# A NEW SUBSPECIES OF *CARABUS (MORPHOCARABUS) ODORATUS* MOTCHULSKY, 1844 (COLEOPTERA, CARABIDAE) FROM EASTERN SIBERIA.

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ABSTRACT: A new subspecies: *Carabus (Morphocarabus) odoratus divnoensis* ssp. n. is described and figured. Diagnostic data are given.

KEY WORDS: Coleoptera, Carabidae, *Carabus (Morphocarabus) odoratus*, new subspecies, Eastern Siberia.

*Carabus odoratus* Motchulsky, 1844 is distributed from the Yamal Peninsula, and all around Siberia to the Magadan area and Kamchatka Peninsula; in southern Siberia from Altai up to the Khabarovsk territories. In the south of Far East Russia the species is absent.

The wide area of this species is inhabited by many unequally differing populations. Some of the groups of populations, undoubtedly, must be considered as a subspecies. At the same time, the majority of populations constitutes 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 *C. odoratus* are described. The majority of infraspecific names must be treated as synonyms. The species has a large number of subspecies and local forms. In the Siberia and north of Far East Russia the species is represented by 20 subspecies.

In the southern part of the area the species occurs in the mountain tundra and in the scree, at altitudes from 1500 to 2600 m above sea level; in the northern part of the area it usually inhabits plain tundra and forest tundra.

In 1998, in Eastern Siberia, near Divnogorsk City a series of *Carabus odoratus* were collected. The collected specimens are rather peculiar morphologically, externally resembling *Carabus kozhantschikovi* Lutshnik, 1924 and should be considered as a new subspecies. The described subspecies is not similar to any Siberian subspecies of *Carabus odoratus*.

The description of *Carabus (Morphocarabus) odoratus divnoensis* ssp. n. is given below.

## DESCRIPTION

### *Carabus (Morphocarabus) odoratus divnoensis* ssp. n.

(Figs 1,2,3)

Holotype: male, Eastern Siberia, Krasnoyarsk Region, Divnogorsk Distr., Shumikha Village environs, 26.VI-10.VII.1998, L. Shumakov leg.

Paratypes: 3 males, 6 females, same data and same locality.

The holotype and the paratypes are preserved in the collection of the State Museum of Biology (Moscow, Russia).

Body length in males is 15.6 - 17.5 mm (including mandibles), width 5.3 - 6.2 mm; body length in females is 16.4 - 18.5 mm, width 6.3 - 7.0 mm.

Head not thickened, ratio width of pronotum/ width of head 1.54; eyes strongly convex; mandibles relatively short, strongly curved and sharply pointed at the apex; surface of mandibles smooth; retinaculum of the right and left mandibles bi-dentate, strongly prominent. Frontal furrows deep and relatively short, inside with sparse coarse punctures or wrinkles. Frons nearly smooth or with dense coarse punctures, vertex and neck coarsely punctured, laterally frons, vertex and neck with a few coarse wrinkles. Labrum wider than clypeus, strongly notched, with two lateral setae. Antenna long, protruding beyond the base of pronotum by four (females) or five (males) apical segments; palpi moderately dilated; penultimate segment of the maxillary palpi longer than the last segment; penultimate segment of the labial palpi with two setae. Mentum tooth obtusely-triangular, slightly shorter than lateral lobes; submentum with two setae.

Prothorax relatively narrow, sometimes nearly cordiform, broadest before the middle, rarely at about the middle; ratio width/length 1.50. Pronotum strongly depressed with dense coarse punctuation and coarse transverse wrinkles, laterally with more coarse sculpture, posteriorly with few longer coarse wrinkles. Median longitudinal line indistinct; basal foveae not deep, inside coarsely-punctured. Sides of pronotum relatively broadly margined, bent upwards; lobes of hind angles relatively short, evenly rounded, slightly bent downwards. Lateral margin with three-four lateral setae.

Elytra oblong-oval, strongly depressed, widest behind the middle; ratio length/width 1.62; ratio width of elytra/width of pronotum 1.46; shoulders evenly rounded; sides of elytra broadly margined, elytral margin coarsely-granular.

Elytral sculpture triploid, homodynamous (all elytral interspaces about equally developed, interrupted into the short links); striae coarsely punctured; primary elytral foveoles indistinct.

Ventral body surface smooth, metepisternum smooth, longer than its width; sides of abdomen slightly wrinkled; last abdominal segment bearing up to 8-12 setae on the apex, fourth and fifth segments without setae; sternal sulci absent.

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

Shape of aedeagus and endophallic structure in general is characteristic for the species. Aedeagus (Fig. 2) strongly curved near the base, in distal part nearly straight, apical lamella relatively narrow, strongly bent downward. Endophallus (Fig.3): basal ventral lobe prominent; ventral apical lobe also prominent; dorsal apical lobe small, slightly convex; dorsal lateral lobes relatively small, convex; median lateral lobes big, strongly convex; right basal lateral lobe small; left basal lateral lobe much bigger convex; ligulum small, slightly prominent; aggonoporius consists of two small symmetric plates.

Coloration of the body bright, strongly constant: pronotum reddish-bronze, elytra green; mandibles, palpi, four basal antenna segments (apically) and legs reddish-brown; ventral body surface brown.

***Differential diagnosis.*** The new subspecies strongly differs from *C. odoratus martjanovianus* Obydov, 1999a, which is distributed in Eastern Siberia (type locality of this subspecies is situated not far from the type locality of *Carabus odoratus divnoensis* ssp. n.) by the following characters: eyes more convex; frontal furrows longer; labrum more strongly notched; retinaculum of the right and left mandibles more prominent; mentum tooth shorter and more obtuse, pronotum narrower, strongly depressed, nearly cordiform (in *C. odoratus martjanovianus* pronotum more convex, broader), pronotal basal foveae less deep; elytra narrower, oblong-oval, strongly depressed with homodynamous sculpture (in *C. odoratus martjanovianus* elytra broader, oval, more convex, sometimes with heterodynamous sculpture); legs of the new subspecies longer. The new subspecies strongly differs from *C. odoratus martjanovianus* by shape of the aedeagus: apical lamella narrower, more bent downward. Coloration of the new subspecies brighter, strongly constant: pronotum reddish-bronze, elytra green; mandibles, palpi, four basal antenna segments and legs reddish-brown; ventral body surface brown (in *C. odoratus martjanovianus* pronotum and elytrae black with bronze, green or blue lustre; margin of elytrae blue or green; primary elytral foveoles bronze or blue; ventral body surface, femurs, clypeus and antennae blackish brown). Body of the new subspecies much shorter.

From other East Siberian subspecies of *C. odoratus* the new subspecies differs by narrower, strongly depressed, nearly cordiform pronotum; narrower, oblong-oval, strongly depressed elytra; longer legs; shape of aedeagus and small body.

***Distribution.*** Up to now, the new subspecies is only known from the type locality (Eastern Siberia, Divnogorsk environs).

***Habitat.*** The type specimens were collected in the scree and stone fields from under the stones.

***Etymology.*** The specific name is derived from the name of Divnogorsk City environs, where the new subspecies was found.

## DISCUSSION

The new subspecies is not similar to any Siberian subspecies of *Carabus odoratus* and probably it is the smallest Siberian subspecies. The new subspecies occurs on stony mountains and has the characters of petrophilous specialization (strongly depressed, narrow elytra and pronotum, long legs). Others East Siberian subspecies (for example *C. odoratus baeri* Ménétriés, 1851 and *C. odoratus magadanicus* Obydov, 1999b, which inhabit tundra and forest tundra have relatively convex elytra and pronotum and rather short legs. Externally the new subspecies resembles *Carabus kozhantschikovi* Lutshnik, 1924, which also occur in the scree and stone fields. Probably *C. odoratus divnoensis* ssp. n. is the most ancient subspecies, isolated in the highest tops of a stony mountains soon after the last glaciation, while the moving other East Siberian subspecies of *C. odoratus* in tundra biotopes went gradually after the last glaciation.

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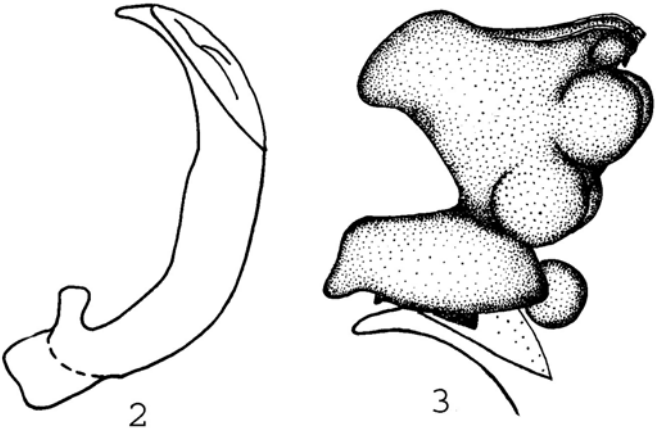
Fig. 1. *Carabus (Morphocarabus) odoratus divnoensis* ssp. n. (holotype, general view).




Figs. 2-3. Male genital structure of *Carabus odoratus divnoensis* ssp. n.: 2. aedeagus (lateral view); 3. endophallus in complete extension (lateral view).