Contributions to the Paederinae (Staphylinidae) Fauna of Kırıkkale Province in Central Anatolia

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ABSTRACT

In this study, Paederinae species from Kırıkkale province of central Anatolia were studied. The present paper is based on material collected by aspirator and sifter between June 2016 and April 2019 in seven localities of southern Kırıkkale province, At the end of the study, 17 species belonging to 11 genera were reported. 14 of them are new record for Kırıkkale Paederinae fauna. Leptobium yagmuri Anlaş, 2017 and Tetartopeus inexcisus Assing, 2009 represented the first record since the description of the species. In addition, Achenium scimbaliodes Koch, 1937 and Tetartopeus inexcisus Assing, 2009 are recorded for the first time from Central Anatolia Region of Turkey.

METHODS

The collected material was deposited in the collection of the Alaşehir Zoological Museum, Manisa (AZMM) of Manisa Celal Bayar University. The map was created using DIVA-GIS 7.5.

INTRODUCTION

According to recent literature, more than 1900 species of Staphylinidae are known in Turkey (Anlaş, 2009: Schülke & Smetana, 2015). The subfamily Paederinae is one of the largest subfamilies of Staphylinidae, containing over 250 species in Turkey (Anlaş, 2009: updated).

Despite many contributions, some parts of the country, especially the central, eastern and southeastern Anatolia have yet not been studied thoroughly. The fauna of Paederinae of Kırıkkale province has been poorly studied. Only five species of Paederinae have been recorded from Kırıkkale province up to now (Sert et al., 2013).

The aim of this study was to make a contribution to fauna of Paederinae of Kırıkkale province.
Classification and nomenclature of the subfamily Paederinae suggested by Schülke and Smetana (2015) have been followed in the study.

RESULTS

In this study, 17 species of 11 genera belonging to the subfamily Paederinae are reported from Kırıkkale province in Central Anatolia Region of Turkey. 14 of them are new record for Kırıkkale Paederinae fauna.

*Astenus procerus* (Gravenhorst, 1806)

**Material examined:** Kırıkkale: 1♂, 1♀, 07.III.2018, Bahşili, Sarıkayalar, 39°41'42"N, 33°18'38"E, 1414 m, leg. Yaman & Örgel.

**Distribution in Turkey:** This species is widely distributed in Turkey (Anlaş, 2009; Sert et al., 2013; Anlaş, 2017b). This species is recorded for the first time from Kırıkkale province.

**Distribution in the world:** *A. procerus* is distributed in Europe, North Africa, Middle Asia, Turkey and Cyprus (Schülke & Smetana, 2015).

*Astenus pulchellus* (Heer, 1839)

**Material examined:** Kırıkkale: 1♂, 3♀, 07.III.2018, Bahşili, Sarıkayalar, 39°41'42"N, 33°18'38"E, 1414 m, leg. Yaman & Örgel.

**Distribution in Turkey:** The recently recorded species is only known from Göktepe, Karaman province, in Southern Turkey (Anlaş, 2017b).

**Distribution in the world:** This species is widely distributed in Europe and also known from Uzbekistan and Turkey (Schülke & Smetana, 2015; Anlaş, 2017b).

*Astenus thoracicus* (Baudi di Selve, 1857)

**Material examined:** Kırıkkale: 4♀, 2♂, 29.VI.2016, Balşeyh, Uzunlar–Gazibeyli road, 39°46'58"N, 33°43'57"E, 1515 m, leg. Yaman & Örgel. 1♂, 2♀, 07.III.2018, Bahşili, Sarıkayalar, 39°41'42"N, 33°18'38"E, 1414 m, leg. Yaman & Örgel. 1♂, 1♀, 30.IV.2019, Keskin, Konur 2 km W, 39°33'37"N, 33°30'38"E, 1430 m, leg. Örgel & Köksal.

**Distribution in Turkey:** This species is widely distributed in Turkey (Anlaş, 2009; Assing, 2013a; Sert et al., 2013; Anlaş, 2017b).

**Distribution in the world:** *A. thoracicus* is distributed from Italy, Canary Islands, Greece, Morocco, Georgia,
**Leptobium gracile** (Gravenhorst, 1802)

**Material examined:** **Kirikkale:** 3♂, 5♀, 07.III.2018, Bahşili, Sarıkyalaray 8 km N, 39°44′12″N, 33°17′13″E, 1430 m, leg. Yaman & Örgel. 2♂, 3♀, 30.IV.2019, Keskin, Konur 2 km W, 39°33′37″N, 33°30′38″E, 1430 m, leg. Örgel & Köksal.

**Distribution in Turkey:** This species is widely distributed in Turkey (Anlaş, 2009, 2017a; Sert et al., 2013).

**Distribution in the world:** This species occurs in Europe, North Africa, Middle East, Middle Asia and Turkey (Schülke & Smetana, 2015).

**Leptobium yagmuri** Anlaş, 2017

**Material examined:** **Kirikkale:** 4♂, 5♀, 07.III.2018, Bahşili, Sarıkyalaray, 39°41′42″N, 33°43′44″E, 1577 m, leg. Yaman & Örgel. 1♂, 3♀, 30.IV.2019, Keskin, Konur 2 km W, 39°33′37″N, 33°30′38″E, 1430 m, leg. Yaman & Örgel.

**Distribution in Turkey:** The recently described species is only known from Ankara province, in central Anatolia (Anlaş, 2017a). The above specimens represent the first records since the original description.

**Distribution in the world:** This species is only known from Ankara province, in central Anatolia (Anlaş, 2017a). The above specimens represent the first records from the original description.

**Achenium humile** (Nicolai, 1822)

**Material examined:** **Kirikkale:** 2♂, 08.III.2018, Çelebi, Tilkili 3 km E, 39°33′12″N, 33°30′41″E, 1427 m, leg. Yaman & Örgel. 3♂, 3♀, 30.IV.2019, Keskin, Konur 2 km W, 39°33′37″N, 33°30′38″E, 1430 m, leg. Örgel & Köksal.

**Distribution in Turkey:** Ankara, Erzincan, Eskişehir, Gümüşhane, Isparta, Kars, Kastamonu, Muş, Niğde, Tunceli, Van (Anlaş, 2009; Anlaş et al., 2011; Assing 2010, Sert et al., 2013; Altın & Yağmur, 2018). A. humile is recorded for the first time from Kırıkkale Province.

**Distribution in the world:** A. humile is widely distributed in Europe and also known from Middle Asia and Turkey (Schülke & Smetana, 2015).

**Achenium scimbalooides** Koch, 1937

**Material examined:** **Kirikkale:** 1♂, 3♀, 08.III.2018, Çelebi, Tilkili 3 km E, 39°33′12″N, 33°30′41″E, 1427 m, leg. Yaman & Örgel. 3♂, 4♀, 07.III.2018, Bahşili, Sarıkyalaray 8 km N, 39°44′12″N, 33°17′13″E, 1310 m, leg. Yaman & Örgel. 1♂, 2♀, 30.IV.2019, Keskin, Konur 2 km W, 39°33′37″N, 33°30′38″E, 1430 m, leg. Örgel & Köksal.

**Distribution in Turkey:** Adana, Bayburt, Çanakkale, Gümüşhane, Manisa, Tunceli, Uşak (Anlaş, 2009; Anlaş et al., 2011; Assing 2010, Örgel & Anlaş, 2016). The species is recorded for the first time from Central Anatolia Region.

**Distribution in the world:** Bulgaria, Turkey and Greece (Schülke & Smetana, 2015).

**Lobrathium rugipenne** (Hochhuth, 1851)

**Material examined:** **Kirikkale:** 2♂, 1♀, 29.VI.2016, Başlışey, Uzunlar–Gazibeyli road, 39°46′58″N, 33°43′57″E, 1515 m, leg. Yaman & Örgel. 1♀, 22.V.2018, Çelebi, 1320 m, 39°28′07″N, 33°29′43″E, leg. Yaman & Örgel.

**Distribution in Turkey:** This species is widespread and common in Turkey (Anlaş, 2009; Sert et al., 2013; Örgel & Anlaş, 2016).

**Distribution in the world:** This species is distributed from the southern Balkans to the Caucasus region and Turkey (Schülke & Smetana, 2015).

**Scymbalium anale** (Nordmann, 1837)

**Material examined:** **Kirikkale:** 1♂, 3♀, 08.III.2018, Çelebi, Tilkili 3 km E, 39°33′12″N, 33°30′41″E, 1427 m, leg. Yaman & Örgel. 1♂, 3♀, 07.III.2018, Keskin, Konur 2 km W, 39°33′37″N, 33°30′38″E, 1430 m, leg. Örgel & Köksal.

**Distribution in Turkey:** Ankara, Antalya, Bingöl, Bolu, Bursa, Çankırı, Diyarbakır, Elazığ, Giresun, Isparta, İstanbul, İzmir, Karaman, Kastamonu, Kütahya, Manisa, Muğla, Niğde, Sinop (Anlaş, 2009; Assing, 2013b, 2018). This species is recorded from the first time from Kırıkkale province.

**Distribution in the world:** This species is known from Europe, Middle Asia, North Africa, Middle East, Iran and Turkey (Schülke & Smetana, 2015).

**Scymbalium scimbalioides** (Koch, 1837)

**Material examined:** **Kirikkale:** 2♂, 07.III.2018, Bahşili, Sarıkyalaray, 39°41′42″N, 33°18′38″E, 1414 m, leg. Yaman & Örgel. 1♂, 3♀, 07.III.2018, Balşeyh, Uzunlar–Gazibeyli road, 39°46′50″N, 33°43′44″E, 1577 m, leg. Yaman & Örgel.

**Distribution in Turkey:** Kastamonu (Assing, 2009). The above specimens represent the first records since the original description and also this species is recorded for the first time from Central Anatolia Region.

**Distribution in the world:** This species is distributed in Europe, Caucasian, Middle Asia, Middle East, Iran and Turkey (Schülke & Smetana, 2015).

**Tetartopeus inexcisus** Assing, 2009

**Material examined:** **Kirikkale:** 1♂, 3♀, 07.III.2018, Bahşili, Sarıkyalaray, 39°41′42″N, 33°18′38″E, 1414 m, leg. Yaman & Örgel.

**Distribution in Turkey:** Kastamonu (Assing, 2009). The above specimens represent the first records since the original description and also this species is recorded for the first time from Central Anatolia Region.

**Distribution in the world:** Turkey (Assing, 2009).

**Luzea graeca** (Kraatz, 1857)

**Material examined:** **Kirikkale:** 1♂, 29.VI.2016, Balşeyh, Uzunlar–Gazibeyli road, 39°46′50″N, 33°43′44″E, 1577 m, leg. Yaman & Örgel. 1♂, 07.III.2018, Bahşili, Sarıkyalaray, 39°41′42″N,
33°18′38″E, 1414 m, leg. Yaman & Örgel.

**Distribution in Turkey**: *L. graeca* is widespread and common in Turkey (Assing, 2006, 2013a; Anlaş, 2009; Sert et al., 2013). This species is recorded for the first time from Kırıkkale province.

**Distribution in the world**: This species is distributed in Southern Europe, Caucasus, Cyprus, Israel, Lebanon, Iran and Turkey (Schülke & Smetana, 2015).

*Medon ferrugineus* (Erichson, 1840)

**Material examined**: Kırıkkale: 3♂, 4♀♀, 07.III.2018, Bahşili, Sarıkayalar, 39°44′42″N, 33°18′38″E, 1414 m, leg. Yaman & Örgel.

**Distribution in Turkey**: Ankara, Bingöl, Bolu, Eskişehir, Gümüşhane, Isparta, Kastamonu, Konya, Muş, Ordu, Sakarya, Samsun, Sinop, Trabzon, Tunceli (Assing, 2004, Anlaş, 2009: Anlaş, 2015). This species is recorded for the first time from Kırıkkale province.

**Distribution in the world**: Europe and Turkey (Assing, 2004: Schülke & Smetana, 2015).

*Scopaeus debilis* Hochhuth, 1851

**Material examined**: Kırıkkale: 1♂, 29.VI.2016, Balşeyh, Uzunlar–Gazibeyli road, 39°46′58″N, 33°43′57″E, 1515 m, leg. Yaman & Örgel.

**Distribution in Turkey**: Adana, Adıyaman, Afyonkarahisar, Ankara, Antalya, Aydın, Denizli, Diyarbakır, Eskişehir, Hakkari, Isparta, İstanbul, İzmir, Kils, Kocaeli, Mardin, Manisa, Mersin, Muğla, Yozgat (Anlaş, 2009: Assing, 2013a: Anlaş & Frisch, 2014: Çiftçi & Hasbenli, 2016). *S. debilis* is recorded for the first time from Kırıkkale province.

**Distribution in the world**: Europe, Caucasus, Middle East, Lebanon, Syria and Turkey (Anlaş & Frisch, 2014: Schülke & Smetana, 2015).

*Scopaeus elegans* Luze, 1910

**Material examined**: Kırıkkale: 1♂, 29.VI.2016, Balşeyh, Uzunlar–Gazibeyli road, 39°46′50″N, 33°43′44″E, 1577 m, leg. Yaman & Örgel.

**Distribution in Turkey**: This species is widely distributed in Turkey (Anlaş, 2009, Sert et al., 2013: Anlaş & Frisch, 2014). *S. elegans* is recorded for the first time from Kırıkkale province.

**Distribution in the world**: Lebanon, Israel, Jordan, Syria and Turkey (Anlaş & Frisch, 2014: Schülke & Smetana, 2015).

*Scopaeus inexcisus* Koch, 1937 and *Tetartopeus inexcisus* Assing, 2009 represented the five species were known from Kırıkkale province. These were *Astenus thoracicus* (Baudi Di Selve, 1857), *Leptobium gracile* (Gravenhorst, 1802), *Lobrathium rugipenne* (Hochhuth, 1851), *Paederus fuscipes* Curtis, 1826 and *Paederus littoralis* Gravenhorst, 1802 (Sert et al., 2013). First three species were reported in this study but remaining two species were not. Although the field study was conducted in all Kırıkkale provincial borders, the specimens could be collected only from the south of the province. At the end of the study, 17 species belonging to 11 genera were reported. Amongst them, *Leptobium yagmuri* Anlaş, 2017 and *Tetartopeus inexcisus* Assing, 2009 represented the first record since the description of the species. *Achenium scimbaliodes* Koch, 1937 and *Tetartopeus inexcisus* are recorded for the first time from Central Anatolia Region of Turkey.

**Distribution in Turkey**: This species is widely distributed in Turkey (Anlaş, 2009, 2017c: Sert et al., 2013: Çiftçi & Hasbenli, 2016). *R. orbiculatus* is recorded for the first time from Kırıkkale province.

**Distribution in the world**: This species is widely distributed in Turkey and Ukraine (Schülke & Smetana, 2015).

*Rugilus orbiculatus* (Paykull, 1789)

**Material examined**: Kırıkkale: 1♂, 07.III.2018, Bahşili, Sarıkayalar 8 km N, 33°17′13″E, 1310 m, leg. Yaman & Örgel. 1♀, 07.III.2018, Balşeyh, Uzunlar–Gazibeli road, 39°46′58″N, 33°43′57″E, 1510 m, leg. Yaman & Örgel.

**Distribution in Turkey**: This species is distributed in the Palaearctic Region and also known from Australian and Nearctic regions (Schülke & Smetana, 2015).

**DISCUSSION**

Up to present study, only five species were known from Kırıkkale province. These were *Astenus thoracicus* (Baudi Di Selve, 1857), *Leptobium gracile* (Gravenhorst, 1802), *Lobrathium rugipenne* (Hochhuth, 1851), *Paederus fuscipes* Curtis, 1826 and *Paederus littoralis* Gravenhorst, 1802 (Sert et al., 2013). First three species were reported in this study but remaining two species were not. Although the field study was conducted in all Kırıkkale provincial borders, the specimens could be collected only from the south of the province. At the end of the study, 17 species belonging to 11 genera were reported. Amongst them, *Leptobium yagmuri* Anlaş, 2017 and *Tetartopeus inexcisus* Assing, 2009 represented the first record since the description of the species. *Achenium scimbaliodes* Koch, 1937 and *Tetartopeus inexcisus* are recorded for the first time from Central Anatolia Region of Turkey.

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**Researchers Contribution Rate Declaration Summary**

The authors declare that they have contributed equally to the article.

**Conflict of Interest Statement**

None of the authors had any financial or personal relationships with other individuals or organizations that might inappropriately influence their work during the submission process.
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