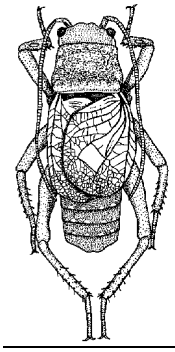

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DIGGER WASPS OF THE GENUS *BEMBECINUS* A. COSTA, 1859 (HYMENOPTERA, CRABRONIDAE, BEMBICINAE) OF THE FAUNA OF RUSSIA AND NEIGHBOURING COUNTRIES

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Six species of the genus *Bembecinus* of the fauna of Russia and neighbouring countries are reviewed. A key to the species is provided.

KEY WORDS: Digger wasps, Hymenoptera, Crabronidae, Bembicinae, *Bembecinus*, Russia.

П. Г. Немков. Роющие осы рода *Bembecinus* A. Costa, 1859 (Hymenoptera, Crabronidae, Bembicinae) фауны России и сопредельных стран // Дальневосточный энтомолог. 2012. N 251. С. 1-11.

Дается обзор шести видов рода *Bembecinus* фауны России и сопредельных стран. Приводится оригинальная определительная таблица видов.

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INTRODUCTION

Bembecinus A. Costa, 1859 numbers 186 species and inhabits all continents and many islands groups (Pulawski, 2012). The females prepare nests with several cells in hard dirt or more frequently in sandy soil. The larvae are fed progressively on a variety of Homoptera, mainly on leafhoppers (Bohart & Menke, 1976; Evans & O'Neill, 2007).

This genus was not especially studied in Russia, but there are keys to the species of European part of USSR (Pulawski, 1978), Kazakhstan and Central Asia (Kazenas, 1978), Russian Far East (Nemkov et al., 1995), and Palaearctic fauna (Schmid-Egger, 2004). The material used in this study is deposited in the collections of Zoological Institute of Russian Academy of Sciences (St-Petersburg) and Institute of Biology and Soil Sciences of Far Eastern Branch of Russian Academy of Sciences (Vladivostok).

Genus *Bembecinus* A. Costa, 1859

Bembecinus A. Costa, 1859:4. Type species: *Bembecinus meridionalis* A. Costa, 1859, by monotypy.

Stizomorphus A. Costa, 1959:7. Type species: *Vespa tridens* Fabricius, 1781, by monotypy.

Six species known in Russia and neighbouring countries are included in the key.

Key to the species

1. In female forebasitarsus distinctly broadened towards apex, about one and a half as long as broad. In male spine of flagellomere IX distally thickened, spiracular lobes of tergite VII with long bristles at dorsolateral edge. 14-15 mm ……. ……..... *B. gracilicornis* (Handlirsch)
– In female forebasitarsus nearly parallelsided, about twice as long as broad. In male spine of flagellomere IX distally pointed, spiracular lobes of tergite VII without long bristles ……... 2
2. Tergite I with interrupted light band. Submarginal cell II short-petiolate or triangular. 9.0-11.0 mm ……..…….... *B. hungaricus* (Frivaldszky)
– Tergite I with not interrupted light band. Submarginal cell II trapeziform (in some *B. tridens* almost triangular) ……... 3
3. Posterolateral carina of propodeum rounded, without emargination ……... 4
– Posterolateral carina of propodeum with distinct emargination ……..... 5
4. In female subantennal area yellow, mesopleuron with large yellow spot. In male inner surface of hindfemur with two spines. 10.0-14.0 mm …….. ……... *B. validior* Gussakovskij
– In female subantennal area and mesopleuron black. In male inner surface of hindfemur with one spine separated by about the length of flagellomere II. 8.0-11.0 mm ……..... *B. acanthomerus* (Morice)
5. In female posterolateral propodeal emargination deep, U-shaped or rectangular. In male clypeus 1.3x as long as basal wide, apical spine of forebasitarsus at least 1.5x as long as width of tarsomere II. 9.0-10.0 mm …….. *B. tridens* (Fabricius)
– In female posterolateral propodeal emargination shallow and obtuse. In male clypeus at most 1.1x as long as basal wide, apical spine of forebasitarsus as long as width of tarsomere II. 8.5-10.0 mm ……..... *B. asiaticus* Gussakovskij

List of the species

Bembecinus acanthomerus (Morice, 1911)

Stizus acanthomerus Morice, 1911: 116, ♀,♂ (syntypes – ♀, ♂, Algeria, Biskra, [Oxford]).

Stizus dentipes Gussakovskij, 1933: 289, ♂ (holotype – ♂, Iran, Kerman, Kambil, [St-Petersburg]), synonymized with *Bembecinus acanthomerus* by Schmid-Egger, 2004: 38; Gussakovskij, 935: 442.

Bembecinus dentipes: Kazenas, 1978: 84.

Bembecinus acanthomerus: Schmid-Egger, 2004: 38.

MATERIAL. **Turkmenistan**: 1♀, 1♂, near Tashkepri, 20.V 1976 (Kurzenko); 14♂, 5 km N Kushka, 27.V 1985, 19-23.V 1990 (Lelej); 2♂, 5 km N Kushka, 19, 23.V 1990 (Lehr).

DISTRIBUTION. Turkey, Syria, Lebanon, Israel, UAE, Oman, Turkmenistan, Iran, Morocco, Algeria, Mauritania, Mali.

Bembecinus asiaticus Gussakovskij, 1935

Bembicinus asiaticus Gussakovskij, 1935: 441, ♀, ♂ (syntypes – ♀, ♂; Tajikistan, Kulab; Uzbekistan, many localities; [St-Petersburg]); Myartseva, 1963: 60, 1965: 90; Islamov, 1970: 63, 64; Myartseva, 1972: 90, 1976: 75; Kazenas, 1978: 84; Islamov, 1986: 523; Kazenas & Esenbekova, 1995: 80; Nazarova, 1998: 41; Kazenas, 2001: 49, 234; Kazenas, 2002: 129; Nazarova, 2004: 108; Schmid-Egger, 2004: 22; Nazarova, 2005: 94; Kazenas, 2008: 105; Schmid-Egger, 2009: 760.

MATERIAL. **Turkmenistan**: 1♂, 95 km E Kara-Kala, 18.VI 1955 (Ponomareva).

DISTRIBUTION. Turkey, Saudi Arabia, Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Tajikistan, Iraq, Iran, Afghanistan, Pakistan.

Bembecinus gracilicornis (Handlirsch, 1892)

Stizus gracilicornis Handlirsch, 1892: 93, ♀ (syntypes – ♀♀, Transcaucasia [Armenia or Azerbaijan], Arax Valley, no specific locality, [Vienna]); Handlirsch, 1895: 983; Gussakovskij, 1933: 290.

Stizus barrei Radoszkowski, 1893: 63, ♀, ♂ (syntypes – ♀, ♂, Turkmenistan, Serax, [Krakov]), synonymized with *Stizus gracilicornis* by Handlirsch, 1895: 983.

Bembecinus gracilicornis: Kazenas, 1978: 85; Nazarova, 1998: 42; Kazenas, 2001: 49; Schmid-Egger, 2004: 21; 2009: 760.

MATERIAL. **Turkmenistan**: 3♀, 2♂, Imam-Baba, 1932 (without other data) (Shchestakov). **Tajikistan**: 1♀, 1♂, Aivadzh, outfall of Kafirnigan River, 18.VI 1934 (Gussakovskij); 1♂, Dushanbe, 11.VI 1944 (Popov). **Iran**: 1♀, Khorosan,

Gezik, 12-13.VII 1901 (Zarudnyi); 1♂, Bampur, Kuusha-Lyarumba, 6-10.V 1901 (Zarudnyi); 2♂, Kerman, Duzab, 18.V 1901 (Zarudnyi).

DISTRIBUTION. Turkey, Transcaucasia (Arax Valley), Turkmenistan, Tajikistan, Iran.

Bembecinus hungaricus (Frivaldszky, 1876)

Larra hungarica Frivaldszky, 1876: 354, ♀, ♂ (syntypes – ♀, ♂; Hungary, Budapest; Romania, Timiş District, Grebenácz, [Budapest]).

Stizus sibiricus Mocsáry *in* Mocsáry & Szépligeti, 1901: 162, ♀, ♂ (syntypes – ♀, ♂, Russia, Krasnoyarskii krai, Minusinsk, [Budapest]).

Stizus japonicus Sonan, 1934: 38, ♀, ♂ (holotype – ♀, Japan, Osaka, Ikeda, [depository unknown]), synonymized with *Bembecinus hungaricus* by Pulawski, 1958: 168; Yasumatsu & Narisada, 1935: 73.

Bembecinus sibiricus: Gussakovskij, 1934: 12; Krasnobayev et al., 1995: 138.

Bembecinus hungaricus sibiricus: Yasumatsu, 1942: 110; Tsuneki, 1971a: 199, 1971b: 9.

Bembecinus hungaricus: Tsuneki, 1965a: 14, 1965b: 28; Tsuneki, 1967: 2; Kazenas, 1978: 84; Pulawski, 1978: 207, 208; Kazenas, 1980: 85; Nemkov, 1992: 250; Gorobchishin, 1995: 19; Kazenas & Esenbekova, 1995: 80; Krasnobayev et al., 1995: 138; Nemkov et al., 1995: 466; Gorobchishin, 1996: 53; Minoranskiy & Shkuratov, 1996: 81; Wu & Zhou, 1996: 153; Kazenas, 2001: 49, 234; Kazenas, 2002: 129; Shlyakhtenok & Skibinska, 2002: 35; Schmid-Egger, 2004: 27; Gorobchishin, 2006: 141; Hua, 2006: 277; Baghirov, 2007: 93; Danilov, 2008: 348; Nemkov, 2008: 25, 2009:140; Schmid-Egger, 2009: 761; Shorenko & Konovalov, 2010: 14; Baghirov, 2011: 143.

Bembecinus hungaricus japonicus: Tsuneki, 1965a: 16, 1965c: 28.

Bembecinus hungaricus verhoeffi Tsuneki, 1965c: 35, ♀ (holotype – ♀, China, Heilongjiang, Harbin, [Leiden]); Tsuneki, 1967: 2; Hua, 2006: 277.

MATERIAL. **Russia**: 1♂, Altai, mouth of Bashkaus river, 12.VII 1980 (Lehr); 2♂, Buryatiya, Kharankhoi, 31.VII 1977 (Kupyanskaya); 3♂, Buryatiya, Naushki, 2-4.VIII 1984 (Lelej); 1♀, 4♂, Buryatiya, Baraty, 25, 26.VII 2007 (Lelej, Proshchalykin, Loktionov); 4♀, 9♂, Buryatiya, Dzhyda, 27.VII 2007 (Lelej, Proshchalykin, Loktionov); 6♀, 8♂, Buryatiya, Naushki, 30.VII 2007 (Lelej, Proshchalykin, Loktionov); 1♀, 1♂, Primorskii krai, 20 km NW Melnichnoe, 2.VIII 1986 (Lelej); 2♀, 1♂, Khabarovskii krai, Mamlyzh, 30.VI, 10.VII 1989 (Mutin); 2♀, 1♂, Khabarovskii krai, Mamlyzh, 18.VIII 1993 (Mutin); 1♀, Evreiskaya avtonomnaya oblast, 15 km N Smidovich, 21.VIII 1982 (Lelej); 2♀, Amurskaya oblast, Leninskii, 7.VIII 1982 (Lelej); 1♀, 4♂, Zabaikalskii krai, Abagaitui, 19-20.VII 1984 (Lelej).

DISTRIBUTION. France, Portugal, Spain, Italy (including Sardinia), Germany, Austria, Slovenia, Croatia, Bosnia, Serbia, Greece, Poland, Czech, Slovakia, Hungary, Romania, Bulgaria, Belarus, Ukraine, Turkey, Russia (Rostovskaya oblast, Samarskaya oblast, Tomskaya oblast, Altai, Krasnoyarskii krai, Buryatiya, Zabaikalskii krai, Amurskaya oblast, Evreiskaya avtonomnaya oblast, Khabarovskii krai, Primorskii krai), Kazakhstan, Mongolia, China (Inner Mongolia, Heilongjiang, Taiwan), Korea, Japan (Honshu, Kyushu, Ryukyu).

***Bembecinus tridens* (Fabricius, 1781)**

Vespa tridens Fabricius, 1781: 464, ♂ (holotype – ♂, Italy, no specific locality, [Copenhagen]).

Stizus tridens: Wierzejski, 1868: 117; Ivanov, 1872: 152; Wierzejski, 1874: 259; Radoszkowski, 1877: 39; Becker, 1880: 153; Yaroshevskiy, 1881: 125; F. Morawitz, 1889: 149, 1891: 218, 1893: 421; Arnold, 1902: 89; Schulz, 1904: 95; Wnukowskij, 1927: 32; Dovnar-Zapolskiy, 1940: 303.

Stizus cyanescens Radoszkowski, 1887: 96, ♀, ♂ (syntypes – ♀, ♂, Transcaspia, no specific locality, [Kraków]).

Bembecinus cyanescens: Gussakovskij, 1935: 441, 444; Tsuneki, 1971b: 10; Kazenas, 1978: 84; Islamov, 1986: 523; Nazarova, 1998: 41; Kazenas, 2001: 49, 2002: 129, 2004: 111; Nazarova, 2005: 94.

Bembecinus tridens: Tsuneki, 1965b: 28; Kazenas, 1972: 146; Kolesnikov, 1977: 317; Kazenas, 1978: 84; Pulawski, 1978: 206, 207; Islamov, 1986: 523; Kuznetzova, 1990: 19; Chinin, 1991: 111; Blagoveshchenskaya, 1994: 91; Gorobchishin, 1995: 19; Nemkov et al., 1995: 466; Kazenas & Esenbekova, 1995: 80; Krasnobayev et al., 1995: 138; Gorobchishin, 1996: 53; Minoranskiy & Shkuratov, 1996: 81; Voblenko, Gorobchishin & Nesterov, 1996: 15; Ananieva & Kochetkov, 1999: 7; Kazenas, 2001: 49, 2002: 129; Shkuratov, 2002: 140; Shlyakhtenok & Skibinska, 2002: 35; Gorobchishin & Protsenko, 2004: 39; Kazenas, 2004: 111; Schmid-Egger, 2004: 33; Shorenko, 2005: 167; Gorobchishin, 2006: 141; Nemkov, 2008: 25; Shcherbakov, 2008: 211; Nemkov, 2009: 141; Konovalov, 2010: 14; Baghirov, 2011: 143; Mokrousov, Berezin & Egorov, 2011: 68.

Bembecinus tridens mongolicus Tsuneki, 1971a: 199, ♂, ♀ (holotype – ♂, Mongolia, Bayanhongor Aymag, Ehingol oasis, [Budapest]), synonymized with *Bembecinus tridens cyanescens* by Schmid-Egger, 2004: 36.

Bembecinus tridens cyanescens: Schmid-Egger, 2004: 36.

MATERIAL. **Spain**: 1♂, Burgos, Quemada, 4.VIII 1985 (Sanza). **Russia**: 1♀, Stavropolskii krai, near Stavropol, 19.VII 1985 (Nemkov). **Azerbaijan**: 1♂, near Baku, Inzhirnaya, 23.VII 1988 (Storozhenko). **Kyrgyzstan**: 1♂, Kazarman, 26.VI 1984 (Pek). **Turkmenistan**: 1♀, 3♂, near Tashkepri, 20.V 1976 (Kurzenko); 1♀, 2♂, 3 km N Firyuza, Vanovskii, 12.VI 1988 (Lelej). **Tajikistan**: 1♂, Pugus, 20.VII 1932 (Fursov); 1♂, 5 km N Dushanbe, Varzob River canyon, 29.V 1977 (Nazarova).

DISTRIBUTION. Belgium, France (including Corsica), Portugal, Spain (including Majorca), Switzerland, Italy (including Sicilia and Sardinia), Germany, Austria, Croatia, Bosnia, Serbia, Albania, Greece (including Thasos, Crete and Rhodes), Poland, Czech, Slovakia, Hungary, Romania, Bulgaria, Malta, Cyprus, Belarus, Ukraine, Turkey, Syria, Lebanon, Israel, Palestine, Jordan, Oman, Russia (Moskovskaya oblast, Bryanskaya oblast, Kurskaya oblast, Ryazanskaya oblast, Saratovskaya oblast, Volgogradskaya oblast, Rostovskaya oblast, Stavropolskaya oblast, Astrakhanskaya oblast, Chuvashiya, Ulyanovskaya oblast, Altai), Georgia, Armenia, Azerbaijan, Kazakhstan, Kyrgyzstan, Uzbekistan, Turkmenistan, Tajikistan, Iraq, Iran, Pakistan, Mongolia, China (Peking), Japan (Ryukyu), Morocco, Algeria, Tunisia, Libya.

***Bembecinus validior* Gussakovskij, 1952**

Bembecinus validior Gussakovskij, 1952: 271, ♀, ♂ (syntypes – ♀, ♂, Tajikistan, Koi-Pyaz-Nau near Mikoyanabad [now Kabadian] and Hissar Mountains, [St-Petersburg]); Kazenas, 1978: 84, 2001: 49, 2002: 130; Schmid-Egger, 2004: 64.

MATERIAL. **Turkmenistan**: 1♂, Badhyzskii zapovednik, Eroyulanduz, 17.V 1990 (Lelej).

DISTRIBUTION. Turkey, Israel, Kazakhstan, Turkmenistan, Tajikistan, Iran, Egypt.

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