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Two new species of *Malthinus* Latreille, 1805 (Coleoptera: Cantharidae) from Georgia

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Abstract. Two new species of soldier beetles of the genus *Malthinus* Latreille, 1805, *M. meskhetinus* sp. n. and *M. mitarbiensis* sp. n., are described from the Mitarbi valley in the Meskheti Mountains, Georgia. The total number of *Malthinus* species registered in Georgia is thus raised to ten, three of them being endemic to the country. *Malthinus turcicus* Pic, 1899 is for the first time recorded from Georgia, with its aedeagus illustrated by photographs for the first time. Provided is an identification key to the *Malthinus facialis* Thomson, 1864 species group of the area.

Key words: Coleoptera, Cantharidae, Malthininae, *Malthinus*, new species, key, Caucasus, Palaearctic region.

Два новых вида *Malthinus* Latreille, 1805 (Coleoptera: Cantharidae) из Грузии

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Резюме. Из долины Митарби в Месхетинском горном массиве Грузии описаны два новых вида жуков-мягкотелок рода *Malthinus* Latreille, 1805, *M. meskhetinus* sp. n. и *M. mitarbiensis* sp. n. Общее число известных из Грузии видов *Malthinus*, таким образом, увеличивается до десяти, три из них эндемичны для страны. *Malthinus turcicus* Pic, 1899 впервые указан для Грузии, а его эдеагус впервые проиллюстрирован фотографиями. Приведена определительная таблица для группы видов *Malthinus facialis* Thomson, 1864 региона.

Ключевые слова: Coleoptera, Cantharidae, Malthininae, *Malthinus*, новый вид, определительная таблица, Кавказ, Палеарктика.

Introduction

The species-rich soldier beetle genus *Malthinus* Latreille, 1805, widely distributed in the Holarctic realm, also penetrating into the Neotropics and the Oriental region, accounts for over 350 species, the greater part of which, about 300 species, occur in the Palaearctic region [Delkeskamp, 1977; Kazantsev, Brancucci, 2007]. Identification of *Malthinus* species in most cases is possible only by males, as the classification of the genus is based exclusively on the shape and structures of the male hind tibia and aedeagus [Brancucci, 1980].

The first two *Malthinus* species were described from Georgia in the last quarter of the twentieth century [Wittmer, 1974]. In 1992 the first review of *Malthinus* of the Caucasus was published, which listed six *Malthinus* species in the Georgian fauna [Wittmer, 1992]. Studies on the fauna of the region resumed at the turn of the century and added one more local species to the genus [Švihla, 1990, 1997; Kazantsev, 2001]. An updated review of the genus, where yet another species from Georgia was described, was published 30 years after and indicated seven species of *Malthinus* for this country [Kazantsev, 2024].

An opportunity to study the new *Malthinus* material collected during the 2024 expedition to the Meskheti Mountains in Georgia allowed discovering two new species in the area, one represented by five specimens, the other – by just one. At a first glance, the mentioned six specimens were attributed to *M. turcicus* Pic, 1899, the only known Caucasian *Malthinus* with slightly curved male hind tibiae, as their male hind tibiae had precisely the same shape. However, a closer look at their copulatory organs demonstrated that

they represent two distinct, unknown to science species occurring sympatrically with *M. turcicus*, which, in its turn, had not been registered in Georgia either. The description of these new taxa is given below, with a key to the *Malthinus facialis* Thomson, 1864 species group of the area.

Material and methods

The studied beetles were glued on cardboard plates. Before the examination, they were relaxed in water, then their detached abdomens were kept for several hours in 10% KOH at room temperature. The KOH treated aedeagi and terminal abdominal segments were then placed in microvials with glycerin for photographing.

MSP-1 zoom stereoscopic dissecting microscope with 8–80 times magnification range was used for examination of diagnostic characters. Photographs were taken with a Canon EOS 6D camera and Canon MP-E 65 mm lens and processed with Zerene Stacker and Adobe Photoshop software.

The body length was measured from the anterior part of head to apices of folded wings.

The following acronym is used the text: ICM – Insect Center (Moscow, Russia).

Family Cantharidae Imhoff, 1856 (1815)
Subfamily Malthininae Kiesenwetter, 1852
Tribe Malthininae Kiesenwetter, 1852
Genus *Malthinus* Latreille, 1805
Subgenus *Malthinus* Latreille, 1805

Malthinus Latreille, 1805: 261 (type species *Cantharis flaveola* Herbst, 1786, subsequent designation by Delkeskamp [1977]).

= *Apteromalthinus* Escalera, 1913: 322 (type species *Apteromalthinus pithanoides* Escalera, 1913 (by monotypy)).

= *Malachidius* Motschulsky, 1860: 62 (type species *Malthinus conspicuus* Kiesenwetter, 1852 (original designation)).

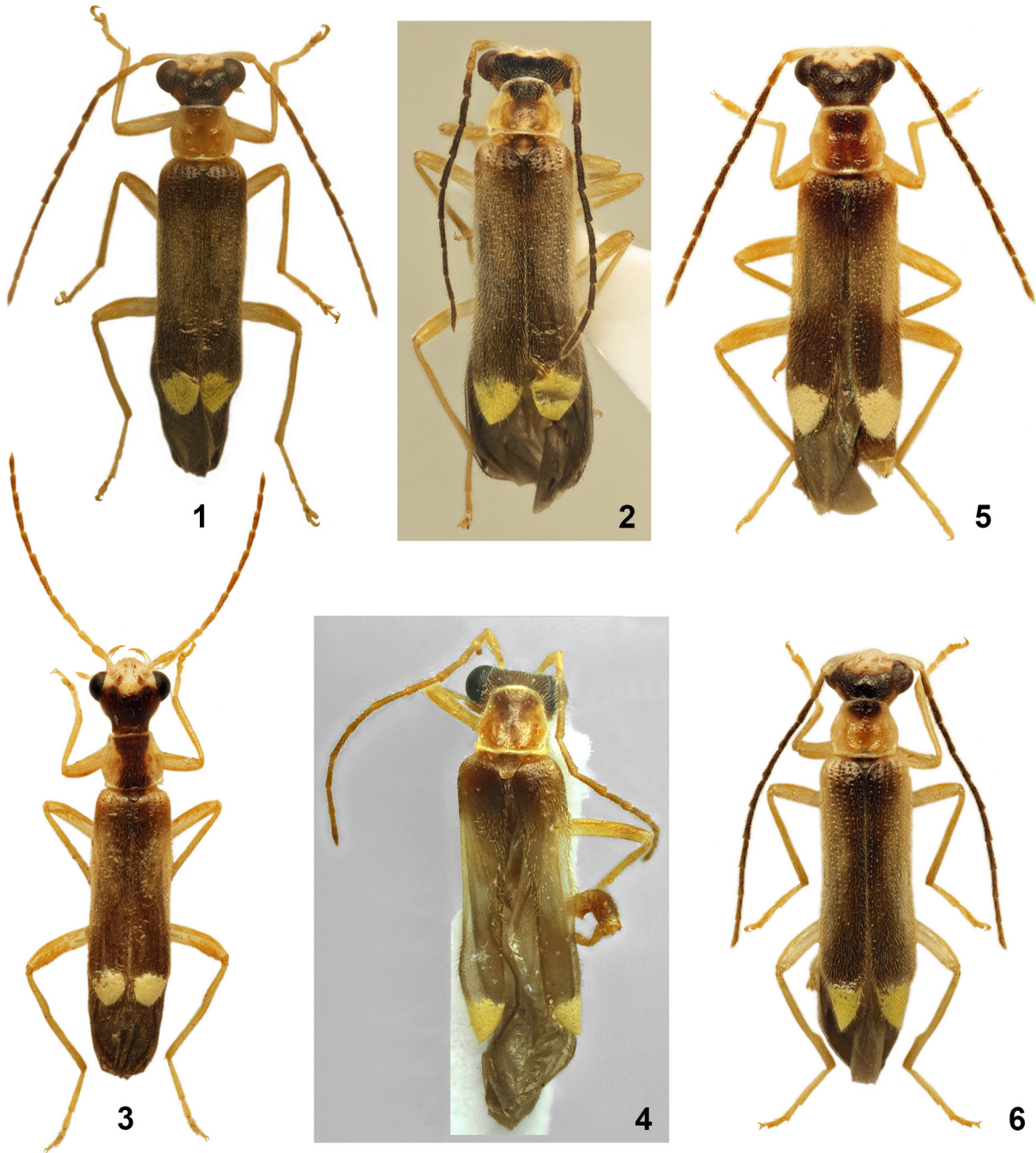
= *Progeutes* Abeille de Perrin, 1894: 92 (type species *Malthinus longipennis* P.H. Lucas, 1846 (subsequent designation by Delkeskamp [1977])).

= *Ymnis* Des Gozis, 1886: 23 (type species *Malthinus flaveolus* Herbst, 1786 (original designation)).

Malthinus meskhetinus Kazantsev, **sp. n.**
(Figs 1, 7, 8)

Material. Holotype, ♂ (ICM): "Georgia, env. Bakuriani, env. Patara Mitarbi, 1350–1440 m, 41.76°N 43.57°E, 17–19.VII.2024, S. Kazantsev leg.". Paratypes: 2♂ (ICM), same label; 1♂ (ICM), "Georgia, env. Bakuriani, S Borzhomi, 1–2 km W Sadgeri, 1050–1150 m, 41.80°N 43.41°E, 16.VII.2024, S. Kazantsev leg."

Description. Male. Dark brown to black; head in front of eyes, palps, antennomeres 1–3, pro- and mesosternum, pronotum,



Figs 1–6. *Malthinus*, males, general view.

1 – *M. meskhetinus* **sp. n.**, holotype; 2 – *M. mitarbiensis* **sp. n.**, holotype; 3 – *M. turcicus*; 4 – *M. romashovi*; 5 – *M. alicae*; 6 – *M. facialis*.

Рис. 1–6. *Malthinus*, самцы, общий вид.

1 – *M. meskhetinus* **sp. n.**, голотип; 2 – *M. mitarbiensis* **sp. n.**, голотип; 3 – *M. turcicus*; 4 – *M. romashovi*; 5 – *M. alicae*; 6 – *M. facialis*.

except anterior margin, legs yellowish testaceous; head behind eyes laterally reddish brown; elytral middle third pale brown; elytral apices sulphur yellow (Fig. 1).

Head transverse, without eyes about as wide as pronotum. Eyes relatively large, spherical, interocular distance ca 1.4 times greater than eye diameter in dorsal view. Vertex glabrous in the centre, roughly punctured posteriorly. Ultimate maxillary and labial palpomeres narrow, noticeably longer than wide. Antennae filiform, attaining to elytral three fourths; antennomere 3 subequal in length to pedicel (antennomere 2) and ca 1.2 times shorter than antennomere 4; antennal pubescence moderately long and sub-erect (Fig. 1).

Pronotum transverse, almost 1.2 times wider than long, widest at the middle, abruptly narrowed anteriorly from the middle, with short rounded anterior and posterior angles, slightly convex anteriorly and indistinctly bisinuate posteriorly; in fine scarce punctures (Fig. 1).

Elytra elongate, ca 3 times longer than wide at humeri, parallel-sided, leaving posterior fourth of folded wings uncovered; elytral punctures arranged in distinct rows; elytral pubescence uniform, short and sub-erect. Scutellum large, narrowing distally, almost truncate at apex (Fig. 1).

Legs long and slender; posterior trochanters distally retracting; posterior tibia slightly curved in proximal fourth (Fig. 1).

Ultimate sternite elongate, slightly narrowing distally and almost non-emarginate at distal margin; ultimate tergite trapezoidal, slightly concave distally.

Aedeagus elongate, semi-rectangular, with elongate, narrowing distally and apically rounded lobes of ventral plate, interophyses attaining to apices of ventral plate and triangular distally in lateral view, centrophyse deeply cleft basally in dorsal view, with triangular in lateral view apical portion (Figs 7, 8).

Body length: 4.2–4.7 mm; width (at humeri): 0.8–0.9 mm.

Female unknown.

Diagnosis. *Malthinus meskhetinus* sp. n. closely resembles *M. turcicus* Pic, 1899 distributed in the Northern Caucasus, Transcaucasia, Turkey and Southeast Europe, also in the shape of male hind tibia, differing in the aedeagal structures, with interophyses attaining to the apices of ventral plate, and deeply cleft basally in dorsal view centrophyse, with triangular in lateral view apical portion (Figs 1, 7, 8).

Etymology. The new species is named after the historical province and the mountains where it was collected.

Malthinus mitarbiensis Kazantsev, sp. n.
(Figs 2, 9, 10)

Material. Holotype, ♂ (ICM): "Georgia, env. Bakuriani, 2–3 km ESE Patara Mitarbi, 1500–1770 m, 41.77°N 43.59°E, 19.VII.2024, S. Kazantsev leg."

Description. Male. Dark brown to black; head in front of eyes, palps, antennomeres 1–2, pro- and mesosternum, pronotum, except anterior margin, legs yellowish testaceous; head behind eyes laterally reddish brown; elytral middle third pale brown; elytral apices sulphur yellow (Fig. 2).

Head transverse, without eyes about as wide as pronotum. Eyes relatively large, spherical, interocular distance ca 2 times greater than eye diameter in dorsal view. Vertex shining, with fine scarce punctures in the centre, rough punctured posteriorly. Ultimate maxillary and labial palpomeres narrow, noticeably longer than wide. Antennae filiform, attaining to elytral five sixths; antennomere 3 subequal in length to pedicel (antennomere 2) and ca 1.1 times shorter than antennomere 4; antennal pubescence relatively long and erect (Fig. 2).

Pronotum transverse, almost 1.3 times wider than long, widest behind the middle, abruptly narrowed anteriorly from the middle, with rounded anterior and short posterior angles, slightly convex anteriorly and indistinctly bisinuate posteriorly; in fine scarce punctures (Fig. 2).

Elytra elongate, ca 3 times longer than wide at humeri, parallel-sided, leaving posterior fifth of folded wings uncovered; elytral punctures arranged in distinct rows; elytral pubescence uniform, relatively long and sub-erect. Scutellum large, narrowing distally, rounded at apex (Fig. 2).

Legs long and slender; posterior trochanters distally not retracting; posterior tibia slightly curved in proximal third (Fig. 2).

Ultimate sternite elongate, slightly narrowing distally and non-emarginate at distal margin; ultimate tergite gradually narrowing distally, non-emarginate at distal margin.

Aedeagus elongate, sub-oval, with transverse, slightly diverging and obliquely truncate apically lobes of ventral plate; interophyses inwardly directed and hooked in lateral view, centrophyse forming a circular structure distally in dorsal view (Figs 9, 10).

Body length: 4.2 mm; width (at humeri): 0.8 mm.

Female unknown.



Figs 7–12. *Malthinus*, aedeagi.

7–8 – *M. meskhetinus* sp. n.; 9–10 – *M. mitarbiensis* sp. n.; 11–12 – *M. turcicus*; 7–10 – holotypes; 7, 9, 11 – dorsally; 8, 10, 12 – laterally. Scale bars 0.5 mm.

Рис. 7–12. *Malthinus*, аедегусы.

7–8 – *M. meskhetinus* sp. n.; 9–10 – *M. mitarbiensis* sp. n.; 11–12 – *M. turcicus*; 7–10 – голотипы; 7, 9, 11 – сверху; 8, 10, 12 – сбоку. Масштабные линейки 0,5 мм.

Diagnosis. *Malthinus mitarbiensis* sp. n., resembling both *M. turcicus* and *M. meskhetinus* sp. n. in the shape of the male hind tibia, is readily distinguished by the apparently different structure of the aedeagus, with transverse, slightly diverging and obliquely truncate apically lobes of ventral plate, inwardly directed and hooked in lateral view interophyses, and forming a circle in dorsal view centrophyse apically (Figs 2, 9, 10).

Etymology. The new species is named after the location (Mitarbi River valley) where the new species was collected.

Malthinus turcicus Pic, 1899
(Figs 3, 11, 12)

Malthinus turcicus Pic, 1899: 206.

Material. 1♂ (ICM), "Georgia, env. Bakuriani, 2–3 km ESE Patara Mitarbi, 1500–1770 m, 41.77°N 43.59°E, 19.VII.2024, S. Kazantsev leg."

Notes. *Malthinus turcicus* is sympatrically distributed in the Mitarbi valley with *M. mitarbiensis* sp. n. and the apparently closely related *M. meskhetinus* sp. n. This is the first record of the species in Georgia.

All three above listed species belong to the *Malthinus facialis* Thomson, 1864 species group, which is characterised by the second antennomere subequal in length to or somewhat longer than antennomere 3, pronotum distinctly narrowed in anterior half, and elytra bearing rows of punctures, sometimes inconspicuous. The group lists six species in Georgia, three of which, *M. romashovi* Kazantsev, 2024, *M. meskhetinus* sp. n. and *M. mitarbiensis* sp. n., are endemic to the country. A key to this species group of Georgia is given below.

A key to the *Malthinus facialis* Thomson, 1864 species group of Georgia

- 1(2). Male hind femur with a spine in the middle; male hind tibia deeply semi-elliptically incised near base (Fig. 4) *M. romashovi*
- 2(1). Male hind femur unmodified; male hind tibia, if modified, not incised near base.
- 3(4). Male hind tibia straight and unmodified (Fig. 5) *M. aliceae* Švihla, 1990
- 4(3). Male hind tibia slightly bent before the middle or abruptly widened before apex (Figs 1–3, 6).
- 5(6). Male hind tibia abruptly widened before apex (Fig. 6) *M. facialis*
- 6(5). Male hind tibia not widened before apex, but slightly bent before the middle (Figs 1–3).
- 7(8). Elytra with rather inconspicuous rows of punctures. Aedeagus with interophyses attaining to the middle of ventral plate and rounded distally in lateral view; centrophyse heart-shaped basally in dorsal view, with semi-circular in lateral view apical portion (Figs 3, 11, 12) *M. turcicus*
- 8(7). Elytra with conspicuous rows of punctures (Figs 1, 2).
- 9(10). Posterior trochanters distally retracting. Aedeagus with elongate, narrowing distally and apically rounded lobes of ventral plate, interophyses attaining to apices of ventral plate and triangular distally in lateral view,

centrophyse deeply cleft basally in dorsal view, with triangular in lateral view apical portion (Figs 7, 8)

- *M. meskhetinus* sp. n.
- 10(9). Posterior trochanters distally not retracting. Aedeagus with transverse, slightly diverging and obliquely truncate lobes of ventral plate, apically inwardly directed and hooked in lateral view interophyses; centrophyse forming a circular structure distally in dorsal view (Figs 9, 10)
 - *M. mitarbiensis* sp. n.

Discussion

The number of *Malthinus* species known in the Caucasian fauna now is 13, whereas in Asia Minor it is over 50 [Kazantsev, Brancucci, 2007]. Apparently, although the species richness of the genus in this region diminishes from west to east, following the relative humidity pattern, in the Western Caucasus, where the relative humidity is as high as in the Turkish Black Sea coast, one would expect more taxonomic variety. So, it is actually not surprising that the number of *Malthinus* species registered in Georgia has risen from six a year ago to ten, i.e. almost by 67%, with three of the added four species being new to science. The problem with *Malthinus*, and with malthinines in general, lies not only in their small size and external similarity, when only examination of their genitalia may help attributing them to the right taxon. It could also be connected with collecting habits of most entomologists who do not bother to collect them at all, or collect not more than two or three specimens at one location, believing that they all belong to one species. There is little doubt that more collecting in the area would bring the number of *Malthinus* in the Caucasus and Transcaucasia closer to that in Turkey.

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