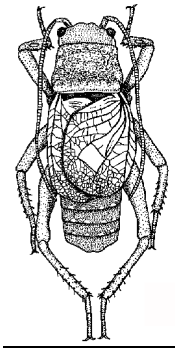

# Far Eastern Entomologist

## Дальневосточный энтомолог

Journal published by Far East Branch of the Russian Entomological Society and Laboratory of Entomology, Federal Scientific Center of the East Asia Terrestrial Biodiversity, Vladivostok

Number 337: 1-16 ISSN 1026-051X July 2017

https://doi.org/10.25221/fee.337.1
http/urn:lsid:zoobank.org:pub:A11B009D-8BB2-4DB0-976E-A8110CFAFE61

# TO THE KNOWLEDGE OF DIGGER WASPS OF SUBFAMILY PEMPHREDONINAE (HYMENOPTERA: CRABRONIDAE) OF RUSSIA

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**Summary**. The review of 16 species from five genera is given. *Stigmus eurasiaticus* **sp. n.** and hitherto unknown male of *Ammoplanus serratus* Tsuneki 1972 are described. *Ammoplanus gegen* Tsuneki, 1972, *Diodontus changaiensis* Tsuneki, 1972, *D. parvulus* (Radoszkowski, 1877), and *Psenulus chevrieri* (Tournier, 1889) are newly recorded from Russia; the distribution of other species are enlarged or clarified in Russia as in other countries. *Entomosericus kaufmani* Radoszkowski, 1877 and *Ammoplanus transcaspicus* Gussakovskij, 1931 are excluded from the list of Russian fauna.

**Key words**: Crabronidae, Pemphredoninae, taxonomy, new species, fauna, new records, Russia.

**М. В. Мокроусов. К познанию роющих ос подсемейства Pemphredoninae (Hymenoptera: Crabronidae) России // Дальневосточный энтомолог. 2017. N 337. С. 1-16.**

**Резюме**. Дан обзор 16 видов из 5 родов подсемейства Pemphredoninae. Описаны *Stigmus eurasiaticus* **sp. n.** и ранее неизвестный самец *Ammoplanus serratus* Tsuneki 1972. Впервые для России указываются *Ammoplanus gegen*

Tsuneki, 1972, *Diodontus changaiensis* Tsuneki, 1972, *D. parvulus* (Radoszkowski, 1877) и *Psenulus chevrieri* (Tournier, 1889), распространение остальных видов расширено или уточнено, как в России, так и в других странах. *Entomosericus kaufmani* Radoszkowski, 1877 и *Ammoplanus transcaspicus* Gussakovskij, 1931 исключены из списка видов фауны России.

## INTRODUCTION

Before the completing of the Catalogue of Hymenoptera of Russia the series of the papers with new data on the different wasps of Russian fauna are published (Mokrousov, 2017; Mokrousov, Lelej, 2016; Mokrousov *et al*., 2016, Lelej *et al*., 2016a; 2016b; Fateryga, 2017). In the current paper the subfamily Pemphredoninae is regarded.

## MATERIAL AND METHODS

This paper is based on the vast material collected in 2011–2016 in the European part of Russia, collection of Zoological Institute (St. Petersburg) and additional material collected by different collectors (indicated in the text). Material are deposited in Zoological Institute, St. Petersburg [ZISP], Zoological Museum of Moscow University [ZMMU], M.V. Mokrousov personal collection (Nizhny Novgorod) [MC], R.T-o. Baghirov personal collection (Tomsk) [BC], A.E. Humala personal collection, (Petrozavodsk) [HC] and in P.V. Rudoiskatel with K.I. Fadeev collection (Yekaterinburg) [RFC]. Other depositories indicated in the text.

The images were processed at the Laboratory of Independent Expertises Ltd., Nizhny Novgorod, with a digital camera Magnüs MagCam MIPS 5MP attached to a Carl Zeiss Stemi 508 stereomicroscope and with digital camera Canon Ixus 115 HS. Image made in transmitted light were processed at the Institute of Biology and Biomedicine at Lobachevsky State University, Nizhny Novgorod, with a digital camera Magnüs MagCam MIPS 5MP attached to a Meiji MT4200L binocular LED microscope. Composite images with an extended depth of field were created from stacks of images using the software Helicon Focus v. 6.0.18. The final illustrations were post-processed for sharpness, contrast and brightness using Adobe® Photoshop® software. The classification of Pemphredoninae follows Pulawski (2017). New faunistic records are asterisked (*). Abbreviations for the collectors: B. – S.A. Belokobylskij, M. – M.V. Mokrousov, R. – P.V. Rudoiskatel'.

## LIST OF THE SPECIES

### Genus *Entomosericus* Dahlbom, 1845

A small genus with three Palaearctic species (Schmid-Egger, 2000), two of them were recorded from Russia: *Entomosericus concinnus* Dahlbom, 1845 (Schmid-Egger, 2000; Shkuratov, 2004; Shorenko, 2005; Mokrousov & Popov, 2016) and *E. kaufmani* Radoszkowski, 1877 (Baghirov, 2010; Nemkov, 2011).

The re-identification of the specimens of *E. kaufmani* from Altai (Baghirov, 2010), show that they are *Tachytes panzeri* (Dufour, 1841) (Crabroninae: Larrini) [BC]. The record of this species from South Ural (Nemkov, 2011) is based on misidentifed *E. concinnus* (V. Nemkov, pers. comm.). Thus, *E. kaufmani* is excluded from the Russian fauna.

### *Entomosericus concinnus* Dahlbom, 1845

*Entomericus* [sic] *concinnus* Dahlbom, 1845: 486, ♂, holotype or syntypes, ♂, Greece: Rhodes Il. [Lund University, Sweden].

*Entomosericus concinnus*: F. Morawitz, 1891: 219 (Astrakhan Prov.); Schmid-Egger, 2000: 360 (Crimea, Orenburg Prov.); Shkuratov, 2004: 76 (Rostov Prov.); Shorenko, 2005: 166 (Crimea); Mokrousov & Popov, 2016: 586 (Krasnodar Terr.).

*Entomosericus kaufmani*: Nemkov, 2011: 258 (Orenburg Prov.).

SPECIMENS EXAMINED. **Russia**: Voronezh Prov., 1♀ [ZISP]; Rostov Prov., Rostov State Nature Reserve, Tzagan-Hag, 46°19'16.4"N 43°17'59.3"E, 3.VI 2011 (M.), 1♀ [MC]; Volgograd (former Sarepta), 1♀, 3♂ [ZISP]; Krasnodar Terr., 2♀ [MC]; Crimea, 5♀, 4♂ [ZISP]; Orenburg Prov., 2♀ [ZISP]. **Ukraine** (1♀) [ZISP]. **Georgia**: 2 km SW Atskuri, 41.712°N 43.139°E, 23.VI 2016 (M.), 1♀, 11♂ [MC, ZISP]. **Turkmenistan**: Germab, without date (Komarov), 1♀, 1♂ [ZISP]. **Kazakhstan**: Uralsk, 11.VII 1925 (Gordeev), 1♂ [ZISP].

DISTRIBUTION. Russia: (*Voronezh Prov., Rostov Prov., Volgograd Prov., Astrakhan Prov., Krasnodar Terr., Crimea, Orenburg Prov.), France, Greece, Croatia, Romania, Hungary, Morocco, Algeria, Ukraine, *Georgia, Armenia, Turkey, Syria, Israel, *Turkmenistan, *Kazakhstan.

## Genus *Ammoplanus* Giraud, 1869

Holarctic genus with one species in South Africa also. Number of species: World – 49 species, Palaearctic – 32, Russia – 6. *Ammoplanus transcaspicus* Gussakovskij, 1931 which recorded from Altai Republic (Baghirov, 2010) actually belongs to *A. kaszabi* Tsuneki, 1972 and *A. marathroicus* (De Stefani Perez, 1887) and is excluded from Russian fauna.

### *Ammoplanus gegen* Tsuneki, 1972

*Ammoplanus gegen* Tsuneki, 1972: 219, ♀, holotype, ♀, Mongolia, Central Aymag, Zuun-Khara [Természettudományi Múzeum, Budapest, Hungary].

SPECIMENS EXAMINED. **Russia**: Volgograd Prov., Gorodishche, 25.VI 1977 (D. Kasparyan), 1♀ [ZISP]. **Tajikistan** (1♀) [ZISP].

DISTRIBUTION. *Russia (Volgograd Prov.), Spain, Austria, Czech Rep., Cyprus, Jordan, Turkmenistan, Tajikistan, Mongolia.

### *Ammoplanus kaszabi* Tsuneki, 1972

*Ammoplanus kaszabi* Tsuneki, 1972: 214, ♀, ♂, holotype, ♂, Mongolia, Central Aymag, Ulaan-Khodag [Természettudományi Múzeum, Budapest, Hungary]; Bouček, 2001: 890 (Altai Prov., Rubtsovsk); Nemkov, 2008: 19 (Altai; Irkutsk Prov.).

*Ammoplanus crudelis* Marshakov, 1976: 680, ♀, holotype, ♀, Mongolia, Oriental Aymag, 32 km SE Salkhit, on river Nurmegin-gol [ZISP], examined. Synonymized with *A. kaszabi* Tsuneki, 1972 by Bouček, 2001: 889; Nemkov, 1986: 96 (Irkutsk Prov.); Budrys, 1995: 405 (Altai; Irkutsk Prov.).
*Ammoplanus transcaspicus*: Baghirov, 2010: 679 (Altai Rep., part.).

SPECIMENS EXAMINED. **Russia**: Volgograd Prov., Gorodishche, 25.VI 1977 (D. Kasparyan), 1♀ [ZISP]; Orenburg Prov., near Orsk, 51°18'N 52°25'E, 18.VI 2010 (R.), 3♀ [RFC, MC]; Chelyabinsk Prov., near Zhdanovskoe, Cheka Mt., 52°40'N 59°06'E, 10.VI 2010 (R.), 1♀ [MC]; Altai Rep.: 10 km SW Kurai, 11.VII 2007 (B.), 5♀ [ZISP]; 20 km WNW Kosh-Agatch, 14.VII 2007 (B.), 1♀ [ZISP]; Krasnoyarsk Prov., near river Vivi, 27.VII 1873 (Tchekanovsky), 1♀ [ZISP]; Irkutsk Prov., Bratsk (Padun vill.), Angara riv. (former Upper Tunguska), 1867 (Tchekanovsky), 1♀ [ZISP]. **Mongolia** (10♀) [ZISP].

DISTRIBUTION. Russia (*Volgograd Prov., *Orenburg Prov., *Chelyabinsk Prov., Altai Prov., Altai Rep., *Krasnoyarsk Prov., Irkutsk Prov.), Spain, France, Turkey, Kazakhstan, Mongolia.

### *Ammoplanus serratus* Tsuneki, 1972

Figs 1–5

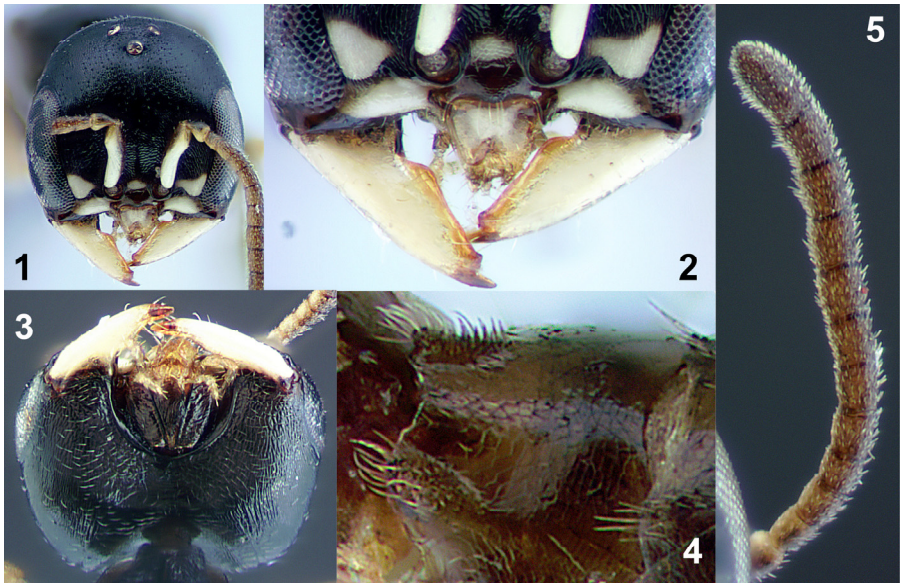
*Ammoplanus serratus* Tsuneki, 1972: 223, ♀, holotype, ♀, Mongolia, Central Aymag, Tosgoni-Ovoo [Természettudományi Múzeum, Budapest, Hungary]; Baghirov, 2010: 679 [Altai Rep.].

SPECIMENS EXAMINED. **Russia**: Altai Rep., 20 km WNW Kosh-Agatch, 14.VII 2007 (B.), 1♂ [ZISP]. **Mongolia**: Khovsgol Aimag (former Khubsugul Aimag), Delger-murun river, near Buren-Khana, 28–29.VI 1968 (A. Emeljanov), 1♀ [ZISP].

DESCRIPTION. MALE (hitherto unknown). Dark brown; small triangular spots at bottom of inner edge of eyes, small rounded spot between antennal sockets, lateral parts of clypeus, labrum, mandible and scape and pedicel ventrally whitish (Fig. 1). Legs brown with paler fore trochanter, apex of fore femur, inner side of fore tibia and tarsus. Wings venation brown, pterostigma brown with paler base. Body length 2.8 mm.

Head. Elongate, ratio length (from vertex to apex of clypeus medially in frontal view) to width 0.88 × (Fig. 1); distance between antennal socket and eye 1.4 × diameter of antennal socket (Fig. 2). Eyes with shallowly emarginate inner orbits, slightly converging downwards, ratio minimal distance from above to minimal distance below about 1.22 × (Fig. 1). Clypeus with deep emargination bounded by strong teeth, medially with small rounded protrusion (Fig. 2). Labrum width 1.33 × its length. Head ventrally with large shallow, undivided hollow behind oral fossa (Fig. 3), but slightly smaller than in female; concavity delimited by transverse, slightly arcuate weak ridge. Mandible broad, inner tooth diagonally truncate (Fig. 2). Flagellomeres 1–10 slightly longer than its width, flagellomer 11 distinctly longer than its width (Fig. 5). Head dull with dense microsculpture; at front with rather strong punctuation; head ventrally with distinct longitudinal wrinkles.

Pronotal collar short, rounded, without transverse carina, not depressed medially. Mesonotum with short lateral admedian lines and notauli; parapsids distinct. Mesosoma (except metanotum) dull with dense microsculpture and weak punctures; metanotum smooth and shiny; metapostnotum with strong wrinkles basally and one long irregular median wrinkle and small transverse wrinkles and irregular areolate sculpture; propodeum laterally with numerous oblique wrinkles.




Figs 1–5. *Ammoplanus serratus*, ♂ (Altai Rep.). 1 – head, frontal view; 2 – clypeus, labrum and mandibles; 3 – head, posterior view; 4 – sternum 5, ventrolateral view; 5 – antenna.

Legs normal; hind tibia slightly curved; hind tarsomere 1 not modified.

Metasomal sternum 5 modified: apex slightly widely emarginated at central part; apical third laterally with rising backwards, longitudinal prominence, bearing long slightly curved setae (Fig. 4). Sterna 3–4 apicolaterally with group of long setae. Tergum 7 densely pubescent.

DISTRIBUTION. Russia (Altai Rep.), Mongolia.

## Genus *Diodontus* Curtis, 1834

### *Diodontus brevilabris* de Beaumont, 1967

*Diodontus brevilabris* de Beaumont, 1967: 345, ♀, ♂, holotype, ♀, Turkey, Amasya [The Natural History Museum, London, Great Britain]; Budrys, 1998: 82 (Belgorod Prov.); Mokrousov, 2010: 63 (Nizhny Novgorod Prov.), Mokrousov & Popov, 2016: 586 (Krasnodar Terr.).

SPECIMENS EXAMINED. **Russia**: Belgorod Prov., 2♂ [MC]; Vladimir Prov., Simontzevo vill., 8.VI 2014 (M.), 1♂ [MC]; Nizhny Novgorod Prov. 56 ♂, 32♀

[MC, ZISP]; Chuvash Rep., Pervoe Semenovo, 22.VII 2014 (V. Egorov), 1♂ [MC]; Rostov Prov., Orlovskoe, 2–3.VI 2011 (M.), 1♀, 7♂ [MC]; Krasnodar Terr., 1♀, 3♂ [MC]; Dagestan Rep., Barkhan Sarykum, 43.01°N 47.237°E, 30.V 2017 (M.), 1♂ [MC]. **Ukraine**: Zakarpatskaja Prov., Kamyanitsa vill., 27.VII 2009 (M.), 2♂ [MC]. **Abkhazia** (1♀) [MC]. **Kyrgyzstan** (1♀) [MC].

DISTRIBUTION. Russia (Belgorod Prov., *Vladimir Prov., Nizhny Novgorod Prov., *Chuvash Rep., *Rostov Prov., Krasnodar Terr., *Dagestan Rep.), Czech Republic, Slovakia, Hungary, Bulgaria, *Ukraine, Turkey, Abkhazia, Kyrgyzstan.

### *Diodontus changaiensis* Tsuneki, 1972

*Diodontus changaiensis* Tsuneki, 1972: 189, ♂, holotype, ♂, Mongolia, Arhangay Aymag, mount Hangay [Természettudományi Múzeum, Budapest, Hungary].

SPECIMENS EXAMINED. **Russia**: Altai Rep., 15 km NW Tashanta, 49°47.459' N 089°01.075'E, 1955 m, 9.VII 2016 (V. Loktionov, M. Proshchalykin), 1♀ [MC].

DISTRIBUTION. *Russia (Altai Rep.), Mongolia.

### *Diodontus parvulus* (Radoszkowski, 1877)

*Passaloecus parvulus* Radoszkowski, 1877: 65, ♀, ♂, syntypes: Uzbekistan, Katta-Kurgan, Zaravschan valley, Samarkand, Tashkent, Keles; Kyrgyzstan, Shahimardan, Hodja-Chiburgan, Vorukh; Tajikistan, Varzaminor; Kazakhstan, Chardara, Kyzil-Kum [ZMMU].

SPECIMENS EXAMINED. **Russia**: Kalmykia, 20 km S Khulhuta, State Reserve «Chernye Zemli», Atzan Khuduk station, –15 m, 46°04'00.1"N 46°18'04.6"E, 27.V 2011 (M.), 5♀ [MC]; 7 km S Mekleta, Koltan-Nur lake, 45°37'05.1"N 45°52'07.07"E, 31.V 2011 (M.), 1♀ [MC]. **Uzbekistan** (16♀, 17♂) [MC].

DISTRIBUTION. *Russia (Kalmykia), Kazakhstan, Central Asia.

## Genus *Spilomena* Shuckard, 1838

Worldwide distributed genus. Number of species: World – 87; Palaearctic – 22; Russia – 7.

### *Spilomena beata* Blüthgen, 1953

*Spilomena beata* Blüthgen, 1953: 172, ♀, ♂, holotype, ♀ France, Haute Garonne, Saint Béat [Musée Zoologique, Lausanne, Switzerland]; Mokrousov, 2015: 81 (Nizhny Novgorod Prov.).
*Spilomena differens*: Baghirov, 2010: 679 (Altaiskiy Terr.).

SPECIMENS EXAMINED. **Russia**: Nizhny Novgorod Prov., 1♀ [MC]; Volgograd Prov.: Sarepta, 1867 (A.K. Bekker), 1♀ [ZISP]; Bakalda, 19.VII 1977 (D.R. Kasparyan), 1♀ [ZISP]; Sverdlovsk Prov., near Dvuretchensk, 56°35'N 60°50' E, 12–19.VI 2006 (R.), 1♀ [RFC], 17.VI 2012 (T.S. Kostromina), 1♀ [RFC]; Orenburg Prov., Orsk, 9.VII 2012 (T.S. Kostromina), 1♀ [RFC]; Altaiskiy Terr., Savvushka vill., 2–4.VIII 2007 (B.), 1♀ [ZISP]. **Ukraine**: Zakarpatskaja Prov., Kamyanitsa vill., 21, 29, 31.VII 2009 (M.), 5♀, 1♂ [MC]. **Kazakhstan**: East Kazakhstan Prov., near Ridder city (former Leninogorsk), 13.VIII 1983 (B.), 2♀ [ZISP].

DISTRIBUTION. Russia (Nizhny Novgorod Prov., *Volgograd Prov., *Sverdlovsk Prov., *Orenburg Prov., *Altaiskiy Terr.), Western, Northernm Southern and Eastern Europe, *Ukraine, Belarus, Georgia, *Kazakhstan.

### *Spilomena curruca* (Dahlbom, 1844)

*Celia curruca* Dahlbom, 1844: 239, ♀, lectotype (design. by Blüthgen, 1953: 173), ♀, Norway, Thynaess near Levangerfjord [Lund University, Sweden].
*Spilomena curruca*: Dollfuss, 1986: 490 (Amur Prov., Primorskiy Terr., Kuril Ils.); Vikberg, 2000: 49 (Leningrad Prov.).
*Spilomena enslini*: Humala & Polevoi, 2008: 131 (Karelia).
*Spilomena differens*: Humala & Polevoi, 2009: 63 (Karelia); Baghirov, 2010: 679 (Altai Rep.).

SPECIMENS EXAMINED. **Russia**: Karelia: 2♀ [HC]; Chuvash Rep., Cheboksary, 8–9.VI 2010 (L. Egorov), 1♀ [MC]; Sverdlovsk Prov., Nature Reserve "Denezhkin Kamen", 10–12.VII 2005 (T. Kostromina), 1♀ [RFC], 18.VII 2005 (T. Kostromina), 1♀ [RFC]; Altaiskiy Terr., 8 km S Biysk, Ust'-Katun', 7–8.VII 2007 (B.), 1♂ [BC]; Altai Rep.: 4♀ [ZISP, BC].

DISTRIBUTION. Russia (Karelia, Leningrad Prov., *Chuvash Rep., *Sverdlovsk Prov., *Altaiskiy Terr., Altai Rep., Amur Prov., Primorskiy Terr., Kuril Ils.), Western, Northerm Southern, Eastern Europe Japan (Honshu).

### *Spilomena differens* Blüthgen, 1953

*Spilomena differens* Blüthgen, 1953: 173, ♀, ♂, holotype, ♂, Finland: Nystad [Museum of Natural History of Helsinki University, Finland]; Vikberg, 2000: 49 (Karelia, Leningrad Prov.).

SPECIMENS EXAMINED. **Russia**: Karelia, 62°06'30"N 35°10'10"E, 18–22.VI 2011 (A. Humala), 1♂ [HC]. The records of this species from Altaiskiy Terr. and Altai Rep. (Baghirov, 2010) belong to *Spilomena beata* Blüthgen and *S. curruca* Dahlbom (see above).

DISTRIBUTION. Russia (Karelia, Leningrad Prov.), Western, Northern, Southern and Eastern Europe.

### *Spilomena enslini* Blüthgen, 1953

*Spilomena enslini* Blüthgen, 1953: 174, ♀, ♂, holotype, ♀, Germany: Erlangen [Museum für Naturkunde, Berlin, Germany]; Baghirov, 2010: 679 (Altaiskiy Terr.); Mokrousov, 2010: 63 (Chuvash Rep.); Mokrousov *et al.*, 2011: 80 (Chuvash Rep.).

SPECIMENS EXAMINED. **Russia**: Chuvash Rep., 1♀, 2♂ [MC]; Sverdlovsk Prov., near Dvuretchensk, 56°35'N 60°50'E, 17.VI 2012 (T.S. Kostromina), 1♀ [RFC]; Altaiskiy Terr.: 13♀ [ZISP, BC]. **Belarus** (1♀) [ZISP]. **Kazakhstan**: Eastern Kazakhstan Prov., 10 km SSE Przhevalskij, Kenderlyk riv., 25.VII 1983 (B.), 1♀ [ZISP].

DISTRIBUTION. Russia (Chuvash Rep., *Sverdlovsk Prov., Altaiskiy Terr.), Western, Northern, Southern, Eastern Europe, *Kazakhstan.

### *Spilomena mocsaryi* Kohl, 1898

*Spilomena mocsaryi* Kohl, 1898: 327, ♂, holotype, ♂, Romania, Caraş-Severin County, Oravița [Természettudományi Múzeum, Budapest, Hungary]; Gussakovskij, 1935: 421 (Crimea); Shkuratov, 1998: 97 (Rostov Prov.), 2004: 79 (Volgograd Prov.); Prisniy, 2012: 47 (Belgorod Prov.).

SPECIMENS EXAMINED. **Russia**: Belgorod Prov., 1♀ [MC]; Rostov Prov., 1♀ [ZISP]; Crimea, 1♂ [ZISP]; Orenburg Prov., near Orsk, 16–17.VIII 2012 (K. Fadeev), 6♀ [RFC, MC]. **Tukrmenistan** (3♂) [ZISP]. **Uzbekistan** (20♀) [ZISP, MC]. **Tajikistan** (9♀, 6♂) [ZISP]. **Cyprus**: Limassol, 17.X 1924 (Mavromenstakis), 3♀, 3♂ [ZISP]; Mandria, 1♀ [ZISP]; Pera Pedi, 2♀ [ZISP].

DISTRIBUTION. Russia (Belgorod Prov., Rostov Prov., Volgograd Prov., Crimea, *Orenburg Prov.), Portugal, Spain, Andorra, France, Germany, Switzerland, Italy, Malta, Austria, Poland, Czech Rep., Slovakia, Hungary, Romania, Bulgaria, Greece, *Cyprus, Georgia, Turkey, Syria, Jordan, Israel, United Arab Emirates, Central Asia.

### *Spilomena troglodytes* (Vander Linden, 1829)

*Stigmus troglodytes* Vander Linden, 1829: 76, ♀, lectotype (design. by Blüthgen, 1953: 170), ♀, Belgium, Liège area [Royal Belgian Institute of Natural Sciences, Brussels, Belgium].
*Celia troglodytes*: Assmus, 1859: 614 (Moscow Prov.).
*Spilomena troglodytes*: Gussakovskij, 1931: 463 (Kursk), 1932: 9 (Primorskiy Terr.); Kolesnikov, 1977: 320 (Bryansk Prov.); Mokrousov, 2010: 63 (Kostroma Prov., Nizhny Novgorod Prov., Chuvash Rep.); Mokrousov *et al*., 2011: 80 (Chuvash Rep.); Shlyakhtenok, 2012: 172 (Krasnodar Terr.); Mokrousov *et al*., 2013: 203 (Mordovia Rep.).

SPECIMENS EXAMINED. **Russia**: Leningrad Prov., Fedorovskoe, 18.VI 1916 (V. Barovskij), 2♂ [ZISP]; Kostroma Prov., 1♀ [ZISP]; Moscow, 1♀ [ZISP]; Nizhny Novgorod Prov.: 39♀, 6♂ [MC], Kursk Prov.: Kursk, 1♀ [ZISP]; 1♀ [ZISP]; Kirov Prov., Falenki, 12.VII 1977 (V. Marshakov), 1♀ [ZISP]; Crimea, Sevastopol (Laspi valley), 20.VIII 1978 (A.G. Kotenko), 1♀ [ZISP]; Sverdlovsk Prov., 55°48'29"N 59°21'39"E, 4.VII 2012 (R.), 1♀ [RFC]; Orenburg Prov., Ural riv., 8.VII 2012 (T. Kostromina), 1♀ [RFC]; Primorskiy Terr., 1♀ [ZISP]. **Switzerland** (2♀) [ZISP]. **Italy** (1♀) [ZISP]. **Poland** (8♀, 5♂) [ZISP]. **Cyprus** (2♀, 1♂) [ZISP]. **Ukraine** (10♀, 3♂) [ZISP, MC]. **Lithuania** (8♀, 1♂) [ZISP]. **Abkhazia** (6♀) [MC]. **Uzbekistan** (1♀) [ZISP]. **Tajikistan** (36♀) [ZISP]. **Kazakhstan** (5♀, 1♂) [RFC, MC].

DISTRIBUTION. Russia (St. Petersburg, *Leningrad Prov., Kostroma Prov., Moscow Prov., Nizhny Novgorod Prov., Mordovia Rep., Bryansk Prov., Kursk Prov., *Kirov Prov., Chuvash Rep., Krasnodar Terr., *Crimea, *Sverdlovsk Prov., *Orenburg Prov., Primorskiy Terr.), Western, Northern, Southern, Eastern Europe, Abkhazia, Georgia, Turkey, Israel, Uzbekistan, Tajikistan, Kyrgyzstan, Kazakhstan, Canada.

## Genus *Stigmus* Panzer, 1804

Widespread genus, except Africa and Australia. Number species: World – 25 species, Palaearctic – 9, Russia – 7.

### *Stigmus eurasiaticus* Mokrousov, sp. n.

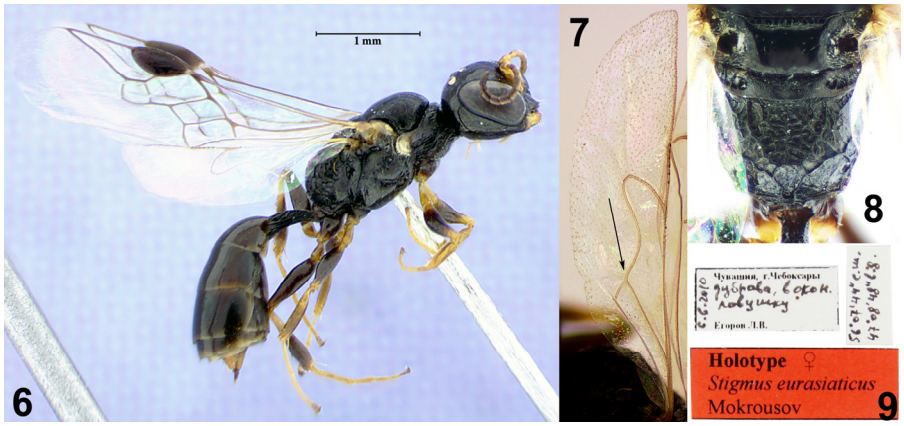
Figs 6–12, 16–17, 20–23

*Stigmus convergens*: Budrys, 1987: 52 (part, Khabarovsk Terr., Primorskiy Terr.), 1995: 404 (part, Irkutsk Prov., Khabarovsk Terr., Primorskiy Terr.); Mokrousov, 2010: 63 (Nizhny Novgorod Prov., Mari El Rep., Chuvash Rep.); Mokrousov *et al*., 2011: 80 (Chuvash Rep.).

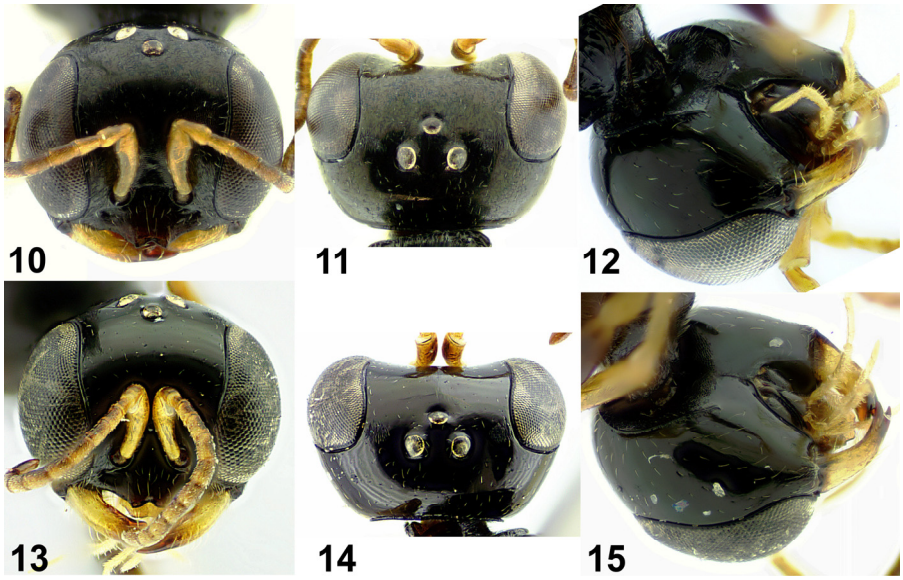
TYPE MATERIAL. Holotype: ♀, **Russia**: Chuvash Rep., Cheboksary, 56°07'44" N 47°08'48"E, 6.VI 2010 (L. Egorov) [ZISP]. Paratypes: **Russia**: Karelia, Petrozavodsk, 1.IX 2015 (A. Humala), 1♀ [ZISP]; Nizhny Novgorod, 25.VI 2004 (Yu. Katyshev, M.), 1♀ [MC]; 19.VIII 2009 (M.), 2♀ [MC]; Cheboksary, 56°07'44"N 47°08'48"E, 28.VI 2010 (L. Egorov), 1♀ [MC]; Mari El Rep., near Nezhnur vill., 56°51.98'N 46°26.89'E, 29.VIII 2009 (M.), 1♀ [MC]; Il'inka vill., 56°47.695'N 47°57.349'E, 1.IX 2009 (M.), 1♀ [ZISP]; Yekaterinburg, 29.VII 2000 (A. Ivanov), 1♀ [ZISP]; Chelyabinsk Prov., Ozersk city, vill. Metlino, 18.VIII 2006 (R.), 1♀ [ZISP]; Altai Rep.: 20 km SE Ongudai, 17.VII 2007 (B.), 1♂ [ZISP]; Tchemal, 19–22.VII 2007 (B.), 1♂ [ZISP]; Artybash, near Teletzkoe lake, 24–27.VII 2007 (B.), 1♀ [ZISP]; near Khabarovsk, Khehtzir, 23.VII 1981 (D. Kasparyan), 1♀ [ZISP]; same, 3.VII 1983 (D. Kasparyan), 1♂ [ZISP]; Primorskiy Terr.: Nature Reserve "Ussuriyskij",15.VII 1981 (D. Kasparyan), 1♀ [ZISP]; Nature Reserve "Kedrovaja Pad'", 28.VI 1983 (A.Kirejtshuk), 1♂ [ZISP]; Barabash-Levada, 5.VI 1979 (B.), 1♂ [ZISP]; near Spassk, 30.VI 1985 (D. Kasparyan), 1♀ [ZISP]; Gornotaezhnoe, 20 km SE Ussuriysk, 12.VII 1983 (E. Budrys), 1♀ [ZISP]; same, 25.VII 1983 (E. Budrys), 1♀, 1♂ [ZISP]; same, 4.IX 1983 (E. Budrys), 1♀ [ZISP]; Ternej, 20.VI 1979 (B.), 2♀ [ZISP]; Barabash, 5.VIII 1978 (D. Kasparyan), 1♀ [ZISP]; Shcherbakovka, 25.VII 1979 (B.), 1♀ [ZISP]; Vladivostok, Okeanskaya, 23.VI 1937 (N. Filippov), 1♂ [ZISP]; same, 23.VI 1981 (D. Kasparyan), 2♂ [ZISP].

DESCRIPTION. FEMALE. Black; mandible (except apex), palps, antenna and legs yellowish brown, pronotal lobes whitish, metasoma apically brownish. Antenna, femur and hind tibia wide darkened. Body length 3.8–4.4 mm (holotype 4.3 mm).

Head. Transverse, frons with weak median sulcus (in some specimens sulcus indistinct). Eyes distinctly converging downwards (Fig. 10), ratio of minimal distance upper eyes to minimal distance between eyes 1.2 ×. Ocelli variable, enlarged in some specimens; in holotype, ratio POL/OOL 0.7 × (Fig. 11). Frons slightly convex before anterior ocellus; temples roundly convex backwards (dorsal view). Clypeus with elongated central lobe, excised anteriorly; lateral lobes with weak, wide, rounded projections (Fig. 10). Occipital carina well developed, disappearing below; head on underside with transverse fold, separating occipital fossa anteriorly, often in the form of an inflection (Fig. 12). Mandible tridentate apically. Antenna simple, flagellomeres distinctly longer than its width. Palps strongly elongate. Head smooth and shiny, with rare fine punctures; setation weak, setae gray, short and rare, longer on clypeal anterior border.




Figs 6–9. *Stigmus eurasiaticus* sp. n., holotype, ♀. 6 – habitus, lateral view; 7 – hind wing (arrow shows the position of *m-cu* ); 8 – scutellum, metanotum and propodeum, dorsal view; 9 – labels.




Figs 10–15. Head of female (10, 13 – frontal view; 11, 14 – dorsal view; 12, 15 – ventro-lateral view). 10–12 – *Stigmus eurasiaticus* sp. n., ♀ (10, 11, holotype; 12, paratype, Primorskiy Terr.); 13–15 – *S. convergens*, ♀ (Japan).

Mesosoma. Pronotal collar transverse, with transverse carina and rounded angles; anterior surface finely densely wrinkled; behind carina with rare longitudinal folds; pronotal lobes reach tegula. Mesonotum with lateral admedian lines (holotype with median groove); notauli well developed, deeply impressed in anterior third; parapsids

developed only in central part; median part, limited by notauli, usually matt, with microscopical irregular longitudinal wrinkles, sometimes with rugae, sloping towards the middle; lateral parts smooth and shiny; punctures small and rare. Furrow between mesonotum and scutellum with short carinae. Scutellum with or without median sulcus, posteriorly with median tooth; punctures small and rare; smooth and shiny. Metanotum anteriorly with short median dentiform carina; matt. Epicnemium and upper part of mesopleuron gently rugose; triangular area (limited by postspiracular carina, omaulus, scrobal sulcus and hypersternaulus) and mesopleuron bottom, smooth and shiny. Propodeum with cellular sculpture, metapostnotum well separated (Fig. 8). Setation weak, setae gray, shot and rare.


Figs 16,17. *Stigmus eurasiaticus* sp. n., ♂, paratype, Primorskiy Terr. 16 – habitus; 17 – genitalia, ventral view.

Legs. Simple, protarsal comb not developed.

Wings. Venation of fore wing typical for *Stigmus*, veins and pterostigma brown; hind wing media diverging after apex of anal cell (Fig. 7).

Metasoma. Petiolus long, dorsally with two longitudinal ribs and with transverse folds; lateral surface with longitudinal ribs; length about 0.8–0.9 × length of metasomal tergum 1. Pygidial plate near flat, semielliptical, with short rounded apex. Metasoma smooth and shiny; punctuation and setation weak, more dense on apical segments; pygidial plate matt.

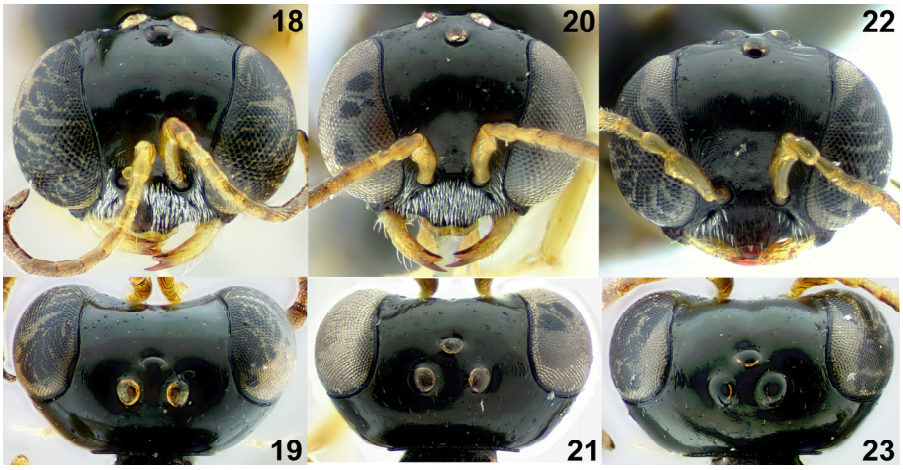
MALE. Coloration as in females. Body length 3.6–4.4 mm.

Head. Transverse, frons with weak, but distinct median sulcus. Eyes distinctly converging downwards (Figs 20, 22), ratio of minimal distance upper eyes to minimal distance between eyes 1.46–1.47 ×. Ocelli variable, enlarged in some specimens (Figs 21, 23). Frons slightly convex before anterior ocellus; temples roundly convex backwards (dorsal view) (Figs 21, 23). Clypeus slightly excised anteriorly. Occipital carina well developed, disappearing below; head on underside with transverse fold,

separating occipital fossa anteriorly, often in the form of an inflection. Mandible bidentate apically. Antenna simple, flagellomeres distinctly longer than its width. Palps strongly elongate. Head smooth and shiny, with rare fine punctures; setation weak, setae gray, short and rare, on clypeus and adjacent part of frons dense, with silvery reflection.

Mesosoma, legs and wings as in females.

Metasoma. Petiolus long, length variable, 0.9–1.1× length of metasomal tergum 1; sculpture as in females. Subgenital sternum long, linear, with rounded apex; laterally with strip of short dark bristles (lacking apically); apically with several long setae. Genitalia – Fig. 17.




Figs 18–23. Head of male (18, 20, 22 – frontal view; 19, 21, 23 – dorsal view). 18, 19 – *Stigmus convergens*, ♂, Japan; 20–23 – *S. eurasiaticus* sp. n., ♂, paratypes, Primorskiy Terr.

COMPARISON. A new species differs from *Stigmus solskyi* A. Mor. by smooth and shiny mesopleural triangle and lacking lateral excision at male clypeus; from *S. munakatai* Tsuneki and *S. pendulus* Panzer differ by whitish pronotal lobes and venation of hind wing (*M* diverging after apex of anal cell) (Fig. 7); from *S. quadriceps* Tsuneki and *S. japonicus* Tsuneki by female head shape (more convergent temples in dorsal view), darkened femur and short digitus in male. *Stigmus eurasiaticus* sp. n. is closely related with *S. convergens* Tsuneki but differs by head shape (Figs 11 *vs* 14 and 21 *vs* 19); by ratio of minimal distance upper eyes to minimal distance between eyes (1.3 × in female and 1.53 × in male of *S. convergens*); by weak longitudinal groove on the frons; by more densely wrinkled propodeum (Fig. 8), by developed transverse fold, separating the occipital fossa anteriorly in female (Figs 12 *vs* 15).

ETYMOLOGY. The specific name is adjective, with the reference to the wide distribution from Europe to the Far East.

DISTRIBUTION. Russia (Karelia, Nizhny Novgorod Prov, Mari El Rep., Chuvash Rep., Sverdlovsk Prov., Chelyabinsk Prov., Altai Rep., Irkutsk Prov., Khabarovsk Terr., Primorskiy Terr.).

***Stigmus convergens* Tsuneki, 1954**
Figs 13–15, 18, 19

*Stigmus convergens* Tsuneki, 1954: 33, ♀, holotype, ♀, Japan, Hokkaido, Akagawa near Kucchian [Museum of Nature and Human Activities, Hyogo, Japan]; Budrys, 1987: 52 (part., Kuril Ils.).

SPECIMENS EXAMINED. **Russia**: Kuril Ils.: Shikotan Il., 16, 20.VIII 1973 (D.R. Kasparyan), 2♀ [ZISP]; Kunashir Il., 7 km N Mendeleevo, 2.VIII 1981 (B.), 1♀ [ZISP]. **Japan** (1♀, 1♂) [ZISP].

DISTRIBUTION. Russia (South Kurils: Shikotan, Kunashir), China (Taiwan), Japan (Hokkaido, Honshu). NOTE. It is island species which replaced on the mainland by *Stigmus eurasiaticus* sp. n.

## Genus *Psenulus* Kohl, 1897

***Psenulus chevrieri* (Tournier, 1889)**

*Psen chevrieri* Tournier, 1889: 126, ♀, holotype or syntypes, ♀, Switzerland, Peney near Genève [Musée d'Histoire Naturelle, Genève, Switzerland].

SPECIMENS EXAMINED. **Russia**: Moscow Prov., Vel'yaminovo vill., 55°12' 53.74"N 37°54'46.03"E, 17.VI 1987 (A. Antropov), 1♂ [ZMMU], 4.VI 2014 (N. Khrustalyova), 1♂ [ZMMU]; Nizhny Novgorod Prov.: Kurilovo vill., 22.VII 2001 (M.), 3♂ [MC]; Dzerdzhynsk, 19.V 2010 (M.), 1♂ [MC]; Kulebaki, 5.VI 2008 (M.), 1♂ [MC]; Blagodatovka vill., 1.VII 2015 (M.), 1♂ [MC]; Vyksa, 16.VI 2001 (I. Kozin, M.), 1♂ [MC], 6.VI 2013 (M.), 1♂ [MC]; Chuvash Rep., Zavolzhie, near Novo-Cheboksarsk, 18.VII 1986 (A. Berezin), 1♂ [MC]; Volgograd Prov.: Kamyshin, 50.07°N 45.3556°E, 27.VII 2015 (B., V. Loktionov, M., M. Proshchalykin), 1♂ [MC]; 16 km NNE Kalach-on-Don, 48.84°N 43.61°E, 28.V 2017 (M.), 1♂ [MC]; Crimea, Crime Natural Reserve, 6.VIII 1936 (V. Geptner), 1♂ [ZMMU]; Orenburg Prov., railway station Kondurovka, 26.VI 2012 (T. Kostromina), 1♂ [RFC]. **Ukraine**: Zakarpatskaja Prov., Kamyanitsa vill., 31.VII 2009 (M.), 1♂ [MC]. **Armenia**: Koti vill. (former Kotigekh), 16.VI 1974 (A. Ponomarenko), 1♂ [ZMMU].

DISTRIBUTION. *Russia (Moscow Prov., Nizhny Novgorod Prov., Chuvash Rep., Volgograd Prov., Crimea, Orenburg Prov.), France, Netherlands, Belgium, Germany, Switzerland, Italy, Austria, Finland, Czech Rep., Slovakia, Croatia, *Ukraine, Estonia, *Armenia.

REMARK. This species distinguish from *Psenulus pallipes* Panzer only by male, and material above is given for males only.

## ACKNOWLEDGEMENTS

I am grateful to A.S. Lelej (Institute of Biology and Soil Science, Vladivostok, Russia), for the comprehensive assistance in the preparation of publication, Sergei A. Belokobylskij (Zoological Institute, St. Petersburg, Russia) and Alexander V. Antropov (Zoological Museum of Moscow State University, Moscow, Russia), curators of the Hymenoptera collection, for the possibility of study of material, and

also to Leonid V. Egorov (State Nature Reserve "Prisurskij", Cheboksary, Russia), Maxim Yu. Proshchalykin and Valeriy M. Loktionov (Institute of Biology and Soil Science, Vladivostok, Russia), Ruslan T-o. Baghirov (Tomsk State University, Tomsk, Russia), Andrey E. Humala (Karelian Research Centre of Russian Academy of Sciences, Petrozavodsk, Russia), Pavel V. Rudoiskatel and Kirill I. Fadeev (Ural Federal University, Yekaterinburg, Russia) for the material of digger wasps, also thanks to Viktor A. Nemkov (State Nature Reserve "Orenburgskij", Orenburg, Russia) for the valuable advice. The work was partly supported by the Russian Foundation for Basic Research (No 16-54-00041 Бел_а).

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