

A Review of Species of the Subgenus *Taeniossticha* Motsch., Genus *Chrysolina* Motsch. (Coleoptera, Chrysomelidae), Distributed in the Dzungar Ata Tau and Tien Shan Mt. Ranges, with Descriptions of Two New Species

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Abstract—Species of the subgenus *Taeniossticha*, genus *Chrysolina*, from the Dzungar Ala Tau, Northern and Central Tien Shan, are revised. A key to the species and figures of the aedeagus of each species are given. Two new species, *Chrysolina klimenkoi* sp. n. and *Ch. sairannurica* sp. n., are described from Southeastern Kazakhstan and Northwestern China. Two new species-groups are distinguished: the *Ch. alata* species-group distributed in the Dzungar Ala Tau and Boro-Khoro Mountain Ranges, and the *Ch. tianshanica* species-group with its members occurring in the Northern and Central Tien Shan. A scheme of the species distribution is given.

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The systematics of the leaf-beetles of the subgenus *Taeniossticha*, genus *Chrysolina*, was a subject of study for many authors. Jacobson (1910) described three species (*Ch. dzhungarica*, *Ch. alata*, and *Ch. tianshanica*) from the area under consideration. Lopatin (1976) described one more species (*Ch. kuldzshensis*); in the book on the leaf-beetle fauna of Middle Asia and Kazakhstan (Lopatin, 1977) he gave a key to the species from this region and placed the name *Ch. dzhungarica* Jacobs. to synonyms. Together with K.Z. Kulenova (Lopatin and Kulenova, 1986), he described a new species (*Ch. koktumensis*) from Eastern Kazakhstan. Bieńkowski (2001) resurrected the name *Ch. dzhungarica* and designated lectotypes of the species described by G.G. Jacobson. Bourdonne (2005) in the revision of the subgenus *Taeniossticha* (which he included in the genus *Craspeda* Motsch.) described two new species from the Dzungar Ala Tau (*Ch. bergeali*) and Tien Shan (*Ch. kungeana*) mountain ranges and gave a key to the species of the subgenus; the key does not include *Ch. khalyktavica* described by Lopatin (2005) after the Bourdonne's revision. In the present paper, two new species of the subgenus *Taeniossticha* (considered in the traditional concept within the genus *Chrysolina* Motsch.) are described from Southeastern Kazakhstan and Northwestern China, a key to all known species of the subgenus occurring in the area under study is given; and two new species-groups are distinguished.

Holotypes of the species described are granted to the collection of the Zoological Institute, Russian Academy of Sciences.

Chrysolina klimenkoi Romantsov, sp. n.

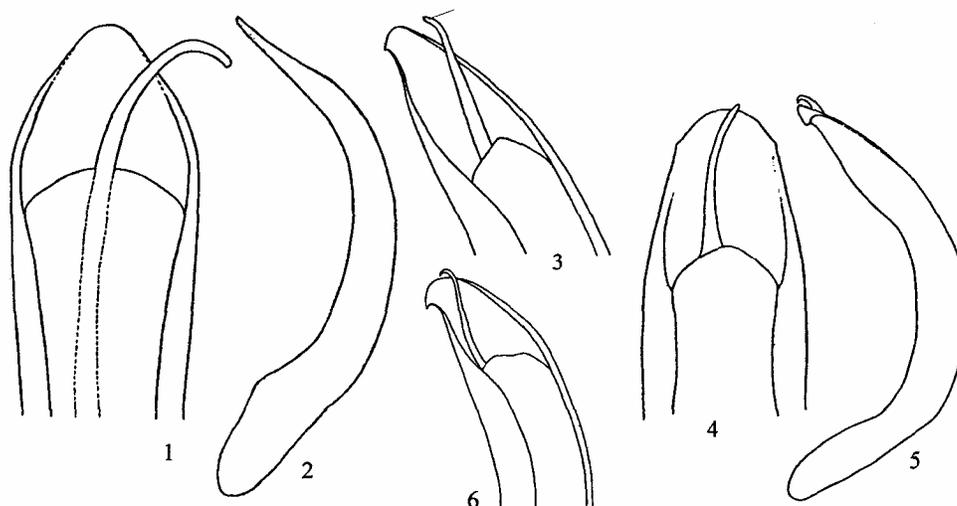
(Figs. 1–3, 34; 49, 1)

Material. Southeastern Kazakhstan, Dzungar Ala Tau, Burkhansarytau Mts., left bank of Bol'shoi Usek River, $h \sim 3100$, 1–3.VII.2000, 1 male (holotype), 1 female (paratype); $h \sim 3100$, 14.VI.2001, 1 female (paratype); $h \sim 3200$, 28.VI.1999, 2 males, 1 female (paratypes). All 6 specimens collected by A.A. Klimenko.

Description. Holotype, male. Body length 6.7 mm.

Body black, head and pronotum with blue-green metallic reflection; elytra brick-brown, punctures of elytra distinctly darker than background; 3rd, 5th, and 7th intervals slightly darker. First and second antennal segments brown ventrally, rest segments blackish brown. Legs black. Pygidium black with brown base.

Frons lustrous, with minute scattered punctures denser at antennal base, with fine deepened median line at center. Furrow separating clypeus from frons distinct, deepened at sides. Clypeus with more distinct and denser punctation. Third segment of maxillary palpus slightly wider than 2nd segment. Antennae about 0.43 times as long as body; 1st–5th antennal



Figs. 1–6. *Chrysolina* Motsch., aedeagus, dorsal view (1, 4), lateral view (2, 5), and view at angle of 30–45° (3, 6): (1–3) *Ch. klimenkoi* sp. n., (4–6) *Ch. sairannurica* sp. n.

segments lustrous, covered with sparse hairs; 6–11th segments shagreened, with short denser hairs; length of 1st segment about 0.4 mm; 2nd segment 0.8 times as long as 3rd; 3rd one about 0.7 times as long as 1st; 4–8th segments about 0.8 times as long as 3rd; 9th and 10th segments 0.9 times as long as 3rd; 11th segment 1.45 times as long as 3rd.

Pronotum twice as wide as long. Sides nearly straight in anterior 3/4, very weakly rounded only at apices; anterior angles rounded, posterior angles sharp. Punctuation of pronotal disc fine, moderately dense, well visible at 10× magnification; punctures on lateral calli smaller and sparser. Lateral calli of pronotum well developed, convex, nearly twice as wide apically as basally; lateral impressions, separating lateral calli from pronotal disk, deep, deepened at base to form vertical wall, then widened, covered with large and deep punctures.

Scutellum short and wide, impunctate.

Elytra without humeral calli, weakly convex, 1.1 times as long as wide in middle part. Hind wings wanting. Elytra with 9 striae of punctures; 3rd and 4th, 5th and 6th, and 7th and 8th striae paired; 5th and 6th striae merged at level of apical elytral declivity. Intervals lustrous, distinctly convex, covered with minute sharp punctures.

Legs with scattered punctuation, tibiae with long recumbent golden hairs denser on inner side. First segment of fore tarsus as long as, and 0.74 times as wide as 3rd segment; 1st segment of middle and hind tarsi

oblong, about as wide as, and 1.5 times as long as 3rd segment.

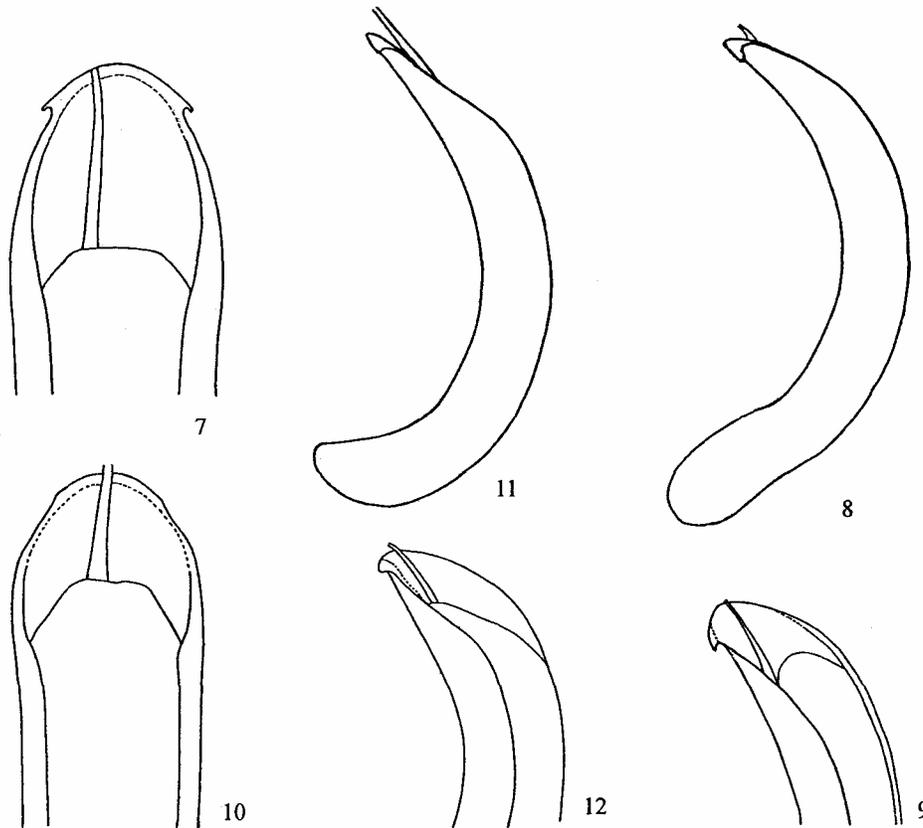
Underside black, with distinct scattered punctures. Pygidium without furrow at base, apex of pygidium with distinct dense punctures.

Aedeagus gradually widening from base to apex, widest in apical 1/5, then narrowed in form of triangle with slightly obtused apex; slender in lateral view (Figs. 1, 2). Teeth situated near apex of aedeagus, sharp, minute, inconspicuous (Fig. 3). Underside of aedeagus flat, with narrow deep longitudinal depression in apical part.

Paratypes. Males. Coloration, body length, length to width ratio of elytra and pronotum about as those in holotype. Variations in structure of aedeagus not found. In one male, 3rd, 5th, and 7th elytral intervals more distinctly darkened than those in holotype; in other male, entirely impunctate intervals more convex, cariniform, and striae almost not approximate.

Females. Body length 7.0–7.2 mm, proportions of body parts about as those in holotype; intervals of elytra strongly convex, cariniform, with obsolete punctuation; 3rd, 5th, and 7th intervals darkened; in one female, lateral depressions of pronotum narrower than those in other specimens of the type series, pronotum with copper tint. Spermatheca as in Fig. 34.

Diagnosis. The new species is most closely related to *Ch. dzhungarica* Jacobson, but differs in a peculiar structure of the aedeagus, shape of the spermatheca, and convex intervals of the elytra.



Figs. 7–12. *Chrysolina* Motsch., aedeagus, dorsal view (7, 10), lateral view (8, 11), and view at angle of 30–45° (9, 12): (7–9) *Ch. alata-vica* Jacobs., (10–12) *Ch. bergeali* (Bourdonne).

Etymology. The species is named after A.A. Klimenko.

Chrysolina sairannurica Romantsov, sp. n.
(Figs. 4–6, 32, 33; 49, 2)

Material. NW China, Xinjiang, W of Boro-Khoro, SW of Lake Sairan-Nur, 15.VIII.2003, *h* ~ 2800 m, 1 ♂—holotype, 5 ♂ and 2 ♀—paratypes; N of Lake Sairan-Nur, Sary-Tshoku Mt., Tsagan-Fargi Riv., 13.VIII.2003, *h* ~ 3300 m, 1 ♂, 1 ♀—paratypes (all 10 specimens collected by I.I. Kabak); “Sergiopl” [Sergiopl (now Ayaguz) is situated on the plain, and the beetles mainly inhabiting high mountains cannot occur there; the former Sergiopl’skii Uezd included the northern slopes of the Dzungar Ala Tau Mt. Range, where this specimen might be collected], 1 ♂—paratype.

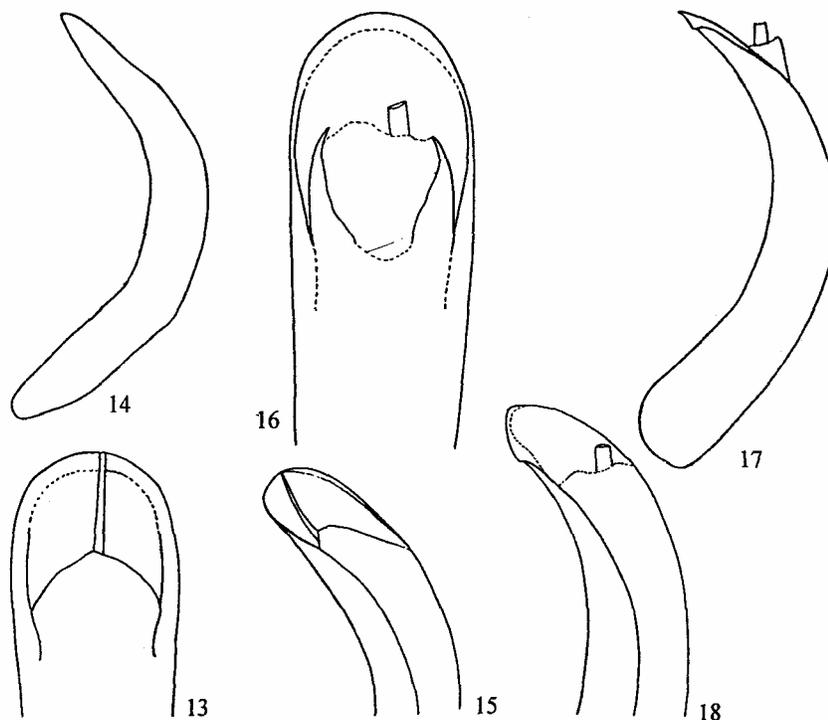
Description. Holotype. Male. Body length 6.3 mm.

Body black; head and pronotum with violet-copper tint; elytra pale brown, with blackened suture, punctures of striae slightly darker than background. First antennal segment brown ventrally, rest segments

blackish brown. Legs black. Pygidium brown, with black apical part.

Frons lustrous, with minute, nearly obliterate punctures, with fine deepened median line in central part; vertex with more distinct, scattered punctures; punctures on clypeus sparse, denser in basal part, similar in size to punctures on vertex. Furrow separating clypeus from frons distinct, deepened at sides. Antennae about 0.43 times as long as body; 1st–5th segments lustrous, covered with sparse hairs; 6–11th shagreened, with denser short hairs. Length of 1st antennal segment about 0.34 mm, 1.15 times length of 3rd segment; 2nd segment 0.53 times as long as 3rd; 4–9th segments about 0.7 times, 10th segment 0.9 times, 11th segment 1.35 times as long as 3rd.

Pronotum twice as wide as long. Sides nearly straight in anterior 3/4, very weakly rounded only at apices; anterior angles rounded, posterior angles sharp. Punctuation of pronotal disc fine, moderately dense, visible at 10× magnification; punctures on lateral calli smaller and sparser. Lateral calli of pronotum moderately convex, nearly twice as wide at base as at apex;



Figs. 13–18. *Chrysolina* Motsch., aedeagus, dorsal view (13, 16), lateral view (14, 17), and view at angle of 30–45° (15, 18): (13–15) *Ch. dzhungarica* Jacobs., (16–18) *Ch. kungeana* (Bourdonne).

lateral impressions separating lateral calli from pronotal disk narrow, deepened at base to form vertical wall, shallower in central part, densely covered with medium-sized punctures.

Scutellum triangular, with very fine punctures visible at 46× magnification.

Elytra without humeral calli, weakly convex, 1.2 times as long as wide at mid-length. Hind wings wanting. Elytra with 9 striae of punctures, 5th and 6th striae merged at level of apical elytral declivity. Intervals matt, convex, covered with minute sharp punctures.

Legs nearly impunctate; tibiae covered with long recumbent golden hairs denser on inner face. First segment of fore tarsus 0.74 times as wide, and as long as 3rd segment; 1st segment in middle and hind tarsi oblong, about 1.5 times as long, and as wide as 3rd segment.

Abdomen black, with scattered distinct punctures. Pygidium with inconspicuous depression at base, densely covered with distinct punctures at apex.

Aedeagus narrow, attenuate at apex (Figs. 4, 5), aedeagus apex with wide, distinct teeth (Fig. 6). Underside of aedeagus with distinct longitudinal depression in apical part.

Paratypes. Males. Body length 6.3–6.7 mm in specimens from Boro-Khoro Mt. Range, and 7.2 mm in those from Sary-Choku Mt. Range. Coloration and length to width ratios of elytra and pronotum in specimens from Boro-Khoro Range similar to those in holotype; in specimen from Sary-Choku Range, elytra darker, head and pronotum black with very weak violet tint; in specimen with label “Sergiopl,” elytra brighter, with lustrous intervals. Shape of aedeagus in all specimens similar to that of holotype.

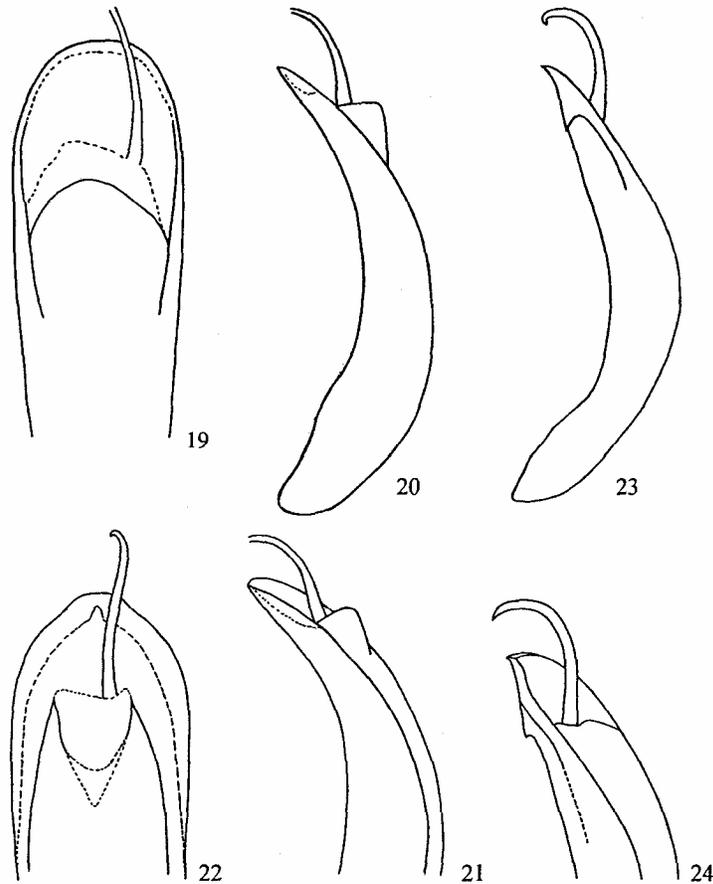
Females. Body length 6.4–7 mm. Spermatheca of specimen from Boro-Khoro Range as in Fig. 33, of that from Sary-Choku Range as in Fig. 32. Body coloration and proportions of pronotum and elytra similar to those of holotype.

Diagnosis. The new species is most closely related to *Ch. alata* Jacobs. and *Ch. bergeali* (Bourdonne), but differs in the shape of the aedeagus and in the narrower lateral impressions of the pronotum.

***Chrysolina alata* Jacobson, 1910**

(Figs. 7–9, 31, 48; 49, 7)

Jacobson, 1910 : 58; Lopatin, 1977 : 149; Bi-eńkowski, 2001 : 130, 193; Bourdonne, 2005 : 337 (*Craspeda*).



Figs. 19–24. *Chrysolina* Motsch., aedeagus, dorsal view (19, 22), lateral view (20, 23), and view at angle of 30–45° (21, 24): (19–21) *Ch. tianshanica* Jacobs., (22–24) *Ch. khalyktavica* Lop.

Material. Kazakhstan: environs of Dzharkent (=Panfilov), Chelokei, V.1909, 1 ♀—lectotype; Ili River, V.1909, 1 ♀—paralectotype; Kamennaya River, V.1910 (Ryukbeil), 1 ♀; “Dzharkent (Heptapotamia), IV.1906, Suworow,” 1 ♀—paralectotype; Dzharkentskii Uezd, 12000’, VI.1915 (Ryukbeil), 2 ♂, 4 ♀; 50 km NNE of Dzharkent, Tyshkantau Mt. Range, upper Sargil River, *h* ~ 3000–3300 m, 28.VII.1994 (V. Dubatolov, O. Kosterin), 1 ♂; Tien-schan, Dzharkent, Tyschkang, 2 ♀; Dzharkent, Kamennaja Retschka, 1 ♀; Semiretschje, Taldy-Bulak, 1 ♂; Tischkan, 22.VI.1909, 3 ♂, 3 ♀; Tischkan, Semirjetschensk, 3 ♂.

Chrysolina bergeali (Bourdonne, 2005)
(Figs. 10–12, 45, 46; 49, 4)

Bourdonne, 2005 : 339 (*Craspeda*).

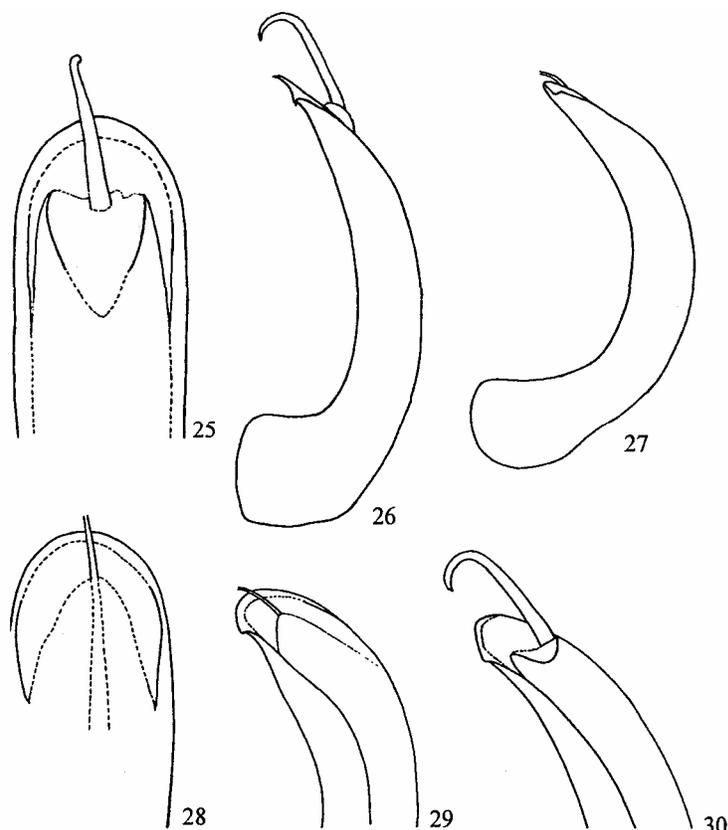
Material. Southeastern Kazakhstan, Dzungar Ala Tau Mt. Range, Toksanbai, Sarychaban Mts., *h* ~ 2700 m, 20.VIII.1990 (I.I. Kabak), 1 ♂, 1 ♀.

One of the characters distinguishing *Ch. bergeali* from *Ch. alata* Jacobs. (according to Bourdonne, 2005) is its short body (length 5.68–6.13 mm in males, and 5.69–5.98 mm in females). The two specimens from the Toksanbai Mt. Range, examined by the author [the aedeagus (Figs. 10–12) matching the figure in the Bourdonne’s paper], differ in the larger bodies (length 6.7 mm in the male and 7.5 mm in the female).

Chrysolina dzhungarica Jacobson, 1910
(Figs. 13–15, 42–44; 49, 3)

Jacobson, 1910 : 58; Lopatin, 1977 : 149; Bi-
enkowski, 2001 : 130, 193; Bourdonne, 2005 : 343
(*Craspeda*).

Material. “Dzhungaria occ., fl. Borotala, VIII.1878, Regel,” 1 ♀—lectotype; NW China, Xinjiang, W Boro-Khoro, W of Emtshek Mt., ESE of Sartai Vill., 10.VIII.2003, 3 ♂; NE Lake Sairan-Nur, Kandzhiga Mt., Tsagan-Fargi Riv., 12.VIII.2003, *h* ~ 3050–3150 m, 1 ♂, 2 ♀. All six specimens are from I.I. Kabak’s collections of 2003.



Figs. 25–30. *Chrysolina* Motsch., aedeagus, dorsal view (25, 28), lateral view (26, 27), and view at angle of 30–45° (29, 30): (25, 26, 30) *Ch. kuldzhensis* Lop., (27–29) *Ch. koktumensis* Lop. et Kulenova.

The species was described from a single female, the spermatheca as that in Fig. 44. According to the shape of the pronotum and structure of the spermatheca (Figs. 42, 43), the specimens from the Kyz-Emchek and Khandzhiga mountain ranges belong to this species; the identification is also supported by the fact that Regel's routes of 1878 passed through these ranges.

Chrysolina khalyktavica Lopatin, 2005
(Figs. 22–24; 49, 10)

Lopatin, 2005 : 572.

Material. NW China, Xinjiang, Khalyktau Mt. R., N of Kungurbulak Riv., $h \sim 3600$ m, 31.VII.2003 (I.I. Kabak), 1 ♂—holotype, 2 ♂—topotypes.

Chrysolina koktumensis Lopatin et Kulenova, 1987
(Figs. 27–29, 35; 49, 8)

Lopatin, Kulenova, 1987 : 39; Bourdonne, 2005 : 345 (*Craspeda*).

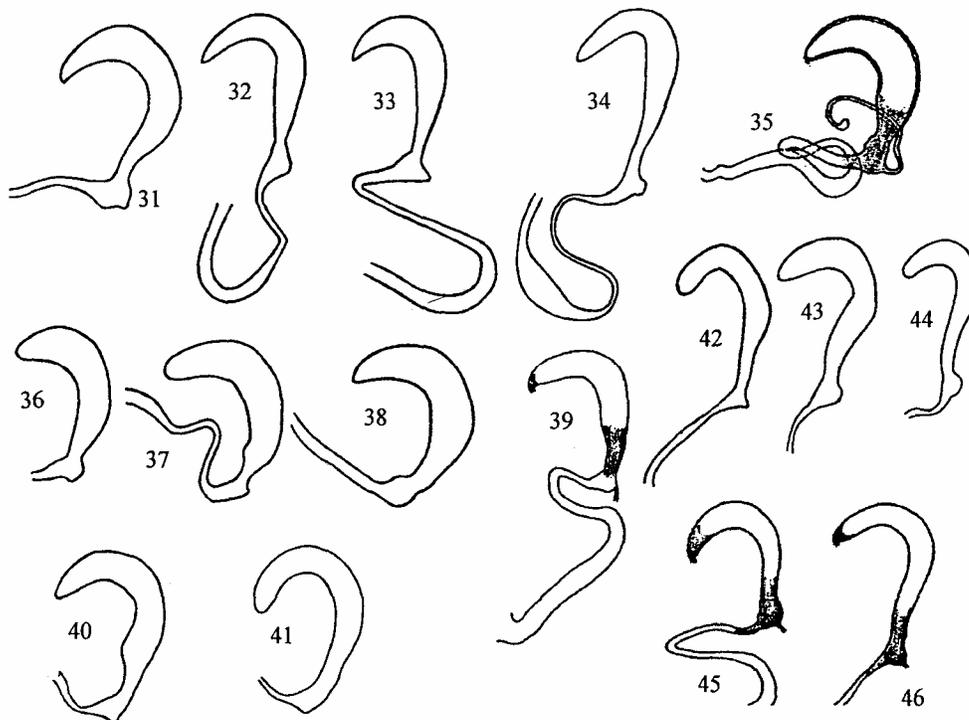
Material. SE Kazakhstan, Dzungar Ala Tau Range, Kyungei-Ala-Too Mt. Range, Mailybai Gorge, $h \sim 2600$ m, 24.VI.1985 (I.I. Kabak), 1 ♂—holotype.

Chrysolina kuldzhensis Lopatin, 1976
(Figs. 25, 26, 30, 36, 37; 47; 49, 5)

Lopatin, 1976 : 113; 1977 : 149; Bieńkowski, 2001 : 194; Bourdonne, 2005 : 321 (*Craspeda*).

Material. “Tian-Schan, Juldus (im. Kuldsha),” 1 ♂—holotype, 1 ♀—paratype; “Kuldzha,” 1 ♂—paratype; Tian-Schan. Juldus Geb., 1 ♂, 1 ♀; Chine, Chines Tian-Schan, 1 ♂; NW China, Xinjiang, SSE of Tekes Narat Mt., left bank Kshi-Kushtai, 5 km N of Bash Khatscha Pass, $h \sim 2900$ m, 15.VII.1999, 1 ♂; cresp Koeksu & Kashi-Kushtai River, Mt. “3189,” 13.VI.1999, 1 ♂, 1 ♀; “r. trib. Kshi-Kushtai, $h \sim 2700$ –3100 m,” 1 ♂, 2 ♀. All specimens of 1999 were collected by I.A. Belousov and I.I. Kabak.

The inscriptions “Juldus” and “Kuldsha” on the labels of the late 19th–early 20th centuries do not really mean these areas. *Chrysolina kuldzhensis* characteristic of high mountains cannot live in the environs of Kuldzha, situated nearly on the plain. According to a personal communication by I.I. Kabak, who has been investigating for many years the carabid fauna of this region, these names formerly designated a large territory from Narynkol and the Ketmen Mt. Range to the upper Kash River.



Figs. 31–46. *Chrysolina* Motsch., spermatheca: (31) *Ch. alata*vica Jacobs; (32, 33) *Ch. sairannurica* sp. n.; (34) *Ch. klimenkoi* sp. n.; (35) *Ch. koktumensis* Lop. et Kulenova; (36, 37) *Ch. kuldzhensis* Lop.; (38–40) *Ch. kungeana* (Bourdonne); (41) *Ch. tianshanica* Jacobs.; (42–44) *Ch. dzhungarica* Jacobs.; (45, 46) *Ch. bergeali* (Bourdonne) [(35, 39, 45, 46) after Bourdonne (2005), others original].

Chrysolina kungeana (Bourdonne, 2005)
(Figs. 16–18, 38–40; 49, 6)

Bourdonne, 2005 : 322 (*Craspeda*).

Material. Kazakhstan, Ketmen Mt. Range, *h* ~ 2250 m, 8.VI.1990 (V.G. Dolin); Ketmen Mt. Range, *h* ~ 2000 m, 25.VII.1997; Zailiiskii Ala Tau, Karash Mt. Range, upper Belshabdar River, 26.VI.2002 (I.I. Kabak), 1 ♂; Transili-Alatau, Karaarta, 2 ♂, 1 ♀; Kirghizia, Kyungei-Ala-Too Mt. Range, Sarybulak Pass, *h* ~ 3500 m, 1–4.VII.2001 (S.A. Toropov), 1 ♂; “Tien-schan, Sary-Dzhaz, Fl. Ken-su,” 2 ♂, 2 ♀.

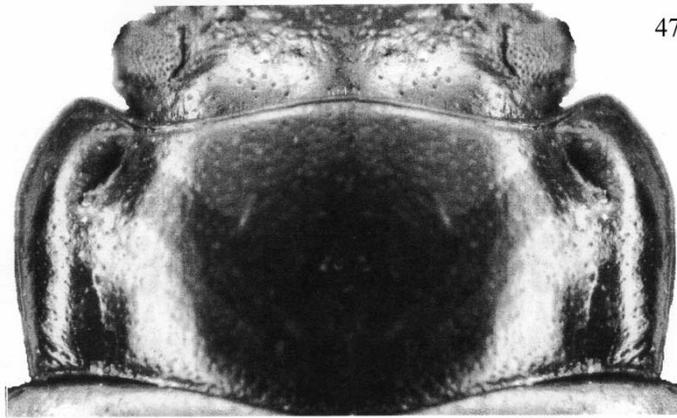
The main characters (Bourdonne, 2005) distinguishing this species from *Ch. tianshanica* are the presence of a tooth at the apex of aedeagus and the fine punctation of the pronotum. In the specimens from the Zailiiskii Ala Tau Mt. Range, examined by the author, the apical tooth of the aedeagus is very feebly marked; the punctation of the pronotum is also not a constant character, e.g., in a specimen from the Ketmen Mt. Range, bearing a tooth at the aedeagus apex, punctures on the pronotum are similar in size to those in *Ch. tianshanica*. *Ch. tianshanica* and *Ch. kungeana* may belong to one variable species. The distribution of these species over ranges of Tien Shan (Fig. 49) also corroborates this assumption.

Chrysolina tianshanica Jacobson, 1910
(Figs. 19–21, 41; 49, 9)

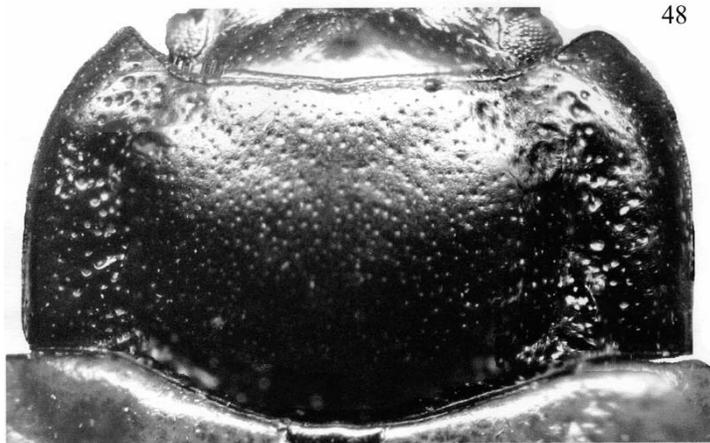
Jacobson, 1910 : 59; Lopatin, 1977 : 149; Bi-
eńkowski, 2001 : 131, 195; Bourdonne, 2005 : 334
(*Craspeda*).

Material. Upper reach of Tekes River, 11.VIII.1907 (Ya.I. Korol’kov), 1 ♀—lectotype (with label “*Chrysolina tianshanica*, type, G. Jacobson det.,” 1 ♂—paralectotype (with label “*Chrysolina tianshanica*, typ., ♂, G. Jacobson det.”).

The Dzungaro–Tien-Shanian representatives of the subgenus, preferring high mountains, seem to constitute a group in the state of active speciation. These species are very similar in appearance and can be reliably differentiated only by the structure of the aedeagus. The characters used earlier in the systematics of the subgenus, such as the color gradations of the pronotum and elytra, extent of convexity of elytral intervals, punctation of the pronotum, and structure of the ultimate segment of the maxillary palpus, are subject to wide variation and can be used only as additional features. At the same time, the species can be subdivided into the two distinct groups (see key below). (1) The *Ch. tianshanica* group n. includes species occurring in the Northern and Central Tien Shan



47



48

Figs. 47, 48. *Chrysolina* Motsch., pronotum: (47) *Ch. kuldzhensis* Lop., (48) *Ch. alatafica* Jacobs.

(*Ch. tianshanica*, *Ch. kuldzhensis*, *Ch. khalyktavica*, and *Ch. kungeana*); (2) the *Ch. alatafica* group n. includes species characteristic of the Dzungar Ala Tau and Boro-Khoro Mt. Ranges (*Ch. alatafica*, *Ch. bergali*, *Ch. dzhungarica*, *Ch. klimenkoi*, *Ch. koktumen-sis*, and *Ch. sairannurica*). The distribution of the species is shown in Fig. 49.

*A Key to the Dzungaro–Tien-Shanian Species
of the Subgenus Taeniossticha Motsch.*

- 1 (8). Impressions separating lateral calli from pronotal disc narrow, nearly impunctate, deepened, forming vertical outer walls at base and in apical part, frequently entirely or partly interrupted near mid-length. Pronotum as in Fig. 47. Underside of aedeagus flat in apical part, without longitudinal depression. Basal part of spermatheca usually wider. Species from the Northern and Central Tien Shan *Ch. tianshanica* species group n.
- 2 (3). Apex of aedeagus without teeth at sides (Figs. 19–21); punctation of pronotum distinct, visible at less than 10× magnification. Spermatheca as in Fig. 41. Body length 6.1 mm in males, 7 mm in females *Ch. tianshanica* Jacobson, 1910 1910.
- 3 (2). Apex of aedeagus with teeth at sides, punctation of pronotum very fine, inconspicuous at magnification less than 10×.
- 4 (5). Aedeagus widened before apex, then narrowed, with widely rounded tooth at apex (Figs. 22, 23). Teeth at sides of aedeagus apex large, wide, situated farther from margin, and tightly pressed to underside, with spikes pointing backwards (Fig. 24). Body narrow, slender, weakly convex. First segment of fore tarsus of male short, strongly widened, wider than 3rd segment. Elytral base and sides with orange edging contrasting with blackish brown background with dis-

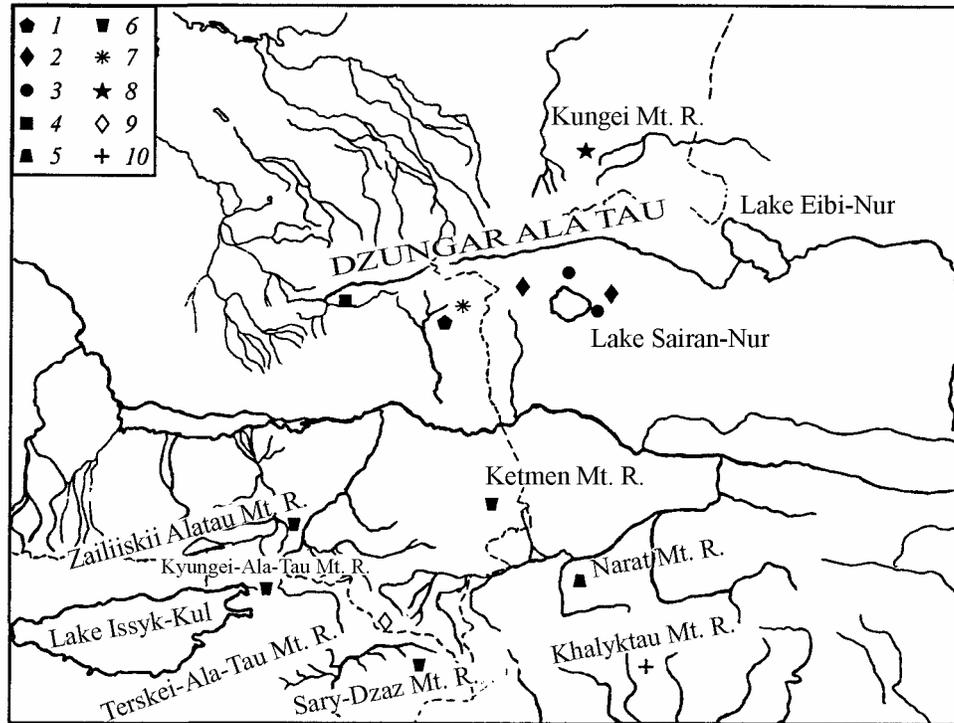


Fig. 49. Distribution of Dzungar–Tien-Shan species of subgenus *Taeniosticha* Motsch., genus *Chrysolina* Motsch.: (1) *Ch. klimenkoi* sp. n., (2) *Ch. sairannurica* sp. n., (3) *Ch. dzhungarica* Jacobs., (4) *Ch. bergeali* (Bourdonne), (5) *Ch. kuldzhensis* Lop., (6) *Ch. kungeana* (Bourdonne), (7) *Ch. alatavica* Jacobs., (8) *Ch. koktumensis* Lop. et Kulenova, (9) *Ch. tianshanica* Jacobs., (10) *Ch. khalyktavica* Lop.

tinct metallic luster. Body length of males 5.8–6.5 mm *Ch. khalyktavica* Lopatin, 2005.

5 (4). Aedeagus subparallel-sided, with rounded apex. Teeth at sides of aedeagus apex smaller and narrower, situated more closely to margin, not pressed. First segment of fore tarsus of male longer, about as wide as 3rd segment. Body wider.

6 (7). Body wider, convex. Elytra reddish brown, with metallic luster; sides and base frequently paler. Apex of aedeagus with distinct sharp teeth at sides (Figs. 25, 26, 30). Spermatheca as in Figs. 36, 37. Body length 5.6–6.9 mm in males, 6.7–7.8 mm in females *Ch. kuldzhensis* Lopatin, 1976.

7 (6). Body narrower, weakly convex. Apex of aedeagus with less distinct teeth at sides (Figs. 16–18). Spermatheca as in Figs. 38–40. Body length 6.0–6.8 mm in males, 6.8–7.2 mm in females *Ch. kungeana* (Bourdonne, 2005).

8 (1). Impressions separating lateral calli from pronotal disc wider, with deep large punctures, deep-

ened, forming vertical outer wall only at base. Pronotum as in Fig. 48. Underside of aedeagus with narrow deep groove-shaped longitudinal depression in apical part. Basal part of spermatheca usually narrower, elongate. Species from the Dzungar Ala Tau and Boro-Khoro mountain ranges

..... *Ch. alatavica* species-group n.

9 (12). Apex of aedeagus with or without very weak teeth at sides. Elytral striae paired.

10 (11). Aedeagus gradually widened from base to apex, widest at 4/5 of its length, then narrowed; its apex in form of slightly obtused triangle with very small and sharp teeth at sides (Figs. 1–3). Spermatheca as in Fig. 34. Lateral impressions of pronotum deep, lateral calli and pronotal disc more convex. Body strongly convex, elytral intervals distinctly convex. Body length 6.4–6.7 mm in males, 7.0–7.2 mm in females *Ch. klimenkoi* Romantsov, sp. n.

11 (10). Aedeagus parallel-sided nearly up to very weakly rounded apex, teeth absent or obsolete (Figs. 13–15). Spermatheca as in Figs. 42–44.

- Lateral impressions of pronotum shallower; lateral calli narrower, weakly convex; pronotal disc less convex. Body weakly convex, intervals of elytra nearly flat. Body length 6.5–6.7 mm in males, 7.0–7.2 mm in females
..... *Ch. dzhungarica* Jacobson, 1910.
- 12 (9). Apex of aedeagus with distinct teeth at sides.
- 13 (16). Body more convex; lateral impressions of pronotum wide, coarsely punctate; aedeagus wide.
- 14 (15). Teeth at sides of aedeagus apex deflexed sideways, projecting, well visible in dorsal view (Figs. 7–9). Spermatheca as in Fig. 31. Pronotum with very wide, strongly convex lateral calli; lateral impressions wide, covered with large deep punctures. Elytral striae not paired, intervals usually strongly convex. Body length 6.5–7.6 mm in males, 6.9–8.0 mm in females
..... *Ch. alata* Jacobson, 1910.
- 15 (14). Teeth at sides of aedeagus apex pressed to margins, hardly visible in dorsal view (Figs. 10–12). Spermatheca as in Figs. 45, 46. Elytral striae paired, with flat intervals in between. Body length 5.68–6.7 mm in males, 5.69–7.5 mm in females *Ch. bergeali* (Bourdonne, 2005).
- 16 (13). Body less convex, lateral impressions of pronotum narrower. Aedeagus narrow.
- 17 (18). Apex of aedeagus narrowed, with large pointed teeth at sides (Figs. 4–6). Spermatheca as in Figs. 32, 33. Pronotum black with violet tint, lateral calli strongly convex, elytra matt, intervals not darkened. Body length 6.3–7.2 mm in males, 6.4–7.0 mm in females
..... *Ch. sairannurica* Romantsov, sp. n.
- 18 (17). Apex of aedeagus rounded, with smaller teeth at sides (Figs. 27–29). Spermatheca as in Fig. 35. Pronotum black, lateral pronotal calli less convex; elytra lustrous, with 3rd, 5th, and 7th intervals darkened. Body length of male 6 mm
..... *Ch. koktumensis* Lopatin & Kulenova, 1981.

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