

**COMPOSITION AND DISTRIBUTION OF THE GENUS *ULOMA* DEJEAN,  
1821 (COLEOPTERA: TENEBRIONIDAE) IN RUSSIA**

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**Summary.** The composition and distribution of darkling beetles of the genus *Uloma* are briefly reviewed for the Russian fauna. In total, four species are known from Russia, one of which is distributed in the European part and the Russian Caucasus, one is transpalearctic, two sympatric species are known only in Primorsky krai of the Russian Far East. The species *Uloma bonzica* is recorded for Russia for the first time. A key to species of *Uloma* from Russia, accompanied by quality illustrations, is given.

**Key words:** darkling beetles, Ulomini, fauna, new records, key, Palearctic region.

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**Резюме.** Кратко рассмотрены состав и распространение чернотелок рода *Uloma* фауны России. Всего в стране известно четыре вида, один из которых распространен в европейской части и на российском Кавказе, один является транспалеарктическим, два симпатрических вида известны только из Дальнего Востока (Приморский край). Вид *Uloma bonzica* впервые указан для России. Приведена определительная таблица для видов рода *Uloma* России, сопровождаемая качественными иллюстрациями.

**INTRODUCTION**

Species of the genus *Uloma* Dejean, 1821 are mainly distributed in subtropical and tropical regions of the world and are known from all biogeographical realms (Bouchard *et al.*, 2021). In the Palearctic, 49 species and subspecies occur, the majority of which are distributed in Eastern Asia and Himalaya (Iwan *et al.*, 2020). Only several species are distributed in the Western Palearctic (Europe and the Middle East), and one of them, *Uloma rufa* (Piller et Mitterpacher, 1783), is widely distributed in the Palearctic from North Africa (Morocco) to the Pacific coast in the Russian Far East (Medvedev, 1992; Iwan *et al.*, 2020). The genus has not been revised worldwide, but several revisions have been published

for Africa (Schawaller, 2015), Himalaya (Schawaller, 1996), partially for Eastern Asia (Masumoto & Nisiikawa, 1986; Kim & Kim, 2004; Jung, 2012), Oriental region (Schawaller, 2000; Liu & Ren, 2016a), New Caledonia (Condamine *et al.*, 2014) and Australia (Kaszab, 1982). Species of the genus *Uloma* are periodically described in numerous papers by Chinese colleagues, but a revision of Chinese species is absent, except for a catalogue with literary sources for records (Liu & Ren, 2016b).

In the fauna of Russia, two species were known for a long time, and relatively recently another species was recorded in the Far East. Below we present data on four species of the Russian fauna, including a new record for the country.

## MATERIAL AND METHODS

Adult beetles were collected by the first author in the Krasnodarsky krai (for the photographing two widespread species) and the second author in Primorsky krai. Material is deposited in the private collections of both authors (PCMN – M.V. Nabozhenko, PCSI – S.N. Ivanov) and Zoological institute of the Russian Academy of Sciences (ZIN – St Petersburg, Russia). Specimens were fixed using ethyl acetate, then cleaned in an ultrasonic bath VBS-1D (Vilitek, Russia) and either mounted onto transparent plates. The male genitalia were soaked in alkaline solution for 24 hours and then glued onto transparent plates. Beetles were examined using binocular microscopes Micromed MC-4 Zoom Led (Nablyudatel'nye pribory, Russia). Beetle photographs were taken using a Canon EOS 5D Mark IV camera body, a Canon MP-E 65mm f/2.8 Macro Lens, and a Canon Macro Twin Lite MT-26EX-RT (Canon Inc., Japan) flash. Stacking was done using Stackshot 3X with enlarged macro rails s/n 3734 (Cognisys Inc., USA). The photosystem was installed on a Kaiser Copy Stand RS 1 (Kaiser Phototechnik, USA) reproduction machine. Images were stacked using Helicon Focus 7.7.4 Pro software (Helicon Soft, Ukraine). We presented material only for two species from the Russian Far East with limited distribution. Figures are not scaled.

### LIST OF THE RUSSIAN SPECIES OF THE GENUS *ULOMA* DEJEAN, 1821

#### ***Uloma culinaris* (Linnaeus, 1758)**

Figs 1, 2

This species is widespread in the European part of Russia from Yaroslavl Region (Vlasov & Nikitsky, 2016) and Udmurtia (Dedyukhin, 2013) in the north and to the Russian Caucasus in the south (Abdurakhmanov & Nabozhenko, 2011). The range in Russia extends also from the west to the east from Kaliningrad Region (Alekseev, 2022) to the Urals (Kozminykh, 2015). The general distribution see in Iwan *et al.* (2020), except Western Siberia (WS in the catalogue) for which we didn't find reliable records in the literature. The first author collected adults and larvae of *U. culinaris* exclusively under the bark or in the thickness of rotten wood of many species of deciduous trees. Nikitsky (2016) noted that the species is also inhabits rotten pine wood.

#### ***Uloma rufa* (Piller et Mitterpacher, 1783)**

Figs 3, 4

This species is widely distributed in Russia from Baltic regions in the west and north-west (Medvedev, 1965; Alekseev, 2008) to the Primorsky krai in the east (Medvedev, 1992; Medvedev & Sundukov, 2009). The southern border of the range in Russia passes along the Black Sea coast of the Caucasus and Crimea (Abdurakhmanov & Nabozhenko, 2011). The

Western Siberia was omitted in the catalogue (Iwan *et al.*, 2020), although records of this species in this region have been published earlier (Efimov, 2008; Sergeeva & Stolbov, 2020). The general distribution see in Iwan *et al.* (2020). The first author collected this species only in rotten wood of old pine trees. Nikitsky (2016) noted that *U. rufa* also occurs in Moscow Region in damp rotten wood of firs, oaks and birches. The Lazovsky Nature reserve is probably the southernmost locality of *U. rufa* in the Far East (Medvedev & Sundukov, 2009).



Figs 1–4. *Uloma* spp. from Russia, habitus. 1, 2 – *U. culinaris*; 3, 4 – *U. rufa*; 1, 3 – male; 2, 4 – female.

***Uloma latimanus* Kolbe, 1886**

Figs 5, 6, 9–12, 17–19

**MATERIAL.** **Russia:** Primorsky krai; Mikhailovka Distr., Ivanovka village environments, 15.VI 2012, 1♂, 1♀, leg. S.N. Ivanov (ZIN); Ussuriysk Distr., Kamenushka village environments, 16.VI 2013, 3♂, 1♀, leg. S.N. Ivanov (PCSI); Chernigovka Distr., Merkushevka village environments, 3–6.VI 2013, 20.VII 2013, 12.VI 2015, 22–29.VII 2016, 3♂, 9♀, leg. S.N. Ivanov (PCSI).

**NOTES.** This species is distributed in Japan, Korean Peninsula (Masumoto & Nisiikawa, 1986, Kim & Kim, 2004, Jung, 2012, etc.) and the Russian Far East (K. Makarov: <https://www.zin.ru/animalia/coleoptera/rus/ulolatkm.htm>).



Figs 5–8. *Uloma* spp. from Russia, habitus. 5, 6 – *U. latimanus*; 7, 8 – *U. bonzica*; 5, 7 – male; 6, 8 – female.

***Uloma bonzica* Marseul, 1876**

Figs 7, 8, 13–16, 20–22

**MATERIAL. Russia:** Primorsky krai, Chernigovka Distr., Merkushevka village environments, 16–18.07.2010, 1♂, 2♀, leg. S.N. Ivanov (PCSI, PCMN); same locality, 31.VII 2020, 1♂, 1♀, leg. S.N. Ivanov (ZIN); same locality, 18.VIII 2023, 1♂, leg. S.N. Ivanov (PCMN); 2 km E Merkushevka village, 12.VIII 2024, 1♂, leg. S. N. Ivanov (PCMN).



Figs 9–12. *Uloma latimanus*, head. 9, 10 – male; 11, 12 – female (9, 11 – ventrally; 10, 12 – ventro-laterally).

**NOTES.** The species was known from Japan and Korean Peninsula (Masumoto & Nisikawa, 1986; Kim & Kim, 2004; Jung, 2012, etc.) and China, Zhejiang (Liu & Ren, 2016b). The record from China was omitted in the catalogue (Iwan *et al.*, 2020). The species *U. bonzica* is recorded for Russia for the first time.

Adults of *U. bonzica* were found on linden (Merkushevka village) together with *Uloma latimanus* Kolbe, 1886 and on a light trap in different localities.

Both sympatric species were collected in slightly different microhabitats: *U. latimanus* – under the bark and in the damp rotting wood of the part of the trunk lying on the ground; *U. bonzica* – on the relatively dry part of the same tree, remaining on the roots and on small fragments scattered nearby.

Aedeagi are similar in both species. Aedeagus of *Uloma bonzica* (Figs 20, 21) differs from same in *U. latimanus* (Figs 17, 18) in the slightly narrower and not dorsally depressed parameres in apical half. Spiculum gastrale of *Uloma bonzica* (Fig. 19) is more different from same in *U. latimanus* in the presence of lateral process on blades (Fig. 22).

Both species have external sexual dimorphism not only in characters of the pronotum, but also in the shape of the mentum. Females have elevated portion of mentum narrower; the elevation is slightly convex in middle, coarsely sparsely punctured, the lateral elongate impression along elevated portion large and deep (Figs 11–12, 15–16), while males have the mentum with the wide depression in middle elevation, without puncturation (Figs 9–10) or with very sparse and fine punctures on the lateral sides (Figs 13–14).



Figs 13–16. *Uloma bonzica*, head. 13, 14 – male; 15, 16 – female (13, 15 – ventrally; 14, 16 – ventro-laterally).

#### Key to species of the genus *Uloma* of Russia

1. Base of pronotum completely margined (Figs 1, 2) ..... *U. culinaris*  
 – Base of pronotum not margined (Figs 3–8) ..... 2
2. Male pronotum with two median tubercles (Fig. 3); body reddish or reddish-brown (Figs 3, 4) ..... *U. rufa*  
 – Male pronotum with four tubercles: two median and two lateral (Figs 5, 7); body black (Figs 5, 6) or black-chestnut (Figs 7, 8) ..... 3

3. Ligula with longitudinal tuft of long dense setae on median elevation (Figs 9–12); eyes with 4–5 ommatidia in narrowest part (Figs 10, 12) ..... *U. latimanus*  
 – Ligula evenly covered with short dense setae, without median elevation (Figs 13–16); eyes with 3 ommatidia in narrowest part (Figs 14, 16) ..... *U. bonzica*



Figs 17–22. *Uloma* spp. from Russia, male genitalia. 17–19 – *U. latimanus*; 20–22 – *U. bonzica*; 17, 20 – parameres dorsally; 18, 21 – parameres laterally; 19, 22 – spiculum gastrale.

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