

A REVIEW OF THE GENUS *MUSARIA* THOMSON, 1864 (COLEOPTERA: CERAMBYCIDAE) IN TURKEY WITH ZOOGEOGRAPHICAL REMARKS

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[Özdikmen, H. & Turgut, S. 2007. A review of the genus *Musaria* Thomson, 1864 (Coleoptera: Cerambycidae) in Turkey with zoogeographical remarks. Munis Entomology & Zoology 2 (2): 511-516]

ABSTRACT: Eleven species of the genus *Musaria* Thomson, 1864; namely, *Musaria affinis* (Harrer, 1784), *Musaria anatolica* Fuchs & Breuning, 1971, *Musaria astarte* Ganglbauer, 1885, *Musaria boeberi* Ganglbauer, 1884, *Musaria faldermanni* Faldermann, 1837, *Musaria kurdistana* Ganglbauer, 1884, *Musaria puncticollis* (Faldermann, 1837), *Musaria rubropunctata* (Goeze, 1777), *Musaria tuerki* (Ganglbauer, 1884), *Musaria volgensis* (Kraatz, 1883) and *Musaria wachanrui* Mulsant, 1851 were recorded in Turkey. Only one species, *Musaria anatolica* Fuchs & Breuning, 1971 among all given species is endemic to Turkey. For each taxon, the paper includes zoogeographical remarks and chorotype information.

KEY WORDS: *Musaria*, *Musaria argus*, Cerambycidae, Coleoptera, Turkey, new record.

Being first established in 1864 by Thomson, the genus *Musaria* with the type species *Saperda affinis* Panzer, 1795 = *Leptura affinis* Harrer, 1784 is placed in the Cerambycidae, Lamiinae. Mostly, previous studies of *Musaria* include faunistic records of Turkey as seen following data. The genus *Musaria* Thomson, 1864 is represented by sixteen species in Palearctic Region. Eleven of them, *Musaria affinis* (Harrer, 1784), *Musaria anatolica* Fuchs & Breuning, 1971, *Musaria astarte* Ganglbauer, 1885, *Musaria boeberi* Ganglbauer, 1884, *Musaria faldermanni* Faldermann, 1837, *Musaria kurdistana* Ganglbauer, 1884, *Musaria puncticollis* (Faldermann, 1837), *Musaria rubropunctata* (Goeze, 1777), *Musaria tuerki* (Ganglbauer, 1884), *Musaria volgensis* (Kraatz, 1883) and *Musaria wachanrui* Mulsant, 1851 have been known from Turkey.

ARRANGEMENT OF INFORMATION

Information in the present text is given in following order:

For each species, the whole subspecies are provided under the taxon names.

The data, Other names, Material examined, Records in Turkey, Distribution, Remarks and Chorotype under the title for each species is given.

Other names. In these parts, as possible as the whole other names including all infraspecific names (synonym, variety, morpha, form, aberration etc.) are provided.

Material examined. Material examined that is provided for only *Musaria argus* (Frölich, 1793) covers the original records for Turkey. The material is deposited in Gazi University (Ankara). This work was supported by a project of TUBITAK of which code is 105T329.

Records in Turkey. These parts include previous records that have been given by various authors in different literatures. The whole records are evaluated as only concerning province and locality in related reference. Each record is accompanied by the author's name and publication date of related reference.

Distribution. In these parts, the whole distribution areas in the world are provided for each taxon.

Remarks. In these parts, taxonomical and nomenclatural problems are discussed for some taxons and are given regional and general distribution range in Turkey chiefly.

Chorotype. The present zoogeographical characterization is based on the chorotype classification of Anatolian fauna, recently proposed by Vigna Taglianti et al. (1999). In the text, as possible as one chorotype description can be identified for each taxon.

Maps. The maps are given in appendix. For each taxon, a map showing distribution patterns in the provinces of Turkey is used. The maps were prepared by used ArcView GIS Version 3.1.

Musaria Thomson, 1864

[Type sp.: *Saperda affinis* Panzer, 1795 = *Leptura affinis* Harrer, 1784]

Remarks: *Musaria* Thomson, 1864 which is given as separate genus in the text has been regarded by some authors as a subgenus of *Phytoecia* Dejean, 1835.

***Musaria affinis* (Harrer, 1784)**

= ssp. *affinis* Harrer, 1784

= ssp. *nigropubescens* Reitter, 1888

= ssp. *altaica* Suvorov, 1913

= ssp. *nigrohirta* Müller, 1948

Other names: *oculata* Scopoli (nomen oblitum); *affinis* Panzer; *nigripes* Voet (preocc.); *bipunctata* Piller et Mitterpacher (preocc.); *haemorrhoidalis* Fabricius; *janus* Frölich; *nigritarsis* Schönherr; *circassica* Reitter; *starcki* Reitter; *subaurata* Pic; *compacta* Pic; *nigrina* Pic; *mutata* Pic.

Records in Turkey: Turkey (Danilevsky & Miroshnikov, 1985; Lodos, 1998); Turkey as *P. nigripes* (Lodos, 1998); Bolu prov.: Yedigöller National Park (Özdikmen & Hasbenli, 2004); ?European Turkey (Danilevsky, 2005b).

Distribution: Europe (Spain, France, Italy, Albania, Slovenia, Croatia, Bosnia-Herzegovina, Serbia, Macedonia, Greece, Bulgaria, ?European Turkey, Romania, Hungary, Austria, Switzerland, Germany, Czechia, Slovakia, Poland, Belorussia, Ukraine, Crimea, Moldavia, European Russia, European Kazakhstan), Siberia, Caucasus, Turkey, Syria.

Remarks: The species distributes probably in whole North Turkey from European Turkey to Artvin province in North-Eastern Anatolia. It is represented by the nominative subspecies in Turkey. The other known subspecies *M. affinis nigropubescens* Reitter, 1888 occurring in Caucasus and Near East (so it may be occur in North-Eastern Turkey), *M. affinis nigrohirta* Müller, 1948 occurring only in Italy and *M. affinis altaica* Suvorov, 1913 occurring in Siberia and Kazakhstan. According to Danilevsky (2005a,b), *M. volgensis* Kraatz, 1883, *M. volgensis boeberi* Ganglbauer, 1884 and *M. tuerki* Ganglbauer, 1884 are accepted as subspecies of *M. affinis* (Harrer, 1784).

Chorotype: Sibero-European.

***Musaria anatolica* Fuchs & Breuning, 1971**

Other names: Absent.

Records in Turkey: Type loc.: Adana prov.: Misis (Fuchs & Breuning, 1971); Muş prov.: Buğlan pass (Hoskovec & Rejzek, 2006).

Distribution: Turkey.

Remarks: Probably the species distributes only in East Turkey.

Chorotype: Anatolian.

***Musaria astarte* Ganglbauer, 1885**

ssp. *astarte* Ganglbauer, 1885

ssp. *perrini* Pic, 1891

ssp. *lederi* Pic, 1899

Other names: Absent.

Records in Turkey: Type loc.: Asia Minor (Ganglbauer, 1885); Turkey (Winkler, 1924-1932; Danilevsky & Miroshnikov, 1985; Lodos, 1998); Niğde prov.: Ulukışla (Demelt, 1967); Niğde prov.: Bor (Çiftahan) as *M. astarte lederi* Pic (Fuchs et Breuning, 1971); Osmaniye prov.: Nurdağı pass, İçel prov.: Silifke (Mut) (Adlbauer, 1988); South-East Anatolia (as type form of as *M. astarte perrini* Pic) (Sama & Rapuzzi, 2000); Adana prov.: Nurdağı pass (Rejzek et al., 2001); Adiyaman prov.: Nemrut Mt. (Karadut village env.) as *M. astarte lederi* Pic (Rejzek & Hoskovec, 1999; Rejzek et al., 2001); Osmaniye prov.: Hasanbeyli as *M. astarte astarte* Gangl. (Hoskovec & Rejzek, 2006).

Distribution: Transcaucasia, Turkey, Near East, Syria.

Remarks: This species is represented by three subspecies in Turkey. *M. astarte perrini* Pic, 1891 occurs in South-East Anatolia, *M. astarte lederi* Pic, 1899 occurs in from North to Central Anatolia and *M. astarte astarte* Ganglbauer, 1885 is present in South Turkey. Danilevsky (2005a) stated "*Ph. astarte lederi*, distributed in Transcaucasia, differs from the nominative subspecies from Turkey by black elytral pubescence".

Chorotype: SW-Asiatic.

***Musaria boeberi* Ganglbauer, 1884**

Other names: *flavipes* Gyllenhal; *persathensis* Pic; *melichari* Roubal.

Records in Turkey: Type loc.: Turkey and Caucasus - Ganglbauer, 1884; European Turkey (Winkler, 1924-1932); Trabzon prov.: Zigana Mountain (Breuning et Villiers, 1967); Turkey (Lodos, 1998); Trabzon prov.: 20 km S Maçka (Sumelas) (Rejzek et al., 2001); Artvin prov.: Yusufeli (Altıparmak), Erzurum prov.: Aşkale (Kop Mt. / Şenkaya (Soğanlı Mt.) / Turnalı / Tortum / Uzundere (Dikyar) (Tozlu et al., 2003); Trabzon prov.: Sümele near (Hoskovec & Rejzek, 2006).

Distribution: Caucasus, Transcaucasia, Turkey, ?Iran.

Remarks: The species distributes probably in whole North Turkey. According to Danilevsky (2005a,b), *M. boeberi* Ganglbauer, 1884 regarded as subspecies of *M. affinis* (Harrer, 1784). Also, it is given by Hoskovec & Rejzek (2006) as a subspecies of *Musaria volgensis* (Kraatz, 1883).

Chorotype: SW-Asiatic (Anatolo-Caucasian + ?Irano-Caucasian + ?Irano-Anatolian).

***Musaria faldermanni* Faldermann, 1837**

Other names: *rosti* Pic; *blessigi* Mor., *pubicollis* Pic.

Records in Turkey: Turkey (Lodos, 1998).

Distribution: Ukraine, Crimea, European Russia, Caucasus, Transcaucasia, European Kazakhstan.

Remarks: The record of Turkey was given by Lodos, 1998 without any exact locality data. So it is doubtful.

Chorotype: Turanian.

***Musaria kurdistanica* Ganglbauer, 1884**

Other names: *luristanica* Pic; *korbi* Pic, *caucasica* Pic.

Records in Turkey: Turkey (Lodos, 1998); Hakkari prov. (Hoskovec & Rejzek, 2006).

Distribution: Caucasus (Armenia), ? Turkey, Northern Iran.

Remarks: The record of Turkey was given by Lodos, 1998 without any exact locality data. But, it is present in East Turkey very likely.

Chorotype: SW-Asiatic (?Anatolo-Caucasian + Irano-Caucasian + Irano-Anatolian).

***Musaria puncticollis* (Faldermann, 1837)**

= ssp. *puncticollis* Faldermann, 1837

= ssp. *stygia* Ganglbauer, 1884

= ? ssp. *persica* Ganglbauer, 1884

Other names: *aladaghensis* Reitter; *gamborensis* Pic; *diversicollis* Pic; *trimaculata* Pic.

Records in Turkey: Malatya prov. as *Phytoecia puncticollis* Faldermann (Heyden, 1888); Turkey (Winkler, 1924-1932; Danilevsky & Miroshnikov, 1985; Lodos, 1998); Taurus as *Musaria puncticollis* v. *trimaculata* Pic, 1917 (Winkler, 1924-1932); Van prov.: Özalp and Kuzgunkuran, Hakkari prov.: Yüksekova, Tunceli prov.: Central, Bingöl prov.: Kuruca as *M. puncticollis persica* (Fuchs et Breuning, 1971); Bitlis prov.: Reşadiye as *M. puncticollis*

persica (Sama, 1982); Van prov.: Kuzgunkiran pass, Bitlis prov.: Tatvan env. (Rejzek et al., 2001); Erzincan prov., Erzurum prov., Diyarbakır prov. (Tozlu et al., 2003); Bitlis prov. Tatvan (Hoskovec & Rejzek, 2006).

Distribution: Caucasus, Transcaucasia, Turkmenia, Near East, Turkey, Iran.

Remarks: There are three subspecies in the World. In Turkey, it is represented by nominotypical subspecies and *M. puncticollis persica* (Ganglbauer, 1884) which occurs in Iran and East and South-East Turkey. *M. puncticollis stygia* (Ganglbauer, 1884) is present in Iran and Central Asia (Turkmenia).

Chorotype: SW-Asiatic.

***Musaria rubropunctata* (Goeze, 1777)**

Other names: *jourdani* Mulsant; *nigrescens* Pic, *obscurior* Pic.

Records in Turkey: Turkey (Lodos, 1998).

Distribution: Europae, (Spain, France, Italy, Germany).

Remarks: The record of Turkey was given by Lodos, 1998 without any exact locality data. It is impossible in Turkey.

Chorotype: W-European.

***Musaria tuerki* (Ganglbauer, 1884)**

Other names: Absent.

Records in Turkey: Turkey (Winkler, 1924-1932; Danilevsky & Miroschnikov, 1985; Lodos, 1998); Tokat prov.: Topçam Mountain (Adlbauer, 1992); European Turkey (Danilevsky, 2005b).

Distribution: Europe (Bulgaria, ?European Turkey), Turkey, Syria.

Remarks: The species distributes in North Turkey. According to Danilevsky (2005a,b), *M. tuerki* Ganglbauer, 1884 regarded as subspecies of *M. affinis* (Harrer, 1784).

Chorotype: Turano-Mediterranean (Balkano-Anatolian).

***Musaria volgensis* (Kraatz, 1883)**

Other names: *m-notata* Pic.

Records in Turkey: Turkey (Lodos, 1998).

Distribution: European Russia, Caucasus.

Remarks: The record of Turkey was given by Lodos, 1998 without any exact locality data. So it is doubtful. According to Danilevsky (2005a,b), *M. volgensis* (Kraatz, 1883) regarded as subspecies of *M. affinis* (Harrer, 1784).

Chorotype: Turanian.

***Musaria waschanrui* Mulsant, 1851**

Other names: *syriaca* Chevrolat; *alboscuteolata* Chevrolat; *jezabel* Reiche; *binodosa* Chevrolat; *bisulcata* Chevrolat; *tripunctata* Chevrolat; *mardinensis* Heyden; *obscuricornis* Pic; *pallidithorax* Pic; *rufomaculata* Pic; *jekeli* Pic.

Material examined: Antalya prov.: Alanya-Taşkent, exit of Karapınar village, 16.05.2006, 1100 m, N 36°36 E 32 24, 1 specimen, leg. H. Özdikmen.

Records in Turkey: Type loc.: Turkey (Mulsant, 1851); Bilecik prov. (Bodemeyer, 1900); Asia Minor and European Turkey (Winkler, 1924-1932); Asia Minor as *M. waschanrui* a. *pallidithorax* Pic, 1898, Mardin prov. as *M. waschanrui* a. *mardinensis* Heyden, 1894, Asia Minor as *M. waschanrui* a. *obscuricornis* Pic, 1897 (Winkler, 1924-1932); Gaziantep prov.: İslahiye, Osmaniye prov.: Hasanbeyli (Demelt, 1963); Yozgat prov.: Central (Fuchs et Breuning, 1971); Kahramanmaraş prov.: Püren pass (Göksun) (Adlbauer, 1992); Turkey (Lodos, 1998; Sama & Rapuzzi, 2000; Rejzek et al., 2001).

Distribution: Turkey, Iran, Syria, Palestine, Jordan, Lebanon.

Remarks: New to Antalya province. This species rather widely distributed in Turkey.

Chorotype: SW-Asiatic.

DISCUSSIONS

The Turkish *Musaria* fauna has been included eleven species to known records. However considering distributional patterns of species, the occurrences of two species as *M. faldermanni* and *M. volgensis* which were given only in Lodos (1998) without any exact locality in Turkey are doubtful while the occurrence of *M. kurdistanica* which recorded in the same reference is true. But *M. rubropunctata* that has the W-European chorotype is impossible for Turkey. Consequently we can accept that Turkish *Musaria* fauna comprise of eight species in real excluding species mentioned above according to current records.

Musaria affinis (Harrer, 1784) has the Sibero-European chorotype. *Musaria astarte* Ganglbauer, 1885, *Musaria puncticollis* (Faldermann, 1837) and *Musaria wachanrui* Mulsant, 1851 have the SW-Asiatic chorotype. *Musaria boeberi* Ganglbauer, 1884 and *Musaria kurdistanica* Ganglbauer, 1884 have the SW-Asiatic (Anatolo-Caucasian + Irano-Caucasian + Irano-Anatolian) chorotype. *Musaria faldermanni* Faldermann, 1837 and *Musaria volgensis* (Kraatz, 1883) have the Turanian chorotype. *Musaria tuerki* (Ganglbauer, 1884) has the Turano-Mediterranean (Balkano-Anatolian) chorotype. *Musaria rubropunctata* (Goeze, 1777) has the W-European chorotype. *Musaria anatolica* Fuchs & Breuning, 1971 that is endemic to Turkey has the Anatolian chorotype.

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