
SEED BEETLE *BRUCHIDIUS TERRENUS* (SHARP) (COLEOPTERA: CHRYSOMELIDAE: BRUCHINAE) – NEW INVASIVE SPECIES TO THE BULGARIAN FAUNA

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ABSTRACT

The East Palaearctic seed beetle Bruchidius terrenus (Coleoptera: Chrysomelidae: Bruchinae) is recorded for the first time to the Bulgarian fauna. Larvae of the bruchid infest mature seeds of introduced mimosa Albizia julibrissin (Fabaceae), an ornamental tree in many countries. The level of damage on seeds caused by bruchid larvae was examined.

Keywords: *Bruchidius terrenus*, *Albizia julibrissin*, invasive species, Bulgaria

Introduction

Bruchidius Schilsky, 1905, is a genus with about 300 described species, widespread in the Old World (4). Some species are introduced with seeds or soil in territories outside their native areal (3, 4). For European countries 80 species of the genus were recorded and 27 species are distributed in Bulgaria (2).

Bruchidius is the most heterogeneous genus within Bruchinae (1). Recent investigations of it reveal several phylogenetic groups that are associated with host-plant taxonomic groups (6). Nevertheless, the genus is not divided into smaller genera, because some species are intermediate concerning morphological characters and bionomy (1).

Most *Bruchidius* species are reported to feed in the larval stage on the seeds of legumes (Fabaceae), as well as on seeds of Caesalpiniaceae, Apiaceae and Asteraceae plants. Some species are pests due to the losses caused to economically important plants.

Bruchidius terrenus (Sharp, 1886) is native to eastern Palaearctic region, where it is considered as an important pest of *Albizia julibrissin* Durazz. (Fabaceae) (7). Morimoto (5) reported *Robinia pseudoacacia* (L.) and *Acacia confusa* Merr. as hosts of *Bruchidius terrenus* too. Recently, *Bruchidius terrenus* was recorded as adventive species in seven southeastern states of USA (3). The same authors gave

a key for identification of North American *Bruchidius* species, as well as diagnosis, re-description and seasonal history of *Bruchidius terrenus*.

Mimosa or pink silk tree, *Albizia julibrissin* origins from Middle and Eastern Asia. In the last three centuries it was introduced as ornamental tree in many countries of Europe, North America and Asia due to the beauty of its flowers, fern-like leaves and umbrella-like canopy (7).

In this paper, *Bruchidius terrenus* is firstly recorded to the Bulgarian fauna. The level of damage on seeds of host-plant *Albizia julibrissin* was investigated in laboratory conditions.

Materials and methods

Ripe pods of *Albizia julibrissin* were collected from several isolated trees in September, 2009 from the following localities: Plovdiv city, Silistra city and Sandanski city. Additional material was collected in November, 2009 from Thessaloniki city (Greece). The material was stored in plastic boxes at laboratory conditions. In the periods September-October 2009 and January-February 2010 emergence of adult seed beetles was observed.

The level of damage caused by the larvae was established in Plovdiv's population. For this purpose, 50 pods of mimosa was collected, seeds were extracted and observed for emergence holes. Whole seeds were dissected for estimating if they are infested or not.

Bruchids were identified after Borowiec (1), Hoebeke et al. (3) and Tuda (6) and deposited in the author's collection.

Results and Discussion

Adults of *Bruchidius terrenus* were reared from dry pods of *Albizia julibrissin* collected in Plovdiv. Seeds of the mimosa collected in Silistra and Sandanski were not infested, while the material collected in Thessaloniki was infested with seed beetles.

Bruchidius terrenus is firstly recorded to the Bulgarian fauna. It was established that the bruchid occurs in Northwest Greece too.

The seeds of the same mimosa trees in Plovdiv from which was collected material for present study, were not infested in 2006 and 2007 years. This fact indicates that the invasion of the *Bruchidius terrenus* happened in the last few years probably with infested mimosa nursery stock or as invasion from neighbour territories.

For estimation the percent of infesting, 545 seed were exanimate. Of them, 303 were with emergence holes. After dissection of the whole seeds, in 20 of them were found larvae, pupae or adults. The rate of infesting of mimosa seeds by *Bruchidius terrenus* in Plovdiv was 59.26%. Hoebeke et al. (3) reported about 90% infested seeds of some mimosa trees in USA. These facts reveal high ecological plasticity of *Bruchidius terrenus* and possibilities for acclimatization in temperate regions.

None parasitoids were reared from collected seeds. The presence of host-plant, appropriate climate and the absence of natural enemies are favourable conditions for fast and successful invasion of the seed beetle *Bruchidius terrenus* to new territories outside of its native areal.

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