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Authors

Carpaneto, Giuseppe M.
Piattella, Emanuele
Pittino, Riccardo

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The scarab beetles of Turkey: an updated checklist and chorotype analysis (Coleoptera, Scarabaeoidea)¹

GIUSEPPE M. CARPANETO*, EMANUELE PIATTELLA**,
RICCARDO PITTINO***

**Dipartimento di Biologia, Università degli Studi "Roma Tre",
Viale G. Marconi, 446 - I-00146 Roma (Italy)*

***Dipartimento di Biologia Animale e dell'Uomo (Zoologia),
Università degli Studi "La Sapienza", Viale dell'Università, 32 - I-00185 Roma (Italy)*

****Museo Civico di Storia Naturale, Corso Venezia, 55 - I-20121 Milano (Italy)*

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SUMMARY

A checklist of 625 species of Coleoptera Scarabaeoidea (281 Laparosticti and 344 Pleurosticti) occurring within the political borders of the Turkish Republic is presented. These species belong to 99 genera and 14 families. The high percent value of Pleurosticti (55%) respect to other Mediterranean scarab beetle faunas, can be explained with the high degree of wilderness and habitat diversity of the Turkish territory which includes large areas of woodland and natural steppe. Usually, the richness of Pleurosticti is subject to a strong decrease whenever the land use is dominated by intensive agriculture or grazing. To each species a main chorotype was assigned in accordance with the most recent criteria. Two chorotypes are dominant: the SW-Asiatic (15%), the E-Mediterranean (12%). According to the current taxonomic arrangement, the number of endemic species appeared very high (234 species that is 37.4% of the whole scarab fauna of Turkey) but inequally distributed in the two above mentioned groups, as the Pleurosticti represent 75% of the endemics. Most endemics occur in southern Anatolian, which resulted to be the scenario of an adaptive radiation for some genera (mainly within Glaphyridae, Melolonthidae and Rutelidae), probably due to the high floristic and habitat diversity. Nevertheless, precaution is due in this diversity assessment because several taxonomic groups of scarab beetles should be carefully revised before processing data for zoogeographical analysis. The highest number of endemics is referable to a S-Anatolian (=Taurian) pattern of distribution observed in 87 species (14%). Other major patterns are: the species widely spread throughout Anatolia (10.6%), and those restricted to the Armenian and Armeno-Caucasian areas (4.5%).

INTRODUCTION

The aim of the present work is to set-up the current knowledge on the scarab beetle fauna of Turkey, providing an updated checklist of the species till now

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recorded in literature. The immediate expected result is a general assessment of the taxonomic diversity of Coleoptera Scarabaeoidea in this country and a preliminary sketch of their regional distribution patterns. A long term result should be the compilation of a monographic volume on the scarab beetles of the Turkish fauna, useful for wildlife management, conservation projects, and faunal inventories at national and regional level.

The present knowledge of the scarab beetles of Anatolia and Turkish Thrace is still too deficient and does not allow to make sound zoogeographical considerations and a numerical treatment of data. Many species belong to genera or to species groups which need a taxonomic revision. Moreover, a number of new species have been identified by us in these last years but they are still undescribed.

There are no basic contributions to the Turkish scarab beetle fauna but only small papers including taxonomic descriptions, relevant faunistic records or lists of species collected in single areas during surveys conducted by private or institutional researchers.

Apart from predators, the scarab beetles include species which belong to all the major types of terrestrial consumers: dung-feeders, detritus-feeders, decayed-wood-feeders, carrion-feeders, fungus-feeders, root-feeders, fruit-feeders, flower-feeders, leaf-feeders. Such a varied spectrum of resources makes the scarab beetles an assemblage of bioindicators useful for assessing the environmental quality. Moreover, many species are restricted to a short range of altitude above the sea level and thus offer a guild of species suitable for assessing the habitat diversity.

STUDY AREA

According to the aim of this paper which should be a first milestone towards the compilation of a volume on the scarab beetles of the Turkish fauna, the literature survey was focused to all the territories included within the political borders of the Turkish Republic, i.e. Anatolia, the Turkish Thrace and Cyprus. The second territory was included even if situated on the European continental shelf; the third one was considered entirely (because of the imprecision of many literature records) even if only the northern part of this island is currently occupied by Turkish government.

Because of its geographic position, Turkey represents both a barrier and a bridge between Asia and Europe. Such a bridge has a north-south extent that ranges from about 300 to 400 miles (480 to 640 kilometres), and it stretches about 1,000 miles from west to east. The geology of Anatolia includes sedimentary rocks ranging from Paleozoic to Quaternary, numerous intrusions, and extensive areas of volcanic material.

The Turkey's land area (about 780,000 square kilometres) is predominantly mountainous, with true lowlands confined to the coastal fringes. About one-fourth

of the surface has an elevation above 1,200 metres, and less than two-fifths lies below 500 metres. Mountain crests exceed 2,500 metres in many places, particularly in the east, where Turkey's highest mountain, Mount Ararat (Agri) reaches 5,137 metres close to the borders with Armenia and Iran. Steep slopes are common throughout the country, while flat or gently sloping land makes up barely one-sixth of the total area. These relief features affect other aspects of the physical environment, producing climates often much harsher than might be expected for this latitude.

Four main relief regions can be identified: the northern mountains, the southern mountains, the central massif, and the Arabian platform.

The northern zone comprises a series of mountain ridges (*i.e.*, the Pontic Mountains), increasing in elevation toward the east, that occupy a belt about 145 to 190 kilometres wide immediately south of the Black Sea. The Kizil and Yesil rivers break through the mountain barrier in a zone of weakness where summits are below 650 metres, dividing the Pontic Mountains into western and eastern sections.

The southern zone occupies the southern third of the country from the Aegean to the Gulf of Iskenderun, from which it extends to the northern side of the Arabian platform. The mountain system falls into two main parts: a complex series of ridges occur west of Antalya, with a north-south trend reaches 2,200 to 2,700 metres; the massive Taurus (Toros) mountain system extends along the Mediterranean coast, with a crestline which often exceed 2,600 metres (some peaks over 3,600 metres). Even though the Mediterranean coastal plain is narrow, there are two major lowland areas: the Antalya Plain which extends inland some 20 miles, and the Adana Plain, measuring roughly 145 by 95 kilometres, at the mouths of the Seyhan and Ceyhan rivers.

In the eastern third of the country the northern and southern fold systems converge to produce an extensive area of predominantly mountainous land with confined valleys.

The central massif, often referred to as the Anatolian Plateau, is located in the western half of the country, between the Pontic and Taurus systems. The most distinctive part of the central massif is the area bounded on the south by the Taurus Mountains and on the northeast by a line from Ankara through Lake Tuz to Nigde. It is an area of flat or gently sloping land at elevations of about 900-1,000 metres, and measuring some 240 by 320 kilometres.

The southeastern Anatolia, the region between the Euphrates and Tigris Rivers, represents the northernmost part of the Arabian platform. It is characterised by relatively gentle relief, with broad plateau surfaces descending to the south from about 800 metres at the mountain foot to 300 metres along the Syrian border.

Two main types of natural vegetation occur: (1) steppe grasslands, which occur mainly in central Anatolia and the southeast but are also found in the valleys and basins of eastern Anatolia; (2) forest and woodland, which cover the remainder

of the country. Over much of its landscape, Anatolia has been greatly modified by human action, both directly (through lumbering and clearance for agriculture) and indirectly (through the activities of grazing animals).

The richest type of woodland is the Pontic, or Colchian, forest, confined to the eastern part of the Black Sea coastlands where rainfall is heavy, there is no summer drought, and winters are mild. Hornbeam, sweet chestnut, oriental spruce, and alder are the commonest species, and there is a rich shrub layer of rhododendron, laurel, holly, myrtle, hazel, and walnut. The remainder of the Black Sea zone is occupied by humid deciduous forest, dominated by oriental spruce, beech, hornbeam, alder, oak, fir, and yew, with oak and pine in the drier parts. Coniferous species become dominant above 1,000 metres, giving way to alpine grassland above 2,100 metres.

Drier conditions in the western and eastern parts of the interior (on either side of the central steppe-grassland zone) produce the drier mixed and deciduous forest belt, where the dominant species are oak, juniper, pine, and fir, with patches of open grassland. Mediterranean mountain forest is characteristic of the central and western Taurus, where pine, fir, and oak are the main species, but cedar, beech, juniper, and maple also occur. Along the Aegean and Mediterranean coasts is a belt of Mediterranean lowland vegetation of the maquis type. Myrtle, wild olive, laurel, and carob are the commonest species, but there are occasional stands of oak, pine, cypress, and other trees or shrubs.

MATERIALS AND METHODS

As defined in the precedent chapter, the checklist includes all the species occurring within the current Turkish political borders, even if restricted to small peripheral areas or only known for single records. An exception to this rule was made including three Aegean species occurring on the Greek islands near to the Turkish coast because future investigations could reveal their presence in western or southern Anatolia. One of these species is *Aphodius rhodiensis*, a species of uncertain validity which is currently thought to be endemic of Rhodes. A further exception was made by including the whole Cyprus even though, in fact, only the northern territory is subject to Turkish occupation. In any case, all literature records were examined by a critical point of view, reinterpreting old data at the light of modern revisions or criteria.

Data were selected from many scientific papers (over 250) belonging to several categories: (a) descriptions of new species and taxonomic revisions, (b) scattered records of rare and localised species as well as findings of species new for Turkey, (c) lists of species collected during expeditions in Turkey or through the Near East, (d) ecological studies on single species or taxocoenosis in Turkey, (e) agrarian studies on crop pests in Turkey, (f) general catalogues of coleoptera and

monographies of entire families at global or regional scale, (g) papers or volumes dealing with areas different from Turkey but including single records for this country or a generic quotation of it. The complete references will be published together with the final catalogue we are preparing.

According to their distribution patterns, the species were classified into major chorotypes, in accordance with the guidelines prepared by Vigna Taglianti et al. (Biogeographia - vol. XX) for the Near East. The term "endemic" is here used for species found solely in Turkey (usually in Anatolia) or living within Turkey and extending to some restricted adjacent areas.

The checklist was arranged in taxonomical order according to a family-splitting classification criterion. Subspecies were not considered. The uncertain or vague records, and those which could be based on doubtful identification were excluded from the analysis.

CONCLUSIONS

A total number of 625 species of scarab beetles was recorded from Turkey in the literature. These species belong to 99 genera and 14 families. Grouping these families into two major groups of both taxonomic and ecological importance, the scarab beetle fauna of Turkey includes 281 *Laparosticti* (mainly dung-feeders or detritus-feeder) and 344 *Pleurosticti* (mainly plant-feeders). The high percent value of *Pleurosticti* (55%) respect to other Mediterranean scarab beetle faunas, can be explained with the high degree of wilderness and habitat diversity of the Turkish territory which includes large areas of woodland and natural steppe which overcome the areas occupied by intensive cultivations. As a matter of fact, the richness of *Pleurosticti* is usually subject to a strong decrease whenever the land use is dominated by intensive agriculture or grazing. The dependence of these plant-feeders from a flourishing vegetation cover of wild herbs, shrubs and trees is very high: several species underwent to local extinction in Mediterranean ecosystems later on the degradation of plant communities (Carpaneto and Piattella, unpublished data).

From this literature survey, the number of endemic species appeared very high (234 species that is 37.4% of the whole scarab fauna of Turkey) but unequally distributed in the two above mentioned groups, as the *Pleurosticti* represent 75% of the endemics. According to the current taxonomic arrangement, the endemic *Laparosticti* are about 20% of the total number of *Laparosticti* occurring in Turkey, whereas the endemic *Pleurosticti* exceed 51% of their total number. Most of them occur in the southern Anatolian which appeared to have been the scenario of an adaptive radiation for some genera (mainly within *Glaphyridae*, *Melolonthidae* and *Rutelidae*), probably due to the high floristic and habitat diversity. Nevertheless precaution is due in this diversity assessment because

several taxonomic groups of scarab beetles should be carefully revised before processing data for zoogeographical analysis. In fact, we argue an excessive splitting trend of some past authors who described many species of Pleurosticti in these last decades. The highest number of endemic species is referable to a S-Anatolian (=Taurian) pattern of distribution observed in 87 species (14%). The second pattern is that shown by the species widely spread throughout Anatolia (10.6%), and those restricted to the Armenian and Armeno-Caucasian areas (4.5%). Apart from the endemic species, two chorotypes are dominant: the SW-Asiatic (15%), the E-Mediterranean (12%).

Tab. I - Scarab beetles in Turkey: number of genera and species for each family.

FAMILY	GENERA	SPECIES	(SPECIES%)
TROGIDAE	1	8	1,28
GLARESIDAE	1	1	0,16
GEOTRUPIDAE	8	24	3,84
HYBOSORIDAE	2	2	0,32
ORPHNIDAE	2	2	0,32
OCHODAEIDAE	1	6	0,96
APHODIIDAE	14	154	26,64
SCARABAEIDAE	12	84	13,44
Total Laparosticti	41	281	44,96
GLAPHYRIDAE	4	70	11,2
MELOLONTHIDAE	22	165	26,4
EUCHIRIDAE	1	1	0,16
RUTELIDAE	10	55	8,8
DYNASTIDAE	4	8	1,28
CETONIIDAE	17	45	7,2
Total Pleurosticti	58	344	55,04
Total Laparosticti+Pleurosticti	99	625	100

Tab. II - Chorotype analysis of scarab beetles in Turkey. Number of species and percent values of Laparosticti and Pleurosticti.

COLEOPTERA SCARABAEOIDEA	LAPARO	%	PLEURO	%	TOTAL	%
Holarctic	4	1,4	0	0	4	0,6
Asiatic-European	7	2,5	2	0,6	9	1,4
Sibero-European	11	3,9	7	2	18	2,8
Centralasiatic-European-Mediterranean	10	3,6	1	0,3	11	1,7
Centralasiatic-European	14	5	1	0,3	15	2,4
Centralasiatic-Mediterranean	7	2,5	1	0,3	8	1,3
Turano-European-Mediterranean	11	3,9	1	0,3	12	1,9
Turano-European	9	3,2	0	0	9	1,4
Turano-Mediterranean	16	5,7	9	2,6	25	4
Europeo-Mediterranean	2	0,7	2	0,6	4	0,6
SW-Asiatic	27	9,6	46	13,4	73	11,7
European	19	6,8	6	1,7	25	4
Centraleuropean	0	0	3	0,9	3	0,5
S-European	12	4,3	24	7	36	5,8
E-European	1	0,4	0	0	1	0,2
Mediterranean	19	6,8	4	1,2	23	3,7
E-Mediterranean	38	13,5	55	16	93	14,9
Mediterraneo-Sindian	1	0,4	0	0	1	0,2
Afrotropico-Indo-Mediterranean	1	0,4	1	0,3	2	0,3
Afrotropico-Mediterranean	1	0,4	0	0	1	0,2
Asiatic	0	0	1	0,3	1	0,2
Saharo-Sahelo-Sindian	1	0,4	0	0	1	0,2
Saharo-Turano-Sindian	2	0,7	0	0	2	0,3
Centralasiatic	6	2,1	0	0	6	1
Turanian	4	1,4	4	1,2	8	1,3
ENDEMICS	58	20,6	176	51,2	234	37,4
TOTAL SPECIES	281		344		625	

Tab. III - Endemic species of scarab beetles of Turkey: number of species and percent values of Laparosticti and Pleurosticti for each category.

ENDEMIC	LAPARO	%	PLEURO	%	TOTAL	%
Anatolian	19	6,8	47	13,7	66	10,6
W-Anatolian	1	0,3	20	0,6	21	3,4
S-Anatolian (Taurian)	19	6,8	68	20	87	14
SE-Anatolian (Kurdish)	1	0,3	10	2,9	11	1,7
Armenian/Armeno-Caucasian	8	2,8	20	0,6	28	4,5
N-Anatolian (Pontic)	3	1,1	4	1,2	7	1,1
Kolkhido-Armenian	6	2,1	2	0,6	8	1,3
Kolkhidian	1	0,3	1	0,3	2	0,3
Cypriot	0	0	4	1,2	4	0,6
TOTAL ENDEMIC SPECIES	58	20,6	176	51,2	234	37,4
TOTAL SPECIES	281		344		625	

Tab. IV - Checklist of the scarab beetles of Turkey with their main chorotype; ? = uncertain record.

COLEOPTERA SCARABAEOIDEA	CHOROTYPE
TROGIDAE	
<i>Trox hispidus</i> (Pontoppidan, 1763)	Centralasiatic-European
<i>Trox klapperichi</i> Pittino, 1983	SW- Asiatic
<i>Trox litoralis</i> Pittino, 1991	E-Mediterranean
<i>Trox perrisi</i> Fairmaire, 1868	European
<i>Trox sabulosus</i> (Linné, 1758)	Sibero-European
<i>Trox scaber</i> (Linné, 1767)	Holarctic
<i>Trox sordidatus</i> Balthasar, 1936	E-Mediterranean
<i>Trox transversus</i> Reiche, 1856	E-Mediterranean
GLARESIDAE	
<i>Glareis holzschuhi</i> Petrovitz, 1968	Endemic
GEOTRUPIDAE	
<i>Bolbelasmus nireus</i> Reitter, 1895	Endemic
<i>Bolbelasmus tauricus</i> Petrovitz, 1973	Endemic
<i>Bolbelasmus unicornis</i> (Schrank, 1789)	S-European
<i>Typhoeus fossor</i> Walzl, 1838	E-Mediterranean
<i>Anoplotrupes stercorosus</i> (Scriba, 1796)	European
<i>Geotrupes mutator</i> Marsham, 1802	Centralasiatic-European
<i>Geotrupes spiniger</i> Marsham, 1802	Turano-European
<i>Geotrupes stercorarius</i> Linné, 1758	Asiatic-European
<i>Glyptogeotrupes molestus</i> Faldermann, 1835	Endemic
<i>Thorectes asperifrons</i> Fairmaire, 1866	Endemic
<i>Thorectes brullei</i> (Jekel, 1865)	E-Mediterranean
<i>Trypocopris amedei</i> (Fairmaire, 1861)	Endemic
<i>Trypocopris caucasicus</i> Weise, 1879	Endemic
<i>Trypocopris fulgidus</i> Motschulsky, 1845	Endemic
<i>Trypocopris vernalis</i> (Linné, 1758)	European
<i>Lethrus apterus</i> (Laxmann, 1770)	S-European
<i>Lethrus armeniacus</i> Reitter, 1890	Endemic
<i>Lethrus brachiicollis</i> Fairmaire, 1855	E-Mediterranean
<i>Lethrus elephas</i> Reitter, 1890	E-Mediterranean
<i>Lethrus fallax</i> Nikolajev, 1975	Endemic
<i>Lethrus macrognathus</i> Fairmaire, 1866	Endemic
<i>Lethrus raymondi</i> Reitter, 1890	E-Mediterranean
<i>Lethrus rotundicollis</i> Fairmaire, 1866	E-Mediterranean
<i>Lethrus schauvi</i> Reitter, 1890	E-Mediterranean
HYBOSORIDAE	
<i>Hybosorus illigeri</i> Reiche, 1853	Turano-Mediterranean
<i>Seleucosorus punctatissimus</i> (Reiche, 1861)	SW-Asiatic

ORPHNIDAE	
<i>Chaetonyx robustus</i> Schaum, 1862 (sensu lato)	S-European
<i>Hybalus angustatus</i> Lucas, 1855 ?	Mediterranean
OCHODAEIDAE	
<i>Ochodaeus chrysomeloides</i> (Schrank, 1781) ?	European
<i>Ochodaeus cornifrons</i> Solsky, 1876	Turano-Mediterranean
<i>Ochodaeus holzschuhi</i> Petrovitz, 1971	Endemic
<i>Ochodaeus integriceps</i> Semenov, 1891 ?	Endemic
<i>Ochodaeus seleuciensis</i> Petrovitz, 1963	Endemic
<i>Ochodaeus thalycroides</i> Reitter, 1893	E-Mediterranean
APHODIIDAE	
<i>Eremazus unistriatus</i> Mulsant, 1851	Saharo-Turano-Sindian
<i>Aphodius aequalis</i> A. Schmidt, 1907	Turano-Mediterranean
<i>Aphodius albosetosus</i> Pittino, 1995	Endemic
<i>Aphodius alkani</i> Petrovitz, 1963	Endemic
<i>Aphodius amanicus</i> Stebnicka, 1978	Endemic
<i>Aphodius ambulans</i> Petrovitz, 1971	SW-Asiatic
<i>Aphodius anatolicus</i> Petrovitz, 1963	Endemic
<i>Aphodius anemurensis</i> Petrovitz, 1968	Endemic
<i>Aphodius angulosus</i> Harold, 1869	E-Mediterranean
<i>Aphodius arenarius</i> (Olivier, 1789)	European
<i>Aphodius arsisaensis</i> Petrovitz, 1968	Endemic
<i>Aphodius asphaltinus</i> Kolenati, 1846	Endemic
<i>Aphodius bidens</i> Solsky, 1876 ?	Centralasiatic
<i>Aphodius biguttatus</i> Germar, 1824	European
<i>Aphodius bispinifrons</i> Reitter, 1889	Endemic
<i>Aphodius bolognai</i> Carpaneto & Piattella, 1989	Endemic
<i>Aphodius borealis</i> Gyllenhal, 1827	Holarctic
<i>Aphodius brignolii</i> Carpaneto, 1973	Endemic
<i>Aphodius cartalinus</i> Olsoufieff, 1918	Endemic
<i>Aphodius citellorum</i> Semenov & Medvedev, 1928	E-European
<i>Aphodius clathratus</i> Reitter, 1892	Armenian
<i>Aphodius clermonti</i> Reitter, 1907	Turano-Mediterranean
<i>Aphodius cognatus</i> Fairmaire, 1860	Centralasiatic-Mediterranean
<i>Aphodius coniugatus</i> (Panzer, 1795)	European
<i>Aphodius consputus</i> Creutzer, 1799	Europeo-Mediterranean
<i>Aphodius constans</i> Duftschmid, 1805	European
<i>Aphodius contaminatus</i> (Herbst, 1783)	European
<i>Aphodius contractus</i> Klug, 1845	Saharo-Sahelo-Sindian
<i>Aphodius convexus</i> Erichson, 1848	Centralasiatic-Europeo-Mediterranean
<i>Aphodius cribrarius</i> Brullé, 1836	Mediterranean

<i>Aphodius dauricus</i> Harold, 1863 ?	Centralasiatic
<i>Aphodius depressus</i> (Kugelann, 1792)	Sibero-European
<i>Aphodius deverticulus</i> Petrovitz, 1961	Endemic
<i>Aphodius digitatus</i> Harold, 1871	SW-Asiatic
<i>Aphodius distinctus</i> (O.F. Müller, 1776)	Centralasiatic-European
<i>Aphodius elephantinus</i> Petrovitz, 1967	Endemic
<i>Aphodius erraticus</i> (Linné, 1758)	Asiatic-European
<i>Aphodius fimetarius</i> (Linné, 1758)	Asiatic-European
<i>Aphodius foetidus</i> (Herbst, 1783)	Europeo-Mediterranean
<i>Aphodius fossor</i> (Linné, 1758)	Sibero-European
<i>Aphodius fumigatulus</i> Reitter, 1892	SW-Asiatic
<i>Aphodius fuscus</i> Reitter, 1892	Endemic
<i>Aphodius ghardimaouensis</i> Balthasar, 1929	Mediterranean
<i>Aphodius gilvipennis</i> Balthasar, 1946	Turano-Mediterranean
<i>Aphodius granarius</i> (Linné, 1767)	Turano-Europeo-Mediterranean
<i>Aphodius haemorrhoidalis</i> (Linné, 1758)	Asiatic-European
<i>Aphodius hilaris</i> Harold, 1869 ?	SW-Asiatic
<i>Aphodius hydrochaeris</i> (Fabricius, 1798)	Turano-Mediterranean
<i>Aphodius hyxos</i> Petrovitz, 1962	Mediterranean
<i>Aphodius ibericus</i> Harold, 1874	Mediterranean
<i>Aphodius ictericus</i> (Laicharting, 1781)	European
<i>Aphodius immundus</i> Creutzer, 1799	Centralasiatic-European
<i>Aphodius isikdagensis</i> Balthasar, 1952	Endemic
<i>Aphodius kermanschahensis</i> Petrovitz, 1959	SW-Asiatic
<i>Aphodius kisilkurni</i> Solsky, 1846	Turano-Mediterranean
<i>Aphodius koshantschikovi</i> Jacobson, 1911	E-Mediterranean
<i>Aphodius kraatzi</i> Harold, 1868	Turano-European
<i>Aphodius lederi</i> Harold, 1876	Endemic
<i>Aphodius lepidulus</i> Harold, 1866	SW-Asiatic
<i>Aphodius libanonensis</i> Petrovitz, 1958	SW-Asiatic
<i>Aphodius linearis</i> Reiche & Saulcy, 1856	Mediterranean
<i>Aphodius lineimargo</i> Reitter, 1893	SW-Asiatic
<i>Aphodius lineolatus</i> Illiger, 1803	Mediterranean
<i>Aphodius lividus</i> (Olivier, 1789)	Mediterranean
<i>Aphodius lugens</i> Creutzer, 1799	Turano-Mediterranean
<i>Aphodius luridus</i> (Fabricius, 1775)	Asiatic-European
<i>Aphodius maculatus</i> Sturm, 1800	European
<i>Aphodius melanostictus</i> W. Schmidt, 1840	Centralasiatic-Europeo-Mediterranean
<i>Aphodius menetriesi</i> Ménétries, 1849	Turanian
<i>Aphodius merdarius</i> (Fabricius, 1775)	Turano-European
<i>Aphodius moestus</i> (Fabricius, 1801)	Afrotropico-Indo-Mediterranean

<i>Aphodius muchei</i> Petrovitz, 1962	Endemic
<i>Aphodius muscorum</i> Adam, 1994 (= <i>niger</i> auctt. nec Panzer, 1797)	European
<i>Aphodius nanoides</i> Balthasar, 1961	Endemic
<i>Aphodius obscurus</i> (Fabricius, 1792)	European
<i>Aphodius ornatulus</i> Harold, 1866	SW-Asiatic
<i>Aphodius ovitensis</i> Pittino & Ballerio, 1994	Endemic
<i>Aphodius paracoenosus</i> Balthasar & Hrubant, 1960	S-European
<i>Aphodius paykulli</i> Bedel, 1907	European
<i>Aphodius persicus</i> Petrovitz, 1961	SW-Asiatic
<i>Aphodius plagiatus</i> (Linné, 1767)	Asiatic-European
<i>Aphodius planicollis</i> Reitter, 1890	Endemic
<i>Aphodius porcus</i> (Fabricius, 1792) ?	European
<i>Aphodius prodromus</i> (Brahm, 1790)	Centralasiatic-European
<i>Aphodius pubescens</i> Sturm, 1800	S-European
<i>Aphodius punctatosulcatus</i> Sturm, 1805 (= <i>sabulicola</i> Thomson, 1868)	Sibero-European
<i>Aphodius punctipennis</i> Erichson, 1848	Turano-European-Mediterranean
<i>Aphodius pusillus</i> (Herbst, 1789)	Sibero-European
<i>Aphodius quadriguttatus</i> (Herbst, 1783)	Turano-European-Mediterranean
<i>Aphodius quadrimaculatus</i> (Linné, 1761)	Turano-European-Mediterranean
<i>Aphodius quadrinaevulus</i> Reitter, 1892	Endemic
<i>Aphodius resli</i> Petrovitz, 1962	Endemic
<i>Aphodius reyi</i> Reitter, 1892	European
<i>Aphodius rhodiensis</i> Baraud, 1976	Endemic
<i>Aphodius rufipes</i> (Linné, 1758)	Sibero-European
<i>Aphodius rufus</i> (Moll, 1782)	Sibero-European
<i>Aphodius satanas</i> Carpaneto, 1976	Endemic
<i>Aphodius satellitius</i> (Herbst, 1789)	Turano-European-Mediterranean
<i>Aphodius scrofa</i> (Fabricius, 1787)	Centralasiatic-European
<i>Aphodius scrutator</i> (Herbst, 1789)	S-European
<i>Aphodius sculpturatus</i> Reitter, 1892	SW-Asiatic
<i>Aphodius serotinus</i> (Panzer, 1799)	Sibero-European
<i>Aphodius sertavulensis</i> Pittino, 1988	Endemic
<i>Aphodius sordidus</i> (Fabricius, 1775)	Sibero-European
<i>Aphodius spinosus</i> Koshantschikov, 1894	Centralasiatic-European
<i>Aphodius sticticus</i> (Panzer, 1798)	European
<i>Aphodius stolzi</i> Reitter, 1906	Mediterranean
<i>Aphodius striatulus</i> Waltl, 1835	Mediterranean
<i>Aphodius sturmi</i> Harold, 1870	Centralasiatic-European-Mediterranean
<i>Aphodius suarius</i> Faldermann, 1835	Mediterranean
<i>Aphodius subterraneus</i> (Linné, 1758)	Sibero-European
<i>Aphodius subtilitarsis</i> Petrovitz, 1963	Endemic

<i>Aphodius suffertus</i> A. Schmidt, 1916	E-Mediterranean
<i>Aphodius suturinigra</i> A. Schmidt, 1916	SW-Asiatic
<i>Aphodius syriacus</i> Harold, 1863	SW-Asiatic
<i>Aphodius tarsensis</i> Petrovitz, 1967	Endemic
<i>Aphodius tauricola</i> Hrubant, 1961	Endemic
<i>Aphodius tbermicola</i> Sturm, 1800	S-European
<i>Aphodius trucidatus</i> Harold, 1863	Centralasiatic
<i>Aphodius uliginosus</i> (Hardy, 1847)	Holarctic
<i>Aphodius varians</i> Duftschmid, 1805	Turano-Europeo-Mediterranean
<i>Aphodius vittatus</i> Say, 1825	Holarctic
<i>Aphodius wewalkai</i> Petrovitz, 1971	Endemic
<i>Aphodius zurcheri</i> Reitter, 1908	Endemic
<i>Euheptaulacus carinatus</i> (Germar, 1824)	Sibero-European
<i>Euheptaulacus sus</i> (Herbst, 1783)	Turano-European
<i>Osmanius balthasari</i> (Petrovitz, 1963)	Endemic
<i>Paracoptochirus petrovitzi</i> Branco & Baraud, 1988	Endemic
<i>Paracoptochirus singularis</i> (Harold, 1868)	E-Mediterranean
<i>Oxyomus silvestris</i> (Scopoli, 1763)	Centralasiatic-Europeo-Mediterranean
<i>Araenius horticola</i> Harold, 1869	Turano-Mediterranean
<i>Brindalus porcicollis</i> (Illiger, 1803)	Mediterranean
<i>Leiopsammodius aegialius</i> Adam, 1986	Endemic
<i>Leiopsammodius belloii</i> (Pierotti, 1981)	E-Mediterranean
<i>Psammodius basalis</i> (Mulsant & Rey, 1871)	Mediterranean
<i>Psammodius laevipennis</i> A. Costa, 1844	Turano-Europeo-Mediterranean
<i>Psammodius nocturnus</i> Reitter, 1892	E-Mediterranean
<i>Psammodius pierottii</i> Pittino, 1979	S-European
<i>Platyotomus tibialis</i> (Fabricius, 1798)	Turano-Mediterranean
<i>Platyotomus variolosus</i> (Kolenati, 1846)	Centralasiatic
<i>Pleurophorus anatolicus</i> Petrovitz, 1961	SW-Asiatic
<i>Pleurophorus caesus</i> (Creutzer, 1796)	Centralasiatic-Europeo-Mediterranean
<i>Pleurophorus pannonicus</i> Petrovitz, 1961	Centralasiatic-European
<i>Rhyssemodes orientalis</i> (Mulsant & Godart, 1874)	Centralasiatic-Mediterranean
<i>Rhyssemodes turcicus</i> Pittino & Rakovic, 1984	Endemic
<i>Rhyssemus annaedicatus</i> Pierotti, 1980	E-Mediterranean
<i>Rhyssemus berytensis</i> Marseul, 1878 sensu lato	E-Mediterranean
<i>Rhyssemus germanus</i> (Linné, 1767)	Centralasiatic-European
<i>Rhyssemus insularis</i> Pittino, 1984	E-Mediterranean
<i>Rhyssemus macedonicus</i> Bénard, 1923	E-Mediterranean
<i>Rhyssemus mediterranicus</i> Petrovitz, 1971	E-Mediterranean
<i>Rhyssemus osmanlis</i> W. Koshantschikov, 1916	Endemic
<i>Rhyssemus ponticus</i> Petrovitz, 1962	Endemic
<i>Rhyssemus resslii</i> Petrovitz, 1965	Endemic

SCARABAEIDAE	
<i>Gymnopleurus flagellatus</i> (Fabricius, 1787)	Centralasiatic-Mediterranean
<i>Gymnopleurus Geoffroyi</i> (Fuessly, 1775)	Turano-Mediterranean
<i>Gymnopleurus mimus</i> Balthasar, 1934	SW-Asiatic
<i>Gymnopleurus mopsus</i> (Pallas, 1781)	Centralasiatic-Mediterranean
<i>Gymnopleurus sturmi</i> MacLeay, 1821	Mediterranean
<i>Scarabaeus armeniacus</i> Ménétries, 1832	E-Mediterranean
<i>Scarabaeus babori</i> Balthasar, 1934	Centralasiatic
<i>Scarabaeus irakensis</i> Stofla, 1938	SW-Asiatic
<i>Scarabaeus pius</i> Illiger, 1803	E-Mediterranean
<i>Scarabaeus sacer</i> Linné, 1758	Mediterraneo-Sindian
<i>Scarabaeus typhon</i> Fischer, 1823	Centralasiatic-Mediterranean
<i>Scarabaeus variolosus</i> Fabricius, 1787	Mediterranean
<i>Scarabaeus wilsoni</i> Waterhouse, 1890	SW-Asiatic
<i>Sisyphus schaefferi</i> (Linné, 1758)	Centralasiatic-Europeo-Mediterranean
<i>Copris armeniacus</i> Faldermann, 1835 = <i>C. felschei</i> Reitter, 1893	Endemic
<i>Copris hispanus</i> (Linné, 1764)	Centralasiatic-Mediterranean
<i>Copris lunaris</i> (Linné, 1758)	Turano-European
<i>Euoniticellus fulvus</i> (Goeze, 1777)	Turano-Europeo-Mediterranean
<i>Euoniticellus pallens</i> (Olivier, 1789)	Saharo-Turano-Sindian
<i>Euoniticellus pallipes</i> (Fabricius, 1781)	Centralasiatic-Europeo-Mediterranean
<i>Paroniticellus festivus</i> (Steven, 1809)	Turanian
<i>Bubas bubaloides</i> Janssens, 1938	Mediterranean
<i>Chironitis furcifer</i> (Rossi, 1792)	Turano-Mediterranean
<i>Chironitis haroldi</i> (Ballion, 1870)	Turano-Mediterranean
<i>Chironitis hungaricus</i> (Herbst, 1789)/ <i>C. pamphilus</i> (Ménétries, 1849)	Turano-European
<i>Onitis alexis</i> Klug, 1835	Afrotropico-Mediterranean
<i>Onitis damoetas</i> Steven, 1806	E-Mediterranean
<i>Onitis ezechias</i> Reiche, 1856	E-Mediterranean
<i>Onitis humerosus</i> (Pallas, 1771)	Turano-Mediterranean
<i>Caccobius histerooides</i> (Ménétries, 1832)	Turano-Mediterranean
<i>Caccobius mundus</i> (Ménétries, 1838)	E-Mediterranean
<i>Caccobius schreberi</i> (Linné, 1767)	Turano-Europeo-Mediterranean
<i>Euonthophagus amyntas</i> (Olivier, 1789)	Centralasiatic-European
<i>Euonthophagus atramentarius</i> (Ménétries, 1832)	E-Mediterranean
<i>Euonthophagus gibbosus</i> (Scriba, 1790)	Centralasiatic-European
<i>Euonthophagus sulcicollis</i> Reitter, 1892	Turano-Mediterranean
<i>Onthophagus aleppensis</i> Redtenbacher, 1843	SW-Asiatic
<i>Onthophagus anatolicus</i> Petrovitz, 1962	Endemic
<i>Onthophagus andalusicus</i> Waltl, 1835	Mediterranean
<i>Onthophagus angorensis</i> Petrovitz, 1963	E-Mediterranean

<i>Onthophagus arvicola</i> Reitter, 1892 (= <i>nuchmenus</i> auct. nec Kolenati, 1846)	E-Mediterranean
<i>Onthophagus basipustulatus</i> Hayden, 1889 ?	Centralasiatic
<i>Onthophagus carpanetoi</i> Pittino, 1982	SW-Asiatic
<i>Onthophagus citellorum</i> Petrovitz, 1967	Endemic
<i>Onthophagus coenobita</i> (Herbst, 1783)	Centralasiatic-European
<i>Onthophagus cruciatus</i> Ménétries, 1832	E-Mediterranean
<i>Onthophagus dellacasai</i> Pittino & Mariani, 1981	E-Mediterranean
<i>Onthophagus dorsosignatus</i> d'Orbigny, 1898	SW-Asiatic
<i>Onthophagus falzonii</i> Goidanich, 1926	SW-Asiatic
<i>Onthophagus fissicornis</i> (Steven, 1809)	E-Mediterranean
<i>Onthophagus fissinatus</i> Fairmaire, 1895	SW-Asiatic
<i>Onthophagus formaneki</i> Reitter, 1897	Endemic
<i>Onthophagus fracticornis</i> (Preyssler, 1790)	Turano-European
<i>Onthophagus furcatus</i> (Fabricius, 1781)	Turano-European-Mediterranean
<i>Onthophagus illyricus</i> (Scopoli, 1763)	Turano-European
<i>Onthophagus furcicornis</i> Reitter, 1893	SW-Asiatic
<i>Onthophagus gibbulus</i> (Pallas, 1781)	Centralasiatic-European
<i>Onthophagus grossepunctatus</i> Reitter, 1905	S-European
<i>Onthophagus kindermanni</i> Harold, 1877	S-European
<i>Onthophagus lemur</i> (Fabricius, 1781)	European
<i>Onthophagus lemuroides</i> d'Orbigny, 1898	SW-Asiatic
<i>Onthophagus leucostigma</i> (Steven, 1811)	Turanian
<i>Onthophagus lucidus</i> (Sturm, 1800)	E-Mediterranean
<i>Onthophagus macedonicus</i> Miksic, 1959	E-Mediterranean
<i>Onthophagus marginalis</i> Gebler, 1817	Asiatic-European
<i>Onthophagus nebulosus</i> Reiche, 1864	Mediterranean
<i>Onthophagus novaki</i> Boucomont & Gillet, 1927	E-Mediterranean
<i>Onthophagus nuchicornis</i> (Linné, 1758)	Centralasiatic-European-Mediterranean
<i>Onthophagus opacicollis</i> Reitter, 1892	Mediterranean
<i>Onthophagus osellai</i> Pittino, 1982	SW-Asiatic
<i>Onthophagus ovarus</i> (Linné, 1767)	Turano-European
<i>Onthophagus ponticus</i> Harold, 1883	S-European
<i>Onthophagus ruficapillus</i> Brullé, 1832	S-European
<i>Onthophagus sacharovskii</i> Olsoufieff, 1918	Endemic
<i>Onthophagus sericatus</i> Reitter, 1893	E-Mediterranean
<i>Onthophagus speculifer</i> Solsky, 1876	Turanian
<i>Onthophagus suermelii</i> Petrovitz, 1963	Endemic
<i>Onthophagus suturellus</i> Brullé, 1832	E-Mediterranean
<i>Onthophagus taurus</i> (Schreber, 1759)	Centralasiatic-European-Mediterranean
<i>Onthophagus tricuspis</i> Semenov, 1899	Endemic
<i>Onthophagus truchmenus</i> Kolenati, 1846 ?	Endemic

<i>Onthophagus vacca</i> (Linné, 1767)	Turano-Europeo-Mediterranean
<i>Onthophagus verticicornis</i> (Laicharting, 1781)	Centralasiatic-European
GLAPHYRIDAE	
<i>Amphicoma ciliata</i> Ménériés, 1836	Endemic
<i>Eulasia (Eulasia) arctos</i> (Pallas, 1781)	E-Mediterranean
<i>Eulasia (Eulasia) aurantiaca</i> (Reitter, 1890)	Endemic
<i>Eulasia (Eulasia) bicolor</i> (Waldl, 1838)	E-Mediterranean
<i>Eulasia (Eulasia) bombylifformis</i> (Pallas, 1781)	Turano-Mediterranean
<i>Eulasia (Eulasia) corniculata</i> (Reitter, 1903)	Endemic
<i>Eulasia (Eulasia) cornifrons</i> (Reitter, 1903)	Endemic
<i>Eulasia (Eulasia) chrysopyga</i> (Faldermann, 1835)	Endemic
<i>Eulasia (Eulasia) diadema</i> (Reitter, 1890)	Endemic
<i>Eulasia (Eulasia) ernae</i> (Petrovitz, 1962)	Endemic
<i>Eulasia (Eulasia) hyrax</i> Truqui, 1848	E-Mediterranean
<i>Eulasia (Eulasia) montana</i> (Reitter, 1890)	Endemic
<i>Eulasia (Eulasia) niidicollis</i> (Reiche, 1862)	SW-Asiatic
<i>Eulasia (Eulasia) praeusta</i> (Champenois, 1896)	SW-Asiatic
<i>Eulasia (Rudeulasia) anemurensis</i> (Petrovitz, 1964)	Endemic
<i>Eulasia (Rudeulasia) chalybaea</i> (Faldermann, 1835)	SW-Asiatic
<i>Eulasia (Rudeulasia) eiselti</i> (Petrovitz, 1967)	Endemic
<i>Eulasia (Rudeulasia) fastuosa</i> (Reitter, 1890)	E-Mediterranean
<i>Eulasia (Rudeulasia) genei</i> Truqui, 1848	SW-Asiatic
<i>Eulasia (Rudeulasia) harmonia</i> (Petrovitz, 1968)	Endemic
<i>Eulasia (Rudeulasia) hybrida</i> (Reitter, 1890)	Endemic
<i>Eulasia (Rudeulasia) papaveris</i> (Sturm, 1843)	SW-Asiatic
<i>Eulasia (Rudeulasia) pulchra</i> (Reitter, 1890)	SW-Asiatic
<i>Eulasia (Rudeulasia) speciosa</i> (Champenois, 1900)	SW-Asiatic
<i>Eulasia (Rudeulasia) straussi</i> (Ganglbauer, 1905)	E-Mediterranean
<i>Eulasia (Vittateulasia) pareyssei</i> (Brullé, 1832)	E-Mediterranean
<i>Eulasia (Vittateulasia) vittata</i> (Fabricius, 1775)	E-Mediterranean
<i>Glaphyrus festivus</i> Ménériés, 1836	SW-Asiatic
<i>Glaphyrus micans</i> Faldermann, 1835	W-Anatolic
<i>Glaphyrus oxypterus</i> (Pallas, 1771)	Sibero-European
<i>Glaphyrus rothi</i> Harold, 1869	E-Mediterranean
<i>Glaphyrus sequensi</i> Reitter, 1903	Endemic
<i>Glaphyrus superbus</i> Champenois, 1898	Endemic
<i>Glaphyrus varians</i> Ménériés, 1836	Endemic
<i>Pygopleurus akbesianus</i> (Petrovitz, 1957)	Endemic
<i>Pygopleurus aleppensis</i> (Petrovitz, 1957)	E-Mediterranean
<i>Pygopleurus anemoninus</i> (Brullé, 1832)	E-Mediterranean
<i>Pygopleurus angulatus</i> (Fairmaire, 1884)	Endemic

<i>Pygopleurus basalis</i> (Reitter, 1890)	SW-Asiatic
<i>Pygopleurus cyaneoviolaceus</i> Motschulsky, 1859	Endemic
<i>Pygopleurus cyanescens</i> (Reitter, 1890)	Endemic
<i>Pygopleurus demelti</i> (Petrovitz, 1967)	Endemic
<i>Pygopleurus despectus</i> (Petrovitz, 1957)	Endemic
<i>Pygopleurus diffusus</i> (Petrovitz, 1957)	E-Mediterranean
<i>Pygopleurus distinctus</i> (Faldermann, 1835)	SW-Asiatic
<i>Pygopleurus foina</i> (Reitter, 1890)	SW-Asiatic
<i>Pygopleurus gordyenensis</i> (Petrovitz, 1971)	Endemic
<i>Pygopleurus hirsutus</i> (Brullé, 1832)	E-Mediterranean
<i>Pygopleurus humeralis</i> (Brullé, 1832)	E-Mediterranean
<i>Pygopleurus immundus</i> (Reitter, 1903)	SW-Asiatic
<i>Pygopleurus kareli</i> (Petrovitz, 1962)	Endemic
<i>Pygopleurus koniae</i> (Petrovitz, 1957)	SW-Asiatic
<i>Pygopleurus labamei</i> (Petrovitz, 1971)	Endemic
<i>Pygopleurus libanonensis</i> (Petrovitz, 1957)	E-Mediterranean
<i>Pygopleurus lucarellii</i> Piattella & Sabatinelli, 1992	Endemic
<i>Pygopleurus lycienseis</i> (Petrovitz, 1971)	Endemic
<i>Pygopleurus madenensis</i> (Petrovitz, 1968)	Endemic
<i>Pygopleurus medius</i> (Petrovitz, 1958)	Endemic
<i>Pygopleurus mithridates</i> (Petrovitz, 1962)	Endemic
<i>Pygopleurus monticola</i> (Petrovitz, 1964)	Endemic
<i>Pygopleurus ottomanus</i> Baraud, 1989	Endemic
<i>Pygopleurus ponticus</i> (Petrovitz, 1957)	SW-Asiatic
<i>Pygopleurus pseudomedius</i> (Miksic, 1964)	Endemic
<i>Pygopleurus pilotrachus</i> (Faldermann, 1835)	SW-Asiatic
<i>Pygopleurus ressi</i> (Petrovitz, 1963)	Endemic
<i>Pygopleurus rufovillosus</i> (Reitter, 1907)	Endemic
<i>Pygopleurus sexualis</i> (Petrovitz, 1968)	Endemic
<i>Pygopleurus simplex</i> (Petrovitz, 1963)	Endemic
<i>Pygopleurus tristis</i> (Petrovitz, 1968)	Endemic
<i>Pygopleurus vulpes</i> (Fabricius, 1781)	S-European
MELOLONTHIDAE	
<i>Acarina labrata</i> (Burmeister, 1855)	SW-Asiatic
<i>Acarina ottomana</i> (Baraud, 1965)	Endemic
<i>Acarina spiraea</i> (Pallas, 1773)	Sibero-European
<i>Amphimallon caucasicum</i> (Gyllenhal, 1817)	E-Mediterranean
<i>Amphimallon nigripenne</i> Reitter, 1902	Endemic
<i>Amphimallon solstitialis</i> (Linné, 1758)	Asiatic-European
<i>Amphimallon verticale</i> Burmeister, 1855	E-Mediterranean
<i>Anoxia (Anoxia) arenbergeri</i> Petrovitz, 1971	Endemic

<i>Anoxia (Anoxia) asiatica</i> Desbrochers, 1871	Endemic
<i>Anoxia (Anoxia) kraatzi</i> Reitter, 1890	Endemic
<i>Anoxia (Anoxia) lodosi</i> Baraud, 1990	Endemic
<i>Anoxia (Anoxia) maculiventris</i> Reitter, 1890	E-Mediterranean
<i>Anoxia (Anoxia) nicaeensis</i> Baraud, 1990	Endemic
<i>Anoxia (Anoxia) nigricolor</i> Pic, 1905	Endemic
<i>Anoxia (Anoxia) pasiphae</i> Reitter, 1890	E-Mediterranean
<i>Anoxia (Anoxia) pilosa</i> (Fabricius, 1792)	S-European
<i>Anoxia (Anoxia) scutellaris</i> Mulsant, 1842	S-European
<i>Anoxia (Anoxia) villosa</i> (Fabricius, 1781)	S-European
<i>Anoxia (Mesanoxia) mauromoustakisi</i> Miksic, 1959	Endemic
<i>Anoxia (Protanoxia) ciliciensis</i> Baraud, 1989	Endemic
<i>Anoxia (Protanoxia) cingulata</i> Marseul, 1868	E-Mediterranean
<i>Anoxia (Protanoxia) cypria</i> Baraud, 1989	Endemic
<i>Anoxia (Protanoxia) orientalis</i> (Krynicky, 1832)	E-Mediterranean
<i>Anoxia (Protanoxia) smyrnensis</i> Petrovitz, 1965	SW-Asiatic
<i>Autoserica castanea</i> Arrow, 1913	Asiatic
<i>Cyphonoxia glasunovi</i> Semenov, 1896	Turano-Mediterranean
<i>Euserica modesta</i> Fairmaire, 1881	SW-Asiatic
<i>Haplidia akbesiana</i> Petrovitz, 1971	Mediterranean
<i>Haplidia armeniaca</i> Baraud, 1990	Endemic
<i>Haplidia baudii</i> Kraatz, 1882	E-Mediterranean
<i>Haplidia besucheti</i> Baraud, 1988	Endemic
<i>Haplidia bodemeyeri</i> Reitter, 1909	Endemic
<i>Haplidia caesarina</i> Reitter, 1902	Endemic
<i>Haplidia ciliciensis</i> Baraud, 1988	Endemic
<i>Haplidia claudii</i> Baraud, 1988	Endemic
<i>Haplidia dilatata</i> Reitter, 1902	Endemic
<i>Haplidia fissa</i> Burmeister, 1855	E-Mediterranean
<i>Haplidia graeca</i> Kraatz, 1882	E-Mediterranean
<i>Haplidia heinzorum</i> Baraud, 1990	Endemic
<i>Haplidia iranica</i> Petrovitz, 1970	SW-Asiatic
<i>Haplidia lodosi</i> Baraud, 1988	Endemic
<i>Haplidia migliaccioi</i> Baraud, 1988	Endemic
<i>Haplidia nitidula</i> Kraatz, 1882	Endemic
<i>Haplidia pamphyliensis</i> Baraud, 1988	Endemic
<i>Haplidia pilicollis</i> Petrovitz, 1967	E-Mediterranean
<i>Haplidia pruinosa</i> Baudi, 1870	Endemic
<i>Haplidia pubiventris</i> Kraatz, 1882	Endemic
<i>Haplidia rugicollis</i> Petrovitz, 1967	Endemic
<i>Haplidia sparsepunctata</i> Petrovitz, 1967	Endemic

<i>Haplidia tarsensis</i> Kraatz, 1882	Endemic
<i>Haplidia transversa</i> (Fabricius, 1801)	S-European
<i>Haplidia turcica</i> Kraatz, 1882	Endemic
<i>Haplidia vagepunctata</i> Kraatz, 1882	Endemic
<i>Haplidia wewalkai</i> Petrovitz, 1971	Endemic
<i>Holochelus costulatus</i> Frivaldsky, 1835	E-Mediterranean
<i>Holochelus lineolatus</i> Redtenbaker, 1889	Endemic
<i>Hoplia (Decamera) corniculata</i> Reitter, 1890	Endemic
<i>Hoplia (Decamera) pseudophilanthus</i> Petrovitz, 1967	Endemic
<i>Hoplia (Decamera) semirufa</i> Pic, 1908	Endemic
<i>Hoplia (Hoplia) colchica</i> Petrovitz, 1967	Endemic
<i>Hoplia (Hoplia) brunnipis</i> Bonelli, 1807	S-European
<i>Hoplia (Hoplia) kunzei</i> Schmidt, 1840	Endemic
<i>Hoplia (Hoplia) pentheri</i> Ganglbauer, 1906	Endemic
<i>Hoplia (Hoplia) pilifera</i> Desbrochers, 1869	Endemic
<i>Hoplia (Hoplia) pollinosa</i> Krynicki, 1832	S-European
<i>Hoplia (Hoplia) pontica</i> Petrovitz, 1967	Endemic
<i>Hoplia (Hoplia) schuberti</i> Petrovitz, 1962	Endemic
<i>Madorrogus glabricollis</i> (Reitter, 1888)	Turanian
<i>Maladera (Aserica) allemandi</i> Keith, 1998	Endemic
<i>Maladera (Aserica) armeniaca</i> Reitter, 1896	Endemic
<i>Maladera (Aserica) angusta</i> Baraud, 1990	Endemic
<i>Maladera (Aserica) attaliensis</i> Petrovitz, 1969	Endemic
<i>Maladera (Aserica) besucheti</i> Baraud, 1990	Endemic
<i>Maladera (Aserica) bruschii</i> Sabatinelli, 1977	Endemic
<i>Maladera (Aserica) cerrutii</i> Sabatinelli, 1977	Endemic
<i>Maladera (Aserica) loebli</i> Baraud, 1990	Endemic
<i>Maladera (Aserica) lyciensis</i> Petrovitz, 1969	Endemic
<i>Maladera (Aserica) ollivieri</i> Keith, 1998	Endemic
<i>Maladera (Aserica) punctatissima</i> (Faldermann, 1835)	Turano-Mediterranean
<i>Maladera (Aserica) seleuciniensis</i> Petrovitz, 1969	Endemic
<i>Maladera (Aserica) taurica</i> Petrovitz, 1969	Endemic
<i>Maladera (Aserica) vignai</i> Sabatinelli, 1977	Endemic
<i>Maladera (Aserica) villiersi</i> Petrovitz, 1969	Endemic
<i>Maladera (Aserica) wewalkai</i> Petrovitz, 1969	Endemic
<i>Melolontha albida</i> Frivaldszky, 1835	E-Mediterranean
<i>Melolontha anita</i> Reitter, 1901	Endemic
<i>Melolontha ciliciensis</i> Petrovitz, 1962	Endemic
<i>Melolontha hippocastani</i> Fabricius, 1801	Sibero-European
<i>Melolontha melolontha</i> (Linné, 1758)	Centraleuropean
<i>Melolontha pectoralis</i> Megerle von Mühlfeld, 1812	S-European

<i>Miltotrogus aequinoctialis</i> (Herbst, 1790)	Centraleuropean
<i>Miltotrogus angustifrons</i> Nonveiller, 1965	Endemic
<i>Miltotrogus arcilabris</i> Marseul, 1879	Endemic
<i>Miltotrogus armeniacus</i> Zeitzev, 1927	Endemic
<i>Miltotrogus brussensis</i> Nonveiller, 1965	Endemic
<i>Miltotrogus buodjelalae</i> Baraud, 1987	Endemic
<i>Miltotrogus escherichi</i> (Brenske, 1897)	Endemic
<i>Miltotrogus fallax</i> Marseul, 1879	E-Mediterranean
<i>Miltotrogus fraxinicola</i> (Sturm & Hagenbach, 1825)	E-Mediterranean
<i>Miltotrogus gracilis</i> Nonveiller, 1965	Endemic
<i>Miltotrogus gradojevici</i> Nonveiller, 1965	E-Mediterranean
<i>Miltotrogus kurdistanus</i> Petrovitz, 1968	Endemic
<i>Miltotrogus majusculus</i> Nonveiller, 1965	Endemic
<i>Miltotrogus mimicus</i> Reitter, 1902	Endemic
<i>Miltotrogus obenbergeri</i> Nonveiller, 1965	Endemic
<i>Miltotrogus phrygicus</i> Petrovitz, 1971	Endemic
<i>Miltotrogus pilicollis</i> (Gyllenhal, 1817)	S-European
<i>Miltotrogus syriacus</i> Brenske, 1886	E-Mediterranean
<i>Miltotrogus tauricus</i> Blanchard, 1850	E-Mediterranean
<i>Miltotrogus vernus</i> (Germar, 1823)	S-European
<i>Miltotrogus zimmermanni</i> Nonveiller, 1965	SW-Asiatic
<i>Omaloptia alternata</i> (Küster, 1849)	Sibero-European
<i>Omaloptia baraudi</i> (Galante Patiño, 1985)	Endemic
<i>Omaloptia corcyrae</i> (Baraud, 1965)	E-Mediterranean
<i>Omaloptia corpulenta</i> (J. Sahlberg, 1908)	E-Mediterranean
<i>Omaloptia diabolica</i> (Reitter, 1887)	E-Mediterranean
<i>Omaloptia erebea</i> (Baraud, 1965)	Endemic
<i>Omaloptia kiritshenkoi</i> (Medvedev, 1952)	S-European
<i>Omaloptia iris</i> Reitter, 1887	E-Mediterranean
<i>Omaloptia minuta</i> (Brenske, 1887)	E-Mediterranean
<i>Omaloptia nicolasi</i> (Baraud, 1965)	S-European
<i>Omaloptia pontica</i> Adam, 1994	Endemic
<i>Pachydema concinna</i> Burmeister, 1855	Endemic
<i>Paratriodonta demelti</i> (Petrovitz, 1963)	Endemic
<i>Paratriodonta difformipes</i> (Fairmaire, 1892)	Endemic
<i>Polyphylla adspersa</i> Motschulsky, 1853	Turano-Mediterranean
<i>Polyphylla fullo</i> (Linné, 1758)	Sibero-European
<i>Polyphylla olivieri</i> (Castelnau, 1840)	Endemic
<i>Polyphylla turkmenoglui</i> Petrovitz, 1965	Endemic
<i>Pseudotrematodes frivaldszkyi</i> (Ménétriés, 1836)	E-Mediterranean
<i>Rhizotrogus aestivus</i> (Olivier, 1789)	European

<i>Rhizotrogus schaufussi</i> Brenske, 1891	Endemic
<i>Rhizotrogus validus</i> Kraatz, 1884	SW-Asiatic
<i>Tanyproctus acrossoides</i> Reitter, 1902	Endemic
<i>Tanyproctus adanensis</i> Reitter, 1908	Endemic
<i>Tanyproctus aphodioides</i> Fairmaire, 1860	Endemic
<i>Tanyproctus carbonarius</i> Faldermann, 1835	Endemic
<i>Tanyproctus carceli</i> Fairmaire, 1884	Endemic
<i>Tanyproctus cariensis</i> Petrovitz, 1971	Endemic
<i>Tanyproctus demaisonii</i> Reitter, 1902	Endemic
<i>Tanyproctus faustus</i> Petrovitz, 1968	Endemic
<i>Tanyproctus holzschubi</i> Petrovitz, 1973	Endemic
<i>Tanyproctus kriechedorffi</i> Reitter, 1909	Endemic
<i>Tanyproctus latimanus</i> Reitter, 1902	Endemic
<i>Tanyproctus lydiensis</i> Petrovitz, 1971	Endemic
<i>Tanyproctus opacipennis</i> Petrovitz, 1968	Endemic
<i>Tanyproctus ovatus</i> Motschulsky, 1859	Endemic
<i>Tanyproctus pamphilus</i> Petrovitz, 1967	Endemic
<i>Tanyproctus pilimargo</i> Reitter, 1902	Endemic
<i>Tanyproctus portusus</i> Reitter, 1902	Endemic
<i>Tanyproctus reichei</i> Rambur, 1843	E-Mediterranean
<i>Tanyproctus riparius</i> Petrovitz, 1963	Endemic
<i>Tanyproctus samai</i> Piattella & Sabatinelli, 1996	Endemic
<i>Tanyproctus speculator</i> Petrovitz, 1963	Endemic
<i>Tanyproctus unicolor</i> Motschulsky, 1859	Endemic
<i>Tanyproctus verryi</i> Fairmaire, 1884	Endemic
<i>Triodonta asiatica</i> Brenske, 1890	Endemic
<i>Triodonta brignolii</i> Sabatinelli, 1977	Endemic
<i>Triodonta brunneipennis</i> Sahlberg, 1908	Endemic
<i>Triodonta dispar</i> Fairmaire, 1892	Endemic
<i>Triodonta eggeri</i> Rey, 1999	Endemic
<i>Triodonta flavimana</i> Burmeister, 1855	Endemic
<i>Triodonta judaica</i> Blanchard, 1850	Endemic
<i>Triodonta lateristria</i> Reitter, 1889	SW-Asiatic
<i>Xestotrogus validus</i> (Kraatz, 1884)	SW-Asiatic
EUCHIRIDAE	
<i>Propomacrus bimucronatus</i> (Pallas, 1781)	SW-Asiatic
RUTELIDAE	
<i>Adoretus gandolphei</i> (Guérin, 1859)	Mediterranean
<i>Adoretus sterbae</i> Reitter, 1909	Endemic
<i>Anisoplia (Anisoplia) agnata</i> Reitter, 1889	SW-Asiatic
<i>Anisoplia (Anisoplia) angorensis</i> Petrovitz, 1971	Endemic

<i>Anisoplia (Anisoplia) aprica</i> Erichson, 1847	Endemic
<i>Anisoplia (Anisoplia) abdita</i> Baraud, 1991	Endemic
<i>Anisoplia (Anisoplia) agricola</i> (Poda, 1761)	S-European
<i>Anisoplia (Anisoplia) armeniaca</i> Kraatz, 1883	Endemic
<i>Anisoplia (Anisoplia) bureschi</i> Zacharieva-Stoilova, 1958	E-Mediterranean
<i>Anisoplia (Anisoplia) chypealis</i> Reitter, 1889	Endemic
<i>Anisoplia (Anisoplia) dispar</i> Erichson, 1847	S-European
<i>Anisoplia (Anisoplia) enucleator</i> Baraud, 1991	Endemic
<i>Anisoplia (Anisoplia) faldermanni</i> Reitter, 1883	Endemic
<i>Anisoplia (Anisoplia) farraria</i> Erichson, 1847	SW-Asiatic
<i>Anisoplia (Anisoplia) hebes</i> Reitter, 1903	E-Mediterranean
<i>Anisoplia (Anisoplia) hirta</i> Zaitzev, 1918	Endemic
<i>Anisoplia (Anisoplia) keonigi</i> Reitter, 1895	Turanian
<i>Anisoplia (Anisoplia) imitatrix</i> Apfelbeck, 1909	E-Mediterranean
<i>Anisoplia (Anisoplia) inculta</i> Erichson, 1847	Endemic
<i>Anisoplia (Anisoplia) lanuginosa</i> Erichson, 1847	Endemic
<i>Anisoplia (Anisoplia) lata</i> Erichson, 1847	E-Mediterranean
<i>Anisoplia (Anisoplia) lodosi</i> Baraud, 1990	Endemic
<i>Anisoplia (Anisoplia) noahi</i> Petrovitz, 1973	Endemic
<i>Anisoplia (Anisoplia) parva</i> Kraatz, 1883	SW-Asiatic
<i>Anisoplia (Anisoplia) persiana</i> Biczok, 1940	SW-Asiatic
<i>Anisoplia (Anisoplia) reitteriana</i> Semenov, 1903	Endemic
<i>Anisoplia (Anisoplia) seleucidis</i> Baraud, 1991	Endemic
<i>Anisoplia (Anisoplia) signata</i> Faldermann, 1835	SW-Asiatic
<i>Anisoplia (Anisoplia) tenebralis</i> Burmeister, 1844	E-Mediterranean
<i>Anisoplia (Anisoplia) thessalica</i> Reitter, 1889	E-Mediterranean
<i>Anisoplia (Anisoplia) tunneri</i> Petrovitz, 1971	Endemic
<i>Anisoplia (Anisoplia) zwicki</i> (Fischer, 1823)	Turanian
<i>Anisoplia (Autanisoplia) austriaca</i> (Herbst, 1783)	S-European
<i>Anisoplia (Autanisoplia) merkli</i> Baraud, 1991	Endemic
<i>Anisoplia (Autanisoplia) tritici</i> Kiesenwetter, 1858	E-Mediterranean
<i>Anomala affinis</i> Ganglbauer, 1882	Endemic
<i>Anomala dubia</i> (Scopoli, 1763)	European
<i>Anomala osmanlis</i> Blanchard, 1859	E-Mediterranean
<i>Anomala solida</i> Erichson, 1847	S-European
<i>Asiopertha nazarena</i> Medvedev, 1949	SW-Asiatic
<i>Asiopertha ganglbaueri</i> (Reitter, 1885)	SW-Asiatic
<i>Blitopertha arenaria</i> (Brullé, 1832)	E-Mediterranean
<i>Blitopertha lineolata</i> Fischer von Waldheim, 1823	S-European
<i>Blitopertha majuscula</i> Medvedev, 1949	SW-Asiatic
<i>Brancoptilia leucaspis</i> (Castelnau, 1840)	SW-Asiatic

<i>Brancoptilia mesopotamica</i> (Pilleri, 1954)	SW-Asiatic
<i>Chaetopteropia muelleri</i> (Pilleri, 1954)	SW-Asiatic
<i>Chaetopteropia petrovitzi</i> (Machatschke, 1971)	Endemic
<i>Chaetopteropia segetum</i> (Herbst, 1783)	Sibero-European
<i>Chaetopteropia syriaca</i> (Burmeister, 1844)	SW-Asiatic
<i>Exomala arenicola</i> (Mulsant, 1870)	S-European
<i>Exomala bileki</i> (Petrovitz, 1968)	Endemic
<i>Exomala hirtella</i> (Brullé, 1832)	E-Mediterranean
<i>Pharaonus varicolorus</i> Burmeister, 1884	SW-Asiatic
<i>Phyllopertha horticola</i> (Linné, 1758)	Centralasiatic-European
DYNASTIDAE	
<i>Oryctes nasicornis</i> (Linné, 1758)	Centralasiatic-Mediterranean
<i>Pentodon algerinum</i> (Herbst, 1789)	Afrotropico-Indo-Mediterranean
<i>Pentodon bidens</i> (Pallas, 1771)	Turano-Europeo-Mediterranean
<i>Pentodon caminariium</i> (Faldermann, 1835)	SW-Asiatic
<i>Pentodon idiota</i> (Herbst, 1789)	S-European
<i>Pentodon quadridens</i> Gebler, 1845	SW-Asiatic
<i>Phyllognathus excavatus</i> (Forster, 1771)	Turano-Mediterranean
<i>Temnorhynchus</i> (<i>Temnorhynchus</i>) <i>baal</i> Reiche & Saulcy, 1856	E-Mediterranean
CETONIIDAE	
<i>Aethiessa mesopotamica</i> Burmeister, 1842	SW-Asiatic
<i>Cetonia aurata</i> (Linné, 1758)	Asiatic-European
<i>Cetonia delagrangi</i> Boucard, 1893	Endemic
<i>Cetonischema aeruginosa</i> (Drury, 1770)	European
<i>Cetonischema speciosa</i> (Adams, 1817)	SW-Asiatic
<i>Chromovalgus peyroni</i> (Mulsant, 1853)	Endemic
<i>Cryptovalgus niveus</i> (Hampe, ????)	Endemic
<i>Eupotosia affinis</i> (Andersch, 1797)	S-European
<i>Eupotosia mirifica</i> (Mulsant, 1842)	S-European
<i>Foveopotosia judith</i> (Reiche, 1871)	E-Mediterranean
<i>Gnorimus nobilis</i> (Linné, 1758)	European
<i>Gnorimus variabilis</i> (Linné, 1758)	European
<i>Gnorimus bartelsi</i> Faldermann, 1836	Endemic
<i>Gnorimus armeniacus</i> Reitter, 1887	Endemic
<i>Heterocnemis graeca</i> (Brullé, 1832)	Endemic
<i>Netocia aethiessina</i> Reitter, 1891	Endemic
<i>Netocia afflicta</i> (Gory & Percheron, 1833)	E-Mediterranean
<i>Netocia excavata</i> (Faldermann, 1835)	Turano-Mediterranean
<i>Netocia hungarica</i> (Herbst, 1790)	S-European
<i>Netocia subpilosa</i> (Desbrochers, 1869)	E-Mediterranean
<i>Netocia trojana</i> (Gory & Percheron, 1833)	E-Mediterranean

<i>Netocia turkestanica</i> (Kraatz, 1886)	Turanian
<i>Netocia vidua</i> (Gory & Percheron, 1833)	E-Mediterranean
<i>Osmoderma brevipenne</i> Pic, 1904	Endemic
<i>Osmoderma lassallei</i> Baraud & Tauzin, 1991	S-European
<i>Oxythyrea albopicta</i> (Motschulsky, 1854)	Endemic
<i>Oxythyrea cinctella</i> (Schaum, 1841)	Turano-Mediterranean
<i>Oxythyrea dulcis</i> Reitter, 1898	E-Mediterranean
<i>Oxythyrea funesta</i> (Poda, 1761)	Europeo-Mediterranean
<i>Oxythyrea noemi</i> Reiche & Saulcy, 1856	E-Mediterranean
<i>Potosia angustata</i> (Germar, 1817)	European
<i>Potosia besucheti</i> Alexis & Delpont, 1996	Endemic
<i>Potosia cuprea</i> (Fabricius, 1775)	Centralasiatic-Europeo-Mediterranean
<i>Potosia cuprina</i> (Motschulsky, 1849)	S-European
<i>Potosia funebris</i> (Gory & Percheron, 1833)	SW-Asiatic
<i>Potosia funesta</i> (Ménétriés, 1836)	SW-Asiatic
<i>Stalagmosoma albella</i> (Pallas, 1781)	SW-Asiatic
<i>Trichius abdominalis</i> Ménétriés, 1832	Endemic
<i>Trichius fasciatus</i> (Linné, 1758)	Asiatic-European
<i>Trichius orientalis</i> Reitter, 1894	SW-Asiatic
<i>Trichius sexualis</i> Bedel, 1906	S-European
<i>Tropinota hirta</i> (Poda, 1761)	Europeo-Mediterranean
<i>Tropinota hirtiformis</i> Reitter, 1913	Turano-Mediterranean
<i>Tropinota squalida</i> (Scopoli, 1783)	Mediterranean
<i>Valgus hemipterus</i> (Linné, 1758)	Turano-Mediterranean