

## A new species of the genus *Pseudotaphoxenus* from Kazakhstan (Coleoptera: Carabidae: Sphodrini)

## Новый вид рода *Pseudotaphoxenus* из Казахстана (Coleoptera: Carabidae: Sphodrini)

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A new species of the genus *Pseudotaphoxenus* Schaufuss, 1865, *P. kazakhstanicus* sp. nov., is described from the Aktolagai Mountain Range in Western Kazakhstan and the Koksengir Mountains in Central Kazakhstan.

Описан новый вид рода *Pseudotaphoxenus* Schaufuss, 1865, *P. kazakhstanicus* sp. nov., из гор Актолагай в Западном Казахстане и гор Коксенгир в Центральном Казахстане.

**Key words:** ground beetles, taxonomy, Kazakhstan, Coleoptera, Carabidae, Sphodrini, *Pseudotaphoxenus*, new species

**Ключевые слова:** жуужелицы, таксономия, Казахстан, Coleoptera, Carabidae, Sphodrini, *Pseudotaphoxenus*, новый вид

### INTRODUCTION

This paper contains the description of a new species of the genus *Pseudotaphoxenus* Schaufuss, 1865 from Western Kazakhstan. The holotype is preserved in the collection of one of the authors (I. Solodovnikov, Vitebsk); the paratype is kept in the Zoological Institute of the Russian Academy of Sciences (St Petersburg).

Measurements were taken as follows: the body length from the anterior margin of the labrum to the elytral apex; head width (HW) across eyes; pronotal length (PL) along its median line; elytral length (EL) from the tip of the scutellum to the apex of the longer elytron; width of the pronotum (PW) and elytra (EW) at their widest points; pronotal base (PB) between the

hind angles; elytral base (EB) between the humeral teeth.

Microsculpture was examined at a magnification of 56x using tracing paper for light dispersion. Dissections were made with standard techniques; dried genitalia were glued on carton boards and pinned beneath the specimens. The genitalia preparations of the two type specimens have been studied. The male genitalia photographs were taken using a DSLR camera Canon EOS 40D with a Canon macro lens EF100 mm as a base lens and a Minolta MC W. Rokkor 35 mm as a reverse lens. The habitus photographs were taken with a Canon macro lens EF100 mm. To achieve sufficient depth of focus, 60 shots were taken using DSLR remote Pro and were combined with the stacking program Zerene Stacker. Post-processing was done in Adobe Photoshop CS 6. Measurements were taken using an ocular

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micrometer of a MBS-10 stereobinocular microscope at a magnification of 8 $\times$ .

## TAXONOMY

Order **COLEOPTERA**

Family **CARABIDAE**

Subfamily **HARPALINAE**

Tribe **SPHODRINI** Laporte, 1834

Genus *Pseudotaphoxenus* Schaufuss, 1865

*Pseudotaphoxenus kazakhstanicus*

**sp. nov.**

(Figs 1–4)

*Holotype*. Male, **Kazakhstan**, “W Kazakhstan, Aktobe Prov., Aktolagai Range, h = 170–220 m, Mt. 238 m, 8–11.05.2004, I.A. Solodovnikov, K.E. Dovgailo” [ca. 47°27'N / 55°07'E], «Pitfall traps along gorge with *Spiraea* and *Cytisus*” [both labels are in Russian].

*Paratype*. Female, **Kazakhstan, Karaganda Prov.**, “Koksengir Mts., 40 km S of Zhana-Arka, Karag[anda Prov.], G. Medvedev, 29.V.961” [ca. 540 m, 48°22'N / 71°31'E] [in Russian].

*Description*. Species medium-sized for this genus: body length 16.8 mm in paratype and 17.1 mm in holotype. Body flat and subparallel (Figs 1, 2). Legs and antennae rather thin, average in length for the genus.

Dorsum and legs black or dark-brownish; palpi, antennae and distal segments of tarsi slightly paler.

Head slightly above average in size, PW/HW = 1.32–1.33. Eyes markedly convex, tempora long, clearly convex. Frontal foveae wide, shallow or moderately deep, not reaching the level of the eyes' mid-length. Two supraorbital pores on each side of head, both being slightly foveolate. Anterior margin of labrum slightly concave. Mandibles long, of normal width, shortly curved distally. Labial tooth long, its apex bifid. Antennae surpassing basal pronotal edge by 2.5–3 distal segments.

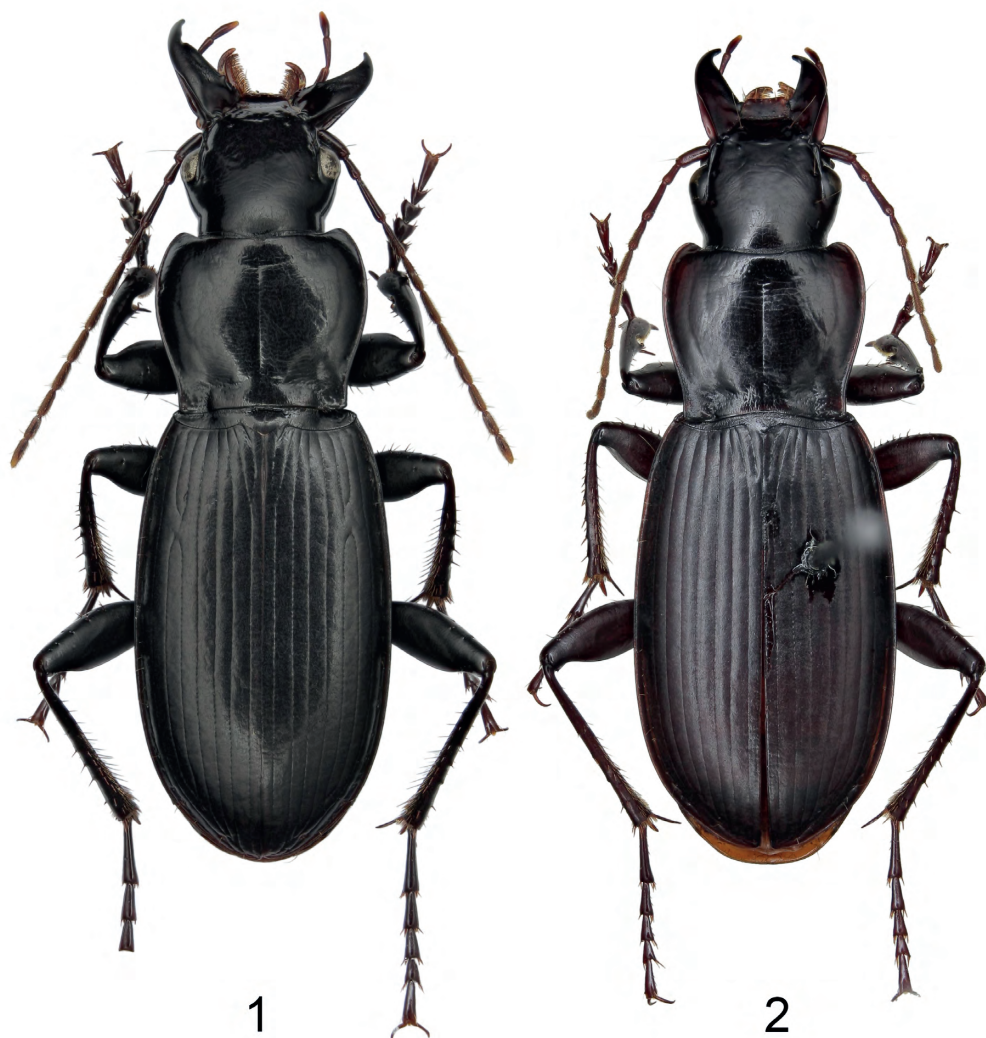
Pronotum short compared to elytra (EL/PL = 2.50–2.58), slightly transverse (PW/PL = 1.26–1.27), broadest in anterior third, moderately narrowed toward

base (PW/PB = 1.24–1.26). Sides widely rounded anteriorly, sinuate posteriorly, emargination before hind angles deep and moderately long. Hind angles not large, subrectangular, blunt or narrowly rounded apically. Posterior margin concave medially, slightly convex laterally. Anterior margin straight or slightly concave, anterior angles markedly salient. Lateral bead thin, lateral groove very narrow, widened before hind angles. Disc convex to lateral groove, narrowly depressed along median line; the latter thin, not reaching anterior and posterior margins of pronotum. Apical transverse impression thin, clearly defined. Basal foveae ovate, deep, narrowly touching basal margin of pronotum, sharply delimited anteriorly and laterally. Prebasal transverse impression wide, not deep, parallel to posterior margin of pronotum. Base slightly longitudinally rugulose in median part, shallowly punctured in basal foveae and near hind angles.

Elytra oblong, moderately broad, EL/EW = 1.58 (in female) and 1.64 (in male), EW/PW = 1.21–1.29), broadest behind middle, widely rounded together apically, slightly convex. Base slightly wider than that of pronotum, EW/EB = 1.39–1.44; humeral tooth acutangular, blunt at apex, slightly projecting outward. Basal border widely arcuate, elytra behind it without impression. Lateral groove very narrow, especially so in apical portion. Discal striae moderately deep, faintly to distinctly punctured; inner interspaces subconvex, outer ones flat. Parascutellar setigerous pore lacking, parascutellar striole long. Umbilicate series consisting of 26–29 setigerous pores. Stria 7 usually with two setigerous pores near apex (with one pore in one elytron of one specimen).

Microsculpture of dorsum consisting of small isodiametric meshes, very shallow in male, well-developed in female, especially on elytra. Integuments slightly shining in male, elytra of female dull.

Mesosternum of male without tubercle before mesocoxa.



**Figs 1, 2.** *Pseudotaphoxenus kazakhstanicus* sp. nov., general view: 1, holotype, male with length 17.1 mm; 2, paratype, female with length 16.8 mm.

Only one paramedian seta on each side of ventrites 3–5; ventrite 6 (last visible) with one pair of setae in both sexes.

Segments 1–3 of male protarsi markedly dilated. Segments of meso- and metatarsi with a few hardly perceptible sulci on dorsal surface. Meso- and metatibiae sparsely pubescent on inner surface.

Median lobe of aedeagus in lateral view slightly narrowed toward apex; its ventral margin angularly bent in apical third, con-

vex before apex; apical lamella curved downward at tip (Fig. 3). In dorsal view, median lobe slightly asymmetric; apical lamella not modified in apical disk, moderately long, subparallel-sided, widely rounded at apex (Fig. 4). Right paramere barely arched, evenly narrowed distally, blunt at apex.

*Comparison.* The systematic position of the new species is uncertain. Based on the aedeagus shape, it should be included into the *juvencus* species group (sensu Casale,



**Figs 3, 4.** *Pseudotaphoxenus kazakhstanicus* sp. nov., median lobe of aedeagus: **3**, lateral view; **4**, dorsal view. Scale bar: 1 mm.

1988). Among the members of this group, the new species is easily recognizable by the combination of the following characters: body flat and subparallel, pronotum with very narrow lateral groove and basal foveae short and sharply delimited, parascutellar pore lacking, elytral base not depressed, microsculpture of the dorsum fine, dorsal surface of the tarsomeres finely sulcate basally and the median lobe of the aedeagus with a short subparallel-sided apical lamella.

In external characters, *P. kazakhstanicus* sp. nov. is similar to *P. gussakovskii* Vereschagina et Kabak, 2000 from the Piandzh Valley sharing with it the following characters: subparallel body; pronotum with narrow lateral groove, short basal foveae and comparatively small hind angles; elytra without parascutellar setigerous pore; and fine microsculpture of the dorsum in male. However, *P. gussakovskii* differs from the new species in having the smaller body size (13.6 mm versus 16.8–17.1 mm in *P. kazakhstanicus* sp. nov.), wider pronotum (PW/PL = 1.46 versus 1.26–1.27 in *P. kazakhstanicus* sp. nov.), with smaller and less acute hind angles, and elytra with blunt humeral tooth. Additionally, the median lobe of the aedeagus in *P. kazakhstanicus* sp. nov. is less narrowed toward apex in lateral view,

with ventral margin convex before apical lamella, which is bent downward at tip.

In habitus, *P. kazakhstanicus* sp. nov. is most similar to *P. pongrazzi* (Jedlička, 1952) from the Northern Tien Shan (Casale, 1988), but differs from it in the following distinctive characters: body flat; pronotum shorter, with smaller and less attenuated hind angles, with sharp and short, clearly punctate basal foveae and with very narrow lateral groove; elytra not depressed at base, with acutangular humeral tooth and without parascutellar pore; meso- and metatarsi only finely sulcate dorsally; microsculpture less developed; and ventral margin of the aedeagus more convex in apical portion in lateral view, with the apical lamella wider in dorsal view.

The new species differs from *P. aralensis* Kabak, 2009, described from the northern coast of the Aral Sea, in having the hind angles of the pronotum blunt at apex, the humeral tooth acuter, the elytral striae less markedly punctate, the aedeagus less arcuate in lateral view, with the apical lamella wider and subparallel-sided in dorsal view.

From *P. rufitarsis* (Fischer von Waldheim, 1823) inhabiting the same region, the new species is easily distinguished by the following characters: pronotum more convex,





**Fig. 5.** Habitat of *Pseudotaphoxenus kazakhstanicus* sp. nov. in Aktolagai Range.

its base narrower, hind angles smaller and not attenuated laterally, and lateral deplanation narrow; in addition, basal portion of each elytron not impressed, microsculpture of the dorsum less developed, and aedeagus with the subparallel-sided apical lamella.

**Distribution.** The new species is only known from two localities in Kazakhstan: the Aktolagai Mountain Range between the Saghyz and Emba rivers (Aktobe Province in Western Kazakhstan) and the Koksengir Mountains (Karaganda Province in Central Kazakhstan).

**Etymology.** The name of the new species refers to Kazakhstan, where the type specimens were collected.

**Bionomics.** In the Aktolagai Mountain Range, the species was collected in a small gorge with *Spiraea* and *Cytisus* (Fig. 5) at elevations of 170–220 m a.s.l.

### Correction of previous paper on *Pseudotaphoxenus*

In one of the previous publications on this genus (Vereschagina & Kabak, 2000: 83), the numeration under the pictures of habitus of *P. gussakovskii* and *P. kopetdaghi* Vereschagina et Kabak, 2000 was mixed; in fact, the habitus of *P. gussakovskii* is shown on Fig. 19, while that of *P. kopetdaghi* is shown on Fig. 20.

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