

**A review of *Malthinus* Latreille, 1806 of the Caucasus (Coleoptera: Cantharidae),
with description of a new species and notes on distribution of the genus
in the region**

**Обзор *Malthinus* Latreille, 1806 (Coleoptera: Cantharidae) Кавказа,
с описанием нового вида и замечаниями о распространении рода в регионе**

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

Abstract. A new species of soldier beetles of the genus *Malthinus* Latreille, 1806, *M. romashovi* Kazantsev, **sp.n.**, is described from Upper Adjara, Georgia. *Malthinus elbursensis* Wittmer, 1978 is reported in the Caucasus (Azerbaijan) for the first time, bringing the total number of *Malthinus* Latreille species registered in the region to eleven. The habitus photos of *Malthinus evidentissimus* Wittmer, 1974, *M. kaszabi* Wittmer, 1974, *M. elbursensis* Wittmer, 1978 and *M. malthodinooides* Kazantsev, 2001 and illustrations of female genitalia of *M. caucasicus* Wittmer, 1974 and *M. flaveoloides* Švihla, 1997 are given for the first time. Provided is an annotated checklist and an identification key to *Malthinus* Latreille species of the Caucasus, with their distribution discussed and illustrated with a map.

Резюме. Новый вид жуков-мягкотелок рода *Malthinus* Latreille, 1806, *M. romashovi* Kazantsev, **sp.n.**, описывается из Верхней Аджарии, Грузия. *Malthinus elbursensis* Wittmer, 1978 впервые приводится для Кавказа (Азербайджан), что увеличивает общее число видов рода, зарегистрированных в регионе, до одиннадцати. Впервые приводятся габитуальные фотографии *Malthinus evidentissimus* Wittmer, 1974, *M. kaszabi* Wittmer, 1974, *M. elbursensis* Wittmer, 1978 и *M. malthodinooides* Kazantsev, 2001, а также иллюстрации гениталий самок *M. caucasicus* Wittmer, 1974 и *M. flaveoloides* Švihla, 1997. Приведены аннотированный список и определительная таблица всех видов *Malthinus* Latreille Кавказа, а также карта их распространения.

Introduction

The soldier beetle genus *Malthinus* Latreille, 1806, widely distributed in the Holarctic realm, is one of the most species-rich in the family, accounting for around 300 species, the greater part of which, about 200 species, occur in the Palaearctic region. The genus belongs in the tribe Malthinini, which together with Malthodini and Malchinini make up the subfamily Malthininae [Delkeskamp, 1977; Kazantsev, Brancucci, 2007; Motyka et al., 2023]. A reliable identification of *Malthinus* Latreille species in the vast majority of 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, while females are characterized by the straight and unmodified hind tibia, and their copulatory organs, although complex and variable, remain mostly unstudied [Brancucci, 1980; Constantin, 2023].

The first several *Malthinus* Latreille species were described from the Caucasus only in the last quarter of the twentieth century [Wittmer, 1974], although certain species from Europe and Turkey had been reported to occur in the Caucasus by different authors and catalogues earlier [Delkeskamp, 1939]. Studies on the Caucasian members of the genus resumed at the turn of the century [Švihla, 1990, 1997; Kazantsev, 2001]. In 1992 a review of the genus of the area was published [Wittmer, 1992], which confirmed the occurrence of three non-local species in the Caucasian fauna, the remaining five proving to be endemic for the region. Recently yet another, initially Turkish, species, *M. pseudoflaveolus* Wittmer, 1974, was formally excluded from the regional list of *Malthinus* Latreille [Kazantsev, 2022], as its specimens from the Caucasus turned out to represent a distinct species [Švihla, 1997].

An opportunity to study the Caucasian soldier beetle material preserved at the Zoological Museum of Moscow University allows adding another species to the *Malthinus* Latreille list of this area, bringing the number of its members in the Caucasus to eleven. The description of the new taxon and illustrations of female genitalia of some of the described species are presented below, along with a key to all *Malthinus* Latreille species of the region, their annotated checklist and a distribution map.

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/female genitalia 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 Caucasus is considered to include northern slopes of the Greater Caucasus and all the territory lying south of it, down to the southern boundaries of Georgia, Armenia and Azerbaijan.

The terminology of the female copulatory organs is given after Brancucci [1980]. The body length was measured from anterior part of the head to apices of folded wings, as the length of elytra may vary relative to the length of folded wings.

The following acronyms are used the text: ICM — Insect Center, Moscow; NHMB — Naturhistorisches Museum, Basel; ZIN — Zoological Institute, Saint-Petersburg; ZMMU — Zoological Museum of Moscow University, Moscow.

Nomenclatural acts introduced in the present work are registered in ZooBank (www.zoobank.org) under urn:lsid:zoobank.org:pub:34AD712A-A3D2-4896-8A8F-104442D8388A.

A checklist of *Malthinus* Latreille species of the Caucasus

Cantharidae Imhoff, 1856 (1815)

Malthininae Kiesenwetter, 1852

Malthininae Kiesenwetter, 1852

Malthinus Latreille, 1806

Malthinus Latreille: 1806: 261.

Type species: *Cantharis flaveola* Herbst, 1786.

Malthinus (*Malthinus*) Latreille, 1806

Malthinus romashovi Kazantsev, **sp.n.**

Figs 1–4, 19, 20, 33–35.

Urn:lsid:zoobank.org:act:1B1C4EA0-5A25-4E27-B83E-8275DE24EB78.

Material. Caucasus, Georgia: *Holotype*, ♂, «Georgia, Upper Adjara, Khulo, 2–3.VI.1928, D. Romashov leg.» (ZMMU); *paratypes*: 3♀, same label (ZMMU and ICM).

Description. *Male*. Brown to dark brown; head in front of eyes, palps, antennomeres 1–2, pro- and mesosternum, pronotum, except anterior third and median stripe, legs, except trochanters and hind femurs in distal half, testaceous; elytral middle three fourths pale brown; pronotal margins and elytral apices bright yellow (Figs 1, 2).

Head transverse, without eyes about as wide as pronotum. Eyes relatively large, spherical, interocular distance ca 1.6 times greater than eye diameter in dorsal view. Vertex in very fine scarce punctures. Ultimate maxillary and labial palpomeres narrow, noticeably longer than wide. Antennae filiform, attaining to elytral two thirds; antennomere 3 subequal in length to pedicel (antennomere 2) and ca 1.2 times shorter

than antennomere 4; antennal pubescence relatively long and erect (Fig. 1).

Pronotum transverse, ca 1.1 times wider than long, abruptly narrowed anteriorly at basal two fifths, in basal two fifths with slightly concave sides, with rounded anterior and short acute posterior angles, slightly convex anteriorly and indistinctly bisinuate posteriorly; in fine scarce punctures (Fig. 1).

Elytra elongate, ca. 2.75 times longer than wide at humeri, parallel-sided, leaving posterior fourth of folded wings uncovered; elytral punctures arranged in inconspicuous rows, more noticeable near suture; elytral pubescence uniform, short and sub-erect. Scutellum large, narrowing distally, broadly rounded at apex (Fig. 1).

Legs long and slender; anterior and middle femurs and tibiae straight and narrow; posterior femur widened, curved in distal half, with a distinct spine in the middle on inner surface; posterior tibia curved in proximal half, with conspicuous semi-oval incision meeting the femoral spine; posterior trochanter elongate, outwardly bent and acute at apex (Figs 1, 2, 19).

Ultimate sternite elongate, abruptly narrowing before apex and deeply incised distally; ultimate tergite constricted before apex, somewhat convex distally (Fig. 20).

Aedeagus elongate, almost parallel-sided, with robust laterophyses and deeply incised ventral plate (Figs 3, 4).

Body length (from head to apices of folded wings): 3.6–4.0 mm; width (at humeri): 0.8–0.9 mm.

Female. Similar to male, with similar hind trochanters, but eyes somewhat smaller, antennae somewhat shorter, hind femurs and tibiae straight and unmodified. Ultimate ventrite with prominent rounded median incision; coxites separated, with elongate ventral processes (Figs 33–35).

Etymology. The new species is named after Dr Dmitry Dmitrievich Romashov (1899–1963), a Moscow-born geneticist and amateur entomologist, who collected the type series of the new species during his 1928 entomological expedition to Georgia.

Diagnosis. *Malthinus romashovi* Kazantsev, sp.n. resembles *M. vartiani* Wittmer, 1966, from Iran [Wittmer, 1966, 1974], as well as *M. jordanicus* Wittmer, 1974, from Jordan [Wittmer, 1974], and *M. brancuccii* Wittmer, 1978 and *M. wittmeri* Švihla, 1998, from Turkey [Wittmer, 1978; Švihla, 1998], in the shape of the male hind tibia and the structure of the aedeagus, differing in the distinctly more pronounced semi-oval tibial incision and presence of the acute spine corresponding to this incision on the hind femur (Figs 1, 2, 19), as well as in the approximate and narrowed distally laterophyses of the aedeagus (Figs 3, 4). The new species also seems to be different from all congeners of the region in the darkened in distal half hind femurs (Figs 1, 2).

Distribution. Georgia (Khulo, Upper Adjara). June.

Malthinus (*Malthinus*) *aliceae*
Švihla, 1990

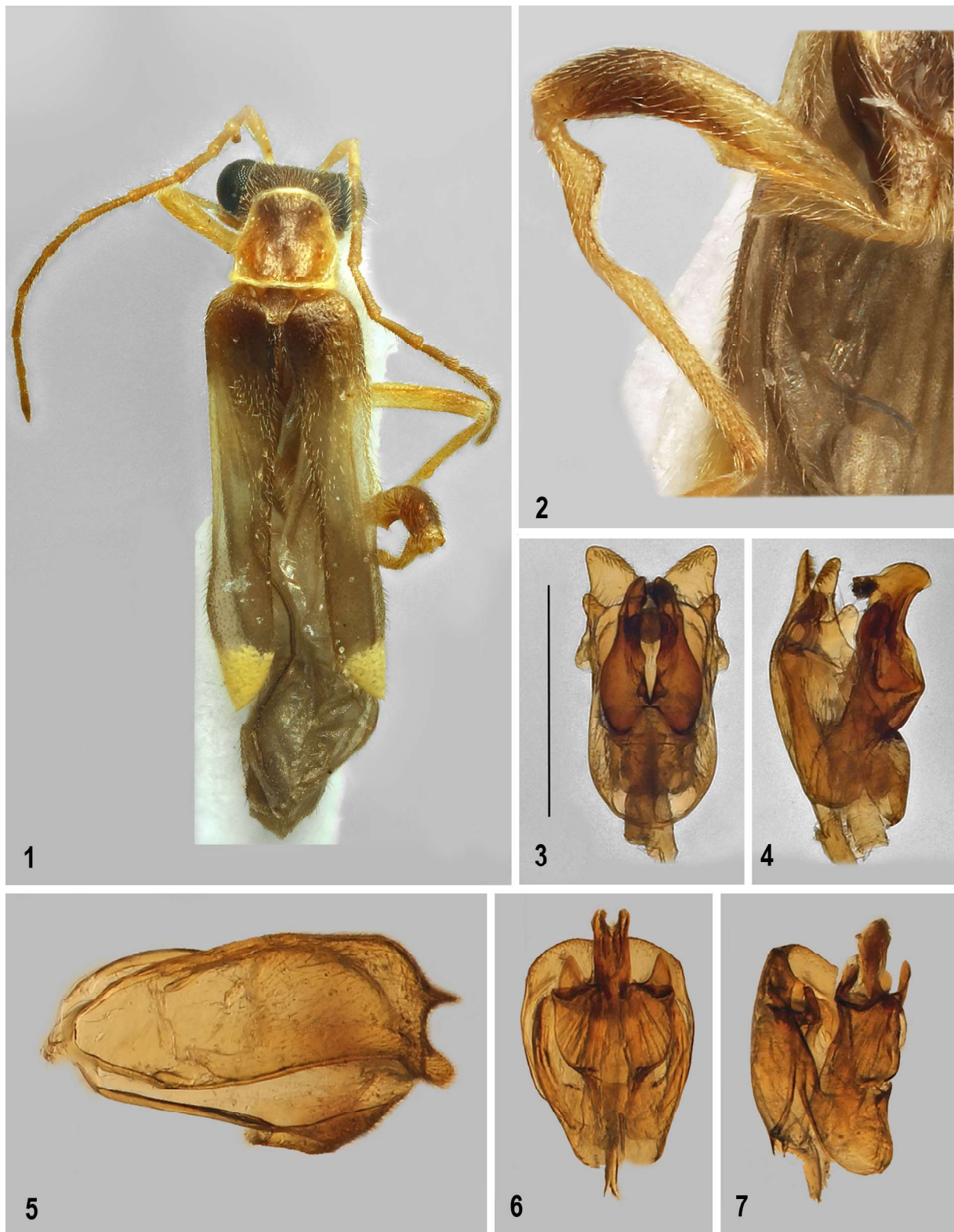
Malthinus aliceae Švihla, 1990: 199.

Distribution. Azerbaijan (Zaqatala National Park, type locality); Abkhazia (Tsumuri); Georgia (Kolkheti National Park) (ICM). Broad-leaved forests. June.

Malthinus caucasicus Wittmer, 1974

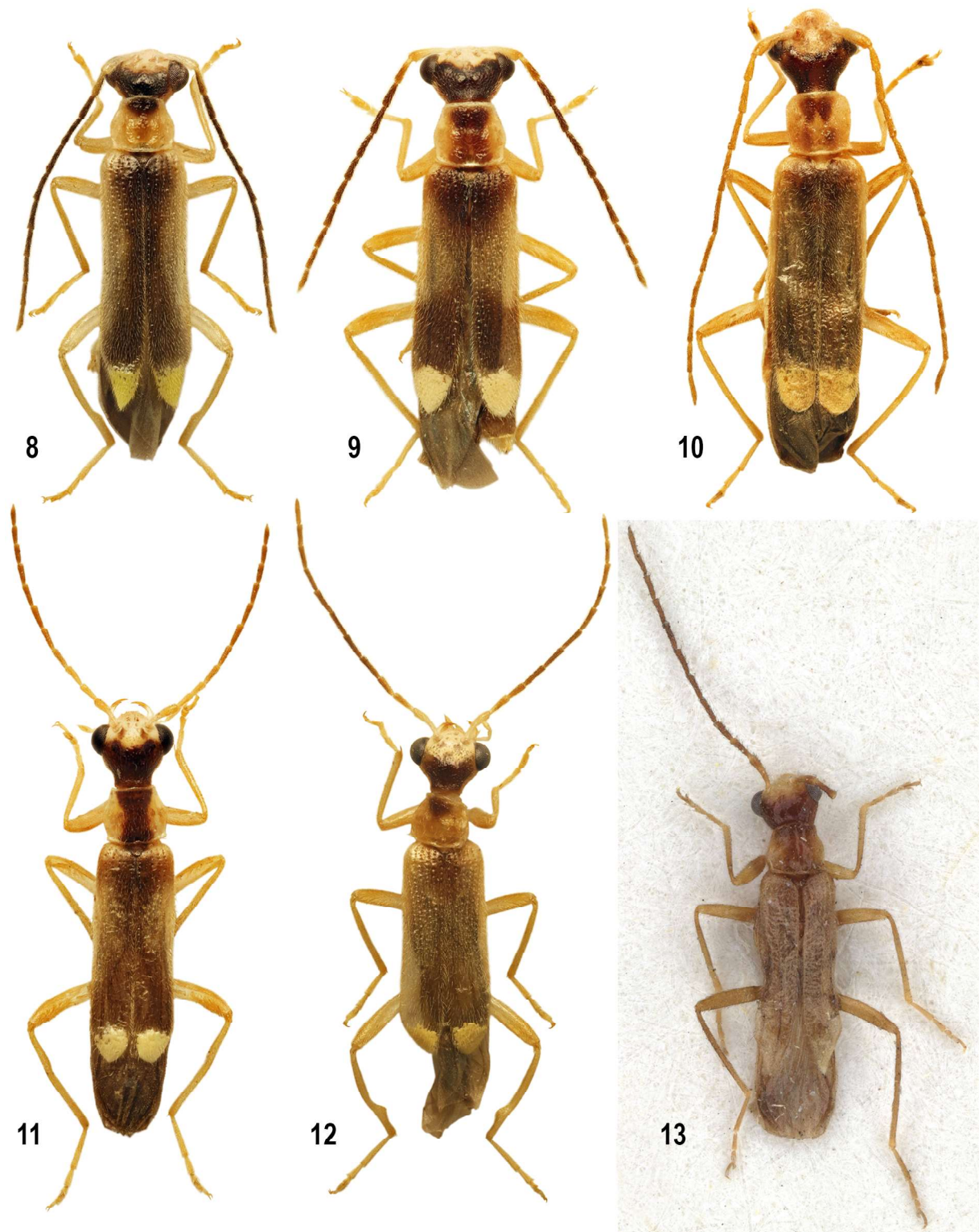
Malthinus (*Malthinus*) *caucasicus* Wittmer, 1974: 420.

Distribution. Northern Caucasus (Krasnodarskii Krai: Dzhankhot, Sukko, Ubinskaya; North Ossetia; Dagestan: Gunib, Derbent); Abkhazia (Ritsa National Park); Georgia



Figs 1–7. *Malthinus* Latreille, general view and details, holotype males: *M. romashovi* Kazantsev, sp.n. (1–4) and *M. malthodinoides* Kazantsev (5–7). 1 — general view; 2 — male hind leg; 3, 4, 6, 7 — aedeagus; 5 — male terminal abdominal segments; 2, 3 — ventrally; 4, 7 — dorsally; 5, 8 — laterally; 6 — ventrolaterally. Scale bars 0.5 mm for Figs 3–7.

Рис. 1–7. *Malthinus* Latreille, общий вид и детали строения, голотипы, самцы: *M. romashovi* Kazantsev, sp.n. (1–4) и *M. malthodinoides* Kazantsev (5–7). 1 — общий вид; 2 — задняя нога самца; 3, 4, 6, 7 — эдегус; 5 — верхние членики брюшка самца; 2, 3 — вид снизу; 4, 7 — вид сверху; 5, 8 — вид сбоку; 6 — вид снизу и сбоку. Масштаб: 0,5 мм для рис. 3–7.



Figs 8–13. *Malbinus* Latreille, general view, males. 8 — *M. facialis* Thomson; 9 — *M. alicae* Švihla; 10 — *M. flaveoloides* Švihla; 11 — *M. turcius* Pic; 12 — *M. elbursensis* Wittmer; 13 — *M. evidentissimus* Wittmer, holotype. Figs 9–11 after [Kazantsev, 2022]; Fig. 13 courtesy M. Borer.

Рис. 8–13. *Malbinus* Latreille, общий вид, самцы. 8 — *M. facialis* Thomson; 9 — *M. alicae* Švihla; 10 — *M. flaveoloides* Švihla; 11 — *M. turcius* Pic; 12 — *M. elbursensis* Wittmer; 13 — *M. evidentissimus* Wittmer, голотип. Рис. 9–11 по [Kazantsev, 2022]; рис. 13 — фото М. Борера.

(Kolcheti National Park, Borzhomi) (ICM; ZMMU); Armenia («Delizhan» = Dilijan, type locality). Also north-eastern Turkey (Artvin Province) [Wittmer, 1992]. Broad-leaved forests. April through June.

Malthinus (Malthinus) elbursensis Wittmer, 1978

Malthinus elbursensis Wittmer, 1978: 360.

Material. South Caucasus, *Azerbaijan*: 1♂ — «Azerbaijan, ca 10 km SSW Lenkoran, Avra (= Hirkan), 20–25.V.1993, A. Napolov leg.» (ICM); 1♀ — «Paleton, 1200, Astara distr., Talysh, 19.VII.1932, Znoyko» (ZIN); 1♀ — «Azerbaijan, Lenkoran distr., Alexeevka, 23.V.1976, N. Nikitsky» (ZMMU).

Distribution. Azerbaijan (Talysh). Also Iran («Mazandaran, Elburs Gebirge, Chalus — Keredj, 36°25'N, 51°15'E»), type locality). First record for Azerbaijan and the Caucasus.

Malthinus (Malthinus) evidentissimus
Wittmer, 1974

Malthinus evidentissimus Wittmer, 1974: 415.

Distribution. Armenia («Arax» = Aras valley, type locality). Known only from the Holotype deposited in the Wittmers collection in NHMB.

Malthinus (Malthinus) facialis
C.G. Thomson, 1864

Malthinus facialis C.G. Thomson, 1864: 195.

Distribution. Northern Caucasus (Krasnodarskii Krai: Dhankhot, Goryachiy Klyuch, Lagonaki, «Mt. Soberoashkh» [Wittmer, 1992] = Sober-Bash Mt., Sochi, Ubinskaya, Utrish; North Ossetia: Ardon Canyon, upper Tsei, Vladikavkaz; Ingushetia: Salgi; Dagestan: Derbent, Gunib); Abkhasia (upper Bzyb River, Ritsa National Park, Hodzhal Mt.). Distributed throughout western and central Europe, also in Turkey and Iran. 380–2000 m a.s.l. June through July. The occurrence of the species in Armenia [Kazantsev, 2011; Kazantsev, Brancucci, 2007] needs to be confirmed.

Malthinus (Malthinus) flaveoloides Švihla, 1997

Malthinus flaveoloides Švihla, 1997: 123.

Distribution. Northern Caucasus (Krasnodarskii Krai: Krasnaya Polyana, Lagonaki, Sochi, Ubinskaya; Chechnya: Veden; Dagestan: Gunib); Abkhasia (upper Bzyb River, Bzyb Mts, Ritsa National Park, «Mcara pr. Gudauta», type locality, Tsumuri, Hodzhal Mt.); Georgia (Kolcheti National Park, Ricoti Pass near Kashuri) (ICM). Also Turkey (Maçka, Sumela Kloster) [Švihla, 1997]. Broad-leaved forests. June.

Remarks. The specific identity of the female specimen reported as *Malthinus pseudoflaveolus* Wittmer, 1974 from Armenia («Armenia, Shikakhokh, 23.VI.1982, M. Danilevsky») [Wittmer, 1992], but which may also belong to this species, is unclear, as the female terminalia and genitalia of *M. pseudo-flaveolus* Wittmer remain unknown.

Malthinus (Malthinus) kaszabi Wittmer, 1974

Malthinus kaszabi Wittmer, 1974: 418.

Distribution. Georgia («Meskisches Gebirge» = Meskheti Mts, Adjara, type locality), Batumi. Also north-eastern Turkey («Hamsiköy, Trabzon») [Wittmer, 1974]. June.

Malthinus (Malthinus) malthodinoides
Kazantsev, 2001

Malthinus malthodinoides Kazantsev, 2001: 1081.

Distribution. Azerbaijan («Talysh»), type locality. May.

Malthinus (Malthinus) swaneticus Wittmer, 1974

Malthinus swaneticus Wittmer, 1974: 420.

Distribution. Northern Caucasus (Krasnodarskii Krai: Krasnaya Polyana, upper Pshekha River); Abkhasia (Achibakh Mts); Georgia (Swanetia, type locality). Broad-leaved forests. May through June.

Malthinus (Malthinus) turcicus Pic, 1899

Malthinus turcicus Pic, 1899: 206.

Distribution. Northern Caucasus (Krasnodarskii Krai: Uch-Dere, Khosta, Maly Utrish, Gelendzhik, Novorossiysk, Dzhanhot; North Ossetia: Vladikavkaz); Abkhasia (Ritsa National Park, Tsumuri, upper Bzyb River). Also central Europe (Austria, Czechia, Hungary, Romania), Turkey («Constantinople» = Istanbul, type locality). Broad-leaved forests. May through June.

A KEY TO *MALTHINUS* LATREILLE SPECIES
OF THE CAUCASUS

- 1(12) Antennomere 2 subequal in length to or somewhat longer than antennomere 3. Elytra with rows of punctures, sometimes inconspicuous (Figs 1, 8–13).
- 2(11) Pronotum mostly testaceous (Figs 1, 8–12).
- 3(4) Male hind femur with a spine in the middle. Male hind tibia deeply semi-elliptically incised near base. Elytra with inconspicuous rows of punctures (Figs 1, 2, 19). Aedeagus elongate, almost parallel-sided, with robust laterophyses and deeply incised ventral plate (Figs 3, 4). Coxites separated, with elongate ventral processes (Figs 34, 35). Body length 3.5–4 mm *M. romashovi* Kazantsev, sp.n.
- 4(3) Male hind femur unmodified (Figs 8–12).
- 5(10) Elytra with conspicuous rows of punctures. Hind tibia in males not bent in the middle. Pronotum yellow testaceous, often with dark discal spot or median line. Posterior half of head dorsally black. Elytra yellowish-brown, broadly darkened at suture and before apices, apices with bright yellow spot (Figs 8, 9, 12).
- 6(7) Male hind tibia straight and unmodified (Fig. 9). Aedeagus with approximate and acute at apices laterophyses and long and deeply incised ventral plate, widest in the middle (Fig. 22). Body length 3.5–4.5 mm *M. alicae* Švihla, 1990.
- 7(6) Hind tibia in males widened before apex (Figs 8, 12, 25). Aedeagus with broadly separated laterophyses and moderately long incised ventral plate, widest in distal third (Figs 22, 24). Body length 3.5–4.5 mm.
- 8(9) Male hind tibia straight and abruptly widened before apex, with almost parallel distal dilatation (Fig. 8). Aedeagus elongate, ca 2.75 times longer than wide (Fig. 22). Coxites robust, approximate at base (Fig. 23). Body length 3.0–5.0 mm *M. facialis* Thomson, 1864.
- 9(8) Male hind tibia noticeably curved, with gradually narrowed towards apex distal widening (Figs 12, 25). Aedeagus more rounded and less elongate (Fig. 24). Body length 4.5 mm *M. elbursensis* Wittmer, 1978.
- 10(5) Elytra with inconspicuous rows of punctures. Male hind tibia slightly bent in the middle. Pronotum yellow, with dark discal spot or median line (Fig. 11). Aedeagus — Fig. 26. Coxites short, separated at base (Fig. 27). Body length 3.5–4.5 mm *M. turcicus* Pic, 1899.
- 11(2) Pronotum mostly brown, with lighter sides, elytral apices with yellowish spots (Fig. 13). Aedeagus — Fig. 28. Body length 3 mm *M. evidentissimus* Wittmer, 1974

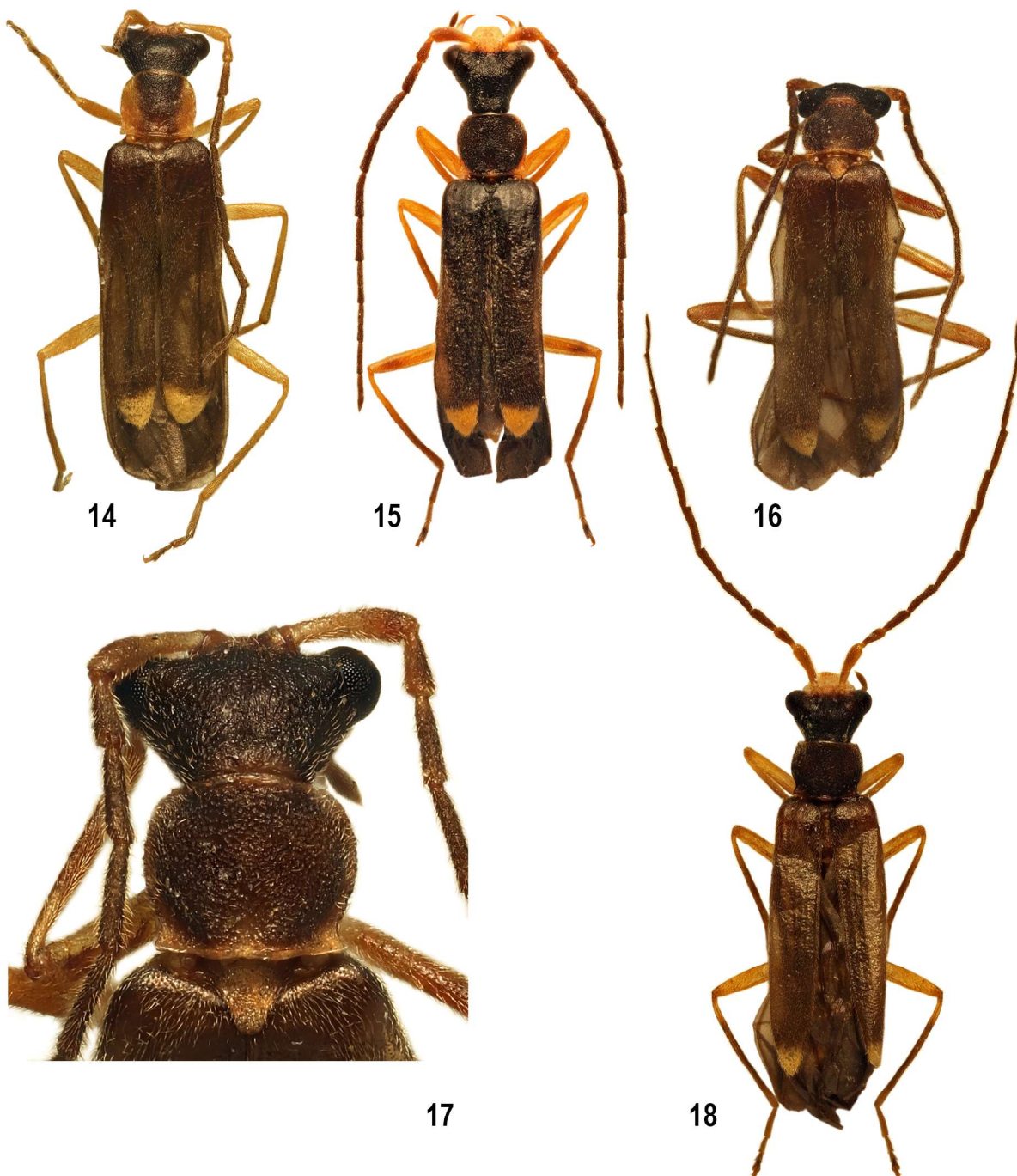
12(1) Antennomere 2 noticeably shorter than antennomere 3. Pronotum with broadly rounded anterior angles. Elytra without rows of punctures (Figs 13–18).

13(14) Pronotum and elytra mostly testaceous (Fig. 10). Aedeagus with long ventral plate lobes (Fig. 29). Coxites short, approximate in their entire length; ventral processes of paraproct relatively robust (Figs 39–41). Body length 5.0–6.0 mm *M. flaveoloides* Švihla, 1997.

14(13) At least elytra mostly dark brown to black (Figs 14–18).

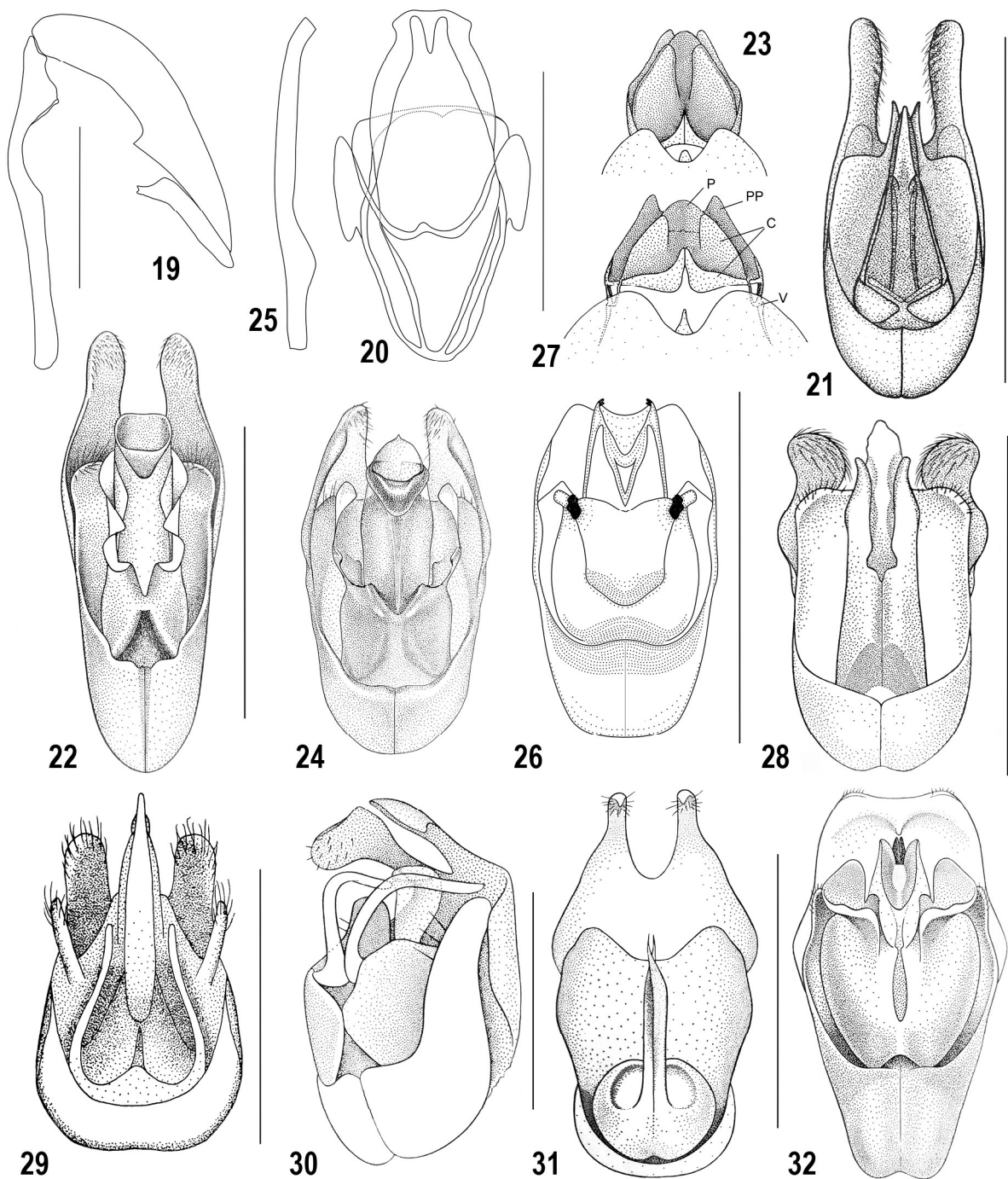
15(16) Pronotum mostly testaceous. Elytra dark brown with bright yellow apical spots (Fig. 14). Male terminal sternite inwardly bent and bifurcate at apex (Fig. 5). Aedeagus roundish, with roundish non-incised ventral plate (Figs 6, 7). Body length 4.4 mm *M. malthodinooides* Kazantsev, 2001

16(15) Both pronotum and elytra mostly dark brown to black (Figs 15–18).



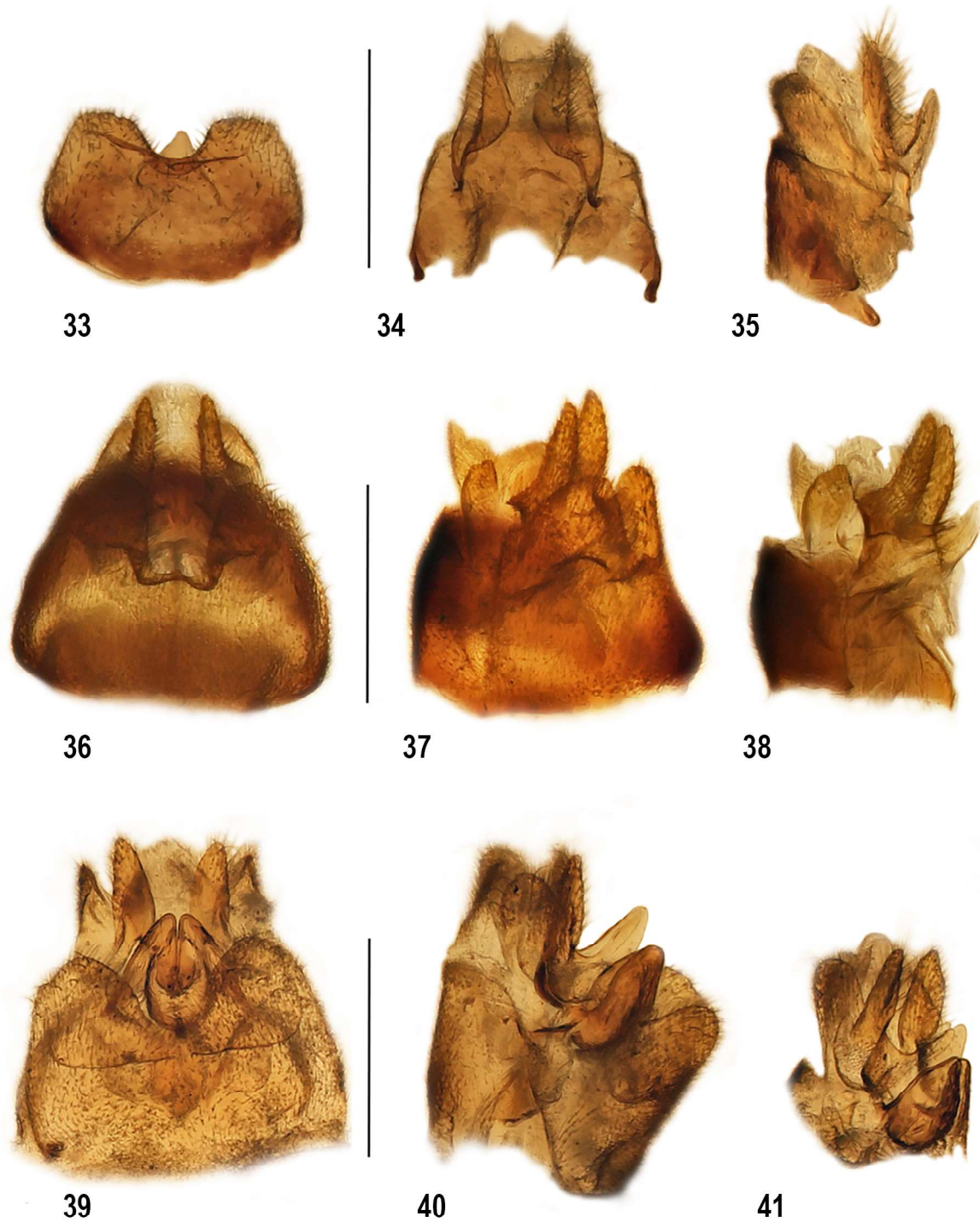
Figs 14–18. *Malthinus* Latreille, general view, males: 14 — *M. malthodinooides* Kazantsev, holotype; 15 — *M. caucasicus* Wittmer; 16, 17 — *M. kaszabi* Wittmer; 18 — *M. swaneticus* Wittmer. Figs 15, 18 after [Kazantsev, 2022].

Рис. 14–18. *Malthinus* Latreille, общий вид, самцы. 14 — *M. malthodinooides* Kazantsev, holotype; 15 — *M. caucasicus* Wittmer; 16, 17 — *M. kaszabi* Wittmer; 18 — *M. swaneticus* Wittmer. Рис. 15, 18 по [Kazantsev, 2022].



Figs 19–32. *Malthinus* Latreille, details: *M. romashovi* Kazantsev, sp.n., male holotype (19, 20), *M. alicae* Švihla (21), *M. facialis* Thomson (22, 23), *M. elbursensis* Wittmer (24, 25), *M. turcicus* Pic (26, 27), *M. evidentissimus* Wittmer (28), *M. flaveoloides* Švihla (29), *M. kaszabi* Wittmer (30), *M. swaneticus* Wittmer (31) and *M. caucasicus* Wittmer (32). 19 — hind leg; 20 — terminal abdominal segments; 21, 22, 24, 26, 28–32 — aedeagus; 25 — male hind tibia; 23, 27 — female genitalia; 19, 20, 23, 25, 27 — ventrally; 21, 22, 24, 26, 28–32 — dorsally. Designations: C — coxite, P — proctiger, PP — paraprocit, V — valvifer. Fig. 21 after [Švihla, 1990], Figs 22, 28, 30–32 after [Wittmer, 1974], Figs 23, 27 after [Brancucci, 1980], Figs 24, 25 after [Wittmer, 1978], Fig. 26 after [Wittmer, 1992], Fig. 29 after [Švihla, 1997]. Scale bars 0.5 mm.

Рис. 19–32. *Malthinus* Latreille, детали строения: *M. romashovi* Kazantsev, sp.n., самец, голотип (19, 20), *M. alicae* Švihla (21), *M. facialis* Thomson (22, 23), *M. elbursensis* Wittmer (24, 25), *M. turcicus* Pic (26, 27), *M. evidentissimus* Wittmer (28), *M. flaveoloides* Švihla (29), *M. kaszabi* Wittmer (30), *M. swaneticus* Wittmer (31), *M. caucasicus* Wittmer (32). 19 — задняя нога; 20 — верхние сегменты брюшка; 21, 22, 24, 26, 28–32 — эдеагус; 25 — задняя голень самца; 23, 27 — гениталии самки; 19, 20, 23, 25, 27 — вид снизу; 21, 22, 24, 26, 28–32 — вид сверху. Обозначения: C — коксит, P — проктигер, PP — парапрокт, V — вальвифер. Рис. 21 по [Švihla, 1990], рис. 22, 28, 30–32 по [Wittmer, 1974], рис. 23, 27 по [Brancucci, 1980], рис. 24, 25 по [Wittmer, 1978], рис. 26 по [Wittmer, 1992], рис. 29 по [Švihla, 1997]. Масштаб: 0,5 мм.



Figs 33–41. *Maltbinus* Latreille, female terminalia: *M. romashovi* Kazantsev, sp.n., paratype (33–35), *M. caucasicus* Wittmer (36–38) and *M. flaveoloides* Švihla (39–41). 33 — ultimate sternite; 34, 35, 38, 41 — female genitalia, with ultimate sternite removed; 36, 37, 39, 40 — female genitalia, with ultimate sternite; 33, 34, 36, 38 — ventrally; 35, 37, 39 — laterally. Scale bars 0.5 mm.

Рис. 33–41. *Maltbinus* Latreille, терминалии самки: *M. romashovi* Kazantsev, sp.n., паратипе (33–35), *M. caucasicus* Wittmer (36–38) и *M. flaveoloides* Švihla (39–41). 33 — верхний стернит; 34, 35, 38, 41 — гениталии самки, без верхнего стернита; 36, 37, 39, 40 — гениталии самки, с верхним стернитом; 33, 34, 36, 38 — вид снизу; 35, 37, 39 — вид сбоку. Масштаб: 0,5 мм.

- 17(20) Pronotum black, with brownish anterior and posterior margins (Figs 15–17). Ventral plate of aedeagus with deep incision; laterophyses long (Figs 30, 31).
- 18(19) Larger, over 4.5 mm in length (Figs 16, 17). Ventral plate of aedeagus with widened distally lobes; laterophyses slender along their entire length (Fig. 30). Body length 4.5–5.0 mm ... *M. kaszabi* Wittmer, 1974.
- 19(18) Smaller, less than 4 mm in length (Fig. 18). Distal lobes of ventral plate of aedeagus not widened apically; laterophyses massive at base (Fig. 31). Body length 3.5–4.0 mm
.....*M. swaneticus* Wittmer, 1974.
- 20(17) Pronotum black, with yellowish brown posterior angles (Fig. 18). Ventral plate of aedeagus without incision; laterophyses short (Fig. 32). Ultimate female sternite with W-form incision; coxites with a dent at base (Figs 36–38). Body length 4.5–5.5 mm*M. caucasicus* Wittmer, 1974.

Discussion

The *Malthinus* Latreille species of the Caucasus seem to be clearly divided into two species-groups, *M. facialis* Thomson group, with antennomere 2 subequal in length to antennomere 3 and elytra with rows of punctures, and *M. biguttatus* (Linnaeus, 1758) group, ie, *M. caucasicus* Wittmer and the like, with antennomere 2 noticeably shorter than antennomere 3 and elytra without rows of punctures. However, certain other characters intertwine — among them those related to the structures of the aedeagus [eg, Wittmer, 1974; Brancucci, 1980; Švihla, 1998].

The complex and variable female genitalia in *Malthinus* Latreille (eg, Figs 23, 27, 33–41) also appear to be potentially useful for understanding relationships within the genus, but these structures, which have not been sufficiently studied, have been completely neglected for higher taxonomic purposes [Brancucci, 1980].

While the number of *Malthinus* Latreille species in the Caucasian fauna is 11 and compares to that in Iran (13), their number in Asia Minor reaches astounding 56 [Kazantsev, Brancucci, 2007]. Apparently, the species richness of the genus here diminishes from west to east, following the relative humidity pattern. However, the western Caucasus, where the relative humidity is as high as in the Turkish Black Sea coast, cannot boast of anything similar to the abundance of Turkish *Malthinus* Latreille — so, the explanation of the difference between the two areas should lie in something else, perhaps related to the geological history, on the one hand, and the historical biogeography of the genus, on the other.

As for the distribution of *Malthinus* Latreille species in the Caucasus, it is easy to notice that there are just two species in common for the Greater and Lesser Caucasus (the latter regarded with adjacent territories within the boundaries of Azerbaijan, which include the Talysh Mountains): *M. caucasicus* Wittmer and *M. flavoloides* Švihla, both endemic for the region as a whole, only slightly penetrating into the Turkish territory in its extreme north-east (Fig. 42).

At the same time, the Greater Caucasus has four species, *M. alicae* Švihla, *M. facialis* Thomson, *M. swane-*

ticus Wittmer and *M. turcicus* Pic, not come across in the Lesser Caucasus, and the Lesser Caucasus has five, *M. elbursensis* Wittmer, *M. evidentissimus* Wittmer, *M. kaszabi* Wittmer, *M. malthodinooides* Kazantsev and *M. romashovi* Kazantsev sp.n., not known from the Greater Caucasus (Fig. 42). While half of the Greater Caucasian species (two out of four, *M. alicae* Švihla and *M. swaneticus* Wittmer) are endemic for the region, the other two being *M. facialis* Thomson and *M. turcicus* Pic, widespread in Europe and Asia Minor, four out of five Lesser Caucasian *Malthinus* Latreille species, *M. evidentissimus* Wittmer, *M. kaszabi* Wittmer, *M. malthodinooides* Kazantsev and *M. romashovi* Kazantsev sp.n., are met nowhere else, except that *M. kaszabi* Wittmer is also registered in Turkey in its extreme north-east (Fig. 42). It should be noted that all the species endemic to the Greater or Lesser Caucasus (ie, *M. alicae* Švihla, *M. swaneticus* Wittmer, *M. evidentissimus* Wittmer, *M. kaszabi* Wittmer, *M. malthodinooides* Kazantsev and *M. romashovi* Kazantsev sp.n.) are known from very few, or even single specimens, which may be due to the fact that they represent only fragments of the once abundant and prosperous *Malthinus* Latreille population that survived in a few scattered refugia. Although inadequate collecting may also have contributed to their rarity in museum collections.

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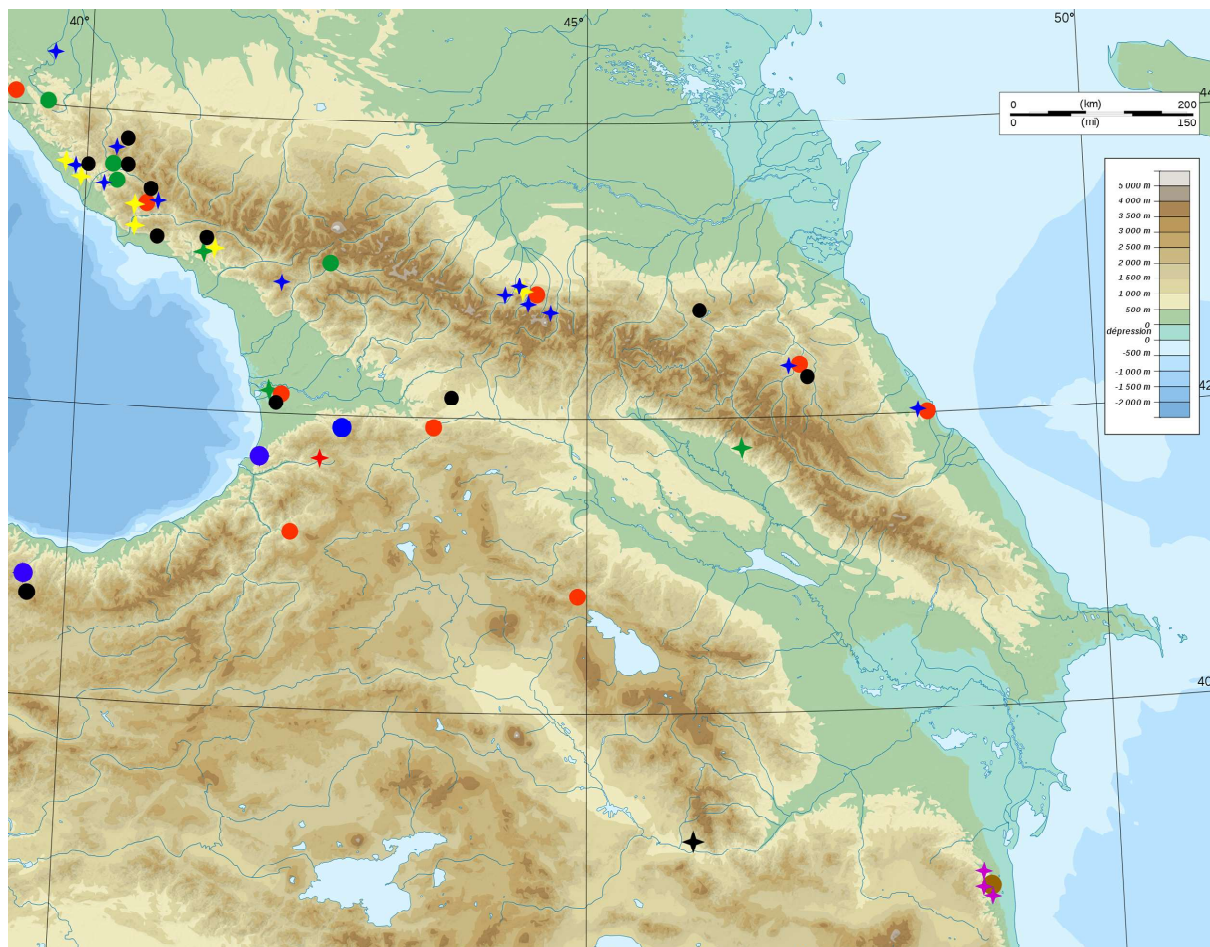


Fig. 42. *Malthinus* Latreille, distribution in the Caucasus. Designations: stars — *Malthinus facialis* Thomson species-group, circles — *Malthinus biguttatus* (Linnaeus) species-group. Green — *M. alicae* Švihla & *M. swaneticus* Wittmer, black — *M. evidentissimus* Wittmer & *M. flaveoloides* Švihla, blue — *M. facialis* Thomson & *M. kaszabi* Wittmer; yellow — *M. turcicus* Pic, purple — *M. elbursensis* Wittmer, red — *M. romashovi* Kazantsev, sp.n. & *M. caucasicus* Wittmer, brown — *M. malthodinooides* Kazantsev.

Рис. 42. *Malthinus* Latreille, распространение на Кавказе. Обозначения: звёзды — группа видов *Malthinus facialis* Thomson, круги — группа видов *Malthinus biguttatus* (Linnaeus). Зелёный — *M. alicae* Švihla & *M. swaneticus* Wittmer, чёрный — *M. evidentissimus* Wittmer и *M. flaveoloides* Švihla, синий — *M. facialis* Thomson и *M. kaszabi* Wittmer; жёлтый — *M. turcicus* Pic, розовый — *M. elbursensis* Wittmer, красный — *M. romashovi* Kazantsev, sp.n. и *M. caucasicus* Wittmer, коричневый — *M. malthodinooides* Kazantsev.

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