



Contributions to the Staphylinidae (Coleoptera) Fauna of Türkiye from the Belgrad Forest, Istanbul

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Abstract: In this study, Staphylinidae species collected during fieldwork conducted in the Belgrad Forest in Istanbul between 2023 and 2024 were examined. Potential habitats-including fungi, leaf litter, stream and lakesides, and carrion-were surveyed using aspirators and sifters. A total of 19 species representing 17 genera and eight subfamilies were identified. Among these, 11 species represent new records for the Marmara Region, and 14 species are new records for Istanbul, and one species' (*Scaphisoma loebli* Tamanini, 1969) locality record was given for the first time with this study.

Keywords: Staphylinidae, faunistics, taxonomy, belgrad forest, istanbul, Türkiye.

İstanbul Belgrad Ormanı'ndan Türkiye Staphylinidae (Coleoptera) Faunasına Katkılar

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Öz: Bu çalışmada, 2023–2024 yılları arasında İstanbul Belgrad Ormanı'nda yürütülen arazi çalışmaları sırasında toplanan Staphylinidae türleri incelenmiştir. Mantarlar, yaprak döküntüleri, akarsu ve göl kıyıları ile leş gibi potansiyel habitatlar aspiratör ve sifter kullanılarak araştırılmıştır. Toplam 17 cinsle bağlı sekiz alt familyadan 19 tür tespit edilmiştir. Bu türlerden 11'i Marmara Bölgesi için, 14'ü ise İstanbul için yeni kayıt niteliğindedir. Ayrıca *Scaphisoma loebli* Tamanini, 1969 türüne ait yerel kayıt da bu çalışmayla birlikte ilk kez verilmiştir.

Anahtar Kelimeler: Staphylinidae, faunistik, taksonomi, belgrad ormanı, istanbul, Türkiye.

INTRODUCTION

The family Staphylinidae is one of the most species-rich and ecologically diverse groups within Coleoptera, comprising more than 67,000 described species across 34 extant subfamilies (Newton, 2022). Staphylinidae species are found in nearly all ecosystems worldwide, ranging from the Arctic to humid tropical regions, and from marine habitats to high alpine ecosystems. Although their morphology appears relatively uniform due to their short elytra, their bodies are highly flexible, which allows them to thrive in a wide variety of microhabitats. Staphylinidae species are insects capable of feeding on a broad range of food sources. Recent research indicates that the Staphylinidae fauna of Türkiye comprises more than 1,900 recorded species (Anlaş, 2009; Schülke & Smetana, 2015). Faunistic studies conducted in Istanbul have reported approximately 170 species to date (Anlaş, 2009; Yeneroğlu et al., 2024; Toktay Okutan & Turan,

2024). In studies specifically conducted in the Belgrad Forest, a total of 25 species from the Staphylinidae family have been identified to date (Anlaş, 2009; Toktay Okutan & Turan, 2024). The Belgrad Forest is a naturally formed woodland located at the easternmost edge of the Çatalca Peninsula, on the European side of Istanbul Province (Bayrak, 2004). The region exhibits characteristics of both the Mediterranean climate and the Euro-Siberian floristic region (Akata, 2017). It is bordered by the Bosphorus Strait to the east and the Black Sea to the north. Although the forest is not situated at a high elevation, it receives significant rainfall and serves as a transitional zone between Central European and Mediterranean climates (Atlas, 1996). This unique climatic condition allows different plant species to grow together in the same area. The vegetation of the forest mainly consists of deciduous trees and shrubs (Bayrak, 2004).

Despite its ecological richness, the Staphylinidae fauna of the Belgrad Forest remains underexplored, and updated faunistic surveys are needed to better understand its diversity. The aim of this study is to document the Staphylinidae species collected in the Belgrad Forest during fieldwork carried out in 2023–2024, to provide updated faunistic data, and to evaluate their associated habitats. Additionally, new regional records for the Marmara Region and Istanbul are presented.

MATERIAL AND METHOD

Fieldwork was conducted in the Belgrad Forest (Istanbul, Türkiye) between 2023 and 2024 (Figure 1). During the field surveys, microhabitats with a high likelihood of supporting Staphylinidae were systematically investigated. Accordingly, specimens were collected from substrates such as fungi, leaf litter, and the margins of streams and lakes. Staphylinidae specimens were preserved in 70% alcohol, labeled, and stored in screw-cap tubes. Information such as collection date, coordinates, altitude, and method of collection was recorded using the Epicollect5 mobile application (v86.2.1). Fieldwork was conducted twice a month. A total of 40 individuals were recorded. Most species were represented by two individuals, while some had higher numbers. In suitable habitats, especially in areas with leaf litter containing fungi, a sifter was used. In wetland areas, an aspirator was mostly used.

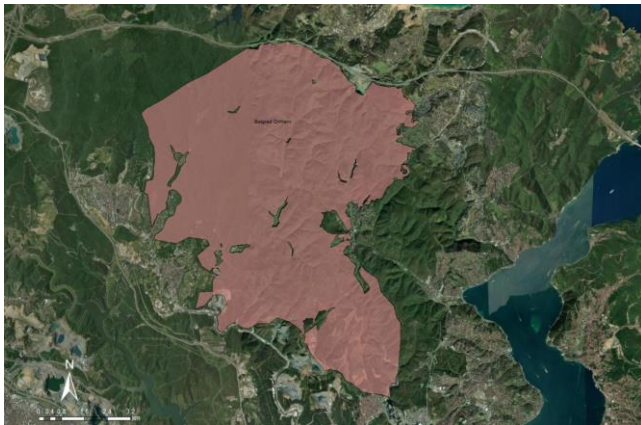


Figure 1. Map of Belgrad Forest (Red) research area.

Collected specimens were preserved in 70% ethanol and subsequently transferred to the laboratory for examination. Male and female genitalia (when available) were dissected by removing abdominal segments and macerating them in 10% KOH for approximately 24 hours. Genital dissections were performed for all species, as this was necessary to confirm the identifications based on external morphology. Afterward, they were treated with distilled water to remove soft tissues. The cleaned structures were temporarily mounted in glycerin on concave slides and examined under a microscope

(Chatzimanolis, 2004). Following these procedures, the specimens were attached to insect labels using a water-based adhesive composed of Methylcellulose and Nipagin, and were fully labeled and added to the collection.

All specimens were identified to the species level based on morphological characteristics. During the morphological examination and identification of the collected specimens, all data were recorded systematically. Identification was carried out using available literature and diagnostic keys (Assing, 2003, 2004a,b, 2006a,b, 2007a,b, 2009, 2010, 2011, 2013, 2014, 2016; Assing & Schülke, 2011; Horion, 1967; Strand & Vik, 1968; Tronquet, 2009; Welch, 1997). Identified Staphylinidae species were preserved in insect cabinets at the Entomology Laboratory of Marmara University (MUEL).

RESULTS

A total of 19 species, representing 17 genera and eight subfamilies, were identified (Aleocharinae, Oxyporinae, Paederinae, Proteininae, Scaphidiinae, Staphylininae, Steninae, Tachyporinae).

Species Collected:

Subfamily: Aleocharinae Fleming, 1821

Tribe: Aleocharini Fleming, 1821

Genus: *Megalogastria* Bernhauer, 1901

Species: *M. cingulata* (Eppelsheim, 1889)

Material examined: Türkiye: İstanbul, Belgrad Forest 1♂ 1♀, leaf debris, 113 m., 41.194323N, 28.943343E, 13.V.2023, leg. Y. Turan.

Distribution in Türkiye: İstanbul, İzmir, Muğla (Assing, 2007a; Anlaş, 2009).

Tribe: Athetini Casey, 1910

Genus: *Dilacra* Thomson, 1858

Species: *D. luteipes* (Erichson, 1837)

Material examined: Türkiye: İstanbul, Belgrad Forest 2♀♀, leaf debris, 119 m., 41.207882N, 28.964011E, 06.IV.2024, leg. Y. Turan.

Distribution in Türkiye: Isparta (Assing, 2009).

Tribe: Myllaenini Ganglbauer, 1895

Genus: *Myllaena* Erichson, 1837

Species: *M. intermedia* Erichson, 1837

Material examined: Türkiye: İstanbul, Belgrad Forest 1♂ 2♀♀, leaf debris, 119 m., 41.207882N, 28.964011E, 06.IV.2024, leg. Y. Turan.

Distribution in Türkiye: İstanbul, Manisa, Niğde, Trabzon (Apfelbeck, 1901; Anlaş, 2007; Sert et al., 2015; Sert et al., 2021).

Tribe: Oxypodini Thomson, 1859

Genus: *Oxypoda* Mannerheim, 1830

Species: *O. vicina* Kraatz, 1858

Material examined: Türkiye: İstanbul, Belgrad Forest 1♀, leaf debris, 113 m., 41.194323N, 28.943343E, 13.V.2023, leg. Y. Turan; Belgrad Forest 1♂, leaf debris,

119 m., 41.207882N, 28.964011E, 06.IV.2024, leg. Y. Turan.

Distribution in Türkiye: Adana, Aydın, Bitlis, Denizli, Erzurum, Eskişehir, Gaziantep, Giresun, İzmir, Kahramanmaraş, Kastamonu, Konya, Manisa, Mersin, Muğla, Nevşehir, Niğde (Anlaş, 2009; Assing, 2013; Sert et al., 2015, 2021; Assing, 2006b, 2007b).

Tribe: Lomechusini Fleming, 1821

Genus: *Zyras* Stephens, 1835

Species: *Z. haworthi* (Stephens, 1832)

Material examined: Türkiye: İstanbul, Belgrad Forest 1♀, leaf debris, 113 m., 41.194323N, 28.943343E, 13.V.2023, leg. Y. Turan

Distribution in Türkiye: Antalya, Giresun, Mersin, Rize, Sinop (Assing, 2010; Sert et al., 2021).

Tribe: Homalotini Heer, 1839

Genus: *Leptusa* Kraatz, 1856

Species: *L. marasica* Assing, 2006

Material examined: Türkiye: İstanbul, Belgrad Forest 1♀, leaf debris, 113 m., 41.194323N, 28.943343E, 13.V.2023, leg. Y. Turan

Distribution in Türkiye: Kahramanmaraş (Assing, 2006b). This species is endemic for Türkiye.

Subfamily: Oxyporinae Fleming, 1821

Genus: *Oxyporus* Fabricius, 1775

Species: *O. rufus* (Linnaeus, 1758)

Material examined: Türkiye: İstanbul, Belgrad Forest 1♀, mushroom, 120 m., 41.190951N, 28.967342E, 04.VI.2023, leg. Y. Turan.

Distribution in Türkiye: Erzurum (Kesdek et al., 2009; Daşdemir&Tozlu, 2022).

Subfamily: Paederinae Fleming, 1821

Genus: *Rugilus* Samouelle, 1819

Species: *R. rufipes* Germar 1836

Material examined: Türkiye: İstanbul, Belgrad Forest 2♂♂ 2♀♀, leaf debris, 113 m., 41.194323N, 28.943343E, 13.V.2023, leg. Y. Turan; 1♂ 1♀, leaf debris, 117 m., 41.183545N, 28.949093E, 05.VIII.2023, leg. Y. Turan.

Distribution in Türkiye: Bolu, Elazığ, Eskişehir, İstanbul, Kırklareli, Sakarya (Anlaş, 2009; Assing, 2011, 2013; Sert et al., 2013).

Subfamily: Proteininae Erichson, 1839

Genus: *Proteinus* Latreille, 1796

Species: *P. brachypterus* (Fabricius 1792)

Material examined: Türkiye: İstanbul, Belgrad Forest 1♂, leaf debris, 113 m., 41.194323N, 28.943343E, 13.V.2023, leg. Y. Turan; 2♂♂, mushroom, 135 m., 41.212714N, 28.938409E, 02.XII.2023, leg. Y. Turan.

Distribution in Türkiye: Adana, Bolu, Düzce, Giresun, Hatay, Kahramanmaraş, Kastamonu, Osmaniye, Rize, Sakarya, Sinop, Trabzon (Assing, 2010, 2013, 2014).

Species: *P. atomarius* (Erichson 1840)

Material examined: Türkiye: İstanbul, Belgrad Forest; 2♂♂, mushroom, 135 m., 41.212714N, 28.938409E, 02.XII.2023, leg. Y. Turan.

Distribution in Türkiye: Düzce, Hatay (Anlaş, 2009; Assing, 2010).

Subfamily: Scaphidiinae Latreille, 1807

Tribe: Scaphidiini Latreille, 1807

Genus: *Scaphisoma* Leach, 1815

Species: *S. loebli* Tamanini, 1969

Material examined: Türkiye: İstanbul, Belgrad Forest, 1♂, mushroom, 141 m., 41.195370N, 28.969455E, 07.II.2023, leg. Y. Turan; 1♀, mushroom, 113 m., 41.194323N, 28.943343E, 13.V.2023, leg. Y. Turan.

Distribution in Türkiye: This species' locality record was given in this study for the first time.

Subfamily: Staphylininae Latreille, 1802

Genus: *Philonthus* Stephens, 1829

Species: *P. micans* (Gravenhorst 1802)

Material examined: Türkiye: İstanbul, Belgrad Forest, 1♂, leaf debris, 113 m., 41.194323N, 28.943343E, 13.V.2023, leg. Y. Turan.

Distribution in Türkiye: Mersin (Anlaş, 2009).

Genus: *Quedius* Stephens, 1829

Species: *Q. humeralis* Stephens, 1832

Material examined: Türkiye: İstanbul, Belgrad Forest, 1♀, leaf debris, 113 m., 41.194323N, 28.943343E, 13.V.2023, leg. Y. Turan.

Distribution in Türkiye: Düzce, Eskişehir, İstanbul, Mersin (Anlaş, 2009; Assing, 2013; Fırat&Sert, 2016).

Species: *Q. lateralis* (Gravenhorst 1802)

Material examined: Türkiye: İstanbul, Belgrad Forest, 1♂, mushroom, 122 m., 41.20875N, 28.935739E, 07.X.2023, leg. Y. Turan; 1♂, mushroom, 122 m., 41.20205N, 28.936916E, 07.X.2023, leg. Y. Turan; 2♂♂, mushroom, 122 m., 41.200223N, 28.938319E, 07.X.2023, leg. Y. Turan.

Distribution in Türkiye: Balıkesir, Isparta, İzmir, Eskişehir (Anlaş, 2009; Assing, 2013; Fırat&Sert, 2016; Abacıgil et al., 2013).

Genus: *Platydracus* Thomson, 1858

Species: *P. fulvipes* (Scopoli, 1763)

Material examined: Türkiye: İstanbul, Belgrad Forest, 1♀, near stream, 131 m., 41.213206N, 28.963133E, 06.IV.2024, leg. Y. Turan.

Distribution in Türkiye: Düzce, Rize (Anlaş, 2009).

Genus: *Gabrius* Stephens, 1829

Species: *G. femoralis* (Hochhuth, 1851)

Material examined: Türkiye: İstanbul, Belgrad Forest, 2♂♂, leaf debris, 117 m., 41.183545N, 28.949093E, 05.VIII.2023, leg. Y. Turan.

Distribution in Türkiye: Antalya, Düzce, Giresun, Kastamonu, Rize (Anlaş, 2009; Assing, 2004a; 2010)

Subfamily: Steninae MacLeay, 1825

Genus: *Stenus* Latreille, 1797

Species: *S. planifrons planifrons* Rey, 1884

Material examined: Türkiye: İstanbul, Belgrad Forest, 1♀, leaf debris, 119 m., 41.207882N, 28.964011E, 06.IV.2024, leg. Y. Turan.

Distribution in Türkiye: Gümüşhane, İstanbul, İzmir, Kırklareli, Kocaeli, Konya, Sakarya, Samsun (Anlaş, 2009; Anlaş&Puthz, 2019; Turan&Sert, 2021).

Subfamily: Tachyporinae MacLeay, 1825

Genus: *Sepedophilus* Gistel, 1856

Species: *S. immaculatus* (Stephens, 1832)

Material examined: Türkiye: İstanbul, Belgrad Forest, 2♂♂ 2♀♀, leaf debris, 2♂♂ (mushroom), 113 m., 41.194323N, 28.943343E, 13.V.2023, leg. Y. Turan.

Distribution in Türkiye: Adana, Bolu, Isparta, İzmir, Kastamonu, Sakarya, Zonguldak (Anlaş, 2009; Assing, 2013)

Genus: *Tachyporus* Gravenhorst, 1802

Species: *T. pusillus* Gravenhorst, 1806

Material examined: Türkiye: İstanbul, Belgrad Forest, 2♀♀, leaf debris, 117 m., 41.183545N, 28.949093E, 05.VIII.2023, leg. Y. Turan.

Distribution in Türkiye: Isparta, İzmir, Konya (Anlaş, 2009; Assing, 2013; 2014).

An analysis of the species distribution among subfamilies revealed that the highest number of species belonged to the subfamily Aleocharinae, represented by six species. This was followed by Staphylininae, with five species. Two species were recorded from each of the subfamilies Tachyporinae and Proteininae, while one species was identified from each of the remaining four subfamilies: Oxyporinae, Paederinae, Scaphidiinae, and Steninae. The distribution of species across subfamilies is illustrated in the graph below (Figure 2).

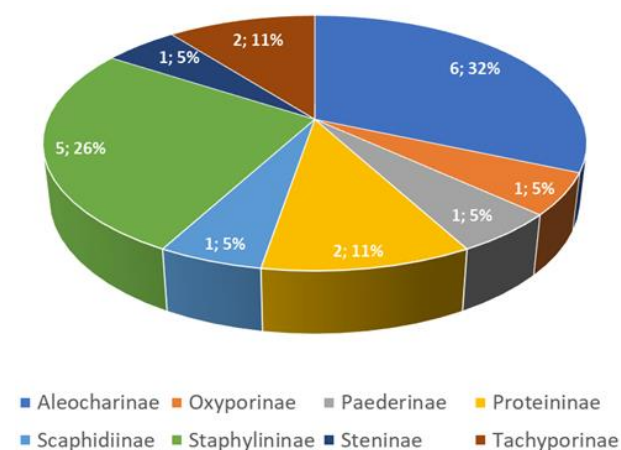


Figure 2. Species richness of Staphylinidae subfamilies recorded in the Belgrad Forest during 2023-2024.

Within the family Staphylinidae, the subfamily with the highest number of species is Aleocharinae, followed by Staphylininae. An examination of the species distribution by subfamilies indicates that the species richness of the subfamilies within Staphylinidae corresponds proportionally to the overall diversity of the family. Among the species identified in this study, 11 species (*Dilacra luteipes*, *Oxypoda vicina*, *Zyras haworthi*, *Leptusa marasica*, *Oxyporus rufus*, *Proteinus atomarius*, *Scaphisoma loebli*, *Philonthus micans*, *Platydracus fulvipes*, *Gabrius femoralis*, *Tachyporus pusillus*) represent new records for the Marmara Region, while 14 species (*Dilacra luteipes*, *Oxypoda vicina*, *Zyras haworthi*, *Leptusa marasica*, *Oxyporus rufus*, *Proteinus brachypterus*, *Proteinus atomarius*, *Scaphisoma loebli*, *Philonthus micans*, *Quedius lateralis*, *Platydracus fulvipes*, *Gabrius femoralis*, *Sepedophilus immaculatus*, *Tachyporus pusillus*) are newly recorded for Istanbul Province (Table 1). Of these, three species (*Proteinus brachypterus*, *Quedius lateralis*, and *Sepedophilus immaculatus*) had previously been reported from the Marmara Region, but are recorded from Istanbul for the first time in the present study. Additionally, for one species (*Scaphisoma loebli*), a detailed locality record is provided here for the first time.

DISCUSSION AND CONCLUSION

In this study, eight subfamilies of the family Staphylinidae were identified. Among them, the subfamily Aleocharinae contained the highest number of species, with a total of six species recorded. *Megalogastrina cingulata* has previously been reported from the Belgrad Forest in Istanbul. Other known localities of the species in Türkiye are İzmir and Muğla. The original description of the species was based on two syntypes from İzmir. Earlier records indicate that specimens of this species were collected in March and August in Türkiye (Assing, 2007a). In the present study, however, the species was recorded in May. Regarding elevation, the species had previously been found at approximately 50 m in Muğla, whereas in this study it was recorded at 113 m.

Another Aleocharinae species is *Dilacra luteipes*. This species was first reported from Türkiye by Assing (2009) based on specimens collected from Isparta. The present study provides the second record of this species from Türkiye. While the species had previously been collected from Isparta at 1550 m in April (Assing, 2009), in this study it was found at 119 m in April, suggesting a broad elevational range.

Myllaena intermedia had previously been reported from Istanbul, Manisa, Niğde, and Trabzon (Apfelbeck, 1901; Anlaş, 2007; Sert et al., 2015; Sert et al., 2021). Its known elevation range was 650–1300 m;

however, in this study it was collected at 119 m, indicating that the species has a wider elevational distribution. While earlier studies reported the species in June, the present study recorded it in April.

Oxypoda vicina is a widely distributed species in Türkiye, with records from all regions of the country (Anlaş, 2009; Assing, 2013; Sert et al., 2015, 2021; Assing, 2006b, 2007b). The species had previously been reported from elevations of 1000–1900 m, but in this study it was found between 113 and 119 m. Past records indicated activity between April and October, and this study similarly found the species between April and May. These findings demonstrate that the species has a broad elevational and seasonal activity range.

Zyras haworthi was previously reported from both the Black Sea Region and the Mediterranean Region by Assing (2010), and later from the Eastern Black Sea Region by Sert et al. (2021). According to these studies, the species occurred between 50 and 1300 m and was active between April and July. Consistent with previous findings, the species was recorded at 113 m in May in this study.

Leptusa marasica is endemic to Türkiye. The species was first discovered in Kahramanmaraş by Assing (2006b), and its name derives from the locality where it was found. It had been reported from 850 m in April; however, in this study it was found at 113 m in May.

From the subfamily Oxyporinae, *Oxyposrus rufus* was previously recorded from Erzurum at 1760 m in August. In this study, the species was found at 117 m in both May and August. As it is typically associated with fungi, it was also collected from a mushroom in this study.

From the subfamily Paederinae, only one species was identified: *Rugilus rufipes*. This species had previously been recorded from Bolu, Elazığ, Eskişehir, Istanbul, Kırklareli, and Sakarya (Anlaş, 2009; Assing, 2011, 2013; Sert et al., 2013). It had been found between 900 and 1220 m, whereas in this study it was recorded between 113 and 117 m. Seasonally, previous studies reported the species between March and August.

The species *Proteinus brachypterus* had previously been reported from Sakarya Province at an altitude of 1275 m by Assing (Assing, 2013). In this study, it was recorded from Istanbul for the first time, at an elevation of 113–135 m. When examining the known elevation range of the species, previous studies reported a wide range between 160 and 2050 m (Assing, 2010, 2013, 2014). With this study, the species' elevation range is now extended to 113–2050 m.

Another member of the genus, *P. atomarius*, had previously been reported from Düzce and Hatay (Anlaş, 2009; Assing, 2010). While earlier records indicate that it was found at 445 m in April, in this study it was recorded at 135 m in December.

One of the species identified in this study is *Scaphisoma loebli*, collected from a mushroom. Although the species had previously been reported from Türkiye (Schülke & Smetana, 2015), no detailed locality information—such as province, coordinates, or elevation—had been provided. This study presents the first detailed locality data for this species in Türkiye.

Five species belonging to the subfamily Staphylininae were identified. *Philonthus micans* had previously been recorded only from Mersin (Anlaş, 2009). No elevational or seasonal information was available for Türkiye. A study conducted in Iran reported that the species occurred between 35 and 101 m and was collected in May–June (Tabadkani et al., 2015). In this study, it was found at 113 m in May, and in both studies it was collected from leaf litter in forested habitats.

Two species of the genus *Quedius* were recorded. *Q. humeralis* had previously been reported from Düzce, Eskişehir, Istanbul, and Mersin (Anlaş, 2009; Assing, 2013; Fırat & Sert, 2016), with an elevational range of 1100–1200 m and activity between May and June. In this study, the species was recorded at 113 m in May.

The species *Q. lateralis* was also recorded from Istanbul for the first time in this study. It had previously been found in the Marmara Region from Balıkesir Province (Abacıgil et al., 2013). The species was earlier reported from Türkiye within an elevation range of 1100–1165 m (Abacıgil et al., 2013; Assing, 2013; Fırat & Sert, 2016). However, based on findings from this study, it has now been recorded at an elevation as low as 122 m.

Platydracus fulvipes had previously been reported from the Black Sea Region, specifically from Düzce and Rize. Its elevational and seasonal distribution had not been documented before; this study provides the first such data, recording the species at 131 m in April.

Gabrius femoralis had been reported from Antalya, Düzce, Giresun, Kastamonu, and Rize (Anlaş, 2009; Assing, 2004a; 2010). Earlier records indicated that the species occurred in March–April at around 1660 m. In this study, however, it was found at a much lower elevation (117 m) and in August.

From the subfamily Steninae, only one taxon was recorded: *Stenus planifrons planifrons*. Previous studies reported the subspecies from Türkiye between March and October and at approximately 1650 m (Anlaş & Puthz, 2019; Turan & Sert, 2021). In this study, however, it was found at 119 m in April.

The species *Sepedophilus immaculatus* had previously been recorded from Sakarya Province in the Marmara Region (Assing, 2013), and is reported from Istanbul for the first time in this study. Previously, it was known from Türkiye within an elevation range of 700–

1330 m. This study extends its known range to 113–1330 m.

From the subfamily Tachyporinae, *Tachyporus pusillus* had previously been reported from Isparta, İzmir, and Konya (Anlaş, 2009; Assing, 2013, 2014). The species had been found between 1440 and 1820 m, whereas in this study it was recorded at 117 m. While previous studies reported it only in April, this study recorded the species in August.

A previous study conducted in the Belgrad Forest focused on Aleocharinae species associated with macrofungi (Toktay Okuytan & Turan, 2024), identifying 11 Aleocharinae species. With the findings of the present study, the total number of Staphylinidae species known from the Belgrad Forest has now reached 30. It is expected that this number will further increase with more extensive and long-term research.

This study was conducted in the Belgrad Forest, located on the European side of Istanbul Province, between 2023 and 2024. A total of 19 species belonging to 17 genera and eight subfamilies of Staphylinidae were identified.

Of these, 11 represent new records for the Marmara Region, and 14 represent new records for Istanbul Province (Table 1).

Table 1. New records for Marmara Region and Istanbul.

Species	Marmara Region	Istanbul Province
<i>Dilacra luteipes</i>	+	+
<i>Oxyropa vicina</i>	+	+
<i>Zyras haworthi</i>	+	+
<i>Leptusa marasica</i>	+	+
<i>Oxyporus rufus</i>	+	+
<i>Proteinus brachypterus</i>	from Sakarya (Assing, 2013)	+
<i>Proteinus atomarius</i>	+	+
<i>Scaphisoma loebli</i>	+	+
<i>Philonthus micans</i>	+	+
<i>Quedius lateralis</i>	from Balıkesir (Abacıgil et al., 2013)	+
<i>Platydacus fulvipes</i>	+	+
<i>Gabrius femoralis</i>	+	+
<i>Sepedophilus immaculatus</i>	from Sakarya (Assing, 2013)	+
<i>Tachyporus pusillus</i>	+	+

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