

Orthoptera Fauna of Aksaray and Konya Province in Middle Anatolia of Turkey

Abbas Mol^{1,2}

¹Health Academy, Emergency Aid and Disaster Management Department, Aksaray University, Aksaray/Turkey

²Science and Technology, Application and Research Center, Aksaray University, Aksaray/Turkey
E-mail: abbasmol19@gmail.com

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Abstract

In this study, the specimens which were reported previous studies and collected by author belonging to families Tettigonidae, Gryllidae, Trigonidiidae, Gryllotalpidae, Rhaphdophoridae, Tridactylidae, Tetrigidae, Pyrgomorphidae, Pamphagidae and Acrididae (Orthoptera) were evaluated which collected from Aksaray and Konya province of Turkey. The study area represented 10 family, 20 subfamily, 54 genera, and 109 taxa, species-subspecies level, have been identified from the study material.

Keywords: Orthoptera, distribution, faunistics, Aksaray, Konya, Turkey

Türkiye'nin Orta Anadolu Bölgesinde Aksaray ve Konya İli Orthoptera Faunası

Özet

Bu çalışmada, Aksaray ve Konya illerinden daha önceki çalışmalarda rapor edilen ve yazar tarafından toplanan Tettigonidae, Gryllidae, Trigonidiidae, Gryllotalpidae, Rhaphdophoridae, Tridactylidae, Tetrigidae, Pyrgomorphidae, Pamphagidae ve Acrididae familyalarına ait Orthoptera örnekleri değerlendirilmiştir. Çalışma alanında 10 familya, 20 altfamilya, 54 cins ve bu cinslere ait tür ve alttür seviyesinde 109 taksonun dağılım gösterdiği belirlenmiştir.

Anahtar Kelimeler: Orthoptera, Dağılım, faunistik, Aksaray, Konya, Türkiye

Introduction

Orthoptera contains 27.080 species in the world and most of them are distribution temperate area (Harz, 1975; Bei-Bienko and Mistshenko, 1951; Demirsoy, 1992; Cigliano et. al., 2018). The order Orthoptera represented tree suborder in the world and these are: Caelifera, Ensifera and Titanoptera (Cigliano et. al. 2018). So far, previous studies revealed that 721 taxa distribution belonging to first two suborder in Turkey (Unal 2017a).

In order to determine Turkey Orthoptera species belonging to two suborder, distinct taxa or faunistic studies have been carried out (Uvarov, 1934; Gümüşsoy, 1976; Demirsoy, 1977; Güneş, 1984; Çıplak, 1999, 2004; Sevgili and Çıplak, 2000; Çıplak et. al., 2005; Unal, 2010, 2011, 2017b; Taylan et. al., 2012, 2014; Mol and Zeybekoğlu 2013; Mol et. al., 2003, 2014, 2016; Şirin et. al., 2011, 2014, 2017).

When considering faunistic studies; Salman (1978) reported that 155 taxa distribution in Ağrı, Kars, and Artvin Province; Gunes (1984) reported that 172 taxa distribution in East Mediterranean region; Demirsoy (1975) reported that 116 taxa distribution in Erzurum and surroundings; Çıplak (1992) reported that 118 taxa distribution in Malatya and surroundings; Naskrecki and Ünal (1995) reported that 110 taxa Hatay and surroundings; Sevgili and Çıplak (2000) reported that 86 taxa distribution in Urfa and surroundings. But extensive studies have not been carried out except a few studies on Orthoptera species in Central Anatolia Region of Turkey.

In this study, the specimens which were reported previous studies and collected by author belonging to Orthoptera from Aksaray and Konya provinces of Turkey were evaluated.

Material and Method

The research material forms Orthoptera taxa, which were collected from previous records and new data collected by the author in the study area. The samples collected by the author were diagnosed and evaluated by known methods (Mol, 2007; Mol et. al., 2014, 2016, etc.). Cigliano et. al. (2018) followed to Orthoptera systematics. The following format is given to information of the taxon: Province (city): town, village (and of areas), altitude, coordinates (If present), collection date, ♂ and ♀ specimen number and the end collector(s). If the subbited taxon belonging to previous records, the refecence is given after the information of the taxon.

Results

Ordo: Orthoptera

1. Tettigonidae Krauss, 1902

1.1. Bradyporinae Burmeister, 1838

1.1.1. Bradyporus Charpentier, 1825

Bradyporus (Callimenus) avanos Unal, 2011

AKSARAY: Aksaray-Güzelyurt road, 20. km., 1200 m., 23.vi.2015, 1♂ (leg. A.Mol);

KONYA: Çeltik, Eskişehir province border, 17.vi.2002, 840 m., 1♂ (Unal, 2011).

Bradyporus (Callimenus) toros Unal, 2011

KONYA: Beyşehir-Kurucaova road, 1216 m., 1.vi.2010 3♂1♀; Yeşildağ village, (Unal, 2011, 2017b).

Bradyporus (Callimenus) dilatatus (Stal, 1876)

KONYA: Akşehir; Ereğli, Besci Plateau, 4.vi.1968, 1♂ (Karabağ, 1958)

1.2. Phaneropterinae Burmeister, 1838

1.2.1. Isophya Brunner von Wattenwyl, 1878

Isophya major Brunner von Wattenwyl, 1878

KONYA: Konya-Beyşehir road, Hanönü passage, 1536 m., 29.v.2001, 6♀; Sarayönü, Kayalı Hill, 11.vi.1963, Güneysınır, 1130 m., 19.vi.2002; Belenbaşı, 1500 m., 22.vi.1991, 10♂1♀; Tatköy, Ağlayançal hill, 1600-1700m., 1♂1♀; vi.1945 3♂1♀ (Karabağ, 1958; Unal 1999; 2004; 2010; Sevgili et. al., 2006)

Isophya karabagi Uvarov, 1940

KONYA: Kulu, 1080 m., 21.v.2006, 2♂1♀ (Unal, 2010)

Isophya anatolica anatolica Ramme, 1951

KONYA: Beyşehir, 5.vi.1931, 4♂1♀; Ilgın, Derbent, 1650 m., 19.vi.2008, 1♂; Yunak-Çeltik, Küçükhasan village, 900 m., 9.vi.2005, 3♂; Cihanbeyli, Gölyazı, 915 m., 21.v.2006, 2♂ (Karabağ, 1958; Unal, 2010).

Isophya strauberi (Fieber, 1853)

KONYA: Akşehir, Çakıllar village, 19.vii.1961, 7♂ (Karabağ et. al., 1971)

1.2.1. *Poecilimon Fischer, 1853*

Poecilimon (Poecilimon) haydari Ramme, 1951

KONYA: Ilgın, Derbent, 1650 m., 19.vi.2008, 1♂; Derbent, Tepeköy, 1600 m., 19.vi.2008, 2♂2♀ (Unal, 2010).

Poecilimon (Poecilimon) excisus Karabağ, 1950

KONYA: 6.vi.1947 1♂; Yunak, Mevlütlü k., 4. km., 1000 m., 9.vi.2005, 1♂1♀; Yunak, Çeltikli, Küçükhasan village, 900 m., 9♂7♀, 1♂4♀ nimf; Akşehir, Çakıllar village, 19.vii.1961, 3♂5♀; Ilgın, Orköy, 18.vii.1961, 2♂12♀ (Karabağ, 1958; Karabağ et. al., 1971; Unal, 2010).

Poecilimon (Poecilimon) davisi Karabağ, 1953

KONYA: Akşehir, vi.1953 1♂1♀; Çakıllar village, 19.vii.1961, 7♀ (Karabağ, 1958; Karabağ et. al., 1971).

1.3.1. *Tettigoniinae Krauss, 1902*

1.3.1. *Rhacocleis Fieber, 1853*

Rhacocleis turcicus (Uvarov, 1930)

KONYA: Akşehir Gölü, 1.x.1934, 1♂2♀ (Fuss) (Karabağ, 1958)

1.3.2. *Rammeola Uvarov, 1934*

Rammeola anatolica Uvarov, 1934

Konya: Akşehir, 1.-16.x.1921 1♀ (type) (Wagner); Seydişehir, Maden mountain, Alacabel, 1100 m., 18.vii.1997, 1♂1♀ (Uvarov, 1934; Karabağ, 1958; Çıplak, 1999)

1.3.3. *Tettigonia Linnaeus, 1758*

Tettigonia caudata Charpentier, 1825

AKSARAY: Gücünkaya village, 19.vii.1973, 1♂; KONYA: Akşehir, Sultan Mountain, 20.vii.1961, 1♂1♀; 28.vii.1991, 3♂; 11.vii.1991, 2♀; 26.vii.1991, 1♀ (Karabağ et. al., 1971, 1980; Unal, 2012).

Tettigonia viridissima Linnaeus, 1758

KONYA: Akşehir, Atakent village, 7.viii.1973, 1♀; Çakıllar village, 19.vii.1961, 2♀ (Karabağ et. al., 1971, 1980)

1.3.4. *Anterastes Brunner von Wattenwyl, 1882*

Anterastes antitauricus Çıplak, 2004

KONYA: Akşehir, Sultandağı, Kalanya stream, 19.vi.1961; Bulumya Plateau; 1500 m., 18.vii.1997, 8♂7♀, N 37.56, E 32 16 (Çıplak, 2004).

Anterastes burri Karabağ, 1951

KONYA: Akşehir Gölü, 2.ix.1931, (Fuss) (Ramme, 1951)

1.3.4. *Anadolua Ramme, 1939*

Anadolua rammei Karabağ, 1952

KONYA: Akşehir, 1.x.1934, (Fuss) (Ramme, 1951)

1.3.5. *Sureyyaella Uvarov, 1934*

Sureyyaella bella Uvarov, 1934

KONYA: Akşehir, 15.vii.1947, 2♂1♀, (Fuss); between Ilgın and Akşehir, 18.vii.1961, 5♂5♀; Bozkır: between Bozkır and Üçpınar, 1430 m, 37° 09' 918" N, 32° 13' 987" E, 31.vii.2012, 3♂1♀ (Ramme, 1951; Karabağ et. al., 1971; Mol et. al., 2016).

1.3.6. *Metrioptera Wesmael, 1838*

Metrioptera (Roeseliana) bispina (Bolivar, 1899)

KONYA: Konuklar (=Özden) 16.vii.1949, 2♂2♀ (Karabağ, 1958)

1.3.7. *Decticus* Serville, 1831

Decticus mithati (Ramme, 1939)

KONYA: Akşehir, Sultan Mountain, 20.vii.1961, 1♂ (Karabağ et. al., 1971)

1.3.8. *Eupholidoptera* Ramme, 1951

Eupholidoptera mersinensis Salman, 1983

KONYA: Seydişehir, Maden Mountain, Alacabel, 1100 m., 18.vii.1997, (Çıplak et. al., 1999)

1.3.9. *Platycleis* Fieber, 1853

Platycleis (Platycleis) intermedia intermeadia (Serville, 1839)

AKSARAY: Koçaş, D.Ü.Ç., 24.vi.1963, 2♂2♀; KONYA: 15.vii.1945; Erenkaya, Arkit, 1300 m., 18.vi.1997, 1♂; Seydişehir, Alacabel, Maden Mountain, 1500 m., 18.vi.1997, 2♂ (Karabağ, 1958; Karabağ et. al., 1971; Çıplak et. al., 2002)

Platycleis (Platycleis) affinis Fieber, 1853

AKSARAY: Güzelyurt-Çiftlik road, Across Akyamaç village, 1628 m., 31.viii.2015, 1♀ (Leg. A.Mol)

Platycleis (Montana) taurica Bolivar, 1899

KONYA: Konuklar, 1.vi.1947 2♂ (Çıplak et. al., 2002)

Platycleis (Montana) scherrei Werner, 1901

KONYA: Konuklar (=Özden) 1.vi.1947, 2♂; Akşehir, Yeniköy, 1020 m., 21.vi.2001, 2♂1♀ (Karabağ, 1958; Unal, 2006)

Platycleis (Incertana) incerta Brunner von Wattenwyl, 1882

AKSARAY: Baymış village, 19.vii.1973 1♀; KONYA: Akşehir, Atakent village, 7.viii.1973, 1♀ (Karabağ et. al., 1980)

1.4. *Saginae* Brunner von Wattenwyl, 1878

1.4.1. *Saga* Charpentier, 1825

Saga cappadocica Werner, 1903

KONYA: Ereğli, ♂♀; Between Iğın and Akşehir, 18.vii.1961, 1♀ (Werner, 1903; Karabağ, 1958; Karabağ et. al., 1971)

2. *Gryllidae* Laicharting, 1781

2.1. *Gryllinae* Laicharting, 1781

2.1.1. *Acheta* Fabricius, 1775

Acheta domesticus Linnaeus, 1758

AKSARAY: 15.vii.1973, 2♂3♀; KONYA: Akşehir, 8.vii.1973, 6♂7♀ (Gümüştuyu, 1976; Önder et. al., 1999b)

2.1.2. *Gryllus* Linnaeus, 1758

Gryllus campestris Linnaeus, 175

AKSARAY: Helvadere, Hasandağı, above piknik area, 1846 m., 14.vi.2015, 1♂ (Leg.A.Mol); KONYA: Central province, 14.vi.1973; Kadınhanı, 20.vi.1974, 3♂; Konuklar, DÜÇ, 20.vi.1974, 2♂ (Gümüştuyu, 1976; Önder et.al.,1999b)

2.1.3. *Melanogryllus* Chopard, Chopard, 1961

Melanogryllus desertus (Pallas, 1771)

AKSARAY: Koçaş, State Producing Farm, 24.vi.1962, 1♂1♀; 21.vi.1973, 2♀; (Central province), 24.vi.1967, (1), (İ.G); Merkez, Nakkaş district., 930 m., 20.vi.2017, 1♂ (Leg. A.Mol); KONYA: Central province, Cille dam., 21.vi.1974; Bozkır, 27.v.1964;

15.vi.1968; Mutlu Plateau, 31.v.1961, 3♂4♀; Ereğli, Alhüyük village, 15.vi.1968, 10♂12♀; Karapınar, Hotamış, 15.vi.1973; 5♂3♀; Ereğli, Akhöyük village, 15.vi.1968, 1♂3♀; Bozkır, Suğla Mutlu Plateau, 12.vi.1961, 15♂21♀; Konuklar, 21.vi.1974, 8♂7♀; Sille dam, 21.vi.1974, 1♂2♀ (Karabağ et. al., 1971; Gümüşsuyu, 1976; Önder et. al., 1999b).

2.1.4. *Tartarogryllus* Tarbinsky, 1940

Tartarogryllus burdigalensis Latreille, 1804

KONYA: vi.1913, 1♀; Central province, Karapınar, Hotamış Gölü, 15.vi.1973 (Karabağ, 1958; Önder et. al., 1999b)

2.2. Gryllomorphinae Saussure, 1877

2.2.1. *Gryllomorpha* Fieber, 1853

Gryllomorpha (Gryllomorpha) dalmatina (Ocskay, 1832)

KONYA: Ereğli, 1♀ nimf (Gümüşsoy, 1976)

3. Trigonidiidae Saussure, 1874

3.1. Nemobiinae Saussure, 1877

3.1.1. *Pteronemobius* Jacobson, 1904

Pteronemobius (Pteronemobius) heydenii (Fischer, 1853)

KONYA: Konuklar, 21.vi.1974 (Önder et. al., 1999b)

Pteronemobius (Pteronemobius) concolor Walker, 1871

AKSARAY: Gücünkaya köyü, 22.vii.1973, 2♂2♀; KONYA: Konuklar, State Producing Farm, 21.vi.1974, 6♂7♀; Sille dam, 21.vi.1974, 2♀ (Gümüşsuyu, 1976).

4. Gryllotalpidae Leach, 1815

4.1. Gryllotalpinae Leach, 1815

4.1.1. *Gryllotalpha* Latreille, 1802

Gryllotalpha gryllotalpha (Linnaeus, 1758)

AKSARAY: 8.vi.1972, 1♂; 22.v.1975, 1♂; KONYA: Ereğli, 5.vii.1969, 2♂1♀; 15.vi.1971, 2♂2♀ (Karabağ et. al., 1971, 1980; Gümüşsuyu, 1976)

5. Rhabdophoridae Walker, 1869

5.1. Troglophilinae Krauss, 1879

5.1.1. *Troglophilus* Krauss, 1879

Troglophilus (Troglophilus) ferzenensis Taylan et.al. 2012

KONYA: Seydişehir, Kuğulupark, Ferzene cave, 1390 m., 24.viii.2009, 6♂12♀, 1 nimf, (Taylan et. al., 2012)

6. Tridactylidae Brullé, 1835

6.1. Tridactylinae Brullé, 1835

6.1.1. *Xya* Latreille, 1809

Xya pfaendleri Harz, 1970

KONYA: İvriz, 23.vii.1980, 10♂ (Güneş, 1984)

7. Tetrigidae Serville, 1838

7.1. Tetriginae Rambur, 1838

7.1.1. *Tetrix* Latreille, 1802

Tetrix subulata (Linnaeus, 1761)

KONYA: Konuklar, 21.vi.1974, 3♀ (Karabağ et. al., 1980)

Tetrix bolivari Saulcy, 1901

KONYA: Konuklar, 21.vi.1974, 1♀ (Karaba et. al., 1980)

Tetrix nutans Hagenbach, 1882

KONYA: Davutoğlan, 14.vi.1974, 1♀ (Karabağ et. al., 1980)

Tetrix depressa (Brissout, 1848)

AKSARAY: Güzelyurt, Manastır Valley, 1300 m, 9.v.2011, 5♂9♀; KONYA: İvriz, 23.vii.1980, 4♂2♀; Halkapınarı, 10.v.1982, 4♂8♀; (Güneş, 1984; Mol et. al., 2014).

Tetrix turcica (Demirsoy, 1977)

KONYA: Halkapınarı, 10.v.1982, 3♂4♀ (Güneş, 1984).

8. Pyrgomorphidae Brunner von Wattenwyl, 1882

8.1. Pyrgomorpha Brunner von Wattenwyl 1882

8.1.1. *Pyrgomorpha* Serville, 1839

Pyrgomorpha Pyrgomorpha) conica (Oliver, 1791)

AKSARAY: 24.vi.1963, 5♂; KONYA: Konuklar, 21.vi.1974, 3♂4♀ (Karabağ et. al., 1971, 1980)

Pyrgomorpha Pyrgomorpha) guentheri Burr, 1899

KONYA: Karapınar, 17.viii.1964, ♀ (Weidner, 1969)

9. Pamphagidae Burmeister, 1840

9.1. Thrinchinae Stal, 1876

9.1.1. *Glyphotmethis* Bei-Bienko, 1951

Glyphotmethis holtzi (Werner, 1901)

KONYA: Fakılı kışlağı, 8.vii.1965, 2♂3♀ (Demirsoy, 1977)

Glyphotmethis holtzi dimorphus (Uvarov, 1934)

KONYA: Akşehir, 1.v.-28.vi.1931, 3♂1♀ (Uvarov, 1934)

Glyphotmethis holtzi brachypterus Unal, 2007

KONYA: Çeltik, Torunlar village, 840 m., 17.vi.2002, 17♂8♀ (Unal, 2016)

Glyphotmethis holtzi pulchripes (Uvarov, 1943)

KONYA: Kulu, 1140 m., 31.v.2010, 1♂2♀, 2♀ nimf; Kadınhanı-Polatlı road, Kurthasan villae, 1090 m., 20.vi.2008, 1♂; Cihanbeyli, Tuzgölü, Yavsan memlehasi (in *Artemisia stepe*), 900 m., 8.vi.1952, 1♂ (type), 3♂3♀ larvae (Karabağ, 1956; Unal, 2016)

Glyphotmethis holtzi turcicus Unal, 2007

KONYA: Bozkır, Dinek-Çiçek village, 1219 m., 4.vi.2012, 3♀ (Unal, 2016)

Glyphotmethis escherichi escherichi (Krauss, 1896)

KONYA: Ereğli, Saray Mountain (Karabağ, 1958)

Glyphotmethis dimorphus dimorphus (Uvarov, 1934)

KONYA: Akşehir; Between Iğın and Akşehir, 18.vii.1961, 3♂4♀ (Karabağ et. al., 1971; Demirsoy, 1977).

9.2. Pamphaginae Burmeister 1840

9.2.2. *Ebrenodes* Ramme, 1951

Ebrenodes tölgi (Ebner, 1919)

KONYA: vi.1913, 1♂, vi. 1919 (Karabağ, 1958; Weidner, 1969)

9.2.3. *Paranocarodes* I. Bolivar, 1916

Paranocarodes brevipes Ramme, 1951

KONYA: Saray Mountain, 1620 m., 13.v.1902, ♂ (type), ♀ (Penther); Madenşehir, vi.1924, ♂ (Brit. Mus.); Tatköy, Ağlayançal Hill, 1600-1700 m., 20.vi.2008, 3♂4♀;

Bozkır, Sorkun, 1100 m., 14.vi.1997, 1♂; Kuruçay, 1200-1300 m., 14.vi.1997, 1♀ (Ramme, 1951; Karabağ, 1958; Unal, 2016).

Paranocarodes beieri Ramme, 1951

KONYA: Konya-Kayseri, 1902, 1♂1♀ (Unal, 2016)

Paranocarodes karabaği (Demirsoy, 1973)

KONYA: Akşehir, 28.viii.1959, 1♂2♀ (Unal, 2016)

Paranocarodes anatoliensis anamas Unal, 2016

KONYA: Beyşehir, Anamas Mountain, 1830 m., 3.vi.2010, 6♂10♀; 1830-2300 m., 3♂3♀ (Unal 2016).

9.2.4. *Nocaracris* Uvarov, 1928

Nocaracris citripes citripes (Uvarov, 1949)

KONYA: Akşehir, Sultan Mountain, 19.vii.1961; Beyşehir, Kurucaova, Anamas Mountain, 2300 m., 3.vi.2010, 4♀ (Demirsoy, 1977; Unal, 2016)

Nocaracris bodenheimeri (Uvarov, 1940)

AKSARAY: Taşpınar, Hasandağı above, 1600-1900 m., 17.vi.1952, 4♂2♀ (Unal, 2016)

Nocaracris bodenheimeri idrisi (Karabağ, 1953)

KONYA: Akşehir, Saray Mountain, 17.ix.1961 (Demirsoy, 1977)

Nocaracris tardus Unal, Bugrov & Jetybayev, 2016

KONYA: Akşehir, Sultan Mountain, 2050 m., 17.vi.2014, 3♂6♀; S. of Akşehir, 5000 ft., 11.v.1979, 2♂1♀ (Unal, 2016)

10. Acrididae Macleay, 1821

10.1. *Cryptacanthacaridinae* Kirby, 1910

10.1.1. *Anacridium* Uvarov, 1923

Anacridium aegyptium (Linnaeus, 1764)

KONYA: 1.vi.1949 (Karabağ, 1958)

10.2. *Calliptaminae* Tinkham, 1940

10.2.1. *Calliptamus* Serville, 1831

Calliptamus tenuicercis (Tarbinski, 1930)

KONYA: Between Ilgın and Akşehir, 18.vii.1961, 1♀ (Karabağ et. al., 1971)

Calliptamus barbarus (Costa, 1836)

KONYA: Between Ilgın and Akşehir, 18.vii.1961, 3♂2♀; İvriz, 23.vii.1980, 2♂ (Karabağ et. al., 1971; Güneş, 1984)

Calliptamus coelesyriensis (Giglio-Tos, 1893)

AKSARAY: Central province, 29.vi.1961 (N.L); Güzelyurt-Çiftlik road, Akyamaç village, 31.viii.2015, 1628 m., 1♀ (Leg. A.Mol) (Önder et. al., 1999a)

Calliptamus barbarus pallidipes Ramme, 1951

KONYA: Karapınar, 17.viii.1964, ♀ (Weidner, 1969)

10.3. *Acridinae* MacLeay 1821

10.3.1. *Acrida* Linnaeus, 1758

Acrida anatolica Dirsh 1949

KONYA: 30.km., Ereğli, 22.viii.1955, larva; Karapınar, 22.viii.1955 ♂♀ larve; 7.viii.1964, ♂♀ (Weidner, 1969)

Acrida bicolor (Thunberg, 1815)

KONYA: Akşehir, 1.ix-16.x.1931 (Wagner) (Karabağ, 1958)

10.4. *Oedipodinae* Walker 1871

10.4.1. *Aiolopus* Fieber, 1853

Aiolopus thalassinus (Fabricius, 1781)

KONYA: Central province, 10.2.1962 (Önder et. al., 1999a)

Aiolopus strepens (Latreille, 1804)

AKSARAY: 24.vi.1963, 5♂3♀; KONYA: Çumra, 4.ix.1963, 2♂ (Karabağ et. al., 1971)

10.4.2. *Locusta Linnaeus, 1758*

Locusta migratoria Linnaeus, 1758

AKSARAY: 24.vi.1963, 5♂3♀; KONYA: Beyşehir, (S. Özbek) (Karabağ, 1958; Karabağ et. al., 1971).

10.4.3. *Paracinema Fischer, 1853*

Paracinema tricolor bisignata (Charpentier, 1853)

KONYA: Beyşehir, Köşk grassland, 11.viii.1973, 2♂ (Karabağ et. al., 1980)

10.4.4. *Pyrgodera Fischer de Waldheim, 1846*

Pyrgodera armata Fischer de Waldheim, 1846

KONYA: vi.1913; Between Ilgın and Akşehir, 18.vii.1961, 2♂ (Karabağ, 1958; Karabağ et. al., 1971)

10.4.5. *Pyrgomorpha Serville, 1839*

Pyrgomorpha (Pyrgomorpha) conica (Oliver, 1791)

AKSARAY: 24.vi.1963, 5♂; KONYA: Konuklar, 21.vi.1974, 3♂4♀ (Karabağ et. al., 1971, 1980)

Pyrgomorpha (Pyrgomorpha) guentheri (Burr, 1889)

KONYA: Karapınar, 17.viii.1964, ♀ (Weidner, 1969)

10.4.6. *Brunnerella Saussure, 1888*

Brunnerella mirabilis Saussure, 1888

KONYA: Başkuyu, 17.vii.1949 (Karabağ, 1958)

10.4.6. *Oedaleus Fieber, 1853*

Oedaleus decorus decorus (Germar, 1826)

KONYA: Akşehir, Çakıllar village, 19.vii.1961, 2♂1♀; Between Ilgın and Akşehir, 18.vii.1961, 2♂4♀; Çumra, 4.ix.1963 m., 2♀ (Karabağ et. al., 1971)

10.4.7. *Celes Saussure, 1884*

Celes variabilis (Pallas, 1771)

AKSARAY: Sarıyahşi, near the municipal guest house, 15.vi.2015, 1100 m., 1♀ (Leg.A.Mol); KONYA: Konya Seydisehir road, Erenkaya village, 1400 m, 37°45'447" N, 032° 12'042" E, 30.VI.2010, 2♂2♀ (Mol et. al., 2014)

10.4.8. *Oedipoda Latreille, 1829*

Oedipoda aurea Uvarov, 1923

KONYA: Akşehir, 1.-15.v., 10.ix., 20.x.1931 (Wagner); Çakıllar village, 19.vii.1961, 2♂♀ (Karabağ, 1958; Karabağ et. al., 1971)

Oedipoda coerulescens (Linnaeus, 1758)

KONYA Akşehir, Çakıllar village, 19.vii.1961, 1♂; İvriz, 23.vii.1980, 1♂2♀ (Karabağ 1958; Karabağ et.al. 1971; Güneş, 1984)

Oedipoda miniata miniata (Pallas, 1771)

KONYA: Çumra, 12.vii.1962; Konuklar, (Özden) 9.viii.1947; Ereğli, Akgöl, İvriz, Kuzuncuk, Bulgar Maden, Kutu 1907 (Karabağ, 1958; Önder et. al., 1999a)

10.4.9. *Acrotylus Fieber, 1853*

Acrotylus insibricus insibricus (Scopoli, 1778)

AKSARAY: 24.vi.1963, 1♂1♀; KONYA: Konuklar, (Özden) 9.iv.1947; Kraterseen bei Karapınar, 23.viii.1955 ♀; 17.viii.1964 2♂2♀ (Karabağ, 1958; Weidner, 1969; Karabağ et. al., 1971)

10.4.10. *Sphingonotus* Fieber, 1852

Sphingonotus (Sphingonotus) theodori theodori Uvarov, 1923

KONYA: Karapınar, 17.viii.1964, 3♀ (Weidner, 1969)

Sphingonotus (Sphingonotus) turcicus Uvarov, 1930

AKSARAY: 24.vi.1963, 1♂1♀; KONYA: Kraterseen bei Karapınar, 23.viii.1955 ♂♀; 17.viii.1964, 4♂5♀ (Karabağ et. al., 1971; Weidner, 1969)

Sphingonotus (Sphingonotus) nebulosus nebulosus Uvarov, 1930

KONYA: İvriz, 23.vii.1980, 4♂2♀ (Ramme, 1951; Güneş, 1984)

10.4.11. *Sphingoderus* Bei-Bienko, 1950

Sphingoderus carinatus (Saussure, 1888)

KONYA: Cihanbeyli, Acı-Tuzgölü, 900 m., 8.ix.1949 (P.H.Davis British Museum) (Karabağ, 1958)

10.4.12. *Asphingoderus* Bei-Bienko, 1950

Asphingoderus uvarovites similis Bei-Bienko, 1951

KONYA: Akşehir, Tuz Gölü (Demirsoy, 1977).

10.5. Egnatiinae Bey-Bienko and Mistshenko, 1951

10.5.1. *Charora* Saussure, 1888

Charora pentagrammica I.Bolivar, 1899

KONYA: Gözlü, 15.vii.1947; Başkuyu, 17.vii.1949; Gözlü, 15.vii.1947, Bakuyun, 17.vii.1949; Tuz Gölü, 17.vii.1961; Tuz Gölü, 17.vii.1961, 6♂5♀; Akşehir-Eğirdir, 12.vii.1961, 3♂2♀ (Karabağ, 1958, 1963; Weidner, 1969)

10.6. Gomphoceriinae Fieber, 1853

10.6.1. *Ramburiella* I. Bolivar, 1906

Ramburiella turcomana (Fischer de Waldheim, 1833)

KONYA: Iğın-Akşehir arası, 18.vii.1961, 3♂2♀ (Karabağ et. al., 1971)

Ramburiella bolivari (Kuthy, 1907)

KONYA: Başkuyu, 17.vii.1949, 5♂4♀ (T. Karabağ); İvriz, 20.vii., Kuzuncuk (Kuzundusk), 26.vii.5, ♀ (type) Kutay (1907) (Karabağ, 1958).

10.6.2. *Pararcyptera* Tarbinski, 1940

Pararcyptera labiata (Brulle, 1832)

AKSARAY: Sarıyahşi, near the municipal guest house, 1100 m, 15.vi.2015, 3♂3♀, (Leg. A.Mol); KONYA: Erkılıç, 1945; Akşehir, vii.1950 (B.Erkut); Çakıllar village, 19.vii.1961, 9♂11♀ (Karabağ, 1958; Karabağ et. al., 1971)

10.6.3. *Dociostaurus* Fieber, 1853

Dociostaurus (Dociostaurus) marrocanus (Thunberg 1815)

KONYA: Seydişehir; Beyşehir; Akşehir, Sultan Mountain, 20.vii.1961, 3♂4♀; Konya-Seydişehir road, Erenkaya village, 1400 m, 30.VI.2010. 37° 45' 447" N, 032° 12' 042" E, 3♂4♀; Bozkır, Between Bozkır and Üçpınar, 1430 m, 37°09'918" N, 32°13'987" E, 31.vii.2012, 18♂13♀ (Karabağ, 1958; Karabağ et. al., 1971; Mol et. al., 2014)

Dociostaurus (Kazakia) brevicollis (Eversmann 1848)

KONYA: 15.vii.1949; Akşehir, vii.1950 (B.Erkut); Akşehir, Sultan Mountain, 20.vii.1961, 2♂7♀; Konya-Seydişehir road, Erenkaya village, 1400 m, 30.VI.2010, 37° 45' 447" N, 032° 12' 042" E, 8♂6; 30.VI.2010. N 37°45.447, E 032°12.042, 1400 m., 9♂10♀ (Karabağ, 1958; Karabağ et. al., 1971; Şirin and Mol, 2013; Mol et. al., 2014).

Dociostaurus (Kazakia) iconium Şirin and Mol, 2013

KONYA: Between Bozkır and Üçpınar, 1430 m, N: 37 09 918 E: 32 13 987, 31.vii.2012, 6 ♂5♀ (Şirin and Mol, 2013).

Dociostaurus (Stauronotulus) cappadocicus (Azam, 1913)

AKSARAY: Sarıyahşi, near the municipal guest house, 1100 m., 15.06.2015, 4♂2♀ (Leg. A. Mol); Aksaray-Güzelyurt road, Kireçlik district, 1000 m., 04.06.2011, 5♂5♀; KONYA: Bozkır, Between Bozkır and Üçpınar, 1430 m, N: 37 09 918 E: 32 13 987, 31.vii.2012, 2 ♀ (Şirin and Mol, 2013)

Dociostaurus (Stauronotulus) hauensteini hauensteini (I.Bolivar, 1853)

KONYA: Konuklar, 16.vii.1949; Between Ilgın and Akşehir, 18.vii.1961, 1♂7♀ (Karabağ, 1958; Karabağ et. al., 1971).

10.6.4. *Notostaurus Bei-Bienko, 1933*

Notostaurus anatolicus (Krauss, 1896)

KONYA: Between Ilgın and Akşehir, 18.vii.1961, 1♀ (Karabağ et. al., 1971).

10.6.5. *Stenobothrus Fischer, 1853*

Stenobothrus (Stenobothrus) fischeri (Eversmann, 1848)

KONYA: Beyşehir, 1.vii.1930; Akşehir, Çakıllar village, 19.vii.1961, 7♂12♀ (S. Özek) (Uvarov, 1934; Karabağ et. al., 1971)

Stenobothrus (Stenobothrus) zubovskii I. Bolivar, 1899

AKSARAY: Sarıyahşi, near the municipal guest house, 1100 m., 15.06.2015, 2♂6♀ (Leg.A.Mol); KONYA: Beyşehir, 1.vii.1930 (S. Özek) (Uvarov, 1934)

10.6.6. *Omocestus I. Bolivar, 1878*

Omocestus (Omocestus) ventralis (Zetterstedt, 1821)

KONYA: Akşehir, Çakıllar village, 19.vii.1961, 5♂ (Karabağ et. al., 1971)

Omocestus (Omocestus) petraeus (Brisout, 1855)

AKSARAY: Güzelyurt, Sivrihisar village, 31.viii.2015, 1777 m., 4♂ (Leg. A. Mol); KONYA: (Karabağ, 1958).

Omocestus (Omocestus) haemorrhoidalis (Charpentier, 1825)

KONYA: İvriz, 23.vii.1980, 3♂5♀ (Güneş, 1984)

10.6.7. *Chorthippus Fieber, 1852*

Chorthippus (Chorthippus) karelini Uvarov, 1910

AKSARAY: Koçtaş, Sazlık, 24.vi.1962, 10♂4♀; (4♂ and 2♀, Zool.Inst.Univ.Ankara) Koçtaş, (D.Ü.Ç) 900 m, 24.vi.1962, 8♂4♀ (K.M.Guichard, D.H.Harvey) (Karabağ, 1963).

Chorthippus (Chorthippus) longicornis longicornis (Latreille, 1804)

AKSARAY: 7.vii.1975, 5♂2♀; KONYA: Akşehir, Atakent village, 7.viii.1973, 1♀; Konuklar, 21.vi.1974, 2♂2♀ (Karabağ et. al., 1980)

Chorthippus (Chorthippus) dichrous (Eversmann 1859)

AKSARAY: 24.vi.1963, 1♂2♀; 16.viii.1955, 6 ♂1♀; KONYA: Akşehir, Atakent village, 7.viii.1973, 2♂4♀; Ereğli, 7.ix.1963, 1♂ (Karabağ et. al., 1971; 1980).

Chorthippus (Glyptobothrus) brunneus brunneus (Thunberg, 1815)

KONYA: Akşehir Gölü, 2.x.1934 (Fuss); Sultan Mountains, 20.vii.1961, 1♂ (Ramme, 1951; Karabağ et. al., 1971)

Chorthippus (Glyptobothrus) bornhalmi Harz, 1971

AKSARAY: Aksaray-Helvadere yolu, Hasan Dağı, above picnic area, 1545 m., 14.vi.2015, 1♂1♀; Çölören village, 1056 m., 15.vi.2015, 1♂1♀; Güzelyurt, Çiftlik road, Akyamaç village, 1628 m., 31.viii.2015, 3♂1♀; Güzelyurt, Sivrihisar village, 31.viii.2015, 1777 m., 2♀ (Leg. A.Mol); KONYA: Bozkır, Between Bozkır and Üçpınar, 1430 m, 37°09'918" N, 32°13'987" E, 31.vii.2012, 12♂13♀ (Mol et. al., 2014)

Chorthippus (Glyptobothrus) vagans (Eversmann, 1848)

KONYA: Ereğli, 7.ix.1963, 1♀ (Karabağ et. al., 1971)

Chorthippus (Glyptobothrus) taurensis Şirin and Çıplak, 2005

KONYA: Seydişehir, Mor Mountains, 19.ix.1995, 1900 m., 1♂ (Çıplak et. al., 2005).

10.6.8. *Euchorthippus* Tarbinski, 1925

Euchorthippus pulvinatus pulvinatus (Fischer de Waldheim, 1849)

KONYA: (Karabağ, 1958)

10.6.9. *Gomphocerus* Thunberg, 1815

Gomphocerus sibiricus turcicus Mistshenko, 1951

KONYA: Bulgar (Bolkar) Mountains (Bei-Bienko and Mistshenko, 1951)

Discussion

As a result of the study, a total of 27 species belonging to Tettigonidae, 5 species belonging to Gryllidae, 2 species belonging to Trigonidiidae, 1 species belonging to Gryllotalpidae, 1 species belonging to Rhabdophoridae, 1 species belonging to Tridactylidae, 5 species belonging to Tetrigidae, 2 species belonging to Pyrgomorphidae, 7 species belonging to Thrinchinae, 8 species belonging to Pamphagidae, and 50 species belonging to Acrididae recorded from Aksaray and Konya province.

The present paper includes Orthoptera order in Aksaray and Konya provinces comprising 109 taxa, belonging to 54 genera, 20 subfamilies, and 10 families. Among 109 taxa, 44 species (shown below) are endemic to Turkey and 18 of them (shown in bold font in below) endemic study area or surroundings. It is revealed that study area is very important for Turkey Orthoptera fauna and biodiversity and these are;

Bradyporus (Callimenus) avanos Unal, 2011

***Bradyporus (Callimenus) toros* Unal, 2011**

Bradyporus (Callimenus) dilatatus (Stal, 1876)

Isophya major Brunner von Wattenwyl, 1878

***Isophya karabagi* Uvarov, 1940**

***Isophya anatolica anatolica* Ramme, 1951**

Poecilimon (Poecilimon) haydari Ramme, 1951

***Poecilimon (Poecilimon) excisus* Karabağ, 1950**

***Poecilimon (Poecilimon) davisii* Karabağ, 1953**

Rhacocleis turcicus (Uvarov, 1930)

Rammeola anatolica Uvarov, 1934

***Anterastes antitauricus* Çıplak, 2004**

Anterastes burri Karabağ, 1951

Anadolua rammei Karabağ, 1952

Sureyyaella bella Uvarov, 1934

Decticus mithati (Ramme, 1939)

Eupholidoptera mersinensis Salman, 1983

Platycleis (Montana) taurica Bolivar, 1899

Platycleis (Montana) scherrei Werner, 1901

Saga cappadocica Werner, 1903

***Troglophilus (Troglophilus) ferzenensis* Taylan et.al.2012**

Tetrix turcica (Demirsoy, 1977)

***Glyphotmethis holtzi holtzi* (Werner, 1901)**

- Glyphotmethis holtzi brachypterus* Unal, 2007**
***Glyphotmethis holtzi turcicus* Unal, 2007**
***Glyphotmethis holtzi pulchripes* (Uvarov, 1943)**
Glyphotmethis dimorphus dimorphus (Uvarov, 1934)
Glyphotmethis escherichi escherichi (Krauss, 1896)
Glyphotmethis dimorphus dimorphus (Uvarov, 1934)
***Ebrenodes tölgi* (Ebner, 1919)**
Paranocarodes brevipes Ramme, 1951
***Paranocarodes beieri* Ramme, 1951**
Paranocarodes karabaği (Demirsoy, 1973)
***Paranocarodes anatoliensis anamas* Unal, 2016**
Nocaracris citripes citripes (Uvarov, 1949)
***Nocaracris tardus* Unal, Bugrov & Jetybayev, 2016**
Nocaracris idrisi (Karabağ, 1953)
Acrida anatolica Dirsh, 1949
Sphingonotus (Sphingonotus) turcicus Uvarov, 1930
Charora pentagrammica I.Bolivar, 1899
Dociostaurus (Stauronotulus) cappadocicus (Azam, 1913)
***Dociostaurus (Kazakia) iconium* Şirin and Mol, 2013**
***Chorthippus (Glyptobothrus) taurensis* Şirin and Çıplak, 2005**
***Gomphocerus sibiricus turcicus* Mistshenko, 1951**

The study area contains a considerable number of endemic Orthoptera species for Turkey. It suggest that this area have to study elaborate in the future especially by using acoustics characteristics.

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References

- Bei-Bienko G. J., Mistshenko L. L. (1951). *The grasshopper of the fauna of the USSR and adjacent countries. Vol II: (İngilizce çeviri)*, Akademii Nauk., T. 40, Moskova-Leningrad, 667 pp.
- Cigliano, M. M., Braun, H., Eades, D. C., Otte D., Nascrecki, P. (2018). *Orthoptera Species file online version 2*. (visited 20 April 2018). <http://osf2x.orthoptera.org>.
- Çıplak, B. (1992). *Malatya ve çevresi Orthoptera (Insecta) faunası*. (Yayınlanmamış Doktora tezi). İnönü Üniversitesi, Fen Bilimleri Enstitüsü, Malatya, Turkey, 134 pp.
- Çıplak, B. (1999). Description of the male of *Rammeola anatolica* Uvarov, 1934 with comments on the monotypic genus *Rammeola* (Orthoptera: Tettigoniidae). *Italian Journal of Zoologia*, 66: 71-74.
- Çıplak, B., Heller, K-G., and Willemse, F. (2009). Review of the genus *Eupholidoptera* (Orthoptera: Tettigoniidae) different genitalia uniform song. *Zootaxa*, 2156: 1-77.
- Çıplak, B., Mol, A., Sirin, D., Zeybekoğlu, Ü., Taylan, M. S. (2005). The *demokidovi*-like short winged *Glyptobothrus* (Orthoptera, Gomphocerinae, *Chorthippus*) of

- Anatolia with description of two new species: from Balkans to Caucasus through southern Anatolia. *Transactions of the American Entomological Society*, 131(3+4): 463-489.
- Çiplak, B. (2004). Systematics, phylogeny and biogeography of *Anterastes* (Orthoptera: Tettigoniidae: Tettigoniinae): evolution within a refugium. *Zoologica Scripta*, 33(1): 19-44
- Çiplak, B., Heller, K. G., Demirsoy, A. (2002). Review and key to species of *Platycleis* from Turkey (Orthoptera: Tettigoniidae) with descriptions of *Yalvaciana* subgen. n., *P. salmani* sp. n. and two new species. *Journal of Natural History*, 36: 197-236.
- Demirsoy, A. (1975). *Erzurum bölgesi Orthoptera (Insecta) faunasının tespiti ve taksonomik incelenmesi*. Atatürk Üniversitesi Yayınları, Erzurum, Turkey, 122 pp.
- Demirsoy, A. (1977). *Türkiye Caelifera (Insecta, Orthoptera) faunasının tespiti ve taksonomik olarak incelenmesi*. Atatürk Üniversitesi Basımevi, Erzurum, 252 pp.
- Demirsoy, A. (1992). *Yaşamın Temel Kuralları, Entomoloji*, Üçüncü baskı, Metaksan, Ankara, 941 pp.
- Demirsoy, A. (1999). *Genel ve Türkiye Zoocoğrafyası "Hayvan Coğrafyası"*. İkinci Baskı, Metaksan, Ankara, Turkey, 965 pp.
- Gümüşsuyu, İ. (1976). *Orta anadolu bölgesinde bulunan Grylloidea ve Tridactylidae (Orthoptera: Insecta) türleri üzerinde taksonomik araştırmalar ve biyolojik gözlemler*. TÜBİTAK, TBAG-133, Doçentlik tezi, 92 pp.
- Güneş, H. V., (1984). *Doğu akdeniz bölgesi orthoptera (Insecta) faunası üzerine taksonomik çalışmalar* (Unpublished PhD. Thesis). Department of Biology, Ankara University of Ankara, Turkey.
- Güneş, H.V. (1984). *Doğu Akdeniz Bölgesi Orthoptera (Insecta) faunası üzerine taksonomik çalışmalar*. Yayınlanmamış Doktora tezi, Ankara Üniversitesi Fen Fakültesi, Ankara, Türkiye, 202 pp.
- Harz, K. (1975). *The Orthoptera of europe*, II. Dr. W.Junk N.V, The Hague, 749 pp.
- Karabağ, T. (1956). Some new and less known Acrididae from Turkey. *Enstituto Espanol de Entomologia*, 125-134.
- Karabağ, T. (1958). *Türkiye'nin Orthoptera faunası*. Şirketi Murettebiye Basımevi, İstanbul, 192 pp.
- Karabağ, T. (1963). Some interesting Acridoidea (Orthoptera) from Turkey. *Annals and Magazine of Natural History*, 6(13): 680-682.
- Karabağ, T., Gümüşsuyu, İ., Balamir, S., Tutkun, E. (1971). Türkiye Orthoptera faunasının tespiti üzerine araştırmalar. *Bitki Koruma Bülteni*, 11(2): 73-100.
- Karabağ, T., Gümüşsuyu, İ., Tutkun, E. (1980). Türkiye Orthoptera faunasının tespiti üzerine araştırmalar (III). *Bitki Koruma Bülteni*, 1-4(20): 1-25.
- Mol, A. (2007). *Karadeniz Bölgesi'nde dağılım gösteren Gomphocerinae Uvarov, 1958 (Orthoptera, Acrididae) altfamilyası türlerinin faunistik ve taksonomik yönden incelenmesi* (Yayınlanmamış Doktora Tezi). Ondokuz Mayıs Üniversitesi, Fen Bilimleri Enstitüsü, Samsun, Turkey, 200 pp.
- Mol, A., Çiplak, B., Sirin, D. (2003). Song and morphology of the three Anatolian endemic species of the genus *Chorthippus* (Orthoptera, Acrididae, Gomphocerinae). *Annales Society Entomologique dela France (n.s.)* 39(2): 121-128.
- Mol, A., Şirin D., Taylan, M.S. (2014). Türkiye'de dağılım gösteren bazı Caelifera (Insecta: Orthoptera) türlerinin yeni lokalite kayıtları, endemizm, yaygınlık ve

- tarımsal zarar oluşturma açısından değerlendirilmesi. *Bitki Koruma Bülteni*, 54(2): 133-170.
- Mol, A., Taylan, M.S., Demir, E., Şirin, D. (2016). Contribution to the knowledge of Ensifera (Insecta: Orthoptera) fauna of Turkey. *Journal of the Entomological Research Society*, 18(1): 75-98.
- Mol, A., Zeybekoğlu, U. (2013). Distribution and taxonomy of Gomphocerinae (Orthoptera, Acrididae) Grasshoppers in the Anatolian Black Sea Basin and check list of Turkey subfamily fauna. *Journal of the Entomological Research Society*, 15(2): 69-102.
- Naskrecki P., Ünal M. (1995). The Orthoptera of Hatay province, S. Turkey. *Bietrage Entomologia*, 45(2), 393-420.
- Önder, F., Pehlivan, E., Karsavuran, Y., Serdar, T., Kısmalı, Ş. (1999a). Catalogue of collection of Pamphagidae, Pyrgomorphae, Catantopidae and Acrididae (Orthoptera: Acridoidea) preserved in the Prof. Dr. Niyazi LODOS Museum, İzmir, Turkey. *Türk Entomoloji Dergisi*, 23(3): 163-178.
- Önder, F., Pehlivan, E., Karsavuran, Y., Serdar, T., Kısmalı, Ş. (1999b). Catalogue of collection of Tettigoniidae (Orthoptera: Acridoidea) preserved in the Prof. Dr. Niyazi LODOS Museum, İzmir, Turkey. *Türk Entomoloji Dergisi*, 23(4): 243-250.
- Ramme, W. (1951). Zur systematik, Faunistik und Biologie der Orthopteren von Südost-Europa und Vorderasien. *Mitteilungen aus dem Zoology Museum of Berlin*: 260-343.
- Salman, S. (1978). *Ağrı, Kars ve Artvin illerinin Orthoptera (Insecta) faunası üzerine taksonomik araştırmalar*. Atatürk Üniversitesi Fen Fakültesi Yayınları, Erzurum, Turkey, 184 pp.
- Sevgili, H., Çıplak, B. (2000). The Orthoptera of Şanlıurfa province from the Mesopotomian part of the Turkey. *Italian Journal of Zoology*, 67: 229-240.
- Sevgili, H., Çıplak, B., Heller, K. G., Demirsoy, A. (2006). Morphology, bioacoustics and phyllogeography of the Isophya major group (Orthoptera. Tettigoniidae: Phaneropterinae): A species complex occurring in Anatolis and Cyprus. *European Journal of Entomology*, 103: 657-671.
- Şirin D., Mol, A. (2013). New species and new song record of the genus *Dociostaurus* Fieber, 1853 (Orthoptera, Acrididae: Gomphocerinae) from Southern Anatolia, Turkey. *Zootaxa*, 3683(4):486-500.
- Şirin, D., Mol, A., Akyıldız, G. (2014). The morphological and behavioral analysis of geographically separated *Rammeihippus* (Orthoptera: Acrididae: Gomphocerinae) population: Data result in taxonomical conflict. *Journal of Insect Science*. DOI: 10.1093/jisesa/ieu007”.
- Şirin, D., Mol, A., Çıplak, B. (2011). *Myrmeleotettix* Bolivar (Orthoptera, Gomphocerinae) in Anatolia on the basis of morphological and behavioural characters: data suggest a new species from southern end of the Anatolian refugium. *Zootaxa*, 2917: 29-47.
- Şirin, D., Mol, A., Taylan, M. S., Akyıldız, G. Demir, E., Kızılocak, D. H. (2017). The Gomphocerinae Tarbinsky, 1932 (Orthoptera: Acrididae) fauna of the Turkish Thrace. *Zootaxa*, 4299(3): 361-383.
- Taylan, M. S., Mol, A., Şirin, D. (2014). A New Species of *Psorodonotus* (Orthoptera, Tettigoniidae) From Anatolia. *ZooKeys*, 3760(3): 449–457.

- Taylan, M. S., Russo, C. R., Cobolli, M., Rampini, M. (2012). New species of the genus *Troglophilus* Krauss, 1879 (Orthoptera: Raphidophoridae) from Western and Southern Anatolia caves, Turkey. *Zootaxa*, 3597: 33-40.
- Unal, M. (1999). Notes on Orthoptera of western Turkey, with description of a new genus and four new species. *Journal of Orthoptera Research*, 8: 243-255.
- Unal, M. (2004). Distribution of forty-six species of the genera *Isophya* Burunner von Wattenwyl: *Poecilimon* Fischer and *Poecilimonella* Uvarov (Orthoptera: Tettigoniidae: Phaneropterinae) in Turkey with description of two new species. *Priamus*, 11(1/2): 1-16.
- Unal, M. (2010). Phaneropterinae (Orthoptera: Tettigoniidae) from Turkey and the Middle East II. *Transactions of the American Entomological Society (1890)*, 136(1/2): 125-183.
- Unal, M. (2011). Taxonomic review of the subfamily Bradyporinae (Orthoptera: Tettigoniidae; Bradyporini; Ehippigrerini) of Turkey, with description of new species and relationship of the taxa. *Zootaxa*, 2899: 1-42.
- Unal, M. (2012). Tettigoniidae (Orthoptera) from Turkey and the Middle East II. *Transactions of the American Entomological Society (1890)*, 138: 21-54.
- Unal, M. (2016). Pamphagidae (Orthoptera: Acridoidea) from the Palaearctic Region: taxonomy, classification, keys to genera and a review of the tribe Nocarodeini I. Bolívar, *Zootaxa*, 4206(1):1-233.
- Unal, M. (2017a). *Check-list of the Turkish Orthoptera*. (visited 26.04.2018), <http://www.orthoptera-tr.org/index.php/check-list-of-the-turkish-orthoptera>
- Unal, M. (2017b). Revision of the genus *Bradyporus* Charpentier, 1825 (Orthoptera: Tettigoniidae; Bradyporinae). *Zootaxa*, 4272(4): 491-228.
- Uvarov, B. P. (1934). Studies in the Orthoptera of Turkey, Iraq and Syria. *Enstituto Espanol de Entomologia*, 10: 21-119.
- Unal, M. (2006). Tettigoniidae (Orthoptera) from Turkey and Middle East. *Transactions of the American Entomological Society (1890)*, 131(1/2): 157-203.
- Weidner, H. (1969). Beitrage zur Kenntnis der Feldheuschenrecken (Caelifera) Anatoliens. *Mitteilungen aus dem Zoology Museum of Berlin*, 66: 145-226.
- Werner, F. (1903). Neue Locustiden aus Westasien. *Zoologischer Anzeiger*, 26: 528-531.