

A natural interspecific hybrid between *Carabus (Morphocarabus) odoratus* Motchulsky, 1844 and *Carabus (Carabus) arvensis* Herbst, 1784 (Coleoptera: Carabidae)

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Abstract. A natural hybrid between *Carabus (Morphocarabus) odoratus antropovi* Shilenkov, 1996 and *Carabus (Carabus) arvensis conciliator* Fischer von Waldheim, 1822 is described and figured.

Key words: Coleoptera, Carabidae, *Carabus*, natural hybrid, south Siberia, eastern Tuva.

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INTRODUCTION

Up to now, many natural hybrids of different species of the genus *Carabus* have been described. Usually natural hybrids are easily to distinguish, because they are single individuals among rich populations of the initial species and the morphology and colorations of hybrids are exactly intermediate between the parents.

Natural hybrids of some species can be found rather often in some regions. For example, natural hybrids between *Carabus (Eotribax) eous* Morawitz, 1889 and *Carabus (Alipaster) pupulus* Morawitz, 1889 were known earlier. These two species are not rare, occur often sympatric and the natural hybrids between them are not a rarity (Obydov, 2007a). *Carabus (Cratocechenus) niedli* Gottwald, 1987 (hyb.

Carabus (Cratocechenus) akinini loudai Gottwald, 1987 X *Carabus (Cratocephalus) cicatricosus corrugis* Dohrn, 1882), is found relatively frequently in the eastern part of the Kirghiz Mt. Ridge, among dense populations of *Carabus akinini loudai* and *Carabus cicatricosus corrugis*.

Natural hybrids have been found much less often in Siberia. A unique known hybrid from Siberia is the natural interspecific hybrid *Carabus (Morphocarabus) eschscholtzi zyrjanovskianus* Shilenkov, 1996 X *Carabus (Morphocarabus) regalis regalis* Fischer von Waldheim, 1822 (Obydov, 1999).

Natural hybrids between species of the subgenera *Morphocarabus* and *Carabus* s. str. were not known till now. The description of a

natural hybrid between *Carabus (Morphocarabus) odoratus antropovi* Shilenkov, 1996 and *Carabus (Carabus) arvensis conciliator* Fischer von Waldheim, 1822 (Fig. 1a) is given below.

MATERIAL

Male: south Siberia, eastern Tuva, upper level of Naryn River Valley, 1900 m, 50°13'N96°15'E, 24.VI.1996, D. Obydov leg.

The specimen is preserved in the collection of the State Museum of Biology (Moscow, Russia).

DESCRIPTION

***Carabus (Morphocarabus) odoratus antropovi* Shilenkov, 1996 (Fig. 1b) X *Carabus (Carabus) arvensis conciliator* Fischer von Waldheim, 1822 (Fig. 1c)**

Body length is 16.5 mm (including mandibles), body width is 6.6 mm.

Body more convex than in *C. odoratus antropovi* but less convex than in *C. arvensis conciliator*.

Head not thickened; ratio width of pronotum/width of head 2.20; eyes prominent. Mandibles less incurved, shorter and broader than in *C. odoratus antropovi* but longer and narrower than in *C. arvensis conciliator*; surface of mandibles smooth. Frontal furrows short and shallow, inside with few coarse wrinkles as in *C. arvensis conciliator*; frons, vertex and neck with coarse punctures as in *C. odoratus antropovi* and with fewer coarse wrinkles as in *C. arvensis conciliator*; laterally vertex with coarse wrinkles as in *C. arvensis conciliator*. Labrum wider than clypeus, moderately notched as in *C. arvensis conciliator*, with two lateral setae. Antenna protruding beyond the base of pronotum by four apical joints, longer than in *C. arvensis conciliator* but shorter than in *C. odoratus antropovi*; palpi shorter than

in *C. arvensis conciliator* and *C. odoratus antropovi*, slightly dilated; penultimate joint of the maxillary palpi slightly shorter than the last joint; penultimate joint of the labial palpi with two setae. Mentum tooth triangular broad as in *C. odoratus antropovi*, shorter than lateral lobes; submentum with two setiferous pores.

Prothorax narrower than in *C. arvensis conciliator* and *C. odoratus antropovi*; ratio width/length 1.72. Pronotum relatively convex as in *C. arvensis conciliator*, with dense coarse punctation; median longitudinal line distinct; basal foveae not deep as in *C. arvensis conciliator*, inside with dense coarse wrinkles and punctures. Lobes of hind angles short, evenly rounded. Sides of pronotum narrowly margined and bent upward posteriorly as in *C. arvensis conciliator*, lateral margin with two setae.

Elytrae oval, more convex than in *C. odoratus antropovi* but less convex than in *C. arvensis conciliator*; widest before middle; shoulders prominent as in *C. arvensis conciliator*, not so rounded as in *C. odoratus antropovi*; sides of elytrae broadly margined. Ratio length/width 1.37; ratio width of elytrae/width of pronotum 1.53. Elytral sculpture exactly intermediate between elytral sculpture of *C. odoratus antropovi* and *C. arvensis conciliator* (Fig. 4); primary elytral foveoles distinct.

Abdominal sternites smooth, metepisternum with sparse fine punctures, not longer than its width; sternal sulci indistinct as in *C. arvensis conciliator*. Legs of normal length, not as long as in *C. odoratus antropovi*; anterior tarsi with four dilated segments bearing hairy pads.

Coloration greenish-bronze; antennae, legs and ventral body surface black.

Distribution. South Siberia, eastern Tuva, upper level of Naryn River Valley, 1900 m.

Habitat. The specimen was collected under a stone in a stone field.

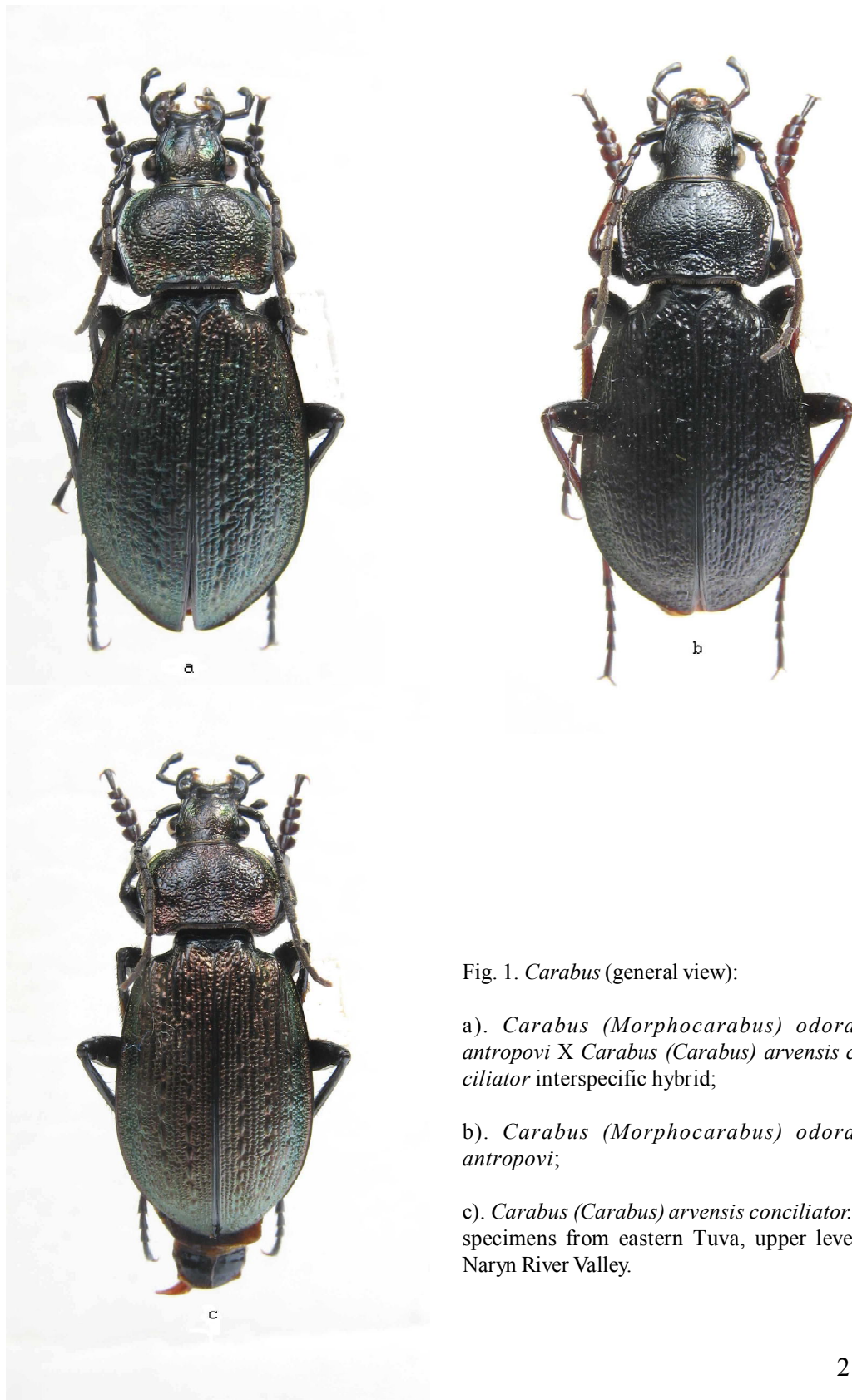


Fig. 1. *Carabus* (general view):

a). *Carabus (Morphocarabus) odoratus antropovi* X *Carabus (Carabus) arvensis conciliator* interspecific hybrid;

b). *Carabus (Morphocarabus) odoratus antropovi*;

c). *Carabus (Carabus) arvensis conciliator*. All specimens from eastern Tuva, upper level of Naryn River Valley.



Fig. 2. Elytral sculpture of *Carabus (Morphocarabus) odoratus antropovi* X *Carabus (Carabus) arvensis conciliator* interspecific hybrid.

DISCUSSION

The majority of natural hybrids have been originally described as species, for example: *C. karkarensis* Kabak et Ovchinnikov, 1994 (?hyb. *C. (Eotribax) valikhanovi* X *C. (Alipaster) pupulus*); *C. dissimulatus* Deuve, 1991 (hyb. *C. (Eotribax) valikhanovi* X *C. (Alipaster) pupulus*); *C. manap* Buezina et Kabak, 1993 (hyb. *C. (Eotribax) eous* X *C. (Alipaster) pupulus*); *C. siniaevi* Deuve, 1993 (hyb. *C. (Eotribax) eous* X *C. (Alipaster) pupulus*); *C. wrzecionkoi* Deuve, 1991 (hyb. *C. (Eotribax) valikhanovi* X *C. (Cratocechenus) akinini puellus*); *C. niedli* Gottwald, 1987 (hyb. *C. (Cratocechenus) akinini loudai* X *C. (Cratocephalus) cicatricosus corrugis*); *C. kleinfeldorum* Kabak et Putschkov, 1995 (?hyb. *C. (Pantophyrtus) turcomanorum* X *C. (Cratocephalus) cicatricosus corrugis*); *C. evstigneevi* Obydov, 1997 (hyb. *C.*

(*Pantophyrtus*) *brachypedilus* X *C. (Cratocephalus) cicatricosus corrugis*).

Many nonexistent species actually are natural interspecific hybrids. *Carabus alajensis* Semenov, 1896 has not been recollected since its description and probably is a natural hybrid between *C. (Pantophyrtus) turcomanorum* and *C. (Deroplectes) staudingeri*.

There are various opinions concerning the expediency of the description of natural interspecific hybrids. I consider that natural interspecific hybrids are necessary to describe, to prevent that they will subsequently be described as a "good" species, based on single specimen.

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