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**New data on *Dorcadion* Dalman, 1817 (Coleoptera, Cerambycidae) of
middle Chu-river basin in Kazakhstan and Kirgizia**

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Key words: Coleoptera, Cerambycidae, *Dorcadion*, new subspecies, lectotypes, Kazakhstan,
Kirgizia.

Abstract. The real nature of *Dorcadion tianshanskii heptapotamicum* Plavilstshikov, 1951, *D. t. terminum* Danilevsky, 1999 and *D. optatum vallesum* Danilevsky, 1999 is established. Lectotypes are designated for *D. tianshanskii* Suvorov, 1910, *D. globithorax radkevitshi* Suvorov, 1910 and *D. matthieseni* Suvorov, 1910. Four new taxa are described from Kazakhstan: *D. tianshanskii algaense* **ssp. n.** from Alga environs southwards Kurday pass, *D. t. otariense* **ssp. n.** from Otar environs in Kopa valley, *D. t. parapumilio* **ssp. n.** from about 10 km westwards Otar in Kopa valley, *D. t. euzhaisanicum* **ssp. n.** from Zhaisan environs in Chu-Ili Mountains in about 50 km eastwards Chu-city.

INTRODUCTION

Fauna of *Dorcadion* species of middle Chu-river basin in Kazakhstan and Kirgizia is extremely rich and complicated. My first attempt of its revision (Danilevsky, 1999) was not successful enough. The species attribution of several populations was wrong. New materials collected by Sergey Toropov (Bishkek, Kirgizia) in the north part of Chu-Ili Mountains in Kazakhstan inspired the present work.

The whole middle part of Chu river basin from about Bishkek to

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Muyunkumy desert and Chu-Ili Mountains (Fig. 57) is inhabited by many different local forms of three vicariant species: *D. optatum* Jakovlev, 1906 (described from the eastern part of Kirgizsky ridge), *D. tianshanskii* Suvorov, 1910 (described from the north part of Chu-Ili Mountains) and *D. mystacinum* (Ballion, 1878) described supposedly from near Aulie-Ata (= Dzhambul, now Taraz). Original designation of the type locality ["Kuldsa"] of *D. mystacinum* (Ballion, 1878) was wrong. No other *Dorcadion* species exist in the area. All three species are connected by a row of more or less transitional populations and could be regarded as subspecies. Traditional interpretation of all three taxa as species is accepted here and could be proved by the existence of natural geographical limits for some of them. Chu river separates *D. mystacinum* from *D. tianshanskii* in the north as well as *D. tianshanskii* from *D. optatum* in the south. So, all *Dorcadion* in Chu river basin to the north and east from Chu river are regarded now as *D. tianshanskii*. All *Dorcadion* of Chu river valley in Kirgizia (hilly or mountain landscapes) are *D. optatum*. All *Dorcadion* of Chu river valley in Kazakhstan to the west and south of Chu river (plain with sandy deserts) are *D. mystacinum*. From the other sides the vicariant system of three species is prolonged to other vicariants, which could also be included in it as subspecies: in the north it is *D. pantherinum* Jakovlev, 1899 in sandy deserts, in the east: *D. tschitscherini* Jakovlev, 1899, *D. suvorovianum* Plavilstshikov, 1915, *D. unidiscale* Danilevsky, 1996 from clay deserts to high mountains. Further eastern relative vicariant connection between *D. suvorovianum* and *D. arietinum* Jakovlev, 1898 is rather probable.

All photos were arranged by the author with one exception. The photo of the female of *D. tianshanskii euzhaisanicum* ssp. n. was kindly sent to me by S. Toropov.

Abbreviations used in the text:

MD – author's collection

ST – collection of S. Toropov (Bishkek, Kirgizia)

ZMM – collection of Zoological Museum of Moscow University.

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REVIEW OF TAXA

1. *Dorcadion (Acutodorcadion) tianshanskii* Suvorov, 1910
(Figs 1-41)

Dorcadion (Compsodorcadion) tianshanskii Suvorov, 1910: 67 – “im Semirjetshje-Gebiet”.

Type locality. Chu-Ili Mountains, upper level of Chulak river valley (about 43°54'30.81"N, 74°32'14.51"E, 980m) - according to the lectotype (present designation) label.

The species was described from “Semirjetshje-Gebiet” without precise indication of the type locality, but series of numerous syntypes, spread over different collections consist of specimens with exact labels.

Description. Body big or middle-sized, but sometimes in plain populations small; 1st antennal joint usually in very fresh specimens with fine white pubescence easily lost in older specimens; 1st antennal joint and femora usually bicolor, but sometimes black; humeral and external elytral carinae strongly granulated or only humeral carinae granulated; pronotum often convex posteriorly; elytral white lines usually narrow, but sometimes moderately wide; humeral and external dorsal elytral white stripes always complete, but sometimes with black dots; external dorsal elytral white stripes never touching epically humeral stripes; internal dorsal elytral white stripes usually absent, but often present in form of several spots and strokes, sometimes rather long, nearly complete, but never touching elytral bases; Body length in males: 14.0-23.4mm, width: 4.7-8.4mm; body length in females: 14.0-26.7mm, width: 5.6-9.4mm.

Distribution (Fig. 57, 1-8). Kazakhstan, Chu-Ili Mountains with foothills.

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1a. *Dorcadion (Acutodorcadion) tianshanskii tianshanskii* Suvorov, 1910

(Figs 1-3)

Dorcadion (Compsodorcadion) tianshanskii Suvorov, 1910: 67 – “im Semirjetshje-Gebiet”.

Dorcadion (Compsodorcadion) tianschanski, Aurivillius, 1923: 26 [wrong posterior spelling – not available] – “Semirjetshensk”.

Dorcadion (s. str.) *tianshanskii*, Plavilstshikov, 1958: 385, part. – Kurday pass, Kopaly canyon, upper level of Chulak river.

Dorcadion (s. str.) *thianshanskii*, Breuning, 1962: 229 – wrong posterior spelling (not available name).

Dorcadion (s. str.) *tianshanskii tianshanskii*, Danilevsky, 1996: 417, Fig. 29 – “Kopaly and Chulak canyons”; 1999: 25 – “upper level of Chulak Valley“, “Anrakai Mts. (now Kulzhabasy Mts. to the north from Otar)”, “upper level of Kopaly Valley“.

Dorcadion (Acutodorcadion) tianshanskii, Danilevsky et al., 2005: 145, 147.

Dorcadion (Acutodorcadion) tianshanskii tianshanskii, Danilevsky, 2010: 242.

Type locality. Chu-Ili Mountains, upper level of Chulak river valley (about 43°54'30.81"N, 74°32'14.51"E, 980m) - according to the lectotype (present designation) label.

Description. The subspecies is characterized by usually large body (especially in typical populations – small specimens are known from Kulzhabasy ridge only); regular oval elytral shape; very rough humeral carinae; external dorsal carinae in males from strongly raised to nearly obliterated, from roughly granulated to relatively smooth, but never pubescent; posterior pronotal swelling absent or poorly developed; pronotal and elytral white stripes usually narrow; humeral and external dorsal elytral stripes usually with black spots and with irregular margins; internal dorsal elytral stripe in males usually totally absent or poorly represented by several longitudinal spots; females usually autochromal, with dark- or light-brown

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ground pubescence, but sometimes autochromal, with black ground pubescence. Body length in males: 15.5-23.0mm, width: 5.0-7.5mm; body length in females: 17.0-25mm, width: 6.2-9.4mm.

Distribution (Fig. 57, 1a-1d). Kazakhstan; Chu-Ili Mountains; four localities are known: upper level of Chulak river, about 43°54'30.81"N, 74°32'14.51"E, 980m; upper level of Kopaly river valley, about 43°45'12.33"N, 75°8'41.52"E, 920m; Ashisu environs, about 50km southwards Kolshengel, 900m, 43°49'31.37"N, 75°30'2.65"E; Kulzhabasy Mts., 930m, 43°36'10.76"N, 75°6'3.26"E.

Materials. 1 male, lectotype (present designation) with goldish circle and 2 labels: 1) [in Russian] [Semirechie Region, upper level of Chulak river 19.05.1909, Nedzvitzy leg.], 2) *Compsodorcadion tianshanskii*. Type m. G.Suworow. det. ♂ - ZMM; 6 paralectotypes (present designation); 4 males and 2 females from same locality and with same data – ZMM and MD (1 male); 1 male, Kazakhstan, 50km S Kolshengel, 900m, 8.5.2001, Danilevsky leg. – MD; 2 males [about same locality], Kazakhstan, Ashisu, 900m, 43°49'31.37"N, 75°30'2.65"E, 17.4.2002, Danilevsky leg. – MD; 15 males, 12 females, Kazakhstan, Kulzhabasy Mts., 930m, 43°36'10.76"N, 75° 6'3.26"E, 21.4.2000, Danilevsky leg. – MD.

1b. *Dorcadion (Acutodorcadion) tianshanskii radkevitchi* Suvorov, 1910

Dorcadion (Compsodorcadion) globithorax radkevitchi Suvorov, 1910: 67 – “Auf den Bergabhängen von Ala-tau auf der Passhöhe Kurbaisk” [Kurday pass].

Dorcadion (Compsodorcadion) globithorax var. *radkevitchi*, Aurivillius, 1923: 23 – “Alatau”.

Dorcadion (s. str.) *globithorax*, Plavilstshikov, 1958: 396, part. – Kurday pass, Kopaly canyon, upper level of Chulak river; Breuning, 1962: 227, part. – “vom Ili F[1]uß beschrieben. - Semirjetchensk: Ala-tau, Syr. Darja, Pishpek, Tokmak, Mts. Alexander etc.”.

Dorcadion (s. str.) *tianshanskii radkevitchi*, Danilevsky, 1996: 417, Fig. 30 – “Kurday pass”; 1999: 25 – “the highest level of the Chu-Ili Mountains from western part of the

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Zhetyzhel Ridge to eastern part of the Kindiktas Ridge“.

Dorcadion (Acutodorcadion) tianshanskii radkevitchi, Danilevsky et al., 2005: 143; Danilevsky, 2010: 242.

Type locality. Kazakhstan, Chu-Ili Mountains, Kurday pass – according to the original description.

Description. The subspecies is characterized by usually large body (largest in the species); elytra less tapering anteriorly than posteriorly, often nearly parallelsided in anterior half; humeral carinae more or less granulated, but usually less rough than in the nominative subspecies, sometimes nearly smooth; external dorsal carinae in males often indistinct and totally covered by ground black pubescence, or slightly raised and shining, or sometimes rather distinct and granulated; posterior pronotal swelling strongly exposed (the biggest swelling in the species); pronotal and elytral white stripes from very narrow to very wide; humeral and external dorsal elytral stripes usually without black spots and with regular margins; internal dorsal elytral stripe absent or present, sometimes long and wide, but in males always free, never reaching anterior or posterior elytral margins; females usually autochromal, with dark- or light-brown ground pubescence, but sometimes autochromal, with black ground pubescence. Body length in males: 18.5-23.4mm, width: 6.0-8.4mm; body length in females: 18.5-26.7mm, width: 7.5-9.4mm.

Distribution (Fig. 57, 2a-2d). The highest level of Chu-Ili Mountains from the southernmost foothills (Rgaity) and western part of Zhetyzhel ridge to northeastern part of Kindiktas ridge; known localities are: Kurday pass, about 43°21'7"N, 74°59'2"E, 1200m; Kindiktas ridge, 45km NE Kurday, about 43°39'N, 74°39'E, 1300m; E Zhetyzhel ridge, Akterek env., 43°18'44"N, 75°16'56"E, 1140m; south of Chu-Ili Mountains, Rgaity env., about 43°9'32"N, 74°48'57"E, 800m.

Materials. Male, lectotype (present designation) with goldish circle and 2 labels: 1)

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[in Russian] [Semirechie, Kurday pass, 1100m. 16.5.1907. A. Yakobson], 2) *globithorax* B.Yakov subsp. *radkevitschii*. Typ.m. G.Suworow. det. ♂ – ZMM; 24 paralectotypes, present designation (including 1 male [ZMM] of *D. optatum matthieseni* with goldish circle and 2 labels: 1) Pischpek Matthiessen, 2) *Compsodorcadion* subsp. *radkevitschii* v. *pauperum* Typ. m. G. Suvorov det. – ZMM; 2 males of *D. tianshanskii otariense* **ssp. n.** [described bellow] with goldish circle and 2 labels: 1) [in Russian] [Semirechie Region, Targan st., 18.5.1907, A.Jacobson leg.], 2) v. *pauperum* Suvor., G.Suvorov det. - ZMM; 1 male of *D. tianshanskii otariense* **ssp. n.** [described bellow] with goldish circle and 2 labels: 1) [in Russian] [Semirechie Region, Targan st., 18.5.1907, A.Jacobson leg.], 2) *Compsodorcadion* subsp. *radkevitschii* var. *pauperum* Typ. m. G.Suvorov det. – ZMM and 1 male [ZMM] from „Sary-Dzhasyk“ [Kastek river canyon?] more similar to *D. kastekum* Danilevsky, 1996); 2 males and 1 female with same labels as lectotype – ZMM; 1 male and 1 female with goldish circle and 2 labels: 1) [in Russian] [Semirechie, Kurday pass, 17.5.1907, A. Yakobson], 2) *Compsodorcadion globithotax* Jak. v. *opulentum* Typ. m. G. Suworow det. – ZMM; 10 males and 2 females with goldish circle and 2 labels: 1) [in Russian] [Semirechie, Kurday pass, 17.5.1907, A. Yakobson], 2) *globithotax* Jak. ssp. *radkevitschii* v. *pauperum* [or: 2) *radkevitschyi* v. *pauperum*] Typ. m. G. Suworow det. – ZMM; 1 male with goldish circle and 2 labels: 1) Wernyi Matthiessen [wrong label, must be from Kurday], 2) *globithotax* B.Jakov. ssp. *radkevitschii* Type. m. G. Suworow det. – ZMM; 1 male with goldish circle and 2 labels: 1) Alexand. Gb. Matthiessen, [wrong label, must be from Kurday], 2) *Compsodorcadion globithotax* B.Jakov. v. *opulentum* Typ. m. G. Suworow det. – ZMM; 1 male with 2 labels: 1) Pischpek Matthiessen [wrong label, must be from Kurday], 2) *D. globithorax* B.Jak. N.Plavilstshikov det. – ZMM; 24 males and 3 females, Kazakhstan, Chu-Ili Mountains, Kurday pass, about 43°21'7"N, 74°59'2"E, 1200m, 11-12.5.1968, A.S. Badenko leg. – MD; 9 males and 5 females, same locality, 29.4.1982, G. Nikolaev leg. – MD; 156 males and 74 females, same locality, 12.5.1991, 11.5.1997, M.Danilevsky leg. – MD; 8 males, Kazakhstan, Chu-Ili

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Mountains, Kindiktas ridge, 45km NE Kurday, about 43°39'N, 74°39'E, 1300m, 12.5.1991, M.Danilevsky leg. – MD; 5 males, 3 females, Kazakhstan, E Zhetyzhel ridge, Akterek env., 43°18'44"N, 75°16'56"E, 1140m, A. Klimenko leg. – MD; 44 males and 28 females, Kazakhstan, south of Chu-Ili Mountains, Rgaity env., 800m, about 43°9'32"N, 74°48'57"E, 8.5.1997, M.Danilevsky leg. – MD.

1c. *Dorcadion (Acutodorcadion) tianshanskii terminum* Danilevsky, 1999

Dorcadion (s. str.) *optatum terminum* Danilevsky, 1999: 23, Figs 15-16 - “hilly region to the east from Georgievka [now Korday] at about 700m above the sea level, along the border between Kazakhstan and Kirgizia”.

Dorcadion (Acutodorcadion) optatum terminum, Danilevsky, 2010: 241.

Type locality. Kazakhstan, hilly region along north (right) bank of Chu river eastwards Georgievka (now Korday), 700m, about 43°1'22"N, 74°47'19"E.

Description. The subspecies is very close to *D. t. radkevitchi*; the main distinguishing character is smaller size; elytra less tapering anteriorly than posteriorly, sometimes nearly parallelsided in anterior half; humeral carinae less granulated, usually with distinct sculpture, sometimes nearly smooth; external dorsal carinae in males indistinct and totally covered by ground black pubescence, or slightly raised and shining, but never distinct and granulated; posterior pronotal swelling less developed, sometimes absent; lateral thoracic spines moderately long or short; pronotal and elytral white stripes from very narrow to wide; internal dorsal elytral stripe in males usually present or sometimes absent; 1st antennal joint usually bicolor, but sometimes totally black; internal surface of posterior tibiae with relatively long and very dense white pubescence; all femora red with black apices, but sometimes red to about middle only; females autochromal, with dark- or light-brown ground pubescence; autochromal females with black ground pubescence unknown,

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but definitely exist as rather rare form. Body length in males: 15.8-22.5mm, width: 5.0-7.4mm; body length in females: 18.0-26.7mm, width: 6.9-9.4mm.

Distribution (Fig. 57, 3). Only one population known: Kazakhstan, hilly region along north (right) bank of Chu river eastwards Georgievka (now Korday), 700m, about 43°1'22"N, 74°47'19"E.

Materials. Holotype (male) and 37 paratypes (22 males and 15 females), Kazakhstan, Georgievka env., 700m, about 43°1'22"N, 74°47'19"E, 10.5.1991, M.Danilevsky leg. – MD; 36 males and 14 females, about same locality, 8.5.2002, M.Danilevsky leg. – MD.

1d. *Dorcadion (Acutodorcadion) tianshanskii algaense* ssp. n.

(Figs 4-8)

Dorcadion (s. str.) *tianshanskii vallesum* Danilevsky, 1999: 27, part. – “middle level of the river Chu, southwards from the Chu-Ili Mountains and may be also on the plain on the left side of the Chu Valley to the north of Bishkek”.

Dorcadion (Acutodorcadion) tianshanskii vallesum, Danilevsky, 2010: 242 – Kazakhstan.

Type locality. Kazakhstan, low foothills southwards Kurday pass, Alga environs, 800m, about 43°15'N, 74°49'E.

Description. The new subspecies is another small lowland form of the species very close to *D. t. terminum*, but elytra often more narrowed posteriorly, though usually regularly oval; elytral carinae are better developed; humeral carinae roughly sculptured, external dorsal carinae usually distinct, though often smooth and sometimes totally pubescent; lateral thoracic spines moderately long or short; pronotal and elytral white stripes in males from narrow to wide; internal dorsal elytral stripe in males usually present in form of several elongated spots or sometimes absent; 1st antennal joint always bicolor, though sometimes rather dark, nearly black; posterior pronotal swelling less developed, sometimes absent; femora always bicolor; posterior

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tibiae narrow with less dense white pubescence; females autochromal, with dark- or light-brown ground pubescence. Body length in males: 17.1-21.1mm, width: 5.7-6.4mm; body length in females: 17.5-22.8mm, width: 6.5-7.8mm.

Distribution (Fig. 57, 4a-4b). Several populations are known along the road downwards Kurday pass to Chu river from about 800m to about 700m in Alga (43°14'N, 74°45'E) environs. Another population is known from Kokpatas river valley at about 700m (43°22'N, 74°27'E).

Materials. Holotype, male (paratype of *D. t. vallesum* Danilevsky, 1999), Kazakhstan, south slope of Kurday pass, Alga environs, 800m, about 43°15'N, 74°49'E, 11.5.1997, M.Danilevsky leg. – MD; 21 paratypes (all are paratypes of *D. t. vallesum* Danilevsky, 1999); 5 males, 3 females with same label - MD; 3 males and 1 female, low level of Kurday pass (about same locality), 12.5.1968, A.S. Badenko leg. - MD; 1 male and 1 female, 190th km of the road Alma-Ata – Bishkek (about same locality), 30.4.1993, R. Kadyrbekov leg. – MD; 4 males and 1 female, Alga environs, 43°13'26"N, 74°43'13"E, 700m, A. Klimenko leg. – MD; 1 male, Kazakhstan, Kokpatas river, 700m, about 43°22'N, 74°27'E, 26.4.1972, A.I. Kostin leg. – MD.

1e. *Dorcadion (Acutodorcadion) tianshanskii otariense* ssp. n.

(Figs 9-20)

Dorcadion (s. str.) *tianshanskii heptapotamicum*, Danilevsky, 1999: 26, part. – “Kazakhstan: Kopa Valley, to the east of Kindiktas Ridge”; “Muinak-Geb.”, “Targap”, “Kenen”, “Otar”.

Dorcadion (Acutodorcadion) tianshanskii heptapotamicum, Danilevsky, 2010: 242, part.

Type locality. Kazakhstan, Kopa valley near Otar.

Remark. My early interpretation (Danilevsky, 1999) of *Dorcadion heptapotamicum* Plavilstshikov, 1951 was connected with wrong geographical attribution of the lectotype locality following lectotype label (“Mainak-Geb.,

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Matthiessen” – Fig. 30) based on similar morphology of a single specimen from near Otar [Fig. 12]. Several populations with all specimens totally fitting to the lectotype were recently discovered (see below) in Chu valley about 100km westwards Otar). Populations from Otar to Kenen are described here as a new subspecies.

Description. The subspecies is the north-east analogue of *D. t. algaense* **ssp. n.** described above, being distributed along and near the other slope of Kurday pass; it is also much smaller than *D. t. radkevitchi*; elytra with about same shape as in *D. t. algaense* **ssp. n.** – considerably tapering posteriorly; humeral carinae granulated similar to *D. t. radkevitchi*, always roughly sculptured; external dorsal carinae in males usually indistinct and totally covered by ground black pubescence, or slightly raised and shining, but never distinct and granulated; posterior pronotal swelling poorly developed, sometimes absent; lateral thoracic spines moderately long or short; pronotal and elytral white stripes from very narrow to wide; internal dorsal elytral stripe in males usually present in form of elongated spots and strokes or sometimes absent; 1st antennal joint usually bicolor, but sometimes totally black; internal surface of posterior tibiae with very long and very dense white pubescence; all femora red with black apices, but sometimes red to about middle only; females autochromal, with dark- or light-brown ground pubescence, or sometimes autochromal with black ground pubescence. Body length in males: 16.7-22.0mm, width: 5.4-6.9mm; body length in females: 18.0-23.5mm, width: 6.5-8.5mm.

Distribution (Fig. 57, 5a-5c). Three populations are known in Kazakhstan near north-east slope of Kurday pass: near Otar (43°30'42"N, 75°11'11"E), 740m, near Kenen (43°25'35"N, 75°6'53"E), 800m and near Targap (43°19'23"N, 75°50'49"E), 760m.

Materials. Holotype, male, Kazakhstan, Otar environs, 740m, 43°30'42"N, 75°11'11"E, 20.4.2000, M.Danilevsky leg. – MD; 16 paratypes; 5 males and 1 female

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with same label – MD; 4 males and 1 female from about same locality, 5.5.1993, R.Kadyrbekov leg. - MD; 1 male and 1 female: [Otar, East of Chu-Iliyskiy Alatau, 6.5.1933, Lebedinskiy leg.] [in Russian] – ZMM; 2 males and 3 females, Kazakhstan, Kenen environs, 800m, 43°25'35"N, 75°6'53"E, 29.4.1993, R.Kadyrbekov leg. – MD; 2 males [paralectotypes of *D. globithorax radkevitschi* Suv. – present designation] with goldish circle and 2 labels: 1) [in Russian] [Semirechie Region, Targan st., 18.5.1907, A.Jacobson leg., 2) v. *pauperum* Suvor., G.Suvorov det. - ZMM; 1 male [paralectotype of *D. globithorax radkevitschi* Suv. – present designation] with goldish circle and 2 labels: 1) [in Russian] [Semirechie Region, Targan st., 18.5.1907, A.Jacobson leg., 2) *Compsodorcadion* subsp. *radkevitschii* var. *pauperum* Typ. m. G.Suvorov det. - ZMM.

1f. *Dorcadion (Acutodorcadion) tianshanskii parapumilio* ssp. n.

(Figs 21-28)

Type locality. Kazakhstan, Kopa valley, about 10 km westwards Otar, 800m, 43°33'20"N, 75°4'18"E.

Description. The subspecies is the smallest plain form of the species; elytra regularly oval; humeral carinae always strongly granulated in males, in females sometimes smooth; external dorsal carinae in males more or less distinct, with only a few small granules; posterior pronotal swelling usually totally absent; lateral thoracic spines moderately long or short; pronotal and elytral white stripes from very narrow to medium wide; internal dorsal elytral stripe in males usually absent or sometimes present in form of several small spots; 1st antennal joint in males black or bicolor; in females usually black, only one female with distinctly bicolor 1st antennal joint; internal surface of posterior tibiae with relatively long and dense white pubescence; all femora usually half-red, but often totally black; tibiae usually dark-red with black apices, but sometimes nearly black; all available females autochromal, with

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dark- or light-brown ground pubescence; autochromal females with black ground pubescence unknown, but definitely exist as rather rare form. Body length in males: 14.0-17.0mm, width: 4.7-5.8mm; body length in females: 14.0-18.0mm, width: 5.6-6.8mm.

Distribution (Fig. 57, 6). Only one population is known in Kazakhstan at about 10km westwards Otar, 800m, 43°33'20"N, 75°4'18"E.

Materials. Holotype, male, Kazakhstan, 10km westwards Otar, 800m, 43°33'20"N, 75°4'18"E, 22.4.1985, G. Nikolaev leg. – MD; 27 paratypes: 16 males and 11 females with same label - MD.

**1g. *Dorcadion (Acutodorcadion) tianshanskii heptapotamicum* Plavilstshikov, 1951
(Figs 29-37)**

Dorcadion (Compsodorcadion) heptapotamicum Plavilstshikov, 1951: 115 – south slope of Kastek pass in the west part of Zailiyskiy Alatau.

Dorcadion (s. str.) *heptapotamicum*, Plavilstshikov, 1958: 383 – north-east of Kirgizia; Breuning, 1962: 222 – “nordöstlichen Kirgisensteppe: Zailinsk Alatau”.

Dorcadion (s. str.) *tianshanskii heptapotamicum*, Danilevsky, 1999: 26, part. – “Kazakhstan: Kopa Valley, to the east of Kindiktas Ridge”; “Muinak-Geb.”, “Targap”, “Kenen”, “Otar”.

Dorcadion (Acutodorcadion) tianshanskii heptapotamicum, Danilevsky, 2009: 711 (lectotype designation); 2010: 242, part.

Type locality. Kazakhstan, nearest Chu-city environs on the right bank of Chu river northwards the town along railway (450m, about 43°50'6"N, 73°50'28"E) – according to the available specimens similar to the lectotype.

Remark. The taxon was described (in Russian) from the south slope of Kastek pass in the west part of Zailiyskiy Alatau on the base of 7 males and 1 female. Now Plavilstshikov’s type series (ZMM) contains only one male (Fig.

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29) with corresponding Russian hand written label (Fig. 30): near Kastek pass, Zailiyskiy Alatau, Matissen. That male was designated by me as lectotype (Danilevsky, 2009). It has another old (original) label: “Mainak-Geb., Matthiessen”. The series of specimens, identified by Plavilstshikov as *D. heptapotamicum* is supplied with Russian big bottom label (Fig. 31), but not a single specimen could be designated as paralectotype, as not agrees with the original description. Though three females in Plavilstshikov’s collection definitely belong to same population as lectotype. One has same geographical label as holotype: “Mainak-Geb., Matthiessen”. Two females have handwritten label in Russian: [near Kastek pass, Zailiyskiy Alatau, Matiessen leg.]. All three are identified by Plavilstshikov as “*D. globithorax*”.

The original publication of the type locality was definitely wrong. Both slopes of Kastek pass were carefully investigated by me in May 1991. The area of the pass (2300m, 42°56'55.00"N, 75°42'40.00"B; Fig. 58: 16) and its slopes (northwards about 10km along the road to about 1800m and southwards about 25km along the road also to about 1800m) are occupied by numerous very big specimens of *D. kastekum* Danilevsky, 1996. Further down southwards near Novoalexandrovka (1480m, 42°55'22.00"N, 75°30'20"E; Fig. 58: 17) only *D. alexandris* Pic, 1900 occurs. More over very strong sculpture of elytral carinae typical for *D. t. heptapotamicum* is impossible for any *Dorcadion* from Zailiyskiy Alatau. The reason for wrong Russian label of the lectotype was most probably the wrong label of very old typical specimen [ZMM] of *D. alexandris*: “Mainak-Geb. / Matthiessen”, and *D. alexandris* could be collected only on the south slope of Kastek pass.

The only way to identify the real type locality was the comparison of the lectotype with available good labeled *Dorcadion* series. It was necessary to find a population with specimens similar to the lectotype. In 1999 a single male (Fig. 12) rather similar to the lectotype was fixed in a series collected in Kopa valley near Otar. Though most of other specimens from near Otar differ

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from the lectotype by much less developed external dorsal carinae.

Now many specimens in several good series collected by S. Toropov in Chu-city environs on the right bank of Chu river northwards along the bank are identified as rather similar to the lectotype. So, the type locality of *D. t. heptapotamicum* must be accepted as hilly area along right bank of Chu-river - the north-west foothills of Chu-Ili Mountains. All *Dorcadion* of that area are very similar to the lectotype, but specimens to the north from Kirov are much darker and specimens to the south from Kirov are smaller. Only a male (MD, Fig. 32) from the locality situated in about 25 km northeastwards Chu-city is fitting enough to the lectotype.

Long ago Chu-Ili Mountains were known with the name Mainak. Such remark was published by Schmidt (1885: 196): “Mainak-ketter im Norden des Tschu”.

It is necessary to mention here, that specimens of rather different species, which cannot occur in one locality are supplied with old printed original label “Mainak-Geb., Matthiessen”, as well as with the label “Pischpek, Matthiessen” or “Wernyi, Matthiessen”.

Description. The subspecies is very close to *D. t. tianshanskii*; it is a small lowland form of the nominative subspecies; elytra always regularly oval; humeral and external dorsal carinae always strongly granulated; posterior pronotal swelling hardly developed or absent; lateral thoracic spines moderately long or short; pronotal and elytral white stripes moderately wide, never very narrow, pronotal stripe sometimes rather wide; external dorsal elytral stripes usually with black spots and irregular margins; internal dorsal elytral stripe in males nearly always present in form of small spots; 1st antennal joint usually bicolor, but sometimes totally black; internal surface of posterior tibiae with short and not very dense white pubescence; pronotal and external dorsal elytral pale stripes are often yellow; femora red with black apices, or red to about middle; females usually autochromal, with dark- or

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light-brown ground pubescence, but sometimes autochromal with black ground pubescence. Body length in males: 14.5-20.5mm, width: 4.8-7.4mm; body length in females: 16.0-20.0mm, width: 6.0-7.5mm.

Distribution (Fig. 57, 7a-7e). Kazakhstan, right bank of Chu river near Chu-city and further northwards; known localities are: about 25 km northeastwards Chu-city along the railway, 43°50'N, 73°50'20"E, 450m; about 20km northwards Chu-city and 4km southwards Kirov, about 43°46'15"N, 73°44'48"E, 440m [according to private message by S. Toropov]; about 25 km northwards Chu-city and 2km northwards Kirov, 43°49'22"N, 73°42'30"E, 440m [according to private message by S. Toropov]; Birlik env., 55 км NW Chu-city, about 44°03'N, 73°30'E, 400m; Komuzek environs, about 150km NW Chu-city, 44°35'N, 72°36'30"E, 300m.

Materials. Lectotype (Danilevsky, 2009), male with goldish circle and 5 labels: 1) Mainak-Geb., Matthiessen, 2) [near Kastek pass, Zailiyskiy Alatau, Matiessen] [in Russian] 3) *D. heptapotamicum* Plav. N. Plavilstsjhikov det., 4) Typus [red], 5) Lectotypus, *Dorcadion (Compsodorcadion) heptapotamicum* Plavilstshikov, 1951, M.Danilevsky des., 2008 [red] - ZMM; 1 female, 1) Mainak Geb., Matthiessen, 2) *D. globithorax* Jak. N. Plavilstsjhikov det.; 2 females, each with two labels: 1) [near Kastek pass, Zailiyskiy Alatau, Matiessen leg.] [handwritten label in Russia], 2) *D. globithorax* B.Jak. N. Plavilstshikov det. – ZMM; 3 males and 1 female: 1) Fl. Tschu, Matthiessen, 2) *D. heptapotamicum* Plav. N. Plavilstsjhikov det. - ZMM; 2 males: 1) Fl. Tschu, Matthiessen, 2) *D. suvorovianum* Plav. N. Plavilstsjhikov det. - ZMM; 1 male: 1) Fl. Tschu, Matthiessen, 2) *D. globithorax* Plav. N. Plavilstsjhikov det. - ZMM; 3 males, 3 females: [Dzhambul Region, Chu District, 24.5.1946, M.Aleeva leg.] [in Russian] – ZMM; 1 male with 2 labels: 1) [Dzhambul Region, Chu-station environs along railway, 24.4.1957, L. Arnoldi leg.] [in Russian]; 2) *D. heptapotamicum* Plav. [Plavilstsjhikov det. 958] [in Russian] – MD; 7 males and 1 female, about 20km northwards Chu-city and 4km southwards Kirov, about 43°46'15"N, 73°44'48"E, 440m, 15.4.2012, S. Toropov leg. – MD; 5 males and 2

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females, Kazakhstan, about 25 km northwards Chu-city and 2km northwards Kirov, 43°49'22"N, 73°42'30"E, 440m, S. Toropov leg. – MD; 1 female, Kazakhstan, Chu-river, Birlik env., 55 км NW Chu-city, about 44°03'N, 73°30'E, 400m, M. Danilevsky leg. - MD; 1 male and 1 female, Kazakhstan, Chu-river, Komuzek environs, about 44°35'N, 72°36'30"E, 300m - M. Danilevsky leg. – MD.

1h. *Dorcadion (Acutodorcadion) tianshanskii euzhaisanicum* ssp. n.

(Figs 38–41)

Type locality. Kazakhstan, Chu-Ili Mountains, 10km eastwards Zhaisan hamlet (= Moynkum) (about 50km eastwards Chu-city), 1100m, 43°36'30"±20"N, 74°27'±20"E.

Description. The subspecies is an intermediate foothill middle-sized form in between *D. t. tianshanskii* and *D. t. heptapotamicum* (a single known female is not in my disposal, but its color photo was kindly sent to me by S. Toropov); elytra always regularly oval; humeral and external dorsal elytral carinae always strongly granulated; posterior pronotal swelling hardly developed or absent; lateral thoracic spines moderately long or short; pronotal white stripe wide; elytral white stripes moderately wide or very narrow with black spots and irregular margins; internal dorsal elytral stripes usually totally absent, but sometimes hardly developed in form of small spots; 1st antennal joint usually bicolor, but sometimes totally black, its fine white pubescence about totally lost in all males, though all are rather fresh; internal surface of posterior tibiae with short, dense white pubescence; all femora in males red with black apices, or red to about middle; male tibiae totally red or red with black apices; a single known female autochromal, with brown ground pubescence. Body length of available males: 18.0-20.5mm, width: 6.3-6.5mm.

Distribution (Fig. 57, 8). Only one population known. Kazakhstan, Chu-Ili Mountains, 10km eastwards Zhaisan (about 50km eastwards Chu-city),

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1100m, 43°36'30"±20"N, 74°27'±20"E.

Materials. Holotype, male, Kazakhstan, Chu-Ili Mountains, 10km eastwards Zhaisan (about 50km eastwards Chu-city), 1100m, 43°36'30"±20"N, 74°27'±20"E, 18.4.2012, S. Toropov leg. – MD; 6 paratypes; males with same label – MD.

I've also designated as paratypes 8 males (length 21.0-23.0mm,) and a female (24.0mm) with same labels, which are not in my disposal, on the base of color photos kindly sent to me with the dimension data by S. Toropov.

Remark. According to Shapovalov (2007) Zhaisan environs in Chu-Ili Mountains (43°37'N, 74°20'E) is the type locality of *D. zhaisanicum* Shapovalov, 2007. That conclusion was made on the base of the Russian label of type series: "Zhaisan Mts., N.Skopin leg.". The locality was investigated by S.Toropov in 2012, and no specimens similar to *D. zhaisanicum* were observed there. Most probably Skopin's Zhaisan Mts. is a rather different locality.

2. *Dorcadion (Acutodorcadion) mystacinum* Ballion, 1878

(Figs 43-50)

Dorcadion mystacinum Ballion, 1878: 369 – "Bei Kuldzha"; Heyden, 1887: 316 – "Alexander-Gebirg";

Dorcadion mystacinum var. *capreolus* Heyden, 1887: 317 – "Alexander-Gebirg" [described without own area, so the availability of the name is doubtful].

Dorcadion (Compsodorcadion) mystacinum var. *ataensis* Pic, 1901a: 18 – "Aulie-Ata".

Dorcadion (Compsodorcadion) mystacinum var. *auliensis* Pic, 1901b: 69 – "Turk.".

Dorcadion (Compsodorcadion) mystacinum, Pic, 1901b: 69 – "Asie C^{le}"; Jakovlev, 1906: 36, 46 – ["Kuldzha", "Alexandrovskiy Ridge", "Aulie-Ata"] [in Russian]; Aurivillius, 1923: 24 – Kuldsha, Alexander Gebirge, Aulie-Ata; Plavilstshikov, 1951: 115 – (close to *D. pumilio* Plav.).

Dorcadion (Compsodorcadion) rufidens Jakovlev, 1906: 36, 39, 47 – [Syr-Darya region] [in

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Russian]; Aurivillius, 1923: 25.

Dorcadion (Compsodorcadion) kusnezovi Jakovlev, 1906: 36, 40, 45 – [“Aulie-Ata”] [in Russian].

Compsodorcadion rufidens, Suvorov, 1913: 71-72 – “Syr-Darja-Gebiet; Umgegend von Aulie-Ata, Talassa-Tal, Station Kjuk”.

Compsodorcadion mysiacinum, Suvorov, 1913: 71 [misprint] (*Compsodorcadion mystacinum* v. *ataensis* Pic, 1901 = *Compsodorcadion kusnezovi* Jakov.).

Dorcadion (Compsodorcadion) ataense, Aurivillius, 1923: 22 (= *kusnezovi* Jak.);

Dorcadion (s. str.) *mystacinum*, Plavilstshikov, 1958: 380 – [“Kazakhstan and Kirgizia. Foothills of south-west Karatau, western part of Kirgizskiy ridge, Talas river valley, western part of Talasskiy Alatau, north-west foothills of Ugamskiy ridge; known in Merke environs, absent in Frunze; most numerous near Dzhambul”], [“records for Kuldzha were wrong”] [in Russian] (= *kuznetzovi* Jak. [wrong spelling]); Breuning, 1962: 217 – “nach einem Stück von Kuldja beschrieben. – Transcaspien: Kuksch, Semirjetschensk: Syr Darja, Mts. Alexander etc.”; Danilevsky, 1999: 19 (wrong original designation of type locality) – westwards Merke; common near Taraz.

Dorcadion (s. str.) *rufidens*, Plavilstshikov, 1958: 381- [“the area coincides with the area of *D. mystacinum*, so it covers the west of Kirgizsky ridge and Talasskiy Alatau, southern foothills of Karatau and northwestern foothills of Ugamskiy ridge”.] [in Russian]; Breuning, 1962: 221.

Dorcadion (s. str.) *ataense*, Breuning, 1962: 219 (= *kusnetzovi* Jak. [wrong spelling]) – “Wjernyj”.

Dorcadion (s. str.) *mystacinum mystacinum*, Danilevsky, 1999: 38-39 – “plains and foot-hills to the north of the eastern part of the Kirgizsky Ridge”.

Dorcadion (s. str.) *mystacinum rufidens*, Danilevsky, 1999: 38-39 – “along Karatau Ridge”.

Dorcadion (Acutodorcadion) mystacinum rufidens, Danilevsky et al., 2005: 145;

Dorcadion (Acutodorcadion) mystacinum, Danilevsky et al., 2005: 145;

Dorcadion (Acutodorcadion) mystacinum mystacinum, Danilevsky, 2010: 241.

Dorcadion (Acutodorcadion) mystacinum rufidens, Danilevsky, 2010: 241.

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Type locality. Kazakhstan, Taraz environs (= Aulie-Ata = Dzhabul), 600m, about 42°54'C, 71°18'B.

The species was described on the base of a single female (17mm) from Kuldzha environs (now Yining in Chinese Dzhungaria). Holotype is not known, but the species traditionally accepted with that name definitely absent in China. More over the original description itself can not be applied to any *Dorcadion* species known from near Kuldza, mostly because of strongly developed humeral and external carinae: “die Seitenrippen stark entwickelt, etwas scharf und glänzend, ziehen sich von der Schulter bis zur Spitze; Mittelrippe auch stark und glänzend”. The original geographical record is generally accepted as wrong.

Most of taxa described and listed by Ballion (1878) originated from near Kuldzha, but several – from near “Wernoje” (now Alma-Ata). Here I conditionally accepted as typical the populations from near Taraz environs (= Aulie-Ata = Dzhabul; Fig. 57, 9a) as about all old specimens of *D. mystacinum* Ballion were collected in that area. The closest to Alma-Ata population is known from near Merke (750m, about 42°50'N, 73°12'E; Fig. 57, 9f) and not considerably differs from Taraz populations.

Description. The species is characterized by small size, long lateral thoracic spines, absence of posterior pronotal swelling, approached humeral and external dorsal elytral stripes, which are often with numerous black spots and irregular margins. Most of published size data of the species are not adequate, as usually several different species were jointed under the name *D. mystacinum*. Body length of available males: 13.7 - 20.5mm, width: 4.7 - 6.5mm; length of available females: 15.5 - 21.0mm, width: 6.4 – 8.4mm; largest specimens are known among *D. m. rufidens*.

Distribution (Fig. 57, 9-10). In Kazakhstan: the whole Karatau mountain system with eastern foothills and plains (*D. m. rufidens*); all area of

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Muyunkumy desert from Karatau Mountains to Chu river (*D. m. mystacinum* and *D. m. pumilio* near Chu); foothills of Kirgizsky ridge from Taraz to Merke (*D. m. mystacinum*); in Kirgizia: Talas valley with surrounding foothills (*D. m. mystacinum*).

**2a. *Dorcadion (Acutodorcadion) mystacinum pumilio* Plavilstshikov, 1951
(Figs 43-50)**

Dorcadion (Compsodorcadion) pumilio Plavilstshikov, 1951: 114 – [“Kazakhstan: Alma-Ata region – foothills along middle level of Ili river [misprint! must be read as Chu river! - MD], especially numerous near Chu station (Chu station, 27 April 1934!, Molotov collective farm of Chu district, 27 April 1934!, Alma-Ata environs, 13 May 1932!, same locality, Matthiessen leg.!); Kirgizia: Frunze”] [in Russian]

Dorcadion (s. str.) *pumilio*, Plavilstshikov, 1958: 381, part. – [“Kazakhstan: Dzhambul region – foothills along middle level of Chu river; according to available materials, especially numerous near Chu station; Alma-Ata; Kirgizia (Frunze).”] [in Russian]; Breuning, 1962: 224 – “nach Stücken aus der Dsungarei, Umgebung Alma-Ata”.

Dorcadion (s. str.) *mystacinum pumilio*, Danilevsky, 1999: 38-39 – “lower level of the Chu valley”.

Dorcadion (Acutodorcadion) mystacinum pumilio, Danilevsky, 2009: 711 (lectotype designation); Danilevsky, 2010: 241.

Type locality. Kazakhstan, left bank of Chu river near Chu-city, Molotov collecting farm – according to the lectotype designation (Danilevsky, 2009).

Description. Small subspecies of sandy desert landscapes along Kazakhstani left bank of Chu river. Elytra always regularly oval; humeral carinae always roughly granulated; external dorsal carinae more or less obliterated, usually with several small granules, but often totally indistinct, covered by ground pubescence; posterior pronotal swelling absent; lateral

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thoracic spines moderately long or short, distinctly shorter than in the nominative subspecies; pronotal and elytral white stripes moderately wide or narrow, usually wider, than in the nominative subspecies; humeral and external dorsal elytral stripes, often without black spots and with regular margins; internal dorsal elytral stripe in males usually totally absent, but sometimes represented by several hardly distinct pale spots; 1st antennal joint bicolor, red with black apex, but sometimes rather dark, nearly totally black; femora also red with black apices, but sometimes very dark, nearly totally black with dark-red bases; internal surface of posterior tibiae with not very dense white pubescence; females usually autochromal, but ground dorsal pubescence often dark-brown, nearly black; very rare females with pale dorsal pubescence, or androchromal with black ground pubescence. Body length in males: 14.0-17.8mm, width: 4.9-5.7mm; body length in females: 15.6-18.5mm, width: 6.0-7.0mm.

Distribution (Fig. 57, 10a-10b). Kazakhstan, left bank of Chu-city; the population are known to about 10km southwards the city (500m, 43°29'N, 73°45'E) and to about 40km westwards the city (570m, 43°35'N, 73°15'E).

Materials. Lectotype (Danilevsky, 2009), male with 3 labels: 1) [Chu Distr., Molotov collective farm], 27-4-34 [in Russian]; 2) *D. pumilio* Plav., N. Plavilstshikov det.; 3) Lectotypus, *Dorcadion (Compsodorcadion) pumilio* Plavilstshikov, 1951, M.Danilevsky des., 2008 [red] — ZMM; 54 paralectotypes (Danilevsky, 2009); 6 males and 11 females, each specimen with 3 same labels — ZMM, ZIN (1 female); 7 males and 9 females, each specimen with 2 labels: 1) [Chu Distr., Molotov collective farm], 27-4-34 [in Russian]; 2) Paralectotypus, *Dorcadion (Compsodorcadion) pumilio* Plavilstshikov, 1951, M.Danilevsky des., 2008 [red] — ZMM; 1 male: 1) cotypus [red]; 2) [Chu Distr., Molotov collective farm], 27-4-34 [in Russian]; 3) *Dorcadion pumilio* m. N. Plavilstshikov det. 1938; 4) Paralectotypus, *Dorcadion (Compsodorcadion) pumilio* Plavilstshikov, 1951, M.Danilevsky des., 2008 [red] — ZIN; 2 males and 6 females: 1) [Chu Distr., Molotov collective farm], 27-4-34 [in

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Russian]; 2) *D. pumilio* a. *semidecorum* Plav., N. Plavilstshikov det.; 3) Paralectotypus, *Dorcadion (Compsodorcadion) pumilio* Plavilstshikov, 1951, M.Danilevsky des., 2008 [red] — ZMM; 4 males and 1 female: 1) [Chu Station], 27-4-34 [in Russian]; 2) *D. pumilio* a. *semidecorum* Plav., N. Plavilstshikov det.; 3) Paralectotypus, *Dorcadion (Compsodorcadion) pumilio* Plavilstshikov, 1951, M.Danilevsky des., 2008 [red] — ZMM; 2 males and 4 females: 1) [Chu Station], 27-4-34 [in Russian]; 3) Paralectotypus, *Dorcadion (Compsodorcadion) pumilio* Plavilstshikov, 1951, M.Danilevsky des., 2008 [red] — ZMM; 1 male: 1) Fl. Tschu, Matthiessen; 2) *D. pumilio* a. *semidecorum* Plav., N. Plavilstshikov det.; 3) Paralectotypus, *Dorcadion (Compsodorcadion) pumilio* Plavilstshikov, 1951, M.Danilevsky des., 2008 [red] — ZMM; 4 males, Kazakhstan, left bank of Chu river, 10km S Chu-city, sands, 19.4.1985, G.Nikolaev leg. – MD; 20 males and 15 females, Kazakhstan, 40km W Chu-city, sands, 20.4.1985, G.Nikolaev leg. – MD.

3. *Dorcadion (Acutodorcadion) optatum* Jakovlev, 1906 (Figs 51-57)

Dorcadion (Compsodorcadion) optatum Jakovlev, 1906: 35, 38 - ["Alexandrovskiy Ridge near Tokmak"] [in Russian]; Aurivillius, 1923: 24 – "Alexander Gebirge".

Dorcadion (s. str.) *optatum*, Plavilstshikov, 1958: 390, part. – Kazakhstan and Kirgizia ["west foothills of Zailiyskiy Alatau, east part of Kirgizskiy Ridge, mostly in Chu valley, near Tokmak and Frunze; probably near west bank of Issyk-Kul lake"] [in Russian]; Breuning, 1962: 214 – "Kasakhstan: Mts. Alexander bei Tokmak".

Dorcadion (s. str.) *optatum*, Danilevsky, 1996: 417, part. (= *pelidnum* Jak. = *mathiseni* Suv.) – "along the south slope of Zailiyski Alatau, along the north slope of Kirgizski mountain ridge and in the plain in between including Boam canyon."; 1999: 18, part. – "Chu Valley from Boam Narrows to about Kara-Balta"; "Shamsi Valley near Taldy-Bulak" as type locality southwards Tokmak.

Dorcadion (s. str.) *optatum optatum*, Danilevsky, 1999: 19 – "from the nearest steppe and

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semidesert environs of Tokmak southwards across Chu river to Kirgizskiy Ridge (north slope from the Shamsi valley through Bystrovka environs to the Boam Narrows).”

Dorcadion (s. str.) *optatum kadyrbekovi* Danilevsky, 1999: 20 – “the highest meadows of the Kek-Too Mt. at about 2000m , situated near the Chu river between the Chong Kemin river and the Kichi-Kemin river”, 42°42'17"N, 75°56'46"E.

Dorcadion (s. str.) *optatum toropyginae* Danilevsky, 1999: 22 – “high meadows on both sides of the Ala-Archa Narrows (1600-2000m)”; type locality at left side: 42°38'50"N, 74°28'25"E, 2000m.

Dorcadion (*Acutodorcadion*) *optatum*, Danilevsky et al., 2005, part.: 145;

Dorcadion (*Acutodorcadion*) *optatum optatum*, Danilevsky et al., 2005: 143-144; 2010: 241.

Type locality. Kirgizia, Tokmak environs near Taldy-Bulak (Danilevsky, 1996), 42°43'41"N, 75°19'E, 1100m – according to the original description and available series.

Description. The species is characterized by usually relatively smooth humeral elytral carinae, though sometimes strongly raised, especially in the nominative subspecies; external dorsal carinae totally obliterated, indistinct; dorsal elytral surface can be rather flat (*D. o. optatum*); pronotal swelling small or indistinct; lateral thoracic spines short or moderately long; elytral pale stripes usually wide and white or very wide and yellow (*D. o. toropyginae*), always with regular margins and without black spots; body small in lowland populations and rather big in highlands (*D. o. kadyrbekovi*); females usually autochromal. Body length in males: 12.2-24.7mm, width: 4.0-7.8mm; length in females: 14.0-24.7mm, width: 5.5–8.8mm.

Distribution (Fig. 57, 11-15). Kirgizia: about whole area of Chu valley from the west republic border (near Chaldavar) to Boam canyon with surrounding mountains; most probably the species penetrates to Kazakhstan in the area northwards Tokmak.

Remark. Further up along Chong-Kemin canyon on the north slope of

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Kungey-Alatau near Novorossiyska (Fig. 58: 14) the area of *D. darjae* Danielvsky, 2001 is situated. The species is a big highland form very close to *D. optatum kadyrbekovi* Danilevsky, 1999 and could be regarded as one more subspecies of *D. optatum*.

1a. *Dorcadion (Acutodorcadion) optatum matthieseni* Suvorov, 1910

(Figs 51-54)

Dorcadion (Compsodorcadion) matthieseni Suvorov, 1910: 66 - «Im Semirjetshje-Gebiet (Alexander Gebirge)».

Dorcadion (s. str.) *matthiesseni*, Plavilstshikov, 1958: 390 [wrong spelling], part. (= *suvorovianum* Plav.) – [“east half of Kirgizskiy Ridge (northern slopes and foothills), Chu-Ili Mountains, Chu valley from Tokmak to about 74°E”, “upper level of Kurtu river is the most northeastern locality” (Kazakhstan: north slope of Zailiyskiy Alatau, eastwards Alma-Ata - MD), “Records for Alma-Ata (Breuning, 1946) need confirmations”] [in Russian].

Dorcadion (Pedestredorcadion) matthieseni, Breuning, 1962: 430, part. (= *suvorovianum* Plavilstshikov, 1915 including ab. *unidiscale* Breuning, 1946) – “Mts. Alexander”, “Wjernyi, Mts. Buruldaion”.

Dorcadion (s. str.) *optatum matthieseni*, Danilevsky, 1999: 20, part. – “From the border of Kirgizia: (Chaldavar environs between Kara-Balta and Merke) eastwards through Bishkek environs and the Alamedin Narrows to about Kant and Issyk-Ata Narrows; and from the foothills of the Kirgizskiy ridge to the Chu river.”

Dorcadion (Acutodorcadion) optatum matthieseni, Danilevsky et al., 2005: 143-144 (endophallus); 2010: 241.

Type locality. Kirgizia, south Bishkek environs – according to the morphology and labels of the type specimens.

Numerous specimens available from several localities in south Bishkek

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environs (Chon-Aryk, Orto-Say) are quite similar to specimens of type series with the labels “Alexand. Gb. Matthiessen” or “Pischpek, Matthiessen”.

Description. Populations of the subspecies consist of small (lowland) and big (highland) specimens in Kirgizian Chu river valley. Elytra convex (flattened in the nominative subspecies), always regularly oval; humeral carinae more or less smooth, but sometimes in highlands roughly granulated, never strongly raised near humeri (as in the nominative subspecies); external dorsal elytral carinae indistinct, totally covered by ground pubescence; posterior pronotal swelling more or less obliterated; lateral thoracic spines moderately long or short, sometimes rather long (Alamedin canyon); pronotal and elytral white stripes moderately wide; humeral and external dorsal elytral stripes without black spots and with regular margins; internal dorsal elytral stripe in males often present in form of shortened central rudiment; 1st antennal joint bicolor, red with black apex, very rare rather dark, nearly totally black; femora also red with black apices, but sometimes very dark, nearly totally black with dark-red bases; internal surface of posterior tibiae with dense short white pubescence; females usually autochromal with brown (often rather pale) ground pubescence, but sometimes androchromal with black ground pubescence. Body length in males: 14.5-21.5mm, width: 5.1-7.3mm; body length in females: 14.9-23.1mm, width: 5.5-8.6mm.

The westernmost population (Chaldovar environs) looks as transitional to *D. m. mystacinum*, because of long pronotal spines and the absence of internal elytral stripe, but dorsal elytral carinae indistinct, that is impossible for *D. mystacinum*.

Distribution (Fig. 57, 12a-12k). Kirgizia; Chu river valley with south foothills of Kirgizsky ridge from the west republic border near Chaldovar to about Issyk-Ata river; known localities are: Chaldovar (about 800m, 42°47'N, 73°32'B), Kara-Balta canyon near Sosnovka (1200m, 42°39'24"N, 73°54'340"E), Kara-Balta canyon (1800m), Dzhardy-Su env. (1200m, about

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42°39'N, 74°E), 20km W Bishkek along south bank of Chu canal (720m, about 42°51'32"N, 74°10'32"E), Malovodnoe (750m, 42°51'N, 74°22'45"E), centre of Bishkek-city, south Bishkek environs near Orto-Say (1200m, 42°46'34"N, 74°36'42"E), south Bishkek environs near Chon-Aryk (northwards Orto-Say), south Bishkek environs near Tash-Debe (1300m, 42°42'48"N, 74°34'50"E), Kant (750m, 42°53'19"N, 74°50'52"E), Alamedin canyon (about 42°36'54"N, 74°39'43"E, 1800m), Issyk-Ata canyon (about 42°35'59"N, 75°1'10"E, 1800m).

Materials. Male, lectotype (present designation) with goldish circle and two labels: 1) Alexand.Gb., Matthiessen; 2) *Compsodorcadion matthiesseni* [sic!] Typ.m. G.Suworow. det. ♂ - ZMM; 4 paralectotypes (present designation) - ZMM; 1 female with same labels; 1 male with 3 labels: 1) Cotypus [red]; 2) Alexand.Gb. Matthiessen; 3) *Compsodorcadion matiseni* [sic!] Typ.m. G.Suworow. det. ♂; 1 female with three labels: 1) Cotypus [red]; 2) Pischpek, Matthiessen; 3) *Compsodorcadion matiseni* [sic!] Typ.m. G.Suworow. det. ♀; 1 female with goldish circle and two labels: 1) Pischpek, Matthiessen; 2) *Compsodorcadion matiseni* [sic!] Type. m. G.Suworow. det. ♀; 1 male, 1) Pischpek, 3.VI.05, Matthiessen; 2) *D. pumilio* a. *semidecorum* Plav., N. Plavilstshikov det.; 3) Paralectotypus, *Dorcadion (Compsodorcadion) pumilio* Plavilstshikov, 1951, M.Danilevsky des., 2008 [red] — ZMM; 5 males and 1 female, 1) Pischpek, Matthiessen; 2) *D. pumilio* a. *semidecorum* Plav., N. Plavilstshikov det.; 3) Paralectotypus, *Dorcadion (Compsodorcadion) pumilio* Plavilstshikov, 1951, M.Danilevsky des., 2008 [red] —ZMM; 1 male, 1) Pischpek, Matthiessen, 2) *D. heptapotamicum* Plav., N. Plavilstshikov det.—ZMM; 1 male, 1) Pischpek, Matthiessen, 2) [Alamedinka riv. canyon, Pishpek env., Alexander ridge, Matissen] [in Russian], 3) *D. globithorax* B.Jak., N.Plavilstshikov det. – ZMM; 5 males and 1 female, 1) Pischpek, Matthiessen, 2) *Compsodorcadion globithorax* B.Jak. v. *opulentum* Suv., N.Plavilstshikov det. – ZMM; 10 males and 2 females, Kirgizia, Kara-Balta canyon near Sosnovka, 1200m, 42°39'24"N, 73°54'340"E, 26-27.4.1997, Danilevsky leg. – MD; 1 male, Kara-Balta canyon, 1800m, 20.5.1997, A.Klimenko

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leg. – MD; 6 males, 4 females, Kirgizia, foothills of Kirgizsky ridge, 82km westwards Frunze [now Bishkek], near Chaldovar (about 800m, 42°47'N, 73°32'B), 26.4.1972, I.A. Kostin leg. – MD; 17 males and 11 females, Kirgizia, Ak-Su river, Dzhardy-Su env., 1200m, about 42°39'N, 74°E, M.Danilevsky leg. - MD; 2 males and 2 females, Kirgizia, 20km W Bishkek along south bank of Chu canal, 720m, about 42°51'32"N, 74°10'32"E, 26.5.1997, A. Klimenko leg. – MD; 4 males, 1 female, Kirgizia, Malovodnoe [750m, 42°51'N, 74°22'45"E] env., 26.4.1972, I.A. Kostin leg. – MD; 3 males, Kirgizia, Frunze [now Bishkek], city-park, 10.5.1997, A. Klimenko leg. – MD; 18 males and 14 females, Frunze [now Bishkek] environs, April-May, 1939-1990, different collectors (K. Arnoldi, I.Kostin, I. Kabak, V.Yanushev and others) – MD; 4 males, 2 females, south Bishkek environs, Orto-Say, 1200m, 42°46'34"N, 74°36'42"E, 30.3.1997, A.Klimenko leg. – MD; 74 males, 29 females, [about same locality] Kirgizia, 10km southwards Bishkek-centre, 1.5.2000, M.Danilevsky leg. – MD; 3 males, 3 females, south Bishkek environs, Chon-Aryk [near Ort-Say], 15.5.1997, A.Klimenko leg. – MD; 7 males and 2 females, south Bishkek environs, Tash-Debe, 1300m, 42°42'48"N, 74°34'50"E, 13-26.6.1993, D.Obydov leg. – MD; 1 male and 1 female, Kirgizia, Kant [750m, 42°53'19"N, 74°50'52"E] env., 18.5.1997, A.Klimenko leg. - MD; 5 males, 7 females, Kirgizia, Alamedin canyon, about 42°36'54"N, 74°39'43"E, 1800m, 25.5.1997, A.Klimenko leg. - MD; 3 males, 2 females, Kirgizia, Issyk-Ata canyon, about 42°35'59"N, 75°1'10"E, 1800m, 20.5.1997, A.Klimenko leg. – MD.

Remark. Several isolated populations from the main canyons of Kirgizsky ridge (Kara-Balta, Ak-Su, Alamedin, Issyk-Ata and others) could be described as different subspecies. Up to now only one the most peculiar population was separated as *D. o. toropyginae* Danilevsky, 1999 from Ala-Archa canyon (Fig. 57, 15).

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1b. *Dorcadion (Acutodorcadion) optatum vallesum* Danilevsky, 1999

(Figs 55-57)

Dorcadion (s. str.) *tianshanskii vallesum* Danilevsky, 1999: 27, part. – “middle level of the river Chu, southwards from the Chu-Ili Mountains and may be also on the plain on the left side of the Chu Valley to the north of Bishkek”.

Dorcadion (s. str.) *optatum matthieseni*, Danilevsky, 1999: 20, part. (specimens collected northwards Bishkek).

Dorcadion (Acutodorcadion) tianshanskii vallesum, Danilevsky, 2010: 241.

Type locality. Kirgizia, “left bank of River Chu near Kamyshanovka”, 540m, 43°14'30"N, 74°15'35"E - according to the holotype label.

Description. The smallest known subspecies distributed along left bank of Chu river in Kirgizia. Elytra convex, always regularly oval; humeral carinae moderately sculptured sometimes strongly raised near humeri; external dorsal carinae in males indistinct, totally covered by ground pubescence; posterior pronotal swelling indistinct; lateral thoracic spines moderately long or short; pronotal and elytral white stripes moderately wide; humeral and external dorsal elytral stripes without black spots and with regular margins; internal dorsal elytral stripe in males often present in form of shortened central rudiment; 1st antennal joint bicolor, red with black apex; femora also red with black apices; internal surface of posterior tibiae with dense short white pubescence; only autochromal females known (often rather pale). Body length in males: 12.2-15.5mm, width: 4.0-5.2mm; length in females: 14.0-18.0mm, width: 5.5–6.8mm.

Distribution (Fig. 57, 14a-14b). Only two localities known along left bank of Chu river: near Kamyshanovka, 540m, 43°14'30"N, 74°15'35"E and near Novaya Ala-Archa, 10km N Bishkek, 43°2'2"N, 74°39'39"E, 620m.

Materials. Holotype (male) and 4 paratypes (2 males and 2 females) of *Dorcadion*

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(s. str.) *tianshanskii vallesum* Danilevsky, 1999, Kirgizia, left bank of Chu river near the bridge to Kamyshanovka [540m, 43°14'30"N, 74°15'35"E], 26.4.1972, I.A. Kostin – MD; 9 males and 5 females, Kirgizia, Novaya Ala-Archa, 10km N Bishkek, 43°2'2"N, 74°39'39"E, 620m, 18.4.1997, A.Klimenko leg. – MD.

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Inscriptions for figures

Figs 1-3. *D. tianshanskii tianshanskii*: 1 – male, lectotype, upper level of Chulak river; 2-3 – male and female, paralectotypes, same locality.

Figs 4-8. *D. tianshanskii algaense* ssp. n.: 4 –male, holotype, Alga env., 800m; 5-6 –males, paralectotypes, Alga env. 600m, 20.4.1997, A.Klimenko leg.; 7-8 - females, paralectotypes, Alga env. 800m, 11.5.1997, M.Danilevsky leg.

Figs 9-20. *D. tianshanskii otariense* ssp. n.: 9 - male, holotype, Otar env., 740m, 20.4.2000, M.Danilevsky leg; 10-11 – males, paratypes, same locality; 12 –male, paratype, about same locality, 5.5.1993, R.Kadyrbekov leg.; 13 – female, paratype, Otar env., 740m, 20.4.2000, M.Danilevsky leg.; 14 - female, paratype, about same locality, 5.5.1993, R.Kadyrbekov leg.; 15-17 - males, paratypes, Kenen env., 800m, 29.4.1993, R.Kadyrbekov leg.; 18-20 - females, paratypes, same locality.

Figs 21-28. *D. tianshanskii parapumilio* ssp. n.: 21 - male, holotype, 10km westwards Otar, 22.4.1985, G.Nikolaev leg.; 22-24 – males, paratypes, same locality; 25-28 - females, paratypes, same locality.

Figs 29-37. *D. tianshanskii heptapotamicum*: 29 – male, lectotype, Mainak-Geb., Mattiessen; 30 – labels of the lectotype; 31 – bottom label from the Plavilstshikov's collection; 32 – male, Chu env., 24.4.1957 L.Arnoldi leg.; 33-34 – males, about 25 km northwards Chu-city, 16-17.4.2012 S.Toropov leg.; 35 – female from same locality; 36-37 – male and female, Komuzek env., May 1984, W.Murzakaev leg.

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Figs 38-41. *D. tianshanskii euzhaisanicum* ssp. n.: 38 – male, holotype, Zhaisan env., 10km eastwards Zhaisan, 1100m, 18.4.2012, S. Toropov leg.; 39-40 – males, paratypes, same locality; 41 [photo by S. Toropov] – female, paratype.

Figs 42-50. *D. mystacinum pumilio*: 42 – male, lectotype; 43 – labels of the lectotype, Chu district; 44-47 – males, paralectotypes, same locality; 48-50 – females, paralectotypes, same locality.

Figs 51-53. *D. optatum matthieseni*: 51 – male, lectotype, Alexand. Gb., Matthiessen; 52 – labels of the lectotype; 53 – female, paralectotype, same locality.

Figs 54-56. *D. optatum vallesum*: 54 – male, holotype, left Chu river bank near bridge to Kamyshanovka, I.A.Kostin leg.; 55-56 – male and female, paratypes, same locality.



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28



29



Mainak-Geb.
Matthiessen

В. Каммерераго нр-
Галео Тосаниевичи
Висомай
Мамикосса

D.
heptapotamicum
Plav.
N. Plavilstshikov det.

-Typus

30

LECTOTYPUS
Dorcadion (Compsodorcadion)
HEPTAPOTAMICUM
Plavilstshikov, 1951
M. Danilevsky des., 2008

31

В. Лупа Тамилелов Мамикосса
на допису на Каммерераго
Република на Каммерераго
невогодна Мамикосса



32



33



34



35



36



37



38



39



40



41



42

Кіушский р-на
Колхоз "ИМ.
Молотова. 27-4-34

D. pumilio Plav.
N. Plavilstshikov det.

LECTOTYPUS
Dorcadion (Compsodorcadion)
PUMILIO
Plavilstshikov, 1951
M. Danilevsky des., 2008



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45



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Alexand. Gb.
Matthiessen

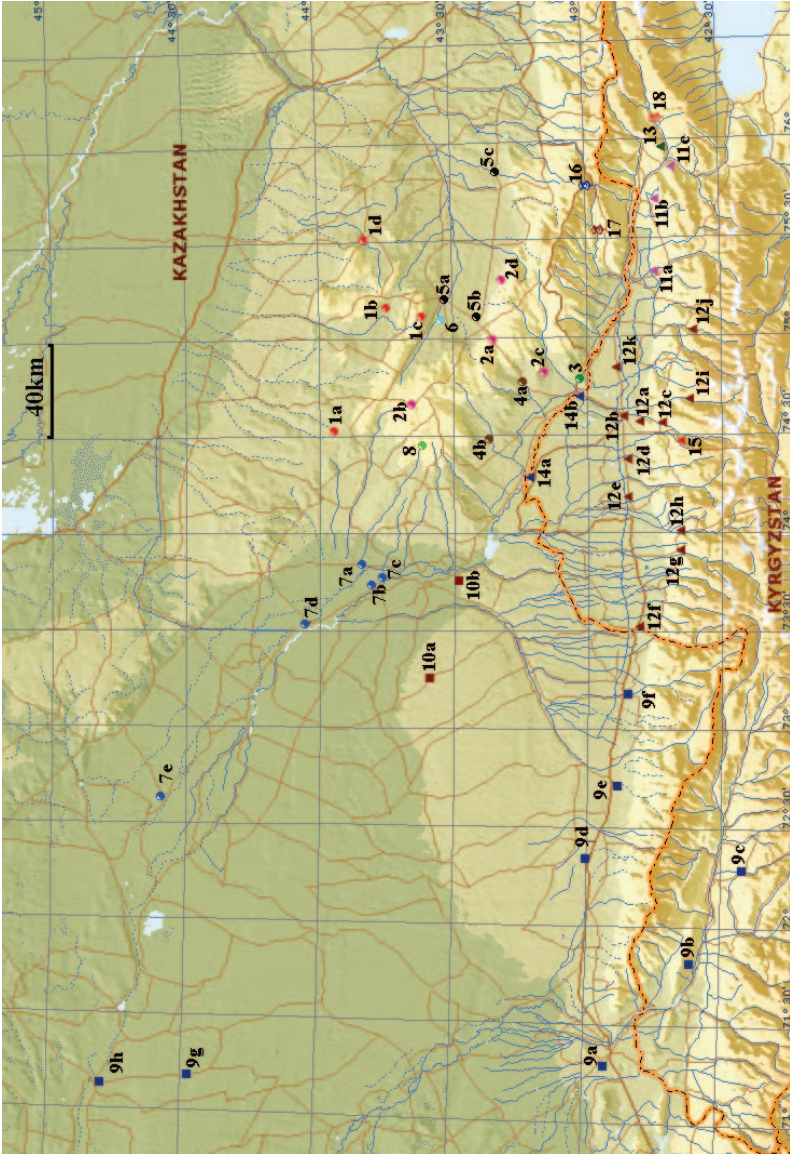
Comptosia dorcadioides
matthiesseni
Syn. n.
G. Suworow. det.

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Inscriptions for the map

- 1 - *D. tianshanskü tianshanskü*:** 1a –upper level of Chulak river, type locality, 1b - upper level of Kopaly river, 1c – Kulzhabasy Mt., 1d – Ashisu.
- 2 - *D. tianshanskü radkevüshi*:** 2a –Kurday pass, type locality, 2b – 45 km NE Kurday, 2c – Rgaity, 2d – Akterek.
- 3 - *D. tianshanskü terminum*:** Georgievka environs, type locality.
- 4 - *D. tianshanskü algaense ssp. n.*:** 4a –Alga, type locality, 4b – Kokpatas river.
- 5 - *D. tianshanskü otariense ssp. n.*:** 5a – Otar, type locality, 5b – Kenen, 5c - Targap.
- 6 - *D. tianshanskü parapumilio ssp. n.*:** 10km W Otar, type locality.
- 7 - *D. tianshanskü heptapotamicum*:** 7a – 25 km northeastwards Chu-city along the railway [probable type locality], 7b – about 25 km northwards Chu-city and 2km northwards Kirov, 7c – about 20km northwards Chu-city and 4km southwards Kirov, 7d – Birlik, 7e – Komuzek.
- 8 - *D. tianshanskü euzhaisanicum ssp. n.*:** 10km eastwards Zhaisan, type locality.
- 9 - *D. mystacinum mystacinum*:** 9a - Taraz environs [probable type locality], 9b - Talas valley, 9c – Kozuchak, 9d – Akyrtoobe, 9e – Podgornoe, 9f – Merke, 9g – 40km S Ulanbel, 10h – Ulanbel.
- 10 - *D. mystacinum pumilio*:** 10a – 40km W Chu [probable type locality], 10b – 10km S Chu.
- 11 - *D. optatum optatum*:** 11a - Tokmak environs near Taldy-Bulak [probable type locality], 11b – Bystrovka, 11c – Boam canyon
- 12 - *D. optatum matthieseni*:** 12a – south Bishkek environs near Chon-Aryk [probable type locality], 12b – Bishkek, 12c - south Bishkek environs near Tash-Debe, 12d – Malovodnoe, 12e - 20km W Bishkek, 12f – Chaldavar, 12g – Sosnovka, 12h – Dzhardy-Su, 12i – Alamedin, 12j – Issyk-Atya, 12k – Kant.
- 13 - *D. optatum kadyrbekovi*:** Kek-Too Mt., type locality.
- 14 - *D. optatum vallesum*:** 14a –Kamyshanovka, type locality, 14b – Novaya Ala-Archa.
- 15 - *D. optatum toropyginae*:** Ala-Archa, type locality.
- 16 - *D. kastekum*:** Kastek pass, type locality.
- 17 - *D. alexandris*:** Novoaleksandrovka [probable type locality].
- 18 - *D. darjae*:** Novorossiyka, type locality.



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- Discussion and conclusion
- Gratitude and links to the numbers of grants
- A list of references
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- Manuscript’s volume should not exceed 10 000 characters including spaces (6 pages)
- Paper size: A4
- Editor: Microsoft Word [Word for Windows 2003]
- Format: *. Doc
- Font: Times New Roman a size 14 regular
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The sample design of the article:

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Methodological aspects of transition from training to selfeducation paradigms

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Key words: kinds of paradigms, training paradigm, self-education paradigm, peculiarity of self-education paradigm at a higher school, didactical complex of selfeducation.

Abstract: The article settles the self-education paradigm in comparison with particular and local pedagogical paradigms. Historical succession, information trend and realization in attributes of training are considered as a methodological basis of self-education paradigm.

[Text of article]

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