

**A NEW SUBSPECIES OF *CARABUS (MORPHOCARABUS)*
AERUGINOSUS FISCHER VON WALDHEIM, 1822
(COLEOPTERA: CARABIDAE) FROM EAST
SAJANS MOUNTAINS (EAST SIBERIA)**

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ABSTRACT: A new subspecies of *Carabus (Morphocarabus) aeruginosus*: *Carabus (Morphocarabus) aeruginosus pitschugini* ssp. n. is described from east Sajans Mountains (East Siberia). Diagnostic data are given.

KEY WORDS: Coleoptera, Carabidae, *Carabus (Morphocarabus) aeruginosus*, new subspecies, Sajans Mountains, East Siberia.

The wide area of *Carabus (Morphocarabus) aeruginosus* Fischer von Waldheim, 1822 is inhabited by many unequally differing populations. Some of the groups of populations, undoubtedly, must be considered as subspecies. At the same time, the majority of populations constitute a continuous sequence of forms slightly different in size, coloration and ratios, but it is hardly possible to consider these forms as subspecies. At present a considerable number of forms of *Carabus aeruginosus* are described. The majority of infraspecific names must be treated as synonyms.

The name *Carabus aereus* Dejean, 1826 was introduced for specimens with orange elytra and indicated individual color variations occur in various localities of *Carabus aeruginosus* area. It was mentioned by G. Fischer von Waldheim (1825-1828) who considered *Carabus aereus* as "variété de l'*aeruginosus*".

Originally *Carabus incertus* Motschulsky, 1844 has been described from "environs du Baical", but the locality mentioned on the label of the lectotype (O.L. Kryzhanovskij designation, 1968) is "Krasnojarsk". Both type series and the populations from Krasnojarsk and Baikal environs (represented in my materials) are conspecific with typical *Carabus aeruginosus* and must be attributed to the nominotypical subspecies.

Carabus subcostatus Motschulsky, 1850 has been described based on single female from "Sibir. orient". Often the name *Carabus subcostatus* was wrongly attributed by many authors to other species, most frequently to *Carabus aeruginosiformis* Breuning, 1932. The holotype female of *Carabus subcostatus* is preserved in the collection of the Zoological Museum of Moscow Lomonosov State University (Moscow, Russia). It has relatively short elytra with about equally developed, uninterrupted elytral interspaces and small size. But in the shape of pronotum and other features this form is very close to the typical *Carabus aeruginosus*. I'm sure that *Carabus subcostatus* is teratological specimen of *Carabus aeruginosus*.

The species is distributed from about Urals Mountain to the east as far as Yakutia and Baikal Lake and as far to the north as north-eastern regions of European Russia and Yamal Peninsula and mouth of Yenisei River. The species

occur in the forested areas; in the north part of the area inhabits tundra and forest-tundra.

The species includes four subspecies: *Carabus (Morphocarabus) aeruginosus aeruginosus* Fischer von Waldheim, 1822, *Carabus (Morphocarabus) aeruginosus herrmanni* Mannerheim, 1827, *Carabus (Morphocarabus) aeruginosus salechardensis* Obydov, 1999 and *Carabus (Morphocarabus) aeruginosus pitschugini* ssp. n.

Recently I have received small series (2 males and female) of *Carabus (Morphocarabus) aeruginosus* collected in the eastern Sajans, Tunkinskie Goltzy (East Siberia). The collected specimens differ from other subspecies of *Carabus (Morphocarabus) aeruginosus* by many features, distributed on periphery of a specific area of *Carabus aeruginosus* and represent a new subspecies, most probably limited to Tunkinskie Goltzy Mountains. A new subspecies of *Carabus (Morphocarabus) aeruginosus* Fischer von Waldheim, 1822 is described in this work. Diagnostic data are given.

***Carabus (Morphocarabus) aeruginosus pitschugini* ssp. n.**

(Figs. 1, 2)

Holotype: male with label: "East Siberia, Tunkinskie Goltzy (East Sajans), Mondy env., 24.VI.1979, E. Ya. Berlov leg.

Papatypes: male and female, same data and same locality.

The holotype is preserved in the collection of the State Museum of Biology (Moscow, Russia). The paratypes are preserved in the collection of Nikolai Yu. PICHUGIN (Vladimir, Russia).

Description: Body length in males is 20.0 - 22.4 mm (including mandibles), width 7.3 - 8.3 mm; body length in female is 21.0 mm, width 7.8 mm.

Head not thickened; ratio width of pronotum/width of head 2.10; eyes strongly convex; mandibles relatively short and broad, slightly incurved and sharply pointed at the apex; terebral tooth of the right and left mandibles bidentate, strongly prominent; retinaculum of right and left mandibles about equally developed, triangular, prominent; surface of mandibles smooth. Frontal furrows relatively deep and shallow, inside smooth or with few coarse wrinkles. Head nearly smooth. Frons, vertex and neck with few coarse wrinkles. Labrum wider than clypeus, strongly notched, with two lateral setae. Antennae protruding beyond the base of pronotum by three-four apical segments; palpi slightly dilated; penultimate segment of the maxillary palpi equal to the last segment; penultimate segment of the labial palpi with two setae. Mentum tooth very short, much shorter than lateral lobes; submentum with two or four setae.

Pronotum convex; broadest at about middle; ratio width/length 1.50. Disk of pronotum with dense coarse punctures, posteriorly pronotum with dense coarse wrinkles; pronotal sculpture less rough laterally. Median longitudinal line distinct; basal foveae big and deep, inside coarsely-wrinkled. Sides of pronotum narrowly margined; lobes of hind angles short, evenly rounded, bent downwards. Lateral margin with two setiferous pores: one pore at about middle and one pore near hind angle.

Elytra short-oval, strongly convex; widest behind middle; shoulders prominent; sides of elytra narrowly margined. Ratio length/width 1.50; ratio width of elytra/width of pronotum 1.32. Elytral sculpture: all elytral interspaces

slightly convex, about equally developed, primary elytral interspaces interrupted into relatively long and short links, secondary and tertiaries uninterrupted. Primary foveoles indistinct; striae finely punctured.

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

Legs of normal length; fore male tarsi with four dilated segments bearing hairy pads.

Shape of aedeagus and endophallic structure (Fig. 3) in general is characteristic for species.

Head and pronotum black, elytra brown, elytral margins black. Mandibles, palpi, antennae, legs, claws and ventral body surface black or dark brown.

Differential diagnosis: The new subspecies differs from nominotypical subspecies of *Carabus aeruginosus* by following features: body much smaller (Fig.4) and more robust (body length in the new subspecies is 20.0 – 22.4 mm; in *Carabus aeruginosus aeruginosus* – 25.0 – 35.0 mm); head nearly smooth (in *Carabus aeruginosus aeruginosus* with dense coarse wrinkles); mentum tooth broader and shorter; pronotum more convex; elytra broader, more convex and shorter (ratio length/width is 1.52, while in *Carabus aeruginosus aeruginosus* this coefficient is 1.58); elytral sculpture less rough, elytral interspaces less convex; primary elytral foveoles less distinct. From other subspecies of *Carabus aeruginosus* the new subspecies differs by less rough sculpture of head; less rough elytral sculpture and much smaller body size.

Distribution: East Siberia, eastern Sajans, Tunkinskie Goltzy Mountains.

Etymology: The new subspecies is named in honour of Russian entomologist Mr. Nikolai Yu. PICHUGIN (Vladimir).

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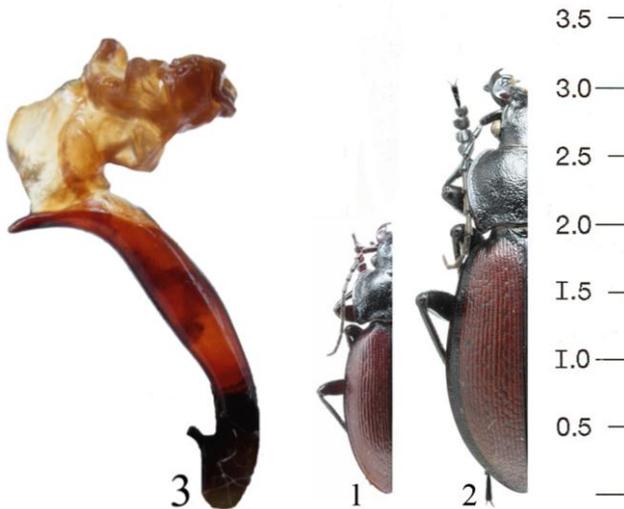
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Figures 1, 2. 1. *Carabus (Morphocarabus) aeruginosus pitschugini* ssp. n. (holotype). 2. *Carabus (Morphocarabus) aeruginosus pitschugini* ssp. n. (paratype).



Figures 3, 4. Fig. 3. Aedeagus and endophallus of *Carabus (Morphocarabus) aeruginosus pitschugini* ssp. n. Fig. 4. Differences in average body size of *Carabus aeruginosus*: 1. *Carabus aeruginosus pitschugini* ssp. n.; 2. *Carabus aeruginosus aeruginosus* (from Barnaul environs).