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Orijinal araştırma (Original article)

Contributions to the Aphrophoridae Amyot & Audınet-Serville, 1843 (Hemiptera: Auchenorrhyncha) fauna of The Bolkar Mountains

Bolkar Dağları Aphrophoridae Amyot & Audinet-Serville, 1843 (Hemiptera: Auchenorrhyncha) faunasına ilişkin katkılar

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ABSTRACT

In this study, 3912 Aphrophoridae specimens collected from the Bolkar Mountains between 2005–2007 were evaluated. As a result of the evaluation, nine species belonging to five genera were determined for this family in the region. All species were photographed from the dorsal view and updated distribution maps of these species were provided in the light of new information.

INTRODUCTION

The family Aphrophoridae Amyot & Audinet-Serville, 1843, is one of the five families of the superfamily Cercopoidea Leach, 1815 (Hemiptera: Cicadomorpha: Auchenorrhyncha). It comprises important plant pests, represented by 157 genera and approximately 925 (1000–1500) species worldwide (Bartlett et al. 2018), and by 17 genera and 51 species in the Palaearctic region (Bartlett et al. 2018; Demirel 2024a, 2024b, 2022; Demirel and Dinç 2025, 2024, 2021, 2018; Demirel and Hasbenli 2025, 2021; Dmitriev et al. 2025; Nast 1987, 1972). In Türkiye, Aphrophoridae is represented by 16 species (Table 1); however, some of these records — particularly *Neophilaenus albipennis* (Fabricius, 1798), *Paraphilaenus notatus* (Mulsant & Rey, 1855), and *Poophilus costalis* (Walker, 1851) — are considered questionable (Demirel 2024a, 2024b, 2022; Demirel and Dinç 2025, 2024, 2021, 2018; Demirel and Hasbenli 2025, 2021) when all available studies are reviewed (Demir 2008, 2019; Lodos and Kalkandelen 1981, 1988; Nast 1972; Önder et al. 2011; Tanyeri and Zeybekoğlu 2021, 2024), due to the lack of sufficient concrete data supporting their presence in the country.

The Turkish representatives of Aphrophoridae, the second largest family of cercopoids, can be readily distinguished from other cercopids by their dull-colored and unpatterned appearance. (Figure 1). Aphrophorids are also called spittlebugs because they secrete large amounts of protective foam (Carvalho and Webb 2005). However, significant variations in the color patterns of Cercopoidea species

Table 1. Aphrophoridae genera and species distributed in Türkiye

Genus	Species	Author	Genus	Species	Author
Aphrophora	*alni*	(Fallén, 1805)	*Neophilaenus*	*albipennis*	(Fabricius, 1798)
Aphrophora	*corticea*	(Germar, 1821)	*Neophilaenus*	*campestris*	(Fallén, 1805)
Aphrophora	*exoleta*	(Horváth, 1901)	*Neophilaenus*	*lineatus*	(Linnaeus, 1758)
Aphrophora	*geruzei*	Tanyeri & Zeybekoğlu, 2021	*Neophilaenus*	*minor*	(Kirschbaum, 1868)
Aphrophora	*salicina*	(Goeze, 1778)	*Paraphilaenus*	*notatus*	(Mulsant & Rey, 1855)
Mesoptyelus	*impictifrons*	(Horváth, 1911)	*Philaenus*	*signatus*	(Melichar, 1896)
Mesoptyelus	*petrovi*	(Grigoriev, 1910)	*Philaenus*	*spumarius*	(Linnaeus, 1758)
Lepyronia	*coleoptrata*	(Linnaeus, 1758)	*Poophilus*	*costalis*	(Walker, 1851)

can be observed (Demirel 2024a, 2024b, 2022) (Figure 1). In fact, due to this variation, many species have numerous synonyms. Therefore, contrary to popular belief, the identification of Aphrophoridae is quite difficult, requiring careful attention and expertise.

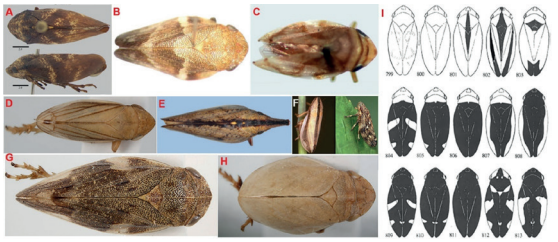


Figure 1. Coloration of the Aphrophoridae species A) *Cephisus siccifolia* B) *Anyllis tiegsi* C) *Mesoptyelus impictifrons* D) *Neophilaenus lineatus* E) *Philagra fuscofasciata* F) *Paraphilaenus paralelus* (left), *Aphrophora cribrate* (right) G) *Aphrophora alni* H) *Lepyronia coleoptrata* I) *Philaenus spumarius* (Carvalho and Webb 2005, Demirel and Dinç 2024, Domahovski et al. 2025, Liang 2022, Liang and Wang 2012, Mozaffarian and Wilson 2015, Ossiannilsson 1981)

In this study, both the Palaearctic and Turkish distribution data, together with local distribution maps of Aphrophoridae species recorded from the provinces of Adana, Mersin, Karaman, Konya and Niğde were updated; their dorsal habitus was photographed and some evaluations were made regarding the inventory of the group within the study area.

MATERIALS AND METHODS

Field studies were conducted in the Bolkar Mountains between April and August of 2005-2007, and specimens belonging to the family Aphrophoridae were collected using the sweeping net method. The specimens, which were converted into standard museum material, were identified under a Boeco BSZ-405 model stereo microscope using with Demirel (2024b), Demirel and Dinç (2025, 2024, 2018), Demirel and Hasbenli (2025), Emeljanov (1967), Holzinger et al. (2003), Lallemand (1912), Mozaffarian and Wilson (2015) and Ossiannilsson (1981). The dorsal habitus of the identified species were photographed to show important morphological characters, and these photographs were edited with GIMP (GNU Image Manipulation Program) software for use in this study. By compiling and processing the data of Demir (2008, 2019), Demirel and Dinç (2025, 2024, 2018), Lodos and Kalkandelen (1981), Angelova and Gjonov (2024), Dmitriev et al. (2025) and Nast (1987, 1972), the current Turkish and Palaearctic distributions of the species were created. The identified specimens are preserved in the Zoology Research Laboratory of the Biology Department of the Faculty of Arts and Sciences at Hatay Mustafa Kemal University.

RESULTS

In this study, a total of 3912 aphrophorid specimens, 1835 males and 2077 females, were obtained and evaluated. As a result of the identifications, a total of nine species belonging to the Aphrophoridae family were identified in the research region: *Aphrophora alni, A. salicina, Lepyronia coleoptrata, Mesoptyelus impictifrons, Neophilaenus campestris, N. lineatus, N. minor, Philaenus signatus* and *P. spumarius*. Data on the identified species are given alphabetically, in the order of name, material studied, Palaearctic and Türkiye distribution subheadings.

Superfamily: Cercopoidea Leach, 1815

Family: Aphrophoridae Amyot & Audinet-Serville, 1843

Subfamily: Aphrophorinae Amyot & Audinet-Serville, 1843

Tribe: Aphrophorini Amyot & Audinet-Serville, 1843

Genus: *Aphrophora* Germar, 1821

Type species *Cercopis alni* Fallén, 1805

Aphrophora alni (Fallén, 1805) (Figure 2A)

Material examined: 4♂♂, 7♀♀, Adana, Pozantı, Ömerli Köyü, Asar Yaylası, 37°32'N, 34°54'E, 1381 m, 24.vii.2004, E. DEMİREL leg.; 5♂♂, 11♀♀, Konya, Halkapınar, Körlü Köyü, 37°24'N, 34°16'E, 1296 m, 22.vii.2006, E. DEMİREL leg.; 3♂♂, 6♀♀, Mersin, Çamlıyayla, Sebil girişi, 37°7'N, 34°32'E, 1092 m, 18.vi.2005, E. DEMİREL leg.; 5♂♂, 6♀♀, Mersin, Merkez, Fındıkpınarı, 36°57'N, 34°23'E, 1265 m, 2.vii.2006, E. DEMİREL leg.; 5♂♂, 9♀♀, Niğde, Ulukışla, Darboğaz–Emirler köyleri arası, 37°28'N, 34°32'E, 1595 m, 26.vii.2005, E. DEMİREL leg.; 10♂♂, 9♀♀, Niğde, Ulukışla, Emirler Köyü Göleti, 37°27'N, 34°29'E, 1633 m, 22.vii.2006, E. DEMİREL leg.; 4♂♂, 4♀♀, Mersin, Merkez, Aslanköy Yolu, Yavca, 37°1'N, 34°23'E, 1097 m, 2.vii.2006, E. DEMİREL leg.; 3♂♂, 4♀♀, Konya, Halkapınar, Körlü Köyü, 37°25'N, 34°17'E, 1339 m, 22.vii.2006, E. DEMİREL leg.; 7♂♂, 4♀♀, Mersin, Mut, Çukurbağ, 36°41'N, 33°36'E, 1101 m, 10.vi.2006, E. DEMİREL leg.; 10♂♂, 9♀♀, Mersin, Erdemli, Güzeloluk, Toros Köyü, 36°52'N, 34°6'E, 1545 m, 29.vii.2005, E. DEMİREL leg.; 3♂♂, 2♀♀, Mersin, Merkez, Aslanköy–Çatak arası, 36°59'N, 34°16'E, 1428 m, 18.viii.2006, E. DEMİREL leg.; 3♂♂, 2♀♀, Adana, Pozantı, Ömerli Köyü, Asar Yaylası, 37°32'N, 34°54'E, 1381 m, 24.vii.2004, E. DEMİREL leg.; 4♂♂, 4♀♀, Niğde, Ulukışla, Emirler Köyü Göleti, 37°27'N, 34°28'E, 1650 m, 12.viii.2006, E. DEMİREL leg.; 4♂♂, 2♀♀, Mersin, Erdemli, İçme Köyü, Sarıkız Yaylası, 36°49'N, 34°15'E, 1276 m, 24.vii.2006, E. DEMİREL leg.; 4♂♂, 3♀♀, Niğde, Ulukışla, Çaykavak Geçidi, 37°35'N, 34°32'E, 1587 m, 14.vii.2005, E. DEMİREL leg.; 5♂♂, 2♀♀, Konya, Halkapınar, Halkapınar girişi, 37°27'N, 34°8'E, 1127 m, 22.vii.2006, E. DEMİREL leg.; 4♂♂, 2♀♀, Mersin, Merkez, Alanyalı Köyü, 37°6'N, 34°30'E, 1211 m, 8.vi.2006, E. DEMİREL leg.; 3♂♂, 2♀♀, Mersin, Silifke, Kırobası, Sarıaydın Köyü, 36°45'N, 33°55'E, 1359 m, 26.vii.2006, E. DEMİREL leg.; 3♂♂, 2♀♀, Mersin, Merkez, Güzelyayla, 37°3'N, 34°30'E, 770 m, 19.v.2006, E. DEMİREL leg.; 3♂♂, 3♀♀, Mersin, Çamlıyayla, Sebil girişi, 37°7'N, 34°31'E, 640 m, 17.vi.2005, E. DEMİREL leg.; 3♂♂, 3♀♀, Mersin, Merkez, Alanyalı Köyü, 37°5'N, 34°25'E, 1455 m, 18.viii.2006, E. DEMİREL leg.; 3♂♂, 3♀♀, Niğde, Ulukışla, Elmalı Köyü Yolu 7. km, 37°32'N, 34°46'E, 1227 m, 24.vii.2004, E. DEMİREL leg.; 3♂♂, 3♀♀, Mersin, Çamlıyayla, Sebil–Alanyalı Köyü arası, 37°6'N, 34°30'E, 1209 m, 27.vii.2005, E. DEMİREL leg.; 9♂♂, 6♀♀, Mersin, Silifke, Kırobası, Sarıaydınlı Köyü, Limonlu Çayı Vadisi, 36°45'N, 33°55'E, 1357 m, 29.vi.2007, E. DEMİREL leg.; 22♂♂, 12♀♀, Mersin, Silifke, Kırobası, Sarıaydın Köyü, Limonlu Çayı, 36°45'N, 33°55'E, 1350 m, 13.vi.2007, E. DEMİREL leg.; 3♂♂, 3♀♀, Mersin, Erdemli, Karakoyak Köyü, 36°45'N, 34°8'E, 1390 m, 16.vi.2005, E. DEMİREL leg.; 3♂♂, 2♀♀, Mersin, Silifke, Uzuncaburç, Kızılseki, Limonlu Çayı Vadisi, 36°39'N, 34°0'E, 965 m, 29.vi.2007, E. DEMİREL leg.; 3♂♂, 3♀♀, Mersin, Erdemli, Hacıalanı Yaylası, Gölet, 36°51'N, 34°13'E, 1533 m, 28.vii.2007, E. DEMİREL leg.; 5♂♂, 3♀♀, Mersin, Silifke, Kırobası, Kıcaköy–Öz Köyü arası, 36°43'N, 33°44'E, 1284 m, 27.vii.2007, E. DEMİREL leg.; 7♂♂, 7♀♀, Niğde, Ulukışla, Madenköy, 37°27'N, 34°38'E, 1668 m, 10.vii.2007, E. DEMİREL leg.; 1♂, 2♀♀, Konya, Halkapınar, Küsere Köyü, 37°24'N, 34°16'E, 1286 m, 1.vii.2007, E. DEMİREL leg.; 5♂♂, 2♀♀, Niğde, Ulukışla, Maden Köy, 37°27'N, 34°38'E, 1637 m, 26.vi.2007, E. DEMİREL leg.; 1♂, 2♀♀, Adana, Pozantı, Pozantı çıkışı dere içi, 37°22'N, 34°49'E, 938 m, 9.vi.2007, E. DEMİREL leg.; 1♂, 2♀♀, Mersin, Merkez, Aslanköy–Çatak arası, 36°59'N, 34°16'E, 1440 m, 2.vii.2006, E. DEMİREL leg.; 1♂, 2♀♀, Konya, Halkapınar, Karaahmet Köyü, 37°28'N, 34°20'E, 1431 m, 26.vii.2005, E. DEMİREL leg.; 1♂, 2♀♀, Mersin, Çamlıyayla, Sebil, Cehennemdere üstü, 37°6'N, 34°30'E, 1162 m, 12.vii.2007, E. DEMİREL leg.; 1♂, 2♀♀, Niğde, Ulukışla, Niğde–Kayseri Yolu, 37°35'N, 34°32'E, 1581 m, 1.vii.2007, E. DEMİREL leg.; 1♂, 3♀♀, Konya, Halkapınar, 37°27'N, 34°8'E, 1101 m, 28.vii.2007, E. DEMİREL leg.; 1♂, 3♀♀, Mersin, Merkez, Aslanköy, Çatak, 36°59'N, 34°16'E, 1419 m, 28.vi.2007, E. DEMİREL leg. (Figure 2B).

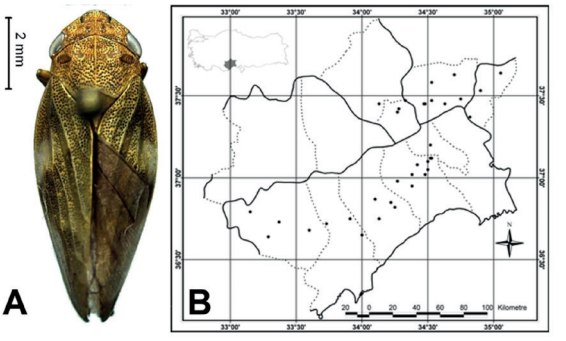


Figure 2. *Aphrophora alni* A) male dorsal habitus B) distribution in the research field

Palaearctic distribution: Albania, Algeria, Armenia, Austria, Azerbaijan, Belgium, Bulgaria, China (Manchuria, Sinkiang), Czech Republic, Denmark, England, Estonia, Finland, France, Georgia, Germany, Greece, Hungary,

Iran, Ireland, Italy, Japan, Kazakhstan, Latvia, Lithuania, Moldova, Mongolia, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russia (north and central), Scotland, Slovakia, Spain, Sweden, Switzerland, Türkiye, Turkmenistan, Ukrainian, Wales, Yugoslavia.

Türkiye distribution: Adana, Afyonkarahisar, Ankara, Antalya, Artvin, Aydın, Balıkesir, Bitlis, Bolu, Burdur, Çanakkale, Çorum, Diyarbakır, Erzincan, Erzurum, Giresun, Hatay, İstanbul, İzmir, Kayseri, Kırklareli, Konya, Kütahya, Manisa, Mardin, Muğla, Ordu, Rize, Samsun, Sinop, Tekirdağ, Trabzon, Yalova, Yozgat.

Aphrophora salicina (Goeze, 1778) (Figure 3A)

Material examined: 23♂♂, 18♀♀, Mersin, Silifke, Uzuncaburç, Kızılseki, Limonlu Çayı Vadisi, 36°39'N, 34°0'E, 965 m, 29.vi.2007, E. DEMİREL leg. (Figure 3B).

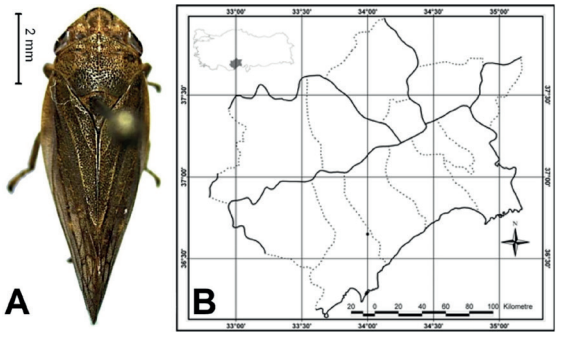


Figure 3. *Aphrophora salicina* A) male dorsal habitus B) distribution in the research field

Palaearctic distribution: Albania, Armenia, Austria, Azerbaijan, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, England, France, Germany, Greece, Hungary, Iran, Ireland, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russia (north, central and south), Slovakia, Spain, Sweden, Switzerland, Türkiye, Ukraine, Uzbekistan, Wales, Yugoslavia.

Türkiye distribution: Ankara, Balıkesir, Burdur, Çanakkale, Elâzığ, Erzincan, Giresun, Gümüşhane, Kırklareli, Konya, Kütahya.

Tribe: Cloviini Schmidt, 1920

Genus: *Lepyronia* Amyot & Audinet-Serville, 1843

Type species *Cicada coleoptrata* Linnaeus, 1758

Lepyronia coleoptrata (Linnaeus, 1758) (Figure 4A)

Material examined: 5♂♂, 10♀♀, Mersin, Merkez, Gözne, 1200 m, 7.vii.2002, E. DEMİREL leg.; 6♂♂, 10♀♀, Mersin, Merkez, Gözne Yolu 10. km, 36°52'N, 34°33'E, 273 m, 19.v.2005, E. DEMİREL leg.; 5♂♂, 9♀♀, Mersin, Erdemli, Kuzucu, Kocayer Yolu, Üzümlü yol ayırımı, 36°49'N, 34°23'E, 682 m, 20.v.2005, E. DEMİREL leg.; 5♂♂, 9♀♀, Mersin, Merkez, Fındıkpınarı, Soğukpınar Köyü, 36°57'N, 34°23'E, 1267 m, 17.vi.2005, E. DEMİREL leg.; 7♂♂, 11♀♀, Mersin, Merkez, Güzelyayla, Kızılbağ Köyü, 37°1'N, 34°29'E, 861 m, 17.vi.2005, E. DEMİREL leg.; 6♂♂, 9♀♀, Mersin, Çamlıyayla, Kargıpınarı Köyü, 37°9'N, 34°44'E, 503 m, 18.vi.2005, E. DEMİREL leg.; 3♂♂, 11♀♀, Mersin, Tarsus, Çamalan, 37°9'N, 34°48'E, 607 m, 6.vii.2005, E. DEMİREL leg.; 8♂♂, 10♀♀, Mersin, Merkez, Değirmendere Köyü, 37°2'N, 34°32'E, 841 m, 7.vii.2005, E. DEMİREL leg.; 4♂♂, 9♀♀, Mersin, Merkez, Emirler Köyü, 36°49'N, 34°30'E, 441 m, 7.vii.2005, E. DEMİREL leg.; 3♂♂, 9♀♀, Mersin, Merkez, Güzelyayla, Atlılar Köyü, 37°5'N, 34°25'E, 1450 m, 8.vii.2005, E. DEMİREL leg.; 5♂♂, 9♀♀, Mersin, Merkez, Güzelyayla, Hangediği Köyü, 37°1'N, 34°27'E, 1264 m, 8.vii.2005, E. DEMİREL leg.; 7♂♂, 10♀♀, Mersin, Merkez, Fındıkpınarı, Soğukpınar Köyü, 36°57'N, 34°23'E, 1275 m, 8.vii.2005, E. DEMİREL leg.; 4♂♂, 11♀♀, Mersin, Erdemli, Güzeloluk, Hacıalanı Yaylası, 36°49'N, 34°14'E, 1632 m, 9.vii.2005, E. DEMİREL leg.; 4♂♂, 13♀♀, Karaman, Ayrancı, Kıraman Köyü, 37°15'N, 33°53'E, 1388 m, 10.vii.2005, E. DEMİREL leg.; 4♂♂, 9♀♀, Konya, Halkapınar, Karaahmet Köyü, 37°28'N, 34°20'E, 1426 m, 10.vii.2005, E. DEMİREL leg.; 4♂♂, 10♀♀, Konya, Halkapınar, Karaahmet Köyü, 37°28'N, 34°20'E, 1431 m, 26.vii.2005, E. DEMİREL leg.; 5♂♂, 9♀♀, Mersin, Tarsus, Çamalan, Ayvalı Köyü Orman Deposu, 37°12'N, 34°47'E, 780 m, 27.vii.2005, E. DEMİREL leg.; 3♂♂, 9♀♀, Mersin, Tarsus, Çamalan, Olukkayağı Köyü, 37°12'N, 34°42'E, 607 m, 27.vii.2005, E. DEMİREL leg.; 8♂♂, 13♀♀, Mersin, Erdemli, Güzeloluk, Tozlu Köyü, 36°49'N, 34°6'E, 1554 m, 29.vii.2005, E. DEMİREL leg.; 22♂♂, 25♀♀, Mersin, Erdemli, Güzeloluk, Toros Köyü, 36°52'N, 34°6'E, 1545 m, 29.vii.2005, E. DEMİREL leg.; 8♂♂, 9♀♀, Karaman, Ayrancı, Küçükkoraç Köyü, 37°4'N, 33°50'E, 1853 m, 29.vii.2005, E. DEMİREL leg.; 9♂♂, 10♀♀, Mersin, Merkez, Gözne yolu, Çukurkeşlik Köyü, 36°52'N, 34°33'E, 277 m, 19.v.2006, E. DEMİREL leg.; 44♂♂, 23♀♀, Mersin, Merkez, Gözne–Fatih Belediyesi, Böğrüeğri yol ayırımı, 37°2'N, 34°32'E, 838 m, 19.v.2006, E. DEMİREL leg.; 9♂♂, 12♀♀, Niğde, Ulukışla, Maden Köyü çıkışı, 37°27'N, 34°39'E, 1526 m, 6.vi.2006, E. DEMİREL leg.; 9♂♂, 9♀♀, Mersin, Tarsus, Gülek, 37°15'N, 34°46'E, 1030 m, 6.vi.2006, E. DEMİREL leg.; 8♂♂, 11♀♀, Mersin, Tarsus, Ayvalı Köyü, 37°12'N, 34°46'E, 883 m, 7.vi.2006, E. DEMİREL leg.; 10♂♂, 9♀♀, Mersin, Çamlıyayla, Olukayağı Köyü, 37°12'N, 34°42'E, 687 m, 7.vi.2006, E. DEMİREL leg.; 19♂♂, 15♀♀, Mersin, Çamlıyayla, Olukayağı–Boğazpınar köyleri arası, 37°12'N, 34°41'E, 545 m, 7.vi.2006, E. DEMİREL leg.; 8♂♂, 9♀♀, Mersin, Merkez, Alanyalı Köyü, 37°6'N, 34°30'E,

1211 m, 8.vi.2006, E. DEMİREL leg.; 8♂♂, 9♀♀, Mersin, Merkez, Emirler Köyü, 36°50'N, 34°30'E, 431 m, 8.vi.2006, E. DEMİREL leg.; 8♂♂, 11♀♀, Mersin, Silifke, Kırobası, 36°43'N, 33°51'E, 1398 m, 10.vi.2006, E. DEMİREL leg.; 10♂♂, 11♀♀, Mersin, Tarsus, Gülek Boğazı, 37°15'N, 34°46'E, 1043 m, 1.vii.2006, E. DEMİREL leg.; 10♂♂, 12♀♀, Mersin, Tarsus, Çamalan, 37°11'N, 34°48'E, 751 m, 1.vii.2006, E. DEMİREL leg.; 11♂♂, 9♀♀, Mersin, Tarsus, Kurtçukuru–Bağçatağı köyleri arası, 37°9'N, 34°44'E, 483 m, 1.vii.2006, E. DEMİREL leg.; 11♂♂, 11♀♀, Mersin, Merkez, Aslanköy Yolu, Yavca, 37°1'N, 34°23'E, 1097 m, 2.vii.2006, E. DEMİREL leg.; 24♂♂, 29♀♀, Mersin, Merkez, Aslanköy–Çatak arası, 36°59'N, 34°16'E, 1440 m, 2.vii.2006, E. DEMİREL leg.; 9♂♂, 12♀♀, Mersin, Merkez, Fındıkpınarı, 36°57'N, 34°23'E, 1265 m, 2.vii.2006, E. DEMİREL leg.; 18♂♂, 16♀♀, Mersin, Erdemli, Güzeloluk Belediyesi, Avgadi–Sorgun Yolu, 36°49'N, 34°6'E, 1542 m, 3.vii.2006, E. DEMİREL leg.; 17♂♂, 17♀♀, Konya, Halkapınar, Halkapınar girişi, 37°27'N, 34°8'E, 1127 m, 22.vii.2006, E. DEMİREL leg.; 22♂♂, 28♀♀, Mersin, Erdemli, Toros Köyü, 36°53'N, 34°6'E, 1670 m, 23.vii.2006, E. DEMİREL leg.; 8♂♂, 9♀♀, Mersin, Erdemli, Sorgun–Hacıalanı Yaylası arası, 36°50'N, 34°9'E, 1227 m, 23.vii.2006, E. DEMİREL leg.; 12♂♂, 14♀♀, Mersin, Erdemli, Hacıalan Yaylası, 36°50'N, 34°10'E, 1422 m, 23.vii.2006, E. DEMİREL leg.; 24♂♂, 40♀♀, Mersin, Erdemli, Hacıalan Yaylası Göleti, 36°51'N, 34°13'E, 1538 m, 23.vii.2006, E. DEMİREL leg.; 10♂♂, 11♀♀, Mersin, Erdemli, Hacıalanı–İçme arası, 36°49'N, 34°14'E, 1546 m, 23.vii.2006, E. DEMİREL leg.; 8♂♂, 8♀♀, Mersin, Erdemli, İçme Köyü, Sarıkız Yaylası üstü, 36°48'N, 34°15'E, 1492 m, 24.vii.2006, E. DEMİREL leg.; 5♂♂, 4♀♀, Mersin, Erdemli, İçme Köyü, Sarıkız Yaylası, 36°49'N, 34°15'E, 1276 m, 24.vii.2006, E. DEMİREL leg.; 34♂♂, 65♀♀, Mersin, Merkez, Fındıkpınarı, 36°56'N, 34°20'E, 1528 m, 24.vii.2006, E. DEMİREL leg.; 5♂♂, 4♀♀, Mersin, Merkez, Atlılar Köyü, 37°5'N, 34°25'E, 1448 m, 24.vii.2006, E. DEMİREL leg.; 5♂♂, 7♀♀, Mersin, Çamlıyayla, Olukayağı–Beyazpınar arası, 37°12'N, 34°41'E, 550 m, 25.vii.2006, E. DEMİREL leg.; 12♂♂, 15♀♀, Mersin, Silifke, Kırobası, Sarıaydın Köyü, 36°45'N, 33°55'E, 1359 m, 26.vii.2006, E. DEMİREL leg.; 6♂♂, 8♀♀, Mersin, Tarsus, Çamalan, Ayvalı Odun Deposu, 37°12'N, 34°47'E, 776 m, 17.viii.2006, E. DEMİREL leg.; 5♂♂, 5♀♀, Mersin, Çamlıyayla, Olukayağı Köyü, 37°12'N, 34°42'E, 615 m, 17.viii.2006, E. DEMİREL leg. (Figure 4B).

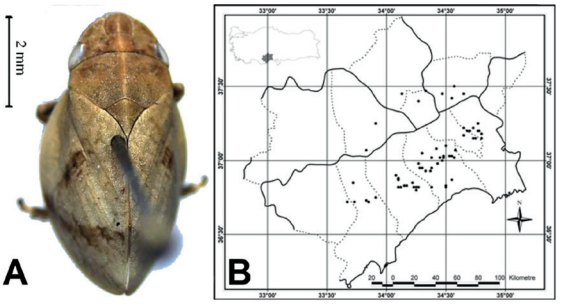


Figure 4. *Lepyronia coleoptrata* A) male dorsal habitus B) distribution in the research field

Palaearctic distribution: Afghanistan, Albania, Algeria, Altai Mts., Armenia, Austria, Azerbaijan, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iran, Iraq, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania; Moldova, Mongolia, Netherlands, Norway, Poland, Portugal, Romania, Russia (north, center and south), Siberia (center), Slovakia, Spain, Sweden, Switzerland, Syria, Tajikistan, Türkiye, Ukraine, Uzbekistan, Yugoslavia.

Türkiye distribution: Adana, Afyonkarahisar, Ankara, Antalya, Artvin, Aydın, Bilecik, Bursa, Çanakkale, Çankırı, Çorum, Diyarbakır, Düzce, Edirne, Elâzığ, Erzincan, Gümüşhane, Hatay, İzmir, Kahramanmaraş, Kars, Kastamonu, Konya, Kütahya, Manisa, Muğla, Muş, Osmaniye, Sakarya, Samsun, Siirt, Sinop, Şırnak, Tokat.

Tribe: Ptyelini Fowler, 1897

Genus: *Mesoptyelus Matsumura*, 1904

Type species *Mesoptyelus nigrifrons* Matsumura, 1904

Mesoptyellus impictifrons (Horváth, 1911) (Figure 5A)

Material examined: 3♂♂, 2♀♀, Mersin, Merkez, Fındıkpınarı, Soğukpınar Köyü, 36°57'N, 34°23'E, 1275 m, 8.vii.2005, E. DEMİREL leg.; 3♂♂, 3♀♀, Mersin, Silifke, Ulupınar Köyü, 36°16'N, 33°34'E, 712 m, 17.v.2006, E. DEMİREL leg.; 3♂♂, 2♀♀, Mersin, Çamlıyayla, Olukayağı–Boğazpınar köyleri arası, 37°12'N, 34°41'E, 545 m, 7.vi.2006, E. DEMİREL leg.; 2♂♂, 2♀♀, Mersin, Silifke, Kızılgeçit Köyü, 36°39'N, 34°0'E, 958 m, 3.vii.2006, E. DEMİREL leg.; 3♂♂, 3♀♀, Mersin, Mut, Çömelek Köyü, Sason Vadisi, 36°42'N, 33°42'E, 1083 m, 4.vii.2006, E. DEMİREL leg.; 2♂♂, 3♀♀, Mersin, Merkez, Takanlı–Doğusandal köyleri arası, 36°46'N, 34°24'E, 304 m, 19.v.2007, E. DEMİREL leg.; 2♂♂, 2♀♀, Mersin, Merkez, Doğusandal Köyü girişi, 36°45'N, 34°23'E, 166 m, 19.v.2007, E. DEMİREL leg.; 2♂♂, 2♀♀, Mersin, Merkez, Doğusandal Köyü, 36°45'N, 34°24'E, 234 m, 19.v.2007, E. DEMİREL leg.; 3♂♂, 2♀♀, Mersin, Erdemli, Sıraç Köyü, 36°45'N, 34°20'E, 731 m, 19.v.2007, E. DEMİREL leg.; 3♂♂, 2♀♀, Adana, Pozantı, Akçatekir, Karboğazı, 37°18'N, 34°43'E, 1334 m, 10.vi.2007, E. DEMİREL leg.; 2♂♂, 2♀♀, Mersin, Mut, Çömelek Köyü, Sason Vadisi, 36°42'N, 33°42'E, 1045 m, 13.vi.2007, E. DEMİREL leg.; 3♂♂, 1♀, Mersin, Silifke, Kırobası, 36°43'N, 33°51'E, 1399 m, 13.vi.2007, E. DEMİREL leg.; 3♂♂, Mersin, Merkez, Fındıkpınarı–Çağlarca Yolu, Çağlarca Köyü, 36°59'N, 34°26'E, 1200 m, 14.vi.2007, E. DEMİREL

leg.; 3♂♂, 4♀♀, Adana, Pozantı, Akçatekir, Karboğazı, Çamçukuru, 37°20'N, 34°42'E, 1885 m, 27.vi.2007, E. DEMİREL leg.; 2♂♂, Adana, Pozantı, Akçatekir, Karboğazı, Çamçukuru, 37°20'N, 34°43'E, 1611 m, 27.vi.2007, E. DEMİREL leg.; 2♂♂, 4♀♀, Mersin, Silifke, Uzuncaburç, Kızılseki, Limonlu Çayı Vadisi, 36°39'N, 34°0'E, 965 m, 29.vi.2007, E. DEMİREL leg.; 3♂♂, 6♀♀, Mersin, Silifke, Uzuncaburç, Kızılseki, Limonlu Çayı Vadisi 4. km, 36°38'N, 34°1'E, 961 m, 29.vi.2007, E. DEMİREL leg.; 5♂♂, 3♀♀, Mersin, Tarsus, Olukoyağı Köyü, Papazın Bahçesi, 37°13'N, 34°39'E, 1201 m, 11.vii.2007, E. DEMİREL leg.; 1♂, Mersin, Silifke, Kırobası, Sarıaydın Köyü, 36°45'N, 33°55'E, 1350 m, 27.vii.2007, E. DEMİREL leg.; 2♂♂, 1♀, Mersin, Mut, Çömelek, Sason Vadisi, 36°42'N, 33°42'E, 1050 m, 1.viii.2007, E. DEMİREL leg.; 1♀, Mersin, Tarsus, Böğrüeğri Köyü, 37°4'N, 34°35'E, 19.v.2005, E. DEMİREL leg.; 2♀♀, Mersin, Merkez, Arslanköy Yolu, Kerimler Köyü, 36°54'N, 34°32'E, 663 m, 20.v.2005, E. DEMİREL leg.; 1♀, Mersin, Erdemli, Sarılar Köyü, 36°38'N, 34°16'E, 155 m, 16.vi.2005, E. DEMİREL leg. (Figure 5B).

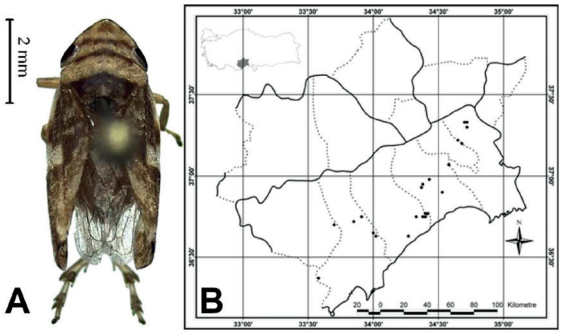


Figure 5. *Mesoptyellus impictifrons* A) male dorsal habitus B) distribution in the research field

Palaearctic distribution: Egypt, Israel, Jordan, Lebanon, Syria, Türkiye (Anatolia).

Türkiye distribution: Antalya, Hatay, Kayseri, Kahramanmaraş, Konya, Mersin, Nur Dağı.

Tribe: Philaenini Metcalf, 1955

Genus: *Neophilaenus* Haupt, 1935

Type species *Cicada lineata* Linnaeus, 1758

Neophilaenus campestris (Fallén, 1805) (Figure 6A)

Material examined: 6♂♂, 6♀♀, Mersin, Merkez, Alanyalı Köyü, 37°5'N, 34°29'E, 1268 m, 17.vi.2005, E. DEMİREL leg.; 16♂♂, 16♀♀, Mersin, Merkez, Gözne, Fatih çıkışı, Değirmendere Yolu, 37°2'N, 34°33'E, 993 m, 19.v.2005, E. DEMİREL leg.; 16♂♂, 13♀♀, Mersin, Tarsus, Böğrüeğri Köyü, 37°4'N, 34°35'E, 19.v.2005, E. DEMİREL leg.; 7♂♂, 7♀♀, Mersin, Merkez, Yüksekoluk Köyü, 36°59'N, 34°26'E, 1210 m, 19.v.2006, E. DEMİREL leg.; 7♂♂, 7♀♀, Mersin, Silifke, Yeşilovacı–Dedeler köyleri, 36°13'N, 33°36'E, 499 m, 17.v.2006, E. DEMİREL leg.; 7♂♂, 8♀♀, Mersin, Silifke, Ulupınar Köyü, 36°16'N, 33°34'E, 712 m, 17.v.2006, E. DEMİREL leg.; 8♂♂, 7♀♀, Mersin, Merkez, Güzelyayla, 37°3'N, 34°30'E, 770 m, 19.v.2006, E. DEMİREL leg.; 7♂♂, 8♀♀, Mersin, Çamlıyayla, Sarıkoyak Yolu, 37°5'N, 34°42'E, 931 m, 19.v.2005, E. DEMİREL leg.; 6♂♂, 6♀♀, Mersin, Silifke, Ulupınar Köyü, 36°16'N, 33°35'E, 754 m, 17.v.2006, E. DEMİREL leg.; 7♂♂, 9♀♀, Mersin, Merkez, Gözne–Fatih Belediyesi, 37°1'N, 34°34'E, 1131 m, 19.v.2006, E. DEMİREL leg.; 6♂♂, 6♀♀, Mersin, Erdemli, Zeybekler Köyü, 36°53'N, 34°20'E, 1119 m, 17.vi.2005, E. DEMİREL leg.; 6♂♂, 7♀♀, Mersin, Merkez, Gözne–Fatih Belediyesi, Böğrüeğri yol ayırımı, 37°2'N, 34°32'E, 838 m, 19.v.2006, E. DEMİREL leg.; 6♂♂, 6♀♀, Mersin, Merkez, Fındıkpınarı, Soğukpınar Köyü, 36°57'N, 34°23'E, 1267 m, 17.vi.2005, E. DEMİREL leg.; 6♂♂, 6♀♀, Mersin, Merkez, Arslanköy Yolu, Kerimler Köyü, 36°54'N, 34°32'E, 663 m, 20.v.2005, E. DEMİREL leg.; 6♂♂, 8♀♀, Mersin, Merkez, Gözne yolu, Çukurkeşlik Köyü, 36°52'N, 34°33'E, 277 m, 19.v.2006, E. DEMİREL leg.; 5♂♂, 5♀♀, Mersin, Merkez, Fındıkpınarı, Kocayer, Zeybekler–Tepeköy ayırımı, 36°52'N, 34°21'E, 1298 m, 23.iv.2006, E. DEMİREL leg.; 7♂♂, 5♀♀, Mersin, Tarsus, Çamalan–Ayvalı Odun Deposu, 37°12'N, 34°47'E, 769 m, 6.vi.2006, E. DEMİREL leg.; 7♂♂, 5♀♀, Niğde, Ulukışla, Maden Köyü çıkışı, 37°27'N, 34°39'E, 1526 m, 6.vi.2006, E. DEMİREL leg.; 6♂♂, 5♀♀, Mersin, Erdemli, Sıraç Köyü, 36°45'N, 34°20'E, 731 m, 19.v.2007, E. DEMİREL leg.; 2♂♂, 5♀♀, Mersin, Mut, Karaman Yolu, 36°45'N, 33°24'E, 948 m, 4.vii.2006, E. DEMİREL leg.; 1♂, 5♀♀, Mersin, Silifke, Narköy, 36°26'N, 33°34'E, 451 m, 20.v.2007, E. DEMİREL leg.; 1♂, 5♀♀, Mersin, Merkez, Fındıkpınarı–Çağlarca Yolu, Çağlarca Köyü, 36°59'N, 34°26'E, 1200 m, 14.vi.2007, E. DEMİREL leg.; 2♂♂, Mersin, Çamlıyayla, Saydibi Yayla Yolu, 37°11'N, 34°35'E, 1576 m, 10.vi.2007, E. DEMİREL leg.; 3♂♂, 4♀♀, Mersin, Merkez, Cehennemdere–Atlılar Köyüne 3 km, 37°5'N, 34°28'E, 1423 m, 11.vi.2007, E. DEMİREL leg.; 2♂♂, 2♀♀, Mersin, Merkez, Atlılar–Aslanköy yol ayırımına 2 km, 37°3'N, 34°25'E, 1388 m, 11.vi.2007, E. DEMİREL leg.; 2♂♂, 2♀♀, Mersin, Çamlıyayla, Tarsus Orman Deposu, 37°10'N, 34°39'E, 1180 m, 10.vi.2007, E. DEMİREL leg.; 3♂♂, 3♀♀, Adana, Pozantı, Akçatekir, Karboğazı, 37°18'N, 34°43'E, 1334 m, 10.vi.2007, E. DEMİREL leg.; 3♂♂, Mersin, Merkez, Atlılar Köyü, 37°5'N, 34°25'E, 1452 m, 11.vi.2007, E. DEMİREL leg.; 3♂♂, 2♀♀, Mersin, Merkez, Yeniköy, Kızılbağ Orman Deposu, 37°0'N, 34°28'E, 1085 m, 11.vi.2007, E. DEMİREL leg.; 2♂♂, Mersin, Çamlıyayla, Sebil–Cehennemdere arası, 37°12'N, 34°34'E, 1741 m, 10.vi.2007, E. DEMİREL leg.;

1♂, Mersin, Merkez, Alanyalı–Atlılar Köyü Yolu, 37°5'N, 34°25'E, 1457 m, 14.vi.2007, E. DEMİREL leg.; 1♂, Mersin, Merkez, Cehennemdere–Alanyalı Yolu arası, 37°6'N, 34°30'E, 1197 m, 11.vi.2007, E. DEMİREL leg.; 1♂, Mersin, Erdemli, Çamlı Köyü, 36°44'N, 34°11'E, 723 m, 20.v.2007, E. DEMİREL leg.; 8♂♂, 13♀♀, Mersin, Erdemli, Fakıllı Köyü, 36°44'N, 34°11'E, 630 m, 19.v.2007, E. DEMİREL leg.; 1♂, 3♀♀, Mersin, Merkez, Pelitkoyağı Köyü, 36°46'N, 34°25'E, 366 m, 19.v.2007, E. DEMİREL leg.; 1♀, Mersin, Tarsus, Kurbanlı Köyü yol ayırımı, Tarsus'a 15 km, 37°1'N, 34°56'E, 157 m, 22.iv.2006, E. DEMİREL leg.; 1♀, Mersin, Erdemli, Avgadı, 36°44'N, 34°7'E, 1359 m, 18.v.2006, E. DEMİREL leg.; 1♀, Mersin, Silifke, Keşlitürkmenli Köyü, 36°32'N, 33°55'E, 959 m, 18.v.2006, E. DEMİREL leg.; 1♂, 1♀, Mersin, Erdemli, Kuzucu, Kocayer Yolu, Üzümlü yol ayırımı, 36°49'N, 34°23'E, 682 m, 20.v.2005, E. DEMİREL leg.; 1♂, 2♀♀, Mersin, Mut, Yerköprü Tabiat Anıtı, 36°32'N, 33°14'E, 279 m, 20.v.2007, E. DEMİREL leg.; 1♂, 2♀♀, Mersin, Erdemli, Karayakup Köyü sonrası, 36°44'N, 34°19'E, 354 m, 19.v.2007, E. DEMİREL leg.; 1♂, 1♀, Mersin, Merkez, Takanlı Köyü, 36°47'N, 34°24'E, 265 m, 19.v.2007, E. DEMİREL leg.; 1♂, 1♀, Mersin, Erdemli, İnoluk Köyü, 36°48'N, 34°20'E, 743 m, 9.vi.2006, E. DEMİREL leg.; 1♂, 1♀, Mersin, Çamlıyayla, Sebil–Alanyalı Köyü arası, 37°7'N, 34°31'E, 781 m, 8.vi.2006, E. DEMİREL leg.; 1♂, 1♀, Mersin, Merkez, Alanyalı Köyü, 37°6'N, 34°30'E, 1211 m, 8.vi.2006, E. DEMİREL leg.; 1♂, 1♀, Mersin, Merkez, Atlılar Köyü, 37°5'N, 34°25'E, 1450 m, 8.vi.2006, E. DEMİREL leg. (Figure 6B).

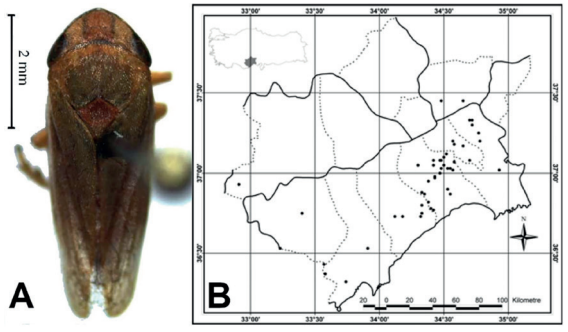


Figure 6. *Neophilaenus campestris* A) male dorsal habitus B) distribution in the research field

Palaearctic distribution: Albania, Algeria, Austria, Azerbaijan, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, England, Estonia, France, Georgia, Germany, Greece, Hungary, Iran, Ireland, Israel, Italy, Jordan, Latvia, Lithuania, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russia (north, south and center), Slovakia, Spain, Sweden (south), Tunisia, Türkiye, Ukraine, Yugoslavia.

Türkiye distribution: Adana, Adıyaman, Afyonkarahisar, Ankara, Antalya, Artvin, Balıkesir, Bitlis, Bolu, Bursa, Çanakkale, Elâzığ, Eskişehir, Giresun, Hatay, İstanbul, İzmir, Kastamonu; Kırklareli, Konya, Kütahya, Manisa, Muğla, Nevşehir, Samsun, Siirt, Sinop, Trabzon, Van.

Neophilaenus lineatus (Linnaeus, 1758) (Figure 7A)

Material examined: 5♂♂, 6♀♀, Niğde, Ulukışla, Aktoprak Köyü, Aktoprak–Çamlıyayla Yolu, 37°26'N, 34°27'E, 1934 m, 26.vii.2005, E. DEMİREL leg.; 7♂♂, 5♀♀, Mersin, Erdemli, Güzeloluk, Tozlu Köyü, 36°49'N, 34°6'E, 1554 m, 29.vii.2005, E. DEMİREL leg.; 5♂♂, 4♀♀, Mersin, Erdemli, Güzeloluk, Toros Köyü, 36°52'N, 34°6'E, 1545 m, 29.vii.2005, E. DEMİREL leg.; 3♂♂, 2♀♀, Konya, Halkapınar, Halkapınar girişi, 37°27'N, 34°8'E, 1127 m, 22.vii.2006, E. DEMİREL leg.; 3♂♂, 2♀♀, Konya, Halkapınar, Körlü Köyü, 37°24'N, 34°16'E, 1296 m, 22.vii.2006, E. DEMİREL leg.; 3♂♂, 2♀♀, Mersin, Silifke, Uzuncaburç, 36°33'N, 33°56'E, 1098 m, 3.vii.2006, E. DEMİREL leg.; 5♂♂, 1♀, Mersin, Erdemli, Toros Köyü, 36°53'N, 34°6'E, 1670 m, 23.vii.2006, E. DEMİREL leg.; 5♂♂, 4♀♀, Mersin, Silifke, Kırobası, Sarıaydın Köyü, 36°45'N, 33°55'E, 1359 m, 26.vii.2006, E. DEMİREL leg.; 3♂♂, Karaman, Ayrancı, Çatköy, 37°10'N, 33°51'E, 1547 m, 23.vii.2006, E. DEMİREL leg.; 3♂♂, 1♀, Niğde, Ulukışla, Emirler Köyü Göleti, 37°27'N, 34°28'E, 1650 m, 12.viii.2006, E. DEMİREL leg.; 3♂♂, Karaman, Ayrancı, Kayaönü Köyü, 37°7'N, 33°48'E, 1565 m, 23.vii.2006, E. DEMİREL leg.; 3♂♂, Mersin, Erdemli, Hacıalanı–İçme arası, 36°49'N, 34°14'E, 1546 m, 23.vii.2006, E. DEMİREL leg.; 6♂♂, 4♀♀, Mersin, Silifke, Kırobası, Sarıaydınlı Köyü, Limonlu Çayı Vadisi, 36°45'N, 33°55'E, 1357 m, 29.vi.2007, E. DEMİREL leg.; 7♂♂, 7♀♀, Mersin, Silifke, Kırobası, Sarıaydın Köyü, Limonlu Çayı, 36°45'N, 33°55'E, 1350 m, 13.vi.2007, E. DEMİREL leg.; 7♂♂, Mersin, Silifke, Kırobası, Sarıaydın Köyü, 36°45'N, 33°55'E, 1350 m, 27.vii.2007, E. DEMİREL leg.; 8♂♂, 8♀♀, Niğde, Ulukışla, Beyağıl, Madenköy, 37°27'N, 34°36'E, 1947 m, 26.vii.2005, E. DEMİREL leg.; 3♂♂, 3♀♀, Niğde, Ulukışla, Madenköy, 37°27'N, 34°38'E, 1668 m, 10.vii.2007, E. DEMİREL leg.; 3♂♂, Niğde, Ulukışla, Emirler Köyü Göleti üzeri, 37°27'N, 34°28'E, 1638 m, 10.vii.2007, E. DEMİREL leg.; 2♂♂, 7♀♀, Adana, Pozantı, Pozantı girişi, dere içi, 37°22'N, 34°49'E, 995 m, 14.vi.2007, E. DEMİREL leg.; 1♀, Mersin, Erdemli, Güzeloluk Belediyesi, Avgadi–Sorgun Yolu, 36°49'N, 34°6'E, 1542 m, 3.vii.2006, E. DEMİREL leg.; 7♀♀, Niğde, Ulukışla, Emirler Köyü Göleti, 37°27'N, 34°29'E, 1633 m, 22.vii.2006, E. DEMİREL leg.; 1♀, Nevşehir, Ürgüp, Damsa Barajı, 38°33'N, 34°55'E, 1204 m, 25.vii.2004, E. DEMİREL leg.; 1♀, Mersin, Erdemli, Hacıalan Yaylası Göleti, 36°51'N, 34°13'E, 1538 m, 23.vii.2006, E. DEMİREL leg.; 1♀, Konya, Halkapınar, Körlü Köyü, 37°25'N, 34°17'E, 1339 m,

22.vii.2006, E. DEMİREL leg.; 2♀♀, Niğde, Ulukışla, Maden Köy, 37°27'N, 34°38'E, 1637 m, 26.vi.2007, E. DEMİREL leg. (Figure 7B).

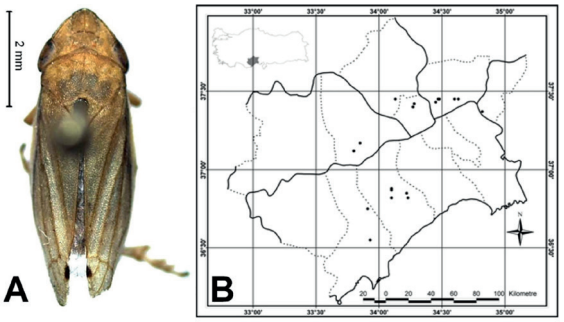


Figure 7. *Neophilaenus lineatus* A) male dorsal habitus B) distribution in the research field

Palaearctic distribution: Albania, Algeria, Altai Mts., Austria, Belgium, Bulgaria, Caucasus, Czech Republic, Denmark, England, Estonia, Finland, France, Germany, Greece, Hungary, Iran, Ireland, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Mongolia, Netherlands, Norway, Poland, Portugal, Romania, Russia (north and center), Scotland, Siberia (west and center), Slovakia, Spain, Sweden, Tunisia, Türkiye, Ukraine, Uzbekistan, Wales, Yugoslavia.

Türkiye distribution: Afyonkarahisar, Ankara, Bursa, Erzincan, İstanbul, İzmir, Konya, Malatya, Nevşehir, Sinop, Van.

Neophilaenus minor (Kirschbaum, 1868) (Figure 8A)

Material examined: 5♂♂, 7♀♀, Mersin, Silifke, Kırobası, Kavak Köyü, 36°44'N, 33°50'E, 1390 m, 27.vii.2007, E. DEMİREL leg.; 4♂♂, 5♀♀, Mersin, Erdemli, Güzeloluk, Toros Köyü Yaylası, 36°54'N, 34°5'E, 1680 m, 28.vii.2007, E. DEMİREL leg.; 4♂♂, 6♀♀, Mersin, Merkez, Alanyalı Köyü, Cehennemderesi üstü, 37°6'N, 34°30'E, 1158 m, 28.vi.2007, E. DEMİREL leg.; 4♂♂, 5♀♀, Mersin, Erdemli, Toros Köyü, 36°53'N, 34°6'E, 1670 m, 23.vii.2006, E. DEMİREL leg.; 4♂♂, 5♀♀, Mersin, Merkez, Aslanköy Yaylası, 36°57'N, 34°17'E, 1868 m, 31.vii.2007, E. DEMİREL leg.; 4♂♂, 4♀♀, Mersin, Erdemli, Hacıalanı Yaylası, Gölet, 36°51'N, 34°13'E, 1533 m, 28.vii.2007, E. DEMİREL leg.; 5♂♂, 3♀♀, Mersin, Merkez, Aslanköy–Yavca arası, Kavaklıpınar, 37°1'N, 34°19'E, 1364 m, 11.vi.2007, E. DEMİREL leg.; 4♂♂, 3♀♀, Adana, Pozantı, Akçatekir, Karboğazı, 37°19'N, 34°41'E, 1536 m, 30.vi.2006, E. DEMİREL leg.; 4♂♂, 3♀♀, Adana, Pozantı, Gülek, Akçatekir Yaylası, 37°19'N, 34°41'E, 1530 m, 1.vii.2006, E. DEMİREL leg.; 6♂♂, 5♀♀, Mersin, Merkez, Aslanköy, Çatak, 36°59'N, 34°16'E, 1419 m, 28.vi.2007, E. DEMİREL leg.; 3♂♂, 2♀♀, Mersin, Erdemli, Hacıalanı Yaylası, 36°49'N, 34°14'E, 1609 m, 27.vii.2007, E. DEMİREL leg.; 4♂♂, 4♀♀, Mersin, Erdemli, Güzeloluk, Avgadi, 36°44'N, 34°7'E, 1356 m, 3.vii.2006, E. DEMİREL leg.; 1♂, 3♀♀, Mersin, Silifke, Kırobası, Sarıaydın Köyü, Limonlu Çayı, 36°45'N, 33°55'E, 1350 m, 13.vi.2007, E. DEMİREL leg.; 4♂♂, 2♀♀, Mersin, Erdemli, Fındıkpınarı–Çağlarca arası, 36°59'N, 34°26'E, 1195 m, 24.vii.2006, E. DEMİREL leg.; 1♂, 2♀♀, Mersin, Merkez, Alanyalı Köyü, 37°6'N, 34°30'E, 1197 m, 2.vii.2006, E. DEMİREL leg.; 4♂♂, 4♀♀, Mersin, Silifke, Elbeyli Köyü, 36°42'N, 34°1'E, 128 m, 10.vi.2006, E. DEMİREL leg.; 5♂♂, 2♀♀, Karaman, Ayrancı, Küçükkoraç Köyü, Mersin Yolu, 37°1'N, 34°4'E, 2154 m, 23.vii.2006, E. DEMİREL leg.; 5♂♂, 4♀♀, Adana, Pozantı, Akçatekir, 37°21'N, 34°41'E, 1768 m, 6.vii.2005, E. DEMİREL leg.; 5♂♂, 2♀♀, Mersin, Erdemli, Hacıalan Yaylası, 36°50'N, 34°10'E, 1422 m, 23.vii.2006, E. DEMİREL leg.; 5♂♂, 2♀♀, Mersin, Merkez, Alanyalı Köyü, 37°6'N, 34°30'E, 1167 m, 31.vii.2007, E. DEMİREL leg.; 3♂♂, 3♀♀, Mersin, Çamlıyayla, Cehennemdere, Sebil, 37°7'N, 34°31'E, 658 m, 2.vii.2006, E. DEMİREL leg.; 3♂♂, 2♀♀, Niğde, Ulukışla, Darboğaz Köyü, 37°28'N, 34°32'E, 1543 m, 21.vii.2006, E. DEMİREL leg.; 4♂♂, 8♀♀, Mersin, Çamlıyayla, Sebil, Cehennemdere üstü, 37°6'N, 34°30'E, 1162 m, 12.vii.2007, E. DEMİREL leg.; 2♂♂, 2♀♀, Mersin, Erdemli, Karakoyak Köyü, 36°45'N, 34°8'E, 1390 m, 16.vi.2005, E. DEMİREL leg.; 1♂, Mersin, Erdemli, Güzeloluk, Hacıalanı Yaylası, 36°49'N, 34°14'E, 1632 m, 9.vii.2005, E. DEMİREL leg.; 2♂♂, Adana, Pozantı, Akçatekir, Karboğazı, 37°20'N, 34°41'E, 1607 m, 27.vii.2005, E. DEMİREL leg.; 1♂, 1♀, Mersin, Merkez, Fındıkpınarı, Soğukpınar Köyü, 36°57'N, 34°23'E, 1275 m, 8.vii.2005, E. DEMİREL leg.; 1♂, Niğde, Ulukışla, Aktoprak Köyü, 37°27'N, 34°28'E, 1710 m, 21.vii.2006, E. DEMİREL leg.; 1♂, Mersin, Çamlıyayla, Olukayağı–Boğazpınar köyleri arası, 37°12'N, 34°41'E, 545 m, 7.vi.2006, E. DEMİREL leg.; 1♀, Mersin, Erdemli, Güzeloluk, Yağda Köyü, 36°45'N, 34°2'E, 1364 m, 10.vi.2006, E. DEMİREL leg.; 1♂, 1♀, Niğde, Ulukışla, Emirler Köyü girişi, 37°29'N, 34°31'E, 1599 m, 26.vi.2007, E. DEMİREL leg.; 1♂, 1♀, Mersin, Merkez, Aslanköy, Tırtar Köyü, Dümbelek Boğazi, 37°3'N, 34°18'E, 1749 m, 12.vii.2007, E. DEMİREL leg.; 1♂, 1♀, Niğde, Ulukışla, Kozluca Köyü girişi, 37°31'N, 34°40'E, 1208 m, 30.vi.2006, E. DEMİREL leg. (Figure 8B).

Palaearctic distribution: Albania, Austria, Belgium, Bulgaria, Czech Republic, Finland, France, Germany, Hungary, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Netherlands, Poland, Portugal, Slovakia, Türkiye (Anatolia), Ukraine, Yugoslavia.

Türkiye distribution: Adana, Ankara, Antalya, Balıkesir, Konya, Manisa, Mersin, Sinop, Sivas.

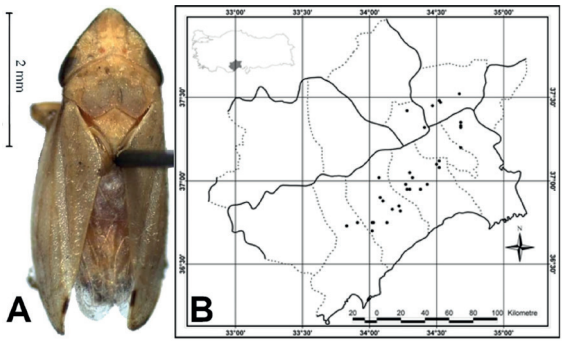


Figure 8. *Neophilaenus minor* A) male dorsal habitus B) distribution in the research field

Genus: *Philaenus* Stål, 1864

Type species *Cicada spumaria* Linnaeus, 1758

Philaenus signatus Melichar, 1896 (Figure 9A)

Material examined: 11♂♂, 9♀♀, Adana, Pozantı, Akçatekir, 37°21'N, 34°41'E, 1768 m, 6.vii.2005, E. DEMİREL leg.; 8♂♂, 7♀♀, Mersin, Çamlıyayla, Saydibi Yayla Yolu, 37°12'N, 34°34'E, 1750 m, 6.vii.2005, E. DEMİREL leg.; 7♂♂, 7♀♀, Mersin, Merkez, Alanyalı–Kızılkaya köyleri arası, 37°5'N, 34°31'E, 1305 m, 7.vii.2005, E. DEMİREL leg.; 4♂♂, 5♀♀, Niğde, Ulukışla, Darboğaz Köyü, 37°27'N, 34°35'E, 1657 m, 13.vii.2005, E. DEMİREL leg.; 4♂♂, 5♀♀, Niğde, Ulukışla, Çaykavak Geçidi, 37°35'N, 34°32'E, 1587 m, 14.vii.2005, E. DEMİREL leg.; 4♂♂, 2♀♀, Niğde, Ulukışla, Darboğaz Köyü, 37°28'N, 34°34'E, 1662 m, 5.vi.2006, E. DEMİREL leg.; 5♂♂, 4♀♀, Niğde, Ulukışla, Maden Köyü, 37°26'N, 34°37'E, 1712 m, 6.vi.2006, E. DEMİREL leg.; 4♂♂, 3♀♀, Niğde, Ulukışla, Maden Köyü çıkışı, 37°27'N, 34°39'E, 1526 m, 6.vi.2006, E. DEMİREL leg.; 5♂♂, 5♀♀, Adana, Pozantı, Akçatekir, 37°22'N, 34°49'E, 938 m, 6.vi.2006, E. DEMİREL leg.; 6♂♂, 4♀♀, Niğde, Ulukışla, Niğde Yolu 3. km, 37°35'N, 34°32'E, 1582 m, 30.vi.2006, E. DEMİREL leg.; 7♂♂, 2♀♀, Adana, Pozantı, Akçatekir, Karboğazı, 37°19'N, 34°41'E, 1536 m, 30.vi.2006, E. DEMİREL leg.; 7♂♂, 6♀♀, Mersin, Çamlıyayla, Saydibi Yayla Yolu, 37°11'N, 34°35'E, 1574 m, 1.vii.2006, E. DEMİREL leg.; 4♂♂, 2♀♀, Niğde, Ulukışla, Emirler Köyü Göleti, 37°27'N, 34°28'E, 1650 m, 12.viii.2006, E. DEMİREL leg.; 5♂♂, 2♀♀, Adana, Pozantı, Akçatekir, Karboğazı, 37°19'N, 34°41'E, 1560 m, 12.viii.2006, E. DEMİREL leg.; 8♂♂, 6♀♀, Mersin, Mut, Mut Orman Deposu, 36°44'N, 33°22'E, 622 m, 19.viii.2006, E. DEMİREL leg.; 11♂♂, 3♀♀, Niğde, Ulukışla, Niğde–Kayseri Yolu, 37°35'N, 34°32'E, 1611 m, 8.vi.2007, E. DEMİREL leg.; 5♂♂, 4♀♀, Adana, Pozantı, Akçatekir, Karboğazı, 37°18'N, 34°43'E, 1334 m, 10.vi.2007, E. DEMİREL leg.; 5♂♂, Mersin, Çamlıyayla, Saydibi Yayla Yolu, 37°11'N, 34°35'E, 1576 m, 10.vi.2007, E. DEMİREL leg.; 4♂♂, Mersin, Çamlıyayla, Sebil–Cehennemdere arası, 37°12'N, 34°34'E, 1741 m, 10.vi.2007, E. DEMİREL leg.; 14♂♂, Mersin, Merkez, Aslanköy–Yavca arası, Kavaklıpınar, 37°1'N, 34°19'E, 1364 m, 11.vi.2007, E. DEMİREL leg.; 1♂, Niğde, Ulukışla, Maden Köy, 37°27'N, 34°38'E, 1637 m, 26.vi.2007, E. DEMİREL leg.; 1♂, Niğde, Ulukışla, Emirler Köyü girişi, 37°29'N, 34°31'E, 1599 m, 26.vi.2007, E. DEMİREL leg.; 11♂♂, 1♀, Adana, Pozantı, Akçatekir, Karboğazı, Çamçukuru, 37°20'N, 34°43'E, 1611 m, 27.vi.2007, E. DEMİREL leg.; 5♂♂, Adana, Pozantı, Akçatekir, Karboğazı, Çamçukuru, 37°19'N, 34°42'E, 1648 m, 27.vi.2007, E. DEMİREL leg.; 1♂, 1♀, Adana, Pozantı, Akçatekir, Karboğazı, Sumaklı Dağı, 37°20'N, 34°41'E, 1564 m, 27.vi.2007, E. DEMİREL leg.; 1♂, Mersin, Merkez, Alanyalı Köyü, Kuyualanı, 37°5'N, 34°28'E, 1427 m, 28.vi.2007, E. DEMİREL leg.; 1♂, 4♀♀, Mersin, Merkez, Aslanköy, Çatak, 36°59'N, 34°16'E, 1419 m, 28.vi.2007, E. DEMİREL leg.; 1♂, 1♀, Mersin, Erdemli, Güzeloluk, Avgadı, Tozlu Köy, 36°49'N, 34°7'E, 1587 m, 29.vi.2007, E. DEMİREL leg.; 2♂♂, Niğde, Ulukışla, Kozluca köyüne 3 km kala, 37°31'N, 34°40'E, 1201 m, 9.vii.2007, E. DEMİREL leg.; 5♂♂, 2♀♀, Adana, Pozantı, Akçatekir, Karboğazı, Çamçukuru, 37°20'N, 34°43'E, 1609 m, 11.vii.2007, E. DEMİREL leg.; 9♂♂, 2♀♀, Mersin, Tarsus, Olukoyağı Köyü, Papazın Bahçesi, 37°13'N, 34°39'E, 1201 m, 11.vii.2007, E. DEMİREL leg.; 1♂, Mersin, Çamlıyayla, Sebil, Cehennemdere üstü, 37°6'N, 34°30'E, 1162 m, 12.vii.2007, E. DEMİREL leg.; 1♂, Mersin, Erdemli, Avgadı, Sorgun–Hacıalanı Yaylası arası, 36°50'N, 34°9'E, 1230 m, 27.vii.2007, E. DEMİREL leg.; 1♂, Mersin, Erdemli, Güzeloluk, Toros Köyü Yaylası, 36°54'N, 34°5'E, 1680 m, 28.vii.2007, E. DEMİREL leg.; 5♂♂, Adana, Pozantı, Akçatekir, Karboğazı, Çamçukuru (Şelale), 37°20'N, 34°43'E, 1678 m, 29.vii.2007, E. DEMİREL leg.; 1♂, Mersin, Çamlıyayla, Sebil, Av Koruma Sahası, Bağdat Manastırı, Suçatı, 37°12'N, 34°28'E, 1504 m, 30.vii.2007, E. DEMİREL leg.; 1♂, Mersin, Çamlıyayla, Sebil, Av Koruma Sahası, Cevizlioğlu–Böğürtlenlik arası, 37°11'N, 34°30'E, 1456 m, 31.vii.2007, E. DEMİREL leg.; 1♂, 1♀, Mersin, Erdemli, Karakoyak Köyü, 36°45'N, 34°8'E, 1390 m, 16.vi.2005, E. DEMİREL leg. (Figure 9B).

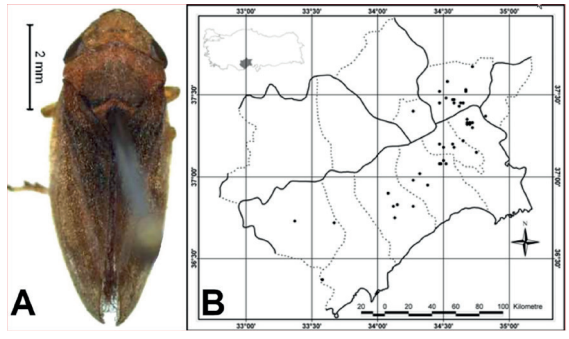


Figure 9. *Philaenus signatus* A) male dorsal habitus B) distribution in the research field

Palaearctic distribution: Afghanistan, Albania, Bulgaria, Cyprus, Greece, Iraq, Italy, Lebanon (Beirut), Morocco, Spain, Türkiye (Anatolia), Yugoslavia.

Türkiye distribution: Adana, Antalya, Aydın, Gavur Dağı, Gaziantep?, Hatay, İzmir, Kahramanmaraş, Mersin, Muğla, Osmaniye.

Philaenus spumarius (Linnaeus, 1758) (Figure 10A)

Material examined: 16♂♂, 17♀♀, Mersin, Merkez, Alanyalı–Kızılkaya köyleri arası, 37°5'N, 34°31'E, 1305 m, 7.vii.2005, E. DEMİREL leg.; 11♂♂, 25♀♀, Adana, Pozantı, Akçatekir, Karboğazı, Çamçukuru, 37°20'N, 34°43'E, 1611 m, 27.vi.2007, E. DEMİREL leg.; 7♂♂, 12♀♀, Mersin, Erdemli, Kuzucu, Kocayer Yolu, Üzümlü yol ayırımı, 36°49'N, 34°23'E, 682 m, 20.v.2005, E. DEMİREL leg.; 6♂♂, 10♀♀, Niğde, Ulukışla, Darboğaz Köyü, 37°28'N, 34°32'E, 1543 m, 21.vii.2006, E. DEMİREL leg.; 6♂♂, 10♀♀, Mersin, Çamlıyayla, Kisecik Köyü çıkışı, 37°6'N, 34°37'E, 561 m, 19.v.2005, E. DEMİREL leg.; 6♂♂, 10♀♀, Mersin, Merkez, Aslanköy–Çatak arası, 36°59'N, 34°16'E, 1428 m, 18.viii.2006, E. DEMİREL leg.; 6♂♂, 11♀♀, Mersin, Merkez, Fındıkpınarı Yolu, 36°57'N, 34°20'E, 1708 m, 20.v.2005, E. DEMİREL leg.; 6♂♂, 11♀♀, Mersin, Merkez, Cehennemdere–Alanyalı Yolu arası, 37°6'N, 34°30'E, 1197 m, 11.vi.2007, E. DEMİREL leg.; 6♂♂, 10♀♀, Mersin, Merkez, Gözne yolu 10. km, Isık Tepe, 36°52'N, 34°33'E, 281 m, 22.iv.2006, E. DEMİREL leg.; 7♂♂, 11♀♀, Niğde, Ulukışla, Maden Köy, 37°27'N, 34°38'E, 1637 m, 26.vi.2007, E. DEMİREL leg.; 6♂♂, 10♀♀, Mersin, Merkez, Gözne, Alanyalı–Değirmendere köyleri arası, 37°5'N, 34°31'E, 1305 m, 28.vii.2005, E. DEMİREL leg.; 6♂♂, 11♀♀, Mersin, Erdemli, Sıraç Köyü, 36°45'N, 34°20'E, 731 m, 19.v.2007, E. DEMİREL leg.; 6♂♂, 11♀♀, Mersin, Merkez, Aslanköy–Çatak arası, 36°59'N, 34°16'E, 1440 m, 2.vii.2006, E. DEMİREL leg.; 7♂♂, 10♀♀, Karaman, Ayrancı, Küçükkoraç, Mersin Yolu, 37°3'N, 33°59'E, 2151 m, 23.vii.2006, E. DEMİREL leg.; 9♂♂, 14♀♀, Mersin, Merkez, Yüksekoluk Köyü, 36°59'N, 34°26'E, 1210 m, 19.v.2006, E. DEMİREL leg.; 6♂♂, 10♀♀, Mersin, Çamlıyayla, Saydibi Yayla Yolu, 37°11'N, 34°35'E, 1576 m, 10.vi.2007, E. DEMİREL leg.; 6♂♂, 11♀♀, Mersin, Merkez, Pelitkoyağı Köyü, 36°46'N, 34°25'E, 366 m, 19.v.2007, E. DEMİREL leg.; 10♂♂, 12♀♀, Adana, Pozantı, Akçatekir, Karboğazı, Çamçukuru, 37°20'N, 34°42'E, 1885 m, 27.vi.2007, E. DEMİREL leg.; 6♂♂, 13♀♀, Mersin, Merkez, Alanyalı Köyü, 37°6'N, 34°30'E, 1211 m, 8.vi.2006, E. DEMİREL leg.; 6♂♂, 13♀♀, Mersin, Çamlıyayla, Sarıkoyak Yolu, 37°5'N, 34°42'E, 931 m, 19.v.2005, E. DEMİREL leg.; 6♂♂, 10♀♀, Mersin, Merkez, Cehennemdere–Atlılar köyüne 3 km, 37°5'N, 34°28'E, 1423 m, 11.vi.2007, E. DEMİREL leg.; 6♂♂, 12♀♀, Adana, Pozantı, Akçatekir, 37°22'N, 34°49'E, 938 m, 6.vi.2006, E. DEMİREL leg.; 6♂♂, 11♀♀, Mersin, Erdemli, Güzeloluk, Toros Köyü, 36°52'N, 34°6'E, 1545 m, 29.vii.2005, E. DEMİREL leg.; 8♂♂, 12♀♀, Mersin, Merkez, Fındıkpınarı, 36°56'N, 34°20'E, 1528 m, 24.vii.2006, E. DEMİREL leg.; 10♂♂, 13♀♀, Karaman, Ayrancı, Küçükkoraç Yaylası, 37°3'N, 33°56'E, 2050 m, 28.vii.2007, E. DEMİREL leg.; 10♂♂, 12♀♀, Mersin, Merkez, Gözne, Fatih çıkışı, Değirmendere Yolu, 37°2'N, 34°33'E, 993 m, 19.v.2005, E. DEMİREL leg.; 19♂♂, 24♀♀, Niğde, Ulukışla, Maden Köy, 37°27'N, 34°38'E, 1668 m, 10.vii.2007, E. DEMİREL leg.; 9♂♂, 12♀♀, Mersin, Çamlıyayla, Tarsus Orman Deposu, 37°10'N, 34°39'E, 1180 m, 10.vi.2007, E. DEMİREL leg.; 6♂♂, 10♀♀, Mersin, Erdemli, Toros Köyü, 36°53'N, 34°6'E, 1670 m, 23.vii.2006, E. DEMİREL leg.; 7♂♂, 13♀♀, Mersin, Tarsus, Dörtler, 37°7'N, 34°52'E, 372 m, 22.iv.2006, E. DEMİREL leg.; 6♂♂, 11♀♀, Mersin, Merkez, Atlılar Köyü, 37°5'N, 34°28'E, 1422 m, 8.vi.2006, E. DEMİREL leg.; 6♂♂, 6♀♀, Mersin, Merkez, Aslanköy–Hangediği arası, Kurudere Mevkii, 37°1'N, 34°24'E, 1130 m, 11.vi.2007, E. DEMİREL leg.; 8♂♂, 14♀♀, Konya, Halkapınar, Karaahmet Köyü, 37°28'N, 34°20'E, 1431 m, 26.vii.2005, E. DEMİREL leg.; 8♂♂, 12♀♀, Karaman, Ayrancı, Çatköy, 37°10'N, 33°51'E, 1547 m, 23.vii.2006, E. DEMİREL leg.; 9♂♂, 10♀♀, Adana, Pozantı, Akçatekir, Karboğazı, Çamçukuru, 37°19'N, 34°42'E, 1648 m, 27.vi.2007, E. DEMİREL leg.; 6♂♂, 10♀♀, Niğde, Ulukışla, Maden Köyü, 37°26'N, 34°37'E, 1712 m, 6.vi.2006, E. DEMİREL leg.; 7♂♂, 11♀♀, Mersin, Merkez, Gözne–Fatih Belediyesi, Böğrüeğri yol ayırımı, 37°2'N, 34°32'E, 838 m, 19.v.2006, E. DEMİREL leg.; 14♂♂, 13♀♀, Mersin, Çamlıyayla, Sebil–Cehennemdere arası, 37°12'N, 34°34'E, 1741 m, 10.vi.2007, E. DEMİREL leg.; 23♂♂, 27♀♀, Niğde, Ulukışla, Aktoprak Köyü, Aktoprak–Çamlıyayla Yolu, 37°26'N, 34°27'E, 1934 m, 26.vii.2005, E. DEMİREL leg.; 6♂♂, 11♀♀, Niğde, Ulukışla, Darboğaz–Gümüş köyleri arası, 37°28'N, 34°35'E, 1716 m, 30.vi.2006, E. DEMİREL leg.; 8♂♂, 13♀♀, Niğde, Ulukışla, Yeniyıldız–Seydifakılı köyleri arası, 37°28'N, 34°20'E, 1429 m, 22.vii.2006, E. DEMİREL leg.; 8♂♂, 17♀♀, Mersin, Silifke, Kırobası, Sarıaydın Köyü, Limonlu Çayı, 36°45'N, 33°55'E, 1350 m, 13.vi.2007, E. DEMİREL leg.; 14♂♂, 19♀♀, Adana, Pozantı, Akçatekir, Karboğazı, 37°18'N, 34°43'E, 1334 m, 10.vi.2007, E. DEMİREL leg.; 6♂♂, 10♀♀, Mersin, Merkez, Güzelyayla, 37°3'N, 34°30'E, 770 m, 19.v.2006, E. DEMİREL leg.; 43♂♂, 60♀♀, Niğde, Ulukışla, Beyağıl, Maden Köy, 37°27'N, 34°36'E, 1947 m, 26.vii.2005, E. DEMİREL leg.; 12♂♂, 14♀♀, Mersin, Merkez, Gözne–Fatih Belediyesi, 37°1'N, 34°34'E, 1131 m, 19.v.2006, E. DEMİREL leg.; 20♂♂, 33♀♀, Mersin, Tarsus, Böğrüeğri Köyü, 37°4'N, 34°35'E, 19.v.2005, E. DEMİREL leg.; 11♂♂, 7♀♀, Mersin, Merkez, Fındıkpınarı, Soğukpınar, 36°56'N, 34°22'E, 1266 m, 14.vi.2007, E. DEMİREL leg.; 10♂♂, 5♀♀, Mersin, Merkez, Atlılar Köyü, 37°5'N, 34°25'E, 1452 m, 11.vi.2007,

E. DEMİREL leg.; 6♂♂, 5♀♀, Mersin, Merkez, Atlılar Köyü, 37°5'N, 34°25'E, 1450 m, 8.vi.2006, E. DEMİREL leg.; 9♂♂, 5♀♀, Mersin, Silifke, Kırobası, Oğru Köyü, 36°51'N, 33°43'E, 1785 m, 9.vii.2005, E. DEMİREL leg.; 9♂♂, 5♀♀, Mersin, Merkez, Alanyalı Köyü, 37°6'N, 34°30'E, 1215 m, 28.vi.2007, E. DEMİREL leg.; 17♂♂, 8♀♀, Adana, Pozantı, Akçatekir, Karboğazı, Çamçukuru (Şelale), 37°20'N, 34°43'E, 1678 m, 29.vii.2007, E. DEMİREL leg.; 14♂♂, 7♀♀, Adana, Pozantı, Akçatekir, Karboğazı, Çamçukuru, 37°20'N, 34°43'E, 1609 m, 11.vii.2007, E. DEMİREL leg.; 9♂♂, 5♀♀, Karaman, Ayrancı, Küçükkoraç Köyü, 37°4'N, 33°50'E, 1853 m, 29.vii.2005, E. DEMİREL leg. (Figure 10B).

Palaearctic distribution: Afghanistan, Albania, Algeria, Armenia, Austria, Azerbaijan, Azores, Belgium, Bulgaria, China (Kansu), Cyprus, Czech Republic, Denmark, England, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iran (northwest, north, center and south), Iraq, Ireland, Italy, Japan (Hokkaido, Honshu), Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Mongolia, Morocco, Netherlands, Norway, Poland, Portugal, Romania, Russia (north, central and south), Scotland, Siberia (east, central and west), Slovakia, Spain (Also Balearic Is.), Sweden, Switzerland, Syria, Tunisia, Türkiye, Ukraine, Uzbekistan, Wales, Yugoslavia.

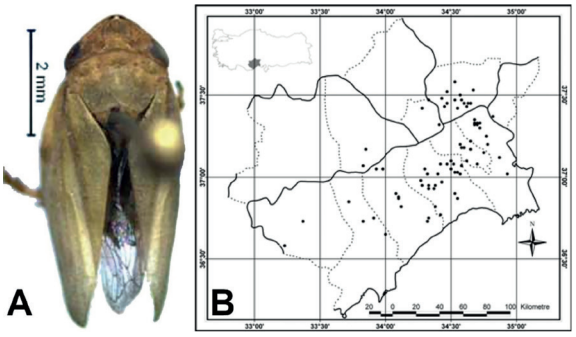


Figure 10. *Philaenus spumarius* A) male dorsal habitus B) distribution in the research field

Türkiye distribution: Ağrı, Amasya, Ankara, Antalya, Artvin, Aydın, Balıkesir, Bilecik, Bitlis, Bolu, Bursa, Çanakkale, Düzce, Elâzığ, Erzincan, Erzurum, Eskişehir, Giresun, Gümüşhane, Hakkâri, Hatay, Iğdır, İstanbul, İzmir, Kahramanmaraş, Kars, Kastamonu, Kırklareli, Kocaeli, Konya, Kütahya, Malatya, Manisa, Mardin, Mersin, Muğla, Ordu, Rize, Samsun, Sakarya, Siirt, Sinop, Sivas, Tekirdağ, Tokat, Trabzon, Tunceli, Van.

DISCUSSION

In this study, a total of nine species belonging to the Aphrophoridae family were identified in the research region, namely *Aphrophora alni, A. salicina, Lepyronia coleoptrata, Mesoptyelus impictifrons, Neophilaenus campestris, N. lineatus, N. minor, Philaenus signatus* and *P. spumarius*.

The present study revealed that the following species represent new provincial records within the study area: *A. alni* (Mersin, Niğde), *A. salicina* (Mersin), *L. coleoptrata* (Mersin, Niğde, Karaman), *M. impictifrons* (Adana), *N. campestris* (Mersin, Niğde), *N. lineatus* (Adana, Mersin, Niğde, Karaman), *N. minor* (Niğde, Karaman), *P. signatus* (Niğde, Konya), and *P. spumarius* (Adana, Niğde, Karaman) (Table 2). These records expand the known distributional ranges of the respective species and provide additional faunistic data that contribute to the understanding of Cercopoidea diversity in southern Anatolia.

The presence of *A. salicina* in the Bolkar Mountains was demonstrated for the first time in this study (Table 2). However, it was recovered only from Mersin and a single location in the entire study area (Table 2, 3). *A. salicina* is an oligophagous species primarily associated with *Salix* spp. in Mersin, specimens were collected along the streamside of a valley at an altitude of 965 m. The occurrence of the species in this locality suggests a strong association with riparian habitats dominated by *Salix* species, implying that the distribution of its host plants plays a key role in determining its local presence. Hence, *A. salicina* appears to be a stenotopic species with a narrow ecological tolerance.

The specimens given as *A. corticea* in the 13th International Zeugma Scientific Research Congress held in Gaziantep on 24-25 February 2025 (Demirel and Hasbenli 2025) and in the doctoral thesis (Demirel 2010) were not included in this study, as it was decided to reconsider their status in light of the new data obtained.

Although *P. spumarius* and *N. lineatus* were not sampled from some provinces in this study, evaluation together with previous records indicates that these species are highly abundant in the study area.

The male-female distribution ratio is almost 1:1 across all species (Table 3). *P. spumarius* ranks first in terms of availability and population density in the area (Table 3), followed by *L. coleoptrata* and *N. campestris*, respectively (Table 3).

Cercopoids are one of the largest groups of xylem sap-sucking insects in the world. Therefore, carefully monitoring their distribution and population density in the region and taking the necessary precautions is crucial for regional agriculture.

Table 2. Aphrophoridae genera and species identified from the Bolkar Mountains

Species \ Provinces	Adana	Mersin	Niğde	Karaman	Konya
Aphrophora alni (Fallén, 1805)	+	+	+	*	+
Aphrophora salicina (Goeze, 1778)	*	+	*	*	*
Lepyronia coleoptrata (Linnaeus, 1758)	*	+	+	+	+
Mesoptyelus impictifrons (Horváth, 1911)	+	+	*	*	*
Neophilaenus campestris (Fallén, 1805)	+	+	+	*	*
Neophilaenus lineatus (Linnaeus, 1758)	+	+	+	+	+
Neophilaenus minor (Kirschbaum, 1868)	+	+	+	+	*
Philaenus signatus (Melichar, 1896)	+	+	+	*	+
Philaenus spumarius (Linnaeus, 1758)	+	+	+	+	+

+ First province record + Previously recorded * No record

Table 3. Population densities of Aphrophoridae species identified from the Bolkar Mountains

Species \ Sample quantities	♂♂	♀♀	Total	Locality
Philaenus spumarius (Linnaeus, 1758)	521	709	1230	74
Lepyronia coleoptrata (Linnaeus, 1758)	524	677	1201	62
Neophilaenus campestris (Fallén, 1805)	186	197	383	50
Aphrophora alni (Fallén, 1805)	166	158	324	35
Philaenus signatus (Melichar, 1896)	177	88	265	43
Neophilaenus minor (Kirschbaum, 1868)	102	93	195	32
Neophilaenus lineatus (Linnaeus, 1758)	84	89	173	18
Mesoptyelus impictifrons (Horváth, 1911)	52	48	100	22
Aphrophora salicina (Goeze, 1778)	23	18	41	1

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ÖZET

Bu çalışmada, 2005–2007 yılları arasında Bolkar Dağları'ndan toplanan 3912 Aphrophoridae örneği değerlendirilmiştir. Yapılan değerlendirme sonucunda, bölgede bu familyaya ait beş cinse dâhil dokuz tür tespit edilmiştir. Tüm türlerin dorsal görünümleri fotoğraflanmış ve elde edilen yeni bilgiler ışığında bu türlerin güncellenmiş dağılım haritaları sunulmuştur.

Anahtar kelimeler: *Aphrophora, Lepyronia, Mesoptyelus, Neophilaenus, Philaenus*, Türkiye

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