

New records of eumenine wasps (Hymenoptera, Vespidae, Eumeninae) from Russia, with description of a new species of *Stenodynerus* de Saussure, 1863

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Abstract

New additions to the knowledge of the subfamily Eumeninae in Russia are provided. *Stenodynerus rossicus* Fateryga & Kochetkov, **sp. nov.** is described from Amurskaya Province and Altai Republic. Three species of eumenine wasps are reported from Russia for the first time: *Onychopterocheilus kiritshenkoi* (Kostylev, 1940), *Pterocheilus quaesitus* (Morawitz, 1895), and *Stenodynerus chitgarensis* Giordani Soika, 1970. *Ancistrocerus dusmetiolus* (Strand, 1914) is excluded from the fauna of Russia; the previous records of this species were based on a misidentification of another similar species, i. e., *A. raddei* (Kostylev, 1940). The taxonomic status of *A. raddei*, however, is unclear: its differences from *A. dusmetiolus*, including the material from Central Asia described as *A. alius* (Kostylev, 1935), are mainly in the color pattern but not in the structure (including the structure of the male genitalia). New and confirmative regional records for 20 species are reported. The known fauna of Russia currently numbers 34 genera and 165 species of Eumeninae s. l. (including Raphiglossinae and Zethinae). In addition, *Eumenes tripunctatus* (Christ, 1791) is reported for the first time from Afghanistan; the first data on the nesting of this species are also reported.

Keywords

Caucasus, distribution, Palaearctic, potter wasps, Siberia, Solitary wasps, taxonomy

Introduction

The subfamily Eumeninae, commonly known as potter wasps, is the most species-rich group among the vespid wasps (Hymenoptera, Vespidae). This cosmopolitan subfamily consists of more than 3,800 described species of solitary (or rarely sub-social) wasps in approximately 200 genera (Tan et al. 2018; Kumar et al. 2019; Li et al. 2019); the latest numbers published by Rahmani et al. (2020) are 3,844 species in 204 genera. According to the results of molecular phylogenetic reconstructions (Bank et al. 2017; Piekarski et al. 2018), the eumenine wasps, however, should be subdivided into three subfamilies: Raphiglossinae, Zethinae, and Eumeninae s. str. At the same time, the latter subfamily comprises about 90% of the eumenine wasps in the broad sense (Eumeninae s. l.).

Russia is the largest country in the world, extending across the entirety of Northern Asia and much of Eastern Europe and incorporating a wide range of environments. Knowledge of the eumenine wasps of this country is still far from comprehensive but is gradually improving. After the publication of the “Annotated Catalogue of the Hymenoptera of Russia” with 158 species in 33 genera of Eumeninae s. l. (Antropov and Fateryga 2017), an additional study (Fateryga and Mokrousov 2019) increased the numbers of species and genera known in Russia to 162 and 34, respectively. In the present paper, new additions to the knowledge of the eumenine wasps in Russia are provided, including the description of a new species and various new national and regional records.

Material and methods

The studied specimens were deposited in the collections of the Federal Scientific Center of the East Asia Terrestrial Biodiversity of the Far East Branch of the Russian Academy of Sciences, Vladivostok, Russia [FSCV], the Zoological Institute of the Russian Academy of Sciences, Saint Petersburg, Russia [ZISP], and the research collection of A.V. Fateryga, Feodosia, Russia [CAFK]. Photographs were taken in FSCV with an Olympus DP74 digital camera attached to an Olympus SZX16 stereomicroscope and in ZISP with a Canon EOS 70D digital camera attached to an Olympus SZX10 stereomicroscope. Multifocus-images were created from stacks of photographs using Helicon Focus 6 Pro software. The final illustrations were postprocessed for sharpness, contrast, and brightness using Adobe Photoshop CS2 software. Male genitalia were extracted after re-softening the specimens and were then boiled in 10% NaOH for 5 min. After that, they were rinsed in 80% ethanol and only then stored and studied in glycerin. The drawings were made on graph paper with the aid of an ocular square grid; final drawings were made by outlining the draft drawings.

Distribution of species follows Antropov and Fateryga (2017) and references therein, taking into account some additions published by Rafi et al. (2017), Fateryga and Mokrousov (2019), Fateryga et al. (2019), and Kochetkov (2020). The regionalization

of Russia follows Belokobylskij and Lelej (2017). New distribution records are marked with an asterisk (*). No subspecies are recognized within species. The morphological terminology is based on Yamane (1990). In morphological descriptions, the letter “F” refers to antennal flagellomeres, the letter “T” to metasomal terga, and the letter “S” to metasomal sterna.

The abbreviations of the collectors’ names are as follows: AF – A.V. Fateryga, AL – A.S. Lelej, MP – M.Yu. Proshchalykin, VL – V.M. Loktionov.

List of species

Ancistrocerus mongolicus (Kostylev, 1940)

Material examined. RUSSIA: *Krasnoyarsk Terr.*, Krasnoyarsk, (1 ♀) [ZISP].

Distribution. Russia: Western Siberia (Altai), Eastern Siberia (Krasnoyarsk Terr., Irkutsk Prov.), Far East (Amurskaya Prov., Khabarovsk Terr., Primorskiy Terr.). – Mongolia, Korean Peninsula.

Remarks. This species was previously reported from Krasnoyarsk Territory with doubts (Antropov and Fateryga 2017); the present record confirms its presence there.

Ancistrocerus nigricornis (Curtis, 1826)

Material examined. RUSSIA: *Tyva Rep.*, Erzin Distr., 25 km NEE Erzin, Mt. Bely Medved, 50°21.56'N, 95°27.66'E, 16.VII.2014, (1 ♀), leg. AL, MP, VL [FSCV].

Distribution. Russia: European part (North-West, Central, ?East, South, North Caucasus, Crimea), Urals, Western Siberia (Novosibirsk Prov., Kemerovo Prov., Altai), Eastern Siberia (*Tyva Rep., Krasnoyarsk Terr., Irkutsk Prov., Buryatia, Yakutia, Zabaikalskiy Terr.), Far East (Khabarovsk Terr., Primorskiy Terr., Sakhalin). – Europe, North Africa, Turkey, Iran, Central Asia, Kazakhstan, Mongolia, China, Japan, India.

Ancistrocerus raddei (Kostylev, 1940)

Figures 1–5, 10, 11, 16

Material examined. RUSSIA: *Altai Rep.*, Kosh-Agach Distr., 6–8 km NE Kokorya, Kyzylshin Riv. vall., 49°57.34'N, 89°03.56'E, 1900 m, 17.VII.1996, (1 ♂), leg. A. Dudko, R. Dudko [FSCV]; Kosh-Agach Distr., 5 km SE Chagan-Uzun, Tydtuyaryk Riv. vall., 50°04.42'N, 88°25.20'E, 8.VII.2019, (1 ♂), leg. AF [CAFK]; *ibid.*, 9.VII.2019, (2 ♀, 4 ♂), leg. Yu.N. Danilov [CAFK]; *ibid.*, 9.VII.2019, (1 ♀, 2 ♂), leg. AF [CAFK]; *ibid.*, 10.VII.2019, (1 ♀), leg. AF [CAFK].

Distribution. Russia: Western Siberia (Altai), Eastern Siberia (Krasnoyarsk Terr., Zabaikalskiy Terr.). – Mongolia, China.



Figures 1–3. *Odynerus (Ancistrocerus) raddei* Kostylev, 1940, holotype, female (ZISP) **1** lateral habitus **2** head in frontal view **3** labels. Scale bars 1.0 mm.

Remarks. Two males of this species from Krasnoyarsk Territory and Altai Republic were previously misidentified as another similar species, i. e., *Ancistrocerus dusmetiolus* (Strand, 1914) (Fateryga 2017, Fateryga et al. 2017), while two females from Altai Republic and Zabaikalskiy Territory were reported as *A. raddei* (Fateryga et al. 2017). The present record of both females and males in the same habitat in Altai suggested that the previous reports were based on a single species, i. e., only one species of this pair occurs in Siberia and Russia as a whole. Study of the holotype of *A. raddei* in ZISP (Figs 1–3) confirms that the Russian material belongs to this species. Females of *A. raddei* (Figs 4, 5) appear larger than *A. dusmetiolus* (Figs 6, 7) and have a different color pattern: the clypeus is often mostly yellow with a central black spot but can be black with lateral yellow spots on its basal part as well; the dorsal mesepisternum often bears a large yellow spot and the scutellum always has two lateral yellow spots, as well as sometimes also the metanotum and propodeum; yellow apical bands on the metasoma are usually present on T1–T4 and S2 (rarely on T1–T5 or T1–T3 only; sometimes also on S3 but in some specimens all the sterna are black as well). Females of *A. dusmetiolus* from the type locality (“Rivas”, Spain) have clypeus always black with lateral yellow spots on its basal part; their dorsal mesepisternum, scutellum (with very rare exceptions), metanotum, and propodeum are completely black; yellow apical bands on the metasoma are usually present on T1–T5 and S2–S4. Females from Central Asia (Figs 8, 9), corresponding to the diagnosis of *Odynerus (Ancistrocerus) alius* Kostylev, 1935, junior subjective synonym of *A. dusmetiolus* according to Blüthgen (1939), generally resemble those from Spain but they usually have an additional spot on T6 and an apical band on S5. At the same time, males of *A. raddei* from Russia and *A. dusmetiolus* from both Spain and Central Asia have a similar color pattern (Figs 10, 12, 14); only



Figures 4–9. *Ancistrocerus raddei* (Kostylev, 1940), Russia (Altai) (**4, 5**), *A. dusmetiolus* (Strand, 1914), Spain (**6, 7**), and *A. dusmetiolus*, Uzbekistan (“*Odynerus alius* Kostylev, 1935”) (**8, 9**), females **4, 6, 8** dorsal habitus **5, 7, 9** head in frontal view. Scale bars 1.0 mm.

the number of apical bands on the metasoma slightly varies (4–6 on terga and 3–5 on sterna) between the species and two small lateral yellow spots on the scutellum can be sometimes present in *A. raddei*, while they are always absent in *A. dusmetiolus*. There are no valuable differences between them in the structure; in particular, even the shape of the clypeus is very similar (Figs 11, 13, 15). Their genitalia, particularly aedeagi, also have no significant differences (Figs 16–18). Thus, the taxonomic status of *A. raddei* is unclear: it may represent either just a color form of *A. dusmetiolus* or a distinct allopatric species. To ascertain the relationships between *A. raddei* and both the European and Central Asian populations of *A. dusmetiolus*, all of them should be studied molecularly. Until this is done, *A. dusmetiolus* should be excluded from the fauna of Russia.

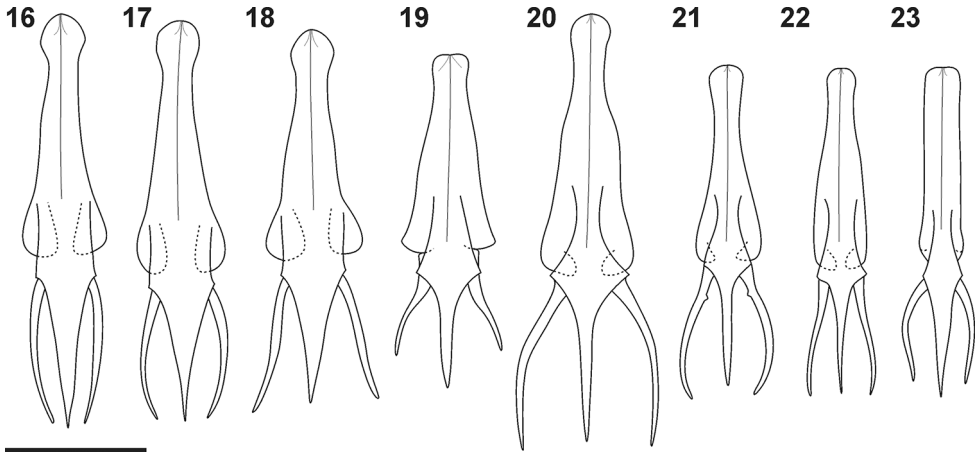


Figures 10–15. *Ancistrocerus raddei* (Kostylev, 1940), Russia (Altai) (**10, 11**), *A. dusmetiolus* (Strand, 1914), Spain (**12, 13**), and *A. dusmetiolus*, Uzbekistan (“*Odynerus alius* Kostylev, 1935”) (**14, 15**), males **10, 12, 14** dorsal habitus **11, 13, 15** head in frontal view. Scale bars 1.0 mm.

Antepipona orbitalis (Herrich-Schäffer, 1839)

Material examined. RUSSIA: *Tyva Rep.*, Kundustug Distr., Fedorovka [currently Kundus-Tug], left bank of Yenisey Riv., 51°34.41'N, 95°09.44'E, sweeping the grass, 19.VII.1949, (1 ♂), leg. Perevozchikova [FSCV]. *Krasnoyarsk Terr.*, Minusinsk Distr., Tes', 53°51.59'N, 92°09.21'E, 7.VII.2014, (1 ♂), leg. AL, MP, VL [CAFK]; Minusinsk Distr., Malaya Minusa, 53°43.24'N, 91°50.08'E, 8.VII.2014, (1 ♀), leg. AL, MP, VL [CAFK]; Minusinsk Distr., 10 km NW Minusinsk, Bystraya Riv. vall., 53°44.06'N, 91°34.12'E, 9.VII.2014, (3 ♀, 2 ♂), leg. AL, MP, VL [FSCV].

Distribution. Russia: European part (Central, East, South, North Caucasus, Crimea), Urals, Western Siberia (Novosibirsk Prov., Altai), Eastern Siberia (*Tyva Rep., *Krasnoyarsk Terr., Irkutsk Prov., Buryatia). – Western, Southern, and Eastern Europe, North Africa, Azerbaijan, Turkey, Kazakhstan, Mongolia.



Figures 16–23. Aedeagi in dorsal view **16** *Ancistrocerus raddei* (Kostylev, 1940), Russia (Altai) **17** *A. dusmetiolus* (Strand, 1914), Spain **18** *A. dusmetiolus*, Uzbekistan (“*Odynerus alius* Kostylev, 1935”) **19** *Stenodynerus rossicus* Fateryga & Kochetkov, sp. nov., paratype, Russia (Amurskaya Prov.) **20** *S. punctifrons* (Thomson, 1874), Russia (Amurskaya Prov.) **21** *S. picticus* (Thomson, 1874), Russia (Primorskiy Terr.) **22** *S. pullus* Gusenleitner, 1981, Russia (Tyva Rep.) **23** *S. orenburgensis* (André, 1884), Russia (Khakassia). Scale bar 0.5 mm.

Eumenes (Eumenes) coarctatus (Linnaeus, 1758)

Material examined. RUSSIA: *Khakassia*, Shira Distr., Chernoye Ozero, 54°41.33'N, 89°24.46'E, 18.VII.2012, (1 ♂), leg. MP, VL [FSCV].

Distribution. Russia: European part (North-West, Central, East, South, North Caucasus, Crimea), Urals, Western Siberia (Tyumen Prov., Omsk Prov., Novosibirsk Prov., Altai), Eastern Siberia (*Khakassia, Krasnoyarsk Terr., Irkutsk Prov., Buryatia, Yakutia, Zabaikalskiy Terr.), Far East (Amurskaya Prov., Khabarovsk Terr., Primorskiy Terr., Magadan Prov.). – Europe, North Africa, Armenia, Azerbaijan, Turkey, Cyprus, Syria, Jordan, Israel, Iran, Turkmenistan, Tajikistan, Kyrgyzstan, Kazakhstan, Mongolia, China, Japan.

Eumenes (Eumenes) coronatus (Panzer, 1799)

Material examined. RUSSIA: *Astrakhan Prov.*, Liman Distr., 8 km SE Promyslovka, 45°40.32'N, 47°14.40'E, 21.V.2019, (1 ♂), leg. MP, VL [CAFK]. *Tyva Rep.*, Tandinskiy Distr., Sosnovka, 51°09.05'N, 94°30.54'E, on flowers, 12.VI.1949, (1 ♂), leg. Dyatlova [FSCV].

Distribution. Russia: European part (North-West, Central, East, *South, North Caucasus, Crimea), Urals, Western Siberia (Altai), Eastern Siberia (*Tyva Rep., Irkutsk Prov., Buryatia, Zabaikalskiy Terr.), Far East (Amurskaya Prov., Khabarovsk Terr., Primorskiy Terr., Kuril Islands). – Europe, Azerbaijan, Turkey, Israel, Iran, Pakistan, Turkmenistan, Kazakhstan, Mongolia, China, Korean Peninsula, Japan.

***Eumenes (Eumenes) mongolicus* Morawitz, 1889**

Material examined. RUSSIA: *Khakassia*, Altayskiy Distr., Izykhskiy Kopi, 53°30.43'N, 91°13.11'E, 7.VII.2014, (1 ♀), leg. AL, MP, VL [FSCV]. *Tyva Rep.*, Orokhin-Gol Riv. vall., 20 km E Amtaigan-Khol' Lake, 25.VIII.1962, (1 ♀) [FSCV]; Erzin Distr., 25 km SE Erzin, Tes-Khem Riv., 50°04.78'N, 95°21.17'E, 14.VII.2014, (1 ♂), leg. AL, MP, VL [CAFK]. *Krasnoyarsk Terr.*, Minusinsk Distr., 10 km NW Minusinsk, Bystraya Riv. vall., 53°44.06'N, 91°34.12'E, 9.VII.2014, (2 ♀), leg. AL, MP, VL [FSCV].

Distribution. Russia: Western Siberia (Altai), Eastern Siberia (*Khakassia, *Tyva Rep., *Krasnoyarsk Terr., Irkutsk Prov., Buryatia, Zabaikalskiy Terr.). – Kyrgyzstan, Mongolia, China.

***Eumenes (Eumenes) pedunculatus* (Panzer, 1799)**

Material examined. RUSSIA: *Khakassia*, Shira Distr., Chernoye Ozero, Chernoye Lake, 54°39.04'N, 89°23.23'E, 16.VII.2012, (1 ♀), leg. MP, VL [FSCV]. *Tyva Rep.*: Tes-Khemskiy Distr., 13 km NEE Samagaltay, 50°37.47'N, 95°11.09'E, 1500 m, 11.VII.2013, (1 ♀), leg. MP, VL [CAFK]; Tes-Khemskiy Distr., Shuurmak, 50°38.19'N, 95°19.31'E, 12.VII.2013, (1 ♂), leg. MP, VL [FSCV].

Distribution. Russia: European part (North-West, Central, East), Urals, Western Siberia (Omsk Prov., Tomsk Prov., Novosibirsk Prov., Altai), Eastern Siberia (*Khakassia, *Tyva Rep., Krasnoyarsk Terr., Irkutsk Prov., Buryatia, Yakutia, Zabaikalskiy Terr.), Far East (Amurskaya Prov., Khabarovsk Terr., Primorskiy Terr., Sakhalin, Magadan Prov.). – Europe, Turkey, Kazakhstan, Mongolia, China.

***Eumenes (Eumenes) tripunctatus* (Christ, 1791)**

Figures 24–26

Material examined. RUSSIA: *Crimea*, Arabat Spit, Kamenskoye-Solyanoye, 45°18.20'N, 35°27.60'E, 23.VII.2017, (1 ♂), leg. AF [CAFK]; *ibid.*, reared from nest collected 28.VI.2020, 13–20.VII.2020, (1 ♀), leg. AF [CAFK]. *Tyva Rep.*, Tes-Khemskiy Distr., S Tannu-Ola Ridge, 45 km SW Samagaltay, S end of Khol'-Yezhu Riv., sandy *Nanophyton* semi-desert, 20.VII.1960, (1 ♀, 1 ♂), leg. J. Stebaev [FSCV]; Tes-Khemskiy Distr., 10 km E Khol'-Oozhu, 1600 m, 15–16.VII.1989, (1 ♀), leg. D.V. Logunov [FSCV]. AFGHANISTAN: *Ghazni Prov.*, SW Moqor, 10–20.IX.1972, (1 ♀), leg. Kabakov [FSCV].

Distribution. Russia: European part (East, South, North Caucasus, Crimea), Urals, Eastern Siberia (Tyva Rep.). – Eastern Europe, Iran, *Afghanistan, Turkmenistan, Kazakhstan, Mongolia, China.

Remarks. Amolin and Artokhin (2014) stated that this species was common in Tyva Republic (Tannu-Ola) but did not report any examined specimens; that record was then disregarded by Antropov and Fateryga (2017), who did not list Tyva Republic in the distribution of *E. tripunctatus*. The species is well known to be confined to



Figures 24–26. *Eumenes tripunctatus* (Christ, 1791), Russia (Crimea) **24** habitat **25** female feeding on *Teucrium capitatum* L. **26** nest on *Crambe maritima* L.

sandy habitats (Amolin and Artokhin 2014), that is evident also for both the Crimea (Fig. 24) and Tyva Republic. Such a habitat preference leads to an idea that sand may be used by *E. tripunctatus* for nest construction. A nest of this species, found for the first time, however, was made of usual clayey soil without any evidences of the sand use (Fig. 26). The nest, found attached to a *Crambe maritima* L. twig on 28.VII.2020 in the Crimea, was open but abandoned by the mother wasp; there was a fifth-instar larva inside. The next day it began spinning a cocoon from which the adult wasp emerged in July of the same year, indicating the presence of the second generation.

Euodynerus (*Euodynerus*) *velutinus* Blüthgen, 1951

Material examined. RUSSIA. *Dagestan*, Levashi Distr., Tsudakhar, 42°19.67'N, 47°09.80'E, 11.VI.2019, (1 ♀), leg. AF [CAFK].

Distribution. Russia: European part (*North Caucasus, Crimea). – Southern Europe, Caucasus, Turkey.

Euodynerus (Pareuodynerus) notatus (Jurine, 1807)

Material examined. RUSSIA: *Tyva Rep.*, Irbitey Riv., 21.VII.1963, (1 ♂), leg. L. Violovich [FSCV]. *Krasnoyarsk Terr.*, Minusinsk Distr., 10 km NW Minusinsk, Bystraya Riv. vall., 53°44.06'N, 91°34.12'E, 9.VII.2014, (1 ♀, 1 ♂), leg. AL, MP, VL [FSCV].

Distribution. Russia: European part (North-West, Central, East, South, North Caucasus, Crimea), Urals, Western Siberia (Altai), Eastern Siberia (*Tyva Rep., *Krasnoyarsk Terr., Irkutsk Prov., Buryatia, Yakutia, Zabaikalskiy Terr.), ?Far East (Amurskaya Prov., Khabarovsk Terr., Primorskiy Terr., Sakhalin, Magadan Prov.). – Europe, North Africa, Caucasus, Turkey, Iran, Kazakhstan, Mongolia, ?China.

Euodynerus (Pareuodynerus) quadrifasciatus (Fabricius, 1793)

Material examined. RUSSIA: *Tyva Rep.*, Todzha Highlands, Azas Lake, Azas Nature Reserve, 1200 m, 19–23.VII.1989, (1 ♂), leg. D.V. Logunov [FSCV].

Distribution. Russia: European part (North, North-West, Central, East, South, North Caucasus, Crimea), Urals, Western Siberia (Tyumen Prov., Omsk Prov., Tomsk Prov., Novosibirsk Prov., Altai), Eastern Siberia (*Tyva Rep., Krasnoyarsk Terr., Irkutsk Prov., Buryatia, Yakutia, Zabaikalskiy Terr.), Far East (Amurskaya Prov., Khabarovsk Terr., Primorskiy Terr., Sakhalin, Kuril Islands, Magadan Prov.). – Europe, North Africa, Caucasus, Turkey, Kazakhstan, Mongolia, China, Korean Peninsula, Japan.

Katamenes tauricus (de Saussure, 1855)

Material examined. RUSSIA: *Krasnoyarsk Terr.*, Minusinsk Distr., 10 km NW Minusinsk, Bystraya Riv. vall., 53°44.06'N, 91°34.12'E, 9.VII.2014, (1 ♀), leg. AL, MP, VL [CAFK].

Distribution. Russia: European part (Crimea), Western Siberia (Altai), Eastern Siberia (Tyva Rep., *Krasnoyarsk Terr., Irkutsk Prov., Buryatia), Far East (Amurskaya Prov.). – Iran, Afghanistan, Kyrgyzstan, Kazakhstan, Mongolia, China, India.

Remarks. This species is problematic and requires a revision due to its actual absence from the type locality (Crimea). The name *K. tauricus* could be a synonym or a subspecies of *K. dimidiatus* (Brullé, 1832), while the valid name for the species mentioned here could be in that case *K. latipes* (Sickmann, 1894) (Fateryga 2018).

Odynerus (Spinicoxa) reniformis (Gmelin, 1790)

Material examined. RUSSIA: *Dagestan*, Rutul Distr., Khlyut, 41°30.40'N, 47°31.15'E, 4.VI.2019, (2 ♂), leg. AF [CAFK].

Distribution. Russia: European part (North-West, Central, East, *North Caucasus), Urals, Western Siberia (Tomsk Prov., Altai), Eastern Siberia (Tyva Rep., Buryatia, Yakutia, Zabaikalskiy Terr.). – Europe, Turkey, Israel, Kazakhstan.

Onychopterocheilus (Asiapterocheilus) kiritshenkoi (Kostylev, 1940)

Material examined. RUSSIA: *Tyva Rep.*, Erzin Distr., 3–5 km E Erzin, 1000–1100 m, 23.V.1990, (1 ♀), leg. D.V. Logunov [FSCV].

Distribution. *Russia: Eastern Siberia (Tyva Rep.). – Mongolia.

Pseudepipona (Pseudepipona) herrichii (de Saussure, 1856)

Material examined. RUSSIA: *Tyva Rep.*, Erzin Distr., vicinity of Erzin, 1000–1100 m, 14–15.VIII.1989, (1 ♂), leg. D.V. Logunov [FSCV].

Distribution. Russia: European part (East, South, North Caucasus, Crimea), Urals, Western Siberia (Omsk Prov., Novosibirsk Prov., Altai), Eastern Siberia (Khakassia, *Tyva Rep., Krasnoyarsk Terr., Irkutsk Prov., Buryatia, Yakutia, Zabaikalskiy Terr.), Far East (Amurskaya Prov., Primorskiy Terr.). – Western, Southern, and Eastern Europe, North Africa, Georgia, Armenia, Azerbaijan, Turkey, Syria, Turkmenistan, Uzbekistan, Kyrgyzstan, Kazakhstan, Mongolia, China, North America.

Pterocheilus (Pterocheilus) phaleratus (Panzer, 1797)

Material examined. RUSSIA: *Krasnoyarsk Terr.*, Minusinsk Distr., Malaya Minusa, 53°43.24'N, 91°50.08'E, 8.VII.2014, (1 ♀), leg. AL, MP, VL [CAFK]; Minusinsk Distr., 10 km NW Minusinsk, Bystraya Riv. vall., 53°44.06'N, 91°34.12'E, 9.VII.2014, (2 ♀), leg. AL, MP, VL [FSCV].

Distribution. Russia: European part (Central, ?East, South, Crimea), Urals, Western Siberia (Novosibirsk Prov., Altai), Eastern Siberia (Tyva Rep., *Krasnoyarsk Terr.). – Europe, Georgia, Azerbaijan, Turkey, Kazakhstan, Mongolia.

Pterocheilus (Pterocheilus) quaesitus (Morawitz, 1895)

Material examined. RUSSIA: *Tyva Rep.*, vicinity of Kyzyl, 4–8.VI.1989, (2 ♀), leg. D.V. Logunov [FSCV].

Distribution. *Russia: Eastern Siberia (Tyva Rep.). – Kazakhstan, Mongolia, China.

***Stenodynerus chitgarensis* Giordani Soika, 1970**

Material examined. RUSSIA: *Dagestan*, Levashi Distr., Tsudakhar, 42°19.67'N, 47°09.80'E, 11.VI.2019, (1 ♀), leg. AF [CAFK].

Distribution. *Russia: European part (North Caucasus). – Azerbaijan, Turkey, Iran, Uzbekistan, Kyrgyzstan.

Remarks. The studied specimen is remarkably darker than it is typical for *S. chitgarensis*. Particularly, it lacks a yellow pattern on the clypeus, scapus, scutellum, propodeum, coxae, T6, and S3–6. Two lateral spots on T2, which are diagnostic for this species (Giordani Soika 1970, Gusenleitner 1981), are also absent. At the same time, there are no differences in the structure from the typical specimens of *S. chitgarensis* from neighboring Azerbaijan (Fateryga et al. 2019).

***Stenodynerus orenburgensis* (André, 1884)**

Figures 23, 50–54

Material examined. RUSSIA: *Khakassia*, Altayskiy Distr., Izykhskiy Kopi, 53°30.43'N, 91°13.11'E, 13.VI.2012, (1 ♀), leg. MP, VL [CAFK]; Shira Distr., Chernoye Ozero, Chernoye Lake, 54°39.04'N, 89°23.23'E, 16.VII.2012, (1 ♂), leg. MP, VL [CAFK].

Distribution. Russia: European part (Central, South, North Caucasus, Crimea), Urals, Western Siberia (Omsk Prov., Altai), Eastern Siberia (*Khakassia, Irkutsk Prov., Buryatia, Zabaikalskiy Terr.). – Europe, Caucasus, Turkey, Kyrgyzstan, Kazakhstan, Mongolia, China.

***Stenodynerus picticrus* (Thomson, 1874)**

Figures 21, 40–44

Material examined. RUSSIA: *Krasnoyarsk Terr.*, Turukhansk Distr., right bank of Yenisey Riv., Vereshchagino, 19.VIII.1988, (2 ♀), leg. P.A. Lehr [FSCV].

Distribution. Russia: European part (North, North-West, Central), Urals, Western Siberia (Tomsk Prov., Altai), Eastern Siberia (Krasnoyarsk Terr., Irkutsk Prov., Buryatia, Yakutia, Zabaikalskiy Terr.), Far East (Amurskaya Prov., Khabarovsk Terr., Primorskiy Terr., Sakhalin, Kamchatka Terr., Magadan Prov.). – Europe, Turkey, Kazakhstan, Mongolia.

Remarks. Kostylev (1938) reported this species from Western Sayan and the Yenisey River but that record was disregarded by Antropov and Fateryga (2017), who did not list Krasnoyarsk Territory in its distribution.

***Stenodynerus pullus* Gusenleitner, 1981**

Figures 22, 45–49

Material examined. RUSSIA: *Khakassia*, Altayskiy Distr., Izykhskiy Kopi, 53°30.43'N, 91°13.11'E, 13.VII.2012, (1 ♀), leg. MP, VL [FSCV].

Distribution. Russia: Western Siberia (Altai), Eastern Siberia (*Khakassia, Tyva Rep., Irkutsk Prov., Buryatia, Zabaikalskiy Terr.), Far East (Amurskaya Prov., Primorskiy Terr.). – Turkey, Mongolia, China, Korean Peninsula.

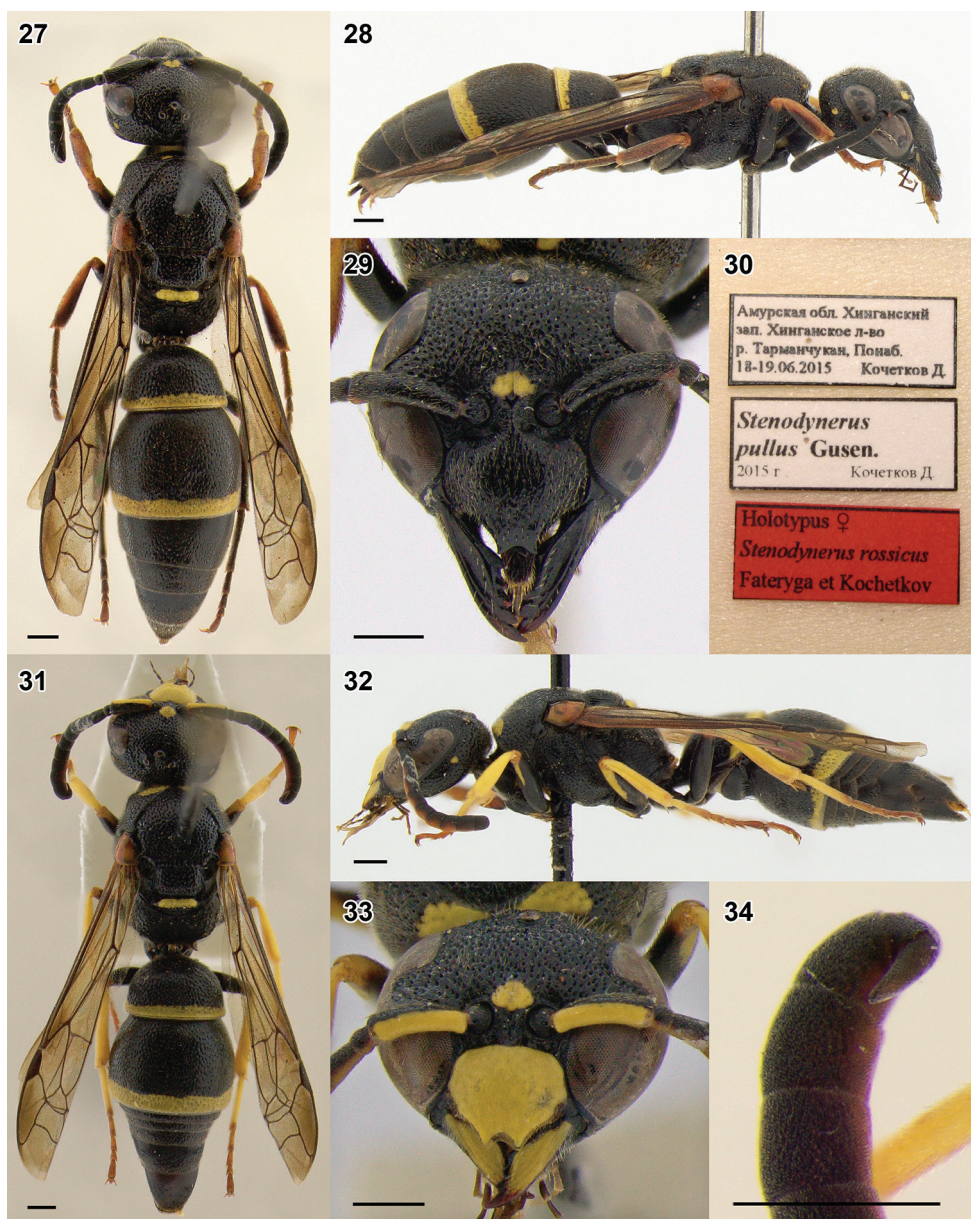
***Stenodynerus rossicus* Fateryga & Kochetkov, sp. nov.**

<http://zoobank.org/5CDD73AA-1A46-42AC-A3BB-7E02F79B6632>

Figures 19, 27–34

Material examined. Holotype: ♀, RUSSIA: *Amurskaya Prov.*, “Хинганский зап., Хинганское л-во, р. Тарманчукан, Понаб” [Arkharu Distr., Khingan Nature Reserve, Khingan Forestry, Tarmanchukan Riv., Ponab Natural Landmark], 18–19.VI.2015, leg. D.N. Kochetkov [ZISP] (dry pinned specimen, illustrated in Figs 27–30). **Paratypes:** RUSSIA: *Altai Rep.*, 2 ♀, Kosh-Agach Distr., 24 km NWW Aktash, Chuya Riv. vall., 50°21.52'N, 87°16.25'E, 6.VII.2019, leg. A.V. Fateryga [CAFK]. *Amurskaya Prov.*, 2 ♀, “п. Архара, скалистый холм, лесная дорога” [Arkharu Distr., Arkhara, rocky hill, forest road], 14.VII.2013, leg. D.N. Kochetkov [FSCV]; 1 ♀, 2 ♂, “п. Архара. Скалистый холм, суходольный луг” [Arkharu Distr., Arkhara. Rocky hill, upland meadow], 7–8.VI.2014, leg. D.N. Kochetkov [CAFK, FSCV]; 1 ♀, *ibid.*, 14.VI.2014, leg. D.N. Kochetkov [FSCV]; 2 ♀, *ibid.*, 27.VI.2014, leg. D.N. Kochetkov [FSCV]; 2 ♀, “п. Архара, скалистый холм, осыпь, суходольный луг” [Arkharu Distr., Arkhara, rocky hill, scree, upland meadow], 14.VI.2015, leg. D.N. Kochetkov [FSCV]; 1 ♀, *ibid.*, 26.VI.2015, leg. D.N. Kochetkov [CAFK]; 1 ♀, “Хинганский зап., пос. Архара, суходольный луг на склоне” [Arkharu Distr., Khingan Nature Reserve, Arkhara, upland meadow on a slope], 12.VII.2016, leg. D.N. Kochetkov [CAFK]; 1 ♀, 1 ♂ (illustrated in Figs 31–34), “пос. Архара, ур. Архаринский увал, суходольный луг на склоне” [Arkharu Distr., Arkhara, Arkharinskiy Uval Natural Landmark, upland meadow on a slope], 22.VI.2018, leg. D.N. Kochetkov [FSCV, ZISP]; 1 ♀, *ibid.*, 10.VII.2019, leg. D.N. Kochetkov [FSCV]; 2 ♀, *ibid.*, 27.VII.2019, leg. D.N. Kochetkov [FSCV]; 1 ♀, “Хинганский заповед., хр. Мал. Хинган, 3 км В Урила, р. Тарманчукан” [Arkharu Distr., Khingan Nature Reserve, Maliy Khingan Range, 3 km E Uril, Tarmanchukan Riv.], 10–12.VII.2018, leg. D.N. Kochetkov [FSCV].

Diagnosis. The new species is closely related to *S. punctifrons* (Thomson, 1874) but differs by having a more slender habitus, black scapus and dorsal mesepisternum in the female, black or dark brown tarsi in the female, and a less deeply emarginated apical margin of clypeus in the male [in *S. punctifrons* (Figs 35–39), the female scapus is reddish or orange ventrally and the dorsal mesepisternum bears a yellow spot, the female tarsi are ferruginous, the male clypeus has a deeply emarginated apical margin]. Another closely

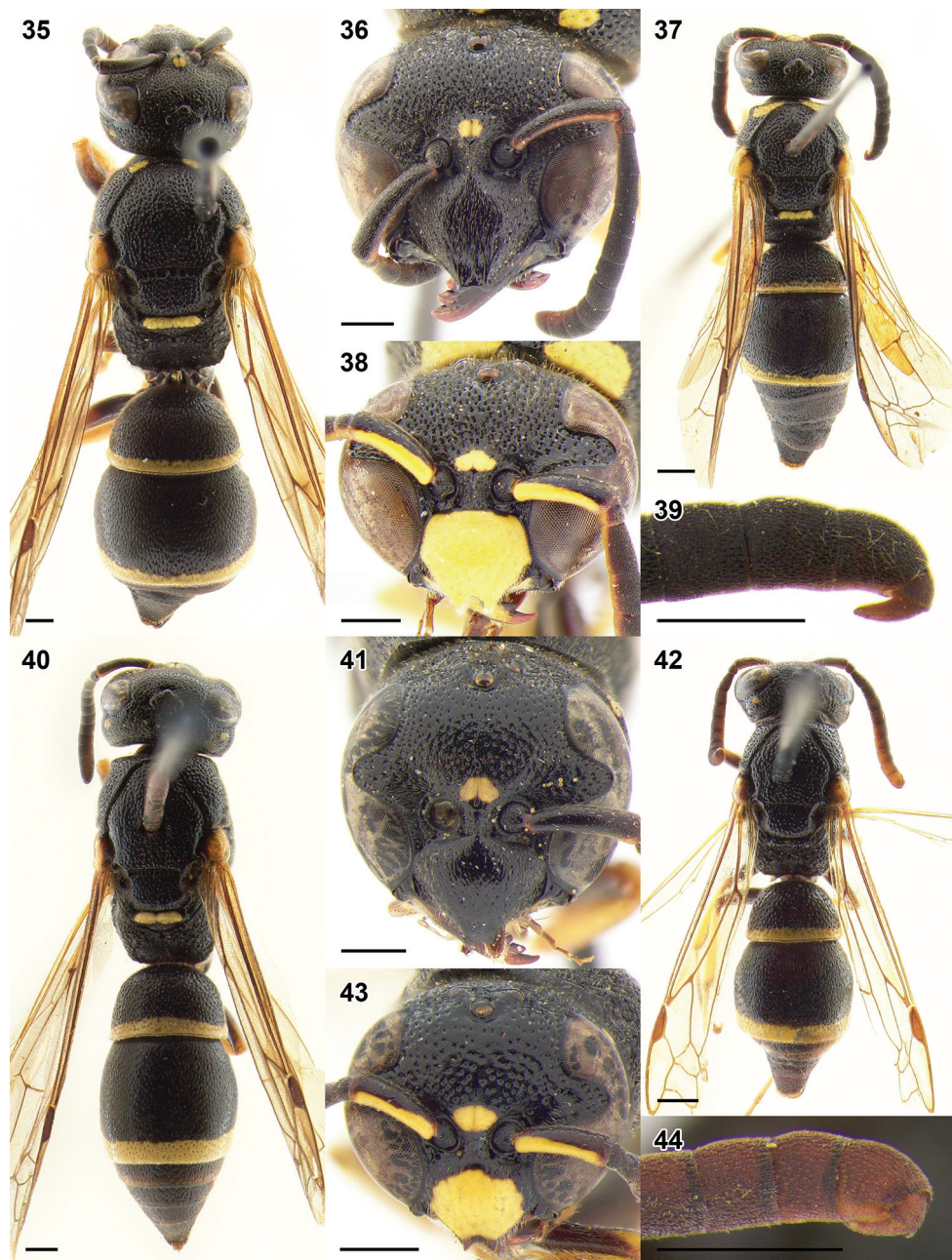


Figures 27–34. *Stenodynerus rossicus* Fateryga & Kochetkov, sp. nov., Russia (Amurskaya Prov.), holotype, female (27–30) and paratype, male (31–34) 27, 31 dorsal habitus 28, 32 lateral habitus 29, 33 head in frontal view 30 labels 34 apex of antenna. Scale bars 0.5 mm.

related species is *S. picticus* (Figs 40–44), whose habitus, female color pattern, and male clypeus are similar to those of *S. rossicus* sp. nov. but which has a flattened scutellum and distinctly longer T1 in dorsal view [both in *S. rossicus* sp. nov. and *S. punctifrons*, the scutellum is evidently convex and T1 is remarkably shorter than long in dorsal view]. The new

species is also similar to *S. pullus* (Figs 45–49) and *S. orenburgensis* (Figs 50–54) but the two latter species have unnoticeable pilosity on the scutum (the setae are much shorter than the diameter of a lateral ocellus versus \pm equal to the diameter of a lateral ocellus in *S. rossicus* sp. nov., *S. punctifrons*, and *S. picticus*), and a female color pattern similar to that in *S. punctifrons*; the male clypeus has a deeply emarginated apical margin in *S. orenburgensis*, less deeply in *S. pullus*. The male F11 of *S. rossicus* sp. nov. is rather big (0.8 as long as F9), similar to that in *S. orenburgensis*, while it is slightly smaller in *S. punctifrons* and *S. picticus* (0.7 as long as F9) and very small in *S. pullus* (0.5 as long as F9). The aedeagus of *S. rossicus* sp. nov. (Fig. 19) is strongly widened towards the base, similar to that in *S. punctifrons* (Fig. 20) and *S. picticus* (Fig. 21) but in a somewhat different manner, while it is less widened towards the base in *S. pullus* (Fig. 22) and almost parallel-sided in *S. orenburgensis* (Fig. 23). The apex of the aedeagus of *S. rossicus* sp. nov. is very slightly emarginated as in *S. orenburgensis*, while it is rounded in *S. punctifrons*, *S. picticus*, and *S. pullus*.

Description. Female. Body length (from head to apical margin of T2) 8 mm; fore wing length 6.5 mm. Structure: Head $1.1\times$ as wide as long in frontal view. Clypeus as wide as long; its apical emargination up to $0.3\times$ as deep as wide, taking $1/4$ of clypeal width. Vertex longer than upper portion of compound eye, \pm flat; cephalic fovea weakly developed, slightly narrower than distance between lateral ocelli. Anterior face of pronotum with V-shaped pair of median foveae; pronotal carina obsolete at center (between yellow spots) and distinct laterally, forming blunt angles at anterolateral corners of pronotum. Epicnemial carina weakly developed but distinct. Tegula evenly rounded posterolaterally. Scutellum slightly but evidently convex. Metanotum dorsally slightly impressed at center. Propodeal shelf weakly developed. Propodeal valvula bilamellate; upper lobe nearly rectangular in lateral view. T1 $1.7\times$ as wide as long in dorsal view, rounded in lateral view, without transverse carina. T2 uniformly convex through entire length, without apical lamella. S2 uniformly convex in lateral view; basal longitudinal furrow on S2 obsolete. Punctuation: Clypeus \pm densely punctured and longitudinally strigate, especially at center; interstices reach approximately 2 puncture diameters, shining but with rather deep micropunctures. Frons with denser and larger punctures than those on clypeus; interstices less than puncture diameter, matt, with micropunctures similar to those on clypeus. Punctuation on vertex and temples similar to that on frons but sparser; interstices approximately equal to puncture diameter. Dorsal and lateral parts of pronotum, scutum, and scutellum with deep large punctures, \pm equal in diameter to parategula width at apex; interstices matt, less than puncture diameter, with distinct micropunctures. Dorsal and ventral mesepisterna and mesepimeron with somewhat smaller and sparser punctures than those on scutum; interstices reach puncture diameter, shining, with rather shallow micropunctures. Tegula with micropunctures only. Dorsal (yellow) face of metanotum with approximately 10 punctures; interstices exceed puncture diameter, shining. Posterior (black) face of metanotum with rough sculpture, matt. Dorsolateral parts of propodeum with comb-like sculpture. Metapleura, lateral parts of propodeum, and propodeal concavity strigate, matt. T1 with dense punctures similar in size to those on scutum but shallower; interstices less than puncture diameter; both punctures and interstices with dense shallow microsculpture. T2–T5 with sparser



Figures 35–44. *Stenodynerus punctifrons* (Thomson, 1874), female, Russia (Amurskaya Prov.) (35, 36), *S. punctifrons*, male, Russia (Amurskaya Prov.) (37–39), *S. picticus* (Thomson, 1874), female, Russia (Krasnoyarsk Terr.) (40, 41), and *S. picticus*, male, Russia (Amurskaya Prov.) (42–44) 35, 37, 40, 42 dorsal habitus 36, 38, 41, 43 head in frontal view 39, 44 apex of antenna. Scale bars 0.5 mm.



Figures 45–54. *Stenodynerus pullus* Gusenleitner, 1981, paratype, female, Russia (Primorskiy Terr.) (45–46), *S. pullus*, male, Russia (Primorskiy Terr.) (47–49), *S. orenburgensis* (André, 1884), female, Russia (Crimea) (50, 51), and *S. orenburgensis*, male, Russia (Crimea) (52–54) 45, 47, 50, 52 dorsal habitus 46, 48, 51, 53 head in frontal view 49, 54 apex of antenna. Scale bars 0.5 mm.

and smaller punctures than those on T1; interstices approximately equal to puncture diameter, with microsculpture similar to that on T1. T6 with dense shallow microsculpture, without distinct punctures. Punctuation on S2 similar to that on T2 but sparser and deeper; interstices reach approximately 3 puncture diameters; distinct microsculpture well visible on them. Punctuation on S3–S6 similar to that on corresponding terga. Pilosity: Mandibles with straight pale setae, as long as width of first labial palpomere at posterior end. Clypeus and temples with \pm appressed brownish setae, somewhat shorter than those on mandibles. Frons and vertex with straight brownish setae, as long as scapus width at base. Dorsal mesosoma with similar but shorter setae, as long as diameter of lateral ocellus. Remaining parts of mesosoma, legs except tibiae and tarsi, and metasoma with setae similar to those on clypeus and gena. Tibiae and tarsi with similar but thicker and straighter setae. Color: Black. Following parts yellow: spot on frons; two small spots on temples at dorsolateral corners of head; two small spots on dorsal face of pronotum (absent in one specimen); dorsal face of metanotum; apical bands on T1 and T2; narrow apical band on S2. Tegula ferruginous. Apical 5–10% of femora and entire tibiae from dark brown to ferruginous. Tarsi from black to dark brown. Wings strongly fuscous, particularly on median, first submarginal, and marginal cells.

Male. Body length (from head to apical margin of T2) 7 mm; fore wing length 6 mm. Structure: Resembles female but clypeus $1.2\times$ as wide as long; its apical emargination up to $0.5\times$ as deep as wide, taking slightly more than $1/4$ of clypeal width. Vertex about as long as upper portion of compound eye, flat. Apex of F11 reaches posterior margin of F8. Meso- and metasoma as in female. Aedeagus as in Fig. 19. Punctuation: Resembles female but clypeus not strigate. Punctuation on dorsal and lateral parts of pronotum, scutum, and scutellum sparser than that in female; interstices approximately equal to puncture diameter. Pilosity: Resembles female but clypeus appears bare, with just very minute setae. Color: Black. Following parts yellow: mandibles, labrum, clypeus, spot on frons; two small spots on temples at dorsolateral corners of head; scapus frontally; two large spots on dorsal face of pronotum; dorsal face of metanotum; spots on fore and middle (or only middle) coxae; posterior $1/3$ of front femora ventrally; posterior $2/3$ of middle femora ventrally; entire tibiae and basitarsi; apical bands on T1, T2, and S2. Tegula, flagellum ventrally, and tarsi 2–5 ferruginous. Wings strongly fuscous as in female.

Etymology. The specific name “*rossicus*” is an adjective in the nominative singular that means “Russian” in Latin and refers to the occurrence of this species in Russia.

Distribution. Russia: Western Siberia (Altai), Far East (Amurskaya Prov.).

Symmorphus (Symmorphus) lucens (Kostylev, 1938)

Material examined. RUSSIA: *Tyva Rep.*, Tes-Khemskiy Distr., Shuurmak, $50^{\circ}38.19'N$, $95^{\circ}19.31'E$, 11.VII.2013, (2 ♂), leg. MP, VL [CAFK].

Distribution. Russia: Urals, Western Siberia (Altai), Eastern Siberia (*Tyva Rep., Irkutsk Prov., Buryatia, Zabaikalskiy Terr.), Far East (Amurskaya Prov., Khabarovsk Terr., Primorskiy Terr., Sakhalin). – Mongolia, China, Korean Peninsula, Japan.

***Symmorphus (Symmorphus) murarius* (Linnaeus, 1758)**

Material examined. RUSSIA: *Altai Rep.*, Kosh-Agach Distr., 24 km NWW Aktash, Chuya Riv. vall., 50°21.52'N, 87°16.25'E, 7.VII.2019, (1 ♂), leg. AF [CAFK].

Distribution. Russia: European part (North-West, Central, North Caucasus, Crimea), Urals, Western Siberia (Tyumen Prov., *Altai), Eastern Siberia (Krasnoyarsk Terr., Irkutsk Prov., Buryatia, Zabaikalskiy Terr.), Far East (Amurskaya Prov., Primorskiy Terr.). – Europe, North Africa, Armenia, Azerbaijan, Turkey, Iran, Central Asia, Kazakhstan, Korean Peninsula.

Conclusion

In addition to the new regional records, one new species of eumenine wasps is described and three species are reported from Russia for the first time. At the same time, one species is excluded from the Russian fauna. A final calculation reveals that 165 eumenine wasp species in 34 genera are known today in this country. Our knowledge of the subfamily Eumeninae s. l. in the fauna of Russia is still incomplete. In particular, the most understudied territories are the North Caucasus and southern Siberia, especially the Altai Republic and Tyva Republic. For example, a specimen of Onychopterocheilus (Asiapterocheilus) collected in Altai (Fateryga et al. 2017) is still unidentified and possibly represents an undescribed species. Thus, further studies of the eumenine wasps of Russia will certainly reveal new important results.

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