

New species of *Malthodes* Kiesenwetter, 1852 (Coleoptera: Cantharidae) from the Greater Caucasus, with notes on distribution of the genus in the area

Новые виды *Malthodes* Kiesenwetter, 1852 (Coleoptera: Cantharidae) Большого Кавказа, с замечанием о распространении рода в регионе

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КЛЮЧЕВЫЕ СЛОВА: Coleoptera, Cantharidae, Malthininae, Malthodes, новые виды, определительная таблица, карты распространения, Палеарктика.

ABSTRACT. Two new species of soldier beetles of the genus *Malthodes* Kiesenwetter, 1852, *M. nabozhenkorum* sp.n. and *M. sukkoensis* sp.n., are described from South Ossetia, Georgia and the vicinity of Anapa. Two species, *M. lederi* Pic, 1912 and *M. lozovoyi* Kazantsev, 2021, are recorded from South Ossetia for the first time. Three species, *M. debilis* Kiesenwetter, 1852, *M. quadristilus* Wittmer, 1992 and *M. tordi* Wittmer, 1970, are excluded from the list of the genus of the Greater Caucasus. The total number of *Malthodes* species registered in the area thus becomes 25. Provided is an annotated checklist and an identification key to *Malthodes* species of the Greater Caucasus, their distribution is discussed and illustrated by maps.

РЕЗЮМЕ. Два новых вида жуков-мягкотелок рода *Malthodes* Kiesenwetter, 1852, *M. nabozhenkorum* sp.n. and *M. sukkoensis* sp.n., описываются из Южной Осетии, Грузии и окрестностей Анапы. Два вида, *M. lederi* Pic, 1912 and *M. lozovoyi* Kazantsev, 2021, впервые приводятся для Южной Осетии. Три вида, *M. debilis* Kiesenwetter, 1852, *M. quadristilus* Wittmer, 1992 и *M. tordi* Wittmer, 1970, исключаются списка видов Главного Кавказского хребта. Общее число видов рода, зарегистрированных в регионе, таким образом, становится 25. Приведены аннотированный список и определительная таблица всех видов *Malthodes* Большого Кавказа, обсуждаются особенности их распространения.

Introduction

The soldier beetle genus *Malthodes* Kiesenwetter, 1852, widely distributed in the Holarctic realm, is the most species-rich in the family, accounting for over 635 species, the greater part of which occur in the Palaearctic region [Delkeskamp, 1977; Kazantsev, Brancucci, 2007; Takahashi, 2021]. A reliable identification of *Malthodes* species in the vast majority of cases is possible only by males, as it requires studying structures of their apical abdominal segments and, often, their genitalia (females, as a rule, are characterised by the unmodified abdominal segments and much more monotonous copulatory organs — e.g., Constantin [2014]; Takahashi [2021]).

The studies on this group of soldier-beetles of the Greater Caucasus Range started at the end of the nineteenth [Reitter, 1888] and continued in the second half of the twentieth and the turn of the twenty-first century [Wittmer, 1958, 1960, 1970, 1979, 1992; Švihla, 1980, 1990, 2002]. Recently studies on the genus of the area resumed [Kazantsev, 2021a, b], and currently it lists 23 species, which makes *Malthodes* second only to *Rhagonycha* Eschscholtz, 1830 among the Greater Caucasian soldier beetles in terms of number of species [Kazantsev, 2022]. More than half of these species, namely, fourteen, were described by the prominent Swiss coleopterologist Walter Wittmer [Wittmer, 1958, 1960, 1970, 1979, 1992].

An opportunity to study new material collected in South Ossetia, Krasnodar Krai and Georgia allows adding another two species to *Malthodes* of this area, bringing the number of species in the Greater Caucasus to 25. Their

description is presented below, along with a key to all species of the genus of the area, their annotated checklist and distribution maps.

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 micro vials 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.

The following acronym is used the text: ICM — Insect Center, Moscow; ZMMU — Zoological Museum of Moscow University.



Figs 1–2. General view of *Malthodes*, males, holotypes.
1 — *M. nabozenkorum* sp.n.; 2 — *M. sukkoensis* sp.n.
Рис. 1–2. Общий вид *Malthodes*, самцы, голотипы.
1 — *M. nabozenkorum* sp.n.; 2 — *M. sukkoensis* sp.n.

Taxonomy

Family Cantharidae Imhoff, 1856 (1815)
Subfamily Malthiniinae Kiesenwetter, 1852
Tribe Malthodini Böving et Craighead, 1930

Malthodes Kiesenwetter, 1852

Malthodes Kiesenwetter, 1852: 242.

Type species: *Malthinus marginatus* Latreille, 1806.

Malthodes nabozhenkorum Kazantsev, **sp.n.**

Figs 1, 3, 4, 10, 11.

MATERIAL. Holotype, ♂, South Ossetia, Dzau District, between Edisa and Zgubir, 42°32'22"N, 44°10'55"E, 1760 m, 17.06.2023, leg. M.V. & S.V. Nabozhenko (ICM); paratypes, 1♂ and 2♀♀, Georgia, Bakuriani, [1800 m], 16–18.VII.1928, D. Romashov (ZMMU); 1♀, Georgia, env. Bakuriani, gorge nr Mitarbi (to Kochta Mt.), 29.VII.1928, D. Romashov (ICM).

DESCRIPTION. Male. Dark brown to black; palps, except ultimate palpomeres, antennomere 1, knees, pronotal posterior angles and anterior margin narrowly testaceous;

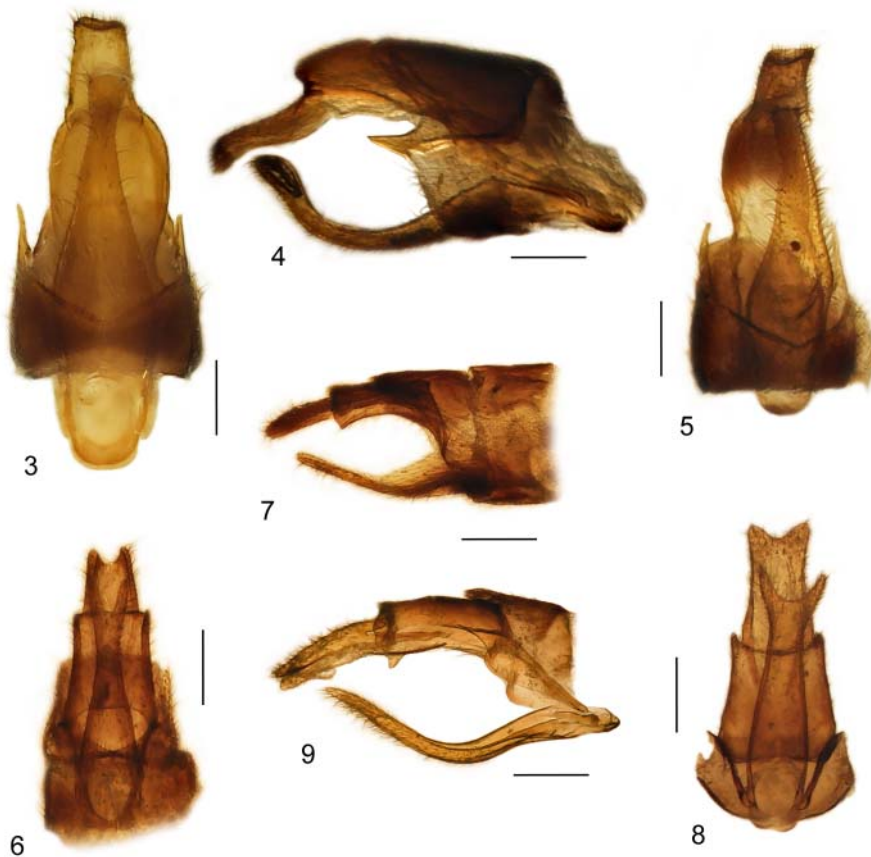
elytral middle two thirds pale brown; elytral apices yellow (Fig. 1).

Head transverse, without eyes about as wide as pronotum. Eyes relatively small, spherical, interocular distance ca 2.2 times greater than eye diameter. Vertex in scarce punctation. Ultimate maxillary and labial palpomeres ca 2 times longer than wide. Antennae filiform, almost attaining to apices of folded wings; antennomere 3 ca 1.5 times longer than pedicel (antennomere 2) and ca 1.4 times shorter than antennomere 4; antennal pubescence short and semi-erect (Fig. 1).

Pronotum transverse, ca 1.4 times wider than long, slightly widening anteriorly, with somewhat concave sides, rounded posterior and blunt laterally developed anterior angles, distinctly concave anteriorly and convex posteriorly (Fig. 1).

Elytra elongate, ca. 2.4 times longer than wide at humeri, parallel-sided, leaving posterior third of folded wings uncovered; elytral pubescence uniform, short and sub-erect. Scutellum transverse, narrowing distally, broadly rounded at apex (Fig. 1).

Legs long and slender; femora and tibiae narrow and straight, tibiae noticeably shorter than femora; hind tarsomere length ratio 5.5 : 3.4 : 1.7 : 1 : 2.7; tarsomere 4 deeply cleft; all claws simple (Fig. 1).

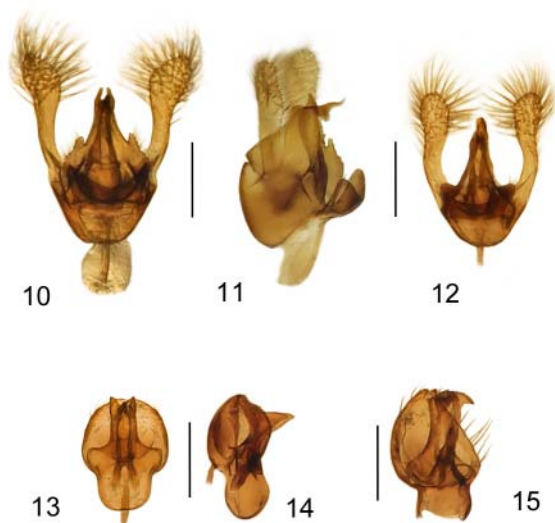


Figs 3–9. Terminal abdominal segments of *Malthodes*.

3, 4 — *M. nabozhenkorum* **sp.n.**; 5 — *M. kasantsevi*; 6, 7 — *M. sukkoensis* **sp.n.**; 8, 9 — *P. pseudobesucheti*; 3, 5, 6, 8 — ventrally; 4, 7, 9 — laterally; 3, 4, 6, 7 — holotypes. Scale bars 0.25 mm.

Рис. 3–9. Вершинные брюшные сегменты *Malthodes*.

3, 4 — *M. nabozhenkorum* **sp.n.**; 5 — *M. kasantsevi*; 6, 7 — *M. sukkoensis* **sp.n.**; 8, 9 — *P. pseudobesucheti*; 3, 5, 6, 8 — снизу; 4, 7, 9 — сбоку; 3, 4, 6, 7 — голотипы. Масштабные линейки 0,25 мм.



Figs 10–15. Aedeagi of *Malthodes*.

10, 11 — *M. nabozhenkorum* sp.n.; 12 — *M. kasantsevi*; 13, 14 — *M. sukkoensis* sp.n.; 15 — *P. pseudobesucheti*; 10, 12, 13 — ventrally; 11, 14, 15 — laterally; 10, 11, 13, 14 — holotypes. Scale bars 0.25 mm.

Рис. 10–15. Эдеагусы *Malthodes*.

10, 11 — *M. nabozhenkorum* sp.n.; 12 — *M. kasantsevi*; 13, 14 — *M. sukkoensis* sp.n.; 15 — *P. pseudobesucheti*; 10, 12, 13 — снизу; 11, 14, 15 — сбоку; 10, 11, 13, 14 — голотипы. Масштабные линейки 0,25 мм.

Ultimate sternite elongate, gradually narrowing distally and slightly widened at apex, strongly curved in lateral view; ultimate tergite elongate, slightly narrowed distally, almost truncate at apex and slightly curved before apex in lateral view; penultimate tergite elongate, distally widened, with convex sides; third from end tergite with acute lateral process (Figs 3, 4).

Aedeagus oval, with prominent parameres, noticeably widened and densely pubescent at apex; laterophyses with acute dents at base, pointed and bent at apex in lateral view (Figs 10, 11).

Length (from head to apices of folded elytra): 3.6–3.7 mm; width (at humeri): 0.8–0.85 mm.

FEMALE. Unknown.

ETYMOLOGY. The new species is named after Drs M.V. & S.V. Nabozhenko (Makhachkala, Dagestan) who collected the type specimen.

DIAGNOSIS. *Malthodes nabozhenkorum* sp.n. is similar to *M. kasantsevi* Wittmer, 1992, known from the alpine zone of mountains of Krasnodar Krai and Abkhazia, differing in the widened distally ultimate sternite (Fig. 3) and presence of teeth at the base of aedeagal laterophyses (Figs 10, 11), vs narrow parallel-sided ultimate sternite in its distal part and absence of teeth at the base of laterophyses in *M. kasantsevi* (Figs 5, 12, 77, 110).

Malthodes sukkoensis Kazantsev, sp.n.

Figs 2, 6, 7, 13, 14.

MATERIAL. Holotype, ♂, S Russia, Krasnodar Krai, Anapa Distr., env. Sukko, 28-30.IV.2018, leg. E.A. Khachikov leg. (ICM); paratype, 1♂, same label (ICM).

DESCRIPTION. **Male.** Dark brown to black; antennomere 1 and antennomere 2 proximally, knees and anterior tibiae apically testaceous; elytral middle third pale brown; elytral apices yellow (Fig. 2).

Head subquadrate, about as wide as pronotum. Eyes moderately large, spherical, interocular distance about as long as eye diameter. Vertex in scarce punctuation. Ultimate maxillary and labial palpomeres ca 3.7 times longer than wide. Antennae filiform, almost attaining to apices of folded wings; antennomeres 2 and 3 subequal in length and ca 1.3 times shorter than antennomere 4; antennal pubescence relatively short and semi-erect (Fig. 2).

Pronotum transverse, ca 1.2 times wider than long, widening anteriorly, with small acute posterior and truncate laterally developed anterior angles, convex anteriorly and posteriorly (Fig. 2).

Elytra elongate, ca. 2.3 times longer than wide at humeri, parallel-sided, leaving posterior third of folded wings uncovered; elytral pubescence uniform, short and sub-erect. Scutellum transverse, slightly narrowing distally, broadly rounded at apex (Fig. 2).

Legs long and slender; femora and tibiae narrow and straight, tibiae noticeably shorter than femora; hind tarsomere length ratio 4.5 : 2.5 : 1.8 : 1 : 1.5; tarsomere 4 deeply cleft; all claws simple (Fig. 2).

Ultimate sternite elongate, gradually narrowing distally, widened and deeply emarginate at apex, somewhat curved in lateral view; ultimate tergite elongate, slightly narrowed distally, with roundish incision at apex; penultimate tergite transverse, sub-rectangular; third from end tergite simple (Figs 6, 7).

Aedeagus roundish, with rounded distally dorsal plate; laterophyses in distal half relatively broad, parallel-sided, with almost rectangular bulges at base, in lateral view slanted outwardly, but not hooked at apex; penis strongly curved, in lateral view (Figs 13, 14).

Length (from head to apices of folded elytra): 3.0 mm; width (at humeri): 0.5–0.6 mm.

FEMALE. Unknown.

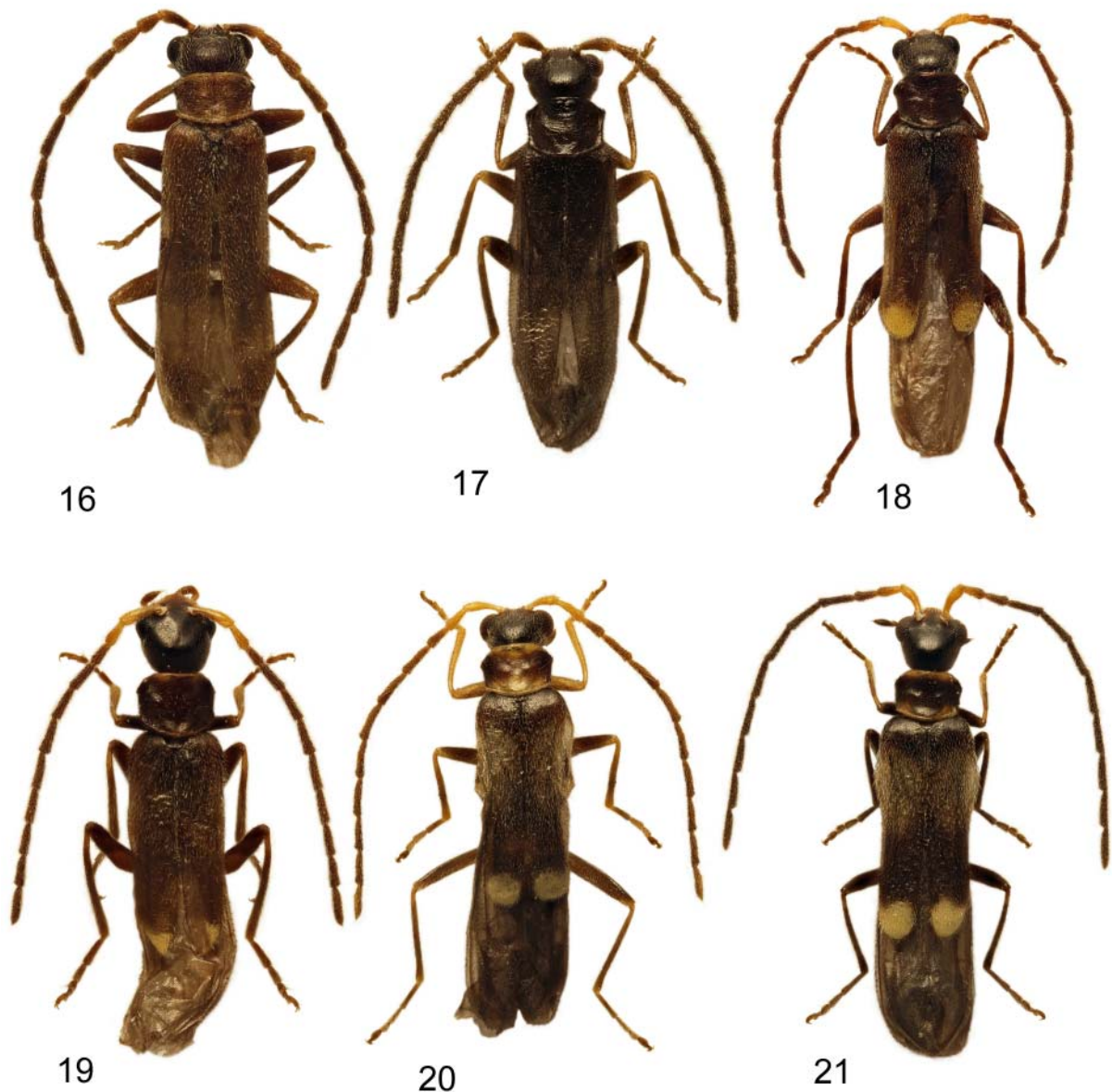
ETYMOLOGY. The new species is named after the type locality.

DIAGNOSIS. *Malthodes sukkoensis* sp.n. resembles *M. pseudobesucheti* Wittmer, 1970, from the mountains of Krasnodar Krai and Abkhazia, differing in the relatively narrowly incised at apex ultimate sternite, shorter and not widened at apex ultimate tergite, more rounded dorsal plate of the aedeagus and not hooked apically, in lateral view, laterophyses (Figs 6, 7, 13, 14), vs broadly widened at apex ultimate sternite, longer and widened at apex ultimate tergite, more narrowed distally dorsal plate of the aedeagus and apically hooked laterophyses, in lateral view, in *M. pseudobesucheti* (Figs 8, 9, 15, 48, 49, 87, 88).

REMARKS. The paratype lacks head and pronotum.

A KEY TO *MALTHODES* SPECIES OF THE GREATER CAUCASUS
1(20) Small, usually smaller than 3 mm. Antennomere 2 subequal in length to antennomere 3 or slightly longer (only in *M. bourgeoisi* slightly shorter) (Figs 16–24).
2(3) Antennomere 2 slightly shorter than antennomere 3. Dark brown, pronotum light brown, darkened at sides. Elytra long, almost completely covering folded wings (Fig. 16). Ultimate sternite abruptly narrowed in distal half; ultimate tergite narrow, elongate, slightly narrowed and rounded at apex (Figs 38–40). Aedeagus — Fig. 81. Body length 2.8–3.2 mm. *M. bourgeoisi* (Reitter, 1888)

- 3(2) Antennomere 2 subequal in length to antennomere 3 or slightly longer. Elytra shorter, leaving apices of folded wings uncovered (Figs 17–24).
- 4(5) Upperside, including antennae, uniformly dark brown to black (Fig. 17). Ultimate sternite parallel-sided, slightly emarginate at apex; ultimate tergite short, non-emarginate apically; (Fig. 41). Aedeagus — Fig. 82. Body length 2.3–2.8 mm. *M. crassicornis* (Mäklin, 1846)
- 5(4) Upperside, including antennae, partly yellow or light brown (Figs 18–24).
- 6(15) Elytra with bright yellow apical spots (Figs 18–22).
- 7(10) Pronotum uniformly black or dark brown, or narrowly touched with light brown at anterior and posterior margins (Figs 18, 19).
- 8(9) Ultimate sternite widened in distal half, with two processes; ultimate tergite parallel-sided, with broadly separated processes at apex (Figs 42, 43). Aedeagus — Fig. 83.



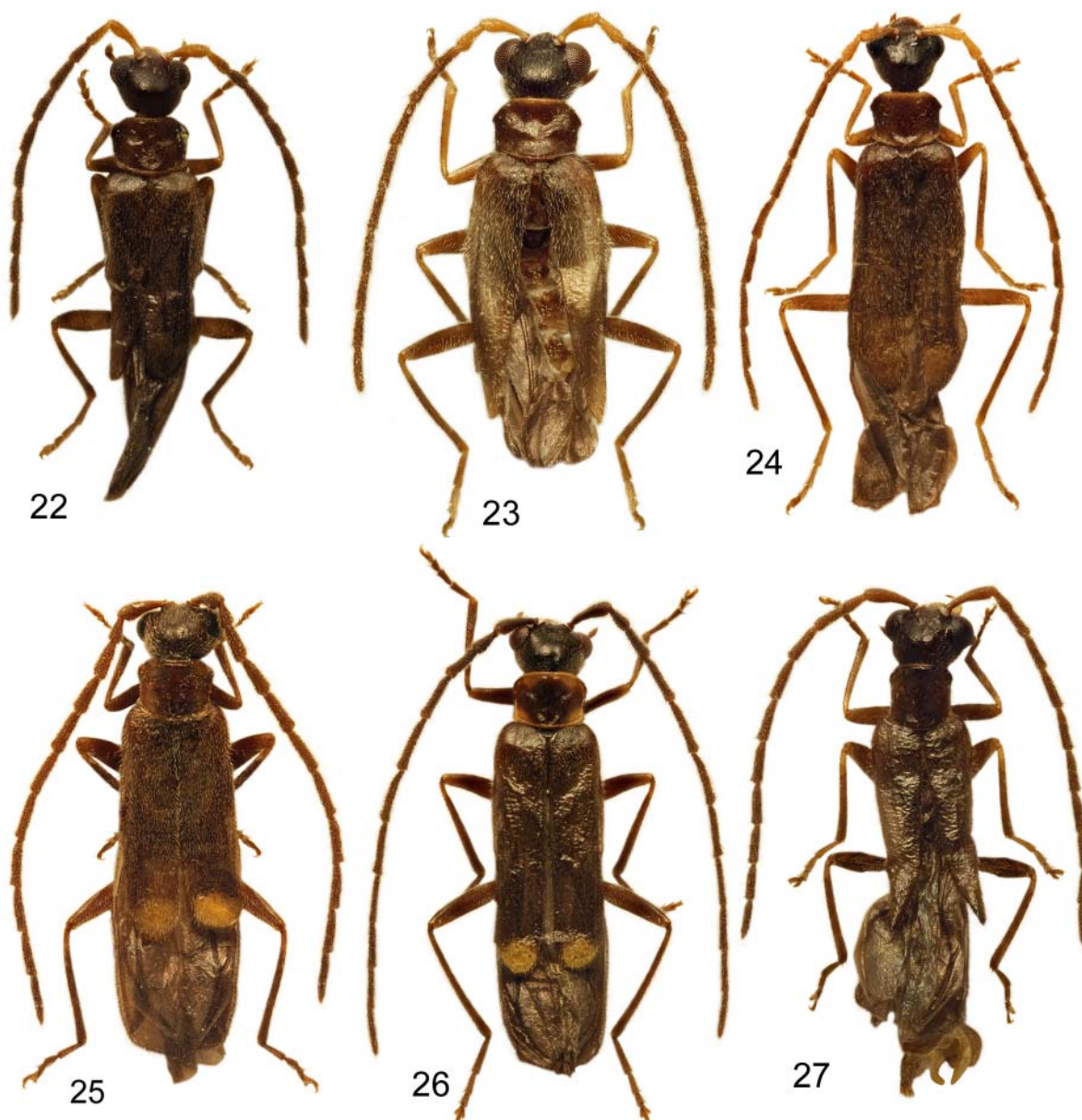
Figs 16–21. General view of *Malthodes*, males.

16 — *M. bourgeoisi*; 17 — *M. crassicornis*; 18 — *M. amplithorax*; 19 — *M. lederi*; 20 — *M. strejceki*; 21 — *M. pseudobesucheti* (after Kazantsev, 2022).

Рис. 16–21. Общий вид *Malthodes*, самцы.

16 — *M. bourgeoisi*; 17 — *M. crassicornis*; 18 — *M. amplithorax*; 19 — *M. lederi*; 20 — *M. strejceki*; 21 — *M. pseudobesucheti* (по: Kazantsev, 2022).

- Body length 2.7–3.1 mm (Fig. 18). *M. amplithorax* Wittmer, 1992
- 9(8) Ultimate sternite narrow, deeply split at apex; ultimate tergite semi-oval, with shallow incision at apex (Figs 44, 45). Aedeagus — Fig. 84. Body length 2.3–2.8 mm (females can be slightly over 3 mm) (Fig. 19). *M. lederi* Pic, 1912
- 10(6) Pronotum more or less broadly yellow at anterior and posterior margins (Figs 20–22).
- 11(12). Ultimate sternite incised at apex; ultimate tergite narrow, narrowed towards apex (Figs 46, 47). Aedeagus — Figs 85, 86. Body length 2.9–3.1 mm (Fig. 20) *M. strejceki* Švihla, 1990
- 12(11). Ultimate sternite not incised at apex (Figs 6, 7, 48, 49).
- 13(14) Ultimate sternite broadly widened at apex, ultimate tergite relatively long and widened at apex (Figs 8, 9, 48, 49). Aedeagal dorsal plate narrowed distally; laterophyses hooked apically, in lat-



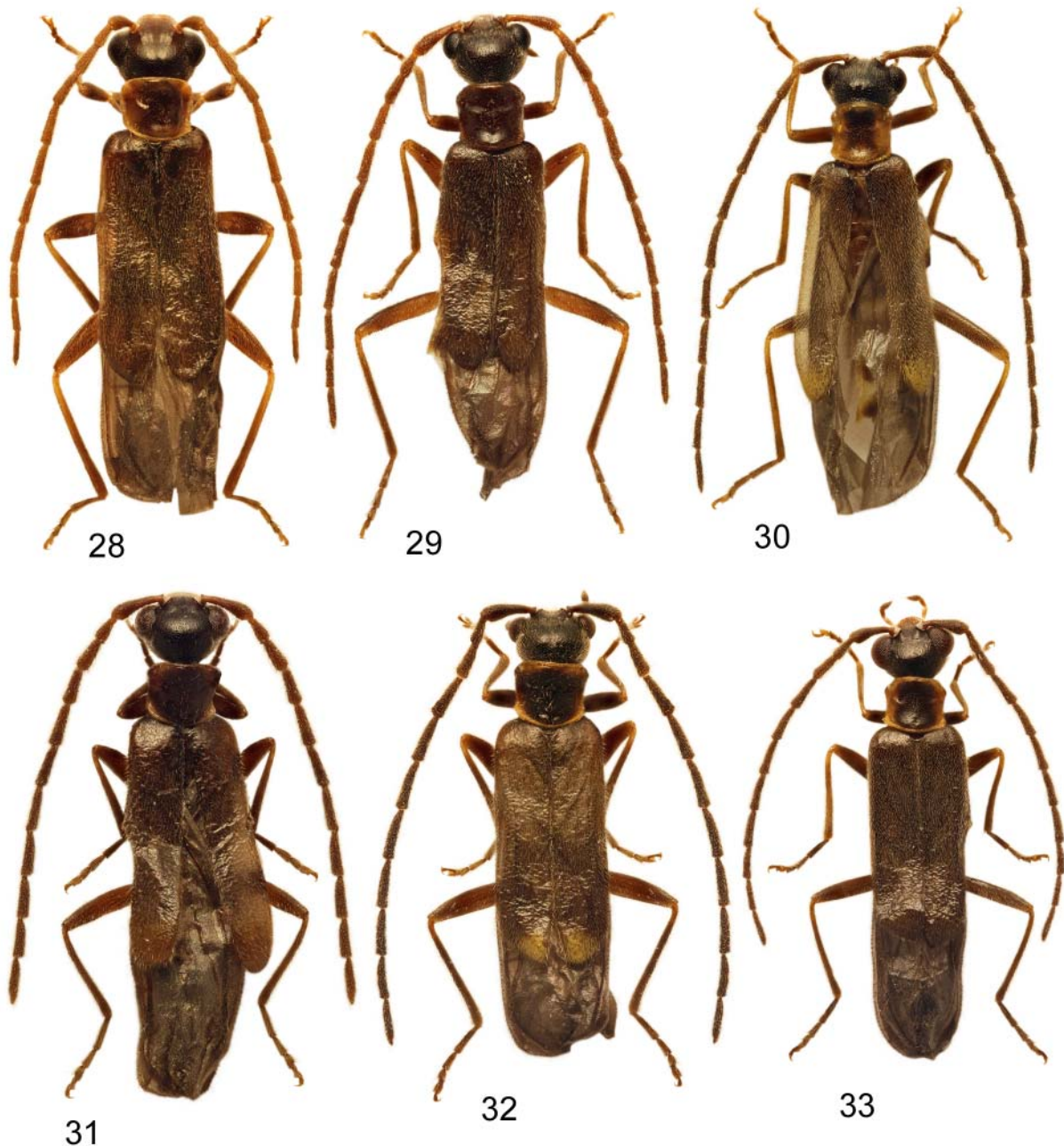
Figs 22–27. General view of *Malthodes*, males.

22 — *M. sotschienesis*; 23 — *M. seregiusi*; 24 — *M. mutatus*; 25 — *M. circassicus*; 26 — *M. kubiensis*; 27 — *M. abkhasicus* (after Kazantsev, 2022).

Рис. 22–27. Общий вид *Malthodes*, самцы.

22 — *M. sotschienesis*; 23 — *M. seregiusi*; 24 — *M. mutatus*; 25 — *M. circassicus*; 26 — *M. kubiensis*; 27 — *M. abkhasicus* (по: Kazantsev, 2022).

- eral view (Figs 15, 87, 88). Body length 2.9–3.1 mm (Fig. 21).*M. pseudobesucheti* Wittmer, 1970
- 14(13) Ultimate sternite relatively narrowly widened at apex, ultimate tergite relatively short and not widened at apex (Figs 6, 7). Aedeagal dorsal plate distally rounded; laterophyses not hooked apically, in lateral view (Figs 13, 14). Body length 3 mm (Fig. 2).*M. sukkoensis* **sp.n.**
- 15(6) Elytra without yellow apical spots (Figs 22–24).
- 16(19) Pronotum uniformly dark brown to black (Fig. 22, 23).
- 17(16) Ultimate sternite long, narrow, strongly curved, split at apex; ultimate tergite almost perpendicular to the preceding one, deeply cleft at apex (Figs 50, 51). Aedeagus — Fig. 89. Body length 2.4–2.8 mm (Fig. 22).*M. sotschiensis* Wittmer, 1970



Figs 28–33. General view of *Malthodes*, males.

28 — *M. medvedevi*; 29 — *M. castanicollis*; 30 — *M. bohaci*; 31 — *M. lyriformis*; 32 — *M. nyholmi*; 33 — *M. lozovoyi* (after Kazantsev, 2022).

Рис. 28–33. Общий вид *Malthodes*, самцы.

28 — *M. medvedevi*; 29 — *M. castanicollis*; 30 — *M. bohaci*; 31 — *M. lyriformis*; 32 — *M. nyholmi*; 33 — *M. lozovoyi* (по: Kazantsev, 2022).

- 18(17) Ultimate sternite moderately long, slightly bent and shallowly emarginate at apex; ultimate tergite coaxial with the preceding one, with shallow split at apex (Figs 52, 53). Aedeagus — Figs 90, 91. Body length 2.7–2.8 mm (Fig. 23). *M. seregiusi* Kazantsev, 2021
- 19(16) Pronotum partly yellow or light brown at anterior and posterior margins (Fig. 24). Ultimate sternite with relatively short and broad apical processes; ultimate tergite bent downwards before apex, widened and semi-circularly incised at apex (Figs 54, 55). Aedeagus — Fig. 92. Body length 3.0–3.5 mm. *M. mutatus* Wittmer, 1970
- 20(1) Relatively large, usually larger than 3.5 mm. Antennomere 2 noticeably shorter than antennomere 3 (Fig. 25–37).
- 21(24) Pronotum completely margined at sides (Figs 26, 27).
- 22(23) Third from end tergite with a dent; ultimate tergite elongate; ultimate sternite without elongate lateral processes (Figs 56–58). Aedeagus — Fig. 93. Body length 3.8–4.5 mm (Fig. 25). *M. circassicus* Švihla, 1980
- 23(22) Third from end tergite simple; ultimate tergite transverse; ultimate sternite with narrow long lateral processes (Figs 59, 60). Aedeagus — Fig. 94. Body length 4.5 mm (Fig. 26). *M. kobiensis* Wittmer, 1970



Figs 34–37. General view of *Malthodes*, males.

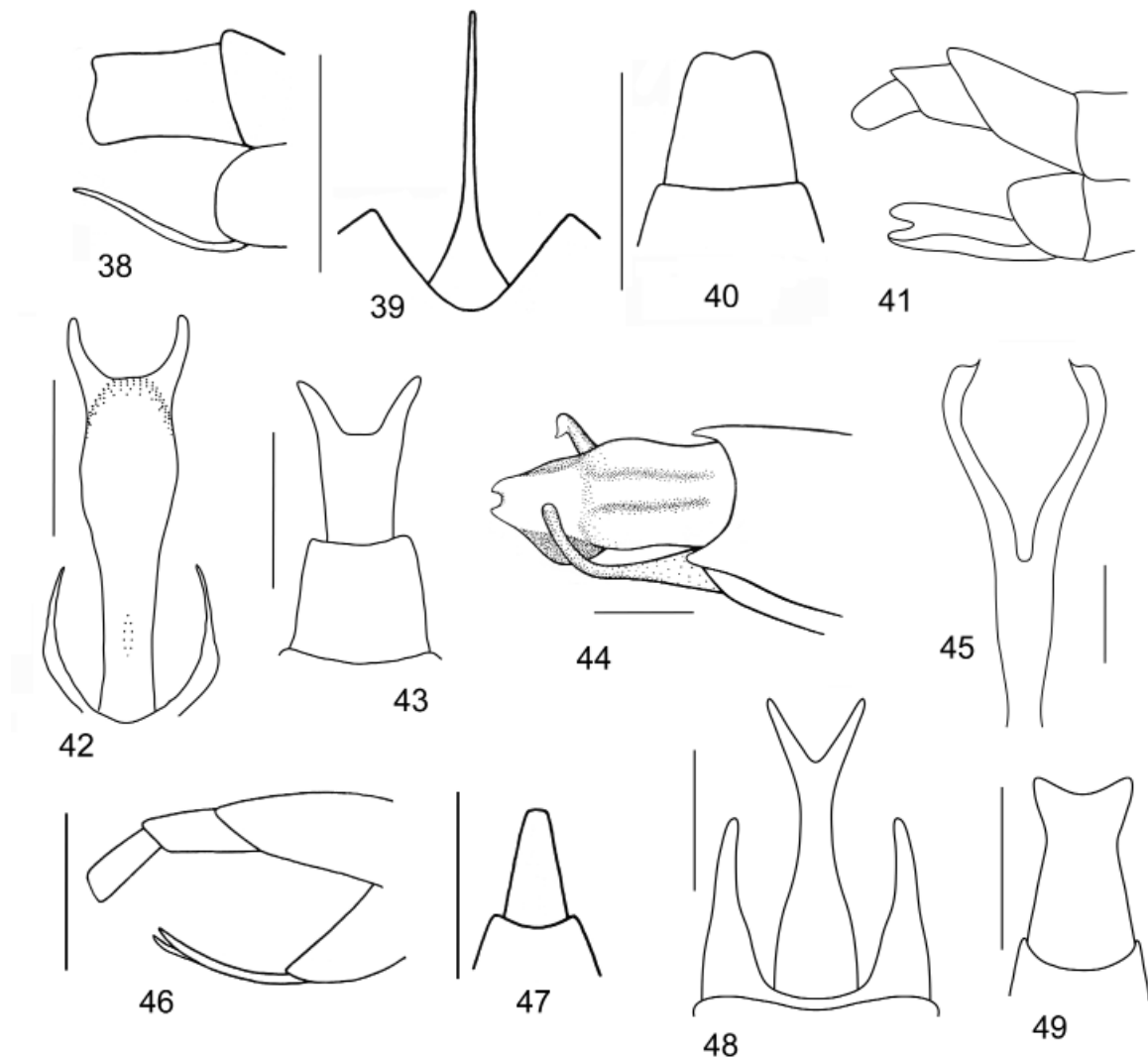
34 — *M. caucasicus*; 35 — *M. vikhrevi*; 36 — *M. kasantsevi*; 37 — *M. orientalicus* (after Kazantsev, 2022).

Рис. 34–37. Общий вид *Malthodes*, самцы.

34 — *M. caucasicus*; 35 — *M. vikhrevi*; 36 — *M. kasantsevi*; 37 — *M. orientalicus* (по: Kazantsev, 2022).

- 24(21) Pronotum margined at sides only at anterior angles (Figs 28–37).
 25(34) Third from end tergite simple (Figs 61–65).
 26(29) Pronotum uniformly dark brown to black, sometimes with narrow testaceous bordering at anterior and posterior margins (Fig. 27).
 27(28) Pronotum uniformly black, distinctly elongate; elytra uniformly black (Fig. 27). Ultimate sternite widened and slightly cleft at apex (Figs 61, 62). Aedeagus — Fig. 95. Body length 3.5–5.0 mm. *M. abkhasicus* Wittmer, 1979
 28(27) Pronotum with narrow testaceous bordering at anterior and posterior margins, distinctly transverse. Ultimate sternite oval.

- Body length 4.8–5.0 mm. *M. jaromiri* Švihla, 2002
 29(26) Pronotum mostly testaceous or broadly lightened at angles (Figs 28–30).
 30(31) Ventral plate of aedeagus very narrow, only slightly widened towards apex; laterophyses massive, widened and dentate at apex; interophyses short and straight (Fig. 96). Bases of tibiae testaceous; elytra uniformly dark brown; antennae light brown, relatively short, slightly reaching over elytral apices (Fig. 28). Body length 5.0–5.5 mm. ..
 *M. medvedevi* Wittmer, 1992
 31(30) Ventral plate of aedeagus relatively broad; laterophyses narrow and long; interophyses absent (Figs 97–100).



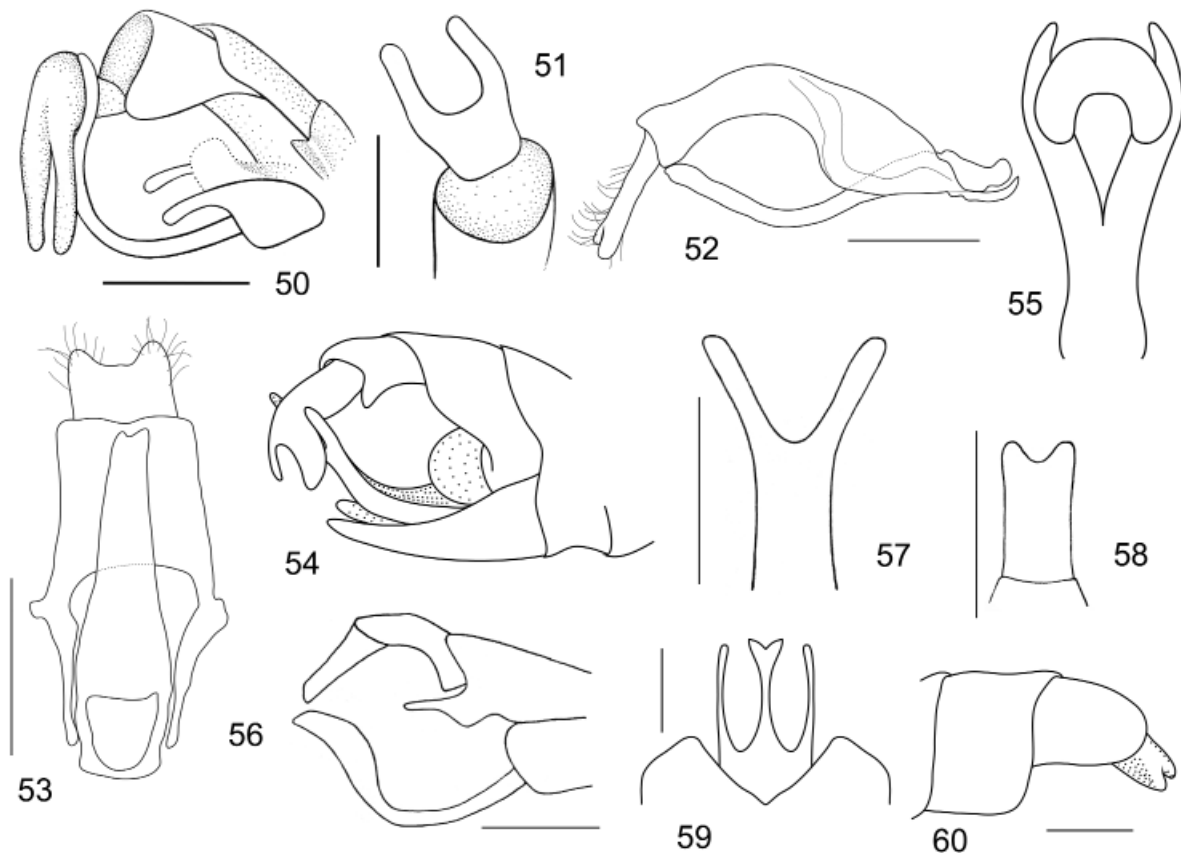
Figs 38–49. Terminal abdominal segments of *Malthodes*.

38–40 — *M. bourgeoisi*; 41 — *M. crassicornis*; 42, 43 — *M. amphithorax*; 44, 45 — *M. lederi*; 46, 47 — *M. strejceki*; 48, 49 — *M. pseudobesucheti*; 39, 42, 45, 48 — ultimate sternite(s); 40, 43, 47, 49 — ultimate tergite(s). Scale bars 0.25 mm. (38–40 — after Švihla, 1990; 41 — after Ganglbauer, 1911; 42, 43 — after Wittmer, 1992; 44, 45, 48, 49 — after Wittmer, 1970; 46, 47 — after Švihla, 1990 and Wittmer, 1992).

Рис. 38–49. Вершинные брюшные сегменты *Malthodes*.

38–40 — *M. bourgeoisi*; 41 — *M. crassicornis*; 42, 43 — *M. amphithorax*; 44, 45 — *M. lederi*; 46, 47 — *M. strejceki*; 48, 49 — *M. pseudobesucheti*; 39, 42, 45, 48 — последний(е) стернит(ы); 40, 43, 47, 49 — последний(е) тергит(ы). Масштабные линейки 0,25 мм. (38–40 — по: Švihla, 1990; 41 — по: Ganglbauer, 1911; 42, 43 — по: Wittmer, 1992; 44, 45, 48, 49 — по: Wittmer, 1970; 46, 47 — по: Švihla, 1990 and Wittmer, 1992).

- 32(33) Laterophyses in lateral view widened and bent at apex; at base, in dorsal view, flat (Figs 97, 98). Pronotum varies from uniformly testaceous to uniformly dark brown (Fig. 29). Body length 3.8–4.8 mm. *M. castanicollis* Reitter, 1888
- 33(32) Laterophyses in lateral view narrow and straight; at base, in dorsal view, dentate (Figs 99, 100). Body length 3.3–5.3 mm (Fig. 30). *M. bohaci* Švihla, 2002
- 34(25) Third from end tergite with processes or dents (Figs 66–80).
- 35(48) Third from end tergite with a dent (Figs 3–5, 66–77).
- 36(45) Ultimate sternite and tergite with a pair of apical processes (Figs 66–76).
- 37(38) Ultimate sternite with long cithern-like processes (Figs 66, 67). Pronotum from uniformly black to noticeably lightened at angles (Fig. 31). Aedeagus — Figs 101, 102. Body length 4.0–4.5 mm. *M. lyriformis* Wittmer, 1992
- 38(37) Ultimate sternite with relatively short and straight processes (Figs 68–72).
- 39(42) Aedeagus with relatively short parameres, not surpassing ventral plate in length (Figs 103–105).
- 40(41) Ultimate sternite weakly narrowed in the middle and not bent before apex (Figs 68–70). Aedeagus with almost truncate apex of ventral plate and non-widened before apex laterophyses (Figs 103). Elytra with bright yellow apices (Fig. 32). Body length 5.0–5.5 mm. *M. nyholmi* Wittmer, 1970
- 41(40) Ultimate sternite distinctly narrowed in the middle and abruptly bent before apex (Figs 71, 72). Aedeagus with distally rounded ventral plate and noticeably widened before apex laterophyses (Figs 104, 105). Elytra uniformly black (Fig. 33). Body length 4.7–4.8 mm. *M. lozovoyi* Kazantsev, 2021
- 42(39) Aedeagus with relatively long parameres, surpassing ventral plate in length (Figs 106–109).
- 43(44) Apical processes of ultimate sternite relatively long (Figs 73, 74). Aedeagus elongate; penis before apex convex, in lateral view (Figs 106, 107). Upperside dark brown to black; pronotal angles testaceous (Fig. 34). Body length 3.0–3.8 mm. *M. caucasicus* Wittmer, 1958
- 44(43) Apical processes of ultimate sternite relatively short (Figs 75, 76). Aedeagus subquadrate; penis before apex



Figs 50–60. Terminal abdominal segments of *Malthodes*.

50, 51 — *M. sotschiensis*; 52, 53 — *M. seregiusi*; 54, 55 — *M. mutatus*; 56–58 — *M. circassicus*; 59, 60 — *M. kubiensis*; 57, 59 — ultimate sternite(s); 51, 55, 58, 60 — ultimate tergite(s). Scale bars 0.25 mm. (50, 51, 59, 60 — after Wittmer, 1970; 52, 53 — after Kazantsev, 2022; 54, 55 — after Wittmer, 1992; 56–58 — after Švihla, 1980).

Рис. 50–60. Вершинные брюшные сегменты *Malthodes*.

50, 51 — *M. sotschiensis*; 52, 53 — *M. seregiusi*; 54, 55 — *M. mutatus*; 56–58 — *M. circassicus*; 59, 60 — *M. kubiensis*; 57, 59 — последний(е) стернит(ы); 51, 55, 58, 60 — последний(е) тергит(ы). Масштабные линейки 0,25 мм. (50, 51, 59, 60 — по: Wittmer, 1970; 52, 53 — по: Kazantsev, 2022; 54, 55 — по: Wittmer, 1992; 56–58 — по: Švihla, 1980).

- concave, in lateral view (Figs 108, 109). Habitually similar to *M. caucasicus* (Fig. 35). Body length 4.0 mm.
 *M. vikhrevi* Kazantsev 2021
- 45(36) Ultimate sternite and tergite simple (Figs 3–5, 77).
 46(47) Ultimate sternite noticeably widened distally (Figs 3, 4). Pronotal angles testaceous; elytra with bright yellow apical spots (Fig. 1). Aedeagal laterophyses with dents (Figs 10, 11). Body length 3.6–3.7 mm.
 *M. nabozenkorum* sp.n.
- 47(46) Ultimate sternite parallel-sided distally (Figs 5, 77). Pronotal angles, bases of antennomeres and bases of tibiae testaceous; elytra with bright yellow apical spots (Fig. 36). Aedeagal laterophyses without dents (Figs 12, 110). Body length 3.0–3.5 mm. *M. kasantsevi* Wittmer, 1992
- 48(35) Third from end tergite with a pair of relatively broad processes at posterior edge, also bearing downward direct-

ed additional appendage at each side; ultimate sternite not emarginate at apex (Figs 78–80). Pronotal angles, bases of antennomeres 1–2 and bases of tibiae testaceous; elytra uniformly dark brown to black (Fig. 37). Aedeagus — Fig. 111. Body length 3.2–4.2 mm. ... *M. orientalicus* Wittmer, 1970

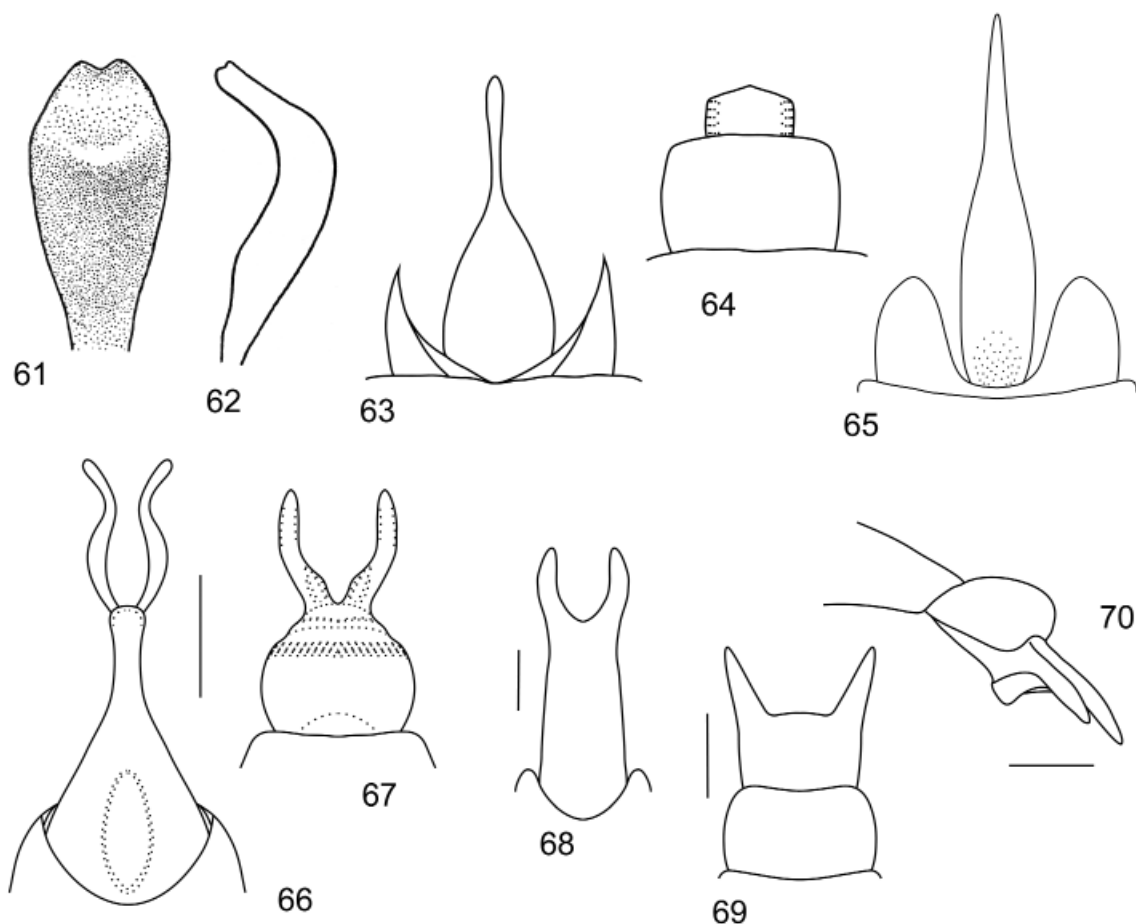
Annotated checklist of *Malthodes* species of the Greater Caucasus

Malthodes Kiesenwetter, 1852

Malthodes Kiesenwetter, 1852: 242.

Type species: *Malthinus marginatus* Latreille, 1806.

1. *abkhasicus* Wittmer, 1979: 141. North-western Caucasus: Krasnodar Krai (Sochi area, Krasnaya Polyana, Lagonaki,



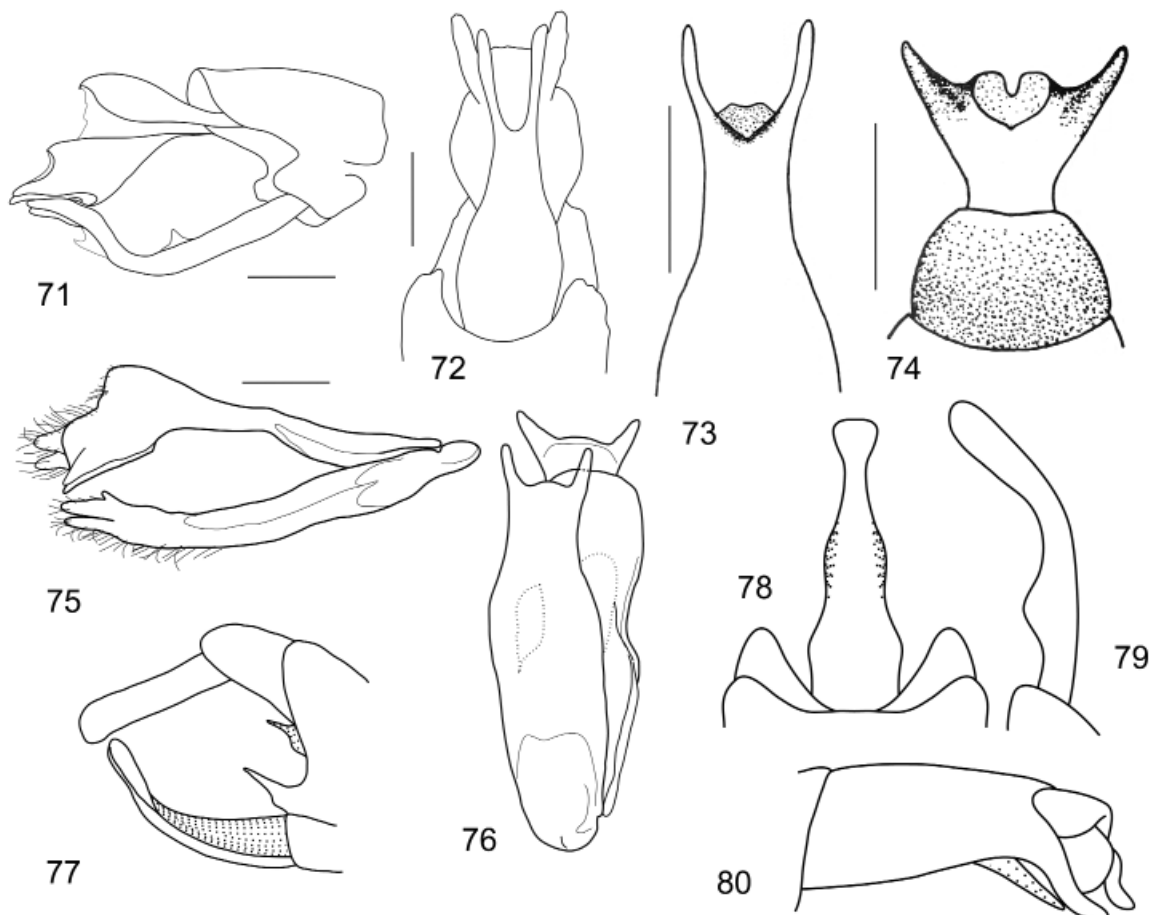
Figs 61–70. Terminal abdominal segments of *Malthodes*.

61, 62 — *M. abkhasicus*; 63, 64 — *M. medvedevi*; 65 — *M. castanicollis*; 66, 67 — *M. lyriformis*; 68–70 — *M. nyholmi*; 61–63, 65, 66, 68 — ultimate sternite(s); 64, 67, 69, 70 — ultimate tergite(s). Scale bars 0.25 mm. (61–64, 66, 67 — after Wittmer, 1992; 65 — after Kazantsev, 2022; 68–70 — after Wittmer, 1970).

Рис. 61–70. Вершинные брюшные сегменты *Malthodes*.

61, 62 — *M. abkhasicus*; 63, 64 — *M. medvedevi*; 65 — *M. castanicollis*; 66, 67 — *M. lyriformis*; 68–70 — *M. nyholmi*; 61–63, 65, 66, 68 — последний(е) стернит(ы); 64, 67, 69, 70 — последний(е) тергит(ы). Масштабные линейки 0,25 мм. (61–64, 66, 67 — по: Wittmer, 1992; 65 — по: Kazantsev, 2022; 68–70 — по: Wittmer, 1970).

- Ubinskaya) and Abkhazia (Miussera) (Map 2). 100–2000 m, June through July.
2. *amplithorax* Wittmer, 1992: 26. North-western Caucasus: Krasnodar Krai (Krasnaya Polyana, Lagonaki) (Map 1). 800–2000 m, June through July.
 3. *bohaci* Švihla, 2002: 137. North-western Caucasus: Krasnodar Krai (Sochi area) and Abkhazia (Bzyb valley, Hodzhal Mt) (Map 2). 500–1000 m, June.
 4. *bourgeoisii* (Reitter, 1888): 210 (*Malchinus*). Northern Caucasus: Krasnodar Krai (Sochi area), North Ossetia (Ardon valley, Tsei Gorge, Tersky Mts), Dagestan (Gunib) (Map 1). The distribution area also includes Georgia, Iran and Turkey [Wittmer, 1992]. 1800–2000 m, June through August.
= *rhapidostylus* Pic, 1912: 59.
 5. *castanicollis* Reitter, 1888: 208. North-western Caucasus: Krasnodar Krai (Sochi area, Tkhab, Ubinskaya) and Abkhazia (env. Sukhum) (Map 2). 2000 m, June.
 6. *caucasicus* Wittmer, 1958: 120. Caucasus: Georgia (Kobi) and Abkhazia (Ritsa R.N.P.) (Map 2). 1500–2120 m, July.
 7. *circassicus* Švihla, 1980: 249. North-western Caucasus: Krasnodar Krai (Krasnaya Polyana, Utrish) (Map 2). 100–2000 m, June.
 8. *crassicornis* (Mäklin, 1846): 179 (*Malthinus*). From West to East Europe, also in North-western Caucasus: Krasnodar Krai (Krasnaya Polyana) (Map 1). The distribution area also includes Iran and Turkey. May through July.
 9. *jaromiri* Švihla, 2002: 138. North-western Caucasus: Abkhazia (Kelasuri valley) (Map 2). 500 m, June.
 10. *kasantsevi* Wittmer, 1992: 34. North-western Caucasus: Krasnodar Krai (Krasnaya Polyana, Lagonaki) and Abkhazia (Ritsa R.N.P., Bzyb Mts) (Map 2). 1700–2500 m, subalpine and alpine zone, July.
 11. *kobiensis* Wittmer, 1970: 62. North-western and northern Caucasus: Krasnodar Krai (Sochi area, Krasnaya Polyana, Lagonaki, Ubinskaya), North Ossetia (Skalisty Mts), Chechnya, Abkhazia (Gagrsky Range, Bzyb valley, Hodzhal Mt, Tsumuri), also Georgia (Kobi) (Map 2). 840–3000 m, June through August.



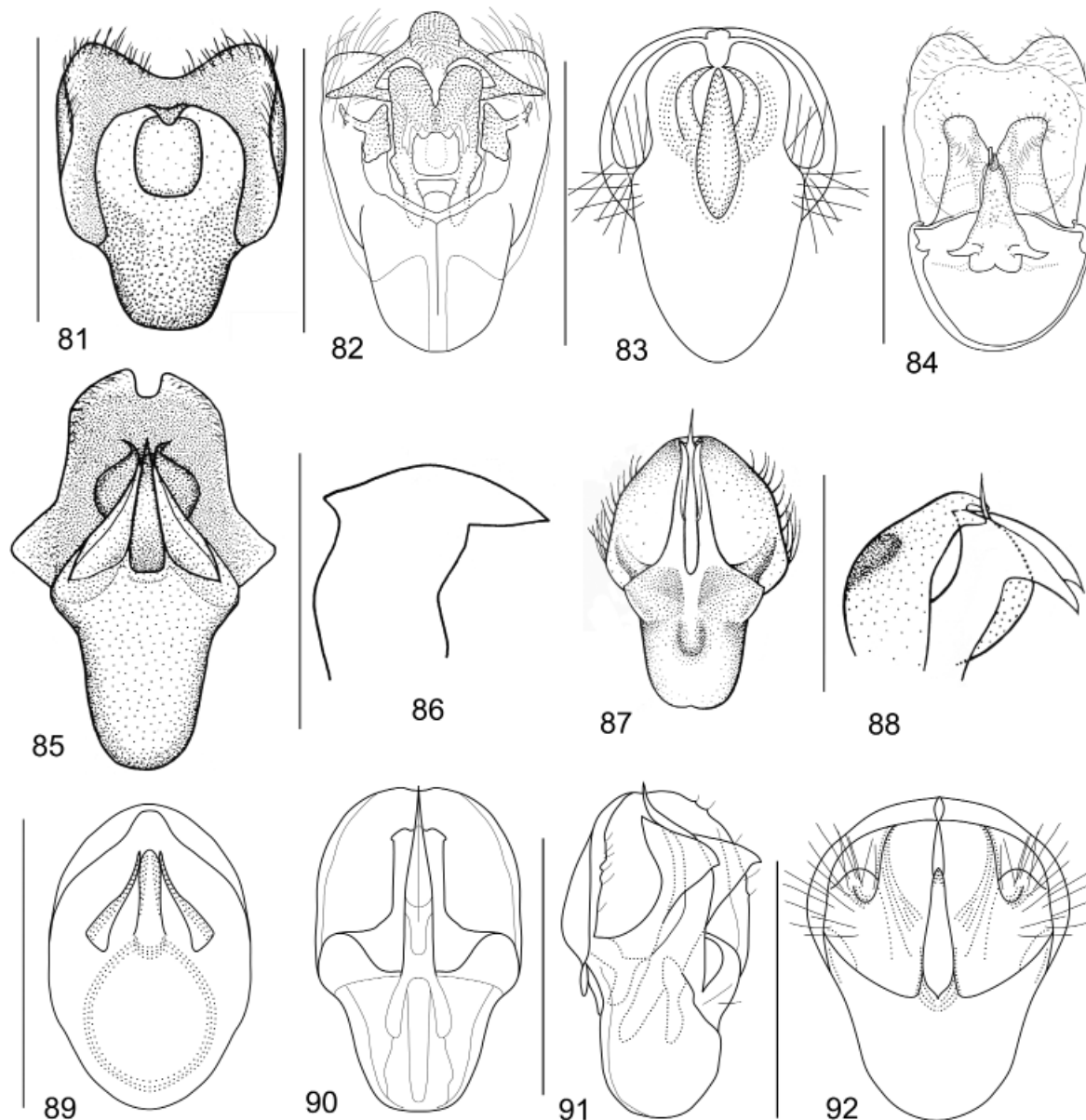
Figs 71–80. Terminal abdominal segments of *Malthodes*.

71, 72 — *M. lozovoyi*; 73, 74 — *M. caucasicus*; 75, 76 — *M. vikhrevi*; 77 — *M. kasantsevi*; 78–80 — *M. orientalicus*; 72, 73, 78, 79 — ultimate sternite(s); 74, 80 — ultimate tergite(s). Scale bars 0.25 mm. (71, 72, 75, 76 — after Kazantsev, 2022; 73, 74, 77 — after Wittmer, 1992; 78–80 — after Wittmer, 1970).

Рис. 71–80. Вершинные брюшные сегменты *Malthodes*.

71, 72 — *M. lozovoyi*; 73, 74 — *M. caucasicus*; 75, 76 — *M. vikhrevi*; 77 — *M. kasantsevi*; 78–80 — *M. orientalicus*; 72, 73, 78, 79 — последний(е) стернит(ы); 74, 80 — последний(е) тергит(ы). Масштабные линейки 0,25 мм. (71, 72, 75, 76 — по: Kazantsev, 2022; 73, 74, 77 — по: Wittmer, 1992; 78–80 — по: Wittmer, 1970).

12. *lederi* Pic, 1912: 59. Northern Caucasus: North Ossetia (Vladikavkaz, Skalisty Mts), Ingushetia, Dagestan (Gunib, Nukatl Mts); also South Ossetia (Dzau) and Georgia (Kobi) (Map 1). 1050–2200 m, June through July. **First record for South Ossetia.**
13. *lozovoyi* Kazantsev, 2021: 231. North-western Caucasus: Abkhazia (Hodzhalt Mt); also South Ossetia (Dzau) (Map 2). 1300–1800 m, June through July. **First record for South Ossetia.**
14. *lyriformis* Wittmer, 1992: 29. North-western Caucasus: Krasnodar Krai (Krasnaya Polyana, Lagonaki) and Abkhazia (Gagrsky Mts, Ritsa R.N.P.) (Map 2). 1700–2000 m, July.
15. *medvedevi* Wittmer, 1992: 22. North-western Caucasus: Krasnodar Krai (Krasnaya Polyana, Lagonaki) and Abkhazia (Hodzhalt Mt) (Map 2). The distribution area also includes Georgia (Tsagveri). 800–2000 m, July.



Figs 81–92. Aedeagi of *Malthodes*.

81 — *M. bourgeoisi*; 82 — *M. crassicornis*; 83 — *M. amplithorax*; 84 — *M. lederi*; 85, 86 — *M. strejceki*; 87, 88 — *M. pseudobesucheti*; 89 — *M. sotschiensis*; 90, 91 — *M. seregiusi*; 92 — *M. mutatus*. Scale bars 0.25 mm. (81, 85, 86 — after Švihla, 1990; 82, 84, 90, 91 — after Kazantsev, 2022; 83, 89, 92 — after Wittmer, 1992; 87, 88 — after Wittmer, 1970).

Рис. 38–49. Эдеагусы *Malthodes*.

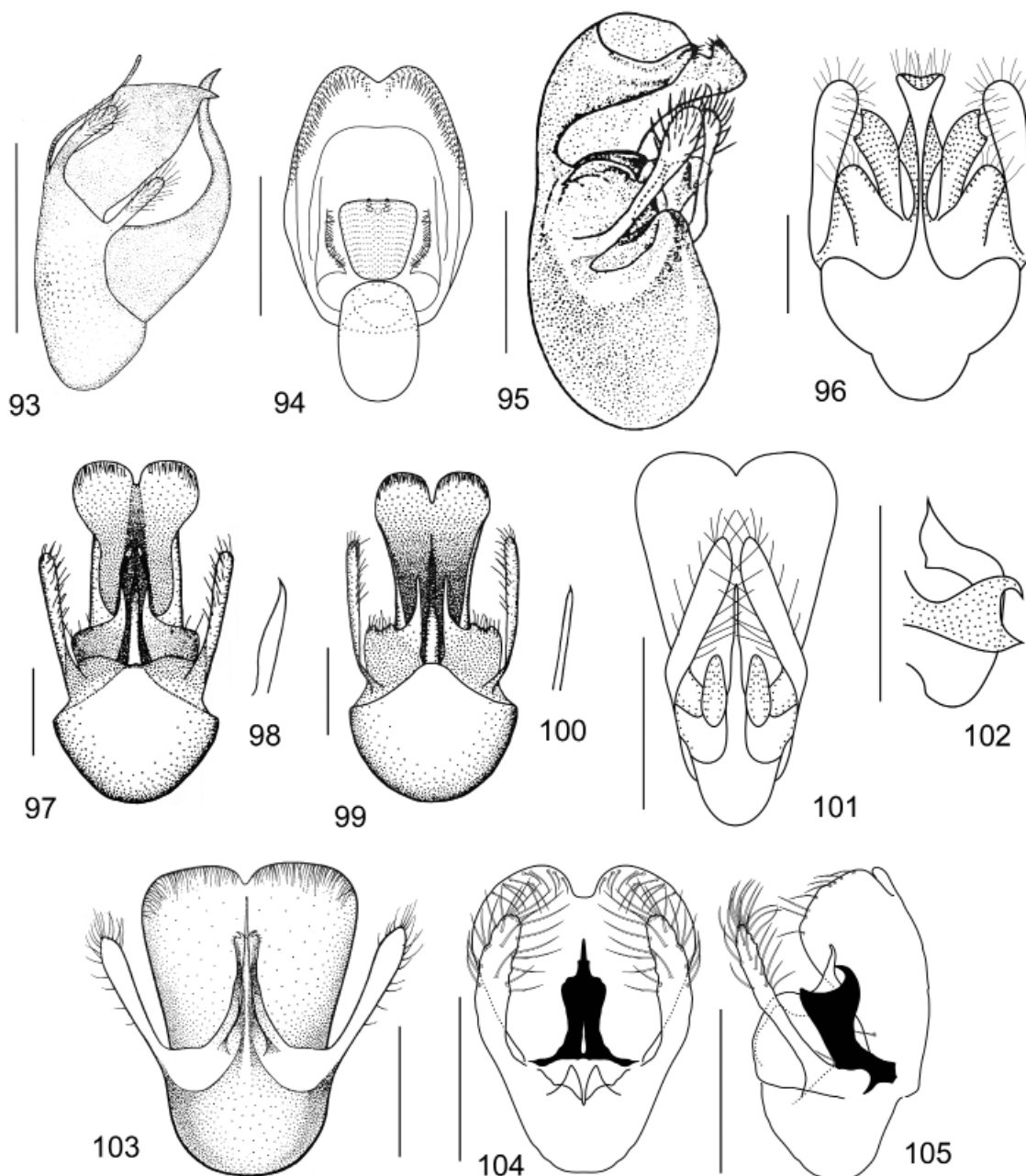
81 — *M. bourgeoisi*; 82 — *M. crassicornis*; 83 — *M. amplithorax*; 84 — *M. lederi*; 85, 86 — *M. strejceki*; 87, 88 — *M. pseudobesucheti*; 89 — *M. sotschiensis*; 90, 91 — *M. seregiusi*; 92 — *M. mutatus*. Масштабные линейки 0,25 мм. (81, 85, 86 — по: Švihla, 1990; 82, 84, 90, 91 — по: Kazantsev, 2022; 83, 89, 92 — по: Wittmer, 1992; 87, 88 — по: Wittmer, 1970).

16. *mutatus* Wittmer, 1970: 40. Northern Caucasus: Teberda, North Ossetia (Tbaukhokh Mt, Skalisty Mts), Dagestan (Gunib) (Map 2). 1270–2350 m, June through July.

17. *nabozhenkorum* Kazantsev, **sp.n.** Greater Caucasus: South Ossetia. Also in central Georgia (Bakuriani). 1760–1800 m, June through July.

18. *nyholmi* Wittmer, 1970: 52. North-western Caucasus: Krasnodar Krai (Ubinskaya) and Abkhazia (Sukhum, Shoudidi Mt) (Map 2). Also distributed in Georgia and Turkey. 420–2000 m, May through July.

19. *orientalicus* Wittmer, 1970: 85. North-western Caucasus: Krasnodar Krai (Ubinskaya), also South Ossetia (Map 2).



Figs 93–105. Aedeagi of *Malthodes*.

93 — *M. circassicus*; 94 — *M. kubiensis*; 95 — *M. abkhasicus*; 96 — *M. medvedevi*; 97, 98 — *M. castanicollis*; 99, 100 — *M. bohaci*; 101, 102 — *M. lyriformis*; 103 — *M. nyholmi*; 104, 105 — *M. lozovoyi*; 98, 100 — laterophyse in lateral view. Scale bars 0.25 mm. (93 — after Švihla, 1980; 94, 104, 105 — after Kazantsev, 2022; 95, 96, 101, 102 — after Wittmer, 1992; 97–100 — after Švihla, 1980; 103 — after Wittmer, 1970).

Рис. 93–105. Эдеагусы *Malthodes*.

93 — *M. circassicus*; 94 — *M. kubiensis*; 95 — *M. abkhasicus*; 96 — *M. medvedevi*; 97, 98 — *M. castanicollis*; 99, 100 — *M. bohaci*; 101, 102 — *M. lyriformis*; 103 — *M. nyholmi*; 104, 105 — *M. lozovoyi*; 98, 100 — латерофиза, сбоку. Масштабные линейки 0,25 мм. (93 — по: Švihla, 1980; 94, 104, 105 — по: Kazantsev, 2022; 95, 96, 101, 102 — по: Wittmer, 1992; 97–100 — по: Švihla, 1980; 103 — по: Wittmer, 1970).

The distribution area also includes Azerbaijan and Turkey. 1760 m, May. **First record for South Ossetia.**

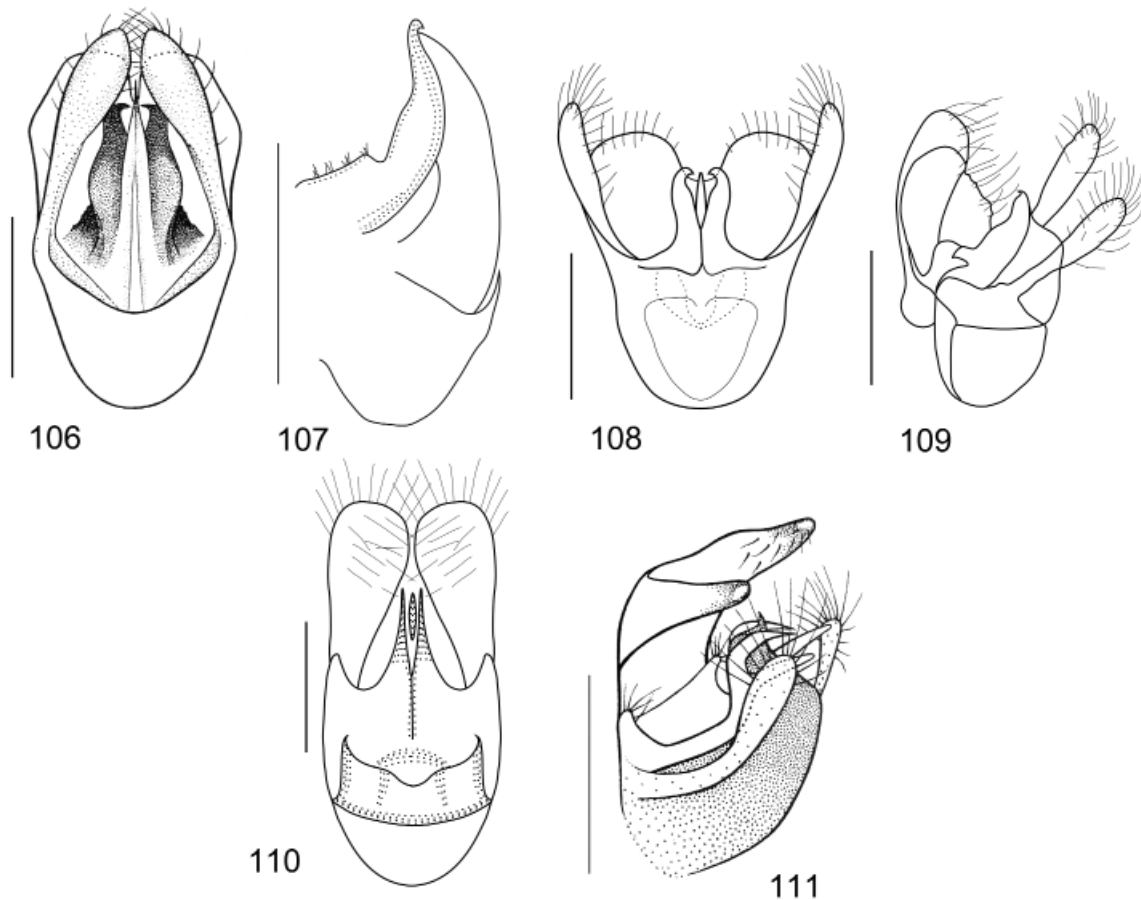
20. *pseudobesucheti* Wittmer, 1970: 61. North-western Caucasus: Krasnodar Krai (Krasnaya Polyana) and Abkhasia (Ritsa R.N.P., Bzyb Mts) (Map 1). 1670–2200 m, June through July.
21. *seregiusi* Kazantsev, 2021: 288. North-western Caucasus: Krasnodar Krai (Sochi area) (Map 1). 220–550 m, May.
22. *sotschienesis* Wittmer, 1970: 63. North-western Caucasus: Krasnodar Krai (Sochi area, Krasnaya Polyana) and Abkhasia (Ritsa R.N.P., Bzyb valley) (Map 1). 550–1900 m, June through July.
23. *strejceki* Švihla, 1990: 200. North-western Caucasus: Krasnodar Krai (Krasnaya Polyana, Lagonaki, Ubinskaya) and Abkhasia (Ritsa R.N.P., Bzyb Mts) (Map 1). 1500–1900 m, June through July.
24. *sukkoensis* Kazantsev, **sp.n.** North-western Caucasus: Krasnodar Krai (S Anapa). 100 m, April.
25. *vikhrevi* Kazantsev, 2021: 288. North-western Caucasus: Krasnodar Krai (Khosta, Sochi area) (Map 2). May.

Malthodes lobicollis (Reitter, 1888) described from ‘Circassien’ based on several females [Reitter, 1888], whereas all the taxonomy of the genus is based on the morphological characters of males (shape and structures of the terminal abdominal segments and aedeagi), cannot be placed amidst its congeners properly. Therefore it is included in the list only as *incertae sedis*.

The following three species are excluded from the list of the Greater Caucasian *Malthodes*:

Malthodes debilis Kiesenwetter, 1852. Distributed from West to East Europe [Delkeskamp, 1977; Wittmer, 1992; Kazantsev, Brancucci, 2007]. One specimen is reported from the Caucasus: ‘Parabotch Forest, Ki[z]l., Tersk distr.’ [Wittmer, 1992]. The taxon is excluded from the list, because the locality where the only ‘Caucasian’ specimen was registered (Kizlyar distr., northern Dagestan), does not belong to the Greater Caucasus.

Malthodes quadrastilus Wittmer, 1992. The taxon is excluded from the list, as its type locality (Terekli-Mekteb, northern Dagestan — Wittmer, 1992) does not belong to the



Figs 106–111. Aedeagi of *Malthodes*.

106, 107 — *M. caucasicus*; 108, 109 — *M. vikhrevi*; 110 — *M. kasantsevi*; 111 — *M. orientalicus*; 98, 107 — laterophyse and penis in lateral view. Scale bars 0.25 mm. (106, 111 — after Wittmer, 1970; 107 — after Wittmer, 1992; 108, 109 — after Kazantsev, 2022).

Рис. 106–111. Эдеагусы *Malthodes*.

106, 107 — *M. caucasicus*; 108, 109 — *M. vikhrevi*; 110 — *M. kasantsevi*; 111 — *M. orientalicus*; 98, 107 — латерофиза и пенис, сбоку. Масштабные линейки 0,25 мм. (93 — по: Švihla, 1980; 94, 104, 105 — по: Kazantsev, 2022; 95, 96, 101, 102 — по: Wittmer, 1992; 97–100 — по: Švihla, 1980; 103 — по: Wittmer, 1970).

Greater Caucasus. The second known specimen of *M. quadristilus* (from Krasnodar Krai — Kazantsev, 2011; 2022), after being re-studied, has proven to belong to the closely related *M. orientalicus* Wittmer, 1970.

Malthodes tordi Wittmer, 1970. *Malthodes tordi*, described from Turkey (Trabzon) [Wittmer, 1970], was later indicated for Abkhazia and Adjara [Wittmer, 1992]. However, the Abkhazian '*M. tordi*' proved to be a related, but different species — *M. jaromiri* Švihla, 2002 [Švihla, 2002], while the re-examination of the Adjara specimens, from the '*M. tordi*' series identified by Wittmer, showed that they also belong to another species, *M. vladimiri* Kazantsev, 2021 [Kazantsev, 2021b]. Therefore, *M. tordi* is excluded from the regional list as well.

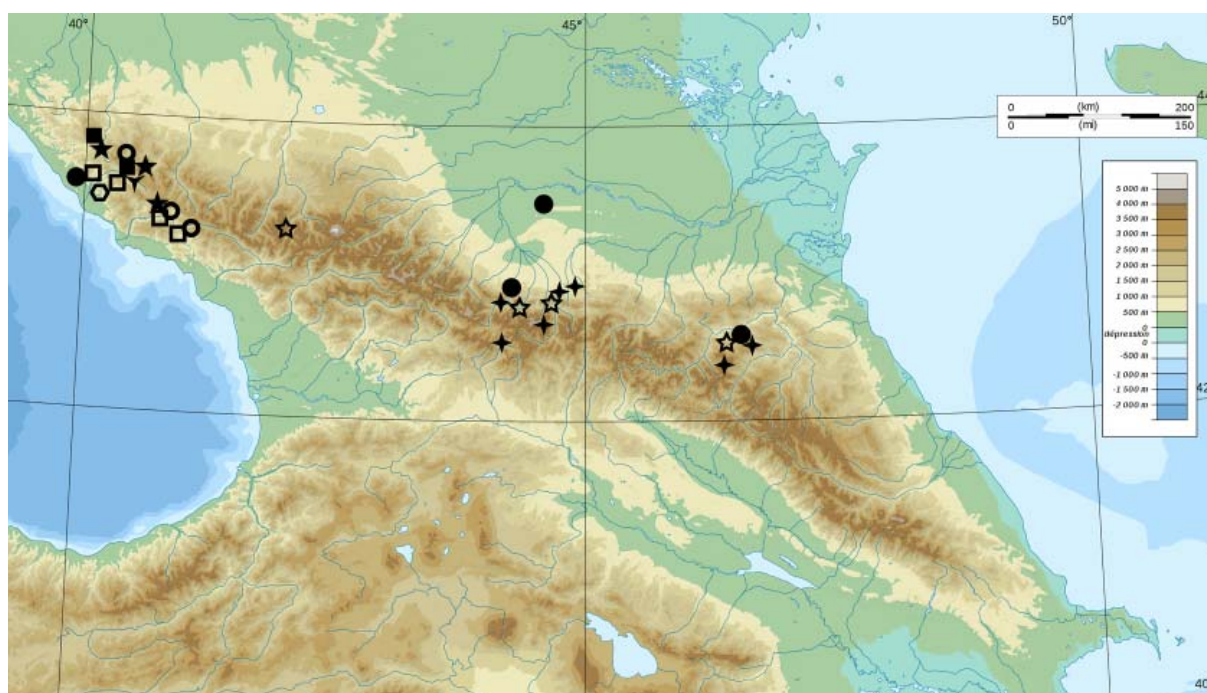
Discussion

A notable aspect of distribution of *Malthodes* in the Greater Caucasus is its relatively high endemism, with only six out of its 25 species also recorded beyond the limits of the mountain range and only four making it beyond the Caucasus sensu lato: *M. crassicornis*, which is widely distributed also in Europe, as well as in Iran and Turkey, and *M. bourgeoisi*, *M. nyholmi* and *M. orientalicus*, which are also found in the Transcaucasian Azerbaijan/Georgia and Turkey/Iran.

However, the genus is unevenly distributed along this mountain range, the number of species is noticeably diminishing from west to east: the majority of them are found in its western part (24), with 8 species in the central,

and only 3 in the eastern part (Maps 1, 2). This is apparently down to the gradually decreasing in the same direction humidity and afforestation, as *Malthodes*, like most other soldier beetles, are associated mainly with forested areas and montane meadows (e.g., Ramsdale [2010]). At the same time it is noteworthy that just two species (*M. bourgeoisi* and *M. mutatus*) are registered in all three parts of the range (ie, western, central and eastern), the Central and East Caucasus have three species in common (*M. bourgeoisi*, *M. lederi* and *M. mutatus*), while the West and Central Caucasus have five (*M. bourgeoisi*, *M. caucasicus*, *M. kubiensis*, *M. lozovoyi* and *M. mutatus*).

Another interesting phenomenon is that its two larger species-groups have different patterns of distribution, with regards to their occurrence on the northern or southern macroslopes. The first group, represented by smaller species, with antennomeres 2 and 3 subequal in length (the oldest taxon being *M. crassicornis*), lists five species registered on the northern and nine on the southern macroslope (Map 1). It should be noted, however, that same species of this group may occur on both macroslopes only where there are suitable passes, eg, in the extreme north-western Caucasus and the Krestovy Pass in the Central Caucasus. Thus, one species (*M. lederi*) seems to have penetrated from the northern to southern macroslope in the Central Caucasus, and two (*M. amplithorax* and *M. strejceki*) — from southern to northern macroslope in the north-west (Map 1).



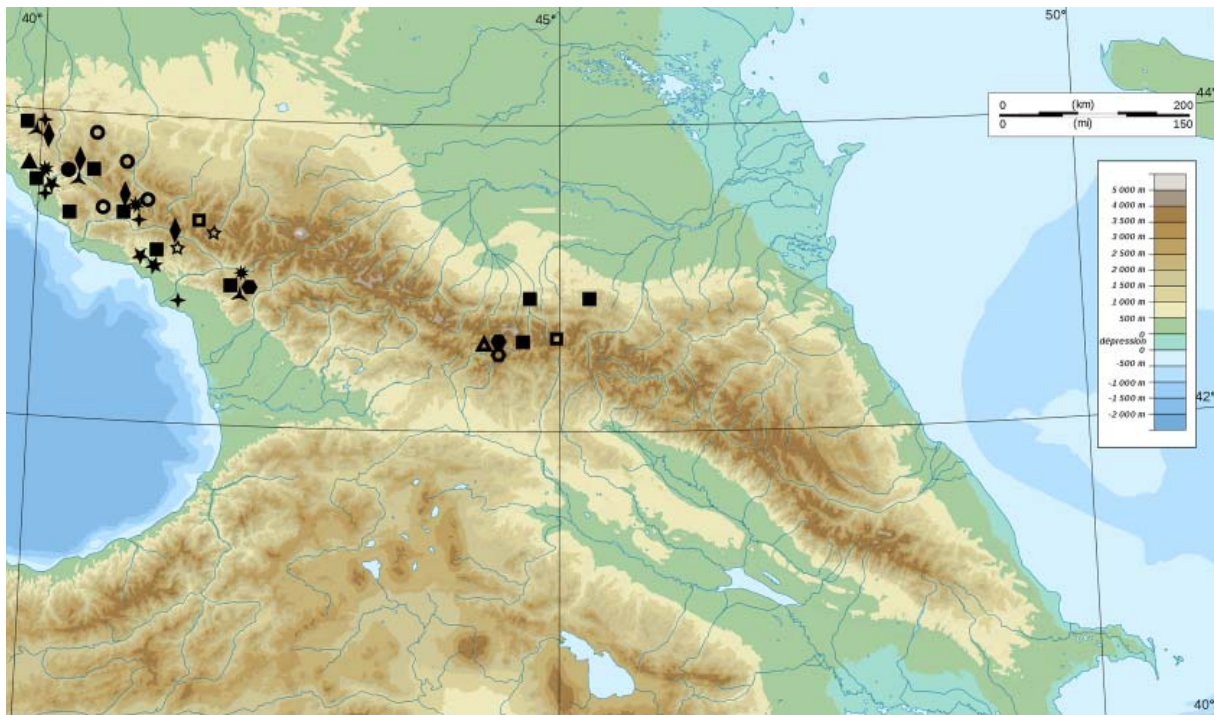
Map 1. Distribution of *Malthodes* in the Greater Caucasus. **Filled contours:** circle — *M. bourgeoisi*; 3-pointed star — *M. crassicornis*; square — *M. amplithorax*; 4-pointed star — *M. lederi*; 5-pointed star — *M. strejceki*; **no fill:** circle — *M. pseudobesucheti*; hexagon — *M. seregiusi*; square — *M. sotchiensis*; star — *M. mutatus*.

Карта 1. Распространение *Malthodes* на Большом Кавказе. **С заливкой:** круг — *M. bourgeoisi*; 3-угольная звезда — *M. crassicornis*; квадрат — *M. amplithorax*; 4-угольная звезда — *M. lederi*; 5-угольная звезда — *M. strejceki*; **без заливки:** круг — *M. pseudobesucheti*; шестиугольник — *M. seregiusi*; квадрат — *M. sotchiensis*; звезда — *M. mutatus*.

The second group, represented by larger species, with antennomere 2 distinctly shorter than antennomere 3 (the oldest taxon being *M. castanicollis*), includes 6 species on the northern and 17 on the southern macroslope (Map 2). Noteworthy, all the species from the northern macroslope (*M. abkhasicus*, *M. caucasicus*, *M. kasantsevi*, *M. kobienensis*, *M. lyriformis* and *M. medvedevi*) are also registered on the southern macroslope of the mountain range, with four of them (*M. abkhasicus*, *M. kasantsevi*, *M. lyriformis* and *M. medvedevi*) penetrating onto the northern macroslope only in the extreme northwest (Lagonaki Plateau). This means the second species-group has rather a southern origin, while the first one seems to have been colonising the Greater Caucasus in both directions. This conclusion, in its turn, suggests that the two species-groups might have different ancestry and represent different lineages deserving higher taxonomic status.

However, the situation with the taxonomy of the genus is not that simple. Eleven genera or subgenera had been established in or near *Malthodes* [Motschulsky, 1853; Fairmaire, 1875; Reitter, 1882; Seidlitz, 1889; Bourgeois, 1892, 1893; Weise, 1892, 1893; Fiori, 1905], of which, after a series of publications [Lacordaire, 1857; Seidlitz, 1891; Heyden *et al.*, 1906; Delkeskamp,

1939], ten ended up as synonyms of *Malthodes* s. str., with just one, *Podistrina* Fairmaire, 1875, surviving as a valid subgenus. The opinion of those who established the synonymies (e.g., Heyden *et al.* [1906], who introduced eight of the mentioned synonymies) appeared to be authoritative enough to discourage further attempts to divide the numerous and morphologically diverse members of *Malthodes* s. str. into subgeneric groups. The most the *Malthodes* scholars ventured into was suggesting 'species-groups' defined by their own criteria (e.g., Wittmer [1970]; Liberti [2016]). A bold step forward was made recently, when a colleague of mine, a Japanese Cantharidae specialist introduced three new subgenera of *Malthodes* for the fauna of Japan [Takahashi, 2021], also restoring the old *Maltharcus* Weise, 1892. The drawback of the act, however, is that at least some old synonyms of *Malthodes* apparently had not been taken into consideration, so there is a chance that the suggested new subgenera may fall into synonymy after a revision of the genus is carried out on a larger scale, on the material from all parts of its distribution areas, and with inclusion of at least type species of the synonymised subgenera/genera in the analysis. Besides, as the Malthininae, where the tribe Malthodini with the



Map 2. Distribution of *Malthodes* in the Greater Caucasus. **Filled contours:** circle — *M. circassicus* (also Utrish, beyond map limits); 3-pointed star — *M. medvedevi*; square — *M. kobienensis* (also Ubinskaya, beyond map limits); 4-pointed star — *M. abkhasicus*; 5-pointed star — *M. castanicollis* (also Ubinskaya and Tkhav Mt., beyond map limits); 6-pointed star — *M. jaromiri*; 9-pointed star — *M. bohaci*; hexagon — *M. lozovoyi*; triangle — *M. vikhrevi*; diamond — *M. kasantsevi*; **no fill:** circle — *M. lyriformis*; star — *M. nyholmi* (also Ubinskaya, beyond map limits); square — *M. caucasicus*; hexagon — *M. nabozenkorum* sp.n.; diamond — *M. orientalicus* (also Ubinskaya, beyond map limits).

Карта 2. Распространение *Malthodes* на Большом Кавказе. **С заливкой:** круг — *M. circassicus* (также Утриш, за пределами карты); 3-угольная звезда — *M. medvedevi*; квадрат — *M. kobienensis* (также Убинская, за пределами карты); 4-угольная звезда — *M. abkhasicus*; 5-угольная звезда — *M. castanicollis* (также Убинская и г. Тхаб, за пределами карты); 6-угольная звезда — *M. jaromiri*; 9-угольная звезда — *M. bohaci*; шестиугольник — *M. lozovoyi*; треугольник — *M. vikhrevi*; ромб — *M. kasantsevi*; **без заливки:** круг — *M. lyriformis*; звезда — *M. nyholmi* (также Убинская, за пределами карты); квадрат — *M. caucasicus*; шестиугольник — *M. nabozenkorum* sp.n.; ромб — *M. orientalicus* (также Убинская, за пределами карты).

genus *Malthodes* belongs, appeared to be one of the basic cantharid lineages, molecular dating placing the node back at ca 100–90 Myr [Motyka *et al.*, 2023], a reference to the accessible molecular data to define the relationships between its variable members might also be helpful.

Acknowledgements. It is my pleasant duty to express gratitude to Dr E.A. Khachikov (Rostov-on-Don), Dr M.V. Nabozhenko (Makhachkala) and Dr V.Yu. Savitskiy (ZMMU, Moscow) for the opportunity to study malthinine material from the Caucasus.

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