

***Bosporomias* gen. n., a New Genus of the Weevil Subfamily Entiminae from Taman Peninsula (Coleoptera, Curculionidae)**

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Received February 2, 2005

Abstract—The new genus *Bosporomias* gen. n. is erected for a single species, *B. pruinosulus* sp. n. from Taman Peninsula. The systematic position of the genus is unclear. The type species is similar to some representatives of the tribes Sciaphilini and Trachyphloeini, especially to those of the genus *Brachysomus* Schoenh., and bears some resemblance to species of *Omius* Germ. and *Trachyphloeus* Germ. *B. pruinosulus* sp. n. differs from all species of the genus *Brachysomus* Schoenh. in the structure of the head, antennae, tarsi, and in the characteristic pubescence. The new genus lacks all apomorphies of the tribe Trachyphloeini: the very dense cover consisting of three-dimensional multiradiate scales, glabrous hypertrophied epistome with sharply projecting anterior angles and sharp posterior keel, and specific structure of the apical fringe of spines on the tibiae.

Use of special methods of collection of soil arthropods considerably promotes knowledge of the fauna of epigeal and endogean Entiminae. Study of the pedobiont fauna is gaining special attention in the courses of general ecological scientific programs performed in Europe. Investigation of voluminous material from Ancient Mediterranean makes it evident that we are at the very beginning of the cognition of pedobiont Entiminae.

In the course of exploitation of the soil as an environment, entimines from different taxa with only remote affinities undergo the miniaturization of the body, loss of pigmentation and alteration of the vestiture, thickening of the scape and condensation of the funicular segments of the antennae, reduction of hind wings and, subsequently, abortion of eyes. Adapting to the new environment, they acquired similar external features, whereas many characters revealing their affinities became unapparent. Determining of the systematic position and relationships of the genus-group taxa is one of the most important and complicated tasks of taxonomists describing geophilous entimines. Development of the classification of the subfamily Entiminae, particularly the genera and tribes based on the complex of modifications associated with abortion of hind wings (the “aptery syndrome” after Zherikhin and Egorov, 1990), is often a hard task.

A highly peculiar species of broad-nosed weevils occurs in Taman Peninsula. This weevil cannot be

attributed to any of the known genera, and even its placement in any tribe of the Entiminae cannot be clearly substantiated; therefore, it is described herein as a representative of a new genus with an uncertain systematic position. There are some other characteristic species of Entiminae in Taman Peninsula with a restricted distribution, e. g., epigeal *Amicromias euxinus* Yunakov et Korotyayev, 2005 (Yunakov, 2005), known outside Taman only from southern Ukraine, and *Trachyphloeus coenopsiformis* Formánek, 1905 (Korotyayev, 1999) which occurs also in Turkey. It is highly probable that *Bosporomias pruinosulus* gen. et sp. n., similarly to these species, will be found subsequently somewhere in the Eastern Mediterranean. One cannot, however, exclude the possibility that the new taxon is endemic to Taman Peninsula, because a very characteristic endogean species, *Nanomias terricola* Yunakov, 2003 (Yunakov, 2003), also probably representing a monotypic endemic genus, is known only from the Chatyr-Dagh massif in the neighboring Crimea.

Figures of the terminalia were made from glycerin preparations with a MBD-1 microscope. The length of body was measured from anterior margin of the pronotum to apex of the elytra.

The holotype and one paratype of the new species are in the Zoological Institute, Russian Academy of Sciences, St. Petersburg; the other paratype is in the Zoological Museum of the Rostov-on-Don University.

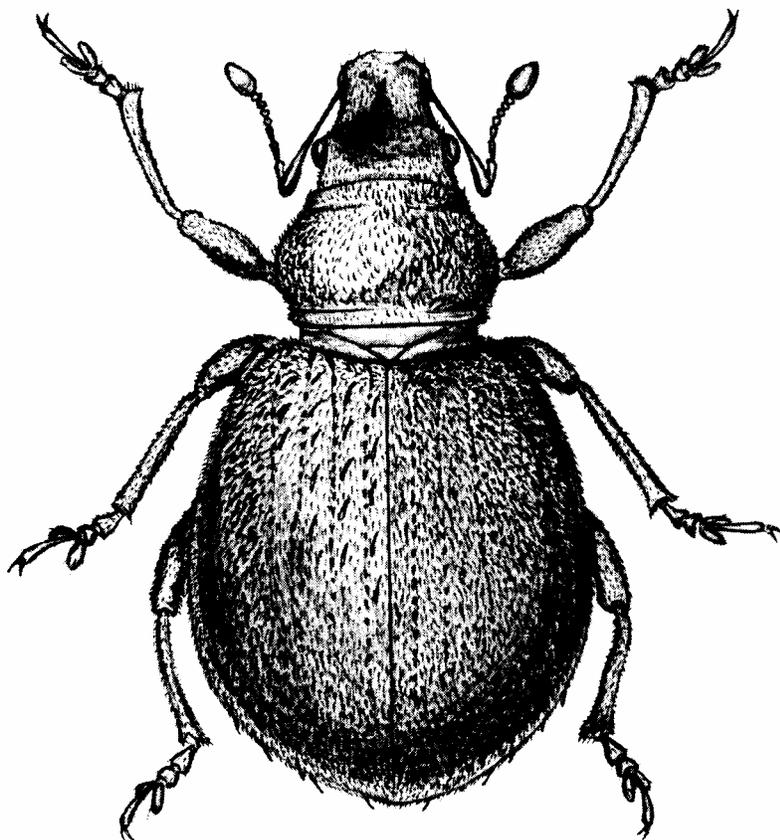


Fig. 1. *Bosporomias pruinosulus* gen. et sp. n. Habitus.

Genus **BOSPOROMIAS** Yunakov et Korotyaev,
gen. n.

Type species *Bosporomias pruinosulus* sp. n.

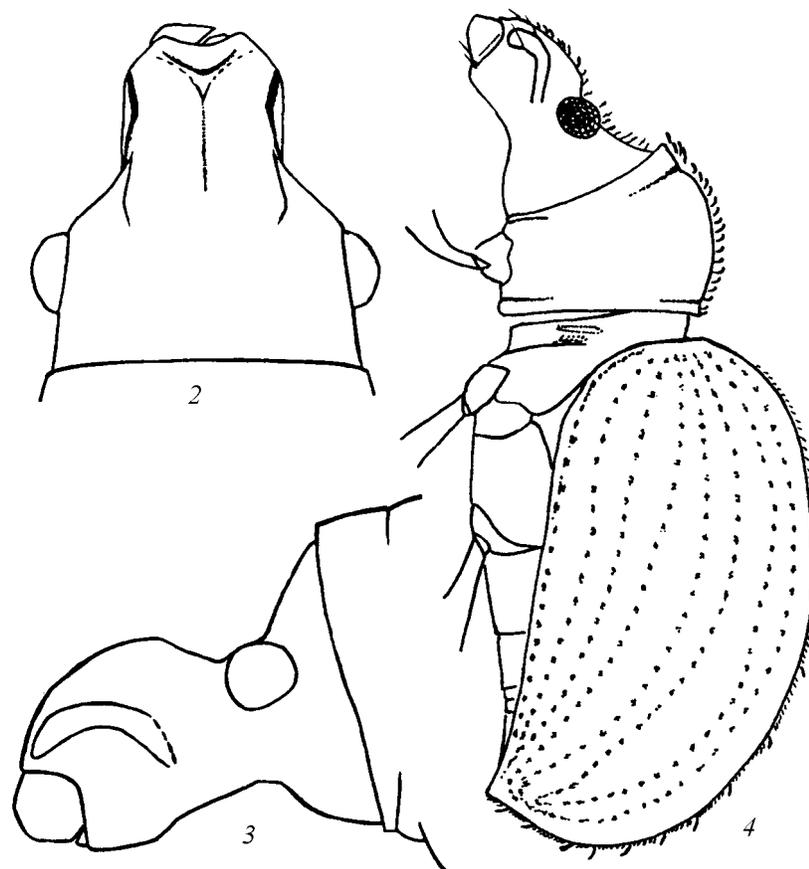
Description. Frons deeply depressed so that small, strongly convex eyes protruding above its surface. Rostral dorsum strongly longitudinally convex; epistome callus-like convex, lacking sharp apical angles, not keeled posteriorly. Antennal scrobes lateral, narrow, with clear subparallel margins; pterygia scarcely developed. Scape of antennae slender, slightly bent at base and apex, club-shaped swollen apically, directed below eye in repose. First segment of antennal funicle very long, sharply swollen at apex; club elliptical, clearly separated from funicle. Pronotum moderately transverse, constricted at base and apex. Elytra broad-oval, convex, abruptly sloping at base, with rather narrow striae and weakly convex intervals. Hind wings absent. Tarsal claws separate nearly to their base. Punctures on head and pronotum dense and deep, but not large; intervals of elytra sparsely and finely punctate.

Ovipositor telescopic; coxites weakly sclerotized; styli reduced, with two pairs of sensilla. Sensilla of

coxites very fine and narrow, situated in apical part of coxites. Spermatheca with reduced ramus and strongly enlarged collum, this type of structure characteristic of *Amicromias* Rtt., *Brachysomus* Schoenh., *Bosporomias* gen. n., *Archaeophloeus* Khnz., and some other wingless genera of the tribe Sciaphilini sharply different in anatomy of ovipositor from *Sciaphilus* Schoenh. Coxites in *Sciaphilus* heavily sclerotized, with poorly developed sensilla, clear excision in basal part, and strongly protruding elongate styli bearing corolla of setae. Similar ovipositor present in species of *Trachyphloeus* Germ.

Vestiture of head and pronotum very dense, complex, formed by long, wide, erect, band-like, hooked grayish setae. Elytra densely covered with small lanceolate semitransparent grayish scales, intervals of elytra with one row of erect setae.

Diagnosis. Systematic position of the new genus is not clear. The type species is similar to some species of *Brachysomus* Schoenh., with proportions of the body much like in species of the genus *Omius* Germ., in particular, *O. rotundatus* F. The dense vestiture of



Figs 2–4. *Bosporomias pruinosulus* gen. et sp. n.: (2) head, dorsal view, (3) head, lateral view; (4) body, lateral view.

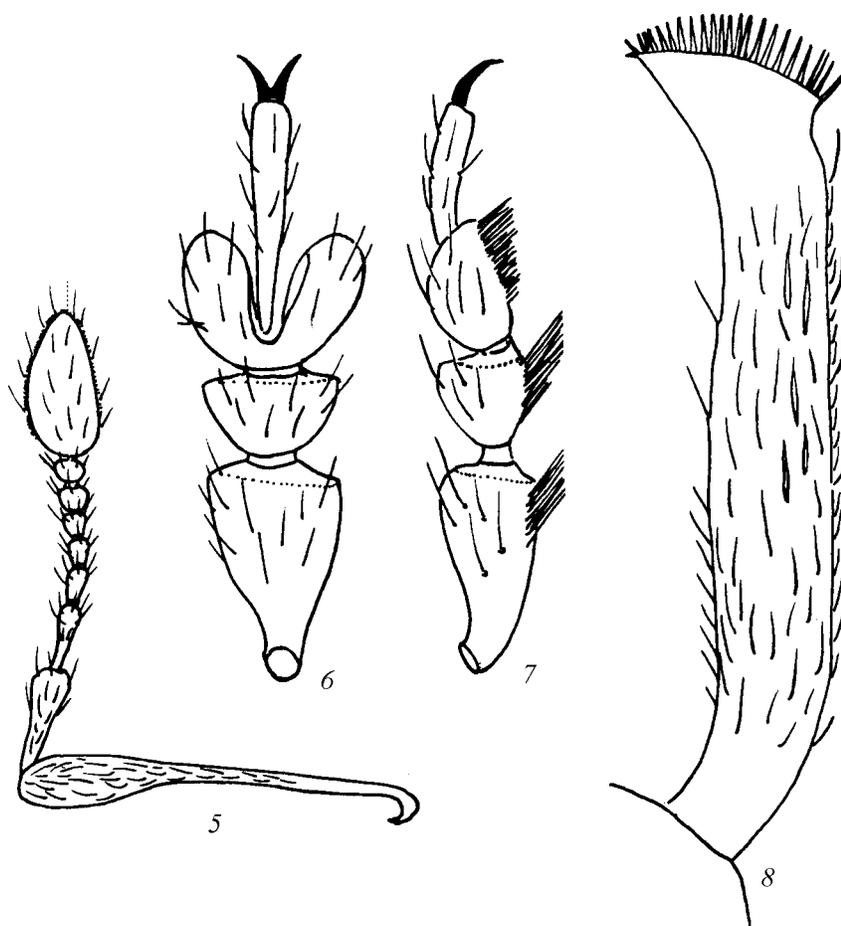
the head and pronotum, formed by erect band-like setae, and the tarsal claws separated almost to the base characterize *Bosporomias* as a form with appearance much more advanced than that in *Brachysomus* in connection with habitation in arid environment. *Brachysomus* demonstrates completely different tendencies in the adaptation of the vestiture and structure of the tarsi to xeric environment. In the most xeromorphic species of *Brachysomus*, the body is covered with broad scales, tightly appressed to the integument; the scales often possessing a more or less strong metallic luster; tarsal claws are always fused or connate in basal half.

The new genus differs from *Trachyphloeus* in the absence of the epistomal keel, and also in the more slender antennae, hair-like scales on the underside, and structure of the female terminalia. *Bosporomias* lacks all apomorphies of the tribe Trachyphloeini: the very dense vestiture of the body composed of the three-dimensional multi-radiate scales; smooth, shining, bare hypertrophied epistome with sharply protruding anterior angles and sharp basal keel; specific structure of the apical comb of tibiae. *Archaeophloeus* Khnz.

differs from Trachyphloeini in a similar way; this genus is placed in a composite tribe Sciaphilini and, occupying a separate position, demonstrates a parallel trend of formation of the *Trachyphloeus*-like appearance in connection with epigeal mode of life. The vestiture of the body and the structure of the head in *Bosporomias* are quite peculiar and not known in any genus of the tribe Sciaphilini.

Bosporomias pruinosulus Yunakov et Korotyaev,
sp. n. (Figs 1–15)

Description. Rostrum weakly transverse, not forming common cone with head, passing to latter through stepwise widening in basal 1/4, weakly narrowing apically. Rostral dorsum strongly convex, weakly narrowing apically, considerably narrower than frons, with shallow, but clearly visible median sulcus. Epistome weakly convex, bare, finely wrinkled, without sharp apical angles and posterior keel. Epistomal margin of rostrum scarcely concave. Anterior margin of rostrum gently and weakly beveled lateral to epistome, not bordered, rounded at sides. Antennal scrobes lat-



Figs 5–8. *Bosporomias pruinosulus* gen. et sp. n.: (5) left antenna; (6) left fore tarsus, dorsal view; (7) left fore tarsus, lateral view; (8) right fore tibia.

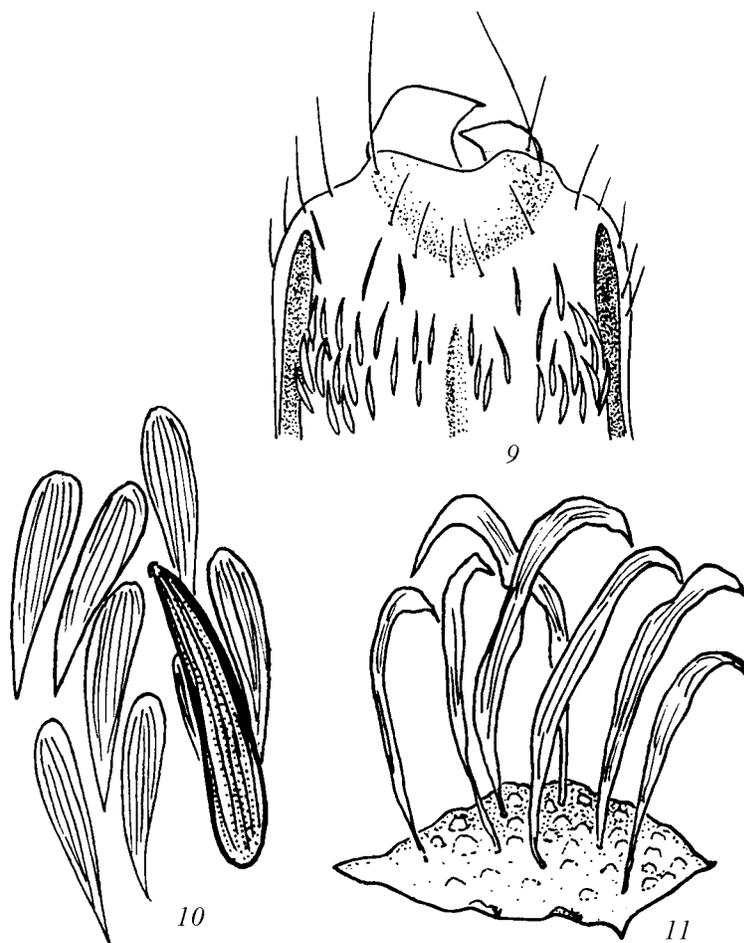
eral, directed postero-ventrally below eyes, but well-visible dorsally as far as widened basal part of rostrum; pterygia scarcely developed and forming no conspicuous dilation of rostrum at apex. Frons wide, 1.5–1.75 times as wide as rostral dorsum at antennal insertion, deeply concave and separated from rostral dorsum by deep transverse depression well visible laterally. Eyes almost round, small, lateral, strongly convex and protruding from head contour, their transverse diameter about 0.4 times width of frons. Head behind eyes scarcely widening posteriorly, its length about half diameter of eye. Mandibles small, moderately protruding anteriorly when clasped. Surface of head nearly matte, with dense, rugose, moderately large, but rather deep punctures forming granulate sculpture in places. Punctuation in middle of frons somewhat obliterated and merging in short longitudinal striae, surface weakly lustrous.

Antennae slender and long, very sparsely pubescent, bearing only sparse fine hairs. Scape slender, noticea-

bly bent at very base and behind apical third, rather sharply club-shaped swollen at apex, directed below eye in repose and reaching anterior margin of pronotum. First and second segments of funicle strongly elongate; 1st segment noticeably wider and longer than 2nd, as long as 2nd and 3rd segments combined; 3rd segment slightly longer than wide; 4th and 5th segments as long as wide; 6th and 7th slightly wider than long. Club oval, 2.3 times as wide as funicle, with base widely rounded and sharply separated from funicle; sutures between segments of club not visible.

Pronotum 1.5 times as wide as long, clearly swollen at sides and constricted near apex, with weakly convex disc. Scutellum invisible dorsally, situated on abrupt basal slope of elytra, without scales, sparsely covered with fine hairs only. Entire pronotal surface covered with dense and fine granulate punctation.

Elytra wide-oval, 1.16 times as long as wide, very weakly rounded and evenly convex at sides or some-



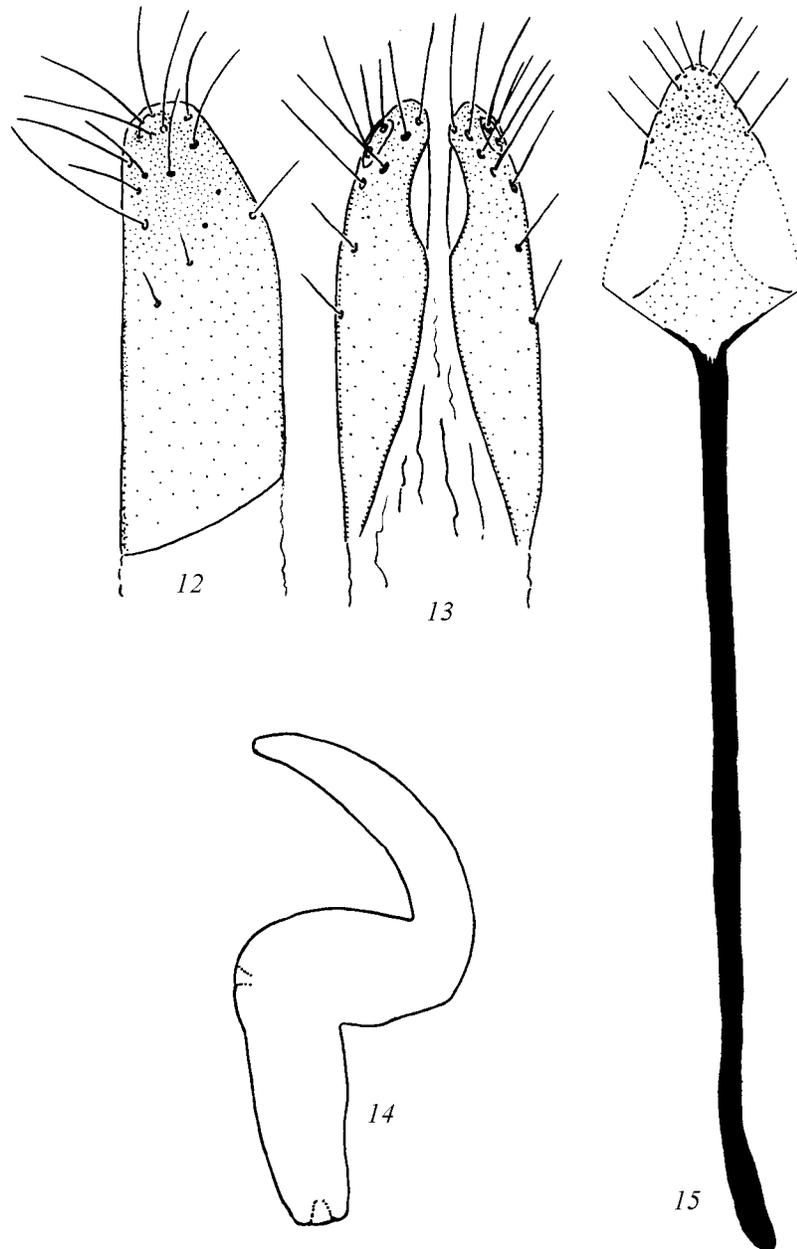
Figs 9–11. *Bosporomias pruinosulus* gen. et sp. n.: (9) apical part of rostrum, dorsal view; (10) vestiture of elytra (fragment); (11) vestiture of pronotum (fragment).

what widened posteriorly, very widely rounded at apex. Disc strongly convex in cross-section, steeply beveled along short distance at base but slightly flattened longitudinally. Basal part sharply sloping toward mesonotum, forming wide smooth, slightly concave surface sharply separated from rest part of elytra but without cariniform edging. Striae narrow, more or less deeply engraved, 0.2 times as wide as the weakly convex or flattened intervals. Surface of intervals weakly lustrous, sparsely covered with fine, shallow, round punctures with anterior margin slightly raised and forming fine but distinct granules on apical declivity.

Femora moderately clavate, mutic. Tibiae slender. Fore tibia weakly incurved apically and with slight angular prominence of outer margin at apex. Apical margin of fore tibia weakly beveled, with apical comb consisting of very dense fine and long light spines; inner apical angle attenuate to form small denticle.

Inner margin of fore tibia very shallowly bisinuate. Middle tibia with large mucro, with inner margin bisinuate more deeply than that in fore tibia, not widened outward at apex. Hind tibia with inner margin moderately bisinuate, similarly to that of middle tibia; apical comb more strongly beveled and terminating with stronger angular prominence on outer margin. Articulation surface at apex of hind tibia slightly widened, and row of spines on anterior margin of tibia somewhat bent away from tibia axis. First segment of tarsus about as long as wide; 2nd segment wider than long; 3rd bilobed, 1.3 times as wide as 2nd; 1st–3rd segments with dense hair brushes over entire ventral surfaces. Claw-segment slender, weakly and gradually widened apically, by $\frac{2}{3}$ extending beyond apex of 3rd segment; 0.7 times as long as rest segments combined. Claws diverging at angle slightly less than 45° , fused only at base.

Anal ventrite with truncate apex.



Figs 12–15. *Bosporomias pruinosulus* gen. et sp. n., female terminalia: (12, 13) ovipositor, details [(12) left coxite, lateral view; (13) coxites, dorsal view]; (14) spermatheca; (15) spiculum ventrale.

Body dark brown, almost black; antennae and legs paler: largest part of antennae, except gradually darkened apex of scape, and tarsi pale reddish brown. Vestiture dense. Head and pronotum clothed with erect band-shaped and filiform light gray scales with hooked apical part constituting 1/3 to 1/2 of their length. Gleaming scales and punctures on head and pronotum forming impression of rime-like coating. Elytra covered with subrecumbent, weakly arcuate gray lanceolate scales more or less strongly attenuate apically. Scales separated usually by distance less than own

width but not concealing integument. Darker scales arranged in diffuse spots or forming ill-defined pattern of dark and pale longitudinal stripes. Intervals with one row of sparse reclinate setae weakly to moderately widening apically and less raised on disc and more strongly so on apical declivity and sides. Length of setae in basal half of elytra about half widths of interval; behind middle, 2/3 of interval width; and on apical declivity, entire width of intervals. Legs moderately densely covered with subrecumbent narrow-lanceolate or parallel-sided scales and

with sparser erect setae, tarsi with sparse hairs and erect setae.

Body length 2.4–2.5 mm (2.45 mm in holotype), width 1.5 mm.

Material. Holotype, ♀: Russia, Krasnodar Terr., Temryuk Distr., vicinity of Taman Vill., 20.V.1995 (Yu.G. Arzanov). Paratypes. As holotype, but 14.V.1995 (P. Ivliev), 1 ♀; saline steppe with *Artemisia taurica* Willd. near Fanagoria Fortress, 27.IV.1980 (B.A. Korotyaev), 1 ♀.

ACKNOWLEDGMENTS

We thank Yu.G. Arzanov for the material provided for this study. The study was supported by the Russian

Foundation for Basic Research, grant nos. 04-04-49109 and 04-04-81026-Bel2004a.

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