

**Contribution to the knowledge of the species of *Crossocerus* Lepeletier et
Brullé (Hymenoptera: Crabronidae, Crabroninae) described by K. Tsuneki**

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**К познанию видов рода *Crossocerus* Lepeletier et Brullé
(Hymenoptera: Crabronidae, Crabroninae), описанных К. Цунеки**

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Abstract. New synonyms of the Palaearctic species of the genus *Crossocerus* Lepeletier et Brullé are established: *C. capitosus* (Shuckard, 1837) = *C. capitosus yezo* Tsuneki, 1960, syn. n.; *C. cetratus* (Shuckard, 1837) = *C. dentsukanus* Tsuneki, 1976, syn. n.; *C. cinxius* (Dahlbom, 1838) = *C. yamato* Tsuneki, 1960, syn. n.; *C. heydeni* Kohl, 1880 = *C. heydeni nipponis* Tsuneki, 1966, syn. n. = *C. murotai* Tsuneki, 1992, syn. n.; *C. nigrinus* (Lepeletier et Brullé, 1835) = *C. verhoeffi sudai* Tsuneki, 1976, syn. n. = *C. babai* Tsuneki, 1979, syn. n.; *C. styrius* (Kohl, 1892) = *C. pilicornis* Tsuneki, 1977, syn. n.; *C. takeuchii* Tsuneki, 1957 = *C. etizenensis* Tsuneki, 1992, syn. n.; *C. yasumatsui* (Tsuneki, 1947) = *C. yasumatsui mongolensis* Tsuneki, 1972, syn. n. = *C. nambui* Tsuneki, 1982, syn. n.

Key words. Hymenoptera, Crabronidae, *Crossocerus*, new synonyms, Palaearctic.

Резюме. Устанавливаются новые синонимы палеарктических видов рода *Crossocerus* Lepeletier et Brullé: *C. capitosus* (Shuckard, 1837) = *C. capitosus yezo* Tsuneki, 1960, syn. n.; *C. cetratus* (Shuckard, 1837) = *C. dentsukanus* Tsuneki, 1976, syn. n.; *C. cinxius* (Dahlbom, 1838) = *C. yamato* Tsuneki, 1960, syn. n.; *C. heydeni* Kohl, 1880 = *C. heydeni nipponis* Tsuneki, 1966, syn. n. = *C. murotai* Tsuneki, 1992, syn. n.; *C. nigrinus* (Lepeletier et Brullé, 1835) = *C. verhoeffi sudai* Tsuneki, 1976, syn. n. = *C. babai* Tsuneki, 1979, syn. n.; *C. styrius* (Kohl, 1892) = *C. pilicornis* Tsuneki, 1977, syn. n.; *C. takeuchii* Tsuneki, 1957 = *C. etizenensis* Tsuneki, 1992, syn. n.; *C. yasumatsui* (Tsuneki, 1947) = *C. yasumatsui mongolensis* Tsuneki, 1972, syn. n. = *C. nambui* Tsuneki, 1982, syn. n.

Ключевые слова. Hymenoptera, Crabronidae, *Crossocerus*, новые синонимы, Палеарктика.

Introduction

The digger wasps of the genus *Crossocerus* Lepeletier et Brullé are widespread in the world. Over two hundred species of this genus are known (Bohart, Menke, 1976). The species of *Crossocerus* burrow their nests in sandy and clay soil, moldering or rotten wood, or renovate existing galleries, burrows and cavities in old logs, stumps, branches and posts. Various small Diptera are the principal prey for this genus, but some species of *Crossocerus* hunt for Homoptera, Hemiptera, Trichoptera, Microlepidoptera, Psocoptera, Mecoptera and Ephemeroptera (Tsuneki, 1960b).

Fourty seven *Crossocerus* species (four of them are synonyms now) and sixteen subspecies have been described by Prof. K. Tsuneki mainly from the Asian part of the Palaearctic.

At the end of 1998 the types of twenty eight *Crossocerus* taxa described by Tsuneki were examined by the author from the Tsuneki's digger wasp collection deposited in Museum of Nature and Human Activities in Hyogo (Sanda, Hyogo Pref., Japan; futher — MNHAH). Seventeen of these species and subspecies have unique sets of diagnostic features and are therefore valid: *C. (Crossocerus) opacifrons* (Tsuneki, 1947) (Japan: Hokkaido); *C. (C.) uchidai* (Tsuneki, 1947) (Japan: Hokkaido); *C. (C.) uchidai hon-donis* Tsuneki, 1976 (Japan: Honshu); *C. (C.) yasumatsui* (Tsuneki, 1947) (Japan: Hokkaido); *C. (Ablepharipus) congener fukuiensis* Tsuneki, 1970 (Japan: Honshu); *C. (Blepharipus) annulipes hokkaidoensis* Tsuneki, 1954 (Japan: Hokkaido); *C. (B.) breviclypeatus* Tsuneki, 1977 (China: Taiwan); *C. (B.) dentsukanus* Tsuneki, 1976 (Japan: Honshu); *C. (B.) minamikawai* Tsuneki, 1966 (Japan: Honshu); *C. (B.) nikkoensis* Tsuneki, 1955 (Japan: Honshu); *C. (B.) tanakai* Tsuneki, 1954 (Japan: Honshu); *C. (B.) tyuzendzianus* Tsuneki, 1954 (Japan: Honshu); *C. (Cuphopterus) hakusanus* Tsuneki, 1954 (Japan: Honshu); *C. (Cuph.) hakusanus sungkangensis* Tsuneki, 1982 (China: Taiwan); *C. (Cuph.) yanoi* (Tsuneki, 1947) (Japan: Hokkaido); *C. (Paroxyrcabro) rubromaculatus* Tsuneki, 1982 (China: Taiwan); *C. (Yambal) minor* Tsuneki, 1990 (Japan: Okinawa). Eleven of these species and subspecies (see below), however, can't in my opinion be regarded as valid since they do not distinct different from the ones described earlier.

This paper is dedicated to Professor V.I. Tobias in recognition of his important contribution to the study of Hymenoptera diversity.

List of the species

Crossocerus (Crossocerus) yasumatsui (Tsuneki, 1947).

Tsuneki, 1947b: 424, ♀♂ (*Crabro*; holotype: ♂, Japan, Hokkaido, Sapporo; deposited in MNHAH; examined); Tsuneki, 1952: 69 (Japan: Shikoku); Leclercq, 1954: 225 (listed); Tsuneki, 1954: 65, 72 (in key); Tsuneki, 1959: 71, 76 (in key); Tsuneki, 1960b: 47 (life history); Nambu, 1975: 77 (Japan: Saitama Pref.); Bohart, Menke, 1976: 404 (listed); Marshakov, 1980: 345, 350 (in key), 361 (redescription); Nemkov, 1986: 103 (Russia: Irkutsk Prov.); Nemkov, 1992: 446 (Russia: Amurskaya Prov.); Nemkov et al., 1995: 432, 438 (in key); Kazenas, 2001: 41 (listed).

— *yasumatsui mongolensis* Tsuneki, 1972: 151, ♀ (holotype: ♀, Mongolia, Hovd Aymag, Mongol-Altai; deposited in Hungarian Natural History Museum, Budapest; not examined), **syn. n.**; Bohart, Menke, 1976: 404 (listed).

— *nambui* Tsuneki, 1982b: 33, ♀♂ (holotype: ♀, China, Taiwan, Nantou Pref., Yingfeng; deposited in MNHAH; examined), **syn. n.**

Material. Russia. Irkutsk Prov.: 1 ♀, 1 ♂, Angarsk, 24 VII 1994 (Nemkov); 1 ♂, 15 km E Ust-Orda, 6 VIII 1994 (Nemkov). Chita Prov.: 2 ♀, Kyakhta, 28 VII 1877 (Lelej). Amurskaya Prov.: 1 ♀, 25 km SW Shimanovsk, 11 VIII 1982 (Lelej). Primorskiy Terr.: 1 ♂, Anisimovka, 11 VII 1984 (Lelej); 1 ♀, Nikolaevka, 24 VII 1986 (Lelej); 1 ♂, 40 km SW Melnichnoe, 31 VII 1986 (Lelej). Sakhalin I.: 1 ♀, 1 ♂, Yuzhno-Sakhalinsk, 5 VIII 1978 (Kurzenko); 1 ♀, Kirillovo, 17 VI 1984 (Basarukin). Kurile Is., Kunashir I.: 7 ♀, 3 ♂, Yuzhno-Kurilsk, 25, 27 VII, 1989 (Lelej); 5 ♀, 4 ♂, same label, (Nemkov); 1 ♀, Dubovoe, 30 VII 1989 (Lelej); 22 ♀, 5 ♂, volcano Golovnina, 2 VIII 1989 (Lelej); 2 ♀, 7 ♂, same label, (Nemkov); 1 ♀, 7 km S Lagunnoe Lake, 12 VIII 1989 (Lelej); 7 ♀, 5 ♂, same locality, 12, 13, 15 VIII 1989 (Nemkov). Mongolia: 1 ♀, 3 ♂, 30 km NW Dzun-Khara, 6 VIII 1976 (Kozlov). China: 1 ♀ (holotype of *C. nambui*), Taiwan, Nantou Pref., Yuingfeng, 19 VIII 1980 (Nambu). Japan: 1 ♀ (holotype of *C. yasumatsui*), Hokkaido, Sapporo, 27 VII 1945 (Tsuneki); 1 ♂ (paratype of *C. yasumatsui*), Hokkaido, Sapporo, 1 VIII 1944 (Tsuneki); 1 ♀, Kyushu, Kumamoto-ken, Gokanoaho, Shiratori-yama 1300, 8 VIII 1991 (Lelej).

Distribution. Kazakhstan, Russia (Irkutsk, Chita, Magadan, Amurskaya Provinces, Yakutia, Kamchatka, Khabarovsk and Primorskiy Territories, Sakhalin, South Kuriles), Mongolia, China (Taiwan), Japan (Hokkaido, Honshu, Kyushu, Shikoku).

Remarks. The comparison of *C. yasumatsui* holotype to *C. yasumatsui mongolensis* and *C. nambui* holotypes has revealed an absence of any essential differences between them.

Crossocerus (Blepharipus) capitosus (Shuckard, 1837).

Shuckard, 1837: 159, ♀ (*Crabro*; syntypes: ♀♀, Britain, Battersea Fields; depository unknown); Dahlbom, 1844: 317 (in revision); Dalla Torre, 1897: 585 (in catalog); Tsuneki, 1947b: 416 (Japan: Hokkaido); Tsuneki, 1952: 69 (Japan:

Shikoku); Tsuneki, 1954: 63, 69 (in key); Tsuneki, Tanaka, 1955a: 70 (Japan: Nikko); Tsuneki, 1959: 70, 74 (in key); Tsuneki, 1960b: 44 (life history); Tsuneki, Shimoyama, 1963: 50 (Japan: Towada Pref.); Nambu, 1973: 153 (Japan: Saitama Pref.); Suda, 1973: 124 (Japan: Yamanashi Pref.); Nambu, 1975: 76 (Japan: Saitama Pref.); Bohart, Menke, 1976: 400 (listed); Marshakov, 1980: 347, 354 (in key); Nemkov et al., 1995: 436, 441 (in key).

— *capitosus yezo* Tsuneki, 1960a: 193, ♀♂ (holotype: ♀, Japan, Hokkaido; deposited in MNHAH; examined), **syn. n.**; Bohart, Menke, 1976: 400 (listed); Tsuneki, 1977: 1 (redescription).

Material. Russia: 1 ♀, Yaroslavl, 16 VII 1928 (Shestakov); 2 ♂, Altai, Teletskoe Lake, 13 VII 1973 (Sazonov); 1 ♀, Primorskiy Terr., Vladivostok, 31 VIII 1984 (Belokobylskij). Ukraine: 1 ♂, Lugansk, 29 VI 1927 (Talitskiy). Japan: 1 ♀ (holotype of *C. capitosus yezo*), Hokkaido, Sapporo, 17 VI 1946 (Tsuneki).

Distribution. Great Britain, Netherlands, Belgium, Luxembourg, France, Italy, Switzerland, Croatia, Norway, Sweden, Finland, Germany, Austria, Hungary, Czech Republic, Slovakia, Romania, Poland, Latvia, Ukraine, Russia (European part, Altai, Primorskiy Terr.), Kazakhstan, Japan (Hokkaido, Honshu, Shikoku).

Remarks. The island subspecies *C. capitosus yezo* described from Hokkaido practically does not differ from the continental specimens of *C. capitosus* collected in Russia and does not therefore deserve a subspecific rank in my opinion.

***Crossocerus (Blepharipus) cetratus* (Shuckard, 1837).**

Shuckard, 1837: 131, ♂ (*Crabro*); syntypes: ♂♂, Great Britain, London area; depository unknown); Gussakovskij, 1932: 22 (Russia: Primorskiy Terr.); Tsuneki, 1947b: 416 (Japan: Hokkaido); Tsuneki, 1954: 61, 71 (in key); Tsuneki, 1955: 217 (Russia: Kurile Is.); Tsuneki, Tanaka, 1955a: 69 (Japan); Tsuneki, 1959: 69, 75 (in key); Tsuneki, 1960b: 42 (life history); Tsuneki, Shimoyama, 1963: 50 (Japan: Towada Pref.); Tsuneki, 1969a: 28 (Japan); Tsuneki, 1970: 11 (Central Japan); Nambu, 1973: 153 (Japan: Saitama Pref.); Suda, 1973: 124 (Japan: Yamanashi Pref.); Tsuneki, 1974: 378 (Korea); Nambu, 1975: 75 (Japan: Saitama Pref.); Bohart, Menke, 1976: 400 (listed); Tsuneki, 1979: 11 (Japan); Marshakov, 1980: 348, 353 (in key); Tsuneki, 1982a: 17 (Korea); Nemkov, 1986: 101 (Russia: Irkutsk Prov.); Leclercq, 1988: 19 (Russia: Primorskiy Terr.); Nemkov et al., 1995: 435, 440 (in key); Togashi, 2001: 19 (Japan: Ishikawa Pref.).

— *dentsukanus* Tsuneki, 1976: 71, ♀ (holotype: ♀, Japan, South Japan Alps, Dentsuku Pass; deposited in MNHAH; examined), **syn. n.**

Material. Russia. Irkutsk Prov.: 17 ♀, 3 ♂, Baikalsk, 26 VI – 5 VIII 1983, 21 VII 1984 (Nemkov); 1 ♂, Bolshie Koty, 11 VIII 1983 (Nemkov). Primorskiy Terr.: 17 ♀, 15 ♂, Ussuriysk Nature Reserve, 25 VII – 15 VIII 1982, 3–5 VI 1989 (Nemkov); 1 ♀, 2 ♂, same locality, 28 VIII 1983, 1 VII 1993, 24 V 1994 (Lelej); 1 ♀, Plastun, 8 VIII 1979 (Kurzenko); 1 ♂, Spassk-Dalniy, 25 V 1985 (Belokobylskij); 1 ♀, 10 km N Livadia, 6 VIII 1987 (Nemkov); 1 ♀, 1 ♂, 10 km E Chernigovka, 23 VI 1997 (Nemkov); 1 ♀, Anisimovka, 26 VI 1997 (Nemkov); 1 ♂, Vladivostok, 10 VI 1989 (Lelej); 1 ♂, “Kedrovaya Pad” Nature Reserve, 1 VII 1997 (Nemkov). Sakhalin I.: 4 ♀, Yuzhno-Sakhalinsk, 2 VIII 1978 (Kurzenko). Kurile Is., Kunashir I.: 1 ♂, Yuzhno-Kurilsk, 25 VII 1989 (Nemkov); 1 ♀, Tretyakovo, 8 VIII 1989 (Nemkov); 1 ♀, Stolbchatyi cape, 9 VIII 1989 (Nemkov); 1 ♀, 7 km S Lagunnoe Lake, 15 VIII 1989 (Lelej). Japan: 1 ♀ (holotype of *C. dentsukanus*), Honshu, South Japan Alps, Dentsuku, 3, 4 VIII 1974 (Tsuneki).

Distribution. Great Britain, Ireland, Belgium, Luxembourg, France, Andorra, Spain, Switzerland, Italy, Croatia, Norway, Sweden, Finland, Germany, Austria, Hungary, Czech Republic, Slovakia, Romania, Poland, Latvia, Belarus, Ukraine, Russia (almost everywhere), Turkey, Kazakhstan, Korea, Japan (Hokkaido, Honshu).

Remarks. The examination of the *C. dentsukanus* holotype and the comparison of it to *C. cetratus* material collected in Russia have not revealed reliable differences between these species.

***Crossocerus (Blepharipus) cinxius* (Dahlbom, 1838).**

Dahlbom, 1838: 38, ♀♂ (*Crabro*); syntypes: ♀♂, Norway, near Dovre; deposited in the Zoological Museum, Lund, Sweden); Tsuneki, 1947a: 290 (Korea); Tsuneki, 1947b: 416 (Japan: Hokkaido); Tsuneki, 1954: 63, 69 (in key); Tsuneki, Tanaka, 1955a: 69 (Japan: Nikko); Tsuneki, 1959: 70, 74 (in key); Tsuneki, 1960b: 44 (life history); Tsuneki, Tano, 1969: 31 (Japan); Bohart, Menke, 1976: 400 (listed); Marshakov, 1980: 347, 354 (in key); Tsuneki, 1982a: 17 (Korea); Nemkov, 1986: 102 (Russia: Irkutsk Prov.); Nemkov et al., 1995: 436, 441 (in key).

— *yamato* Tsuneki, 1960a: 195, ♀♂ (holotype: ♀, Japan, Nikko; deposited in MNHAH; examined), **syn. n.**; Bohart, Menke, 1976: 400 (listed); Tsuneki, 1977: 1 (redescription).

Material. Russia. Irkutsk Prov.: 1 ♀, Baikalsk, 29 VIII 1983 (Nemkov). Primorskiy Terr.: 1 ♀, Terney, 4 VI 1985 (Belokobylskij); 1 ♂, 10 km N Livadia, 4 VI 1985 (Nemkov). Japan: 1 ♀ (holotype of *C. yamato*), Tochigi Pref., Nikko, 27 VII 1952 (Tanaka); 1 ♂ (paratype of *C. yamato*), Tochigi Pref., Nikko, 20 V 1934 (Tsuneki).

Distribution. Netherlands, Belgium, France, Switzerland, Italy, Norway, Sweden, Finland, Germany, Austria, Czech Republic, Slovakia, Romania, Poland, Latvia, Russia (forest zone), Kazakhstan, Korea, Japan (Hokkaido, Honshu).

Remarks. The investigation of *C. yamato* holotype has shown that it actually belongs to the rather rare Euro-Siberian species *C. cinxius*.

***Crossocerus (Blepharipus) heydeni* Kohl, 1880.**

Kohl, 1880: 216, ♂ [syntypes: ♂♂, Austria, Tirol, Bozen area (now Italy, Alto Adige, St. Gries and Kollern near Bolzano); deposited in Naturhistorisches Museum, Wien, Austria]; Leclercq, 1954: 234 (listed); Tsuneki, 1954: 63, 71 (in key); Tsuneki, Tanaka, 1955b: 22 (Japan: Nikko); Tsuneki, 1959: 70, 75 (in key); Tsuneki, 1960b: 44 (life history); Tsuneki, Shimoyama, 1963: 50 (Japan: Towada Pref.); Suda, 1973: 124 (Japan: Yamanashi Pref.); Tsuneki, 1973a: 78 (discussion); Bohart, Menke, 1976: 401 (listed); Marshakov, 1980: 348, 354 (in key); Tsuneki, 1982a: 8, 17 (Korea); Nemkov et al., 1995: 435, 441 (in key).

— *sutshanicus* Gussakovskij, 1932: 23, ♀ [*Crabro*; holotype: ♀, Russia, Primorskiy Terr., Sutshan (= Partizansk); deposited in Naturhistorischen Reichsmuseum, Stockholm, Sweden; examined]; Bohart, Menke, 1976: 403 (listed); Bitsch, Leclercq, 1993: 109 (synonymized with *C. heydeni*).

— *hedgreni* Kjellander, 1954: 238, ♂ (*Crabro*; holotype: ♂, Sweden, Uppland, Björkö; deposited in Naturhistorischen Reichsmuseum, Stockholm, Sweden; not examined); Bohart, Menke, 1976: 401 (listed); Lomholdt, 1976: 397 (synonymized with *C. heydeni*).

— *heydeni nipponis* Tsuneki, 1966: 35, ♀♂ (holotype: ♀, Japan, Mt. Haku; deposited in MNHAH; examined), **syn. n.**; Nambu, 1975: 76 (Japan: Saitama Pref.); Bohart, Menke, 1976: 401 (listed); Tsuneki, 1977: 4 (variation).

— *murotai* Tsuneki, 1992: 52, ♀ (holotype: ♀, Japan, Fukui Pref., Natasho-mura, Mashidani; deposited in MNHAH; examined), **syn. n.**

Material. Russia. Leningradskaya Prov.: 1 ♀, 2 ♂, Staraya Ladoga, 15 VI 1954 (Novikov). Primorskiy Terr.: 1 ♀ (holotype of *C. sutshanicus*), Suchan (= Partizansk), 22 VII 1930 (Malaise); 1 ♀, Ussuriysk Nature Reserve, 8 VIII 1982 (Nemkov); 1 ♀, same locality, 27 VIII 1982 (Lelej); 1 ♂, Terney, 4 VI 1985 (Belokobylskij). Japan: 1 ♀ (holotype of *C. heydeni nipponis*), Honshu, Ishikawa Pref., Mt. Haku, 2 VIII 1952 (Tsuneki); 1 ♀ (holotype of *C. murotai*), Honshu, Fukui Pref., Natasho-mura, Mashidani, 19 VIII 1989 (Murota).

Distribution. France, Switzerland, Italy, Sweden, Finland, Germany, Austria, Czech Republic, Slovakia, Ukraine, Russia (European part, Altai, Primorskiy Terr., Sakhalin I.), Korea, Japan (Honshu).

Remarks. The study of *C. heydeni nipponis* and *C. murotai* holotypes has revealed that they do not distinctly differ from *C. heydeni* specimens collected in Russia.

***Crossocerus (Blepharipus) nigrinus* (Lepeletier et Brullé, 1835).**

Lepeletier, Brullé, 1835: 729, ♀ [*Blepharipus*; syntypes: ♀♀, France, Paris area (lost); neotype (designated by Leclercq, 1973b) — ♀, France, Yvelines, Maison Laffitte; deposited in Museum National d'Histoire Naturelle, Paris, France]; Iwata, 1938: 86 (Japan: Hokkaido; Russia: Sakhalin, Kurile Is.); Tsuneki, 1947b: 417 (Japan: Hokkaido); Tsuneki, 1954: 63, 72 (in key); Tsuneki, 1955: 217 (Russia: Kurile Is.); Tsuneki, Tanaka, 1955b: 22 (Japan: Nikko); Tsuneki, 1959: 70, 76 (in key); Tsuneki, 1960b: 44 (life history); Tsuneki, Shimoyama, 1963: 50 (Japan: Towada Pref.); Tsuneki, 1967a: 14 (China: Manchuria); Tsuneki, 1967b: 44 (Japan: Mt. Hyonosen); Tsuneki, 1969c: 61 (Japan: Fukui); Tsuneki, 1970: 11 (Central Japan); Leclercq, 1974: 421 (synonymy); Bohart, Menke, 1976: 402 (listed); Nemkov, 1986: 102 (Russia: Irkutsk Prov.); Nemkov et al., 1995: 435, 440 (in key).

— *verhoeffi* Tsuneki, 1967a: 14, ♂ (holotype: ♂, China, Manchuria, Kharbin; deposited in Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands; not examined); Bohart, Menke, 1976: 404; Nemkov et al., 1995: 435 (in key, synonymized with *C. nigrinus*).

— *nigrinus sudai* Tsuneki, 1976: 71, ♂ (holotype: ♂, Japan, Chiba Pref., Kimitsu City, Mt. Daifuku; deposited in MNHAH; examined), **syn. n.**

— *babai* Tsuneki, 1979: 11, ♂ (holotype: ♂, Japan, Hokkaido, Wakkanai; deposited in MNHAH; examined), **syn. n.**

Material. Russia. Irkutsk Prov.: 1 ♀, Baikalsk, 17 VII 1988 (Nemkov); 1 ♀, 15 km E Ust-Orda, 1 VIII 1994 (Nemkov). Kamchatka: 1 ♀, Atlasovo, 10 VII 1985 (Belokobylskij); 2 ♀, 1 ♂, Kozyrevsk, 16, 21 VII 1985 (Belokobylskij). Primorskiy Terr.: 1 ♀, Anisimovka, 13 VII 1976 (Kurzenko); 1 ♂, Partizansk, 20 VIII 1977 (Kurzenko); 3 ♀, Ussuriysk

Nature Reserve, 14, 15 VIII 1982 (Nemkov); 2 ♂, Novitskoe, 22 VIII 1985 (Belokobylskij); 3 ♀, Merkushevka, 22 VIII 1985 (Nemkov); 1 ♀, Barabash-Levada, 7 IX 1985 (Belokobylskij); 5 ♀, 4 ♂, Dmitrievka, 29 V–VIII 1985, 23 VI–I IX 1986 (Nemkov); 4 ♀, Dersu, 20–22 VIII 1991 (Sidorenko). Sakhalin: 1 ♀, Novo-Alexandrovsk, 26 VII 1978 (Kupyan-skaya); 1 ♀, Starodubskoe, 26 VII 1978 (Belokobylskij). J a p a n : 1 ♂ (holotype of *C. nigritus sudai*), Honshu, Chiba Pref., Kimitsu City, Mt. Daifuku, 13 V 1974 (Suda); 1 ♂ (holotype of *C. babai*), Hokkaido, Wakkanai, 6 VII 1977 (Baba).

Distribution. Great Britain, Ireland, Netherlands, Denmark, Belgium, Luxembourg, France, Spain, Switzerland, Italy, Croatia, Sweden, Finland, Germany, Austria, Hungary, Czech Republic, Slovakia, Poland, Latvia, Belarus, Ukraine, Russia (almost everywhere), Kazakhstan, China (Manchuria), Japan (Hokkaido, Honshu), Canada, USA.

Remarks. The comparison of *C. nigritus sudai* and *C. babai* holotypes to *C. nigritus* material collected in Russia has revealed an absence of any essential differences between these taxa.

***Crossocerus (Blepharipus) takeuchii* Tsuneki, 1957.**

Tsuneki, 1957: 61, ♀ (holotype: ♀, North Korea, Sanyodai; deposited in Kyoto University, Kyoto, Japan; not examined); Tsuneki, 1959: 75 (in key), 1982b: 17 (Korea); Leclercq, 1988: 19 (Russia: Primorskiy Terr.); Nemkov et al., 1995: 435, 441 (in key).

— *etizenensis* Tsuneki, 1992: 50, ♂ (holotype: ♂, Japan, Fukui Pref., Natasho-Mura; deposited in MNHAH; examined), **syn. n.**

Material. Russia. Primorskiy Terr.: 1 ♂, Znadovorovka, 6 VIII 1985 (Belokobylskij); 1 ♂, Evseevka, 25 VIII 1985 (Belokobylskij); 2 ♀, Spassk-Dalnii, 20 IX 1988 (Belokobylskij). J a p a n : 1 ♂ (holotype of *C. etizenensis*), Honshu, Fukui Pref., Natasho-Mura, Mushidani, 19 VIII 1989 (Murota).

Distribution. Russia (Primorskiy Terr.), Korea, Japan (Honshu).

Remarks. The study of *C. etizenensis* holotype and the comparison of it to *C. takeuchii* material collected in Russia have not revealed any essential differences between these taxa.

***Crossocerus (Blepharipus) styrius* (Kohl, 1892).**

Kohl, 1892: 198, ♀ (*Crabro*; holotype: ♀, Austria, Steiermark, Admont; deposited in Naturhistorisches Museum, Wien, Austria; not examined); Dalla Torre, 1897: 630 (in catalog); Kohl, 1915: 235 (in revision); Leclercq, 1954: 233 (new combination); Bohart, Menke, 1976: 403 (listed); Dollfuss, 1989: 9 (type material in Naturhistorisches Museum, Wien); Nemkov et al., 1995: 436, 441 (in key).

— *pauillus* Gussakovskij, 1932: 22, ♀ (*Crabro*; holotype: ♀, Russia, Primorskiy Terr., Sedanka; deposited in Naturhistorischen Reichsmuseum, Stockholm, Sweden; examined); Leclercq, 1954: 235 (new combination); Tsuneki, 1954: 62, 72 (in key); Tsuneki, Tanaka, 1955b: 22 (Japan: Nikko); Tsuneki, 1955: 217 (Russia: Kurile Is.); Tsuneki, 1959: 70, 75 (in key); Tsuneki, 1960b: 44 (life history); Tsuneki, 1968: 54 (Korea: Quelquepart Island); Tsuneki, 1969a: 27 (Japan); Tsuneki, 1969b: 28 (Japan: Kyushu); Nambu, 1973: 153 (Japan: Saitama Pref.); Tsuneki, 1973b: 126 (taxonomy); Nambu, 1975: 76 (Japan: Saitama Pref.); Bohart, Menke, 1976: 402 (listed); Bitsch, Leclercq, 1993: 113 (synonymized with *C. styrius*).

— *sugiharai* Iwata, 1938: 86, ♀♂ (*Crabro*; holotype: ♀, Russia, Kurile Is., Etorofu, Seseki; deposited in Hokkaido University; not examined); Leclercq, 1954: 234 (new combination, listed); Tsuneki, 1955: 217 (synonymized with *C. pauillus*); Tsuneki, 1959: 70, 75 (in key); Bohart, Menke, 1976: 403 (listed as valid species).

— *pilicornis* Tsuneki, 1977: 2, ♂ (holotype: ♂, Japan, Honshu, Fukui Pref., Hatogayu; deposited in MNHAH; examined), **syn. n.**

Material. Russia. Primorskiy Terr.: 1 ♀ (holotype of *C. pauillus*), Sedanka (outskirts of Vladivostok), 21 VI 1930 (Malaise); 2 ♂, Vysokogorsk, 6 VI 1985 (Belokobylskij); 1 ♀, Anisimovka, 11 IX 1988 (Kasparyan). Kurile Is, Kunashir I.: 1 ♀, Tretyakovo, 8 VIII 1989 (Nemkov). J a p a n : 1 ♂ (paratype of *C. pilicornis*), Honshu, Fukui Pref., Hatogayu, 3, 4 VII 1962 (Tsuneki); 1 ♂ (holotype of *C. pilicornis*), Honshu, Fukui Pref., Hatogayu, 16 VII 1973 (Tsuneki); 1 ♂, Hokkaido, Sapporo, Hitsujigaoka, 13 VI 1986 (Maeto); 1 ♀, Honshu, Oita Pref., Mts. Kuju, Mt. Kuro-dake, 28 V 1989 (Konishi); 1 ♂, Honshu, Hyogo Pref., Sekinomiya-cho, Hyonoson, 1 VI 1989 (Konishi).

Distribution. Great Britain, Ireland, Netherlands, Belgium, Luxembourg, France, Spain, Switzerland, Croatia, Sweden, Finland, Germany, Austria, Czech Republic, Slovakia, Romania, Poland, Latvia, Bulgaria, Russia (Primorskiy Terr., South Kuriles), Korea, Japan (Hokkaido, Honshu, Kyushu).

Remarks. The examination of *C. pilicornis* holotype has shown that it actually belongs to the rather rare trans-Palaeartic species *C. styrius*.

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