

**SUBSPECIFIC STRUCTURE OF *CARABUS*
(*MORPHOCARABUS*) *CHAUDOIRI* GEBLER, 1847
(COLEOPTERA, CARABIDAE)**

Dmitry Obydov*

*Timiryazev's State Museum of Biology, 123242, Malaya Gruzinskaya str. 15, Moscow, Russia. E-mail: obydozd@mtu-net.ru

[Obydov, D. 2009. Subspecific structure of *Carabus (Morphocarabus) chaudiroidi* Gebler, 1847 (Coleoptera, Carabidae). Munis Entomology & Zoology, 4 (2): 596-605]

ABSTRACT: 7 subspecies of *Carabus (Morphocarabus) chaudiroidi* are examined. The type localities and areas of some subspecies are specified.

KEY WORDS: Coleoptera, Carabidae, *Carabus (Morphocarabus) chaudiroidi*, taxonomy, distribution, Siberia.

The species includes 7 subspecies: *Carabus (Morphocarabus) chaudiroidi* Gebler, 1847; *Carabus (Morphocarabus) chaudiroidi mongolorum* Csiki, 1927; *Carabus (Morphocarabus) chaudiroidi czadanicus* Obydov, 1997; *Carabus (Morphocarabus) chaudiroidi marusiki* Obydov, 1997; *Carabus (Morphocarabus) chaudiroidi zaikai* Obydov, 1999; *Carabus (Morphocarabus) chaudiroidi beladici* Obydov, 2001 and *Carabus (Morphocarabus) chaudiroidi shilenkovi* O. Berlov, 1989.

The detailed morphological description of subspecies is omitted in this work and can be found in the literature cited.

Distribution of subspecies is given on collection materials. I have added also color photos of all subspecies.

Abbreviations of Institutes and Museums mentioned in the text.

MNHN = Muséum national d'Histoire naturelle (Paris)

ZIN = Zoological Institute of Russian Academy of Sciences (Sankt-Petersburg, Russia).

ZMMU = Zoological Museum of Moscow Lomonosov State University (Moscow, Russia).

DEI = Deutsches Entomologisches Institut (Eberswalde)

TMB = Timiryazev's State Museum of Biology (Moscow, Russia).

TINR = Tuvianian Institute for the Exploration of Natural Resources (Kyzyl, Tuva).

***Carabus (Morphocarabus) chaudiroidi* Gebler, 1847**

Carabus chaudiroidi Gebler, 1847: 287 ("Kusnezksichen Gebirge; häufiger am Flusse Kan Ostsibiriens").

Carabus chaudiroidi: Motschulsky, 1859: 221.

Carabus chaudiroidi: Chaudiroid, 1852: 98; 1877: 76.

Carabus (Carabus s. str., sect. Eucarabus) mongolorum: Breuning, 1932: 278 (part.).

Carabus (Carabus s. str., sect. Eucarabus) ?chaudiroidi: Breuning, 1932: 278 (part.).

Carabus (in sp., sectio Diocarabus) chaudiroidi: Jakobson, 1905: 251 (part.).

Carabus (Morphocarabus) chaudiroidi: Deuve, 1991: 47; 1994: 106; Březina, 1994: 19; 1999: 15; Imura et Mizusawa, 1996: 10, 112 (part.); Obydov, 1997: 78; Kleinfeld et Schütze, 1999: 10; Schütze et Kleinfeld, 1999: 22, 210.

Carabus (Morphocarabus) chaudiroidi (error) = *chaudiroidi*: Ghiretti, 1996: 70.

Carabus (Morphocarabus) odoratus chaudiroidi: Shilenkov, 1996: 32, 58-59 (part.).

Morphocarabus chaudiroidi: (Osawa et al.), 2002: 80.

Carabus (Morphocarabus) chaudiroidi: Deuve, 2004: 145.

Type locality: The locality mentioned on the label of the lectotype is “Sibérie, Altaï”, but in the original description F. Gebler (1847) wrote “Sehr selten im Kusnezkschen Gebirge; häufiger am Flusse Kan Ostsibiriens”. Now Kuznetzky Alatau Mts do not belong to Altai mountain system, and Kan River (Krasnoïarsk Region) is also very far from Altai Mts, so the definition of type locality needs further study.

Remark: Now typical *C. chaudiroi* is known based on two type specimens only (MNHN).

Description. Body length is 18.2-24.2 mm.

Head not thickened; eyes strongly convex; mandibles relatively short, strongly curved and sharply pointed at the apex; retinaculum of right and left mandibles strongly prominent; surface of mandibles smooth. Frontal furrows relatively deep and long, inside smooth. Frons, vertex and neck with sparse and coarse punctures and wrinkles, laterally frons and vertex with more rough sculpture. Labrum wider than clypeus, moderately notched, with two lateral setae. Antennae long, protruding beyond the base of pronotum by four apical joints; palpi slightly dilated; penultimate joint of the maxillary palpi equal to last joint; penultimate joint of the labial palpi with two setae. Mentum tooth shorter than lateral lobes; submentum with two or four setae.

Prothorax transverse, broadest at about middle. Pronotum convex with dense coarse punctation, laterally and posteriorly with coarse wrinkles. Median longitudinal line distinct; basal foveae shallow, inside coarsely-wrinkled. Sides of pronotum narrowly margined; lobes of hind angles short, evenly rounded, slightly bent downwards. Lateral margin with three setae: one setae before middle, one setae at about middle and one setae near hind angle or with two setiferous pores.

Elytra oval or oblong-oval, widest behind middle; shoulders slightly prominent; sides of elytrae broadly margined. Primary elytral interspaces a little more developed, interrupted into relatively long and short links; secondary and tertiary about equally developed, partially integral, partially interrupted into long and short links or all elytral interspaces interrupted into short and relatively long links, sometimes conjugated transversely. Primary foveoles distinct; striae coarsely punctured.

Metepisternum and abdominal sternites smooth, metepisternum longer than its width; sternal sulci absent.

Legs of normal length or short; sometimes femurs of fore legs slightly dilated, fore male tarsi with four dilated segments bearing hairy pads.

Aedeagus (Fig. 8) strongly curved near the basis, in distal part nearly straight, apical lamella narrow; endophallus (Fig. 9).

Body one-coloured black, black with bronze or green lustre, dark bronze, dark cooper, bronze, blackish bronze, green, greenish bronze; primary elytral foveoles sometimes bronze; mandibles and claws reddish brown; sometimes tibiae, and four basal antennae joints (apically) reddish brown; ventral body surface black or blackish brown.

Remark: The subspecies of *Carabus (Morphocarabus) chaudiroi* nearly do not differ by male genital structure.

Distribution: The species occur in the north-eastern Siberia (from Chukot Peninsula to Yakutia) and in the mountains of south-eastern Siberia. *Carabus*

chaudoiri inhabits plain and mountain tundra, forest-tundra and mountain larch forests, at the altitudes from 1000 to 2600 m above sea level; spread over locally.

***Carabus (Morphocarabus) chaudoiri chaudoiri* Gebler, 1847 (Fig.1)**

Carabus chaudoiri Gebler, 1847: 287 ("Kusnezksichen Gebirge; häufiger am Flusse Kan Ostsibiriens").

Carabus (Morphocarabus) chaudoiri chaudoiri: Deuve, 1991: 47; 1994: 106; Březina, 1994:19; 1999: 15; Imura et Mizusawa, 1996: 10, 112 (part.); Obydov, 1997: 78; Kleinfeld et Schütze, 1999: 10; Schütze et Kleinfeld, 1999: 22, 210.

Carabus (Morphocarabus) chaudoiri chaudoiri: Deuve, 2004: 145.

Type locality: Western Siberia, ?Altai Mountains (see above).

Description. Body length is 22.0-22.8 mm. Pronotum broad, transverse. Elytra oblong-oval; primary elytral interspaces a little more developed, interrupted into the links of medium length; secondary and tertiary about equally developed, partially integral, posteriorly partially interrupted into the short and long links. Body dark bronze; margins of pronotum and elytra bronze; ventral body surface, mandibles and legs blackish brown.

Distribution: Western Siberia, ?Altai Mountains.

Type material examined: Lectotype of *Carabus chaudoiri* (Th. Deuve designation, 1991): female with two labels: "Sibérie, Altaï" and "Lectotypus" (MNHN); paralectotype of *Carabus chaudoiri* (Th. Deuve designation, 1991): female with two label: "Sibérie, Altaï" and "Paralectotypus" (MNHN).

***Carabus (Morphocarabus) chaudoiri mongolorum* Csiki, 1927 (Fig.2)**

Carabus neglectus Lapouge, 1913: 16 (nec. Kraatz, 1887) ("Centre du triangle Minousinsk-Kobdo-Ourga; nord de la Mongolie").

Carabus mongolorum Csiki, 1927: 241 (nom. n. pro *C. neglectus* Lapouge, 1913) ("Tunkun, Sajjan, N. Mongolie").

Carabus (Carabus s. str., sect. Eucarabus) mongolorum: Breuning, 1932: 278.

Carabus (Morphocarabus) chaudoiri: Březina, 1994: 134 (part.).

Carabus (Morphocarabus) mongolorum: Obydov, 1997: 81.

Carabus (Morphocarabus) chaudoiri mongolorum: Deuve, 1991: 47; 1994: 106; Ghiretti, 1996: 70; Imura et Mizusawa, 1996: 10, 112 (part.); Březina, 1999: 15; Kleinfeld et Schütze, 1999: 10; Schütze et Kleinfeld, 1999: 59, 210; Obydov, 1999: 107; 2001: 459.

Carabus (Morphocarabus) odoratus melleus: Shilenkov, 1994: 66 (part.); Kryzhanovskij et al., 1995: 39 (part.); Shilenkov, 1996: 58 (part.).

Carabus (Morphocarabus) chaudoiri mongolorum: Deuve, 2004: 145.

Type locality: Tunkinskie Goltsy Mt Ridge (between Big Sajans Mt Ridge and Baikal Lake in Western Buryatia).

Description. Body length is 20.0 mm. Pronotum transverse; sides of pronotum narrowly margined, lobes of hind angles short. Elytra oblong-oval; primary and secondary elytral interspaces interrupted into the short links; tertiary partially integral; striae coarsely punctured. Body blackish bronze; ventral body surface, palpi, mandibles, antennae and legs brown.

Distribution: Western Buryatia: Tunkinskie Goltsy Mt Ridge; Northern Mongolia.

Type material examined: Lectotype of *Carabus mongolorum*: male with six labels: "Lectotypus", "Tunkun, Sajan", "Amorphocarabus neglectus 2 males 2 females", "Carabus neglectus mihi Types", "Muséum Paris Coll. G. Vacher de Lapouge", "C. neglectus hom. mongolorum 1913, p.16" (MNHN).

***Carabus (Morphocarabus) chadoiri czadanicus* Obydov, 1997 (Fig.3)**

Carabus (Morphocarabus) chadoiri czadanicus Obydov, 1997: 79 ("W. Tuva, Chadan").

Carabus (Morphocarabus) chadoiri czadanicus: Obydov, 1999: 107 ("Tuva: 60 km NW Kyzyl: Khadyn env".)

Carabus (Morphocarabus) chadoiri czadanicus: Březina, 1999: 15 ("C. Tuva, Khadyn").

Carabus (Morphocarabus) chadoiri czadanicus: Ghiretti, 1996: 80/A (supplement 3, 1999); Kleinfeld et Schütze, 1999: 10; Schütze et Kleinfeld, 1999: 27, 210; Obydov, 2001: 459.

Carabus (Morphocarabus) chadoiri czadanicus: Deuve, 2004: 145.

Type locality: Western Tuva Chadan (error); in fact: Central Tuva: Khadyn env., 60 km NW of Kyzyl.

Description. Body length is 19.0-24.2 mm. Pronotum broad, transverse; sides of pronotum broadly margined; lobes of hind angles evenly rounded. Elytra oblong-oval, primary elytral interspaces slightly broader, interrupted by rather deep and coarse foveoles into short links; secondary and tertiary about equally developed, integral, rarely partially interrupted into the long and short links. Striae coarsely punctured. Body black or blackish bronze; ventral body surface black.

Distribution: Central Tuva: Khadyn env., 60 km north-west of Kyzyl.

Type material examined: Holotype of *Carabus chadoiri czadanicus*: male with two labels: "W. Tuva, Chadan, 28-30.VI.1994, P. Smrz leg." and "Holotypus, Carabus (Morphocarabus) chadoiri czadanicus ssp. n., D. Obydov det., 1996" (TMB); 6 paratypes of *Carabus chadoiri czadanicus*: 3 males, 3 females, each specimen with two labels: "W. Tuva, Chadan, 28-30.VI.1994, P. Smrz leg." and "Paratypus, Carabus (Morphocarabus) chadoiri czadanicus ssp. n., D. Obydov det., 1996" (TMB, MNHN, coll. P. Smřz, Czech Republic, Prague).

***Carabus (Morphocarabus) chadoiri marusiki* Obydov, 1997 (Fig.4)**

Carabus (Morphocarabus) mongolorum marusiki Obydov, 1997: 83 ("SE Tuva, Sangilen Mt. Ridge, Kargy River").

Carabus (Morphocarabus) chadoiri marusiki: Obydov, 1999: 107; 2001: 459.

Carabus (Morphocarabus) chadoiri marusiki: Březina, 1999: 15; Ghiretti, 1996: 80 (supplement 3, 1999); Kleinfeld et Schütze, 1999: 11; Schütze et Kleinfeld, 1999: 55, 210.

Carabus (Morphocarabus) chadoiri marusiki: Deuve, 2004: 145.

Type locality: South-eastern Tuva, Sangilen Mt. Ridge, Kargy River valley.

Description. Body length is 18.5-24.0 mm. Pronotum relatively small, transverse, sides of pronotum narrowly margined and slightly bent upwards; lobes of hind angles short, evenly rounded. Elytra oblong-oval; primary elytral interspaces a little more developed, interrupted into short links; secondary and tertiary about equally developed, secondary interspaces interrupted into long links, tertiary integral. Body blackish bronze, bronze, green, greenish bronze, rarely black, with

metallic lustre; margins of pronotum and elytrae bronze, green, greenish bronze or blackish bronze. Ventral body surface black or blackish brown.

Distribution: South-eastern Tuva, Sangilen Mt. Ridge, Kargy River valley, Balyktyk-Khem River valley. The subspecies inhabits mountain larch forests, mountain tundra and forest-tundra at the altitudes from 1500 to 2600 m above the sea level.

Remark: In the some parts of the area the subspecies occurs sympatrically with other *Morphocarabus*: *C. henningi* and *C. odoratus*.

Type material examined: Holotype of *Carabus mongolorum marusiki*: male with two labels: "S-E Tuva, Sangilen Mts, valley of the Kargy river, 50°31'N97°01'E, 1600m, 4.VII.1996, D. Obydov leg." and "Holotypus, Carabus (Morphocarabus) mongolorum marusiki ssp. n., D. Obydov det., 1996" (TMB); 43 paratypes of *Carabus mongolorum marusiki*: male, female, same locality, 1.VII.1996, Yu. Marusik leg.; male, 4 females, same locality, 4.VII.1996, D. Obydov leg.; 3 males, 2 females, S-E Tuva, Sangilen Mts, valley of the Kargy river, 50°34'N 97°04'E, 1500m, 2-4.VII.1996, D. Obydov leg.; 14 males, 12 females, S-E Tuva, Sangilen Mts, upper part of Kargy river, 50°24'N 96°41'E, 2300m, 28.VI-4.VII.1996, D. Obydov leg.; male, S-E Tuva, Sangilen Mts, valley of the Balyktyk-Khem river, 50°17'N 96°39'E, 2100m, 26.VI-4.VII.1996, D. Obydov leg.; 2 females, S-E Tuva, near Balyktyk-Khem Pass, 50°17'N 96°23'E, 2300m, 27.VI-5.VII.1996, D. Obydov leg.; 2 females, S-E Tuva, Balyktyk-Khem Pass, 50°15'N 96°19'E, 2600m, 27.VI-5.VII.1996, D. Obydov leg.; each specimen with label: "Paratypus, Carabus (Morphocarabus) mongolorum marusiki ssp. n., D. Obydov det., 1996" (MNHN, DEI, ZIN, ZMMU, TMB, TINR).

***Carabus (Morphocarabus) chadoiri zaikai* Obydov, 1999 (Fig.5)**

Carabus (Morphocarabus) chadoiri zaikai Obydov, 1999: 105 ("Tuva, Akademika Obrucheva Mt. Ridge").

Carabus (Morphocarabus) chadoiri zaikai: Kleinfeld et Schütze, 1999: 10; Schütze et Kleinfeld, 1999: 89, 210; Obydov, 2001: 459.

Carabus (Morphocarabus) chadoiri zaikai: Deuve, 2004: 145.

Type locality: Tuva, Akademika Obrucheva Mt. Ridge, 2100 m.

Description. Body length is 18.2-21.9 mm. Pronotum transverse; sides of pronotum evenly rounded and broadly margined, its margin slightly bent upwards posteriorly; lobes of hind angles short, evenly rounded. Elytra oblong-oval, convex; primary elytral interspaces a little more developed, interrupted into relatively short links; secondary and tertiary about equally developed, interrupted into the short and long links, sometimes conjugated transverse. Primary foveoles distinct; striae coarsely punctured. Body black, bronze, blackish-bronze, green, greenish-bronze, with metallic lustre; palpi, antennae, femurs, tarsi and ventral body surface blackish-brown; mandibles, tibiae, claws and four basal segments of antennae (apically) reddish brown.

Distribution: Tuva, Akademika Obrucheva Mt Ridge. The subspecies inhabits mountain tundra, forest-tundra and mountain larch forests, at the altitudes from 1100 up to 2100 m above the sea level.

Remark: In its habitat in the mountain tundra the subspecies is sympatric with *C. (Morphocarabus) odoratus* and *C. (Diocarabus) sloutzovi*. In the larch forests occur sympatrically with *C. (Morphocarabus) henningi*, *C. (Diocarabus) loschnikovi* and *C. (Megodontus) schoenherri*.

Type material examined: Holotype of *Carabus chaudiroi zaikai*: male with two labels: "Tuva, Akademika Obrucheve Mt. Ridge, 2100 m, mountain tundra, N52°00'E095°34', Sainak Pass, 2.VII.1998, D. Obydov leg." and "Holotypus, Carabus (Morphocarabus) chaudiroi zaikai ssp. n., D. Obydov det., 1998" (TMB); 33 paratypes of *Carabus chaudiroi zaikai*: 9 males, 16 females, same date and same locality; 2 males, 6 females, Tuva, Akademika Obrucheve Mt. Ridge, 1100 m, N52°07'E096°00', 3.VII.1998, D. Obydov leg.; each specimen with label: "Paratypus, Carabus (Morphocarabus) chaudiroi zaikai ssp. n., D. Obydov det., 1998" (MNHN, ZIN, ZMMU, TMB, TINR).

***Carabus (Morphocarabus) chaudiroi beladici* Obydov, 2001 (Fig.6)**

Carabus (Morphocarabus) chaudiroi beladici Obydov, 2001: 460 ("Tuva, Eastern Tannu-Ola, Chongyz Tayga").

Carabus (Morphocarabus) chaudiroi beladici: Deuve, 2004: 145.

Type locality: Tuva, East Tannu-Ola Mt. Ridge, Čongyz Tajga, 1500 m.

Description. Body length is 20.0-21.6 mm. Very dark coloration characterises this subspecies which is unlike that of any other subspecies of *C. chaudiroi* from mountains of southern Siberia. Pronotum convex, transverse; sides of pronotum narrowly margined; lobes of hind angles short, evenly rounded, slightly bent downwards. Elytra oval; primary elytral interspaces a little more developed, interrupted into relatively long and short links; secondary and tertiary about equally developed, partially integral, partially interrupted into long and short links. Primary foveoles distinct; striae coarsely punctured. Body one-coloured black; mandibles and claws brownish; sometimes tibiae, and four basal antennae joints (apically) reddish brown; ventral body surface black, rarely blackish brown.

Distribution: Tuva, East Tannu-Ola Mt. Ridge, Čongyz Tajga. The subspecies inhabits mountain forest-tundra and mountain larch forests, at the altitudes 1500 m above the sea level.

Type material examined: Holotype of *Carabus chaudiroi beladici*: male with two labels: "Russia, East Tannu-Ola, Čongyz Tajga, 1500 m, 1.VI.1997, M. Česánek leg." and "Holotypus, Carabus (Morphocarabus) chaudiroi beladici ssp. n., D. Obydov det., 2000" (TMB); 9 paratypes, 3 males, 6 females of *Carabus chaudiroi beladici*, each specimen with two labels: "Tuva, East Tannu-Ola, Kara-Khol Lake, 29-31.V.2000, M. Beladič leg." and "Paratypus, Carabus (Morphocarabus) chaudiroi beladici ssp. n., D. Obydov det., 2000" (coll. M. Beladič, Slovakia, Bratislava).

***Carabus (Morphocarabus) chaudiroi shilenkovi* O. Berlov, 1989 (Fig.7)**

Carabus (Morphocarabus) shilenkovi O. Berlov, 1989: 151 ("Chukotka, Bilibinsky dist., Omolon Vill.").

Carabus (Morphocarabus) shilenkovi: Deuve, 1991: 49; 1994: 109; Březina, 1994: 21; Shilenkov, 1994: 66; 1996: 34; Kryzhanovskij et al., 1995: 39; Ghiretti, 1996: 75.

Carabus (Morphocarabus) chudoiri shilenkovi: Obydov, 1999: 107; 2001: 459; Březina, 1999: 15; Kleinfeld et Schütze, 1999: 10; Schütze et Kleinfeld, 1999: 74, 210.

Carabus (Morphocarabus) chudoiri shilenkovi: Deuve, 2004: 145.

Type locality: Chukotka Peninsula, Bilibinsky dist., Omolon Village environs.

Description. Body length is 19.3-21.8 mm. Pronotum strongly convex, transverse; lobes of hind angles short, evenly rounded, slightly bent downwards. Elytra oval, convex; elytral sculpture triploid; all elytral interspaces about equally developed, primary elytral interspaces integral, secondary and tertiary interrupted into short links. Primary foveoles indistinct; striae coarsely punctured. Body one-coloured black, sometimes with weak violet or bronze lustre; mandibles, palpi, antennae, legs and ventral body surface black.

Distribution: North of Far East Russia and North Siberia: Chukotka Peninsula, Yakutia.

Type material examined: Holotype of *Carabus (Morphocarabus) shilenkovi*: male with two labels: "Chukotka Peninsula, Bilibinsky dist., Omolon Village, 8.VI.1969, Nikolaev leg." and "Carabus (Morphocarabus) shilenkovi sp. n., O. Berlov det." (ZIN).

Additional material examined: male and female with labels: "Yakutia, Oimyakon Mountain Plateau, 12-18.VII.1998, M. Česánek leg." (coll. M. Česánek, Slovakia, Bratislava).

Taxonomical remarks: For the long time, approximately since the beginning of XX century *Carabus (Morphocarabus) chudoiri* Gebler, 1847 is considered as so-called "lost species".

Gebler's collection where there were type specimens of *Carabus (Morphocarabus) chudoiri*, preserved in the Barnaul Museum of local study (western Siberia) by strange line of action has disappeared. Later some Gebler's type specimens including lectotype and paralectotype of *Carabus (Morphocarabus) chudoiri* (Th. Deuve designation, 1991) have been found in the Laboratory of entomology of Muséum national d'Histoire naturelle (Paris). V.G. Shilenkov (1994, 1996) and some other authors are considered *Carabus (Morphocarabus) chudoiri* as synonym of *Carabus (Morphocarabus) odoratus* Motschulsky, 1846. However studying of a type material has allowed confirming specific status of *Carabus (Morphocarabus) chudoiri* (D. Obydov, 1997). Studying of the holotype of *Carabus (Morphocarabus) shilenkovi* O. Berlov, 1989 has shown that this taxon is subspecies of *Carabus (Morphocarabus) chudoiri* (D. Obydov, 1999). Thus *Carabus (Morphocarabus) chudoiri* is widespread polymorphic species which occupies all suitable biotopes of the north of Far East and east Siberia and mountains of the south of the central and east Siberia gravitate, however, to steppe sites of tundra and forest-tundra. The greatest polymorphism the species demonstrate in the south of the area, whence has been described six subspecies.

ACKNOWLEDGEMENTS

I wish to express my heartfelt gratitude to Dr. Thierry Deuve (MNHN, Paris) for lectotype of *Carabus chaudiroi* and lectotype of *Carabus mongolorum*. I am very grateful also to all my friends and colleagues who provided me with materials for study.

LITERATURE CITED

- Berlov, O. E.** 1989. [A new species of Genus *Carabus* (Coleoptera: Carabidae) from North-eastern Siberia]. Zool. Journal, T. 68, N6: 151-153. [in Russian].
- Breuning, S.** 1932. Monographie der Gattung *Carabus*. Bestimmungs-Tabellen der europäischen Coleopteren, 104 Heft. Troppau: 1-496.
- Březina, B.** 1994. The Check-list of the Genus *Carabus* (Coleoptera: Carabidae), Klapalekiana, Vol. 30, No.1-2, Praha: 164 pp.
- Březina, B.** 1999. World Catalogue of the Genus *Carabus* L. Pensoft Publishers, Sofia-Moscow: 170 pp.
- Chaudiroi, M.** 1852. Mémoire sur la Famille des Carabiques. Bull. Soc. Imp. Nat. Mosc., XXV, N. 1, Moscou: 3-104.
- Chaudiroi, M.** 1877. Notes synonymique. Deutsche Ent. Zeitschrift, 29: 76.
- Csiki, E.** 1927. Carabidae: Carabinae I., Junk & Schenkling, Coleopterorum Catalogus, Pars 91, W. Junk ed., Berlin: 307 pp.
- Deuve, Th.** 1991. La Nomenclature Taxonomique du Genre *Carabus*. Bibl. ent., Vol. IV, Venette: 198 pp.
- Deuve, Th.** 1994. Une Classification du Genre *Carabus*. Bibl. ent., Vol. V., Venette: 296 pp.
- Deuve, Th.** 2004. Illustrated catalogue of the Genus *Carabus* of the World. Pensoft Series Faunistica n° 34, Pensoft ed., Sofia: 461 pp.
- Gebler, F.** 1847 Verzeichnis der im Kolywano-Woskresenskischen Hüttenbezirke Süd-West-Sibiriens beobachteten Käfer. Bull. Soc. Imp. Nat. Moscou, XX: 263-361.
- Ghiretti, D.** 1996. Photographic catalogue of the genus *Carabus*. Conte ed., Lecce: 404 pp.
- Imura, Yu. & Mizusawa, K.** 1996. The *Carabus* of the World. Mushi-Sha's Iconographic Series of Insects 2, Tokyo: 261 pp.
- Jakobson, G. G.** 1905. [The Beetles of Russia and West Europe]. St. Petersburg: 1024 pp [in Russian].
- Kleinfeld, F. & Schütze, H.** 1999. Systematische Liste der Gattung *Carabus*.: 70 pp.
- Kryzhanovskij, O. L., Belousov, I. A., Kabak, I. I., Kataev, B. M., Makarov, K. V. & Shilenkov, V. G.** 1995. A Checklist of the Ground-Beetles of Russia and Adjacent Lands (Insecta, Coleoptera, Carabidae). Pensoft Publishers, Sofia-Moscow: 271 pp.
- Motschulsky, V.** 1859. Catalogue des insectes rapportés des environs de fl. Amour, depuis la Schilka jusqu'à Nikolaëvsk. Bull. Soc. Imp. Nat. Moscou, XXXI: 487-490.

Obydov, D. 1997. New and little known taxa of the genus *Carabus* from Siberia and Far East Russia (Coleoptera, Carabidae). *Coléoptères*, 3 (5): 77-91.

Obydov, D. 1999. The new taxa of the genus *Carabus* L. from Central Tuva (Coleoptera, Carabidae). *Lambillionea*, XCIX, 1: 104-108.

Obydov, D. 2001. Notes on *Carabus* from Tuva Republic “*Carabus odoratus*” species group (Coleoptera, Carabidae). *Lambillionea*, CI, 3: 459-464.

Osawa, S., Su, Z-H. & Imura, Yu. 2002. Molecular Phylogeny and Evolution of the Carabid Ground Beetles of the World. Chiyodaku Tokyo: 264 pp. [in Japanese].

Schütze, H. & Kleinfeld, F. 1999. *Carabusformen Sibiriens und Zentral-Asiens*, 2. Auflage: 242 pp.

Shilenkov, V. G. 1994. Catalogue of the *Carabus* species from Siberia with preliminary notes to the taxonomical revision (Coleoptera, Carabidae). *Carabid Beetles: Ecology and Evolution*, Kluwer Academic Publishers: 63-69.

Shilenkov, V. G. 1996. [The ground beetles of the genus *Carabus* L. (Coleoptera, Carabidae) of South Siberia. Irkutsk State University Publ]. Irkutsk: 73 pp. [in Russian].



Fig.1. *Carabus (Morphocarabus) chaudoiri chaudoiri* (lectotype)

Fig.2. *Carabus (Morphocarabus) chaudoiri mongolorum* (lectotype)

Fig.3. *Carabus (Morphocarabus) chaudoiri czadanicus* (holotype)

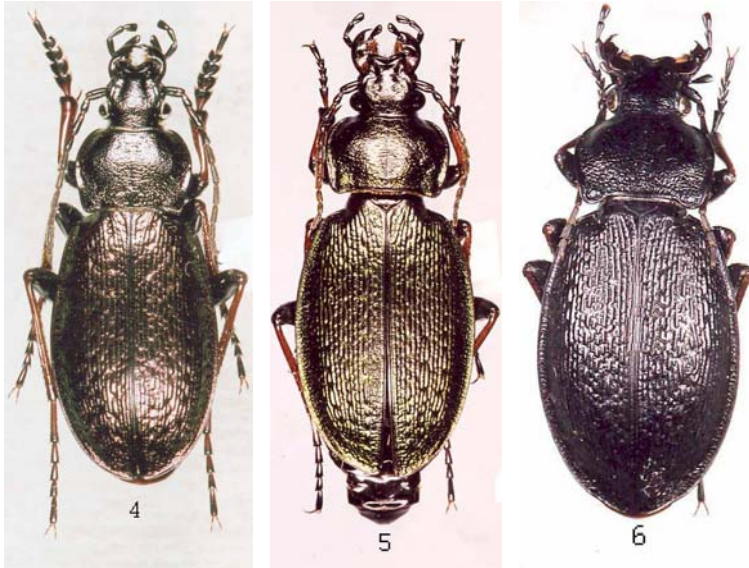


Fig.4. *Carabus (Morphocarabus) chaudoiri marusiki* (holotype)
 Fig.5. *Carabus (Morphocarabus) chaudoiri zaikai* (paratype)
 Fig.6. *Carabus (Morphocarabus) chaudoiri beladici* (paratype)

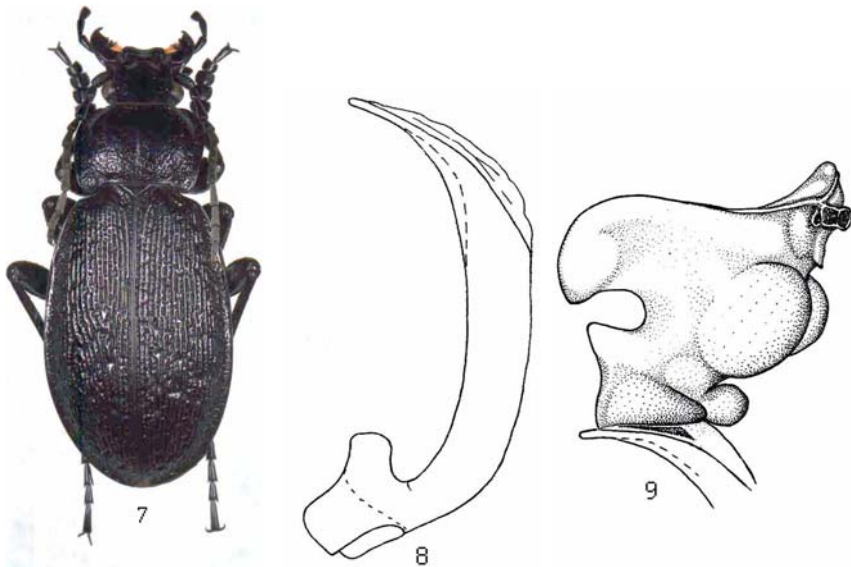


Fig.7. *Carabus (Morphocarabus) chaudoiri shilenkovi* (from Yakutia)
 Figs 8-9: male genital structure of *Carabus (Morphocarabus) chaudoiri marusiki*. 8. Aedeagus, 9. endophallus in complete extension.