

1-1-2016

Faunistic and zoogeographical composition and preliminary evaluations of some ecological features of the subfamily Staphylininae (Coleoptera: Staphylinidae) of the Central Anatolian Region of Turkey

SENEM FIRAT

OSMAN SERT

Follow this and additional works at: <https://journals.tubitak.gov.tr/zoology>



Part of the [Zooology Commons](#)

Recommended Citation

FIRAT, SENEM and SERT, OSMAN (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*: Vol. 40: No. 2, Article 5. <https://doi.org/10.3906/zoo-1501-46>

Available at: <https://journals.tubitak.gov.tr/zoology/vol40/iss2/5>

This Article is brought to you for free and open access by TÜBİTAK Academic Journals. It has been accepted for inclusion in Turkish Journal of Zoology by an authorized editor of TÜBİTAK Academic Journals. For more information, please contact academic.publications@tubitak.gov.tr.

Faunistic and zoogeographical composition and preliminary evaluations of some ecological features of the subfamily Staphylininae (Coleoptera: Staphylinidae) of the Central Anatolian Region of Turkey

Senem FIRAT*, Osman SERT

Department of Biology, Faculty of Science, Hacettepe University, Ankara, Turkey

Received: 20.01.2015 • Accepted/Published Online: 25.11.2015 • Final Version: 05.02.2016

Abstract: The focus of this study is to provide the faunistic, ecological, and zoogeographical status of Staphylininae (Coleoptera: Staphylinidae) fauna of the Central Anatolian Region of Turkey. The study material comprises specimens collected from field studies between 2009 and 2012 and also specimens that were previously collected by other researchers. In total, 90 taxa of 26 genera belonging to 3 tribes of Staphylininae were recorded. Number of specimens, collection habitats and methods, months, and altitudes are given in a table and figures for collected species. Distributions of species in other regions of Turkey and zoogeographical regions are also given in the table and figures for all species. Zoogeographical statuses of all species are discussed.

Key words: Coleoptera, Staphylininae, Central Anatolian Region, fauna, ecology, zoogeography

1. Introduction

Staphylinidae is the largest family of Coleoptera and the whole Animalia kingdom with 55,400 identified species (Grebennikov and Newton, 2009). With the addition of new species and fossil records this number reaches 58,331 (Solodovnikov et al., 2013). With almost 6600 species worldwide from over 290 genera, the subfamily Staphylininae is the largest subfamily of Staphylinidae (Herman, 2001). In Turkey, the Staphylininae fauna is represented by 341 species from 40 genera and 5 tribes (Anlaş, 2009), and this number is increasing with the addition of recently detected and newly described species.

There is a considerable amount of study concerning the Staphylinidae fauna of Turkey; however, the Staphylininae fauna of the Central Anatolian Region is a rather newly studied subject. Although the studies of Abacıgil et al. (2013), Anlaş (2007, 2009), Anlaş and Rose (2009), Apfelbeck (1901), Assing (2009, 2010a, 2010b, 2011), Bernhauer (1905), Bordoni (1971, 1973, 1976, 1978, 1979), Coiffait (1966, 1972, 1974, 1978a, 1978b), Deyrolle (1873), Ganglbauer (1905), Horion (1965), Japhosvili and Anlaş (2011), Kesdek et al. (2009), Korge (1964, 1971), Özdemir and Sert (2008, 2009), Özgen and Anlaş (2010), Özgen et al. (2010), Peyron (1858), Sahlberg (1913), Scheerpeltz (1958), Schillhammer et al. (2007), Smetana (1953, 1954, 1965a, 1965b, 1967, 1968a, 1968b, 1977), Solodovnikov

(2000, 2002, 2004), Solodovnikov and Stourač (2002), Stourač (2000, 2002), Tezcan and Amiryan (2003), and Tezcan and Anlaş (2009) on the family Staphylinidae and the subfamily Staphylininae include species from Turkey and the research area, they do not thoroughly provide the Staphylininae fauna and ecological and zoogeographical profile of the Central Anatolian Region.

The research area covers the middle part of the Anatolian peninsula, which includes Aksaray, Ankara, Çankırı, Eskişehir, Karaman, Kayseri, Kırıkkale, Kırşehir, Konya, Nevşehir, Niğde, Sivas, and Yozgat provinces (Figure 1). The Central Anatolian Region is the second largest region of Turkey after the Eastern Anatolian Region and, excluding the Southeastern Anatolian Region, it is adjacent to the remaining six regions of Turkey. The region is divided into four sections as Konya, Upper Sakarya, and Middle and Upper Kızılırmak. It has a plains profile in terms of landforms. While vast plains are found in the middle part, mountains extends around the borders. In the south, there are volcanic mountains extending in parallel with the Middle Taurus mountain range: Erciyes, Melendiz, Hasandağı, Karacadağ, and Karadağ from north to south. The most important streams and rivers of the Central Anatolian Region are the Kızılırmak, Sakarya, Porsuk, and Delice. Lake Tuz is the largest lake of the region and Akşehir, Eber, Ilgın (Çavuşçu), Tuzla, Seyfe, Mogan, and Sultansazlığı are other important lakes.

* Correspondence: senemoz@hacettepe.edu.tr



Figure 1. Map of research area.

In the region, the summers are hot and dry, and there is a continental climate with cold winters and snow. Towards the east, due to the increase in elevation, the degree of continental climate changes and winter temperatures reach very low values. The Central Anatolian Region is the region with the least precipitation in Turkey. The natural vegetation is steppe. Containing 7% of Turkey's forests, the region is in sixth place among the seven regions of Turkey for forested area. Sparse and small steppes around Lake Tuz become more frequent and taller towards the borders of the region. As the elevation through mountain slopes increases, the precipitation increases and coniferous woods and *Pinus* spp. surround some areas, whereas streams are lined with tall *Salix* spp. (Atalay and Mortan, 2008).

2. Materials and methods

In this study, the material comprised specimens collected from field studies between 2009 and 2012 and also specimens from the collection deposited in the Hacettepe University Zoology Museum (Ankara, Turkey) (HUZOM). Field studies between April and October were mostly done using an aspirator and insect net and by sifting debris. In addition, from November to March, specimens were collected by sifting debris at Hacettepe University's Beytepe Campus from time to time. The specimens were collected mainly from cow dung by aspirator (I), under stones at riverbanks (II), from herbaceous plants near streams by insect net (III), and from leaf and forest vegetation debris by sifter (IV). Coordinates of localities were recorded

using GPS. After finishing fieldworks, specimens were put in the collection and species were determined by using the identification keys of Bordoni (1982), Coiffait (1956a, 1956b, 1972, 1974, 1978a), Lohse (1964), Smetana and Davies (2000), Solodovnikov and Newton (2005), and Stourač (2000, 2002). Collection habitats and methods, number of specimens, collection months, vertical distributions, and distributions in other regions of Turkey and zoogeographical regions are given in the Table for collected species. Graphs showing the comparison of the number of determined species with the represented number of species in Turkey and their percentages (Figure 2), number of collected species according to months (Figure 3), number of collected species from different altitudes (Figure 4), zoogeographical structure of the research area for all species (Figure 5), and distributions in other regions of Turkey (Figure 6) have been prepared. Current distributions of *Philonthus danicus*, *Philonthus sanguinolentus*, *Philonthus frigidus frigidus*, *Rabigus pullus*, *Tasgius minax*, *Erichsonius cinerascens*, and *Xantholinus linearis linearis* in Turkey were not given because their situations are discussed in a forthcoming study by Firat and Sert (unpublished data). Zoogeographical regions of species were taken from Smetana (2004). Zoogeographical statuses of species in Asia were handled in four subregions (Middle East, Middle Asia, Siberia, and Far East). As a result, species were sorted as endemic species for Turkey (ETr), common species with Europe (E), common species with Asia (Sb: East and Western Siberian part of Russia,

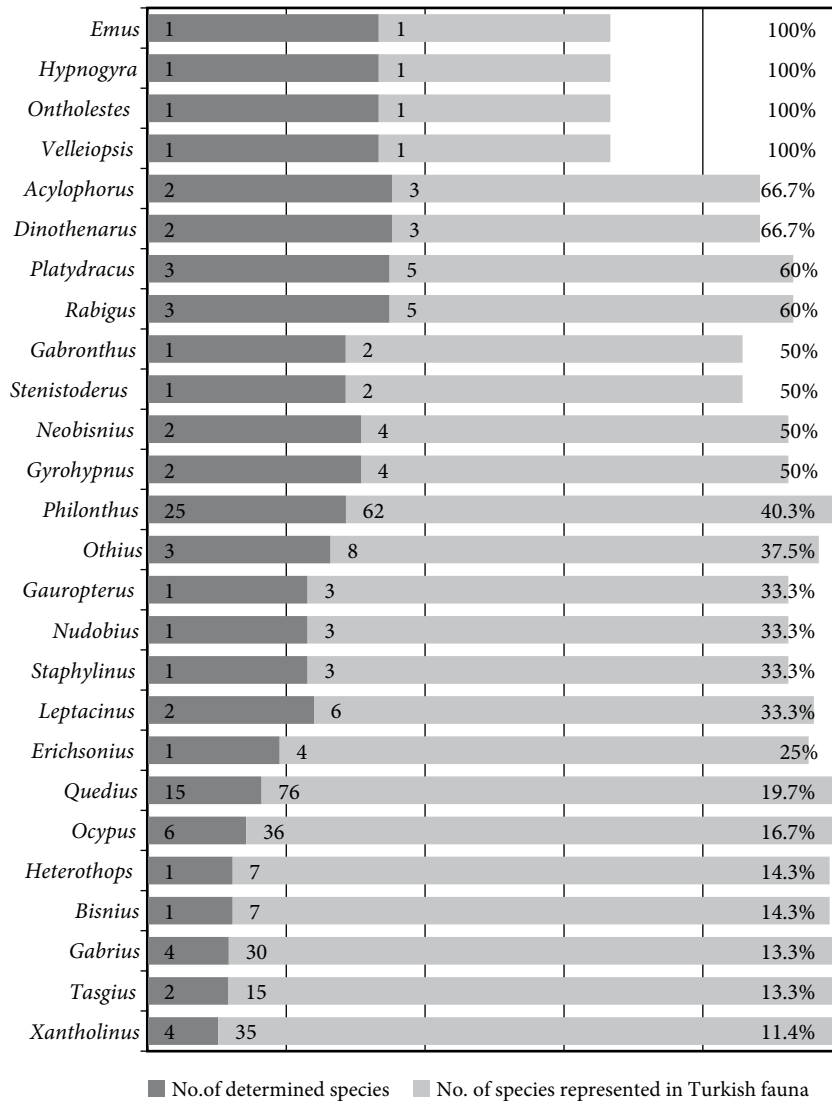


Figure 2. Number of determined species according to genera, number of species represented in Turkish fauna, and their representation percentages.

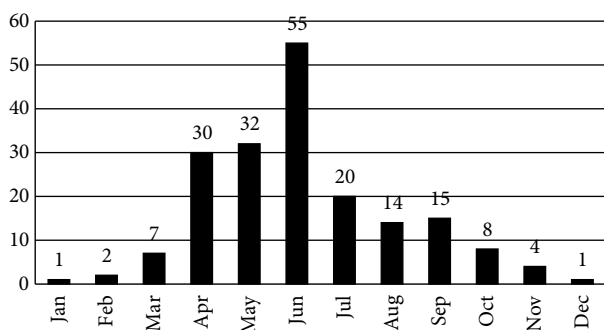


Figure 3. Distribution of species according to collection months.

ME: Middle East (Syria, Iraq, Iran, Jordan, Israel, Lebanon, Arabian peninsula, Sinai peninsula, Cyprus), MA: Middle Asia (Afghanistan, Bhutan, China, India (Arunachal Pradesh, Himachal Pradesh, Kashmir, Sikkim, Darjeeling District and Uttaranchal, Uttar Pradesh), Kazakhstan, Kyrgyzstan, Mongolia, Nepal, Uzbekistan, Pakistan, Turkmenistan, Tajikistan), FE: Far Eastern Asia (Far Eastern Territory of Russia, North Korea, South Korea, Japan)), common species with North African (N), and Afrotropical (AFR), Australian (AUR), Nearctic (NAR), Neotropical (NTR), and Oriental (ORR) regions, and also cosmopolitan species (COS) (Table).

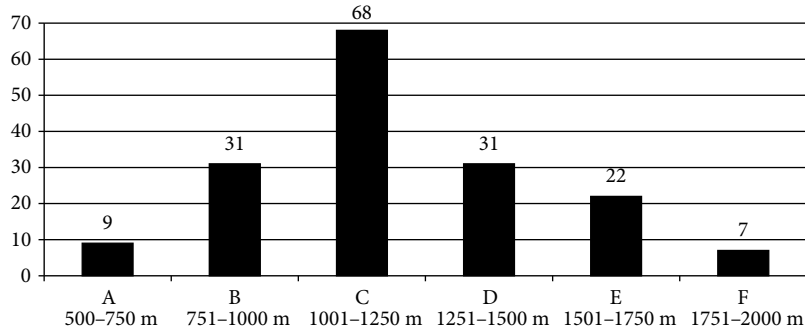


Figure 4. Number of collected species according to vertical distribution in research area.

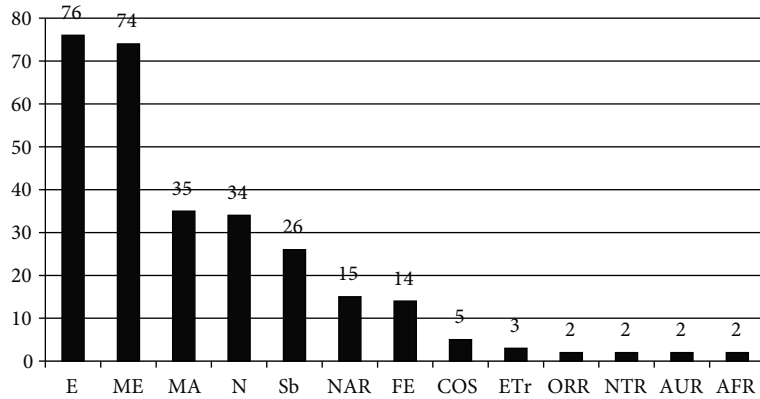


Figure 5. Zoogeographical structure of the subfamily Staphylininae fauna of the research area. ETr: Endemic for Turkey, COS: cosmopolitan, E: European part of western Palearctic, FE: Far East, MA: Middle Asia, ME: Middle East, N: North Africa, Sb: Siberia, AFR: Afrotropical, AUR: Australian, NAR: Nearctic, NTR: Neotropic, ORR: Oriental.

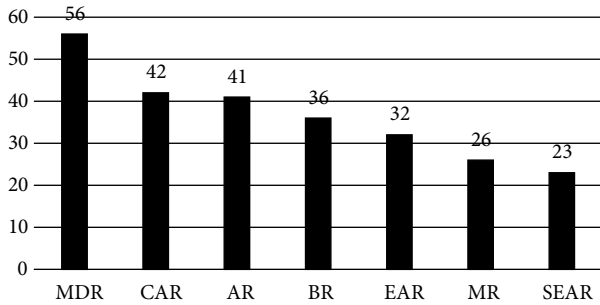


Figure 6. Number of shared species of the research area with different geographical regions of Turkey. CAR: Central Anatolian Region, EAR: Eastern Anatolian Region, AR: Aegean Region, MDR: Mediterranean Region, BR: Black Sea Region, MR: Marmara Region, and SEAR: Southeastern Anatolian Region.

3. Results

In total, 90 taxa of 26 genera belonging to 3 tribes of the subfamily Staphylininae were recorded. Since three of these specimens could only be identified at the genus level, 87 specimens are given as identified species.

Tribe Othiini Thomson, 1859

Genus *Othius* Stephens, 1829

Othius laeviusculus Stephens, 1833

Examined material: Kırşehir: Kaman, Çadırılıhacıyusuf, 39°11'20"N, 33°53'51"E, 1025 m, 27.V.2010, 1♀, Leg. S. Fırat.

Distribution in Turkey: Adana, Adıyaman, Ankara, Antalya, Ardahan, Aydın, Batman, Bursa, Denizli, Edirne, İstanbul, İzmir, Kahramanmaraş, Karaman, Kastamonu, Manisa, Mersin, Muğla, Rize, Samsun, Tunceli, Van (Apfelbeck, 1901; Sahlberg, 1913; Horion, 1965; Coiffait, 1966; Assing, 1997, 1999, 2005, 2008, 2010b; Anlaş, 2009; Özgen et al., 2010).

Othius lapidicola Märkel & Kiesenwetter, 1848

Examined material: Ankara: Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 11.VIII.2010, 2♂♂; Çankırı: Ilgaz, 41°02'35"N, 33°44'41"E, 1702 m, 07.VI.2011, 1♂; Kırıkkale: Sulakyurt, Akkuzulu-Koruköy, 40°12'57"N, 33°36'34"E, 668 m, 25.IV.2011, 1♂; Leg. S. Fırat.

Table. Collected species from the research area. Collection habitats and methods: I, cow dung by aspirator; II, under stones at riverbanks; III, herbaceous plants near streams by insect net; IV, leaf and forest vegetation debris by sifter. Vertical distributions: A, 501–750 m; B, 751–1000 m; C, 1001–1250 m; D, 1251–1500 m, E, 1501–1750 m, F, 1751–2000 m. Distributions in Turkey: 1, Marmara Region; 2, Aegean Region; 3, Mediterranean Region; 4, Central Anatolian Region; 5, Black Sea Region; 6, Eastern Anatolian Region; 7, Southeastern Anatolian Region; 8, first detailed locality for Turkey; 9, first locality record for Turkey (Bodemeyer, 1906; Bodemeyer, 1927; Assing, 2009, 2010a, 2010b, 2011; Anlaş, 2009; Anlaş and Rose, 2009; Kesdek et al., 2009; Özgen and Anlaş, 2010; Japoshvili and Anlaş, 2011; Abacıgil et al., 2013). Zoogeographical distributions: ETr, endemic for Turkey; COS, cosmopolitan; E, Europe; FE, Far East; MA, Middle Asia; ME, Middle East; N, North Africa; Sb, Siberia; AFR, Afrotropical; AUR, Australian; NAR, Nearctic; NTR, Neotropic; ORR, Oriental (Smetana, 2004).

Species	No. of specimens	Coll. habitats-methods	Collection months	Vertical distributions	Distribution in Turkey	Zoogeographic distribution
<i>Acylophorus glaberrimus</i>	3	II	Apr, Jun	C	3, 6, 7	E, N, ME, MA
<i>Acylophorus lindbergi</i>	4	II	Jun	C	6	ETr
<i>Bisnius sordidus</i>	12	I, II, IV	Apr, May, Jun, Jul, Aug	B, C, D	2, 3	E, Sb, N, ME, MA, FE, COS
<i>Dinothenarus flavocephalus</i>	1	II	Jul	C	3	E, ME
<i>Dinothenarus pubescens</i>	1	II	May	B	4	E, ME
<i>Emus hirtus</i>	5	I	Jun	C, D	2, 4, 5	E, ME
<i>Erichsonius cinerascens</i>	16	II, IV	Apr, May, Jun, Sep	A, C, E, F	1	E, N
<i>Gabrius astutoides</i>	3	IV	Jun	F	2, 3	E, ME, NAR
<i>Gabrius breviventer</i>	1	IV	May	D	4	E, N, ME, MA, NAR
<i>Gabrius nigritulus</i>	8	I, II, IV	May, Jun, Jul, Aug	C, E	2, 3, 4, 7	E, Sb, N, ME, MA, FE, COS
<i>Gabrius suffragani</i>	1	II	May	C	5	E, ME
<i>Gabronthus maritimus</i>	1	II	Aug	B	2, 3	E, N, ME, MA, FE, AFR, ORR
<i>Gauropterus sanguinipennis</i>	4	II, III	Jun, Aug, Sep	C, D, E	1, 2, 3, 4, 5, 6, 7	E, ME, MA
<i>Gyrohypnus angustatus</i>	3	II, IV	Mar, Jun, Oct	B, C, D	1, 2, 3, 4, 5, 6, 7	E, Sb, N, ME, MA, NAR
<i>Gyrohypnus fracticornis</i>	9	II, IV	Mar, Jun	C, D	2, 4, 5, 7	E, Sb, N, ME, MA, AUR, NAR, NTR
<i>Heterothops dissimilis</i>	3	IV	Mar, May, Sep	C, D	4	E, Sb, N, ME, MA
<i>Hypnogyra angularis</i>	3	I, IV	Jun, Sep	C	1	E, N, ME, FE
<i>Leptacinus batychrus</i>	25	I, II	Apr, Jun, Jul, Aug, Sep	A, B, C, F	1, 3, 4, 5, 6, 7	E, Sb, N, ME, MA, FE, COS
<i>Leptacinus intermedius</i>	7	I, II	Apr, May, Jun	B, C	1, 3, 4, 7	E, N, ME, NAR
<i>Neobisnius procerulus</i>	4	II	May, Jun	C, D	1, 3	E, N, ME, MA, AFR, AUR, NTR
<i>Neobisnius prolixus</i>	8	I, II	Jun, Jul	B, C, D	2, 4, 5, 6	E, ME, MA
<i>Nudobius lentus</i>	3	IV	Jun	F	1, 2, 3, 4, 5	E, Sb, ME, MA, FE
<i>Ocypus curtipennis</i>	8	II, III	May, Jun, Sep, Oct	C, D	1, 2, 3, 7	E, ME
<i>Ocypus fulvipennis</i>	1	IV	Nov	B	2, 5	E, Sb, ME, MA
<i>Ocypus helleni</i>	1	IV	Nov	C	4, 6	E, ME, MA
<i>Ocypus mus</i>	12	II, III, IV	Jan, Mar, Apr, May, Jun, Oct	B, C, D, E	1, 2, 3, 4, 5, 7	E, ME
<i>Ocypus picipennis</i>	7	II, III	Apr, Jun, Aug	C, E, F	2, 3, 4, 5, 6, 7	E, Sb, ME, MA, FE
<i>Ocypus sericeicollis</i>	1	II	Jun	D	2, 3, 4, 7	E, ME
<i>Ontholestes murinus</i>	25	I, II	Apr, Jun, Jul	A, C, D	2, 3, 4, 6, 7	E, Sb, ME, MA, FE, NAR
<i>Othius laeviusculus</i>	1	IV	Mar	C	1, 2, 3, 4, 5, 6, 7	E, N, ME
<i>Othius lapidicola</i>	4	I, IV	Apr, Jun, Aug	A, C, E	1, 2, 3, 4, 5, 6	E, ME
<i>Othius punctulatus</i>	4	II, IV	Mar, Jun, Oct	D, E	1, 2, 3, 4, 5, 6	E, N, ME
<i>Philonthus atratus</i>	2	II	Sep	E	3, 4, 5, 6, 7	E, Sb, N, ME, MA, FE
<i>Philonthus carbonarius</i>	1	II	Sep	C	2, 3, 6	E, Sb, N, ME, MA, FE, NAR
<i>Philonthus caucasicus</i>	1	I	Jun	D	3, 4, 6	E, Sb, ME, MA, NAR
<i>Philonthus cognatus</i>	2	IV	Feb, Jun	C, E	2, 3, 5, 6	E, Sb, N, ME, MA, NAR
<i>Philonthus concinnus</i>	217	I, II, IV	Apr, May, Jun, Jul, Aug, Sep	A, B, C, D, E, F	2, 3, 4, 5, 6, 7	E, Sb, N, ME, MA, FE, NAR
<i>Philonthus coprophilus</i>	13	I, II	Apr, Jun	A, B, C, D	2, 5, 6	E, Sb, ME
<i>Philonthus cruentatus</i>	10	I	Apr, Jun	C, D	1, 2, 3	E, Sb, N, ME, MA, FE, NAR
<i>Philonthus danicus</i>	8	I, II	Apr, May, Jun	A, B, C	9	ME

Table. (Continued).

Species	No. of specimens	Coll. habitats-methods	Collection months	Vertical distributions	Distribution in Turkey	Zoogeographic distribution
<i>Philonthus debilis</i>	4	IV	Apr, Nov	C	2, 3, 4	E, Sb, N, ME, MA, FE, NAR
<i>Philonthus dimidiatipennis</i>	1	II	Jun	D	3, 4	E, N, ME, MA, ORR
<i>Philonthus ebeninus</i>	4	I, IV	Jun, Jul	B, C, E	1, 2, 3	E, Sb, N, ME, MA, FE
<i>Philonthus frigidus</i>	1	II	Jun	C	8	E
<i>Philonthus fumarius</i>	2	IV	May	C	1	E
<i>Philonthus intermedius</i>	41	I, II, IV	Apr, May, Jun, Jul	B, C, E	2, 3, 4, 6, 7	E, N, ME, MA
<i>Philonthus juvenilis</i>	3	II	Sep	E	3, 4	E, ME
<i>Philonthus laminatus</i>	2	II	May	B	1, 3, 4, 5, 6	E, ME
<i>Philonthus nitidicollis</i>	11	I	May, Jun, Jul	A, B, C, D	2, 3, 4, 5, 6, 7	E, Sb, N, ME, MA
<i>Philonthus politus</i>	1	I	Apr	C	3, 4, 7	E, Sb, N, ME, MA, FE, COS
<i>Philonthus quisquiliarius</i>	10	I, II	Apr, Jun, Aug	B, C, E	2, 3, 4, 7	E, Sb, N, ME, MA, FE
<i>Philonthus rectangulus</i>	13	I, II	Apr, May, Jun, Jul	B, C	4, 6, 7	E, Sb, N, ME, MA, FE, COS
<i>Philonthus rubripennis</i>	4	II	Apr, Jun, Aug	C, E	3, 6	E, Sb, N, ME, MA, FE
<i>Philonthus rufimanus</i>	63	II	May, Jun, Jul, Aug	B, C, D, E	1, 2, 3, 5, 6	E, ME, MA
<i>Philonthus sanguinolentus</i>	4	I, II	Apr, May, Jul	B, C	9	E, Sb, N, NAR
<i>Philonthus spinipes</i>	2	II	Jun	C, D	3	E, ME, O. A.
<i>Philonthus truquii</i>	8	II, IV	May, Jun	C, E	3, 4	ME
<i>Platydacus flavopunctatus</i>	1	I	Aug	F	3, 4	E, ME, O. A.
<i>Platydacus hypocrita</i>	1	I	Jul	E	2, 4	E, ME
<i>Platydacus stercorarius</i>	1	IV	Aug	C	2, 4, 5, 6	E, Sb, ME, MA
<i>Quedius brevis</i>	1	IV	Jun	E	2, 5	E, N, ME
<i>Quedius cinctus</i>	15	I, II, IV	Feb, Mar, May, Jun, Sep	B, C, D	1, 2, 3, 5, 7	E, N, ME, NAR
<i>Quedius curtidens</i>	5	IV	Apr, May, Sep	C	3	ETr
<i>Quedius fuliginosus</i>	1	IV	Apr	C	2, 3, 5	E, Sb, N, ME
<i>Quedius humeralis</i>	1	IV	Jun	C	1, 3	E, ME, O. A.
<i>Quedius josue</i>	3	IV	Jun, Sep	C, D	3	ME
<i>Quedius lateralis</i>	2	IV	Jun, Jul	C	2	E, ME
<i>Quedius levicollis</i>	3	IV	Jun	C	2, 3, 4, 5, 6	E, N, ME
<i>Quedius limbatus</i>	1	IV	Oct	D	2, 4, 5, 6	E, ME
<i>Quedius nivicola</i>	2	IV	Mar	B	2	E, ME
<i>Quedius ochripennis</i>	13	I, III, IV	Apr, May, Jun, Aug, Dec	B, C, D, E	1, 3, 4, 7	E, N, ME, MA
<i>Quedius pseudonigriceps</i>	13	II, III, IV	Jun, Jul, Sep	C, D, E	1, 3, 4, 5, 6	E, ME
<i>Quedius scintillans</i>	7	I, II, IV	May, Jun, Sep	B, C	2, 3	E, N, ME, MA
<i>Quedius umbrinus</i>	8	II, IV	May, Jun	C, D	1, 3, 4, 5, 6	E, ME
<i>Quedius vicinus</i>	2	IV	Jul	B	5	E, ME, MA
<i>Rabigus ocaleoides</i>	2	II	Jun	C, D	2, 3, 5	E, ME
<i>Rabigus pullus</i>	2	I, II	Apr, Jul	B, C	8	E, Sb, ME, MA, FE
<i>Rabigus tenuis</i>	2	I, IV	May	B, C	5, 6	E, Sb, ME, MA
<i>Staphylinus caesareus</i>	8	II	Apr, May, Jun	B, C, E	3, 4, 5, 6, 7	E, N, ME
<i>Stenistoderus cephalotes</i>	2	II	Apr, Jun	A, C	1, 3, 5, 6	E, N, ME
<i>Tasgius minax</i>	1	II	Jul	C	9	E
<i>Tasgius pedator</i>	2	II	Jul	B	1, 3	E, N, ME
<i>Velleiopsis marginiventris</i>	2	IV	Nov	C	8	E, ME
<i>Xantholinus coiffaiti</i>	2	IV	Apr, Oct	C	1, 5	E, ME
<i>Xantholinus dvoraki</i>	1	III	Apr	C	5	E, Sb, ME, MA
<i>Xantholinus linearis</i>	1	IV	Oct	C	3	E, Sb, ME, NAR
<i>Xantholinus puthzi</i>	3	IV	Apr	B, C	3	ETr

Distribution in Turkey: Adana, Afyonkarahisar, Amasya, Ankara, Antalya, Ardahan, Artvin, Aydın, Bitlis, Bolu, Bursa, Isparta, İstanbul, Denizli, Erzurum, Giresun, Gümüşhane, İzmir, Kahramanmaraş, Karabük, Kars, Kastamonu, Kayseri, Kırklareli, Konya, Manisa, Mersin, Muğla, Ordu, Rize, Samsun, Sinop, Sivas, Tokat, Tunceli, Van (Sahlberg, 1913; Horion, 1965; Coiffait, 1966, 1978b; Assing, 1997, 1999, 2005, 2008, 2010b; Solodovnikov, 2000; Anlaş, 2009; Japoshvili and Anlaş, 2011).

Othius punctulatus (Goeze, 1777)

Examined material: Çankırı: Ilgaz, Kadınçayırı, 40°01'43"N, 33°43'52"E, 1273 m, 19.X.2011, 1♂; Sivas: Doğanşar, Söbüler, 40°04'53"N, 37°33'49"E, 1595 m, 22.VI.2011, 2♀♀; Yozgat: Çandır, Kozan, 39°15'13"N, 35°33'58"E, 1261 m, 24.V.2011, 1♂, Leg. S. Firat.

Distribution in Turkey: Afyonkarahisar, Artvin, Aydın, Bitlis, Bolu, Bursa, Isparta, İzmir, Gümüşhane, Karabük, Kastamonu, Konya, Kütahya, Manisa, Nevşehir, Tokat, Sinop, Sivas (Coiffait, 1965, 1966, 1978b; Assing, 1997, 1999, 2005, 2008, 2010b; Tezcan and Amiryan, 2003; Anlaş and Rose, 2009).

Tribe Staphylinini Latreille, 1802

Subtribe Philonthina Kirby, 1837

Genus *Bisnius* Stephens, 1829

Bisnius sordidus (Gravenhorst, 1802)

Examined material: Aksaray: Central County, Dikmen, 38°10'43"N, 34°05'45"E, 1149 m, 18.IV.2010, 1♂; Ankara: Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 11.VIII.2010, 1♀, Leg. Y. Turan; Kırşehir: Central County, Sıdıkküküboğaz, 39°08'36"N, 33°55'01"E, 992 m, 27.V.2010, 2♀♀; Konya: Çumra, Beylerce, 37°32'36"N, 32°45'57"E, 1028 m, 12.IV.2010, 1♀, 1♂; Ereğli, Halkapınar road, 37°25'45"N, 34°11'36"E, 1160 m, 14.VI.2009, 1♂; Nevşehir: Hacibektaş, Hacılar-Karaburna, Kızılırmak bridge, 38°51'27"N, 34°27'28"E, 974 m, 24.V.2010, 3♀♀, 1♂; Yozgat: Akdağmadeni, Eynelli-Akçakışla road, 39°32'55"N, 35°41'33"E, 1340 m, 02.VII.2010, 1♀, Kılıçlı-Boğazköy road, 39°52'27"N, 35°57'24"E, 1070 m, 03.VII.2010, 1♀, Leg. S. Firat.

Distribution in Turkey: Antakya, Manisa (Fauvel, 1874; Bordoni, 1978; Anlaş and Rose, 2009).

Genus *Erichsonius* Fauvel, 1874

Erichsonius cinerascens (Gravenhorst, 1802)

Examined material: Aksaray: Güzelyurt, 38°19'33"N, 34°14'28"E, 1120 m, 22.VI.2009, 1♀; Ankara: Beypazarı, Karaşar road, Haydarlar, 40°17'08"N, 31°56'34"E, 1288 m, 13.VI.2011, 1♂; Çamlıdere, Dörtkonak, 40°30'46"N, 32°49'30"E, 1199 m, 14.VI.2011, 1♀, 1♂; Kırıkkale: Keskin, Köprüköy bridge, 39°34'25"N, 33°25'58"E, 723 m, 09.IV.2010, 9♀♀; Kırşehir: Kaman, Kaman-Ömerhacılı, 39°18'19"N, 33°46'04"E, 1104 m, 27.V.2010, 1♂; Niğde: Central County, Koyunlu-Fesleğen, 37°59'19"N, 34°32'56"E, 1658 m, 26.IX.2010, 1♂; Çamardı, Üçkapılı-

Örenköy, 37°53'29"N, 34°55'01"E, 1832 m, 04.VI.2010, 1♀, Leg. S. Firat.

Distribution in Turkey: Kocaeli (Goek Dag, Sabandja) (Bodemeyer, 1906; Bodemeyer, 1927; Horion, 1965).

Genus *Gabrius* Stephens, 1829

Gabrius astutoides (A. Strand, 1946)

Examined material: Çankırı: Ilgaz, 41°03'42"N, 33°44'43"E, 1801 m, 07.VI.2011, 3♂♂, Leg. S. Firat.

Distribution in Turkey: Antalya, Muğla (Anlaş, 2007; Anlaş and Rose, 2009)

Gabrius breviventer (Sperk, 1835)

Examined material: Kırşehir: Kaman, Kaman-Ömerhacılı, 39°18'19"N, 33°46'04"E, 1104 m, 27.V.2010, 1♂, Leg. S. Firat.

Distribution in Turkey: Ankara, Niğde (Smetana, 1953).

Gabrius nigrutilus (Gravenhorst, 1802)

Examined material: Aksaray: Güzelyurt, Selime bridge, 38°19'33"N, 34°14'28"E, 1127 m, 16.V.2011, 1♀, 1♂; Ankara: Çubuk, Kışlacık, 40°23'19"N, 32°56'46"E, 1179 m, 05.VII.2011, 1♀; Çankırı: Ilgaz, National Park entrance, 41°03'29"N, 33°44'22"E, 1750 m, 30.VI.2010, 1♂; Yapraklı, Aşağıöz-Yukarıöz, 40°48'49"N, 33°51'22"E, 1214 m, 29.VI.2010, 1♀; Eskişehir: Mihaliççık, Otluk-Karacaören, 40°00'13"N, 31°07'43"E, 1151 m, 27.VII.2011, 1♂; Niğde: Çamardı, 37°49'55"N, 34°58'56"E, 1486 m, 18.VIII.2010, 1♀, 1♂, Leg. S. Firat.

Distribution in Turkey: Adana, Ankara, Antalya, İzmir, Karaman (Konya), Manisa, Mardin, Mersin (Peyron, 1858; Fauvel, 1874; Sahlberg, 1913; Smetana, 1953, 1967; Tezcan and Amiryan, 2003; Anlaş, 2009; Anlaş and Rose, 2009; Özgen et al., 2010).

Gabrius suffragani Joy, 1913

Examined material: Nevşehir: Ürgüp, Damsa dam, 21.V.2010, 38°32'55"N, 34°55'16"E, 1228 m, 1♂, Leg. S. Firat.

Distribution in Turkey: Samsun (Korge, 1971; Assing, 2010a).

Genus *Gabronthus* Tottenham, 1955

Gabronthus maritimus (Motschulsky, 1858)

Examined material: Kayseri: Yahyalı, Kapuzbaşı road, Balçıcakırı, 37°48'15"N, 35°26'49"E, 784 m, 20.VIII.2010, 1♂, Leg. S. Firat.

Distribution in Turkey: Adana, Antalya, Aydın, Kilis, Manisa, Alata (Smetana, 1953, 1967; Anlaş, 2009; Anlaş and Rose, 2009).

Genus *Neobisnius* Ganglbauer, 1895

Neobisnius procerulus procerulus (Gravenhorst, 1806)

Examined material: Konya: Central County, Altınapa dam pond, 37°53'19"N, 32°18'35"E, 1257 m, 02.VI.2009, 1♀; Nevşehir: Ürgüp, Damsa dam, 38°32'55"N, 34°55'16"E, 1228 m, 21.V.2010, 3♂♂, Leg. S. Firat.

Distribution in Turkey: Adana, Antalya, Svilengrad (Turkey-Bulgaria border) (Smetana, 1967; Anlaş and Rose, 2009).

Neobisnius prolixus (Erichson, 1840)

Examined material: Ankara: Beypazarı, Karaşar road, Haydarlar, 40°17'08"N, 31°56'34"E, 1288 m, 13.VI.2011, 1♂; Kırşehir: Central County, Kortulu-Sıdıklıdarboğaz junction, 39°04'35"N, 34°00'37"E, 930 m, 28.VI.2009, 1♀; Konya: Ereğli, Halkapınar road, 37°25'45"N, 34°11'36"E, 1160 m, 14.VI.2009, 1♀; Sivas: Suşehri, İmranlı road, Yürekli, 40°06'36"N, 38°10'58"E, 953 m, 19.VII.2009, 1♀; Şarkışla, Altınyayla-Şarkışla, Konak river, 39°16'17"N, 36°32'20"E, 1403 m, 20.VII.2009, 2♀♀, 2♂♂, Leg. S. Firat.

Distribution in Turkey: Ankara, Aydın, Bayburt, İzmir, Malatya, Manisa, Trabzon, Tunceli (Sahlberg, 1913; Horion, 1965; Smetana, 1967; Anlaş, 2009).

Genus *Philonthus* Stephens, 1829

Philonthus atratus (Gravenhorst, 1802)

Examined material: Niğde: Central County, Koyunlu-Fesleğen, 37°59'19"N, 34°32'56"E, 1658 m, 26.IX.2010, 1♀, 1♂ Leg. S. Firat.

Distribution in Turkey: Ankara, Batman, Diyarbakır, Erzurum, Kastamonu, Konya, Malatya, Mersin, Niğde (Ganglbauer, 1905; Smetana, 1953; Coiffait, 1978b; Öncüler, 1991; Anlaş, 2009; Kesdek et al., 2009; Özgen et al., 2010).

Philonthus carbonarius (Gravenhorst, 1802)

Examined material: Aksaray: Güzelyurt, İhlara valley, 38°15'53"N, 34°17'25"E, 1127 m, 15.IX.2011, 1♂, Leg. S. Firat.

Distribution in Turkey: Antalya, Ardahan, Bingöl, Elazığ, Erzurum, Kars, Manisa (Anlaş and Rose, 2009; Kesdek et al., 2009; Özgen and Anlaş, 2010).

Philonthus caucasicus Nordmann, 1837

Examined material: Nevşehir: Derinkuyu, Özlüce-Özyayla, 38°28'10"N, 34°40'58"E, 1471 m, 24.VI.2009, 1♂, Leg. S. Firat.

Distribution in Turkey: Erzurum, Kırşehir, Mersin (Smetana, 1953; Anlaş, 2009; Kesdek et al., 2009).

Philonthus cognatus Stephens, 1832

Examined material: Ankara: Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 24.II.2011, 1♂, Leg. M. Kabalak; Yozgat: Akdağmadeni, Akdağmadeni-Akçakışla, 39°40'15"N, 35°55'08"E, 1529 m, 21.VI.2011, 1♀, Leg. S. Firat.

Distribution in Turkey: Ardahan, Artvin, Balıkesir (Kaz Dağı), Erzurum, Kars, Mersin, Trabzon (Smetana, 1953; Fagel, 1963; Coiffait, 1978b; Abacıgil et al., 2013; Kesdek et al., 2009).

Philonthus concinnus (Gravenhorst, 1802)

Examined material: Aksaray: Gülağaç, Selime bridge, 38°19'35"N, 34°14'27"E, 1120 m, 22.VI.2009, 2♀♀; same locality, 20.V.2010, 1♀; Gülağaç, Gülağaç junction to

Kızılkaya, 38°21'18"N, 34°13'45"E, 1111 m, 23.VI.2009, 2♂♂; Central County, Dikmen, 38°10'43"N, 34°05'45"E, 1149 m, 18.IV.2010, 1♂; Central County, Helvadere-Hasadağı, 38°10'09"N, 34°11'24"E, 1620 m, 01.VII.2011, 4♀♀; Central County, Helvadere-Hasadağı mountain road, 38°09'45"N, 34°11'11"E, 1788 m, 01.VII.2011, 1♀, 1♂; Ağaören, Göynük-Sofular, 38°45'54"N, 33°50'02"E, 1131 m, 14.IX.2011, 1♀, 3♂♂; Ankara: Çubuk, Karagöl road, 40°21'54"N, 32°56'47"E, 1170 m, 05.VII.2011, 1♂; Çubuk, Kışlacık, 40°23'19"N, 32°56'46"E, 1179 m, 05.VII.2011, 2♀♀; Çubuk, Durhasan, 40°20'10"N, 32°56'21"E, 1185 m, 05.VII.2011, 1♀; Çankırı: Şabanözü, Ankara-Çankırı junction, 40°28'14"N, 33°16'40"E, 1024 m, 06.VI.2011, 1♀; Ilgaz, 41°02'35"N, 33°44'41"E, 1588 m, 07.VI.2011, 3♀♀; Eskişehir: Mihaliççık, Ahırköy, 39°46'44"N, 31°32'54"E, 788 m, 30.VI.2009, 1♀, 1♂; Günyüzü, Karacaören-Kuzören, 39°19'25"N, 31°44'12"E, 1279 m, 15.VI.2010, 10♀♀, 7♂♂; Kayseri: Felahiye, 39°07'36"N, 35°38'08"E, 1397 m, 21.VII.2009, 1♀; Central County, Eskiömerler-Karakimse, Yemliha, 38°55'50"N, 35°11'24"E, 1177 m, 09.VI.2010, 14♀♀, 4♂♂; Kırıkkale: Yahşihan, 39°55'26"N, 33°22'22"E, 696 m, 09.IV.2010, 5♀♀; Sulakyurt, Akkuzulu-Koruköy, 40°12'57"N, 33°36'34"E, 668 m, 25.IV.2011, 3♀♀; Kırşehir: Central County, Kortulu-Sıdıklıdarboğaz, 39°04'35"N, 34°00'37"E, 930 m, 28.VI.2009, 2♀♀, 1♂; Mucur, Yazıkınık, 39°09'07"N, 34°24'24"E, 1123 m, 27.VI.2009, 13♀♀, 2♂♂; Central County, Akçaağıl village river, 39°01'47"N, 34°12'57"E, 966 m, 25.V.2010, 3♀♀, 5♂♂; Central County, Sıdıklıküçükboğaz village pond, 39°08'36"N, 33°55'01"E, 992 m, 27.V.2010, 33♀♀, 12♂♂; Konya: Doğanhisar, Yazlıca, 38°10'00"N, 31°45'26"E, 1156 m, 24.IV.2010, 1♀; Ereğli, Halkapınar road, 37°25'45"N, 34°11'36"E, 1160 m, 14.VI.2009, 2♂♂; Central County, İkipınar-Yeşildere, 37°34'55"N, 32°15'19"E, 1223 m, 02.VI.2009, 2♀♀, 1♂; Nevşehir: Acıgöl, 38°28'35"N, 34°32'58"E, 1533 m, 20.V.2010, 1♀; Derinkuyu, Özlüce-Özyayla, 38°28'10"N, 34°40'58"E, 1471 m, 24.VI.2009, 1♂; Hacıbektaş, Hacılar-Karaburna, Kızılırmak bridge, 38°51'27"N, 34°27'28"E, 974 m, 24.V.2010, 31♀♀, 8♂♂; Kozaklı, 39°06'37"N, 34°45'14"E, 1102 m, 24.V.2010, 2♀♀; Kozaklı, Karasenir-Karahasanlı, 39°17'29"N, 34°49'18"E, 960 m, 26.VI.2009, 3♀♀, 2♂♂; Ürgüp, Sarıhıdır, Kızılırmak stream, 38°43'59"N, 34°55'50"E, 938 m, 24.VI.2009, 3♂♂; Niğde: Çamardı, Özyurt-Üçkapılı, 37°55'42"N, 34°53'24"E, 1900 m, 21.VIII.2011, 1♂; Central County, Fesleğen, 38°00'00"N, 34°33'26"E, 1693 m, 22.VIII.2011, 1♂; Sivas: Hafik, Kurucaova Pass-Çatpınar junction, 40°04'59"N, 37°33'49"E, 1571 m, 07.VII.2010, 1♀; Yozgat: Central County, Büyüknefes-Güneşli, 39°51'39"N, 34°31'51"E, 1261 m, 11.VI.2010, 10♀♀, 5♂♂; Central County, Reçep, 39°48'48"N, 34°53'06"E, 1336 m, 12.VI.2010, 1♀, Leg. S. Firat.

Distribution in Turkey: Adana, Ankara, Antalya, Ardahan, Balıkesir (Kaz Dağı), Bingöl, Bolu, Diyarbakır, Erzincan, Erzurum, Iğdır, Kayseri, Konya, Manisa, Mardin, Mersin, Karaman, Tunceli (Sahlberg, 1913; Smetana, 1953, 1967; Bohac, 1986; Öncüer, 1991; Anlaş, 2009; Anlaş and Rose, 2009; Kesdek et al., 2009; Özgen and Anlaş, 2010; Özgen et al., 2010; Abacıgil et al., 2013).

Philonthus coprophilus Jarrige, 1949

Examined material: Aksaray: Central County, Dikmen, 38°10'43"N, 34°05'45"E, 1149 m, 18.IV.2010, 1♀, 4♂♂; Kırıkkale: Balıseyh, Hıdırseyh, 40°01'13"N, 33°39'29"E, 1042 m, 10.IV.2010, 1♂; Yahşihan, 39°55'26"N, 33°22'22"E, 696 m, 09.IV.2010, 1♀, 1♂; Konya: Beyşehir, Bayağşar-Irmaklı, 37°34'46"N, 31°48'16"E, 1142 m, 25.IV.2010, 1♂; Nevşehir: Derinkuyu, Özlüce-Özyayla, 38°28'10"N, 34°40'58"E, 1471 m, 24.VI.2009, 2♀♀, 1♂; Kozaklı, Karasenir-Karahasanlı, 39°17'29"N, 34°49'18"E, 960 m, 26.VI.2009, 1♂, Leg. S. Firat.

Distribution in Turkey: Balıkesir (Kaz Dağı), Erzurum, Sinop (Assing, 2007a, 2010a; Abacıgil et al., 2013).

Philonthus cruentatus (Gmelin, 1790)

Examined material: Konya: Doğanhisar, Yazlıca, 38°10'00"N, 31°45'26"E, 1156 m, 24.IV.2010, 4♂♂; Beyşehir, Bayağşar-Irmaklı, 37°34'46"N, 31°48'16"E, 1142 m, 25.IV.2010, 4♂♂; Nevşehir: Derinkuyu, Özlüce-Özyayla, 38°28'10"N, 34°40'58"E, 1471 m, 24.VI.2009, 2♂♂, Leg. S. Firat.

Distribution in Turkey: Antalya, Balıkesir (Kaz Dağı), Denizli, İstanbul (Apfelbeck, 1901; Sahlberg, 1913; Öncüer, 1991; Anlaş and Rose, 2009; Abacıgil et al. 2013).

Philonthus danicus Coiffait, 1963

Examined material: Kırıkkale: Yahşihan, 39°55'26"N, 33°22'22"E, 696 m, 09.IV.2010, 1♀; Konya: Çumra, 37°32'36"N, 32°45'57"E, 1018 m, 12.IV.2010, 1♀, 4♂♂; Nevşehir: Hacıbektaş, Hacılar-Karaburna, Kızılırmak bridge, 38°51'27"N, 34°27'28"E, 974 m, 24.V.2010, 1♀; Kozaklı, Karasenir-Karahasanlı, 39°17'29"N, 34°49'18"E, 960 m, 26.VI.2009, 1♀, Leg. S. Firat.

Philonthus debilis (Gravenhorst, 1802)

Examined material: Ankara: Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 24.XI.2011, 1♂, Leg. F. Dikmen; same locality, 10.IV.2012, 1♀, 2♂♂, Leg. S. Firat.

Distribution in Turkey: Adana, Ankara, Balıkesir (Kaz Dağı), Denizli, Mersin (Fauvel, 1874; Sahlberg, 1913; Smetana, 1953; Öncüer, 1991; Tezcan and Amiryan, 2003; Abacıgil et al., 2013).

Philonthus dimidiatipennis Erichson, 1840

Examined material: Konya: Central County, Altınapa dam pond, 37°53'19"N, 32°18'35"E, 1405 m, 02.VI.2009, 1♀, Leg. S. Firat.

Distribution in Turkey: Adana, Ankara, Isparta (Smetana, 1953, 1967; Scheerpeltz, 1958).

Philonthus ebeninus (Gravenhorst, 1802)

Examined material: Aksaray: Central County, Helvadere-Hasadağı, 38°10'09"N, 34°11'24"E, 1620 m, 01.VII.2011, 1♀; Çankırı: Ilgaz, 41°02'35"N, 33°44'41"E, 1588 m, 07.VI.2011, 1♀; Kırşehir: Mucur, Yazıkınık, 39°09'07"N, 34°24'24"E, 1123 m, 27.VI.2009, 1♂; Nevşehir: Kozaklı, Karasenir-Karahasanlı, 39°17'29"N, 34°49'18"E, 960 m, 26.VI.2009, 1♂, Leg. S. Firat.

Distribution in Turkey: Adana, Antalya, Bursa, İzmir, Mersin (Erichson, 1840; Peyron, 1858; Smetana, 1953; Anlaş, 2009; Anlaş and Rose, 2009).

Philonthus frigidus frigidus Märkel & Kiesenwetter, 1848

Examined material: Aksaray: Gülağaç, Gülağaç junction to Kızılkaya, 38°21'18"N, 34°13'45"E, 1111 m, 23.VI.2009, 1♂, Leg. S. Firat.

Distribution in Turkey: Not cited (Fauvel, 1874; Ganglbauer, 1895; Horion, 1965; Herman, 2001).

Philonthus fumarius (Gravenhorst, 1806)

Examined material: Kırşehir: Kaman, Kaman-Ömerhacılı, 39°18'19"N, 33°46'04"E, 1104 m, 27.V.2010, 2♂♂; Leg. S. Firat.

Distribution in Turkey: İstanbul (Apfelbeck, 1901; Horion, 1965; Anlaş, 2009).

Philonthus intermedius (Lacordaire, 1835)

Examined material: Aksaray: Central County, Dikmen, 38°10'43"N, 34°05'45"E, 1149 m, 18.IV.2010, 3♀♀, 3♂♂; Central County, Helvadere-Hasadağı mountain road, 38°09'45"N, 34°11'11"E, 1788 m, 01.VII.2011, 3♀♀; Ankara: Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 30.IV.2012, 1♂, Leg. M. Topçular; Çubuk, Karagöl road, 40°21'54"N, 32°56'47"E, 1170 m, 05.VII.2011, 1♂; Çubuk, Durhasan, 40°20'10"N, 32°56'21"E, 1185 m, 05.VII.2011, 1♂; Eskişehir: Seyitgazi, Kümbet, 39°12'09"N, 30°37'05"E, 1070 m, 21.IV.2011, 1♀; Kayseri: Develi, Gümüşören, 38°15'42"N, 35°37'21"E, 1286 m, 18.VI.2011, 1♂; Kırıkkale: Keskin, İğdebeli, 39°30'38"N, 33°31'03"E, 972 m, 25.VII.2003, 1♂, Leg. N. Yanbuluğlu; Kırşehir: Kaman, Kaman-Ömerhacılı, 39°18'19"N, 33°46'04"E, 1104 m, 27.V.2010, 1♀, 2♂♂; Konya: Doğanhisar, Yazlıca, 38°10'00"N, 31°45'26"E, 1156 m, 24.IV.2010, 4♀♀, 6♂♂, Beyşehir, Bayağşar-Irmaklı, 37°34'46"N, 31°48'16"E, 1142 m, 25.IV.2010, 1♂; Çumra, Beylerce, 37°32'36"N, 32°45'57"E, 1028 m, 12.IV.2010, 1♀; Central County, İkipınar-Yeşildere, 37°34'55"N, 32°15'19"E, 1223 m, 02.VI.2009, 2♀♀; Nevşehir: Derinkuyu, Özlüce-Özyayla, 38°28'10"N, 34°40'58"E, 1471 m, 24.VI.2009, 3♀♀, 4♂♂; Kozaklı, Karasenir-Karahasanlı, 39°17'29"N, 34°49'18"E, 960 m, 26.VI.2009, 1♀; Sivas: Yıldızeli, Zengi junction, 39°57'20"N, 36°50'39"E, 1367 m, 25.VI.2011, 1♂, Leg. S. Firat.

Distribution in Turkey: Ankara, Antalya, Balıkesir (Kaz Dağı), Denizli, İzmir, Kahramanmaraş, Malatya,

Mardin, Mersin (Fauvel, 1874; Peyron, 1858; Sahlberg, 1913; Öncüer, 1991; Anlaş, 2009; Anlaş and Rose, 2009; Özgen and Anlaş, 2010; Abacıgil et al., 2013).

Philonthus juvenilis Peyron, 1858

Examined material: Niğde: Central County, Koyunlu-Fesleğen, 37°59'19"N, 34°32'56"E, 1658 m, 26.IX.2010, 1♀, 2♂♂, Leg. S. Fırat.

Distribution in Turkey: Antalya, Mersin, Niğde (Peyron, 1858; Smetana, 1953; Coiffait, 1974; Anlaş and Rose, 2009).

Philonthus laminatus (Creutzer, 1799)

Examined material: Kırşehir: Kaman, Kaman-Ömerhacılı, 39°18'19"N, 33°46'04"E, 1104 m, 27.V.2010, 1♀, 1♂, Leg. S. Fırat.

Distribution in Turkey: Ankara, Balıkesir, Bayburt, Erzurum, Muğla, Tunceli (Fauvel, 1874; Smetana, 1953; Horion, 1965; Coiffait, 1978b; Bohac, 1986; Schillhammer, 2003; Anlaş, 2009; Kesdek et al. 2009).

Philonthus nitidicollis (Lacordaire, 1835)

Examined material: Aksaray: Gülağaç, Gülağaç junction to Kızılkaya, 38°21'18"N, 34°13'45"E, 1111 m, 23.VI.2009, 1♂; Karaman: Central County, Süleymanhacı-Madenşehri, 37°27'24"N, 33°04'15"E, 1039 m, 12.VI.2009, 1♂; Kayseri: Yahyalı, 15 km to Kapuzbaşı waterfalls, 37°46'43"N, 35°25'10"E, 686 m, 22.VII.2009, 1♂; Kırşehir: Central County, Sıdıkküçükboğaz, 39°08'36"N, 33°55'01"E, 992 m, 27.V.2010, 2♂♂; Nevşehir: Derinkuyu, Özlüce-Özyayla, 38°28'10"N, 34°40'58"E, 1471 m, 24.VI.2009, 5♂♂; Kozaklı, Karasenir-Karahasanlı, 39°17'29"N, 34°49'18"E, 960 m, 26.VI.2009, 1♂, Leg. S. Fırat.

Distribution in Turkey: Adana, Ankara, Antalya, Balıkesir (Kaz Dağı), Bingöl, Gaziantep, Isparta, İzmir, Konya, Siirt (Sahlberg, 1913; Smetana, 1953; Anlaş, 2009; Anlaş and Rose, 2009; Özgen and Anlaş, 2010; Japhosvili and Anlaş, 2011; Abacıgil et al., 2013).

Philonthus politus (Linnaeus, 1758)

Examined material: Konya: Çumra, Beylerce, 37°32'36"N, 32°45'57"E, 1028 m, 12.IV.2010, 1♂, Leg. S. Fırat.

Distribution in Turkey: Ankara, Mardin, Mersin (Erichson, 1840; Peyron, 1858; Scheerpeltz, 1958; Bordoni, 1978; Bohac, 1986; Özgen and Anlaş, 2010).

Philonthus quisquiliarius quisquiliarius (Gyllenhal, 1810)

Examined material: Aksaray: Ortaköy, Balcı, 38°42'20"N, 34°06'23"E, 1162 m, 15.VI.2009, 1♂; Ankara: Çubuk, Karagöl Yıldırım Evcı junction, 40°26'22"N, 32°53'02"E, 1540 m, 05.VIII.2008, 1♀, Leg. Y. Turan; Eskişehir: Mihaliççık, Ahırköy, 39°46'44"N, 31°32'54"E, 788 m, 30.VI.2009, 5♂♂; Kırıkkale: Keskin, Köprüköy bridge, 39°34'25"N, 33°25'58"E, 723 m, 09.IV.2010, 1♀; Kırşehir: Central County, Kortulu-Sıdıkkıdarboğaz,

39°04'35"N, 34°00'37"E, 930 m, 28.VI.2009, 1♀, Nevşehir: Kozaklı, Karasenir-Karahasanlı, 39°17'29"N, 34°49'18"E, 960 m, 26.VI.2009, 1♂, Leg. S. Fırat.

Distribution in Turkey: Adana, Ankara, İzmir, Mersin, Siirt (Peyron, 1858; Fauvel, 1874; Sahlberg, 1913; Öncüer, 1991; Özgen et al., 2010; Smetana, 1953, 1967).

Philonthus rectangulus Sharp, 1874

Examined material: Aksaray: Central County, Dikmen, 38°10'43"N, 34°05'45"E, 1149 m, 18.IV.2010, 5♀♀, 1♂; Ankara: Çubuk, Durhasan, 40°20'10"N, 32°56'21"E, 1185 m, 05.VII.2011, 2♀, 2♂; Kayseri: Tomarza, Köprüköy, 38°25'49"N, 35°58'47"E, 960 m, 18.VI.2011, 1♂; Kırıkkale: Balışeyh, Işıklar, 39°51'40"N, 33°40'18"E, 901 m, 26.IV.2011, 1♀; Yozgat: Akdağmadeni, Tarhana, 39°53'45"N, 35°42'59"E, 912 m, 25.V.2011, 1♀; Leg. S. Fırat.

Distribution in Turkey: Ankara, Erzurum, Trabzon, Tunceli, Şanlıurfa (Smetana, 1953; Anlaş, 2009; Kesdek et al., 2009).

Philonthus rubripennis Stephens, 1832

Examined material: Ankara: Çamlıdere, Dörtkonak, 40°30'46"N, 32°49'30"E, 1199 m, 14.VI.2011, 1♀; Çubuk, Karagöl Yıldırım Evcı junction, 40°26'22"N, 32°53'02"E, 1540 m, 05.VIII.2008, 1♀, Leg. Y. Turan-O. Sert; Konya: Doğanhisar, Yazlıca, 38°10'00"N, 31°45'26"E, 1156 m, 24.IV.2010, 2♀♀, Leg. S. Fırat.

Distribution in Turkey: Erzurum, Mersin, Tunceli (Peyron, 1858; Fauvel, 1874; Anlaş, 2009; Kesdek et al., 2009).

Philonthus rufimanus Erichson, 1840

Examined material: Aksaray: Gülağaç, Selime bridge, 38°19'35"N, 34°14'27"E, 1120 m, 22.VI.2009, 4♀♀; same locality, 20.V.2010, 1♀; same locality, 16.V.2011, 1♀, 2♂♂; Gülağaç, Gülağaç junction to Kızılkaya, 38°21'18"N, 34°13'45"E, 1111 m, 23.VI.2009, 9♀♀, 4♂♂; Ankara: Çamlıdere, Tatlak bridge, 40°27'31"N, 32°22'21"E, 1002 m, 14.VI.2011, 3♀♀, Leg. S. Fırat; Çubuk, Karagöl Yıldırım Evcı junction, 40°26'22"N, 32°53'02"E, 1540 m, 05.VIII.2008, 1♂, Leg. Y. Turan-O. Sert; Çankırı: Şabanözü, Ankara-Çankırı junction, 40°28'14"N, 33°16'40"E, 1024 m, 06.VI.2011, 2♀♀, 1♂; Eskişehir: Mihaliççık, Ahırköy, 39°46'44"N, 31°32'54"E, 788 m, 30.VI.2009, 1♀, 1♂; Kayseri: Sarioğlan, Sahruh bridge, 39°11'03"N, 35°56'19"E, 1116 m, 21.VII.2009, 3♂♂; Konya: Bozkır Bozkır-Hadim, 37°08'51"N, 32°15'14"E, 1482 m, 05.V.2007, 1♂, Leg. Y. Turan-M. Kabalak; Ereğli, Halkapınar, 37°25'45"N, 34°11'36"E, 1160 m, 14.VI.2009, 3♀♀, 1♂; Sivas: Suşehri, İmranlı road, Yürekli, 40°06'36"N, 38°10'58"E, 953 m, 19.VII.2009, 1♀; Şarkışla, Altınyayla-Şarkışla, Konak river, 39°16'17"N, 36°32'20"E, 1403 m, 20.VII.2009, 5♀♀, 10♂♂; Yozgat: Akdağmadeni, Kuşlucaçağı, 39°48'49"N, 35°48'41"E, 1001 m, 13.VI.2010, 3♀♀, 6♂♂, Leg. S. Fırat.

Distribution in Turkey: Aydın, Balıkesir (Kaz Dağı), Bayburt, İzmir, Kilis, Mersin, Manisa, Svilengrad (Turkey-Bulgaria border), Tunceli (Sahlberg, 1913; Smetana, 1953, 1967; Horion, 1965; Tezcan and Amiryan, 2003; Anlaş, 2009; Anlaş and Rose, 2009; Abacıgil et al., 2013).

Philonthus sanguinolentus (Gravenhorst, 1802)

Examined material: Aksaray: Central County, Dikmen, 38°10'43"N, 34°05'45"E, 1149 m, 18.IV.2010, 1♀; Ankara: Çubuk, Karagöl road, 40°21'54"N, 32°56'47"E, 1170 m, 05.VII.2011, 1♀; Konya: Doğanhisar, Yazlıca, 38°10'00"N, 31°45'26"E, 1156 m, 24.IV.2010, 1♂; Nevşehir: Hacıbektaş, Hacılar-Karaburna, Kızılırmak bridge, 38°51'27"N, 34°27'28"E, 974 m, 24.V.2010, 1♀, Leg. S. Fırat.

Philonthus spinipes Sharp, 1874

Examined material: Konya: Ereğli, Halkapınar road, 37°25'45"N, 34°11'36"E, 1160 m, 14.VI.2009, 1♂; Nevşehir: Derinkuyu, Özlüce-Özyayla, 38°28'10"N, 34°40'58"E, 1471 m, 24.VI.2009, 1♂, Leg. S. Fırat.

Distribution in Turkey: Antalya, Mersin (Assing, 2006).

Philonthus truquii Peyron, 1858

Examined material: Kırşehir: Kaman, Kaman-Ömerhacılı, 39°18'19"N, 33°46'04"E, 1104 m, 27.V.2010, 5♀♀, 1♂; Sivas: Doğanşar, Söbüler, 40°04'53"N, 37°33'49"E, 1595 m, 22.VI.2011, 1♂; Zara, Karahasan-Kelhasan, 39°45'32"N, 37°50'31"E, 1530 m, 24.VI.2011, 1♀ Leg. S. Fırat.

Distribution in Turkey: Adana, Mersin, Niğde (Peyron, 1858; Jarrige, 1952; Smetana, 1954; Coiffait, 1974).

Genus Rabigus Mulsant & Rey, 1876

Rabigus ocaleoides (J. Sahlberg, 1908)

Examined material: Karaman: Ayrancı, Melikli, 37°10'48"N, 33°47'23"E, 1434 m, 14.VI.2009, 1♂; Konya: Hadim, Pabuççular, 37°03'01"N, 32°03'33"E, 1283 m, 4.VI.2009, 1♂; Leg. S. Fırat.

Distribution in Turkey: Antalya, İzmir, Kahramanmaraş, Manisa, Mersin (Sahlberg, 1913; Coiffait, 1974; Smetana, 1977; Assing, 2006; 2009; Anlaş, 2009).

Rabigus pullus (Nordmann, 1837)

Examined material: Kayseri: Yahyalı, Kapuzbaşı road, Yeşilköy, 37°53'49"N, 35°30'49"E, 800 m, 22.VII.2009, 1♀; Kapuzbaşı road, Delialıuşağı, 37°57'43"N, 35°32'13"E, 1211 m, 27.IV.2011, 1♂, Leg. S. Fırat.

Distribution in Turkey: Not cited (Horion 1965; Coiffait, 1974; Herman, 2001; Smetana, 2004).

Rabigus tenuis (Fabricius, 1793)

Examined material: Aksaray: Güzelyurt, Selime bridge, 38°19'33"N, 34°14'28"E, 1127 m, 16.V.2011, 1♀; Yozgat: Akdağmadeni, Tarhana, 39°53'45"N, 35°42'59"E, 912 m, 25.V.2011, 1♂, Leg. S. Fırat.

Distribution in Turkey: Amasya, Bayburt, Erzurum (Korge, 1971; Assing, 2009).

Subtribe *Quediina* Kraatz, 1857

Genus Acylophorus Nordmann, 1837

Acylophorus glaberrimus (Herbst, 1784)

Examined material: Çankırı: Şabanözü, Ankara-Çankırı junction, 40°28'14"N, 33°16'40"E, 1024 m, 06.VI.2011, 2♂♂; Konya: Doğanhisar, Yazlıca, 38°10'00"N, 31°45'26"E, 1156 m, 24.IV.2010, 1♀; Leg. S. Fırat.

Distribution in Turkey: Adana, Bingöl, Erzincan, Mersin (Peyron, 1858; Fauvel, 1874; Korge, 1971; Assing, 2004).

Acylophorus lindbergi Scheerpeltz, 1958

Examined material: Çankırı: Şabanözü, Ankara-Çankırı junction, 40°28'14"N, 33°16'40"E, 1024 m, 06.VI.2011, 4♀♀; Leg. S. Fırat.

Distribution in Turkey: Van (Scheerpeltz, 1958; Smetana, 1967; Coiffait, 1978a).

Genus Heterothops Stephens, 1829

Heterothops dissimilis (Gravenhorst, 1802)

Examined material: Ankara: Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 22.III.2012, 1♀; same locality, 20.IX.2012, 1♂, Leg. Y. Turan; Yozgat: Çandır, Çandır-Çayıralan, Kozan, 39°15'13"N, 35°33'58"E, 1261 m, 24.V.2011, 1♂, Leg. S. Fırat.

Distribution in Turkey: Ankara (Smetana, 1967).

Genus Quedius Stephens, 1829

Subgenus *Distichalius* Casey, 1915

Quedius cinctus (Paykull, 1790)

Examined material: Ankara: Beypazarı, Karaşar road, Haydarlar, 40°17'08"N, 31°56'34"E, 1288 m, 13.VI.2011, 1♂; Çankaya, Hacettepe University Green Valley, 39°52'01"N, 32°44'24"E, 1047 m, 17.II.2011, 2♂♂; Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 22.III.2012, 1♀, 1♂; Eskişehir: Günyüzü, Karacaören-Kuzören, 39°19'25"N, 31°44'12"E, 1279 m, 15.VI.2010, 4♀♀; Mihalgazi, Dağköplü-Yarımca, 39°56'53"N, 30°40'13"E, 1165 m, 16.VI.2010, 1♀; same locality, 01.IX.2010, 1♀; Kırşehir: Central County, Akçaağıl, 39°01'47"N, 34°12'57"E, 966 m, 25.V.2010, 1♀; Nevşehir: Hacıbektaş, Hacılar-Karaburna, Kızılırmak bridge, 38°51'27"N, 34°27'28"E, 974 m, 24.V.2010, 1♀, 2♂♂, Leg. S. Fırat.

Distribution in Turkey: Antalya, Artvin, Bolu, İstanbul, İzmir, Mersin, Rize, Siirt (Peyron, 1858; Fauvel, 1874; Apfelbeck, 1901; Sahlberg, 1913; Korge, 1971; Coiffait, 1978b; Öncüer, 1991; Anlaş and Rose, 2009; Özgen and Anlaş, 2010).

Subgenus *Microsaurus* Dejean, 1833

Quedius brevis Erichson, 1840

Examined material: Çankırı: Ilgaz, 41°03'42"N, 33°44'43"E, 1801 m, 07.VI.2011, 1♂, Leg. S. Fırat.

Distribution in Turkey: Kastamonu (Assing, 2007b; Abacıgil et al., 2013).

Quedius ochripennis (Ménétriés, 1832)

Examined material: Ankara: Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 14.XII.2011, 1♂; same locality, 12.IV.2012, 1♀, Leg. M. Kabalak; Çankırı: Ilgaz, 41°02'35"N, 33°44'41"E, 1702 m, 07.VI.2011, 1♀; Eskişehir: Günyüzü, Karacaören-Kuzören, 39°19'25"N, 31°44'12"E, 1279 m, 15.VI.2010, 1♂; Kayseri: Central County, Eskiömerler-Karakimse, Yemliha, 38°55'50"N, 35°11'24"E, 1177 m, 09.VI.2010, 1♀, 1♂; Kırşehir: Kaman, Kaman-Ömerhacılı, 39°18'19"N, 33°46'04"E, 1104 m, 27.V.2010, 1♀; Nevşehir: Hacibektaş, Hacılar-Karaburna, Kızılırmak bridge, 38°51'27"N, 34°27'28"E, 974 m, 24.V.2010, 2♀♀; Niğde: Çamardı, Çamardı-Mahmatlı, 37°45'04"N, 35°00'43"E, 1355 m, 18.VIII.2010, 1♀; Yozgat: Central County, Koyunculu-Yeşilova, 39°41'41"N, 35°00'17"E, 1172 m, 24.V.2011, 1♀; Yerköy, Kayadibi-Salmanlı-Zincir, 39°53'11"N, 34°16'29"E, 1003 m, 23.V.2011, 2♀♀, Leg. S. Firat.

Distribution in Turkey: Adana, Hatay, Isparta, İstanbul, Kayseri, Mardin (Apfelbeck, 1901; Gridelli, 1929; Smetana, 1967; Bordoni, 1978; Assing, 2007b; Japhosvili and Anlaş, 2011).

Subgenus *Quedius* Stephens, 1829

Quedius fuliginosus (Gravenhorst, 1802)

Examined material: Kayseri: Yahyalı, Kapuzbaşı road, Delialıuşağı, 37°57'43"N, 35°32'13"E, 1211 m, 27.IV.2011, 1♀, Leg. S. Firat.

Distribution in Turkey: İzmir, Mersin, Trabzon (Peyron, 1858; Fauvel, 1874; Gridelli, 1924; Smetana, 1962; Bordoni, 1976; Coiffait, 1978a; Tezcan and Amiryman, 2003).

Quedius levicollis (Brullé, 1832)

Examined material: Eskişehir: Mihalgazi, Dağküplü-Yarımca, 39°56'53"N, 30°40'13"E, 1165 m, 16.VI.2010, 3♂♂, Leg. S. Firat.

Distribution in Turkey: Adana, Ankara, Balıkesir (Kaz Dağı), Erzurum, İzmir, Manisa, Trabzon (Fauvel, 1874; Gridelli, 1924; Smetana, 1967; Anlaş, 2009; Anlaş and Rose, 2009; Kesdek et al., 2009; Abacıgil et al., 2013).

Quedius vicinus (Ménétriés, 1832)

Examined material: Kırıkkale: Keskin, İğdebeli, 39°30'38"N, 33°31'03"E, 972 m, 25.VII.2003, 2♂♂, Leg. N. Yanbuloğlu.

Distribution in Turkey: Bolu, Giresun, Kastamonu, Ordu, Rize (Korge, 1964, 1971).

Subgenus *Raphirus* Stephens, 1829

Quedius curtidens Smetana, 1967

Examined material: Ankara: Çamlıdere, Aşarlar, 40°29'51"N, 32°27'48"E, 1258 m, 14.VI.2011, 1♀; Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 04.IV.2012, 1♀, 1♂; Eskişehir: Mihalgazi, Dağküplü-Yarımca, 39°56'53"N, 30°40'13"E, 1165 m, 01.IX.2010, 1♂; Yozgat: Çandır, Çandır-Çayıralan, Kozan, 39°15'13"N, 35°33'58"E, 1261 m, 24.V.2011, 1♀, Leg. S. Firat.

Distribution in Turkey: Adana (Smetana, 1967).

Quedius humeralis Stephens, 1832

Examined material: Eskişehir: Mihalgazi, Dağküplü-Yarımca, 39°56'53"N, 30°40'13"E, 1165 m, 16.VI.2010, 1♂; Leg. S. Firat.

Distribution in Turkey: İstanbul, Mersin (Apfelbeck, 1901; Sahlberg, 1913; Gridelli, 1922).

Quedius josue Saulcy, 1865

Examined material: Eskişehir: Günyüzü, Karacaören-Kuzören, 39°19'25"N, 31°44'12"E, 1279 m, 15.VI.2010, 1♂; Mihalgazi, Dağküplü-Yarımca, 39°56'53"N, 30°40'13"E, 1165 m, 16.VI.2010, 1♂; same locality, 01.IX.2010, 1♂, Leg. S. Firat.

Distribution in Turkey: Antalya (Korge, 1971; Coiffait, 1978a).

Quedius lateralis (Gravenhorst, 1802)

Examined material: Eskişehir: Mihalgazi, Dağküplü-Yarımca, 39°56'53"N, 30°40'13"E, 1165 m, 16.VI.2010, 1♂; Central County, Mihalgazi road, 39°56'07"N, 30°35'46"E, 1134 m, 28.VII.2011, 1♀, Leg. S. Firat.

Distribution in Turkey: Balıkesir (Kaz Dağı), İzmir (Sahlberg, 1913; Gridelli, 1938; Öncüer, 1991; Abacıgil et al., 2013).

Quedius limbatus (Heer, 1839)

Examined material: Çankırı: Ilgaz, Kadınçayırı, 40°01'43"N, 33°43'52"E, 1273 m, 19.X.2011, 1♂, Leg. S. Firat.

Distribution in Turkey: Ardahan, Artvin, Bayburt, Bolu, Giresun, Gümüşhane, İzmir, Kastamonu, Kayseri, Tunceli (Korge, 1964, 1971; Horion, 1965; Coiffait, 1978a; Solodovnikov, 2002).

Quedius nivicola Kiesenwetter, 1858

Examined material: Ankara: Çankaya, Hacettepe University, Beytepe pond surr., 39°52'34"N, 32°44'23"E, 990 m, 29.III.2011, 2♂♂, Leg. S. Firat.

Distribution in Turkey: İzmir (Bernhauer, 1905; Sahlberg, 1913; Öncüer, 1991).

Quedius pseudonigriceps Reitter, 1909

Examined material: Aksaray: Güzelyurt, İhlara valley, 38°15'53"N, 34°17'25"E, 1127 m, 15.IX.2011, 3♂♂; Çankırı: Yapraklı, Aşağıöz-Yukarıöz, 40°48'49"N, 33°51'22"E, 1214 m, 29.VI.2010, 1♂; Eskişehir: Alpu, Otluk-Karacaören, 40°00'14"N, 31°07'41"E, 1141 m, 30.VI.2009, 1♂; Günyüzü, Karacaören-Kuzören, 39°19'25"N, 31°44'12"E, 1279 m, 15.VI.2010, 2♀♀, 4♂♂; Sivas: Yıldızeli, Danaören junction, 39°49'31"N, 36°42'24"E, 1329 m, 17.VII.2009, 1♀; Zara, Karahasan-Kelhasan, 39°45'32"N, 37°50'31"E, 1530 m, 24.VI.2011, 1♀, Leg. S. Firat.

Distribution in Turkey: Adana, Bolu, Bursa, Hatay, İstanbul, Kahramanmaraş, Kastamonu, Kırklareli, Konya, Ordu, Trabzon, Tunceli (Reitter, 1909; Gridelli, 1922; Korge, 1964, 1971; Fagel, 1968; Coiffait, 1978b; Öncüer, 1991; Solodovnikov, 2002).

Quedius scintillans (Gravenhorst, 1806)

Examined material: Eskişehir: Mihalgazi, Dağküplü-Yarımca, 39°56'53"N, 30°40'13"E, 1165 m, 01.IX.2010, 2♀♀; Kırşehir: Central County, Akçağal, 39°01'47"N, 34°12'57"E, 966 m, 25.V.2010, 1♀; Nevşehir: Hacıbektaş, Hacılar-Karaburna, Kızılırmak bridge, 38°51'27"N, 34°27'28"E, 974 m, 24.V.2010, 2♂♂; Yozgat: Central County, Büyüknefes-Güneşli, 39°51'39"N, 34°31'51"E, 1010 m, 11.VI.2010, 1♀; Central County, Recepli, 39°48'48"N, 34°53'06"E, 1336 m, 12.VI.2010, 1♀, Leg. S. Fırat.

Distribution in Turkey: Antalya, Denizli, İzmir (Sahlberg, 1913; Öncüer, 1991; Anlaş and Rose, 2009).

Quedius umbrinus Erichson, 1839

Examined material: Çankırı: Yapraklı, Aşağıöz-Yukarıöz, 40°48'49"N, 33°51'22"E, 1214 m, 29.VI.2010, 1♀; Eskişehir: Günyüzü, Karacaören-Kuzören, 39°19'25"N, 31°44'12"E, 1279 m, 15.VI.2010, 2♂♂; Kayseri: Central County, Eskiömerler-Karakimse, Yemliha, 38°55'50"N, 35°11'24"E, 1177 m, 09.VI.2010, 1♀; Kırşehir: Kaman, Kaman-Ömerhacılı, 39°18'19"N, 33°46'04"E, 1104 m, 27.V.2010, 3♂♂; Nevşehir: Kozaklı, Boğaziçi, 39°06'37"N, 34°45'14"E, 1102 m, 24.V.2010, 1♂; Leg. S. Fırat.

Distribution in Turkey: Artvin, Bolu, Bursa Düzce, Erzurum, Giresun, Hatay, İstanbul, Kastamonu, Konya, Mersin, Tunceli (Peyron, 1858; Korge, 1964; Solodovnikov, 2002).

Genus Velleiopsis Fairmaire, 1882***Velleiopsis marginiventris*** Fairmaire, 1882

Examined material: Ankara: Elmadağ, Lalahan, Odabaşı village, 01.XI.2010, 39°55'52"N, 33°07'39"E, 1173 m, 1♀, 1♂, Leg. K. Koyuncu.

Distribution in Turkey: Ankara, Gümüşhane (Smetana, 1995; Fırat and Sert, 2015).

Subtribe Staphylinina Latreille, 1802***Genus Dinothenarus*** Thomson, 1858

Dinothenarus flavocephalus flavocephalus (Goeze, 1777)

Examined material: Eskişehir: Mihalççık, Otluk-Karacaören, 40°00'13"N, 31°07'43"E, 1151 m, 27.VII.2011, 1♂, Leg. S. Fırat.

Distribution in Turkey: Mersin (Baudi di Selve, 1857; Peyron, 1858; Fauvel, 1874; Scheerpeltz, 1966; Anlaş, 2009).

Dinothenarus pubescens pubescens (De Geer, 1774)

Examined material: Ankara: Evren, Yusufuşağı-İnebeyli, 39°05'02"N, 33°41'39"E, 895 m, 28.V.2003, 1♂, Leg. N. Yanbuloğlu.

Distribution in Turkey: Ankara (Smetana, 1967).

Genus Emus Leach, 1819***Emus hirtus*** (Linnaeus, 1758)

Examined material: Çankırı: Kurşunlu, Sivricek, 40°51'55"N, 33°22'11"E, 1142 m, 05.VI.2011, 1♀, 2♂♂;

Kayseri: Tomarza, Köprüköy, 38°25'49"N, 35°58'47"E, 1377 m, 18.VI.2011, 1♀; Felahiye, Karaşeyh, İsabay, 39°08'35"N, 35°34'26"E, 1468 m, 19.VI.2011, 1♀; Konya: Central County, Yeşildere, İkipınar, 37°34'55"N, 32°15'19"E, 1223 m, 02.VI.2009, 1♂, Leg. S. Fırat.

Distribution in Turkey: Ankara, Artvin, Manisa (Fauvel, 1874; Anlaş, 2009; Kesdek et al., 2009).

Genus Ocypus Leach, 1819**Subgenus *Ocypus*** Leach, 1819***Ocypus curtipennis*** Motschulsky, 1849

Examined material: Aksaray: Güzelyurt, İhlara valley, 38°15'53"N, 34°17'25"E, 1127 m, 30.VI.2011, 3♂♂; Leg. S. Fırat; Ankara: Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 06.X.2011, 1♀; Çankaya, Hacettepe University, 39°52'11"N, 32°44'00"E, 1046 m, 30.IX.2011, 2♀♀, Leg. Y. Turan; Kırşehir: Akpınar, Akpınar-Deveci, 39°26'44"N, 33°38'17"E, 1123 m, 01.V.2011, 1♀, Leg. S. Fırat; Nevşehir: Ürgüp, Yeşilbaş-Demirtaş, 38°34'13"N, 35°04'12"E, 1383 m, 24.VI.2007, 1♂, Leg. O. Sert-M. Kabalak.

Distribution in Turkey: Antalya, Balıkesir (Kaz Dağı), Bursa, Hatay, İstanbul, İzmir (Coiffait, 1956c; Smetana, 1965a; Anlaş, 2009; Anlaş and Rose, 2009; Kesdek et al., 2009; Abacıgil et al., 2013).

Subgenus *Pseudocypus* Mulsant & Rey, 1876***Ocypus fulvipennis*** Erichson, 1840

Examined material: Ankara: Etimesgut, Eryaman, 39°59'02"N, 32°37'58"E, 869 m, 2.XI.2010, 1♀, Leg. Y. Turan.

Distribution in Turkey: Bolu, Giresun, İzmir, Manisa (Horion, 1965; Tezcan and Amiryan, 2003).

Ocypus helleni (G. Müller, 1926)

Examined material: Ankara: Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 24.XI.2011, 1♂, Leg. F. Dikmen.

Distribution in Turkey: Ardahan, Erzurum, Eskişehir, Kayseri (Müller, 1943; Smetana, 1968a ; Öncüer, 1991; Kesdek et al., 2009).

Ocypus mus (Brullé, 1832)

Examined material: Aksaray: Ortaköy, Ortaköy-Akpınar, 38°45'19"N, 34°00'58"E, 1232 m, 11.V.2007, 1♂, Leg. M. Kabalak-Y. Turan; Güzelyurt, İhlara valley, 38°15'53"N, 34°17'25"E, 1127 m, 30.VI.2011, 1♂; Ankara: Çankaya, Bahçelievler, 39°55'24"N, 32°49'27"E, 900 m, 07.X.2010, 1♀; Çankaya, Hacettepe University, Beytepe pond surr., 39°52'34"N, 32°44'23"E, 990 m, 29.III.2011, 1♀, Leg. S. Fırat; Çankaya, Hacettepe University, 39°52'11"N, 32°44'00"E, 1046 m, 29.IV.2011, 2♀♀, Leg. F. Dikmen; Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 05.X.2011, 2♀♀, Leg. O. Sert; same locality, 24.I.2011, 1♂, same locality, 10.IV.2012, 1♀, Leg. S. Fırat; Sivas: Zara, Karahasan-Kelhasan, 39°45'32"N, 37°50'31"E, 1530 m, 24.VI.2011, 1♀; Yozgat: Çekerek,

Çekerek, Kuruçay, 40°06'34"N, 35°26'38"E, 1336 m, 25.V.2011, 1♀, Leg. S. Firat.

Distribution in Turkey: Ankara, Balıkesir (Kaz Dağı), Bursa, İstanbul, Isparta, İzmir, Kütahya, Manisa, Mersin, Muğla, Şanlıurfa, Trabzon (Fauvel, 1874; Sahlberg, 1913; Scheerpeltz, 1958; Horion, 1965; Bohac, 1986; Anlaş, 2009; Anlaş and Rose, 2009; Japoshvili and Anlaş, 2011; Abacıgil et al., 2013).

Ocybus picipennis picipennis (Fabricius, 1793)

Examined material: Kayseri: Central County, Eskiömerler-Karakimse, 38°55'50"N, 35°11'24"E, 1177 m, 09.VI.2010, 1♀, 1♂, Leg. S. Firat; Kırşehir: Boztepe, Boztepe-Yenidoğanlı road, 23.VI.2007, 39°15'51"N, 34°17'15"E, 1156 m, 09.VI.2010, 1♂, Leg. Y. Turan; Niğde: Central County, Fesleğen, 37°59'19"N, 34°32'66"E, 1658 m, 29.IV.2011, 2♂♂; Çamardı, Örenköy, 37°53'07"N, 34°55'21"E, 1807 m, 21.VIII.2011, 2♂♂, Leg. S. Firat.

Distribution in Turkey: Afyonkarahisar, Ankara, Antalya, Bolu, Burdur, Isparta, İzmir, Kastamonu, Kayseri, Manisa, Mersin, Trabzon, Tunceli (Peyron, 1858; Fauvel, 1874; Ganglbauer, 1905; Smetana, 1965a, 1965b, 1967, 1968a, 1968b; Coiffait, 1964, 1978b; Tezcan and Amiryman, 2003; Anlaş, 2009; Anlaş and Rose, 2009).

Ocybus sericeicollis (Ménétriés, 1832)

Examined material: Yozgat: Central County, Recepli, 39°48'48"N, 34°53'06"E, 1336 m, 12.VI.2010, 1♀, Leg. S. Firat.

Distribution in Turkey: Ankara, Antalya, Balıkesir (Kaz Dağı) Erzurum, İzmir, Manisa, Şanlıurfa (Anlaş, 2009; Anlaş and Rose, 2009; Kesdek et al., 2009; Abacıgil et al. 2013).

Genus *Ontholestes* Ganglbauer, 1895

Ontholestes murinus (Linnaeus, 1758)

Examined material: Aksaray: Central County, Dikmen, 38°10'43"N, 34°05'45"E, 1149 m, 18.IV.2010, 1♀, 2♂♂; Kayseri: Yahyalı, 15 km to Kapuzbaşı waterfalls, 37°46'43"N, 35°25'10"E, 686 m, 22.VII.2009, 1♀; Kırıkkale: Yahşihan, 39°55'26"N, 33°22'22"E, 696 m, 09.IV.2010, 1♀, 1♂; Konya: Çumra, Çumra, 37°32'36"N, 32°45'57"E, 1018 m, 12.IV.2010, 3♀♀; Doğanhisar, Yazlıca, 38°10'00"N, 31°45'26"E, 1156 m, 24.IV.2010, 8♀♀, 2♂♂, Central County, Yeşildere, İkipinar, 37°34'55"N, 32°15'19"E, 1223 m, 02.VI.2009, 1♀, 1♂; Nevşehir: Derinkuyu, Özlüce-Özyayla, 38°28'10"N, 34°40'58"E, 1471 m, 24.VI.2009, 3♀♀, 1♂, Leg. S. Firat.

Distribution in Turkey: Ankara, Bingöl, Erzurum, Gaziantep, Isparta, İzmir, Kütahya, Manisa (Fauvel, 1874; Bohac, 1986; Anlaş, 2009; Anlaş and Rose, 2009; Kesdek et al., 2009; Özgen and Anlaş, 2010; Japoshvili and Anlaş, 2011).

Genus *Platydracus* Thomson, 1858

Platydracus flavopunctatus (Latreille, 1804)

Examined material: Niğde: Çamardı, Özyurt-Üçkapılı,

37°55'42"N, 34°53'24"E, 1900 m, 21.VIII.2011, 1♀, Leg. S. Firat.

Distribution in Turkey: Adana, Afyonkarahisar, Ankara, Mersin (Peyron, 1858; Smetana, 1967, 1968a; Bohac, 1986; Öncüer, 1991).

Platydracus hypocrita (G. Müller, 1925)

Examined material: Aksaray: Central County, Helvadere-Hasandağı, 38°10'09"N, 34°11'24"E, 1620 m, 01.VII.2011, 1♂, Leg. S. Firat.

Distribution in Turkey: Ankara, İzmir (Müller, 1925; Coiffait, 1974; Bohac, 1986).

Platydracus stercorarius stercorarius (Olivier, 1795)

Examined material: Ankara: Çankaya, Hacettepe University, 39°52'11"N, 32°44'00"E, 1046 m, 12.VIII.2009, 1♀, Leg. S. Firat.

Distribution in Turkey: Ardahan, Artvin, Balıkesir (Kaz Dağı), Erzurum, Kars, Konya, Rize, Trabzon (Smetana, 1965a, 1968a; Horion, 1965; Kesdek et al., 2009; Abacıgil et al., 2013).

Genus *Staphylinus* Linnaeus, 1758

Staphylinus caesareus Cederhjelm, 1798

Examined material: Ankara: Çubuk, Y. Çavundur, 40°23'25"N, 33°03'38"E, 1250 m, 16.V.2003, 1♀; Kızılcahamam, Pazar junction, 40°20'00"N, 32°42'02"E, 973 m, 17.VI.2003, 2♂♂; Polatlı, Kavaközü, 40°37'58"N, 32°39'12"E, 1197 m, 17.VI.2003, 1♀, 1♂; Leg. N. Yanbuloğlu; Kırıkkale: Sulakyurt, Yeniceli-Alişeyhli, 40°09'50"N, 33°53'44"E, 1055 m, 25.IV.2011, 1♀, Leg. B. Şabanoglu; Niğde: Central County, Fesleğen, 37°59'19"N, 34°32'66"E, 1658 m, 29.IV.2011, 1♀, 1♂, Leg. S. Firat-Y. Turan.

Distribution in Turkey: Adıyaman, Ankara, Antalya, Ardahan, Artvin, Bayburt, Bolu, Erzincan, Erzurum, Giresun, Isparta, Kastamonu, Kars, Kayseri, Konya, Malatya, Mersin, Niğde, Ordu, Trabzon, Tunceli (Peyron, 1858; Fauvel, 1874; Fagel, 1963; Smetana, 1965a, 1965b, 1967, 1968a, 1968b; Newton and Thayer, 1992; Anlaş and Rose, 2009; Kesdek et al., 2009; Japoshvili and Anlaş, 2011).

Genus *Tagius* Stephens, 1829

Subgenus *Rayacheila* Motschulsky, 1845

Tagius minax (Mulsant & Rey, 1861)

Examined material: Yozgat: Akdağmadeni, Sorgun-Akdağmadeni, Oluközü (2. İst), 39°40'50"N, 35°46'48"E, 1244 m, 20.VII.2005, 1♂, Leg. O. Sert-M. Kabalak.

Subgenus *Tasgius* Stephens, 1829

Tasgius pedator pedator (Gravenhorst, 1802)

Examined material: Kırıkkale: Keskin, İğdebeli, 39°30'38"N, 33°31'03"E, 972 m, 25.VII.2003, 1♀, 1♂, Leg. N. Yanbuloğlu.

Distribution in Turkey: İstanbul, Mersin (Horion, 1965; Smetana, 1967).

Tribe Xantholinini Erichson, 1839

Genus *Gauropterus* Thomson, 1860***Gauropterus sanguinipennis* (Kolenati, 1846)**

Examined material: Ankara: Çamlıdere, Dörtkonak, 40°30'46"N, 32°49'30"E, 1199 m, 14.VI.2011, 1♀; Çubuk, Karagöl Yıldırım Evcı junction, 40°26'22"N, 32°53'02"E, 1540 m, 05.VIII.2008, 1♂, Leg. Y. Turan; Karaman: Ayrancı, Melikli, 37°10'48"N, 33°47'23"E, 1434 m, 14.VI.2009, 1♀; Niğde: Central County, Koyunlu-Fesleğen, 37°59'19"N, 34°32'56"E, 1658 m, 26.IX.2010, 1♀; Leg. S. Firat.

Distribution in Turkey: Adana, Amasya, Ankara, Antalya, Balıkesir (Kaz Dağı), Batman, Bayburt, Bilecik, Bingöl, Bitlis, Bursa, Erzurum, Erzincan, Eskişehir, Gaziantep, Hakkari, Hatay, Isparta, İzmir, Iğdır, Kars, Kastamonu, Konya, Malatya, Manisa, Mersin, Muğla, Niğde, Sakarya, Siirt, Şırnak, Tunceli, Van, Zonguldak (Sahlberg, 1913; Bordoni, 1973, 1976, 1978, 2005; Öncüer, 1991; Tezcan and Amiryan, 2003; Assing, 2006; Anlaş, 2009; Kesdek et al., 2009; Abacıgil et al., 2013)

Genus *Gyrohypnus* Leach, 1819***Gyrohypnus angustatus* Stephens, 1833**

Examined material: Ankara: Çankaya, Hacettepe University, Beytepe pond surr., 39°52'34"N, 32°44'23"E, 990 m, 29.III.2011, 1♀; Çankırı: Ilgaz, Kadınçayırı, 40°01'43"N, 33°43'52"E, 1273 m, 19.X.2011, 1♀; Karaman: Ayrancı, Taşkale, Kızılağullarini-Büyükkoras road, 37°07'59"N, 33°40'50"E, 1459 m, 24.VI.2010, 1♀, Leg. S. Firat.

Distribution in Turkey: Amasya, Ankara, Ardahan, Artvin, Aydın, Balıkesir (Kaz Dağı), Bayburt, Bitlis, Bolu, Bursa, Erzurum, Giresun, İstanbul, İzmir, Kars, Kastamonu, Konya, Kütahya, Manisa, Mersin, Ordu, Osmaniye, Rize, Yalova, Zonguldak (Coiffait, 1965, 1966; Assing, 2003, 2007c; Bordoni, 2003; Tezcan and Amiryan, 2003; Anlaş, 2009; Kesdek et al., 2009; Abacıgil et al., 2013).

***Gyrohypnus fracticornis* (O. Müller, 1776)**

Examined material: Aksaray: Central County, Dikmen, 38°10'43"N, 34°05'45"E, 1149 m, 18.IV.2010, 1♀, 1♂; Ankara: Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 22.III.2012, 2♂♂; Eskişehir: Günyüzü, Karacaören-Kuzören, 39°19'25"N, 31°44'12"E, 1279 m, 15.VI.2010, 2♀♀, 2♂♂; Konya: Ereğli, Halkapınar road, 37°25'45"N, 34°11'36"E, 1160 m, 14.VI.2009, 1♀, Leg. S. Firat.

Distribution in Turkey: Ankara, Bayburt, Gaziantep, Giresun, İzmir, Kahramanmaraş, Manisa, Muğla, Ordu (Coiffait, 1965, 1978b; Tezcan and Amiryan, 2003; Assing, 2007c; Anlaş and Rose, 2009).

Genus *Hypnogyra* Casey, 1906***Hypnogyra angularis* (Ganglbauer, 1895)**

Examined material: Ankara: Çankaya, Hacettepe University, 39°52'11"N, 32°44'00"E, 1046 m, 13.VI.2012, 1♀, Leg. M. Topçular; Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 21.IX.2012, 1♀, Leg.

E. Durmaz; Konya: Central County, İkipınar, Yeşildere, 37°34'55"N, 32°15'19"E, 1223 m, 02.VI.2009, 1♀, Leg. S. Firat.

Distribution in Turkey: Çanakkale, İstanbul (Horion, 1965; Bordoni, 1971; Assing, 2007c, 2009).

Genus *Leptacinus* Erichson, 1839***Leptacinus batychrus* (Gyllenhal, 1827)**

Examined material: Aksaray: Ağaçören, Göynük-Sofular, 38°45'54"N, 33°50'02"E, 1131 m, 14.IX.2011, 1♂; Gülağaç, Gülağaç junction to Kızılkaya, 38°21'18"N, 34°13'45"E, 1111 m, 23.VI.2009, 3♀♀, 3♂♂; Eskişehir: Mihaliççık, Ahırköy, 39°46'44"N, 31°32'54"E, 788 m, 30.VI.2009, 3♂♂; Karaman: Central County, Süleymanhacı-Madenşehir, 37°27'24"N, 33°04'15"E, 1039 m, 12.VI.2009, 2♀♀, 2♂♂; Kayseri: Yahyalı, 15 km to Kapuzbaşı waterfalls, 37°46'43"N, 35°25'10"E, 686 m, 22.VII.2009, 3♀♀, 3♂♂; Kırıkkale: Keskin, Köprüköy bridge, 39°34'25"N, 33°25'58"E, 723 m, 09.IV.2010, 1♀; Nevşehir: Gülşehir, Hacılar, 38°50'03"N, 34°26'31"E, 934 m, 25.VI.2009, 1♂; Ürgüp, Sarıhıdır, 38°43'59"N, 34°55'50"E, 938 m, 24.VI.2009, 1♂; Niğde: Çamardı, Özyurt-Üçkapılı, 37°55'42"N, 34°53'24"E, 1900 m, 21.VIII.2011, 2♀♀; Leg. S. Firat.

Distribution in Turkey: Amasya, Ankara, Antalya, Artvin, Bolu, Bursa, Hakkari, Van (Coiffait, 1965, 1966, 1972; Assing, 2007c; Anlaş and Rose, 2009).

***Leptacinus intermedius* Donisthorpe, 1936**

Examined material: Karaman: Central County, Süleymanhacı-Madenşehir, 37°27'24"N, 33°04'15"E, 1039 m, 12.VI.2009, 1♀, 3♂♂; Kırıkkale: Sulakyurt, Yeniceli-Alişeyhli, 40°09'50"N, 33°53'44"E, 1055 m, 25.IV.2011, 2♀♀; Kırşehir: Central County, Sıdıklıküçükboğaz, 39°08'36"N, 33°55'01"E, 992 m, 27.V.2010, 1♂, Leg. S. Firat.

Distribution in Turkey: Adana, İstanbul, Konya, Mardin, Osmaniye (Ciceroni, 1994; Assing, 2007c; Özgen and Anlaş, 2010).

Genus *Nudobius* Thomson, 1860***Nudobius lentus* (Gravenhorst, 1806)**

Examined material: Çankırı: Ilgaz, 41°03'42"N, 33°44'43"E, 1801 m, 07.VI.2011, 1♀, 2♂♂, Leg. S. Firat.

Distribution in Turkey: Ankara, Bolu, Bursa, Manisa, Mersin, Rize, Sinop (Peyron, 1858; Coiffait, 1965, 1966; Tezcan and Amiryan, 2003; Assing, 2007c).

Genus *Stenistoderus* Jacquelin du Val, 1856***Stenistoderus cephalotes cephalotes* (Kraatz, 1858)**

Examined material: Ankara: Çamlıdere, Dörtkonak, 40°30'46"N, 32°49'30"E, 1199 m, 14.VI.2011, 1♀; Kırıkkale: Keskin, Köprüköy bridge, 39°34'25"N, 33°25'58"E, 723 m, 09.IV.2010, 1♀, Leg. S. Firat

Distribution in Turkey: Adana, Antalya, Balıkesir, Çanakkale, İstanbul, Kahramanmaraş, Kastamonu, Mersin, Sinop, Tunceli (Sahlberg, 1913; Coiffait, 1966, 1972; Bordoni, 2005; Assing, 2007c, 2010a).

Genus *Xantholinus* Dejean, 1821

Subgenus *Calolinus* Coiffait, 1956

Xantholinus puthzi A. Bordoni, 1979

Examined material: Ankara: Kazan, Pazar-Uğurlu, 40°20'58"N, 32°40'56"E, 1000 m, 16.IV.2011, 2♂♂; Kayseri: Yahyalı, Kapuzbaşı road, Delialıuşağı, 37°57'43"N, 35°32'13"E, 1211 m, 27.IV.2011, 1♂, Leg. S. Firat.

Distribution in Turkey: Mersin-Karaman border (Sertavul pass) (Bordoni, 1979; Assing, 2007c).

Subgenus *Xantholinus* Dejean, 1821

Xantholinus coiffaiti Franz, 1966

Examined material: Ankara: Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 04.IV.2012, 1♂; Çankırı: Ilgaz, Kadınçayırı, 40°01'43"N, 33°43'52"E, 1273 m, 19.X.2011, 1♂, Leg. S. Firat.

Distribution in Turkey: İstanbul, Samsun (Assing, 2007c, 2009).

Xantholinus dvoraki Coiffait, 1956

Examined material: Konya: Beyşehir, Beyşehir-Derebucak, Karadiken, 37°38'23"N, 31°37'39"E, 1128 m, 18.IV.2006, 1♂, Leg. M. Kabalak.

Distribution in Turkey: Bolu, Kastamonu (Coiffait, 1966; Bordoni, 1971; Gusarov, 2002; Assing, 2007c, 2011).

Xantholinus linearis linearis Olivier, 1795

Examined material: Ankara: Çankaya, Hacettepe University, 39°52'16"N, 32°44'07"E, 1045 m, 12.X.2012, 1♂, Leg. Y. Turan.

Distribution in Turkey: Mersin (Peyron, 1858).

4. Discussion

4.1. Faunistic composition

As a result of this study, 87 species belonging to 26 genera were identified at the species level from the research area. It was determined that the majority of Staphylininae fauna includes species belonging to the tribe Staphylinini (75 species, 83.4%), followed by tribes Xantholinini (12 species, 13.3%) and Othiini (3 species, 3.3%) respectively.

Distribution of the determined species according to their genera is compared with the Turkish Staphylininae fauna. In this context, mainly the checklist of Anlaş (2009) is used. The studies of Abacıgil et al. (2013), Anlaş and Rose (2009), Assing (2008, 2009, 2010a, 2010b), Japhosvili and Anlaş (2011), Kesdek et al. (2009), Özgen and Anlaş (2010), and Özgen et al. (2010) are also considered. According to these studies with respect to the Turkish fauna, from the Central Anatolian Region, all of the species from the genera *Emus*, *Hypnogyra*, *Ontholestes*, and *Velleiopsis*, which are represented by one species each, and 50% of the species from the genera *Gabronthus*, *Stenistoderus*, *Neobisnius*, and *Gyrohypnus* were detected. The lowest number of species was detected from the genus *Xantholinus*, representing 11.4% of the Turkish fauna. Among the genera having numerous species, 25 and

15 species were detected from *Philonthus* and *Quedius*, representing the 40.3% and 19.7% of the Turkish fauna, respectively (Figure 2).

The number of species determined in this study is compared with the number of previously recorded species from the Central Anatolian Region. According to these evaluations, the genera *Hypnogyra*, *Velleiopsis*, *Acylophorus*, *Rabigus*, *Gabronthus*, *Stenistoderus*, and *Tasgius* are recorded here for the Central Anatolian Region for the first time. With respect to previous records, more species are determined from *Quedius* and *Philonthus*. In addition, 12 out of 25 and 9 out of 15 species from the genera *Philonthus* and *Quedius*, respectively, are first records for the Central Anatolian Region. Among the genera *Ocypus*, *Xantholinus*, *Gauropterus*, *Gyrohypnus*, *Bisnius*, and *Gabrius*, from which lower numbers of species were determined from previous records, *Gabrius* has the lowest representation percentage of 40% with the four determined out of 10 previously recorded species, whereas two of them are first records for the research area. Furthermore, 3 species from *Xantholinus*, 2 species from *Ocypus*, and 1 species each from *Bisnius*, *Neobisnius*, and *Dinothenarus* are also new records for the research area. Consequently, 42 out of 87 species are determined as the new records for the Central Anatolian Region. Belonging to subfamily Staphylininae, 73 species are previously recorded from the research area, and together with the 42 newly recorded species, this number reaches 115.

4.2. Ecological properties

Looking at the collected number of specimens (Table), *Philonthus concinnus* has the highest number with 217 collected specimens and is followed by *Philonthus rufimanus* (63 specimens), *Philonthus intermedius* (41 specimens), and *Leptacinus batychnus* and *Ontholestes murinus* (25 specimens each). Considering the results, it is primarily thought that the populations of abundantly collected species are represented by numerous specimens, whereas the least collected species are represented by low numbers. However, it is thought that there would be three more possible causes of these results: the time of field studies coinciding with times when the population intensity was low, the effects of habitat properties on population intensity, and collection method.

According to collection habitat and methods, *Bisnius sordidus*, *Gabrius nigrifulus*, *Ocypus mus*, *Philonthus concinnus*, *P. intermedius*, *Quedius cinctus*, *Q. ochripennis*, *Q. pseudonigriceps*, and *Q. scintillans* are determined as the most diverse species (Table). As can be understood from the obtained results, the vast majority of adults of the species of the subfamily Staphylininae were found in leaf and forest vegetation debris and under stones at riverbanks, followed by specimens collected from cow dung. A relatively small amount of species were collected from herbaceous plants near streams.

When the material collected by field studies was examined together with material collected by previous researchers according to collection months, the species of the subfamily Staphylininae were found most abundantly between the months of April and June, and exclusively in June (Figure 3). Between July and September, they were rather less abundant than in the previous period. A decline in their activity was also observed between October and March. However, it was determined that species belonging to the subfamily Staphylininae could be found as adults throughout the whole year.

In order to be able to make phenological evaluations, the situation of genera having more than one species was outlined as follows. From the genus *Acylophorus*, *A. lindbergi* was collected in June and *A. glaberrimus* was collected in April and June. Because of that, it is thought that *Acylophorus* species are mostly active between April and June. Belonging to the genus *Dinothenarus*, *D. flavocephalus* and *D. pubescens* were collected in July and May, respectively. Therefore, it is concluded that *Dinothenarus* species are more active between May and July, as are species of *Neobisnius*. Since more species were collected from the genus *Gabrius*, a more precise observation could be made. *G. nigrutilus*, being the most collected species in this genus, was collected between May and August, covering other species' distribution, and as a result, *Gabrius* species are more actively found between May and August. Both species of *Gyrohypnus* were collected in May and June, indicating that species from this genus are more frequently found in these months. In addition, *G. angustatus* was also collected in October, giving us the thought that they carry on their activity in autumn. It was determined that *Leptacinus* species could be collected from the field for a long time period between April and September. Due to the lack of *Ocyopus* specimens only in February, July, and December, it was concluded that these specimens could actively be found throughout the whole year and especially encountered mostly in colder months. Although *Othius* specimens could not be found in May, July, and September, it is thought that they are active between March and October. When we look at the genus *Philonthus*, they were found between April and September, while April–June was their most active time period. Since there were specimens collected in February and November besides the previously mentioned period, *Philonthus* species are probably active throughout the whole year, except the coldest months. *Platydracus* species were collected in July and August and this created an impression that these species are found actively in this period. When sampling months of *Quedius* species were examined, it was determined that they were found between April and September, while April–June was their most active time period. Because of the decrease of species collected in July

and August, it is thought that they are less active during these warmer months, and since they were not collected in January and November, it is concluded that especially the specimens of subgenera *Microsaurus* and *Distichalius*, which are larger according to their body size, are probably active throughout the whole year. Three species belonging to the genus *Rabigus* were collected in April, May, June, and July consecutively, and this suggests that they are most active between April and July. Both species belonging to the genus *Tasgius* were detected in July, indicating that they are more active and could be found densely in this month. Species belonging to the genus *Xantholinus* were collected only in April and October and this could be interpreted as evidence that they prefer colder months. It is thought that these data could give rise to a general understanding of the phenologies of the genera.

The data acquired in our study are compared with Drugmand's phenological study (1996) and it is concluded that our data are coherent with that study. Drugmand examined the phenologies of specimens belonging to the tribe Staphylinini that were collected over a 20-year period in Belgium and Luxemburg. According to these data, except for the genus *Acylophorus* collected in May, the genera *Dinothenarus* and *Emus* respectively collected between March and November and February and November, and the genus *Gabronthus* collected between July and November, the other genera could be seen throughout the whole year.

According to previous studies, while Balog et al. (2010) and Twardowski et al. (2014) investigated staphylinid communities in maize fields, Balog and Markó (2007), Balog et al. (2009), and Honěk et al. (2012) examined them in apple and pear orchards and Frank and Reichhart (2004) in winter wheat fields. Frank and Reichhart (2004) conducted their experiments in winter and found staphylinids abundantly between November and March. Japhosvili and Anlaş (2011), who conducted their study in a 1-year period, and Abacıgil et al. (2013) and Anlaş et al. (2014), who collected specimens between February and November and from mid-April to mid-November, respectively, obtained similar results. Our findings are consistent with other researchers' results, showing that species belonging to the subfamily Staphylininae could be found throughout the whole year. They are distributed mostly from April to October and relatively more abundant between May and July.

While examining the vertical distributions of the species, the altitude range at which they were found most densely was determined and it was concluded that the distributions of the species change with altitude. Sampling altitudes are divided into 250-m vertical intervals (A: 500–750 m, B: 751–1000 m, C: 1001–1250 m, D: 1251–1500 m, E: 1501–1750 m, F: 1751–2000 m). Interval C

has the most number of species with 68 species, followed by intervals B and D with 31 species each (Figure 4). The vertical distributions of the species are given in the Table and it can be seen that *Philonthus concinnus* is the only species that was detected in all altitude ranges. The most widely distributed species following that are *Erichsonius cinerascens*, *Leptacinus batychrus*, *Ocypus mus*, *Philonthus coprophilus*, *P. nitidicollis*, *P. rufimanus*, and *Quedius ochripennis*.

4.3. Zoogeographical composition

When the determined species were examined according to zoogeographic regions and subregions (Table; Figure 5), it could be seen that while three species are endemic to Turkey, five species are cosmopolitan. Of the remaining 79 species, 76 and 74 of them are distributed in the European and Middle Eastern parts of the Palearctic Region, respectively. Among them, 35 are shared with the Middle Asian, 34 with the North African, and 26 with the Siberian parts of the Palearctic Region. While 15 are shared with the Nearctic Region and 14 with the Far Eastern part of the Palearctic Region, two species each are shared with the Afrotropical, Australian, Neotropic, and Oriental regions. In addition, three species each are only distributed only in the European part or only in the Middle Eastern part of Palearctic Region. The distribution patterns of the species show that Turkey's geographical position as an intersection point between Europe, Asia, and Africa is reflected on its fauna. According to species composition, Turkey's fauna seems to be a mixture of European and Asian (Middle Asia, Middle East, Siberia, and Far East) with 76 and 75 represented species, respectively. It could be seen that the number of Asian fauna species is higher by a very small difference with the addition of the endemic species to the Asian fauna. This is an expected situation considering that

the Anatolian peninsula, which constitutes the larger part of Turkey, is a part of the continent Asia.

According to the present literature, species' distributions in Turkey are given in the Table and Figure 6. With respect to the literature, 42 of 87 identified specimens are first records for the Central Anatolian Region. Among the identified species, the Mediterranean Region has the highest number of shared species with 56 species. The Aegean, Black Sea, and Eastern Anatolian regions follow this region with 41, 36, and 32 species, respectively. Finally, while 26 species are shared with the Marmara Region, 23 are found in the Southeastern Anatolian Region. In previous studies by various authors, 73 species were identified from the Central Anatolian Region. In our study, excursions were made according to the borders of the present provinces, not the geographical borders of the Central Anatolian Region. Therefore, geographic and climatic conditions determining the geographical regions conflict with the borders of the provinces and it is thought that this situation influenced the shared status of the identified species with other regions.

Acknowledgments

This study was part of a PhD thesis conducted at the Hacettepe University Biology Department that was accepted on 19 June 2013. We would like to thank Assoc Prof Dr Alexey Solodovnikov from the Natural History Museum of Denmark, University of Copenhagen, Zoological Museum; Dr Manfred Uhlig and Dr Johannes Frisch from Museum für Naturkunde Humboldt University, Berlin; and Dr Volker Assing from Hannover, Germany for their valuable contributions. We also thank Dr Burcu Şabanoğlu and Yavuz Turan for their help in collecting the material and Assoc Prof Dr Mahmut Kabalak and Nazlı Yanbuloğlu as the collectors of collection species.

References

- Abacıgil TÖ, Varlı SV, Tezcan S (2013). Faunistic studies on Staphylininae (Coleoptera: Staphylinidae) in Kazdağları (Balıkesir province) in Turkey. *Mun Ent Zool* 8: 415–433.
- Anlaş S (2007). The present situation of the Staphylinidae fauna of Turkey (Coleoptera). *Linz biol Beitr* 39: 5–9.
- Anlaş S (2009). Distributional checklist of the Staphylinidae (Coleoptera) of Turkey, with new and additional records. *Linz biol Beitr* 41: 215–342.
- Anlaş S, Rose A (2009). Some additional notes about Staphylininae (Coleoptera: Staphylinidae) fauna of Turkey. *Mun Ent Zool* 4: 346–352.
- Anlaş S, Tezcan S, Örgel S (2014). Seasonal dynamics and species composition of dung-inhabiting staphylinids (Coleoptera, Staphylinidae) in Western Turkey. *Anadolu Doğa Bilimleri Dergisi* 5: 14–19.
- Apfelbeck V (1901). Bericht über eine Entomologische Forschungsreise nach der Türkei und Griechenland im Jahre 1900. *Wiss Mitt Bosnisch-Herzegowin Landesmus* 8: 447–469 (in German).
- Assing V (1997). A revision of *Othius* Stephens, 1829. III. The species of the Western Palaearctic region exclusive of the Atlantic Islands (Coleoptera, Staphylinidae, Xantholininae). *Nova Suppl Ent Berlin* 10: 3–130.
- Assing V (1999). A revision of *Othius* Stephens (Coleoptera, Staphylinidae). VIII. Further records, new species, and a new synonym. *Linz biol Beitr* 31: 661–691.
- Assing V (2003). On the taxonomy of *Gyrophypnus* Leach: new synonymies, new species, and a key to the Western Palaearctic and Middle Asian representatives of the genus (Insecta: Coleoptera: Staphylinidae). *Ent Bl* 99: 55–81.

- Assing V (2004). New species and records of Staphylinidae from Turkey III (Insecta: Coleoptera). *Linz biol Beitr* 36: 669–733.
- Assing V (2005). A revision of Othiini. XIV. New species, new synonyms, and new records (Insecta: Coleoptera: Staphylinidae). *Entomol Probl* 35: 51–67.
- Assing V (2006). New species and records of Staphylinidae from Turkey IV, with six new synonymies (Coleoptera: Staphylinidae). *Koleopterol Rundsch* 76: 223–276.
- Assing V (2007a). New species and additional records of Staphylinidae from Turkey V (Coleoptera). *Stuttg Beitr Naturk D Ser A (Biol)* 700: 1–64.
- Assing V (2007b). Two new species and additional records of “small”-eyed *Quedius* from the Eastern Mediterranean (Coleoptera: Staphylinidae: Staphylininae). *Beitr Entomol* 57: 335–345.
- Assing V (2007c). On the Xantholinini of Turkey and adjacent regions (Coleoptera: Staphylinidae, Staphylininae). *Zootaxa* 1474: 1–54.
- Assing V (2008). A revision of Othiini. XVI. Four new species of Othius from the Himalaya and China, and additional records (Coleoptera: Staphylinidae, Staphylininae). *Koleopterol Rundsch* 78: 245–263.
- Assing V (2009). On the Staphylinidae of Turkey. VI. Thirteen new species and additional records (Coleoptera). *Koleopterol Rundsch* 79: 117–172.
- Assing V (2010a). On the Staphylinidae of Turkey. VII. Five new species and additional records (Coleoptera: Staphylinidae). *Koleopterol Rundsch* 80: 71–102.
- Assing V (2010b). A revision of Othiini. XVII. A new species from China and additional records (Coleoptera: Staphylinidae: Staphylininae). *Linz biol Beitr* 42: 1077–1091.
- Assing V (2011). On the Staphylinidae of Turkey VIII. Eleven new species, two new synonymies, a new combination, and additional records (Coleoptera: Staphylinidae). *Koleopterol Rundsch* 81: 179–227.
- Atalay İ, Mortan K (2008). *Türkiye Bölgesel Coğrafyası*. 4th ed. Ankara, Turkey: İnklap Kitabevi (in Turkish).
- Balog A, Kiss J, Szekeres D, Szénási Á, Markó, V (2010). Rove beetle (Coleoptera: Staphylinidae) communities in transgenic Bt (MON810) and near isogenic maize. *Crop Prot* 29: 567–571.
- Balog A, Markó V (2007). Rove beetles (Coleoptera: Staphylinidae) in Central European apple and pear orchards – comparative studies of species richness, abundance and diversity. *J Plant Prot Res* 47: 309–321.
- Balog A, Marko V, Imre A (2009). Farming system and habitat structure effects on rove beetles (Coleoptera: Staphylinidae) assembly in Central European apple and pear orchards. *Biol Brat* 64: 343–349.
- Baudi di Selve F (1857). Coleoptera quaedam e Staphylinorum familia nova vel minus cognita cum observationibus. *Berliner entomol Z* 1: 97–115 (in Latin).
- Bernhauer M (1905). 13. Folge neuer Staphyliniden der paläarktischen Fauna, nebst Bemerkungen. *Verh KK Zool-Bot Ges Wien* 55: 580–596 (in German).
- Bodemeyer E von (1906). Beiträge zur Käferfauna von Klien-Asien. *Dtsch entomol Z* 2: 417–434 (in German).
- Bodemeyer B von (1927). Ueber meine Entomologische Reisen nach Kleinasien (1911), Ost-Sibirien, Schilka und Amur (1912), Tunis, Oasis Gafsa, Khroumerie (1913) und Iran, das Elbursgebirge (1914). Bd. I. Kleinasien. Stuttgart, Germany: Alfred Kerner (in German).
- Bohac J (1986). Kurzflüglerkäfer/Coleoptera, Staphylinidae als Bioindikatoren für ökologischen Gleichgewicht einer Landschaft un menschlichen Einfluss. In: Paukert J, Ruzicka V, Bohac J, editors. Proceedings of IVth International Conference Bioindicatoros deteriorisatiensis Regienis, Liblice, Czechoslovakia, 1982. České Budějovice, Czechoslovakia: Ustav krajinne ekologie CSAV, pp. 23–34 (in German).
- Bordoni A (1971). Note sugli Xantholinus della Turchia e descrizione di una nuova specie (Col. Staphylinidae). *Redia* 52: 679–689 (in Italian).
- Bordoni A (1973). Nuovi stafilinidi della Turchia appartenenti al Museo Civico di Storia Naturale di Verona (Coleoptera). *Fragm Entomol* 9: 35–39 (in Italian).
- Bordoni A (1976). Quarto contributo alla conoscenza degli Staphylinidae della Turchia (Coleoptera). *Fragm Entomol* 12: 221–239 (in Italian).
- Bordoni A (1978). Staphylinidae dell'Asia Minore. Quinta nota: Entità raccolte in grotta e descrizione di nuove specie (Coleoptera), Fauna Ipogea di Turchia. Quaderni di Speleologia. Circolo Speleologico Romano 3: 55–67 (in Italian).
- Bordoni A (1979). Descrizione dello *Xantholinus (Calolinus) puthzi* n. sp. del Tauro di Cilicia (Col. Staphylinidae). *Redia* 62: 107–110 (in Italian).
- Bordoni A (1982). Coleoptera Staphylinidae, Generalità–Xantholininae. Fauna d'Italia 19. Bologna, Italy: Calderini (in Italian).
- Bordoni A (2003). Una nuova specie di *Gyrophypnus* dell'Asia Minore. (Coleoptera, Staphylinidae). *Boll Soc Entomol Ital* 134: 229–232 (in Italian).
- Bordoni A (2005). Sui *Gauropterus* della Regione Palearctica e in particolare su quelli. Descritti da Kirschenblatt, conservati nel Museo Zoologico di San Pietroburgo (Coleoptera, Staphylinidae). *Boll Soc Entomol Ital* 137: 205–213 (in Italian).
- Ciceroni A (1994). Revisione delle specie italiane del genere *Leptacinus* ERICHSON con note sinonimiche su alcuni Xantholinini europei e nordafricani (Coleoptera, Staphylinidae: Xantholininae). *Boll Mus Civ Stor Nat Verona* 18: 97–119 (in Italian).
- Coiffait H (1956a). Les Xantholininae de France et des régions voisines (Col. Staphylinidae). *Rev Fr Entomol* 23: 31–75 (in French).
- Coiffait H (1956b). Nouveaux Xantholininae d'Europe centrale et de la région méditerranéenne (Col. Staphylinidae). *Bull Soc Entomol Fr* 61: 139–143 (in French).

- Coiffait H (1956c). Les "Staphylinus" et genres voisins de France et des régions voisines. *Mém Mus Natl Hist Nat Ser A Zoo* 8: 177–224 (in French).
- Coiffait H (1964). Note sur les *Ocypus* (sensu lato) avec description de formes nouvelles. *Bull Soc hist nat Toulouse* 99: 81–106 (in French).
- Coiffait H (1965). Sur quelques Xantholininae de l'Asie Mineure (Coleoptera, Staphylinidae). *Reichenbachia* 5: 119–123 (in French).
- Coiffait H (1966). Anadolu'nun Xantholininae (Col. Staphylinidae) Ieri II. *Istanbul Üniversitesi Fen Fakültesi Mecmuası B Sciences Naturelles* 31: 21–24 (in Turkish).
- Coiffait H (1972). Coleopteres Staphylinidae de la region Palearctique occidentale. I. Generalites. Sous-familles: Xantholininae et Leptotyphlinae. *Nouv Rev Entomol (Suppl.)* 2: 1–651 (in French).
- Coiffait H (1974). Coleopteres Staphylinides de la region Palearctique occidentale II. Sous famille Staphylininae, Tribus Philonthini et Staphylinini. *Nouv Rev Entomol (Suppl.)* 4: 1–593 (in French).
- Coiffait H (1978a). Coléoptères staphylinides de la région paléarctique occidentale III. Sous famille Staphylininae, Tribu Quediini. Sous famille Paederinae, Tribu Pinophilini. *Nouv Rev Entomol (Suppl.)* 8: 1–364 (in French).
- Coiffait H (1978b). Staphylinides récoltés par T. Deuve en Anatolie septentrionale (Col. Staph.). *Nouv Rev Entomol* 8: 163–175 (in French).
- Deyrolle T (1873). Enumération des Staphylinides recueillis en Asie Mineure. *Rev Mag Zool* 1: 410–414 (in French).
- Drugmand D (1996). Atlas des Staphylinini de Belgique et du Grand-Duché de Luxembourg (Coleoptera Staphylinidae Staphylininae). *Mem Soc Ent Belg* 36: 3–194 (in French).
- Erichson WF (1840). *Genera et species Staphylinorum insectorum coleopterorum familiae*. Berlin, Germany: F. H. Morin. (in Latin).
- Fagel G (1963). Contribution a la connaissance des Staphylinidae. LXXXVI. Sur quelques Staphylinidae d'Anatolie. *Bull Ann Soc R Entomol Belg Entomol* 99: 426–430 (in French).
- Fagel G (1968). Contribution a la connaissance des Staphylinidae. CII. Espèces inédites d'Anatolie et du bassin méditerranéen. *Bull Ann Soc R Entomol Belg Entomol* 104: 118–134 (in French).
- Fauvel A (1874). Faune Gallo-Rhénane ou descriptions des insectes qui habitent la France, la Belgique, la Hollande, le Luxembourg, les provinces Rhénanes et la Valais avec tableaux synoptiques et planches gravées. *Bull Soc Linn Normandie* 8: 167–340 (in French).
- Firat S, Sert O (2015). Description of genital structures of *Velleiopsis marginiventris* Fairmaire, 1882 (Coleoptera: Staphylinidae: Staphylininae) from Turkey. *Entomol News* 124: 300–302.
- Frank T, Reichhart B (2004). Staphylinidae and Carabidae overwintering in wheat and sown wildflower areas of different age. *Bull Entomol Res* 94: 209–217.
- Ganglbauer L (1895). Die Käfer von Mitteleuropa. Die Käfer der österreichisch-ungarischen Monarchie, Deutschlands, der Schweiz, sowie des französischen und italienischen Alpengebietes. 2. Familienreihe Staphylinidae. Teil I. Staphylinidae, Pselaphidae. Vienna, Austria: Carl Gerold's Sohn (in German).
- Ganglbauer L (1905). Coleoptera. In: Penther A, Zederbauer E, editors. *Ergebnisse einer naturwissenschaftlichen Reise zum Erdschias-Dagh (Kleinasien)*. Vienna, Austria: *Annalen des Naturhistorischen Museums*, pp. 246–290 (in German)
- Grebennikov VV, Newton AF (2009). Good-bye Scydmaenidae, or why the ant-like stone beetles should become megadiverse Staphylinidae sensu latissimo (Coleoptera). *Eur J Entomol* 106: 275–301.
- Gridelli E (1922). Studi sul genere *Quedius* STEPH. (Coleopt., Staphyl.). *Atti Accad Sci Veneto-Trentino-Istriana* 12–13: 123–140 (in Italian).
- Gridelli E (1924). Studi sul genere *Quedius* STEPH. (Col. Staph.). Secondo contributo. Specie della regione paleartica. *Mem Soc Entomol Ital* 3: 5–112 (in Italian).
- Gridelli E (1929). Studi sul genere *Quedius* STEPH. (Col. Staphyl.). *Mem Soc Entomol Ital* 7: 19–43 (in Italian).
- Gridelli E (1938). Studi sul genere *Quedius* STEPH. (Coleopt. Staphyl.). *Boll Soc Entomol Ital* 70: 6–19 (in Italian).
- Gusarov V (2002). *Xantholinus dvoraki* COIFFAIT, 1956, the only valid species of the subgenus *Meneidophallus* BORDONI, 1999, with remarkably variable internal sac of aedeagus (Coleoptera, Staphylinidae). *Zootaxa* 21: 1–11.
- Herman L (2001). Catalog of the Staphylinidae (Insecta: Coleoptera). 1758 to the end of the second millennium. V. Staphylinine Group (part 2). Staphylininae: Diochini, Maorothiini, Othiini, Platyprosopini, Staphylinini (Amblyopinina, Anisolinina, Hyptiomina, Philonthina). *Bulletin of the American Museum of Natural History*, 265. New York, NY, USA: American Museum of Natural History Library.
- Honěk A, Kocian M, Martinková Z (2012). Rove beetles (Coleoptera: Staphylinidae) in an apple orchard. *Plant Prot Sci* 48: 116–122.
- Horion A (1965). Faunistik der mitteleuropäischen Käfer. Staphylinidae. 2. Paederinae bis Staphylininae, 10. Überlingen-Bodensee, Germany: A. Feyel (in German).
- Japoshvili G, Anlaş S (2011). Notes on the family Staphylinidae (Coleoptera) collected by pitfall traps in Gölcük Natural Park, Isparta Province of Turkey. *J Entomol Res Soc* 13: 41–48.
- Jarrige J (1952). Brachelytres nouveaux ou mal connus de la faune circuméditerranéenne. *Ann Soc Entomol Fr* 119: 117–139 (in French).
- Kesdek M, Yıldırım E, Anlaş S (2009). Contribution to the knowledge of Staphylinidae (Coleoptera) fauna of Turkey. *Mun Ent Zool* 4: 355–364.
- Korge H (1964). Carabiden- und Staphylinidenfunde in den Pontischen Gebirgen Kleinasien und in Mazedonien (Coleoptera). *Reichenbachia* 4: 105–126 (in German).

- Korge H (1971). Beiträge zur Kenntnis der Koleopterenfauna Kleinasien. *Annotnes Zool Bot* 67: 1–68 (in German).
- Lohse GA (1964). Band IV. Staphylinidae I (Micropeplinae bis Tachyporinae). In: Freude H, Harde KW, Lohse GA, editors. *Die Käfer Mitteleuropas*. Krefeld, Germany: Goecke & Evers, p. 264. (in German).
- Müller J. (1925). Terzo contributo alla conoscenza del genere *Staphylinus* L. *Boll Soc Entomol Ital* 57: 40–48 (in Italian).
- Müller J. (1943). Ottavo contributo alla conoscenza del genere *Staphylinus* (L.). *Atti Mus civ stor nat Trieste* 15: 95–109 (in Italian).
- Newton AF Jr, Thayer MK (1992). *Current Classification and Family-Group Names in Staphyliniformia (Coleoptera)*. *Fieldiana Zoology*, Vol. 67. Chicago, IL, USA: Field Museum of Natural History.
- Öncüer C (1991). Türkiye Bitki Zararlısı Böceklerin Parazit ve Predatör Kataloğu. İzmir, Turkey: Ege Üniversitesi Ziraat Fakültesi Yayınları (in Turkish).
- Özdemir S, Sert O (2009). Determination of Coleoptera fauna on carcasses in Ankara province, Turkey. *Forensic Sci Int* 183: 24–32.
- Özdemir S, Sert O (2008). Systematic studies on male genitalia of Coleoptera species found on decomposing pig (*Sus scrofa* L.) carcasses at Ankara province. *Haceteppe J Biol Chem* 36: 137–161.
- Özgen İ, Anlaş S (2010). A cow dung investigation on Staphylinidae (Coleoptera), with a new record from Turkey. *Mun Ent Zool* 5: 642–645.
- Özgen İ, Anlaş S, Eren S (2010). Contribution to the knowledge of Staphylinidae (Coleoptera) fauna of cotton and pistachio fields in Southeastern Anatolia. *Anadolu Doğa Bilimleri Dergisi* 1: 20–26.
- Peyron E (1858). *Catalogue des Coléoptères des environs de Tarsous (Caramanie), avec la description des espèces nouvelles*. *Ann Soc Entomol Fr* 3: 353–434 (in French).
- Reitter E (1909). *Fauna Germanica. Die Käfer des Deutschen Reiches. Nach der analytischen Methode bearbeitet. II Band. Schriften des Deutschen Lehrervereins für Naturkunde* 24. Stuttgart, Germany: K. G. Lutz (in German).
- Sahlberg J (1913). *Coleoptera mediterranea orientalia, quae in Aegypto, Palaestina, Syria, Caramanis atque in Anatolia occidentali anno 1904 collegerunt John Sahlberg et Unio Saalas. Öfversigt af Finska Vetenskaps-Societetens Förhandlingar (A)* 55: 1–281 (in Latin).
- Scheerpeltz O (1958). *Wissenschaftliche Ergebnisse der von Herrn Dr. K. Lindberg, Lund, im Jahre 1956 nach der Türkei und Armenien unternommenen Reise. Coleoptera-Staphylinidae. Entomol Tidskr (Supplementum)* 78: 3–37 (in German).
- Scheerpeltz O (1966). Eine neue Art der Grossgattung *Staphylinus* L., neue Subgenera und Bemerkungen über einige bereits bekannte paläarktische Arten dieser Grossgattung (Col.). *Nachrichtenbl Bayer Entomol* 15: 105–117 (in German).
- Schillhammer H (2003). Revision of the East Palaearctic and Oriental species of *Philonthus* STEPHENS Part 5. The rotundicollis and sanguinolentus species groups (Coleoptera: Staphylinidae, Staphylininae). *Koleopterol Rundsch* 73: 85–136.
- Schillhammer H, Snäll S, Coskun M, Jansson N (2007). The West Palearctic species of *Hesperus* Fauvel, 1874, with descriptions of three new species from Turkey (Coleoptera: Staphylinidae: Staphylininae). *Koleopterol Rundsch* 77: 123–132.
- Smetana A (1953). Results of the zoological scientific expedition of the national museum in Praha to Turkey. 12. Coleoptera III. Staphylinidae (genera *Philonthus* Curt., *Gabrius* Steph.). *Acta ent Mus Nat Pragae* 28: 117–124.
- Smetana A (1954). Results of the zoological scientific expedition of the national museum in Praha to Turkey. 17. Coleoptera VI. Staphylinidae (genera *Philonthus* Curt., *Gabrius* Steph.). *Acta ent Mus Nat Pragae* 29: 177–180.
- Smetana A (1962). Bestimmungstabelle der mitteleuropäischen Arten der Gattung *Quedioides* STEPH. (Col., Staphylinidae). *Entomol Bl Biol Syst Käfer* 58: 133–155 (in German).
- Smetana A (1965a). Zur Kenntnis der *Staphylinus*- und *Ocyopus*-Arten Nordanatoliens (Coleoptera, Staphylinidae). *Reichenbachia* 5: 25–46 (in German).
- Smetana A (1965b). Weiterer Beitrag zur Kenntnis der *Staphylinus*- und *Ocyopus*-Arten Anatoliens. *Reichenbachia* 6: 79–82 (in German).
- Smetana A (1967). *Wissenschaftliches Ergebnis der zoologischen Expedition des Nationalmuseum in Prag nach der Türkei. Coleoptera-Staphylinidae, Subfam. Oxytelinae. Acta ent Mus Nat Pragae* 37: 297–324 (in German).
- Smetana A (1968a). Zur Kenntnis der *Staphylinus* and *Ocyopus* Arten Anatoliens (Coleoptera, Staphylinidae). *Acta Faun Ent Mus Nat Pragae* 13: 155–161 (in German).
- Smetana A (1968b). Einige *Staphylinus*- und *Ocyopus* Arten aus Anatolien (Col., Staphylinidae). *Acta Rer Natur Mus Slov Bratislava* 14: 87–90 (in German).
- Smetana A (1977). New and interesting *Gabrius*, *Rabigus* and *Philonthus* from Turkey (Coleoptera, Staphylinidae). *Rev Suisse Zool* 84: 791–797.
- Smetana A (1995). Taxonomic and faunistic contributions to the knowledge of Palaearctic *Quedioides* (Coleoptera, Staphylinidae, Staphylinini). *Elytra* 23: 77–88.
- Smetana A (2004). Family Staphylinidae (except subfamilies Pselaphinae and Scaphidiinae). In: Löbl I, Smetana A, editors. *Catalogue of Palaearctic Coleoptera. Volume 2. Hydrophiloidea, Histeroidea, Staphylinoidae*. Stenstrup, Denmark: Apollo Books, pp. 237–698.
- Smetana A, Davies A (2000). *Reclassification of the north temperate taxa associated with Staphylinus sensu lato, including comments on relevant subtribes of Staphylinini (Coleoptera: Staphylinidae)*. *Am Mus Novit* 3287: 1–88.
- Solodovnikov AY (2000). On the *Othius* Stephens in the fauna of the Caucasus and Northeastern Anatolia (Coleoptera: Staphylinidae: Xantholininae). *Zoosyst Rossica* 8: 324–328.

- Solodovnikov AY (2002). Taxonomy and faunistics of some species of *Quedius* Stephens, 1829 from the Caucasus and Asia Minor (Coleoptera, Staphylinidae). *Koleopterol Rundsch* 72: 137–158.
- Solodovnikov AY (2004). Taxonomy and faunistics of some West Palearctic *Quedius* Stephens subgenus *Raphirus* Stephens (Coleoptera, Staphylinidae, Staphylininae). *Koleopterol Rundsch* 74: 221–243.
- Solodovnikov AY, Newton AF (2005). Phylogenetic placement of Arrowinini trib. n. within the subfamily Staphylininae (Coleoptera: Staphylinidae), with revision of the relict South African genus *Arrowinus* and description of its larva. *Syst Entomol* 30: 398–441.
- Solodovnikov AY, Štourač P (2002). Redescription, new synonym, and revised distribution of *Quedius* (*Raphirus*) *kirkclarensis* from northern Anatolia (Coleoptera: Staphylinidae: Staphylininae). *Entomol Probl* 32: 133–137.
- Solodovnikov A, Yue Y, Tarasov S, Ren D (2013). Extinct and extant rove beetles meet in the matrix: Early Cretaceous fossils shed light on the evolution of a hyperdiverse insect lineage (Coleoptera: Staphylinidae: Staphylininae). *Cladistics* 29: 360–403.
- Štourač P (2000). Drei neue paläarktische Arten der Gattung *Heterothops* (Coleoptera, Staphylinidae). *Folia Heyrovskyana* 8: 67–72 (in German).
- Štourač P (2002). *Heterothops besucheti* sp.n. und *H. orientalis* sp.n. aus der Türkei (Coleoptera : Staphylinidae). *Rev Suisse Zool* 109: 735–739 (in German).
- Tezcan S, Amiryan J (2003). The rove beetles (Coleoptera, Staphylinidae) of the ecologically managed cherry orchards of western Turkey. In: Materials of the IV. Republican Youth Scientific Conference; 15–17 December 2003; Yerevan, Armenia, p. 83.
- Tezcan S, Anlaş S (2009). Notes on rove beetles (Coleoptera: Staphylinidae) collected by light traps from integrated cherry orchards in Izmir province of Turkey. *Türk Entomol Derg* 33: 3–11.
- Twardowski J, Bereś P, Hurej M, Klukowski Z (2014). A quantitative assessment of the unintended effects of Bt-maize (MON 810) on rove beetle (Col., Staphylinidae) assemblages. *Pol J Environ Stud* 23: 215–220.