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To the knowledge of the Asiatic species of the genus *Trechus* CLAIRVILLE

(Insecta: Coleoptera: Carabidae)

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Abstract

Twenty new species and four new subspecies of the genus *Trechus* CLAIRVILLE are described from the former USSR: *Trechus terskeiensis ukokensis* ssp.n. (Kyrghyzstan) and *T. suluk* sp.n. (Kyrghyzstan), both from the *T. terskeiensis* species group; *T. larisae* sp.n. (Kyrghyzstan), *T. aksuensis* sp.n., *T. tentek* sp.n., *T. kimak* sp.n., *T. mitjaevi* sp.n., *T. kokzhotensis* sp.n., *T. abakumovi* sp.n., and *T. zhabyk taishi* ssp.n. (all from Kazakhstan) belonging to the *T. micrangulus* species group; *T. pamirensis* sp.n., *T. katranicus* sp.n., *T. putchkovi* sp.n., *T. egorovi* sp.n., *T. shchurovi* sp.n., *T. belovi* sp.n., and *T. demissus matshensis* ssp.n. (all from Kyrghyzstan) belonging to the *T. adustus* species group; *T. manensis ciseniseicus* ssp.n., *T. zinovievi* sp.n., *T. baskonicus* sp.n., *T. dudkorum* sp.n., *T. compactulus* sp.n., *T. toroticus* sp.n., and *T. ongudaicus* sp.n. (all from Russia) belonging to the *T. almonius* species group. The aedeagi of some *Trechus* species described earlier from Central Asia (*T. obliquebasalis* BREIT, *T. micrangulus* REITTER, and *T. bodemeyeri* REITTER) are studied and their taxonomic position with regard to recently described species is discussed. The morphological features and phylogenetic relations of the species of the *T. adustus* group are considered and the diagnose of the group is completed.

Key words. Carabidae, *Trechus*, new species, new subspecies, systematics, Central Asia, Kazakhstan, Kyrghyzstan, Russia, Tian Shan, Pamiro-Alai, Dzhungarian Alatau, Altai.

Zusammenfassung

Zwanzig neue Arten und vier neue Unterarten der Gattung *Trechus* CLAIRVILLE aus dem Gebiet der ehemaligen UdSSR werden beschrieben: *Trechus terskeiensis ukokensis* ssp.n. (Kirgisistan) und *T. suluk* sp.n. (Kirgisistan), beide aus der *T. terskeiensis* Artengruppe; *T. larisae* sp.n. (Kirgisistan), *T. aksuensis* sp.n., *T. tentek* sp.n., *T. kimak* sp.n., *T. mitjaevi* sp.n., *T. kokzhotensis* sp.n., *T. abakumovi* sp.n. und *T. zhabyk taishi* ssp.n. (alle aus Kasachstan) aus der *T. micrangulus* Gruppe; *T. pamirensis* sp.n., *T. katranicus* sp.n., *T. putchkovi* sp.n., *T. egorovi* sp.n., *T. shchurovi* sp.n., *T. belovi* sp.n. und *T. demissus matshensis* ssp.n. (alle aus Kirgisistan) aus der *T. adustus* Gruppe; *T. manensis ciseniseicus* ssp.n., *T. zinovievi* sp.n., *T. baskonicus* sp.n., *T. dudkorum* sp.n., *T. compactulus* sp.n. und *T. toroticus* sp.n., *T. ongudaicus* sp.n. (alle aus Rußland) aus der *T. almonius* Gruppe. Die Aedeagi einiger, bereits beschriebener *Trechus* Arten aus Zentralasien (*T. obliquebasalis* BREIT, *T. micrangulus* REITTER, *T. bodemeyeri* REITTER) werden untersucht. Die taxonomische Stellung dieser Arten unter Berücksichtigung der neu beschriebenen Arten wird behandelt. Die morphologischen Merkmale und die phylogenetischen Zusammenhänge der Arten der *T. adustus* Gruppe werden behandelt und die Diagnose der Gruppe wird vervollständigt.

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Introduction

This publication is a continuation of the papers published by BELOUSOV & KABAK (1991, 1992, 1993, 1994, 1995) on the carabid genus *Trechus* CLAIRVILLE from the Asiatic part of the former USSR.

Numerous *Trechus* species were collected recently by our friends and colleagues, and by the junior author. Those prooved to be new are described below.

In spite of numerous recent researches into Asiatic *Trechus* species (BELOUSOV & KABAK 1991, 1992, 1993, 1994, 1995, DEUVE 1993, DEUVE & QUÉINNEC 1992), the first described Asiatic members of the genus remain a mystery, mainly because some holotypes are females. The taxonomic position of some of these species was clarified after the males had been found in the Národni Muzeum v Praze.

The morphometric characters used here follow those of BELOUSOV & KABAK (1994, 1995). The number of genital preparations is given in parentheses after the number of specimens.

Abbreviations of collections used in the text:

CAG	collection of A. Gitzen, Neuhofen
CAK	collection of A. Koval, St. Petersburg
CAKR	collection of A. Kravetz, Volgograd
CAP	collection of A. Putchkov, Kiev
CAZ	collection of A. Zamotajlov, Krasnodar
CBZ	collection of B. Zvarič, Most
CCK	collection of I. Kabak, Almaty
CDL	collection of D. Lomakin, Tiumen
CEK	collection of E. Komarov, Volgograd
CEZ	collection of E. Zinoviev, Ekaterinburg
CIB	collection of I. Belousov, St. Petersburg
CRD	collection of R. Dudko, Tiumen
CSO	collection of S. Ovtshinnikov, Bishkek
CVZ	collection of V. Zieris, Pardubice
IBK	Institute of Biology, Academy of Sciences of Kyrghyzstan, Bishkek
ISE	Institute of Systematics, Ecology of Animals and Plants, Novosibirsk
IZK	Institute of Zoology, National Academy of Sciences of Kazakhstan, Almaty
MPU	Pedagogical University of Moscow
NHMW	Naturhistorisches Museum, Wien
NMP	Národni Muzeum v Praze, Prague
TMB	Hungarian Natural History Museum, Budapest
ZISP	Zoological Institute, Russian Academy of Sciences, St. Petersburg

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The *Trechus micrangulus* group

This group is considered here in the same sense as in KRYZHANOVSKIJ & al. (1995). Allied Siberian species are regarded separately in the *T. almonius* group.

Trechus micrangulus REITTER (Fig. 5)

Trechus micrangulus REITTER, 1913, Ent. Bl. 9: 174 (Type: Chines. Tian Shan).
non *Trechus micrangulus*: JEANNEL 1927: 336, figs. 865-867; JEANNEL 1962: 93, fig. 11.

Material examined: Holotype: ♂ (TMB) "v. Bodemeyer, CHINE, Chines. Tian-Shan,"; labelled "Monotypus ♀, 1913, Trechus micrangulus Reitter", "coll. Reitter", "micrangulus m., 1913, Type". **Further material:** 1(1) ♂, 1 ♀ (NMP) "v. Bodemeyer, CHINE, chines. Tian-Shan", labelled "Spec. typ.".

Notes: Externally this species is characterized by the relatively dark color of the dorsum, not large but protruding eyes, and small distinct hind angles of pronotum. The aedeagus (Fig. 5) reveals that *T. micrangulus* is very close to two subgroups within the *T. micrangulus* group: the median lobe is steplike bent, with distal and proximal part of subequal size; the ventral side is almost straight, hardly convex toward apical portion and then barely hooked upward; the middle part of the aedeagus is swollen, especially from the left side and constricted further in dorsal view.

First, *T. micrangulus* is closely related to *T. turukensis* BELOUSOV & KABAK (BELOUSOV & KABAK 1991, 1994) and *T. dulat* BELOUSOV & KABAK, 1992, from Kazakhstan and Kyrghyzstan. However, *T. micrangulus* is easily distinguished from these species in being smaller, considerably darker and in having more distinctly protruding eyes. Besides, the aedeagus is somewhat smaller and its apical portion more stout in dorsal view (Fig. 5).

Second, the species considered is very close to *T. kalabianus* DEUVE, *T. turnaianus* DEUVE, and *T. tianshanivagus* DEUVE from the Chinese Tian Shan. All these species are very similar externally: the body size is about 3 - 3.5 mm and the dorsum is dark, almost bicolored. The difference between these is not important enough to be sure of their specific independence. Additional material from different parts of the Chinese Tian Shan is necessary to resolve this problem.

Trechus dichrous REITTER

Trechus dichrous REITTER, 1911, Wien. ent. Ztg. 30(1): 48 (Type: China, Kaschgar).
Trechus dichrous: JEANNEL 1927: 338 (part.); JEANNEL 1962: 93, fig. 12 (part.).

Notes: REITTER (1911) compared this species with *T. pertyi* HEER from Europe noting the considerably larger size of the species from China. This fact seems to be important as 4 mm body length is really large. The same body size was given by REITTER (1911) in the same paper for *T. ronchettii* REITTER, one of the largest Caucasian members of the *T. lederi* group. The size of the numerous available specimens of the latter is indeed about 4 mm. This fact supports indirectly the validity of the body length given by REITTER (1911) for *T. dichrous* as well, which does not therefore match *T. oblique-basalis* BREIT in the body size.

Besides, the type locality of *T. dichrous* seems to be far from that of *T. obliquebasalis* (about 300 km according to JEANNEL 1927: p. 338). All these data favor the hypothesis that these taxa are different species. Additional material from Kaschgar may clarify the question.

The aedeagus illustrated by JEANNEL (1960: fig. 12) for the specimen from Aksu, which he believed to be *T. dichrous,* seems to represent *T. obliquebasalis* with wrongly figured apex. In any case, all examined specimens labelled as the above specimen turned out to be *T. obliquebasalis.*

Trechus obliquebasalis BREIT (Fig. 8)

Trechus obliquebasalis BREIT, 1914, Col. Rundsch. 3(10-11): 165 (Type: Aksu).
Trechus dichrous: JEANNEL 1927: 338, fig. 868 (part.); JEANNEL 1962: 93 (part.).
Trechus obliquebasalis: BELOUSOV in KRYZHANOVSKIJ & al. 1995: 73, reference 130.

Material examined: Paratypes: 2(2) ♂♂ (TMB), "Aksu, China Turk.", "coll. Reitter", "Paratypus, Trechus obliquebasalis Breit", "dichrous". - 2(1) ♂♂, 2 ♀♀ (NMP), labelled either as paratypes or as follows: "Tian-Shan, Aksu Thal"; one female specimen bears a label "cotype", other specimens provided with the label "spec. typ.". **Further material:** 13(3) ♂♂, 10 ♀♀ (CIB, CIK), E Terskey Alatau, gorge of Bayankol River, Akkol River, 28.V.1991 (Kabak). - 18(3) ♂♂, 11 ♀♀ (CIB, CIK), same area, Meredionalny mt. range, gorge Alaaighyr, 2900-3500 m, 16.VII.1992 (Kabak). - 11 ♂♂, 5 ♀♀ (CIB, CIK), same area, 5 km W of confluence of Ashutor and Bayankol rivers, 2700 - 3300 m, 15.VII.1992 (Kabak).

Notes: The species is easily distinguished from the allied species in the constricted aedeagal apex in dorsal view (Fig. 8), a character indicated by BREIT (1914) in the original description.

The species is usually regarded as junior synonym of *T. dichrous.*

The comparative study of the type series with the specimens from Kazakhstan reveals these populations to be conspecific. Only weak differences could be noted. The type specimens from China are somewhat lighter and larger (3.32 mm vs. 3.09 mm in population from Kazakhstan).

Distribution: The species is known from the southeastern part of Terskey Alatau and recorded from the adjacent mountains in China.

Ecology: In Kazakhstan, the species inhabits a wide belt of altitudes ranging from the forest to the alpine zone.

Trechus bodemeyeri REITTER (Fig. 6)

Trechus bodemeyeri REITTER, 1913, Ent. Bl. 9: 173 (Type: Chines. Tian Shan).
Trechus bodemeyeri: JEANNEL 1927: 480, fig. 1122; JEANNEL 1962: 95, fig. 13.

Material examined: Holotype: ♀ (TMB), "v. Bodemeyer, China, Chines. Tian-Shan,"; labelled "Monotypus ♀, 1913, Trechus bodemeyeri Reitter", "coll. Reitter", "Trechus bodemeyeri m., 1913, Typ". **Further material:** 1 ♂ (NMP), "v. Bodemeyer, Chine, Chines. Tian Shan", "Spez. typ.", "Trechus bodemeyeri".

Notes: The combination of small and parallel-sided body (length 2.65 - 2.75 mm), pale color of dorsum, deep and punctate striae of elytra as well as pointed apices of hind angles of pronotum makes the species easy to recognize. Both examined specimens are

similarly labelled. Thus the systematic position of this species can be determined more exactly with regard to the aedeagus.

Aedeagus (Fig. 6) small and strongly bent in the middle, with simple apex, endophallus consisting of rather short scaly patch not reaching the apical orificium. A similar aedeagal conformation is known also for *T. bayanbulak* DEUVE described from the same area. It seems very probable that both of these taxa are conspecific and may represent only different geographic races.

Distribution: According to JEANNEL (1962), Chinese Tian Shan, Juldus Minor.

Trechus larisae sp.n. (Fig. 7)

Holotype: ♂ (ZISP), Inner Tien-Shan, Baiduly mt. range, env. of Baiduly Pass, both slopes, 2900-3550 m, 20-21.VI.1994 (Molchanov & Shchurov). **Paratypes:** 74(9) ♂♂, 51 ♀♀ (ZISP, NHMW, CIB, CIK, CAZ, CAG), collected together with holotype. - 5(2) ♂♂, 1 ♀ (CIB, CAZ), same locality, 3000 - 3400 m, 28.VI.1995 (Shchurov). - 1 ♂ (CIB), Inner Tien Shan, S slope of Karadzhorga mt. range, 3000 m, 26.VI.1995 (Shchurov).

Description: Rather large species, body length 3.25 - 4.07 mm (males larger, average 3.88 mm vs. 3.73 in females). Body 2.34 - 2.52 (2.44) times as long as wide. Brownish testaceous, antennae monochromously yellowish.

Head large. Eyes of medium size, hardly protruding, 0.8 - 1.55 (1.25) times as long as temples. Antennae filiform, surpassing base of elytra by 3 - 4 apical antennomeres, 3rd segment 2.15 - 2.55 (2.30) times as long as wide.

Pronotum subcordate, 1.14 - 1.35 (1.23) times as wide as head, 1.23 - 1.38 (1.30) times as wide as long, and 1.30 - 1.44 (1.37) times as wide as pronotal base, which is 0.94 - 1.06 (1.0) times as wide as anterior margin. Base weakly lobed, distinctly excised on sides. Hind angles well-developed and pointed at apices. Marginal gutter narrow, wider posteriorly. Sides briefly rounded anteriorly, almost straight posteriorly, but deeply sinuate before hind angles produced weakly laterad. Basal transverse impression deep but not sharply outlined. Basal foveae medium-sized and deep. Basal surface slightly rugulose.

Elytra large, oval and wide, broadest at midlength, humeri slightly protruding, rounded. Elytra 1.41 - 1.56 (1.48) times as long as wide, 2.84 - 3.24 times (average 3.05 in males and 2.94 in females) as long as pronotum, and 1.82 - 2.04 (1.91) times as wide as head. Striae superficial, stria 4 well marked only on disc, stria 5 shorter, others either hardly visible or effaced; all barely punctate. Apical striola short, slightly curved and sharply interrupted anteriorly. Inner intervals subconvex, outer ones flat. Anterior discal pores at pore 4 level of umbilicate series or somewhat removed posteriad; posterior discal pores far before pore 5 of umbilicate series. Discal formula 19 - 29 (23) / 43 - 56 (51).

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum, and strongly transverse meshes on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 7) large and step-like bent, with a simple and massive obtuse apex. Endophallus armature represented by scaly patch.

Notes: Obviously the new species is closely related to the sympatric *T. ovtshinnikovi* BELOUSOV & KABAK, but can be easily distinguished by larger size, shallower elytral striae, which are more superficially and sparsely punctate, and by paler color of dorsum and antennae, which are monochromously yellowish while *T. ovtshinnikovi* with antennal segments 4 - 11 vaguely obscured. Aedeagus considerably larger, apex more massive and obtuse, oblique in lateral view (Fig. 7).

Distribution: Baiduly and Karadzhorga mt. ranges.

Ecology: Alpine species occurring at altitudes between 2900 and 3500 m.

Trechus zhabyk BELOUSOV & KABAK

Trechus zhabyk BELOUSOV & KABAK, 1994, Russ. Ent. Jorn. 3: figs. 15-16 (Type: Tastau mt. range, Karaungur river).

Trechus zhabyk tastavensis BELOUSOV & KABAK, 1994, Russ. Ent. Jorn. 3: fig. 17 (Type: E Tastau mt. range).

Trechus zhabyk taishi ssp.n. (Fig. 33)

Holotype: ♂ (ZISP), SE Kazakhstan, N slopes of Dzhungarian Alatau mt. range, sources of Sarymsakty (Lepsy) River, left bank near Karakezen Pass, 3100-3400 m, 11.VIII.1995 (Kabak). **Paratypes:** 90(18) ♂♂, 30(1) ♀♀ (ZISP, NHMW, MPU, CIK, CIB, CAP, CAK, CAG, CSO, CEK), collected together with holotype. - 41(3) ♂♂, 16 ♀♀ (CIK, CIB), same locality, but right bank, 3000 - 3500 m, 12.VIII.1995 (Kabak).

Description: Medium-sized, body length 2.80 - 3.10 (2.98) mm; body 2.27 - 2.52 times (males wider, average 2.38 vs. 2.43 in females) as long as wide. Light testaceous, appendages yellowish.

Head: Eyes small and flat, 1.15 - 1.45 (1.30) times as long as subconvex temples. Antennae filiform, relatively short, not reaching anterior pore level and surpassing base of pronotum by 2.5 apical antennomeres; its 3rd segment 1.75 - 2.35 (2.10) times as long as wide.

Pronotum transverse, 1.18 - 1.25 (1.22) times as wide as head, 1.27 - 1.40 (1.35) times as wide as long, and 1.31 - 1.41 (1.36) times as wide as pronotal base; its hind angles obtusangular but distinct, either pointed or rounded at apices. Sides straightened posteriad. Base narrow and slightly oblique on sides, 0.93 - 1.07 (0.99) times as wide as anterior margin. Basal transverse impression superficial. Basal foveae not large but very deep, rugulose. Marginal gutter of moderate width, slightly dilated just near hind angles. Basal surface rugulose.

Elytra oval and feebly depressed, with faintly protruding and rounded humeri and wide apex, 1.35 - 1.50 (1.42) times as long as wide, 2.85 - 3.18 (3.00) times as long as pronotum, and 1.77 - 2.02 times (average 1.92 in males vs. 1.86 in females) as wide as head. Striae rather deep, evanescent toward sides, beginning with stria 5 very shallow, all striae distinctly punctate. Apical striola straight, directed to stria 5 anteriorly or sometimes to subapical pore. Inner intervals subconvex. Anterior discal pore varying near level of pore 4 of umbilicate series; posterior discal pore before the median group. Apical and subapical pores spaced. Discal formula 18 - 25 (21) / 45 - 54 (49).

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum, and strongly transverse meshes on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 33) of average size, slightly curved and "S"-shaped. Endophallus armature indistinct.

Notes: *Trechus zhabyk taishi* ssp.n. differs distinctly from *T. zhabyk* s.str. in the aedeagus, which is larger (Fig. 39), less curved, with more developed basal bulb, and less distinctly defined apical disc. The new subspecies differs from *T. zhabyk tastavensis* (BELOUSOV & KABAK 1994: fig. 17) with the same aedeagus size (Fig. 39) in less attenuated apex and larger bulb of aedeagus. It is worth noting that these two subspecies are separated by the range of the nominotypical form. Differences between *T. zhabyk taishi* ssp.n. and two sympatric congeners are discussed below.

Distribution: Upper reaches of Sarymsakty River (basin of Lepsy River) in Dzhungarian Alatau.

Ecology: In alpine zone at an elevation of 3100 - 3400 m. The subspecies is sympatric with *T. mitjaevi* sp.n. and one further taxon related to *T. tishetshkini*. Among the above taxa, *T. zhabyk taishi* ssp.n. seems to be most cryptozoic.

Trechus kokzhotensis sp.n. (Fig. 9)

Holotype: ♂ (ZISP), N Dzhungarian Alatau, Kokzhota mt. range, sources of Bessemas River, S of village Topoliovka, 2400-2700 m, 4.VIII.1994 (Kabak). **Paratypes:** 18(6) ♂♂, 11 ♀♀ (ZISP, NHMW, CIB, CIK), collected together with holotype.

Description: Medium-sized species, body length 3.08 - 3.45 mm (males larger, average 3.34 mm vs. 3.24 in females); 2.26 - 2.52 (2.38) times as long as wide. Body stout and subconvex. Dorsum pitchy black, shining, legs monochromously yellow. Suture of elytra and sometimes disc of pronotum tinged with reddish. Usually, antennae vaguely obscured beginning with apical portion of antennomere 4; their distal segments strongly darkened.

Head large. Eyes rather large but slightly protruding, 1.60 - 2.60 (2.10) times as long as temples. Antennae filiform, not long, surpassing base of elytra by two apical antennomeres, and not reaching anterior pore level, its 3rd segment 1.75 - 2.10 (1.95) times as long as wide.

Pronotum transverse, 1.16 - 1.26 (1.22) times as wide as head, 1.31 - 1.47 (1.37) times as wide as long, and 1.25 - 1.42 (1.32) times as wide as pronotal base; its hind angles small and almost rectangular with apices slightly rounded and directed outwards. Sides straight posteriorly and hardly excised just before hind angles. Base 0.91 - 1.05 (1.00) times as wide as anterior margin, only slightly oblique on sides. Basal transverse impression very superficial and faintly outlined. Basal foveae large and deep. Basal surface moderately rugulose. Lateral margin moderately reflexed, posteriorly approximately as wide as on elytra.

Elytra oval and short, 1.27 - 1.42 (1.36) times as long as wide, 2.60 - 3.02 (2.75) times as long as pronotum, and 1.71 - 1.91 (1.80) times as wide as head. Humeri weakly salient. Striation distinct but not deep. Striae 1 - 4 distinct and entire, beginning with stria 5 short and shallow but even, stria 7 conspicuous in middle. Apical striola sharp and regularly curved, joining stria 5 anteriorly. All striae finely punctate. Inner intervals subconvex, outer ones flat. Anterior discal pores far removed from base of elytra and usually

situated near pore 4 level of humeral group. Posterior discal pore markedly before median group of umbilicate series, which is widely spaced from humeral one. Discal formula 17 - 25 (21) / 47 - 56 (50).

Microsculpture superficial, comprised of rather small isodiametric meshes on head, irregular transverse meshes on pronotum, and fine transverse lines on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 9) slender, with slightly attenuate apical portion and hardly defined scaly endophallus armature.

Notes: The unique combination of the blackish dorsum and yellowish legs makes the species easily to be recognized among Dzhungarian *Trechus*. The aedeagus structure argues for its closeness to *T. zhabyk* BELOUSOV & KABAK.

Distribution: Kokzhota mt. range on the N slope of Dzhungarian Alatau.

Ecology: The new species occurs in the forest zone sympatrically with *T. brevicorpus* BELOUSOV & KABAK. In the alpine zone, both species are replaced by *T. tshildebaevi* BELOUSOV & KABAK.

Trechus aksuensis sp.n. (Fig. 4)

Holotype: ♂ (ZISP), N Dzhungarian Alatau, left bank of Aksu River, Soldatsai River, *Picea* forest, 2300 - 2400 m, 20.VIII.1994 (Kabak). **Paratypes:** 7(7) ♂♂, 2 ♀♀ (ZISP, CIB, CIK), collected together with holotype (Kabak & Frolov).

Description: Medium-sized and subconvex species, body length 3.00 - 3.20 mm (males larger, average 3.10 mm vs. 3.04 in females); 2.42 - 2.58 (2.50) times as long as wide. Testaceous, appendages yellowish.

Head: Eyes small and flat, 1.0 - 1.20 (1.15) times as long as temples. Antennae filiform, rather short, not reaching anterior pore level, its 3rd segment 1.80 - 2.10 (1.90) times as long as wide.

Pronotum subcordate but variable, very transverse, 1.20 - 1.28 (1.25) times as wide as head, 1.42 - 1.50 (1.47) times as wide as long, and 1.33 - 1.41 (1.39) times as wide as pronotal base; its hind angles variable, rectangular to obtusangular, sharp or rounded at apices. Sides straightened posteriad or briefly sinuate before hind angles. Base 0.94 - 1.02 (0.99) times as wide as anterior margin, slightly oblique on sides. Basal transverse impression superficial and faintly outlined. Basal foveae large and deep. Marginal gutter narrow, dilated in posterior third. Basal surface rugulose.

Elytra oval and subconvex, broadest at midlength or slightly behind it, 1.42 - 1.50 (1.47) times as long as wide, 2.70 - 2.95 (2.87) times as long as pronotum, and 1.74 - 1.89 times (average 1.84 in males vs. 1.79 in females) as wide as head. Striae 1 - 3 distinct and entire, stria 4 not continuous, outer ones beginning with stria 5 indistinct; all not punctured. Apical striola short and strongly curved, joining stria 3 anteriorly. Inner intervals subconvex, outer ones flat. Anterior discal pores usually at level between pores 3 and 4, normally closer to former; posterior ones markedly before median group of umbilicate series. Apical triangle equilateral or apical and subapical pores approached. Discal formula 17 - 20 (18) / 49 - 54 (52).

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum, and barely transverse meshes on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 4) large and step-like bent. Endophallus armature represented by scaly patch, narrowed and sinuate distally in dorsal view.

Notes: Among Dzhungarian *Trechus* this species is characterized by its aedeagus. Besides, the conjunction of the apical striola and stria 3 seems to deserve attention.

Distribution: Basin of the left tributary of Aksu River in Dzhungarian Alatau.

Ecology: The new species was collected together with *T. korzhun* BELOUSOV & KABAK in the forest zone at altitudes of 2300 - 2400 m; both species are replaced by *T. dzhungaricus* BELOUSOV & KABAK in the alpine meadows.

Trechus abakumovi sp.n. (Fig. 10)

Holotype: ♂ (ZISP), N slope of Dzhungarian Alatau mt. range, basin of Aksu River, upper reaches of Bolshoy Aidausai River, right bank, 2500 - 3000 m, 11.VIII.1994 (Kabak). **Paratypes:** 20(6) ♂♂, 12 ♀♀ (ZISP, NHMW, MPU, CIK, CIB, CAG), collected together with holotype.

Description: Medium-sized species, body subconvex, length 3.06 - 3.45 mm (males larger, average 3.32 mm vs. 3.22 in females). Body 2.33 - 2.47 (2.38) times as long as wide. Color dark, head and elytra brownish, or even pitchy black, pronotum and suture of elytra tinged with reddish. Rarely all dorsum pitchy black. Palpi and legs yellowish, contrasting with dark color of dorsum. Antennae vaguely obscured beginning with the distal portion of antennomeres 3 - 4.

Head large. Eyes of average size, slightly convex, 1.65 - 2.40 (1.95) times as long as temples. Antennae short, surpassing pronotal base by 2.5 apical segments, and not reaching anterior pores level of elytra, 3rd segment 1.80 - 2.10 (1.95) times as long as wide.

Pronotum cordate, transverse, 1.18 - 1.25 (1.22) times as wide as head, 1.27 - 1.39 (1.34) times as wide as long, and 1.26 - 1.39 (1.33) times as wide as pronotal base. Sides straight, not sinuate before hind angles, latter marked although rounded on apices. Base strongly oblique on sides, 0.98 - 1.12 (1.05) times as wide as anterior margin. Basal transverse impression deep but not sharply outlined, weakly rugulose. Basal foveae large and deep. Marginal gutter narrow, distinctly dilated posteriorly.

Elytra oval, 1.37 - 1.48 (1.42) times as long as wide, 2.76 - 3.02 times (males have longer elytra, average 2.92 vs. 2.85 in females) as long as pronotum, and 1.80 - 1.94 (1.87) times as wide as head. Striae rather deep, even exterior ones visible although interrupted and shallow; all striae finely but distinctly punctate. Apical striola almost straight, joining stria 5 anteriorly. Intervals subconvex. Anterior discal pores at level between pores 3 and 4, usually closer to latter; posterior discal pores before pore 5 of umbilicate series. Discal formula 17 - 25 (21) / 42 - 59 (54). Subapical pore more distant in apical triangle.

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum, and weakly transverse meshes on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 10) step-like bent, broadest near midlength, with apical disc. Normally, endophallus armature present and comprised of small and finely delimited plate in anisotopous position.

Notes: This species is most closely related to *T. dzhungaricus* BELOUSOV & KABAK, 1991. Both species are sympatric and easy to distinguish. The new species differs in larger size, darker color of dorsum, more oblique sides of pronotal base, less sinuate sides and more rounded hind angles of pronotum as well as in apical striola more evidently joining stria 5 anteriorly. Besides, *T. abakumovi* has a considerably larger aedeagus with more attenuated apex and larger apical disc (Fig. 10; BELOUSOV & KABAK 1991: fig. 49).

Distribution: N slope of Dzhungarian Alatau, basin of Aksu River, upper reaches of Bolshoy Aidausai River.

Ecology: The species was collected in alpine meadows.

Trechus mitjaevi sp.n. (Fig. 34)

Holotype: ♂ (ZISP), SE Kazakhstan, N slopes of Dzhungarian Alatau mt. range, sources of Sarymsakty (Lepsy) River, left bank near Karakezen Pass, 3100-3400 m, 11.VIII.1995 (Kabak). **Paratypes:** 50(15) ♂♂, 14(3) ♀♀ (ZISP, NHMW, MPU, CIK, CIB, CAP, CAK, CAG, CSO, CEK), collected together with holotype.

Description: Medium-sized, subconvex and stout species, body length 2.75 - 3.30 (3.02) mm; 2.34 - 2.50 (2.41) times as long as wide. Usually testaceous, appendages yellowish; sometimes disc of elytra and vertex a little darker, brownish.

Head not large. Eyes of average size, weakly convex, 1.40 - 2.00 (1.70) times as long as temples, latter convex. Antennae relatively short, not reaching anterior pore level, and surpassing base of pronotum by 2.5 apical antennomeres; its 3rd segment 1.65 - 2.10 (1.85) times as long as wide, middle segments almost moniliform.

Pronotum transverse, 1.18 - 1.28 (1.22) times as wide as head, 1.26 - 1.38 (1.33) times as wide as long, and 1.27 - 1.40 (1.32) times as wide as pronotal base; its hind angles obtusangular but distinct, rounded at apices. Sides either straight or weakly sinuate before hind angles. Base 0.97 - 1.10 (1.04) times as wide as anterior margin, oblique on sides, rarely almost straight. Basal transverse impression superficial and faintly outlined. Basal foveae large and deep. Marginal gutter narrow, slightly reflexed, hardly dilated posteriorly. Basal surface rugulose.

Elytra oval and subconvex, with faintly protruding humeri, and widely rounded apex, 1.38 - 1.46 (1.42) times as long as wide, 2.76 - 2.95 (2.87) times as long as pronotum, and 1.75 - 1.91 times (average 1.88 in males vs. 1.83 in females) as wide as head. Striae regular, of normal depth, shallower towards sides, striae 1 - 4 complete, non of them punctate. Apical striola straight, directed to stria 5 anteriorly, and sharply interrupted here. Inner intervals subconvex, outer flat. Anterior discal pore usually more distant from base of elytra as pore 4, rarely between pores 3 and 4 of humeral group; posterior pore distinctly before the median group of umbilicate series. Apical triangle equilateral. Discal formula 21 - 29 (25) / 49 - 58 (55).

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum, and transverse meshes on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 34) of average size, arched, with apical disc. Endophallus armature represented by finely delimited saddle-shaped plate in anisotopous position.

Notes: The new species is most closely related to *T. exilipenis* BELOUSOV & KABAK from the basin of Khorgos River in the southern part of Dzhungarian mountains. Despite of the great geographical distance, both species share the same type of aedeagus including similar endophallus armature (Fig. 34). However, *T. mitjaevi* sp.n. readily differs from the above species in having a more stout median lobe of aedeagus, especially in the apical portion, and larger endophallus plate in a more dorsal position. Externally, the new species is distinguished from *T. exilipenis* by darker color, larger and more convex eyes (average index 1.70 vs. 1.20 in *T. exilipenis*), and the posteriorly more constricted pronotum. In the aedeagus shape, the new species is most similar to *T. murzorum* BELOUSOV & KABAK differing from it in presence of well-defined and asymmetric proximal plate of endophallus. Externally, *T. mitjaevi* sp.n. differs from *T. murzorum* in being darker and having larger eyes (average index 1.25 in *T. murzorum*). *Trechus mitjaevi* sp.n. is sympatric with two other *Trechus* species. One of them seems to represent a geographical race of *T. tishetshkini* BELOUSOV & KABAK and is easily distinctive in having smaller size and dark body. The 2nd species, *T. zhabyk taishi* ssp.n. differs from *T. mitjaevi* sp.n. in the pronotum more constricted at base (average ratio of maximum width to base 1.37 vs. 1.32 in *T. mitjaevi* sp.n.) and smaller eyes (average index 1.30 vs. 1.70 in *T. mitjaevi* sp.n.).

Distribution: N slope of Dzhungarian Alatau, upper reaches of Sarymsakty River in the basin of Lepsy River.

Ecology: The species occurs in the alpine zone at elevations of 3100 - 3400 m.

Trechus tentek sp.n. (Fig. 30)

Holotype: ♂ (ZISP), SE Kazakhstan, N slopes of Dzhungarian Alatau mt. range, bass. of Tentek River, watershed of Arshaly Vost. and Mal. Arshaly Rivers, Abatas mt., 2600 m, 8.VIII.1995 (Kabak). **Paratypes:** 100(10) ♂♂, 54(3) ♀♀ (ZISP, NHMW, MPU, CIK, CIB, CAP, CAK, CAG, CSO, CEK), collected together with holotype.

Description: Small-sized species with stout and subconvex body; length 2.59 - 2.92 (2.77) mm; body 2.30 - 2.56 (2.41) times as long as wide. Color variable, brownish, usually tinged with reddish on pronotal disc and suture of elytra; appendages yellowish, only middle antennomeres sometimes vaguely obscured.

Head large. Eyes small and subconvex, 1.25 - 1.85 (1.45) times as long as temples, latter convex. Antennae rather short, not reaching anterior pore level, and surpassing base of pronotum by 2.5 apical antennomeres; its 3rd segment 1.55 - 2.00 (1.80) times as long as wide, middle segments almost moniliform.

Pronotum transverse, 1.17 - 1.24 (average 1.21 in males vs. 1.19 in females) times as wide as head, 1.27 - 1.39 (1.33) times as wide as long, and 1.28 - 1.42 (1.34) times as wide as pronotal base; its hind angles obtusangular either rounded or pointed at apices. Sides straightened posteriorly, briefly rounded anteriorly. Base straight or feebly rectilinearly oblique on sides, 0.97 - 1.05 (1.01) times as wide as anterior margin. Basal transverse impression superficial and faintly outlined, far distant from pronotum base.

Basal foveae very large and deep. Marginal gutter narrow and regular, slightly reflexed, hardly dilated posteriorly. Basal surface rugulose.

Elytra stout and oval, subconvex, faintly depressed on disc, broadest just after mid-length. Humeri weakly prominent. Elytra 1.33 - 1.45 (1.38) times as long as wide, 2.60 - 2.97 (2.77) times as long as pronotum, and 1.73 - 1.93 (1.82) times as wide as head. Inner striae deep, not punctate, outer ones finely punctate; striae 4 and 5 shallow, striae 6 - 7 evanescent. Apical striola straight and deep, normally directed to stria 5 anteriorly. Inner intervals flat, although striae deep. Usually anterior discal pore closer to pore 3 than to pore 4; posterior one before pore 5 of umbilicate series. Apical triangle subequilateral. Discal formula 17 - 23 (20) / 44 - 56 (51).

Microsculpture superficial, comprised of isodiametric meshes on head, irregular transverse meshes on pronotum, and almost isodiametric meshes on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 30) small and feebly curved, ventral side almost straight. Median lobe slightly dilated in apical quarter and gradually narrowed towards pointed apex in dorsal view.

Notes: *Trechus tentek* sp.n. seems to be most closely related to *T. zhabyk*, differing from it in smaller size, darker color, larger eyes, and wider elytra. The aedeagus of the new species is more slender, endophallus armature lacking. Besides, the new species differs from *T. maisaicus* BELOUSOV & KABAK and *T. ispulensis* BELOUSOV & KABAK in smaller size, darker color, almost straight base of pronotum, and wider elytra.

Distribution: Northern slope of Dzhungarian Alatau, basin of Tentek River.

Ecology: The species occurs in meadows at an elevation of 2600 m.

Trechus kimak sp.n. (Fig. 32)

Holotype: ♂ (ZISP), SE Kazakhstan, N slope of Dzhungarian Alatau mt. range, watershed of Lepsy and Sarymsakty rivers (basin of Tentek river), 3000 m, 9.VIII.1995 (Kabak). **Paratypes:** 23(10) ♂♂, 22 ♀♀ (ZISP, NHMW, MPU, CIK, CIB, CAP, CAK, CAG, CSO, CEK), collected together with holotype.

Description: Small-sized species with oval and convex body; length 2.45 - 2.80 mm (males smaller, average 2.57 mm vs. 2.63 in females); body 2.24 - 2.49 (2.36) times as long as wide. Color variable, from monochromously testaceous to brownish; completely sclerotized specimens bicolor, head and disc of elytra dark brownish, disc of pronotum and suture reddish; legs and palpi yellowish, only antennae faintly obscured beginning with antennomere 3 or 4.

Head massive. Eyes average and subconvex, 1.40 - 2.00 (1.60) times as long as temples, latter convex. Antennae rather short, not reaching anterior pore level and surpassing base of pronotum by 2 - 2.5 apical antennomeres; 3rd segment 1.40 - 2.00 (1.60) times as long as wide, middle segments almost moniliform.

Pronotum large and moderately transverse, 1.15 - 1.31 (1.24) times as wide as head, 1.27 - 1.39 (1.33) times as wide as long, and 1.29 - 1.41 (1.36) times as wide as pronotal base; its hind angles obtusangular and usually pointed at apices or even protruding as small denticles. Sides straight posteriorly, rounded anteriorly. Base straight, sometimes

feebly rectilinearly oblique on sides, 0.97 - 1.05 (1.01) times as wide as anterior margin. Basal transverse impression superficial, deeper laterally. Basal foveae large and deep. Marginal gutter narrow, hardly dilated posteriorly. Basal surface rugulose.

Elytra oval, convex with strongly rounded sides, broadest near middle, slightly depressed on disc. Humeri distinctly prominent, although widely rounded. Elytra 1.30 - 1.45 (1.36) times as long as wide, 2.51 - 2.84 (2.68) times as long as pronotum, and 1.73 - 1.93 (1.82) times as wide as head. Striae of elytra rather deep, more superficial to sides, base and apex of elytra; even stria 7 visible, although incomplete; external striae finely punctate. Apical striola hardly curved anteriorly, directed to stria 5 and interrupted here. Inner intervals subconvex. Anterior discal pore usually a little more distant from base of elytra than pore 3; posterior discal pore markedly before pore 5 of umbilicate series. Apical triangle subequilateral, sometimes with wider base. Discal formula 17 - 22 (20) / 47 - 57 (51).

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum, and almost isodiametric meshes on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 32) small and slender, gradually arched, of regular width, apical part oblique. Endophallus armature comprised of two weakly sclerotized pieces fused anteriorly and divergent posteriorly, the left one larger.

Notes: In the aedeagus apex, the new species is similar to *T. songoricus* BELOUSOV & KABAK, *T. scapulatus* BELOUSOV & KABAK, *T. korzhun* BELOUSOV & KABAK, and *T. pallens* BELOUSOV & KABAK, differing from them in smaller size, darker color, and fused anterior part of the copulatory pieces. As for the latter character, *T. kimak* sp.n. is similar to *T. uygurorum* BELOUSOV & KABAK, *T. shatrovskyi* BELOUSOV & KABAK, and *T. tishetshkini* BELOUSOV & KABAK. The closeness of all these species is confirmed also by the dark color, small size and the almost rectilinear pronotal base and usually pointed pronotal hind angles. However, *T. kimak* sp.n. differs from the above species in strongly oblique aedeagal apex and larger pronotum. Specially noteworthy is the almost isodiametric elytral microsculpture, a character distinguishing *T. kimak* sp.n. from most Dzhungarian congeners.

Distribution: Basin of Tentek River on northern slope of Dzhungarian Alatau.

Ecology: The species was collected in meadows at an elevation of 3000 m.

The *Trechus terskeiensis* group

This group was established for several species from the Tian Shan based mainly on the shape of the aedeagus and the hind angles of the pronotum (BELOUSOV & KABAK 1991). Since then, some additional species were found (BELOUSOV & KABAK 1992, 1994). This group seems to be most closely related to the *T. adustus* group.

Trechus terskeiensis BELOUSOV & KABAK

Trechus terskeiensis BELOUSOV & KABAK, 1991, Revue ent. l'URSS 70(4): 819, fig. 24 (Type: Karkara, Kok-Dzhar).

Trechus terskeiensis ukokensis ssp.n. (Figs. 2 - 3)

Holotype: ♂ (ZISP), SE of Kotshkorka, upper reaches of Ukok River, 3500 - 3700 m, 15-16.VI.1994 (Molchanov & Shchurov). **Paratypes:** 25(15) ♂♂, 9 ♀♀ (ZISP, NHMW, MPU, CIB, CIK, CAP, CAG), collected together with holotype. - 15(4) ♂♂, 11 ♀♀ (CAZ, CIB, CIK), same locality, 3000 - 3500 m, 4-5.VII.1995 (Shchurov). - 16(11) ♂♂, 6 ♀♀ (ZISP, CIB, CIK), Inner Tien Shan, Karadzhorga mt. range, nr Akkia Pass, 3100 - 3500 m, 19.VI.1994 (Molchanov & Shchurov).

Notes: *Trechus terskeiensis ukokensis* ssp.n. differs from other subspecies in having a more slender aedeagus (Figs. 2, 3, 38). Besides the new subspecies has more elongate elytra, which are 1.36 - 1.50 (1.43) times as long as wide vs. 1.32 - 1.43 (1.38) times in other subspecies.

The specimens from Karadzhorga mt. range are distinctive in having a shorter aedeagus and more distant plates of endophallus armature.

The new species is sympatric with *T. pavlovskii dolonicus* BELOUSOV & KABAK, the former taxon differs in more elongate elytra which are broadest far behind midlength (oval and broadest near midlength in *T. pavlovskii dolonicus*), and in the pronotum with straight base and more distinctly projecting acute hind angles.

Distribution: Basin of Ukok River and Karadzhorga mt. range, i.e. the new subspecies inhabits the western part of the species range.

Ecology: The subspecies was collected in alpine meadows at elevations of 3000 - 3700 m.

Trechus suluk sp.n. (Fig. 1)

Holotype: ♂ (ZISP), Kyrghyzstan, NE spur of Ferghana mt. range, Takhtalyk mt. range, Chonko river, SSW of Ozgorush, 2500 - 3200 m, 9.07.95 (Kabak). **Paratypes:** 135(7) ♂♂, 79(5) ♀♀ (ZISP, NHMW, MPU, IZK, CSO, CIK, CIB, CAK, CAP, CAG, CEK), collected together with holotype.

Description: Medium-sized species with convex and robust body. Dorsum slightly or moderately depressed. Length 3.17 - 3.70 mm (males larger, average 3.57 mm vs. 3.44 in females). Body 2.22 - 2.42 (2.32) times as long as wide. Monochromously brownish testaceous, relatively light, only head and disc of elytra somewhat darker. Suture hardly lighter than disc of elytra; antennae indistinctly obscured beginning with the apical half of antennomere 3 or distal half of antennae vaguely darkened; legs monochromously light.

Head massive. Eyes large but flat, 1.75 - 2.15 (1.95) times as long as temples. Antennae long, surpassing base of pronotum by 2.5 apical antennomeres, barely reaching anterior discal pore level, their 3rd antennomere 1.90 - 2.30 (2.10) times as long as wide.

Pronotum very transverse, massive, 1.17 - 1.43 times (average 1.33 in males vs. 1.26 in females) as wide as head, 1.29 - 1.43 (1.38) times as wide as long, and 1.24 - 1.37 (1.31) times as wide as pronotal base; lateral sides widely rounded anteriorly, straight posteriorly, not sinuate before hind angles, latter small and obtusangular but usually pointed. Base of pronotum almost rectilinear, hardly excised laterally, 1.02 - 1.11 (1.07) times as wide as anterior margin. Basal transverse impression sharply outlined at sides, vague in the middle; basal foveae hardly impressed. Marginal gutter narrow, distinctly dilated towards hind angles. Basal surface weakly rugulose, wrinkles medially more smooth.

Elytra oval and subconvex, subdepressed on disc, broadest near midlength; humeri rounded and feebly salient, 1.34 - 1.46 times (average 1.42 in males vs. 1.38 in females) as long as wide, 2.74 - 3.07 times as long as pronotum (average 2.97 in males vs. 2.86 in females), and 1.88 - 2.13 times as wide as head (average 1.99 in males vs. 1.93 in females). Striae very superficial and finely punctate, evanescent towards sides, base, and apex of elytra. Intervals flat. Apical striola almost straight and abruptly interrupted, joining trace of stria 5 anteriorly. Anterior discal pore near level of pore 4; posterior one at level of pore 5 or between pores 5 and 6. Discal formula 15 - 20 (18) / 47 - 62 (54). Apical triangle equilateral.

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum, and strongly transverse meshes on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 1) very large and step-like bent, more or less swollen in middle part, with medium-sized apical disc and large sagittal lobe, often more developed than illustrated. Median lobe subequal in width, with asymmetric orificium and triangular apex in dorsal view. Endophallus armature large, comprised of two large and strongly sclerotized plates.

Notes: The new species is most closely related to *T. ferghanicus* BELOUSOV & KABAK and *T. merenicus* BELOUSOV & KABAK. From the former, *T. suluk* sp.n. is easily to be distinguished by brownish testaceous color (*T. ferghanicus* dark brownish), by eyes of smaller size (eye-temple ratio 1.75 - 2.15, average 1.95 in *T. suluk* sp.n. vs. 2.10 - 2.60, average 2.35 in *T. ferghanicus*), by longer antennae, and by less acute hind angles of pronotum. The aedeagus of the new species is narrower in dorsal view, with less asymmetric orificium, less developed apical disc, and different shape of endophallus plates.

From the latter, the new species differs in wider elytra which are in males, on the average, 1.99 times as wide as head vs. 1.91 in males of *T. merenicus*. *Trechus suluk* sp.n. differs readily from *T. merenicus* only in the triangular shape of the aedeagal apex (attenuated and parallel-sided in *T. merenicus*) and in the endophallus armature, both plates of which are very large and subequal.

Distribution: Known from Takhtalyk mt. range situated in the northeastern part of Ferghana mt. range.

Ecology: Alpine species occurring in mountain meadows at elevations of 2500 - 3200 m.

The *Trechus adustus* group

This group was recognized by BELOUSOV & KABAK (1991) for species having the following characters: the hind angles of pronotum strongly removed from the base anteriad and widely rounded; pronotal base oblique on sides and therefore broadly lobed in the middle; aedeagus slender, step-like bent, without the apical disc but hooked apically; endophallus armature consisting of two, usually narrow plates, the lower of which is long and often protruding over the aedeagus orificium distally. As indicated above, this group seems to be most closely related to the *T. terskeiensis* group. The discovery of *T. putchkovi* sp.n. bridges to some extent the gap between these groups in the aedeagus structure. This species has the endophallus armature resembling that of *T. narynensis*,

especially concerning the shape of the lower plate pointed and curved distally. Contrariwise, the external characteristics appear to be more valuable. Moreover, in addition to the above characters, one further important feature should be noted. All hitherto known members of the *T. adustus* group have distinctly pubescent elytra, borders of pronotum and abdominal sterna. This character deserves special attention. A considerable part of the *Trechus* species has more or less distinctly pubescent temples and eyes. This pubescence seems a rudiment of the regular pubescence earlier covered all teguments. In any case, the body of most species is covered by very small and fine micropunctulae, visible only at high magnification and if the surface is clean.

Trechus adustus JEANNEL (Fig. 31)

Trechus adustus JEANNEL, 1962, Rev. franç. Ent. 29(2): 93, fig. 10 (Type: Alai mts, Taldyk Pass).

Material examined: Holotype: ♀ (ZISP), "Alai mt. range, near Taldyk, 3000 - 3500 m, 16.VI.961 (Zaslavsky)"; labelled by Jeannel "Type". **Paratypes:** 4(1) ♂♂, 3 ♀♀ (ZISP), collected together with holotype. **Further material:** 4 ♂♂, 2 ♀♀ (ZISP), same locality, 3000 - 3500 m, 17.VI.1961 (Gurjeva).

Notes: The species is easily to be distinguished from all other members of the *T. adustus* group by the peculiar shape of the lower plate in the endophallus armature, truncated at apex in dorsal view (Fig. 31). This species differs from the allied *T. animosus* in having longer elytra which are 3.04 - 3.23 (3.15) times as long as pronotum compared with 2.76 - 3.01 (2.93) in *T. animosus*. The difference in ratio of pronotum base to anterior margin (JEANNEL 1962: p. 91, thesis "3") is not confirmed for material at our disposal, average index 1.12 in *T. adustus vs.* 1.13 in *T. animosus*. The differences between *T. adustus* and sympatric *T. putchkovi* sp.n. are discussed below.

Distribution: At the moment *T. adustus* is known only from Taldyk Pass in the eastern part of Alai mt. range.

Trechus arrisi JEANNEL (Fig. 23)

Trechus arrisi JEANNEL, 1962, Rev. franç. Ent. 29(2): 92, fig. 5 (Type: Alai mts, Irkeshtam).

Material examined: 6(4) ♂♂ (ZISP, CIB, CIK) Alai mt. range, 15 km W of Irkeshtam, 50 km E Sarytash, Koek-Suu, 3000 - 3800 m, 16.VII.1989 (Egorov).

Notes: The species is very closely related to *T. jugivagus* LUTSHNIK, differing from it mainly in less attenuated apex and straight ventral side of aedeagus. JEANNEL (1962) indicated that *T. arrisi* differs from *T. jugivagus* also by longer pronotum. In fact, both species are identical in this respect (Fig. 37) but readily distinguished by the ratio of pronotum width to head width (average index 1.23 in males of *T. arrisi* vs. 1.18 in males of *T. jugivagus*).

Distribution: Eastern part of Alai Valley near Irkeshtam.

Trechus animosus JEANNEL (Fig. 24)

Trechus animosus JEANNEL, 1962, Rev. franç. Ent. 29(2): 92, fig. 6 (Type: Atbashi).

Material examined: Holotype: ♀ (ZISP), "Central Tien Shan, N slope of Atbashi Ridge, 3000 m, 21.VI.59 (Zaslavskyi)". Labelled "Type", "Trechus animosus", "Holotypus, Trechus animosus". **Paratypes:** 5(2) ♂♂, 1 ♀ (ZISP), collected with holotype. **Further material:** 2 ♂♂ (ZISP), from the same series as paratypes.

Notes: The difference in relative length of elytra and pronotum indicated by JEANNEL (1962: p. 91, thesis "4") is really valuable for distinguishing *T. animosus* and *T. arrisi* but does not permit to separate *T. arrisi* from *T. jugivagus* (Fig. 37). *Trechus animosus* is distinctive in having the pointed ventral plate of the endophallus armature (Fig. 24). JEANNEL (1962: p. 90, fig. 6) figured the straight aedeagus apex in this species that does not match the real conformation.

Distribution: Atbashi mt. range in the Central Tian Shan.

Trechus jugivagus LUTSHNIK (Fig. 29)

Trechus jugivagus LUTSHNIK, 1930, Abh. Pamir Exp. (1928), 2: 38 (Type: Ui-Bulak).
Trechus jugivagus: JEANNEL 1962: 92, fig. 8.

Material examined: 6(1) ♂♂, 7 ♀♀ (ZISP), Transalai mt. range, Bordabo env., 3200 - 3400 m, 11.VI.1965 (Gurjeva). - 5(1) ♂♂, 1 ♀ (ZISP), same data (Lopatin). - 4 ♂♂, 1 ♀ (ZISP), same locality, 22.VII.1960 (Lopatin). - 3(1) ♂♂, 1 ♀ (CIB, CIK, CSO), Transalai mt. range, Kyzylart Pass, 25.VII.1988 (Ovtshinnikov). - 1(1) ♂ (ZISP), same area, Alai Valley, lower course of Kyzylart River, 27.VI.48 (Kiritshenko). - 1(1) ♂ (ZISP), Shakhdarinskyi mt. range, Kukhi-Lial', 16.V.1965 (Lopatin).

Notes: The species differs from other members of the *T. adustus* group in having the combination of strongly attenuated aedeagus apex with the convex ventral side of aedeagus before the apical portion (Fig. 29). Besides, *T. jugivagus* has the shortest antennae within the *T. adustus* group (Fig. 36); but this character is of little value in distinguishing this taxon from most species of the group. It seems to be most allied to *T. arrisi*.

Distribution: This is one of the most widespread species within the *T. adustus* group inhabiting a vast area in the southern part of the Pamiro-Alai.

Trechus demissus JEANNEL

Trechus demissus JEANNEL, 1962, Rev. franç. Ent. 29(2): 87, fig. 9 (Type: Tshitshak mt.).

Trechus demissus matshensis ssp.n. (Fig. 27)

Holotype: ♂ (ZISP), Kyrghyzstan, NE Turkestan mt. range, right bank of Kalai-Makhmud River, S Dzhana-Artsha, 3400 - 3500 m, 14.VII.1995 (Komarov). **Paratypes:** 23(7) ♂♂, 10 ♀♀ (ZISP, NHMW, CEK, CIB, CIK), collected together with holotype. - 1 ♀, same area, sources of Kalai-Makhmud River, 3200 m, 12.VII.1995 (Komarov). - 1 ♂, 1 ♀ (CEK), same area, Artsha-Basha, 4 km E of Golysh Peak, border of melting snow near rocks, 3100 - 3400 m, 15.VII.1995 (Komarov). - 3 ♂♂, 3 ♀♀ (CAKR), same area, sources of Or-Mazan-Suu River (right tributary of Kalai-Makhmud Riv.), 3400 - 3500 m, 16.VII.1995 (Kravetz). - 2 ♀♀ (CEK), same locality, 13 km E of Skalistyi Peak, 3400 m, 16.VII.1995 (Komarov). - 1 ♀, same area, sources of Ala-Maidan, Kyzyl-Utshuk, 3 km SE of Golysh Peak, 3000 m, 15.VII.1995 (Komarov). - 1 ♂, same area, near Dzhanaartsha Pass, 3 km N of Golysh Peak, 3700 m, 14.VII.1995 (Komarov). - 5 ♂♂, 6 ♀♀ (CAKR), same locality, 4 km NE of Raigorodskyi Glacier, 4 km WNW of Artsha-Basha, 3300 - 3600 m, 14.VII.1995 (Kravetz).

Further material: 14(6) ♂♂, 17 ♀♀ (CEK, CIB, CIK), NE part of Turkestan mt. range, Karabel mts, nr lake Karakoel-Katta, 3200 - 3400 m, 8.VII.1995 (Komarov). - 10 ♂♂, 3 ♀♀ (CEK), same locality, 3000 - 3200 m, 9.VII.1995 (Komarov).

Description: Medium-sized subspecies with rather narrow forebody and oval, slightly flattened elytra. Length 3.04 - 3.40 (3.20) mm (both sexes equal in size). Body 2.40 - 2.64

(2.50) times as long as wide. Brownish, tinged with reddish, relatively dark, especially to borders and apex of elytra. Appendages slender and monochromous, distinctly lighter than dorsum.

Head large. Eyes average, subconvex, 1.35 - 1.75 (1.50) times as long as temples, latter rather flat. Antennae long, surpassing base of pronotum by 3 apical segments, 3rd antennomere 1.90 - 2.45 (2.15) times as long as wide.

Pronotum 1.12 - 1.27 (1.19) times as wide as head, 1.26 - 1.42 (1.34) times as wide as long, and 1.23 - 1.35 (1.28) times as wide as pronotal base; its hind angles widely rounded, base strongly oblique on sides. Sides strongly rounded anteriorly, straight and narrowed posteriorly, sinuation before hind angles lacking. Base of pronotum wide, 1.02 - 1.10 (1.06) times as wide as its anterior margin. Basal transverse impression deep but not sharply outlined; basal foveae average. Marginal gutter of moderate width, distinctly dilated posteriorly. Basal surface smooth.

Elytra large and oval, broadest behind middle; disc slightly flattened, 1.42 - 1.55 (1.48) times as long as wide, 2.98 - 3.18 (3.06) times as long as pronotum, and 1.72 - 1.89 (1.84) times as wide as head. Humeri weakly prominent. Striae superficial, evanescent towards base, apex and sides; usually only striae 1 - 3 conspicuous, striae 4 - 5 hardly visible; non of them punctate. Intervals flat. Apical striola short, interrupted anteriorly. Anterior discal pore normally at level between pores 3 and 4 of umbilicate series. Posterior discal pore before or rarely at level of pore 5 of umbilicate series. Discal formula 19 - 26 (22) / 48 - 60 (55). Apical triangle slightly elongated.

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum, and either fine lines or strongly transverse meshes on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 27) weakly step-like bent, ventral side sinuated gradually; median lobe flattened sagittally; apex hooked in lateral view and constricted triangularly in dorsal view. Lower plate of endophallus armature well-sclerotized, very narrow in both projections, its apex protruding beyond orificium. Upper plate small but distinct.

Variability: The population from Karakoel-Katta is distinguished by lighter body color and by the more slender aedeagus.

Notes: The new subspecies differs from *T. demissus* s.str. mainly in having considerably thicker aedeagus in both projections (Figs. 25, 26, 27). Besides, on the average the color of the dorsum is darker.

Distribution: The new subspecies inhabits the eastern part of the species range in the Matsha Massif (E Turkestan mt. range).

Ecology: The species occurs in alpine meadows at elevations of 3400 - 3500 m.

Trechus pamirensis sp.n. (Figs. 18, 19)

Holotype: ♂ (ZISP), N slope of Zaalayskyi mt. range, Aram-Kunghey, S of village Dorot-Korgon, 3000 m, 22.VII.1993 (Gritshik). **Paratypes:** 4(4) ♂♂ 2 ♀♀ (ZISP, CIB, CIK), collected together with holotype. - 8(2) ♂♂, 5 ♀♀ (CAZ, CIB, CIK), same locality, 4000 m, 18.VII.1995 (Shchurov). - 23(1) ♂♂, 16 ♀♀ (CAK, CIB, CIK, CVZ), Zaalayskyi mt Range, Berk-Suu Pass, 3700 m, 12.VII.1995 (Koval). - 23(1) ♂♂, 16 ♀♀ (CAK),

same locality, Berk-Suu River, 3400 m, 13.VII.1995 (Koval). - 72(5) ♂♂, 42 ♀♀ (NHMW, CAP, CIK), same locality, 20 km W Daroot-Korgon, 2800 m, 9-10.VII.1995 (Putchkov). - 4 ♂♂, 5 ♀♀ (CSO), same locality, (Ovtchinnikov).

Description: Large-sized species with rather narrow forebody and wide elytra. Length 3.72 - 4.31 mm (males larger, average 4.03 vs. 3.85 in females). Body 2.27 - 2.48 (2.36) times as long as wide. Color variable: testaceous to brownish with paler pronotum and elytral suture.

Head massive. Eyes large but feebly convex, 1.35 - 2.00 times as long as temples (average 1.70 in males vs. 1.55 in females). Antennae long, faintly surpassing anterior discal pore level, their 3rd antennomere 2.05 - 2.60 (2.30) times as long as wide.

Pronotum subquadrate, 1.13 - 1.24 (1.19) times as wide as head, 1.24 - 1.39 (1.32) times as wide as long, 1.15 - 1.29 (1.22) times as wide as pronotal base; its hind angles widely rounded, base oblique on sides and broadly lobed. Sides strongly arched anteriorly, widely rounded in middle, and straight posteriorly. Base of pronotum very wide, 1.02 - 1.27 (1.13) times as wide as anterior margin. Basal transverse impression deep but not sharply outlined; basal foveae small and not deep. Marginal gutter average, distinctly dilated posteriorly. Basal surface smooth.

Elytra very large, depressed on disc, abruptly sloped to sides and apex; 1.39 - 1.50 times as long as wide (average 1.45 in males vs. 1.42 in females), 3.13 - 3.54 times as long as pronotum (average 3.37 in males vs. 3.25 in females), and 1.98 - 2.20 times as wide as head (average 2.11 in males vs. 2.04 in females). Striae very superficial and very finely punctate. Intervals flat. Apical striola hardly curved, sharply interrupted anteriorly. Anterior discal pore at level between pores 2 - 4 of umbilicate series; posterior one markedly before pore 5. Discal formula 17 - 23 (19) / 48 - 58 (53).

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum, and fine transverse lines on elytra, faint medially on disc of pronotum and head.

Aedeagus (Figs. 18, 19) large and slightly curved, depressed sagittally, with attenuate apex. Lower plate of endophallus armature narrow and well-defined, "S"-shaped, rounded apically, upper plate faintly defined, recognized only in lateral view.

Variability: The population originated from Berk-Suu differs in larger size (average body length 4.03 mm vs. 3.91 in the population from Aram-Kunghey), in having narrower pronotum (index 1.30 vs. 1.35 respectively), wider pronotal base (average ratio of base to anterior margin 1.16 vs. 1.09 respectively) and longer elytra (average ratio of elytra length to pronotum length 1.79 vs. 1.71 in the population from Aram-Kunghey).

Notes: Doubtless *T. pamirensis* sp.n. is most closely related to *T. turkestanicus* BELOUSOV & KABAK sharing with it the following characters: large size, relatively light color and similar aedeagus structure (stout shape and distinctly attenuate apex). The new species is easily to be distinguished from it by the narrow lower plate of endophallus armature while it is vague and wide, faintly delimited proximally in *T. turkestanicus*. Besides, the more stout shape of aedeagus with considerably less attenuate apex in dorsal view should be noted in the new species.

Distribution: N slopes of Zaalayskyi mt. range.

Ecology: Alpine species occurring at elevations of 2800 - 4000 m.

Trechus katranicus sp.n. (Fig. 20)

Holotype: ♂ (ZISP), N foothills Alaiskyi mt. range, Katran-Too mt. range, S of village Sovetskyi, 3000 m, 20.V.1994 (Kabak). **Paratypes:** 105(9) ♂♂, 72 ♀♀ (ZISP, NHMW, MPU, CAK, CAP, CAG, CEK, CIB, CIK), collected together with holotype.

Description: Medium-sized species with subconvex and oval body. Length 3.26 - 3.70 (3.46) mm. Body 2.33 - 2.61 (2.46) times as long as wide. Reddish-brown, with darker sometimes pitchy black elytra and head. Appendages monochromously brownish-yellow.

Head of medium size. Eyes rather large but weakly convex, 1.45 - 1.85 (1.70) times as long as temples. Antennae average, hardly reaching anterior discal pore level and surpassing base of pronotum by 3 apical segments. 3rd antennomere 1.95 - 2.30 (2.10) times as long as wide.

Pronotum transverse, 1.21 - 1.29 (1.26) times as wide as head, 1.26 - 1.44 (1.37) times as wide as long, and 1.22 - 1.32 (1.27) times as wide as pronotal base; its hind angles widely rounded. Sides moderately rounded in middle, strongly arched anteriorly and almost evenly narrowed posteriorly. Base distinctly oblique on sides, 1.05 - 1.17 (1.08) times as wide as its anterior margin. Basal transverse impression vague and superficial; basal foveae small and not deep. Basal surface smooth.

Elytra subconvex, broadest at midlength or feebly posteriad, 1.38 - 1.53 (1.46) times as long as wide, 2.90 - 3.21 (3.00) times as long as pronotum, and 1.80 - 2.00 times (average 1.92 in males vs. 1.85 in females) as wide as head. Apices of elytra rounded separately. Striae superficial and somewhat irregular, not punctate, even stria 1 not sharply engraved, stria 5 - 7 effaced. Intervals flat. Apical striola short and superficial, gradually disappearing and joining site of stria 7 anteriorly. Apical triangle equilateral, sometimes base wider. Anterior discal pore at level between pores 2 and 3. Discal formula 15 - 21 (18) / 52 - 61 (57).

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum, and exclusively fine transverse lines on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 20) slender, gradually arched with apex hooked in lateral view and evenly narrowed in dorsal view. Plates of endophallus armature narrow, pointed distally.

Notes: This species is closely related to *T. adustus* and *T. alajensis* BELOUSOV & KABAK differing from these in narrower apical portion without any constriction in dorsal view. Upper sclerite considerably better defined as compared with related species.

Distribution: Alai mt. range: ridge Katran-Too, north of Khaidarkan.

Ecology: The species was collected on northern slopes at an elevation of ca. 3000 m in the most humid stations.

Trechus egorovi sp.n. (Fig. 22)

Holotype: ♂ (ZISP), Alaiskyi mt. range, 15 km W of Irkeshtam, 50 km E of Sarytash, Koek-Suu, 3000 - 3800 m, 16.VII.1989 (Egorov). **Paratype:** 1(1) ♂ (ZISP), collected together with holotype.

Description: Medium-sized species with convex and stout body. Length 3.25 - 3.38 mm. Body 2.23 - 2.34 times as long as wide. Reddish-brown, elytra slightly darkened posteriorly and laterally. Appendages monochromously reddish-yellow.

Head of medium size. Eyes rather large, weakly convex, 1.85 - 2.00 times as long as temples, latter relatively flat. Antennae average, hardly reaching anterior discal pore level and surpassing pronotum base by 3.5 apical segments. Their antennomere 3 ca. 2.00 - 2.10 times as long as wide.

Pronotum transverse and convex, 1.25 - 1.31 times as wide as head, 1.35 - 1.38 times as wide as long, and 1.22 times as wide as pronotal base; hind angles rounded. Sides widely and regularly rounded till hind angles, sinuation before them lacking. Base of pronotum very wide, strongly oblique on sides, 1.18 times as wide as its anterior margin. Basal transverse impression superficial and smooth, even on sides; basal foveae small. Marginal gutter rather narrow in middle, markedly dilated posteriorly. Basal surface smooth.

Elytra subconvex, feebly flattened on disc, broadest at midlength, 1.37 - 1.41 times as long as wide, 2.82 - 2.92 times as long as pronotum, and 1.90 - 1.96 times as wide as head. Humeri moderately protruding. Striae superficial, shallower laterally and apically, not punctate, striae 5 - 6 hardly visible. Intervals 1 - 3 subconvex, others flat. Apical striola short, joining stria 5. Apical triangle equilateral. Anterior discal pore at level between pores 3 and 4, usually closer to former, the posterior one a little before pore 5 of umbilicate series. Discal formula 17 - 18 / 48 - 51.

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum, and transverse lines on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 22) medium-sized, step-like bent; ventral border almost straight, apex very slender in dorsal view and distinctly hooked in lateral view. Dorsal plate of endophallus armature well sclerotized and more developed as compared with ventral one, which is very small and pale, pointed distally, and terminated far from orificium.

Notes: *Trechus egorovi* sp.n. is unique within the *T. adustus* group in having the lower plate of the endophallus armature barely sclerotized and pointed distally. The species seems to be most closely related to *T. arrisi* differing from it mainly in pronotum shape with wider base, convex, not sinuate posteriad sides, and small basal foveae. Besides, both species are easily distinguished by the aedeagal apex being more straight and slender in *T. egorovi*.

Distribution: Eastern part of Alai Valley. The species was found together with *T. arrisi*.

Ecology: According to the original label the type specimens were found in the alpine zone at elevations of 3000 - 3800 m.

Trechus shchurovi sp.n. (Fig. 28)

Holotype: ♂ (ZISP), N slope of Zaalayskyi mt. range, Aram-Kunghey, 4000 m, 18.VII.1995 (Shchurov). **Paratypes:** 12(6) ♂♂, 8 ♀♀ (ZISP, NHMW, CAZ, CIB, CIK), collected together with holotype. - 10(2) ♂♂, 1 ♀ (CAP, CIB, CIK), same locality, S of village Dorot-Korgon, 26.VI.1994 (Tretjakov).

Description: Medium-sized species, body oval and subconvex, length 3.20 - 3.65 mm (males larger, average 3.45 mm vs. 3.33 in females). Body 2.31 - 2.65 (2.39) times as long as wide. Color variable, usually reddish-brown, with darker, sometimes blackish-brown elytra; pronotum, suture, and lateral margins of elytra somewhat lighter. Appendages monochromously yellowish.

Head rather large, especially in females. Eyes large but weakly convex, 1.70 - 3.10 (2.40) times as long as temples. Antennae average, hardly reaching anterior discal pore level and surpassing pronotum base by 3 - 4 apical segments; 3rd antennomere 1.80 - 2.30 (2.15) times as long as wide.

Pronotum transverse, 1.14 - 1.25 (1.19) times as wide as head, 1.29 - 1.51 (1.36) times as wide as long, and 1.22 - 1.35 (1.27) times as wide as pronotal base; its hind angles widely rounded. Sides moderately rounded in middle, strongly arched anteriorly and almost evenly narrowed posteriorly, hardly sinuate near hind angles. Base of pronotum strongly oblique on sides, 0.99 - 1.14 (1.08) times as wide as its anterior margin. Basal transverse impression superficial, more distinct on sides; basal foveae hardly perceptible. Marginal gutter narrow or moderate, dilated posteriorly. Basal surface smooth or slightly rugulose.

Elytra wide and oval, moderately depressed on disc, broadest at midlength or somewhat behind middle; elytra 1.39 - 1.65 (1.46) times as long as wide, 3.04 - 3.38 (3.21) times as long as pronotum, and 1.74 - 2.02 (average 1.95 in males vs. 1.91 in females) times as wide as head. Striae rather deep, not punctate, and shallower laterally and apically, stria 6 entire, stria 7 partly distinct. Inner intervals subconvex. Apical striola medium-sized, abruptly interrupted anteriorly. Subapical pore closer to exterior one than to apical one. Anterior discal pore at level between pores 3 and 4, posterior one distinctly before pore 5 of umbilicate series. Discal formula 16 - 26 (21) / 42 - 58 (51).

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum, and either fine lines or strongly transverse meshes on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 28) slender and step-like bent, with well-defined endophallus armature consisting of two plates, the lower one rather large and widely rounded apically.

Notes: The new species is very similar to *T. arrisi* and *T. jugivagus*, differing from these in the less slender apical part of the aedeagus and especially in the wider lower plate of the endophallus armature in dorsal view.

Trechus shchurovi sp.n. is distinguished from the sympatric *T. pamirensis* sp.n. by smaller body size (3.20 - 3.65 (3.41) mm vs. 3.72 - 4.15 (3.91) mm for *T. pamirensis* sp.n. from Aram-Kunghei), by darker color, by larger and more convex eyes, and by the different aedeagus (Figs. 18, 19, 28).

Distribution: The species is known from the northern slope of the Transalai Mts.

Ecology: Alpine species, collected at an elevation of ca. 4000 m.

Trechus putchkovi sp.n. (Fig. 21)

Holotype: ♂ (ZISP), S Kyrhystan, Alai mt. range, valley of Gultsha River, Kyzyl-Alai env., 3100 m, 7.VII.1995 (Koval). **Paratypes:** 54(3) ♂♂, 16 ♀♀ (ZISP, NHMW, MPU, CAG, CEK, CAK, CIB, CIK, CVZ), collected together with holotype. - 144(4) ♂♂, 84 ♀♀ (CAP, CSO, CIB, CIK), same locality, Karakol Riv., 6-7.VII.1995 (Putchkov & Ovtshinnikov). - 2(1) ♂♂ (CAP), same area, Taldyk Pass, 6.VII.1995 (Putchkov). - 2(2) ♂♂, 2 ♀♀ (CAZ), same locality, 3800 m, 24.VII.1995 (Shchurov).

Description: Medium-sized species with subconvex and oval body, length 3.40 - 3.90 (males larger, average 3.69 mm vs. 3.52 in females). Body 2.37 - 2.55 (2.46) times as long

as wide. Color usually reddish-brown, with darker, sometimes blackish-brown elytra; pronotum, suture and lateral margins of elytra somewhat lighter; appendages yellowish.

Head average. Eyes rather large but slightly convex, 1.25 - 2.20 (1.60) times as long as temples, latter flat. Antennae long, surpassing anterior discal pores level and protruding beyond base of pronotum by 4 apical segments. Third antennomere 2.00 - 2.75 (2.30) times as long as wide.

Pronotum transverse, 1.18 - 1.32 (1.22) times as wide as head, 1.22 - 1.40 (1.33) times as wide as long, and 1.18 - 1.34 (1.29) times as wide as pronotal base; its hind angles widely rounded. Sides almost evenly narrowed posteriorly, distinctly but briefly sinuate near hind angles. Base of pronotum moderately oblique on sides, 1.05 - 1.20 (1.11) times as wide as anterior margin. Basal transverse impression superficial; basal foveae small and feebly impressed. Basal surface hardly rugulose. Marginal gutter average, strongly dilated posteriorly.

Elytra oval, elongate, subconvex, hardly depressed on disc; broadest after midlength; humeri oblique and rounded. Elytra 1.42 - 1.51 (1.47) times as long as wide, 3.00 - 3.29 (3.13) times as long as pronotum, and 1.88 - 2.05 (1.95) as wide as head. Striae very superficial, especially posteriorly, not punctate; stria 4 shortened; striae 5 - 7 evanescent. Intervals flat. Apical striola average, directed to stria 4 and sharply interrupted here. Apical triangle elongate. Anterior discal pore at level near pore 4; posterior one near level of pore 5 of umbilicate series. Discal formula 19 - 28 (23) / 48 - 59 (53).

Microsculpture well marked, comprised of isodiametric meshes on head, irregular transverse meshes on pronotum, and strongly transverse meshes or even transverse lines on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 21) of medium size, not too slender, broadest in middle, apex hooked. Endophallus armature very large and strongly sclerotized, consisting of two large plates, upper plate considerably smaller and not sharply outlined.

Notes: The new species is rather isolated within the *T. adustus* group. Externally it is easily to be recognized by the very long antennae (Fig. 36). The new species is well separated from all other members of the group by the very large lamelliform lower plate of the endophallus armature. In this respect, *T. putchkovi* sp.n. is similar to the species of the *T. terskeiensis* group, especially to *T. narynensis* BELOUSOV & KABAK, characterized by the very similar, slender aedeagus shape (BELOUSOV & KABAK 1991, fig. 27). However, these species are easily distinguished by the quite different shape of the upper sclerite of the endophallus armature as well as by the group characters: *Trechus putchkovi* sp.n. has very finely pubescent elytra and rounded hind angles of pronotum with base oblique on sides.

As for the sympatric *T. adustus*, the new species is distinctive in the larger size (average 3.64 mm vs. 3.48 mm in *T. adustus*), longer elytra (average 1.47 vs. 1.43 in *T. adustus*), smaller eyes and in the considerably longer antennae, which are longer than 1.75 mm (shorter than 1.75 mm in *T. adustus*, fig. 36), their 3rd segment on the average 2.30 times as long as wide compared with 2.10 in *T. adustus*.

Distribution: The species is known only from the eastern part of the Alai Mts.: sources of Gultsha River and Taldyk Pass.

Ecology: Alpine species, collected at an altitude of 3000 - 3800 m.

Trechus belovi sp.n. (Fig. 35)

Holotype: ♂ (ZISP), Kyrghyzstan, W Alai mt. range, Kollektorsky mt. range, left tributary of Dugoba river, 13 km S Iordan, 3700 - 3800 m, 1.VII.1995 (A. Belov). **Paratypes:** 34(3) ♂♂, 18 ♀♀ (ZISP, NHMW, IZU, MPU, CEK, CAP, CIB, CIK, CAK), collected together with holotype.

Description: Medium-sized species with rather narrow forebody and widely oval, flattened elytra. Length 3.11 - 3.63 (3.38) mm (both sexes almost equal in size). Body 2.35 - 2.53 (2.45) times as long as wide. Reddish testaceous, elytra and usually labrum mostly tinged with brownish in posterior part. Appendages monochromously yellowish.

Head large. Eyes of medium size, subconvex, 1.65 - 2.15 (1.90) times as long as temples, latter relatively flat. Antennae long, surpassing base of pronotum by 3 - 3.5 apical segments and hardly reaching anterior pore level, their 3rd antennomere 1.95 - 2.40 (2.10) times as long as wide, middle antennomeres filiform.

Pronotum rather small, 1.15 - 1.23 (1.19) times as wide as head, 1.29 - 1.36 (1.33) times as wide as long, 1.24 - 1.37 (1.30) times as wide as pronotal base; hind angles rounded, base broadly lobed. Sides widely arched throughout, hardly sinuate just before hind angles. Base of pronotum wide, 1.00 - 1.14 (1.06) times as wide as anterior margin. Basal transverse impression deep and not sharply outlined; basal foveae very small and superficial. Marginal gutter average, distinctly dilated posteriorly. Basal surface smooth.

Elytra wide and oval, broadest near middle; disc slightly flattened, 1.39 - 1.57 (1.48) times as long as wide, 3.01 - 3.33 (3.14) times as long as pronotum, and 1.86 - 2.02 (1.91) times as wide as head. Humeri rounded and slightly salient. Striae very superficial, not punctate, evanescent towards base, apex and sides; usually only striae 1 - 3 distinct and entire, stria 5 often shortened anteriorly, striae 4 - 5 hardly recognizable, intervals flat. Apical striola deep and straight, directed to trace of stria 5 and abruptly interrupted anteriorly. Anterior discal pore usually at level between pores 3 and 4 of umbilicate series; posterior one slightly before level of pore 5 of umbilicate series. Discal formula 19 - 26 (22) / 48 - 55 (52). Apical triangle subequilateral.

Microsculpture superficial, comprised of isodiametric meshes on head, very fine transverse meshes on elytra, faint on disc of pronotum and head.

Aedeagus (Fig. 35) rather large and thick, step-like bent, basal bulb small. Apex strongly attenuate and parallel-sided in dorsal view. Endophallus armature complicate, consisting of two main sclerites; the lower one large, with widely rounded distal part.

Notes: Doubtless, the new species occupies an intermediate position between *T. demissus* JEANNEL and *T. pamirensis* sp.n. The new species is most close to *T. demissus* differing from it in the stouter body shape, more convex lateral sides of pronotum, and considerably larger aedeagus with more distinctly developed endophallus armature and strongly attenuate apex (Figs. 25 - 27, 35). *Trechus belovi* sp.n. is distinguished from *T. pamirensis* by smaller elytra, shorter antennae, less quadrate pronotum, short and wide lower plate in the endophallus armature, and by the more attenuate aedeagal apex (Figs. 18, 19, 35).

Distribution: The new species inhabits the western part of the Alai Mts.

Ecology: The species was collected in the alpine zone at an elevation of 3700 - 3800 m.

The *Trechus almonius* group

This group as treated here includes only Siberian *Trechus* species with scaly endophallus armature, close to *T. almonius* and probably merits to be split into several groups.

Trechus dudkorum sp.n. (Fig. 14)

Holotype: ♂ (ZISP), NE Altai, Abakanskyi mt. range, upper reaches of Kotagatsh River, 25 km E of village Yailiu, 1750 m, 25.VII.1994 (Lomakin). **Paratypes:** 40(4) ♂♂, 19 ♀♀ (ZISP, NHMW, CRD, CIB, CIK,), collected with holotype (R. Dudko, Lomakin). - 3(2) ♂♂, 6 ♀♀, same locality, 26.VII.1994 (R. Dudko, Lomakin). - 14(1) ♂♂, 4 ♀♀ (CRD, CIB, CAK, CSO), same locality, 1800 m, 26.VII.1994 (Lomakin). - 11(4) ♂♂, 15 ♀♀, same locality, 1850 m, (R. Dudko). - 3 ♀♀, same locality, sources of river Konnyi, alpine meadow, 1800 m, 25.VII.1994 (R. Dudko). - 1 ♂, same locality, 1900 m. - 3 ♂♂, 2 ♀♀ (CRD, CIB), same locality, 2000 m, 26.VII.1994 (A. & R. Dudko). - 11(4) ♂♂, 12 ♀♀, same locality, sources of the right tributary of Kokshi River, 1850 m, 26.VII.1994 (R. Dudko). - 2 ♂♂, 1 ♀, same locality, 2000 m. - 2(1) ♂♂, 5 ♀♀, same area, vic. of lake Teletskoye, upper reaches of Cheliush River, near timber-line, 1850 m, 4.VI.1994 (Lomakin). - 1 ♀, same locality, 6.VI.1994 (A. Dudko). - 11(4) ♂♂, 6 ♀♀, same area, 7 km NNW of Baskon mt., 2000 - 2200 m, 5 - 6.VI.1994 (Lomakin). - 1(1) ♂, same area, S part of Abakanskyi mt. range, upper reaches of Karakol River, alpine meadow, 2150 - 2300 m, 9.VII.1994 (Lomakin). - 11(2) ♂♂, 7 ♀♀, same area, SE of mt Kozbazhi, 2100 m, 10.VII.1994 (A. & R. Dudko, Lomakin). - 1(1) ♂, same locality, 2 km NE of Kozbazhi mt., 1950 - 2100 m, 11.VII.1994 (A. & R. Dudko). - 4 ♂♂, 5 ♀♀, same locality, 5 km W of mt. Kozbazhi, 2200 m, 12.VII.1994 (Lomakin). - 3(3) ♂♂, 3 ♀♀ (MPU, CIB, CIK), Kemerovskaya region, Kuznetskyi Alatau, 25 km SSW of Belogorsk, mt. Bolshaya Tserkovnaya, 26.VIII.1993, 1350 m, (Gratchev & Golovatch). - 1 ♀ (CIB), same locality, 550 m, 28.VIII.1993 (Gratchev & Golovatch). - 7(2) ♂♂, 16(1) ♀♀ (ISE, CIB, CIK), same area, Mt. Chemodan, 27.VI.1994 (Demidenko). - 1 ♂, 6 ♀♀ (ISE), same locality, 22.VII.1994 (Demidenko).

Description: Large-sized species with oval and elongate body. Dorsum slightly convex, length 3.47 - 4.28 mm (males larger, average 3.91 mm vs. 3.67 in females). Body 2.37 - 2.65 (2.51) times as long as wide. Color variable, usually head and elytra on disc pitchy black, sometimes monochromously reddish-brown. Pronotum and elytral suture lighter, distinctly tinged with reddish; appendages yellowish; surface shining, iridescent.

Head of medium size. Eyes not large, subconvex, 1.3 - 2.0 (1.5) times as long as temples. Antennae average, surpassing base of pronotum by 2.5 - 3 apical antennomeres and reaching the anterior pores level. 3rd antennomere 2.35 - 2.65 (2.50) times as long as wide.

Pronotum massive, slightly constricted posteriorly, 1.18 - 1.50 (1.28) times as wide as head, 1.18 - 1.50 (1.32) times as wide as long and 1.16 - 1.49 (1.29) times as wide as pronotal base. Sides widely rounded, briefly but deeply sinuate before hind angles; latter acute, protruding outwards, sometimes rounded at apices. Base weakly oblique on sides, 0.89 - 1.16 (1.06) times as wide as anterior margin. Basal foveae medium-sized, but very deep. Basal surface strongly rugulose. Basal transverse impression deep but not sharply outlined. Marginal gutter wide, especially posteriorly.

Elytra elongate and oval, broadest near midlength, subconvex, 1.41 - 1.61 (1.53) times as long as wide, 2.83 - 3.07 (2.96) times as long as pronotum, and 1.74 - 1.97 (1.87) times as wide as head. Striae 1 - 4 well-developed beginning with stria 5 shallower, but even stria 6 - 7 visible, all striae evidently but finely punctate. Intervals subconvex. Apical striola short, regularly curved, joining stria 7 anteriorly. Anterior discal pore at level between pores 3 and 4, posterior one strongly before pore 5 of umbilicate series. Apical triangle subequilateral. Discal formula 13 - 20 (16) / 42 - 53 (47).

Microsculpture superficial, comprised of isodiametric meshes on head, strongly transverse meshes on pronotum and elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 14) very large and slender, step-like bent, parallel-sided, with well-developed sagittal lobe. Endophallus armature small but finely delimited, concave distally.

Variability: The population from Kuznetzky Alatau differs in smaller size (average body length 3.64 mm vs. 3.86 in other populations) and in having shorter elytra, which are on the average 1.46 times as large as wide vs. 1.54 in other populations. The posterior discal pore in specimens originated from Kuznetsky Alatau is placed more posteriorly.

Notes: Despite of great differences in the general appearance, the new species is related to *T. teletskianus* BELOUSOV & KABAK as revealed by the structure of male genitalia. From all hitherto described species, *T. dudkorum* sp.n. is easily to be distinguished by large size and pitchy black color of dorsum.

Distribution: NE Altai; mountains near Teletskoye Lake and Kuznetsky Alatau Mts.

Ecology: The species inhabits the forest and alpine zone at elevations of 1350 - 2300 m.

Trechus baskonicus sp.n. (Fig. 13)

Holotype: ♂ (ZISP), NE Altai, nr Teletskoe Lake, 7 km NNW of Baskon mt., 2000 - 2200 m, 5.VI.1994 (A. Dudko). **Paratypes:** 1(1) ♂, 2 ♀♀ (ZISP, CIB), collected with holotype (Lomakin).

Description: Convex and large-sized species with oval elytra. Length 3.78 - 4.25 mm (males larger, average 4.19 mm vs. 3.99 in females). Body longer in males, 2.37 - 2.39 times as long as wide vs. 2.24 - 2.29 in females. Color of dorsum reddish-brown, head distinctly darker, pronotum and suture of elytra lighter, appendages mainly testaceous but antennae beginning with apical half of segment 4 vaguely obscured. Dorsum iridescent.

Head of medium size. Eyes convex and rather large, 1.7 - 2.0 (1.85) times as long as temples. Antennae average, surpassing pronotal base by 3 apical antennomeres, their 3rd segment 2.10 - 2.35 (2.20) times as long as wide.

Pronotum massive, 1.22 - 1.29 (1.26) times as wide as head, 1.23 - 1.40 (1.32) times as wide as long, and 1.23 - 1.31 (1.27) times as wide as pronotal base. Sides deeply and briefly sinuate before hind angles, evenly constricted posteriorly and rounded anteriorly. Hind angles small, pointed at apices and somewhat protruding outwards, base slightly oblique on sides, 1.07 - 1.19 (1.13) times as wide as anterior margin. Basal foveae large and deep. Basal surface hardly rugulose. Basal transverse impression superficial and not sharply outlined. Marginal gutter wide, especially posteriorly.

Elytra strongly convex, especially near base, broadest at midlength, 1.36 - 1.43 (1.40) times as long as wide, 2.82 - 3.11 (2.98) times as long as pronotum, and 1.98 - 2.05 (2.03) times as wide as head. Striae superficial, but all visible and evidently punctate. Intervals flat. Apical striola short, joining stria 5 anteriorly. Anterior discal pore at level between pores 3 and 4, the posterior one feebly before pore 5 of umbilicate series. Apical triangle elongate. Discal formula 20 - 23 (22) / 52 - 57 (54).

Microsculpture comprised of isodiametric meshes on head, strongly transverse meshes on pronotum and elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 13) very large and step-like bent; ventral margin "S"-shaped. Median lobe strongly constricted before middle and therefore distal third strongly swollen. Lower surface of aedeagus roughly rugulose, bearing strong ridge. Aedeagus apex very characteristic. Lateral margins of orificium sinuate before apex. Endophallus armature hardly defined, represented by obsolete scaly field.

Notes: The new species is most closely related to *T. onicus* BELOUSOV & KABAK but readily differs from it in the larger body, lighter color of dorsum (brownish-testaceous with obscured antennae vs. pitchy black body of *T. onicus* with contrasting monochromously yellowish antennae). Besides, *T. baskonicus* sp.n. has the more straight pronotal base hardly oblique laterally, more protruding pronotal hind angles, regularly oval elytra, broadest at midlength as compared with *T. onicus*, which has the elytra broadest behind the middle and deeply and strongly punctate elytral striae. In addition, the new species has a more strongly dilated apical third of the aedeagus in dorsal view, while *T. onicus* is characterized by the median lobe of regular width, without distinct dilation. Endophallus armature more developed in *T. onicus* represented by well-defined and pair scaly pieces placed more distally, while *T. baskonicus* sp.n. has a vague and hardly perceptible impair field.

Distribution: The species is known from Mt. Baskon near the northeastern part of Lake Teletskoye.

Ecology: The species was collected in adnival conditions, under large, deeply embedded stones.

Trechus zinovievi sp.n. (Fig. 12)

Holotype: ♂ (ZISP), Russia, Siberia, Kemerovo Region, Kuznetsky Alatau, Igly Taizhasu, snow field below plateau "Yubileynoe", 23.VII.1995 (Mikhailov). **Paratypes:** 2(2) ♂♂, 1 ♀ (CEZ, CIB, CIK,), collected with holotype.

Description: Large-sized and subconvex species. Body length 3.81 - 4.13 mm (males larger, average 4.01 mm vs. 3.81 mm for unique specimen female). Body 2.38 - 2.44 (2.42) times as long as wide. Color of dorsum reddish-brown with blackish head and elytra, pronotum and suture of elytra lighter, reddish, appendages monochromously light. Dorsum shining and iridescent.

Head relatively small. Eyes average and subconvex, 1.8 - 2.1 (2.0) times as long as temples, latter convex. Antennae average, 3rd segment 2.15 - 2.35 (2.25) times as long as wide.

Pronotum massive, transverse, 1.29 - 1.31 (1.30) times as wide as head, 1.31 - 1.38 (1.34) times as wide as long, 1.26 - 1.30 (1.29) times as wide as pronotal base. Sides widely rounded, evenly narrowed posteriorly and not sinuate before hind angles, latter obtuse. Base wide and hardly oblique on sides, 1.12 - 1.18 (1.15) times as wide as anterior margin. Basal foveae large and deep. Basal surface rugulose. Basal transverse impression arched, smooth medially and more sharply outlined on sides. Marginal gutter average and regular, hardly wider posteriorly.

Elytra convex, broadest near midlength, depressed along suture, 1.42 - 1.49 (1.45) times as long as wide, 2.89 - 3.04 (2.96) times as long as pronotum, and 1.93 - 2.04 (1.98) times as wide as head. Striae distinct, even stria 7 almost continuous; all faintly punctate. Intervals subconvex and subparallel. Apical striola average, directed to stria 5. Anterior discal pore usually at level of pores 3, posterior one markedly before pore 5 of umbilicate series. Apical triangle elongate. Discal formula 16 - 19 (18) / 47 - 51 (50).

Microsculpture comprised of isodiametric meshes on head, small strongly transverse meshes on pronotum, and fine transverse lines on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 12) very large, depressed and hardly curved at basal part, strongly dilated to distal quarter in dorsal view. Endophallus armature well defined, comprised of scaly patch and finely sclerotized triangular dorsal plate.

Notes: The new species seems to be closely related to *T. baskonicus* sp.n., differing from it in being darker with almost blackish head vs. testaceous brownish in *T. baskonicus* sp.n. and especially in having more rounded hind angles while the above mentioned species has acute ones. Besides, *T. zinovievi* sp.n. has strongly elongate elytra with discal pores placed more anteriorly, and with distinctly punctate striae. The aedeagi of both species are easily distinguished from each other (Figs. 12, 13), especially by the endophallus armature. In this respect, the new species is very similar to some Siberian *Trechus* including *T. compactulus* sp.n. and *T. toroticus* sp.n., described below (Figs. 15, 16).

Distribution: The species is known only from the type locality in Kuznetskyi Alatau.

Ecology: The species was collected near melting snow.

Trechus compactulus sp.n. (Fig. 15)

Holotype: ♂ (ZISP), Kemerovo Region, Kuznetsky Alatau, 25 km SSW of Belogorsk, mt. Bolshaya Tserkovnaya, 1350 m, 26.VIII.1993 (Gratshev & Golovatch). **Paratypes:** 1 ♀ (MPU), collected together with holotype. - 2 ♀♀ (CIB, CIK), same locality, 550 m, 28.VIII.1993 (Gratshev & Golovatch). - 1(1) ♂ (ISE), same locality, 14.VII.1994 (Demidenko). - 5(2) ♂♂, 7(1) ♀♀ (ISE, CIB, CIK), same area, Mt. Chemodan, 27.VI.1994 (Demidenko). - 2 ♂♂, 3 ♀♀ (ISE), same locality, 22.VII.1994 (Demidenko).

Description: Small-sized species with stout and convex body, feebly depressed on disc of elytra. Length 2.99 - 3.25 mm. Male specimen considerably smaller, 3.00 mm as compared with average body length 3.17 mm in females. Body 2.35 - 2.49 (2.42) times as long as wide. Color of dorsum brownish testaceous, sometimes tinged with amber reddish; pronotum and suture of elytra usually lighter; appendages yellowish. Dorsum iridescent.

Head massive but not large. Eyes small and subconvex, 1.35 - 1.75 (1.45) times as long as subconvex temples. Antennae short, surpassing base of pronotum approximately by 2 apical antennomeres, not reaching anterior discal pore level, 3rd segment 1.65 - 1.90 (1.75) times as long as wide.

Pronotum massive and transverse, 1.17 - 1.28 (1.24) times as wide as head, 1.32 - 1.44 (1.40) times as wide as long, and 1.24 - 1.37 (1.32) times as wide as pronotal base. Sides almost evenly narrowed posteriorly or hardly sinuate before hind angles, latter obtusan-

gular, with rounded apices. Base hardly oblique on sides, 0.98 - 1.03 (1.01) times as wide as anterior margin. Basal foveae large and deep. Basal surface faintly rugulose. Basal transverse impression superficial and not sharply outlined. Marginal gutter narrow, weakly dilated posteriorly.

Elytra convex and oval, barely flattened on disc, broadest behind middle, 1.40 - 1.45 (1.42) times as long as wide, 2.77 - 2.93 (2.84) times as long as pronotum, and 1.75 - 1.79 (1.78) times as wide as head. Striae average, strongly punctate, inner striae distinct and entire, beginning with stria 4 partly interrupted. Inner intervals subconvex. Apical striola average, curved and joining stria 5 anteriorly. Anterior discal pore at level between pores 3 and 4, posterior one markedly before pore 5 of umbilicate series. Apical triangle elongate. Discal formula 20 - 23 (22) / 54 - 60 (56).

Microsculpture comprised of small and distinct isodiametric meshes on head, irregular strongly transverse meshes on pronotum, and fine anastomosing transverse meshes on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 15) large and step-like bent, with developed apical disc. Apex very slender and strongly attenuated. Median lobe "S"-shaped in dorsal view. Orificium on left side. Endophallus armature comprised of small dorsal plate and well-defined scaly patch. This patch is prolonged as slightly sclerotized scales distally.

Notes: The new species is closely related to *T. holzun* SHILENKOV & SOKOLOV, due to the similar composition of the endophallus armature consisting of small and weakly sclerotized plate, and large and well-defined scaly patch. These species, however, strongly differ from each other in the disposition of the above elements and in the aedeagus shape which is much more slender in the new species.

Distribution: Kuznetskyi Alatau, environs of Belogorsk.

Ecology: The species was found in the forest zone at very low altitude.

Trechus toroticus sp.n. (Fig. 16)

Holotype: ♂ (ZISP), NE Altai, 25 km E of village Yailiu, upper reaches of Kotagatsh River, 1750 m, 25.VII.1994 (R. Dudko). **Paratypes:** 4(4) ♂♂, 5 ♀♀ (CIB, CRD, CDL, CIK), collected together with holotype (Lomakin & R. Dudko). - 2(2) ♂♂, 1 ♀, same area, 4 km NE of village Yailiu, Torot mt. range, 1100 m, 12.VI.1994 (A. & R. Dudko). - 1(1) ♂, same area, Abies & Betula forest (Lomakin).

Description: Small-sized species with stout and convex body. Length 2.88 - 3.16 mm (average 3.03 mm in males vs. 2.98 in females). Body 2.34 - 2.57 (2.49) times as long as wide. Color of upper side testaceous, sometimes tinged with amber brownish; appendages light. Dorsum iridescent.

Head of medium size. Eyes small and subconvex, 1.30 - 1.65 (1.50) times as long as subconvex temples. Antennae short, surpassing base of pronotum by 2 apical antennomeres. 3rd segment 1.40 - 2.10 (1.80) times as long as wide.

Pronotum massive and transverse, 1.20 - 1.29 (1.25) times as wide as head, 1.36 - 1.43 (1.38) times as wide as long, and 1.29 - 1.36 (1.32) times as wide as pronotum base. Sides evenly narrowed posteriorly, sometimes base slightly sinuate before hind angles, latter obtusangular with rounded apices. Base hardly oblique on sides, 0.97 - 1.06 (1.03) times

as wide as anterior margin. Basal foveae large and deep. Basal surface rugulose. Basal transverse impression superficial and not sharply outlined. Marginal gutter narrow, weakly dilated posteriorly.

Elytra convex, feebly flattened on disc, broadest behind middle, 1.35 - 1.50 (1.45) times as long as wide, 2.68 - 2.87 (2.79) times as long as pronotum, and 1.68 - 1.83 (1.73) times as wide as head. Striae superficial and punctate, stria 1 - 4 distinct and entire, others beginning with stria 5 not continuous although traceable. Inner intervals subconvex. Apical striola short, slightly curved and joining stria 5 anteriorly. Anterior discal pore at level between pores 2 and 4; posterior pore markedly before pore 5 of umbilicate series. Discal formula 18 - 25 (22) / 49 - 61 (56).

Microsculpture comprised of isodiametric meshes on head, strongly transverse meshes on pronotum, and very fine transverse lines on elytra, faint medially on disc of pronotum and on head.

Aedeagus (Fig. 16) of average size, step-like bent, with slightly hooked apex. Distal orificium distinctly asymmetric. Endophallus armature as in the previous species, but less developed in dorsal view.

Variability: Two known populations of the species differ from each other in proportions. The population originated from Torot mt. range differs in having smaller elytra which are on the average 2.74 times as long as pronotum as compared with 2.85 in the other population, and 1.36 times as wide as pronotum vs. 1.43 in population from upper reaches of Kotagatsh River.

Notes: The new species is most closely related to *T. compactulus* sp.n. easily differing in the considerably smaller aedeagus (despite of subequal body size) with less attenuate apex, which is almost straight in dorsal view. Endophallus armature similar but less developed (Figs. 15, 16). The new species occurs together with *T. lomakini* BELOUSOV & KABAK. Superficially these species are very similar. *Trechus toroticus* sp n. is distinguished by smaller size and darker color with iridescent shining. Aedeagi of both species are entirely different.

Distribution: NE Altai: mountains near northeastern part of Lake Teletskoye.

Ecology: Collected in the forest zone.

Trechus manensis BELOUSOV & KABAK

Trechus manensis BELOUSOV & KABAK, 1995, Selevinia, 1994 (3): 19, fig. 5 (Type: Kuturtshinskoe Belogorie).

Trechus manensis ciseniseicus ssp.n. (Fig. 11)

Holotype: ♂ (ZISP), Russia, Siberia, Kemerovo Region, Kuznetsky Alatau, mt. Dvuglavaya env., near lake, 1500 - 1700 m 17.VII.1995 (Yu. Mikhailov). **Paratypes:** 3 ♀♀ (CEZ), same area, ridge between Tumuias and Dvuglavaya mt., mountain tundra, 16.VII.1995 (Mikhailov).

Description: Medium-sized subspecies with rather flat and elongate body; length 3.55 - 3.87 (3.67) mm. Body 2.40 - 2.59 (2.51) times as long as wide. Color of dorsum reddish-brown, relatively light; appendages light.

Head of medium size. Eyes subconvex, 1.40 - 2.15 times as long as temples (average 2.15 in males vs. 1.55 in females), latter convex. Antennae average , 3rd segment 2.05 - 2.35 (2.25) times as long as wide.

Pronotum transverse, 1.27 - 1.29 (1.28) times as wide as head, 1.31 - 1.38 (1.35) times as wide as long, and 1.31 - 1.41 (1.36) times as wide as pronotal base. Sides widely rounded, moderately narrowed posteriorly and weakly sinuate before obtuse but distinct hind angles. Base straight, 1.02 - 1.09 (1.05) times as wide as anterior margin. Basal foveae large and deep. Basal surface smooth. Basal transverse impression deep but not sharply outlined. Marginal gutter narrow and regular, slightly dilated posteriorly.

Elytra oval and depressed, rather narrow, with widely rounded humeri, 1.46 - 1.54 (1.50) times as long as wide, 2.78 - 3.06 (2.89) times as long as pronotum, and 1.75 - 1.87 (1.83) times as wide as head. Striae deep and irregularly punctate. Striae 1 - 5 entire, striae 6 - 7 superficial marked by a row of punctures. Intervals subconvex. Apical striola long, joining stria 5. Anterior discal pore at level between pores 2 and 3, posterior ones just before pore 5 of umbilicate series. Apical triangle elongate. Discal formula 15 - 17 (16) / 49 - 53 (51).

Microsculpture comprised of isodiametric meshes on head, irregular transverse meshes on pronotum, and strongly transverse meshes on elytra, more superficial medially on disc of pronotum and head.

Aedeagus (Fig. 11) step-like bent, slightly "S"-shaped; apex pointed and curved upwards. Ventral side convex in apical quarter. Endophallus armature represented by scaly patch enveloped in tube. Two small plates in proximal part of aedeagus.

Notes: Despite of the very similar aedeagus structure, the new subspecies is strikingly different in appearance, having larger size, lighter color, more depressed body, and straight base of pronotum. Besides, the aedeagus of the new subspecies is distinguished by the ventral side being more strongly convex while it is almost rectilinear in the nominotypical subspecies, by the dorsal side less strongly protruding dorsally, and by the apex more strongly hooked dorsally. Scaly patch and both plates of endophallus armature more strongly developed. From *T. zinovievi* sp.n., originated from the same region, the new taxon differs in the considerably more convex dorsum, deeper basal foveae of pronotum, and more acute hind angles of pronotum.

Distribution: Kuznetskyi Alatau: mt. Dvuglavaya environs.

Ecology: The species was collected at an altitude of 1500 - 1700 m.

Trechus ongudaicus sp.n. (Fig. 17)

Holotype: ♂ (ZISP), C Altai, near Ongudai, 4.VI.1989 (Saluk).

Description: Medium-sized species. Length 3.31 mm. Body 2.43 times as long as wide. Color of dorsum, reddish-brown, head darkened, pronotum lighter, appendages testaceous. Dorsum iridescent.

Head of medium size. Eyes convex and rather large, 1.85 times as long as temples. Antennae average, surpassing base of pronotum by 2.5 apical antennomeres, 3rd segment 1.95 times as long as wide.

Pronotum massive, 1.22 times as wide as head, 1.34 times as wide as long, and 1.34 times as wide as pronotal base. Sides almost evenly narrowed posteriorly, briefly sinuate before hind angles, latter very small, but distinct. Base slightly oblique on sides, 0.99 times as wide as anterior margin. Basal foveae of medium size but deep. Basal surface hardly rugulose. Basal transverse impression superficial and not sharply outlined. Marginal gutter rather narrow, dilated posteriad.

Elytra convex, broadest behind middle, 1.44 times as long as wide, 2.92 times as long as pronotum, and 1.85 times as wide as head. Striae rather deep and strongly punctate, stria 6 and even stria 7 partly perceptible. Intervals subconvex. Apical striola short, joining stria 5 anteriorly. Anterior discal pore at level between pores 3 and 4, posterior one markedly before pore 5 of umbilicate series. Apical triangle elongate. Discal formula 21 / 51.

Microsculpture comprised of isodiametric meshes on head, strongly transverse meshes on pronotum, and fine transverse lines on elytra, faint medially on disc of pronotum and head.

Aedeagus (Fig. 17) of medium size, step-like bent, and slightly hooked apex. Endophallus armature hardly defined, represented by slightly sclerotized plate in ventral position.

Notes: The new species is a member of the subgroup of Siberian *Trechus* species comprising of such species as *T. stanovskyi* MORAVEC, *T. sajanensis* MORAVEC, *T. karasibensis* BELOUSOV & KABAK, *T. kantegiricus* BELOUSOV & KABAK, *T. onicus*, and *T. baskonicus* sp.n. All these species are characterized by the similar aedeagus structure, similar habitus and are distributed in the same region in East Altai and West Sayan mts.

The new species is distinctive in the endophallus armature represented by slight but well delimited plate placed ventrally near the middle part of the aedeagus. As for the aedeagus shape, the new species is most similar to *T. stanovskyi*, readily differing from it in the shorter aedeagus apex with more strongly convergent sides in dorsal view. The new species seems to be most closely related to *T. onicus*. These species share the similar type of the endophallus armature but are easily distinguished by the aedeagus shape.

Distribution: Central Altai: Ongudai environs.

Ecology: Unknown.

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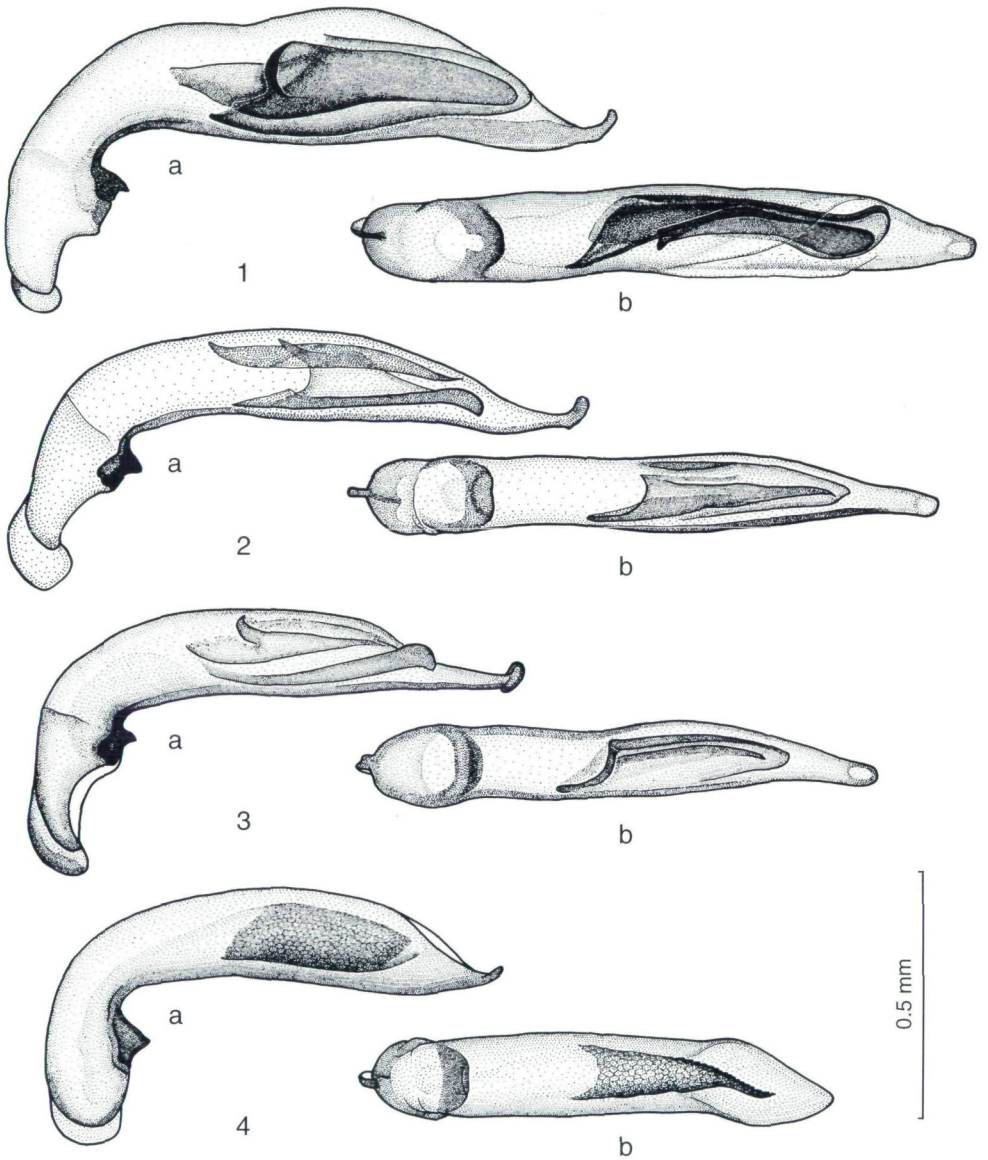

Figs. 1 - 4: Median lobe of aedeagus (a - lateral view, b - dorsal view) of (1) *Trechus suluk* sp.n., (2) *T. terskeiensis ukokensis* ssp.n. from Ukok, (3) the same, from Karadzhorga mt. range, (4) *T. aksuensis* sp.n.

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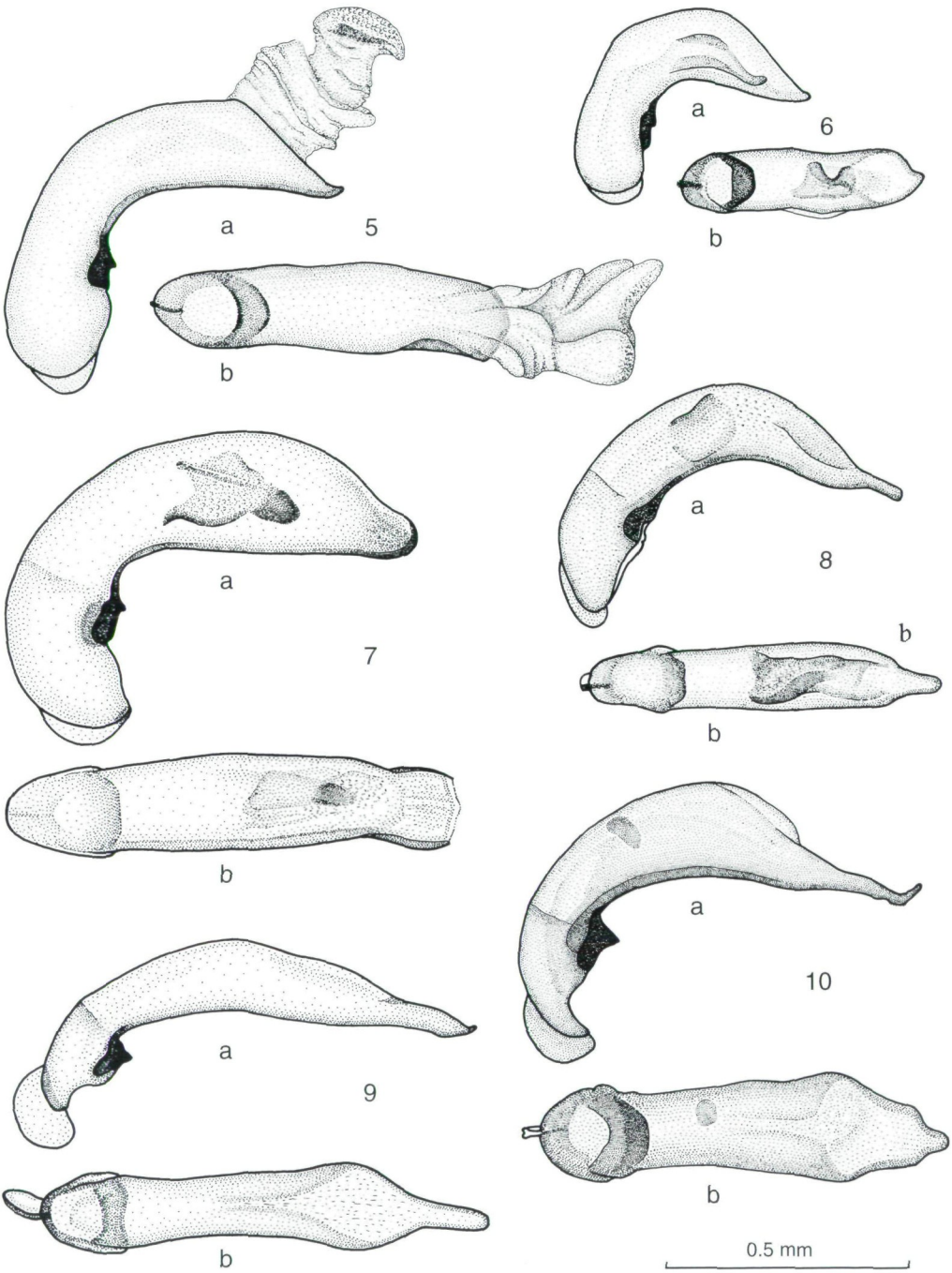
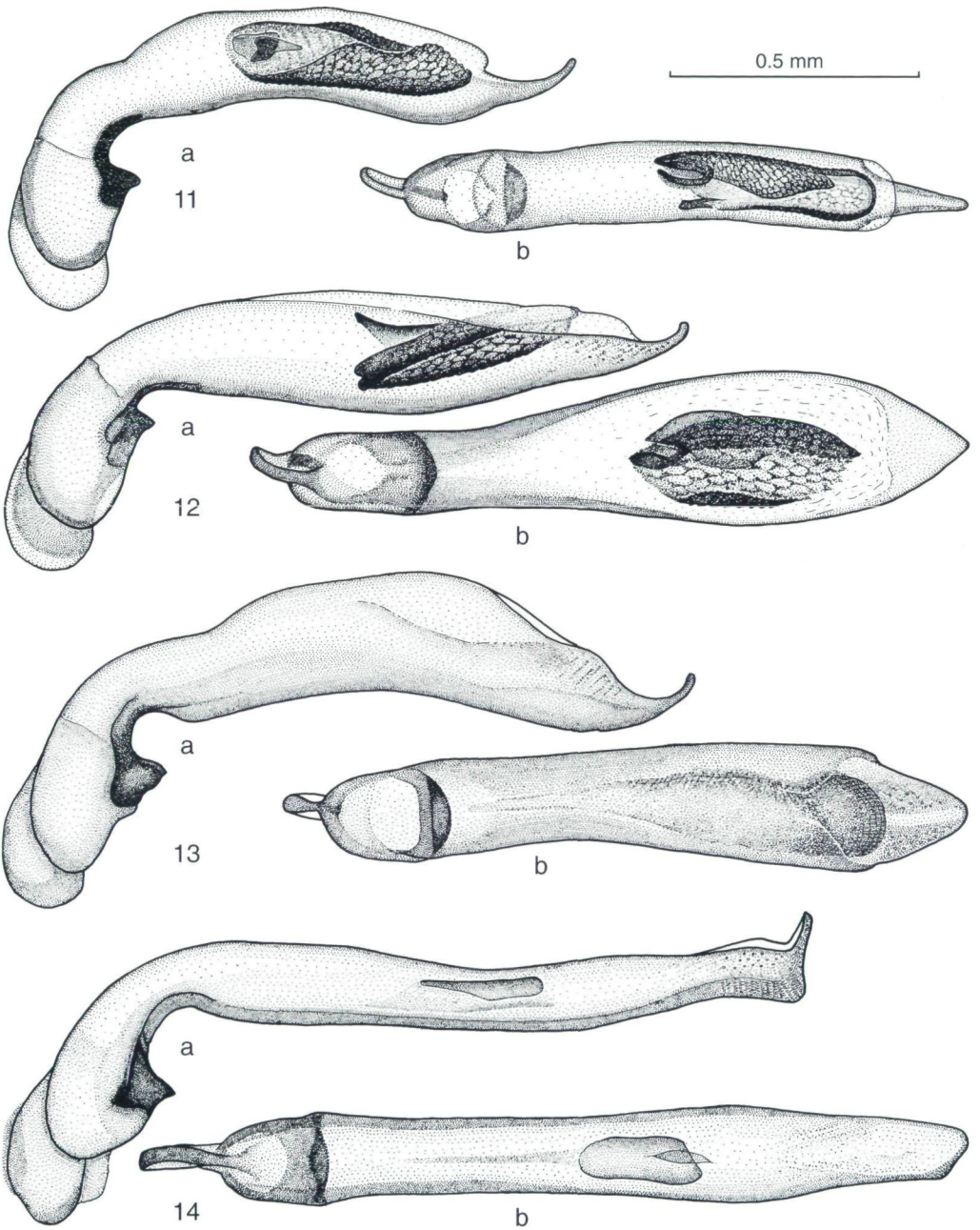


Figs. 5 - 14: Median lobe of aedeagus (a - lateral view, b - dorsal view) of (5) *Trechus micrangulus* REITTER, (6) *T. bodemeyeri* REITTER, (7) *T. larisae* sp.n., (8) *T. obliquebasalis* BREIT, (9) *T. kokzhotensis* sp.n., (10) *T. abakumovi* sp.n, (11) *Trechus manensis ciseniseicus* ssp.n., (12) *T. zinovievi* sp.n., (13) *T. baskonicus* sp.n., (14) *T. dudkorum* sp.n.



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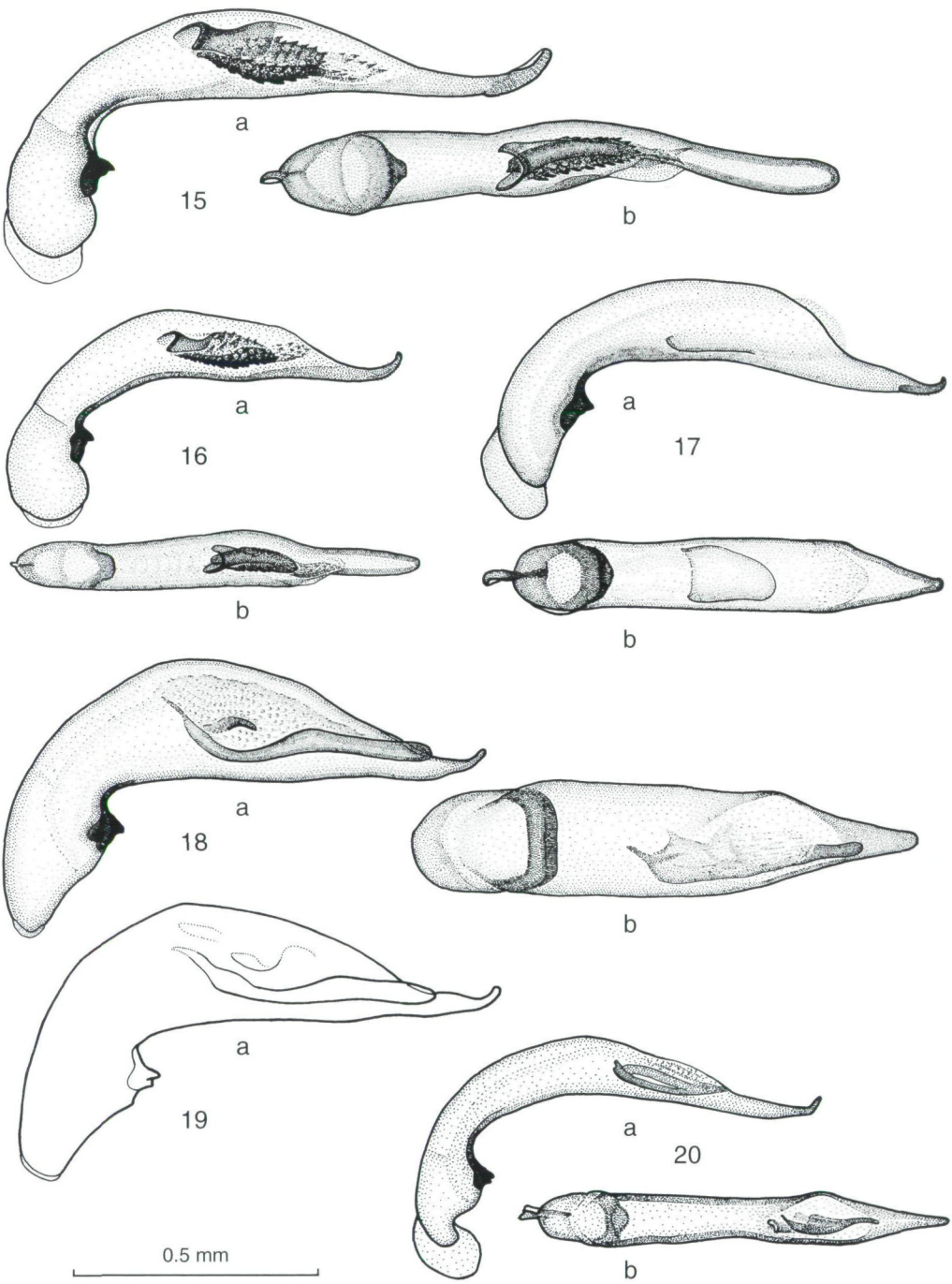
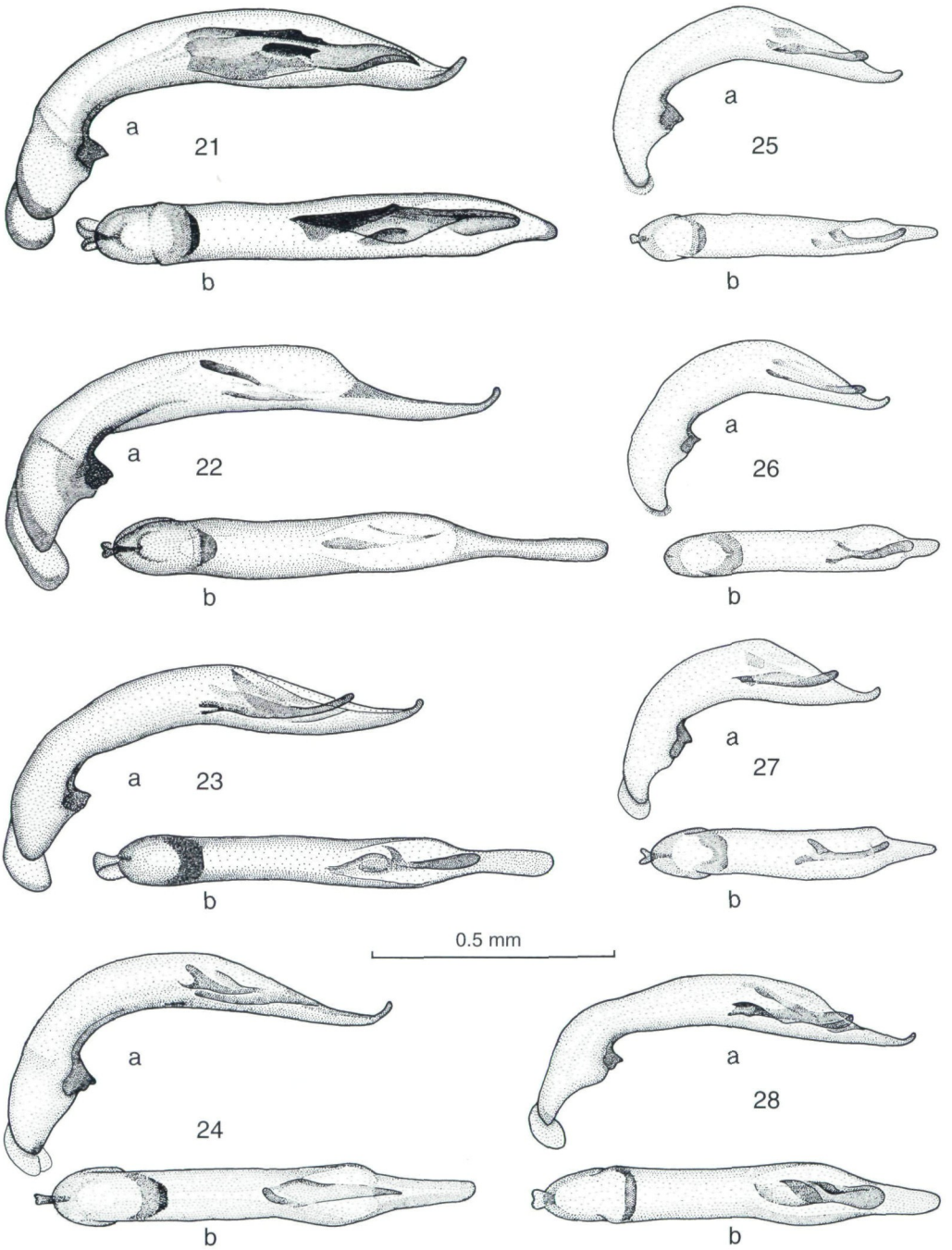
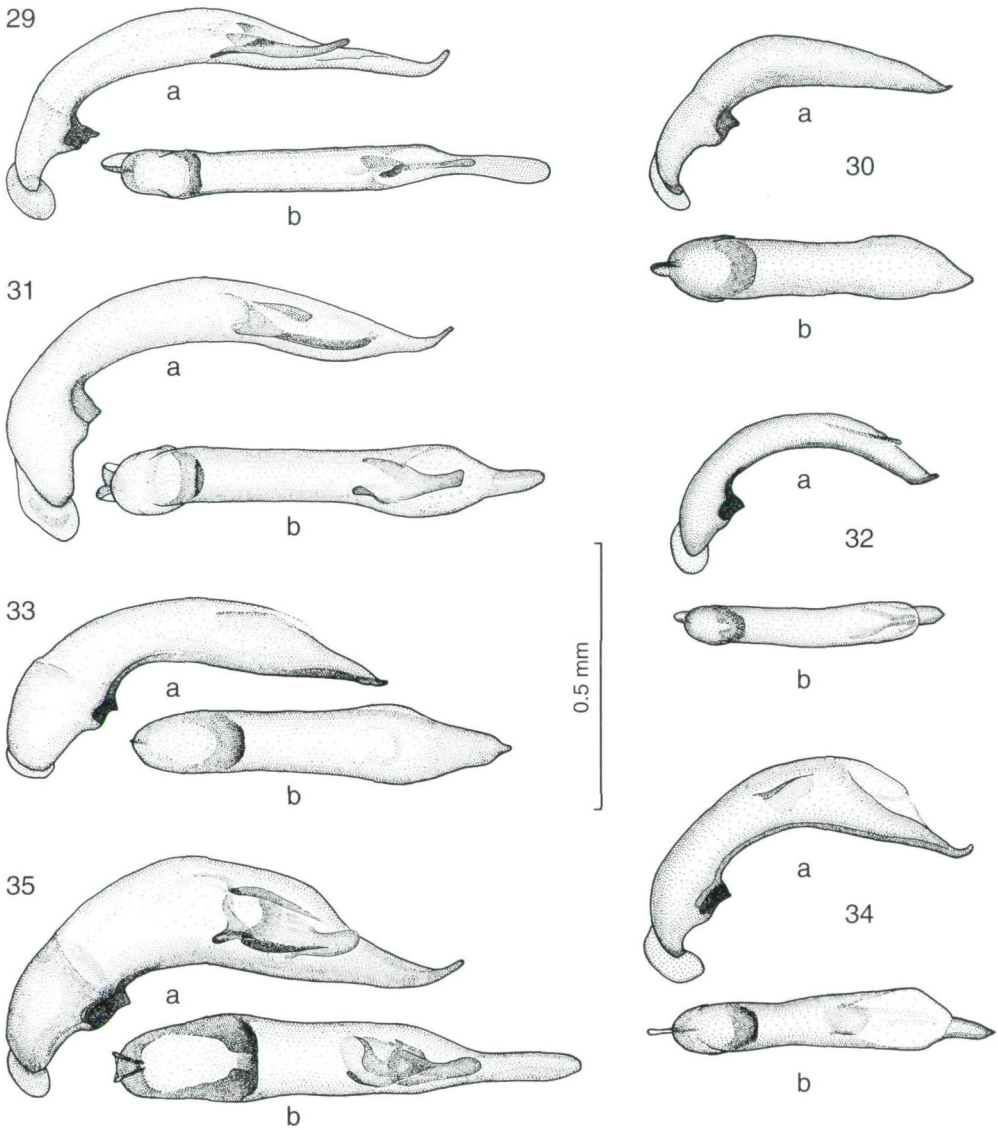


Figs 15 - 20: Median lobe of aedeagus (a - lateral view, b - dorsal view) of (15) *Trechus compactulus* sp.n., (16) *T. toroticus* sp.n., (17) *T. ongudaicus* sp.n. (18) *T. pamirensis* sp.n., from Aram-Kunghey, (19) the same, from Berk-Suu, (20) *T. katranicus* sp.n.



Figs 21 - 28: Median lobe of aedeagus (a - lateral view, b - dorsal view) of (21) *Trechus putchkovi* sp.n., (22) *T. egorovi* sp.n., (23) *T. arrisi* JEANNEL, 15 km from Irkeshtam, (24) *T. animosus* JEANNEL, paratype, (25) *T. demissus* JEANNEL, from Kshemysh River, (26) the same, from Karakoel-Katta, (27) *T. demissus matshensis* ssp.n., (28) *T. shchurovi* sp.n.



Figs 29 - 34: Median lobe of aedeagus (a - lateral view, b - dorsal view) of (29) *Trechus jugivagus* LUTSHNIK, from Kyzylart, (30) *T. tentek* sp.n., (31) *T. adustus* JEANNEL, paratype, (32) *T. kimak* sp.n. (33) *T. zhabyk taishi* ssp.n. (34) *T. mitjaevi* sp.n. (35) *T. belovi* sp.n.

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