



**PRELIMINARY REPORT ON THE AUCHENORRHYNCHA
(HEMIPTERA) FAUNA OF KAZDAĞI NATIONAL PARK WITH TWO
NEW RECORDS FOR TURKEY***

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Abstract - Auchenorrhyncha specimens collected in the years 2004 and 2005 in the Kazdağı (Ida Mountain) National Park in north-west Turkey were examined. 40 species belonging to 9 families were found: 1 species belongs to the family Cixiidae, 2 to Delphacidae, 2 to Tettigometridae, 1 to Meenoplidae, 3 to Issidae, 1 to Flatidae, 7 to Cercopidae, 2 to Membracidae, and 21 species to Cicadellidae. Distribution of these species in Turkey and their host plants are given along with their locality records. 31 species records are new to Balıkesir, and *Bubastia (s.str.) ludviki* Dlabola, 1979 and *Iassus mirabilis* Orosz, 1979 are new records for Turkish fauna.

KEY WORDS: Hemiptera, Auchenorrhyncha, fauna, Kazdağı National Park, Turkey.

Izveček – PREDHODNO POROČILO O FAVNI ŠKRŽATKOV (HEMIPTERA: AUCHENORRHYNCHA) V NARODNEM PARKU KAZDAĞI Z DVEMA NOVIMA NAJDBAMA ZA TURČIJO

Pregledali smo primerke škržatkov, zbrane v letih 2004 in 2005 v Narodnem parku Kazdağı (gora Ida) v severozahodni Turčiji. Našli smo 40 vrst, pripadajočih 9 družinam: 1 vrsta pripada družini Cixiidae, 2 družini Delphacidae, 2 družini Tettigometridae, 1 družini Meenoplidae, 3 družini Issidae, 1 družini Flatidae, 7 družini Cercopidae, 2 družini Membracidae in 21 vrst družini Cicadellidae. Razširjenost teh vrst v Turčiji in njihove hranilne rastline so navedeni poleg podatkov o najdiščih. Podatki o 31 vrstah so novi za Balıkesir, vrsti *Bubastia (s.str.) ludviki* Dlabola, 1979, in *Iassus mirabilis* Orosz, 1979, pa sta prvič zabeleženi v turški favni.

KLJUČNE BESEDE: Hemiptera, Auchenorrhyncha, favna, Narodni park Kazdağı, Turčija.

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Introduction

Turkey's first faunistic records of Auchenorrhyncha were given by Fahringer (1922), Haupt (1930), Kerville (1939), Zachvatkin (1937, 1946), Dlabola (1957, 1971a, 1971b, 1974, 1981, 1982, 1983, 1985a, 1985b, 1986), Linnavuori (1965), Asche (1982), Remane and Hoch (1985), Dworakowska (1970, 1972, 1982) Kalkandelen (1974, 1980, 1985, 1987, 1988, 1989a, 1989b, 1990, 1993, 1994, 2000) and Kartal (1981, 1983, 1985a, 1985b, 1986, 1987, 1988). Lodos and Kalkandelen (1980-1988) compiled the faunistic records of the studies until 1988 and listed 725 species in a preliminary checklist. Later, the studies of Abdul-Nour (1988), Meyer-Arndt (1988, 1991), Kartal and Zeybekoğlu (1992, 1994a, 1994b, 1997), Zeybekoğlu (1996, 1998), Zeybekoğlu and Bulut (2000), Kartal, Zeybekoğlu and Dursun (2001), Başpınar and Uygun (1991a, 1991b, 1991c, 1992a, 1992b), Boulard (1979, 1993), Güçlü and Özbek (1995, 1996), Gnezdilov (2002), Emeljanov (2003), Demir (1998, 2004a, 2004b, 2005a, 2005b, 2006) presented records of 48 additional species, raising the total species number for the country to 773.

Province of Kazdağı National Park (in Balıkesir country), which was selected as the study area, is located in southwest Turkey, between 26° 30' - 27° 00' eastern longitude and 39° 30' - 39° 45' northern latitude. The elevation ranges between 100 m and 1774 m. 26 Auchenorrhyncha species were known in Balıkesir area prior to our study, a compilation of records in the studies of the authors mentioned above.

Material and methods

Field studies were carried out in the years 2004 and 2005. 257 adult Auchenorrhyncha specimens were collected and analyzed. They were collected by sweeping the herbaceous plants with a wood shaft net. The host plants of species collected from only one plant species by wood shaft net were determined. The material is kept dry in the author's collection.

Results

Altogether 40 species were found. Along with their distribution in Turkey and the plants found to be their hosts, the examined material of these species is listed below.

Family: CIXIIDAE SPINOLA, 1839

Hyalesthes obsoletus Signoret, 1866

Material examined: Balıkesir, Kazdağı National Park, Zeytinli, 150 m, 06.06.2005 7♂9♀. On *Vitex agnus-castus*. **Distribution in Turkey:** Adıyaman, Afyon, Ağrı, Ankara, Antalya, Aydın, Balıkesir, Bolu, Burdur, Bursa, Çankırı, Çanakkale, Çorum, Diyarbakır, Düzce, Elazığ, Erzincan, Erzurum, Eskişehir, Gaziantep, Giresun, Hakkari, Iğdır, Isparta, İçel, İstanbul, Kahramanmaraş, Konya, Mardin, Muğla, Rize, Sakarya, Sinop, Sivas, Tokat, Trabzon, Urfa, Van (Fahringer, 1922; Lodos & Kalkandelen, 1980; Hoch & Remane, 1985; Kalkandelen, 2000).

Family: DELPHACIDAE LEACH, 1815

***Kelisia ribauti* Wagner, 1938**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 1000 m, 04.06.2005, 9♂3♀. On *Juncus*. **Distribution in Turkey:** Ankara, Bitlis, Diyarbakır, Erzurum, Hakkari, Siirt, Van (Lodos & Kalkandelen, 1980b; Güçlü, 1996).

***Conomelus odryssius* Dlabola, 1965**

Material examined: Balıkesir, Kazdağı National Park, Tozlu place, 1200 m, 28.08.2004, 3♂29♀; Tozlu place, 1200 m, 05.06.2005, 2♂2♀. On *Juncus*. **Distribution in Turkey:** Konya (Remane & Asche, 1979).

Family: MEENOPLIDAE FIEBER, 1872

***Meenoplus albosignatus* Fieber, 1866**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 800 m, 29.08.2004, 1♂. On *Quercus*. **Distribution in Turkey:** Adıyaman, Ankara, Bolu, Hakkari, Mardin, Muş (Linnavuori, 1965; Lodos & Kalkandelen, 1980c; Demir, 2006).

Family: TETTIGOMETRIDAE GERMAR, 1821

***Tettigometra (s.str.) sulphurea* Mulsant et Rey, 1855**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 1000 m, 04.06.2005, 1♀. It has been collected from weeds in a *Pinus brutia* forest. **Distribution in Turkey:** Artvin, Aydın, Bilecik, Bursa, Diyarbakır, Elazığ, İzmir, Kütahya, Nevşehir, Sakarya, Urfa, Uşak, Van (Lodos & Kalkandelen, 1980c; Demir, 2006).

***Tettigometra (Metroplaca) baranii* (Signoret, 1866)**

Material examined: Balıkesir, Kazdağı National Park, Tozlu place, 1100 m, 24.07.2004, 1♂3♀ YD leg.; Top of Kazdağı, 1700 m, 28.08.2004, 1♂1♀. **Distribution in Turkey:** Ankara, Mardin (Lodos & Kalkandelen, 1980c; Demir, 2006).

Family: ISSIDAE SPINOLA, 1839

***Peltonotellus punctifrons* Horváth 1895**

Material examined: Balıkesir, Kazdağı National Park, Top of Kazdağı, 1700 m, 28.08.2004, 1♂. **Distribution in Turkey:** Ankara, Kırşehir, Yozgat (Dlabola, 1957; Kartal, 1985).

***Bubastia (s.str.) ludviki* Dlabola, 1979**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 800 m, 29.08.2004, 1♂. **Distribution in Turkey:** This is the first record of this species for Turkey.

***Agalmatium bilobum* (Fieber, 1877)**

Material examined: Balıkesir, Kazdağı National Park, Zeytinli, 150 m, 06.06.2005, 1♂1♀. **Distribution in Turkey:** Adana, Adıyaman Afyon, Ankara,

Aydın, Balıkesir, Bilecik, Burdur, Bursa, Çanakkale, Çorum, Denizli, Eskişehir, Gaziantep, Hatay, İzmir, Gümüşhane, Kırklareli, Kırşehir, Kütahya, Malatya, Manisa, Muğla, Sakarya, Sivas, Tekirdağ, Tokat, Uşak, Yozgat (Linnvuori, 1965; Lodos & Kalkandelen, 1981a; Kartal, 1985).

Family: FLATIDAE SPINOLA, 1839

***Phantia subquadrata* (Herrich-Schaeffer, 1838)**

Material examined: Balıkesir, Kazdağı National Park, Zeytinli stream, 150 m, 28.08.2004, 1♀. On *Genista*. **Distribution in Turkey:** Ankara, Aydın, Bilecik, Denizli, Diyarbakır, Edirne, Isparta, İzmir, Manisa, Mardin, Muğla (Lodos & Kalkandelen, 1981b; Demir, 2004b).

Family: CERCOPIDAE LEACH, 1815

***Cercopis intermedia* Kirschbaum, 1868**

Material examined: Balıkesir, Kazdağı National Park, South side, 1200 m, 03.07.2004, 1♀; Tozlu place, 1480 m, 03.07.2004, 1♂ Y.Durmuş leg. **Distribution in Turkey:** Adıyaman, Amasya, Artvin, Ankara, Bitlis, Çanakkale, Diyarbakır, Elazığ, Eskişehir, Gaziantep, Giresun, Hakkari, Hatay, Isparta, İzmir, Kahramanmaraş, Kayseri, Kırklareli, Konya, Kütahya, Mardin, Niğde, Rize, Samsun, Siirt, Trabzon, Urfa, Uşak (Lodos & Kalkandelen, 1981c; Kartal et. al., 1994; Demir, 2006).

***Cercopis vulnerata* Rossi, 1807**

Material examined: Balıkesir, Kazdağı National Park, Tozlu place, 24.07.2004, 2♂1♀; Tozlu place, 03.07.2004, 2♂1♀ Y.Durmuş leg. **Distribution in Turkey:** Bursa, Kocaeli, Sakarya (Lodos & Kalkandelen, 1981c).

***Triecphorella geniculata* (Horvath, 1881)**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 1000 m, 04.06.2005, 1♀. **Distribution in Turkey:** Adana, Kahramanmaraş, Konya, Samsun (Fahringer, 1922; Kartal et. al., 1994).

***Neophilaenus campestris* (Fallén, 1805)**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 1000 m, 04.06.2005, 1♂. **Distribution in Turkey:** Adana Hatay, Adıyaman Ankara, Artvin, Bitlis, Bursa, Çanakkale, Eskişehir, Giresun, İzmir, Kırklareli, Kütahya, Manisa, Muğla, Nevşehir, Samsun, Sinop, Siirt, Trabzon, Van (Linnvuori, 1965; Lodos & Kalkandelen, 1981c; Demir, 2006).

***Neophilaenus minor* (Kirschbaum, 1868)**

Material examined: Balıkesir, Kazdağı National Park, Top of Kazdağı, 1700 m, 28.08.2004, 3♂5♀. **Distribution in Turkey:** Ankara, Konya (Dlabola, 1957; Demir, 2004b, 2006).

***Aphrophora alni* (Fallén, 1805)**

Material examined: Balıkesir, Kazdağı National Park, Tozlu place, 24.07.2004, 1♂; Tozlu place, 23.07.2004, 1♀ Y.Durmuş leg. **Distribution in Turkey:** Afyon, Ankara, Artvin, Aydın, Balıkesir, Bitlis, Bolu, Çanakkale, Çorum, Diyarbakır, Erzincan, Erzurum, Giresun, İstanbul, İzmir, Kayseri, Kırklareli, Konya, Kütahya, Mardin, Muğla, Manisa, Ordu, Rize, Samsun, Sinop, Tekirdağ, Trabzon, Yozga (Linnavuori, 1965; Lodos & Kalkandelen, 1981c; Kartal et. al., 1994; Demir, 2004b, 2006).

***Philaenus spumarius* (Linnaeus, 1758)**

Material examined: Balıkesir, Kazdağı National Park, Tozlu place, 1480 m, 03.07.2004, 15♂20♀ Y.Durmuş leg.; Camp field, 700 m, 06.06.2005, 1♀; Tozlu place, 23.07.2004, 2♂2♀; Tozlu place, 24.07.2004, 3♂6♀; Tozlu place, 1480 m, 03.07.2004, 6♂4♀. **Distribution in Turkey:** Ağrı, Amasya, Ankara, Artvin, Aydın, Balıkesir, Bilecik, Bitlis, Bolu, Bursa, Çanakkale, Elazığ, Erzincan, Erzurum, Giresun, Gümüşhane, Hakkari, İzmir, Kars, Kırklareli, Kocaeli, Kütahya, Malatya, Manisa, Mardin, Muğla, Ordu, Rize, Samsun, Siirt, Sinop, Tekirdağ, Trabzon, Tokat, Van (Linnavuori, 1965; Lodos & Kalkandelen, 1981c; Kartal et. al., 1994; Demir, 2004b, 2006).

Family: MEMBRACIDAE RAFINESQUE, 1815

***Gargara genistae* (Fabricius, 1775)**

Material examined: Balıkesir, Kazdağı National Park, Top of Kazdağı, 1700 m, 28.08.2004, 1♀. **Distribution in Turkey:** Ankara, Aydın, Balıkesir, Çorum, Erzurum, İzmir, Muğla (Lodos & Kalkandelen, 1981c; Demir, 2006).

***Centrotus cornutus* (Linnaeus, 1758)**

Material examined: Balıkesir, Kazdağı National Park, Tozlu place, 1200 m, 28.08.2004, 1♀; Tozlu place, 1200 m, 03.07.2004, 1♂ Y.Durmuş leg. **Distribution in Turkey:** Artvin, Aydın, Bilecik, Bursa, Çorum, Denizli, Erzincan, Edirne, Giresun, İzmir, Kocaeli, Kütahya, Kırklareli, Ordu, Sakarya, Tekirdağ (Lodos & Kalkandelen, 1981c; Demir, 2006).

Family: CICADELLIDAE LATREILLE, 1825

***Iassus mirabilis* Orosz, 1979**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 800 m, 29.08.2004, 1♂1♀. On *Quercus*. **Distribution in Turkey:** This is the first record of this species for Turkey.

***Eupelix cuspidata* (Fabricius, 1779)**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 1000 m, 04.06.2005, 1♂. **Distribution in Turkey:** Adıyaman, Afyon, Ankara, Artvin, Çanakkale, Diyarbakır, Konya, Malatya, Mardin, Niğde, Urfa (Lodos & Kalkandelen, 1982b; Demir, 2006).

***Aphrodes makarovi* Zachvatkin, 1948**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 700 m, 06.06.2005, 3♂. **Distribution in Turkey:** Adana, Ankara (Başpınar & Uygun, 1991; Demir, 2006).

***Alebra albostriella* (Fallén, 1826)**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 800 m, 29.08.2004, 1♂1♀. On *Quercus*. **Distribution in Turkey:** Ankara, Artvin, Bolu, Çorum, Hatay, İzmir, Kayseri, Kocaeli, Ordu (Linnavuori, 1965; Lodos & Kalkandelen, 1983b; Demir, 2006).

***Micantulina (Mulsantina) stigmatipennis* (Mulsant et Rey, 1855)**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 1000 m, 04.06.2005, 1♂2♀. On *Verbascum*. **Distribution in Turkey:** Ankara, Burdur, Isparta, İstanbul, İzmir, Manisa (Lodos & Kalkandelen, 1983b; Demir, 2006).

***Eupteryx gyaurdagicus* Dlabola, 1957**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 1000 m, 04.06.2005, 16♂14♀. On grass with *Mentha*. **Distribution in Turkey:** Ankara, Bolu, Isparta, İzmir, Manisa, Nevşehir, Sinop (Lodos & Kalkandelen, 1984b; Kartal, 1983; Demir, 2006).

***Eupteryx melissae* Curtis, 1837**

Material examined: Balıkesir, Kazdağı National Park, Zeytinli stream, 150 m, 28.08.2004, 4♂. On grass with *Mentha*. **Distribution in Turkey:** Ankara, Kastamonu, Sinop (Lodos & Kalkandelen, 1984b).

***Grypotes puncticollis* (Herrich-Schaeffer, 1834)**

Material examined: Balıkesir, Kazdağı National Park, Top of Kazdağı, 1700 m, 28.08.2004, 1♂; Balıkesir, Kazdağı National Park, Camp field, 800 m, 29.08.2004, 1♀. On *Pinus nigra*. **Distribution in Turkey:** Amasya, Ankara, Çankırı, Ordu, Samsun, Sinop (Kalkandelen, 1974; Lodos & Kalkandelen, 1985; Zeybekoğlu, 1994; Zeybekoğlu, 1998).

***Balclutha rhenana* Wagner, 1939**

Material examined: Balıkesir, Kazdağı National Park, Zeytinli, 150 m, 06.06.2005, 2♂1♀. **Distribution in Turkey:** Erzurum (Lodos & Kalkandelen, 1985b).

***Platymetopius henribauti* Dlabola, 1961**

Material examined: Balıkesir, Kazdağı National Park, Zeytinli, 150 m, 06.06.2005, 1♂; Balıkesir, Kazdağı National Park, Zeytinli stream, 150 m, 28.08.2004, 1♀. **Distribution in Turkey:** Ankara, Konya (Kalkandelen, 1974; Lodos & Kalkandelen, 1986b; Demir, 2006).

***Anoplotettix fuscovenosus* (Ferrari, 1882)**

Material examined: Balıkesir, Kazdağı National Park , Camp field, 1000 m, 04.06.2005, 1♂. **Distribution in Turkey:** Ankara, Bursa, Çorum, Edirne, İzmir, Kırklareli, Manisa, Rize, Sakarya, Samsun, Sinop, Tokat (Lodos & Kalkandelen, 1986b; Kartal & Zeybekoğlu, 1991; Zeybekoğlu, 1998; Demir, 2006).

***Selenocephalus pallidus* Kirschbaum, 1868**

Material examined: Balıkesir, Kazdağı National Park , Zeytinli stream, 150 m, 28.08.2004, 1♀. On *Cistus creticus*. **Distribution in Turkey:** Adana, Ankara, Antalya, Aydın, Bolu, Burdur, Bursa, Çanakkale, Çankırı, Çorum, Denizli, Isparta, İzmir, Kayseri, Kırşehir, Konya, Manisa, Samsun, Sinop, Tokat, Yozgat, (Linnavuori, 1965; Kalkandelen, 1974; Lodos & Kalkandelen, 1986c; Kartal & Zeybekoğlu, 1991; Demir, 2006).

***Hardya anatolica* Zachvatkin, 1946**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 1000 m, 04.06.2005, 1♀. **Distribution in Turkey:** Adıyaman, Ankara, Antalya, Bolu, Elazığ, Erzincan, Isparta, İzmir, Karaman, Kayseri, Kırşehir, Nevşehir, Ordu (Zachvatkin, 1946; Linnavuori, 1965; Kalkandelen, 1974; Lodos & Kalkandelen, 1987; Demir, 2004b, 2006).

***Cicadula (Henriana) lineatopunctata* (Matsumura, 1908)**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 1000 m, 04.06.2005, 3♂. **Distribution in Turkey:** Ankara, Aydın, Bolu, Bursa, Çankırı, Diyarbakır, Düzce, Erzincan, İzmir, Mardin, Sakarya, Sinop, Urfa (Kalkandelen, 1974; Lodos & Kalkandelen, 1987).

***Handianus procerus* (Herrich-Schaeffer, 1835)**

Material examined: Balıkesir, Kazdağı National Park , Top of Kazdağı, 1700 m, 28.08.2004, 1♂3♀. **Distribution in Turkey:** Afyon, Ağrı, Ankara, Antalya, Bitlis, Erzurum, Isparta, İzmir, Kırıkkale, Konya, Malatya, Nevşehir, Niğde, Urfa, Van, Zonguldak (Kalkandelen, 1974; Lodos & Kalkandelen, 1987b; Demir, 2006).

***Euscelis incisus* (Kirschbaum, 1868)**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 800 m, 29.08.2004, 1♂. **Distribution in Turkey:** Ankara, Burdur, Isparta, Eskişehir, Kayseri, Kırşehir (Kalkandelen, 1974; Demir, 2004b, 2006).

***Artianus manderstjernii* (Kirschbaum, 1868)**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 800 m, 29.08.2004, 1♂. **Distribution in Turkey:** Ağrı, Ankara, Balıkesir, Çankırı, Diyarbakır, Gaziantep, İzmir, Kırklareli, Urfa, Van, Zonguldak (Kalkandelen, 1974; Lodos & Kalkandelen, 1987b; Demir, 2004b, 2006).

***Arocephalus (s.str.) longiceps* (Kirschbaum, 1968)**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 700 m, 06.06.2005, 5♂5♀; Camp field, 800 m, 05.06.2005., 2♂4♀; Camp field, 1000 m, 04.06.2005, 1♂5♀. **Distribution in Turkey:** Ankara, Bolu, Erzincan, Hakkari, İzmir, Konya (Lodos & Kalkandelen, 1987c; Kartal & Zeybekoğlu et. al., 2001; Demir, 2006).

***Psammotettix alienus* (Dahlbom, 1850)**

Material examined: Balıkesir, Kazdağı National Park, Zeytinli, 150 m, 06.06.2005, 1♂. **Distribution in Turkey:** Adana, Amasya, Ankara, Balıkesir, Bursa, Diyarbakır, Erzincan, Hakkari, Iğdır, Kastamonu, Konya, Mardin, Muş, Nevşehir, Sakarya, Samsun, Siirt, Sinop, Uşak, Van, Yozgat (Kalkandelen, 1974; Lodos & Kalkandelen, 1987c; Kartal ve Zeybekoğlu, 1991; Kartal & Zeybekoğlu et. al., 2001; Demir, 2004b, 2006).

***Psammotettix confinis* (Dahlbom, 1850)**

Material examined: Balıkesir, Kazdağı National Park, Camp field, 1000 m, 04.06.2005, 5♂3♀. **Distribution in Turkey:** Ağrı, Ankara, Balıkesir, Erzincan, Erzurum, Giresun, Hakkari, Iğdır, Isparta, Ordu, Samsun, Sivas, Van (Kalkandelen, 1974; Lodos & Kalkandelen, 1987c; Kartal ve Zeybekoğlu, 1991; Kartal & Zeybekoğlu et. al., 2001).

***Jassargus (Aurkius) repletus* (Fieber, 1869)**

Material examined: Balıkesir, Kazdağı National Park, Top of Kazdağı, 1700 m, 28.08.2004, 4♂1♀. **Distribution in Turkey:** Amasya, Ordu, Samsun, Sinop, Tokat (Kartal & Zeybekoğlu, 1992).

Discussion

Our study is first contribution to the knowledge of the Auchenorrhyncha fauna of the Kazdağı National Park. Until now, twenty six species have been known from the Balıkesir province including the National Park. Thirty one of forty determined species are new to the Balıkesir province and the number of species known from the research area increased to fifty seven. *Bubastia (s.str.) ludviki* Dlabola, 1979 and *Iassus mirabilis* Orosz, 1979 are first records for the Turkish fauna. Before this study, *Conomelus odryssi* Dlabola, 1965 has been known only from Konya and *Balclutha rhenana* Wagner, 1939 only from Erzurum. Up to now, *Neophilaenus minor* (Kirschbaum, 1868) has been known only from Central Anatolia. We determined its presence also in the Marmara region.

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