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New apterous *Aphodius* species from Kazakhstan (Coleoptera: Scarabaeidae)

Nový bezkřídlý druh rodu *Aphodius* z Kazachstánu (Coleoptera: Scarabaeidae)

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Abstract. *Aphodius* (*Mendidius*) *olexai* sp. n. from the Muyun-kum desert in Kazakhstan is described and illustrated. The new species is apterous and unique among the so far known Palaearctic species of *Mendidius* Harold, 1868 in having an entirely smooth, impunctate pronotum.

The subgenus *Mendidius* Harold, 1868 belongs among the most numerous and also taxonomically most difficult subgenera of the genus *Aphodius* Illiger, 1798. Presently there are nearly 60 species known (Dellacasa 1988, Medvedev & Nikritin 1974), most of them from desert and semidesert habitats of the Holarctics. In the south the subgenus reaches into the Ethiopean (Sahel) and Oriental (India) regions. One species (*A.* (*M.*) *distinguendus* A. Schmidt, 1910) was described from the Moluccan archipelago, but its subgeneric status is equivocal inter alia also due to the absence of desert habitats in the area. Most species are known from the deserts of Central Asia, and their alpha-taxonomy is very poorly understood. Many species were based on one or few specimens, whose descriptions are brief and lack illustrations of the external male genitalia. It is thus to be expected that a number of the species will be synonymized.

The material collected by Aldo Olexa in Kazakhstan contains six specimens of a hitherto undescribed *Mendidius*. Its completely smooth pronotum, which is a unique character within the subgenus, and absence of metathoracic wings allowed me to describe this taxon as a new species.

Specimens of the newly described species are provided with one red label: Aphodius (Mendidius) olexai sp. n. HOLOTYPUS [resp.] PARATYPUS David Král det. 1996 [printed]. Exact label data are cited for the type material. Author's remarks and notes are found in square brackets.

Aphodius (*Mendidius*) *olexai* sp. n.

(Fig. 1)

Type material. Holotype and 5 paratypes (all females), labelled: Akyrtobe, Džamb. [=Dzhambul], Kazachst. [=Kazakhstan], 6.5.1981, A. Olexa [lgt.] [printed]. Holotype and paratype No 5 in coll. David Král (Praha) and paratypes Nos 1-4 in coll. Aldo Olexa (Praha).

Description (habitus of holotype as in Fig. 1). Female. Body length 4.3-4.7 mm (holotype - 4.4 mm). Oval, moderately dilatate posteriorly, strongly convex in lateral view. Dorsal surface distinctly shiny, except for clypeus glabrous. Colour reddish brown, elytral suture rather darkened.

Head broadly trapezoidal, convex in lateral view. Anterior clypeal margin sinuate at middle, each side of sinuation with distinctly developed, sharp and markedly upturned tooth; sides almost

straight, with long, testaceous setae. Genae broadly rounded, not very prominent, distinctly exceeding eyes outwards, with tuft of long testaceous setae. Clypeal surface granulate; granules large, round to oval, rather irregularly distributed, each bearing long, semierect, testaceous seta. Epistomal hump not developed, frontal suture distinctly impressed without trace of frontal tubercles, with several granules laterally. Occiput entirely smooth, without punctures.

Pronotum transverse, convex, completely smooth, impunctate; bordered all around, anterior border slightly impressed; lateral margin with several long, testaceous setae. Anterior angles rounded, distinctly projecting anteriorly, sides broadly rounded to rounded posterior angles, basal margin broadly rounded.

Scutellum widely triangular, with several fine punctures.

Elytra moderately dilatate posteriorly, widest just behind middle, without humeral denticle and without distinctly developed shoulder. Striae distinctly impressed, strial punctures markedly crenating margins of intervals, separated by less than their diameter, becoming more widely spaced near apex. Striae 6 and 7 shortened basally approximately in 0.9 and stria 8 in approximately 0.7. Intervals flat, almost smooth, only apically with several very fine punctures.

Metathoracic wings entirely absent.

Metasternal plate smooth, shiny and glabrous, with completely developed medial furrow. Abdominal sternites shagreened, almost opaque, with long testaceous setae.

All femora strongly widened, metafemur nearly discoidale; shiny smooth, only with row of hairlike setae near anterior and posterior margins. Protibia tridentate, ventral edge only with two indistinct denticles near basis; apical spur acute. Meso- and metatibia moderately thickened, with well developed transversal carinae. Setae of apical mesotibial row spinelike and long, rather unequal in length; apical spurs slightly curved, apically acute; upper spur distinctly longer than basimesotarsite. Setae of apical metatibial row spinelike, very short and equal in length; apical spurs flattened, spoonlike, both distinctly longer than basimetatarsite. Metatarsites triangularly widened, bearing long, hairlike setae. All claws fine, almost hairlike, only feebly curved.

Male unknown.

Differential diagnosis. New species differs from all so far known Palaearctic species in having entirely smooth, impunctate pronotum.

Collection circumstances. The new species was sifted from sand dunes in the Muyun-kum desert near the Akyrtobe village.

Name derivation. Patronymic, dedicated to my friend Aldo Olexa (Praha), an excellent student on the Histeridae and Eucnemidae, and the collector of the type material.

Apart from other characters justifying placement in the subgenus *Mendidius* sensu Nikolaev (1979, 1987), the new species lacks wings and has fine claws transitional to the hairlike type characteristic of the subgenus *Sugrames* Reitter, 1894 sensu Nikolaev (1987). Balthasar (1964) listed harlike claws as characterisic of the taxa *Sugrames* and *Mothon* Semenov & Medvedev, 1928 and also noted that some species of these genera (sensu e.g. Balthasar 1964) are apterous, which can be said with certainty only of *Aphodius ammodites* Peyerimhoff, 1939 (the available literature does not provide such information on other species, and I haven't had an opportunity to examine them excluding for the following species having functional wings: *A. brevitarsis* Reitter, 1894, *A. sarmaticus* Semenov & Medvedev, 1928, and *A. sefrensis* Petrovitz, 1958. However *A. ammodites* is often placed by some authors (e.g. Dellacasa 1988) in a subgenus of its own,

Sitiphus Fairmaire, 1894, which possesses transitional features (shape of claws, femora and tibiae, and aptery) similar to *Sugrames, Mothon,* and also *Pseudosugrames* Kieseritzky, 1928. In contrast, *Aphodius* (*Mendidius*) *mamajevi* Medvedev, 1968 is micropterous (based on my own examination of the type material deposited in Moscow, Zoological Museum of the Lomonosov State University). These features are highly adaptive to life in desert habitats and may result from parallel evolution of several lineages. Also *A.* (*M.*) *olexai* sp. n. possesses a complex of charac-

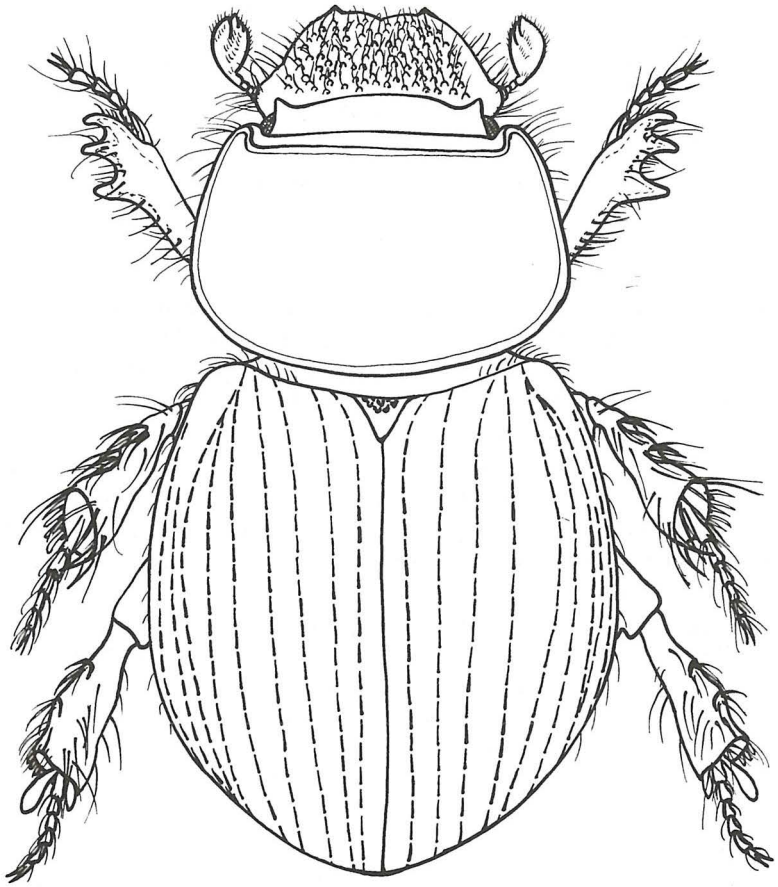


Fig. 1. Holotype habitus of *Aphodius* (*Mendidius*) *olexai* sp. n.
Obr. 1. *Aphodius* (*Mendidius*) *olexai* sp. n., postava holotypu.

ters that with regard to the above noted generic taxa is transitional. Our current knowledge thus is too inadequate to satisfactorily resolve the generic resp. subgeneric situation and in turn attributions of the species. However, the available data seem to indicate that at least the taxa *Mothon, Pseudosugrames* and *Sitiphus* should be placed in the subgenus *Mendidius* of the genus *Aphodius.*

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SOUHRN

Podrod *Mendidius* Harold, 1868 patří mezi nejpočetnější a také systematicky nejobtížnější podrody rodu *Aphodius* Illiger, 1798. V současné době je známo téměř 60 druhů (Dellacasa 1988, Medvedev & Nikritin 1974) většinou rozšířených v pouštních a polopouštních oblastech holarktické oblasti. Na jihu areál podrodu zasahuje do etiopské oblasti (Sahel) a orientální oblasti (Indie). Jeden druh (*A.* (*M.*) *distinguendus* A. Schmidt, 1910) byl popsán z Moluckého souostroví. Jeho podrodové zařazení je ovšem problematické mimo jiné proto, že pouštní a polopouštní biotopy v tomto regionu chybí. Nejvíce druhů je známo z pouští Střední Asie, kde je také situace na úrovni alfa-taxonomie velmi málo přehledná. Mnoho druhů bylo popsáno na základě jednoho nebo málo kusů, navíc velmi stručně a bez vyobrazení vnějších samčích genitálií. Lze tedy očekávat, že řada druhů bude synonymizována.

V materiálu Aldy Olexy z Kazachstánu jsem nalezl šest kusů dosud neznámého druhu podrodu *Mendidius.* Zcela hladký štít (unikátní znak v rámci tohoto podrodu) a absence křídel mi dovolují jej i přes výše uvedené skutečnosti popsat jako nový druh.

A. (*M.*) *olexai* sp. n. vykazuje vedle ostatních znaků, které jej řadí do podrodu *Mendidius* v pojetí Nikolaeva (1979, 1987), také absenci křídel a tvar drápků, který je přechodem k vláskovitému tvaru drápků, charakteristickému pro podrod *Sugrames* Reitter, 1894 sensu Nikolaev (1987). Balthasar (1964) uvádí vláskovitý tvar drápků jako charakteristický pro taxony *Sugrames* a *Mothon* (Semenov & Medvedev, 1928) a také se zmiňuje o tom, že některé druhy těchto dvou rodů (sensu e.g. Balthasar 1964) jsou bezkřídlé, což se dá s určitostí tvrdit jen o druhu *Aphodius ammodites* Peyerimhoff, 1939 (u ostatních druhů to není v literatuře uvedeno, ani jsem neměl možnost je studovat, kromě následujících druh s funkčními křídly: *A. brevitarsis* Reitter, 1894, *A. sarmaticus* Semenov & Medvedev, 1928 a *A. sefrensis* Petrovitz, 1958). Bezkřídlý *A. ammodites* bývá však řazen některými autory (e.g. Dellacasa 1988) do samostatného podrodu *Sitiphus* Fairmaire, 1894, který vykazuje ovšem opět stejné přechodné znaky (tvar drápků, tvar stehen a holení a apterie) jako taxony *Sugrames, Mothon,* a také *Pseudosugrames* Kieseritzky, 1928. Naopak druh *Aphodius* (*Mendidius*) *mamajevi* Medvedev, 1968 je mikropterní (zjištěno autorem při studiu typového matriálu tohoto druhu uloženého v Zoologickém muzeu Lomonosovovy stát-

ní univerzity v Moskvě). Tyto znaky jsou zřejmou adaptací k životu v pouštním habitatu a mohou být výsledkem paralelního vývoje několika vývojových linií. U druhu *A.* (*M.*) *olexai* sp. n. je uvedený komplex znaků klasifikující výše uvedený výčet taxonů ranku rodu opět přechodný. Při současné znalosti tedy nelze podrodovou resp. rodovou situaci výše uvedených taxonů uspokojivé vyřešit. Uvedené skutečnosti hovoří spíše pro přiřazení nejméně taxonů *Mothon, Pseudosugrames* a *Sitiphus* k podrodu *Mendidius* v rámci rodu *Aphodius.*