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A contribution to the knowledge of the Aphodiinae and Scarabaeinae fauna of Turkey (Coleoptera: Scarabaeoidea: Scarabaeidae)

Alper POLAT, Erol YILDIRIM & Stefano ZIANI

A b s t r a c t : This study is based upon material from subfamilies Aphodiinae and Scarabaeinae of the family Scarabaeidae collected from different localities of Turkey between 1966 and 2013. The study resulted in recording for Turkish fauna of 20 species and subspecies from 14 genera of Aphodiinae and 36 species and subspecies from 12 genera of Scarabaeinae. In total, 56 species and subspecies belonging to 26 genera of the subfamilies Aphodiinae and Scarabaeinae are listed. Among them, *Acanthobodilus immundus* (CREUTZER, 1799), *Aphodius fimetarius* (LINNAEUS, 1758), *Bodilus lugens* (CREUTZER, 1799) and *Colobopterus erraticus* (LINNAEUS, 1758) from Aphodiinae and *Gymnopleurus mopsus mopsus* (PALLAS, 1781), *Euoniticellus fulvus* (GOEZE, 1777), *Caccobius schreberi* (LINNAEUS, 1767), *Euonthophagus gibbosus* (SCRIBA, 1790), *Onthophagus* (*Palaeonthophagus*) *ruficapillus* BRULLÉ, 1832 and *Scarabaeus typhon* (FISCHER VON WALDHEIM, 1823) from Scarabaeinae have been found the most abundant and widespread species. In addition, new localities have been found for some species and subspecies, which have already been reported from Turkey.

K e y w o r d s : Coleoptera, Scarabaeoidea, Scarabaeidae, Aphodiinae, Scarabaeinae, Fauna, Turkey.

Introduction

Scarabaeidae is a very large family of beetles of which are known roughly 1.600 genera and 27.000 species (SCHOLTZ & GREBENNIKOV 2005). This family includes several groups with significant impact on human activities such as those commonly referred to as scarabs, chafers, flower beetles, leaf chafers, dung beetles when adults, or white grubs when larva. They are extremely variable in shape, presence and type of coverage of integuments (hairs, spines, scales), and size, which is comprised between about 1 and 170 mm.

Aphodiinae is a subfamily of about 1.500 species of small to moderate-sized beetles. They are generally cylindrical in shape and seldom show much sexual dimorphism. The abdominal spiracles are located in the membranous parts of the dorsum, the 3-segmented antennal club is covered with microsetae, and the metatibiae have two apical spurs. Most aphodiines are dung feeding, but a few are root feeding and may be serious pests of pastures, for example *Aphodius howitti* HOPE in Australia. Other species feed on decaying vegetable matter, or can be found in termites and ants nests, and some in mammal burrows (BOOTH et al. 1990).

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Scarabaeinae is a large-sized group, mainly abundant in the tropics. The abdominal spiracles are all in the membranous parts of the dorsum (the laparostict condition), at least the last antennal segment is densely covered with microsetae, and the metatibiae have only a single apical spur. Strong sexual dimorphism is often shown in the form of horns, tubercles, and excavations on the head, pronotum, and sometimes other parts of the body. Most scarabaeines feed on dung, sometimes where it lays, and sometimes in special chambers underground. Species belonging to some genera, for example *Scarabaeus* LINNAEUS, *Gymnopleurus* ILLIGER, and *Sisyphus* LATREILLE, form dung into balls and roll them away to be buried. Two Indian species, *Onthophagus unifasciatus* (SCHALLER) and *O. bifasciatus* (FABRICIUS), sometimes could cause the medical condition known as scarabiasis in which living beetles are passed with the faeces of children (BOOTH et al. 1990).

Turkey is biogeographically one of the most interesting countries in the West Palaearctic region. Some faunistic studies on these subfamilies in the Turkey have been made by BALTHASAR (1953, 1963a, 1963b), PETROVITZ (1963), PITTINO (1982), KIRGIZ (1982, 1987), PEHLIVAN (1988, 1989), LODOS et al (1999), CARPANETO et al. (2000), DELLACASA & KIRGIZ (2002), DELLACASA & DELLACASA (2006), KABAKOV (2006), ROZNER & ROZNER (2009), ZIANI & SAMA (2013) and SÜRGÜT et al. (2014).

The aim of this paper is to present some further records of Aphodiinae and Scarabaeinae from Turkey.

Materials and Methods

Species listed below were collected from different localities of Turkey between 1966 and 2013. In addition, material collected in previous years from other Turkish localities and preserved in Ataturk University, Faculty of Agriculture, Department of Plant Protection, the Entomology Museum, Erzurum, Turkey (EMET) is been also evaluated.

Provinces of the collected specimens are given in alphabetical order in the following list. The material is deposited in the Entomology Museum, Erzurum, Turkey (EMET). Systematic and nomenclature follows LÖBL & LÖBL (2016).

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Results

In this study, 20 species and subspecies from 14 genera of Aphodiinae and 36 species and subspecies from 12 genera of Scarabaeinae are recorded. These records improve the knowledge of the Scarabaeoida fauna of Turkey.

Family S c a r a b a e i d a e LATREILLE, 1802

Subfamily A p h o d i i n a e LEACH, 1815

Tribe Aphodiini LEACH, 1815

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Genus *Acanthobodilus* G. DELLACASA, 1983

Acanthobodilus immundus (CREUTZER, 1799)

M a t e r i a l e x a m i n e d : Erzurum: Pasinler, Tımar, N 40°02'53.5", E 41°44'40.7", 1834 m, 24.V.2013, ♂, Yakutiye, Atatürk Üniversity Field, 1850 m, 20.VI.1996, ♂, 26.VI.1996, ♂, 03.VII.1996, ♀, 14.VII.1996, ♀, 15.VII.1998, ♂, 19.VII.1998, ♀, 26.VII.1997, 2♀♀, ♂, 27.VII.1996, ♀, ♂, 28.VII.1997, ♂, 31.VII.1998, ♀, 05.VIII.1996, ♀, 12.VIII.1996, ♂, 15.VIII.1997, ♂, Karagöbek, N 40°10'18.6", E 41°26'15", 2017 m, 19.V.2013, ♂.

Genus *Acrossus* MULSANT, 1842

Acrossus luridus (FABRICIUS, 1775)

M a t e r i a l e x a m i n e d : Erzurum: Aziziye, Karakale, N 40°12'32.9", E 40°58'14.6", 2130 m, 01.V.2012, 2♀♀, 2♂♂, Oltu, 18.IV.1972, 5♂♂, Tortum, 23.V.1972, ♂.

Genus *Amidorus* MULSANT & REY, 1870

Amidorus obscurus obscurus (FABRICIUS, 1792)

M a t e r i a l e x a m i n e d : Erzurum: Aziziye, Kuzgun, N 40°10'58", E41°04'16.4", 2118 m, 03.VI.2012, ♀; Şenkaya, 05.IX.1990, ♀.

Genus *Aphodius* HELLWIG, 1798

Aphodius fimetarius (LINNAEUS, 1758) s.l.

M a t e r i a l e x a m i n e d : Artvin: 26.VI.1996, ♀; Diyarbakır: Ergani, 920 m, 25.VII.2013, ♀; Erzurum: Aşkale, Gürkaynak, N 39°55'30.2", E 40°29'52.8", 1852 m, 08.VI.2012, 2♂♂, Aziziye, Kızılkale, N 40°11'8.81", E 40°55'49.61", 2175 m, 01.V.2012, 8♀♀, 6♂♂, Pasinler, Tımar, N 40°02'53.5", E 41°44'40.7", 1834 m, 24.V.2013, ♂, Yakutiye, Atatürk Üniversity Field, N 39°53'51.67", E 41°13'02.07", 1850 m, 10.VII.2011, ♀, ♂, Karagöbek, N 40°10'18.6", E 41°26'15", 2017 m, 19.V.2013, ♀, ♂.

Genus *Bodilus* MULSANT & REY, 1870

Bodilus lugens (CREUTZER, 1799)

M a t e r i a l e x a m i n e d : Erzurum: Çat, Aşağı Çat, 1950 m, 06.VIII.2010, ♀; Palandöken, 19.VII.1971, ♀, 20.VII.1971, ♂; Yakutiye, Atatürk Üniversity Field, 1850 m, 15.VI.1996, ♀, 3.VII.1996, ♀, 14.VII.1996, ♀, 14.VII.1997, ♀, 17.VII.1996, ♀, 17.VII.1997, ♀, 18.VII.1996, ♀, 22.VII.1997, 3♀♀, 24.VII.1996, ♀, 26.VII.1996, ♀, 26.VII.1997, 3♀♀, 30.VII.1996, ♀, 05.VIII.1996, 2♀♀, 06.VIII.1996, ♀, 10.VIII.1997, 3♀♀, 12.VIII.1996, ♀, ♂, 15.VIII.1998, ♀, 18.VIII.1997, ♂, 20.VIII.1997, ♂, 23.VIII.1996, ♀.

Bodilus punctipennis (ERICHSON, 1848)

M a t e r i a l e x a m i n e d : Erzurum: Yakutiye, 20.VII.1971, ♂, Atatürk Üniversity Field, 1850 m, 15.VI.1996, ♀, 29.VI.1996, ♂, 14.VII.1996, ♀, 14.VII.1998, ♂, 17.VII.1998, ♂, 22.VII.1997, ♂, 26.VII.1996, ♀, 26.VII.1997, ♂, 30.VII.1996, ♂.

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Genus *Calamosternus* MOTSCHULSKY, 1860

***Calamosternus granarius* (LINNÉ, 1767)**

Material examined: Erzurum: Yakutiye, 07.VI.1971, 16♀♀, 15♂♂.

Genus *Chilothorax* MOTSCHULSKY, 1860

***Chilothorax albosetosus* (PITTINO, 1995)**

Material examined: Erzurum: Yakutiye, Atatürk Üniversity Field, 03.V.1983, ♂, 20.VI.1996, ♀, 04.VII.1996, ♂, 14.VII.1996, ♂, 18.VII.1996, 2♀♀, 20.VII.1996, ♀, 20.VII.1997, ♀, 26.VII.1997, 2♂♂, 28.VII.1997, 2♂♂, 12.VIII.1996, ♂, 15.VIII.1997, ♂, 3♀♀, 27.VIII.1996, ♀.

***Chilothorax melanostictus* (W. SCHMIDT, 1840)**

Material examined: Erzurum: Yakutiye, Atatürk Üniversity Field, 1850 m, 04.VII.1996, ♀.

Genus *Colobopterus* MULSANT, 1842

***Colobopterus erraticus* (LINNAEUS, 1758)**

Material examined: Erzurum: Aziziye, Kuzgun, N 40°10'58", E 41°04'16.4", 2118 m, 03.VI.2012, ♀, 2♂♂, Çat, Yavi, 1844 m, 22.VII.2011, ♂, Pasinler, Tımar, N 40°02'53.5", E 41°44'40.7", 1834 m, 24.V.2013, 14♀♀, 8♂♂, Şenkaya, Değirmenlidere, N 40°45'54", E 42°33'49.6", 2139 m, 15.VI.2013, ♂, Tekman, Hacıömer, N 39°36'05.3", E 41°46'47.42", 1871 m, 16.VII.2011, ♀, 3♂♂, Yakutiye, Karagöbek, N 40°10'18.6", E 41°26'15", 2017 m, 19.V.2013, ♀, ♂.

Genus *Esymus* MULSANT & REY, 1870

***Esymus merdarius* (FABRICIUS, 1775)**

Material examined: Erzurum: Aziziye, Kuzgun, N 40°10'58", E 41°04'16.4", 2118 m, 03.VI.2012, ♀.

***Esymus pusillus pusillus* (HERBST, 1789)**

Material examined: Erzurum: Aziziye, Kuzgun, N 40°10'58", E 41°04'16.4", 2118 m, 03.VI.2012, ♀, Yakutiye, Karagöbek, N 40°10'18.6", E41°26'15", 2017 m, 19.V.2013, ♂.

Genus *Eudolus* MULSANT & REY, 1870

***Eudolus quadriguttatus* (HERBST, 1783)**

Material examined: Erzurum: Pasinler, Tımar, N 40°02'53.5", E 41°44'40.7", 1834 m, 24.V.2013, ♂.

Genus *Euheptaulacus* G. DELLACASA, 1983

***Euheptaulacus carinatus carinatus* (GERMAR, 1824)**

Material examined: Artvin: Yusufeli, 15.VIII.1997, ♂; Erzurum: Yakutiye, Atatürk

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Üniversity Field, 1850 m, 14.VII.1996, ♀, 14.VII.1998, ♀, 16.VII.1998, ♀, ♂, 26.VII.1997, ♀, 28.VII.1997, ♀, 2♂♂, 31.VII.1998, 2♀♀, 05.VIII.1996, ♂, 06.VIII.1996, 2♂♂, 10.VIII.1997, ♂, 23.VIII.1996, 2♂♂.

***Euheptaulacus sus* (HERBST, 1783)**

Material examined: Erzurum: Yakutiye, Atatürk Üniversity Field, 1850 m, 14.VII.1996, 2♂♂, 16.VII.1998, ♂, 20.VII.1997, ♂, 24.VII.1996, 3♀♀, 2♂♂, 26.VII.1997, ♀, ♂, 28.VII.1997, ♂, 05.VIII.1996, ♂, 12.VIII.1996, 2♀♀, 2♂♂, 18.VIII.1997, 2♂♂, 23.VIII.1997, ♂, 27.VIII.1996, ♂.

Genus *Eupleurus* MULSANT, 1842

***Eupleurus subterraneus subterraneus* (LINNAEUS, 1758)**

Material examined: Adana: 07.VI.1988, ♂; Elazığ: Harput, Miyadin, Şimal Mezra, 20.VIII.1973, ♀; Erzurum: Oltu, 18.IV.1972, 2♂♂, Palandöken, Börekli, 1822 m, 22.VII.2011, ♀, ♂, Yakutiye, 22.VII.1983, ♂, Atatürk Üniversity Field, 1850 m, 15.VIII.1997, ♂, Karagöbek, N 40°10'18.6", E 41°26'15", 2017 m, 19.V.2013, ♀.

Genus *Melinopterus* MULSANT, 1842

***Melinopterus prodromus* (BRAHM, 1790)**

Material examined: Erzurum: Aziziye, Karakale, N 40°12'32.9", E 40°58'14.6", 2130 m, 01.V.2012, 19♂♂, 23♀♀, Kızılkale, N 40°11'8.81", E 40°55'49.61", 2175 m, 01.V.2012, 10♂♂, ♀.

***Melinopterus punctatosulcatus hirtipes* (FISCHER VON WALDHEIM, 1844)**

Material examined: Erzurum, Aziziye, Karakale, N 40°12'32.9", E 40°58'14.6", 2130 m, 01.V.2012, 5♀♀, 3♂♂, Oltu, 18.IV.1972, ♂, Pasinler, N 39°58'32.66", E 41°37'31.54", 1684 m, 09.V.2012, ♀.

Genus *Nialus* MULSANT & REY, 1870

***Nialus varians* (DUFTSCHMID, 1805)**

Material examined: Erzurum: Yakutiye, Atatürk Üniversity Field, 1850 m, 22.VII.1997, ♀, 1850 m, 24.VII.1996, ♂, 26.VII.1996, ♀, ♂, 28.VII.1997, ♀, 5.VIII.1996, ♀, 12.VIII.1996, ♀.

Genus *Otophorus* MULSANT, 1842

***Otophorus haemorrhoidalis* (LINNAEUS, 1758)**

Material examined: Ordu: Çakırlı, 1200 m, 07.VIII.2013, ♂; Rize: Çamlıhemşin Ayder Plateau, 1200 m, 30.VII.2000, ♀.

Subfamily Scarabaeinae LATREILLE, 1802

Tribe Coprini LEACH, 1815

Genus *Copris* GEOFFROY, 1762

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***Copris* (*Copris*) *felschei* REITTER, 1892**

Material examined: Erzurum: Pasinler, 10.VI.1983, ♀.

***Copris* (*Copris*) *hispanus cavolini* (PETAGNA, 1792)**

Material examined: Adana: 28.VII.1992, ♂; Diyarbakır: Silvan, 825 m, 17.IV.1995, ♂; Şanlıurfa: Ceylanpınar, 25.V.1991, ♂.

***Copris* (*Copris*) *lunaris* (LINNAEUS, 1758)**

Material examined: Ankara: Çamlıdere, 05.VIII.1994, ♂, 15.IX.1994, ♂; Düzce: Akçakoca, 10.IX.2010, ♀; Erzurum: Narman, 15.V.1966, ♀, 05.VII.1980, ♂, Pasinler, Tımar, N 40°02'53.5", E 41°44'40.7", 1834 m, 24.V.2013, ♂, Büyükdere, 28.VI.1990, ♀; Giresun: 15.VIII.1995, ♀; İstanbul: Sarıyer, Rumelikavağı, 20.VII.1993, ♂; Kahramanmaraş: Elbistan, 1050 m, 5.VIII.1998, ♀; Samsun: Çarşamba, 23.VIII.1995, ♀.

Tribe Gymnopleurini LACORDAIRE, 1856

Genus *Gymnopleurus* ILLIGER, 1803

***Gymnopleurus* (*Gymnopleurus*) *flagellatus asperatus* MOTSCHULSKY, 1849**

Material examined: Erzincan: Kemaliye, 20.VIII.1979, 9♀♀, 12♂♂; Erzurum: Narman, 38 T 02.4°95'96", 44°76'64.1", 2200 m, 27.VI.2013, 2♂♂, Pasinler, Tımar, N 40°02'53.5", E 41°44'40.7", 1834 m, 24.V.2013, 4♀♀, 12♂♂, Tortum, Derekapı, 09.VI.1974, ♀, ♂, Yakutiye, 25.VII.1966, 6♀♀, 5♂♂, 25.VII.1986, ♀, ♂, 25.VIII.1966, ♀.

***Gymnopleurus geoffroyi* (FUESSLY, 1775)**

Material examined: Çanakkale: Biga, Karabiga, Meşelik, 15.V.2010, ♀; Denizli: Çivril, Çakallar, 960 m, 08.VII.2013, ♀, ♂; Diyarbakır: Silvan, 825 m, 17.IV.1995, ♀; Erzincan: Kemaliye, 20.VIII.1979, ♂; İzmir: Ödemiş, 19.VII.1990, ♂, 29.VII.1990, ♀, ♂; Konya: Gürağaç, 10.VII.1998, ♀, ♂.

***Gymnopleurus mopsus mopsus* (PALLAS, 1781)**

Material examined: Artvin: 15.VII.1997, ♀; Elazığ: 1067 m, 15.VII.1995, ♂; Erzurum: İspir, Değirmenli, 1421m, 30.V.2011, 25♀♀, 27♂♂, Öztoprak, N 40°30'36.38", E 41°02'42.8", 1225 m, 30.V.2011, 13♀♀, 29♂♂, Narman, Kilimli, N 40°19'50.9", E 41°58'50.02", 1711 m, 16.VII.2012, 3♀♀, 5♂♂, Tekman, Hacıömer, N 39°36'05.3", E 41°46'47,42", 1871 m, 16.VII.2011, ♂, Yakutiye, 25.VII.1966, 2♀♀, 3♂♂, 25.VII.1986, ♂, Dumlu, Yeşilyurt, N 40°04'40.76", E 41°21'43,13", 1804 m, 09.VII.2012, 15♀♀, 5♂♂; Mersin: Tarsus, 10.IX.1995, ♂.

Tribe Oniticellini H. J. KOLBE, 1905

Genus *Euoniticellus* A. JANSSENS, 1953

***Euoniticellus fulvus* (GOEZE, 1777)**

Material examined: Bingöl: Ilıcalar, İçpınar, Derik Mezrası, Paşaçeşmesi, 1100 m, 28.V.2006, ♂; Erzincan,:18.VII.1997, ♂; Erzurum: Aziziye, Dallıkavak, N 40°10'32.8", E 40°58'04.8", 2320 m, 14.VI.2013, ♀, Kuzgun, N 40°10'58", E 41°04'16.4", 2118 m, 03.VI.2012, 2♀♀, ♂, Oltu, Sütkans, 25.VI.1996, ♀, Pasinler, N 39°58'32.66", E 41°37'1.54", 1684 m, 19.IX.2009, 2♂♂, Tekman, Hacıömer, N 39°36'05.3", E 41°46'47.42", 1871 m, 16.VII.2011, ♂,

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Yakutiye, Atatürk Üniversity Field, N 39°53'51.67", E 41°13'02.07", 1850 m, 10.VII.2011, ♂, Karagöbek, N 40°10'18.6", E 41°26'15", 2017 m, 19.V.2013, 2♂♂; Kahramanmaraş: Elbistan, 1050 m, 15.VIII.1998, ♀.

Genus *Paroniticellus* BALTHASAR, 1963

Paroniticellus festivus (STEVEN, 1809)

Material examined: Erzurum: Pasinler, Tımar, N 40°02'53.5", E 41°44'40.7", 1834 m, 24.V.2013, ♂.

Tribus Onitini LAPORTE, 1840

Genus *Cheironitis* VAN LANSBERGE, 1875

Cheironitis haroldi (BALLION, 1871)

Material examined: Erzurum: Tekman, Hacıömer, N 39°36'05.3", E 41°46'47.42", 1871 m, 16.VII.2011, ♂.

Cheironitis pamphilus (MENETRIES, 1849)

Material examined: Erzurum: Yakutiye, 10.IX.1973, ♀, 26.IX.1984, ♀.

Genus *Onitis* FABRICIUS, 1798

Onitis alexis septentrionalis BALTHASAR, 1942

Material examined: Adana: 29.VII.1993, ♂, 20.VIII.1993, ♀, 08.IX.1993, ♂, Balcalı, 10.VII.1992, ♂, Kozan, 11.VII.1983, ♀, 12.VIII.1983, ♂, 10.IX.1983, 2♀♀, Savruk, 02.VII.1996, ♀; Adıyaman: Kahta, Elbeyi, 650 m, 03.VII.2011, ♂, 650 m, 20.VIII.2011, ♀; Aydın: Çine, 700 m, 13.VII.2010, ♀; Mersin: 04.IX.1992, ♀.

Onitis damoetas STEVEN, 1806

Material examined: Erzurum: Pasinler, Tımar, N 40°02'53.5", E 41°44'40.7", 1834 m, 16.V.2013, ♂.

Tribe Onthophagini BURMEISTER, 1846

Genus *Caccobius* C.G. THOMSON, 1859

Caccobius (*Caccobius*) *histeroides* (MÉNÉTRIES, 1832)

Material examined: Balıkesir: Madra Mountain, N 39°21'0.08", E 027°13'98.1", 19.VI.2012, ♀; Erzurum: İspir, N 40°29'20.4", E 41°00'31", 1236 m, 22.VI.2011, ♀.

Caccobius (*Caccobius*) *mundus* (MÉNÉTRIES, 1839)

Material examined: Erzurum: Oltu, Toprakkale, 1436 m, 23.VI.2011, ♀.

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***Caccobius schreberi* (LINNÉ, 1767)**

M a t e r i a l e x a m i n e d : Erzurum: Aşkale, Topalçavuş, N 39°55'33.2", E 40°34'33", 1639 m, 08.VI.2012, ♀, Aziziye, Kuzgun, N 40°10'58", E 41°04'16.4", 2118 m, 03.VI.2012, 3♀♀, Çat, Yavi, 22.VII.2011, 1844 m, 5♀♀, ♂, İspir, N 40°29'20.4", E 41°00'31", 1236 m, 22.VI.2011, 4♀♀, ♂, Öztoprak, N 40°30'36.38", E 41°02'42.8", 1225 m, 30.V.2011, 2♀♀, Palandöken, 20.VII.1971, ♂, Tortum, 10.IV.1972, ♂, 25.V.1972, 2♀♀, Yakutiye, Atatürk Üniversity Field, N 39°53'51.67", E 41°13'02.07", 1850 m, 10.VII.2011, ♂, 1800 m, 18.VIII.2010, ♀.

Tribe Onthophagini BURMEISTER, 1846

Genus *Euonthophagus* BALTHASAR, 1959

***Euonthophagus amyntas alces* (FABRICIUS, 1792)**

M a t e r i a l e x a m i n e d : Antalya: Korkuteli, 700 m, 22.VI.2013, ♂; Erzurum: İspir, Öztoprak, N 40°30'36.38", E 41°02'42.8", 1225 m, 30.V.2011, ♂.

***Euonthophagus gibbosus* (SCRIBA, 1790)**

M a t e r i a l e x a m i n e d : Antalya: Elmalı, Gömbe, 1250 m, 28.VII.2013, ♀, Korkuteli, 700 m, 22.VI.2013, ♂, Kargın, 820 m, 05.IX.2013, 3♀♀, 820 m, 18.VIII.2013, ♀, Yukarı Beymelek, 170 m, 29.VI.2013, ♀; Erzurum: İspir, Öztoprak, N 40°30'36.38", E 41°02'42.8", 1225 m, 30.V.2011, ♀, ♂, Pasinler, Tımar, N 40°02'53.5", E 41°44'40.7", 1834 m, 24.V.2012, ♀, Tortum, 10.IV.1972, ♀, 26.V.1972, ♂, Yakutiye, Atatürk Üniversity Field, 1800 m, 05.VIII.2010, ♀, Dumlu, Yeşilyurt, N 40°04'40.76", E 41°21'43.13", 1804 m, 09.VII.2012, ♀.

Genus *Onthophagus* LATREILLE, 1802

***Onthophagus* (*Furconthophagus*) *furcatus* (FABRICIUS, 1781)**

M a t e r i a l e x a m i n e d : Erzurum: Oltu, 25.VI.1971, ♀, Olur, Köprübaşı, 973 m, 30.VII.2011, ♀, Pasinler, Tımar, N 40°02'53.5", E 41°44'40.7", 1834 m, 24.V.2013, ♀, Tortum, 10.IV.1972, ♂; Mersin: Erdemli, Üçtepe, 120 m, 25.IX.2012, ♀; Tunceli: Pülümür, Boğalı, 1412 m, 07.VIII.2011, ♀.

***Onthophagus* (*Onthophagus*) *illyricus* (SCOPOLI, 1763)**

M a t e r i a l e x a m i n e d : Ankara: 31.VII.1997, ♀; Erzurum: Uzundere, Gölbaşı, 1150 m, 14.VIII.2012, ♀; Osmaniye: Kadirli, Kabayar, 14.VII.1997, 3♀♀, ♂, 15.VII.1997, ♂, 16.VII.1997, ♀, 17.VII.1997, ♀, 2♂♂.

***Onthophagus* (*Onthophagus*) *taurus* (SCHREBER, 1759)**

M a t e r i a l e x a m i n e d : Antalya: Elmalı, Gömbe, 1250 m, 28.VII.2013, ♂, Korkuteli, Kargın, 820 m, 05.IX.2013, ♂; Erzincan: 10.IX.1996, ♂; Eskişehir: 25.VI.1996, ♀; Konya: 9.VII.1995, ♂; Muş: 05.VII.1996, ♀, 24.VII.1996, ♂, Bağlar, 15.VII.1996, ♀.

***Onthophagus* (*Palaeonthophagus*) *carpanetoi* PITTINO, 1982**

M a t e r i a l e x a m i n e d : Balıkesir: Madra Mountain, N 39°25'65.6", E 027°14'86.1", 19.VI.2012, ♀, N 39°21'0.08", E 027°13'98.1", 19.VI.2012, ♀; Erzurum: İspir, Köprübaşı, 06.VI.1980, ♂.

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***Onthophagus* (*Palaeonthophagus*) *coenobita* (HERBST, 1783)**

M a t e r i a l e x a m i n e d : Balıkesir: Madra Mountain, N 39°23'84.2", E 027°15'0.56", 19.VI.2012, ♀.

***Onthophagus* (*Palaeonthophagus*) *cruciatus* MÉNÉTRIES, 1832**

M a t e r i a l e x a m i n e d : Erzurum: Pasinler, Tımar, N 40°02'53.5", E 41°44'40.7", 1834 m, 24.V.2013, ♂.

***Onthophagus* (*Palaeonthophagus*) *dorsosignatus* d'ORBIGNY 1898**

M a t e r i a l e x a m i n e d : Erzurum: İspir, N 40°29'20.4", E 41°00'31", 1236 m, 22.VI.2011, ♂.

***Onthophagus* (*Palaeonthophagus*) *fracticornis* (PREYSSLER, 1790)**

M a t e r i a l e x a m i n e d : Erzurum: Aziziye, Kuzgun, N 40°10'58", E 41°04'16.4", 2118 m, 03.VI.2012, 3♀♀, Oltu, Başaklı, 20.V.1972, ♀, Pasinler, Rabat, 2400 m, 13.VI.1996, ♀, Yakutiye, Atatürk Üniversity Field, N 39°53'51.67", E 41°13'02.07", 1850 m, 10.VII.2011, ♀; Tunceli: Mazgirt, Kalaycı, 950 m, 25.III.2010, ♀.

***Onthophagus* (*Palaeonthophagus*) *gibbulus rostrifer* REITTER, 1892**

M a t e r i a l e x a m i n e d : Erzurum: Aziziye, Kuzgun, N 40°10'58", E 41°04'16.4", 2118 m, 03.VI.2012, ♀, ♂.

***Onthophagus* (*Palaeonthophagus*) *grossepunctatus* REITTER, 1905**

M a t e r i a l e x a m i n e d : Balıkesir: Madra Mountain, N 39°21'0.08", E 027°13'98.1", 18.VII.2012, ♂.

***Onthophagus* (*Palaeonthophogus*) *lucidus* (ILLIGER, 1800)**

M a t e r i a l e x a m i n e d : Antalya: Korkuteli, Kargın, 820 m, 18.VIII.2013, ♀.

***Onthophagus* (*Palaeonthophagus*) *medius* (KUGELANN, 1792)**

M a t e r i a l e x a m i n e d : Erzurum: Pasinler, Çöğender, 09.VI.2011, 1743 m, ♀, Tortum, 25.VI.1972, ♂, Yakutiye, Karagöbek, N 40°10'18.6", E 41°26'15", 2017 m, 19.V.2013, 2♀♀.

***Onthophagus* (*Palaeonthophagus*) *ruficapillus* BRULLÉ, 1832**

M a t e r i a l e x a m i n e d : Erzincan: Kemah, 02.VIII.1980, ♂; Erzurum: Çat, 1898 m, 06.VIII.2010, ♀, Yavi, 1844 m, 22.VII.2011, 2♀♀, 4♂♂, Horasan, Hacıahmet, 1823 m, 13.VIII.2010, ♀, İspir, N 40°29'20.4", E 41°00'31", 1236 m, 22.VI.2011, 4♀♀, 3♂♂, Köprüköy, Eyüpler, 1245 m, 26.VI.2011, ♂, Narman, Göllü, 1803 m, 30.VII.2011, ♀, Mahmutçavuş, N 40°20'18.7", E 41°55'36.4", 1568 m, 16.VII.2012, ♂, Oltu, 25.VI.1971, ♀, 3♂♂, Yakutiye, 02.VI.1971, ♂, 07.VI.1972, ♂, 20.VII.1971, ♂, Atatürk Üniversity Field, N 39°53'51.67", E 41°13'02.07", 1850 m, 10.VII.2011, 2♀♀, ♂, Gökçeyamaç, 20.VI.1970, ♀; Konya: Güneysınır, 1017 m, 21.VI.1999, ♀; Ordu: Çakırlı, 1200 m, 23.VIII.2013, ♀.

***Onthophagus* (*Palaeonthophagus*) *sacharovskii* OLSOUFIEFF, 1918**

M a t e r i a l e x a m i n e d : Erzurum: Palandöken, Nenehatun, 1900 m, 21.IV.2002, ♀.

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***Onthophagus* (*Palaeonthophagus*) *truchmenus* KOLENATI, 1846**

M a t e r i a l e x a m i n e d : Erzurum: Aziziye, Ilıca, Harmanlar, 25.VIII.2007, ♀, Kuzgun, N 40°10'58", E 41°04'16.4", 2118 m, 03.VI.2012, ♀, Pasinler, Tımar, N 40°02'53.5", E 41°44'40.7", 1834 m, 24.V.2013, ♀.

***Onthophagus* (*Palaeonthophagus*) *vacca* (LINNAEUS, 1767)**

M a t e r i a l e x a m i n e d : Erzurum: Tortum, 25.VI.1972, ♀.

Tribe Scarabaeini LATREILLE, 1802

Genus *Ateuchetus* BEDEL, 1892

***Ateuchetus armeniacus* (MÉNÉTRIES, 1832)**

M a t e r i a l e x a m i n e d : Bitlis: 27.V.1983, ♂, 27.V.1989, ♂; Erzurum: Oltu, Sütkans, 18.VI.1996, ♀, Tortum, Derebaşı, 09.VI.1974, ♀, 09.VI.1994, ♀, Derekapı, 09.VI.1974, 2♂♂; Kars: Sarıkamış, Karakurt, N 40°07'54.3″, E 042°20' 94.1″, 1501 m, 17.IV.2002, ♀, ♂.

Genus *Scarabaeus* LINNAEUS, 1758

***Scarabeus pius* (ILLIGER, 1803)**

M a t e r i a l e x a m i n e d : Bilecik: Gölpazarı, Dereli, 490 m, 25.VI.2010, ♀; Burdur: 1025 m, 25.VII.2011, ♀; Denizli: Çivril, Çakallar, 960 m, 08.VII.2013, ♀; Tunceli: Mazgirt, Kalaycı, 950 m, 25.III.2010, ♀, 1000 m, 28.IV.2010, ♂.

***Scarabaeus typhon* (FISCHER VON WALDHEIM, 1823)**

M a t e r i a l e x a m i n e d : Ağrı: Doğubeyazıt, İshak Paşa Sarayı, 1936 m, 10.VIII.2013, 2♂♂, 1936 m, 27.VIII.2013, ♂; Burdur: 1025 m, 22.VI.2011, ♂; Denizli: Serinlihisar, 1000 m, 10.VII.2011, ♂, 1000 m, 16.VII.2011, ♂, 1000 m, 28.VII.2011, 2♂♂, 1000 m, 25.VIII.2011, ♂, 1000 m, 02.IX.2011, 2♂♂, 1000 m, 13.IX.2011, ♂; Diyarbakır: Silvan, 17.IX.1995, ♂; Elazığ: 1067 m, 18.VIII.1995, ♂, Harput, Miyadin, Şimal Mezra, 15.VIII.1973, ♂; Erzurum: Palandöken, 28.VII.1994, ♂; Iğdır: 25.I.1971, ♂, 21.V.1969, ♂, 25.VI.1971, ♂, 28.VI.1971, ♀, 9.IX.1985, ♂, Devlet Üretme Çiftliği, 01.IV.1977, ♂, 21.IV.1977, 2♂♂; Kayseri: Sarız, 07.VII.1990, ♀, 13.XII.1990, ♂; Konya: Çumra, Bakkalbaşı, 07.VIII.1998, 2♂♂, Güneysınır, Gürağaç, 1071 m, 04.VII.1999, ♂; Mersin: Gülnar, Demirözü, 1300 m, 20.VIII.201, ♂, Tarsus, 08.VIII.1994, ♂; Muğla: Köyceğiz, 18.VII.1996, ♂; Muş: Devlet Üretme Çiftliği, 01.VI.1972, ♂; Nevşehir: 1120 m, 15.VIII.2011, ♂, Nar, 26.IX.2009, ♂; Niğde: Bor, 21.VIII.1990, ♂.

Tribe Sisyphini MULSANT, 1842

Genus *Sisyphus* LATREILLE, 1806

***Sisyphus* (*Sisyphus*) *schaefferi schaefferi* (LINNAEUS, 1758)**

M a t e r i a l e x a m i n e d : Adana: Balcalı, 13.VII.2011, ♀; Amasya: 14.VII.1983, ♂, 14.VII.1993, ♀; Erzurum: Dumlu, Muratgeldi, 05.VIII.1997, ♀, İspir, N 40°29'20.4", E 41°00'31", 1236 m, 22.VI.2011, ♀; Muş: 15.V.1970, ♀, 15.V.1973, 2♀♀.

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Zusammenfassung

Vorliegende Arbeit behandelt Aufsammlungen von Aphodiinae und Scarabaeinae (Coleoptera, Scarabaeidae) aus unterschiedlichen türkischen Gebieten im Untersuchungszeitraum 1966 bis 2013. Als Ergebnis ergaben sich der Nachweis von 20 Arten aus 14 Gattungen Aphodiinae sowie 36 Arten und Unterarten aus 12 Gattungen von Scarabaeinae.

References

BALTHASAR V. (1953): Wissenschaftliche Ergebnisse der zoologischen Expedition des National-Museums in Prag nach der Turkei. — Acta Entomologica Musei Nationalis Pragae **28**: 19-26.

BALTHASAR V. (1963a): Monographie der Scarabaeidae und Aphodiidae der Palaearktischen und Orientalischen Region. Coleoptera: Lamellicornia. Band 1.1. Scarabaeinae, 2. Coprinae. — Verlag der Tschechoslowakischen Akademie der Wissenschaften, Prag, pp 391.

BALTHASAR V. (1963b): Monographie der Scarabaeidae und Aphodiidae der Palaearktischen und Orientalischen Region. Coleoptera: Lamellicornia. Band II. Coprinae (Onitini, Oniticellini, Onthophagini). — Tschechoslowakischen Akademie der Wissenschaften, Prag, pp 627.

BOOTH R.G., COX M.L. & R.B. MADGE (1990): The guides to insects of importance to man. 3. Coleoptera. — International Institute of Entomology, pp 384.

CARPANETO G., PIATTELLA E. & R. PITTINO (2000): The scarab beetles of Turkey: an updated checklist and chorotype analysis (Coleoptera, Scarabaeoidea). — Biogeographia **21**: 217-240.

DELLACASA M. & T. KIRGIZ (2002): Records of Aphodiinae from Edirne province and neighbouring areas (European Turkey). — Italian Journal of Zoology **69**: 71-82.

DELLACASA G. & M. DELLACASA (2006): Fauna d'Italia Coleoptera Aphodiidae, Aphodiinae. Edizioni calderini, Bologna, pp 484.

KABAKOV O.H. (2006): Scarab Beetles Subfamily Scarabaeinae (Coleoptera: Scarabaeidae) of Russia and Adjacent Countries. — Moscow, KMK Scientific Press Ltd., pp 374.

KIRGIZ T. (1982): Taxonomic investigations on fauna of Coleoptera (Scarabaeidae) dung beetles of Adana province and its surroundings. — Cukurova University Faculty of Basic Sciences, Master Thesis, pp 58.

KIRGIZ T. (1987): Coprinae (Coleoptera: Scarabaeidae) Fauna of Adana and Hatay provinces and vicinities. — The Journal of Fırat University **2** (2): 51-57.

LÖBL I. & D. LÖBL (2016) (eds): Catalogue of Palaearctic Coleoptera. Volume 3. Scarabaeoidea, Scirtoidea, Dascilloidea, Buprestoidea, Byrrhoidea. — Revised and updated edition. Leiden, Boston: Brill. **3** (2): 983 pp.

LODOS N., ÖNDER F., PEHLİVAN E., ATALAY R., ERKİN E., KARSAVURAN Y., TEZCAN S. & S. AKSOY (1999): Faunistic studies on Scarabaeoidea (Aphodiidae, Cetoniidae, Dynastidae, Geotrupidae, Glaphyridae, Hybosoridae, Melolonthidae, Ochodaeidae, Rutelidae, Scarabaeidae) (Coleoptera) of Western Black Sea, central Anatolia and Mediterranea Regions of Turkey. — Ege University Basimevi, Bornova, İzmir. pp 72.

download www.zobodat.at

PEHLIVAN E. (1988): Taxonomic studies on Turkey Scarabaeidae (Coleoptera) family. I. *Scarabaeus* L., *Gymnopleurus* ILL., *Sisyphus* LATR. — Turkish Journal of Entomology **12** (4): 221-230.

PEHLIVAN E. (1989): Taxonomic studies on Turkey Scarabaeidae (Coleoptera) family. II. *Onthophagus* LATR. — Turkish Journal of Entomology **13** (1): 25-42.

PETROVITZ R. (1963): Neue und interessante Scarabaeidae aus dem vorderen Orient II Teil. — Reichenbachia, Zeitschrift für taxonomische Entomologie des Staatliches Museum für Tierkunde in Dresden **1** (28): 235-267.

PITTINO R. (1982): Due nuovi *Onthophagus* LATR. Anatolici del gruppo *ovatus* (L.) (Coleoptera, Scarabaeidae). — Fragmenta entomologica **16** (2): 189-203.

ROZNER I. & G. ROZNER (2009): Additional Data to the Lamellicornia Fauna of Turkey (Coleoptera: Lamellicornia). — Natura Somogyiensis **15**: 69-100.

SÜRGÜT H., TÜVEN A., VARLI S.V., POLAT A. & S. TEZCAN (2014): An Evaluation on the pitfall trap collected Scarabaeoidea (Coleoptera) species in Western Turkey. — Munis Entomology & Zoology **9** (2): 812-818.

SCHOLTZ C.H. & V.V. GREBENNIKOV (2005): Scarabaeiformia. — In: BEUTEL R.G. & R.A.B. LESCHEN (eds), Coleoptera, beetles Volume 1: Morphology and systematics (Archostemata, Adephaga, Myxophaga, Polyhaga partim). — Handbuch der Zoologie. Eine Naturgeschichte der Stämme des Tierreichs. Band IV. Arthropoda: Insecta, Teilband **38**, 345-365. Walter de Gruyter, Berlin, pp 567.

ZIANI S. & G. SAMA (2013): Chorological data on some Geotrupidae, Aphodiidae and Scarabaeidae (Coleoptera: Scarabaeoidea) species collected during some field trips in Turkey. — Munis Entomology & Zoology **8** (1): 458-465.

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