

A new species of the genus *Psammодиус* Fallén, 1807  
from Northeastern Anatolia and Caucasus  
(Coleoptera, Aphodiidae, Psammодиinae)

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**Abstract:** A new species of the genus *Psammодиус* Fallén, 1807 is described from Eastern Turkey and Caucasus under the name of *P. caucasicus*. Its allies and distribution are discussed.

**Key words:** new species, *Psammодиус caucasicus* sp. nov., Coleoptera, Aphodiidae, Psammодиinae, Northeastern Turkey, Caucasus.

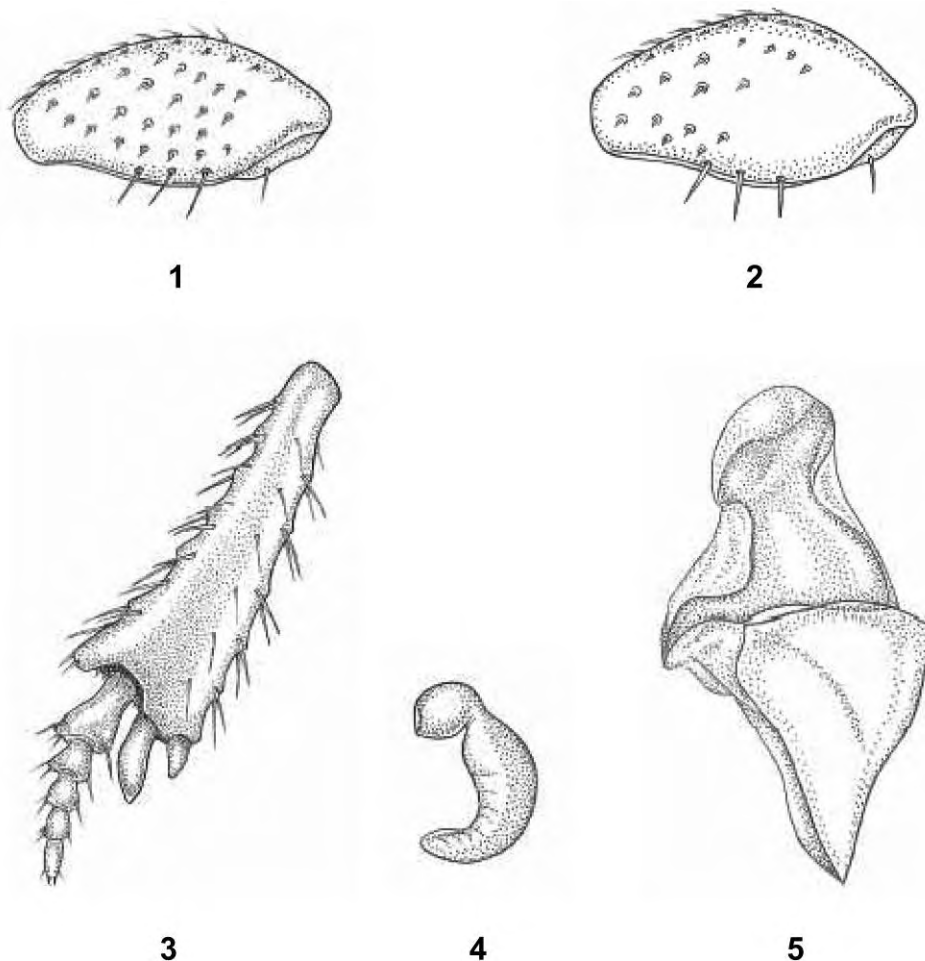
During revision works carried out independently by the present authors on the genus *Psammодиус* Fallén, 1807, they realized that they were describing the same new species on specimens from Eastern Turkey and Caucasus, respectively. Consequently, in order to avoid any problem about the authority of the new species, they decided to join their efforts and describe it together.

Acronyms and Abbreviations. The material quoted here are kept in the following collections: ABC=A. Ballerio coll., Brescia, Italy; ISC=I.V. Shokhin coll., Rostov-on-Don, Russia; RPC=R. Pittino coll., Milan, Italy; ZISP=Zoological Institute, Academy of Sciences, St.Petersburg; ZMMU=Zoological Museum, Moscow State University.

*Psammодиус caucasicus* sp. nov.

(Figs. 1, 3-5)

*Description.* Length: 3.2 to 4.1 mm. Oblong oval, strongly convex, moderately dilated backwards, shiny, dark reddish brown to black. Clypeus obtusely rounded on either side of distinct, angulate median emargination, sides deeply notched near genae, genae bare, strongly auriculate, clearly produced; frontal granules moderately coarse and close, rounded to slightly suboval, quite uniform in size and shape, clypeal granules evenly smaller and sparser, occipital ridges distinctly convex. Pronotum widest at middle, 1.54 to 1.57 times wider than long, with five transverse ridges and furrows, ridges rather wide, continuous, strongly convex but not sharp, all smooth, but 1st ridge medially with transverse row of moderate punctures, ending laterally into fine discrete granules at inner side of anterior angles; 2nd ridge visibly separated from 3rd laterally, 4th ridge bending back, joining 5th medially, 5th ridge distinctly produced backwards on either side near middle, clearly reducing width of last furrow, its hind edge close to basal margin medially; transverse furrows rather deep and narrow, each with single transverse row of moderate punctures, but 3rd furrow distinctly wider with two transverse rows of punctures, 5th furrow



Figs 1-5. *Psammодиус* species.

1, 3-5. *Psammодиус caucasicus* sp. nov., paratype (Çoruh riv. Nr. Borçka, Artvin, Turkey). 1. Hind femur, ventral view (0.9 mm); 3: hind tibia and tarsus, dorsal view (1.3 mm); 4: spermatheca (0.3 mm); 5: aedeagus, lateral view (0.45 mm).  
2: *Psammодиус asper* (Fabricius, 1775) (Fanø, Frisian Islands, Denmark), hind femur, ventral view (0.93 mm).

flat, wide laterally, very narrow medially, wholly shagreened with sparse, shallow, coarse, umbilicate punctures; midline furrow narrow but distinct, with single irregular row of coarse punctures; anterior angles coarsely rough, dull, strongly shagreened, lateral pronotal margins finely crenate, lateral setae thick, rather short, distinctly dilated apically. Scutellum triangular, small, dull. Elytra in both sexes rather elongate, moderately dilated apically, 1.33 to 1.36 times longer than wide, 2.75 to 2.79 times as long as pronotum; humeral callus prominent, no distinct humeral tooth, striae rather coarse, moderately deep, obviously chain-like, barely more than 2/5 as wide as intervals, striae punctures distinct, deep, clearly crenating interstitial edges, intervals more than twice as wide as striae, smooth, shiny, finely and sparsely punctate, vaguely tectiform, discally poorly, apically distinctly convex, 1st and 3rd intervals near base

not or barely more elevated than adjacent even ones, all intervals reaching elytral apex, but 5th, 6th and 8th clearly shortened apically, 10th interval and epipleural carina dull, rough, shagreened, the former entirely flat. Metathoracic wings fully developed. Metasternum medially shiny, smooth, anterior postcoxal grooves vestigial, posterior antecoxal grooves and metasternal triangles distinct, metasternal plate flat in female, slightly depressed in male, in both sexes impunctate with deep, complete, very coarse midline furrow; abdominal sternites bare, shiny medially, with transverse row of fine, slight granules at extreme sides; 12 long, fine, hair-like setae on apical pygidial margin, 6 setae on either side gradually shorter outwards. Femora shiny with moderately close, coarse setigerous punctures, profemur 1.97 to 2.04 times as long as wide, mesofemur elongate, 2.88 to 2.95 times as long as wide; metafemur (Fig. 1) moderately plump, 1.92 to 2.04 times as long as wide, widest near middle. Protibial apical spur almost same length as first 2 tarsal joints combined, blunt apically; meso- and metatibiae straight, metatibia (Fig. 3) robust, 2.24 to 2.29 times longer than wide, moderately narrowed basally, gradually remarkably widened towards apex, outer apical angle rather distinctly produced, inner margin straight, weakly crenate, outer margin shallowly concave, sharply, rather coarsely and sparsely serrated, upper apical spur flat, barely bent inwards, rounded apically, distinctly shorter than first 2 tarsal joints combined; metatarsus about 7/10 of tibial length and 1.6 times the tibial width, 1st segment stout, clearly dilated and produced outwards apically, barely longer than next 2 ones combined. Claws small, corneous. Parameres (Fig. 5) slightly shorter than to at most as long as basal piece. Spermatheca: Fig. 4.

*Type series.* Holotype ♂ and allotype (RPC), 12 paratypes (RPC, ISC): Iyidere river, 5km SE of Kalkandere, Rize Prov., Turkey, 250m, 18. VI. 1992, L. & R. Pittino leg. Additional paratypes: 4exs., same data as the holotype, A. Ballerio leg. (ABC); 5exs., Çoruh river, 8km SE of Borçka, Artvin Prov., Turkey, 250m, 17. VI. 1992, L. & R. Pittino leg. (RPC, ISC). 1♀, Iori river, Eldari (=Kasristskali), Georgia, 21. IV. 1910, Mlokozevich leg. (ZISP); 1♂, Makhuntseti, Georgia, 21. V. 1928, D. Romashov leg. (ZMMU). 1♀, Yupshara river, near Ritza, Abkhazia, 27. VII. 2000, I. V. Shokhin leg. (ISC). 1♂1♀, Ardon, N. Severnaja Osetija (=Alania), Russia, 3-6. VI. 1900, Demokidov leg. (ZISP); 1♂2♀♀, Fanagorijskaya, Krasnodar Reg., Russia, 3.V.2004, D.G. Kasatkin leg. (ISC, RPC); 1ex., Ubinskaya, Krasnodar, Russia, 1-2. VII. 1967, N. B. Nikitskiy leg. (ZMMU); 1ex., 15km SW of Nal'chik, Kabardino-Balkaria, Russia, 15.VI.1967 N. B. Nikitskiy leg. (ZMMU). The holotype will be deposited at the Natural History Museum in Milan.

*Etymology.* The name of the new species refers to its geographic distribution

*Notes.* The moderately widened metafemur individuates *P. caucasicus* sp. nov. with certainty among all its W. Palaearctic allies, making it vaguely relate to the Japanese *P. convexus* Waterhouse, 1875. Bare gena, apically gradually dilated metatibia, and moderately shortened metatarsus relate the new species to *P. asper* (Fabricius, 1775), that may be assumed to represent its closest ally. The latter, however, besides the obviously plumper metafemur (Fig. 2), which is 1.78 to 1.85 times as long as wide, differs in having hind edge of 5th pronotal ridge clearly spaced from basal margin in whole extent, single row of punctures along 3rd pronotal transverse furrow; quite distinct humeral tooth, remarkably convex elytral discal intervals, 1st and 3rd intervals visibly more elevated than adjacent even ones basally, striae punctures slightly notching interstriae edges; metasternal plate distinctly impressed in both sexes, 4 hair-like erect setae along the apical pygidial margin. Moreover, the parameres are visibly shorter than basal piece in *P. asper*, and the spermatheca is quite different.

*Distribution.* *P. caucasicus* sp. nov. occurs in Northeastern Anatolia and Caucasus (Fig. 6), but the actual limits of its range are still in need of investigation. In Caucasus, the new species appears to be restricted to mountain areas of western Caucasus, whereas it is replaced by *P. asper* on the plains of Ciscaucasia (Anapa, South Dagestan, Baku). As far as it is known, the two species occur allopatrically.

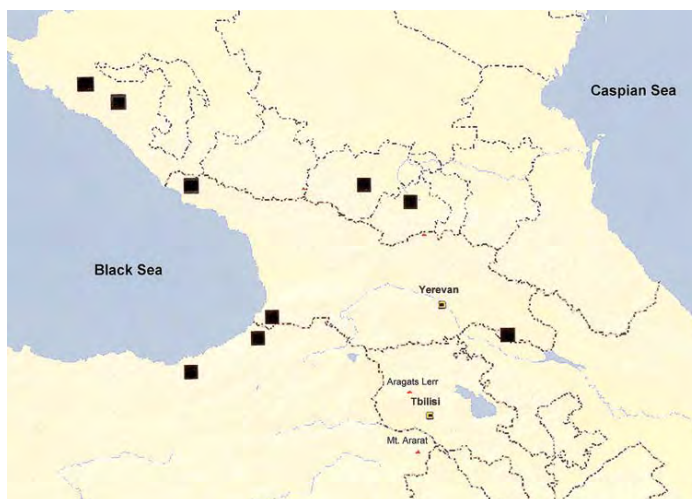


Fig. 6. Known distribution of *Psammodius caucasicus* sp. nov.

Thus, old records of *P. sulcicollis* Illiger, 1802 from Armenia: Aresh (Olsoufieff, 1918), Agsteev river, near Idzhevan (Iablokov-Khnzorian, 1967), and Azerbaijan: Karadonly and Lenkoran (Olsoufieff, 1918) seemingly refer to its senior synonym, *P. asper*, although certainty can be achieved only after examining all respective specimens. In Turkey, the new species is known from two inland localities on the plain of northeastern Anatolia, both not far from the seashore and from the boundaries of Georgia, whereas its relative *P. asper* has never been recorded from this country (Pittino, 1978; Rakovič, 1981). In several stations, *P. caucasicus* was collected riverside by sifting sand among grass roots, in Caucasus occasionally together with *P. laevipennis* Costa, 1844.

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