

Five new records, new localities and new host plants for the Turkish flea-beetle fauna (Coleoptera: Chrysomelidae: Alticinae)

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Altica lencorana Konstantinov, *A. longicollis* (Allard), *Aphthona atrocaerulea* (Stephens), *A. violaceae* (Koch), and *Phyllotreta lorestanica* Warchalowski are new for the Turkish Alticinae fauna. *A. lencorana* and *P. lorestanica* have earlier been known to occur only in their type localities in Azerbaijan and Iran, respectively. Since then, the records reported here (Bayburt and Erzurum provinces) are the first localities for *A. lencorana*, and that of Erzurum for *P. lorestanica*. Additionally, *Centaurea glastifolia* L. is reported as a new host plant for *A. lencorana*, and *Euphorbia falcate* and *E. eriophora* as new host plants of *Aphthona atrocaerulea* and *A. violaceae*, respectively. The chorotype and host plants are reported for each of the five species.

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1. Introduction

The leaf beetles (Chrysomelidae) are the second-largest family of Coleoptera, comprising approximately 50,000 described species worldwide, arranged in over 2,000 genera in 19 subfamilies (Lopatin 1977, Seeno & Wilcox 1982, Booth *et al.* 1990, Konstantinov & Vandenberg 1996). The flea beetles (Alticinae) constitute the largest of the 15 or more subfamilies recognized by most authors (Jolivet *et al.* 1988, Gruev & Döberl 1997).

Several studies have recently been conducted on the leaf-beetle fauna of Turkey (Aslan 1997, Gruev & Aslan 1998, Aslan & Özbek 1998,

1999, 2000a, 2000b, Aslan & Warchalowski 2001, Aslan *et al.* 1999, 2002, 2003, Fritzlär 2001, Gök *et al.* 2002). In these contributions, various species have been described and new records have been added to the Turkish fauna.

The present study is based upon the flea-beetle samples collected from different parts of the country during 1998–2003. In the collection of the insect samples, hand sweep net and mouth aspirator have been used. To identify the host plants, plants damaged by insects were examined and chrysomelids on these plants were collected. The identification of the flea-beetle genera *Altica*, *Aphthona* and *Phyllotreta* was based on the keys by Lopatin (1977), Konstantinov (1988) and

Warchalowski (2003). In the chorotype classification, Vigna Talgianti *et al* (1999) was followed.

The examined material is deposited at the Atatürk University, Entomology Museum Erzurum, Turkey (EMET).

2. Results

Altica lencorana Konstantinov, 1991

Altica lencorana Konstantinov, Insect of the Caucasus, Makhachkala 1: 41–42.

Material examined. Erzurum, Horasan, Sac Pass, 2350 m a.s.l., 27.VIII.2003, 15 ♂♂, 17 ♀♀; leg. İ. Aslan; Bayburt, Kop Mountain, 2330 m a.s.l., 28.VIII.2003, 17 ♂♂, 13 ♀♀, leg. İ. Aslan.

Host plants. In both localities, the samples were collected on *Centaurea glastifolia* L.

Distribution. Azerbaijan (Gruev & Döberl 1997, Warchalowski 2003).

Remarks. Konstantinov (1995) redescribed this species as a new species. The descriptions of *A. lencorana* and *A. talyshana* are almost identical. Konstantinov (1995) did not propose *A. talyshana* to be a new name for *A. lencorana*. Gruev & Döberl (1997) considered *A. talyshana* as a synonymy of *A. lencorana*.

In this species, the apical part of the median stripe was deeply impressed, narrower than 1/3 of aedeagus in apical part.

Altica longicollis (Allard, 1860)

Graptodera longicollis Allard, Ann. Soc. Ent. Fr., 3: 76–83.

Material examined. Ankara, Şereflikoçhisar, 21.VII.1998, 2 ♂♂, 1 ♀; leg. C. Guclu; Aksaray, Ortaköy, 28.VII.2000, 1 ♂, 1 ♀, leg. İ. Aslan.

Host plants. The insect samples collected in Ortaköy (Aksaray) were found on *Rumex* spp.

Distribution. Northern and Central Europe from Northern Spain, England and Norway to Germany, Poland and Karelia (Warchalowski 2003).

Remarks. According to Gruev & Döberl (1997), erroneous records of this species have been published in Turkey and Italy.

In this species, the median stripe in 1/3 length of tubular part is distinctly narrowed. Upper side

is greenish blue. Frontal calli are approximately triangular, distinctly separated from frons by deep frontal furrows.

Aphthona atrocaerulea (Stephens, 1831)

Haltica atrocaerulea Stephens, Illustr. Brit. Ent. 4: 299–300.

Material examined. Erzurum, Aşkale, 1650 m a.s.l., 1.VI.1999, 1 ♂, 2 ♀♀; Tortum, Karlı, 2400 m, 22.IX.2002, 7 ♂♂, 5 ♀♀, leg. İ. Aslan.

Host plants. All of the specimens were collected from *Euphorbia falcata* L.. Konstantinov (1998) indicated *Euphorbia cyparissias*, *E. esula* and *E. segetalis* as host plants for this species.

Distribution. Europe, Northern Africa and Iran (Konstantinov 1998, Warchalowski 2003).

Remarks. According to Gruev & Döberl (1997), erroneous records of this species have been reported in Greece, Caucasus and Iran. Distributed as reported above, but in Turkey may possibly represent the insufficiently described *Aphthona kocheri* Kral, 1969 from Morocco.

Aphthona violacea (Koch, 1803)

Haltica violacea Koch, Ent. Hefte 2: 56.

Material examined. Yalova, Bahçe Kültürleri Araştırma Enstitüsü, 5 m a.s.l., 27.IV.2003, 3 ♂♂, 4 ♀♀, leg. H. Özbek.

Host plants. All of the specimens were collected from *Euphorbia eriophora* Boiss. *Euphorbia palustris* was reported as being a host plant by Bedel (1889–1901), and *E. esula* and *E. lucida* by Konstantinov (1998).

Distribution. Europe, Caucasian countries, Altai and Southern Siberia (Konstantinov 1998, Warchalowski 2003).

Phyllotreta lorestanica Warchalowski, 1973

Phyllotreta atra lorestanica Warchalowski, Pol. Pis. Ent. 43: 664–665.

Material examined. Erzurum, Hınıs, 1550 m a.s.l., 14.VI.2002, 2 ♂♂, 4 ♀♀, leg. İ. Aslan.

Host plants. All of the specimens were collected from *Lepidium* spp.

Distribution. Northern Iran (Gruev & Döberl 1997, Warchalowski 1994).

3. Discussion

Many Alticinae species are serious pests that cause direct damages on their host plants, and especially adults are also known to transmit viruses (Lopatin 1977, Jolivet *et al.* 1988, Konstantinov 1998, Aslan *et al.* 1999). Several species, including *Longitarsus*, *Altica*, *Aphthona* and *Pseudolampsis*, have been successfully used in the biological control of weeds (Booth *et al.* 1990, Aslan & Özbek 1999, Aslan *et al.* 2003). The species of Alticinae that occur in Turkey can be divided mainly into two groups from the agricultural point of view, namely as being “destructive” (pest) and “useful” insects. *Phyllotreta atra*, *P. nigripes*, *P. undulata* and *P. vittula*, are important pests on cabbage, radish, turnip and rape in Turkey (Aslan & Özbek 2000b). *Chaetocnema tibialis*, *C. concinna*, *C. hortensis* and *C. breviscula* are important pests on sugar beet in Turkey (Aslan & Özbek 1998). The second group can be considered as useful insects due to their feeding on various species of weeds. They are mostly leaf feeders. Recently, the use of herbicides in control is often not considered practical or desirable. Therefore, for some groups of weeds, biological control has become a widely-used strategy for control of pest weeds. Among these species, *Longitarsus jacobaeae* is one of the most effective biological control agents of *Senecio jacobaeae* (Aslan & Özbek 1999). *Aphthona flava* and *A. nigriscutis* are important biological control agents of the leafy spurge. *Psylliodes chalconera* and *P. hyosciamyami* have special importance in the biological control of *Carduus nutans* and *Hyoscyamus niger*, respectively (Aslan & Özbek 1999).

So far *Altica lencorana* has been known to occur only in the type locality in Azerbaijan. However, we recorded it from Bayburt and Erzurum provinces in Turkey. Since the records from the type locality, Bayburt and Erzurum are the first ones for this species, and its westernmost areas of distribution reach these two provinces. The present data suggests that it is associated with the Turanian Anatolian chorotype. More importantly, *Centaurea glastifolia* was determined as its host plant for the first time. We observed that the adults and larvae of *A. lencorana* seriously damaged leaves of *C. glastifolia*. However, re-

search should be conducted to investigate the potential of *A. lencorana* for the control of *C. glastifolia*. This plant is an important weed in pastures and meadows, particularly in eastern and central Turkey.

Although Gruev & Döberl (1997) suggested that the occurrence of *Altica longicollis* is questionable in Turkey and even in Italy, we recorded *A. longicollis* for the first time for Turkey and the Asian continent. The south-eastern distribution of this species has extended to central Turkey. With present data, its chorological category could be Siberio-European chorotype.

Although *Aphthona atrocaerulea* has wide geographical distribution (Konstantinov 1998, Warchalowski 2003), it was recorded from Turkey for the first time. Gruev & Döberl (1997) pointed out that the existence of this species is questionable in Greece, Caucasus and Iran. However, our studies showed that this species occurs in Turkey. We assume that *A. atrocaerulea* may also inhabit the other mentioned countries. Another important point is that *Euphorbia falcata* was recorded as a new host plant for *A. atrocaerulea*. As the previous species, also *Aphthona violaceae* has wide geographical distribution, although we reported it as a new species for the Turkish fauna. *Euphorbia eriophora* is a new host plant for *A. violaceae*.

Warchalowski described *Phyllotreta lorestanica* in 1973 from Iran (Konstantinov 1998, Warchalowski 2003). After the type locality, Erzurum (Turkey) is the first locality for this species and *Lepidium* sp. is the first-recorded host plant of this species. With present data *P. lorestanica* has Irano-Anatolian chorotype.

We conclude that the Chrysomelidae fauna of Turkey should be studied more intensively.

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