

New species of the genus *Zophohelops* Reitter, 1902 (Coleoptera: Tenebrionidae) with review of the species of Northern Tien-Shan

Новые виды рода *Zophohelops* Reitter, 1902 (Coleoptera: Tenebrionidae) с обзором видов из Северного Тянь-Шаня

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Abstract. 3 new species of the genus *Zophohelops* Reitter, 1902 are described: *Z. kerzhneri* sp. n., *Z. dolini* sp. n. (Northern Tien Shan, Kirgizskiy range), *Z. schawalleri* sp. n. (Western Tien Shan, Baubashata range). Review of the representatives of the genus *Zophohelops* of Northern Tien Shan is provided including redescription of *Z. cylindronotoides* (Reitter, 1902) and *Z. spiridon* Reitter, 1922, illustrations of each species and the key to determine them.

Резюме. В работе описаны 3 новых вида рода *Zophohelops* Reitter, 1902: *Z. kerzhneri* sp. n., *Z. dolini* sp. n. (Северный Тянь-Шань, Киргизский хребет), *Z. schawalleri* sp. n. (Западный Тянь-Шань, хр. Баубаш-Ата). Дан обзор северотяньшанских видов с переописанием *Z. cylindronotoides* (Reitter, 1902) и *Z. spiridon* Reitter, 1922, рисунками каждого вида и определительной таблицей.

Introduction

26 species of the genus *Zophohelops* Reitter, 1902 is known at present time [Nabozhenko, Löbl, 2008]. Species *Helops diabolinus* Brancsik, 1899 (now *Zophohelops*), described from Turkmenistan (Ashkhabad), belongs to some other genus (possibly to either of the genera *Nalassus* Mulsant, 1854, *Reitterohelops* Skopin, 1960 or *Eustenomacidius* Nabozhenko, 2006), since representatives of *Helops* are not found in Southern Turkmenistan.

Zophohelops was described by Reitter [1902] as a subgenus of the genus *Helops* Fabricius, 1775. Previously he included in the genus *Helops* 4 species from Western and Northern Tien Shan. Later Reitter [1922] raised the rank of *Zophohelops* to the genus and described another 4 species from Tien Shan. Even more later Skopin [1960, 1964, 1966] described 3 species from Western Tien Shan.

Zophohelops and allied genera were revised by Medvedev [1987], who reasoned the independent taxonomic status of genera *Reitterohelops* and *Turcmenohelops* Medvedev, 1987 and described 15 species from Western Tien Shan. Later 1 species from South Western Tadzhikistan was described and 1 species from Armenia was transferred to the genus *Zophohelops* [Nabozhenko, 2001, 2004]. So, the

distribution of the genus *Zophohelops* is not restricted only to Tien Shan.

Medvedev [1987] proposed 2 centers of the generic distribution of *Zophohelops* in Tien Shan. The first center is in Western Tien Shan (more than 20 species), the second – in Northern Tien Shan (2 species).

In this paper 2 new species are described from Kirgizskiy range, the fauna of which now includes 4 species of *Zophohelops* (fig. 15). The species *Z. spiridon* Reitter, 1922 and *Z. cylindronotoides* (Reitter, 1902) are redescribed because their existing descriptions are limited only by the works of Reitter [1902, 1922].

Materials

The study is based on the examination of the material from the following institutes and museums: Zoological Institute, Russian Academy of Sciences (ZIN, Saint-Petersburg, Russia), Staatliches Museum für Naturkunde Stuttgart (SMN, Stuttgart, Germany), author's collection (CN).

Zophohelops kerzhneri Nabozhenko, sp. n.
(Fig. 3, 6)

Description of female. Body black, with greasy lustre, dorsally hairless (excluding head), ventrally pubescent. Anterior margin of clypeus straight. Head widest at level of eyes. Eyes weakly convex, widely spaced. Ratio of width of head at level of eyes to distance between eyes 1.36. Genae weakly rounded. Outer margin of head at junction of gena and clypeus without emargination. Head with weak, but distinct transverse depression along frontal suture. Puncturation of head irregular: on frons dense and coarse, punctures large, round (puncture diameter 1.5–2 times exceeding distance between punctures); sinciput without puncturation. Surface of head covered with recumbent golden hairs. Ventral side of head pubescent. Ocular sulcus not pronounced, temples ventrally only with weakly visible small depressions near lower margins of eyes. Antennae short, reaching base of pronotum. 11th segment of antennae obtuse and straightly truncated on apex, 1.3 times as long as 10th segment.

Pronotum transverse (1.3 times as wide as long), widest in the middle. Outer margins strongly regularly rounded, anterior margin

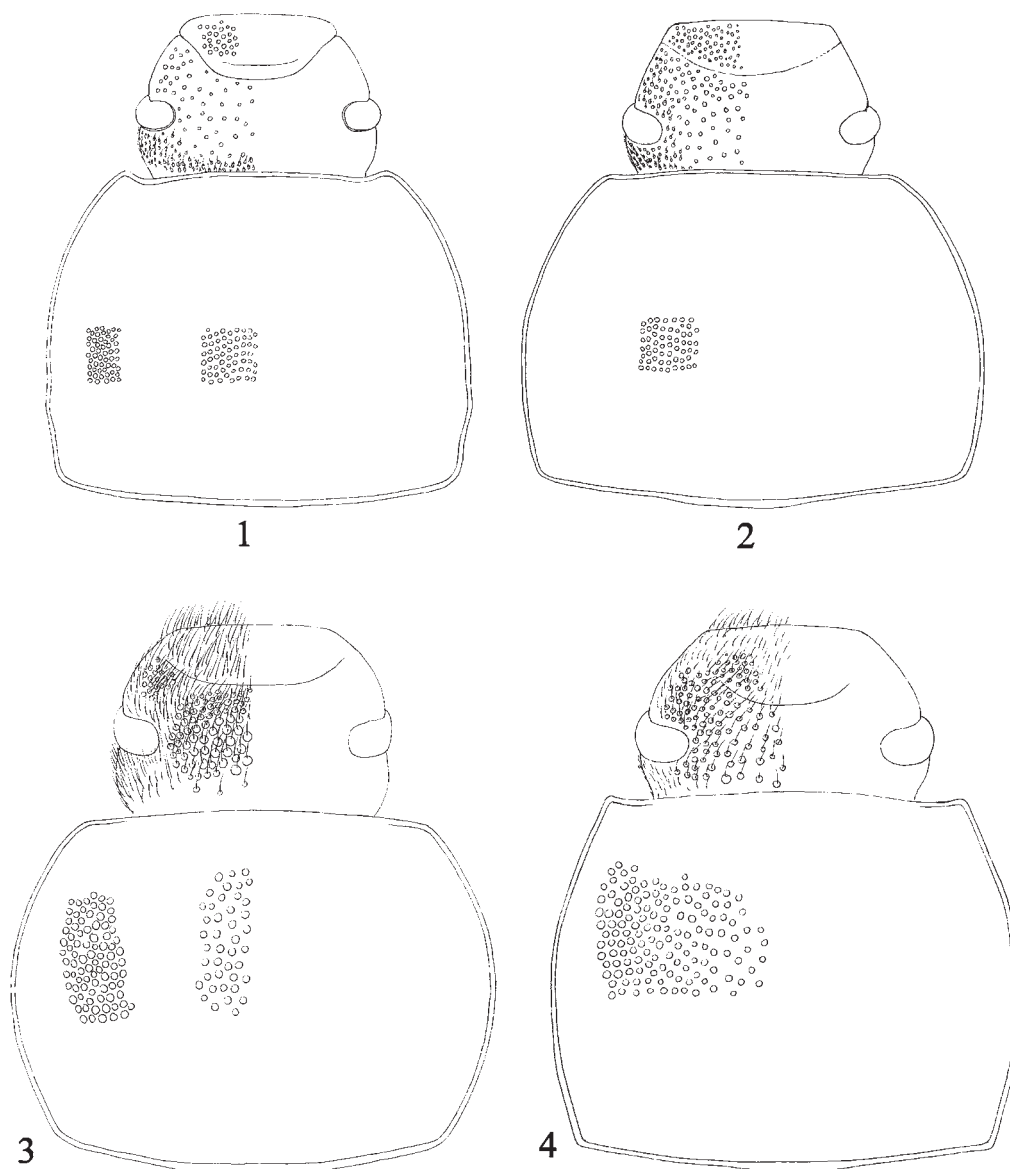


Fig. 1–4. *Zophohelops*, females, pronotum and head.

1 – *Z. spiridon*; 2 – *Z. cylindronotoides*; 3 – *Z. kerzhneri* sp. n.; 4 – *Z. dolini* sp. n.

Рис. 1–4. Переднеспинка и голова самок *Zophohelops*.

1 – *Z. spiridon*; 2 – *Z. cylindronotoides*; 3 – *Z. kerzhneri* sp. n.; 4 – *Z. dolini* sp. n.

straight, base slightly rounded. Outer margins and base distinctly edged, anterior margin without edging in middle. Anterior and posterior angles obtuse, widened on the apex. Disc of pronotum regularly convex, only with elongate depression near middle of each outer margin. Puncturation of pronotum irregular with round punctures: before middle moderately coarse, not dense, distance between punctures 3–4 times exceeding puncture diameter. Other surface of pronotum with denser puncturation (puncture diameter 1.5–2 times exceeding distance between punctures). Propleura with short worm-shaped confused rugae, covered with pale hairs, directed to outer margin of pronotum. Outer margin of propleura not flattened. Prothorax densely pubescent.

Elytra elongated (1.3 times as long as wide), widest in the middle, its outer margin straight at the basal half and rounded to the apex. Outer margin of epipleura (lateral margin of elytra) not visible in dorsal view. Elytra 1.2 times as wide as pronotum

and 2.4 times as long as pronotum. Punctures in striae on elytra elongated, at base and sides round, not merged into entire furrows. Intervals flattened, moderately coarsely punctured, in transverse section of each interval 3–4 punctures. Apex of elytra covered with short pale hairs. Epipleura depressed, with transverse rugae, with punctures and longitudinal rugae in the base, covered with very short recumbent hairs.

Metathorax coarse and moderately densely punctured in the middle (diameter of punctures approximately equal to distance between them).

Abdomen densely pubescent, 1–3rd abdominal sternites coarse and moderately densely punctured, with longitudinal rugae, punctures weakly rasp-shaped, 4–5th sternites without rugae, with more fine and dense puncturation (puncture diameter 1.5–2 times exceeding distance between punctures). Anal sternite with fine edging, apex not edged.

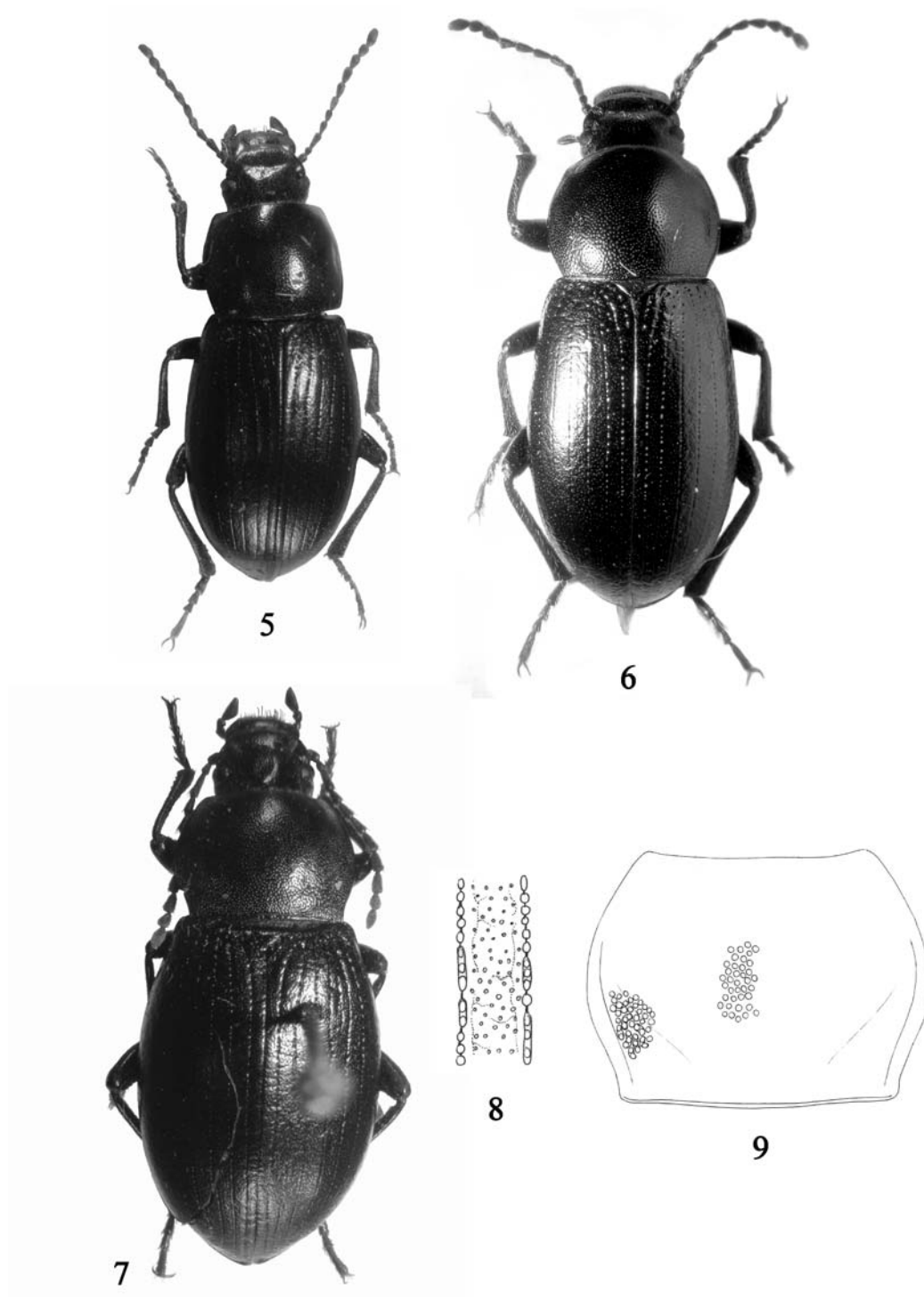


Fig. 5–9. *Zophohelops*, females, general view, details of structure.
 5–7 – general view; 7–9 – *Z. schawalleri* sp. n.; 5 – *Z. dolini* sp. n.; 6 – *Z. kerzhneri* sp. n.; 7 – *Z. schawalleri* sp. n.; 8 – interval of elytra; 9 – pronotum.

Рис. 5–9. *Zophohelops*, самки, общий вид, детали строения.
 5–7 – общий вид; 7–9 – *Z. schawalleri* sp. n.; 5 – *Z. dolini* sp. n.; 6 – *Z. kerzhneri* sp. n.; 7 – *Z. schawalleri* sp. n.; 8 – междурядье надкрылий; 9 – переднеспинка.

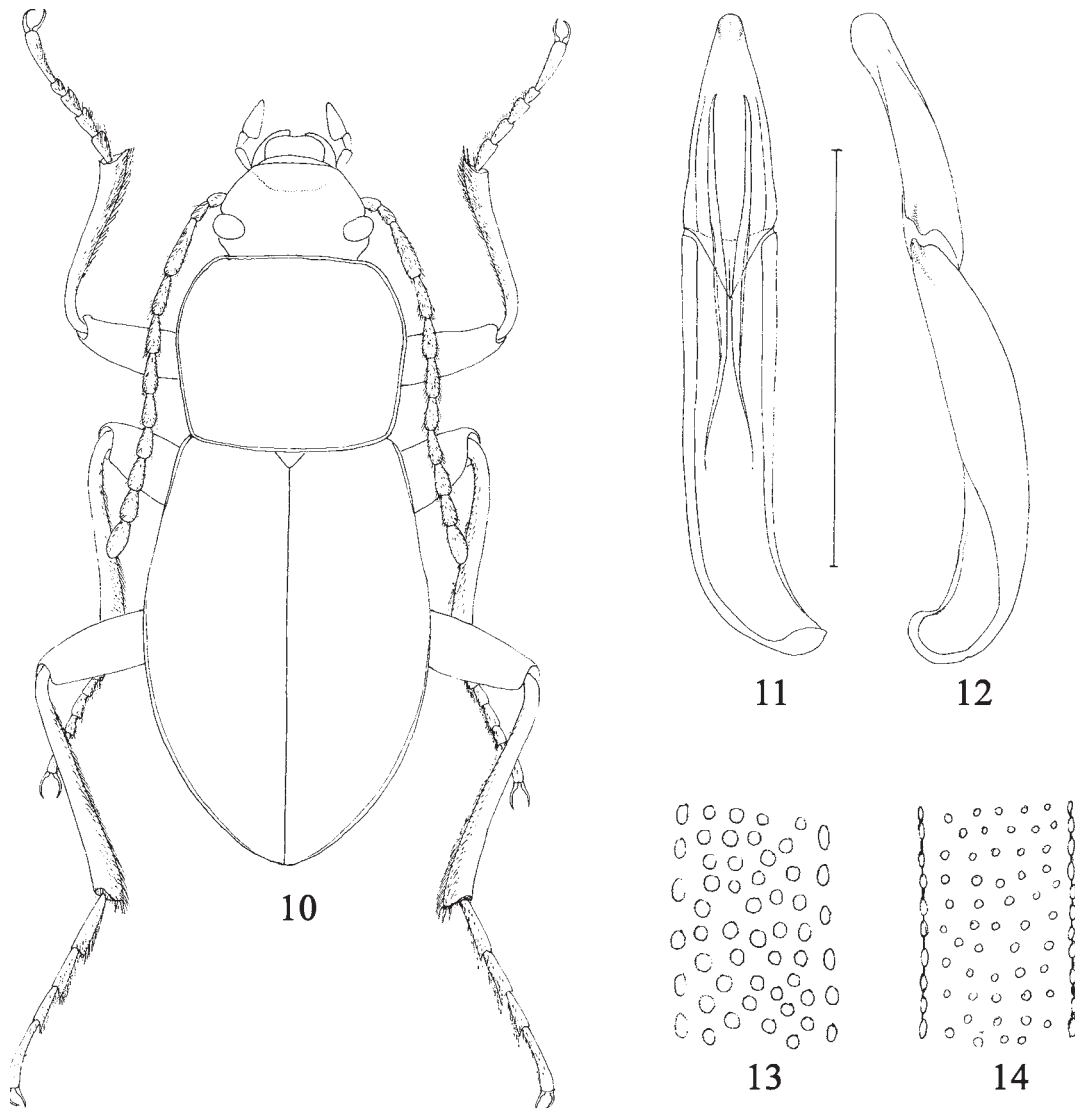


Fig. 10–14. *Zophohelops*, detail of structure.

10–13 – *Z. cylindronotoides*; 10 – general view, male; 11 – aedeagus, ventral view; 12 – aedeagus, lateral view; 13 – interval of elytra; 14 – *Zophohelops spiridon*, interval of elytra. Scale – 1 mm.

Рис. 10–14. *Zophohelops*, детали строения.

10–13 – *Z. cylindronotoides*; 10 – самец, общий вид; 11 – эдегус, вид с вентральной стороны; 12 – эдегус, вид сбоку; 13 – междурядье надкрылья; 14 – междурядье надкрылья *Zophohelops spiridon*. Масштабная линейка – 1 мм.

Tibiae straight, femorae and tibiae densely covered with golden hairs.

Length of body – 12.2 mm, width – 4.5 mm.

Type material. Holotype, ♀, with label: “Kyrgyzstan, Kyrgyzsky Rg. Mt., 15 km S Sosnovka, 1800 m., 29–30.06.2001, Dolin & Andreeva leg.” [SMN].

Etymology. The species named in honour of the outstanding entomologist, Prof. Izyaslav Moiseevich Kerzhner.

Diagnosis. New species is closely related to *Z. dolini* sp. n. Differences are in the key.

Zophohelops dolini Nabozhenko, sp. n.

(Fig. 4–5)

Description of female. Body black, shining, legs dark-

brown, pronotum more shining than elytra. Head widest at level of eyes. Eyes weakly convex. Ratio of width of head at level of eyes to distance between eyes 1.4. Surface of head covered with short recumbent yellow hairs. Genae weakly rounded. Outer margin of head at junction of gena and clypeus, without emargination. Puncturation of head not coarse, sparse, punctures round. Distance between punctures 2–4 times puncture diameter exceeding, on the side of front diameter of punctures approximately equal to distance between them. Head with deep transverse depression along frontal suture. Ventral side of head pubescent with short subrecumbent hairs. Antennae short, only with one apical segments projecting beyond base of pronotum.

Pronotum weakly transverse (1.2–1.24 times as wide as long), widest in the middle, 1.54 times as wide as head. Outer margins weakly regularly rounded. Anterior and posterior angles distinct on the apex, weakly obtuse-angled. Outer margins and base distinctly edged, anterior margin without edging in middle.



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Fig. 15. Distribution of species of the genus *Zophohelops* in Northern Tien Shan.

Рис. 15. Распространение видов рода *Zophohelops* в Северном Тянь-Шане.

Disc of pronotum regularly convex, only with elongate depression near middle of each outer margin. Punctuation of pronotum moderately coarse, not dense (distance between punctures in the middle 1.2 times puncture diameter or diameter of punctures approximately equal to distance between them). On sides puncture diameter 1.5–2 times exceeding distance between punctures. Propleura with strongly smooth confused rugae, covered with short recumbent hairs, its outer margin not flattened.

Elytra oval, visibly convex, outer margin of epipleura (lateral margin of elytra) not visible in dorsal view. Punctures in striae round deep, merged in short rows. Intervals flattened, distinct and moderately densely punctured. Apex and partly lateral margins of elytra covered with short subrecumbent hairs.

Ventral part of body pubescent with subrecumbent yellow hairs. Abdominal sternites finely and sparsely punctured and covered with recumbent hairs. Anal sternite not edged on apex.

Tibiae straight, densely covered with recumbent yellow hairs.

Length of body – 11–12 mm, width – 4–5 mm.

Type material. Holotype, ♀, with label: “Kirgizstan, Kirgizsky G.–K. Karabalty-Schlucht, 2000 m, 1–6.06.1994” without author [SMN]; paratype, female, with label: “Kyrgyzstan, Kyrgyzski Rg. Orto-Tokoj, Kara-Kudzhur riv., 1300–1500, 17.06.1997, V. Dolin” [ZIN].

Etymology. The species named in honour of the outstanding entomologist, Prof. Vladimir Gdalich Dolin.

Diagnosis. New species is closely related to *Z. kerzhneri* sp. n. Differences are in the key.

Zophohelops cylindronotoides (Reitter, 1902)
(Fig. 2, 10–13)

Redescription of male. Body matte, black or brown. Head widest at level of eyes. Eyes weakly convex. Ratio of width of head at

level of eyes to distance between eyes 1.6. Genae weakly rounded. Outer margin of head at junction of gena and clypeus without emargination. Punctuation of head sparse, not coarse, punctures small, round. Genae and clypeus with more dense punctuation. Surface of head near eyes and temples with very short, weakly visible recumbent setae. Other surface of head hairless. Ventral side of head covered with recumbent pale hairs. Antennae long, densely pubescent, their 3 apical segments extending beyond base of pronotum. 9–11th segments dorsally rounded or oval, laterally flattened.

Pronotum very weakly transverse (1.1 times as wide as long), widest in the middle or before the middle, 1.45–1.5 times as wide as head. Outer margins weakly rounded, from widest part to base straight. Angles obtuse-angled widely rounded on apex. All margins of pronotum distinctly edged. Punctuation of pronotum moderately coarse and dense (diameter of punctures approximately equal to distance between them); On sides punctuation more dense (puncture diameter 1.5 times exceeding distance between punctures). Propleura hairless, with sharp long longitudinal rugae.

Elytra convex, oval (1.4 times as long as wide), 1.2–1.25 times as wide and 2 times as long as pronotum. Outer margin of epipleura (lateral margin of elytra) visible in dorsal view. Striae obsolete, so punctures in striae and in intervals with identical size. Punctuation of elytra coarse and dense, punctures as on pronotum, diameter of punctures approximately equal to distance between them.

Abdominal sternites hairless, only 1st and 2nd sternites with hair spot of long recumbent hairs. Legs long, tibiae straight.

Length of body – 8–9.5 mm.

Redescription of female. Body more large, robust. Outer margin of genae straight or very weakly rounded. Antennae short, only 2 their apical segments projected beyond base of pronotum.

Pronotum more transverse, than at male (1.3 times as wide as long). Elytra more wide (1.5 times as long as wide), 1.23–1.25 times as wide as pronotum. Abdominal sternites without hair spots.

Length of body – 10–11 mm.

Material (including types), references and synonymy cited in paper of Medvedev [1987].

Other studied material. Kazakhstan, Alma-Ata region, Kok-Tyube, 4.06.1977 (leg. I. Kabak), 1♀ [CN].

Zophohelops spiridon Reitter, 1922

(Fig. 1, 14)

Redescription of female. Body robust, black or dark brown, matt, legs dark brown or red brown. Head widest at level of eyes. Eyes weakly convex. Ratio of width of head at level of eyes to distance between eyes 1.5. Genae weakly rounded. Outer margin of head at junction of gena and clypeus with small distinct emargination. Puncturation of head fine and sparse (distance between punctures 3–5 times as wide as puncture diameter). Clypeus with more dense puncturation. Surface of head hairless, only near eyes and in the base of sinciput with very short and sparse setae. On ventral side head covered with recumbent pale hairs.

Pronotum massive, transverse (1.25–1.3 times as wide as long), widest behind the middle, rarely in the middle. Outer margins weakly rounded, in the base straight or very weakly emarginated. Anterior margin straight, base weakly widely rounded. Angles of pronotum obtuse-angled, widely rounded, often projected. All sides of pronotum edged. Puncturation of pronotum dense, moderately coarse (puncture diameter 1.5 times as wide as distance between punctures or approximately equal to distance between them). Propleura with long longitudinal rugae, hairless.

Elytra wide, convex. Striae on elytra good visible, puncture in striae deep, more large than punctures in intervals. Punctures in striae elongated, rarely merged in short rows. Intervals flattened, finely and moderately densely punctured. Punctures in intervals less than on pronotum.

Abdominal sternites hairless, anal sternite not edged on apex.

Tibiae straight.

Length of body – 9–11 mm.

Male unknown.

Material (including types), references and synonymy cited in paper of Medvedev [1987]. Material of ZIN studied.

Key to species of the genus *Zophohelops* of Northern Tien Shan.

1(5). Head, propleura, abdominal sternites and elytra on the apex not pubescent. Anterior margin of pronotum edged. Propleura with long longitudinal rugae.

3(4). Puncturation of intervals of elytra coarse and dense, punctures as on pronotum. Striae obsolete, punctures in striae and in intervals with identical size. Outer margin of head at junction of gena and clypeus without emargination*Z. cylindronotoides*

4(3). Puncturation of intervals of elytra more fine not coarse, finer than on pronotum. Striae well visible, punctures in striae larger than in intervals. Outer margin of head at junction of gena and clypeus with small distinct emargination.....*Z. spiridon*

5(1). Head, propleura, abdominal sternites and elytra on the apex pubescent. Anterior margin of pronotum not edged. Propleura with worm-shaped irregular rugae.

6(7). Pubescence of head, propleura and abdominal

sternites very dense, hairs long. Pronotum more transverse (1.5 as wide as long). Outer margins of pronotum visibly rounded, anterior angles widely rounded on apex, not projected.....*Z. kerzhneri* sp. n.

7(6). Pubescence of head, propleura and abdominal sternites not dense, hairs short. Pronotum less transverse (1.2–1.24 as wide as long). Outer margins of pronotum weakly rounded, anterior angles distinct, weakly projected..... *Z. dolini* sp. n.

Zophohelops schawalleri Nabozhenko, sp. n.

(Fig. 7–9)

Description of female. Body robust, black with greasy shine. Pronotum and head more shine than elytra. Head widest at level of eyes and temples. Eyes weakly convex, widely spaced. Ratio of width of head at level of eyes to distance between eyes 1.45. Genae gently, very weakly rounded. Outer margin of head at junction of gena and clypeus without emargination. Surface of head hairless, only near eyes pubescent with recumbent golden hairs. Puncturation of head moderately coarse, not dense (diameter of punctures approximately equal to distance between them), puncture round. Ventral side of head covered with reddish-brown recumbent hairs. Antennae short, their 2 apical segments extending beyond base of pronotum.

Pronotum transverse (1.36 times as wide as long), widest in the middle, 1.87 as wide as head of eyes level. Outer margins of pronotum visibly rounded, shortly emarginated in base. Anterior margin of pronotum weakly widely emarginated, base straight, only weakly widely emarginated on each lateral margin. Anterior angles of pronotum weakly obtuse-angled, posterior straight, narrowly rounded on apex. Outer and anterior margins not edged, base narrowly edged. Lateral sides of disc of pronotum widely flattened in basic half, their margins reflexed. Puncturation of pronotum coarse and dense, punctures round. Puncturation less dense in the middle of disc, punctures not bordered, puncturation on sides of disc very dense and coarse, punctures bordered and often merged in short worm-shaped rows. Prothorax pubescent, propleura with coarse longitudinal rugae, their outer margin flattened, in anterior part with short recumbent sparse hairs.

Elytra wide (1.4 as long as wide), widest at the middle, 1.34 times as wide and 2.6 times as long as pronotum. Punctures in striae deep, round in the middle and elongated on other surface of elytra, often merged in short rows. Puncturation of intervals moderately coarse and dense, puncture diameters 1.5 times as less as distance between punctures. In transverse section of each interval 3–4 punctures.

Metathorax and abdominal sternites covered with very short recumbent pale setae. Puncturation of abdominal sternites irregular. 1st sternite with coarse and dense puncturation (puncture diameter 1.5 times as wide as distance between punctures); 2–5 sternites with fine and sparse puncturation, punctures longitudinally elongated. Anal sternite completely edged on apex. Epypleura reaching to apex.

Femorae with recumbent golden hairs. Tibiae straight,

with subrecumbent dense hairs.

Length of body – 10.3 mm, width – 5 mm.

Type material. Holotype, ♀, with label: “Kirghizia: Baubashata range, S Alash, 1500 m, 25–26.V.1993, leg. Schawaller” [SMN].

Etymology. The species named in honour of known tenebrionidologist Dr. Wolfgang Schawaller.

Diagnosis. The new species is close related to *Z. kuramensis* Medvedev, 1987, from which it differs in the form of pronotum (*Z. kuramensis* with weakly rounded, not emarginated margins of pronotum, not flattened sides of pronotum, edged anterior and outer margins); striae at *Z. kuramensis* very fine, as dotted line, puncturation of intervals sparse and very fine.

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