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## New records of aphid fauna in Turkey

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### Abstract

Three aphid species were identified as new records for Turkey aphid fauna from Bartın province. These species are *Ceruraphis viburnicola* (Gillette) (Hemiptera: Aphididae), *Dysaphis apiifolia* (Theobald) (Hemiptera: Aphididae) and *Macrosiphum mordvilkoi* Miyazaki (Hemiptera: Aphididae). These records increase the recorded aphid-fauna of Turkey to 433 species.

**Key words:** Aphidoidea, Bartın, *Ceruraphis viburnicola*, *Dysaphis apiifolia*, *Macrosiphum mordvilkoi*, *Petroselinum*, *Rosa*, *Viburnum*

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## Introduction

Studies of the Turkish aphid fauna were limited until the last decade. Although preliminary studies were done at the beginning of the 1900s, most of these studies were carried out by foreign researchers and were only focused on very small parts of Turkey (Trotter 1903; Fahringer 1922). Çanakcıoğlu (1975) reviewed previous studies and listed 258 species. Tuatay (1988, 1991, 1993) added about 30 species as new records. Duzgunes et al. (1982) reported three additional species. Recently, many more studies have organized and added more than 40 new records (Canakcioglu and Toper 1999; Kaygin and Canakcioglu 2003; Toros et al. 2002; Toros et al. 2003; Gorur 2002, 2004; Ozdemir et al. 2005; Aslan and Uygun 2005). Remaudière et al. (2006) revised studies conducted on Turkey aphid fauna and listed about 417 species, despite some controversies. Akyurek (2006) and Kaygin et al. (2008) added 11 new records.

## Methods and Materials

This study was conducted between 2005 and 2006. Aphid species were collected in the field from their host plants. The study area was located in the Western Black Sea Region of Turkey, where few detailed studies have been carried out.

Collection and preparation of samples were been done according to the principles of Hille Ris Lambers (1950) and Martin (1983). Species were identified according to Bodenheimer and Swirski (1957), Canakcioglu (1975), and Blackman and Eastop (1994, 2006). Systematic knowledge, host plants, and synonyms of determined species were taken from Blackman and Eastop (1994, 2006) and Remaudière and Remaudière (1997). The taxonomic status of the species was checked according to the recent update of Fauna Europaea 1.1 ([www.faunaeur.org](http://www.faunaeur.org)). Voucher specimens were deposited at the Entomology Department of Forestry Faculty in Bartın and the Department of Biology in Niğde.

## Result

*Ceruraphis viburnicola* (Gillette) (Hemiptera: Aphididae), *Dysaphis apiifolia* (Theobald) (Hemiptera: Aphididae) and *Macrosiphum mordvilkoii* Miyazaki (Hemiptera: Aphididae) were new records for Turkey aphid fauna. All new recorded species belonged to the Aphidinae subfamily and Macrosiphini tribe.

### *Ceruraphis* Börner, 1926

#### *Ceruraphis viburnicola* (Gillette, 1909)

#### *NeoCeruraphis viburnicola* (Gillette, 1909)

Apterous individuals were collected on *Viburnum* sp. at Bartın on 29 July 2005. The species was also collected on *Viburnum* sp. at Niğde province, which is located at the Inner Anatolia of Turkey, on 23 June 2005. They mainly feed on shoots, undersides of the leaves and flowers, such as the snowball flowers of *Viburnum opulus*. They heavily colonize young leaves and flowers and are attended by ants. Their primary host is *V. opulus*, but a secondary host is as yet unknown. Previously, it has been recorded in Canada and the USA (Maw et al. 2000; [www.faunaeur.org](http://www.faunaeur.org)).

### *Dysaphis* Börner, 1931

#### *Dysaphis apiifolia* (Theobald, 1923)

#### *Aphis ferrugineastriata* Essig, 1938

Apterous individuals found on *Petroselinum* sp. at Hendekyanı (Central Bartın), 22 May 2006. There were dense colonies at the leaf bases that were attended by a lot of ants. This aphid is yellowish-grey to greenish-grey and dusted with wax. They typically colonize heavily the leaf bases of celery and parsley, and become serious pests of these host plants (Blackman and Eastop 2006). They mainly feed on *Apium graveolens*, *Foeniculum vulgare*, *Petroselinum sativum*, and various *Umbelliferae* species.

They are essentially distributed in the Afro-tropical region, Australian region, East Palearctic, Near East, Nearctic region, Neotropical region and North Africa ([www.faunaeur.org](http://www.faunaeur.org) 2007).

### *Macrosiphum* Passerini, 1860

#### *Macrosiphum mordvilkoii* Miyazaki, 1968

*Macrosiphum mulgedifolii* Tashev 1967

Both apterae and alatae forms were collected on *Rosa* spp. at the gardens of Ulus (vicinity of Bartın) and Bartın Forest Enterprise, 31 March 2006. They were abundant in the study area and densely colonized the host plant. The species was identified from apterous individuals. This species was easily separated from other *Macrosiphum* species because of their black front head and antennal segment III with rhinaria extending over most of the length of segment (Figure 1).

They are distributed in Japan, Korea and eastern Russia (Blackman and Eastop 2006).



**Figure 1:** Position of rhinaria on the third antennal segment of *Macrosiphum mordvilkoii*. High quality figures are available online.

## Discussion

Recent studies have shown that aphid species listed for Turkey's aphid fauna do not sufficiently indicate the real number, as there has been much information accumulated during the last decades. These arguments also are supported when Turkey is compared with its neighbours that are located in similar

geographic areas in terms of richness of flora, geographic variability, geographic location, agricultural landscape, etc. For example, Tsitsipis et al. (2007) reviewed the known Greek aphid fauna comprising 301 species. Comparatively, the study of the fauna of some countries isn't greater, with about 340 species in Iran and only 167 species in Lebanon and Syria (Remaudière et al. 2006).

The results presented have added three new species to Turkey aphid fauna, so now the Turkey aphid fauna has at least 433 species. Thus, it can be expected that with further research, in different parts of the country, the recorded Turkish aphid fauna will be considerably increased.

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## References

- Akyurek B. 2006. *Determination of aphid (Homoptera: Aphididae) fauna of Ondokuz Mayıs University Kurupelit Campuse area*. M.S. Thesis (with English Summary), Ondokuz Mayıs University.
- Aslan MM, Uygun N. 2005. The Aphids (Homoptera: Aphididae) of Kahramanmaraş Province, Turkey. *Turkish Journal of Zoology* 29: 201-209.
- Blackman RL, Eastop VF. 2006. *Aphids on the World's Herbaceous Plants and Shrubs. (Volume 1: Host lists and keys / Volume 2: The aphids)*. J. Wiley & Sons.
- Blackman RL, Eastop VF. 1994. *Aphids on the world's trees: An identification and information guide*. C.A.B. International Wallingford.

Bodenheimer FS, Swirski E. 1957. *The Aphidoidea of the Middle East*. The Weigmann Science Press of Israel.

Canakcioglu H, Toper A. 1999. Insects of poplar trees in Bartın area. *Review of the Faculty of Forestry*, University of Istanbul, A Series, 49(2): 91-103.

Canakcioglu H. 1975. *The Aphidoidea of Turkey*. 1<sup>st</sup> edition. University of Istanbul Forestry Faculty Press.

Duzgunes Z, Toros S, Kılınçer N, Kovancı K. 1982. *Parasites and Predators of Aphidoidea Species in Ankara Province*. Ministry of Agriculture and Rural Affairs, General Directorate of Protection and Control (Turkish, with English summary).

Fahringer J. 1922. *Eine Rhyncotenausbeute aus der Turkei, Kleinasien und den Benachbarten Gebieten*. Konowia 1: 137-144, 296-307. Aphididae: 304-305.

Gorur G. 2002. New records for Turkish aphid fauna (Homoptera: Aphididae). *Zoology of the Middle East* 25: 67-69.

Gorur G. 2004. *Aphid Species of Niğde Region (Insecta: Homoptera: Aphidoidea)*. Niğde University Press, No: 17 (Turkish, with English summary).

Hille Ris Lambers D. 1950. On mounting aphids and other soft-skinned insects. *Entomologische Berlin* 13: 55-58.

Kaygin AT, Canakcioglu H. 2003. Contributions to the knowledge of conifer aphid fauna in Turkey and their zoogeographical distribution. *Anzeiger für Schadlingskunde - Journal of Pest Science*, Band 76(2), 50-56.

Kaygin AT, Gorur G, Cota F. 2008. Contribution to the aphid (Homoptera: Aphididae) species damaging on woody plants in Bartın, Türkiye. *International Journal of Natural and Engineering Sciences* 2(1): 83-86

Martin JH. 1983. The identification of common aphid pests of tropical agriculture. *Tropical Pest Management* 29: 395-411.

Maw HEL, Footitt RG, Hamilton KGA, Scudder GGE. 2000. *Checklist of the Hemiptera of Canada and Alaska*. NRC Research Press.

Ozdemir I, Remaudière G, Toros S, Kılınçer N. 2005. New aphid records from Turkey including the description of a new Lachnus species (Hemiptera: Aphididae). *Revue Française d'Entomologie* 27(3): 97-102.

Remaudière G, Remaudière M. 1997. *Catalogue des Aphididae du monde (Catalogue of the World's Aphididae)*. Inra.

Remaudière G, Toros S, Ozdemir I. 2006. New contribution to the aphid fauna of Turkey (Hemiptera, Aphidoidea). *Revue française d'Entomologie (N.S.)* 28(2): 75-96.

Toros S, Ozdemir I, Canakcioglu H. 2003. The Betula aphids of Turkey. *Journal of Pest Science* 76: 173-175.

Toros S, Uygun N, Ulusoy R, Satar S, Ozdemir I. 2002. *Aphid Species of Eastern Mediterranean Region*. Agricultural Ministry Publication.

Trotter A. 1903. Galle della Penisola Balcanica e Asia Minore. *Nuovo Giornale Botanico Italiano* 10: 202- 232.

Tsitsipis JA, Katis NI, Margaritopoulos JT, Lykouressis DP, Avgelis AD, Gargalianou I, Zarpas KD, Perdakis DC, Papapanayotou A. 2007. A contribution to the aphid fauna of Greece. *Bulletin of Insectology* 60(1): 31-38.

Tuatay N. 1988. Türkiye Yaprakbitleri (Homoptera; Aphididae) I. Aphidinae: Macrosiphini (I. Kısım). *Bulletin of Plant Protection* 28(1-2): 1-28.

Tuatay N. 1991. Türkiye Yaprakbitleri (Homoptera: Aphididae) I. Aphidinae: Macrosiphini (III. Kısım) *Bulletin of Plant Protection* 31: 3-18. (Turkish, with English summary).

Tuatay N. 1993. Aphids of Turkey (Homoptera: Aphididae) IV. Aphidinae: Macrosiphini Part IV. *Bulletin of Plant Protection* 33(1-2): 83-105.