna, distribution, new records, Iran

Introduction

The coleopteran family Chrysomelidae, with its 37,000-40,000 described species that are widespread in all zoogeographical regions, is one of the most species-rich families of phytophagous insects (Schmitt 1996, Biondi & D’Alessandro 2012). This family comprises many species that show high level of ecological and biological specialisation, at least in temperate regions, and a significant trend towards differentiation and endemism (Biondi et al. 2013). Alticini (flea beetles) is a very large and diverse tribe of leaf beetles within the subfamily Galerucinae according to the current classification of Chrysomelidae (Bouchard et al. 2011), with about 8,000 recognised species of more than 500 genera (Nadein 2015, Aslan et al. 2016).

Most species are agricultural pests and attack only one plant group or closely related groups. Common agricultural and garden hosts include members of the families Brassicaceae (mustard, broccoli, kale, cabbage, collards, etc.) and Solanaceae (potatoes, tomatoes, eggplant, peppers, etc.). Other hosts include alder, currant, evening primrose, sedum, skunkbrush, sumac, willow and a variety of weeds and grasses. Some species act as biological control agents of weeds. The larvae of most flea beetle species feed on small roots or root hairs which may reduce slightly plant health and vigour, but typically does not result in substantial economic loss. An exception is damage by the tuber flea beetle larvae to potato tubers (Jolivet & Hawkeswood 1995, Jolivet & Verma 2002, Jolivet et al. 2004, Aslan & Gök 2006).


Materials and Methods

This study was based on specimens collected during 2007-2011 from some regions of Iran by the author and some colleagues and students. The specimens were collected using entomological net and a
Malaise trap. The specimens were identified to the species level under a stereomicroscope using the taxonomic keys and figures given by Konstantinov & Vanderberg (1996), Konstantinov (1998) and Warchalowski (2010). They were sent to Prof. A. Warchalowski (Poland) and Prof. B. Gruev (Bulgaria) for confirmation.

Data about classification, nomenclature and distribution in adjacent countries of Iran (Afghanistan, Armenia, Azerbaijan, Iraq, Pakistan, Turkey and Turkmenistan) are according to Döberl (2010a). The identification of chorotypes are based on Taglianti et al. (1999).

**Results**

In total, 16 new records of Alticini (Chrysomelidae: Galerucinae) belonging to eight genera were registered from 15 provinces of Iran (Fig. 1). The list of species is given below alphabetically with distribution data (in adjacent countries of Iran) and chorotypes.

**Family Chrysomelidae Latreille, 1802**

**Subfamily Galerucinae Latreille, 1802**

**Tribe Alticini Newman, 1834**

**Genus Altica Geoffroy, 1762**

1. *Altica amelpophaga amelpophaga* Guérin-Néville, 1858


2. *Altica balassogloi* Jakobson, 1892

Material examined: Mazandaran Province, Babol, 36°30′N 52°35′E, 1 ex., on *Rubus idaeus* L. (Rosaceae), April 2007; Razavi Khorasan Province, Mashhad, 36°17′N 59°40′E, 2 exx, on *Lactuca sativa* L. (Asteraceae), April 2009. Distribution in adjacent countries: Afghanistan, Pakistan. Chorotype: Centralasiatic.

**Genus Aphthon Chevrolat, 1836**

3. *Aphthon franzii* Heikertinger, 1944


4. *Aphthon nigriceps* W. Redtenbacher, 1842


**Genus Chaetocnema Stephens, 1831**

5. *Chaetocnema (Chaetocnema) obesa* Boieldieu, 1859

Material examined: Guilan Province, Lahijan, 37°14′N 50°02′E, 3 ex., on *Amaranthus retroflexus* L. (Amaranthaceae), July 2008; Mazandaran Province, Noor, 36°19′N 52°00′E, 2 exx, August 2010 [Malaise trap]. Distribution in adjacent countries: Iraq, Turkey. Chorotype: Centralasiatic-Europeo-Mediterranean.

6. *Chaetocnema (Tlanoma) chlophanga* Duftschild, 1825

Material examined: Golestan Province, Minudasht, 37°10′N 55°30′E, 2 ex., on *Convolvulus arvensis* (Convolvulaceae), August 2009; Isfahan Province, Kashan, 34°00′N 51°20′E, 1 ex., June 2011 [Malaise trap]. Distribution in adjacent countries: Azerbaijan, Iran, Turkey. Chorotype: Centralasiatic-Europeo-Mediterranean.

**Genus Dibolia Latreille, 1829**

7. *Dibolia (Dibolia) cryptocephala* Koch, 1803


8. *Dibolia (Dibolia) rugulosa* K. Redtenbacher, 1849


9. *Dibolia (Eudibolia) carpatica* Weise, 1893


**Genus Epitrix Foundras, 1861**

10. *Epitrix atropae Foudras, 1861*


**Genus Longitarsus Latreille, 1829**

11. *Longitarsus (Longitarsus) echii* Koch, 1803

Material examined: Kermanshah Province: Javanrud, 34°46′N 46°19′E, 2 ex., on *Salvia nemorosa* subsp. *pseudosylvestris* (Stapf) Bornm.
New Records of Flea Beetles (Coleoptera: Chrysomelidae: Galerucinae: Alticini) from Iran


Genus Mantura Stephens, 1831  
12. Mantura (Mantura) rustica Linnaeus, 1767  

Genus Phyllotreta Chevrolat, 1836  
13. Phyllotreta acutecarinata Heikertinger, 1941  

14. Phyllotreta balcanica Heikertinger, 1909  

Genus Psylliodes Latreille, 1829  
16. Psylliodes (Psylliodes) affinis Paykull, 1799  
Material examined: Kuhgiloyeh & Boyerahmad Fig. 1. Map of Iran with boundaries of provinces for showing the distribution of 16 new country records.
Province, Lordegan, 31°26′N 50°50′E, 2 ex., on *Sinapis arvensis* L. (Brassicaceae), April 2009; Fars Province, Abadeh, 31°15′N 52°30′E, 1 ex., on *Alyssum campestre* L. (Brassicaceae), May 2010. Distribution in adjacent countries: Azerbaijan, Turkey. Chorotype: Palaearctic.

**Discussion**

Finding 16 new records indicates that the fauna of Iranian Alticini is diverse and poorly known. The still low number of species recorded is due to the ways of collection and the limited sampled areas. Nevertheless, the overall results are very interesting. Until now a total of 167 Alticini species had been reported from Iran (Warchalowski 1967, 1973, Rapilly 1978, Lopatin 1990, Modarres Awal 1997, Serri & Naserzadeh 2008, Döberl 2010a, b, Gahari & Hawkeswood 2011, Gahari & Jędrzczkowski 2012, Samin et al. 2014, Serri et al. 2016). Together with these 16 new records, the total number of Iranian flea beetles reaches 183 species in 18 genera. Iran forms a large part of the Iranian Plateau and covers an area of 1,623,779 km². It borders to the north with the Caucasus Mountains, Middle Asian natural regions and the Caspian Sea (~27 m below sea level); to the west with the Anatolian and Mesopotamian regions; to the east with the eastern part of the Iranian Plateau (Afghanistan and adjacent west Pakistan) and the Baluch-Sindian region; and finally to the south with the Persian Gulf and Gulf of Oman, which are connected by the latter to the Indian Ocean (Fig. 1; Zehzad et al. 2002). Of course regarding the vari-
ous geographical regions and climate in Iran, and the fauna of adjacent countries of Iran (e.g. Turkey with 340 species from 22 genera (ÖZDİKMEN 2014), it seems likely that many other species remain to be discovered in the future. In addition to these 16 new records several other specimens have been collected and are currently under identification. Further, all the species of this study are distributed at least in one neighbouring country, especially in Turkey with 14 recorded species (Fig. 2). Among the recorded genera in Iran, *Longitarsus* and *Phyllotreta* with 40 and 34 species, respectively, are more diverse than the others (Fig. 3). Nevertheless, very little attention has been paid till now to the host plants of the Iranian Alticini.

Acknowledgements: I would like to express my sincere thanks to Prof. A. Warchalowski and Dr. W. J. Jędrzyczkowski (Poland) and Prof. B. Gruev (Bulgaria) for invaluable cooperation, Dr. J. Rastegar, Dr. H. Sakenin, Dr. S. Imani for providing some specimens from insect collections of Islamic Azad University. The research was supported by the Islamic Azad University (Yadegar-e-Ismail Khomeini (RAH) Shahre Rey Branch).

References


Received: 14.10.2016
Accepted: 31.10.2017