

The Genus *Xantholinus* Dejean, 1821 (Coleoptera: Staphylinidae: Staphylininae: Xantholinini) in Turkey: a New Species from South-eastern Anatolia and New Records of Known Species

Sinan Anlaş

Alaşehir Vocational School, Celal Bayar University, TR-45600, Alaşehir, Manisa, Turkey; E-mail: sinan.anlas@gmail.com

Abstract: *Xantholinus (Helicophallus) kunti* sp. n. from Siirt Province in South-eastern Anatolia, Turkey, is described and illustrated. Additional records of 19 other species of the genus *Xantholinus* are reported from Turkey. The distribution of 12 species of the subgenus *Helicophallus* in the country is mapped.

Key words: Coleoptera, *Xantholinus*, Turkey, new species, distributional map.

Introduction

The genus *Xantholinus* Dejean, 1821 includes more than 280 species in the world (after HERMAN 2001, updated). According to recent studies, 122 species of the genus *Xantholinus* are known from the Palaearctic, 37 of which are distributed in Turkey (ASSING 2007, 2008, 2016, BORDONI 2011, ANLAŞ 2014, SCHÜLKE & SMETANA 2015). Twenty-one of them are restricted to Anatolia and represent nearly 60% of the Turkish *Xantholinus* fauna. Since 2007, 14 new species have been described from Turkey and, most probably, many species remain to be discovered and described.

In the present study, a new species is described and new data on the distribution of 19 further species of the genus *Xantholinus* are reported from Turkey. In addition, a map of the distribution of 12 species of the subgenus *Helicophallus* Coiffait, 1956 in Turkey is presented.

Materials and Methods

Primary and secondary sexual characters of the species described herein are termed following COIFFAIT (1972) and ASSING (2007). The morphological studies were conducted using a Stemi 2000-C microscope (Zeiss, Germany). For the photographs a digital camera Axiocam ERC5s (Zeiss, Germany) was used.

The following abbreviations are used for the measurements (given in mm): AL: length of antenna; AW: maximal width of abdomen; EL: length of elytra from apex of scutellum to posterior margin; EW: combined width of elytra; HL: head length from anterior margin of clypeus to posterior margin of head; HW: head width (including eyes); ML: length of aedeagus from apex of ventral process to base; PL: length of pronotum along median line; PW: maximal width of pronotum; TaL: length of metatarsus; TiL: length of metatibia; TL: total body length.

The material referred to in this study is stored in the following collections: AZMM – Alaşehir Zoological Museum, Manisa, Turkey (S. Anlaş); HNHM – Hungarian Natural History Museum, Budapest, Hungary (G. Makranczy, O. Merkl); MHNG – Muséum d'Histoire Naturelle, Genève, Switzerland (G. Cuccodoro); NMPC – National Museum, Praha, Czech Republic (M. Fikáček, J. Hájek).

Results

Xantholinus (Calolinus) bayrami Anlaş, 2014

Material: **Ankara:** 1♂, 07.XI.2014, ODTÜ campus, 39°53'55"N, 32°46'26"E, leg. Yağmur (AZMM); **Bolu:** 1♂, 23.III.1977, Gerece, Iran

Expedition 1977, National Museum Prague (NMPC); **Konya:** 2♂♂, 1♀, 01.IV–01.VI.2014, Emirgazi, Gölören, Karacadağ, 1550 m a.s.l., 37°50'05"N, 33°51'01"E, pitfall traps, leg. Yağmur (AZMM); **Yozgat:** 1♂, 2♀♀, 24.XI.1973, SW-Yozgat (NMPC). **Distribution:** The recently described species was previously known only from the type locality in Konya Province (ANLAŞ 2014).

***Xantholinus (Calolinus) ibex* Assing, 2007**

Material: Denizli: 2♂♂, 1♀, 24.III.2016, Bozkurt, İnceler, Eşeler Mts., 1744 m a.s.l., 37°42'55"N, 29°29'31"E, leg. Anlaş (AZMM). **Distribution:** This species was known only from Antalya and Muğla Provinces in South-western Anatolia (ASSING 2007, ANLAŞ 2014). The specimens from Denizli represent a new province record for Turkey.

***Xantholinus (Calolinus) rufipennis* Erichson,**

1839

Material: Artvin: 1♂, 12.VIII.2013, Bülbül Pass, 2532 m a.s.l., 41°03'08"N, 42°16'41"E, leg. Yağmur (AZMM); **Bahkesir:** 2♂♂, 1♀, 31.III.2016, Sındırgı, Koçu Mts., 1020 m a.s.l., 39°13'17"N, 28°01'50"E, leg. Anlaş (AZMM); **Denizli:** 1♂, 25.III.2016, Çal, Çökelez Mts., 1575 m a.s.l., 38°02'49"N, 29°22'10"E, leg. Anlaş (AZMM); **Diyarbakır:** 1♂, Silvan, 09.VI.1990, leg. Podiussány (HNHM); **Istanbul:** 1♂, 1♀, Emirgan, 8.VII.1969, leg. Besuchet (MHNG); **Kilis:** 2♀♀, 16.X.2013, Kesmelik environs, 36°44'15"N, 37°07'06"E, leg. Yağmur (AZMM); **Kütahya:** 1♂, 1♀, 01.IV.2016, Simav, Akdağ, 39°14'54"N, 28°49'43"E, 1700 m a.s.l., leg. Anlaş (AZMM); 1♂, 02.IV.2016, Şaphane Dağı, 39°03'N, 29°15'E, 960 m a.s.l., leg. Anlaş (AZMM); **Manisa:** 31♂♂, 36♀♀, 15.V.2012–30.III.2014, Alaşehir, Piyadeler, vineyard, 162 m a.s.l., 38°22'13"N, 28°31'28"E, pitfall traps (AZMM); 23♂♂, 20♀♀, 15.V.2012–30.III.2014, Alaşehir, Baklacı Village environs, vineyard, 143 m a.s.l., 36°24'46"N 28°26'31"E, pitfall traps (AZMM); **Muğla:** 1♂, 2♀♀, 02.V.1975, Göcek (Fethiye), leg. Besuchet & Löbl (MHNG); 1♂, 1♀, 01.V.1975, Marmaris, Çetibeli, leg. Besuchet & Löbl (MHNG); **Siirt:** 1♂, 16.V.2011, Meydandere, 827 m a.s.l., 37°55'18"N, 42°05'29"E, leg. Yağmur (AZMM); **Uşak:** 1♂, 3♀♀, 27.III.2016, Banaz, Susuz, 1090 m a.s.l., 38°37'44"N, 29°44'10"E, leg. Anlaş (AZMM); 1♂, 03.IV.2016, Gediz, Sandıklı 2 km S, 38°55'00"N, 29°25'45"E, 830 m a.s.l., leg. Anlaş (AZMM). **Distribution:** This species is widespread in the Eastern Mediterranean region (ASSING 2007, SCHÜLKE & SMETANA 2015).

***Xantholinus (Helicophallus) bitlisicus* Assing,**

2007 (Figs. 1D, H)

Material: Muş: 1♂, 15.V.2013, Hasköy, Elmabulak, leg. Gündüz (AZMM). **Distribution:** This species was known only from Bitlis Province of Turkey (ASSING 2007, 2016). The specimen from Muş represents a new province record for Turkey (Fig. 2).

***Xantholinus (Helicophallus) ceviki* Anlaş, 2014**

Material: Ardahan: 7♂♂, 9♀♀, 16.VI.1986, 16 km SW Göle, 1600 m a.s.l., leg. Besuchet, Löbl & Burckhardt (MHNG); 1♂, 22.VII.2011, Ardahan, 1950 m a.s.l., 41°07'35"N, 42°46'47"E, leg. Koç (AZMM). **Distribution:** This recently described species is known from some localities in Ardahan and Erzurum Provinces of Turkey (ANLAŞ 2014; Fig. 2).

***Xantholinus (Helicophallus) luteipennis* COIFFAIT, 1970** (Figs. 1C, G)

Material: Afyonkarahisar: 1♂, 15.V.2014, Emir Mts., 38°55'49"N 31°12'18"E, 1860 m a.s.l., leg. Yağmur & Örgel (AZMM); 1♂, 2♀♀, 09.V.2015, Emir Mts., 38°54'48"N 31°11'49"E, 1580 m a.s.l., leg. Yağmur & Örgel (AZMM); **Gaziantep:** 1♂, 16.III.2013, Şahinbey, Sof Mts., 1341 m a.s.l., 37°07'59"N, 37°09'02"E, leg. Yağmur & Koç (AZMM); **Karaman:** 2♂♂, X.2013–V.2014, Karadağ, pitfall traps, leg. Yağmur (AZMM); **Muş:** 1♂, 1♀, 21.XI.2013, Korkut, pitfall traps, leg. Gündüz (AZMM). **Distribution and Remarks:** This species was known from Adıyaman, Gaziantep, Kayseri, Kahramanmaraş and Muş Provinces (ASSING 2007, 2016, ANLAŞ 2014). It is here recorded from Central and Central-western Anatolia (Fig. 2). The original description of *X. khachikovi* ANLAŞ, 2014 was based on two males from two localities in Muş Province of Eastern Anatolia (ANLAŞ 2014). Recently, this species has been proposed as a synonym of *X. luteipennis* by ASSING (2016). A re-examination of the aedeagus of the types of *X. khachikovi*, especially the distal and proximal parts of the internal structures, in squeeze preparation revealed that it is identical to *X. luteipennis*. Therefore, I confirm that *X. khachikovi* is a synonym of *X. luteipennis*. The illustration of the aedeagus of *X. luteipennis* by COIFFAIT (1972) is misleading, since it shows the presence of only one large distal spine.

***Xantholinus (Helicophallus) tauricus* Bordoni,**

1972

Material: Konya: 1♂, 1♀, 09.VII–01.X.2013, Güneysırmır, pitfall traps, leg. Yağmur & Kesdek (AZMM). **Distribution:** This species is known only from Isparta and Konya Provinces (BORDONI 1972, ASSING 2007, ANLAŞ 2014; Fig. 2).

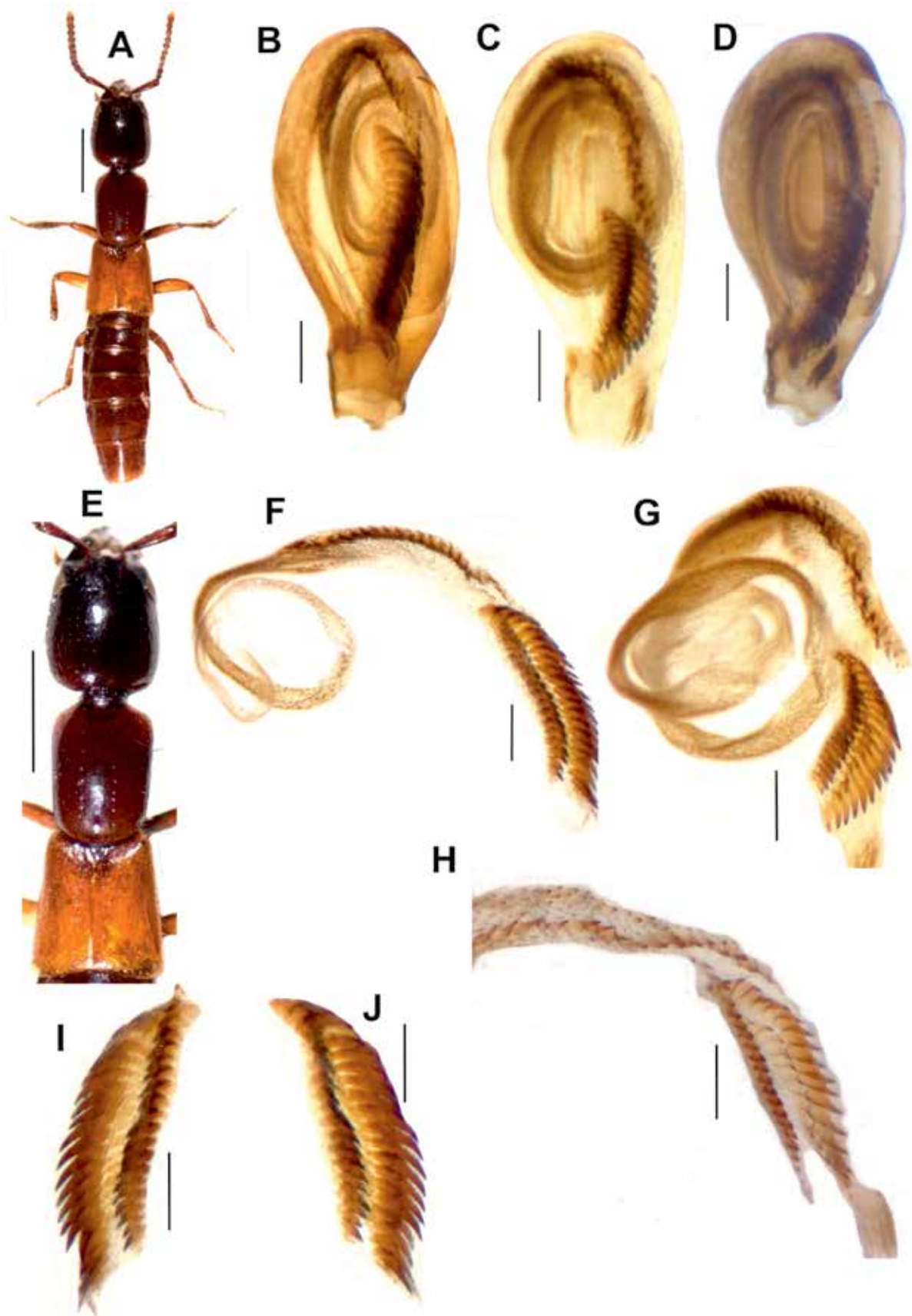


Fig. 1. *Xantholinus kunti* sp. n. (A-B, E-F, I-J), *X. luteipennis* Coiffait (C, G), *X. bitliscicus* Assing (D, H). A—habitus; B, C, D—aegeagus in dorsal view; E—forebody; F, G, H—internal structures of aegeagus in squeeze preparation; I, J—distal part of internal structures of aegeagus in squeeze preparation. Scale bars: 1.0 mm (Figs. A, E); 0.2 mm (Fig. B-D and F-J).

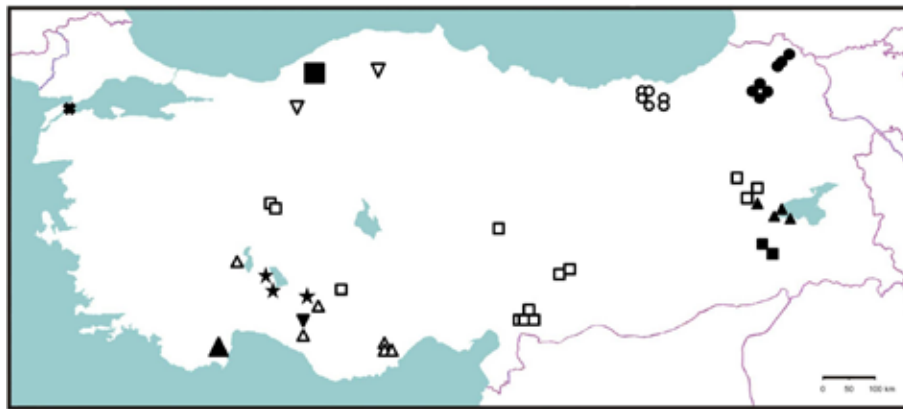


Fig. 2. Distributions of the Turkish species of the subgenus *Helicophallus*: *Xantholinus bitlisicus* Assing (small filled triangles), *X. brevispinosus* Assing (filled upside down triangle), *X. ceviki* Anlaş (filled circles), *X. chersonesicus* Assing (crossier), *X. faginus* Assing (large filled square), *X. ilgazensis* Coiffait (open upside down triangles), *X. korgei* Coiffait (open circles), *X. kunti* sp. n. (small filled squares), *X. lividipennis* Coiffait (large filled triangle), *X. luteipennis* Coiffait (small open squares), *X. multispinosus* Assing (small open triangles) and *X. tauricus* Bordoni (stars). The dubious record of *X. korgei* in Sinop Province is omitted.

***Xantholinus (Helicophallus) kunti* sp. n.** (Figs. 1A–B, E–F, I–J)

Type Material: Holotype: TURKEY, ♂, “TR. Siirt Province, Baykan 4 km NE, Bitlis River, ca. 770 m a.s.l., 38°11’42”N, 41°49’03”E, 17.XI.2010, Anlaş & Yağmur / Holotype ♂, *Xantholinus (Helicophallus) kunti* sp. n. det. S. Anlaş 2015” (AZMM). **Paratypes:** TURKEY, same data as holotype, 2♂♂ and 5♀♀, 17.XI.2010 and 1♂, 21.V.2010 (AZMM); 1♂, 11.IV.2011, Siirt Province 10 km SE, Uluçay, 666 m a.s.l., 37°57’04”N, 41°49’47”E, leg. Yağmur (AZMM).

Measurements (in mm) and ratios (range, arithmetic mean; n=10). AL: 1.68–1.96, 1.85; HL: 1.23–1.33, 1.29; HW: 0.94–1.08, 1.03; PW: 0.86–0.94, 0.91; PL: 1.24–1.33, 1.29; EL: 0.82–0.93, 0.89; EW: 1.13–1.24, 1.19; AW: 1.14–1.26, 1.21; TiL: 0.75–0.80, 0.77; TaL: 0.62–0.66, 0.64; ML: 1.28–1.35, 1.32 (n=5); TL: 7.2–8.3, 7.8; HL/HW: 1.23–1.30, 1.25; PW/HW: 0.87–0.91, 0.88; PW/PL: 0.69–0.71, 0.70; EL/PL: 0.66–0.70, 0.69; EW/PW: 1.31–1.32, 1.31; AW/EW: 1.00–1.02, 1.01; TiL/TaL: 1.21

Etymology: The species name is dedicated to Kadir Buğaç Kunt (Ankara), a specialist on arachnids and a friend of the author, who has carried out important zoological research in Turkey.

Description: Habitus as in Figs. 1A, E. Coloration: head dark brown to black, pronotum and abdomen reddish-brown to dark brown, head always somewhat darker than pronotum, elytra yellowish-red to bright reddish; legs dark yellowish, antennae reddish to brown.

Head strongly oblong, average 1.25 times as long as wide (see ratio HL/HW and Figs. 1A, E); eyes small, not distinctly projecting from lateral outline of head,

approximately 1/5 the length of postocular region in dorsal view; dorsal surface with sparse, well-defined, and relatively coarse punctation and with a few interspersed micropunctures, central dorsal region almost without punctures, microsculpture absent; antenna not slender, with 8–10 antennomeres weakly transverse, at most 1.5 times as wide as long (Fig. 1A).

Pronotum narrower than head (see ratio PW/HW and Figs. 1A, E), and strongly oblong (see ratio PW/PL and Figs. 1A, E); distinctly tapering posteriorly; lateral margins almost straight in dorsal view; dorsal series composed of 10–12 punctures; microsculpture absent.

Elytra distinctly wider than pronotum and, at suture distinctly shorter than pronotum (see ratio EL/PL, EW/PW and Figs. 1A, E), punctation of variable density but mostly well-defined. Hind wings at least in some specimens of reduced length. Legs relatively long (see measurements TiL and TaL).

Abdomen approximately as wide as elytra (see ratio AW/EW and Fig. 1A); punctation fine and sparse; all tergites with distinct transverse microsculpture and well-defined, pubescence blackish; posterior margin of tergite VII with narrow palisade fringe.

♂: Posterior margins of tergite and sternite VIII weakly convex and narrowly semitransparent; aedeagus with internal structures composed of a proximal series of approximately 20–25 relatively short and sklerotised spines, a distal series of approximately 18–20 long and slender spines, a second distal series of approximately 15–18 shorter spines and very small and barely visible distal brush-like cluster (Figs. 1B, F, I and J).

Differential diagnosis: The species is distinguished from all its congeners by the internal struc-

tures of the aedeagus. For illustrations of the internal structures of the aedeagus of these species in Turkey, see the figures by COIFFAIT (1972), ASSING (2007) and ANLAŞ (2014). The similarly derived morphology of the aedeagal characters suggests that this new species is most closely related to *X. luteipennis* and *X. bitlisicus*:

Xantholinus luteipennis is readily separated from the new species by a smaller aedeagus with distally shorter, smaller and less sklerotised spines, by the presence of an intermediate distal series and by the distinct distal brush-like cluster of semi-transparent spines (see Figs. 1C, G); *X. bitlisicus* is distinguished from the new species by the different coloration (head and pronotum reddish brown to dark brown, elytra bright reddish; abdomen brown to blackish brown), shorter legs, the two proximal series of sclerotised spines, the presence of an intermediate distal series and by the distinct distal brush-like cluster of semitransparent spines (see Figs. 1D, H).

I identified this new species as *X. luteipennis* in ANLAŞ (2014: Figs. 32-33) without squeeze preparation. But after examination on the internal structures of the aedeagus of the new species in squeeze preparation it was revealed that they refer to different species.

Distribution: The species was collected in two localities in Siirt Province of South-eastern Anatolia (Fig. 2). The specimens were collected near the banks of Bitlis River and Uluçay.

Xantholinus (Heterolius) caucasicus Bordoni,

1975

Material: Bitlis: 2♂♂, 1♀, 24-26.IV.2009, Tatvan, leg. Nabozhenko (AZMM). **Distribution:** This species was known only from Artvin Province, North-east Turkey, and also the Caucasus (ASSING 2007, BORDONI 2011, ANLAŞ 2014). The specimens from Bitlis represent a new province record for Turkey.

Xantholinus (Idiolinus) ciliciae Bordoni, 1971

Material: Adana: 1♂, 29-31.VII.1947, Börücek, Exp. Nat. Mus. ÇSR (NMPC); 1♀, Tekir, 30.IV.1978, 1300 m a.s.l., leg. Besuchet & Löbl (MHNG); **Hatay:** 1♂, 3.V.1978, Antakya, Soğukoluk, 700 m a.s.l., leg. Besuchet & Löbl (MHNG); 1♂, 2.V.1978, Antakya, Harbiye, leg. Besuchet & Löbl (MHNG); **Osmaniye:** 1♂, 1♀, 1.V.1978, Karatepe, 200 m a.s.l., leg. Besuchet & Löbl (MHNG). **Distribution:** This species is known from Adana, Adıyaman, Antalya, Hatay, Kahramanmaraş, Mersin, Niğde and Osmaniye Provinces of Turkey and also from Cyprus (BORDONI 1971, ASSING 2007, ANLAŞ 2014).

Xantholinus (Idiolinus) crassicornis Hochhuth,

1851

Material: Artvin: 5♂♂, 7♀♀, 11.VI.1986, Pırnallı, Karkal Dağı, 1600 m a.s.l., leg. Besuchet, Löbl & Burckhardt (MHNG); 1♂, 17.VI.2014, Şavşat, Kirazlı, 1497 m a.s.l., 41°25'50"N, 42°29'27"E, leg. Yağmur (AZMM); 1♂, 13.V.1967, Artvin, 650 m a.s.l., leg. Besuchet (MHNG); **Ardahan:** 11♂♂, 11♀♀, 13.VI.1986, Damal-Posof, 2400-2500 m a.s.l., leg. Besuchet, Löbl & Burckhardt (MHNG). **Distribution:** *Xantholinus crassicornis* is distributed in Azerbaijan, Georgia, southern European Russia, Iran and Turkey (ASSING 2007, SCHÜLKE & SMETANA 2015). In Turkey, this species is known from Ardahan and Artvin, North-eastern Anatolia.

Xantholinus (Paracyclinus) procerus Erichson,

1839

Material: Kütahya: 1♂, 1♀, 02.IV.2016, Şaphane Dağı, 39°03'N, 29°15'E, 960 m a.s.l., leg. Anlaş (AZMM). **Distribution:** According to ASSING (2007) and SCHÜLKE & SMETANA (2015), this species is known from Romania, Bosnia-Herzegovina, Albania, Bulgaria, Ukraine, Russian South European territory, Georgia, Azerbaijan and Turkey (Ankara-Çankırı and Bolu Provinces). The specimens from Kütahya represent a new province record for Turkey.

Xantholinus (Typhlolinus) graecus KRAATZ

1858

Material: Adana: 1♂, Adana (NMPC); **Afyonarhisar:** 2♂♂, 26.III.2016, Sandıklı, Sandıklı Mts., 1500 m a.s.l., 38°27'40"N, 30°21'32"E, leg. Anlaş (AZMM); **Denizli:** 1♂, 1♀, 24.III.2016, Bozkurt, İnceler, Eşeler Mts., 1744 m a.s.l., 37°42'55"N, 29°29'31"E, leg. Anlaş (AZMM); **Izmir:** 1♀, 16.VII.1969, Bahçeliköy, leg. Besuchet (MHNG); **Mersin:** 1♂, 30.IV.1978, Tarsus, Gülek, 1550 m a.s.l., leg. Besuchet & Löbl (MHNG); 1♂, 27.IV.1978, Riv. Babadil (=Babadıl Deresi, Sipahili, Aydınçık), leg. Besuchet & Löbl (MHNG); 1♂, İçel vilayet, Alkouyatkor? 12.V.1984, leg. Szaloki (HNHM); **Uşak:** 2♂♂, 03.IV.2016, Banaz, Susuz, 38°38'50"N, 29°42'54"E, 800 m a.s.l., leg. Anlaş (AZMM). **Distribution:** *Xantholinus graecus* is widespread in Lebanon, Israel, Italy, Albania, Macedonia, Greece, Cyprus and Turkey (ASSING 2007, ANLAŞ 2014, SCHÜLKE & SMETANA 2015).

Xantholinus (Typhlolinus) gridellii Coiffait, 1956

Material: Konya: 1♂, 2♀♀, 10.XI.2011, Bozkır, Belören Village, 1030 m a.s.l., leg. Kesdek (AZMM). **Distribution:** *Xantholinus gridellii* is distributed in the Middle East (Israel, Lebanon, Syria,

Cyprus) and Gaziantep Province, South-east Turkey (ASSING 2007). Thus, this species is recorded for the first time from Central Anatolia.

***Xantholinus (Typhlolinus) laevigatus* Jacobsen,**

1849

Material: Kastamonu: 1♂, 1♀, 17.V.1976, Ilgazdağ (=Ilgaz Dağları), Diphan, 1300 m a.s.l., leg. Besuchet & Löbl (MHNG); 1♂, 17.V.1976, Ilgazdağ, 1700-1800 m a.s.l., leg. Besuchet & Löbl (MHNG). **Distribution:** This species is widespread in Turkey (Bolu, Bursa, Düzce, Gaziantep, Izmir, Kastamonu, Manisa and Mersin Provinces) and Europe (ASSING 2007, ANLAŞ 2014, SCHÜLKE & SMETANA 2015).

***Xantholinus (Typhlolinus) osellai* Bordoni, 1976**

Material: Bolu: 1♂, 2♀♀, 13.V.1976, Mengen 9 km N, 750 m a.s.l., leg. Besuchet & Löbl (MHNG); **Karabük:** 1♂, 16.V.1976, Zonguldak, Safranbolu 17 km N, 1000 m a.s.l., leg. Besuchet & Löbl (MHNG); **Kastamonu:** 1♂, 1♀, 18.V.1976, Küre 5 km S, 1200 m a.s.l., leg. Besuchet & Löbl (MHNG); 4♂♂, 5♀♀, 16.V.1976, Küre 5 km S, 600 m a.s.l., leg. Besuchet & Löbl (MHNG); 2♂♂, 1♀, 18.V.1976, Ağlı 13 km E, 1200 m a.s.l., leg. Besuchet & Löbl (MHNG); 10♂, 8♀, 18.V.1976, Inebolu, Küre, 700 m a.s.l., leg. Besuchet & Löbl (MHNG); 1♂, 28.IV.2013, Azdavay, Ballıdağ-Azdavay road, 41°34'19"N, 33°19'21"E, leg. Kunt (AZMM); **Sinop:** 1♂, 1♀, 17.VIII.2014, Gerze, Bolalı, 41°41'23"N, 35°09'46"E, 850 m a.s.l., leg. Koç (AZMM); 2♂♂, 1♀, 03.VIII.2014, Erfelek, 41°52'12"N, 34°55'26"E, 477 m a.s.l., leg. Koç (AZMM); 1♂, 12.VIII.2014, Türkeli, 41°40'30"N, 34°20'52"E, 1105 m a.s.l., leg. Koç (AZMM); **Zonguldak:** 1♂, 4♀♀, 29.V.1976, Zonguldak, 500 m a.s.l., leg. Besuchet & Löbl (MHNG). **Distribution:** This species was known from Bolu, Karabük, Kastamonu, Sinop in Northern Anatolia (BORDONI 1976, ASSING 2007, ANLAŞ 2014). The specimens from Zonguldak represent a new province record for Turkey.

***Xantholinus (Typhlolinus) varnensis* Coiffait,**

1972

Material: Manisa: 2♂♂, 2♀♀, 24.III.2016, Alaşehir, Bozdağlar 550 m a.s.l., 38°13'44"N, 28°33'15"E, leg. Anlaş (AZMM); 10♂♂, 13♀♀, 15.V.2012-30.III.2014, Alaşehir, Piyadeler, vineyard, 162 m a.s.l., 38°22'13"N, 28°31'28"E, pitfall traps (AZMM); 22♂♂, 27♀♀, 15.V.2012-30.III.2014, Alaşehir, Baklacı Village environs, vineyard, 143 m a.s.l., 36°24'46"N 28°26'31"E, pitfall traps (AZMM). **Distribution:** This species is known from Bulgaria, Greece and Turkey (SCHÜLKE

& SMETANA 2015). The Turkish records are from Bursa, Izmir, Kırklareli, Kütahya, Manisa and Muğla Provinces in Western Anatolia (ASSING 2008, ANLAŞ 2014).

***Xantholinus (s. str.) audrasi* Coiffait 1956**

Material: Artvin: 1♂, 24.VII.2011, Şavşat, 757 m a.s.l., 41°16'15"N, 42°16'02"E, leg. Koç (AZMM); 1♂, 1♀, 06.VII.2012, Maşat road, Hatila Valley, leg. Yağmur (AZMM). **Bingöl:** 2♂♂, 1♀, 19.VII.2012, Solhan, Buldan Pass, 1680 m a.s.l., 38°56'32" N, 41°08'24" E, leg. Yağmur (AZMM); **Bitlis:** 1♂, 1♀, 10.IV.1989, Küçükusu, leg. Szaloki (HNHM); **Denizli:** 1♂, 2♀♀, 25.III.2016, Çal, Çökelez Mts., 1470 m a.s.l., 38°02'29"N, 29°22'25"E, leg. Anlaş (AZMM); **Erzurum:** 1♂, 16.X.2002, Pasinler, Meydanderesi, leg. Kesdek (AZMM); 1♂, 27.VII.2011, İspir road, 40°10'17"N, 40°59'37"E, 2120 m a.s.l., leg. Yağmur (AZMM); **Istanbul:** 1♂, Kilyos, 8.VII.1969, leg. Besuchet (MHNG); **Kütahya:** 1♂, 3♀♀, 01.IV.2016, Simav, Akdağ, 39°14'54"N, 28°49'43"E, 1700 m a.s.l., leg. Anlaş (AZMM); **Manisa:** 62♂♂, 36♀♀, 15.V.2012-30.III.2014, Alaşehir, Piyadeler, vineyard, 162 m a.s.l., 38°22'13"N, 28°31'28"E, pitfall traps (AZMM); 12♂♂, 9♀♀, 15.V.2012-30.III.2014, Alaşehir, Baklacı Village environs, vineyard, 143 m a.s.l., 36°24'46"N 28°26'31"E, pitfall traps (AZMM). **Distribution:** According to ASSING (2007) and SCHÜLKE & SMETANA (2015), this species is widespread in the West Palearctic.

***Xantholinus (s. str.) davoraki* Coiffait, 1956**

Material: Erzurum: 1♂, 16.X.2002, Pasinler, Meydanderesi, leg. Kesdek (AZMM). **Distribution:** The species is known from Europe, the Caucasus region, Central Asia and Turkey (ASSING 2007, 2011, BORDONI 2011). In Turkey, this species had been recorded from from Bolu, Kastamonu and Tunceli Provinces (ASSING 2011, ANLAŞ 2014). The specimen from Erzurum represents a new province record.

***Xantholinus (s. str.) longiventris* Heer, 1839**

Material: Balıkesir: 1♂, 1♀, 31.III.2016, Sındırgı, Koçu Mts., 1020 m a.s.l., 39°13'17"N, 28°01'50"E, leg. Anlaş (AZMM). 1♂, 31.III.2016, Sındırgı, Çerçili, 810 m a.s.l., 39°11'49"N, 28°01'33"E, leg. Anlaş (AZMM). **Distribution:** According to SCHÜLKE & SMETANA (2015), *X. longiventris* is widespread in the Palearctic. This species was known only from Afyonkarahisar Province in Turkey (ANLAŞ 2014). Thus, the specimens from Balıkesir represent a new province record for Turkey.

Discussion

Until recently, the fauna of the genus *Xantholinus* in Turkey had been very poorly studied. In last ten years, several articles addressing *Xantholinus* from Turkey have been published, including descriptions of 15 new species as well as new and additional country records. Currently, 38 species of ten subgenera of *Xantholinus* are known from Turkey: *Calolinus* Coiffait (six species, five of them are found only in Turkey); *Helicophallus* Coiffait (12 species; all of them are known only from Turkey); *Heterolius* Coiffait (two species); *Idiolinus* Casey (two species); *Milichilinus* Reitter (one species, endemic to Turkey); *Paracyclinus* Bordoni (one species); *Purrolinus* Coiffait (one species); *Toxophallus* Bordoni (one species, endemic to Turkey); *Typhlolinus* Reitter (eight species, three of them are found only in Turkey) and the nominate subgenus (four species). The subgeneric concept currently in use is highly artificial. It is needed to re-split the genus phylogenetically.

SCHÜLKE & SMETANA (2015) elevated the subgenus *Milichilinus* to the generic level but this status needs further confirmation, especially by molecular studies. They (SCHÜLKE & SMETANA 2015) also included three additional species to the Turkish *Xantholinus* fauna, i.e. *Xantholinus calcidicus* Bordoni, 1973, *X. linearis* (Olivier, 1795) and *X. sidonensis* Coiffait, 1956. The presence of these three species in Turkey seems doubtful and requires confirmation. *Xantholinus linearis* has a wide geographical range in the Palaearctic and the Nearctic. This species was recorded from the Taurus Mountain in Southern Anatolia by PEYRON (1858) and, recently, also from Ankara Province of Central Anatolia (FIRAT & SERT 2016), without presenting any diagnostic figures. These records from Turkey are doubtful and might be a result of misidentification. *Xantholinus sidonensis* was originally described from Lebanon and later also recorded from

Israel, Cyprus and “Turkey”; though its locality (Castellosso Island, known also as Meyisti or Meis) is an island at three kilometres west of the Turkish coast, it is in the borders of Greece. *Xantholinus calcidicus* is reported from Izmir and Bursa Provinces in Western Anatolia by BORDONI (1976). According to ASSING (2007), this species is a synonym of *X. graecus*. Possibly, these records could be referred to *X. graecus* or *X. varnenis* (see ASSING 2007, for further details).

Turkish *Xantholinus* spp. represent more than 30% of the Palaearctic species diversity of this genus. Compared to the *Xantholinus* fauna of the most diverse Mediterranean countries (Italy: 26 species; Spain: 15 species; Greece: 12 species) and the Caucasus Region (20 species), the highest diversity and percentage of endemism are apparently found in Anatolia.

The species of the genus *Xantholinus* are difficult to be distinguished and many eastern species, especially those from the Caucasus Region, have not been revised. An entire revision of the group is a prerequisite for further studies of the diversity of the group and especially for the recognition of further new species from this region. In addition, the Middle East fauna is almost unknown. The taxonomy of the group is further complicated because the illustrations provided by COIFFAIT (1972) are unsuitable for a reliable diagnosis. For all these reasons, a detailed taxonomic revision of the species of the genus *Xantholinus* is urgently needed for Anatolia and the Middle East.

Acknowledgements: I am grateful to my colleagues for making their staphylinid collections available to me. Special thanks to György Makranczy (Budapest), Giulio Cuccodoro (Genève) and Martin Fikáček (Prague) for arranging the loans of specimens from the museum collections of *Xantholinus* spp. This study was partially supported by the Celal Bayar University Scientific Research Projects Coordination Unit (BAP, project nos. 2012-001 and 2015-176).

References

- ANLAŞ S. 2014. On the genus *Xantholinus* DEJEAN of Turkey: three new species, new and additional records, with distributional checklist (Coleoptera: Staphylinidae: Staphylininae: Xantholinini). *Journal of Insect Biodiversity* 2: 1–28.
- ASSING V. 2007. On the Xantholinini of Turkey and adjacent regions (Coleoptera: Staphylinidae, Staphylininae). *Zootaxa* 1474: 1–54.
- ASSING V. 2008. On the taxonomy and zoogeography of some Palaearctic Paederinae and Xantholinini (Coleoptera: Staphylinidae). *Linzer Biologische Beiträge* 40: 1237–1294.
- ASSING V. 2011. On the Staphylinidae of Turkey. VIII. Eleven new species, two new synonymies, a new combination, and additional records (Coleoptera: Staphylinidae). *Koleopterologische Rundschau* 81: 179–227.
- ASSING V. 2016. On the Staphylinidae of Turkey XI. Two new species, new synonymies, and additional records (Insecta: Coleoptera). *Linzer Biologische Beiträge* 48: 269–280.
- BORDONI A. 1971. Note sugli *Xantholinus* della Turchia e descrizione di una nuova specie (Col. Staphylinidae). *Redia* 52: 679–689.

- BORDONI A. 1972. Nuove specie di *Xantholinus* del Museo di Storia Naturale di Ginevra (Col. Staphylinidae). *Mitteilungen der Schweizerischen Entomologischen Gesellschaft*, 45: 127–130.
- BORDONI A. 1976. Quarto contributo alla conoscenza degli Staphylinidae della Turchia (Coleoptera). *Fragmenta Entomologica* 12: 221–239.
- BORDONI A. 2011. Notes on Palaearctic Xantholinini VI. New species and new records from Caucasus (Coleoptera, Staphylinidae). *Fragmenta Entomologica* 43: 41–56.
- COIFFAIT H. 1972. Coléoptères Staphylinidae de la région paléarctique occidentale. I. Généralités, sous-familles: Xantholininae et Leptotyphlinae. *Supplément à la Nouvelle Revue d'Entomologie* 2: 1–651.
- FIRAT S. & SERT O. 2016. Faunistic and zoogeographical composition and preliminary evaluations of some ecological features of the subfamily Staphylininae (Coleoptera: Staphylinidae) of the Central Anatolian Region of Turkey. *Turkish Journal of Zoology* 40 (1): 164–185.
- HERMAN L. H. 2001. Catalog of the Staphylinidae (Insecta: Coleoptera). 1758 to the end of the second millennium. Volumes I–VII. *Bulletin of the American Museum of Natural History* 265: 1–4218.
- PEYRON E. 1858. Catalogue des Coléoptères des environs de Tarsous (Caramanie), avec la description des espèces nouvelles. *Annales de la Société Entomologique de France* 3 (6): 353–434.
- SCHÜLKE M. & SMETANA A. 2015. Staphylinidae. In: LÖBL I. & LÖBL D. (Eds.), *Catalogue of Palaearctic Coleoptera. Volume 2. Hydrophiloidea – Staphyloidea*. Revised and updated edition. Leiden: Brill, pp. 304–1134.

Received: 13.10.2016

Accepted: 04.02.2017