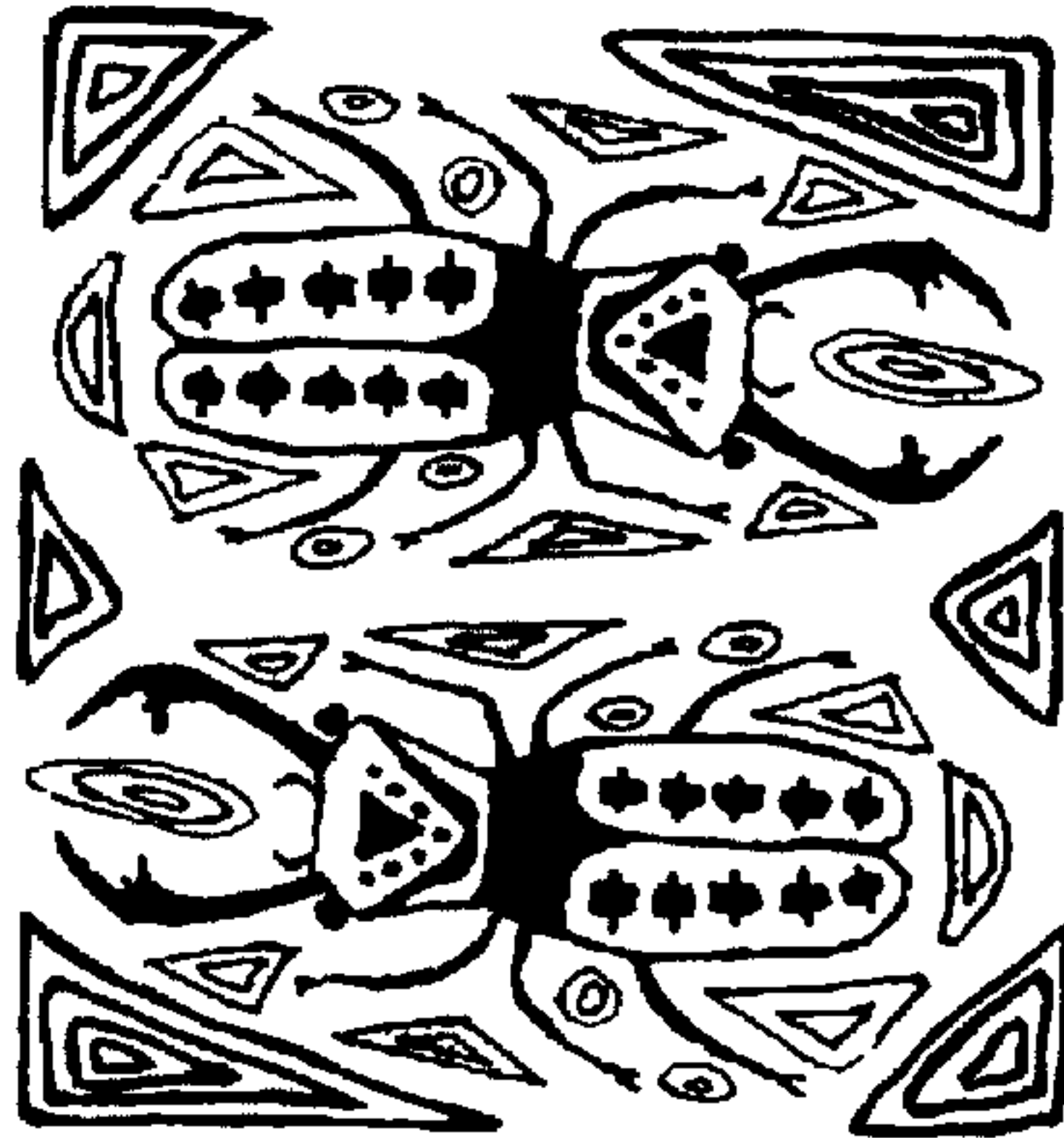


Coleoptera

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(Coleoptera, Cerambycidae)*

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Review of *Dorcadion* (s. str.) species from the upper Chu-Valley and allied territories (Coleoptera, Cerambycidae)

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Résumé.

La distribution de *D. globithorax* Jakovlev est restreinte à sa localité typique. *D. kastekus* Danilevsky, stat. n. est élevé au rang d'espèce, sa répartition est élargie. La localité typique, la morphologie et la distribution de *D. optatum* Jakovlev sont étudiées. Cinq sous-espèces sont séparées : *D. optatum* s. str., *D. o. matthieseni* Suvorov, comb. n., *D. o. kadyrbekovi* ssp. n., *D. o. toropyginae* ssp. n., *D. o. terminum* ssp. n. *D. tianshanskii* Suvorov est divisé en quatre sous-espèces : *D. tianshanskii* s.str., *D. t. radkevitchi* Suvorov, *D. t. heptapotamicum* Plavilstshikov, stat.n., *D. t. vallesum* ssp.n. *D. unidiscale* Breuning, stat. n. est élevé au rang d'espèce. *D. suvorovianum* Suvorov est reconnu comme une bonne espèce (proche de *D. unidiscale*), répartie au long du versant nord de Zailyskiy Alatau. *D. suvorovianum koramensis* ssp. n. est décrit de l'extrême est de Zailyskiy Alatau. *D. pelidnum* Jakovlev est aussi reconnu comme une bonne espèce (proche de *D. tibiale* Jakovlev), connu seulement des environs de la localité typique au sud de Bystrovka en Kirgizie. *D. tibiale toropovi* ssp. n. est décrit de la partie la plus orientale de la chaîne Kirgize. Trois groupes indépendants d'espèces apparentées sont distingués. Localisation et liens entre taxons voisins sont précisés sur une carte d'Asie Centrale.

Summary

The distribution of *D. globithorax* Jakovlev is limited to its type locality. *D. kastekus* Danilevski, stat. n. is raised to species rank, its area is enlarged. The type locality, morphology and distribution of *D. optatum* Jakovlev are discussed. Five subspecies are separated : *D. optatum* s. str., *D. o. matthieseni* Suvorov, comb. n., *D. o. kadyrbekovi* ssp. n., *D. o. toropyginae* ssp. n., *D. o. terminum* ssp. n. *D. tianshanskii* Suvorov is divided into 4 subspecies : *D. tianshanskii* s.str., *D. t. radkevitchi* Suvorov, *D. t. heptapotamicum* Plavilstshikov, stat.n., *D. t. vallesum* ssp.n. *D. unidiscale* Breuning, stat. n. is raised to species rank. *D. suvorovianum* Suvorov stat. rest. is recognized as a good species (close to *D. unidiscale*), distributed along north slope of Zailyskiy Alatau. *D. suvorovianum koramensis* ssp.n. is described from the easternmost part of Zailyskiy Alatau. *D. pelidnum* Jakovlev is also recognized as a good species (close to *D. tibiale* Jakovlev), known only from the neighbourhood of the type locality, to the south of Bystrovka in Kirgizia. *D. tibiale toropovi* ssp. n. is described from the easternmost part of the Kirgizskiy Ridge. Three independent groups of related species are recognized. Locations and relations of close taxa are figured on the map of Central Asia.

Key words

Coleoptera, Cerambycidae, *Dorcadion*, new taxa, Kazakhstan, Kirgizia.

I also attribute to *D. kastekus* stat. n. a population from near Ak-Tiuz (Kichi-Kemin Valley, Kirgizia) on the south slope of the Zailyskiy Alatau. In fact it is morphologically identical to the population of *D. kastekus* stat. n. from the Karakunuz Valley (also south slope). Though both communities are characterized by a great degree of individual variability, it is possible to find for each specimen from one population its morphological double in another. Aedeagus of *D. kastekus* stat. n. is moderately pointed, parameres relatively long and parallelsided.

Distribution - High mountains (1800-2300 m) of the East Zhetyzhel Ridge and the West Zailyskiy Alatau from the Kastek Pass to the Kichi-Kemin Canyon.

Remark. - Westwards, along the highest level of the Chu-Ili mountains, from the Akterek Narrows, *D. kastekus* is replaced by *D. tianshanskii radkevitshi*, but transitional populations are not known. Eastwards, it is replaced by *D. grande* (the most western known population is in Kaskelen Narrows) with distinct hiatus; southwards along the river Karakunuz, it is replaced by *D. alexandris* (Fig. 3-5), also with distinct hiatus; then southwards from the area of *D. alexandris* and at the south-east extremity of *D. kastekus* area along the Chu Valley different races of *D. optatum* occur. N.N. Plavilstshikov identified specimens of *D. kastekus*, as one of the forms of his *D. globithorax*. I. A. Kostin (1973) included this form in his *D. tibiale* as « *D. tibiale pelidnum* ».

3. *Dorcadion optatum* Jakovlev, 1906 (Fig. 6-16)

The species was described from « Aleksandrovsky Ridge (now Kirgizskil ridge), Tokmak environs ». The holotype, male (Fig. 6), is preserved in Zoological Museum (Saint Petersburg). After studying several populations along the north slope of Kirgizskiy Ridge from near Tokmak I am able to fix precisely the type locality of the species! It is the Shamsi Valley near Taldy-Bulak. Only among beetles of this population there are several specimens which are absolutely identical to type male : body small enough, with so rare (in the group) complex of characters as totally black antennae (including 1st joint), nearly black legs (only bases of femora and tibiae are red) with glabrous inner side of hind and middle male femora and tibiae, strongly developed humeral carinae with very rough sculpture and yellow colour of pale elytral and thoracic stripes. In fact type population is characterized by considerable individual variability : 1st antennal joint can be half red, as well as femora and tibiae, first tibiae often totally red excluding small apical black spot; pale elytral stripes can be white; internal pale elytral stripe complete or totally absent.

Distribution - I attribute to the species all populations of small and medium size beetles, which inhabit the Chu Valley from the Boam Narrows to

about Kara-Balta, including the neighbouring mountain slopes. Among the great diversity of populations of this area, several subspecies can be recognized. Westwards from the species area, along Kirgizskiy Ridge the area of *Dorcadion mystacinum* Ballion, 1878(*) begins (from about Merke). Between Kara-Balta and Merke (in the Chaldybar environs) a transitional population occurs. North-westwards along Zailyiskiy Alatau and Chu-Ili Mountains *D. optatum* gradually changes to *D. tianshanskii radkevitshi* (whose area begins from about the river Rgaity). Northwards along the lower level of the Chu Valley it changes to *Dorcadion tianshanskii vallesum* ssp. n. (whose area begins from about Alga).

4. *Dorcadion optatum optatum* Jakovlev, 1906 (Fig. 6-8)

Materials. - Male (HOLOTYPE), « Kirgizia, Aleksandrovsky ridge (now Kirgizskiy Ridge), Tokmak environs, 22.4.1903, Rovniagin leg » (the label in Russian), deposited in the Zoological Institute (Saint-Petersburg); other specimens from the author's collection : 10 males and 6 females, Kirgizia, Tokmak env., 11.5.1988, S. Murzin leg.; 9 males and 8 females, Kirgizia, Kirgizskiy Ridge, Shamsi riv., Taldy-Bulak env., 8.5.1986, I. Belousov leg.; 2 males and 2 females, Kirgizia, Bystrovka env., right bank Chu River, 24.5.1969, I. A. Kostin and A. S. Badenko leg.; 5 males and 9 females, Kirgizia, 7 km to the South from Bystrovka, 1400m, 31.5.1997, M. Danilevsky leg.; 5 males and 2 females, Kirgizia, the entrance of Boam Narrows, 25.5.1969, I. A. Kostin and A. S. Badenko leg.

Body length in males : 15.5-19 mm, in females : 17.1-19.9 mm; body width in males : 5.1-6.5 mm; in females : 6.1-7.7 mm.

The nominative subspecies is characterized by relatively small size, very long and narrow thoracic spines, the strongest in the species development of humeral carinae with very rough sculpture, flat elytrae, inner side of male middle and hind femora and tibiae glabrous, lacking pubescence. Black 1st antennal joint and dark legs are mostly exceptional, the basal half of the 1st antennal joint is usually red, and the femora and tibiae are only apically darkened. Dorsal elytral stripes mostly narrow. Autochromal females are more numerous than androchromal.

Distribution. - From the nearest steppe and semidesert environs of Tokmak southwards across Chu river to Kirgizskiy ridge (north slope from the Shamsi Valley through Bystrovka environs to the Boam Narrows). Known populations of *D. o. optatum* are a little different. As a general law for the group, the smallest size is a character of the populations occupying the lowest localities. The largest beetles were collected by myself in the mountains to the southeast from Bystrovka at the altitude of about 1400 m. The smallest specimens are known from near Taldy-Bulak and from the beginning of Boam Narrows (about 1200 m) the easternmost population of the subspecies (Fig. 7-8).

(*) *D. mystacinum* Ballion, 1878 was described from « Kuldzha » (now Jining in Chinese Dzhungarie). The species, treated traditionally under this name, is very common near Taraz (earlier « Aulie-Ata », then « Dzhambul ») in Kazakhstan and absent in Dzhungarie. I do not know the type, but I suppose that the type locality was wrongly indicated, as for example with *Carabus lindemanni* Ballion, 1878, which was also reported from Kuldzha in original description, but is distributed only near Alma-Ata.

5. *Dorcadion optatum kadyrbekovi* ssp. n. (Fig. 9-10)

Materials. - Male, HOLOTYPE, Kirgizia, Kek-Too Mt. (at the north bank of the lowest level of the river Chong-Kemin), about 2000 m, 1.5.1993, R. Kadyrbekov *leg.* (author's collection); 41 PARATYPES: 30 males and 4 females, same locality, 1.5.1993 and 26.5.1993, R. Kadyrbekov *leg.* (author's collection); 5 males and 2 females, same locality, 1.5.1993, R. Kadyrbekov *leg.* (R. Kadyrbekov's collection, Alma-Ata); 5 males and 1 female, same labels (S. Saluk's collection, Minsk).

Body length in males : 19-24,7 mm, in females : 20,2-24,7 mm; body width in males : 5,9-7,8 mm; in females : 7,8-8,8 mm.

The population is transitional between *D. o. optatum* and *D. kastekus*. Thoracic spines are well developed; the development of white or yellowish thoracic and elytral design is rather variable, but never very strong; internal elytral dorsal stripe long and moderately wide, partly reduced or totally absent. The beetles are much larger than *D. o. optatum*; 1st antennal joint always bicoloured, though sometimes rather dark; elytrae convex, humeral carinae less developed, usually without very rough sculpture; hind and middle femora always with fine internal pubescence, at least apically; all femora, middle and hind tibiae with only apical black markings, anterior tibiae often totally red; inner surface of hind tibiae with more developed fine pubescence and longer erect setae. Females more often autochromal. The new subspecies differs from *D. kastekus*. by a little smaller body size; elytrae flatter, in males with nearly parallel sides in anterior third (in males of *D. kastekus* - distinctly converging anteriorly); humeral carinae a little higher with distinct sculpture, sometimes rather rough, humeral furrows a little deeper; inner pubescence of hind and middle femora and tibiae less developed; aedeagus a little more pointed than in *D. kastekus*, similar to *D. o. optatum*.

Distribution - Only one population is known. It occupies the highest meadows of the Kek-Too Mt. at about 2000 m, situated near the Chu river between the Chong Kemin river and the Kichi-Kemin river.

6. *Dorcadion optatum matthieseni* Suvorov, 1910 comb. n. (Fig. 11-12)

Materials. - 2 males and 2 females (SYNTYPES), « Pischpek, Matthiessen » (Zoological Museum of Moscow State University); 1 female (SYNTYPE) with same label (Zoological Institute, Saint-Petersburg); 5 males and 1 female, Chaldavar (now Chaldybar), 600-700 m, 12.5.1907, A. Jakobson *leg.*; 12 males and 6 females, S Frunze (now Bishkek), 7.5.1990, I. Kabak *leg.*; 8 males, 6 females, Frunze env., 5.1939, 5.5.1942, 23.4.1943, 10.5.1948, 15-21.4.1953, 18.4.1954, 13.4.1964, 5.1977, 15.5.1982, 27.6.1986, *leg.* : Iukhnevich, K. Arnoldi, M. I. Shapiro, Sumina, Dovzhenko, V. Ianushev, A. Kondratiev (author's collection); 7 males, Bishkek, city-park, 850 m, 10.5.1997, A. Klimenko *leg.*; 59 males, 17 females, Low Ala-Archa (2km N Bishkek), 700 m, 18-20.4.1997, A. Klimenko *leg.*; 16 males, 5 females, Orto-Sai, (4km S Bishkek), 1100 m, 30.3.1997, A. Klimenko *leg.*; 38 males, 21 females, Chon-Aryk (1km S Bishkek), 900 m, 15.5.1997, A. Klimenko *leg.*; 11 males, 2 females, Yssyk-Ata Narrows, 1800 m, 20.5.1997, A. Klimenko *leg.*; 1 male, 1 female, Kant env., 700 m, 10.5.1997, A. Klimenko *leg.*; 150 males, 36 females, Alamedin Narrows, 1800 m, 19-25.5.1997, A. Klimenko *leg.*; 15 males, 10 females, south bank of Chu canal (20 km W Bishkek), 700 m, 26.5.1997, A. Klimenko

leg.; 1 male, Kara-Balta Narrows, 1800 m, 20.5.1997, A. Klimenko *leg.* 9 males, near the gate of « Ala-Archa » National Park (20 km S Bishkek), 1500 m, 20-25.5.1997, A. Klimenko *leg.* (author's collection and collection of A. Klimenko, Tver); 10 males, 2 females, Kara-Balta Valley near Sosnovka, 1200 m, 26-27.4.1997, M. Danilevsky *leg.*; 15 males and 11 females, Ak-Su Valley near Dzhardy-Su, 1300 m, 29.4.1997, M. Danilevsky *leg.* 4 males, 1 female, Malovodnoe (12 km W Bishkek), 700 m, 26.4.1972, I.A. Kostin *leg.*; 8 males, 2 females, Tash-Debc (10 km S Bishkek), 1200 m, 13-23.6.1993, D. Obydov *leg.* (author's collection).

Body length in males : 13-21,5 mm, in females : 14,5-23,1 mm; body width in males : 4,1-7,3 mm; in females : 5,5-8,6 mm.

The subspecies is characterized by moderately long thoracic spines, 1st antennal joint always bicoulored, bicoloured legs; evenly oval elytrae, with moderately developed humeral carinae, pale elytral and thoracic design white or yellow, internal dorsal elytral stripe present or absent; internal surface of hind and middle tibiae densely pubescent; aedeagus and parameres of males from near Bishkek are usually similar to *D. o. optatum*; males from western populations (near Ak-Su and Kara-Balta) often have more pointed aedeagus and shorter parameres; females are usually autochromal.

The taxon was described as a species from « Pischpek » (now Bishkek in Kirgizia), though in original description the author mentioned only : « Alexander Gebirge ». All specimens from type series deposited in the Zoological Museums of Moscow and Saint-Petersburg are with labels : « Pischpek, Matthiessen ». The type series is absolutely identical to the series in my collection from the nearest environs of Bishkek and from inside the city. Such specimens are characterized by the smallest body size in the species (for example in the population from Low Ala-Archa - north environs of Bishkek - the length of males is only 13-16 mm). In all directions from this locality the specimens become larger.

The western border of the subspecies coincides with the border of the species area (in my materials, Kara-Balta environs), specimens from there have legs and 1st antennal joints lighter, internal dorsal elytral stripe mostly absent. Between Kara-Balta and Merke (in the Chaldybar environs) a population transitional to *D. mystacinum* occurs (male elytrae rather flat with narrow white lines, internal dorsal line always absent, humeral and external dorsal carinae with rough sculpture, though female is not so close to *D. mystacinum* : elytrae convex with wide white lines and indistinct carinae). Eastwards from Bishkek, specimens from the Yssyk-Ata Narrows are more or less close to the typical populations, though legs and 1st antennal joint are considerably darker (sometimes black) and internal hind and middle femora pubescence often absent. The population from near Kant is transitional to *D. o. optatum*, because of flattened elytrae, poor internal pubescence of hind and middle femora, darkened legs and 1st antennal joint. I also attribute to *D. o. matthieseni* the population from higher level of the Alamedin Narrows (1800 m - to the south from Kant) with the largest body size known in the subspecies, though they are usually considerably darker with glabrous

internal surface of hind and middle male femora and tibiae. To the north of Bishkek, *D. o. matthieseni*, changes to *D. tianshanskii vallesum* ssp. n.; to the south in the high mountains along the Ala-Archa Valley, it changes to *D. o. toropyginae* ssp. n.

Distribution. - From the border of Kirgizia (Chaldavar environs between Kara-Balta and Merke) eastwards through Bishkek environs and the Alamedin Narrows to about Kant and the Yssyk-Ata Narrows; and from the foothills of the Kirgizskiy ridge to the Chu river.

Remark. - Earlier (Danilevsky, 1996a) I regarded *D. matthieseni* as a synonym of *D. optatum*, because at that time I was not ready to divide the species into subspecies.

7. *Dorcadion optatum toropyginae* ssp. n. (Fig. 13-14)

Materials. - Male, HOLOTYPE, left side of the Ala-Archa Narrows (about 20 km S Bishkek), 1800 m, 2.5.1997, M. Danilevsky leg. (author's collection); 344 PARATYPES : 269 males, 52 females, from about the same locality, 1600-2000 m, 2-4.5.1997, G. B. Danilevskaja, M. L. Danilevsky leg.; 3 males, upper Malinovka (right side of the Ala-Archa Narrows), 1600 m, 4.6.1997, M. Danilevsky leg.; 1 male, 1 female, Ala-Archa, 17.5.1992, E. Tarasov leg. (author's collection); 4 males and 2 females, Ala-Archa Narrows, 1800 m, 15.5.1993, S. Toropov leg. (collection of S. Toropov, Bishkek); 2 males, Ala-Archa National Park (right bank of the river), 1800 m, 4.6.1997, A. Klimenko leg. (collection of A. Klimenko, Tver).

Body length in males : 16,8-21,1 mm, in females : 17,3-22,6 mm; body width in males : 5,4-7,2 mm; in females : 6,8-8,6 mm.

The subspecies is characterized by very strong development of pale elytral design (yellow or yellowish). In most specimens, pale elytral stripes are considerably wider than black interspaces, so elytrae look yellow with narrow black stripes; internal dorsal stripe nearly always present; thoracic median stripe about twice as narrow as black stripes, only in females it can be of about the same width; elytrae generally relatively wide, regularly oval with low humeral carinae of moderate sculpture; thoracic spines long; middle and hind femora with poor internal pubescence; aedeagus moderately pointed with slightly elongated apex, very similar to *D. o. optatum* from near Bishkek and *D. o. matthieseni*, but parameres a little wider and shorter; females autochromal or androchromal.

Distribution. - The new subspecies inhabits high meadows on both sides of the Ala-Archa Narrows (1600-2000 m). The highest populations almost totally consist of very pale specimens. At the level of about 1500 m populations transitional to *D. o. matthieseni* Suv. occur.

Remark. - *D. o. toropyginae* ssp. n. is convergently similar to *D. alexandris* (= *D. luteolum* Suvorov, 1910), though *D. alexandris* (Fig. 3-5) is considerably larger and belongs to another branch of forms.

Derivatio nominis. - I dedicate the new subspecies to my mother in law Zoia Vasilievna Titkova, using her maiden name Toropygina.

8. *Dorcadion optatum terminum* ssp. n. (Fig. 15-16)

Materials. - Male, HOLOTYPE, Kazakhstan, Georgievka env. (15 km NE Bishkek, at the border line with Kirgizia), 700 m, 10.5.1991, M. Danilevsky leg.; PARATYPES: 52 males and 35 females with same labels (author's collection).

Body length in males : 18-22,5 mm, in females : 20,5-23,5 mm; body width in males : 5,9-7,4 mm; in females : 7,9-9,5 mm.

On average, it is smaller than *D. t. radkevitchi* (though one of the largest forms of the species); humeral carinae less developed with moderately rough sculpture; dorsal carinae in males usually indistinct; internal dorsal white elytral stripe mostly present; all dorsal stripes including middle thoracic stripe are relatively wider; aedeagus feebly pointed, similar to aedeagus of *D. t. radkevitchi*; females usually autochromal. The subspecies differs from *D. o. kadyrbekovi* ssp. n. by more convex elytrae; males with indistinct humeral furrow and low humeral carinae; thoracic spines relatively short; body relatively wider; abdominal pubescence extremely dense.

The taxon is the northernmost form of the species, being a transition between the mountain forms as *D. o. kadyrbekovi* ssp. n. and *D. tianshanskii radkevitchi*.

Distribution. - Only one population of the subspecies is known. It is situated in the hilly region to the east of Georgievka, at about 700 m above the sea level, along the border between Kazakhstan and Kirgizia.

9. *Dorcadion tianshanskii* Suvorov, 1910

The species is characterized by very rough sculpture of humeral elytral carinae; external dorsal carinae usually also distinct, with more or less rough sculpture; prothorax strongly convex posteriorly, as in other relative species of the group; short stout elytral setae indistinct.

The species was described from « Semirjetshje-Gebiet », without precise indication of type locality, but series of numerous syntypes, spread over different collections, consist of specimens, collected in two neighbouring localities in the eastern part of the Chu-Ili Mountains : the Kopaly Valley and the Chulak Valley.

Distribution. - The species area is limited to the Chu-Ili Mountains and the allied hilly plains.

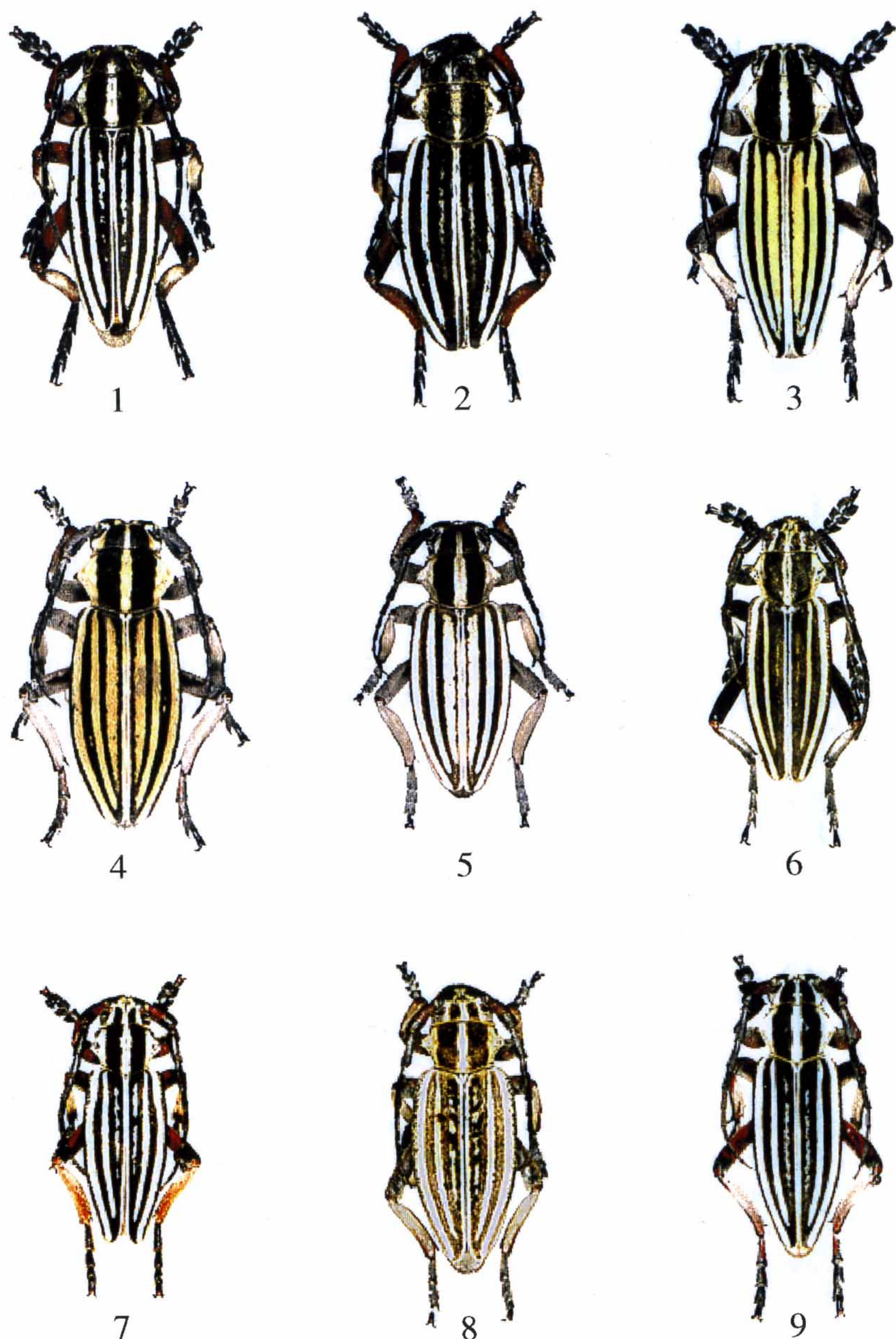


Fig. 1-9 : 1-2, *Dorcadion globithorax*, syntypes: 1, male; 2, female. 3-5 *D. alexandris*: 3, male; 4-5, females. 6-8, *D. optatum optatum*: 6, male, holotype; 7, male from Boam Narrows; 8, female from Boam Narrows. 9, *D. optatum kadyrbekovi* ssp. n., male, holotype.

10. *Dorcadion tianshanskii tianshanskii* Suvorov, 1910

Materials. - 5 males (SYNTYPES), Semiretchie, upper level of the Chulak Valley, 19.5.1909, B. Nedzvetzky *leg.* (Zoological Institute, Saint.-Petersburg); 1 male (SYNTYPE) with the same label (author's collection); 1 male, Chubok, near the Anrakai Mts (now Kulzhabasy Mts, to the north of Otar), 19.5.1909, Marozhii *leg.* (Zoological Institute, Saint.-Petersburg); 3 males and a female (SYNTYPES), Semiretchie, upper level of the Kopaly Valley, 5.1909, B. Nedzvetzky *leg.* (collection of the Moscow Zoological Museum).

Body length in males : 19,5-23 mm, width: 6,2-7,5 mm; body length of the female : 24 mm, width : 9,5 mm.

The nominative subspecies is characterized by a relatively large body, with evenly oval elytrae. In males, middle thoracic and elytral white stripes usually very narrow; internal dorsal elytral stripes usually absent or present in the form of small spots and strokes; internal femora surfaces with fine pubescence. The only known female autochromal, with brownish dark pubescence.

Distribution. - North-east part of the species area : Chu-Ili mountains to North-East from Kopa valley.

11. *Dorcadion tianshanskii radkevitchi* Suvorov, 1910

Materials. - 32 males, 6 females, Kazakhstan, Kurday Pass, 1100-1300 m, 11.5.1968, A.S. Badenko *leg.*; 10 males and 5 female, same locality, 29.4.1982, G.Nikolaev *leg.*; 447 males, 156 females, same locality and about 50 km along the main ridge to the north-west, 12.5.1991 and 11.5.1997, M.Danilevsky *leg.*; 67 males and 32 females, south slope of the Zhetyzhel Ridge, Rgaity, 800 m, 8.5.1997, M.Danilevsky *leg.* (author's collection); 13 males and 3 females, north slope of the Zhetyzhel Ridge, Akterek, 29.4.1997, A.Klimenko *leg.* (author's collection and collection of A.Klimenko, Tver).

Body length in males : 16,5-23,4 mm, in females : 19-26,7 mm; body width in males : 5,5-7,5 mm; in females : 7-9,2 mm.

The subspecies is characterized by a relatively large body; elytrae usually less converging anteriorly (often nearly parallelsided) than posteriorly (main distinguishing character from the nominative form). In males middle thoracic and elytral white stripes usually very narrow; internal dorsal elytral stripes usually absent, or present in the form of small spots and strokes, or rarely as a complete line; internal femora surfaces usually glabrous. Females usually autochromal: black pubescence is replaced by dark brown or pale brown (to nearly white); very rarely androchromal: with black pubescence and without internal dorsal white stripe.

The taxon was described as a subspecies of *D. globithorax* from the Kurday Pass - one of the highest locality in the Chu-Ili Mountains. Recently it was regarded as a subspecies of *D. tianshanskii* (Danilevsky, 1996 a).

Distribution. - The subspecies is distributed along the highest level of the Chu-Ili Mountains from western part of the Zhetyzhel Ridge to eastern part of the Kindiktas Ridge.

Remark. - N. N. Plavilstshikov (1958) recognized several species (!) inside one Kurday population (*D. globithorax*, *D. tianshanskii*, *D. matthieseni* and so on). I.A. Kostin (1973) divided this population into two subspecies (!) : *D. tibiale globithorax* and *D. tibiale alexandris* (for specimens with complete internal dorsal white stripe).

12. *Dorcadion tianshanskii heptapotamicum* Plavilstshikov, 1951, stat. n. (Fig.17-19)

Materials. - Male (SYNTYPE), « Muinak, Geb. Matthiessen » (Zoological Museum of Moscow University); 5 males, Targap, 18.5.1907, A. Jakobson leg. (Zoological Institute of Saint.-Petersburg); 5 males and 5 females, Kazakhstan, Kenen (at the eastern foot of the Kurday Pass), 500 m, 29.4.1993, R. Kadyrbekov leg.; 6 males and 4 females, Kazakhstan, Otar, 500 m, 5.5.1993, R. Kadyrbekov leg. (author's collection and collection of S. Saluk, Minsk).

Body length of males : 16.7-19.0 mm, width 5.4-6.4 mm, length of females : 18-22,2 mm, width : 6,5-8,2 mm.

Body of moderate size; elytrae evenly oval, with very rough sculpture of humeral carinae, rough sculpture of external dorsal carinae also usually distinct; 1st antennal joint nearly always bicoloured, rarely totally black, in males without fine pubescence; white thoracic and elytral stripes moderately wide; internal dorsal elytral stripe usually present or sometimes absent, in males from near Targap, external dorsal stripes narrow and internal stripes always absent; in males from near Kenen, fine legs pubescence less developed, inner sides of hind and middle femora usually glabrous; in males from near Otar and Targap, fine leg pubescence rather dense, inner sides of middle and hind femora are pubescent, though not very densely; females usually autochromal.

It differs from *D. t. radkevitchi* by a smaller body size, usually wider white stripes with more or less distinct internal elytral stripes; elytrae regularly oval (in *D. t. radkevitchi*. anterior elytral borders are more parallel). Eastwards, the area of *D. t. heptapotamicum* is very close to the area of *D. suvorovianum* It differs from *D. suvorovianum* (as all other subspecies of *D. tianshanskii*) by not protruding, roughly sculptured humeral carinae and indistinct short, stout elytral setae.

According to the original description the taxon was described as a species from the region to the south of the Kastek Pass. The syntypes (Fig. 17) have two labels : the original old printed label is: « Muinak Geb. Matthiessen », and another one, new, hand written label (most probably - Plavilstshikov's hand) in Russian [« Kastek Pass environs »]. I do not know such toponame as « Muinak ». It is absent from both modern maps and maps from the beginning of the century, but most probably, it means the hilly region in the environs of the Kopa Valley (to

the east from Kindiktas ridge). Anyway, I am sure that the new hand written label is wrong, as I personally attentively investigated the south slope of the Kastek Pass, which was occupied by another form. I know specimen from the Kopa Valley, which are very similar (practically identical) to the syntypes.(Figs. 18-19). So I previously regarded this locality as typical.

Distribution. - Kazakhstan : Kopa Valley to the east of Kindiktas Ridge.

13. *Dorcadion tianshanskii vallesum* ssp. n. (Fig. 20-21)

Materials. - HOLOTYPE, male, left bank of River Chu, near Kamyshanovka, 550 m, 26.4.1972, I. A. Kostin leg.; 45 PARATYPES: 2 male and 2 females with the same label; 1 male, Kokpatas River (right bank of the River Chu), 600 m, 26.4.1972, I. A. Kostin leg.; 3 males, 1 female, low level of the Kurday Pass, 12.5.1968, A.S. Badenko leg.; 3 males and 1 female, 190th km of the Alma-Ata - Bishkek road (south of the Kurday Pass), 30.4.1993, R. Kadyrbekov leg. (author's collection); 1 male, 3 females, 4km NW of Alga (south of the Kurday Pass), 800 m, 10.5.1988, R. Kadyrbekov leg.; 6 males 3 females, Alga, 800 m, 29.4.1993, R. Kadyrbekov leg. (collection of S. Saluk, Minsk); 9 males, 1 female, Alga, 600 m, 20.4.1997, A. Klimenko leg. (author's collection and collection of A. Klimenko, Tver); 6 males and 3 females, Alga, 600 m, 11.5.1997, M. Danilevsky leg. (author's collection).

Body length of males from near Kamyshanovka: 14-16 mm, width 4,7-5,3mm, length of females : 16-16,5mm, width : 16,3-16,4mm. Body length of males from near Alga : 17,1-21,1mm, width : 5,7-6,7 mm; length of females : 17,5-22,8 mm, width : 6,5-7,8 mm.

Body from very small to moderate size, with very strong development of very rough elytral carinae; females usually autochromal. It differs from *D. t. radkevitchi* first of all by small body size, white elytral design more developed, internal elytral stripe usually present, all dorsal stripes wider; elytrae regularly oval (in *D. t. radkevitchi* anterior elytral borders more parallel). *D. t. vallesum* ssp. n. differs from *D. o. matthieseni* by strong development of humeral and specially external dorsal carinae in males.

Three populations from the middle level of the Chu Valley are known : two from near Kamyshanovka and from near Alga. Specimens from the third population are a little larger.

The new subspecies is a transition from *D. o. matthieseni* to *D. tianshanskii radkevitchi*.

Distribution. - The subspecies is distributed in the low hilly plain along the 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.

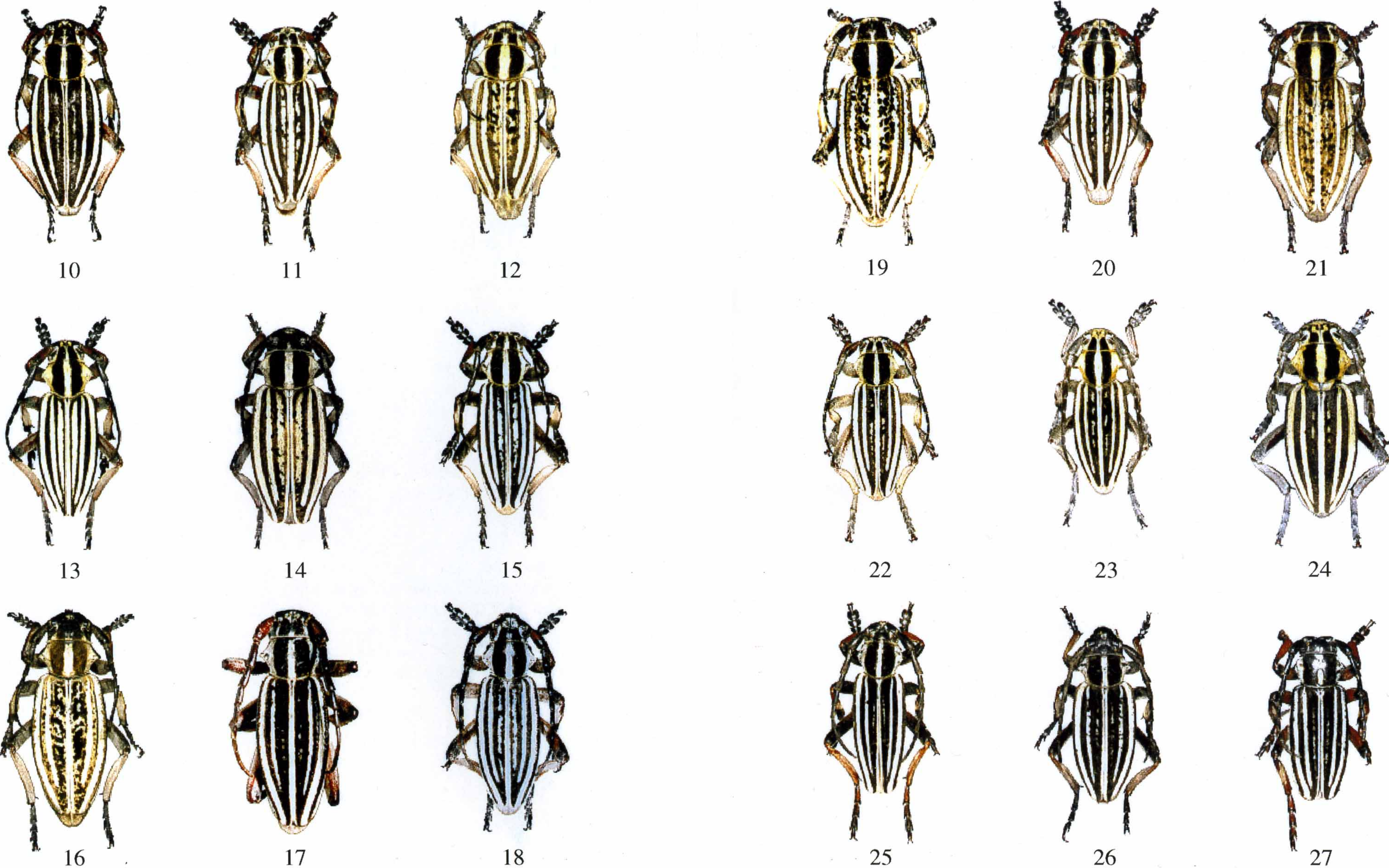


Fig. 10-18 : 10, *Dorcadion optatum kadyrbekovi* ssp. n., female, paratype. 11-12, *D. optatum matthieseni*: 11, male from Law Ala Archa (10 km. N. Bishkek), 12, female same locality. 13-14, *D. optatum toropyginae* ssp. n. : 13, male, holotype; 14, female, paratype. 15-16, *D. optatum terminum* ssp. n. 15, male, holotype; 16, female, paratype. 17-18, *D. tianshanskii heptapotamicum*: 17, male, syntype; 18, male from near Otar.

Fig. 19-27: 19 - *Dorcadion tianshanskii heptapotamicum*: female from near Otar. 20-21, *D. tianshanskii vallesum* ssp. n.: 20 - male, holotype; 21 - female, paratype from the type locality. 22-24 - *D. suvorovianum suvorovianum*: 22 - male, syntype; 23- male from Kaskelen environs; 24 - female, from the same locality. 25-26 *D. suvorovianum koramensis* n.ssp.: 25 - male, holotype; 26 - female, paratype. 27 - *D. pelidnum*: male probably from same series as type specimen.

14. *Dorcadion unidiscale* Breuning, 1946, stat. n.

Materials. - 254 males and 63 females, Kazakhstan, Zailyskiy Alatau, Kaskelen Narrows, 1500-2000 m, 8.6.1986, 7.5.1991, 15.5.1996, M. Danilevsky leg.

Body length in males : 16,6-21,1 mm, width : 5,1-6,6mm; length of females : 16,7-22,8 mm, width : 5,7-7,4 mm.

The species is characterized by medium body size; elytrae enlarged anteriorly or with parallel sides in the basal half, in such a way that the widest point is often near humeri; internal elytral white stripe nearly always absent, even in females, which are always androchromal; erect elytral setae hardly distinct or indistinct; all femora and first antennal joint totally black; thoracic spines very short; aedeagus strongly pointed, similar to aedeagus of *D. tschitscherini* Jakovlev, 1900.

Earlier (Danilevsky, 1996 a) I regarded it as a subspecies of *D. globithorax*. But now, after the reception of new materials, it became clear that *D. unidiscale* belongs to another group of species, connected with *D. tschitscherini*. All species of « *tschitscherini*-group » (also including *D. suvorovianum* and *D. kapchagaicus* Danilevsky, 1996 a) differ from other *Dorcadion* s. str. by the very strong development of the humeral carinae and the extremely dense fine antennal and leg pubescence; the erect elytral setae are more or less distinct.

So far, only one population has been known. It occupies high meadows in the Kaskelen Narrows.

Remark. - The species area totally coincides with local population of *D. grande* - a species of « *globithorax*-group ». Beetles of both species are often crawling side by side, though *Dorcadion grande* is much less numerous.

Northwards, eastwards and westwards *D. unidiscale* is replaced by different populations of *D. suvorovianum*.

15. *Dorcadion suvorovianum* Plavilstshikov, 1916, stat.rev. (Fig. 22-26)

The species is characterized by medium body size, with oval elytrae, though the widest point is before the middle; erect elytral setae mostly hardly visible, usually distinct only along longitudinal elytral carinae; fine leg and antennal pubescence very dense; thoracic spines usually short. Females are autochromal or androchromal.

The species was described as *D. formosum* Suvorov, 1910 (nec Kraatz, 1870). The type specimens are preserved in the Zoological Institute (Saint-Petersburg).

N.N. Plavilstshikov (1927) erroneously synonymized the name *D. suvorovianum* with *D. matthieseni*, in spite of very different type localities. In fact,

type specimens of *D. formosum* Suvorov (Fig. 22) are rather similar to *D. matthieseni*, because of small body, same elytral design and very distinct humeral carinae. But they are identical to my specimens (Figs. 23-24) collected very near its type locality, because of very dense fine antennal pubescence and short thoracic spines. *D. formosum* was described from the Kon-Muly Narrows of the river Usun-Kargaly. The narrows is situated on the north slope of the Zailyskiy Alatau (last but one to the west from Kaskelen). Regarding small size of specimens, it must be the beginning of the narrows at about 1000 m above the level of the sea.

Distribution. - The species area is stretched along the middle level of the north slope of the Zailyskiy Alatau, from about the foot-hills of the Chu-Ili Mountains (near Targap) through the Uzunagach, Kaskelen and Talgar Narrows to the easternmost extremity of the ridge (near Kuram). On the plains to the north of the Zailyskiy Alatau it is replaced by different populations of *D. tschitscherini*.

D. suvorovianum is always considerably larger than *D. tschitscherini*; internal white dorsal elytral stripe in males mostly absent, erect elytral setae present, but less developed.

I know *D. tschitscherini* from near low Chemolgan in the Kaskelen Valley, Alma-Ata city, Talgar environs, Karaoi, Karakemer, Malovodnoe, Aschysai.

In the eastern part of the area the species changes to *D. arietinum chilikensis* Danilevsky, 1996c.

16. *Dorcadion s. suvorovianum* Plavilstshikov, 1916 (Fig. 22-24)

Materials. - 2 males (SYNTYPES), Semirechie, Kon-Muly, Uzun-Kargaly river, 15.4.1909, B. Nedzvitzky leg. (Zoological Institute, S.-Petersburg); 1 female, Uzun-Agach env., 900 m, 10.5.1969, I. A. Kostin, A. S. Badenko leg.; 2 males, 2 females, Kazakhstan, Targap env., 700 m, 25.4.1972, I. A. Kostin leg.; 1 male and two females, near Aksai, 10.5.1969, I. A. Kostin and A. S. Badenko leg.; 1 male, Alma-Ata env., Right Talgar river, 2000 m, 14.5.1987, G. Nikolaev leg.; 3 males, 2 females, Kaskelen env., 1300 m, 11.4.1991, M. Danilevsky leg. (author's collection); 15 males, 1 female, Kaskelen env., 1200 m., 13.5.1997, A. Klimenko leg.; 28 males, 6 females, Kaskelen env., 1000 m, 28-30.4.1997, O. Legezin leg. (author's collection and collection of A. Klimenko, Tver).

Body length in males : 16-21,8 mm, width: 5-7 mm; length of females : 17,8-20,6 mm, width : 6,5-7,9 mm.

The nominative subspecies is characterised by hardly visible erect elytral setae; 1st antennal joint always bicoulored; densely pubescent inner side of hind and middle tibiae; external dorsal elytral stripe nearly always without black markings (very rarely, single small black spots may occur, only in females).

Distribution. - I preliminarily attributed to the nominative subspecies all species populations excepting the most eastern one (near Koram).

17. *Dorcadion suvorovianum koramensis* ssp. n. (Fig. 25-26)

Materials. - Male, HOLOTYPE, N slope of Zailiiskii Alatau, above Koram, 2800m, 2.6.1966, N. Skopin leg.; 1 PARATYPE, female with same label (author's collection).

Body length of male : 18.6 mm, width : 5.8 mm; length of female : 18.1 mm, width : 6.6 mm.

I have only received one pair. Both are distinctly transitional between *D. s. suvorovianum* and *D. arietinum chilikensis*. The new subspecies differs from the nominative form by long erect elytral setae; totally black 1st antennal joint; relatively long thoracic spines; glabrous inner side of hind and middle tibiae in male and very poorly pubescent in female; external dorsal elytral stripe in androchromal female with numerous black spots. It is similar to *D. a. chilikensis* in having spotted elytral stripes (at least in female), and glabrous inner sides of femora; the development of erect elytral setae is about the same. It differs from *D. a. chilikensis* by pronotum more convex posteriorly, elongate body, both in male and in female and by the presence of a fine antennal pubescence, which is absent in all forms of *D. arietinum* Jakovlev, 1897.

Distribution. - The population of the new subspecies is one of the highest known *Dorcadion* community of the region, occupying the upper level (2800 m) of fir forests on the north slope of the east spur of the Zailyskiy Alatau - Bokaidyntau Ridge.

18. *Dorcadion pelidnum* Jakovlev, 1906, stat. rev. (Fig. 27-30)

Materials. - Male and female, Kirgizskiy Ridge, Tokmak env., Rovniagin's bee-garden, 11.4.1903, Rovniagin leg.; 3 males, 10.6.1903, and 1 female, 9.6.1903, bee-garden near Tokmak, Rovniagin leg. (Zoological Inst., Saint-Petersburg); 1 male, 10.6.1903 same locality, Rovniagin leg. (author's collection); 1 female, Tokmak environs, Kyzyl-Su, 22.5.1903, Rovniagin leg.; 1 male, Shamsi River, 17.7.1908, R. R. leg. (Zoological Inst., Saint-Petersburg); 2 males, 1 female, Kirgizia, Orlovka env., 1000 m, 2-3.5.1993, R. Kadyrbekov leg. (author's collection).

Body length in males : 18-21,1 mm, width : 6,6-7 mm; length of females : 20,6-21,5 mm, width : 7,9-8,1 mm.

The species is close to *D. tibiale* Jakovlev, 1890 and is characterized by a relatively wide body, very low and smooth humeral carinae, moderately long thoracic spines; 1st antennal joint totally black with sparse, easily losable fine pubescence; internal dorsal elytral stripe always absent; narrow external stripes; humeral and external dorsal elytral stripes with small black spots; leg pubescence not very dense. Both known females are a little brownish.



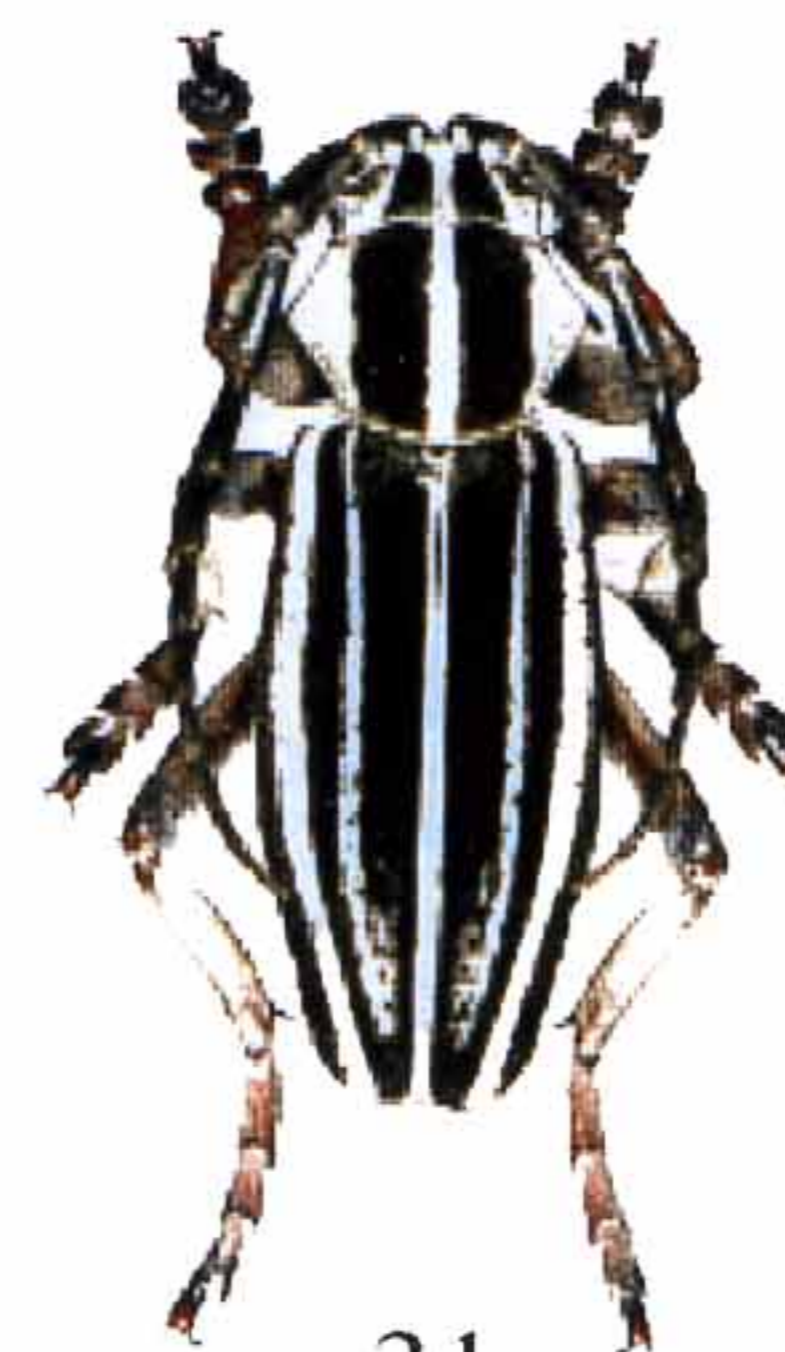
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Fig. 28-34: 28 - *Dorcadion pelidnum*, female from the same series as type specimen; 29 - male from near Orlovka; 30 - female from the same locality. 31-32 *D. tibiale tibiale*: 31 - male, from the southern slope of the Dolon Pass; 32 - female, from the same locality. 33-34 *D. tibiale toropovi* ssp. n.: 33 - male, holotype; 34 - female, paratype.

Distribution. - *D. pelidnum* is distributed in the eastern foothills of the Kirgizskiy Ridge from Shamsi and Kyzyl-Su Narrows to about Bystrovka environs.

The species was described from near Tokmak, from the same locality as *D. optatum* (and in the same paper, just in the next page). That is why I regarded it as a synonym of the latter (Danilevsky, 1996 a), though the type of *D. pelidnum* was rather different. Without materials from the locality I mistakenly treated the holotype of *D. pelidnum* as the outmost form of the variability range of *D. optatum*.

Now, together with precise indication of Jakovlev's locality and a large series from typical population of *D. optatum*, I have received from the same locality several specimens of another species, close to *D. tibiale*. These specimens (Fig. 29-30) well agree with the holotype of *D. pelidnum* Holotype, male with label: « Alexandrovsky ridge, near Tokmak, Rovnegin's bee-garden » was preserved in the Saint-Petersburg Zoological Institute. Unfortunately, this year, the type specimen is not in its place in the Institute collection. So I use, as the species standard, two other specimens (male and female, Fig. 27-28) from the same collection with nearly the same labels (collected in the same place one day later) and very similar to holotype (I have noticed it before).

Typical *D. tibiale* (Fig. 31-32) from the Naryn Valley differs from *D. pelidnum* by a more elongated body with less developed leg pubescence; dorsal elytral white stripes often diffused posteriorly; hind and middle tibiae a little narrower. Females are also mostly androchromal.

19. *Dorcadion tibiale toropovi* ssp. n. (Fig. 33-34)

Materials. - Male, HOLOTYPE, Kirgizia, Kuvaky Pass, 1400 m, 10-15.5.1996, S. Toropov leg. (author's collection); PARATYPES: 1 male and 2 females with same labels (author's collection and collection of S. Toropov, Bishkek).

Body length in males : 18-18,6 mm, width : 5,6-6,2 mm; length of females : 18,7-20,3 mm, width : 7,2-7,5 mm.

The new subspecies is the northernmost population of the species area. It differs from the nominative form by small body size, less developed leg pubescence, and a special character of elytral design with relatively wide external stripes and relatively narrow black interspace between dorsal and humeral stripes, the latter covered with numerous black spots. Both females are androchromal (dark pubescence totally black).

Distribution. - Only one population from the Kuvaky pass is known. It is the easternmost point of the Kirgizskiy Ridge to the north from the Orto-Tokoi reservoir.

Remark. - I know the nominative form of *D. t. tibiale* (holotype, male, described from Naryn river valley, is preserved in the Saint-Petersburg Zoological Institute)

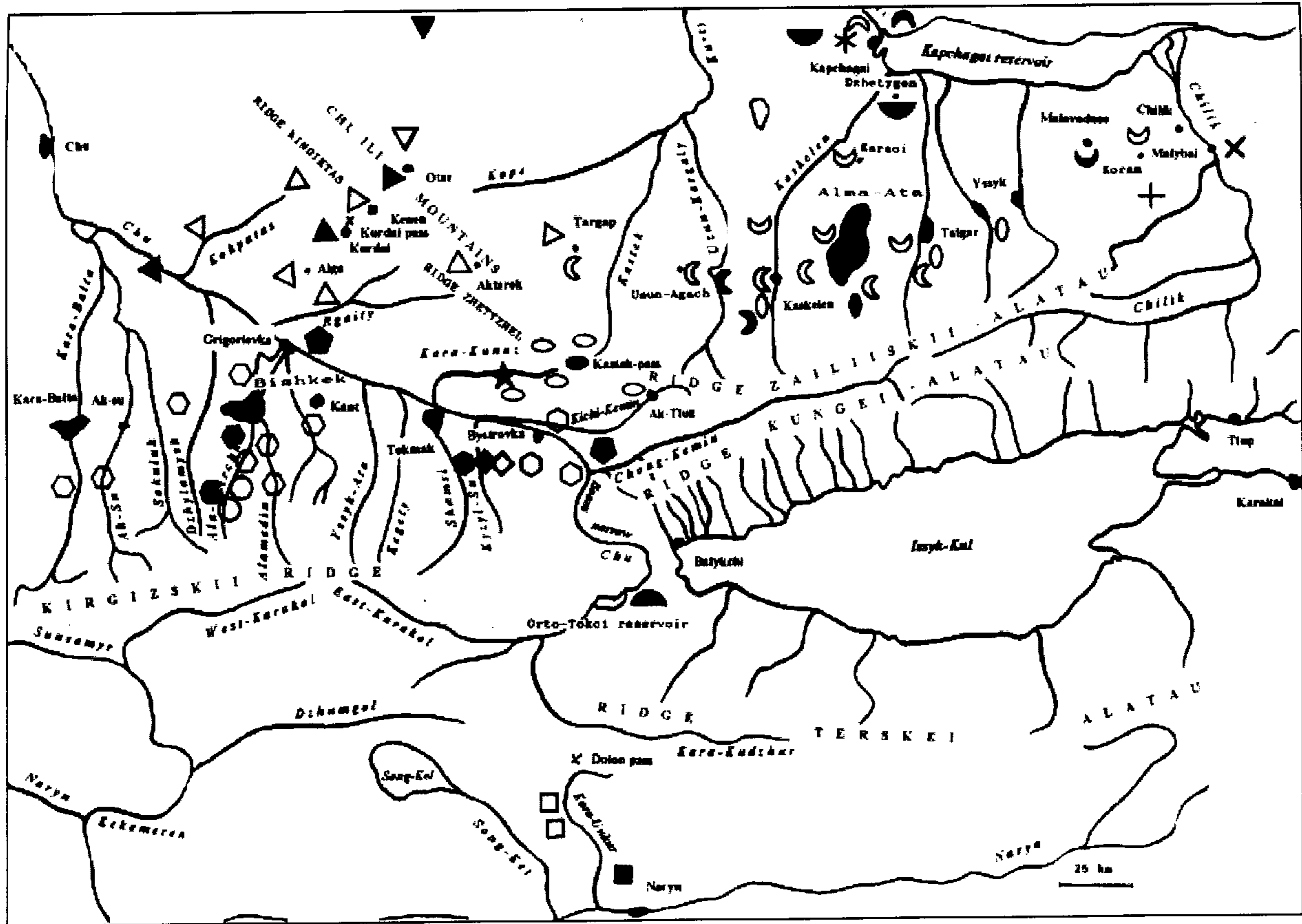


Fig. 35: Chu Valley and allied rivers of Kirgizia and Kazakhstan.

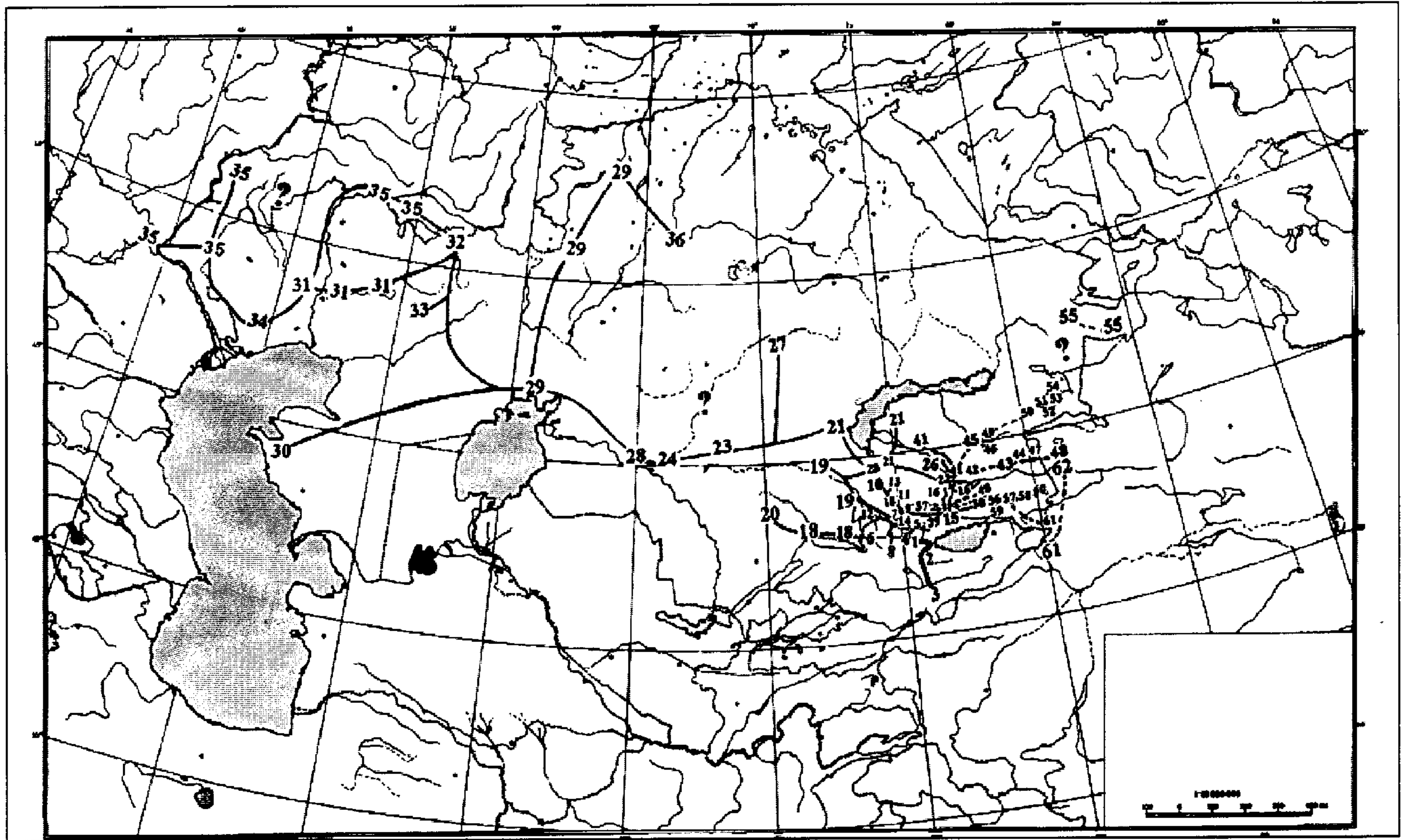


Fig. 36: Relative connexions of *Dorcadion s. strictospecies* from Chu Valley and allied territories (1-62 - Taxa localities)

from the south slope of the Dolon Pass, from about 2500 m down to about Naryn city at 2200 m, where I observed a lot of beetles in the beginning of June 1993 crawling around big plants of *Achnatherum* sp. Two series from the At-Bashi Valley (3 males, 5.1889, K. Bogdanovich leg. and 3 males, 16.6.1959, Zaslavsky leg.) and a series from « Kelte-Biuk »(?) (5.1889, K. Bogdanovich leg.) are preserved in the Saint-Petersburg Zoological Institute. According to N. N. Plavilstshikov (1958) the area of *D. tibiale* is much larger. It has also been recorded from West China (south slope of the Khan-Tengri Mountains system and upper level of the river Ak-Su).

Derivatio nominis. - I am glad to dedicate this species to my friend S. Toropov, who has collected Central Asia insects for many years and specially supported my Kirgizian expedition in 1997.

Fig. 35. Chu river and allied river vallies of Kirgizia and Kazakhstan.

- * 1 - type locality of *D. globithorax*.
- ○ 2 - type and another localities of *D. kastekus*.
- ○ 3 - type and another localities of *D. grande*.
- ★ 4 - type locality of *D. alexandris*.
- ○ 5 - type and another localities of *Dorcadion optatum optatum* .
- ◆ 6 - type locality of *D. optatum kadyrbekovi* ssp. n.
- ○ 7 - type and another localities of *D. optatum matthieseni*.
- ○ 8 - type and another locality of *D. optatum toropyginae* ssp. n.
- ◆ 9 - type locality of *D. optatum terminum* ssp. n.
- ▼ ▼ 10 - type and another locality of *D. tianshanskii tianshanskii*.
- ▲ ▲ 11 - type and another localities of *D. tianshanskii radkevitchi*.
- ▶ ▶ 12 - type and another locality of *D. tianshanskii heptapotamicum* .
- ◀ ▲ 13 - type and another localities of *D. tianshanskii vallesum* ssp. n.
- ☾ 14 - type locality of *D. unidiscale*.
- ☾ ☾ 15 - type and another localities of *D. suvorovianum suvorovianum*.
- + 16 - type locality of *D. suvorovianum koramensis* ssp. n.
- ☾ ☾ 17 - type and another localities of *D. tschitscherini*.
- × 18 - type locality of *D. arietinum chilikensis*.
- ◆ ◇ 19 - type and another locality of *D. pelidnum*.
- □ 20 - type and another localities of *D. tibiale tibiale*.
- ◐ 21 - type locality of *D. tibiale toropovi* ssp. n.
- ◐ ◐ 22 - syntype localities of *D. profanifuga*.
- ☾ ☾ 23 - type and another locality of *D. kapchagaicus*.

Fig. 36. Relative connections of *Dorcadion* (s. str.) species from Chu-Valley and allied territories (1-62 - taxa localities).

1 - *D. pelidnum*; 2 - *D. tibiale toropovi* ssp. n.; 3 - *D. t. tibiale*; 4 - *D. o. optatum*; 5 - *D. o. kadyrbekovi* ssp. n.; 6 - *D. o. matthieseni*; 7 - *D. o. terminum* ssp. n.; 8 - *D. o. toropyginae* ssp. n.; 9 - *D. kastekus*; 10 - *D. tianshanskii radkevitchi*; 11 - *D. t. heptapotamicum*, stat. n.; 12 - *D. t. vallesum* ssp. n.; 13 - *D. t. tianshanskii*; 14 - *D. alexandris*; 15 - *D. grande*; 16 - *D. profanifuga*; 17 - *D. globithorax*; 18 - *D. m. mystacinum*; 19 - *D. m. pumilio*; 20 - *D. m. rufidense*; 21 - *D. pantherinum desertum*; 22 - *D. p. shamaevi*; 23 - *D. p. pantherinum*; 24 - *D. p. sabulosum*; 25 - *D. ninae*; 26 - *D. absinthium*; 27 - *D. irinae*; 28 - *D. glycyrrhizae obtusipenne*; 29 - *D. g. androsovi*; 30 - *D. g. dostojevskii*; 31 - *D. g. inderiense*; 32 - *D. g. dubianskii*; 33 - *D. g. uvarovi*; 34 - *D. g. glycyrrhizae*; 35 - *D. g. rufifrons*; 36 - *D. turgaicum*; 37 - *D. s. suvorovianum*; 38 - *D. s. koramensis* ssp. n.; 39 - *D. unidiscale*; 40 - *D. tschitscherini*; 41 - *D. kapchagaicum*; 42 - *D. suvorovi karachokensis*; 43 - *D. s. konyrolenus*; 44 - *D. s. suvorovi*; 45 - *D. s. taldykurganus*; 46 - *D. s. tekeliensis*; 47 - *D. nivosum*; 48 - *D. leopardinum*; 49 - *D. acutispinum*; 50 - *D. nikolaevi*; 51 - *D. laterale*; 52 - *D. abakumovi*; 53 - *D. tenuilineatum*; 54 - *D. alakoliense*; 55 - *D. songaricum*; 56 - *D. arietinum chilikensis*; 57 - *D. a. charynensis*; 58 - *D. a. arietinum*; 59 - *D. a. zhalanash*; 60 - *D. a. ketmeniensis*; 61 - *D. a. strandi*; 62 - *D. a. lucae*.

Conclusion

All taxa, described above, are the members of three independent lines of relative forms (Fig. 36).

The shortest one connects *D. pelidnum* (from near Bystrovka in the Chu Valley) through *D. tibiale toropovi* ssp.n. (Orto-Tokoi env. in the upper level of the river Chu) to *D. t. tibiale* (from the Dolon Pass to the Naryn and At-Bashi Valleys).

Another line goes from *D. o. optatum* (from about the Boam Narrows) in two directions: the first one to *D. o. matthieseni* (from about Kant environs through Bishkek to Kara-Balta), with short branch to *D. o. toropyginae* ssp.n. (upper level of the Ala-Archa Narrows), to *D. tianshanskii vallesum* ssp.n. (Chu valley to the north of Bishkek and south foot-hills of the Chu-Ili Mountains), then to *D. t. radkevitchi* (upper level of Chu-Ili Mountains) with two branches to *D. t. tianshanskii* (northeastern extremity of the Chu-Ili Mountains) and *D. t. heptapotamicum* (Kopa valley). Another branch goes to *D. t. radkevitchi* along the north side of the Chu Valley from *D. o. optatum* to *D. o. kadyrbekovi* ssp. n., then through *D. o. terminum* ssp.n. (near Georgievka). *D. t. radkevitchi*. is connected along Zhetyzhel Ridge with *D. kastekus* Further the line goes along Zailyskiy Alatau to *D. grande*, then to *D. profanifuga* Plavilstshikov. (described from between the river Ili and Zailyskiy Alatau) and at last to *D. globithorax* (Kapchagay env. in the Ili valley). Inside this diversity of forms a cross line connects *D. kastekus* through *D. alexandris* (along the Karakunuz Valley, Novoalexandrovka env.), with *D. optatum terminum* ssp. n. and through the Kitchi-Kemin Valley with *D. o. kadyrbekovi* ssp. n. Outside the circle of

forms described in this paper *D. t. vallesum* ssp. n. is connected with *D. mystacinum pumilio* Plavilstshikov, 1951 (lower level of the Chu valley), and *D. o. matthieseni* is connected with *D. m. mystacinum* (plains and foot-hills to the north of the eastern part of the Kirgizskiy Ridge) and then, along the Karatau Ridge with *D. mystacinum rufidense* Jakovlev, 1906. *D. m. pumilio* Plavilstshikov in direction of the Ili Valley seems to be connected through *D. ninae* Danilevsky, 1995 (Kolshengel env.) with a great number of forms of « *D. pantherinum-group* ». Taxa of « *D. pantherinum-group* » go northwards and westwards through *D. pantherinum desertum* Danilevsky, 1995 (near lake Balkhash), *D. p. pantherinum* Jakovlev, 1900 (south Betpak-Dala desert), with a north branch to *D. irinae* Danilevsky, 1997 (near the source of the Sary-Su) to *D. p. sabulosum* Danilevsky, 1995 (Kzyl-Orda env.). *D. p. sabulosum* Dan. seems to be connected through *D. glycyrrhizae obtusipenne* Motschulsky, 1860 (Kzyl-Orda env.) and *D. g. androsovi* Suvorov, 1909 (near the Aral sea), with vast « *D. glycyrrhizae-group* » reaching northwards Kustanai and Saratov environs (*D. g. dostojevskii* Semenov, *D. turgaicum* Suvorov, *D. g. uvarovi* Suvorov, *D. g. dubianskii* Jakovlev, *D. g. inderiense* Suvorov, *D. g. rufifrons* Motschulsky). Southeastwards from Kolshengel « *D. pantherinum-group* » prolongates through *D. p. shamaevi* Danilevsky, 1995 (left bank of the river Ili) to *D. absinthium* Plavilstshikov, 1937 (right bank of the river Ili).

Third line begins from *D. suvorovianum*, distributed from northwestern extremity of the Zailyskiy Alatau to its eastern extremity with *D. s. koramensis* ssp.n. southward, a short branch is represented by *D. unidiscale*. Northwards, *D. suvorovianum* is connected with *D. tschitscherini* (plains to the north of Zailyskiy Alatau), then with *D. kapchagaicum* Danilevsky, 1996 a (Kapchagai env. and Malai-Sary Mountains), then eastwards and northwards with many subspecies of *D. suvorovi* Jakovlev, 1906 of the Dzhungarsky Alatau (*D. s. karachokensis* Danilevsky, 1996b, *D. s. konyrolenus* Danilevsky, 1996b, *D. s. tekeliensis* Danilevsky, 1996b, *D. s. suvorovi*) and with *D. nivosum* Suvorov, 1913 (southeastern extremity of the Dzhungarsky Alatau) and *D. leopardinum* Plavilstshikov, 1937 (Yining) at the end. To the north, the line is prolonged from *D. suvorovi taldykurganus* Danilevsky, 1996b (near Taldy-Kurgan) and *D. acutispinum* Motschulsky, 1860 (Kopal env.) to *D. nikolaevi* Danilevsky, 1995 (river Lepsy near Andreevka), which seems to be connected with the northeastern Dzhungarian group consisting of *D. laterale* Jakovlev, 1895 (Andreevka env.), *D. abakumovi* Thomson, 1864 (Lepsinsk env.) *D. tenuilineatum* Jakovlev, 1995 (near Glinovka) and *D. alakoliense* Danilevsky, 1988 (Alakol lake). The end of this line seems to be represented by *D. songaricum* Ganglbauer, 1883 in the Tarbagatai Mountains.

On the other side, *D. suvorovianum koramensis* ssp. n. is connected through *D. arietinum chilikensis* with « *D. arietinum-group* » prolonged to the

Ketmen Mountains, the neighbouring ridges and plains (*D. a. charynensis* Danilevsky, 1996c, *D. a. arietinum*, *D. a. zhalanash* Danilevsky, 1996c, *D. a. ketmeniensis* Danilevsky, 1996c) and to the Khan-Tengri Mountains system (*D. arietinum strandi* Plavilstshikov, 1931) and may be further to Yining (*D. arietinum lucae* Pic, 1898).

I do not include in the scheme *D. iliense* Plavilstshikov, 1937, described from the north bank of the river Ili not far from Kapchagay. Only three syntypes (preserved in the Moscow Zoological Museum) are so far known. The species looks like small *D. g. rufifrons*, nearly identical to *D. g. dubianskii* Suvorov. I can not believe, that a form so close to *D. g. rufifrons* can occur so far from its area. Most probably *D. iliense* was collected somewhere in the Ural Valley.

I put on the map several question marks in the areas from where no *Dorcadion* (s. str.) are known, but any of transitional forms may occur.

In fact, the design of lines, drawn on the map is, in great extent connected with traditional expeditions or big roads. The real geographical relations between the described taxa must be much more numerous and complicated.

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