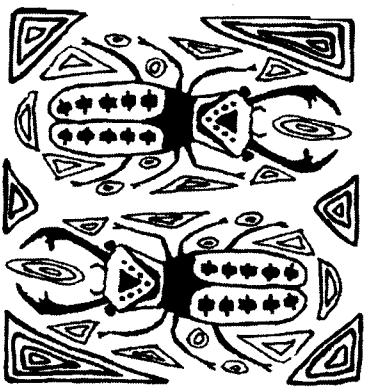
Coleoptera

A revision of the «Carabus aeruginosus» *species group. (Coleoptera, Carabidae)*

DMITRY OBYDOV



5(9)

SEPTEMBRE 1999

ISSN 1265-3357

A revision of the « *Carabus aeruginosus* » species group (Coleoptera, Carabidae)

by Dmitry Obydov
Darwin-Museum, Entomological Department,
Malaya Pirogovskaya str.1,
Moscou 119435, Russie

Résumé.

Six espèces du groupe de « *Carabus aeruginosus* » ont été examinées. Quatre sous-espèces nouvelles : *C. aeruginosus salechardensis* ssp. n., *C. putus geblerianus* ssp. n., *C. putus saragaschensis* ssp. n. et *C. spasskianus tungus* ssp. n. sont décrites. Le statut et la répartition de certaines formes ont été précisés.

Summary.

Six species of the « *Carabus aeruginosus* » species group are examined. Four new subspecies : *C. aeruginosus salechardensis* ssp. n., *C. putus geblerianus* ssp. n., *C. putus saragaschensis* ssp. n. and *C. spasskianus tungus* ssp. n. are described. The status and the habitat of some varieties are precised.

Mots-clés : Coleoptera, Carabidae, *Carabus,* taxonomie, répartition, Sibérie.

The group consists of six species : *C. aeruginosus* Fischer, 1822, *C. eschscholtzi* Mannerheim, 1827, *C. verzhutzkii* Berlov et Shilenkov, 1996, *C. aeruginosiformis* Breuning, 1932, *C. putus* Motschulsky, 1844 and *C. spasskianus* Fischer, 1824. The distribution of species and subspecies is given on the basis of publications and material from the collections of the Zoological Museum of Moscow University (ZMMU), the Zoological Institute of the Russian Academy of Sciences (ZIN) (Sankt-Petersburg), the Darwin Museum (DM) (Moscow), collection of Dr. M. L. Danilevsky (Moscow), and some other private collections.

Carabus (Morphocarabus) aeruginosus Fischer, 1822

aeruginosus Fischer, 1822, Ent. Imp. Ross., 1 : 101.
aereus Dejean, 1826, Spec. Coleopt., 2: 57 (Sibérie).
gmelini Fischer, 1828, Ent. Imp. Ross., 3: 161, tab. 6, fig. 3 (only figure without description).
incertus Motschulsky, 1844, Insectes de la Sibérie : 104 (environs du Baïcal).
subcostatus Motschulsky, 1850. Käfer Russl. : 80 (Sibir. orient.).
capucinus Géhin, 1885, Cat. Car.: 22 (Sibérie occ.).
cereus Lapouge, 1924, Misc. Ent.: 192 (Transbaïkalie).

Type locality. - The species has been described from " Sibérie, Ridders " (present name is Leninogorsk in eastern Kazakhstan). Leninogorsk environs have been thoroughly investigated by modern collectors, and no *Carabus* with characters described by Fischer (" noir ou brun métallique, élytres carénés, à côtes crénulées, dont trois à chaînons ") was found there. Leninogorsk environs are occupied by the very common *C. eschscholtzi* Mannerheim, 1827 with black, without metallic lustre, elytra and about almost equally developed, interrupted into the short links, elytral interspaces. So, most probably, the original indication of type locality - Ridders (Leninogorsk) - is wrong. The fact that *C. aeruginosus* and *C. eschscholtzi* never occur sympatrically supports this opinion. Later, Fischer (1825-1828) wrote about *C. aeruginosus* : " Il se trouve en Sibérie, aux environs de Barnaoul ". I have studied specimens from Barnaul environs which fit well the original description of *C. aeruginosus*, so, I preliminary regard Barnaul environs as a type locality.

The wide area of this species 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 constitutes a continuous sequence of forms slightly different in size, coloration and proportions, but it is hardly possible to consider these forms as subspecies. Currently, a considerable number of forms of *C. aeruginosus* are described. The majority of infraspecific names must be treated as synonyms. The name *C. aereus* Dejean, 1826, was introduced for specimens with orange elytra, colour variations occurring in various localities of the *C. aeruginosus* area. It was mentioned by G. Fischer (1825-1828) who considered *C. aereus* as « variété de l'*aeruginosus* ». Originally *C. incertus* Motschulsky (Fig. 2) was described from " environs du Baïcal ", but the locality mentioned on the label of the lectotype (designated by O. L. Kryzhanovskij, 1968, who regarded *C. incertus* as synonym of *C. aeruginosus*) is " Krasnojarsk ". Both type series and populations from Krasnoiarsk and Baikal environs (represented in my materials) are conspecific with typical *C. aeruginosus* and must be attributed to the nominotypical subspecies. *C. subcostatus* Motschulsky was described after one female from " Sibir. orient ". The name *C. subcostatus* was often wrongly attributed by many authors to other species, most frequently to *C. aeruginosiformis* Breuning. The female holotype (Fig. 3) is preserved in the Zoological Museum of Moscow University. It has relatively short elytra with almost equally developed integral elytral interstices and is of small size. But this form is very close to the typical *C. aeruginosus* by the shape of pronotum and other features. I am almost sure that *C. subcostatus* is an anomalous specimen of *C. aeruginosus*.

The species is distributed from about Urals to the East, as far as Yakutia and Baikal Lake, and to the North as far as the north - eastern regions of European Russia, the Yamal peninsula and the mouth of Yenisei river. It occurs in the forested areas; in the north part of the area, it inhabits tundra and forest-tundra.

The species consits of three subspecies : *C. a. aeruginosus* Fischer, 1822, *C. a. herrmanni* Mannerheim, 1827 and *C. a. salechardensis* ssp. n.

***Carabus (Morphocarabus) aeruginosus aeruginosus* Fischer, 1822** (Fig. 1-2-3-24-38)

Type locality. - Barnaul environs.

Material. - 2 males, 1 female, Sib., Barnaul, VII.32 (DM); female, LECTOTYPE of *C. incertus* Motsch. (designated by O. L. Kryzhanovsky, 1968) with four labels: "*Carabus incertus* mihi, Krasnojarsk", "Sibir", "Lectotypus" and "*C. (Morphocarabus) aeruginosus* F.-W., O. Kryzhanovskij det.", 7 PARALECTOTYPES with labels: "Krasnojarsk", "*Carabus incertus* Motsch. Sib. or.", "Daur", "Sib. or." and "Sibir" (ZMMU, Moscow); female lectotype of *C. subcostatus* Motsch. (designated by O. L. Kryzhanovsky, 1968) with two labels: "*Carabus subcostatus* Motsch., Sibir." and "Sibir. orient." (ZMMU, Moscow); male, 2 females, Altai, ex coll. Motshulsky (ZMMU); male, with labels: "Sibiria, Gebl. " and "*C. aereus*" (ZMMU); male, with labels: "Sibiria, Gebl. " and "*C. aeruginosus*" (ZMMU); 2 males, 7 females, Altai, Chiri, 51'47"N 87'50"E, 31.VII.93, M. Savitzkiy *leg.* (ZMMU); male, Altai, Teletzkoe lake, 15.VI.51 (ZMMU); 2 males, 2 females, Kemerovo dist., Kuzedeevo vil. env., M.Tem river, 27.VI.68, O. Trushko *leg.* (DM); 32 males, 54 females, Novokuznetzk, 4-10.VI.1992, V. Siniaev *leg.*, (DM, Moscow); 26 males, 38 females, Novokuznetzk dist., Kuzedeevo vill. env., 20-30.VI.1994, M. Danilevsky & D.Obydov *leg.* (DM, coll., M. Danilevsky, Moscow); 3 males, 10 females, Novosibirsk dist., M. Sharap vil. env., 3.7. 1976, F.Opanasenko *leg.* (DM); 126 males, 288 females, Krasnoiarsk dist., Bazaikha river, 2-22.VII.1994, M. Danilevsky & D. Obydov *leg.*, (DM, coll. M. Danilevsky, Moscow); male, 10 females, Tomsk dist., Chilino vil. env., 2-30.VII.1967, Shvezov *leg.* (DM, coll. M. Danilevsky, Moscow); male, Krasnoiarsk dist., Pervomaiskoe vil. env., 30.VI.1972., M. Danilevsky *leg.* (DM); male, Tuva, Ishtyk-Khem, 10.VI.1972., M. Danilevsky *leg.* (DM); 6 males, 12 females, Tuva, Tannu-Ola Mts., Shurmak riv., 9.7.71, M. Danilevsky *leg.* (DM, coll. M. Danilevsky, Moscow); 12 males, 22 females, S-E Tuva, Sangilen Mts, valley of Kargy river, 50'31"N 97'01"E, 1800m, 29.VI.1996, D. Obydov *leg.* (DM); 26 males, 22 females, S-E Tuva, Sangilen Mts, valley of Balyktyk-Khem river, 50'17"N 96' 39"E, 2100m, 26.VI-4.VII.1996, D.Obydov *leg.* (DM); 12 males, 8 females, Tuva, 15 km from Kyzyl to the East, 51'43"N 94'42E, 16-18.VI.1996, D. Obydov *leg.* (DM); 46 males, 34 females, Tuva, Naryn riv., 1500 m, 50'11"N 95'39"E, 19.VI.1996, D. Obydov *leg.* (DM); 12 males, 24 females, Tuva, Shurmak riv., 1100 m, 50'44"N 95'18"E, 20.VI.1996, D. Obydov *leg.* (DM); 2 males, female, Tuva, Khorumnug-Taiga Mts., 1500 m, 50'24"N 95'28"E, Dzhen-Aryk riv., 14-16.VII.1996, D. Obydov *leg.* (DM); 2 males, Sayan Mts., Otug-Sug riv., 26.7.1990, L. Rubalov *leg.* (coll. M. Danilevsky, Moscow); male, female, Novosibirsk dist., Iskitim vil., 24.6.66, F. Opanasenko *leg.* (coll. M. Danilevsky, Moscow); male, female, Altai, Ust-Sema, 25.6.88, Sazonov *leg.* (DM, coll. M. Danilevsky, Moscow); 22 males, 28 females, West Sayans, near Cheremushki vil., 1-14.VII.1994, M.

Danilevsky & D. Obydov *leg.* (DM, coll. M. Danilevsky, Moscow); male, Krasnojarsk (ZMMU); female, Yeniseiskaia Gub., Taitzet (ZMMU); female, Minussinskaia G., 15.VI.1902 (ZMMU); female, Sib. Krasnojarsk (ZMMU); female, Yenisei. Gub., 30.VII, Sushkin *leg.* (ZMMU); 24 males, 32 females, Siberia, Khakassia, Saragash, 400m, 3-23.VII.1994, M. Danilevsky & D. Obydov *leg.* (DM, coll. M. Danilevsky, Moscow); 4 females, near Kyzyl-Kul lake, Minussinsk dist., VI-VII (ZMMU); female, Tuva, Kyzyl dist., Ust-Elegest vil., 2.VI.71, Korotiaev *leg.* (ZMMU); male, Baikal, Staudinger (ZMMU); 2 males, Siberia, Staudinger (ZMMU); female, Siberia, Minussinsk, 1.6.1922 (ZMMU); male, female, Yakutsk env., 8.VII.1962, Zhelokhovtzev *leg.* (ZMMU); female, Krasnoiarsk Reg., Evenk Autonomous Region, Tura vil. env., VII.1971 (ZMMU); male, female, Sibir. bor., Enissei inf., 69', Dudinka, 10.VII (ZMMU); 6 males, 6 females, E. Sayans, Tunkinskie Goltsy Mt Range, Mondy vil. env., 800m, 3-10.VI.1991, L. Chernyshev *leg.* (coll. L. Chernyshev, Zhukovsky); 5 males, female, Tuva, Samagaltai env., 1200 m, 19-20.VI.94, P. Smrz *leg.*, (coll P. Smrz, Czech Budejovice); 4 males, 2 females, Tuva, Saryg-Sep, VII.94, P. Smrz *leg.* (coll P. Smrz, Czech Budejovice); 18 males, 16 females, Tuva, Khadyn env., 26-30.VI.94, P. Smrz *leg.* (coll P. Smrz, Czech Budejovice); female, Minussinskaia Gub., P. P. Sushkin (ZMMU); 2 females, Siberia, ex coll. Basilevsky (ZMMU).

Description. - Elytra brown or black, primary elytral interstices broader, interrupted into short links; secondary interstice partially interrupted; tertiary interstice usually integral.

Distribution. - Western Siberia (Novosibirsk env., Altai : Barnaul env., Teletzkoe lake env.; Tomsk env., Novokuznetzk env., Kemerovo env.); central Siberia (Krasnoiarsk env., Evenk Autonomous Region, Minussinsk env., Khakassia, Tuva); eastern Siberia (western Buriatia : Mondy env.; Irkutsk env., Yakutsk env.).

***Carabus (Morphocarabus) aeruginosus herrmanni* Mannerheim, 1827** (Fig. 4-25)

Type locality. - Urals : Zlatoust.

Material. - 1 male (TOPOTYPE) Mt. Ural, Zlatoust, ex coll. Motshulsky (ZMMU); male, (TOPOTYPE) S. Urals Mts., Zlatoust, 22-28.VI.1952, S. Nikulina leg. (DM); male (TOPOTYPE), South Urals, Naziamskie Mts., near Zlatoust, 10.VII.1951, ex coll. Nikulin (ZMMU); male (TOPOTYPE), South Urals, Zlatoust env., 30.VI.1951, ex coll. Nikulin (ZMMU); male, Molot. dist., Lysva, 4.VIII.1947, G. Viktorov *leg.* (ZMMU); 2 males, 3 females, Urals, Sabar Mts., 1-19.VIII.1993, T. Beliakova *leg.* (DM); 6 males, 8 females, Urals, Perm dist., Kamenka vil. env., S. Shestakov *leg.* (ZMMU); 2 females, Nizhniy Tagil (DM); 6 males, female, Urals, Perm dist., 12 km from Lysva vil. to the South, Kamenka vil., 16-8.V.1964, V. Zherikhin *leg.* (ZMMU); 2 males, Tobolsk Gub., Golub. Buer., 18-22.VI.35, Telyshev *leg.* (ZMMU); male, Tobolsk, Ivanovsk, 29.VII.1928, T. Dolgatchev *leg.* (ZMMU).

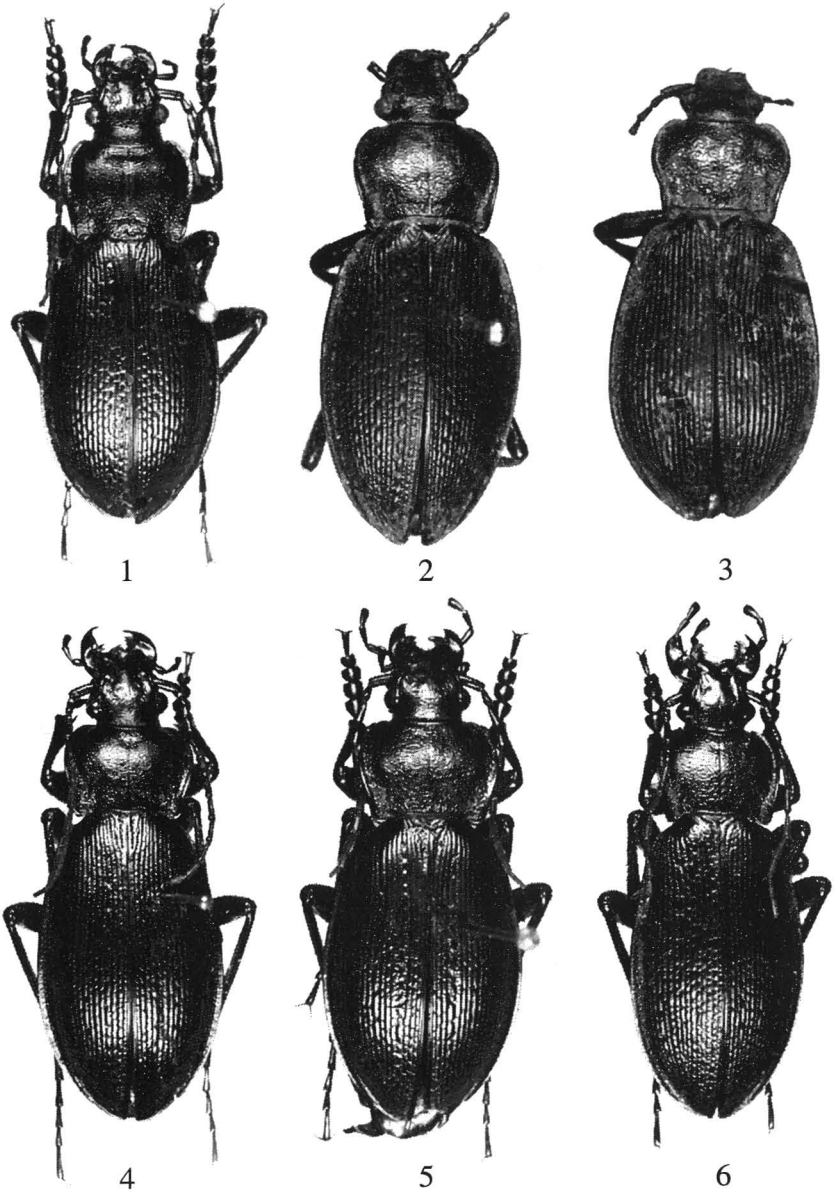


Fig. 1-6 : *Carabus* (general view). 1, *C. aeruginosus aeruginosus* Fisch., male (from Barnaul). - 2, *C. a. aeruginosus* Fisch., female (lectotype of *C. incertus* Motsch.). - 3, *C. a. aeruginosus* Fisch., female (lectotype of *C. subcostatus* Motsch.). - 4, *C. a. herrmanni* Mann., male (topotype). - 5, *C. a. salechardensis* ssp. n., male (holotype). - 6, *C. e. eschscholtzi* Mann., male (from Zmeinogorsk).

Description. - The subspecies differs by broadly margined sides of pronotum and smoother elytral sculpture.

Distribution. - Southern and Central Urals (Zlatoust env., Perm env., Nizhniy Tagil env.), South-West of Western Siberia (Tobolsk env.).

***Carabus (Morphocarabus) aeruginosus salechardensis* ssp. n.** (Fig. 5-26-39)

Material. - HOLOTYPE : male, N-W.Siberia, Yamalo-Nenetzky Autonomous region, Salekhard env., 27.VI.1934; 24 PARATYPES : female, Salekhard environs, 28.VI.1956; 2 males, 2 females, Salekhard, tundra, 30.VIII.1953, I. Telischev *leg.*; male, Salekhard, tundra, 3.VII.1951, Telischev *leg*; female, Salekhard, 12.VI.1941; male, female, Salekhard, tundra, VII.1951; male, Obdorsk, 20.VII.1941; male, Obdorsk, 24.VI.1940; male, female, Obdorsk, tundra, 4.VII.1940; 2 males, female, M. Sosva riv., Shukht-gort, 16-19.VI.1931; female, Berezov., 5.IX.1930, V. Stepatchev *leg.*; male, Polui riv., 5.VIII. 1933, G. Kolesnikov *leg.*; male, female, mouth of Pechora river, Shaitanovka vil. env., 18.VII.75, Voronin *leg.*; female, Malyi Yamal, Nizhnjaia Khadytta, 2.VIII.33, A. Kamensky *leg.*; 2 males, female, Salekhard env., 27.VI.1954. The HOLOTYPE is preserved *in* the collection of Darwin Museum (Moscow). PARATYPES: *in* the Darwin Museum (Moscow) and *in* the Zoological Museum of Moscow University (Moscow).

Description. - Body length in males 26.0 - 28.5 mm (including mandibles), width 9.5 - 11.2 mm; body length in females 26.2 - 31.0 mm, width 10.0 - 11.8 mm.

Head and pronotum black; elytra black, brown or dark brown, elytral margins black; ventral surface black or dark brown. Head not thickened, ratio width of pronotum/width of head 2.03; eyes convex. Frons coarsely wrinkled with sparse punctures; frontal furrows relatively deep, inside with coarse wrinkles, rarely with sparse punctures. Labrum wider than clypeus, moderately notched, with two lateral setae. Antennae protruding beyond the base of pronotum by 3-4 apical joints; palpi slightly dilated; the last but one joint of the labial palpi with two setae. Mentum tooth from very short to reduced; submentum with two setae.

Pronotum transverse, broadest at about middle; ratio width/length 1.49. Sides of pronotum broadely margined, rounded anteriorly, then slightly narrowed to hind angles. Pronotal margin broader posteriorly and slightly bent upwards; lobes of hind angles triangular, very short, slightly bent downwards. Disk of pronotum with dense punctation and coarse wrinkles. Median longitudinal line well-marked; basal foveae relatively deep, triangular, inside coarsely wrinkled. Lateral margin with two setiferous pores: one pore at about middle and one pore near hind angle.

Elytra oval, convex, widest at about middle; shoulders prominent; sides of elytra broadly margined. Ratio length/width 1.62; ratio width of elytra/width of pronotum 1.36. All elytral interstices almost equally developed, primary interstice rarely slightly broader. Primary elytral interstice interrupted into short links; secondary interstice partially integral, partially interrupted into long links; tertiary interstice integral. Primary foveoles shallow; striae coarsely punctured.

Metepisterna and abdominal sternites smooth, metepisterna longer than wide. Legs of normal length; fore male tarsi with four dilated and pubescent segments.

Aedeagus (Fig. 26); endophallus (Fig. 39); ventral-apical lateral lobe strongly convex.

Discussion. - The new subspecies differs from other subspecies of *C. aeruginosus* by the following features : body more robust; pronotum broader and more flattened with more rough and dense punctation; pronotal margin broader, slightly bent upwards; lobes of hind angles shorter; elytra more convex with rougher sculpture; mentum tooth shorter; apical lamella of aedeagus more bent (Fig. 24-25-26), ventral-apical lateral lobe of endophallus much bigger and more convex (Fig. 38-39).

Distribution. - North-eastern regions of European Russia (mouth of Pechora River), North of Western Siberia (Southern Yamal : Salekhard environs; Southern Malyi Yamal); it is one of the most northern form of the species. The beetles inhabit plain tundra and plain forest-tundra reaching far North beyond the Arctic Circle. Very similar form is distributed in the North of Central Siberia (mouth of Yenisei River : Dudinka environs), which may also belong to *C. a. salechardensis* ssp. n.

***Carabus (Morphocarabus) eschscholtzi* Mannerheim, 1827**

Type locality. - The species was described from "Sibiria", without more precise indication of locality. According to my materials, the specimens from Zmeinogorsk environs are mostly fitting the original description. So, I regard Zmeinogorsk as the type locality. Zmeinogorsk was also accepted as locality of *C. eschscholtzi* by V. Motschulsky (1844).

Description. - The species differs from closely related species by evenly rounded sides of pronotum, which is broadly margined and strongly bent upwards posteriorly, and by a elytral sculpture more homogeneous than in *C. aeruginosus*. *C. eschscholtzi* is very close to *C. aeruginosus* (Fig. 38-40) by the structure of the endophallus , but the ventral basal lobe of the endophallus is more prominent, and the left basal lateral lobe much bigger. Apical lamella of aedeagus shorter (Fig. 24-27).

Distribution. - The species is distributed in the Western Altai. It inhabits mixed forests in the plains, foothills and mountains. In some parts of the area it occurs sympatrically with *C. putus* Motschulsky.

The species consists of three subspecies: *C. e. eschscholtzi* Mannerheim, 1827, *C. e. zyrjanovskianus* Shilenkov and Berlov, 1996, and *C. e. tulatensis* Berlov and Shilenkov, 1996.

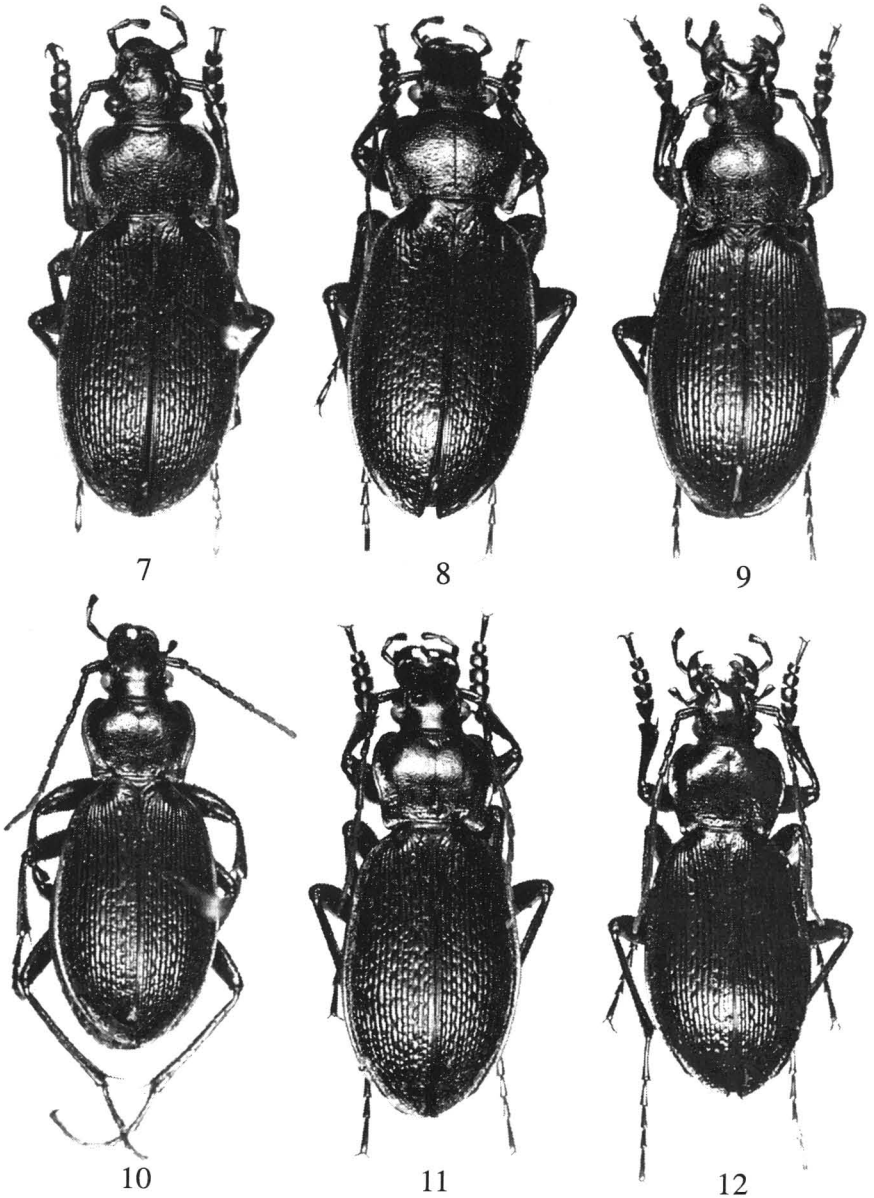


Fig. 7-12 : *Carabus* (general view). 7, *C. e. eschscholtzi* Mann., male (from Riddersk). - 8, *C. e. zyrjanovskianus* Shilenkov et Berlov., male (topotype). - 9, *C. v. verzhutzkii* Berlov et Shilenkov, male (from Shebalino). - 10, *C. a. aeruginosiformis* Breun., male (topotype). - 11, *C. a. aeruginosiformis* Breun., male (from Cheremushki). - 12, *C. a. zinaidae* Obydov, male (holotype).

***Carabus (Morphocarabus) eschscholtzi eschscholtzi* Mannerheim, 1827**
(Fig. 6-7-27-40)

Type locality. - Zmeinogorsk.

Material. - 65 males, 32 females, W. Altai, Zmeinogorsk dist., Cherepa-novskiy vil. env., 2-16.6.1990, D. Obydov *leg.* (DM); male, female, Siberia, Altai, Leninogorsk, 22.VI.84, V. Shilenkov *leg.* (coll. M. Danilevsky, Moscow); 2 males, E. Kazakhstan, 55 km between Leninogorsk and Ust-Kamenogorsk, 22.VI.83 (ZMMU); male, Ulbinskoe, 27.VII.1910, A. Yakobson *leg.* (ZMMU); male, 3 females, Riddersk, Semipalat. dist, 1911, Derzhavin *leg.* (ZMMU); male, Altai, Ust Kamenogorsk, 21.VIII.30, Lukjanovitsch *leg.* (ZMMU); male, E. Kazakhstan, 50 km NE Feklistovka (N Ust-Kamenogorsk), 20.VI.1983 (ZMMU); female, with labels: "Altai, Gebl." and "*C. eschscholtzi*" (ZMMU).

Description. - Elytra mostly black, sometimes with weak greenish lustre; all elytral interstices almost equally developed, interrupted into the short links.

Distribution. - Western Altai: Zmeinogorsk env.; Eastern Kazakhstan: Leninogorsk env., Ust-Kamenogorsk env.

***Carabus (Morphocarabus) eschscholtzi zyrjanovskianus* Shilenkov & Berlov, 1996**
(Fig. 8-28)

Type locality. - Eastern Kazakhstan: Zyrianovsk .

Material. - 1 male, 7 females (topotypes), Ust-Kamenogorsk dist., Zyria-novsk, 27.V-16.VII.1971, V. Mordkovich *leg.* (DM); 164 males, 182 females, E. Kazakhstan, Zyrianovsk dist., Putintzevo vil. env., 1-14.VI.1994, M. Danilevsky & D. Obydov *leg.* (DM, coll. M. Danilevsky, Moscow); 6 females, E. Kazakhstan, Zyrianovsk env., 20.VII.1993, A. Evstigneev *leg.* (coll. A. Shamaev, Moscow).

Description. - Pronotum and elytra much broader than in nominotypical subspecies, black, rarely with weak blue or green lustre.

Distribution. - Eastern Kazakhstan. Very local subspecies distributed along Bukhtarma river in the lower and middle part of the valley (Zyrianovsk env., Verkhneberezovsky vil. env., Serebriansk env., Paryginsky dist.: Kutikha vil. env., Putintzevo vil. env.).

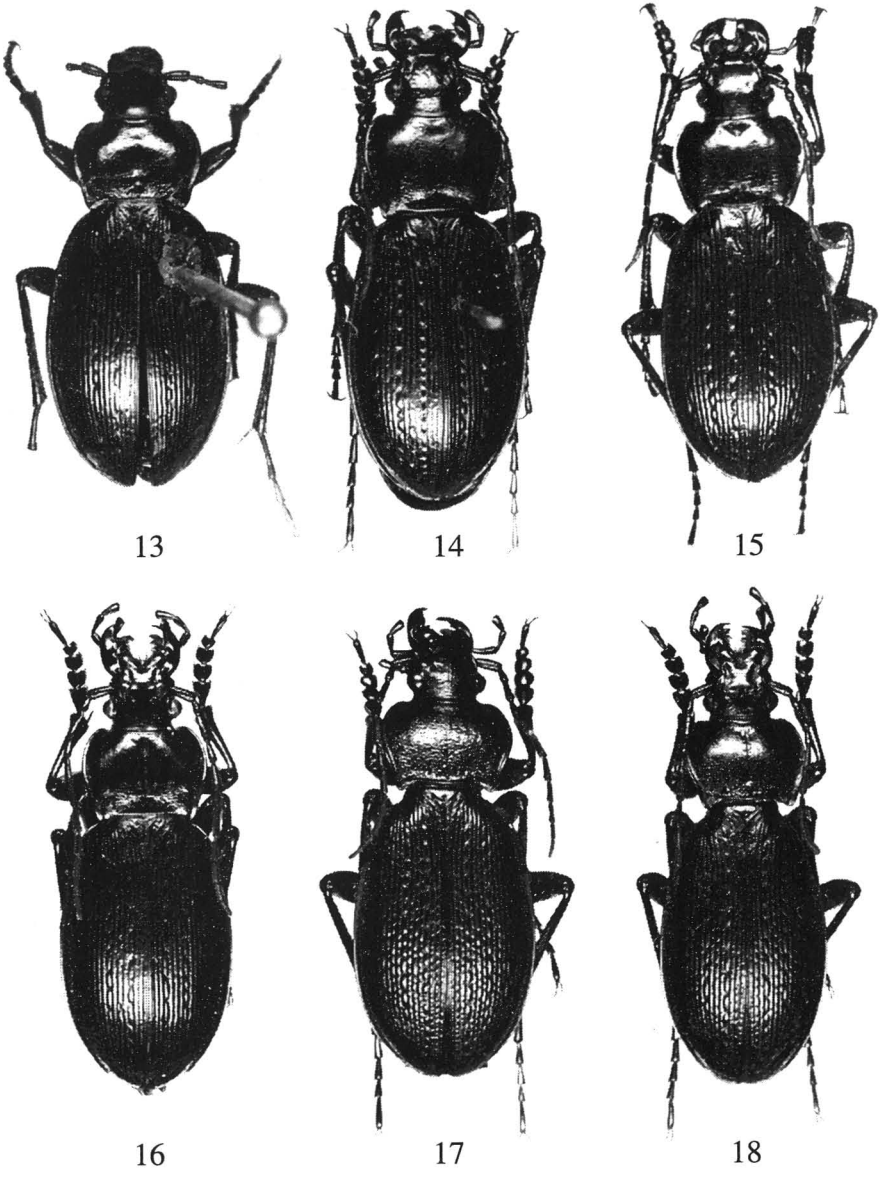


Fig. 13-18 : *Carabus* (general view). 13, *C. p. putus* Motsch., female (lectotype). - 14, *C. p. putus* Motsch., male (from Chiketaman Pass). - 15, *C. p. putus* Motsch., male (from Aktash). - 16, *C. p. schestopalovi* Plutenko, male (paratype). - 17, *C. p. geblerianus* ssp. n., male (holotype). - *18, C. p. saragaschensis* ssp. n., male (holotype).

***Carabus (Morphocarabus) eschscholtzi tulatensis* Berlov & Shilenkov, 1996**

Type locality. - Altai, Tigiretzky Mt Range, Tulata vil.

The subspecies was described after two females and its separation seems to be rather doubious.

Distribution. - Altai : Tigiretzky Mt Range.

***Carabus (Morphocarabus) verzhutzkii* Berlov & Shilenkov, 1996**

Type locality. - Altai Mountain : Anuisky Mt Range: Chernyi Anui vil. env.

Description. - Externally resembles *C. aeruginosus* Fischer and differs from the latter by the shape of pronotum, more convex elytra and the structure of endophallus (Fig. 38-41).

Distribution. - The species is distributed in Central, Northern and Western Altai. It inhabits mixed mountain forests and occurs sympatrically with *C. putus* Motschulsky.

The species consists of two subspecies : *C. v. verzhutzkii* Berlov & Shilenkov, 1996 and *C. v. kolyvanus* Shilenkov & Berlov, 1996.

***Carabus (Morphocarabus) verzhutzkii verzhutzkii* Berlov & Shilenkov, 1996**
(Fig. 9-29-41)

Type locality. - Altai Mountain; Anuisky Mt Range: Chernyi Anui vil. env.

Material. - 56 males, 44 females, Altai, Shebalino vil. env., 14-26.VI.1995, D. Obydov leg. (DM); male, 2 females, Altai, Shebalino, 9.06.1996, Brinev *leg.* (coll. A. Shamaev, Moscow).

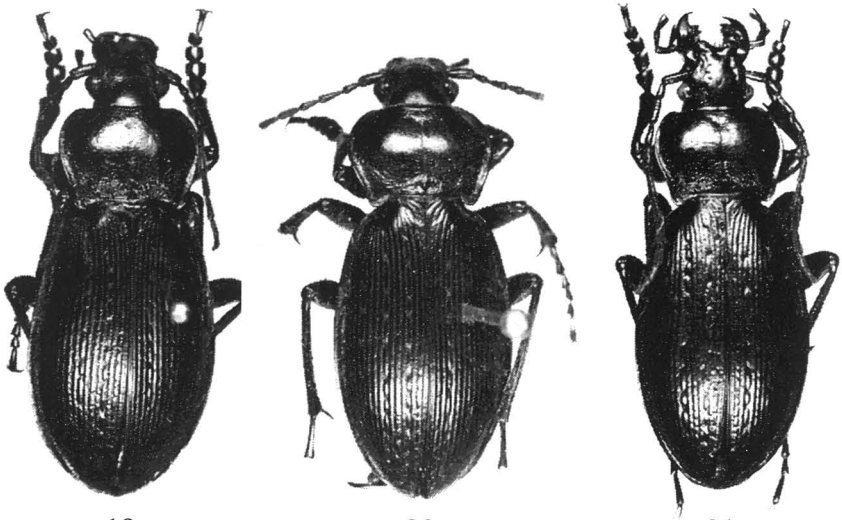
Description. - Pronotum shorter than in *C. aeruginosus*, with very short hind angles, elytra convex, brown or dark brown.

Distribution. - Central and Northern Altai : Seminsky Mt Range : Shebalino vil. env.; Anuisky Mt Range.

***Carabus (Morphocarabus) verzhutzkii kolyvanus* Shilenkov & O. Berlov, 1996**

Type locality. - The subspecies was described after one male and four females from Altai : Kolyvan vil. env., Kamenka vil.

I have not seen these specimens. As was mentioned by V. Shilenkov in the original description, the subspecies differs from the nominotypical subspecies by more flattened elytra and bigger size and externally resembles *C. eschscholtzi* Mannerheim.



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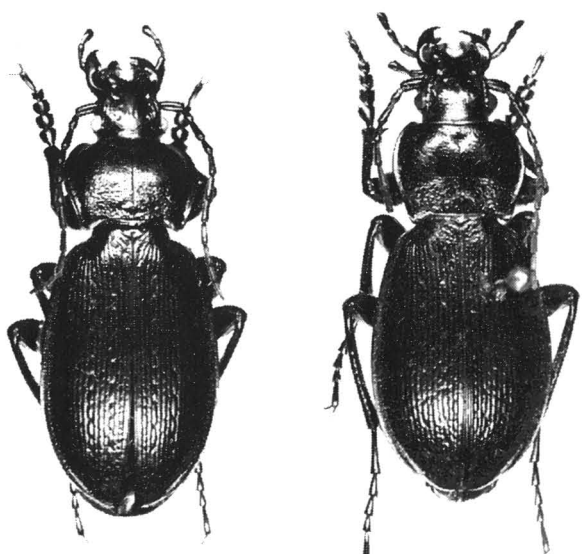

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Fig. 19-23 : *Carabus* (general view). 19, *C. s. spasskianus* Fisch., male (from Chita env.). - 20, *C. s. spasskianus* Fisch., male (lectotype of *C. gryphus* Motsch.). - 21, *C. s. spasskianus* Fisch., male (from Irkutsk env.). - 22, *C. s. spasskianus* Fisch., male (from Mondy env.). - 23, *C. s. tungus* ssp. n., male (holotype).

Distribution. - Western Altai. So far, only one population (Kolyvan Mt Range; Kamenka vil. env.) is known.

***Carabus (Morphocarabus) aeruginosiformis* Breuning, 1932**

Type locality. - Western Sayans: Kazyr-Suk River.

Description. - The species differs from *C. aeruginosus* by cordiform pronotum, flattened elytra and the structure of endophallus.

Distribution. - C. aeruginosiformis is distributed from Western Sayans to South-Eastern Tuva. It inhabits mountain forests and mountain forest-tundra at altitudes up to 2500 m; it occurs in the bush-wood and screes.

The species includes three subspecies : *C. a. aeruginosiformis* Breuning, 1932, *C. a. microputus* O. Berlov & Shilenkov, 1996 and *C. a. zinaidae* Obydov, 1997.

***Carabus (Morphocarabus) aeruginosiformis aeruginosiformis* Breuning, 1932** (Fig. 10-11-30-42)

Type locality. - Western Sayans : Kazyr-Suk River.

Material. - 1 male (TOPOTYPE), Sayans Mountains, Kazyr-Suk Riv., 21.VII.1918, Kozhanchikov *leg.* (ZIN); 1 female (TOPOTYPE), Sayans Mountains, Kazyr-Suk Riv., 6.VI.1918, Kozhanchikov *leg.* (ZIN); 140 males, 82 females, West Sayans, near Cheremushki vil., 1-14.VII.1994, M. Danilevsky & D. Obydov *leg.* (DM, coll. M. Danilevsky, Moscow).

Description. - Elytra flattened, black, sometimes with weak green or blue lustre; all elytral interstices interrupted into short links.

Distribution. - West Sayans : Kazyr-Suk River valley; Dzhoisky and Borus Mt Ranges, where this species occurs sympatrically with *C. aeruginosus* Fisch.

***Carabus (Morphocarabus) aeruginosiformis zinaidae* Obydov, 1997** (Fig. 12-31-43)

Type locality. - South-Eastern Tuva: Sangilen Mts.: Kargy River valley.

Material. - HOLOTYPE, male, S-E Tuva, Sangilen Mts, valley of the Kargy River, 50'31"N 97'01"E, 1800m, 29.VI.1996, D. Obydov *leg.* (DM); 14 males, 5 females, (PARATYPES), same date and same locality, D. Obydov *leg.*, 7 males, 6 females, (PARATYPES), S-E Tuva, Sangilen Mts, valley of the Balyktyk-Khem River, 50'17"N 96'39"E, 2100m, 26.VI-4.VII.1996, D. Obydov *leg.* (DM, Moscow; National Museum of Natural History, Paris; ZIN, St. Petersburg; Tuvinian Institute for the Exploration of Natural Resources, Kyzyl and collection of Dr. M. Danilevsky, Moscow).

Description. - The subspecies differs from *C. a. aeruginosiformis* by more transverse, cordiform pronotum, more flattened and transverse elytra with integral secondary and tertiary elytral interstices.

Distribution. - South-Eastern Tuva: Sangilen Mt Range; Kargy River valley and Balyktyk-Khem River valley. In its habitat (the screes at altitudes about 2000 m. above the sea level) this subspecies is sympatric with *C. aeruginosus* Fisch.

***Carabus (Morphocarabus) aeruginosiformis microputus* O. Berlov & Shilenkov, 1996**

Type locality. - Western Tannu-Ola Mt Range, Khandagaity vil. env.

Description. - According to the original description, the subspecies differs by more robust body, smaller size, hardly cordiform pronotum with short hind angles and partially integral secondary and tertiary elytral interstices. Externally resembles small specimens of *C. spasskianus* Fisch.

Distribution. - Tuva : Western and Eastern Tannu-Ola Mt Range.

***Carabus (Morphocarabus) putus* Motschulsky, 1844**

Type locality. - "Smeinogorsk". The lectotype (Fig. 13) is preserved in the collection of the Zoological Museum of Moscow University.

C. putus Motschulsky was often considered as a synonym of *C. spasskianus* Fischer, 1823 (Shilenkov, 1994, Kryzhanovskij *et al.*, 1995, Shilenkov, 1996). This species is distributed very far from the area of *C. spasskianus* (type locality: "Dauria") and separated from the area of *C. spasskianus* by a large area of the related species *C. aeruginosiformis*. The morphological differences and the distinct area make the separate status of *C. putus* Motsch. well grounded. However *C. putus*, *C. aeruginosiformis* and *C. spasskianus* are morphologically very similar to each other and could be treated as subspecies.

The species is distributed from western and northern foothills of Altai Mountain to central Khakassia. It occurs in the mixed plain forests, mountain forests, mountain tundra and forest-tundra.

The species consits of four subspecies : *C. p. putus* Motschulsky, 1844, *C. p. schestopalovi* Plutenko, 1995, stat. n., *C. p. geblerianus* ssp. n. and *C. p. saragaschensis* ssp. n.

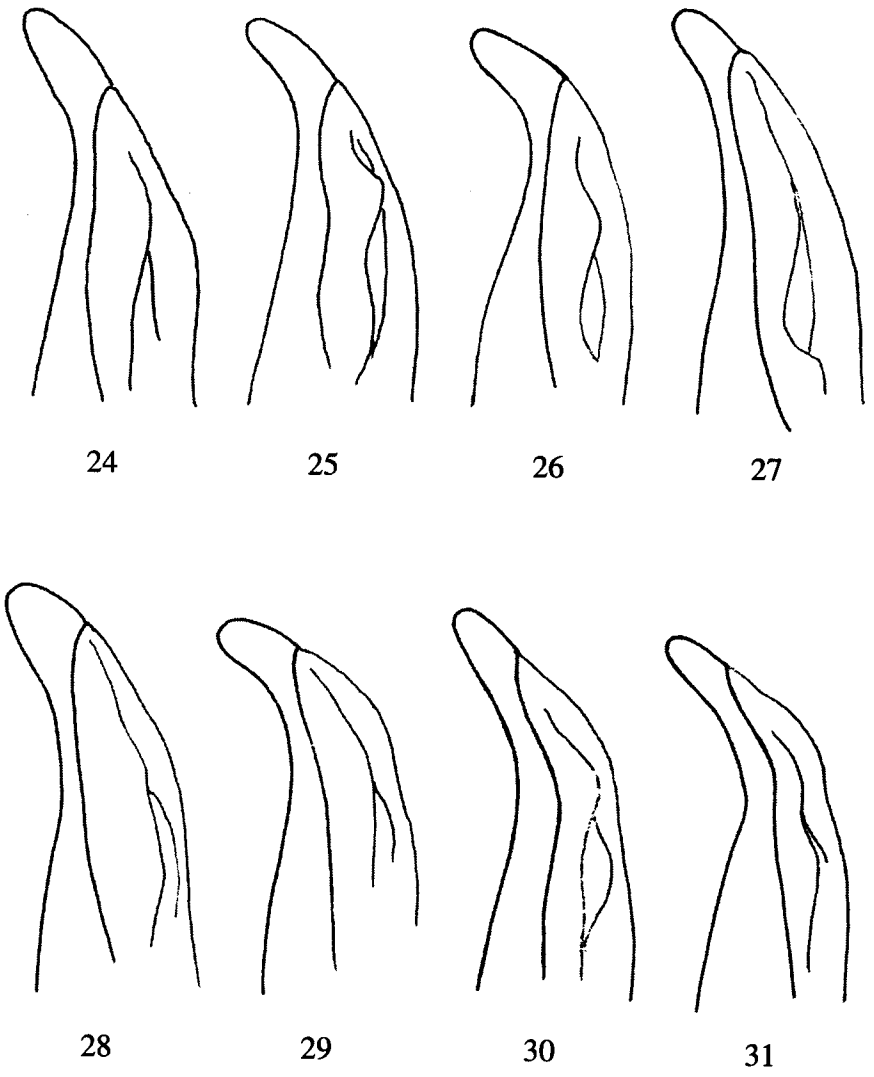

Fig. 24-31 : *Carabus*, aedeagus, apex (right lateral view). 24, *C. a. aeruginosus*. - 25, *C. a. herrmanni*. - 26, *C. a. salechardensis*. - 27, *C. e. eschscholtzi*. - 28, *C. e. zyrjanovskianus*. - 29, *C. v. verzhutzkii*. - 30, *C. a. aeruginosiformis*. - 31, *C. a. zinaidae*.

***Carabus (Morphocarabus) putus putus* Motschulsky, 1844** (Fig.13-14-15-32-44)

Type locality. - Zmeinogorsk.

Material. - LECTOTYPE, female (designated by O.L. Kryzhanovsky, 1968) with three labels : "*Carabus putus* mihi Smeinogorsk", "Kolywan", "Lectotypus, Kryzhanovskij det."; PARALECTOTYPE, male with label "Sibir" (Zoological Museum of Moscow University, Moscow); male, Altai, Aktash, 8.89, E.Matveev *leg.* (coll. M. Danilevsky, Moscow); male, female, Altai, Ilgumen Riv., Chiketaman Pass, 12.V.1985, V. Prasolov *leg.* (coll. M.Danilevsky, Moscow); 5 males, 3 females, Altai, Aktash, 2500 m, 6.7.90, E. Matveev *leg.* (DM, coll. A. Shamaev, Moscow); 6 females, Altai, Chemal, 19.VI.1990, A. Evstigneev *leg.* (coll. A. Shamaev, Moscow); male, Altai, Aktash, 2200 m, 6.6.1987, A. Gorodinsky *leg.* (coll. A. Shamaev, Moscow); male, Altai, Aktash, 23.6.81, Prasolov *leg.* (DM); 2 males, female, Altai, Aktash, 29.6.88, Sazonov *leg.* (DM); male, 2 females, Altai, Aktash, 1900 m, 16.VII.90, E. Matveev *leg.* (DM); 3 males, female, Altai, Shebalino, 26.6.88, E. Matveev *leg.* (DM); male, Altai, Shebalino, Yaroshenko *leg.* (DM); 2 males, female, Altai, Chemal vil., 6-8.VI.90 (DM); 3 males, 4 females, Altai, Chemal vil., 22-27.VI.87, A.Gorodinsky *leg.* (DM, coll. A. Shamaev, Moscow); 132 males, 86 females, Altai, Shebalino vil. env., 14-26.VI.1995, D.Obydov *leg.* (DM); female, Altai, Angudai env., 2-3.VI.1989 (ZMMU); female, Altai, Nurikhinskoe, 29.VI.1955 (ZMMU).

Description. - The nominotypical subspecies is characterised by nearly smooth frons and pronotum. Elytra relatively flat; high-mountain forms from Central Altai have flatter elytra (Fig. 15).

Distribution. - western and central Altai.

***Carabus (Morphocarabus) putus schestopalovi* Plutenko, 1995, stat. n.** (Fig. 16-33-45)

Type locality. - North-Eastern Kazakhstan, Sarym-Sakty Mts., Soldatovo vill. env.

Material. - 2 PARATYPES, male with labels: "*Carabus (Morphocarabus) schestopalovi* sp. n., det. A. Plutenko, 1995", "N-E Kazakhstan, Sarym-Sakty Mts. 12-19 VII, Soldatovo vill. env., A. Plutenko *leg.*", *in* coll. J. Farkac (Prague); female with same labels, *in* coll. B. Brezina (Prague).

Description. - This taxon was described as a species and only slightly differs from typical *C. putus* in the shape of pronotum, but in the shape of aedeagus and structure of endophallus *C. schestopalovi* is very close to *C. putus* s. str. (Fig. 32, 33, 44, 45) and must be regarded as subspecies of *C. putus*.

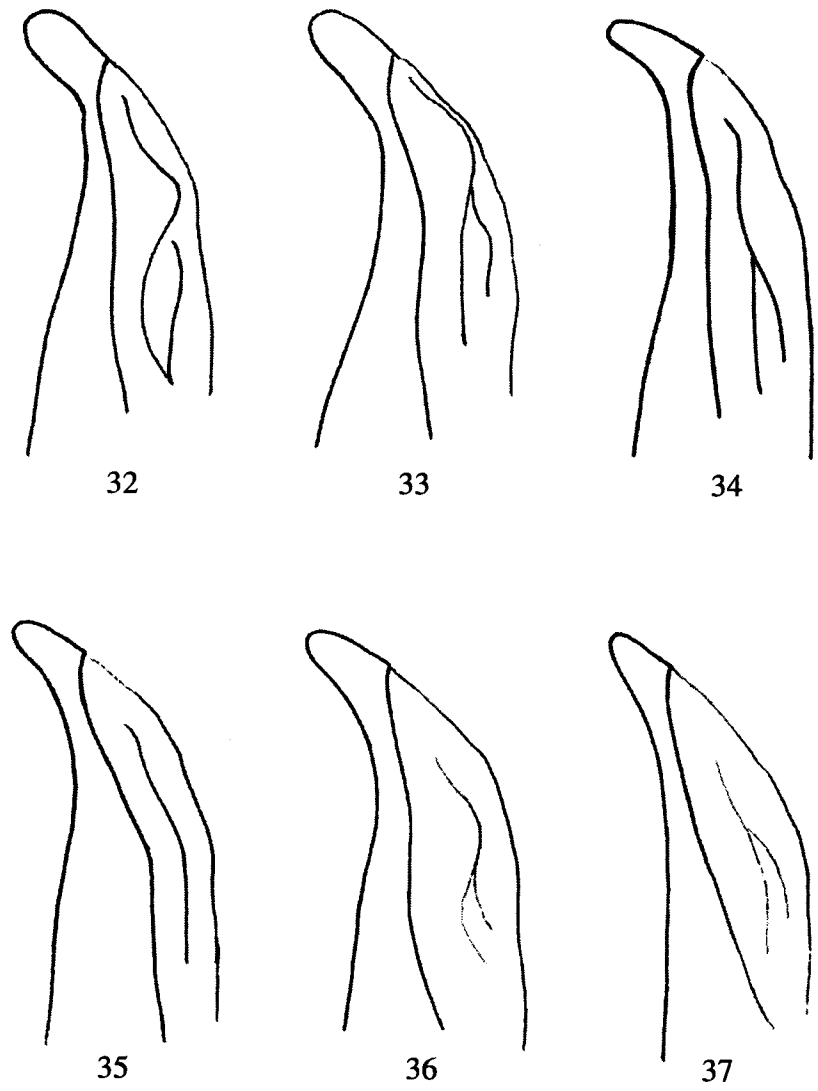

Fig. 32-37 : *Carabus*, aedeagus, apex (right lateral view). 32, *C. p. putus*. - 33, *C. p. schestopalovi*. - 34, *C. p. geblerianus*. - 35, *C. p. saragaschensis*. - 36, *C. s. spasskianus*. - 37, *C. s. tungus*.

Distribution. - North-Eastern Kazakhstan. Only one population (Sarym-Sakty Mts., Soldatovo vill. env.) is known.

***Carabus (Morphocarabus) putus geblerianus* ssp. n.** (Fig. 17-34-46)

Material. - HOLOTYPE : male, Barnaul, 27.5.1965 (*in* collection of Dr. M. Danilevsky, Moscow); 32 PARATYPES : 3 males, 5 females, same date and same locality (DM, collection of Dr. M. Danilevsky, Moscow).; 10 males, 13 females, Altai, Kalmanka dist., Zimari vil., 7.VIII.1973, E. Priakhina *leg.* (ZMMU, Moscow); female, Sibiria oc., Barnaul, 15.IX.1934, A. Kamenskij *leg.* (ZMMU, Moscow).

Description. - Body length in males 27.0 - 29.4 mm (including mandibles), width 10.0 - 10.8 mm; body length in females 26.2 - 29.8 mm, width 10.2 - 11.4 mm. Dorsal and ventral surface of the same black colour, ventral surface rarely dark brown.

Head not thickened, ratio width of pronotum/width of head 2.0; eyes convex; apical part of mandibles strongly incurved and sharply pointed; surface of mandibles smooth; frontal furrows relatively deep and long, inside smooth, rarely with sparse and coarse punctures. Frons coarsely punctured, with sparse and coarse wrinkles. Labrum wider than clypeus, moderately notched, with two lateral setae. Antennae protruding beyond the base of pronotum by 4-5 apical joints; palpi slightly dilated; the last but one joint of the maxillary palpi nearly equal to the last joint; the last but one joint of the labial palpi with two setae. Mentum tooth triangular, much shorter than lateral lobes; submentum with one pair of setiferous pores.

Pronotum transverse, broadest at about middle; ratio width/length 1.48. Sides of pronotum evenly rounded; hind angles short, slightly bent downwards. Pronotal disk wrinkled with sparse and coarse punctures, its sculpture much more rough and dense than in nominotypical subspecies. Median longitudinal line well-marked; basal foveae shallow, inside coarsely wrinkled. Sides of pronotum narrowly margined; lateral margin with two setiferous pores: one pore at about middle and one pore near hind angle.

Elytra oblong-oval, moderately convex, widest below middle; shoulders prominent; sides of elytra narrowly margined. Ratio length/width 1.62; ratio width of elytra/width of pronotum 1.38. Primary elytral interstices a little more developed, interrupted into short links; secondary and tertiary interstices almost equally developed, partially integral, partially interrupted into short and long links; in some specimens all elytral interstices almost equally developed, interrupted into short links. Primary foveoles indistinct; striae finely punctured.

Metepisterna and abdominal sternites smooth, metepisterna slightly longer than wide. Legs of normal length; fore male tarsi with four dilated and pubescent segments.

Aedeagus (Fig. 34); endophallus (Fig. 46).

Discussion. - The new subspecies differs from *C putus s. str.* and *C. putus schestopalovi* by the following features: frons punctation much rougher and denser, frontal furrows deeper; pronotum more convex with rougher sculpture; elytra much broader and more convex, sculpture more homogeneous. Externally resembles *C. eschscholtzi* Mannerheim.

Distribution. - Altai; Barnaul City environs. It occurs sympatrically with *C. aeruginosus* Fisch. This form was already known in the last century, but wrongly determined as *C. eschscholtzi* Mann., which does not occurs in Barnaul environs.

Etymology. - The new subspecies is named in honour of Dr. Friedrich A. Gebler.

***Carabus (Morphocarabus) putus saragaschensis* ssp. n.** (Fig. 18-35-47)

Material. - HOLOTYPE : male, Siberia, Khakassia, Saragash, 400m, 6.VII.1994, D. Obydov *leg.* (DM); 43 PARATYPES: 21 males, 22 females, same locality, 3-23.VII.1994, M. Danilevsky & D. Obydov *leg.* (DM, ZIN, ZMMU, coll. M. Danilevsky).

Description. - Body length in males 23.4 - 30.0 mm (including mandibles), width 8.0 - 10.8 mm; body length in females 25.4 - 30.2 mm, width 9.5 - 11.0 mm. Dorsal surface black; ventral surface black or dark brown.

Head not thickened, ratio width of pronotum/width of head 1.98; eyes convex. Frons nearly smooth or with few coarse wrinkles, rarely with sparse punctures; frontal furrows relatively shallow, inside nearly smooth. Labrum wider than clypeus, strongly notched, with two lateral setae. Antennae protruding beyond the base of pronotum by 4 apical joints; palpi slightly dilated; the last but one joint of the labial palpi with two setae. Mentum tooth triangular, shorter than lateral lobes; submentum with 2-4 setae.

Pronotum transverse, broadest at about the middle; ratio width/length 1.54. Pronotal disk flattened, nearly smooth, rarely with sparse wrinkles. Sides of pronotum evenly rounded and narrowly margined; lateral margin of pronotum slightly bent upwards posteriorly; hind angles triangular, short, slightly bent downwards. Median longitudinal line well-marked; basal foveae very shallow, inside coarsely wrinkled. Lateral margin with two setiferous pores: one pore at about the middle and one pore near the hind angle.

Elytra oblong-oval, moderately convex, widest at about the middle; shoulders prominent; sides of elytra broadly margined. Ratio length/width 1.63; ratio width of elytra/width of pronotum 1.38. Elytral sculpture: all elytral interstices almost equally developed, the primary are sometimes slightly broader. Primary elytral interstice interrupted into the short links; secondary interstice partially integral, partially interrupted into the short links; tertiary interstice integral. Primary foveoles indistinct; striae finely punctured.

Metepisterna and abdominal sternites smooth, metepisterna slightly longer than its width. Legs of normal length; fore male tarsi with four dilated and pubescent segments.

Aedeagus (Fig. 35); endophallus (Fig. 47).

Discussion. - The new form externally resembles *C. aeruginosus* Fisch. with which it occurs sympatrically, and differs from the latter by endophallus structure (Figs 38,47), shape of pronotum and smooth frons and pronotum. The new subspecies differs from *C p. putus* and *C. p. schestopalovi* by the following features: pronotum and elytra more convex; elytral sculpture more homogeneous: all elytral interstices almost equally developed (in other forms of *C. putus*, except

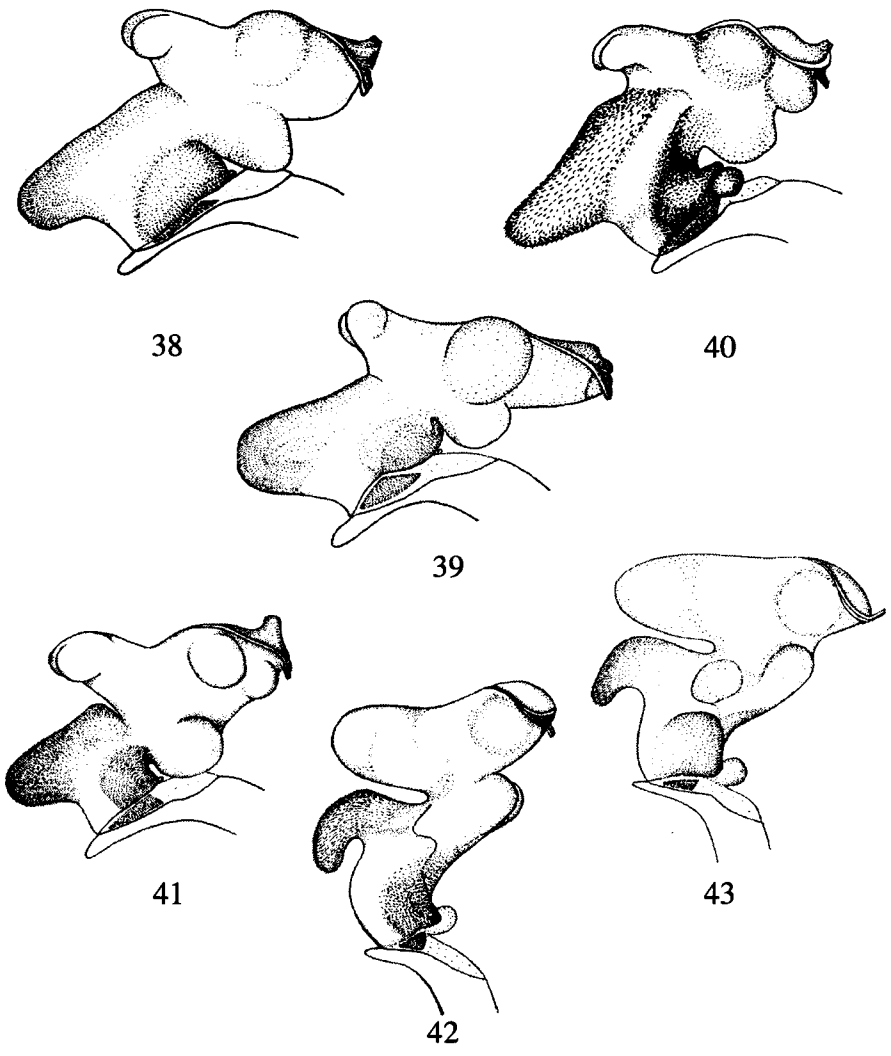

Fig. 38-43 : *Carabus,* endophallus in complete extension (right lateral view). 38, *C. a. aeruginosus.* - 39, *C. a. salechardensis* . - 40, *C. e. eschscholtzi.* - 41, *C. v. verzhutzkii.* - 42, *C. a. aeruginosiformis.* - 43, *C. a. zinaidae.*

C. p. geblerianus ssp. n., primary interstice broader); elytra without lustre and with indistinct primary foveoles. The new subspecies differs from *C putus geblerianus* ssp. n. by nearly smooth frons and pronotum.

Distribution. - Central Khakassia: Saragash env. It is the most eastern population of the species. The type series were collected in the birch kolki forest at the altitudes 400 m above the sea level.

***Carabus (Morphocarabus) spasskianus* Fischer, 1824**

Type locality. - The species has been described from "Dauria", without more precise indication of locality. In Fischer's times, the territory referred to as Dauria was ranging from about Yablonovyi Mt range to the East up to the valley of Argun river; it makes the South-Eastern part of modern Transbaikalian area. Types are not available, but I have studied specimens from Chita Region (S-E Transbaikalie) and specimens from the nearest environs of Baikal Lake, including the type of Motschulsky : *C. gryphus* (Fig. 20), described from "montagnes de Hamar-Daban". All studied specimens are well fitting to the original description of *C. spasskianus* Fisch.

Description. - The species differs from *C. putus* by more convex and broader pronotum and more convex elytra. *C. spasskianus* is very close to *C. putus* by the structure of endophallus (Fig. 44,48), but ventral basal and ventral apical lobes of endophallus are situated much nearer to each other, ventral basal lobe is more bent downwards.

Distribution. - The species is distributed from Transbaikalie and Northern Mongolia to central part of Krasnoiarsk reg. It occurs in the mixed forests. In some parts of the area, it is sympatric with *C. aeruginosus* Fisch.

The species includes two subspecies : *C. s. spasskianus* Fischer, 1824 and *C. s. tungus* ssp. n.

***Carabus (Morphocarabus) spasskianus spasskianus* Fischer, 1824** (Fig. 19-20-21-22-36-48)

Type locality : Dauria (South-Eastern Transbaikalie).

Material. - male, female, Chita Reg., Verkhne-Udinsk env., M. Pertzovka vil., 18.VI.1920, Sazhin *leg.* (DM); male, lectotype of *C. gryphus* (designated by O. L. Kryzhanovsky, 1968) with two labels : "*Carabus gryphus* Motsch. Sib. or." and "Amaga", 10 PARALECTOTYPES with labels : "Irkutsk", "Hamar-Daban", "Baical", "Verchnei Udinsk" (Zoological Museum of Moscow University, Moscow); 2 males, females, Irkutsk, Kuznetzov *leg.* 18.5.1991 (DM); 3 males, female, Mondy vil. env., 17-20.6.88, M. Shestopalov *leg.* (coll. M. Danilevsky, coll. A. Shamaev,

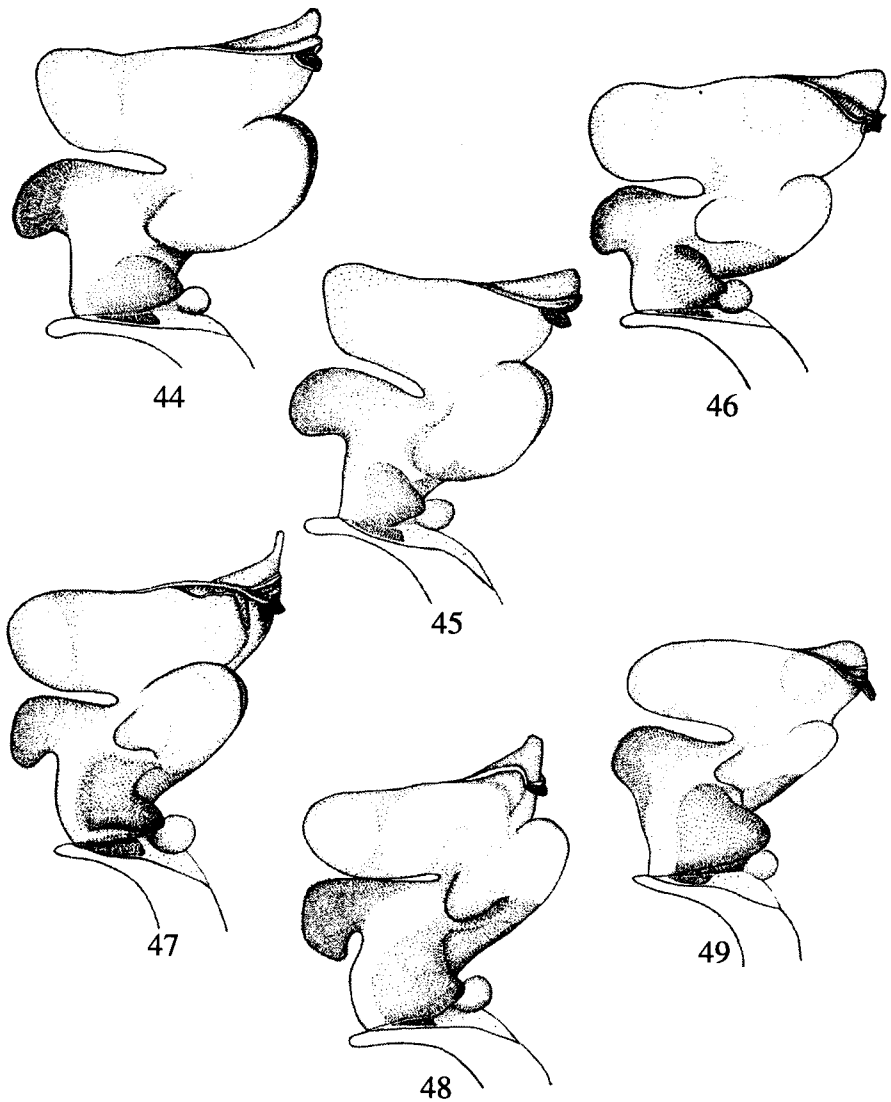

Fig. 44-49 : *Carabus,* endophallus in complete extension (right lateral view). 44, *C. p. putus.* - 45, *C. p. schestopalovi.* - 46, *C. p. geblerianus.* - 47, *C. p. saragaschensis.* - 48, *C. s. spasskianus.* - 49, *C. s. tungus.*

Moscow); male, Irkutsk dist., Ilimsk - Nizhne-Ilimsk, 28.VI.65, V. Zherikhin *leg.* (ZMMU); male, female, l. Baikal, Kultuk, 7-12.VII.1911 (ZMMU); female, Transbaikalien, Leder, Reitter (ZMMU); male, Daur., ex coll. Motshulsky (ZMMU); maie, Irkutsk, ex coll. Motshulsky (ZMMU); male, Baikal (ZMMU); female, l. Baikal, Staudinger (ZMMU); 16 males, 14 females, E. Sayans, Tunkinskie Goltsy Mt Range, Mondy vil. env., 800m, 3-10.VI.1991, L. Chernyshev *leg.* (coll. L. Chernyshev, Zhukovsky); male, Mongolia, Muren, Gorbunov *leg.* (coll. M. Danilevsky, Moscow).

Description. - Elytra mostly black, relatively convex and narrow; secondary and tertiary elytral interstices usually partially interrupted into short and long links.

Distribution. - Baikal Lake environs (Hamar-Daban Mt Range, Tunkinskie Goltsy Mt Range, Irkutsk environs); Yablonovyi Mt Range; Chita environs; Northern Mongolia.

***Carabus (Morphocarabus) spasskianus tungus* ssp. n.** (Fig. 23-37-49)

I have got only three specimens (2 males and 1 female) of this taxon, therefore, the description of the subspecies is not complete. But its very special morphology and the its locality which is away from the area of the nominotypical subspecies, allow me to treat the new form as a subspecies.

Material. - HOLOTYPE : male with label: "Krasnoiarsk reg., Ilimpeya and Dovogpokan riv., VII.1974, Lunin *leg.* "; PARATYPES : female, "Evenk Autonomous Region, N. Tunguska riv., Tura vil. env., Miratachi stream, 14.VII.1972". (ZMMU); male, "Podkamennaia Tunguska, Chomba, 11-16.VI.1958" (DM).

Description. - Body length in males 23.8-24.5 mm (including mandibles), width 9.2-10.0 mm; body length in female 27.8 mm, width 11.2 mm.

Head and pronotum black; elytra black or brown with black margins; ventral surface of body, mandibles, palpi and legs black or blackish brown. Head not thickened, ratio width of pronotum/width of head 2.07 (males), 2.02 (female); eyes moderately convex. Frons smooth; frontal furrows long, not deep, inside smooth. Labrum slightly wider than clypeus, strongly notched, with two lateral setae. Antennae protruding beyond the base of pronotum by 3 (female) or 4 (male) apical joints; palpi slightly dilated; the last but one joint of the labial palpi with two setae. Mentum tooth very short; submentum with two setiferous pores.

Pronotum transverse, cordiform, broadest at about middle; ratio width/length 1.51 (males), 1.64 (female). Sides of pronotum broadely margined; pronotal margin broader posteriorly and slightly bent upwards; lobes of hind angles triangular, short, slightly bent downwards. Disk of pronotum nearly smooth, with few shallow wrinkles. Median longitudinal line deep, well-marked; basal foveae not deep, inside coarsely wrinkled. Lateral margin with two setiferous pores: one pore at about middle and one pore near hind angle.

Elytra oblong-oval, flattened, widest behind middle or at about middle; shoulders prominent; sides of elytra broadely margined. Ratio length/width 1.50 (males), 1.63

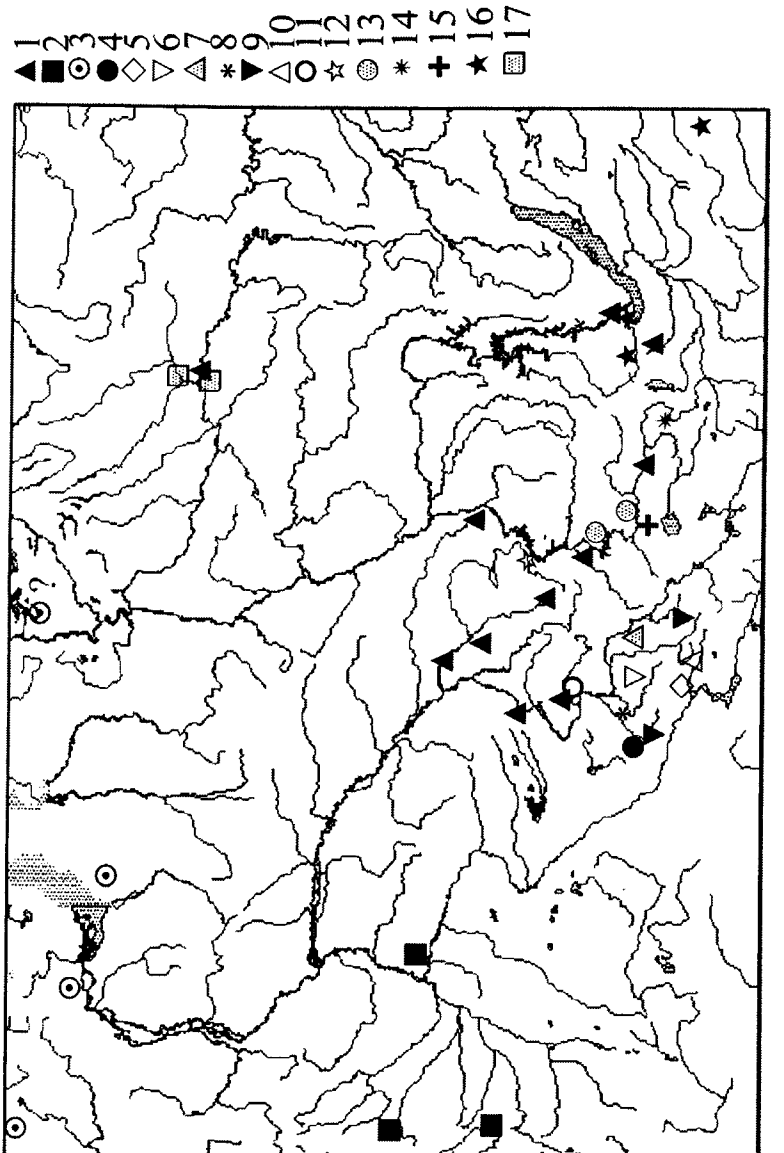

Fig. 50. - The map of Siberia : distribution of "*Carabus aeruginosus*" species group : 1,. *C. aeruginosus* s. str. - 2, *C. a. herrmanni*. 3, - *C. a. salechardensis* ssp. n. - 4, *C. eschscholtzi* s. str. - 5, *C. e. zyrjanovskianus*. - 6, *C. e. tulatensis*. - 7, *C. verzhutzkii* s. str. - 8, *C. verzhutzkii kolyvanus*. - 9, *C. putus* s. str. - 10, *C. p. schestopalovi*. - 11, *C. p. geblerianus* ssp. n. - 12, *C. p. saragaschensis* ssp. n. - 13, *C. aeruginosiformis* s. str. - 14, *C. a. zinaidae*. - 15, *C. a. microputus*. - 16, *C. spasskianus* s. str. - 17, *C. s. tungus* ssp. n.

(female); ratio width of elytra/width of pronotum 1.35 (males), 1.36 (female). All elytral interstices about equally developed. Primary elytral interstices interrupted into the short and long links, at the male partially integral; secondary and tertiary interstices integral. Primary foveoles well-marked; striae coarsely punctured.

Metepisterna smooth, its length nearly equal to its width. Abdominal sternites smooth, laterally finely rugose. Legs long; fore male tarsi with four dilated and pubescent segments.

Aedeagus (Fig. 37). Endophallus (Fig. 49) : ventral basal lobe broad, right basal lateral lobe broad and prominent.

Discussion. - The new subspecies differs from the nominotypical subspecies by following features : pronotum narrower and longer; elytra broader and shorter, more flattened, its sculpture more homogeneous; elytral margin broader, primary elytral foveoles deeper, legs longer.

Distribution. - Central part of Krasnoiarsk reg. (Evenk Autonomous Region); it is the most northern population of the species. The new subspecies is sympatric with *C. aeruginosus* Fisch.

Acknowledgments

I wish to express my hearty gratitude to Dr. E. Antonova (Moscow), Dr. N. Nikitsky (Moscow) and Dr. B. Kataev (Sankt-Petersburg) for providing me with an opportunity to study the collections of the Zoological Museum of Moscow University and the Zoological Institute of the Russian Academy of Sciences. My thanks go to Dr. L. Chernyshev (Zhukovsky), Mr. B. Brezina (Prague), Dr. J. Farkac (Prague), Mr. P. Smrz (Czech Budejovice) and Mr. A. Shamaev (Moscow) who kindly loaned materials for studies. My special thanks to Dr. M. Danilevsky (Moscow) who made great efforts to collect many *Carabus* forms during his expeditions to Siberia, and kindly loaned all his materials for studies.

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Date de publication : 25 septembre 1999