

FAUNISTIC NOTES ON THE SPECIES OF ELATERIDAE (COLEOPTERA) IN İZMİR PROVINCE OF TURKEY

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ABSTRACT: In this study, Elateridae fauna of İzmir province of Turkey was studied and 42 species of 17 genera belonging to six subfamilies of Elateridae were recorded. Among them, 28 species were evaluated as the first record in İzmir fauna.

KEY WORDS: Elateridae, fauna, İzmir, Turkey, new record

Elateridae is one of the largest families of Coleoptera with more than 10 000 described species in approximately 750 genera worldwide. Species of this family are distributed around the world except for polar zones and high mountain ranges covered with snow (Laibner, 2000). Bodies of adults are more or less convex, elongate or broadly ovoid, often oblong, more rarely markedly slender or wide and flat. Body length is a little more than 2 mm and the maximum size is about 80 mm.

From the economic standpoint, most species are inconsequential. Larvae of a few species prey on some forest pests and can be considered useful. However, their control on forest pests is not considered important because they had consumed less food. Some phytophagous species attack radicles and young roots, thus preventing germination or causing weakness of plant (Laibner, 2000). Furthermore, beetles of family Elateridae play a major role in the dead wood habitat. They are known as click beetles because they are able to jump with a spring-like click when they are on their backs (Dajoz, 2000).

There are some descriptions and faunistical records on Turkish elaterids in the entomological literature. After the publication of Heyden Catalogue (Heyden et al., 1906), many species were listed from Turkey by Sahlberg (1912-1913), Winkler (1924-1932) Schenkling (1925-1927). Later Leseigneur (1972), Gül-Zümreoğlu (1972), Tarnawski (1984), Guglielmi & Platia (1985), have included some other species to the fauna of Turkey. Additional records can also be found in many studies of Platia & Schimmel (1992, 1993, 1994), Platia & Gudenzi (1996, 1998, 2000, 2002), Cate & Platia (1997), Lodos (1998), Cate et al. (2002), Dusanek & Mertlik (2004), Kabalak & Sert (2005), Platia & Kovancı (2005), Kesdek et al. (2006), Platia et al. (2007), Löbl & Smetana (2007) and Mertlik & Platia (2008) on the Elateridae fauna of Turkey. These studies contain many species determined both from the province of İzmir and from whole Turkey. In the studies of Sahlberg (1912-1913), Schenkling (1925-1927), Gül-Zümreoğlu (1972), Guglielmi & Platia (1985), Cate & Platia (1997) and Platia & Gudenzi (1998, 2000, 2002) some species of Elateridae from İzmir province have been reported.

This paper has been prepared in order to give some additional information after the completion of PhD project of the first author on the fauna of İzmir province.

MATERIAL AND METHODS

Material have been collected mainly by sweeping net and knock down methods as well as sticky yellow traps, bait traps and pitfall traps. Material have also been collected by hand on the ground, under stone, under the bark of trees during the field studies conducted in İzmir province in 2003-2005.

In addition to these, material collected during 1960-1999 and housed in the collection of LEMT (Lodos Entomological Museum, Turkey) at the Department of Plant Protection, Faculty of Agriculture, Ege University, Bornova, İzmir, Turkey have been evaluated in this study.

All taxa have been given in subfamilies according to Laibner (2000) and arranged in alphabetical order within each subfamily. For each species, information on the name of locality, date of collection, plant or place on which the material collected, and the number of species have been given in brackets.

RESULTS

In this study, 42 species of 17 genera belonging to six subfamilies of Elateridae have been given.

Pyrophorinae Candéze, 1863

Aeoloderma crucifer (Rossi, 1790)

Material examined: **Ödemiş**-Gereli, 25.i.1972, *Cydonia* sp., (6); **Seferihisar**-Sığacık, 23.xii.1971, *Zea mays*, (4). Totally 10 specimens. This species is the first record for İzmir fauna.

Calais parreyssi (Steven, 1830)

Material examined: **Balçova**, 20.vi.1981, weeds, (1); **Balçova**-Teleferik, 02.v.1978, *Pinus* sp., (1); **Bornova**-Çiçekli, 23.v.1999, (1); **Kemalpaşa**-Çambel, 22.vi.2004, bait trap, (1); **Kemalpaşa**-Kurudere, 16.iv.2003, *Pinus* sp., (1). Totally 5 specimens. This species is the first record for İzmir fauna.

Drasterius bimaculatus (Rossi, 1790)

Material examined: **Bornova**, 05.ix.1963, light trap, (3), 06.vi.1975, *Populus* sp., (1); **Kemalpaşa**, 21.ii.1972, *Pyrus communis*, (1), 17.v.2005, sticky yellow trap, (1); 24.v.2005, sticky yellow trap, (1); **Kemalpaşa**-Armutlu, 12.ix.2003, pitfall trap, (3); **Kımk**, 18.v.1973, apiaceous plants, (1); **Kiraz**, 25.i.1972, under stone, (1); **Menderes**-Gümüldür, 01.i.1972, on the ground, (3); **Ödemiş**, 29.xii.1971, on the ground, (7), under stone, (1); **Seferihisar**, 28.xii.1971, under stone, (1); **Seferihisar**-Sığacık, 23.xii.1971, *Zea mays*, (2); **Urla**, 01.i.1972, on the ground, (1). Totally 27 specimens. Previously, this species recorded from İzmir by Sahlberg (1912-1913), Gül-Zümreoğlu (1972) and Guglielmi & Platia (1985).

Lacon punctatus (Herbst, 1779)

Material examined: **Bergama**-Kozak, 03.vii.2003, *Salix* sp., (1); **Beydağ**, 04.v.2004, *Pinus* sp., (1); **Bornova**, 13.v.1962, (1), 03.ii.1972, *Olea europaea*, (1); **Bornova**-Çiçekli, 04.ix.1999, (1), 21.x.1999, (1), 18.xi.1999, (2); **Kemalpaşa**, 21.ii.1972, *Pyrus communis*, (1), 04.ii.2003, *Olea europaea*, (1); **Kemalpaşa**-Armutlu, 27.iv.2004, *Prunus avium*, (1); **Kemalpaşa**-Kurudere, 16.iv.2003, *Pinus* sp., (7), 12.xii.2003, under stone, (2), 01.iii.2004, under bark, (8); **Kemalpaşa**-Nif Mountain, 25.v.2004, under bark, (1); **Ödemiş**-Bozdağ, 30.iv.2003, *Pinus* sp., (1); **Seferihisar**, 30.iii.2004, under stone, (1). Totally 31 specimens. This species is the first record for İzmir fauna.

Denticollinae Stein & Weise, 1877***Athous haemorrhoidalis*** (Fabricius, 1801)

Material examined: **Ödemiş**-Bozdağ, 20.v.1970, poaceous plants, (1), 18.v.2004, *Prunus persica*, (1). Totally 2 specimens. This species is the first record for İzmir fauna.

Athous vittatus (Fabricius, 1792)

Material examined: **Çeşme**, 01.v.2005, *Pelargonium* sp., (1); **Ödemiş**-Bozdağ-Büyükçavdar, 19.vi.2003, *Juglans regia*, (1). Totally 2 specimens. This species is the first record for İzmir fauna.

Hemicrepidius hirtus (Herbst, 1784)

Material examined: **Ödemiş**-Bozdağ-Büyükçavdar, 19.vi.2003, *Urtica* sp., (2). Totally 2 specimens. This species is the first record for İzmir fauna.

Cardiophorinae Candéze, 1859***Cardiophorus antennalis*** Germar, 1843

Material examined: **Ödemiş**, 25.iv.1973, *Crataegus* sp., (2). Totally 2 specimens. This species is the first record for İzmir fauna.

Cardiophorus cyanipennis Mulsant & Wachanru, 1852

Material examined: **Bornova**, 20.iv.1977, (1); **Çeşme**, 12.v.1984, weeds, (1); **Narlıdere**, 11.ii.1972, *Olea europea*, (1); **Kemalpaşa**-Ören, 08.i.1999, sticky yellow trap, (1); **Ödemiş**, 24.i.1972, *Platanus* sp., (1), 24.iv.1973, weeds, (2); **Ödemiş**-Bozdağ, 24.v.1978, *Pinus* sp., (1). Totally 8 specimens. This species is the first record for İzmir fauna.

Cardiophorus discicollis (Herbst, 1806)

Material examined: **Balçova**, 11.vii.1971, *Amygdalus communis*, (5); **Bayındır**, 24.iv.1973, *Crataegus* sp., (1); **Bayındır**-Söğütören, 28.v.2003, *Pyrus elaeagnifolia*, (1); **Bergama**, 14.v.1971, weeds, (1); **Bornova**, v.1962, (1); **Kemalpaşa**, 08.v.1969, weeds, (1); **Kiraz**, 04.iv.2004, *Onopordum* sp., (3); **Menderes**-Gümüldür, 09.iv.1973, weeds, (1); **Ödemiş**, 24.iv.1973, *Rubus* sp., (2); **Ödemiş**-Bozdağ, 18.v.2004, *Mespilus germanica*, (2), *Prunus persica*, (4). Totally 22 specimens. This species is the first record for İzmir fauna.

Cardiophorus nigratissimus Buysson, 1891

Although this species has been recorded from İzmir by Sahlberg (1912-1913) and Guglielmi & Platia (1985), it has not been collected in this study.

Cardiophorus rotundicollis Frivaldszky, 1845

Material examined: **Bayındır**, 14.iv.1967, weeds, (1); **Menderes**-Gümüldür, 09.iv.1973, weeds, (4); **Menderes**-Gümüldür, 09.iv.1973, (1); **Seferihisar**, 20.iv.1972, *Matricaria* sp., (1). Totally 7 specimens. Recently, this species was recorded from İzmir by Platia & Gudenzi (2002).

Cardiophorus ruficollis (Linnaeus, 1758)

Material examined: **Ödemiş**-Bozdağ, 30.iv.2003, *Pinus* sp., (1). Totally 1 specimen. This species is the first record for İzmir fauna.

Cardiophorus ruficuris (Brullé, 1832)

Material examined: **Bayındır**, 14.iv.1967, weeds, (2); **Ödemiş**, 24.iv.1973, *Rubus* sp., (7). Totally 9 specimens. This species was recorded from İzmir by Platia & Gudenzi (2002).

Cardiophorus sacratus Erichson, 1840

Material examined: **Ödemiş**, 14.v.1970, weeds, (2). Totally 2 specimens. Previously, Sahlberg (1912-1913) and Guglielmi & Platia (1985) recorded this species from İzmir.

Cardiophorus syriacus (Linnaeus, 1758)

Material examined: Balçova-Trazlı, 18.iv.2005, under stone, (1); Bornova, 09.iv.2005, shrubs, (1). Totally 2 specimens. This species is the first record for İzmir fauna.

Cardiophorus vestigialis Erichson, 1840

Material examined: Narlıdere, 11.ii.1972, *Pyrus elaeagnifolia*, (1); Ödemiş, 24.i.1973, *Platanus* sp., (1); Seferihisar, 20.iv.1972, *Cydonia vulgaris*, (4). Totally 6 specimens. This species is the first record for İzmir fauna.

Dicronychus cinereus (Herbst, 1784)

Material examined: Kemalpaşa-Armutlu, 27.iv.2004, *Prunus cerasus*, (1), *Rubus* sp. (3); Kemalpaşa-Yukarıkızılca, 11.vi.2003, *Juglans regia*, (2); Ödemiş-Bozdağ, 24.v.1972, *Castanea sativa*, (1), *Crataegus* sp., (1), 24.v.1978, *Castanea sativa*, (1), 15.vi.2004, *Castanea sativa*, (1); Ödemiş-Hacıhasanlı, 01.vi.2004, *Castanea sativa*, (1), *Prunus cerasus*, (4). Totally 15 specimens. This species is the first record for İzmir fauna.

Dicronychus rubripes (Germar, 1824)

Material examined: Ödemiş-Bozdağ, 24.v.1972, *Crataegus* sp., (1), 14.v.1973, weeds, (1), 24.v.1978, *Pinus* sp., (4). Totally 6 specimens. This species is the first record for İzmir fauna.

Negastriinae Nakane & Kishii, 1956***Quasimus minutissimus*** (Germar, 1822)

Although this species has been recorded from İzmir under the name of ***Hypnoidus minutissimus*** by Sahlberg (1912-1913), it has not been collected in this study.

Zoroachros alysidotus (Kiesenwetter, 1858)

Material examined: Kemalpaşa, 17.v.2005, sticky yellow trap, (1); Kemalpaşa-Armutlu, 12.ix.2003, pitfall trap, (2); Kemalpaşa-Ören, 21.viii.1994, sticky yellow trap, (1), 01.vi.1998, pitfall trap, (1), 02.xi.1998, sticky yellow trap, (1); Kemalpaşa-Örnekköy, 12.ix.1994, sticky yellow trap, (1). Totally 7 specimens. Sahlberg (1912-1913) recorded this species from İzmir under the name of ***Hypnoidus alysidotus***.

Elaterinae Leach, 1815***Adrastus limbatus*** (Fabricius, 1776)

Material examined: Bayındır, 28.v.2003, *Prunus persica*, (4); Kemalpaşa-Armutlu, 11.vi.2003, *Prunus avium*, (6); Kemalpaşa-Ören, 11.vi.2003, *Prunus avium*, (3); Kemalpaşa-Yukarıkızılca, 11.vi.2003, *Juglans regia*, (7), *Pinus* sp., (1), *Platanus* sp., (2), *Prunus avium*, (4); Selçuk-Belevi, 21.v.2003, *Prunus persica*, (2). Totally 29 specimens. This species is the first record for İzmir fauna.

Adrastus pallens (Fabricius, 1792)

Material examined: Bornova-Pınarbaşı, 03.vi.1970, *Juglans regia*, (15); Ödemiş-Pirinççi, 28.v.1969, weeds, (1). Totally 16 specimens. This species is the first record for İzmir fauna.

Adrastus rachifer (Geoffroy in Fourcroy, 1785)

Material examined: Bornova, 07.vii.1978, *Rubus* sp., (1). Totally 1 specimen. Guglielmi & Platia (1985) recorded this species from İzmir.

Agriotes brevis Candéze, 1863

Material examined: Karşıyaka-Bayraklı, vi.1983, weeds, (1); Ödemiş-Bozdağ, 29.v.2003, *Castanea sativa*, (1); Ödemiş-Bozdağ-Büyükkavdar, 19.vi.2003, *Urtica* sp., (1). Totally 3 specimens. Sahlberg (1912-1913) recorded this species from İzmir.

Agriotes gurgistanus Faldermann, 1835

Material examined: Bornova, 25.iv.1984, weeds, (1); **Ödemiş-Bozdağ-Büyükçavdar**, 17.vii.2003, *Urtica* sp., (2). Totally 3 specimens. This species is the first record for İzmir fauna.

Agriotes kraatzi Schwarz, 1891

Material examined: **Ödemiş-Bozdağ-Büyükçavdar**, 17.vii.2003, *Urtica* sp., (2); **Seferihisar-Sığacık**, 28.xii.1971, *Zea mays*, (1). Totally 3 specimens. This species was recorded from İzmir by Sahlberg (1912-1913).

Agriotes lineatus (Linnaeus, 1767)

Material examined: **Kemalpaşa-Nif Mountain**, 25.v.2004, *Juglans regia*, (1); **Ödemiş-Bozdağ**, 29.v.2003, *Prunus cerasus*, (2); **Ödemiş-Üçler Pass**, 18.v.2004, *Pyrus elaeagnifolia*, (1). Totally 4 specimens. This species is the first record for İzmir fauna.

Agriotes paludum Kiesenwetter, 1859

Material examined: **Ödemiş**, 24.iv.1973, *Matricaria* sp., (2). Totally 2 specimens. This species is the first record for İzmir fauna.

Agriotes turcicus Candéze, 1863

Although this species has been recorded from İzmir by Sahlberg (1912-1913), it has not been collected in this study.

Ampedus elegantulus (Schönherr, 1817)

Material examined: **Ödemiş-Bozdağ**, 24.v.1978, *Urtica* sp., (1), 30.iv.2003, *Pinus* sp., (1). Totally 2 specimens. This species is the first record for İzmir fauna.

Ampedus elongatulus (Fabricius, 1787)

Material examined: **Kemalpaşa**, 25.v.2004, under bark, (1); **Kemalpaşa-Kurudere**, 16.iv.2003, *Pinus* sp., (1); **Ödemiş-Bozdağ**, 30.iv.2003, *Pinus* sp., (2). Totally 4 specimens. This species is the first record for İzmir fauna.

Peripontius terminatus (Erichson, 1842)

Material examined: **Beydağ**, 04.vi.2004, *Rubus* sp., (1); **Bornova**, 10.ix.1983, weeds, (1); **Karaburun-Mordoğan**, 08.vi.2003, *Prunus persica*, (3); **Kemalpaşa**, 15.v.2003, *Juglans regia*, (1); **Kemalpaşa-Armutlu**, 15.v.2003, *Rubus* sp., (3), 11.vi.2003, *Prunus cerasus*, (1), 27.iv.2004, *Prunus cerasus*, (6); **Kemalpaşa-Çambel**, 25.v.2004, *Quercus* sp., (4); **Kemalpaşa-Nif Mountain**, 25.v.2004, *Juglans regia*, (2); **Kemalpaşa-Ören**, 11.v.1999, sticky yellow trap, (1); **Ödemiş-Birgi**, 01.vi.2003, *Cupressus* sp., (1); **Ödemiş-Bozdağ-Gündalan**, 17.vii.2003, *Urtica* sp., (1); **Ödemiş-Kemerköy**, 01.vi.2004, *Quercus* sp., (1); **Ödemiş-Kırkoluk**, 29.v.2003, *Ulmus* sp., (1); **Seferihisar**, 28.xii.1971, under stone, (1). Totally 28 specimens. This species is the first record for İzmir fauna.

Pittonotus theseus (Germar, 1817)

Material examined: **Bornova**, 02.v.1962, (1), 12.v.1962, (1), 15.vii.1963, (1), 20.vi.1979, (1), 17.vi.1980, under stone, (1); **Çeşme**, 01.vii.2004, light trap, (1), 17.vii.2004, light trap, (1), 02.vii.2005, light trap, (2); **Menderes-Gümüldür**, 06.vi.1977, (2); **Karaburun**, 05.vii.1978, light trap, (1); **Kemalpaşa-Armutlu**, 12.ix.2003, pitfall trap, (1); **Konak**, 07.ii.1960, (3), 25.vi.1973, light trap, (1); **Tire**, 31.vii.1988, (1). Totally 18 specimens. This species is the first record for İzmir fauna.

Synaptus filiformis (Fabricius, 1781)

Material examined: **Bornova**, 20.iv.1993, weeds, (1); **Bornova-Pınarbaşı**, 03.vi.1970, *Juglans regia*, (1); **Bornova-Zeytinköy**, 12.v.1972, *Juglans regia*, (2); **Ödemiş**, 25.v.1973, *Juglans regia*, (1); **Ödemiş-Bozdağ**, 20.v.1970, *Mentha* sp., (1), 24.v.1978, weeds, (1). Totally 7 specimens. This species is the first record for İzmir fauna.

Melanotinae Candéze, 1859***Melanotus brunnipes*** (Germar, 1824)

Material examined: Selçuk, 29.vi.1971, *Citrullus vulgaris*, (1). Totally 1 specimen. This species is the first record for İzmir fauna.

Melanotus castanipes (Paykull, 1800)

Material examined: Çeşme, 10.vii.2004, light trap, (1), 02.vii.2005, (1), 09.vii.2005, (3), 16.vii.2005, (2). Totally 7 specimens. This species is the first record for İzmir fauna.

Melanotus crassicollis (Erichson, 1841)

Material examined: Bayındır, 14.v.1973, *Quercus* sp., (1); Ödemiş-Birgi, 07.vi.1972, weeds, (1). Totally 2 specimens. Sahlberg (1912-1913) recorded this species from İzmir.

Melanotus fusciceps (Gyllenhal, 1817)

Material examined: Bornova, 18.v.1975, (1), 23.vi.1961, (1); Karaburun-Mordoğan, vii.1973, light trap, (1); Kemalpaşa, 23.iv.1966, (1). Totally 4 specimens. Guglielmi & Platia (1985) recorded this species from İzmir.

Melanotus punctolineatus (Pélerin, 1829)

Material examined: Bornova, 18.v.1975, (1); Ödemiş, 14.v.1973, *Ulmus* sp., (1), 18.iv.1980, *Solanum tuberosum*, (4); Ödemiş-Bozdağ, 14.v.1973, weeds, (2). Totally 8 specimens. This species is the first record for İzmir fauna.

Melanotus tenebrosus (Erichson, 1841)

Material examined: Bergama-Kozak Plateau, 03.vii.2004, weeds, (1); Çeşme, 21.vi.2003, light trap, (1), 28.vi.2003, (1), 03.vii.2004, (1), 17.vii.2004, (1). Totally 5 specimens. Previously, Sahlberg (1912-1913) and Gül-Zümreoğlu (1972) recorded this species from İzmir.

Melanotus villosus (Brullé, 1832)

Material examined: Çeşme, 05.vii.2003, light trap, (1), 03.vii.2004, (1), 10.vii.2004, (1); Selçuk-Şirince, 25.vi.2003, weeds, (1). Totally 4 specimens. This species is the first record for İzmir fauna.

RESULTS

As a results of this study, 42 species of 17 genera belonging to six subfamilies of Elateridae have been reported from İzmir. Twenty eight of them namely *Aeoloderma crucifer*, *Calais parreyssi*, *Lacon punctatus*, *Athous haemorrhoidalis*, *A. vittatus*, *Hemicrepidius hirtus*, *Cardiophorus antennalis*, *C. cyanipennis*, *C. discicollis*, *C. ruficollis*, *C. syriacus*, *C. vestigialis*, *Dicronychus cinereus*, *D. rubripes*, *Adrastus limbatus*, *A. pallens*, *Agriotes gurgistanus*, *A. lineatus*, *A. paludum*, *Ampedus elegantulus*, *A. elongatulus*, *Peripontius terminatus*, *Pittonotus theseus*, *Synaptus filiformis*, *Melanotus brunnipes*, *M. castanipes*, *M. punctolineatus* and *M. villosus* have been determined for the first time in İzmir province.

Among them, *Lacon punctatus*, *Adrastus limbatus*, *Peripontius terminatus*, *Drasterius bimaculatus* and *Cardiophorus discicollis* were the abundant and widespread species. Separately, *Aeoloderma crucifer*, *Dicronychus cinereus* and *Pittonotus theseus* were the other common species.

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