

Studies on Delphacidae (Homoptera, Auchenorrhyncha) From Turkey

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Abstract: Between 1987-1993, The Delphacidae fauna of the region of Erzurum and some other provinces was surveyed. The material contains 16 species. Among them, *Eurysa libira* Remane & Asche and *Xanthodelphax xanthus* Vilbaste are new for the fauna of Turkey. This paper includes distributional records on the other species known in Turkey.

Key Words: New record, Homoptera, Auchenorrhyncha, Delphacidae, Distribution, Turkey

Türkiye Delphacidae (Homoptera, Auchenorrhyncha) Faunası Üzerine Çalışmalar

Özet: Çalışmada, 1987-1993 yılları arasında, Erzurum ve diğer bazı illerden toplanan Delphacidae örnekleri incelenmiş ve 16 tür saptanmıştır. *Eurysa libira* Remane & Asche ve *Xanthodelphax xanthus* Vilbaste türleri Türkiye faunası için yeni kayıt olarak tespit edilmiş ve diğer türlerin Türkiye'deki yayılışı ile ilgili ilave kayıtlar verilmiştir.

Anahtar Kelimeler: Yeni kayıt, Homoptera, Auchenorrhyncha, Delphacidae, Yayılış, Türkiye

Introduction

The large surface of land covered by Turkey is subdivided into several climatically distinct regions. This study was mainly conducted in the Erzurum province which has a continental climate regime characterized by long-severe winters and hot-dry summers. However, the presence of high mountains and narrow deep valleys in the region produces a variety of local climates with different ecological conditions. This is the main cause for the richness and diversity of the regional fauna and flora.

Information on Turkish delphacid fauna is limited. Fahringer (1) and Bodenheimer (2) recorded a few species. Dlabola (3, 4) recorded more than 20 species from Turkey. Later, Asche (5) recorded 37 species, nine of which were new for the Turkish fauna. Other papers concentrated on particular groups such as maize-feeding delphacids (6, 7, 8). Finally, existing literature and available material were analyzed by Lodos & Kalkandelen (9, 10), who listed 52 species from Turkey. However, this group can still be regarded as insufficiently investigated. The present paper reports recent findings of Delphacidae in the Erzurum region and some other provinces.

Results

Asiracinae

Asiraca clavicornis (Fabricius, 1794)

Synonymy: *Cicada clavicornis* Fabricius, 1794; *Delphax clavicornis* Fabricius, 1789; *Asiraca clavicornis divisa* Rey, 1891.

Distribution: Afghanistan, Albania, Austria, Belgium, Bulgaria, China (Manchuria, Sinkiang), Cyprus, Czechoslovakia (Bohemia, Moravia, Slovakia), France, Germany, Great Britain (England), Hungary, Ireland, Israel, Italy (also Sardinia and Sicily), Morocco, Netherlands, Poland, Portugal, Romania, Spain, Switzerland, Tunisia, Armenia, Azerbaijan, Georgia, Kazakhstan, Kirghizia, Latvia, Moldavia, s. Russia, Tadzhikistan, Turkmenia, Ukraine, Uzbekistan, Yugoslavia (11).

Distribution in Turkey: Ankara, Çorum, Denizli, İstanbul, İzmir, Konya, Kütahya, Samsun, Sinop, Yozgat (9).

Material examined: AMASYA: Centre, 5.ix.1989, 1♀; ERZURUM: Tortum, Centre, 15.ix.1989, 1♂.

Kelisiinae

Kelisia ribauti Wagner, 1938 (Mediterranean form)

Distribution: Afghanistan, Austria, Azores, Canary Is., Cyprus, Czechoslovakia (Bohemia, Moravia), Denmark, Finland, France, Germany, Great Britain (England) Iraq, Madeira Archipelago, Morocco, Poland, Portugal, Romania, Sweden, Turkey (Anatolia), Altai Mts., Estonia, Georgia, Kazakhstan, Kirghizia, Latvia, n. Russia, Tadzhikistan, Uzbekistan (11).

Distribution in Turkey: Ankara, Diyarbakır, Hakkari, Konya, Siirt, Van (9).

Material examined: ERZURUM: Aşkale, Çiftlik, 9.vii.1989, 3♂♂, 1♀; Kargapazarı Mts., 2700m, 1♀; Oltu, Centre, 13.ix.1989, 1♂, 1♀; Tortum, Centre, 15.ix.1989, 4♂♂, 2♀♀, 6.vii.1992, 1♂, 1♀; Kaledibi, 15.ix.1990, 1♀, 12.vii.1993, 1♀; Uzundere, Ulubah, 31.v.1991, 1♀; BITLIS: Centre, 29.v.1989, 2♂♂; Kireçtaşı, 25.v.1989, 1♀.

Stenocraninae

Stenocranus minutus (Fabricius, 1787)

Synonymy: *Fulgora minuta* Fabricius, 1787; *Delphax minuta* Fabricius, 1803; *Asiraca minuta* Latreille, 1804; *Stenocarenus* (sic) *minutus* Shalberg, 1871; *Delphax lineola* Germar, 1818.

Distribution: Algeria, Austria, Belgium, Bulgaria, Czechoslovakia (Bohemia, Moravia, Slovakia), Denmark, Finland, France, Germany, Great Britain (England) Hungary, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Romania, Sweden, Switzerland, Tunisia, Armenia, Azerbaijan, Estonia, Kazakhstan, Kirghizia, Latvia, Moldavia, m. and s. Russia, Ukraine, Uzbekistan, n. Yugoslavia (11).

Distribution in Turkey: Ankara (9).

Material examined: BITLIS: Centre, 29.vii.1989, 1♀.

Chlorioninae

Chloriona unicolor (Herrich-Schäffer, 1835)

Synonymy: *Delphax unicolor* Herrich-Schäffer, 1835; *Chloriona oranensis* Matsumura, 1910; *Chloriona canariensis* Lindberg, 1954; *Chloriona edwardsi* Le Quesne, 1960.

Distribution: Austria, France, Germany, Great Britain (England), Hungary, [?] Iraq, Ireland, Italy (also Sardinia), Tunisia, Georgia, Kazakhstan, m. and s. Russia, Ukraine, Uzbekistan, Yugoslavia (11).

Distribution in Turkey: Ankara (9).

Material examined: ERZURUM: Aşkale, Küçükgeçit, 7.ix.1989, 1♀; Horasan, Centre, 21.vi.1989, 1♀; Nar-

man, Centre, 27.vii.1989, 1♂; Oltu, Centre, 13.ix.1992, 1♀; Olur, Coşkunlar, 26.vii.1986, 2♂♂; Pasinler, Centre, 8.viii.1991, 1♂; Pazaryolu, Centre, 2.vii.1989, 1♂.

Stirominae

Eurya libira Remane & Asche, 1986

Distribution: Iraq (12).

This species is a new record for the Turkish fauna.

Material examined: BITLIS: Centre, 29.v.1989, 1♂, 1♀.

Criomorphae

Dicranotropis hamata (Boheman, 1847)

Synonym: *Delphax hamata* Boheman, 1847

Distribution: Algeria, Austria, Belgium, Bulgaria, Czechoslovakia (Bohemia, Moravia, Slovakia), Finland, France, Germany, Great Britain (England, Scotland, Wales), Hungary, Ireland, Italy, Netherlands, Norway, Poland, Romania, Spain, Sweden, Tunisia, Altai Mts., Estonia, Georgia, Kazakhstan, Latvia, Moldavia, m. and s. Russia, m. Siberia, Ukraine Yugoslavia (11).

Distribution in Turkey: Bolu (5).

Material examined: ERZURUM: Narman, Kireçli, 27.vii.1989, 1♀.

Falcotoya minuscula (Horváth, 1897)

Synonymy: *Delphax minuscula* Horváth, 1897; *Delphacodes minuscula* Metcalf, 1946; *Calligypona minuscula* Diabola, 1954; *Metadelphax minuscula* Wagner, 1963; *Toya minuscula* Diabola 1971.

Distribution: Afghanistan, Czechoslovakia (Slovakia), Egypt, Hungary, Iran, Romania, Turkey (Anatolia), Armenia, Kazakhstan, Tadzhikistan, Yugoslavia (11).

Distribution in Turkey: Ankara, Adana, Erzurum, Içel (9).

Material examined: ERZURUM: Yeşilyayla, 12.vii.1990, 1♂, 3.vii.1992, 1♂; Hınıs, Bellitaş, 28.iv.1989, 2♂♂; Horasan, Centre, 19.vii.1990, 2♂♂; Oltu, Dağdibi, 13.ix.1989, 1♂; Olur, Ormanağzı, 26.vii.1989, 1♂; Şenkaya, Penek valley, 25.vii.1989, 2♂♂; Tortum, Centre, 14.ix.1989, 1♂, 10.vii.1993, 1♂; Y.Sivri, 27.vii.1989, 1♂; ERZURUM: Altıntepe, 16.vi.1984, 1♂; IĞDIR: Centre, 22.vi.1989, 1♂.

Javesella dubia (Kirschbaum, 1868)

Synonymy: *Delphax dubia* Kirschbaum, 1868; *Liburnia dubia* Fieber, 1872; *Weidnerianella dubia* Wagner,

1963; *Delphax herrichii* Kirschbaum, 1868; *Delphax nitidipennis* Kirschbaum, 1868; *Liburnia pargasensis* Reuter, 1880; *Liburnia difficilis* Edwards, 1888; *Liburnia obscurella* Haupt, 1935.

Distribution: Austria, Azores, Belgium, Bulgaria, Cyprus, Czechoslovakia (Bohemia, Moravia, Slovakia), Denmark, Finland, France, Germany, Great Britain (England, Scotland), Ireland, Italy, Madeira Archipelago, Morocco, Netherlands, Norway, Poland, Romania, Sweden, Altai Mts., Armenia, Estonia, Kazakhstan, Latvia, Moldavia, n. and m. Russia, Ukraine, Uzbekistan (11).

Distribution in Turkey: Ankara (9).

Material examined: ERZURUM: S. Kesik, 5.viii.1989, 1♂; Aşkale, Merdiven, 7.ix.1989, 1♂; Oltu, Centre, 13.ix.1989, 2♂♂, 1♀.

Javesella pellucida (Fabricius, 1794)

Synonymy: *Fulgora pellucida* Fabricius, 1794; *Delphax pellucida* Fabricius, 1803; *Liburnia pellucida* Scott, 1870; *Delphacodes pellucida* Muir & Giffard, 1924; *Weidnerianella pellucida* Wagner, 1963; *Fulgora striata* Fabricius, 1794; *Fulgora marginata* Fabricius, 1794; *Delphax dispar* Fallén, 1806; *Delphax sturalis* Curtis, 1837; *Delphax herrichii* Kirschbaum, 1868; *Delphax ochroleuca* Kirschbaum, 1868; *Delphax frontalis* Kirschbaum, 1868; *Liburnia flavipennis* J. Sahlberg, 1871; *Delphax stejnegeri* Ashmead, 1899.

Distribution: Algeria, Austria, Azores, Belgium, Czechoslovakia (Bohemia, Moravia, Slovakia), Denmark, Finland, France, Germany, Great Britain (England, Scotland, Wales), Hungary, Ireland, Iceland, Italy, Libya, Mongolia, Morocco, Netherlands, Norway, Poland, Romania, Spain, Sweden, Switzerland, Turkey (Anatolia), Altai Mts., Estonia, Georgia, Kazakhstan, Kirghizia, Latvia, Moldavia, Russia (Kamchatka, Kurile Is., Maritime Territory, n., m. and s. Russia, Sakhalin, Siberia), Ukraine, Uzbekistan, Yugoslavia (11).

Distribution in Turkey: Ankara, Diyarbakır, Konya, Sinop (9).

Material examined: ERZURUM: Centre, 27.vii.1989, 1♂, 1♀, 28.vii.1991, 1♂, Mürdümük, 5.viii.1989, 1♀, S.Kesik, 5.vii.1989, 1♂, 2♀♀, Söğütlü, 5.viii.1989, 1♀; Aşkale, Çiftlik, 9.viii.1989, 2♂♂, 2♀♀, 13.viii.1992, 1♂, Merdiven, 9.viii.1989, 1♀, Ortabahçe, 7.ix.1989, 1♂; Hınıs, Bellitaş, 11.iv.1989, 1♂, 29.iv.1989, 5♂♂, 1♀; Horasan, Centre, 21.vi.1989, 7♂♂; Ispir, Centre, 3.viii.1989, 2♀♀; Narman, Centre, 27.vii.1989, 2♀♀; Oltu, Centre, 13.ix.1989, 1♂, 3♀♀, 21.vii.1991, 1♀, Dağdibi, 13.ix.1989, 2♀♀; Palandöken Mts., 24.viii.1989,

2200m, 1♀; Tortum, Centre, 14.viii.1989, 1♂, 1♀, 15.ix.1989, 2♀♀, 25.ix.1989, 1♀, 31.viii.1992, 1♀, Kaledibi, 15.ix.1989, 4♂♂; BİTLİS: Kireçtaşı, 25.v.1989, 1♀; KAHRAMANMARAŞ: Afşin, 27.vii.1991, 1♀.

Laodelphax striatellus (Fallen, 1826)

Synonymy: *Delphax striatella* Fallen, 1826; *Liburnia striatella lateralis* Fieber, 1879; *Delphax striatella firmbriata* Rey, 1894; *Delphacodes striatella reyana* Metcalf, 1943; *Liburnia devastans* Matsumura, 1900; *Liburnia nipponica* Matsumura, 1900; *Liburnia minonensis* Matsumura, 1900; *Liburnia giffuensis* Matsumura, 1900; *Liburnia akashiensis* Matsumura, 1900; *Liburnia maikoensis* Matsumura, 1900; *Liburnia niveopicta* Haupt, 1927; *Liburnia marginata* Haupt, 1935; *Liburnia haupti* Lindberg, 1936.

Distribution: Afghanistan, Albania, Algeria, Austria, Bulgaria, Canary Is., China (Manchuria, Shansi), Czechoslovakia (Bohemia, Moravia, Slovakia), Finland, France, Germany, Great Britain (England), Hungary, Iran, Iraq, Israel, Italy (Also Sardinia and Sicily), Japan (Hokkaido, Honshu, Kyushu, Shikoku), Korean Peninsula, Lebanon, Madeira Archipelago, Mongolia, Netherlands, Poland, Portugal, Romania, Spain, Sweden, Tunisia, Turkey (Anatolia), Altai Mts., Armenia, Azerbaijan, Estonia, Georgia, Kazakhstan, Kirghizia, Latvia, Moldavia, Russia (Kurile Is., Maritime Territory, n., m. and s. Russia, w. Siberia), Tadzhikistan, Ukraine, Uzbekistan, Yugoslavia; [Oriental region] (11).

Distribution in Turkey: Adana, Adıyaman, Ankara, Bitlis, Antalya, Diyarbakır, Eskişehir-Bilecik, Içel, İzmir, Malatya, Muğla, Niğde, Siirt, Şırnak (9).

Material examined: ERZURUM: Centre, 1.vii.1986, 1♀, 30.6.1989, 2♂♂, 1.viii.1990, on *M. sativa*, 4♂♂, 23.vii.1991, 2♂♂, 1♀, 30.vii.1992, 2♂♂, 3♀♀, 15.vii.1993, 1♂, 1♀, S.Kesik, 5.vii.1989, 1♂, 1♀, Söğütlü, 5.vii.1989, 1♂, 2♀♀; Aşkale, Çiftlik, 9.viii.1989, 6♂♂, 1♀, Küçükgeçit, 7.ix.1989, 1♂, Merdiven, 7.ix.1989, 2♂♂, 3♀♀, Ortabahçe, 7.ix.1989, 2♂♂, 1♀; Ispir, Centre, 3.vii.1989, 4♂♂, 24.vii.1991, 1♂, 21.vii.1992, 1♀, M.Köprübaşı, 2.vii.1989, 1♀, 2.vii.1989, 2♂♂, 24.vii.1991, 1♀, Özbağ, 18.vii.1989, 3♂♂, 3.viii.1989, 10♂♂, 3♀♀, 21.vii.1992, 2♂♂; Narman, Centre, 27.vii.1989, 4♂♂, 2♀♀, Beyler, 27.vii.1989, 1♂, 1♀, Kireçli Mt., 27.vii.1989, 2400m, 1♂; Oltu, Centre, 13.ix.1989, on *Beta* sp., 12♂♂, 3♀, 27.vii.1992, 3♂♂, 1♀, Ballica, 25.vii.1989, 1♀, Dağdibi, 13.ix.1989, 10♀♀, Tuzluca, 15.ix.1989, 7♂♂, 1♀, Yolboyu, 13.ix.1989, 1♂.

1963; *Delphax herrichii* Kirschbaum, 1868; *Delphax nitidipennis* Kirschbaum, 1868; *Liburnia pargasensis* Reuter, 1880; *Liburnia difficilis* Edwards, 1888; *Liburnia obscurella* Haupt, 1935.

Distribution: Austria, Azores, Belgium, Bulgaria, Cyprus, Czechoslovakia (Bohemia, Moravia, Slovakia), Denmark, Finland, France, Germany, Great Britain (England, Scotland), Ireland, Italy, Madeira Archipelago, Morocco, Netherlands, Norway, Poland, Romania, Sweden, Altai Mts., Armenia, Estonia, Kazakhstan, Latvia, Moldavia, n. and m. Russia, Ukraine, Uzbekistan (11).

Distribution in Turkey: Ankara (9).

Material examined: ERZURUM: S. Kesik, 5.viii.1989, 1♂; Aşkale, Merdiven, 7.ix.1989, 1♂; Oltu, Centre, 13.ix.1989, 2♂♂, 1♀.

Javesella pellucida (Fabricius, 1794)

Synonymy: *Fulgora pellucida* Fabricius, 1794; *Delphax pellucida* Fabricius, 1803; *Liburnia pellucida* Scott, 1870; *Delphacodes pellucida* Muir & Giffard, 1924; *Weidnerianella pellucida* Wagner, 1963; *Fulgora striata* Fabricius, 1794; *Fulgora marginata* Fabricius, 1794; *Delphax dispar* Fallén, 1806; *Delphax sturalis* Curtis, 1837; *Delphax herrichii* Kirschbaum, 1868; *Delphax ochroleuca* Kirschbaum, 1868; *Delphax frontalis* Kirschbaum, 1868; *Liburnia flavipennis* J. Sahlberg, 1871; *Delphax stejnegeri* Ashmead, 1899.

Distribution: Algeria, Austria, Azores, Belgium, Czechoslovakia (Bohemia, Moravia, Slovakia), Denmark, Finland, France, Germany, Great Britain (England, Scotland, Wales), Hungary, Ireland, Iceland, Italy, Libya, Mongolia, Morocco, Netherlands, Norway, Poland, Romania, Spain, Sweden, Switzerland, Turkey (Anatolia), Altai Mts., Estonia, Georgia, Kazakhstan, Kirghizia, Latvia, Moldavia, Russia (Kamchatka, Kurile Is., Maritime Territory, n., m. and s. Russia, Sakhalin, Siberia), Ukraine, Uzbekistan, Yugoslavia (11).

Distribution in Turkey: Ankara, Diyarbakır, Konya, Sinop (9).

Material examined: ERZURUM: Centre, 27.vii.1989, 1♂, 1♀, 28.vii.1991, 1♂, Mürdümük, 5.viii.1989, 1♀, S.Kesik, 5.vii.1989, 1♂, 2♀♀, Söğütlü, 5.viii.1989, 1♀; Aşkale, Çiftlik, 9.viii.1989, 2♂♂, 2♀♀, 13.viii.1992, 1♂, Merdiven, 9.viii.1989, 1♀, Ortabağçe, 7.ix.1989, 1♂; Hınıs, Bellitaş, 11.iv.1989, 1♂, 29.iv.1989, 5♂♂, 1♀; Horasan, Centre, 21.vi.1989, 7♂♂; İspir, Centre, 3.viii.1989, 2♀♀; Narman, Centre, 27.vii.1989, 2♀♀; Oltu, Centre, 13.ix.1989, 1♂, 3♀♀, 21.vii.1991, 1♀, Dağdibi, 13.ix.1989, 2♀♀; Palandöken Mts., 24.viii.1989,

2200m, 1♀; Tortum, Centre, 14.viii.1989, 1♂, 1♀, 15.ix.1989, 2♀♀, 25.ix.1989, 1♀, 31.viii.1992, 1♀, Kaledibi, 15.ix.1989, 4♂♂; BITLİS: Kireçtaşı, 25.v.1989, 1♀; KAHRAMANMARAŞ: Afşin, 27.vii.1991, 1♀.

Laodelphax striatellus (Fallen, 1826)

Synonymy: *Delphax striatella* Fallen, 1826; *Liburnia striatella lateralis* Fieber, 1879; *Delphax striatella fibrata* Rey, 1894; *Delphacodes striatella reyna* Metcalf, 1943; *Liburnia devastans* Matsumura, 1900; *Liburnia nipponica* Matsumura, 1900; *Liburnia minonensis* Matsumura, 1900; *Liburnia giffuensis* Matsumura, 1900; *Liburnia akashiensis* Matsumura, 1900; *Liburnia maikoensis* Matsumura, 1900; *Liburnia niveopicta* Haupt, 1927; *Liburnia marginata* Haupt, 1935; *Liburnia haupti* Lindberg, 1936.

Distribution: Afghanistan, Albania, Algeria, Austria, Bulgaria, Canary Is., China (Manchuria, Shansi), Czechoslovakia (Bohemia, Moravia, Slovakia), Finland, France, Germany, Great Britain (England), Hungary, Iran, Iraq, Israel, Italy (Also Sardinia and Sicily), Japan (Hokkaido, Honshu, Kyushu, Shikoku), Korean Peninsula, Lebanon, Madeira Archipelago, Mongolia, Netherlands, Poland, Portugal, Romania, Spain, Sweden, Tunisia, Turkey (Anatolia), Altai Mts., Armenia, Azerbaijan, Estonia, Georgia, Kazakhstan, Kirghizia, Latvia, Moldavia, Russia (Kurile Is., Maritime Territory, n., m. and s. Russia, w. Siberia), Tadzhikistan, Ukraine, Uzbekistan, Yugoslavia; [Oriental region] (11).

Distribution in Turkey: Adana, Adıyaman, Ankara, Bitlis, Antalya, Diyarbakır, Eskişehir-Bilecik, İçel, İzmir, Malatya, Muğla, Niğde, Siirt, Şırnak (9).

Material examined: ERZURUM: Centre, 1.vii.1986, 1♀, 30.6.1989, 2♂♂, 1.viii.1990, on *M. sativa*, 4♂♂, 23.vii.1991, 2♂♂, 1♀, 30.vii.1992, 2♂♂, 3♀♀, 15.vii.1993, 1♂, 1♀, S.Kesik, 5.vii.1989, 1♂, 1♀, Söğütlü, 5.vii.1989, 1♂, 2♀♀; Aşkale, Çiftlik, 9.viii.1989, 6♂♂, 1♀, Küçükgeçit, 7.ix.1989, 1♂, Merdiven, 7.ix.1989, 2♂♂, 3♀♀, Ortabağçe, 7.ix.1989, 2♂♂, 1♀; İspir, Centre, 3.vii.1989, 4♂♂, 24.vii.1991, 1♂, 21.vii.1992, 1♀, M.Köprübaşı, 2.vii.1989, 1♀, 2.vii.1989, 2♂♂, 24.vii.1991, 1♀, Özbağ, 18.vii.1989, 3♂♂, 3.viii.1989, 10♂♂, 3♀♀, 21.vii.1992, 2♂♂; Narman, Centre, 27.vii.1989, 4♂♂, 2♀♀, Beyler, 27.vii.1989, 1♂, 1♀, Kireçli Mt., 27.vii.1989, 2400m, 1♂; Oltu, Centre, 13.ix.1989, on *Beta* sp., 12♂♂, 3♀, 27.vii.1992, 3♂♂, 1♀, Ballica, 25.vii.1989, 1♀, Dağdibi, 13.ix.1989, 10♀♀, Tuzluca, 15.ix.1989, 7♂♂, 1♀, Yolboyu, 13.ix.1989, 1♂,

12.vii.1991, 1♀; Olur, Coşkunlar, 26.vii.1989, 1♂; Palandöken Mts., 24.vii.1989, 2400m, 4♂♂, 2♀♀; Pasinler, 1.vii.1986, 3♂♂; Pazaryolu, Centre, 2.vi.1989, 2♂♂, 12.vii.1990, 2♀♀, 7.viii.1992, 2♂♂, 5♀♀; Şenkaya, Penek valley, 25.vii.1989, 5♂♂, 4♀♀; Tortum, Centre, 27.vii.1989, 1♂, 14.vii.1991, 10♂♂, 3♀♀, Bahçeli, 15.ix.1989, 1♂, Kaledibi, 15.ix.1989, 1♂, 31.viii.1992, 1♂, Tortum-kale, 15.ix.1989, 1♂; ANKARA: Centre, 3.vii.1993, 1♀; BITLIS: Centre, 29.v.1989, 2♂♂, Kireçtaşı, 28.v.1989, 1♂, 1♀; ERZINCAN: Centre, 13.vi.1984, 3♀♀; İĞDIR: Centre, 22.vii.1989, on *Zea* sp., 1♂, 1♀, Küllük, 26.vii.1991, 1♀; İÇEL: Erdemli, 21.vii.1992, 1♂; KAHRAMANMARAŞ: Afşin, 20.vii.1991, 1♂, 21.viii.1991, 7♂♂, 15♀♀; KARS: Centre, 21.vii.1992, 2♀♀; Çıldır, 11.vi.1992, 1♀; ORDUR: Centre, 14.vii.1991, 1♂, Gülyalı, Turnasuyu, 16.vii.1991, 1♂, Ulubey, 4.vii.1991, 2♂♂, 1♀; Ünye, 23.vii.1991, 1♂, 1♀, 18.vii.1991, 1♀; RİZE: Centre, 7.ix.1992, 1♂.

***Muirodelphax aubei* (Perris, 1857)**

Synonymy: *Delphax aubei* Perris, 1857; *Delphax cognata* Fieber, 1866; *Delphax protrusa* Fieber, 1866; *Delphax obsoleta* Kirschbaum, 1868; *Delphax obscurinervis* Kirschbaum, 1868.

Distribution: Afghanistan, Austria, Belgium, Bulgaria, Czechoslovakia (Bohemia, Moravia, Slovakia), Denmark, France, Germany, Great Britain (England, Scotland, Wales), Ireland, Italy, Hungary, Mongolia, Netherlands, Poland, Portugal, Sweden, Tunisia, Turkey (Anatolia), Estonia, Georgia, Kazakhstan, Kirghizia, Moldavia, Tadzhikistan, Ukraine, Uzbekistan, Yugoslavia (11).

Distribution in Turkey: Ankara, Erzurum, Izmir (9).

Material examined: ERZURUM: Centre, 26.vii.1983, 2♂♂, 2♀♀, 19.vii.1989, 1♂, 11.vii.1989, 4♂♂, 23.vii.1991, 2♀♀, 28.viii.1991, 1♂; Narman, Centre, 27.vii.1989, 1♀; Oltu, Centre, 13.ix.1989, 1♂, 1♀, 17.vii.1992, 1♀, Ballica, 24.vii.1989, 2♂♂; Pasinler, Centre, 25.vii.1985, 1♂, Çöğender, 8.ix.1989, 1♂; Tortum, Centre, 27.vii.1989, 1♂, 31.viii.1992, 1♂.

***Sogatella vibix* (Haupt, 1927)**

Synonymy: *Liburnia vibix* Haupt, 1927; *Calligypona vibix* Linnavuori, 1962; *Sogatella suezensis* Linnavuori, 1964; *Sogatella catoptron* Fennah, 1963; *Sogatella diachenhea* Kuoh, 1977; *Delphacodes dogensis* Ishihara, 1952; *Delphacodes longifurcifera* Esaki & Ishihara, 1947; *Sogatella longifurcifera* Fennah, 1963; *Liburnia*

matsumurana Metcalf, 1943; *Sogatella matsumurana* Nast, 1975; *Delphacodes panicicola* Ishihara, 1949; *Sogatella panicicola* Fennah, 1963; *Sogatella parakolophon* Linnavuori, 1973.

Distribution: Widely distributed in s. Europe, Afro-tropical Region, Oriental Region, Australia, Pacific (13).

Distribution in Turkey: Adıyaman, Amasya, Diyarbakır, Elazığ, Gaziantep, İçel, Izmir, Karaman, Konya, Mardin, Nevşehir, Siirt, Şanlıurfa (9).

Material examined: ERZURUM: Aşkale, Küçükgeçit, 7.ix.1989, 1♂; Oltu, Centre, 13.ix.1989, 5♂♂, 2♀♀, 13.viii.1993, 2♂♂, 1♀, Dağdibi, 13.ix.1989, 8♂♂, 2♀♀, 2.ix.1992, 2♂♂, 2♀♀; Pasinler, Centre, 1.vii.1986, 3♂♂, Porsuk, 8.ix.1989, 1♂, 1♀; Tortum, 14.ix.1989, 2♂♂, 1♀.

***Toya propinqua* (Fieber, 1866)**

Synonymy: *Delphax propinqua* Fieber, 1866; *Delphax hamatula* Kirschbaum, 1868; *Liburnia terminalis* Van Duzee, 1907; *Liburnia tuckeri* Van Duzee, 1912; *Delphacodes subfusca* Muir, 1919; *Delphax cataniae* Matsumura, 1910; *Delpax nigrifrons* Matsumura, 1910; *Delphacodes sihirozui* Ishihara, 1949.

Distribution: Afghanistan, Albania, Algeria, Austria, Bulgaria, Canary Is., Cyprus, Czechoslovakia (Bohemia, Moravia, Slovakia), Egypt, France, Germany, Hungary, Iran, Iraq, Israel, Italy (also Sicily), Japan (Honshu), Jordan, Libya, Madeira Archipelago, Morocco, Poland, Portugal, Romania, Spain, Spanish Sahara, Tunisia, Turkey (Anatolia), Armenia, Georgia, Kazakhstan, Kirghizia, Moldavia, s. Russia, Tadzhikistan, Uzbekistan, Yugoslavia; [Ethiopian Region, Nearctic Region and Oriental Region] (11).

Distribution in Turkey: Afyon, Ankara, Antalya, Adana, Hatay, Isparta, İçel (9).

Material examined: ERZURUM: Oltu, Dağdibi, 13.ix.1989, 1♂, Tuzluca, 13.ix.1989, 1♂; ORDU: Korgan, 6.vii.1991, 1♀.

***Unkanodes tanasijevici* (Dlabola, 1965)**

Synonymy: *Elymodelphax tanasijevici* Dlabola, 1965; *Ribautodelphax notabilis* Logvinenco, 1970; *Calligypona zeravshanica* Dubovsky

Distribution: s. Russia, Ukraine, Greece, Yugoslavia (5).

Distribution in Turkey: Ankara, Konya (5).

Material examined: ERZURUM: Centre, 24.vii.1986, 1♂, 1.viii.1986, 3♂♂, 2♀♀, 1.viii.1989, 1♂.

23.viii.1989, 1♀, 31.vii.1990, 1♀, 1.viii.1990, 1♂, 1♀, 23.vii.1991, 1♂, 30.vii.1992, 1♀, 15.vii.1993, 1♂, S.Kesik, 5.viii.1989, 1♂, Söğütlü, 5.viii.1989, 1♀; Aşkale, Ortabahçe, 7.ix.1989, 1♂, 1♀; Hınıs, Bellitaş, 28.iv.1989, 5♂♂; Narman, Centre, 27.vii.1989, 3♂♂, 1♀, Beyler, 27.vii.1989, 5♂♂, 3♀♀, Demirdağ, 27.vii.1989, 1♂; Ispir, Centre, 3.viii.1989, 2♂♂, 2♀♀, 24.vii.1991, 1♀, 21.viii.1992, 1♀; Köprüköy, Centre, 2.vii.1984, 1♂; Oltu, Centre, 21.viii.1988, 1♂, 13.ix.1989, 2♂♂, 1♀, Ballıca, 24.vii.1989, 14♂♂, 2♀♀, 12.vii.1991, 2♂♂, 15.viii.1991, 1♀, 2.ix.1992, 1♂, 1♀, Çamlıbel, 24.vii.1989, 1♂, Dağdibi, 13.ix.1989, 4♂♂, Kaleboğazi, 24.vii.1989, 4♂♂, 2♀♀, 15.viii.1991, 1♂, Tuzluca, 13.viii.1989, 2♂♂, 2.ix.1992, 1♂, Yolboyu, 13.ix.1989, 1♂, 12.vii.1991, 1♀; Olur, Çoşkunlar, 26.vii.1989, 2♂♂; Pasinler, Centre, 25.vii.1983, 2♂♂, 1.viii.1986, 3♂♂, 16♀♀, 8.vii.1986, 2♀♀; Pazaryolu, Centre, 24.vii.1986, 1♀, 2.vi.1989, 1♀, 2.vii.1989, 1♂, 21.vii.1992, 1♀; Tortum, Kaledibi, 15.ix.1989, 1♂, Y.Sivri, 27.vii.1989, 6♂♂, 2♀♀, 31.viii.1992, 2♂♂; Şenkaya, Gözalan, 30.iv.1992, 1♂, Penek valley, 25.vii.1989, 2♂♂; ORDU: Korgan, 6.viii.1991, 2♂♂.

Xanthodelphax xanthus Vilbaste, 1965

Synonym: *Xanthodelphax soosi* Nast, 1966

Distribution: Poland, Altai Mts., Kazakhstan (11).

This species is a new record for the Turkish fauna.

Material examined: ERZURUM: Horasan, Centre, 21.vi.1989, 1♂.

Delphacinae

Delphax crassicornis (Panzer, 1796)

Synonymy: *Cicada crassicornis* Panzer, 1796; *Cicada dubia* Panzer, 1796; *Asiraca grisea* Latreille, 1804.

Distribution: Austria, Belgium, Czechoslovakia (Bohemia), Denmark, Finland, Germany, Hungary, Italy (also Sicily), Japan (Hokkaido, Honshu, Kyushu), Netherlands, Poland, Romania, Spain, Sweden, Tunisia, Azerbaijan, Estonia, Kazakhstan, Kirghizia, Latvia, n. and m. Russia, Tadzhikistan, Ukraine, Yugoslavia (11).

Distribution in Turkey: Diyarbakır, Erzurum (9).

Material examined: ERZURUM: Oltu, Centre, 29.vii.1989, 1♀; Pasinler, Centre, 14.vii.1986, 1♂.

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