Invertebrate Zoology, 2022, 19(1): 91–98

A review of species of the genus *Anthocomus* Erichson, 1840 (Coleoptera: Cleroidea: Malachiidae) of North Asia with description of new species from South Primorie

S.E. Tshernyshev[1,2]

[1] *Institute of Animal Systematics and Ecology, Russian Academy of Sciences, Siberian Branch, Frunze Street, 11, Novosibirsk, 630091, Russia. E-mail: sch-sch@mail.ru*
[2] *Tomsk State University, Lenina prospekt, 36, Tomsk, 634050, Russia.*
http://orcid.org/0000-0001-5931-9241

http://zoobank.org/urn:lsid:zoobank.org:pub:CD2D498D-B950-4D46-BE4F-864249881673

ABSTRACT: The disribution and species diversity of the genus *Anthocomus* Erichson, 1840 (Coleoptera Malachiidae) of North Asia are discussed. Three species, *A.* (*Celidus*) *equestris* (Fabricius 1781), *A.* (*A.*) *coreanus* Pic, 1911 (Korea) and *A.* (*A.*) *mongolicus* Wittmer 1969 (Mongolia), known from the region and adjacent territories are discussed. A new species, *A.* (*A.*) *kurbatovi* Tshernyshev, sp.n. differs in its monochromous black colour of body with white external plate of elytral appendage in male and red-orange apices of elytra in female, is described from Lasovskii State Reserve, South Primorie, Russia. Detailed description of a new species is provided, together with illustrations of external appearance, antenna, head and pronotum, anterior and posterior legs, elytral apices and genitalia of male, and a distribution map of the species. Key to species of the genus *Anthocomus* in North Asia is provided.
How to cite this article: Tshernyshev S.E. 2022. A review of species of the genus *Anthocomus* Erichson, 1840 (Coleoptera: Cleroidea: Malachiidae) of North Asia with description of new species from South Primorie // Invert. Zool. Vol.19. No.1. P.91–98. doi: 10.15298/invertzool.19.1.09

KEY WORDS: Malachiidae, Malachiini, *Anthocomus*, taxonomy, new species, Inner Asia.

Обзор рода *Anthocomus* Erichson, 1840 (Coleoptera: Cleroidea: Malachiidae) Северной Азии с описанием нового вида из Южного Приморья

С.Э. Чернышёв[1,2]

[1] *Институт систематики и экологии животных СО РАН, ул. Фрунзе, 11, Новосибирск, 630091, Россия. E-mail: sch-sch@mail.ru*
[2] *Томский государственный университет, проспект Ленина, 36, Томск, 634050, Россия.*

РЕЗЮМЕ: В статье обсуждается состав и распространение видов рода *Anthocomus* Erichson, 1840 (Coleoptera: Malachiidae) на территории Северной Азии. Помимо широко распространенного в лесной зоне вида *A.* (*Celidus*) *equestris* (Fabricius 1781) рассмотрены виды *A.* (*A.*) *coreanus* Pic, 1911 (Korea) и *A.* (*A.*) *mongolicus* Wittmer 1969

(Mongolia), известные из сопредельных территорий. Из Южного Приморья описан новый вид *Anthocomus* (*A.*) *kurbatovi* Tshernyshev, sp.n. (Лазовский заповедник), проиллюстрированы внешний вид, специфические структуры и гениталии самца. Дана определительная таблица видов рода *Anthocomus* Северной Азии.
Как цитировать эту статью: Tshernyshev S.E. 2022. A review of species of the genus *Anthocomus* Erichson, 1840 (Coleoptera: Cleroidea: Malachiidae) of North Asia with description of new species from South Primorie // Invert. Zool. Vol.19. No.1. P.91–98. doi: 10.15298/invertzool.19.1.09

КЛЮЧЕВЫЕ СЛОВА: Malachiidae, Malachiini, *Anthocomus*, таксономия, новый вид, Внутренняя Азия.

Introduction

The genus *Anthocomus* Erichson, 1840, is representative of the tribe Malachiini (Tshernyshev, 1998, 2000, 2009, 2011, 2021), represents small or moderate size beetles (2.5–4.5 mm) with an elongate and sub-parallel body evenly expanded posteriorly, thin and simple antennae and legs, a body colour of black or black with metallic luster, and colour of elytra uniformly black, red or pale yellow, or orange-red with triangular spots or fasciae. Species of the genus can be distinguished from the congeners of the tribe by the antennae 11-segmented, dentate or obtuse-dentate, simple, pronotum subquadrate with rounded angles, slightly impressed near posterior angles, mat, shagreen with fine puncturation; elytra impressed at apices in male with impressions deep and possessing two spicular or lamellate appendages, legs thin, slightly elongate, simple, or posterior tibia in male with indentation in middle, all tarsi 5-segmented, simple, anterior tarsi lacking comb above second segment.

Currently the subgeneric structure of the genus *Anthocomus* Erichson, 1840 is represented by three subgenera, namely *Anthocomus* (*Anthocomus*) Erichson, 1840, *A.* (*Celidus*) Mulsant et Rey, 1867 and *Anthocomus* (*Omphalius*) Abeille de Perrin, 1891 (Mayor, 2003, 2007; Tshernyshev, 2021). Species occurring in North Asia are belonging to two subgenera, *Anthocomus* (*Anthocomus*) Erichson, 1840 and *A.* (*Celidus*) Mulsant et Rey, 1867.

Most of the *Anthocomus* Erichson species with red coloured elytra are common in Europe and can often be found on flowers in forest clearings and parks, or on transport and room windows in towns and cities. The diversity of European species is well studied (Mayor, 2007), while Asian species are listed in the Palaearctic Catalogue as 'Incertae sedis', and very poorly known. That is why species occurring in the region of North Asia are studied and discussed in the present paper.

Three species of *Anthocomus* Erichson have been recorded from North Asia and adjacent territories, *A.* (*A.*) *coreanus* Pic, 1911, *A.* (*A.*) *mongolicus* Wittmer, 1969 and *A.* (*Celidus*) *equestris* (Fabricius, 1781) (Tshernyshev, 2012b, 2021). North Asia, a vast territory in the Asian part of Russia, is considered as a subregion of Eurasia and limited by the Uralskii, Sibirskii and Dalnevostochnyi (Far-Eastern) federal okrugs (districts). The landscapes of the region are diverse, ranging from sandy and stony deserts of Ubsunur despression in the Tuva and Kosh-Agachskii districts of the Republic of Altai, to the Arctic tundra and desert to the north in the Polar Urals, Chukotka, Yakutia and Kamchatka. The diversity and distribution of beetles in the families Byrrhidae, Dasytidae, Malachiidae, Meloidae, Melyridae and Oedemeridae in the region were recently reviewed (Tshernyshev, 2012a,b, 2013, 2017a,b). In material from Southern Primorie, kindly provided by Dr Sergei Kurbatov for study, a male and a female of a new species with a distinctly black colouration was found. This species is described in the present paper as *A.* (*A.*) *kurbatovi* Tshernyshev, sp.n. which differs in its monochromous black colour of body with white external

plate of elytral appendage in male and orange-red apices of elytra in female.

Material and methods

The beetles were studied using an Amscope trinocular stereomicroscope (Ultimate Trinocular Zoom Microscope 6.7X-90X Model ZM-2TY), and digital photographs were taken using a Carl Zeiss Stemi 2000 trinocular microscope and the AxioVision programme. Male genitalia, embedded in DMHF (Dimethyl hydantoin formaldehyde), were mounted onto a transparent card and pinned under the specimen. Type material has been deposited in the collection of the Zoological Institute of the Russian Academy of Sciences, Saint Petersburg, Russia.

Results

Class Insecta Linnaeus, 1758
Orded Coleoptera Linnaeus, 1758
Suborder Polyphaga Emery,1886
Superfamily Cleroidea Latreille, 1802
Family Malachiidae Fleming, 1821
Subfamily Malachiinae Fleming, 1821
Tribe Malachiini Fleming, 1821
Genus ***Anthocomus*** Erichson, 1840

Anthocomus Erichson, 1840: 97, type species *Cantharis fasciatus* Linnaeus, 1758 fixed by Thomson, 1859: 112;

= *Anthocomus* (*Parembalus*) Abeille de Perrin, 1891: 187; type species *Anthocomus fenestratus* Linder, 1864 fixed and synonymized by Mayor (2003: 88);

Anthocomus (*Celidus*) Mulsant et Rey 1867: 131, 135, type species *Malachius equestris* Fabricius, 1781, designated by Mayor (2003: 89); = *Anthocomus* (*Neotrotus*) Abeille de Perrin, 1891: 187; type species *Malachius bipunctatus* Harrer, 1784 (junior synonym of *Malachius equestris* Fabricius, 1781) designated by Negrache & Hernandez (1990: 284);

Anthocomus (*Omphalius*) Abeille de Perrin, 1891: 187; type species *Malachius haeres* Abeille de Perrin, 1883 fixed by monotypy.

DIAGNOSIS. Small or moderate-size beetles (c. 2.5–4.5 mm) with elongate and subparallel body evenly expanded posteriorly, various colouration, from monochromously black to a combination of red and black with metallic lustre. Head simple, eyes small, round; antennae 11-segmented, dentate or obtuse-dentate, simple, 2nd antennomere clearly visible, oval or triangular, 1.3 times as short as the 3rd antennomere; palpi simple, slightly elongate, apical palpomere conic, disk of head flat, finely punctured, mat, shagreen, pronotum subquadrate with rounded angles, slightly impr4essed near posterior angles, mat, shagreen with fine puncturation; elytra subparallel, slightly expanded posteriorly in females, and impressed at apices in male, impressions deep and possessing two spicular or lamellate appendages. Wings well developed in both sexes. Legs thin, slightly elongate, simple, or posterior tibia in male with indentation in middle, all tarsi 5-segmented, simple, anterior tarsi lacking comb above 2nd segment. Pygidium (apical tergite) elongate, evenly narrower and rounded apically, 8th ultimate abdominal ventrite (apical tergite) narrow, transverse, hollowed in middle, tegment with short base and thin elongate parameres, aedeagus of Malachiinae-type, simple, straight or somewhat curved dorsally, with round apex and short pointed lamella, one or two long spines visible in inner sac of the aedeagus.

DISTRIBUTION. Species of the genus are widely distributed in Eurasia from Europe to the Far East, occurring mainly in forest or forest-steppe zones.

List of species in the genus *Anthocomus* of North Asia and adjacent territories

1. ? *A.* (*A.*) *coreanus* Pic, 1911 (Korea);
2. *A.* (*A.*) *kurbatovi* Tshernyshev, sp.n. (Russia: Primorie, Laso);
3. ? *A.* (*A.*) *mongolicus* Wittmer, 1969 (Mongolia, Dornogov (East Gobi) Aimak: Sainshand);
4. *A.* (*Celidus*) *equestris* (Fabricius, 1781) (Central and Southern Europe and Caucasus: Austria, Belgium, Bulgaria, Croatia, Czech Republic, Finland, Germany, Greece, Italy, Poland, Romania, Russia, Spain, Sweden, Switzerland; North America: USA and Canada).

? *Anthocomus* (*Anthocomus*) *coreanus* Pic, 1911

Anthocomus coreanus Pic, 1911: 107 ("Corée");

Anthocomus (*Anthocomus*) *coreanus* Pic, 1911: Mayor, 2003: 89, 2007: 439.

REMARKS. The species was described from an unique specimen with no indication of sex. Since a loan of the type specimen from Paris Museum is impossible, is necessary to understand species from the original description. The description presents a remarkable species, the characters of which to not fit those of the genus reviewed here. Wide antennae (Antennes fortes) show than this is probably a male; if so, another character, simple apices of elytra provide further evidence that this is not *Antocomus*. The yellow colour of the sides of the pronotum and elytra in combination with a lead-black colouration are comparable with *Haplomalachius* (*Flabellomalachius*) *forticornis* Wittmer, 1984 and *Haplomalachius* (*Flabellomalachius*) *ishiharai* Satô, Wittmer, 1989 subspecies *H.* (*F.*) *ishiharai kasantsevi* Wittmer, 1996, but the synonymy of these species can only be proposed after a comparison with type material. Nevertheless, in view of the facts discussed above, this species temporary remains in the key to *Anthocomus* Erichson of Asia as questionable.

DISTRIBUTION. To date, this species is only known from the description with an ambiguous locality name "Corea" as terra typica.

Anthocomus (*Anthocomus*) *kurbatovi* Tshernyshev, **sp.n.**
Fig. 1A–M.
http://zoobank.org/urn:lsid:zoobank.org:act:9E51520E-06C5-4627-88B7-BA0BFEB54BE6

MATERIAL. **Russia, *Promorskii Krai:*** Holotypus, male, Lazoskii State Rezerve, America cordon, h~350 m a.s.l., 43°16′N, 134°03′E, 23–31.v.2009, S.À. Kurbatov leg.; allotype, female, idem (ZIN) (damaged: 7th–11th right antennomeres and right femora absent).

DESCRIPTION. Male. Head, pronotum and scutellum black with weak blue-green metallic luster, elytra black lacking metallic luster, bases of appendages inside the apical impressions yellow, appendages black, inner appendage with white oval plate on apex; posterior and anterior sides of labrum, apices of mandibles, palpi yellow; antennae yellow with the first antennomere brown spotted above; ventral side uniformly black with a weak blue-green luster; anterior and intermediate legs yellow except for basal half of femora which is brown, posterior legs black with yellow comissures of femora and tibiae; vesicles yellow-brown, thorax mesepimere black.

Head narrow, transverse, not narrower than pronotum, interocular area above antennae with a trapeziform impression, surface sparsely covered with thin short white adpressed hairs, irregularly finely punctuated with distinct microsculpture; clypeus narrow, short, transverse, labrum twice as long as clypeus, transverse, genae short, straight; eyes weakly protrudent, round; palpi narrow, elongate, the 1st segment is 1.5 times longer than the 2nd, clavate or scoop-shape, the 2nd segment is half the length of the 3rd, triangular, apical segment narrow, strongly narrowed and pointed at apex, conic; surface with light short hairs. Antennae dentate (Fig. 1D); the 1st segment slightly enlarged and subtriangular, twice as long as the 2nd antennomere, which is subquadrate and 1.5 times as long as the 3rd antennomere, 3rd-10th antennomeres triangular, apical 1.5 times as long as the 10th, elongate and oval, slightly fusiform; antennomeres covered with goldish thin and short semierect hairs.

Pronotum transverse and almost completely equilateral, anterior margin arcuate, posterior straight, all angles evenly rounded, weakly convex and with distinct depressions at the posterior angles; margination very thin at basal and anterior sides and widened on sides at basal half; surface dull, with distinct cellular microsculpture and traces of punctures, sparsely covered with short fine white adpressed hairs.

Scutellum narrow, transverse, rectangular, almost completely hidden by the pronotum, flat; the surface shining, lacking punctures with cellular microsculpture, sparsely covered with short adpressed white hairs.

Elytra parallel, slightly expanded posterior at apical quarter; shoulders distinct, weakly protruding, epipleurae narrow, distinctly marginate, suture thin with indistinct margination; apices strongly truncate and impressed (Fig.

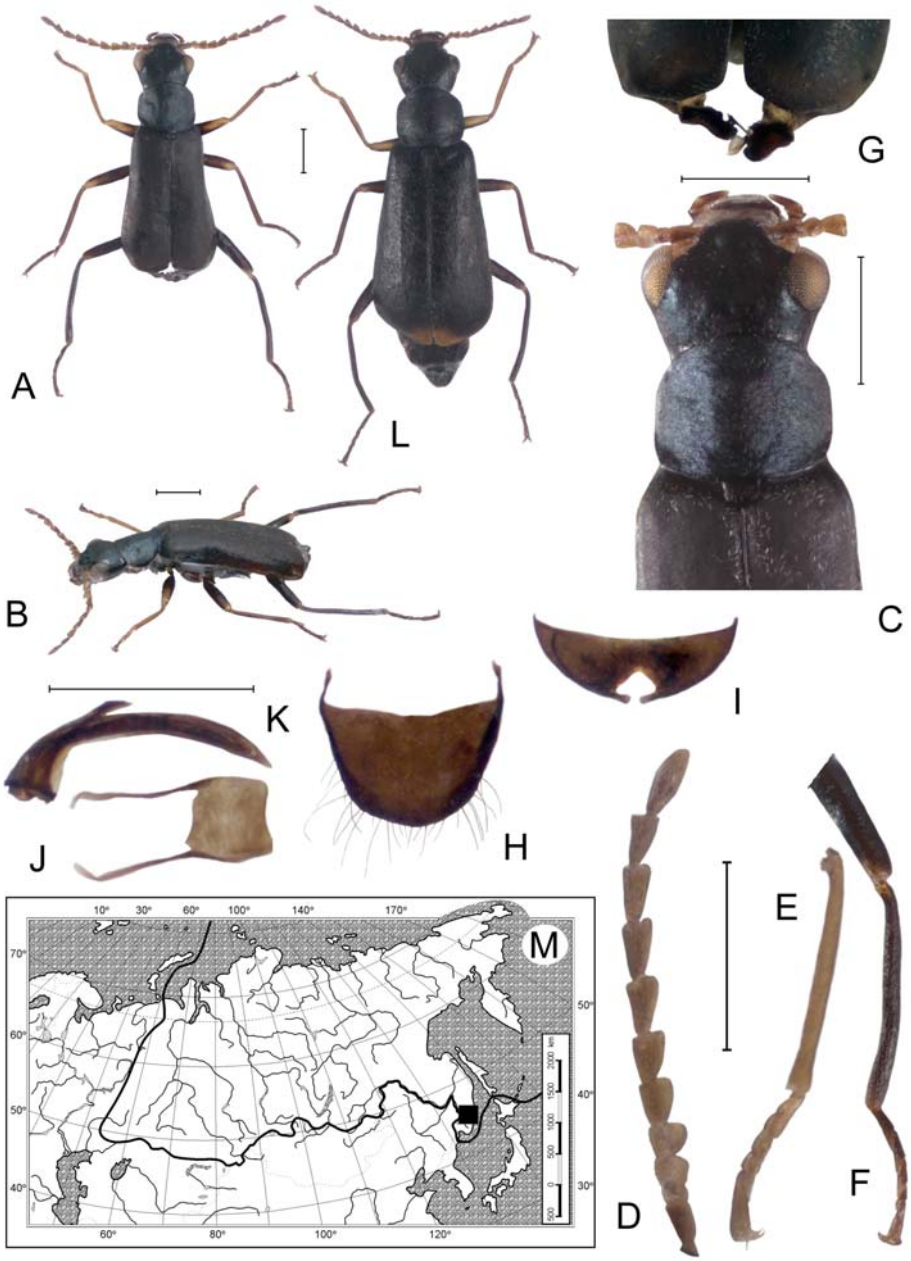

Fig. 1. *Anthocomus kurbatovi* Tshernyshev sp.n., holotype, male (A–K), allotype, female (L). A, L — external appearance, dorsal view; B — external appearance, lateral view; C — head, pronotum and scutellum, dorsal view; D — left antenna; E — left anterior tibia and tarsus; F — right posterior leg; G — apices of elytra; H — pygidium (apical tergite); I — ultimate abdominal ventrite (apical sternite); J — tegmen; K — aedeagus, dorsal view; M — locality map. Scale bar 0.5 mm.

Рис. 1. *Anthocomus kurbatovi* Tshernyshev sp.n., голотип, самец (A–K), аллотип, самка (L). A, L — внешний вид, дорзально; B — внешний вид, латерально; C — голова, переднеспинка и щиток, дорзально; D — левый усик; E — левая передняя голень и лапка; F — правая задняя нога; G — вершины надкрылий; H — пигидий (вершинный тергит); I — последний вентрит брюшка (вершинный стернит); J — тегумен; K — эдеагус, дорзально; M — карта распространения. Масштаб 0,5 мм.

1G), apices transverse, flat, outer appendage wide oval impressed in middle, with a short curved tuft of hairs at apex, inner appendage as thin pedicellum possessing oval plate above; surface surface dull, looks chagrin, punctures traceable, microsculpture distinct, sell-shape, covered with fine, short white adpressed hairs.

Wings well developed.

Legs simple, long and thin, posterior femora extending over the elytral apices, posterior tibiae slightly curved outwards and widened posteriorly (Fig. 1F), covered with short adpressed goldish hairs; femora somewhat wider than tibiae, compressed; all tarsi 5-segmented, simple, lacking combs or appendages (Fig. 1E), narrow and slightly elongate, 1st–6th tarsomeres compressed, apical depressed, 2–4th tarsomeres in anterior legs, 1st–3rd in intermediate, and 1st–2nd and 3rd–4th tarsomeres in posterior legs nearly equal in length and size, the claw tarsomere is the longest, and 1.2 times as long as the 1st tarsomere in all legs; claws short, sharp, with distinct round lamellae at base.

Ventral body surface weakly shining, sparsely and indistinctly punctured, sparsely covered with fine, adpressed dark pubescence; metathorax convex, simple, lacking appendage of hair tuft; pygidium (apical tergite) (Fig. 1H) strongly narrow and transverse, evenly rounded at apex, with deep triangular emargination in the middle; 8th ultimate abdominal ventrite (apical sternite) (Fig. 1 I) almost completely equilateral, evenly rounded apically, 1.7 as wide as long. Phallus (Figs. 1K) simple, strongly curved dorsally, pointed anteriorly, with a sharp and narrow apical lamella, inner sack lacking denticles; tegmen elongate, longitudinal, 2.2 times longer than wide, slightly emarginate in the middle and with short subquadrate base and thin long appendages (Fig. 1J).

Length (holotype) 2.6 mm, width (at elytral base) 0.75 mm.

Female differs in its larger size, short antennae just reaching elytral bases, shorter legs, posterior femore not reaching elytral apices, elytra more strongly widened posteriorly, simple, each with triangular orange-red spot near suture.

Length (allotype) 3.4 mm, width (at elytral base) 0.88 mm.

ETYMOLOGY. The species is named after an entomologist, the well-known specialist on Pselaphidae beetles, Dr Sergei Alexandrovich Kurbatov, All-Russian Plant Quarantine Center (VNIIKR), Moscow, Russia, for collecting the Malachiidae in different regions of the World and providing them for scientific study.

DIAGNOSIS. The new species is distinguishable by its uniformly black colouration with weak metallic luster of elytra and white plates on inner appendages in apical impressions of male. Differential characters of the species are given in the Key below.

? *Anthocomus* (*Anthocomus*) *mongolicus* Wittmer, 1969

Anthocomus mongolicus Wittmer, 1969: 57–58 (Mongolia: Sajn-Šand);

Anthocomus (?) *mongolicus* Wittmer, 1969: Mayor, 2007: 440.

REMARKS. The species is known only from the original description taken from a unique female with a distinctive colouration. The elytra light colouration and the pronotum with wide yellow-rose sides differnetiate this species from all *Anthocomus* species known from Mongolia, but align this species to those of the subgenus *Haplomalachius* (*Flabellomalachius*), for example *H.* (*F.*) *forticonis* (Wittmer, 1984). Absence of male special characters provide no opportunity to attribute this species to *Anthocomus* or any other genus of the tribe Malachiini. This species is only provisionally regarded as belonging *Anthocomus* (?).

DISTRIBUTION**.** The species is only known from the type locality, Sainshand, Dornogov (East Gobi) Aimak of Mongolia.

Anthocomus (*Celidus*) *equestris* (Fabricius, 1781)

Malachius equestris Fabricius, 1781: 500;

Anthocomus equestris (Fabricius, 1781): Erichson, 1840: 98;

Anthocomus (*Celidus*) *equestris* (Fabricius, 1781): Mulsant, Rey, 1867: 131, 135–138, Plate 4, Figs 8, 15, 17;

Celidus equestris (Fabricius, 1781): Švihla, 1996: 480; 1998: 235;

Anthocomus (*Celidus*) *equestris* (Fabricius, 1781): Mayor, 2003: 89, 2007: 439.

REMARKS. This is a common *Anthocomus* species widely distributed in Eurasia throughout Far East and introduced to North America. Small beetles black with distinct green metallic lustre and red elytra possessing W-shape dark fascia below middle. Male of the species is distinctive in posterior tibiae with flexure in middle, elytral apices impressed and provided with lamellate appendages. The species is associated with woody plants during its life-cycle, the larvae feeding on small invertebrates occurring under bark. In the Asian part of Russia, imagos often can be found creeping on windows in city transport saloons, on windows inside buildings, and other urban habitats. This can probably be explained by the compact planting of poplar trees in residential areas during the 70 year period of the former USSR. In Siberia this species can usually be collected in poplar forests near rivers or other water reservoirs, and probably poplars are the most preferable trees for larvae *A. equestris* development.

DISTRIBUTION. The species is widely distributed in the forest zone of Eurasia and has been introduced to North America. It is recorded from Central and Southern Europe, Caucasus, to the Russian Far East: Austria, Belgium, Bulgaria, Croatia, Czech Republic, Finland, Germany, Greece, Italy, Poland, Romania, Russia, Spain, Sweden, Switzerland, and North America: USA and Canada.

Key to species of the genus *Anthocomus* in North Asia and adjacent territories

1. Posterior tibiae in male with distinct flexure in middle (*Anthocomus* (*Celidus*)); head and pronotum black with weak green metallic luster, palpi yellow-brown, antennae black, 1st to 3rd antennomeres yellow beneath; elytra orange-red with black triangular mark at the base, narrow stripes on humeri and wide inverted V or W-shape spot in posterior half; in male impressions in elytral apices orange-red and inner appendages red-brown, impressions oblique near suture with small bead-shaped appendage at the tip, inner appendages located near suture, flattened, leaf-shaped and with a hair tuft curved above; anterior and intermediate legs yellow, bases of anterior and basal half of intermediate femora, posterior legs black, sometimes intermediate tibiae and tarsi darkened; underside black lacking metallic luster; 2.8 mm ..... ***A.* (*Celidus*) *equestris*** (Fabricius, 1781)

— Posterior tibiae in male simple, lacking flexure in middle (*Anthocomus* (*Anthocomus*)) 2

2. Pronotum monochromously dark, head black, Antennae yellow, first antennomere with brown spot above; anterior and intermediate legs yellow except for brown basal half of femora, posterior legs black with yellow comissures of femora and tibiae; palpi yellow; head and pronotum with weak blue-green metallic luster, elytra black lacking metallic luster, in females with red maculae on apices near suture, in male bases of appendages inside the impressions yellow, appendages black, inner appendage possessing white oval plate on apex; impressions straight, inner appendage thin near suture, outer appendage flat and oval with additional oval plate on upper side; underside black with weak blue-green luster; 2.6–3 mm ..... ***A.* (*A.*) *kurbatovi*** Tshernyshev, sp.n.

— Pronotum with contrasting colours or disc dark with yellow or yellow-red lateral margins, head black in basal portion and yellow distally up to level of eyes; elytral apices simple, lacking impressions or appendages, with rose or red markings near suture 3

3. Elytra yellowish with rose apices and dark suture, head and pronotum with weak bronze luster; pronotum with wide yellow or rose-yellow lateral sides; palpi and antennae yellow, antennae short, reaching humeri, intermediate antennomeres weakly triangular; legs yellow except for brown claws or apical tarsomeres; 3 mm ..... ***A.* (*A.*) *mongolicus*** Wittmer, 1969

— Elytra and pronotum lead-black lacking metallic luster, with yellow lateral edges; palpi dark with yellow spots at bases of palpomeres, antennae except for basal antennomeres beneath, and legs almost completely dark, antennae long, expanded over the basal quarter of the elytra, strong, with elongate wide triangular intermediate antennomeres; 3 mm ..... ***A.* (*A.*) *coreanus*** Pic, 1911

Acknowledgements. The author is grateful to Prof. Mark Seaward (Bradford University, U.K.) for advice and linguistic revision of the text and to Dr Dmitri Telnov (the Natural History Museum, London) and Isidor Plonski (Vienna, Austria) for their kind help regarding copies of literature. The special thanks are also due to Dr Sergei Kurbatov (All-Russian Plant Quarantine Center (VNIIKR), Mos-

cow) for collecting Malachiidae and the loan of material for this study.

This study was supported by the Russian Foundation for Basic Research (grant no. 19-04-00465-a), as well as the Program of Basic Scientific Research (FNI) of the State Academies of Sciences, project No. 0247-2021-0004.

References

Abeille de Perrin E. 1891. Malachiidae. Malachides d'Europe et pays voisins // Annales de la Société Entomologique de France. T.60. P.115–230, 405–446, Plates 6–7.

Erichson W.F. 1840. III Die Malachien // Entomographien, Untersuchungen in dem Gebiete der Entomologie, mit besonderer Benutzung der Königl. Sammlung zu Berlin. Berlin: F.H. Morin. Erstes Heft. S.44–134.

Fabricius I.Ch. 1781. Species Insectorum exhibentes eorum differentias, specificas, synonyma, auctorum, loca natalia, metamorphosin. Adiectis observationibus, descriptionibus. Tom. I. Impensis Carol. Ernest. Eohnii, Hamburgi et Kilonii. 552 p.

Mayor A.J. 2003. Nomenclatorial corrections for Dasytidae and Malachiidae (Coleoptera) // Insecta Mundi. Vol.17. Nos 1–2. P.85–96.

Mayor A.J. 2007. Family Malachiidae Fleming, 1821 // I. Löbl, A. Smetana (eds.). Catalogue of Palaearctic Coleoptera. Stenstrup: Apollo Books. Vol.4. P.415–454.

Mulsant E., Rey C. 1867. Histoire naturelles des Coléoptères de France. Vésiculifères // Annales de la Société Agricola de Lyon. T.11. No.3. P.625–943, Plates 1–7.

Pic M. 1911. Descriptions de plusieurs Coléoptères Malacodermes et Hétéromères // Bulletin de la Société d'Histoire Naturelle d'Autun. Vol.15. P.107–109.

Švihla V. 1996. Coleoptera: Cleroidea 3 (Malachiidae) // Rozkošný R., Vaòhara J. (eds.). Terrestrial invertebrates of the Pálava Biosphere Reserve of UNESCO, III. Folia Facultatis Scientiarum Naturalium Universitatis Masarykianae Brunensis. Biologia. Vol.94. P.479–481.

Thomson C.G. 1859. Skandinaviens Coleoptera, synoptiskt bearbetade. Vol.I. Lund. 290 p.

Tshernyshev S.E. 1998. Towards the knowledge of the *Malachius* group soft-winged flower beetles (Coleoptera, Malachiidae) of the fauna of Russia and the adjacent countries. Part 1 // Russian Entomological Journal. Vol.7. Nos 3–4. P.129–146.

Tshernyshev S.E. 2000. Contributions to the knowledge of the *Malachius* group of soft-winged flower beetles (Coleoptera, Malachiidae) of the fauna of Russia and the adjacent countries. Part II // Bulletin de L'Institut Royal des Sciences Naturelles de Belgique. Entomologie. Vol.70. P.199–218.

Tshernyshev S.E. 2009. *Anthomalachius*, a new genus of soft-winged flower beetles (Coleoptera, Malachiidae) // Zootaxa. Vol.2094. No.1. P.23–35. https://doi.org/10.11646/zootaxa.2094.1.3

Tshernyshev S.E. 2011. [A review of soft-winged flower beetles (Coleoptera, Malachiidae) of the fauna of Russia and the adjacent territories. 5. Keys to supraspecific taxa] // Euroasian Entomological Journal Vol.10. No.3. P.341–348, colour plate V [in Russian, with English abstract].

Tshernyshev S.E. 2012a. [A review of pill beetle fauna (Coleoptera, Byrrhidae) of North Asia] // Euroasian Entomological Journal. Vol.11. No.5. P.437–447 [in Russian with English abstract].

Tshernyshev S.E. 2012b. [A review of soft-winged flower beetle fauna (Coleoptera, Malachiidae) of North Asia] // Euroasian Entomological Journal. Vol.11. No.6. P.575–587 [in Russian with English abstract].

Tshernyshev S.E. 2013. [A review of species of the genus *Curimopsis* Ganglbauer 1902 (Coleoptera, Byrrhidae) of North Asia] // Zoologicheskii Zhurnal. Vol.93. No.5. P.534–544 [in Russian with English abstract]. https://doi.org/10.1134/S001387381306001X

Tshernyshev S.E. 2017a. [A review of blister beetle fauna (Coleoptera, Meloidae) of North Asia] // Euroasian Entomological Journal. Vol.16. No.4. P.325–343 [in Russian with English abstract]. https://doi.org/10.15298/euroasentj.16.4.08

Tshernyshev S.E. 2017b. [A review of oedemerid and dasytid beetle fauna (Coleoptera, Oedemeridae, Melyridae, Dasytidae) of North Asia] // Euroasian Entomological Journal. Vol.16. No.6. P.554–565 [in Russian with English abstract]. https://doi.org/10.15298/euroasentj.16.6.08

Tshernyshev S.E. 2021. A review of the genus *Anthocomus* Erichson, 1840 (Coleoptera, Cleroidea: Malachiidae) of Inner Asia // Zootaxa. Vol.4969. No.3. P.511–525. https://doi.org/10.11646/zootaxa.4969.3.4

Wittmer W. 1969. Resultate der Expedition des Zoologischen Institutes in Leningrad nach d. Mongolei 1967. Coleoptera: Cantharidae und Malachiidae (42. Beitrag zur Kenntnis der Paläarktischen Cantharidae und Malachiidae) // Entomologischen Arbeiten aus dem Museum Gg. Frey. Bd.20. S.510–517.

Responsible editor K.G. Mikhailov