

## NEW *DORCADION* DALMAN, 1817 FROM KAZAKHSTAN

(Coleoptera, Cerambycidae)

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**Key words:** Coleoptera, Cerambycidae, *Dorcadion*, new taxa, Kazakhstan.

**Résumé.** Deux nouvelles espèces et trois nouvelles sous-espèces sont décrites: *D. nikolaevi* sp.n. de la vallée du fleuve Lepsy, *D. ninae* sp. n. de Kolshengil, *D. pantherinum sanbulosum* ssp. n. de Kzyl-Orda, *D. pantherinum desertum* ssp. n. des environs nord de Bakanas, *D. pantherinum shamaevi* sp. n. de Kapchagai. Les caractères distinctifs sont discutés.

**Abstract.** Two new species and three new subspecies are described: *D. nikolaevi* sp.n. from the valley of Lepsy river, *D. ninae* sp. n. from Kolshengel, *D. pantherinum sanbulosum* ssp. n. from Kzyl-Orda, *D. pantherinum desertum* ssp. n. from the north environs of Bakanas, *D. pantherinum shamaevi* sp. n. from Kapchagai. The distinguishing characters are discussed.

The present paper is mostly dedicated to the descriptions of the materials which were collected during my last expedition to Kazakhstan in 1994.

**Acknowledgements.** I wish to express my hearty gratitude to the science director of Darwin State Museum Mr. Igor FADEEV (Moscow), to my daughter Nina DANILEVSKAIA and to her friend Eugene GOLUBEVA, who accompanied me in the expedition and helped to find such a beautiful material. My thanks are due to Dr. G. NIKOLAEV from Alma-Ata University (Kazakhstan) for the donation of valuable specimens, to Dr. H. SCHÖNMANN from Naturhistorisches Museum Wien for providing with an opportunity to study the Cerambycidae collection, to Dr. A. LOBANOV from Zoological Institute of Russian Academy of Sciences (S. Petersburg) for the loan of the type specimen and for his continuous kind guidance in the museum of the Institute.

### *Dorcadion* (s. str.) *nikolaevi* sp. n. (Figs. 1-7)

**Description.** Male: Head black; frons and vertex with deep distinct scattered punctuation and small less distinct denser punctuation, which is very dense in the middle of the frons and on the vertex and sparse or absent on the lateral portions of the frons; covered with fine white hairs which are denser along median frons line, in shallow impression between the antennae, on genae and around the eyes (old specimens with glabrous frons); vertex with two black triangular hair blotches. Numerous strong semierect setae present on frons; labrum black; mandibles black or reddish basally; palpi dark-brown, last joints darker, often nearly black, but lightened apically. Antennae relatively robust, attaining apices elytral 1/5th, totally black or with red basal half of 1st joint, partly covered with fine dark pubescence (glabrous in old specimens), 1st joint coarsely punctuated, thick, relatively conical, with strong semierect setae; 3d - 4th joints nearly smooth dorsally; 3d joint nearly as long as 1st, combined with 2nd longer than 1st, 4th joint short, about 1.3 times shorter than 3d.

Prothorax about 1.1 times longer than the basal width, slightly wider anteriorly than posteriorly; lateral tubercles long and acute, slightly recurved up- and backwards; pronotum relatively flat, with a relatively broad medial longitudinal white stripe, wide lateral white areas and black areas in between, which are about two times wider than the white stripe; posterolateral angles of pronotum with several deep dots bearing stout setae; lateral prothoracic portions below lateral tubercles glabrous, coarsely sparsely punctate. Scutellum small, triangular with white pubescence glabrous medially.

Elytrae 1.9 - 2.1 times longer than wide; usually more narrowed posteriorly than anteriorly, or oval widest near middle, sometimes nearly parallel anteriorly; humeral and external dorsal carinae well developed with a deep furrow in between; basal portion of the humeral carina coarsely sculptured, mostly glabrous (in quite intact specimens both carinae covered with a pubescence), in large specimens dentate, in small specimens nearly smooth; elytral pubescence of black ground colour, each elytron with 4 or 5 longitudinal white stripes: marginal stripe - which covers about a half of lateral elytral margin, with irregular edge; wide humeral stripe - always complete, never interrupted, usually without black spots; more or less narrow external dorsal stripe - complete (Fig. 3) or interrupted with black (Figs 1,4), sometimes reduced to several white spots, never fused with the humeral stripe apically; internal dorsal stripe totally absent (Fig. 4) or present in the form of more or less distinct the white spots or strokes (Figs 1-3); humeral stripe from 1.2 to 2.0 times wider than the external dorsal stripe; joint sutural stripe about as wide as dorsal stripe or distinctly narrower, usually narrower than central stripe of pronotum, bordered with spots of velvety black pubescence. Strong erect setae present, but sparse and very short, so hardly visible.

Legs sparsely covered with very fine white pubescence and strong short suberect dark setae, anterior tibia with yellow hair brushes, middle tibia with brown or dark brown brushes; all femora basally red, apically black; tibiae entirely red or sometimes middle and posterior tibiae darkened apically; tarsi entirely black, or with reddish base of first joint, or with reddish bases of all joints or entirely reddish; posterior tarsi with first joint about 1.3 times shorter than 2nd and 3d joints combined; 1st and 2nd combined about equal in length to 3d and 4th combined.

Abdomen as well as ventral portions of thorax regularly covered with very fine sparse white hairs; abdominal cuticle black or sometimes reddish; last sternite broadly truncate or slightly emarginate; pygidium broadly rounded, postpygidium narrowly rounded.

Female: Mostly autochromal (Figs 6-7), from brown to pale brown colour of body pubescence, rarely androchromal (Fig. 5). Cuticle colour and puncturation as in male, though in pale specimens palpi red and frons puncturation rather variable - sometimes very coarse. Antennal and legs pubescence denser and stronger; in intact specimens white basal hair rings present on 3d - 5th antennal joints. Antennae surpassing middle of elytrae; 3d antennal joint about 1.3-1.5 times shorter than 1st; 4-th joint about 1.4 - 1.3 times shorter than 3-d. Prothorax more transverse, it is about 1.3 - 1.4 times shorter than the basal width. Elytrae regularly oval or more narrowed apically, never angulately broadened in the posterior half, about 1.5 - 1.7 times longer than broad; humeral and external dorsal carinae strongly prominent with a deep furrow in between; the marginal white stripe covers from about a third to about a half of the lateral surface; in pale specimens ground colour of lateral pubescence dark brown; humeral stripe wide, complete, with or without several dark spots; external dorsal stripe mostly complete with several velvety brown spots or interrupted by numerous brown spots, or reduced to several small white spots and nearly totally replaced with velvety brown; internal dorsal stripe absent (Fig. 5) or

present in form of mixture of white and dark brown spots (Figs 6-7); sutural stripes narrow, always accompanied with velvety dark brown spots. Last abdominal sternite truncate, last abdominal tergite rounded.

Body length in males: 12.6 - 16.0 mm, in females: 14.5 - 17.0 mm; body width in males: 4.4 mm - 5.6 mm; 5.8 - 7.2 mm.

**Materials.** Holotype (Fig. 1): ♂, Kazakhstan, Kettybai Mts, right side of Lepsy river, 600m, 11.V.1994, M. Danilevsky leg.; 78 paratypes: 62 ♂♂ and 12 ♀♀, same locality, 600-700m, 10-11.V.1994, M. Danilevsky leg.; 3 ♂♂ with label: "Kazakhstan, Lepsy river, right side, 19.V.1981, G. Nikolaev leg.; 1 ♂ with label: "Kazakhstan, Lepsy river, 22.IV.1991, M. Danilevsky leg." (all type specimens are deposited in author's collection)

**Discussion.** *Dorcadion nikolaevi* sp. n. does not seem to be very close to any other *Dorcadion*. Both morphologically and geographically it is intermediate between *D. acutispinum* Motschulsky, 1860, p. 310 (described from Kopal valley in Dzhungarsky Alatau) and *D. songaricum* Ganglbauer, 1883, p.477 (described from "Ala Tau, Songarei"). I can not recognize the type locality of *D. songaricum*, but I have seen the type series of this species in the Naturhistorisches Museum Wien (three males and a female). The specimens of the type series are quite conspecific to my specimens (more than hundred) from Northern Tarbagatai (Chilikty valley); so I believe that *D. songaricum* was described from the Tarbagatai mountains and are surely absent in Dzhungarsky Alatau.

Males of *D. acutispinum* are in general wider; with black spots on frons between antennal insertions; first antennal joint nearly cylindrical, always totally red; white stripes of prothorax are very narrow, so black areas are about 6 times wider than the central black stripe; tibiae and femorae always totally red, tarsi black and distinctly narrower. Females with angulately broadened elytrae behind middle; white stripes of prothorax are also rather narrow; first antennal joint, all femora and tarsi are totally red; tarsi, especially hind tarsi, distinctly longer.

*D. songaricum* is in general longer, males: 14.3 - 18.0 mm, females: 15.0 - 19.5 mm. Head often reddish; antennae and legs including tarsi sometimes totally red; usually distal antennal joints, tarsi and apices of femorae darkened; often antennae with only a basal half of first antennal joint red; first joint strongly conical. Prothorax with very short lateral tubercles, though acute; white stripes of pronotum narrow. Elytrae with the internal dorsal white stripes always absent, without any traces.

Another small *Dorcadion* from region - *D. tschitscherini* Jakovlev, 1900 p. 150, 153 (described from Malovodnoie - left bank of Ili river) can be easily distinguished by strongly raised humeral carinae, distinctly visible strong erect setae on the elytrae and dense antennal pubescence.

The new species is dedicated to Dr. Georgiy NIKOLAEV (Alma-Ata, Kazakhstan), who collected the first 3 specimens in 1981.

#### *Dorcadion* (s. str.) *ninae* sp. n. (Figs. 8-16)

**Description.** Male: Head black; frons with deep distinct scattered puncturation which becomes rare on the vertex and small less distinct denser puncturation, which is very dense in the middle of the frons and on the vertex and sparse or absent on the lateral portions of the frons; frons covered with dense white hairs which are usually absent on the lateral portions, with (or without) two black stripes in a shallow impression between antennae; the white hairs also cover the genae, the lateral portions of the vertex, and narrow the vertex median line; vertex with two black wide longitudinal hair blotches. Numerous strong semierect setae present on the frons; labrum black;

mandibles black or reddish basally; palpi brown or red or brown with black apical joints. Antennae nearly attaining elytral apices, black with red basal 3/4 or 2/3 of 1st joint; covered with fine black pubescence, except 3 basal joints; two basal joints and the basal part of the 3d bear scattered white setae; 1st joint coarsely punctate, thick, relatively cylindrical, with strong semierect setae; 1st joint nearly as long as 2nd and 3d combined, 4th joint about 1.2 times shorter than 3d.

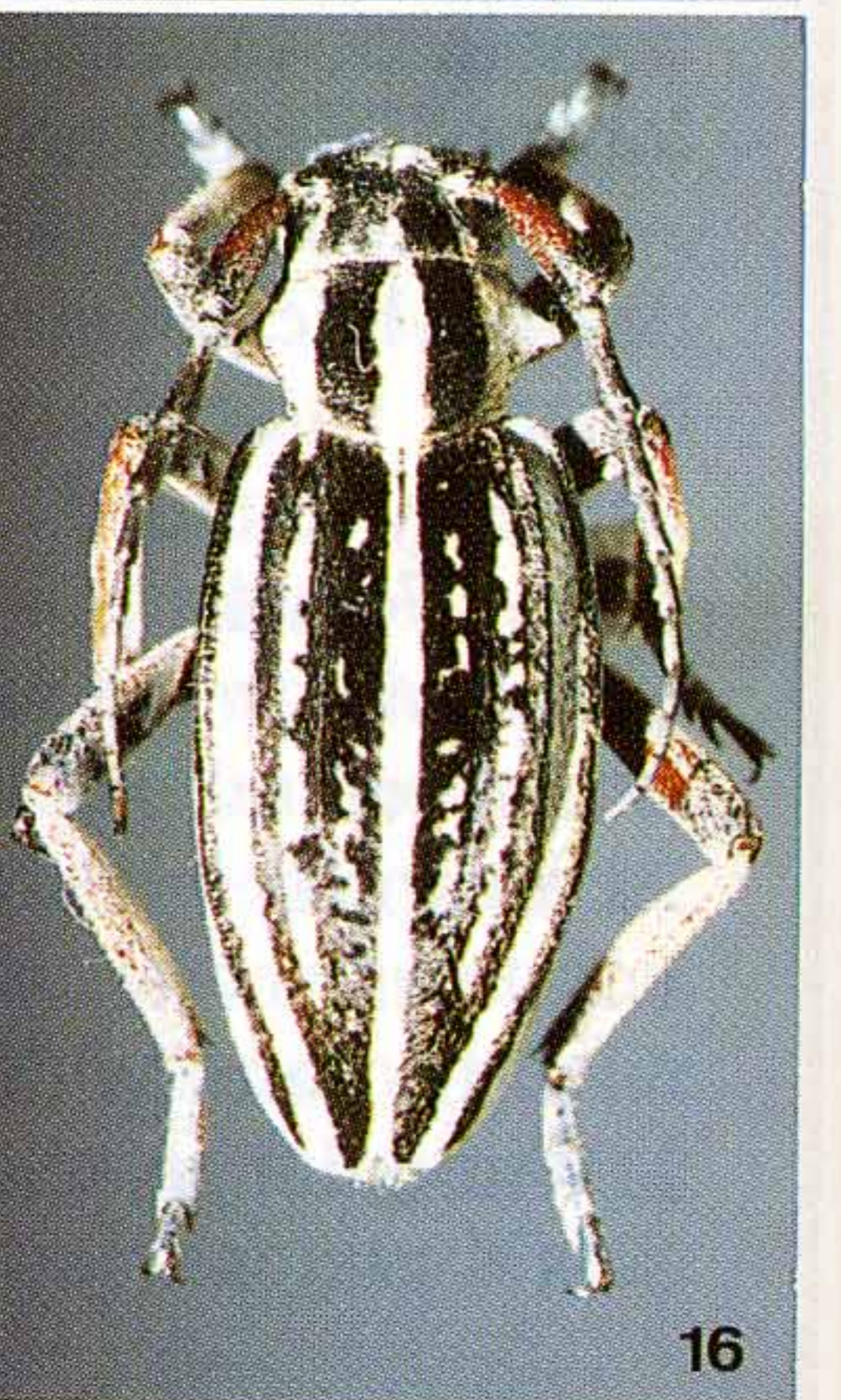
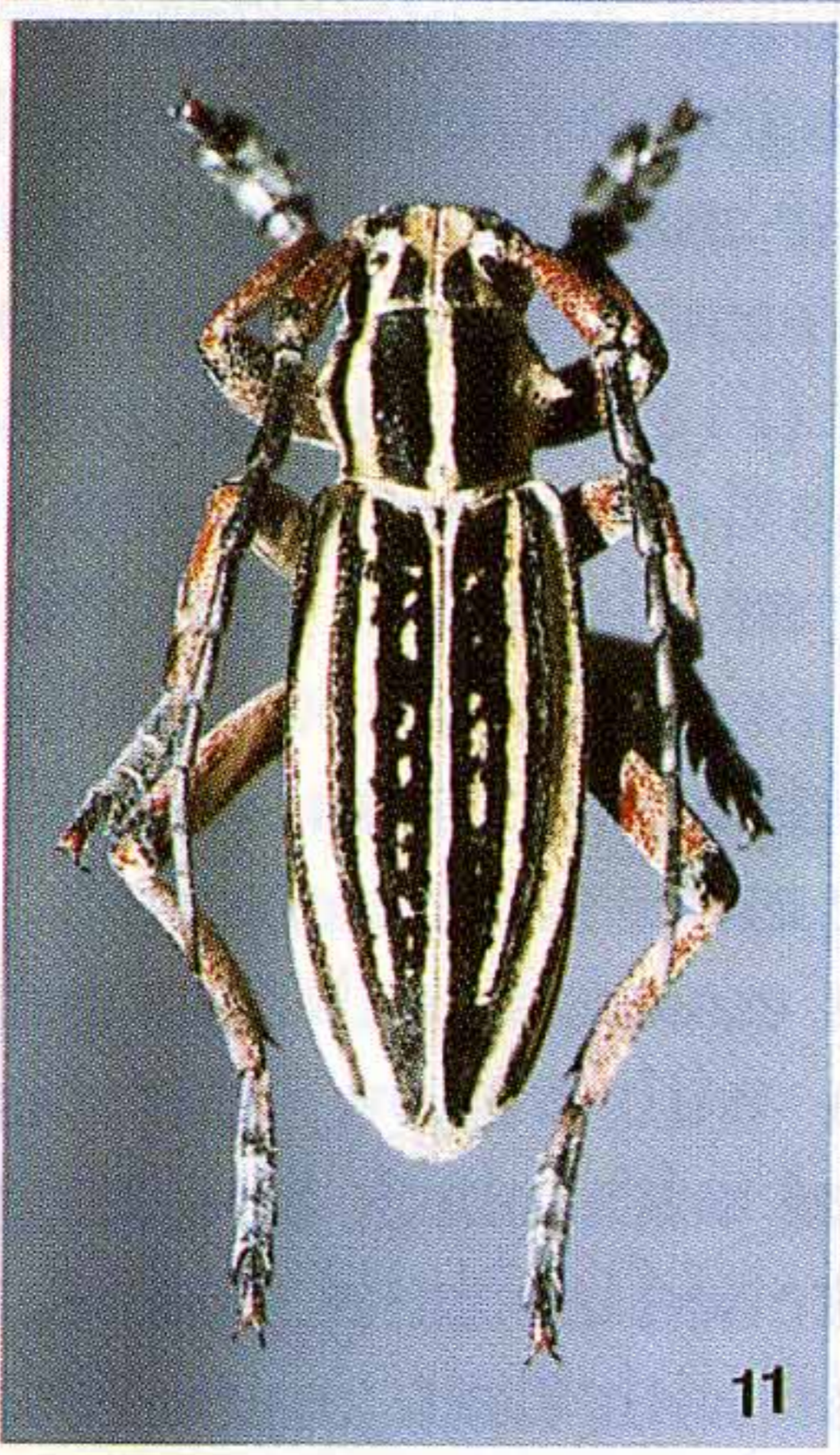
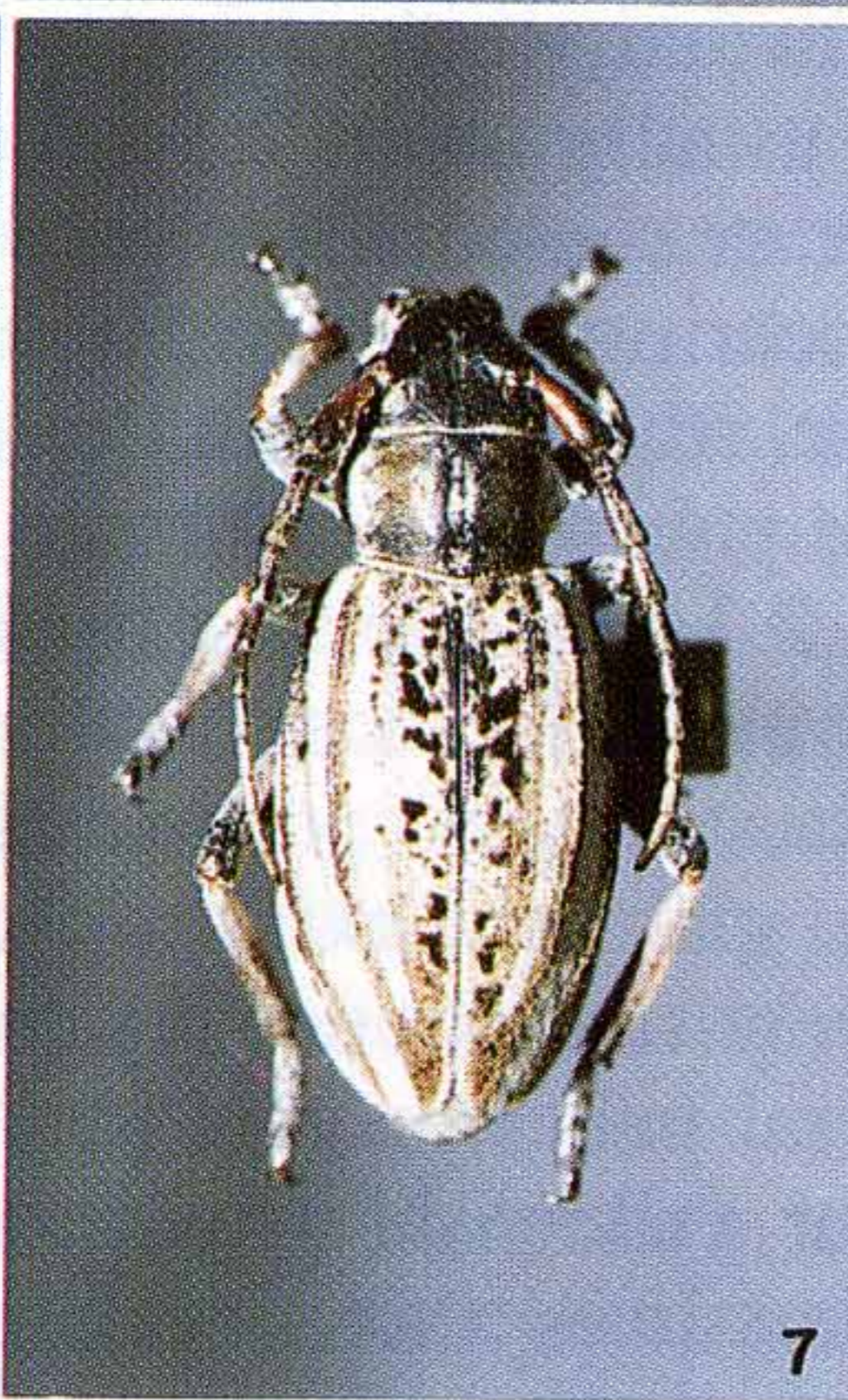
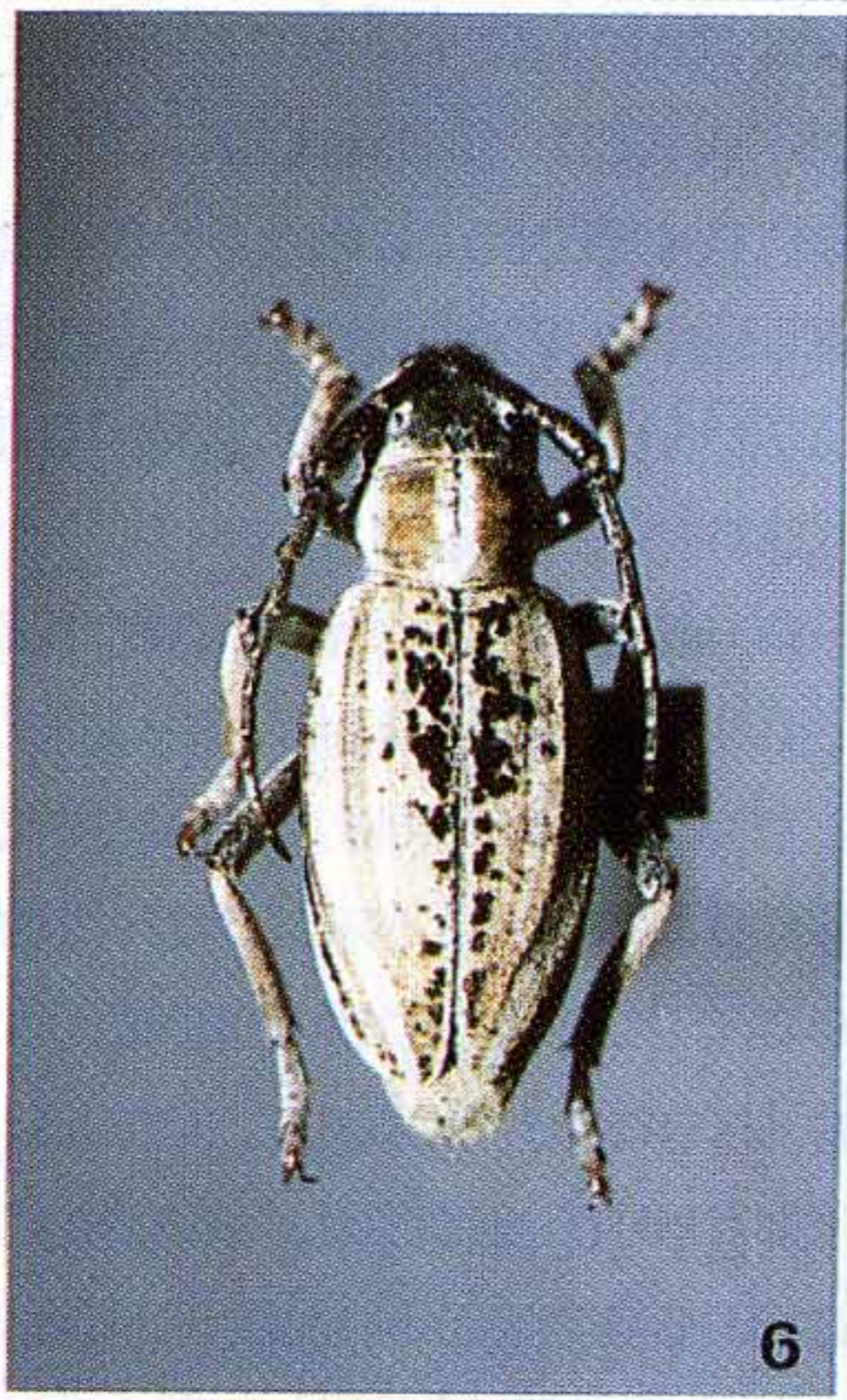
Prothorax transverse, about 1.1 times shorter than the basal width, slightly wider anteriorly, sometimes a little swelled posteriorly; lateral tubercles long and acute, slightly recurved up- and backwards; pronotum relatively flat, with a relatively broad longitudinal medial white stripe, wide lateral white areas and black areas in between, which are usually about 2.5 times wider than the central white stripe, or about equal in width, or sometimes narrower; posterolateral angles of pronotum with several deep dots bearing stout setae; lateral prothoracic portions below lateral tubercles with sparse white hairs and coarse sparse punctuation. Scutellum small, triangular with white pubescence, glabrous medially.

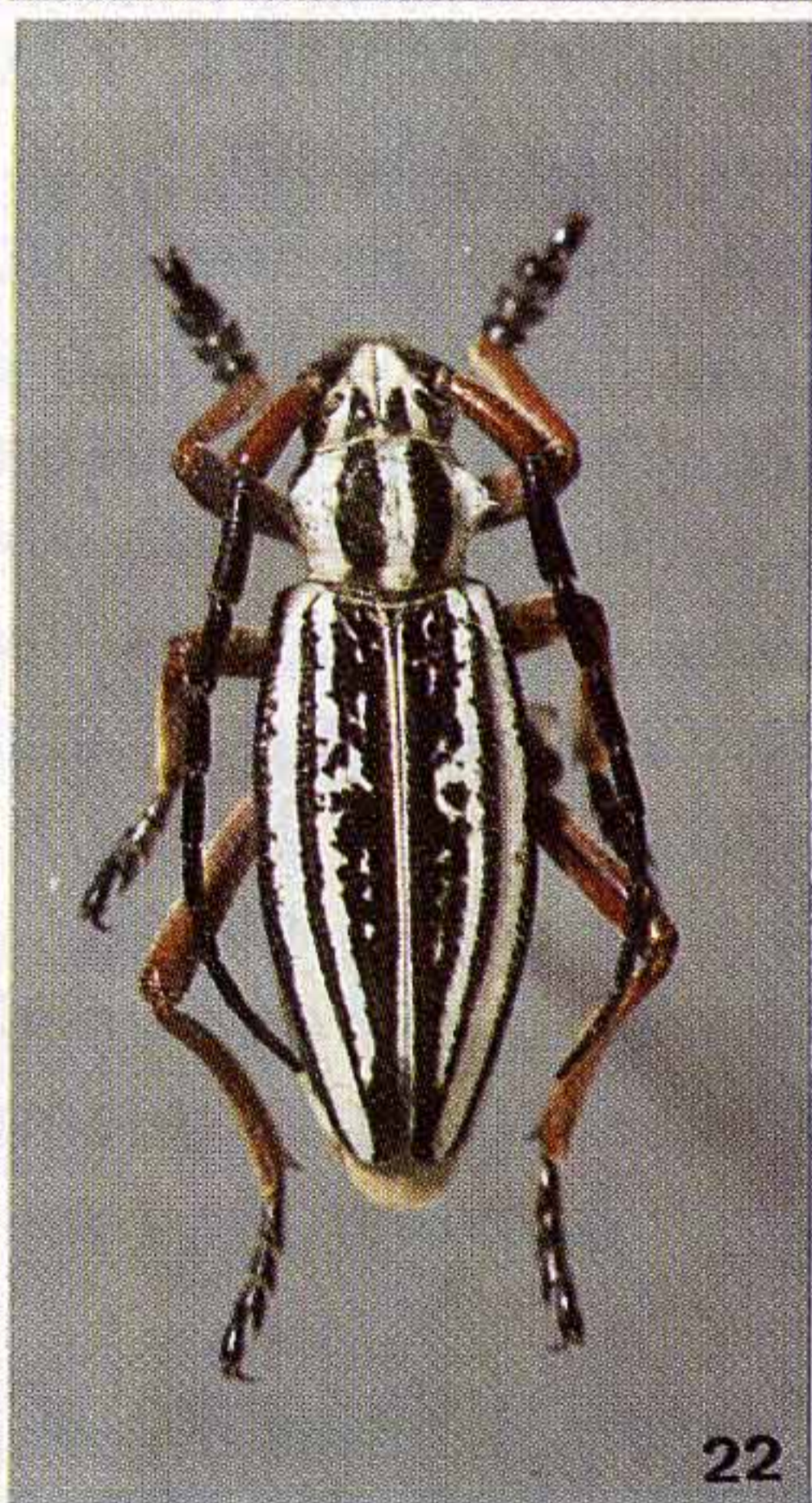
Elytrae 2.1 - 2.3 times longer than wide; usually more narrowed posteriorly than anteriorly, or oval, widest near the middle, sometimes nearly parallel anteriorly; humeral carinae distinct, basal portion of the humeral carina coarsely sculptured, granulate or dentate, glabrous; external dorsal carina more or less distinct, coarsely sculptured or relatively smooth, usually covered with pubescence (in old specimens often glabrous); elytral pubescence of black ground colour, each elytron with 4 or 5 longitudinal white or yellowish stripes: marginal stripe, which covers from 1/3 to about a half or sometimes more of lateral elytral margin, with irregular edge; humeral stripe - always complete, never interrupted, usually with linear margins, rarely slightly corroded by black spots; wide or narrow external dorsal stripe - complete, with linear margins (Figs 8-10), or strongly corroded (rarely interrupted) by black (Fig. 12), never fused with humeral stripe apically; internal dorsal stripe rarely totally absent (Fig. 13), mostly present in form of more or less distinct white spots or strokes (Figs 8-12); humeral stripe from 1.2 to 2.0 times wider than external dorsal stripe, rarely nearly equal in width; joint sutural stripe from about equal in width to the central pronotal stripe to about 2 times narrower, usually narrower than the central stripe of the pronotum; as wide, or narrower, or wider than the external dorsal stripe. Strong erect setae indistinct.

Legs densely covered with fine white pubescence and strong suberect black setae, anterior tibia with yellow hair brushes, middle tibia with brown or black brushes; femorae red with black apices; all tibiae entirely red or often middle and posterior tibiae darkened apically; tarsi entirely black, or with reddish base of first joints; posterior tarsi with first joint about 1.2 times shorter than 2nd and 3d joints combined; 1st and 2nd combined about 1.4 times longer than 3d and 4th combined; lobes of 3d joint of hind tarsi moderately elongated.

Abdomen as well as ventral portions of thorax regularly covered with fine dense white pubescence; abdominal cuticle black or sometimes reddish; last sternite broadly truncate or slightly emarginate; pygidium broadly rounded, postpygidium narrowly rounded.

Female: Only androchromal, of about the same colour and pubescence patterns as in the males; but fine white pubescence present on the four basal antennal joints; central pronotal stripe always wide; antennae reaching apical third of elytrae; 3d antennal joint combined with 2nd slightly shorter than 1st; 4-th joint about 1.2 - 1.3 times shorter than 3d. Prothorax more transverse, it is about 1.2 times shorter than the basal width. Elytrae regularly oval or more narrowed apically, about 1.8 - 1.9 times longer than broad.





Humeral carinae strongly prominent, external dorsal carinae mostly distinct, both with more or less coarse sculpture, a furrow in between distinct; marginal white stripe covers more than a half of the lateral surface; humeral stripe wide, complete, with linear margins or with several black marginal spots; external dorsal stripe mostly complete (Figs 14-15) with or without black spots or interrupted by numerous black spots (Fig. 16), very rarely reduced to a line of white spots and strokes; internal dorsal stripe always present in the form of white or pale spots and strokes; the sutural stripe always narrower than the central pronotal stripe, narrower or sometimes wider than the external dorsal stripe. Last abdominal sternite and last abdominal tergite narrowly truncate or rounded apically.

Body length in males: 16.4 - 20.0 mm, in females: 17.6 - 22.5 mm; body width in males: 5.3 mm - 6.3 mm, in females: 6.7 - 8.5 mm.

**Materials.** Holotype (Fig. 8): ♂, Kazakhstan, 10 km to South from Kolshengel, 350 m, 22.IV.1994, M. Danilevsky leg.; 104 paratypes: 71 ♂♂ and 33 ♀♀, same locality and date (all type specimens are deposited in the author's collection).

**Discussion.** *Dorcadion ninae* sp. n. is very close to *D. pantherinum* Jakovlev, 1900 (p. 147), but in *D. pantherinum* the thoracic lateral spines are distinctly longer; humeral and dorsal carinae much more coarsely sculptured, toothed; elytrae more narrowed anteriorly; lobes of 3-d joint of hind tarsi very long. In *D. ninae* sp. n. the external dorsal white elytral stripe is well developed, mostly wide and complete, rarely narrow or even interrupted; in typical *D. pantherinum* this stripe is always interrupted and mostly reduced to several white spots; first antennal joint and all legs totally red (only tarsi blackish) while in *D. pantherinum* the first antennal joints and all femorae with black apices.

**Bionomy.** *Dorcadion ninae* sp. n. inhabits sagebrush (*armoise* in french) plain in transitional zone between sandy and clay desert. They are very numerous at the end of april, while *D. pantherinum* prefers hilly drift sands.

#### *Dorcadion pantherinum pantherinum* Jakovlev, 1900 (Figs 17-21)

According both to the first description and to the type label, the type locality is situated between Kazalinsk and Karkaralinsk (see the map). This point must be somewhere in central Betpak-Dala desert as the unique type specimen (male in Zoological Institute of the Russian Academy of Sciences, Fig.17) fits well to my female from Chulak-Espe in Betpak-Dala (Fig. 20).

The nominative subspecies is characterized by a strongly interrupted external elytral white stripe, a toothed elytral humeral and dorsal carina, red first antennal joints, all tibiae and femorae, reddish second antennal joint and tarsi, strongly elongated lobes of 3d joints of hind tarsi, very long thoracic spines; abdomen glabrous (frayed?), in type specimen - red.

*D. p. pantherinum* (Figs.18-19), which I collected in Ak-Suiok (near the west part of Balkhash lake) are rather close to the type specimen although apices of first antennal joint and femora can be darkened. The unique female (Fig. 21) found by me in the sandy desert to the north from Kolshengel also belongs to the nominative form.

#### *Dorcadion pantherinum sabulosum* ssp. n. (Figs. 22-23)

**Description.** Similar to the nominative subspecies but external dorsal stripe relatively wide and often complete, lateral thoracic spines shorter. Elytral carinae also coarsely sculptured, first antennal joints, tibiae and femorae totally red; tarsi and second antennal joints black; lobes of 3-d joints of hind tarsi very long. Abdomen medially with sparse pubescence.

Body length in male: 21.0 mm, in females: 21.5 - 23.8 mm; body width in males: 6.7 mm, in females: 8.1 - 8.8 mm.

**Materials.** Holotype (Fig. 22): ♂, Kazakhstan, 37 km to the East from Kzyl-Orda, 1.V.1993, M. Danilevsky leg.; 6 paratypes, ♀ ♀ with same data (all type specimens are deposited in the author's collection).

It is the most western population of the species. The beetles inhabit sandy desert with *Haloxylon* and *Calligonum* shrubs and seem to be not numerous.

*Dorcadion pantherinum shamaevi* ssp. n. (Fig. 24-29)

**Description.** Similar to the nominative subspecies but the first antennal joints and femorae with more or less black apices, tarsi black or reddish; the external elytral dorsal white stripe often wide and complete; internal dorsal stripe poorly developed, sometimes totally absent (Fig. 29); sutural stripe often yellow; elytral carinae sometimes without coarse sculpture; abdomen with very dense pubescence; lateral thoracic spines shorter; lobes of 3d joints of hind tarsi very long.

Body length in males: 18.8 - 22.8 mm, in females: 20.3 - 27.4 mm; body width in males: 5.8 - 7.3 mm, in females: 7.5 - 9.7 mm.

**Materials.** Holotype (Fig. 24): ♂, Kazakhstan, left side of Ili river to the West from Kapchagai, 24.IV.1994, M. Danilevsky leg. (author's collection); 26 paratypes: 4 ♂♂ and 4 ♀♀ with same data (author's collection), 13 ♂♂ and 5 ♀♀ same locality, 4.V.1986, 19-23.IV.1991, A. Shamaev leg. (author's collection and collection of Andrei Shamaev, Moscow).

The beetles inhabit hilly sands not far from the city.

*Dorcadion pantherinum desertum* ssp. n. (Figs. 30-32)

**Description.** Very similar to the nominative subspecies, but smaller, dorsal elytral white stripes mostly reduced to small spots; sometimes humeral stripe rather narrow or interrupted; elytral carinae toothed basally; thoracic spines and lobes of 3d joint of hind tarsi shorter. First antennal joint, tibiae and femora red; tarsi black; abdomen medially sparsely pubescent.

Body length in males: 17.0 - 19.3 mm, in females: 19.2 - 23.1 mm; body width in males: 5.9 - 6.5 mm, in females: 7.5 - 9.2 mm.

**Materials.** Holotype: ♂, Kazakhstan, 120 km to North-East from Bakanas (to the South from west part of Balkhash lake), 12.V.1984, M. Danilevsky leg.; 44 paratypes, 30 ♂♂ and 11 ♀♀ with same data, 1 ♂ and 2 ♀♀, V.1983, same locality (all type specimens are deposited in the author's collection).

The beetles were very numerous in sandy Barkhan desert with *Haloxylon* and *Calligonum* shrubs.

## References

- GANGLBAUER L., 1883. Cerambycidae. Bestimmungs-Tabellen der europäischen Coleopteren. VIII.- *Verh. zool. - bot. Ges. Wien*: 437-586.
- MOTSCHULSKY V., 1860. Coléoptères rapportés de la Songarie par M. Sémenov et décrit par V. de Motschulsky.- *Bull. Acad. Imp. Sc. de St.- Pétersbourg*, 1: 301-314.
- JAKOVLEV B.E., 1900. Quelques nouvelles espèces du sous-genre *Compsodorcadion* Ganglb.- *Horae Soc. ent. Ross.*, 33: 147-155.



**Figures:**

1-7. *Dorcadion nikolaevi* sp. n.: 1 (holotype)-4, males; 5-7, females. 8-16. *Dorcadion ninae* sp. n.: 8 (holotype)-13, males; 14-16, females. 17-21. *Dorcadion pantherinum pantherinum* Jak.: 17, male, holotype; 18-19, males from Ak-Suiok; 20, female from Chulak-Espe; 21, female, north of Kolshengel. 22-23. *Dorcadion pantherinum sabulosum* ssp. n.: 22, male, holotype; 23, female. 24-29. *Dorcadion pantherinum shamaevi* ssp. n.: 24, male, holotype; 25-26, females (Danilevsky leg.); 27-29, males (Shamaev leg.). 30-32. *Dorcadion pantherinum desertum* ssp. n.: 30 (holotype) - 31, males; 32, female.



33. **Map of Kazakhstan:** 1 - type locality of *D. nikolaevi* sp. n. (the valley of Lepsy river); 2 - type locality of *D. acutispinum* (Kopal in Northern Dzhungarsky Alatau Mts.); 3 - possible type locality of *D. songaricum* (valley to the North from Tarbagatai Mts); 4 - type locality of *D. tschitscherini* (Malovodnoe); 5 - type locality of *D. ninae* sp. n. (to the South from Kolshengel); 6 - possible type locality of *D. pantherinum* (central Betpak-Dala desert); 7 - locality of *D. p. pantherinum* (Chulak-Espe); 8 - locality of *D. p. pantherinum* (Ak-Suiok); 9 - locality of *D. p. pantherinum* (to the North from Kolshengel); 10 - type locality of *D. p. sabulosum* ssp. n. (to the North from Kzyl-Orda); 11 - type locality of *D. p. desertum* ssp. n. (to the North-East from Bakanas); 12 - type locality of *D. p. shamaevi* ssp. n. (Kapchagai).