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DISTRIBUTION AND HOST RECORD OF *BRUCHOPHAGUS ROBINIAE* (HYMENOPTERA, EURYTOMIDAE) IN TURKEY

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Distribution and Host Record of *Bruchophagus robiniae* (Hymenoptera, Eurytomidae) in Turkey.
Zerova, M. D., Fursov, V. N., Klymenko, S. I. — For the first time the phytophagous chalcid wasp *B. robiniae* was reared from host seeds of *Robinia viscosa* Ventenat, in the environs of Ankara, Turkey. New data on biology and distribution are given.
Key words: *Bruchophagus*, phytophagous, Eurytomidae, *Robinia*, Turkey.

Introduction

In Turkey 88 species in eight genera from two subfamilies (Eurytominae, Rileyinae) were recorded (Cam, 2012). There are seven species of the genus *Bruchophagus* (*Bruchophagus*) Ashmead (*B. astragali* Fedoseeva, *B. colutae* Bouček, *B. gibbus* (Boheman), *B. coronillae* Szelenyi, *B. mutabilis* Nikolskaya, *B. robiniae* Zerova, *B. roddi* Gussakovskiy) which were found in Turkey (Doğanlar, 1990; Cam, 2011, 2012). The species of the genus *Bruchophagus* develop in the seeds of two plant families: Fabaceae (genera *Astragalus*, *Colutea*, *Coronilla*, *Dorycnium*, *Glycyrrhiza*, *Hedysarum*, *Hippocrepis*, *Lotus*, *Medicago*, *Onobrychis*, *Ononis*, *Oxytropis*, *Robinia*, *Sophora*, *Trifolium*, *Trigonella*), and Liliaceae (genus *Eremurus*) (Zerova, 1975, 1992, 1995).

Bruchophagus robiniae was described by the first co-author from the Southern Ukraine (Crimea) (Zerova, 1970). Later this species was recorded from Bulgaria, Armenia, Tajikistan and Uzbekistan (Zerova, Seregina, 1994). In all cases the insects were reared from the seeds of *Robinia pseudoacacia* Linneus (Fabaceae). *Bruchophagus robiniae* Zerova was recorded in Turkey only from Tokat Province (Doğanlar, 1990; Cam, 2011, 2012). In 2016 in Turkey we reared *B. robiniae* from seeds of *Robinia viscosa* Ventenat (native to North America). We identified that the specimens reared from *R. viscosa* in Turkey are identical with *B. robiniae* collected in Ukraine.

For the first time Ankara Province is recorded here as new distribution place of *B. robiniae*. The plant *R. viscosa* Ventenat is recorded here for the first time as a new host for *B. robiniae*. In this paper, imago of *B. robiniae* are described and illustrated, and new data on biology and distribution of this species are provided.

Material and methods

All examined specimens are deposited in I. I. Schmalhausen Institute of Zoology, National Academy of Sciences of Ukraine, Kyiv. The insects were collected, fixed and mounted after their emergence from the dry seeds of *Robinia viscosa* Ventenat (Fabaceae) which were kept inside plastic packages (15 cm x 25 cm) in laboratory conditions of +20–21 °C.

The terminology used in this work generally follows that of Zerova (1978). The study of the morphological structures of the adults was carried out using microscopes MBS-9 and MBS-10. The photos were made using Sony DHR-CX240E camera mounted on the microscope MBS-10, as well as the Olympus C-4040 ZOOM camera with software: Olympus DP-Soft (Version 3.2) mounted on the Olympus CX-41 microscope. All measurements are given in mm.

***Bruchophagus robiniae* Zerova, 1970 (fig. 1–6)**

Material studied. 1 ♀ (holotype), 18 ♀ and 6 ♂ (paratypes), **Ukraine**, Crimea, Massandra, coll. 19.09.1967, reared 10–14.03.1968, from seeds of *Robinia pseudoacacia* L. (coll. Zerova); 4 ♀, **Ukraine**, Nikita, coll. 25.08.1969, reared 05.1970 (coll. Zerova); 4 ♂, **Tajikistan**, Dushanbe, coll. 19.11.1966 (coll. Babaev); 3 ♀, **Armenia**, Erevan, coll. 21.08.1956 (coll. V. Trjapitzin); 1 ♀, **Uzbekistan**, Tashkent, coll. 1939 (coll. Yahontov); 17 ♀, 7 ♂, **Turkey**, Ankara, Yenimahalle, Plant. Protect. Res. Center, 39°57'19" N 32° 48'19" E (DMS, GPS), 20.01.2016, reared ex seeds *Robinia viscosa* Ventenat (coll. V. Fursov).

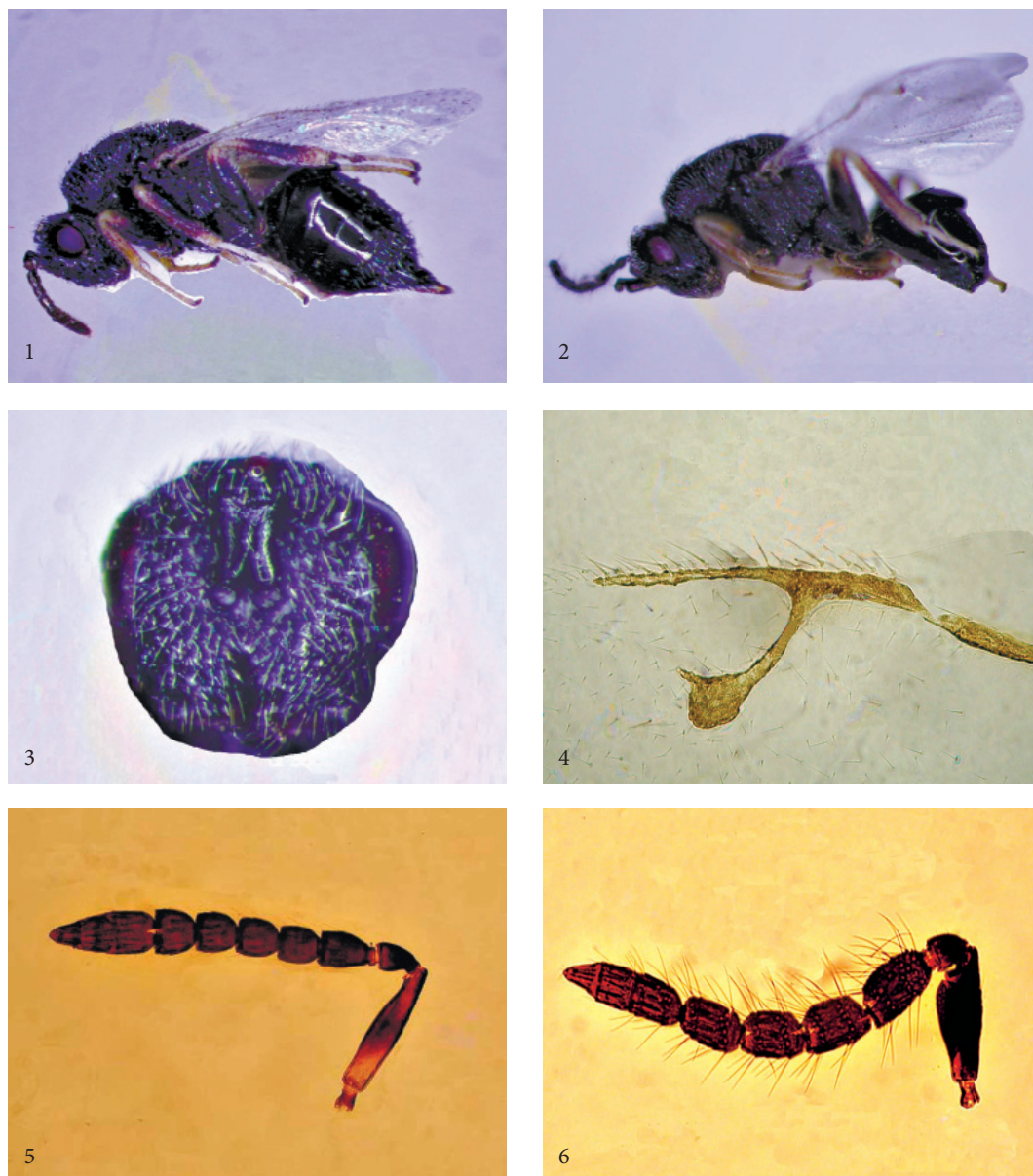


Fig. 1–6. *Bruchophagus robiniae* Zerova: 1, 3–5 — female; 2, 6 — male; 1, 2 — lateral view; 3 — head, 4 — marginal and radial veins, 5, 6 — antenna.

Description. Female (fig. 1). Length about 3.0 mm, (holotype 2.7 mm). Body stout with broad thorax and round abdomen. Body black, all coxae black, fore and mid femora black, hind femora brownish-black, all tibiae dark-brown, tarsi reddish-brown, fore wing venation yellow, tip of ovipositor dark; antennae dark, but scape reddish at the basis. Head and thorax (dorsal part) reticulate with uniform umbelicate pits, pubescence sparse and short. Head from above stout, some wider than pronotal collar, about 1.8 times as wide as long, POL / OOL ratio 2 : 1. Head frontally broader than high in ratio, 55 : 40; the height of eye longer than malar space as 15 : 10; external clypeus margin straight; face with uniform and scarce pubescence. Antennae inserted some higher of middle of face; scape long, not reaching the mid ocellus, the first funicular segment some longer than wide (6 : 4). 2–5 funicular segments square, equal in length club long, some longer than two previous flagellar segments, flagellum with short pubescence.

Mesosoma distinct convex laterally, pronotal collar transverse, ratio of width to length as 2.75 : 1.0; propodeum with small punctures in the middle and some large punctures on the sides. Venation with short marginal vein, the postmarginal vein in 1.35 times longer than marginal vein, ratio of marginal, postmarginal and radial veins — 90 : 111 : 150. Mesopleura with fine reticulation. Metasoma with very short petiolus, abdomen nearly as long as mesosoma (ratio laterally 30 : 28).

Male (fig. 2). Petiolus short, shorter than hind coxa. Antennae with stout pedicellus, widening at the apex, funicle 4-segmented, the first segment a little longer than 2–4th, club 3-segmented, some longer than two previous funicular segments, pubescence, with setae, their length 1,1 times longer than width of segments.

Diagnosis. This species is morphologically mostly close to *B. coluteae* Bouček, from which it is differentiated by shorter and rounded abdomen, expanded and convex mesosoma, and longer postmarginal vein (postmarginal vein in 1.35 times longer than marginal). Male genitalia of *B. robiniae* with long digital sclerites, nearly 2.0 times longer than width, and hooks on digital sclerites massive, but in *B. coluteae* digital sclerites nearly quadrate, and hooks slender.

Biology. Phytophagous species inside the seeds of *Robinia viscosa* Ventenat (Fabaceae).

Distribution. Turkey, Ukraine (Crimea), Bulgaria, Armenia, Uzbekistan, Tajikistan.

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References

- Cam, H. 2011. A checklist of the Eurytomidae (Hymenoptera, Chalcidoidea) species of Turkey. *Zootaxa*, **3113**, 53–64.
- Cam, H. 2012. Updated checklist of the Eurytomidae (Hymenoptera, Chalcidoidea) species of Turkey. *Arch. Biol. Sci., Belgrade*, **64** (2), 667–674.
- Doğanlar, M. 1990. Bazı Türkiye Eurytomidae (Hymenoptera: Chalcidoidea) türleri. Türkiye II. Biyolojik Mücadele Kongresi (26-29 Eylül 1990, Ankara) Bildirileri, *Entomoloji Derneği Yayın*, **4**, 1–331 [In Turkish].
- Zerova, M. D. 1970. A new species of the genus *Bruchophagus* Ashm. (Hymenoptera, Eurytomidae) from the South of the USSR. *Vestnik Zoologii*, **5**, 77–79 [In Russian].
- Zerova, M. D. 1975. New species of the genus *Bruchophagus* (Hymenoptera, Eurytomidae), developing in the seeds of *Eremurus* spp. *Vestnik Zoologii*, **6**, 41–46 [In Russian].
- Zerova, M. D. 1978. *Fauna of Ukraine. Parasitic Hymenoptera. Chalcid wasps — family Eurytomidae*. Naukova Dumka, Kiev, Vol. 11, Is. 9, 1–465 [In Ukrainian].
- Zerova, M. D. 1992. New species of the genus *Bruchophagus* (Hymenoptera, Eurytomidae), with taxonomic analysis. *Vestnik Zoologii*, **5**, 21–28 [In Russian].

- Zerova, M. D. 1995. *The Parasitic Hymenoptera — subfamilies Eudecatominae and Eudecatominae of Palaearctics (Chalcidoidea, Eurytomidae)*. Naukova Dumka, Kyiv, 1–456. [In Russian].
- Zerova, M. D., Seregina, L. Ya. 1994. *The seed-eating chalcid wasps of the Palaearctics*. Naukova Dumka, Kyiv, 1–232 [In Russian].

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