



Original article (Orijinal araştırma)

Contributions to the fauna of Elateridae (Coleoptera) of Turkey with a description of a new species and two new records¹

Türkiye Elateridae (Coleoptera) faunasına bir yeni tür ve iki yeni kayıt ile katkılar

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Summary

A new species, *Athous (Orthathous) savsatensis* n. sp., was discovered in Artvin province and two new species for Turkish fauna, *Agriotes bogatschevi* Dolin, 1969 and *Athous (Athous) kobachidzei* Dolin & Chantladze, 1982, were recorded from Giresun, Gümüşhane, Rize and Trabzon provinces within comprehensive field studies carried out in 2013, 2014 and 2015 on the Elateridae family of the Eastern Black Sea Region of Turkey. The morphology of the new species is described. Photographs of habitus, drawings of aedeagi and the distribution map of the new species, its closely related species and new records are given.

Keywords: *Athous*, *Agriotes*, Eastern Black Sea Region, new records, new species

Özet

Türkiye'nin Doğu Karadeniz Bölgesi Elateridae familyası üzerinde 2013, 2014 ve 2015 yıllarında gerçekleştirilen kapsamlı arazi çalışmalarında Artvin ilinden *Athous (Orthathous) savsatensis* n. sp. yeni türü keşfedilmiş ve Giresun, Gümüşhane, Rize ve Trabzon illerinden Türkiye faunası için iki yeni kayıt olan *Agriotes bogatschevi* Dolin, 1969 ve *Athous (Athous) kobachidzei* Dolin & Chantladze, 1982 türleri tespit edilmiştir. Yeni türün morfolojisi betimlenmiştir. Yeni türün, yeni türe yakın türün ve yeni kayıtların ergin fotoğrafları, erkek üreme organlarının çizimleri ve yayılış haritası verilmiştir.

Anahtar sözcükler: *Athous*, *Agriotes*, Doğu Karadeniz Bölgesi, yeni kayıtlar, yeni tür

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Introduction

The family Elateridae is the ninth biggest family of Coleoptera and belongs to the superfamily Elateroidea (Lawrence, 1982). According to various authors (Lawrence, 1982; Booth et al., 1990; Lodos, 1998; Demirsoy, 1999; Laibner, 2000), the family Elateridae has 6,000-10,000 species. The elaterid fauna (Coleoptera) of Turkey includes seven subfamilies, 65 genera and 483 species (Mertlik & Platia, 2008; Kabalak & Sert, 2009, 2010a, b, 2011, 2012a, b, 2013; Platia & Gudenzi, 2009; Platia et al., 2009; Schimmel et al., 2009; Gülperçin & Tezcan, 2010, 2015; Platia, 2010a, b, 2011a, b, 2012, 2014, 2015, 2016; Platia & Nemeth, 2011; Platia et al., 2011; Kabalak et al., 2013a, b; Nemeth & Platia, 2014; Platia & Kakiopoulos, 2015). Among them, 85 species of the genus *Agriotes* and 53 species of the genus *Athous* have been recorded from Turkey to date.

In this study, a new species and two new records are given from Eastern Blacksea Region of Turkey.

Materials and Methods

Field methods

The materials were collected by using insect nets from Artvin, Giresun, Gümüşhane, Rize and Trabzon provinces of Eastern Blacksea Region of Turkey in 2013, 2014 and 2015.

Examination of specimens

The body length and width of holotype and paratypes of the new species were measured along the midline from the anterior margin of the frons to the apices of the elytra and across the broadest part of the elytra, respectively. Photographs of imago and aedeagi were taken using a stereoscopic microscope system. Holotype and paratypes of the new species were compared with paratype of *Athous (Orthathous) fragariae* Platia & Kovanci, 2005. Aedeagi of the new species and newly recorded species were drawn in detail, and aedeagus of *Athous (O.) fragariae* (Figures 2 & 6) was redrawn from the literature (Platia & Kovanci, 2005). The distribution map (Figure 9) was prepared with CFF 2.0 (Carto Fauna-Flora) (Barbier & Rasmont, 1996, 2000). The aedeagi were extracted using standard methods, dipped in Canada balsam, and placed on a celluloid plate.

Results

As a result of this study, a new species was discovered and two new records were detected. The description of a new species, locality data, photographs of habitus, drawings of aedeagi and the distribution map of the new species, its closely related species and new records are given below.

Athous (Orthathous) savsatensis n. sp. (Figures 1 & 5)

Type material: Holotype, male, Artvin province, Şavşat county, Karagöl-Şavşat road, 1572 m, 41°17'36.6" N, 42°26'51,7" E, 15.VII.2014, leg. M. Kabalak & O. Sert.

Paratype: 3 males, Artvin province, Şavşat county, Karagöl-Şavşat road, 1572 m, 41°17'36.6" N, 42°26'51,7" E, 15.VII.2014, leg. M. Kabalak & O. Sert.

Holotype and paratype are deposited in Hacettepe University Zoology Museum of the Biology Department, Hacettepe University, Ankara.

Holotype: Male, length 8.14 mm, width 2.13 mm. Body light brown except dark brown head, pronotum and scutellum, covered with long and grayish yellow hairs.

Antenna exceed apices of posterior angles of pronotum by about 2.5 segments, third segment two times as long as second segment.

Pronotum 1.1 times as long as wide, punctuation generally umbilicate and sparse, posterior margin of pronotum narrower than basal part of elytra.

Scutellum V-shaped, 1.18 times as long as wide.

Elytra 2.6 times as long as wide, elytral striae distinct and bearing umbilicate punctures, almost parallel sided from basal part to medial part, gradually narrowing from medial part to apical part, truncated at apex, elytra 2.28 times as long as pronotum.

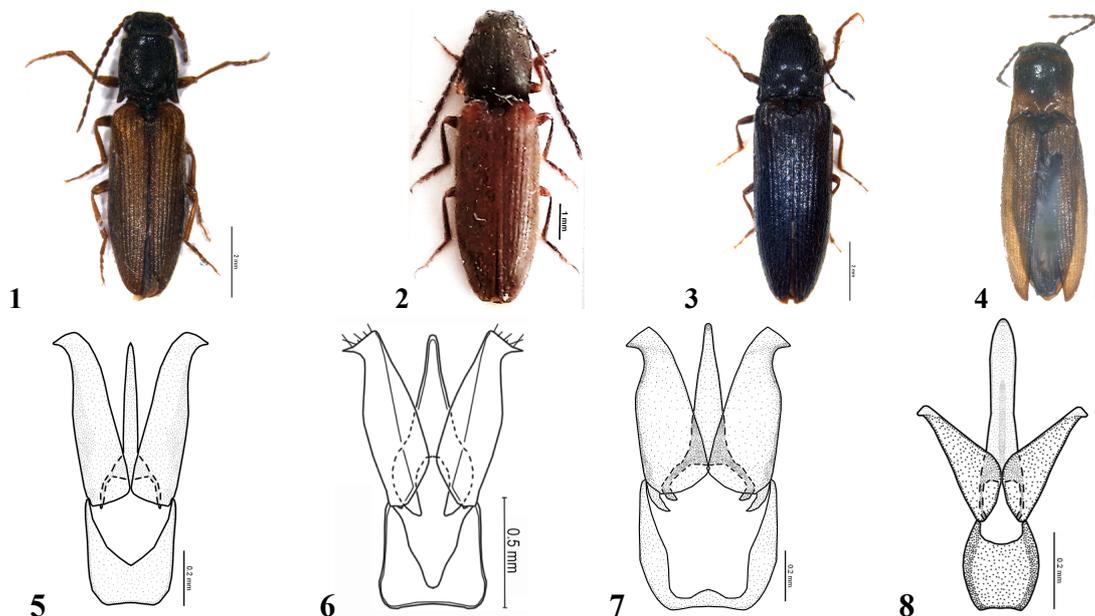
Length of aedeagus almost 1 mm, with morphology typical for the genus (Figure 4), parameres triangularly dentate and apex slightly angled.

Female: Unknown.

Paratype: Length 7.32-8.58 mm, width 1.97-2.3 mm.

Etymology: The name is derived from the name of the Şavşat county, Artvin province.

Habitat: Specimens were collected from herbaceous plants on the forest floor using an insect net.



Figures 1-8. 1. *Athous (Orthathous) savsatensis* n. sp., habitus. 2. *Athous (Orthathous) fragariae*, habitus. 3. *Athous (Athous) kobachidzei*, habitus. 4. *Agriotes bogatschevi*, habitus. 5. *Athous (Orthathous) savsatensis* n. sp., aedeagus (dorsal view). 6. *Athous (Orthathous) fragariae*, aedeagus (dorsal view, redrawn from Platia & Kovanci, 2005). 7. *Athous (Athous) kobachidzei*, aedeagus (dorsal view). 8. *Agriotes bogatschevi*, aedeagus (dorsal view).

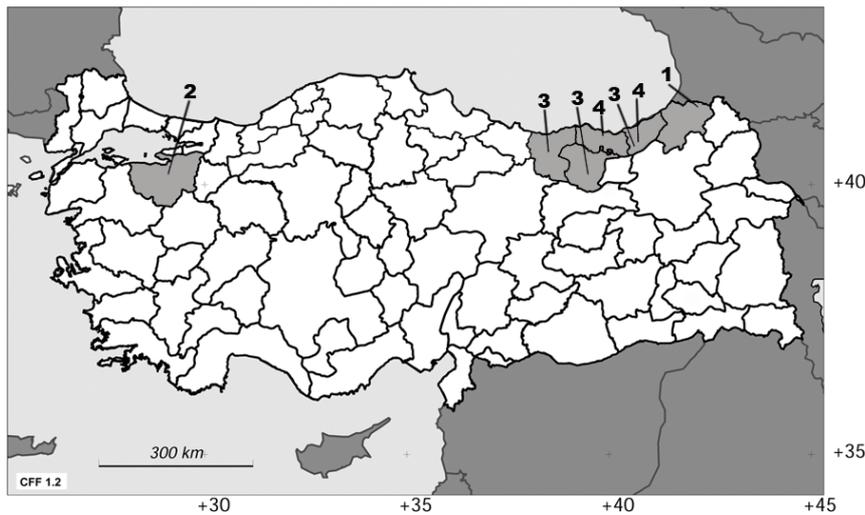


Figure 9. Distribution map of the new species, its closely related species and new records: (1) *Athous (Orthathous) savsatensis*, (2) *Athous (Orthathous) fragariae*, (3) *Athous (Athous) kobachidzei*, (4) *Agriotes bogatschevi*.

Athous (Athous) kobachidzei Dolin & Chantladze, 1982 (Figures 3 & 7)

Material examined: Giresun province, Espiye county, Ericek road, 1048 m, 40°47'30.7" N, 38°43'31.5" E, 10.VI.2014, ♂, and Dereli county, Şebinkarahisar road, 1569 m, 40°31'21" N, 38°21'16.8" E, 03.VI.2015, 2 ♂♂, leg. M. Kabalak, Y. Turan; Gümüşhane province, Kelkit county, 1991 m, 40°15'41.7" N, 39°28'28.4" E, 04.VI.2014, 2 ♂♂, and Rize province, İkizdere county, Çilekli village, 2037 m, 40°37'27.7" N, 32°31'2" E, 23.VI.2013, ♂, leg. M. Kabalak, Y. Turan & O. Sert.

Habitat: Specimens were collected from herbaceous plants near a stream using an insect net.

Turkey distribution: New record for Turkish fauna.

World distribution: Azerbaijan, Georgia, and Southern European territory of Russia (Cate, 2007).

Agriotes bogatschevi Dolin, 1969 (Figures 4 & 8)

Material examined: Rize province, İkizdere county, Güneyce Entrance, 242 m, 40°49'42.9" N, 40°28'31.4" E, 30.VII.2013, ♀, ♂, and Trabzon province, Yomra county, Yomra-Demirciler road, 888 m, 40°48'07.41" N, 39°48'40.98" E, 26.VI.2013, ♂ leg. M. Kabalak, Y. Turan & O. Sert.

Habitat: Specimens were collected from herbaceous plants near a stream using an insect net.

Turkey distribution: New record for Turkish fauna.

World distribution: Azerbaijan, Georgia, and Southern European territory of Russia (Cate, 2007).

Discussion

Athous (O.) savsatensis n. sp. is closely allied to *At. (O.) fragariae*, but can be separated by the following characters; *At. (O.) savsatensis* n. sp. is shorter and slender, while *At. (O.) fragariae* is longer and thicker; antennae of *At. (O.) fragariae* are longer and exceeding about 3.5 segments the apices of posterior angles of pronotum, while antennae of the new species is shorter and exceeding the apices of posterior angles of pronotum by almost 2.5 segments; anterior corners of pronotum are protruding in *At. (O.) savsatensis* n. sp., while anterior corners of pronotum are not protruding in *At. (O.) fragariae*; and elytra of the new species is lighter brown, while elytra of *At. (O.) fragariae* is brown.

Morphology of aedeagi of the new species and its closely related species are compared in Table 1. The median lobe is slim, distinctly shorter than parameres, pointed at apex and with short, slim and pointed arms in *At. (O.) savsatensis* n. sp., while the median lobe is gradually thickening, slightly shorter than parameres, finger shaped at apex and with long, thick and slightly pointed arms in *At. (O.) fragariae*. Paramere has short and slightly pointed tooth and slightly rounded at apex in *At. (O.) savsatensis* n. sp., while it is long and strongly pointed and angled at apex in *At. (O.) fragariae*.

Table 1. Morphology of aedeagus, collection months, collection localities and zoogeographical distribution comparisons of *Athous (Orthathous) savsatensis* n. sp. and *Athous (Orthathous) fragariae*

Character	<i>Athous (Orthathous)savsatensis</i> n. sp.	<i>Athous (Orthathous) fragariae</i> (Figure 6)
Median lobe	Slim	Gradually thick
Median lobe length	Distinctly shorter than parameres	Slightly shorter than parameres
Arms of median lobe	Short and slim; apex pointed	Long and thick; apex slightly pointed
Apex of median lobe	Pointed	Finger shaped
Distal tooth of paramere	Short, slightly pointed and directed laterally	Long, strongly pointed and slightly directed laterally
Lateral sides of paramere	Slightly sinuate	Sinuate
Apex of paramere	Slightly rounded	Angled
Collection month	July	June and July
Collection localities	Artvin province	Bursa province
Zoogeographical distribution	Turkey	Turkey

According to the literature (Platia & Kovancı 2005) and data of this study, collection months, collection localities of Turkey and zoogeographical distributions of the new species and its closely related species are given (Table 1). *Athous (O.) fragariae* is collected in June and July, while *At. (O.) savsatensis* n. sp. was only collected in July. *Athous (O.) fragariae* was recorded from Bursa province (Platia & Kovancı, 2005), while *At. (O.) savsatensis* n. sp. was collected from Artvin province (Figure 9). According to the current status, both species are only known to occur in Turkey and they could reasonably be considered to be endemic to Turkey. On the other hand, the collection locality of the new species was found quite close to border of Georgia, therefore it is possible that it also occurs in Georgia.

Athous (A.) kobachidzei was described by Dolin & Chantladze (1982). It is clearly distinguishable from *Athous (Athous) vittatus* Reitter, 1890, which also occurs in Turkey, by the structure of antennae, scutellum and aedeagus. According to Cate (2007), *At. (A.) kobachidzei* occurs in Azerbaijan, Georgia and Southern European territory of Russia. These areas are close to the collection areas in Turkey (i.e., in Giresun, Gümüşhane and Rize provinces; Figure 9). There are floristic and topographic similarities between its collection area and its known distribution, which could explain the presence of *At. (A.) kobachidzei* in Turkey.

Agriotes bogatschevi was described by Dolin (1969). Drawings of aedeagi of genus *Agriotes* in the study of Gurjeva (1972) showed that *Ag. bogatschevi* is clearly distinguishable from other species by morphology of the aedeagus (Figure 8), which has a long median lobe and short parameres. In Mardjanian (1987), *Ag. bogatschevi* is given as a synonym of *Agriotes integricolis* Reitter, 1911, whereas, Cate (2007) gave *Agriotes bogatschevi bogatschevi* Dolin, 1969 and *Agriotes bogatschevi rugosus* Gurjeva, 1979. *Agriotes bogatschevi bogatschevi* occurs in Georgia and Southern European

territory of Russia, and *Ag. bogatschevi rugosus* occurs in Azerbaijan and Southern European territory of Russia (Cate, 2007). In this study, it was recorded it in Rize and Trabzon provinces (Figure 9), which could be accepted as a continuation of the Caucasus Region, because floristic and topographic properties of collection area are very similar with the rest of its known distribution.

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