



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 381: 1-8

ISSN 1026-051X

April 2019

<https://doi.org/10.25221/fee.381.1>
<http://zoobank.org/References/90120944-643F-4FDF-A835-8CA20898F1FD>

TO THE KNOWLEDGE OF GASTERUPTIIDAE (HYMENOPTERA) FROM RUSSIAN FAR EAST

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Summary. Ten species of the Gasteruptiidae from Russian Far East and Siberia are listed. Five species are newly recorded from Russia and one species is new for the Russian Far East. New replacement name *Gasteruption graciloides* van Achterberg, **nom. n.** is proposed for *G. gracilis* Alekseev, 1995, nec Smith, 1859, nec Pasteels, 1956. *Gasteruption abeillei* Kieffer, 1912, **stat. resurr.** is resurrected from the synonyms. A new synonymy are proposed: *Gasteruption abeillei* Kieffer, 1912 = *Trichofoenus breviterebrae* Watanabe, 1934, **syn. n.**, *Gasteruption hastator* (Fabricius, 1804) = *Gasteruption formilis* Alekseev, 1995, **syn. n.**, *Gasteruption japonicum* Cameron, 1888 = *Gasteruption (!) sibiricum* Semenov, 1892, **syn. n.**

Key words: checklist, new name, new synonymy, new records, Russia.

К. ван Ахтерберг, Ю. Н. Сундуков, А. С. Лелей, С. А. Белокобыльский.
К познанию Gasteruptiidae (Hymenoptera) Дальнего Востока России // Дальневосточный энтомолог. 2019. N 381. С. 1-8.

Резюме. Приведен список 10 видов семейства Gasteruptiidae Дальнего Востока России и Сибири. Пять видов впервые указываются для фауны России и один вид – для Дальнего Востока. Предложено новое замещающее название *Gasteruption graciloides* van Achterberg, **nom. n.** для *Gasteruption gracilis* Alekseev, 1995, nec Smith, 1859, nec Pasteels, 1956. Восстанавливается из синонимов *Gasteruption abeillei* Kieffer, 1912, **stat. resurr.** Предложена новая синонимия: *Gasteruption abeillei* Kieffer, 1912 = *Trichofoenus breviterebrae* Watanabe, 1934, **syn. n.**, *Gasteruption hastator* (Fabricius, 1804) = *Gasteruption formilis* Alekseev, 1995, **syn. n.**, *Gasteruption japonicum* Cameron, 1888 = *Gasteruption* (!) *sibiricum* Semenov, 1892, **syn. n.**

INTRODUCTION

Gasteruptiidae is a family in Evanioidea with a worldwide distribution, including two extant subfamilies Hyptiogastrinae and Gasteruptiinae, and with about 500 nominal species. Most species of this family belong to Gasteruptiinae, which consists of more than 400 species worldwide (Zhao *et al.*, 2012). In a recent phylogenetic analysis of Gasteruptiinae (Macedo, 2009), four genera of the subfamily were proposed: *Gasteruption* Latreille, 1796, *Phutofoenus* Kieffer, 1911, *Spinolafoenus* Macedo, 2009, and *Trilobitofoenus* Macedo, 2009. Among them, *Gasteruption* is predominant and the only worldwide genus in this subfamily, while the other three genera are restricted to the Neotropical region and include seven species in total (Macedo 2009).

The study of gasteruptiid wasps has been minimal for several decades. It is only recently, that the Palaearctic and Northeast Oriental gasteruptiid wasps are well investigated (Zhao *et al.*, 2012, van Achterberg, Talebi, 2014; Tan *et al.*, 2016; Saure *et al.*, 2017). Our knowledge of the gasteruptiid fauna of the vast area of Russian Far East is quite fragmentary with only few overviews available (Alekseev, 1995; Alekseev, Proshchalykin, 2012). The faunistic study of the Far Eastern Gasteruptiidae is very important because it will reveal the eastern limit of the western (European-Siberian) species and the northern limit of the East Asian species. This information is indispensable for understanding the real distributional patterns of these wasps in Eurasia.

The present paper is a result of the study of the collection of the Gasteruptiidae kept in the Federal Scientific Center of the East Asia Terrestrial Biodiversity, Vladivostok. We have listed collecting records for 88 specimens to 10 species of genus *Gasteruption* Latreille, 1797 from various regions in the Asian part of Russia. Next abbreviation is used in the material: AL – A. Lelej. General distribution of the species follows Tan *et al.* (2016), Zhao *et al.* (2012), Johansson & van Achterberg (2016).

LIST OF THE SPECIES

Genus *Gasteruption* Latreille, 1797

Gasteruption Latreille, 1797: 113. Type species: *Ichneumon assectator* Linnaeus, 1758, by subsequent designation (Latreille, 1810).

***Gasteruption abeillei* Kieffer, 1912, stat. resurr.**

Gasteruption abeillei Kieffer, 1912: 228, 231, 251, type locality "Frankreich".

Gasteruption assectator: Madl, 1989: 159.

Trichofoenus breviterebrae Watanabe, 1934: 285, holotype: Konuma, 23.V 1931, K. Tamani leg. [=Russia, South Sakhalin, Novoaleksandrovsk]; synonymized under *G. boreale* (Thomson, 1883) by Johansson & Achterberg (2016); new synonymy proposed by CvA; **syn. n.**

SPECIMENS EXAMINED. **Russia.** *Kamchatka*: near Esso, 20.VII 2005, 1♂, M. Proshchalykin. *Kunashir Island*: Cape Ivanovskii, 11–12.VII 2013, 1♀, Yu. Sundukov & L. Sundukova; Cape Stolbchatyi, 20, 23.VII, 11.VIII 1989, 2♂, 1♀, AL; ibid, creek valley, 9.VIII 1989, 1♂, V. Sidorenko; headwaters of Zolotaya River, 400–500 m, 19.VIII 2013, 1♀, Yu. Sundukov. *Primorskii krai*: Vladivostok, 22.VII 1987, 1♀, AL; 18 km SW Krounovka, 29.VII 1990, 1♀, AL; near Barabash-Levada, 8.VII 1986, 1♀, AL; 20 km SE Spassk-Dalnyi, Evseevka, 17.VII 2006, 1♂, S. Belokobylskij; Evseevka, 28.VI 1985, 1♂, AL; Vysokogorsk, 12.VI 1986, 1♀, AL; Bolshaya Ussurka River, 40 km S Melnichnoe, 1.VIII 1986, 1♀, AL; 20 km NW Melnichnoe, 2.VIII 1986, 2♀, AL & N. Kurzenko. *Amurskaya oblast*: Khingansky Nature Reserve, 7 km E Ukrainka, 12.VI 1987, 1♂, AL. *Altayskii krai*: near Biysk, Kakosheresh, 2–4.VIII 2006, 1♀, V. Krivokhatsky.

DISTRIBUTION. **Russia**: Kamchatka, Magadanskaya oblast, Kuril Islands, Sakhalin, Primorskii krai, Khabarovskii krai, Amurskaya oblast, Siberia, Ural, European part. – Europe.

NOTES. *Gasteruption abeillei* was synonymized with *G. assectator* (Linnaeus) s.l. by Madl (1989) but it is considered to be a valid species, mainly characterized by the shorter ovipositor sheath and shorter yellowish subapical antennal segments of the females.

***Gasteruption assectator* (Linnaeus, 1758)**

SPECIMENS EXAMINED. **Russia:** *Kunashir Island*: Cape Stolbchatyi, 23.VII, 9–10.VIII 1989, 2♂, 4♀, AL & P. Nemkov; 7 km S Lake Lagunnoe, 12.VIII 1989, 1♀, P. Nemkov. *Primorskii krai*: Livadiya near Nakhodka, forest, 31.VII 2013, 1♀, S. Belokobylskij; Barabash-Levada, 23.VI 1999, AL, 1♀; 20 km SE Spassk-Dalnyi, Evseevka, 17.VII 2006, 1♀, S. Belokobylskij; Arsen'evka River near Yakovlevka, 20.VII 1986, 1♂, AL; Bolshaya Ussurka River, 40 km S Melnichnoe, 31.VII 1986, 1♂, AL. *Jewish Autonomous Region*: Zabelovsky Zakaznik, Lake Zabelovskoe, 3–4.IX 2005, 1♀, V. Kuznetsov. *Amurskaya oblast*: Khingansky Nature Reserve, Kundur, Olochi, 26.VII 1988, 2♂, AL; ibid, Kundur, 28.VI 1989, 1♀, P. Nemkov.

DISTRIBUTION. **Russia**: South Kuril Islands, Sakhalin, Primorskii krai, Khabarovskii krai, Jewish Autonomous Region, Amurskaya oblast, European part. – Japan, China, Europe.

NOTES. *Gasteruption assectator* is treated here as including all former *G. assectator* s.l. except for the species with hook-shaped bristles on the ovipositor sheath (*G. nigritarse* (Thomson, 1883)) or with comparatively short ovipositor sheath (*G. abeillei* Kieffer, 1912).

***Gasteruption bicoloratum* Tan et van Achterberg, 2016**

? *Gasteruption incilis* Alekseev, 1995: 42, key, ♀, holotype, Primorskii Krai, Anisimovka, 12.VI 1975, leg. A. Berezantsev.

SPECIMENS EXAMINED. **Russia**: *Primorskii krai*: Anisimovka, 4.VIII 1983, 1♂, 1♀, AL. *Amurskaya oblast*: Khingansky Nature Reserve, Kundur, Karapcha River, 20.VII 1988, 1♀, AL.

DISTRIBUTION. **Russia** (new record): Primorskii krai, Amurskaya oblast. – China.

NOTES. The holotype of *G. incilis* Alekseev, 1995 could not be found in the Moscow Museum despite many efforts (including of the author); it is the only known specimen and originates from Anisimovka (South Primorskii krai). The original description is very rudimentary (in a key only!), the two key characters (apical antennal segment with ventral sensory area depressed and antenna apically paler than basally) are both variable in several species and thus useless for recognition of the species. The first character (the deep and parallel-sided impression of the apical antennal segment with sharp borders in the female) is a highly variable character that may occur e.g. in the very similar *G. abeillei*, *G. assectator*, *G. nigritarse* and *G. bicoloratum*. The specialized ventral sensory part of the apical antennal segment is variably depressed because of variable speed of desiccation. A pair of specimens from the type locality of *G. incilis* but collected later (4.VIII 1983 instead of 12.VI 1975) belongs to *G. bicoloratum*, but very likely *G. abeillei*, *G. nigritarse* and *G. assectator* also occur at the type locality. Arbitrarily, *G. incilis* is provisionally included under *G. bicoloratum* till the holotype is found; the typical characters of the latter species (yellow mandibles and yellowish pattern of metasoma) are not mentioned in the original description, which may be used as an argument to list *G. incilis* under *G. abeillei*, *G. nigritarse* or *G. assectator*.

***Gasteruption brevicuspis* Kieffer, 1911**

SPECIMENS EXAMINED. **Russia**: *Primorskii krai*: Ussuriysky Nature Reserve, kordon Peyshula, 21.VIII 1987, 1♀, V. Kostyukov. *Amurskaya oblast*: Khingansky Nature Reserve, Kundur, Karapcha River, 20.VII 1988, 1♂, AL.

DISTRIBUTION. **Russia** (new record): Primorskii krai, Amurskaya oblast. – China, Myanmar, India.

***Gasteruption graciloides* van Achterberg, nom. n.**

Gasteruption gracilis Alekseev, 1995: 43, ♀♂, fig. 15, 5, key, (holotype, Primorskii krai, 40 km NE Ussuriysk, 16.VIII 1985, A. Antropov leg.); nec *Gasteruption gracile* Pasteels, 1956, nec *Foenus gracilis* Smith, 1859.

DISTRIBUTION. **Russia**: Primorskii krai, Amurskaya oblast.

NOTES. A new name is necessary for *G. gracilis* Alekseev, 1995, because it is both a primary and a secondary homonym. It is described from Russian Far East

(South of Primorskii krai and Amurskaya oblast), but not present in the examined material.

***Gasteruption hastator* (Fabricius, 1804)**

Gasteruption formilis Alekseev, 1995: 42, ♀, holotype, Primorskii krai, Chkalovka, 24.VII 1988, N. Azarova leg.; new synonymy proposed by CvA; **syn. n.**

SPECIMENS EXAMINED. **Russia:** *Primorskii krai:* Dmitrievka, 25.VII 1986, 1♂, P. Nemkov; 20 km SE Spassk-Dal'ny, Evseevka, 17.VII 2006, 2♀, S. Belokobyl'skij.

DISTRIBUTION. **Russia:** Primorskii krai, Amurskaya oblast, Altai, European part. – Central Asia, Asia Minor, Europe.

NOTES. The type specimens of *G. formilis* could not be examined but considering the characters mentioned in the key by Alekseev (1995) and the redescription by Zhao *et al.* (2012) it concerns a melanic form of *G. hastator*. *Gasteruption formilis* is morphologically very similar, but *G. formilis* has the head (as most of the body) dark brown (largely red in typical *G. hastator*). Other differences are the more or less transverse sculpture of the mesoscutum and the extend of the depression of the clypeus, but both are variable in examined series from Central Asia.

***Gasteruption japonicum* Cameron, 1888**

Gasteruption (!) *sibiricum* Semenov, 1892: 24, ♀, holotype, Russia, Krasnoyarsk, Streblov leg.; synonymized with *G. subtile* (Thomson, 1883) by Madl (1989); new synonymy proposed by CvA; **syn. n.**

SPECIMENS EXAMINED. **Russia:** *Kunashir Island:* caldera of volcano Golovnin, 3.VIII 1989, 1♂, 1♀, AL; Tretyakovo, 21–22.VIII 2013, 1♀, Yu. Sundukov & L. Sundukova. *Primorskii krai:* Vladivostok, Sedanka, 20.VI 1993, 1♂, AL; Ussuriysky Nature Reserve, 27.VIII 1982, 1♀, AL; 10 km W Chernigovka, 21.VI 1997, 1♀, AL; 20 km W Spassk-Dal'ny, shore of Khanka Lake, 16.VII 2006, 1♀, S. Belokobyl'skij; 20 km SE Spassk-Dal'ny, Evseevka, 17.VII 2006, 2♀, S. Belokobyl'skij; Bolshaya Ussurka River, 20 km NW Melnichnoe, 2.VIII 1986, 1♂, N. Kurzenko.

DISTRIBUTION. **Russia:** Kuril Island (new record), Primorskii krai (new record), Eastern Siberia, NW of European part. – Japan, China.

NOTES. The description of *G. sibiricum* contradicts the synonymization of *G. sibiricum* with *G. subtile* (Thomson, 1883) by Madl (1989) and is not accepted here. The holotype (a female from Krasnoyarsk, Eastern Siberia collected by Streblov and in the Morawitz collection) could not be found either in St. Petersburg or Moscow. The head is comparatively long (“capite oblong”) and the mesoscutum is very finely sculptured and matt (“mesonoto valde opaco, subtilissime fere microscopice subtransversim ruguloso subtiliterque disperse punctato, ...”). This fits better with *G. japonicum* and *G. sibiricum* is, therefore, here synonymized with it.

***Gasteruption oshimense* Watanabe, 1934**

SPECIMENS EXAMINED. **Russia:** *Primorskii krai:* environs of Ryasanovka, apiary, 6.IX 1998, 1♀, P. Nemkov; Kedrovaya Pad' Nature Reserve, 31.VIII 1986, 1♀, AL; *ibid.*, 23–28.VII 2008, 1♀, A. Khalaim; 10 km W Chernigovka, 21.VI 1997, 1♂, AL; 20 km SE Spassk-Dal'niy, Evseevka, 17.VII, 4.VIII 2006, 3♂, S. Belokobyl'skij; Bolshaya Ussurka River, 20 km NW Melnichnoe, 2.VIII 1986, 1♀, N. Kurzenko. *Amurskaya oblast:* Khingansky Nature Reserve, Kundur, Karapcha River, 20.VII 1988, 1♀AL.

DISTRIBUTION. **Russia** (new record): Primorskii krai, Amurskaya oblast. – Japan (Honshu), China, Tajikistan.

***Gasteruption poecilothecum* Kieffer, 1911**

SPECIMENS EXAMINED. **Russia:** *Primorskii krai:* Kedrovaya Pad' Nature Reserve, 23–28.VII 2008, 1♂, 1♀, A. Khalaim; 10 km N Livadiya, 6.VII 1987, 1♀, P. Nemkov; Lazovsky Nature Reserve, Bay Proselochnaya, 11.VII 2008, 1♂, A. Khalaim; Khankaysky Nature Reserve, cape Przhhevskogo, Malaise trap, 1–2.VII 2005, 2♂, V. Sidorenko; Arsenevka River near Yakovlevka, 25.VII 1986, 1♀, AL; near Vysokogorsk, 28.VII 1986, 1♀, AL; Bolshaya Ussurka River, 40 km S Melnichnoe, 31.VII 1986, 1♀, AL; 20 km NW Melnichnoe, 2.VIII 1986, 2♂, 4♀, N. Kurzenko, P. Lehr & AL; Gogolevka, 3.VIII 1986, 1♀, AL. *Khabarovskii krai:* Khabarovsk, 17.VIII 1961, 1♀, A. Maslov; 20 km SE Snezhny, middle course of Dzhaul River, 2.VII 2005, 1♀, AL & M. Proshchalykin. *Amurskaya oblast:* Khingansky Nature Reserve, Kundur, 19, 23.VII 1988, 3♀, AL; Kundur, Olochi, 26–27.VII 1988, 2♀, AL. *Irkutskaya oblast:* 15 km W Ust'-Orda, Ordinsk, 17.VI 2000, 1♀, P. Nemkov.

DISTRIBUTION. **Russia** (new record): Magadanskaya oblast, Sakhalin, Primorskii krai, Khabarovskii krai, Amurskaya oblast, Siberia. – Japan (Hokkaido, Honshu), China, Mongolia, Azerbaijan.

***Gasteruption sinarum* Kieffer, 1911**

SPECIMENS EXAMINED. **Russia:** *Primorskii krai:* Bolshaya Ussurka River, 20 km NW Melnichnoe, 2.VIII 1986, 1♂, N. Kurzenko.

DISTRIBUTION. **Russia** (new record): Primorskii krai. – China, Central Asia.

***Gasteruption* sp.**

SPECIMENS EXAMINED. **Russia:** *Kamchatka:* near Esso, 30.VII 2005, 1♂, M. Proshchalykin; *Primorskii krai:* Kedrovaya Pad Nature Reserve, 5.VI 1997, 1♂, AL.

CONCLUSION

List of ten species of the Gasteruptiidae from Russian Far East and Siberia is given. *Gasteruption bicoloratum* Tan et van Achterberg, 2016, *G. brevicuspis* Kieffer, 1911, *G. oshimense* Watanabe, 1934, *G. poecilothecum* Kieffer, 1911, *G. sinarum* Kieffer, 1911 are newly recorded from Russia and *G. japonicum* Cameron, 1888 is new for the Russian Far East. New replacement name *Gasteruption graciloides* van Achterberg, **nom. n.** is proposed for *G. gracilis* Alekseev, 1995, nec Smith, 1859, nec Pasteels, 1956. *Gasteruption abeillei* Kieffer, 1912, **stat. resurr.** is resurrected from the synonyms. New synonymy is proposed: *Gasteruption abeillei* Kieffer, 1912 = *Trichofoenus breviterebrae* Watanabe, 1934, **syn. n.**, *Gasteruption hastator* (Fabricius, 1804) = *Gasteruption formilis* Alekseev, 1995, **syn. n.**, *Gasteruption japonicum* Cameron, 1888 = *Gasteruption* (!) *sibiricum* Semenov, 1892, **syn. n.**

ACKNOWLEDGEMENTS

We wish to thank Dr. V.N. Alekseev, Dr. A.V. Antropov, and Prof. Dr. A.P. Rasnitsyn for their efforts to locate the Alekseev types of Gasteruptiidae. The work was partly supported for ASL by the Russian Found of Basic Research (No 17-04-00259).

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