

Zeitschrift: Entomologica Basiliensia
Herausgeber: Naturhistorisches Museum Basel, Entomologische Sammlungen
Band: 16 (1993)

Artikel: On new carabids of the genus Carabus L. (Coleoptera, Carabidae) from the Caucasus [4th contribution]
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DOI: <https://doi.org/10.5169/seals-980480>

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Entomologica Basiliensia	16	37-57	1993	ISSN 0253-2484
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On new carabids of the genus *Carabus* L. (Coleoptera, Carabidae) from the Caucasus. 4th contribution¹⁾

I. A. Belousov and A. S. Zamotajlov

Abstract: Two species and three subspecies of the genus *Carabus* L. from the Caucasus are described as new: *C. (Tribax) circassicus koshtanensis* n.ssp. (Kabardino-Balkaria), *C. (Tribax) onerosus* n.sp. (W Georgia), *C. (Tribax) apschuanus galianus* n.ssp. (E. Abkhazia), *C. (Archiplectes) shtchurovi* n.sp. (Kabardino-Balkaria) and *C. (Archiplectes) satyrus napraensis* n.ssp. (W Abkhazia). Subspecific status of *C. (Cechenochilus) boeberi buschi* Semenov & Znojko is resurrected, redescription of *C. (Tribax) balkaricus* Belousov & Abdurakhmanov is given.

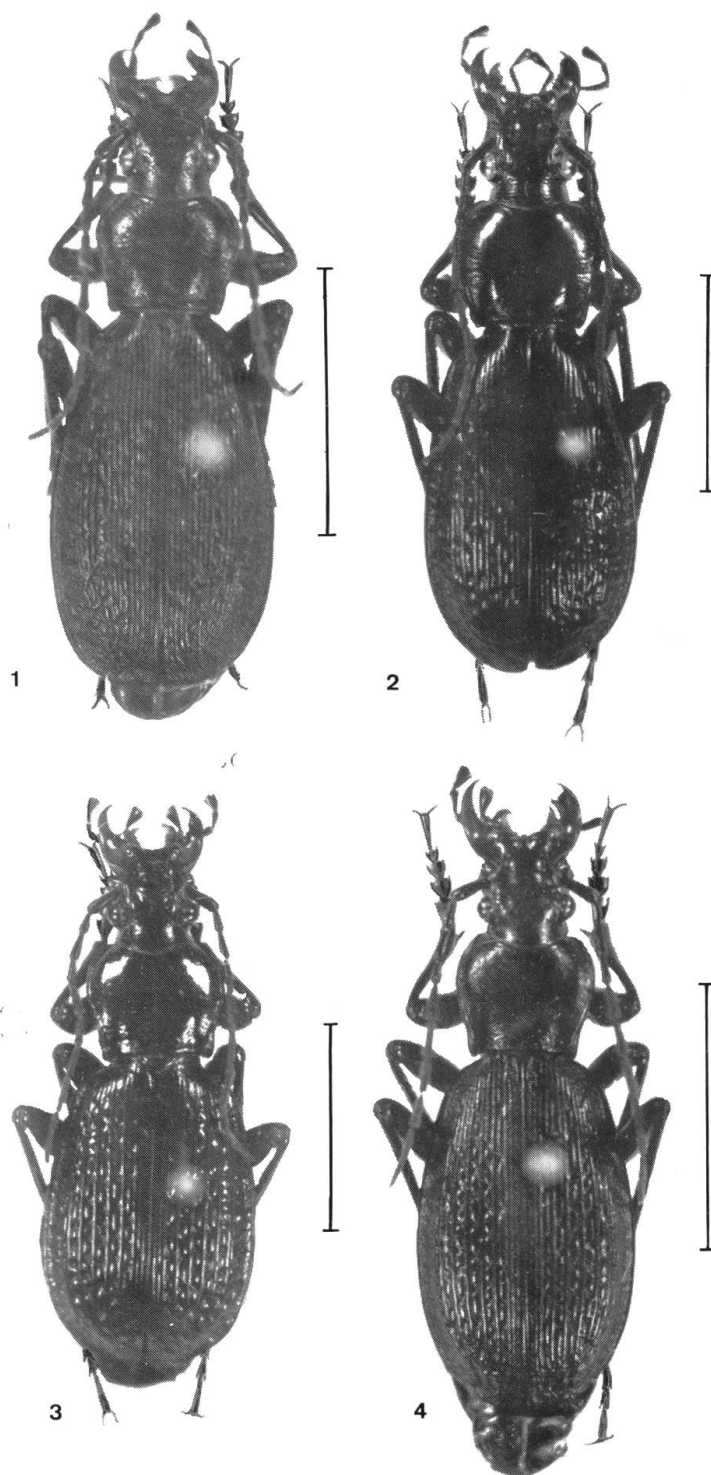
Key words: Coleoptera Carabidae – Caucasus – *Carabus* – new species and subspecies – taxonomy.

The present contribution is based chiefly on the materials recently collected by the authors and members of the section of the Russian Entomological Society in Krasnodar, namely Dr A. I. Miroshnikov, Dipl.-Agr. V. N. Orlov, Mr. A. Yu. Solodovnikov, and Mr. V. I. Shchurov, during their Caucasian expeditions of 1991 and 1992. The survey has been conducted also due to the kind help of Dr. B. M. Kataev, St. Petersburg, who took part in several collecting trips over the Caucasus together with the first author and provided us with interesting materials for study. Before going further, we want to express also our sincere thanks to Dr. A. G. Koval, St. Petersburg, for his materials from Mingrelia, Dr. O. L. Kryzhanovskij, St. Petersburg, for his permission to examine type materials, deposited in the Zoological Institute of Russian Academy of Sciences, and to Dr. Y. Imura, Yokohama, for the valuable information on holotype of *C. pseudoplatessa* Gottw.

The abbreviations used herein for indication of deposition of the type materials are as follows:

- ZISP = Zoological Institute of the Russian Academy of Sciences, St. Petersburg
- NHMB = Natural History Museum, Basel
- AK = collection of Mr. A. G. Koval, St. Petersburg
- AM = collection of Dr. A. I. Miroshnikov, Krasnodar

¹⁾ Continuation of the series, beginning see Entomologica Basiliensia, volumes 13, 14, 15



Figs 1–2: *Carabus*, general view. 1, *C. circassicus koshtanensis* n.ssp. holotype. 2, *C. onerosus* n.sp., paratype from Mt Kvira. 3, Figs 3–4: 3, *C. apschuanus galianus* n.ssp., paratype from Mt Okhachku. 4, *C. balkaricus* Belousov & Abdurakhmanov, holotype. Scale: 10 mm.

- AZ = collection of Dr. A. S. Zamotajlov, Krasnodar
BK = collection of Dr. B. M. Kataev, St. Petersburg
IB = collection of Dr. I. A. Belousov, St. Petersburg

1. *Carabus (Tribax) circassicus koshtanensis* n.ssp. Figs 1, 5, 12, 13, 29.

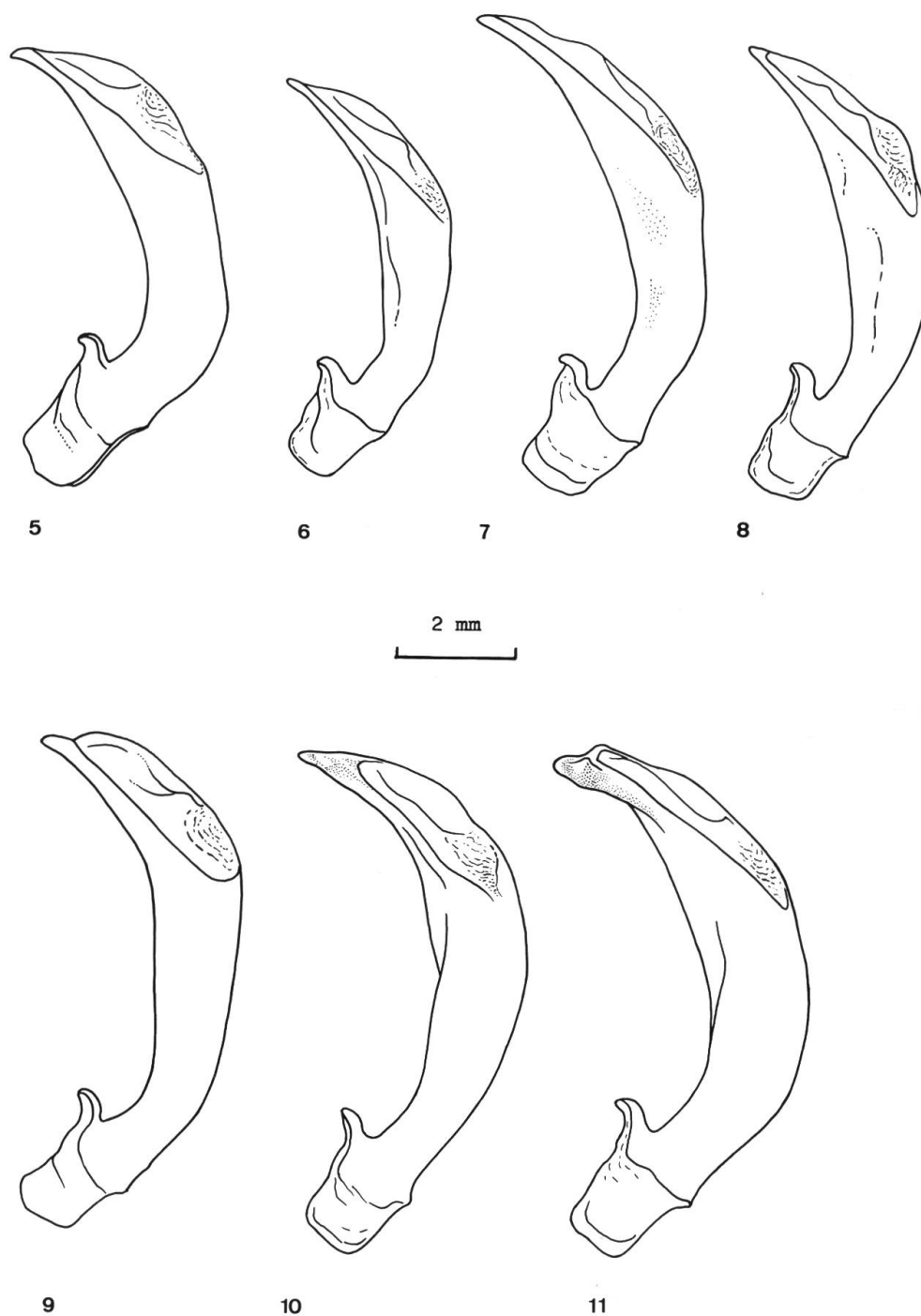
? *Carabus circassicus teberdensis* ZOLOTAREW, BREUNING, 1934, Monogr. Carabus: 1106 (partim).

Habitus (Fig. 1): Length 23 mm. Black, dorsum with a hint of blue lustre, legs black. Fairly slender subspecies.

Head normal, proportion of width of pronotum to width of head 1.38, frontal furrows distinct, slightly divergent posteriad, eyes moderately convex, only one supraorbital pore, situated at about mid-eye level, present; surface rugous; antennae long, reaching fully beyond basal one third of elytra; tooth of mentum short, pointed. Pronotum subcordate, 1.31 times as wide as long, proportions of maximum width to basal width 1.38, and of maximum width to apical width 1.06; front margin distinctly bordered, with fairly developed frontal bulge, lateral sides conspicuously and evenly bordered, with 3–4 setiferous pores in front and 2 pores near hind angles on each side; hind angles faintly although distinctly protrudent backwards, rounded; disk rugous, with sparse and coarse punctures. Elytra oblong-ovate, flattened, very narrow in front, 1.66 times as long as wide and 1.57 times as wide as pronotum, shoulders inconspicuous; elytral sculpture coarse and distinct, homodynamous, composed of 13 interspaces, primaries and secondaries interrupted by shallow, inconspicuous foveoles, links of primary interspaces long, of secondary ones much shorter; lateral explanate border narrow, contracted towards base. Ventral surface smooth, lateral sides of sternites gently rugous. Aedeagus (Figs 5, 12, 13) strongly bent step-like at base, apical lamella rather narrow, at apex somewhat beak-shaped, distinctly bent ventrally. Copulatory pieces (Fig. 29) composed of single asymmetric subtriangular sclerite with broad membranous longitudinal field along its right edge, it is strongly bent dorso-ventrally, base broad, with rather long process on the right, apex of sclerotized part acute.

Holotype: ♂ (ZISP), Kabardino-Balkaria, Bezengi env., source of river Mizhirgi, 24. VI. 1991, N. Grishchenko.

So far as the authors are aware, this form differs from all known populations of *C. circassicus* Ganglb. in inconspicuous shoulders,



Figs 5–11: *Carabus*, aedeagus, right lateral view 5, *C. circassicus koshtanensis* n.ssp., holotype. 6, *C. kasbekianus veselyi* Gottw., from Mt Bangurian. 7, *C. onerosus* n.sp., paratype from Mt Kvira. 8, *C. apschuanus galianus* n.ssp., paratype from Mt Okhachku. 9, *C. balkaricus* Belousov & Adburakhmanov, holotype. 10, *C. shtchurovi* n.sp., holotype. 11, *C. satyrus napraensis* n.ssp., paratype from Mt Napra.

narrow elytra with lateral sides fairly strongly dilated from behind shoulders to widest par (although some high-altitude populations from Abishira-Akhuba Mt Range possess somewhat close habitus), and in narrow and strongly bent at base aedeagus with apical lamella distinctly curved ventrally. Examination of materials from different localities of the North Caucasus revealed, that *C. circassicus koshtanensis* n.ssp. possesses extraordinary broad at base sclerite of copulatory piece, except for a specimen from "Elborus G." (ZISP) (Figs 24–29), the latter being easternmost of all hitherto known localities of *C. circassicus* Ganglb., the most geographically close to that of the new subspecies. Individuals with broad base of copulatory pieces are also known from Abkhazia (Bzybian Karst Plateau), however *C. circassicus koshtanensis* n.ssp. is distinguishable from such specimens in extremely narrow distal part of sclerite, forming acute angle at its tip. The new subspecies differs also from populations inhabiting eastern part of the NW Caucasus (i.e. subspecies *teberdensis* Zolot.) in elytral sculpture, particularly in secondary interspaces being rather densely interrupted by foveoles.

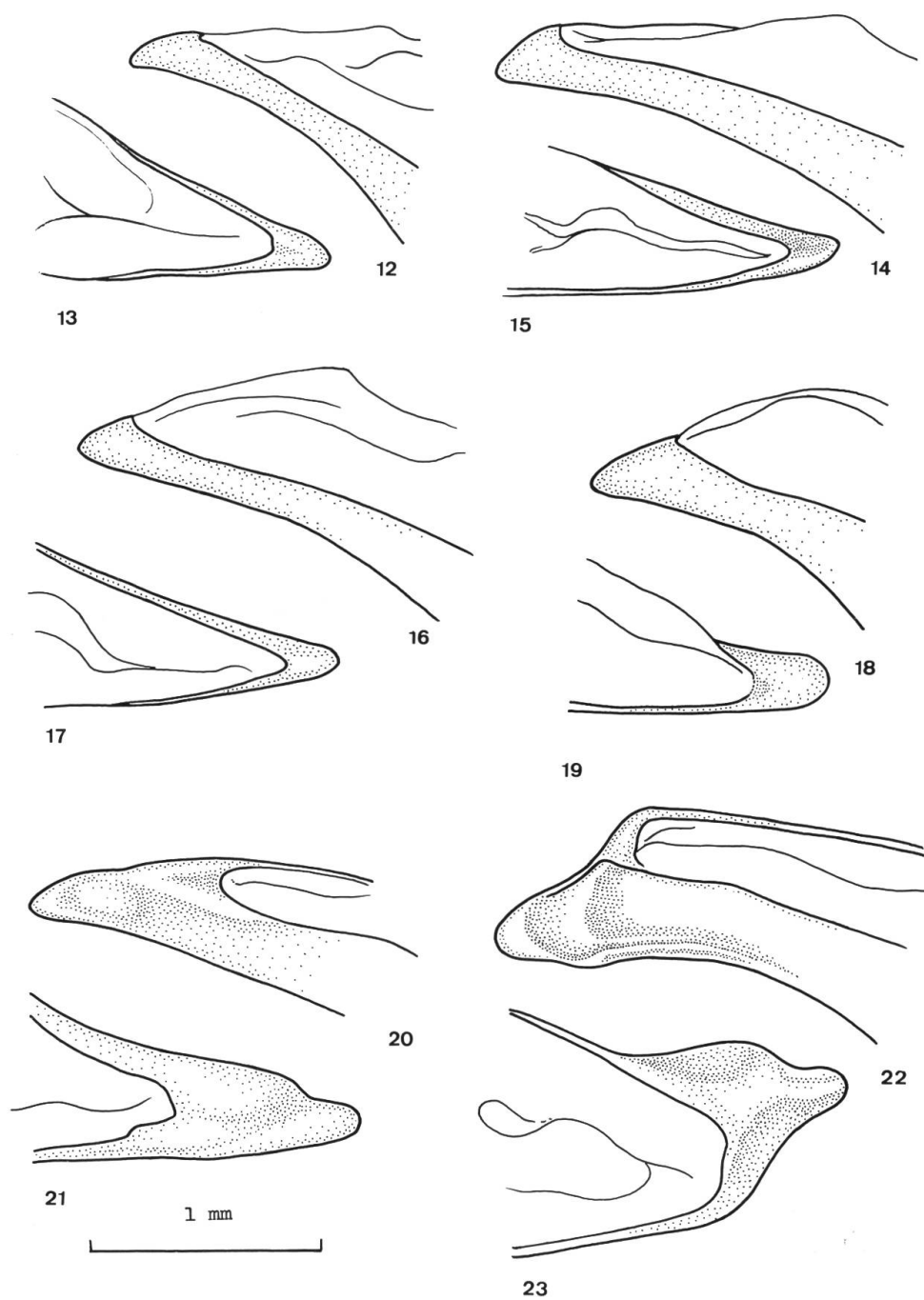
The authors are still doubtful about the taxonomic status of the present form, though since it is known by a single specimen, we have no enough material for its precision. Type locality of the new form seems to be strongly isolated from the range of *C. circassicus* Ganglb., this fact could be interpreted apparently as an evidence of its specific status.

The type specimen was collected at mixed-grass alpine meadow.

2. *Carabus (Tribax) onerosus* n.sp. Figs 2, 7, 14, 15, 33, 38, 39.

Habitus (Fig. 2): Length 23–30 mm (females being usually somewhat larger, average length of females ca. 28 mm, of males ca. 25 mm). Black, shiny, dorsum with blue or violet metallic lustre, sometimes dark greenish, lateral margins of pronotum and elytra brighter, with various tink; antennae and legs usually black, although rufobasal and rufofemoral individuals are also rather abundant within some populations, predominating over one from the right bank of river Magana. Large and rather plump species with fairly convex dorsum, related to *C. kasbekianus* Kraatz.

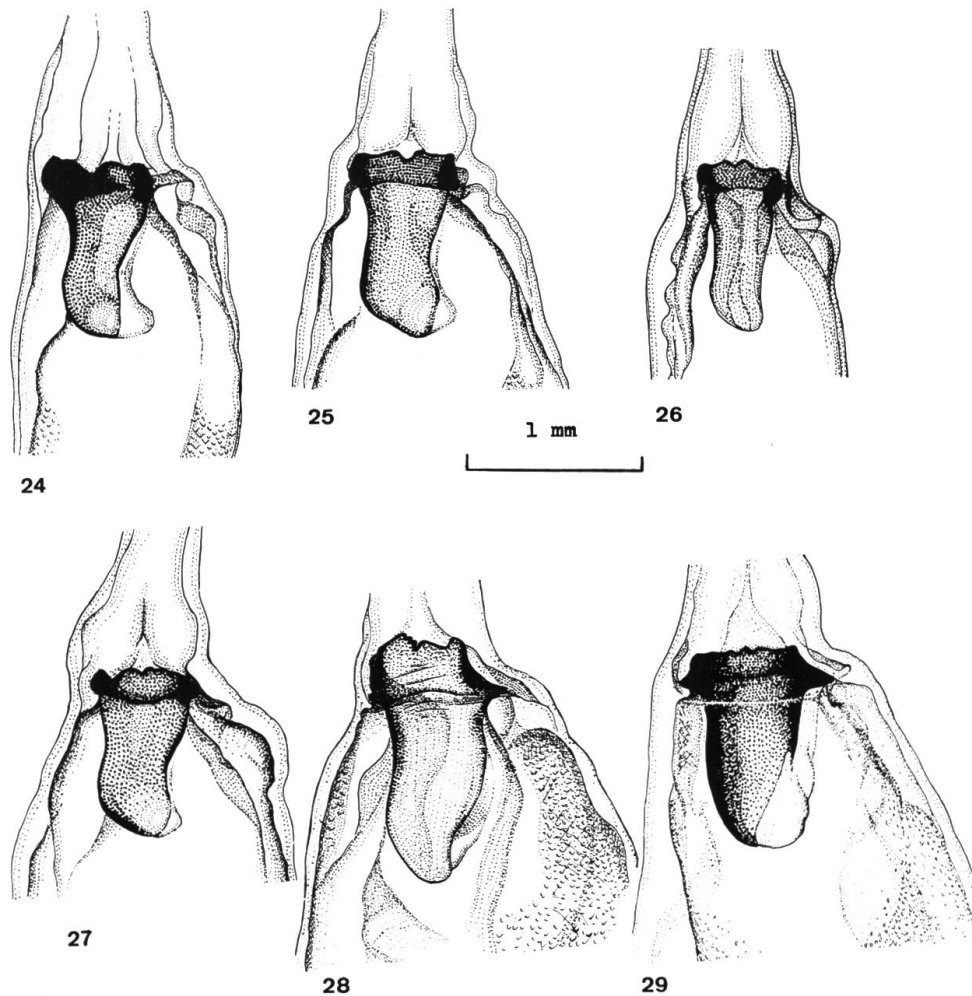
Head moderately thick, proportion of width of pronotum to width of head 1.32–1.50; surface smooth, only at vertex faintly and indistinctly rugous; antennae in males reaching before middle of elytra, in



Figs 12–23: *Carabus*, aedeagus, apex. 12, *C. circassicus koshtanensis* n.ssp., holotype, right lateral view. 13, idem, dorsal view. 14, *C. onerosus* n.sp., paratype from Mt Kvira, right lateral view. 15, idem dorsal view. 16, *C. apschuanus galianus* n.ssp., paratype from Mt Okhachku, right lateral view. 17, idem, dorsal view. 18, *C. balkaricus* Belousov & Abdurakhmanov, holotype, right lateral view. 19, idem, dorsal view. 20, *C. shtchurovi* n.sp., holotype, right lateral view. 21, idem, dorsal view. 22, *C. satyrus napraensis* n.ssp., paratype from Mt Napra, right lateral view. 23, idem, dorsal view.

females conspicuously shorter, extending only beyond basal one-third of elytra. Pronotum faintly transverse, 1.26–1.40 times as wide as long (in females being somewhat broader), massive, convex; it is subcordate, weakly contracted posteriad (proportion of maximum width to basal width of pronotum 1.16–1.25), although with prominent hollow of lateral margin before markedly protrudent backwards, beyond basal level, hind angles; surface smooth, shiny, with superficial indistinct wrinkles, punctuation sparse, rather distinct only in basal foveae. Elytra oblong-ovate, 1.53–1.68 times as long as wide and 1.34–1.52 times as wide as pronotum, at disk flattened, lateral sides moderately arcuate; ridges of primary and secondary interspaces interrupted by rather deep and sparse foveoles. Aedeagus (Fig. 7, 14, 15); endophallus (Figs 38, 39); copulatory pieces (Fig. 33) of two symmetric sclerites of irregular shape.

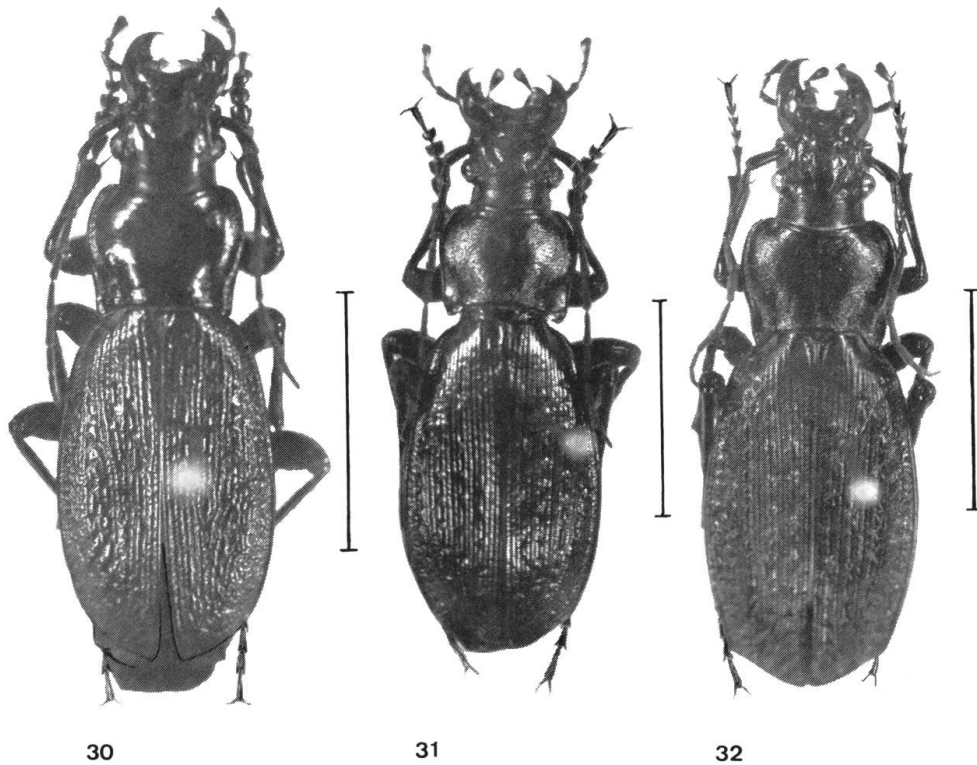
Holotype: ♂ (ZISP), Mingrelia, Egriss Mt Range, NE slopes of Mt Kvira, Kerkhanon 2000 m, 1.VI.1988, I. Belousov & B. Kataev. Paratypes: 2 ♂ & 2 ♀ (NHMB); 4 ♂ & 6 ♀ (IB & BK), same locality, together with holotype. 8 ♂ & 8 ♀ (IB & BK), Mingrelia, Egriss Mt Range, upper reaches of river Dzhiralia, 1700 m, 1.–2.VI.1988, I. Belousov & B. Kataev. 3 ♂ & ♀ (IB & BK), Mingrelia, Egriss Mt Range, upper reaches of river Magana, 1700–2100 m, 4.VI.1988, I. Belousov & B. Kataev. 4 ♂ & 5 ♀ (IB & BK), Mingrelia, Egriss Mt Range, SW slopes of Mt Kvira, 1800–1900 m, 30.V.1988, I. Belousov & B. Kataev. 1 ♂ & 2 ♀ (IB & BK), Mingrelia, Tsalendzhikha distr., NE of Dzhvari, 1300–1700 m, 29.V.1988, I. Belousov & B. Kataev. 4 ♂ (IB), Mingrelia, S foothills of plateau Askhi, source of river Abasha, 1200–1300 m, 11.VII.1990, I. Belousov. 1 ♂ & 1 ♀ (AZ), Mingrelia, Mt Kvira, 2000 m. 13.V.1991, A. Zamotajlov. 16 ♂ & 7 ♀ (AZ & AM); 2 ♂ (IB), Mingrelia, W spurs of Mt Kvira, 1200 m, 13.V.–5.VII.1991, A. Zamotajlov & A. Miroshnikov. 15 ♂ & 17 ♀ (AZ & AM); 1 ♂ & 1 ♀ (IB), Mingrelia, Mt Kvira, 1650 m, 13.V.–5.VII.1991, A. Zamotajlov & A. Miroshnikov. 10 ♂ & 10 ♀ (NHMB); 27 ♂ & 28 ♀ (AZ & AM); 1 ♂ & 1 ♀ (IB), same locality, 1800 m, 13.V.–5.VII.1992, A. Zamotajlov & A. Miroshnikov. 22 ♂ & 17 ♀ (AZ & AM); 2 ♂ (IB), same locality, 2000 m, 13.V.–5.VII.1991, A. Zamotajlov & A. Miroshnikov. 1 ♂ & 4 ♀ (IB), same locality, 15.VII.1991, I. Belousov. 5 ♂ 5 ♀ (NHMB); 85 ♂ & 91 ♀ (AZ & AM); 1 ♂ (IB), Svanetia, right bank of river Magana, 800 m, 12.V.–4.VII. 1991, A. Zamotajlov & A. Miroshnikov. 2 ♂ & 3 ♀ (AZ & AM); 1 ♂ (IB), Mingrelia, valley of river Tekhuri, 12 km S of Lebarde, 950 m,



Figs 24–29: *Carabus circassicus* Ganglb., copulatory pieces of local populations. 24, Bolshoy Zelenchuk valley, Arkhyz env. 25, Source of river Aksaut. 26, source of river Bolshaya Marka. 27, Dzhemahat valley, Teberda env. 28, “Nord Caucas, Elborus G., 8000’”. 29, Source of river Mizhirgi (type locality of *C. circassicus koshtanensis* n.ssp.).

15.V.–6.VII.1991, A. Zamotajlov & A. Miroshnikov. 4 ♂ & 5 ♀ (AZ & AM), Mingrelia, valley of river Tekhuri, Doberazeni env., 500 m, 16.V.–6.VII.1991, A. Zamotajlov & A. Miroshnikov. 8 ♂ & 2 ♀ (AK), same locality, 600–800 m, 30.VI.–23.VIII.1991, A. Koval.

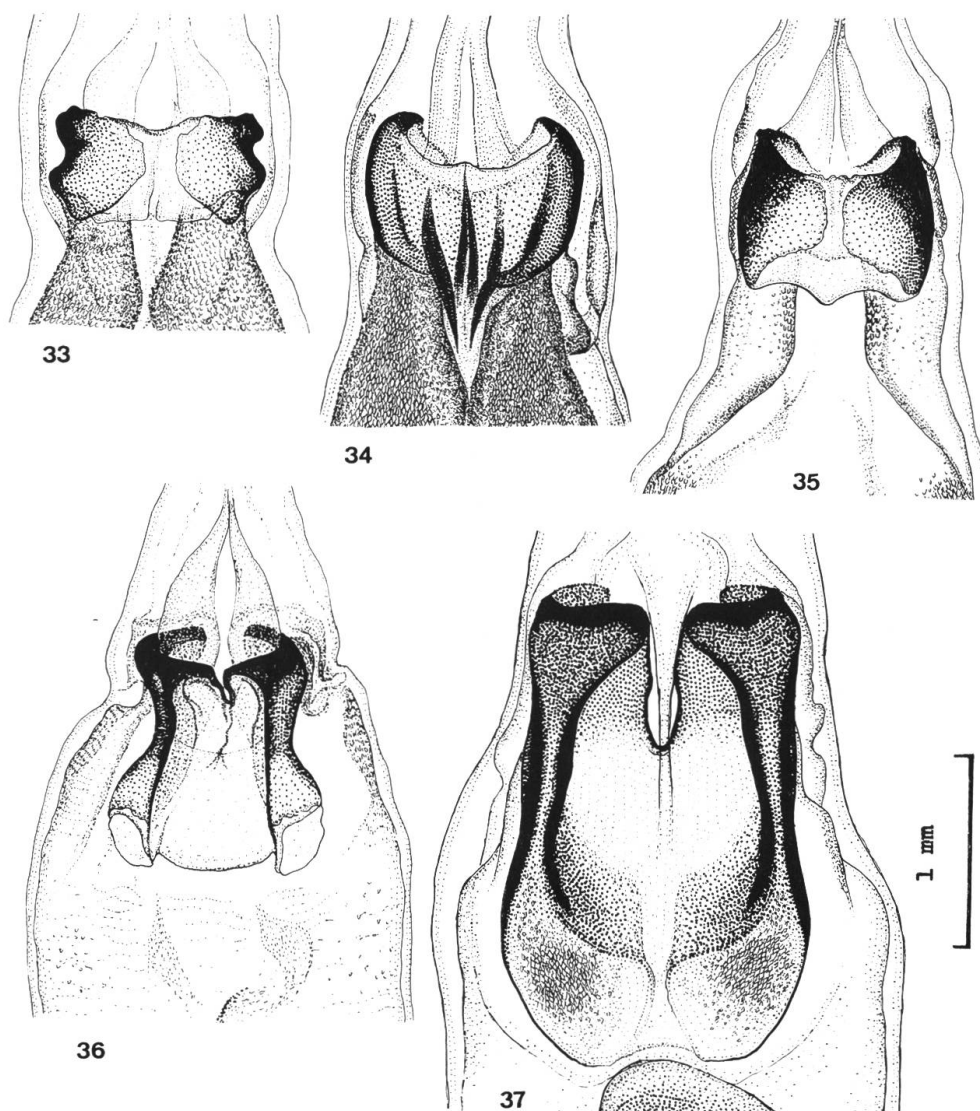
Resembling *C. kasbekianus* Kraatz and its subspecies *veselyi* Gottwald in the structure of male genitalia, the new species is easily distinguishable from them in very massive pronotum (proportion of length of elytra to length of pronotum in *C. onerosus* n.sp. is 2.90–3.20, while in *C. kasbekianus* Kraatz and *C. kasbekianus veselyi*



Figs 30–32: *Carabus*, general view. 30, *C. shtchurovi* n.sp., holotype. 31, *C. satyrus napraensis* n.ssp., paratype from Mt Chibzharga, male. 32, idem, paratype, female. Scale: 10 mm.

Gottw. 3.25–3.60) with smooth, shiny surface (in both above mentioned subspecies of *C. kasbekianus* Kraatz disk of pronotum is rather densely and distinctly punctured, resulting in somewhat more dull surface reflection), and in stronger produced backwards hind angles of pronotum. Furthermore, *C. onerosus* n.sp. differs also from nominotypical subspecies of *C. kasbekianus* Kraatz in conspicuously more sparse elytral punctuation composed of smaller and more shallow punctures. Aedeagus of the same shape as in two above cited subspecies of *C. kasbekianus* Kraatz; copulatory pieces, being also quite similar, are somewhat stronger protrudent in the new species. Median lobe of endophallus is thicker, oblique, with a subtriangular sclerite (Figs 38–41). This character is not always so strongly pronounced, however, specimens transitional in this respect are unknown to the authors now.

In smooth, shiny pronotum and sparse elytral punctuation the new species resembles *C. kasbekianus mingrelicus* Reitt., unknown to the authors in natura. However it is strongly different in blue coloration.



Figs 33–37: *Carabus*, copulatory pieces. 33, *C. onerosus* n.sp., paratype from Mt. Kvira. 34, *C. apschuanus galianus* n.ssp., paratype from Mt Okhachku. 35, *C. balkaricus* Belousov & Abdurakhmanov, holotype. 36, *C. shtchurovi* n.sp., holotype. 37, *C. satyrus napraensis* n.ssp., paratype from Mt Chibzharga.

tion of dorsum (*C. kasbekianus mingrelicus* Reitter possesses „rein schwarze Färbung“), in more convex dorsum (in *C. kasbekianus mingrelicus* Reitter it is „sehr flach“), and in relatively massive, distinctly transverse pronotum (in *C. kasbekianus mingrelicus* Reitter „Halschild so lang als breit“). REITTER (1889) use the latter for delimitation of *C. mingrelicus* Reitt. and *C. circassicus* Ganglb. Actually, proportion of width of pronotum to its length is 1.25–1.43 in *C. circassicus* Ganglb., i.e. very close to that in the species described. Of course,

further investigations can reveal that *C. onerosus* n.sp. and *C. kasbekianus mingrelicus* Reitt. represent actually two subspecies of the same species, in spite of striking external differences.

C. onerosus n.sp. seems to be distributed along foremost karst ranges of Mingrelia from Mt Kvira in the west to Askhi Mt Mass in the east.

The species occurs in different types of leaf-bearing and mixed forests and subalpine meadows.

3. *Carabus (Tribax) apschuanus galianus* n.sp. Figs 3, 8, 16, 17, 34, 42, 43.

Habitus (Fig. 3): Length 22—28 mm. Black, dorsum with greenish-bronze lustre, legs always black. Rather robust and broad subspecies, closely related to *C. pseudoplatessa* Gottw.

Holotype: ♂ (ZISP), E Abkhazia, Mt Okhachku, 4.V.1989, I. Belousov. & B. Kataev. Paratypes: 1 ♂ (IB), same locality, together with holotype. 1 ♂ & 1 ♀ (IB), E Abkhazia, S slopes of Mt Okhachku, 1200–1500 m, 5.V.1989, I. Belousov. 1 ♂ & 1 ♀ (IB), E Abkhazia, Mt Okhachku, 1900 m, 7.V.1989, I. Belousov. 1 ♂ (IB), E Abkhazia, valley of river Okumi, 500–1000 m, 1.V.1989, I. Belousov. 10 ♂ & 10 ♀ (NHMB); 92 ♂ & 46 ♀ (AZ & AM); 4 ♂ 2 ♀ (IB), E Abkhazia, vicinities of Mt Okhachku n. Machake, 700–1750 m, 9.5.–3.VII.1991, A. Zamotajlov & A. Miroshnikov. 6 ♂ 14 ♀ (AZ & AM), E Abkhazia, SW spurs of Akiba Mt Range, 1000–1200 m, 7.V.–2.VII.1991, A. Zamotajlov & A. Miroshnikov.

This new subspecies is easily distinguishable from *C. pseudoplatessa* Gottw. by its bright bronze or greenish-bronze lustre in foveoles and around tubercles of primary and secondary interspaces of elytra (instead of blue or greenish blue in *C. pseudoplatessa* Gottw.). Therefore, in this character it is different from all hitherto known Caucasian *Tribax*-species (excluding specific group of species, related to *C. steveni* Men.). Pronotum also brightly coloured, with very bright greenish-bronze border dilated towards hind angles. Body somewhat more convex, shiny. It is also different in complete or almost complete absence of punctuation and presence of quite superficial, smoothed wrinkles on head and pronotum (in *C. pseudoplatessa* Gottw. wrinkles, when even very sparse, are distinct, sharp, forming before hind angles of pronotum a sulcate net of wrinkles), and in relatively broader and more massive pronotum (it is 1.33–1.43

times as wide as long). Male genitalia (Figs 8, 16, 17, 34, 42, 43) identical to those of *C. pseudoplatessa* Gottw.

Transitional in both coloration and microreticulation individuals between two mentioned forms occur sometimes in the mountainous region between valleys of rivers Okumi and Galidzga (examined following materials: 1 ♂ (IB), Bakhundzhara, 6.VII.1989, Lukashuk; 1 ♂ (IB), Valley of Okumi, o. 1000 m, 2.V.1989, I. Belousov. 3 ♀ (IB, BK), Watershed of rivers Okumi and Tsarche, 1000 m, 9.V.1989, I. Belousov. & B. Kataev. 2 ♀ (IB, BK), Gali distr., Tsarche env., 1800 m, 9. V. 1989, I. Belousov & B. Kataev. 2 ♂ & 1 ♀ (AZ & AM), right bank of river Okumi, 1400 m, 7.V.–2.VII.1991, A. Zamotajlov & A. Miroshnikov. 4 ♂ & 3 ♀ (AZ & AM), Right bank of river Okumi, 850 m, 7.V.–2.VII.1991, A. Zamotajlov & A. Miroshnikov. One population somewhat closer related to *C. pseudoplatessa* Gottw. is known from the left bank of river Okumi (1 ♂ & 3 ♀ (AZ & AM), Left bank of river Okumi, 650–800 m, 8.V.–2.VII.1992, A. Zamotajlov & A. Miroshnikov). We know also a single specimen with bronze coloration from the environs of Tkvarcheli, however, according to body shape and microreticulation it is closer to *C. pseudoplatessa* Gottw. Holotype of *C. pseudoplatessa* Gottw., originated from environs of Tkvarcheli (Mt Lashkendar), possesses dark blue coloration and prominent microreticulation of pronotum.

Examination of vast materials on the *apschuanus*-group from different localities of the W Caucasus revealed no constant differences between *C. apschuanus* Rost and *C. pseudoplatessa* Gottw. Therefore we are prone to ressurect status, given by GOTTWALD (1982) to these forms, despite the opinion of NOVOTNÝ and VOŘÍŠEK (1988), i.e. to treat *C. pseudoplatessa* Gottw. as subspecies, *C. apschuanus pseudoplatessa* Gottw., stat. resurr.

The type series was collected chiefly in fir-mixed forests, several specimens were found in different types of leaf-bearing forests and in subalpine zone near timber-line.

4. *Carabus (Tribax) balkaricus* Belousov & Abdurakhmanov Figs 4, 9, 18, 19, 35, 44, 45.

Carabus balkaricus BELOUSOV & ABDURAKHMANOV, 1991, Insects of the Caucasus, 1: 28–30.

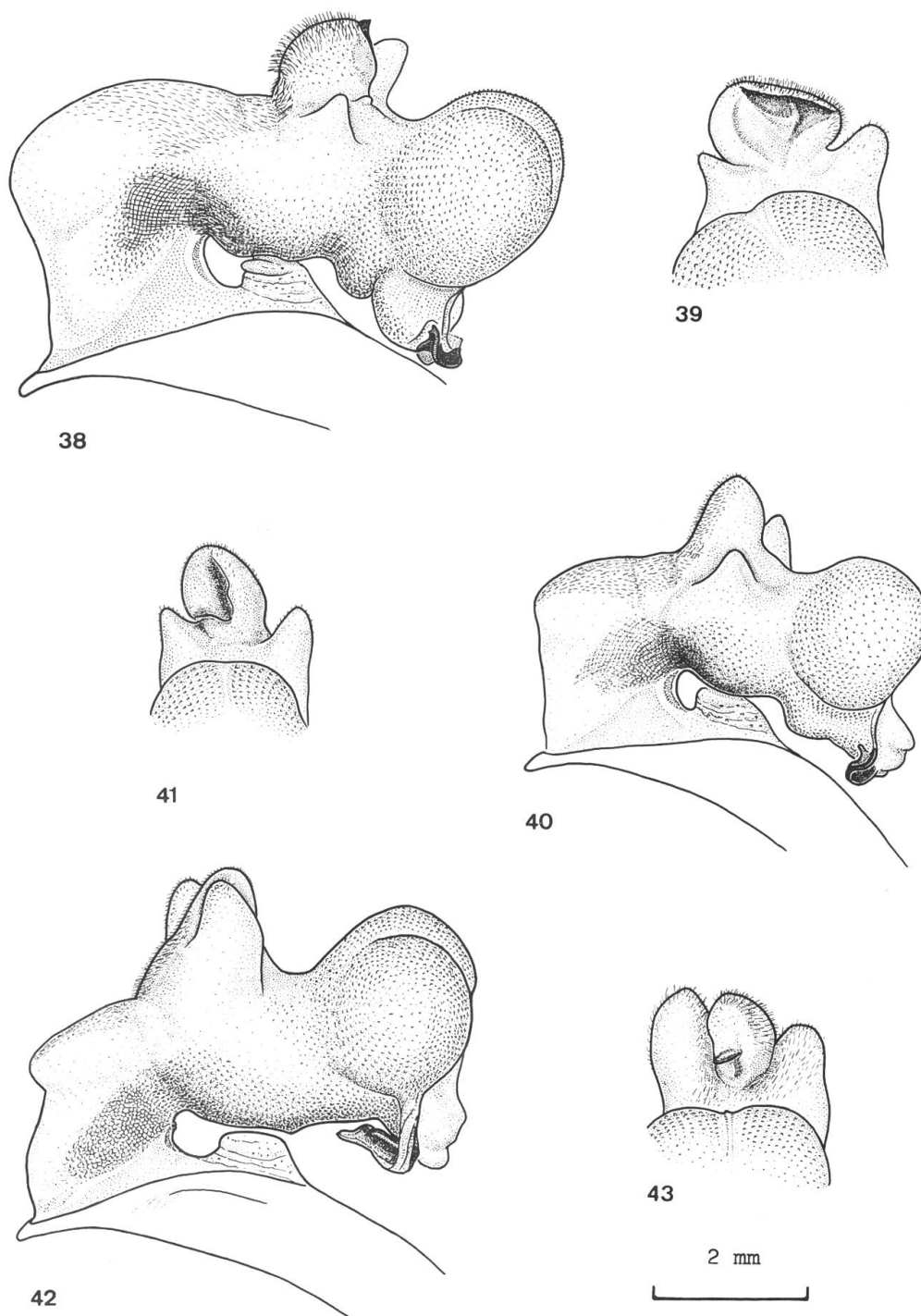
This form has recently been described upon a single male specimen (BELOUSOV & ABDURAKHMANOV, 1991). The detection of

the second specimen of this species allowed to study its endophallus in complete erection and to refine its systematic position. Detailed redescription of this species is given below.

Habitus (Fig. 4): Length 21–27 mm. Black, ventral surface and femora somewhat lighter coloured, dark piceous, dorsum with faint blue lustre, lateral margins of elytra with metallic greenish-bronze border, antennae entirely black. Species of medium (within *Tribax*) body size, moderately flattened dorso-ventrally.

Head normal, proportion of width of pronotum to width of head 1.39, frontal furrows deep, nearly straight and parallel, inside smooth, labrum broader than clypeus, with apical emargination and row of 10 setae, one lateral pore developed also on each side of labrum, labial suture hardly visible; mandibles moderately elongate, more or less evenly arcuate, left one being somewhat more narrow; eyes of normal size, convex; surface on disk nearly smooth, at sides rugous; antennae rather long, reaching before middle of elytra; tooth of mentum rather short, acute, pointed. Pronotum faintly transverse, 1.38 times as wide as long, strongly cordate, with conspicuous emargination of lateral margins before hind angles, proportions of maximum width to basal width 1.24–1.31, and of maximum width to apical width 1.14–1.26; front margin of pronotum faintly emarginate, not distinctly bordered, although with prominent depression behind slightly developed frontal bulge, explanate border of lateral margins of normal width, bears two pores on each side, one somewhat before middle and the other near hind angles, which are rectangular, at apices rounded, protrudent backwards like small lobes; surface coarsely rugous, particularly at sides. Elytra oblong-ovate, somewhat flattened, 1.56–1.63 times as long as wide and 1.52–1.65 times as wide as pronotum; primary and secondary interspaces interrupted by shallow setiferous foveoles, their links represented as rows of small tubercles and much broader than tertiaries; apical emargination of elytra missing, but lateral margin at apex strongly sinuated. Sternites without transversal sulci, with one pair of setiferous pores in the middle, apical sternite with 8 setiferous pores along hind margin. Protarsi with 4 dilated basal segments with adhesive appendages beneath. Aedeagus (Figs. 9, 18, 19) large, its distal part conspicuously broadened. Copulatory pieces (Fig. 38) large, of two symmetrical sclerites, completely separated by narrow membranous longitudinal strip.

Material, holotype: ♂ (ZISP), Kabardino-Balkaria, Verkhniaya Balkaria env., 1700 m, 2.IX.1985, G . Abdurakhmanov.



Figs 38–43: *Carabus*, endophallus in complete erection. 38, *C. onerosus* n.sp., holotype, right lateral view. 39, idem, median lobe. 40, *C. kasbekianus veselyi* Gottw. from Dzhinaura valley, right lateral view. 41, idem, median lobe. 42, *Carabus apschuanus galianus* n.ssp., paratype from Mt Okhachku, right lateral view. 43, idem, median lobe.

Further material: 1 ♂ (AZ), same locality, 1750 m, 10.V.1992, V. Orlov.

This species resembles most readily *C. kasbekianus veselyi* Gottw., although is distinguishable, first of all, by greenish elytral margins, stronger protrudent backwards hind angles of pronotum, broader tubercles of primary and secondary interspaces, that are conspicuously wider than tertiaries. In localities where both taxa occur sympatric, *C. balkaricus* Belousov & Abdurakhmanov is different from the neighbouring populations of *C. kasbekianus veselyi* Gottw. also in more dark femora and black basal antennal segment. Aedeagus considerably larger, than in *C. kasbekianus veselyi* Gottw. (body size of both species being subequal), copulatory pieces of different shape, sclerites approach each other very tightly (in *C. kasbekianus* Kraatz they are stronger detached), larger and somewhat stronger sclerotized. As regards structure of endophallus, *C. balkaricus* Belousov & Abdurakhmanov is most closely related to *C. fossiger* Chaud. (Figs. 44–47). Both species are very similar in shape of endophallus (especially in structure of its distal part) as well as in the position of copulatory pieces (aggonoporiis). However, it is easily distinguishable from *C. fossiger* Chaud. in both external characters (body size smaller, elytra stronger convex, hind angles of pronotum more protrudent) and structure of male genitalia, particularly copulatory pieces.

The regarded form can actually represent an infraspecific natural hybrid as was indicated in the first description (BELOUSOV & ABDURAKHMANOV, 1991). In this case *C. kasbekianus veselyi* Gottw. and *C. fossiger* Chaud. must be pointed out as the most probable parental species. However, as these species have a large sympatric range, *C. balkaricus* Belousov & Abdurakhmanov being known from a single locality only, such interpretation seems hardly possible.

5. *Carabus (Archiplectes) shtchurovi* n.sp. Figs 10, 20, 21, 30, 36.

Habitus (Fig. 30): Length 23 mm, Black, dorsum bronze, median line, lateral margins of pronotum and elytra with faint greenish lustre, proepisterna greenish-black, with metallic lustre. Species of small (within *Archiplectes*) body size, rather strongly flattened dorsoventrally. Habitually resembles species of the *felicitanus*-group or *C. starcki* Heyd.

Head broad, proportion of width of pronotum to width of head 1.33, frontal furrows shallow, labrum broader than clypeus, its apical edge with prominent emargination and row of 16 setae, one lateral pore present on each side of labrum; mandibules rather short and broad, evenly arcuate, eyes convex, anterior supraorbital seta situated before front margin of eye and posterior one somewhat at mid-eye level; surface faintly rugous; antennae long, extending beyond basal one-third of elytra; tooth mentum short, pointed. Pronotum narrow, cordate, 1.40 times as wide as long, widest at apical one-third, proportion of maximum width to basal width 1.19, proportion of basal width to apical width 1.15, front margin weakly emarginate and broadly bordered, front angles rounded, inconspicuous, lateral sides gently sinuated, explanate border of lateral margins extremely narrow, bears four pores on each side, one pore situated at hind angles, which are acute, protrudent backwards, at apices dull; basal foveae rather deep, disk gently rugous, lateral areas and basal foveae scattered with minute punctures. Elytra oblong-ovate, flat, 1.63 times as long as wide and 1.43 times as wide as pronotum, shoulders rounded, apex of each elytron forming acute angle; elytral sculpture irregular, somewhat entangled, of 13–14 indistinct interspaces, primaries broader and somewhat more conspicuous, composed of different tubercle-like links, foveoles small and inconspicuous, lateral areas and apices with numerous tubercles and granules. Ventral surface almost smooth, lateral sides of sternites gently rugous, they bear more or less prominent transversal sulci and one pair of setiferous pores in the middle, apical sternite with 8 setiferous pores along hind margin. Protarsi with 4 dilated basal segments, all with adhesive hairs ventrally. Aedeagus (Figs 10, 20, 21) moderately arcuate, at base almost straight, apical lamella weakly twisted ventrally, it is strongly elongate and narrow (viewed dorsally), apex faintly emarginate on the right. Copulatory pieces (Fig. 36) composed of two fused sclerites, base with shallow hollow, dorsal carinate processes narrow and almost straight.

Holotype: ♂ (ZISP), Kabardino-Balkaria, Bezengi env., vicinities of glacier Mizhirgi, 24.VI.1991, N. Grishchenko.

In the structure of aedeagus, this new species can not be attributed to any of hitherto known species-groups of *Archiplectes*, although peculiarities of endophallus armature resembles those of the *felicitanus*-group (being apparently quite primitive). However, in shallow basal hollow and straight, not bent inwards dorsal processes of

copulatory pieces it is also easily distinguishable from all known forms. *C. shtchurovi* n.sp. seems to be the easternmost representative of the Northcaucasian species-complex, comprising different forms of *C. kratkyi* Gangl., *C. felicitanus* Raitt., and *C. edithae* Raitt. So far as it is known, *C. kratkyi dauti* Zamot. is the most closely related to the new species, although localities of both taxa are separated by vast area with no form related to *C. kratkyi* Gangl. known from it. Thus *C. shtchurovi* n.sp. is isolated from the above complex in both morphological and geographical respects.

This species is dedicated to our friend and colleague Mr. V. I. Shchurov of Krasnodar, who has forwarded us an unique specimen of this remarkable form.

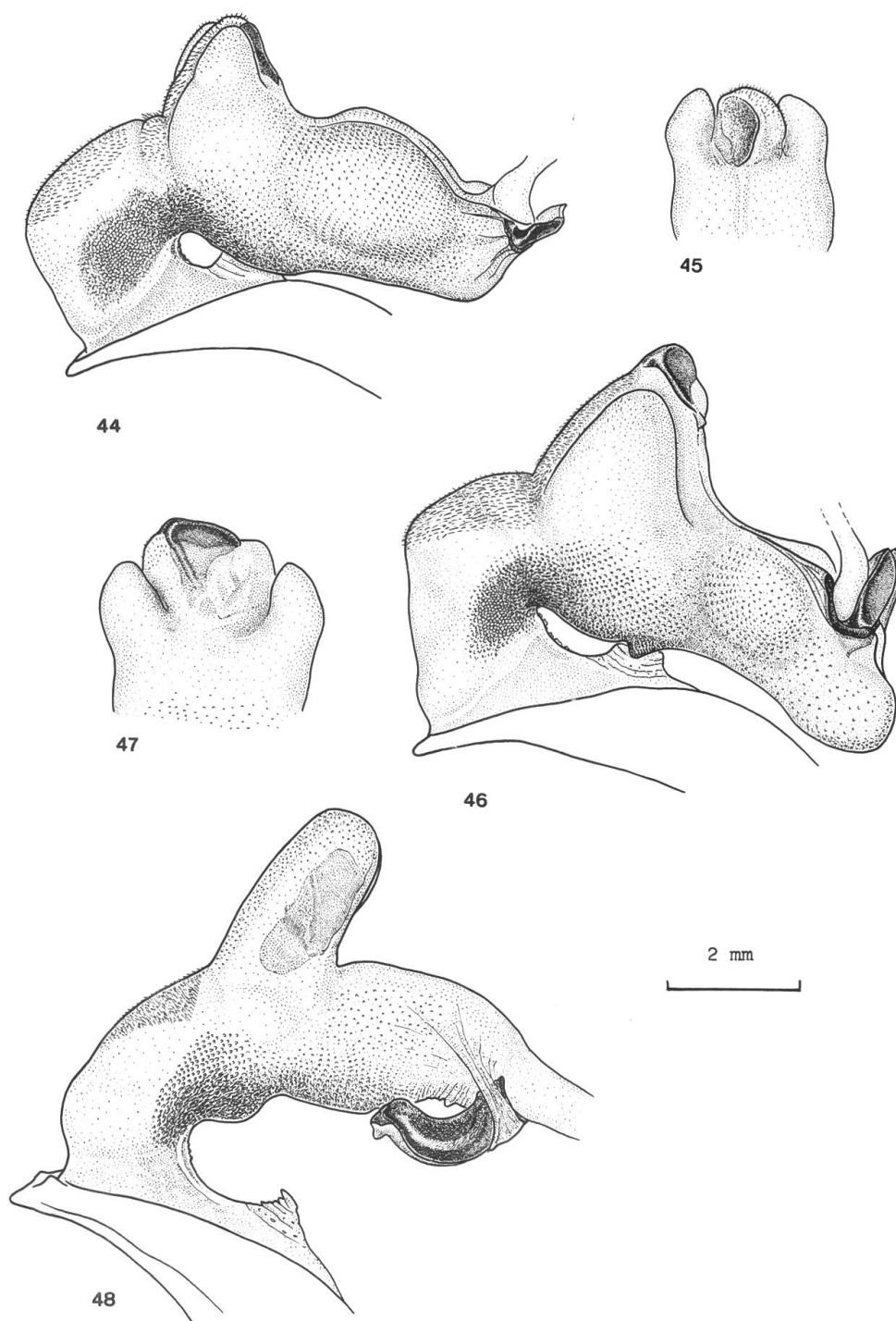
The type specimen was collected in moraine conglomeration near-by glacier Mizhirgi.

6. *Carabus (Archiplectes) satyrus napraensis* n.sp. Figs 11, 22, 23, 31, 32, 37, 48.

Habitus (Figs. 31, 32): Length 22—31 mm. Black, dorsum usually greenish-bronze, sometimes green or violet. Robust subspecies, strongly resembling *C. satyrus duripshensis* Kurn.

Holotype: ♂ (ZISP), Abkhazia, Bzybian Mt Range, vicinities of Mt Chibzharga, 1900–2000 m, 20.VI–26.VII.1992, I. Belousov, A. Miroshnikov, & A. Zamotajlov. Paratypes: 15 ♂ & 15 ♀ (NHNB); 276 ♂ & 269 ♀ (AZ, AM, & IB), same locality, together with holotype. 35 ♂ & 41 ♀ (AZ, AM, & IB), same locality, 1800–1850 m, 20.V–20.VI.1992, I. Belousov, A. Miroshnikov, & A. Zamotajlov. 2 ♂ & 2 ♀ (AZ), same locality, 2000–2100 m, 26.VII.1992, A. Zamotajlov. 1 ♂ (IB), Abkhazia, Bzybian Mt Range near Mt Napra, N slopes, 2200 m, 12.VI.1991, I. Belousov. 1 ♂ (IB), same locality, pass, 2250 m, 12.VI.1991, I. Belousov. 1 ♂ & 1 ♀ (IB), same locality, S slopes, 2000 m, 12.VI.1991, I. Belousov.

This new subspecies is closely related to *C. satyrus duripshensis* Kurn., which substitute it in the east. There are no morphometrical characteristics readily distinguishing these two forms, although some peculiar morphological features predominate within majority of studied specimens. *C. satyrus napraensis* n.ssp. is smaller (according to KURNAKOV, 1972, body size of *C. satyrus duripshensis* Kurn. is 28–33 mm), more robust. pronotum less cordate, with lateral margins weaker sinuated before less extended laterad hind angles, lateral



Figs 44–48: *Carabus*, endophallus in complete erection. 44, *C. balkaricus* Belousov & Abdurakhmanov from Cherek Balkarskiy valley, right lateral view. 45, idem, median lobe. 46, *C. fossiger ingusch* Zolot. from Cherek Balkarskiy valley, right lateral view. 47, idem, dorsal view. 48, *C. satyrus napraensis* n.ssp., paratype from Mt Napra, right lateral view.

explanate border substantially more narrow near front angles, elytra more distinctly ovate, sometimes extremely broad, elytral sculpture sharply heterodynamous, with tertiaries being weaker protrudent, particularly in females. Aedeagus (Fig. 11, 22, 23) usually somewhat smaller and more narrow, without keel on the left of tube. Copulatory pieces (Fig. 37) and endophallus (Fig. 47) are similar to those of the other subspecies of the species in question. Individuals of *C. satyrus duripshensis* Kurn. from western part of its range (Mt. Chipchira and Khuap env.) possess somewhat transitional characters between both subspecies (holotype of *C. satyrus duripshensis* Kurn. originates from Mt Didripsh at eastern part of the subspecies' range).

C. satyrus napraensis n.ssp. is different from all hitherto known subspecies of *C. satyrus* Kurn. in its habitat preference. While these subspecies occur mostly in leaf-bearing forests (only population of *C. satyrus duripshensis* Kurn. from Mt Chipchira inhabits also Subalpine zone), the new subspecies is known mostly from Subalpine and Alpine zones, being distributed towards adnival watershed communities, forest dwelling populations of this form seem to be missing from western periphery of Bzybian Mt Range in vicinities of Mts Napra and Chibzharga.

7. *Carabus (Cechenochilus) boeberi buschi* Semenov & Znojko, re-surr. stat.

Carabus boeberi buschi SEMENOV & ZNOJKO, 1932, Dokl. Akad. Nauk SSSR, 1932: 186.

Carabus boeberi longiceps CHAUDOIR, GOTTWALD, 1983, Acta entomol. bohemosl. 80: 60 (partim).

This form has been recently synonymized by GOTTWALD (1988) with *C. boeberi longiceps* Chaud. Examination of new materials revealed, that it represents a well separated subspecies of *C. boeberi* Ad., different from all known in several important characters and inhabiting quite a limited part of the Main Caucasian Range.

Material: Holotype, ♂ (ZISP), labelled "Kuban distr., Yusengi, 8000–8300' 12.VII.1911, N. Bush", "Holotypus *C. boeberi bushi* Sem. & Znojko, 1931".

Further material: 9 ♂ & 4 ♀ (AZ, AM, & IB), C Caucasus, Kabardino-Balkaria, source of river Yusengi, 2600–3100 m,

17.VI.–23.VII.1992, I. Belousov, A. Miroshnikov, and A. Zamotajlov. 2 ♂ (AZ & AM), same locality, 17.VI.1992, V. Shchurov. 1 ♂ (AZ), same locality, 17.VI.1992, A. Zamotajlov. 1 ♂, 1 ♀ (IB), same locality, 17.VI.1992, I. Belousov. 1 ♀ (AZ), same locality, 10.–20. VII.1983, S. Kulik. 1 ♀ (IB), Kabardino-Balkaria, N slopes of Pass Becho, 2800 m, 23.VII.1990, I. Belousov. 2 ♂ & 1 ♀ (IB), Swanetia, S slopes of Pass Becho, 2800 m, 22.VII.1990, I. Belousov.

The main diagnostic features, distinguishable for this form, are as follows: lateral margins of elytra before middle with 3–5 (usually 4–5) setae (other subspecies of *C. boeberi* Ad., except for *C. boeberi longiceps* Chd., usually possess only two setae near front angles of pronotum); interspaces uniform, mat, faintly protrudent, with sparse punctures (resembling in the latter character *C. boeberi longiceps* Chaud.); elytral apex especially flat (in other forms of *C. boeberi* Ad. more or less convex), femora and basal antennal segment red or reddish-brown (in other forms of *C. boeberi* Ad. black or piceous); head somewhat longer and weaker thickened than in *C. boeberi longiceps* Chaud.; legs conspicuously longer than in other subspecies of *C. boeberi* Ad. including *C. boeberi longiceps* Chaud.

This form seems to be distributed only at Pass Becho N and S slopes and in the upper reaches of river Yusengi. Eastwards, in the source of river Bashilauzsu, it is substituted by *C. boeberi* Ad., westwards and northwards, by *C. boeberi felix* Sem.

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Additions

In 1993 some more specimens of the species mentioned in this paper have been collected, they are in complete accordance with the given descriptions, the data are as follows:

Carabus (Tribax) onerosus n.sp..

Paratypes: 16 ♂ & ♀ (AZ & AM), Mingrelia, W slopes of Ofitsari Mt Range nr. Doberazeni, 500 m, 3.V.–16.VIII.1993, S. Kazantsev. 16 ♂ & 15 ♀ (AZ & AM), Mingrelia, SE slopes of Mt Muchera nr. Meore-Balda, 800–900 m, 2.V.–18.VIII.1993, S. Kazantsev.

Carabus (Tribax) balkaricus Belousov et Abdurakhmanov

Further material: 1 ♀ (AZ & AM), Balkaria, Verkhniaya Balkaria env., left bank of Cherek Balkarskyi, 1800 m, 8.IV.–29.VIII.1993, A. Zamotajlov & A. Miroshnikov.

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