

## Records of digger wasps from Eastern Siberia and the Far East of Russia (Hymenoptera: Sphecidae, Crabronidae)

With 8 figures and 2 maps

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### Abstract

Information is given on the distribution of 17 species of Sphecidae and 106 species of Crabronidae in Eastern Siberia and the Russian Far East. First records for Eastern Siberia are *Crossocerus* (*Crossocerus*) *tarsatus* (SHUCKARD, 1837), *Diodontus handlirschi* KOHL, 1888, *Gorytes albidulus* (LEPELETIER, 1832), *Gorytes procrustes* HANDLIRSCH, 1888, *Nysson interruptus* (FABRICIUS, 1798), *Oxybelus haemorrhoidalis* OLIVIER, 1812 and *Pemphredon lethifer* (SHUCKARD, 1837). First recorded from Far East is *Ectemnius* (*Ectemnius*) *guttatus* (VANDER LINDEN, 1829).

### Zusammenfassung

Informationen zur Verbreitung von 17 Arten der Sphecidae und 106 Arten der Crabronidae im Osten Sibiriens werden präsentiert. Erstfunde für Ostsibirien sind *Crossocerus* (*Crossocerus*) *tarsatus* (SHUCKARD, 1837), *Diodontus handlirschi* KOHL, 1888, *Gorytes albidulus* (LEPELETIER, 1832), *Gorytes procrustes* HANDLIRSCH, 1888, *Nysson interruptus* (FABRICIUS, 1798), *Oxybelus haemorrhoidalis* OLIVIER, 1812 und *Pemphredon lethifer* (SHUCKARD, 1837). Erstfund für den Fernen Osten ist *Ectemnius* (*Ectemnius*) *guttatus* (VANDER LINDEN, 1829).

### Key words

Insecta, Hymenoptera, Sphecidae, Crabronidae, Distribution, Russia, Siberia, Far East

### Introduction

The digger wasp fauna of Siberia and the Far East of Russia has moved more into the focus of entomologists during recent years. Wolf-Harald Liebig carried out four expeditions to Eastern Siberia and the Far East. Two of these excursions (2007 and 2014) examined the western banks of Lake Baikal (Irkutsk Province), another (2012) Buryat Republic, and the last (2014) Primorskii Territory. Most records presented here resulted from these

expeditions. Supplementary records are from material in the collection of The Bavarian State Collection of Zoology Munich (Zoologische Staatssammlung München) (mainly specimens from the island Sakhalin), the collection of Senckenberg Deutsches Entomologisches Institut, and the private collections of C. Schmid-Egger (Berlin) and M. Jänicke (Eisenberg).

## Material and methods

For the present study 892 specimens (162 Sphecidae, 730 Crabronidae) were examined. Determination of most specimens was undertaken with the key by NEMKOV et al. (1995). Additionally, the keys by BOUČEK (2001), DANILOV (2014b), DOLLFUSS (2010, 2013), GAYUBO & FELTON (2000), JACOBS (2007), KOHL (1906), MARSHAKOV (1979), NEMKOV (1996) and SCHMID-EGGER (2016) were used. For identification of *Gorytes* LATREILLE, 1805 the keys by NEMKOV (1989, 1990) and SCHMID-EGGER (2002) were used. However, the identification of some males proved to be problematic. According to SCHMID-EGGER (personal communication), some “European” taxa from the Far East represent separate species. This hypothesis can only be confirmed by revision of the Palaearctic species. The distribution of digger wasps in Eastern Siberia is treated in the catalogues of NEMKOV (2008, 2009, 2012a), DANILOV (2014a) and BELOKOBYLSKIJ & LELEJ (2017) if not mentioned otherwise. Distribution data of all species here listed are presented in the catalogue of BELOKOBYLSKIJ & LELEJ (2017). Records from Russia are given for the main geographic parts as treated by BELOKOBYLSKIJ & LELEJ (2017). Distribution in the provinces may check in the catalogue. New local records from the Russian provinces are marked with an asterisk (\*).

Specimens are stored in coll. Liebig (Bad Muskau) and coll. Jacobs (Ranzin), in the coll. of The Bavarian State Collection of Zoology Munich (leg. Nesterov, Golovushkin), coll. Schmid-Egger (Berlin) (leg. Lelej, Mattes and some specimens leg. Nesterov) and the coll. Jänicke (Eisenberg) (leg. Jänicke). Specimens collected by Taeger are stored in the coll. of Senckenberg Deutsches Entomologisches Institut Müncheberg. The maps were constructed with help of Google Earth Pro (© 2017 Google, © 2017 ZENRIN, Image Landsat / Copernicus, US Dept. of State Geographer). The coordinates are in decimal degrees. Collecting dates are in German format, as on the collecting labels. Especially elder collecting labels bears no coordinates. Coordinates of this collecting sites are completed by the authors. Maybe, it isn't the real collecting place sometimes, but the next settlement.

### Index of localities

**Eastern Siberia, Tuva Republic** (Fig. 1, Map 1). Kysyl, about 700 m a.s.l. (51.71°N 94.45°E). **Eastern Siberia, Irkutsk Province** (Fig. 1, Map 1). Angarsk, about 430 m a.s.l. (52.49°N 103.91°E); Bolshoje Goloustnoje environment, about 500 m a.s.l. (52.06°N 105.42°E); Irkutsk, about 440 m a.s.l. (52.28°N 104.31°E); Sarma environment, 600–930 m a.s.l. (53.10°N 106.84°E); Ust-Ordynski east, wetland near steppe, 554 m a.s.l. (52.84°N 104.79°E).

**Eastern Siberia, Buryat Republic** (Fig. 1 Map 1). East-Sajan, Mondy, 30 km northwest, Camp near the Black Irkut, 1878 m a.s.l. (51.91°N 100.76°E); Bank of Black Irkut, 1691 m a.s.l. (51.80°N 100.72°E).

**Eastern Siberia, Zabaikalskii Territory** (Fig. 1, Map 1). Dauriskij Reserve, 650 m a.s.l. (49.96°N 115.43°E).

**Far East, Khabarovsk Territory** (Fig. 1, Map 2). Boitsovo (47.08°N 134.30°E).

**Far East, Primorskii Territory** (Fig. 1, Map 2). Anisimovka, 70 km east Vladivostok, 240–480 m a.s.l. (43.18°N 132.76°E); Bonevurovo (43.72°N 132.04°E); Chasan 7 km west, about 20 m a.s.l. (42.43°N 130.65°E); Dalnegorsk northwest, 719 m a.s.l. (44.64°N 135.47°E); Kavalerovo, 200 m a.s.l. (44.25°N 135.06°E); Lazo (43.38°N 133.90°E); Mezhdurechje (45.75°N 134.12°E); Novonezhino southeast, 138 m a.s.l. (43.19°N 132.66°E); Poshiga 2 km south Ariadnoje, 233–270 m a.s.l. (45.12°N 134.38°E); Ryazanovka (42.79°N 131.24°E); Samarka, Gordeyevska Mt. (44.74°N 134.21°E); Saratovka 8 km south, 173 m a.s.l. (44.58°N 134.13°E); Kalinovka, 171–259 m a.s.l. (44.45°N 132.95°E); Tikhoye nr. Razdolnoye, 36 km south Ussuriysk (43.60°N 131.87°E); Uborka north, 206 m a.s.l. (44.45°N 134.07°E).

**Far East, Sakhalin** (Fig. 1 Map 2). Yuzhno-Sakhalinsk, about 50 m a.s.l. (46.96°N 142.73°E); Korsakov, Ptiche Lake, about 50 m a.s.l. (46.63°N 142.79°E); Lugovoje, about 50 m a.s.l. (47.03°N 142.79°E); Novoaleksandrovsk, about 50 m a.s.l. (47.05°N 142.73°E); Pravda, about 50 m a.s.l. (46.94°N 142.01°E).

### List of species

#### Sphecidae

*Ammophila deserticola* TSUNEKI, 1971

**Irkutsk Province.** 2 ♂♂ Bolshoje Goloustnoje 20.06.2011, leg. Liebig.

**Distribution:** Russia: Urals, Western and Eastern Siberia, Far East. – Kyrgyzstan, Mongolia, China.

*Ammophila infesta* F. SMITH, 1873

**Primorskii Territory.** 1 ♂ Anisimovka 01.07.2014, 1 ♂, 1 ♀ Poshiga 21.06.2014, leg. Liebig.

**Distribution:** Russia: Far East. – Korean Peninsula, Japan.

*Ammophila mongolensis* TSUNEKI, 1971

(Fig. 2a)

**Buryat Republic.** 1 ♂, 3 ♀♀ East Sajan, Mondy, 30 km NW 07.–11.07.2012, leg. Liebig.

**Distribution:** Russia: Western and Eastern Siberia. – Turkey, Tajikistan, Uzbekistan, Kyrgyzstan, Mongolia, China.

*Ammophila pubescens* CURTIS, 1836

**Irkutsk Province.** 12 ♂♂, 6 ♀♀ Bolshoje Goloustnoje 11.–24.06.2011, leg. Liebig, 1 ♂ Bolshoje Goloustnoje 18.07.2012, leg. Floßmann. 8 ♂♂, 6 ♀♀ Sarma 16.–22.07.2007, leg. Liebig.

**Buryat Republic.** 8 ♂♂, 1 ♀ East Sajan, Mondy, 30 km NW 29.06.–13.07.2012, leg. Liebig.

**Primorskii Territory.** 1 ♂ Poshiga 21.06.2014, leg. Liebig. 3 ♂♂ Saratovka 21.–22.06.2014, leg. Liebig. 1 ♂, 2 ♀♀ Kalinovka 26.–27.06.2014, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Iran, Kazakhstan, Mongolia, China.

*Ammophila sabulosa* (LINNÉ, 1758)

**Irkutsk Province.** 4 ♂♂, 1 ♀ Bolshoje Goloustnoje 12.–22.06.2011, leg. Liebig, 1 ♀ Bolshoje Goloustnoje 18.07.2012, leg. Floßmann. 2 ♂♂ Sarma 19./24.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Syria, Iran, Central Asia, Kazakhstan, Mongolia, China.

*Ammophila sickmanni* KOHL, 1901

**Primorskii Territory.** 2 ♂♂, 1 ♀ Kalinovka 26.–27.06.2014, leg. Liebig. 1 ♂ Poshiga 20.06.2014, leg. Liebig. 1 ♀ Anisimovka 02.07.2014, leg. Liebig.

**Distribution:** Russia: Eastern Siberia, Far East. – Mongolia, China, Korean Peninsula.

*Ammophila terminata* F. SMITH, 1856

**Buryat Republic.** 1 ♂ East Sajan, Mondy, 30 km NW 13.07.2012, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia. – Europe, North Africa, Turkey, Central Asia, Kazakhstan, Mongolia, China.

*Ammophila vagabunda* F. SMITH, 1856

**Primorskii Territory.** 1 ♂ Anisimovka 02.07.2014, leg. Liebig. 1 ♀ Anisimovka 07.06.1993, leg. Taeger. 1 ♂ Novonezhino 30.06.2014, leg. Liebig. 1 ♂ Poshiga 21.06.2014, leg. Liebig.

**Distribution:** Russia: Far East. – Mongolia, China, Korean Peninsula, Japan, Southeast Asia, India.

*Chalybion japonicum* (GRIBODO, 1883)

**Primorskii Territory.** 2 ♂♂, 3 ♀♀ Kalinovka 29.06.2014, leg. Liebig.

**Distribution:** Russia: Far East. – China, Korean Peninsula, Japan.

*Hoplammophila aemulans* (KOHL, 1901)

**Primorskii Territory.** 1 ♂, 2 ♀♀ Kalinovka 29.06.2014, leg. Liebig.

**Distribution:** Russia: Far East. – China, Korean Peninsula, Japan.

*Palmodes occitanicus* (LEPELETIER & SERVILLE, 1828)

**Irkutsk Province.** 10 ♂♂, 2 ♀♀ Bolshoje Goloustnoje 12.–26.06.2011, leg. Liebig, partim det. Schmid-Egger.

**Distribution:** Russia: European Part, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Syria, Israel, Iran, Central Asia, Kazakhstan, Mongolia, China, Korean Peninsula.

**Remark:** In the opinion of SCHMID-EGGER (personal communication) the specimens from the Far East may represent a separate species. A revision of the Palaearctic species of *Palmodes* KOHL, 1890 is outstanding.

*Podalonia affinis* (KIRBY, 1798)

**Irkutsk Province.** 3 ♂♂, 5 ♀♀ Bolshoje Goloustnoje 12.–20.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Caucasus, Turkey, Jordan, Israel, Iran, Central Asia, Kazakhstan, Mongolia, China, Korean Peninsula.

*Podalonia alpina* (KOHL, 1888)

\***Buryat Republic.** 5 ♂♂, 4 ♀♀ Mondy, 30 km NW 28.06.–13.07.2014, leg. Liebig.

**Distribution:** Russia: European Part (North Caucasus), Western Siberia (Altai), Eastern Siberia (Tuva Republic). – Mountains of Europe, North Africa, Turkey, Iran, Afghanistan, Tajikistan, Kyrgyzstan, Kazakhstan, Mongolia, China.

*Podalonia asiatica* DANILOV, 2017

\***Irkutsk Province.** 10 ♂♂ Sarma 17.–24.07.2007, leg. Liebig.

**Distribution:** Russia: Eastern Siberia. – Mongolia, China.

**Remark:** The present specimens are running in the keys of KOHL (1906) and DOLLFUSS (2010) to *Podalonia andrei* (F. MORAWITZ, 1889). After revision of the group by DANILOV (2017) the males are conspecific with *Podalonia asiatica*. Maybe two ♀♀ from the same place belongs to the hitherto unknown females of this species.

*Podalonia caucasica* (MOCSÁRY, 1883)

**Irkutsk Province.** 1 ♀ Sarma 16.07.2007, leg. Liebig det. Schmid-Egger. 7 ♂♂, 20 ♀♀ Bolshoje Goloustnoje 12.–25.06.2011, leg. Liebig.

**Buryat Republic.** East Sajon, Mondy, 30 km NW 1 ♀ 25.06.2012, leg. Liebig.

**Distribution:** Russia: Western and Eastern Siberia.– Bulgaria (DOLLFUSS 2010), Georgia, Tajikistan, Uzbekistan, Kazakhstan, Mongolia, China, India. The record Estonia (Europe EE) (BELOKOBYSKIY & LELEJ 2017) may be an error.

*Sceliphron deforme* (F. SMITH, 1856)

**Primorskii Territory.** 2 ♀♀ Novonezhino 01.07.2014, leg. Liebig det. Schmid-Egger. 3 ♂♂ Kalinovka 29.06.2014, leg. Liebig, partim det. Schmid-Egger.

**Distribution:** Russia: European Part, Western and Eastern Siberia, Far East. – Europe, Tajikistan, Uzbekistan, Kyrgyzstan, Kazakhstan, Mongolia, China, Korean Peninsula, Japan, Southeast Asia, India.

*Sphex funerarius* GUSSAKOVSKIY, 1934

**Irkutsk Province.** 1 ♂ Bolshoje Goloustnoje 21.06.2011, leg. Liebig, det. Schmid-Egger.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Georgia, Turkey, Syria, Israel, Iran, Central Asia, Kazakhstan, Mongolia, China.

## Crabronidae

*Alysson pertheesi* GORSKI, 1852

**Irkutsk Province.** 1 ♀ Sarma 24.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Western and Eastern Siberia, Far East. – Europe, Mongolia, China, Korean Peninsula, Japan.

*Argogorytes fargeii* (SHUCKARD, 1837)

**Irkutsk Province.** 2 ♂♂, 8 ♀♀ Bolshoje Goloustnoje 19.–25.06.2011, leg. Liebig, partim det. Schmid-Egger.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia. – Europe, Armenia, Turkey, Israel, Kazakhstan, Mongolia, China.

*Argogorytes mystaceus grandis* (GUSSAKOVSKIY, 1932)

**Primorskii Territory.** 1 ♂ Anisimovka 07.06.1993, leg. Taeger. 1 ♂ Anisimovka 07.06.1993, leg. Taeger. 1 ♀ Poshiga 20.06.2014, leg. Liebig, det. Schmid-Egger. 1 ♀ Kalinovka 29.06.2014, leg. Liebig, det. Schmid-Egger.

**Distribution:** Russia: Eastern Siberia, Far East. – China, Korean Peninsula, Japan.

**Remark:** In opinion of SCHMID-EGGER (personal communication), *A. grandis* is a distinct species.

*Astata boops* (SCHRANK, 1781)

**Irkutsk Province.** 1 ♂ Bolshoje Goloustnoje 20.06.2011, leg. Liebig. 1 ♂ Ust-Ordynski (steppe) 27.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Abkhazia, Turkey, Israel, Arabian Peninsula, Iraq, Iran, Afghanistan, Turkmenistan, Tajikistan, Uzbekistan, Kazakhstan, Mongolia, China, Korean Peninsula, India.

*Astata minor* KOHL, 1885

**Irkutsk Province.** 1 ♂ Bolshoje Goloustnoje 25.06.2011, leg. Liebig. 2 ♂♂, 1 ♀ Ust-Ordynski (Steppe) 26.–27.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Israel, Iran, Turkmenistan, Uzbekistan, Kazakhstan.

*Bembix diversipes* F. MORAWITZ, 1889

**Irkutsk Province.** 10 ♂♂, 6 ♀♀ Sarma 16.–22.07.2007, leg. Liebig, partim det. Schmid-Egger. 9 ♂♂ Bolshoje Goloustnoje 20.–25.06.2011, leg. Liebig. 3 ♂♂, 4 ♀♀ Ust-Ordynski 26.–27.06.2011, leg. Liebig.

**Distribution:** Russia: Western and Eastern Siberia, Far East. – Turkey, Iran, Uzbekistan, Kyrgyzstan, Kazakhstan, Mongolia, China.

*Bembix rostrata rostrata* (LINNÉ, 1758)

**Irkutsk Province.** 9 ♂♂, 4 ♀♀ Sarma 24.07.2007, leg. Liebig, partim det. Schmid-Egger. 3 ♂♂ Ust-Ordynski 26.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia. – Europe, Azerbaijan, Turkey, Iran, Turkmenistan, Tajikistan, Uzbekistan, Kazakhstan, Mongolia, China.

*Cerceris arenaria* (LINNÉ, 1758)

**Irkutsk Province.** 1 ♂ Bolshoje Goloustnoje 22.06.2011, leg. Liebig. 14 ♂♂, 14 ♀♀ Sarma 17.–24.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Caucasus, Turkey, Israel, Iran, Central Asia, Kazakhstan, Mongolia, China, Korean Peninsula, Japan.

**Remark:** According to SCHMIDT (2000) *Cerceris arenaria stecki* SCHLETTERER, 1889 differs from the nominate form only in more whitish and smaller bands on the tergites. NEMKOV (2009) did not treat it as a separate taxon. We agree with his opinion.

*Cerceris hortivaga* KOHL, 1880

**Primorskii Territory.** 2 ♀♀ Anisimovka 02.07.2014, leg. Liebig. 1 ♀ Kalinovka 28.06.2014, leg. Liebig.

**Distribution:** Russia: Far East. – Europe, China, Korean Peninsula, Japan.

*Cerceris micropunctata* SHESTAKOV, 1918

**Irkutsk Province.** 3 ♂♂, 1 ♀ Bolshoje Goloustnoje 13.–20.06.2011, leg. Liebig. 3 ♀♀ Sarma 18.07.2007, leg. Liebig.

**Distribution:** Russia: Western and Eastern Siberia.

*Cerceris pedetes* KOHL, 1887

\***Irkutsk Province.** 2 ♀♀ Sarma 24.07.2007, leg. Liebig.

**Distribution:** Russia: Eastern Siberia, Far East. – China, Korean Peninsula, Japan.

*Cerceris quadrifasciata* (PANZER, 1799)

**Irkutsk Province.** 1 ♀ Bolshoje Goloustnoje 25.06.2011, leg. Liebig. 1 ♀ Sarma 23.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Caucasus, Turkey, Kazakhstan, China, Korean Peninsula.

*Cerceris ruficornis* (FABRICIUS, 1793)

**Irkutsk Province.** 4 ♂♂ Bolshoje Goloustnoje 24.–25.06.2011, leg. Liebig. 2 ♂♂ Sarma 18.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Israel, Iran, Tajikistan, Uzbekistan, Kyrgyzstan, Kazakhstan, China, Korean Peninsula.

*Cerceris rybyensis* (LINNÉ, 1771)

**Irkutsk Province.** 1 ♂, 1 ♀ Bolshoje Goloustnoje 25.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Caucasus, Turkey, Syria, Iran, Turkmenistan, Tajikistan, Uzbekistan, Kazakhstan, Korean Peninsula, Japan, India.

*Crabro (Anothyreus) lapponicus* ZETTERSTEDT, 1838  
(Fig. 2b)

**Buryat Republic.** 7 ♂♂, 3 ♀♀ East Sajan, Mondy, 30 km NW 28.06.–13.07.2012, leg. Liebig.

**Distribution:** Russia: European Part (north and north-west), Eastern Siberia. – Europe (northern parts).

*Crabro (Anothyreus) maeklini* A. MORAWITZ, 1866  
(Figs. 2c, 2d)

\***Buryat Republic.** 13 ♂♂, 7 ♀♀ East Sajan, Mondy, 30 km NW 28.06.–14.07.2012, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Eastern Siberia, Far East. – Europe (northern parts), Kazakhstan, Mongolia.

*Crabro (Crabro) cribrarius* (LINNÉ, 1758)

**Irkutsk Province.** 3 ♂♂, 2 ♀♀ Bolshoje Goloustnoje 20.–22.06.2011, leg. Liebig.

**Zabaikalskii Territory.** 1 ♂ Dauriskij Reserve 24.07.1989, leg. Nesterov.

**Sakhalin.** 1 ♂ Korsakov (Ptiche Lake) 12.08.1975, leg. Nesterov.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Iran, Kazakhstan, Mongolia, Korean Peninsula. The record from North Africa by BELOKOBYLSKIY & LELEJ (2017) is doubtful.

*Crabro (Crabro) peltarius* (SCHREBER, 1784)

**Sakhalin.** 1 ♂ Novoaleksandrovsk [without date], leg. Nesterov.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Kazakhstan, Mongolia, Korean Peninsula.

*Crabro (Crabro) sibiricus* A. MORAWITZ, 1866

**Zabaikalskii Territory.** 1 ♂ Dauriskij Reserve 24.07.1989, leg. Golovushkin.

**Distribution:** Russia: Western and Eastern Siberia, Far East. – Kazakhstan, Mongolia, China.

*Crossocerus (Acanthocrabro) vagabundus* (PANZER, 1798)

**Irkutsk Province.** 2 ♀♀ Bolshoje Goloustnoje 20./24.06.2011, leg. Liebig. 1 ♂ Sarma 18.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Uzbekistan, Kazakhstan, Mongolia, China, Korean Peninsula, Japan, India.

*Crossocerus (Blepharipus) barbipes* (DAHLBOM, 1845)

**Irkutsk Province.** 1 ♀ Sarma 19.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Kazakhstan, Mongolia, China, Korean Peninsula, Japan, North America.

*Crossocerus (Blepharipus) cetratus* (SHUCKARD, 1837)

**Irkutsk Province.** 1 ♀ Sarma 16.07.2007, leg. Liebig. 1 ♀ Bolshoje Goloustnoje 13.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Kazakhstan, Mongolia, China, Korean Peninsula, Japan.

*Crossocerus (Blepharipus) leucostoma* (LINNÉ, 1758)

**\*Buryat Republic.** 1 ♀ East Sajan, Mondy, 30 km NW 30.06.2012, leg. Liebig.

**Primorskii Territory.** 1 ♂ Anisimovka 07.06.1993, leg. Taeger. 1 ♀ Dalnegorsk 24.06.2014, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Kazakhstan, Mongolia, Korean Peninsula, Japan, North America.

*Crossocerus (Blepharipus) walkeri* (SHUCKARD, 1837)

**Irkutsk Province.** 1 ♂, 1 ♀ Sarma 18./19.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Kazakhstan, Mongolia, Korean Peninsula, Japan.

*Crossocerus (Crossocerus) elongatulus* (VANDER LINDEN, 1829)

**Irkutsk Province.** 1 ♂ Angarsk 02.07.1983, leg. Nemkov. **\*Buryat Republic.** 1 ♀ East Sajan, Mondy, 30 km NW 02.07.2012, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Azerbaijan, Turkey, Iran, Turkmenistan, Tajikistan, Turkmenistan, Kyrgyzstan, Kazakhstan, Mongolia, Japan, North and South America.

**Remark:** The differentiation between the subspecies *C. elongatulus* (s. str.) and *C. elongatulus annulatus* LEPELETIER & BRULLÉ, 1835 as made by BELOKOBYSKIY & LELEJ (2017) seems doubtful. The common occurrence of two subspecies in a wide range of distribution contradicts the concept of subspecies. Here is a need of clearing the taxonomy and the distribution data. So we don't follow this opinion.

*Crossocerus (Crossocerus) exiguus* (VANDER LINDEN, 1829)

**Irkutsk Province.** 1 ♀ Sarma 21.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkmenistan, Kazakhstan, Mongolia, China, Korean Peninsula.

*Crossocerus (Crossocerus) kohli* (BISCHOFF, 1921)

**\*Buryat Republic.** 2 ♀♀ East Sajan, Mondy, 30 km NW 11.–12.07.2012, leg. Liebig.

**Distribution:** Russia: Western and Eastern Siberia, Far East. – Tajikistan, Uzbekistan, Kyrgyzstan, Kazakhstan, Mongolia, China, India.

*Crossocerus (Crossocerus) palmipes palmipes* (LINNÉ, 1767)

**Irkutsk Province.** 1 ♀ Sarma 24.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia. – Europe, North Africa, Turkey, Kazakhstan, Mongolia.

*Crossocerus (Crossocerus) tarsatus* (SHUCKARD, 1837)

**\*Buryat Republic.** 1 ♂ East Sajan, Mondy, 30 km NW 13.07.2012, leg. Liebig.

**Distribution:** Russia: European Part, Western Siberia, Far East. – Europe, North Africa, Georgia, Turkey, Iran, Kazakhstan, Mongolia, Korean Peninsula, North America. New record for Eastern Siberia.

*Crossocerus (Crossocerus) yasumatsui* (TSUNEKI, 1947)

\***Tuva Republic.** 8 ♂♂ Kysyl 16.08.1998, leg. Mattes.

**Buryat Republic.** 15 ♂♂, 4 ♀♀ East Sajan, Mondy, 30 km NW 10.–13.07.2012, leg. Liebig.

**Distribution:** Russia: Western and Eastern Siberia, Far East. – Kyrgyzstan, Kazakhstan, Mongolia, Japan, South East Asia.

*Crossocerus (Cuphopterus) dimidiatus* (FABRICIUS, 1781)

**Irkutsk Province.** 3 ♂♂ Bolshoje Goloustnoje 19.06.2011, leg. Liebig.

**Sakhalin.** 7 ♂♂ Lugovoje 22.07.1980, leg. Nesterov. 8 ♂♂ Pravda 28.08.1995, leg. Nesterov.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Kyrgyzstan, Kazakhstan, Mongolia, China, Korean Peninsula, Japan.

**Remark:** *C. dimidiatus* (s. str.) occurs in the Far East and the western parts of Siberia, *C. dimidiatus agyo* TERAYAMA & TAKAHASHI, 2017 on Sakhalin, the Kuriles, Korean Peninsula and Japan. NEMKOV et al. (1995) made no difference between both subspecies. The latter was described by KOHL (1915) as *Crossocerus serrripes sapporoensis* after a single female with darker legs. The male differs from the nominate form by less yellow markings (see LECLERCQ 1974). Maybe these are color variants only.

*Crossocerus (Hoplocrabro) quadrimaculatus* (FABRICIUS, 1793)

**Irkutsk Province.** 2 ♀♀ Sarma 17./18.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Iran, Tajikistan, Uzbekistan, Kazakhstan, Mongolia.

*Diodontus collaris* TSUNEKI, 1972

**Irkutsk Province.** 6 ♂♂ Sarma 18.–24.07.2007, leg. Liebig.

\***Buryat Republic.** 12 ♂♂, 5 ♀♀ East Sajan, Mondy, 30 km NW 06.–13.07.2012, leg. Liebig.

**Distribution:** Russia: Western and Eastern Siberia. – Kazakhstan, Mongolia.

*Diodontus dziuroo* TSUNEKI, 1972

\***Irkutsk Province.** 1 ♀ Bolshoje Goloustnoje 20.06.2011, leg. Liebig.

**Distribution:** Russia: Eastern Siberia, Far East. – Kazakhstan, Mongolia.

*Diodontus gegen* TSUNEKI, 1972

\***Irkutsk Province.** 1 ♂ Bolshoje Goloustnoje 20.06.2011, leg. Liebig.

**Distribution:** Russia: Eastern Siberia. – Mongolia.

*Diodontus handlirschi* KOHL, 1888

\***Buryat Republic.** 1 ♂ East Sajan, Mondy, 30 km NW 01.07.2012, leg. Liebig.

**Distribution:** Russia: Western Siberia (Altai), Far East. – Europe, North Africa, Turkey, Kyrgyzstan, Kazakhstan, Mongolia. New record for Eastern Siberia.

*Diodontus luperus* SHUCKARD, 1837

**Irkutsk Province.** 1 ♀ Bolshoje Goloustnoje 22.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia. – Europe, North Africa, Turkey, Kazakhstan, Mongolia.

*Diodontus medius* DAHLBOM, 1844

**Irkutsk Province.** 2 ♂♂ Bolshoje Goloustnoje 16.06.2011. 1 ♂, 8 ♀♀ Sarma 16.–24.07.2007, leg. Liebig.

\***Buryat Republic.** 4 ♂♂ East Sajan, Mondy, 30 km NW 30.06.2012, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey.

*Diodontus tristis* (VANDER LINDEN, 1829)

**Irkutsk Province.** 1 ♂ Bolshoje Goloustnoje 16.06.2011, leg. Liebig. 1 ♂, 1 ♀ Sarma 21./23.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Iran, Tajikistan, Uzbekistan, Kyrgyzstan, Kazakhstan, Mongolia.

*Dryudella pinguis* (DAHLBOM, 1832)

**Irkutsk Province.** 1 ♂, 3 ♀♀ Bolshoje Goloustnoje 11.–24.06.2011, leg. Liebig. 1 ♂, 1 ♀ Sarma 17./18.07.2007, leg. Liebig. 1 ♂ Ust-Ordynski (steppe) 27.06.2011, leg. Liebig.

\***Buryat Republic.** 2 ♀♀ East-Sajan, Mondy, 30 km NW 06.07.2012, leg. Liebig.

**Distribution:** Russia: European Part, Western and Eastern Siberia, Far East. – Europe, Kazakhstan, North America.

*Dryudella stigma* (PANZER, 1809)

**Irkutsk Province.** 2 ♂♂, 4 ♀♀ Sarma 16.–24.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Western and Eastern Siberia, Far East. – Europe, Kazakhstan.

*Ectemnius (Clytochrysus) cavifrons* (THOMSON, 1870)

**Irkutsk Province.** 1 ♂, 1 ♀ Bolshoje Goloustnoje 13./23.06.2011, leg. Liebig.

**Primorskii Territory.** 3 ♂♂ Poshiga 20./21.06.2014, leg. Liebig.

**Sakhalin.** 2 ♂♂, 1 ♀ Korsakov (Ptiche Lake) 12.08.1975, leg. Nesterov. 5 ♂♂ Lugovoje 22.07.1980, leg. Nesterov. 2 ♂♂, 1 ♀ Novoaleksandrovsk (without date), leg. Nesterov.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Tajikistan, Kazakhstan, Mongolia, Korean Peninsula, Japan, South East Asia.

*Ectemnius (Clytochrysus) lapidarius* (PANZER, 1803)

**Primorskii Territory.** 1 ♀ Bonevurovo 25.05.1993, leg. Taeger. 1 ♂ Ryazanovka 16.06.1993, leg. Taeger.

**Sakhalin.** 1 ♂ Korsakov (Ptiche Lake) 12.08.1975, leg. Nesterov. 1 ♀ Lugovoje 22.07.1980, leg. Nesterov.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Georgia, Turkey, Iran, Kyrgyzstan, Kazakhstan, Mongolia, China, Korean Peninsula, Japan, North America.

*Ectemnius (Clytochrysus) ruficornis* (ZETTERSTEDT, 1838)

**Irkutsk Province.** 1 ♂ Bolshoje Goloustnoje 14.06.2011, leg. Liebig.

**Sakhalin.** 2 ♂♂ Korsakov (Ptiche Lake) 12.08.1975, leg. Nesterov. 2 ♂♂ Lugovoje 22.07.1980, leg. Nesterov. 2 ♂♂ Novoaleksandrovsk (without date), leg. Nesterov. 1 ♂ Pravda 28.08.1995, leg. Nesterov.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Kazakhstan, Mongolia, Korean Peninsula, Japan, South East Asia, North America.

*Ectemnius (Clytochrysus) sexcinctus* (FABRICIUS, 1775)

\***Irkutsk Province.** 1 ♂ Sarma 21.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Iran, Kyrgyzstan, Kazakhstan, Mongolia, China, India, North America.

*Ectemnius (Ectemnius) borealis* (ZETTERSTEDT, 1838)

**Irkutsk Province.** 3 ♂♂, 1 ♀ Bolshoje Goloustnoje 19.–25.06.2011, leg. Liebig. 3 ♂♂, 6 ♀♀ Sarma 16.–19.07.2007, leg. Liebig.

**Zabaikalskii Territory.** 1 ♀ Dauriskij Reserve 24.07.1989, leg. Nesterov.

**Primorskii Territory.** 1 ♀ Poshiga 21.06.2014, leg. Liebig.

**Sakhalin.** 1 ♀ Lugovoje 22.07.1980, leg. Nesterov. 1 ♀ Novoaleksandrovsk (without date), leg. Nesterov.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Kazakhstan, Mongolia, Korean Peninsula, Japan, North America.

*Ectemnius (Ectemnius) dives* (LEPELETIER & BRULLÉ, 1835)

**Primorskii Territory.** 1 ♂ Anisimovka 07.06.1993, leg. Taeger.

**Sakhalin.** 1 ♂ Lugovoje 22.07.1980, leg. Nesterov.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Georgia, Turkey, Israel, Kazakhstan, China, Korean Peninsula, Japan, North America.

*Ectemnius (Ectemnius) guttatus* (VANDER LINDEN, 1829)

**Irkutsk Province.** 2 ♂♂ Bolshoje Goloustnoje 14./24.06.2011, leg. Liebig. 1 ♂ Bolshoje Goloustnoje 18.06.2011, leg. Jänicke.

\***Sakhalin:** 1 ♂ Korsakov (Ptiche Lake) 12.08.1975, leg. Nesterov. 2 ♂♂, 1 ♀ Lugovoje 22.07.1980, leg. Nesterov. 1 ♂ Pravda 28.08.1995, leg. Nesterov.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia. – Europe, Kazakhstan. New record for Far East.

*Ectemnius (Hypocrabro) continuus* (FABRICIUS, 1804)

**Irkutsk Province.** 1 ♂ Bolshoje Goloustnoje 23.06.2011, leg. Liebig. 1 ♂ Bolshoje Goloustnoje 18.07.2012, leg. Floßmann. 7 ♂♂ Sarma 16.–21.07.2007, leg. Liebig.



**Buryat Republic.** 1 ♂, 1 ♀ East-Sajan, Mondy, 30 km NW 06./12.07.2012, leg. Liebig.

**Zabaikalskii Territory.** 2 ♀♀ Dauriskij Reserve 24.07.1989, leg. Golovushkin. 1 ♂ Dauriskij Reserve 24.07.1989, leg. Nesterov.

**Primorskii Territory.** 1 ♂ Anisimovka 08.06.1993, leg. Taeger. 1 ♂ Bonevurovo 10.06.1993, leg. Taeger. 1 ♂ Dalnegorsk 25.06.2014, leg. Liebig. 1 ♂ Samarka, Gordeyevska Mt. 29.05.1993, leg. Taeger.

**Sakhalin.** 7 ♂♂ Yuzhno Sakhalinsk 22.07.1980, leg. Nesterov. 1 ♀ Korsakov (Ptitch Lake) 12.08.1975, leg. Nesterov. 1 ♂, 1 ♀ Lugovoje 22.07.1980, leg. Nesterov. 1 ♂ Novoaleksandrovsk (without date), leg. Nesterov.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Georgia, Azerbaijan, Turkey, Jordan, Israel, Iran, Iraq, Central Asia, Kazakhstan, Mongolia, China, Korean Peninsula, Japan, North and South America.

*Ectemnius (Hypocrabro) pedicellaris* (F. MORAWITZ, 1889)

**Zabaikalskii Territory.** 1 ♀ Dauriskij Reserve 24.07.1989, leg. Golovushkin.

**Distribution:** Russia: Eastern Siberia, Far East. – Mongolia, China, Korean Peninsula.

*Ectemnius (Hypocrabro) rubicola* (DUFOR & PERRIS, 1840)

**Primorskii Territory.** 1 ♀ Poshiga 20.06.2014, leg. Liebig.

**Sakhalin.** 1 ♂ Korsakov (Ptitch Lake) 12.08.1975, leg. Nesterov. 3 ♂♂ Lugovoje 22.07.1980, leg. Nesterov. 2 ♂♂ Pravda 28.08.1995, leg. Nesterov.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Iran, Kazakhstan, Japan.

*Ectemnius (Hypocrabro) schlettereri* (KOHL, 1888)

**Irkutsk Province.** 1 ♂ Ust-Ordynski (steppe) 27.06.2011, leg. Liebig.

**Primorskii Territory.** 1 ♂ Poshiga 20.06.2014, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Iran, Kazakhstan, China, Korean Peninsula, Japan, India, South East Asia.

*Ectemnius (Metacrabro) fossorius* (LINNÉ, 1758)

**Irkutsk Province.** 2 ♂♂ Sarma 16./18.07.2007, leg. Liebig.

**Primorskii Territory.** 1 ♀ Uborka 23.06.2014, leg. Liebig. 18 ♂♂ Poshiga 20./21.06.2014, leg. Liebig. 1 ♀ Saratovka 19.06.2014, leg. Liebig.

**Sakhalin.** 1 ♂, 2 ♀♀ Lugovoje 22.07.1980, leg. Nesterov. 4 ♂♂, 1 ♀ Novoaleksandrovsk (without date), leg. Nesterov.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Kazakhstan, Mongolia, China, Korean Peninsula, Japan.

*Ectemnius (Metacrabro) spinipes* (A. MORAWITZ, 1866)

**Irkutsk Province.** 1 ♀ Bolshoje Goloustnoje 24.06.2011, leg. Liebig. 2 ♀♀ Sarma 16./18.07.2007, leg. Liebig.

**Primorskii Territory.** 1 ♂ Poshiga 20.06.2014, leg. Liebig.

**Sakhalin.** 1 ♂ Korsakov (Ptitch Lake) 12.08.1975, leg. Nesterov. 2 ♂♂, 2 ♀♀ Lugovoje 22.07.1980, leg. Nesterov. 2 ♂♂, 1 ♀ Novoaleksandrovsk (without date), leg. Nesterov.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Azerbaijan, Turkey, Turkmenistan, Kazakhstan, Mongolia, China, Korean Peninsula, Japan.

*Ectemnius (Yanonius) martjanowi* (F. MORAWITZ, 1892)

**Sakhalin.** 1 ♂ Lugovoje 22.07.1980, leg. Nesterov. 2 ♂♂, 1 ♀ Novoaleksandrovsk (without date), leg. Nesterov.

**Distribution:** Russia: Western and Eastern Siberia, Far East. – Mongolia, China, Korean Peninsula, Japan, India.

*Gorytes aino* TSUNEKI, 1963

**Primorskii Territory.** 1 ♀ Saratovka 19.06.2014, leg. Liebig.

**Distribution:** Russia: Eastern Siberia, Far East. – China, Japan.

*Gorytes albidulus* (LEPELETIER, 1832)

\***Irkutsk Province.** 1 ♂, 1 ♀ Sarma 14.07./28.06.2006, leg. Jänicke. 1 ♂ Sarma 21.07.2007, leg. Liebig. 1 ♂ Bolshoje Goloustnoje 20.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Western Siberia (Altai). – Europe, North Africa, Azerbaijan, Turkey, Iran, Uzbekistan, Kyrgyzstan, Kazakhstan, Mongolia. New record for Eastern Siberia.

**Remark:** First recorded in Siberia in the Altai Mountains (BAGHIROV 2011). The next nearest records are in Mongolia (Zavchan Aimak, Chövsgöl Aimak) (TSUNEKI 1971). Chövsgöl Aimak is located south of Zabaikalskii Territory.

*Gorytes ambiguus* HANDLIRSCH, 1888

**Irkutsk Province.** 1 ♂, 2 ♀♀ Bolshoje Goloustnoje 14.–25.06.2011, leg. Liebig.

**Distribution:** Russia: Western and Eastern Siberia, Far East. – Tajikistan, Uzbekistan, Kazakhstan, Mongolia, China.

*Gorytes laticinctus koreanus* (LEPELETIER, 1832)

\***Irkutsk Province.** 2 ♂♂ Ust-Ordynski (steppe) 27.06.2011, leg. Liebig.

**Distribution:** Russia: Eastern Siberia, Far East. – Korean Peninsula, Japan.

*Gorytes neglectus* HANDLIRSCH, 1895

(Figs. 2e, 2f)

**Buryat Republic.** 6 ♂♂, 1 ♀ East-Sajan, Bank of Black Irkut 30.06.2012, leg. Liebig. 3 ♂♂, 5 ♀♀ East-Sajan, Mondy, 30 km NW 02.–13.07.2012, leg. Liebig.

**Primorskii Territory.** 1 ♀ Kavalerovo 26.06.2014, leg. Liebig. 1 ♀ Poshiga 21.06.2014, leg. Liebig.

**Distribution:** Russia: European Part, Western and Eastern Siberia, Far East. – Europe, Turkey, Kazakhstan, Korean Peninsula.

*Gorytes pieli* YASUMATSU, 1943

\***Irkutsk Province.** 1 ♂ Bolshoje Goloustnoje 20.06.2011, leg. Liebig.

**Distribution:** Russia: Eastern Siberia, Far East. – Mongolia, China, Korean Peninsula.

*Gorytes procrustes* HANDLIRSCH, 1888

\***Irkutsk Province.** 4 ♂♂ Bolshoje Goloustnoje 20.–25.06.2011, leg. Liebig. 1 ♂ Ust-Ordynski (steppe) 27.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia (Altai, Baghirov 2011). – Europe, Georgia, Turkey, Kazakhstan. New record for Eastern Siberia.

*Gorytes quadrifasciatus* (FABRICIUS, 1804)

**Irkutsk Province.** 1 ♂, 2 ♀♀ Sarma 24.07.2007, leg. Liebig, det. Schmid-Egger. 7 ♂♂ Ust-Ordynski (steppe) 27.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Kyrgyzstan, Kazakhstan, Mongolia, Korean Peninsula.

*Gorytes quinquecinctus* (FABRICUS, 1793)

**Irkutsk Province.** 1 ♂, 1 ♀ Bolshoje Goloustnoje 20./25.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia. – Europe, North Africa, Azerbaijan, Turkey, Syria, Iran, Uzbekistan, Kyrgyzstan, Kazakhstan.

*Gorytes quinquefasciatus* (PANZER, 1798)

**Irkutsk Province.** 10 ♂♂, 3 ♀♀ Bolshoje Goloustnoje 20.–25.06.2011, leg. Liebig. 1 ♂, 1 ♀ Ust-Ordynski (steppe) 27.06.2011, leg. Liebig.

**Primorskii Territory.** 2 ♂♂ Poshiga 20.06.2014, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe.

*Gorytes sulcifrons mongolicus* TSUNEKI, 1971

**Irkutsk Province.** 3 ♀♀ Sarma 18./21.07.2007, leg. Liebig.

**Distribution:** Russia: Western and Eastern Siberia. – Azerbaijan, Kazakhstan, Mongolia, China.

**Remark:** The identification of the ♀♀ is confirmed by comparison with the original description of TSUNEKI (1971).

*Lestica alata* (PANZER, 1797)

**Irkutsk Province.** 4 ♂♂, 1 ♀ Bolshoje Goloustnoje 20.–25.06.2011, leg. Liebig. 1 ♂ Ust-Ordynski (steppe) 27.06.2011, leg. Liebig.

**Zabaikalskii Territory.** 1 ♂, 1 ♀ Dauriskij Reserve 24.07.1989, leg. Golovushkin.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Kyrgyzstan, Kazakhstan, Mongolia, China, Korean Peninsula, Japan, North India.

*Lestica camelus* (EVERSMANN, 1849)

**Irkutsk Province.** 5 ♂♂, 5 ♀♀ Bolshoje Goloustnoje 19.–25.06.2011, leg. Liebig. 1 ♂ Bolshoje Goloustnoje 18.07.2012, leg. Floßmann. 3 ♂♂ Sarma 18./21.07.2007, leg. Liebig.

**Primorskii Territory.** 5 ♂♂, 2 ♀♀ Poshiga 20.–22.06.2014, leg. Liebig.

**Sakhalin.** 1 ♂ Korsakov (Ptiche Lake) 12.08.1975, leg. Nesterov. 7 ♂♂ Lugovoje 22.07.1980, leg. Nesterov. 1 ♀ Novoaleksandrovsk, leg. Nesterov.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Turkey, Kazakhstan, Mongolia, China, Korean Peninsula, Japan.

*Lestica clypeata* (SCHREBER, 1759)

**Irkutsk Province.** 2 ♂♂, 2 ♀♀ Sarma 16.–21.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Georgia, Turkey, Syria, Lebanon, Israel, Iraq, Iran, Turkmenistan, Uzbekistan, Kyrgyzstan, Kazakhstan.

*Lestica collaris* (MATSUMURA, 1912)

**Primorskii Territory.** 2 ♂♂ Dalnegorsk 24.06.2014, leg. Liebig. 1 ♂ Poshiga 21.06.2014, leg. Liebig. 1 ♂ Ussuriskij Zapovednik 28.08.1999, leg. Mattes.

**Distribution:** Russia: Far East. – Korean Peninsula, Japan.

*Lestica reiteri* (KOHL, 1915)

**Primorskii Territory.** 1 ♂ Lazo 22.08.1999, leg. Mattes.

**Distribution:** Russia: Far East. – Korean Peninsula, Japan.

*Lestica subterranea ochotica* (A. Morawitz, 1866)

\***Irkutsk Province:** 3 ♀♀ Sarma 16.–24.07.2007, leg. Liebig.

**Distribution:** Russia: Western and Eastern Siberia, Far East. – Mongolia, China.

*Lindenius panzeri* (VANDER LINDEN, 1829)

**Irkutsk Province.** 2 ♂♂, 2 ♀♀ Bolshoje Goloustnoje 20.–25.06.2011, leg. Liebig. 1 ♂, 1 ♀ Sarma 17./21.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Iran, Afghanistan, Turkmenistan, Uzbekistan, Kazakhstan, Mongolia, China.

*Mellinus crabroneus* (THUNBERG, 1791)

**Irkutsk Province.** 5 ♂♂ Ust-Ordynski (steppe) 27.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Kyrgyzstan, Kazakhstan, Mongolia, China, Korean Peninsula.

*Mimesa equestris* (FABRICIUS, 1804)

**Irkutsk Province.** 1 ♂ Bolshoje Goloustnoje 25.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Kazakhstan, Korean Peninsula.

*Mimesa lutaria* (FABRICIUS, 1787)

**Irkutsk Province.** 15 ♀♀ Sarma 17.–24.07.2007, leg. Liebig. 1 ♂ Ust-Ordynski (steppe) 27.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Uzbekistan, Kyrgyzstan, Kazakhstan, Mongolia, China, Korean Peninsula, Japan, North America.

*Mimumesa dahlbomi* (WESMAEL, 1852)

**Primorskii Territory.** 1 ♂ Anisimovka, Litovka Mt. 08.06.1993, leg. Taeger.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Kyrgyzstan, Kazakhstan, Mongolia, China, Korean Peninsula, Japan.

*Miscophus bicolor* JURINE, 1807

**Irkutsk Province.** 1 ♂ Sarma 21.07.2007, leg. Liebig, det. Schmid-Egger. 1 ♂, 1 ♀ Bolshoje Goloustnoje 22.06./24.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Syria, Iran, Kazakhstan, Mongolia, Korean Peninsula.

*Nysson dimidiatus* JURINE, 1807

**Irkutsk Province.** 5 ♂♂, 2 ♀♀ Sarma 21./22.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Western and Eastern Siberia, Far East. – Europe, Armenia, Central Asia, Kazakhstan, Mongolia.

*Nysson interruptus* (FABRICIUS, 1798)

\***Irkutsk Province:** 1 ♀ Bolshoje Goloustnoje 20.06.2011, leg. Liebig. 2 ♀♀ Sarma 18./21.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western Siberia. – Europe, North Africa, Turkey, Israel, Armenia, Kazakhstan. New record for Eastern Siberia.

*Nysson maculosus* (GMELIN, 1790)

**Irkutsk Province.** 1 ♂, 1 ♀ Bolshoje Goloustnoje 20./25.06.2011, leg. Liebig. 1 ♂, 4 ♀♀ Sarma 18.–23.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Caucasus, Turkey, Tajikistan, Uzbekistan, Kazakhstan, Mongolia, China, Korean Peninsula.

*Nysson spinosus* (Forster, 1771)

**Khabarovsk Territory.** 1 ♀ Boitsovo 26.05.1993, leg. Taeger.

**Primorskii Territory.** 1 ♂, 1 ♀ Bonevurovo 10.06.1993, leg. Taeger. 2 ♀♀ Anisimovka 07.06.1993, leg. Taeger. 3 ♀♀ Ryazanovka 16.06.1993, leg. Taeger, 1 ♀ Tikhoye nr. Razdolnoye 19.06.1993, leg. Taeger.

**Distribution:** Russia: European Part, Western and Eastern Siberia, Far East. – Europe, Azerbaijan, Turkey, Iran, Kazakhstan, Japan.

*Oxybelus haemorrhoidalis* OLIVIER, 1812

\***Irkutsk Province:** 11 ♂♂, 3 ♀♀ Sarma 18.–24.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western Siberia, Far East. – Europe, North Africa, Turkey, Syria, Israel, Iran, Afghanistan, Turkmenistan, Uzbekistan, Kyrgyzstan, Kazakhstan, Mongolia, China, Korean Peninsula, Japan. New Record for Eastern Siberia.

*Oxybelus trispinosus* (FABRICIUS, 1787)

**Primorskii Territory.** 1 ♂ Anisimovka 02.07.2014, leg. Liebig. 1 ♂ Saratovka 19.06.2014, leg. Liebig. 4 ♂♂ Kalinovka 29.06.2014, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Kazakhstan.

*Oxybelus uniglumis* (LINNÉ, 1758)

**Irkutsk Province.** 1 ♀ Sarma 22.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Tajikistan, Kyrgyzstan, Kazakhstan, Mongolia, North America.

*Passaloecus borealis* DAHLBOM, 1844

**Primorskii Territory.** 1 ♀ Dalnegorsk 25.06.2014, leg. Liebig.

**Distribution:** Russia: European Part, Western and Eastern Siberia, Far East. – Europe, Kazakhstan, North America.

*Passaloecus monilicornis* DAHLBOM, 1842

**Irkutsk Province.** 2 ♂♂ Bolshoje Goloustnoje 25.06.2011, leg. Liebig. 1 ♂ Ust-Ordynski (steppe) 26.06.2011, leg. Liebig.

\***Buryat Republic.** 1 ♀ East-Sajan, Mondy, 30 km NW 10.07.2012, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Kazakhstan, Mongolia, China, Korean Peninsula, Japan, North America.

*Pemphredon inornata* SAY, 1824

**Buryat Republic.** 2 ♂♂, 6 ♀♀ East-Sajan, Mondy, 30 km NW 29.06.–13.07.2012, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Central Asia, Kazakhstan, Mongolia, China, Korean Peninsula, Japan, North America.

*Pemphredon lethifer* (SHUCKARD, 1837)

\***Buryat Republic.** 6 ♂♂, 8 ♀♀ East-Sajan, Mondy, 30 km NW 28.06.–12.07.2012, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western Siberia, Far East. – Europe, North Africa, Azerbaijan, Turkey, Israel, Iraq, Iran, Tajikistan, Uzbekistan, Kyrgyzstan, Kazakhstan, Mongolia, China, Korean Peninsula, Japan, North America. New record for Eastern Siberia.

**Remark:** Distribution not certain, because in most cases *P. lethifer* und *P. fabricii* (MÜLLER, 1911) have not been distinguished (see JACOBS 2007).

*Pemphredon lugens* DAHLBOM, 1842

**Irkutsk Province.** 10 ♂♂, 1 ♀ Bolshoje Goloustnoje 12.–19.06.2011, leg. Liebig.

\***Buryat Republic.** 1 ♂ East-Sajan, Mondy, 30 km NW 08.07.2012, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Kazakhstan.

*Pemphredon lugubris* (FABRICIUS, 1793)

**Irkutsk Province.** 1 ♀ Bolshoje Goloustnoje 23.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Iran, Uzbekistan, Kyrgyzstan, Kazakhstan, Mongolia, China, Korean Peninsula, Japan, North America.

*Pemphredon montana* DAHLBOM, 1844

**Irkutsk Province.** 8 ♂♂ Bolshoje Goloustnoje 13.–16.06.2011, leg. Liebig.

**Primorskii Territory.** 1 ♀ Anisimovka 01.07.2014, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Eastern Siberia, Far East. – Europe, Kazakhstan, China, Korean Peninsula, Japan, North America.

*Pemphredon mortifer* VALKEILA, 1972

**Irkutsk Province.** 1 ♀ Bolshoje Goloustnoje 19.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Eastern Siberia, Far East. – Europe, Azerbaijan, Turkey, Korean Peninsula, Japan, North America.

*Philanthus hellmanni* (EVERSMANN, 1849)

**Irkutsk Province.** 1 ♀ Sarma 24.07.2007, leg. Liebig, det. Schmid-Egger.

**Distribution:** Russia: Western and Eastern Siberia, Far East. – Tajikistan, Kazakhstan, Mongolia, China.

*Pison strandi* YASUMATSU, 1935

**Primorskii Territory.** 1 ♂ Kalinovka 29.06.2014, leg. Liebig.

**Distribution:** Russia: Far East. – Korean Peninsula, Japan.

*Psen ater* (OLIVIER, 1792)

**Irkutsk Province.** 1 ♂ Bolshoje Goloustnoje 25.06.2011, leg. Liebig. 1 ♂ Ust-Ordynski (steppe) 27.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Turkey, Uzbekistan, Kazakhstan, Mongolia, China, Korean Peninsula, Japan.

*Psenulus anomoneurae* (YASUMATSU, 1938)

**Primorskii Territory.** 1 ♀ Anisimovka 07.06.1993, 1 ♂ Anisimovka 08.06.1993, leg. Taeger.

**Distribution:** Russia: Far East. – Korean Peninsula, Japan.

*Psenulus pallipes* (PANZER, 1798)

**Irkutsk Province.** 1 ♂, 2 ♀♀ Sarma 21.–22.07.2007, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Armenia, Turkey, Iran, Kazakhstan, China, Korean Peninsula, Japan, North America.

**Remark:** Distribution not always certain, *P. pallipes* may be confused with *P. chevrieri* (TOURNIER, 1889) (see SCHMID-EGGER 2016).

*Rhopalum laticorne* (TSUNEKI, 1947)

**Primorskii Territory.** 1 ♂ Dalnegorsk 24.06.2014, leg. Liebig.

**Distribution:** Russia: Eastern Siberia, Far East. – China, Korean Peninsula.

*Stizus perrisi* DUFUR, 1838

(Figs. 2g, 2h)

**Primorskii Territory.** 10 ♂♂, 13 ♀♀ Kalinovka 27–28.06.2014, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, Armenia, Turkey, Uzbekistan, Kyrgyzstan, Kazakhstan, China, Korean Peninsula, Japan.

**Remark:** *Larra pulcherrima* F. SMITH, 1856 is synonymized by NEMKOV (2012b) with *Stizus perrisi*.

*Tachytes panzeri* (DUFUR, 1841)

**Irkutsk Province.** 1 ♂, 3 ♀♀ Ust-Ordynski (steppe) 26.–27.06.2011, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia. – Europe, North Africa, Turkey, Israel, Iran, Turkmenistan, Tajikistan, Uzbekistan, Kazakhstan.

*Trypoxylon figulus* (LINNÉ, 1758)

**Irkutsk Province.** 1 ♂, 2 ♀♀ Bolshoje Goloustnoje 13./19.06.2011, leg. Liebig, Jänicke.

**Buryat Republic.** 8 ♂♂, 4 ♀♀ East-Sajan, Mondy, 30 km NW 29.06.–14.07.2012, leg. Liebig.

**Primorskii Territory.** 1 ♀ Poshiga 22.06.2014, leg. Liebig.

**Distribution:** Russia: European Part, Urals, Western and Eastern Siberia, Far East. – Europe, North Africa, Turkey, Tajikistan, Uzbekistan, Kyrgyzstan, Kazakhstan, Mongolia, China, Japan, North America.

*Trypoxylon frigidum cornutum* GUSSAKOVSKIJ, 1932

**Primorskii Territory.** 1 ♂, 3 ♀ ♀ Poshiga 21.06.2014, leg. Liebig.

**Distribution:** Russia: Western and Eastern Siberia, Far East. – Korean Peninsula, Japan.

*Trypoxylon koreanum* TSUNEKI, 1956

**Primorskii Territory.** 1 ♀ Novonezhino 30.06.2014, leg. Liebig.

**Distribution:** Russia: European Part, Far East. – China, Korean Peninsula.

*Trypoxylon ussuriense* KAZENAS, 1980

**Primorskii Territory.** 1 ♀ Kalinovka 27.06.2014, leg. Liebig.

**Distribution:** Russia: Far East.

*Tzustigmus rhinocerus* (BUDRYS, 1987)

**Primorskii Territory.** 1 ♀ Mezhdurechje 28.05.1993, leg. Taeger.

**Distribution:** Russia: Far East. – Korean Peninsula.

Not determined taxa

*Ammoplanus* GIRAUD, 1869

**Irkutsk Province.** 1 ♂, 3 ♀ ♀ Sarma 21.–24.07.2007, leg. Liebig.

**Remark:** These specimens could not be identified with the keys by MARSHAKOV (1979) and BOUČEK (2001).

*Nitela* LATREILLE, 1809

**Irkutsk Province.** 1 ♂ Bolshoje Goloustnoje 19.06.2011, leg. Liebig.

**Remark:** This specimen could not be identified with the key by GAYUBO & FELTON (2000).

*Harpactus* SHUCKARD, 1837

**Buryat Republic.** 1 ♂ East-Sajan, Mondy, 30 km NW 13.07.2012, leg. Liebig.

**Remark:** This specimen could not be identified with the key by NEMKOV (1996).

## Results

Seven species are recorded first for Eastern Siberia: *Crossocerus* (*Crossocerus*) *tarsatus* (SHUCKARD, 1837), *Diodontus handlirschi* KOHL, 1888, *Gorytes albidulus* (LEPELETIER, 1832), *Gorytes procrustes* HANDLIRSCH, 1888, *Nysson interruptus* (FABRICIUS, 1798), *Oxybelus haemorrhoidalis* OLIVIER, 1812 and *Pemphredon lethifer* (SHUCKARD, 1837). *Ectemnius guttatus* (VANDER LINDEN, 1829) is new for the Far East.

There are some new regional records:

Eastern Siberia, Tuva Republic: *Crossocerus* (*Crossocerus*) *yasumatsui* (TSUNEKI, 1947).

Eastern Siberia, Irkutsk Province: *Podalonia asiatica* Danilov, 2017, *Cerceris pedetes* KOHL, 1887, *Diodontus dziuroo* TSUNEKI, 1972, *Diodontus gegen* TSUNEKI, 1972, *Ectemnius* (*Clytochrysus*) *sexcinctus* (FABRICIUS, 1775), *Gorytes albidulus* (LEPELETIER, 1832), *Gorytes laticinctus koreanus* HANDLIRSCH, 1888, *Gorytes pieli* YASUMATSU, 1943, *Gorytes procrustes* HANDLIRSCH, 1888, *Lestica subterranea ochotica* (A. MORAWITZ, 1866), *Nysson interruptus* (FABRICIUS, 1798), *Oxybelus haemorrhoidalis* OLIVIER, 1812

Eastern Siberia, Buryat Republic: *Podalonia alpina* (KOHL, 1888), *Crabro* (*Anothyreus*) *maeklini* A. MORAWITZ, 1866, *Crossocerus* (*Blepharipus*) *leucostoma* (LINNÉ, 1758), *Crossocerus* (*Crossocerus*) *elongatulus* (VANDER LINDEN, 1829), *Crossocerus* (*Crossocerus*) *kohli* (BISCHOFF, 1921), *Crossocerus* (*Crossocerus*) *tarsatus* (SHUCKARD, 1837), *Crossocerus* (*Crossocerus*) *varus* LEPELETIER & BRULLÉ, 1835, *Diodontus collaris* TSUNEKI, 1972, *Diodontus handlirschi* KOHL, 1888, *Diodontus medius* DAHLBOM, 1844, *Dryudella pinguis* (DAHLBOM, 1832), *Passaloecus monilicornis* DAHLBOM, 1842, *Pemphredon lethifer* (SHUCKARD, 1837) and *Pemphredon lugens* DAHLBOM, 1842.

Far East, Sakhalin: *Ectemnius* (*Ectemnius*) *guttatus* (VANDER LINDEN, 1829).

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Fig. 1: Maps of collecting sites. Map 1: Collecting sites in Tuva, the Baikal area, Buryatia and Transbaikalia (Tchita Oblast). Map 2: Collecting sites in Primorye and Sakhalin.

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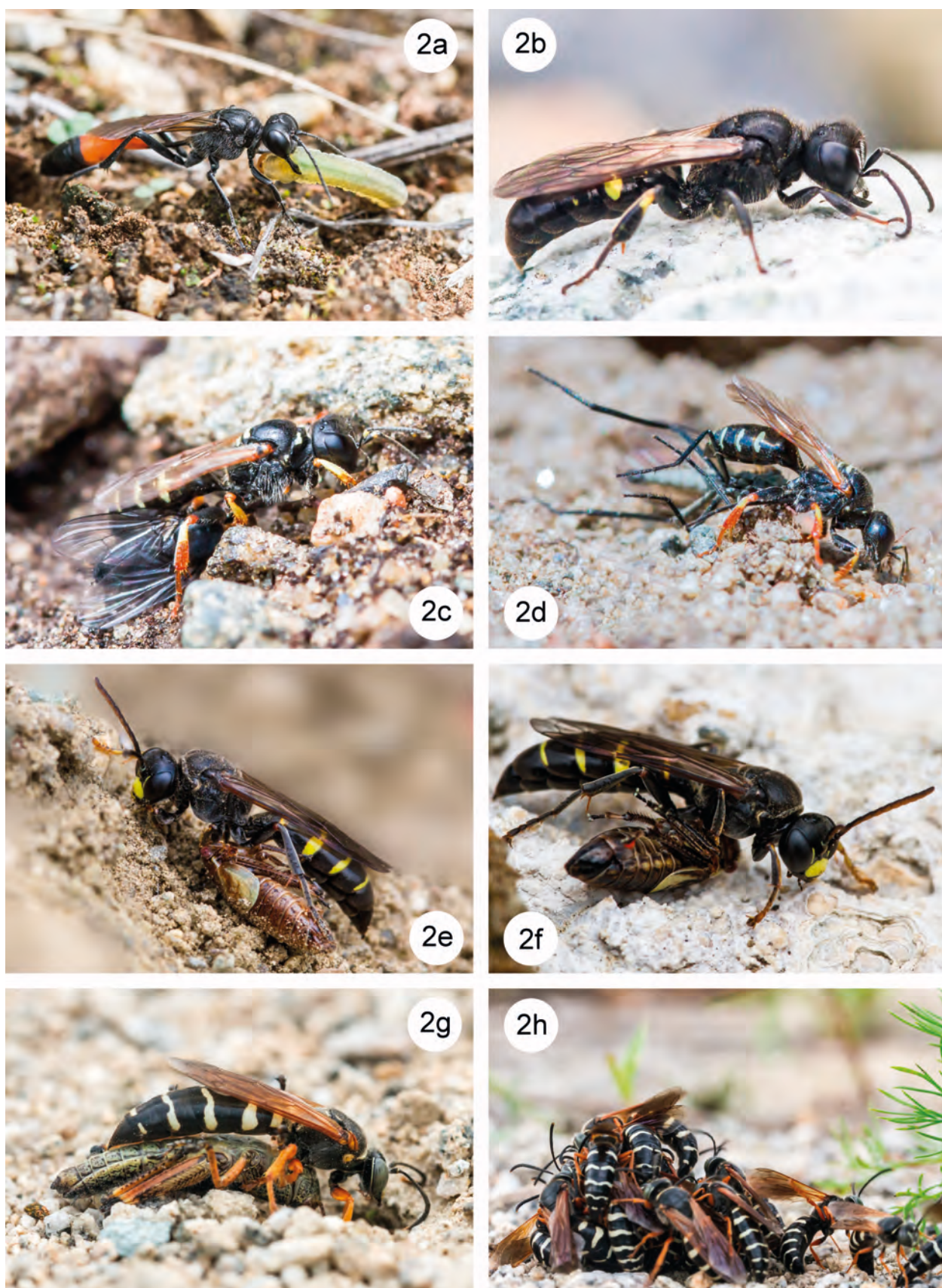


Fig. 2a-h: Digger wasps in action. 2a. *Ammophila mongolensis* ♀ with prey. 2b. *Crabro (Anothyreus) lapponicus* ♂. 2c-d. *Crabro (Anothyreus) maeklini* ♀ with prey. 2e-f. *Gorytes neglectus* ♀ with prey. 2g. *Stizus perrisi* ♀ with prey. 2h. *Stizus perrisi* ♂ ♂ waiting for emergence of a ♀.