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A brief review of the genus *Mantura* Stephens, 1831 (Coleoptera: Chrysomelidae: Galerucinae: Alticini) of Russia and some adjacent territories

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Abstract. Seven species of the genus *Mantura* Stephens, 1831 are reviewed. In total, six species are known in Russia. *Mantura rustica* (Linnaeus, 1767), *M. chrysanthemii* (Koch, 1803), *M. pallidicornis* (Waltl, 1839) and *M. cylindrica* Miller, 1881 are distributed in the European part of the country. One European species, *Mantura obtusata* (Gyllenhal, 1813) needs verification for distribution in Russia. Two species, *M. japonica* Jacoby, 1885 and *M. clavareauii* Heikertinger, 1912 are recorded for the fauna of Russia for the first time. Both species were collected in the Russian Far East, the first one in Primorsky Region, the latter on Sakhalin. The genus *Mantura* is newly recorded from Sakhalin Island. Key to species of *Mantura* of the Russian fauna is given.

Key words: *Mantura*, faunistics, new records, identification key, Palaearctic, Russia, Sakhalin.

Краткий обзор рода *Mantura* Stephens, 1831 (Coleoptera: Chrysomelidae: Galerucinae: Alticini) фауны России и некоторых прилегающих территорий

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Резюме. Приведен обзор семи видов рода *Mantura* Stephens, 1831 фауны России и сопредельных территорий. *Mantura rustica* (Linnaeus, 1767), *M. chrysanthemii* (Koch, 1803), *M. pallidicornis* (Waltl, 1839) и *M. cylindrica* Miller, 1881 распространены в европейской части страны. Для одного европейского вида, *M. obtusata* (Gyllenhal, 1813), требуется верификация материала для подтверждения его распространения в России. Два таксона, *M. japonica* Jacoby, 1885 и *M. clavareauii* Heikertinger, 1912, впервые указаны для фауны России. Оба вида были найдены на Дальнем Востоке, первый в Приморском крае, второй на Сахалине (род *Mantura* впервые указывается для фауны острова Сахалин). Дана определительная таблица видов фауны России.

Ключевые слова: *Mantura*, фаунистика, новые указания, определительная таблица, Палеарктика, Россия, Сахалин.

Introduction

The genus *Mantura* Stephens, 1831 is divided into two subgenera (*Mantura* s. str. and *Stenomantura* Heikertinger, 1909), with 20 species in the world, 15 of them are distributed in the Palaearctic. Several taxa occur in the North America (Canada, USA), Africa and Southeast Asia [Lopatin, 1977, 2010; LeSage, 1991; Kimoto, Takizawa, 1994; Konstantinov, Vandenberg, 1996; Riley et al., 2003; Gruev, Döberl, 2005; Medvedev, 2009; Döberl, 2010; Warchałowski, 1998, 2010]. Five species of *Mantura* were known so far in the fauna of Russia: *M. rustica* (Linnaeus, 1767), *M. chrysanthemii* (Koch, 1803), *M. obtusata* (Gyllenhal, 1813), *M. pallidicornis* (Waltl, 1839) and *M. cylindrica* Miller, 1881 [Gressitt, Kimoto, 1963; Medvedev, Shapiro, 1965; Medvedev, 1982, 1992; Kimoto, Takizawa, 1994; Warchałowski, 1998, 2010; Bieńkowski, 2004; Lopatin et al., 2004; Gruev, Döberl, 2005; Lopatin, Nesterova, 2005; Döberl, 2010; Dolgin, Bieńkowski, 2011; Sergeev, 2017, 2018]. Species of *Mantura* inhabit mesophytic biotopes and trophically are associated with Polygonaceae, Asteraceae, Cistaceae [Medvedev, Roginskaya, 1988; Jolivet, Hawkeswood, 1995;

Warchałowski, 1998; Baviera, Biondi, 2015]. Adults feed on skeletonize leaves, while larvae develop in the mines inside of leaves, possibly also in the roots of a plant in the soil [Zaitsev, Medvedev, 2009].

In this paper two additional species, *M. japonica* Jacoby, 1885 and *M. clavareauii* Heikertinger, 1912 are recorded for Russia. The distribution of *M. obtusata* (Gyllenhal, 1813) and *M. pallidicornis* (Waltl, 1839) is clarified.

Material and methods

This work is based on the material collected by the author in 2015–2019 in Primorskiy Region and Sakhalin Island, and deposited in the collection of Federal Scientific Center of the East Asia Terrestrial Biodiversity, Far Eastern Branch of the Russian Academy of Sciences (EATB, Vladivostok, Russia). Materials from the following collections also have been studied:

MNKNU – V.N. Karazin State Museum of Nature Kharkov National University (Kharkov, Ukraine);

IZS – I.I. Schmalhausen Institute of Zoology of the National Academy of Sciences of Ukraine (Kiev, Ukraine);

NSU – N.V. Gogol Nezhyn State University (Nezhyn, Ukraine);

SNHM – State Natural History Museum of the National Academy of Sciences of Ukraine (Lvov, Ukraine);

ZIN – Zoological Institute of the Russian Academy of Sciences (St Petersburg, Russia).

Photographs were taken with the stereomicroscope Olympus SZX16 and digital camera Olympus DP74 and stacked using Helicon Focus software. The final illustrations were post-processed for contrast and brightness using Adobe Photoshop® software.

The classification of Chrysomelidae based on Riley et al. [2003] is used.

Subfamily Galerucinae Latreille, 1802

Tribe Alticini Newman, 1835

Genus *Mantura* Stephens, 1831

Mantura Stephens, 1831: 322. Type species: *Chrysomela rustica* Linnaeus, 1767, by subsequent designation [Westwood, 1840].

Cardiapus Curtis, 1833: pl. 435. Type species: *Cardiapus mathewsii* Curtis, 1833, by monotypy.

Balanomorpha Chevrolat in Dejean, 1836: 393. Type species: *Galleruca semiaenea* Fabricius, 1792 (= *Chrysomela rustica* Linnaeus, 1767), by subsequent designation of Heikertinger [1951]. Junior subjective synonym of *Mantura* according to Weise [1886].

Mantura (Mantura) chrysanthemii (Koch, 1803)

(Figs 1–3)

Haltica chrysanthemii Koch, 1803: 45 (type locality: Palatinate, Germany).

Mantura chrysanthemii: Zhyvotovskaya, 1957: 52; Medvedev, Shapiro, 1965: 454; Bieńkowski, 2004: 92; Gus'kova, 2010: 217; Dolgin, Bieńkowski, 2011: 232; Ruchin, 2011: 167; Sergeev, Sheshurak, 2014: 23; Sergeev, 2018: 85.

Material. Ukraine: 1 ex., (IZS), Donetsk Region, "Kamennye Mogily" Nature Reserve, 2.06.1970 (V.G. Dolin); 1 ex., (EATB), same locality, 26.05.1998 (E.S. Ivanova); 1 ex., (EATB), same locality, 19.06.2004 (M.Ye. Sergeev); 1 ex., (EATB), same locality, 15.05.2006 (E.Yu. Savchenko); 1 ex., (EATB), same locality, 15.06.2006 (E.Yu. Savchenko); 2 ex., (EATB), Slavyansk District, Slavyansk env., 22.04.2002 (V.Yu. Nazarenko); 1 ex., (NSU), Chernigov Region, Sednev env., floodplain of the Snov River, 10–13.06.1991 (P.N. Sheshurak); 2 ex., (EATB), Kiev, coast of Telbin Lake, 1.09.2000 (V.Yu. Nazarenko); 2 ex., (EATB), same locality, 20.06.2002 (V.Yu. Nazarenko); 1 ex., (SNHM), Lvov env., 11.06. (clear date and collector unknown).

Distribution. North-West Africa, Europe. Russia: European part (Leningrad, Moscow, Vladimir, Tula and Penza regions, Komi Republic, Mordovian Republic, Udmurt Republic), Ural (Perm Region, Bashkir Republic) [Zhyvotovskaya, 1957; Bieńkowski, 2004; Gus'kova, 2010; Warchałowski, 2010; Ruchin, 2011; Dolgin, Bieńkowski, 2011; Bieńkowski, Orlova-Bieńkovskaya, 2012; Sergeev, Sheshurak, 2014; Sergeev, 2018]. Introduced in North America (Canada, USA) [LeSage, 1991; Riley et al., 2003].

Mantura (Mantura) clavareai Heikertinger, 1912

(Figs 4–6)

Mantura (Mantura) clavareai Heikertinger, 1912: 45 (syntypes from Japan: "Jesso" (Hokkaido), "Kioto" (Kyoto, Honshu)).

Mantura (Mantura) clavareai: Kimoto, Takizawa, 1994: 248; Warchałowski, 2010: 910; Cho, An, 2020: 18.

Material. Russia: 1♂, (EATB), Sakhalin, Nevelsk District, Yasnomorskoe env., floodplain of Yasnomorka River, 19.07.2019 (M.Ye. Sergeev).

Distribution. Russia (new record): Sakhalin. South Korea, Japan: Hokkaido, Honshu, Kyushu, Shikoku [Kimoto, Takizawa, 1994; Warchałowski, 2010; Cho, An, 2020].

Mantura (Mantura) japonica Jacoby, 1885

(Figs 7, 8)

Mantura (Mantura) japonica Jacoby, 1885: 720 (type locality: "Hakodate" (Hokkaido, Japan)).

Mantura japonica: Kimoto, Takizawa, 1994: 248; Warchałowski, 2010: 910.

Material. Russia: 1♀, (EATB), Primorskiy Region, Khasansky District, near Barabash, meadow in floodplain of Barabashevka River, 8.06.2019 (M.Ye. Sergeev).

Distribution. Russia (new record): Primorskiy Region. Japan: Hokkaido [Kimoto, Takizawa, 1994; Warchałowski, 2010].

Mantura (Mantura) obtusata (Gyllenhal, 1813)

Haltica obtusata Gyllenhal, 1813: 579 (type locality: Sweden, according to Wanntorp [2008: 100]).

Haltica ambigua Kutschera, 1862: 52. (type locality: Aachen, Germany). Junior subjective synonym of *Haltica obtusata* according to Wanntorp [2008].

Mantura obtusata: Wanntorp, 2008: 129; Döberl, 2010: 536.

Notes. Döberl [2010] did not list this species from Russia. However, this species was indicated for the north-west of the European part of Russia (Pskov, Yaroslavl' and Moscow regions) [Bieńkowski, 2004; Bieńkowski, Orlova-Bieńkovskaya, 2012; Vlasov, Rusinov, 2017]. We have not studied this material, but we can assume that *M. obtusata* occurs in the north-west of the European part of Russia on the basis of distribution of this species in western and northern Europe.

Distribution. Western and Northern Europe, in Eastern Europe it is known from Poland (Lower Silesia); in Southern Europe it is known in the northern part of the Balkan Peninsula (Slovenia) [Warchałowski, 1998; Bieńkowski, 2004; Gruev, Döberl, 2005; Borowiec et al., 2011].

Mantura (Mantura) pallidicornis (Waltl, 1839)

(Figs 9–11)

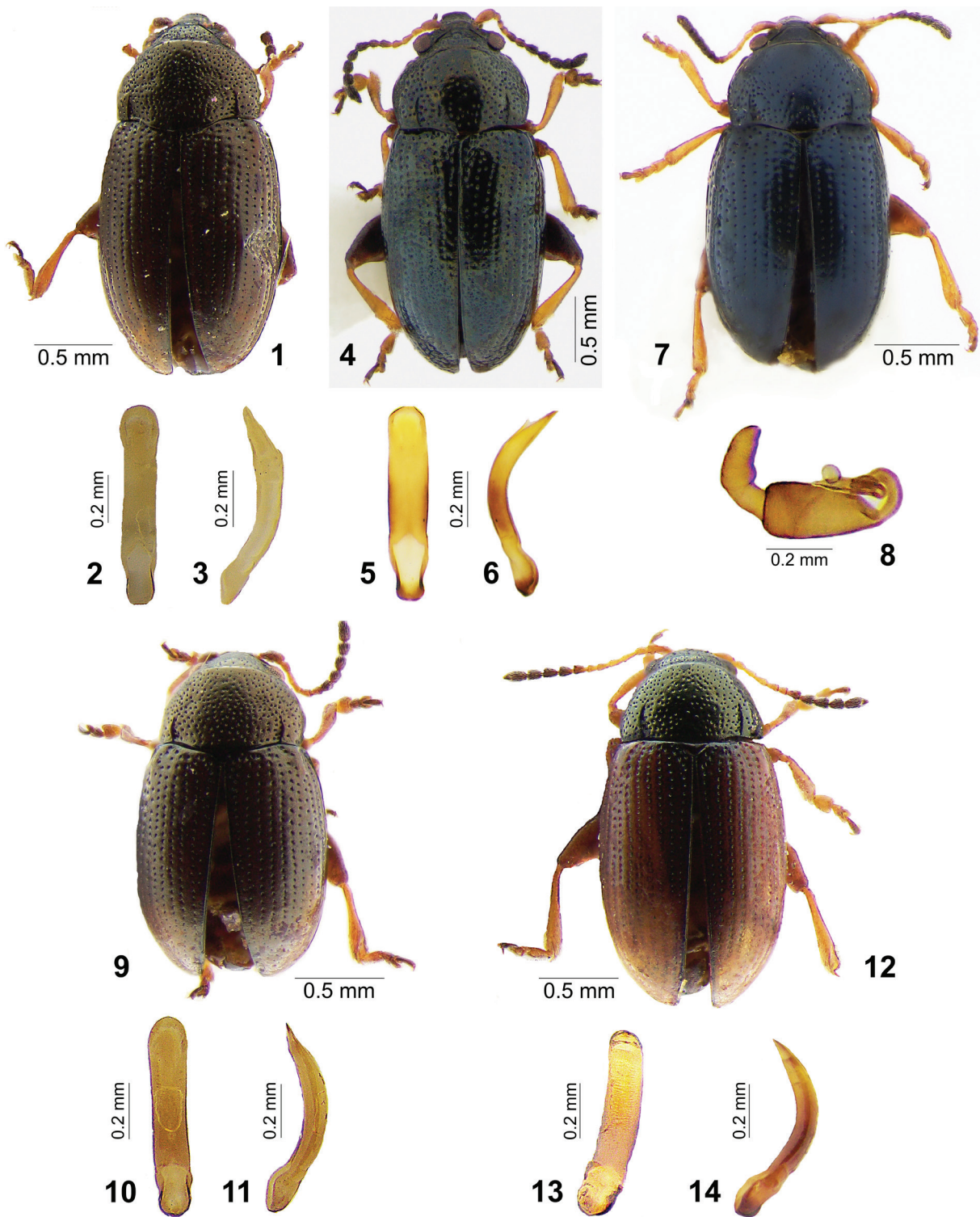
Haltica pallidicornis Waltl, 1839: 225 (type locality: "Passau", Germany).

Mantura pallidicornis: Wanntorp, 2008: 100; Döberl, 2010: 536.

Mantura obtusata: Medvedev, Shapiro, 1965: 454; Warchałowski, 1998: 178; Bieńkowski, 2004: 92; Sergeev, 2018: 86.

Material. Ukraine: 1 ex., (MNKNU), Kharkov Region, Petrovsky District, Protopyovka, 21.06.1952 (D.S. Shapiro); 2 ex., (NSU), Chernigov Region, Koropsky District, Obolonie env., Desna River valley, 17.06.1992 (P.N. Sheshurak).

Notes. Before the work of Wanntorp [2008] *Mantura pallidicornis* was unknown from Eastern Europe, including Russia and Ukraine. Wanntorp [2008] examined genitalia (aedeagus) of *M. obtusata* and clearly separated this species from the close *M. pallidicornis*. According to his data, the distribution of *M. obtusata* is limited by countries



Figs 1–14. *Mantura* species, habitus and details of structure.

1–3 – *M. chrysanthemi*, male; 4–6 – *M. clavareai*, male; 7–8 – *M. japonica*, female; 9–11 – *M. pallidicornis*, male; 12–14 – *M. rustica*, male. 1, 4, 7, 9, 12 – habitus; 2, 5, 10, 12 – aedeagus, ventral view; 3, 6, 11, 14 – the same, lateral view; 8 – spermatheca.

Рис. 1–14. Виды рода *Mantura*, габитус и детали строения.

1–3 – *M. chrysanthemi*, самец; 4–6 – *M. clavareai*, самец; 7–8 – *M. japonica*, самка; 9–11 – *M. pallidicornis*, самец; 12–14 – *M. rustica*, самец. 1, 4, 7, 9, 12 – габитус; 2, 5, 10, 12 – эдегус, вентрально; 3, 6, 11, 14 – то же, латерально; 8 – сперматека.

of Western and Northern Europe to the North Balkans on south, while *M. pallidicornis* is widely distributed in Europe [Döberl, 2010].

Distribution. Europe (Northern, Central, Southern, Eastern, including Ukraine and south of the European part of Russia) [Döberl, 2010].

Mantura (Mantura) rustica (Linnaeus, 1767)
(Figs 12–14)

Chrysomela rustica Linnaeus, 1767: 595 (type locality: “ad Hammerby”, Sweden).

Mantura rustica: Medvedev, Shapiro, 1965: 454; Medvedev, 1992: 594; Kubisz et al., 1997: 263; Warchałowski, 1998: 179–180; Bieńkowski, 2004: 92; Gus’kova, 2010: 217; Sergeev, 2017: 200; Sergeev, 2018: 86; Cho, An, 2020: 18.

Material. Russia: 1 ex., (ZIN), Primorskiy Region, Anuchino District, Vinogradovka env., 28.06.1929 (Kirichenko); 1 ex., (EATB), Primorskiy Region, Kirovsky District, Pavlo-Fedorovka env., Khanka Nature Reserve, 12.07.2016 (M.Ye. Sergeev); 1 ex. (EATB), Novosibirsk Region, Kolyvan’ District, Tropino env., birch forest, 21.07.1978 (V.N. Kuznetsov). Ukraine: 2 ex. (EATB), Donetsk, 2–31.05.1999 (E.V. Prokopenko); 2 ex. (EATB), Lugansk Region, near Dyakovo, 12.04.2000 (S.V. Kononov); 1 ex. (EATB), Stanitsa Luganskaya District, Lugansk Nature Reserve, floodplain of the Seversky Donets River, 18.06.2002 (A.G. Maltseva); 2 ex., (EATB), same locality, 12.06.2003 (A.G. Maltseva); 2 ex., (EATB), Dnepropetrovsk Region, Sinel’niko District, Raevka, 15.06.1984 (A.M. Sumarokov).

Distribution. The widespread Palearctic species. Western and Eastern Europe (including Ukraine). Russia: European part (Moscow, Oryol, Volgograd regions, Kalmyk Republic, Udmurt Republic, Crimea), Ural, Western Siberia (Novosibirsk Region, Altai), south of Eastern Siberia (Krasnoyarsk and Irkutsk regions, Yakutsk Republic), the Far East (Amur and Primorskiy regions), Turkey, Kazakhstan, Kyrgyzstan, Tajikistan, Afghanistan, Mongolia, China, South Korea [Lopatin, 1977, 2010; Medvedev, 1992; Kubisz et al., 1997; Warchałowski, 1998, 2010; Mosyakin, Popov, 1999; Bieńkowski, 2004; Gus’kova, 2010; Döberl, 2010; Bieńkowski, Orlova-Bieńkovskaya, 2012; Sergeev, 2017, 2018; Cho, An, 2020].

Mantura (Stenomantura) cylindrica Miller, 1881

Mantura cylindrica Miller, 1881: 2 (type locality: “Dalmatia” (Croatia)).

Mantura cylindrica: Medvedev, Shapiro, 1965: 454; Warchałowski, 1998: 181; Gruev, Döberl, 2005: 112; Döberl, 2010: 537.

Distribution. Europe (Italy (Sicily), Croatia, Bulgaria, Greece), Asian Turkey, Syria, Azerbaijan, Russia (Dagestan) [Medvedev, Shapiro, 1965; Warchałowski, 1998; Gruev, Döberl, 2005; Döberl, 1999, 2010; Baviera, Biondi, 2015].

Key to the *Mantura* species of Russia

(based on Medvedev, Shapiro [1965],
Kimoto, Takizawa [1994],
Bieńkowski [2004], Warchałowski [2010]
with modifications)

1. Pronotum anterad not narrowed, posterolaterally with distinct longitudinal short groove. Elytra posterad longitudinally acute. (Subgenus *Mantura*) 2
- Pronotum anterad strongly narrowed and projected over head; posterolaterally without distinct longitudinal short groove. Elytra posterad almost rounded.

- (Subgenus *Stenomantura*). – Body length 1.8–2 mm *M. (S.) cylindrica*
2. Elytra unicolorous 3
- Elytra bicolorous (Fig. 12). – Body length 2–2.8 mm *M. (M.) rustica*
3. Body dorsally shining 4
- Body dorsally matte 5
4. Body dorsally dark metallic green (Fig. 4). Pronotum dorsally distinctly punctate and finely granulate. Legs reddish brown, often hind femora bronzy. – Body length 2.5–3 mm. Aedeagus (Fig. 5, 6) *M. (M.) clavareau*
- Body dorsally pitchy-brown or brownish-red, mostly with bronze reflection, or dark bronze (Fig. 1). Legs rust-reddish or dark amber, hind femora and apical part of antennae darkened. – Body length 1.8–2.7 mm. Aedeagus (Fig. 2, 3) *M. (M.) chrysanthem*
5. Body dorsally black with obscure greenish or bluish tint 6
- Body dorsally dark blue (Fig. 7). – Spermatheca (Fig. 8). Body length 1.8–2.1 mm *M. (M.) japonica*
6. Aedeagus ventrally without distinct rills (Figs 10, 11). Body length 1.8–2.6 mm (Fig. 9) ... *M. (M.) pallidicornis*
- Aedeagus ventrally with distinct rills. Body length 1.8–2 mm *M. (M.) obtusata*

Discussion

The genus *Mantura* is represented by seven species in the fauna of Russia, including two species (*Mantura japonica* and *M. clavareau*) new for the fauna of the country; the genus is also recorded for the fauna of Sakhalin Island for the first time.

Species of this genus are not numerous in nature and usually are presented by single specimens or small series in collection materials. Therefore, new records are valuable additions to the current knowledge of the distribution of *Mantura* within the fauna of Russia and adjacent territories. Endemic species are absent in the fauna of the country. The mentioned species belong to the four biogeographical groups: Transpalearctic – *M. rustica*; Western Palearctic – *M. obtusata*, *M. pallidicornis* and *M. chrysanthem*, the latter was introduced in North America; Mediterranean – *M. cylindrica*; Eastern Palearctic – *M. japonica* and *M. clavareau*.

One species, *M. (s. str.) mathewsii* Curtis, 1833 is distributed in Western, Central, Southern and Eastern Europe (including Ukrainian Carpathians), Azerbaijan (Absheron Peninsula), Asian Turkey (Denizli, Isparta provinces) [Medvedev, Shapiro, 1965; Warchałowski, 1998; Lopatin et al., 2004; Gruev, Döberl, 2005; Döberl, 2010; Ekiz et al., 2013] and can be found in the North Caucasus (Dagestan Republic or Krasnodar Region of Russia).

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