

TO SUBSPECIFIC STRUCTURE OF *CARABUS (TRIBAX) APSCHUANUS* ROST, 1893 (COLEOPTERA, CARABIDAE)

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[Obydov, D. 2010. To subspecific structure of *Carabus (Tribax) apschuanus* Rost, 1893 (Coleoptera, Carabidae). *Munis Entomology & Zoology*, 5, suppl.: 904-910]

ABSTRACT: 6 subspecies of *Carabus (Tribax) apschuanus* Rost, 1893 are examined. The status and the habitat of some subspecies are précised. *Carabus (Tribax) apschuanus nakrensis* Novotný et Voříšek, 1988, stat. n., comb. n. is proposed.

KEY WORDS: Coleoptera, Carabidae, *Carabus (Tribax) apschuanus*, taxonomy, distribution, Caucasus.

Carabus (Tribax) apschuanus Rost, 1893 is polymorphic species which is distributed in west and central Caucasus.

The species includes 6 subspecies: *Carabus (Tribax) apschuanus apschuanus* Rost, 1893; *Carabus (Tribax) apschuanus pseudoplatessa* Gottwald, 1982; *Carabus (Tribax) apschuanus zorkae* Novotný et Voříšek, 1988; *Carabus (Tribax) apschuanus schoeni* Novotný et Voříšek, 1988; *Carabus (Tribax) apschuanus nakrensis* Novotný et Voříšek, 1988, stat. n., comb. n. and *Carabus (Tribax) apschuanus galianus* Belousov et Zamotajlov, 1993.

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 and literature. I have added also photos of all subspecies and map of its type localities.

Carabus (Tribax) apschuanus Rost, 1893

Carabus (Plectes) puschkini var. *apschuanus* Rost, 1893: 341 (part.).

Carabus (Tribax) puschkini apschuanus: Jakobson, 1905: 248 (part.).

Carabus (sectio *Tribax*) *puschkini* subv. *apschuanus* Lapouge, 1909: 141 (part.).

Carabus (sectio *Tribax*) *puschkini* nat. *apschuanus* Breuning, 1934: 1109 (part.).

Carabus (Tribax) platessa apschuanus Gottwald, 1980: 38 (part.).

Carabus (Tribax) apschuanus Gottwald, 1982: 216.

Carabus (Tribax) platessus apschuanus: Deuve, 1991: 113 (part.).

Carabus (Tribax) apschuanus: Belousov et Zamotajlov, 1993: 47; Deuve, 1994: 190; 2004: 265; Březina, 1994: 50; 1999: 56; Kryzhanovskij et al., 1995: 54; Imura et Mizusawa, 1996: 177; Ghiretti, 1996: 223; Kleinfeld et Schütze, 1999: 28; Schütze et Kleinfeld, 2001: 16, 157; Retezár, 2008: 29.

Type locality. Georgia, Abkhazia, Mt. Chipshira.

Description. Body length is 21.5-35.0 mm.

Head not thickened; eyes convex; mandibles relatively long and narrow, slightly incurved; terebral tooth of the right and left mandibles bi-dentate, strongly prominent; retinaculum of the right and left mandibles triangular relatively prominent; surface of mandibles smooth. Frontal furrows relatively deep, mediad smooth or wrinkled. Frons usually smooth; vertex and neck with sparse wrinkles. Labrum wider than clypeus, slightly notched, with two lateral setae. Antennae surpassing base of pronotum by 4-5 antennomeres; palpi moderately or strongly dilated; penultimate palpomere of the maxillary palpi usually equal to the last

palpomere; penultimate palpomere of the labial palpi with two setae. Mentum tooth triangular, slightly shorter or equal to lateral lobes; submentum with two setae.

Pronotum slightly convex, sometimes cordiform; broadest about at middle or behind middle. Disk of pronotum usually smooth, sometimes coarsely-wrinkled or coarsely-punctured; pronotal sculpture less rough laterally. Median longitudinal line distinct; basal foveae usually deep, mediad smooth, coarsely-wrinkled or coarsely-punctured.

Sides of pronotum narrowly margined; lobes of hind angles short, triangular, bent down. Lateral margin with two setiferous pores: one pore about at middle and one pore near hind angle.

Elytra oval, slightly convex; widest behind middle or about at middle; shoulders not prominent; margins of elytra narrowly margined. Elytral sculpture: all elytral interspaces about equally developed, primary elytral interspaces interrupted into relatively long and short links; secondary uninterrupted or interrupted into very long links. Primary foveoles indistinct; striae finely punctured.

Metepisternum smooth, slightly longer than wide; abdominal sternites smooth, sides of abdomen slightly finely wrinkled; sternal sulci absent.

Legs relatively long; male fore tarsi with four dilated segments bearing hairy pads.

Aedeagus (Fig. 7); endophallus (Fig. 8).

Coloration black, black with blue luster, violet, blue or dark blue, sometimes elytral margins bright violet, violet with pink luster, bronze or greenish-bronze, elytral foveoles sometimes with bright bronze or greenish-bronze luster; first basal antenna segment sometimes brown or reddish-brown; legs black, often femurs brown or reddish-brown. Ventral body surface black.

Distribution. West and central Caucasus.

Carabus (Tribax) apschuanus apschuanus Rost, 1893

(Fig. 1)

Carabus (Plectes) puschkini var. *apschuanus* Rost, 1893: 341 ("Mt. Chipshira").

Carabus (Tribax) apschuanus apschuanus: Gottwald, 1982: 216; Belousov et Zamotajlov, 1993: 48; Deuve, 1994: 190; 2004: 265; Březina, 1994: 50; 1999: 56; Kryzhanovskij et al., 1995: 54; Imura et Mizusawa, 1996: pl. 47, 177; Ghiretti, 1996: 223; Kleinfeld et Schütze, 1999: 28; Schütze et Kleinfeld, 2001: 16, 157; Retezár, 2008: 29, pl. 23.

Type locality. Georgia, Abkhazia, Mt. Chipshira.

Description. Body length is 28.8-35.0 mm.

The largest subspecies of *Carabus (Tribax) apschuanus*. Coloration black with blue luster; legs black, rarely femurs brown. Elytral sculpture much more rough than in other subspecies of *Carabus (Tribax) apschuanus*.

Distribution. West Caucasus: Bzyb'sky Mt. Ridge, Mt. Chipshira, Mt. Dydrypsh, Duripsh env., Otkhara env., Khyp'sy River valley, Aapsy River valley, Achandara env., Mtsara env., Akuara env.

Material examined. Male and 2 females with labels: "Caucasus, Abkhazia, Otkhara vill. env., 8-20.VII.1992, P. Gorbachev leg." (coll. Biological Museum, Moscow); 3 males, 3 females with labels: "Abkhazia, Duripsh env., 18-21.VII.1989, L. Chernyshev leg." (coll. Biological Museum, Moscow); 2 males, 4 females with labels: "Caucasus, Abkhazia, Mtsara env., 11.VII.1994, A. Evstegneev leg." (coll. Biological Museum, Moscow).

Carabus (Tribax) apschuanus pseudoplatessa Gottwald, 1982

(Fig. 2)

Carabus (Tribax) apschuanus pseudoplatessa Gottwald, 1982 ("Tkvar'tsheli env.").

Carabus (Tribax) pseudoplatessa: Novotný et Voříšek, 1988: 140 (part.).

Carabus (Tribax) apschuanus pseudoplatessus: Deuve, 1994: 190; Imura et Mizusawa, 1996: pl. 47, 177; Ghiretti, 1996: 223.

Carabus (Tribax) apschuanus pseudoplatessa: Belousov et Zamotajlov, 1993: 47; Březina, 1994: 50; 1999: 56; Kryzhanovskij et al., 1995: 54; Kleinfeld et Schütze, 1999: 28; Schütze et Kleinfeld, 2001: 59, 157; Deuve, 2004: 265; Retezár, 2008: 29, pl. 24.

Type locality. Georgia, Abkhazia, Tkvarcheli environs.

Description. Body length is 22.3-29.0 mm.

Elytral interspaces relatively convex, pronotum coarsely-punctured or nearly smooth. Pronotum and elytra violet or dark blue, sometimes elytral margins bright violet with pink luster. Femurs black, rarely brown; ventral body surface black.

Distribution. West Caucasus: Tkvarcheli env.; Mt. Khodhzal; Kyalasur River valley; Adzgara River valley; Guandra env.; Klych River valley; Saken River valley; Argunia env.; Argun River valley.

Material examined. 3 males and 3 females with labels: "Abkhazia, Tkvarcheli, 1200 m, 13.VI.1990, M. Danilevsky leg." (coll. Biological Museum, Moscow); male and 2 females with labels: "Abkhazia, Argun River valley, 6.VII.1994, L. Chernyshev leg." (coll. Biological Museum, Moscow).

Carabus (Tribax) apschuanus zorkae Novotný et Voříšek, 1988

(Fig. 3)

Carabus (Tribax) pseudoplatessa zorkae Novotný et Voříšek, 1988: 143 ("Teberda").

Carabus (Tribax) apschuanus pseudoplatessus: Deuve, 1994: 190 (part.).

Carabus (Tribax) apschuanus zorkae: Kryzhanovskij et al., 1995: 54; Ghiretti, 1996: 223.

Carabus (Tribax) apschuanus pseudoplatessa: Březina, 1999: 56 (part.); Schütze et Kleinfeld, 2001: 76, 157 (part); Deuve, 2004: 265 (part.).

Type locality. Russia, Karachai-Cherkessian Region, Teberda.

Description. Body length is 21.8-25.2 mm.

The subspecies differs by coarsely-wrinkled pronotum and moderately convex elytral interspaces. Pronotum and elytra violet or dark blue, femurs reddish-brown, first basal antenna segment brown; ventral body surface black.

Distribution. West Caucasus: Karachai-Cherkessian Region, Teberda environs.

Material examined. 3 males and 4 females with labels: "Caucasus, Karachai-Cherkessian Region, Teberda, 18.V.1990, I. Avdeev leg." (coll. Biological Museum, Moscow); 4 males and 2 females with labels: "Caucasus, Teberda, 8.VI.1986, L. Chernyshev leg." (coll. Biological Museum, Moscow).

Carabus (Tribax) apschuanus schoeni Novotný et Voříšek, 1988

(Fig. 4)

Carabus (Tribax) pseudoplatessa schoeni Novotný et Voříšek, 1988: 143 ("Kardyvach Lake").

Carabus (Tribax) apschuanus pseudoplatessus: Deuve, 1994: 190 (part.).

Carabus (Tribax) apschuanus schoeni: Kryzhanovskij et al., 1995: 54; Ghiretti, 1996: 223.

Carabus (Tribax) apschuanus pseudoplatessa: Březina, 1999: 56 (part.); Schütze et Kleinfeld, 2001: 65, 157 (part); Deuve, 2004: 265 (part.).

Carabus (Tribax) apschuanus schoeni: Retezár, 2008: 30, pl. 26.

Type locality. Russia, Krasnodar Region, Kardyvach Lake.

Description. Body length is 21.5-23.2 mm.

The smallest subspecies of *Carabus (Tribax) apschuanus*. Pronotum and elytra blue, dark blue or violet, femurs and first basal antenna segment reddish-brown; ventral body surface black. Elytral sculpture more rough than in other subspecies of *Carabus (Tribax) apschuanus*, except nominotypical subspecies.

Distribution. West Caucasus: south-east Krasnodar Region: Kardyvach Lake environs and north-west Abkhazia: Pskhu River valley, Mt. Chkha, Baayu River valley, north-eastern environs of Ritsa Lake.

Material examined. 3 males and 3 females with labels: "Caucasus, Abkhazia, 6.8 km from Ritsa Lake to NE, 1.7 km from Kutukukh Mt. to NW, 1678 m, fir-tree-beech-tree forest, 43°31'N40°37'E, 19-25.VII.2008, A. Vlasenko leg. (coll. A. Vlasenko, Moscow).

***Carabus (Tribax) apschuanus nakrensis* Novotný et Voříšek, 1988
stat. n., comb. n. (Fig. 5)**

Carabus (Tribax) nakrensis Novotný et Voříšek, 1988: 148 ("Nakra River").

Carabus (Tribax) mingrel nakrensis: Deuve, 1991: 114 (part.).

Carabus (Tribax) apschuanus pseudoplatessus: Deuve, 1994: 190 (part.).

Carabus (Tribax) nakrensis: Kryzhanovskij et al., 1995: 54 (part.).

Carabus (Tribax) apschuanus pseudoplatessa: Březina, 1999: 56 (part.); Schütze et Kleinfeld, 2001: 51, 157 (part.); Deuve, 2004: 265 (part.).

Type locality. Georgia, Svanetia, Nakra River.

Description. Body length is 23.9-25.3 mm.

Pronotum and elytra dark blue or black, femurs, mandibles and first basal antenna segment brown; ventral body surface black. Very narrow pronotum is characterise this subspecies is unlike that of any other subspecies of *Carabus (Tribax) apschuanus*. Habitually resembles *Carabus (Tribax) kasbekianus onerosus* Belousov et Zamotajlov, 1993, but strongly differ from latter by elytral sculpture and male genital structure which is characteristic for *Carabus (Tribax) apschuanus*.

Distribution. central Caucasus, Georgia, Svanetia, Nakra River valley.

Material examined. 2 males with labels: "Svanetia, fl. Nakr, 10.VII.1930, A. Bogachev leg." (coll. Zoological Museum of Moscow Lomonosov State University); 3 males, 3 females with labels "Caucasus, Svanetia, 25.VI.1987, L. Chernyshev leg." (coll. Biological Museum, Moscow).

***Carabus (Tribax) apschuanus galianus* Belousov et Zamotajlov, 1993
(Fig. 6)**

Carabus (Tribax) apschuanus galianus Belousov et Zamotajlov, 1993: 47 ("E Abkhazia, Mt Okhachku").

Carabus (Tribax) apschuanus galianus: Deuve, 1994: 190; 2004: 265; Kryzhanovskij et al., 1995: 54; Imura et Mizusawa, 1996: pl. 47, 177; Ghiretti, 1996: 223; Březina, 1999: 56; Kleinfeld et Schütze, 1999: 28; Schütze et Kleinfeld, 2001: 35, 157; Retezár, 2008: 29, pl. 25.

Type locality. Georgia, Abkhazia, Mt. Okhachku.

Description. Body length 22.0-28.3 mm.

This subspecies is closely related to *Carabus (Tribax) apschuanus pseudoplatessa* Gottwald, 1982, but easily differ from latter by its bright bronze or greenish-bronze luster in foveoles and around tubercles of primary and secondary elytral interspaces.

Distribution. West and central Caucasus: Akiba and Okhachku Massif, Okumi River valley.

Type material examined. Paratype of *Carabus (Tribax) apschuanus galianus*: male with two labels: "Eastern Abkhazia, south slope of Mt. Okhachku, 4.V.1989, I. Belousov leg." and "*Carabus (Tribax) apschuanus galianus* ssp. n., Belousov & Zamotajlov det." (coll. M. Shestopalov, Moscow).

Additional material examined. 2 males and female with labels: "Abkhazia, Mt. Okhachku, 18-22.VI.1994, A. Evstegneev leg. (coll. Biological Museum, Moscow).

ACKNOWLEDGEMENTS

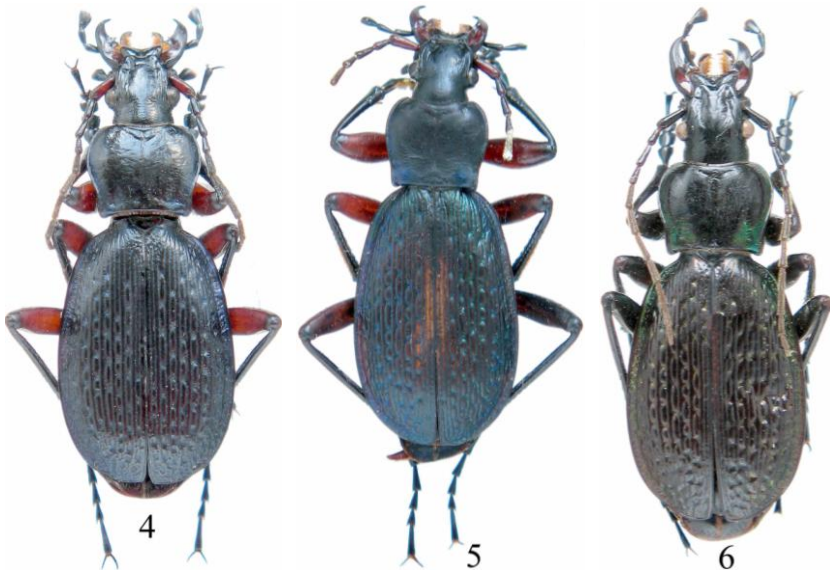
I wish to express my hearty gratitude to Mr. Andrei S. VLASENKO (Moscow) who kindly loaned material for studies and other support.

LITERATURE CITED

- Belousov, I. A. & Zamotajlov, A. S.** 1993. On new carabids of the genus *Carabus* L. (Coleoptera, Carabidae) from the Caucasus. (4th contribution). Entomol. Basiliensia, 16: 37-57.
- Breuning, S.** 1934. Monographie der Gattung *Carabus*. Bestimmungs-Tabellen der europäischen Coleopteren, 108 Heft. Troppau: 915-1120.
- Březina, B.** 1994. The Check-list of the Genus *Carabus* (Coleoptera: Carabidae), Klapalekiana, 30 (1-2), Praha: 164 pp.
- Březina, B.** 1999. World Catalogue of the Genus *Carabus* L. Pensoft Publishers, Sofia-Moscow: 170 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.
- Ghiretti, D.** 1996. Photographic catalogue of the genus *Carabus*. Conte ed., Lecce: 404 pp.
- Gottwald, J.** 1980. Revision der Untergattung *Tribax* der Gattung *Carabus* (Coleoptera, Carabidae). Acta entomol. bohemoslow, 77: 25-45.
- Gottwald, J.** 1982. Zur Taxonomie und Nomenklatur von *Tribax* und verwandten Untergattungen der Gattung *Carabus* (Coleoptera, Carabidae). Acta entomol. bohemoslow, 79: 207-220.
- 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.
- Lapouge, G.** 1909. Tableaux de détermination des formes du genre *Carabus*. L'Echange 25: 141.
- Novotný, J. & Voříšek, C.** 1988. Nove Taxony rodu *Carabus* z Kavkazu. Fauna Bohemiae Septentrionalis, 13: 139-157.
- Retezár, I.** 2008. The *Carabus* of Abkhazia, Caucasus (Coleoptera, Carabidae). Printed in Hungary: 60 pp, 80 pl.
- Rost, C.** 1893. Neue oder wenig bekannte caucasische Coleopteren. Entomol. Nachrichten, 19 (22): 338-344.
- Schütze, H. & Kleinfeld, F.** 2001. Die Caraben Kaukasiens. 1. Auflage: 178 pp.



Figures 1-3: *Carabus (Tribax) apschuanus* (general view): 1. *Carabus (Tribax) apschuanus apschuanus* Rost, 1893; 2. *Carabus (Tribax) apschuanus pseudoplatessa* Gottwald, 1982; 3. *Carabus (Tribax) apschuanus zorkae* Novotný et Voříšek, 1988.



Figures 1-8: *Carabus (Tribax) apschuanus* (general view): 4. *Carabus (Tribax) apschuanus schoeni* Novotný et Voříšek, 1988; 5. *Carabus (Tribax) apschuanus nakrensis* Novotný et Voříšek, 1988; 6. *Carabus (Tribax) apschuanus galianus* Belousov et Zamotajlov, 1993.



Figures 7-8: Male genital structure of *Carabus (Tribax) apschuanus apschuanus*: 7. Aedeagus of *Carabus (Tribax) apschuanus apschuanus*; 8. Endophallus in complete extension of *Carabus (Tribax) apschuanus apschuanus*.



Map 1. The map of Caucasus. Type localities of subspecies of *Carabus (Tribax) apschuanus*: 1. *Carabus (Tribax) apschuanus apschuanus*; 2. *Carabus (Tribax) apschuanus pseudoplatessa*; 3. *Carabus (Tribax) apschuanus zorkae*; 4. *Carabus (Tribax) apschuanus schoeni*; 5. *Carabus (Tribax) apschuanus nakrensis*; 6. *Carabus (Tribax) apschuanus galianus*.