Short communication

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Two New Chalcidoid Parasitoids (Hymenoptera: Chalcidoidea) of *Tortrix viridana* L. (Lepidoptera: Tortricidae) for the Fauna of Bulgaria

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Abstract: Two chalcidoids, *Cyclogastrella simplex* (Walker) (Pteromalidae) and *Monodontomerus aeneus* (Fonscolombe) (Torymidae), are recorded for the first time from Bulgaria. They were reared from pupae of *Tortrix viridana L. collected* in a mixed stand formed by *Quercus cerris* L. and *Q. petraea* Liebel. in Sofia region. The biological association of *M. aeneus* to *T. viridana* is regarded as new, not recorded previously for these species. Possible hyperparasitism of *T. viridana by M. aeneus* through the moth's primary parasitoid *C. simplex* is also discussed.

Key words: *Cyclogastrella simplex*, *Monodontomerus aeneus*, *Tortrix viridana, Quercus* spp., new records, Bulgaria

Introduction

The green oak leaf roller, *Tortrix viridana* Linnaeus, 1758 (Lepidoptera: Tortricidae), is one of the most important pest species of oaks in Bulgaria (Zaemdzhikova, Balov 2011). During mass outbreaks, the larvae of this moth can cause complete defoliation (Rubtsov, Utkina 2002). Recently, at least 46 chalcidoid species belonging to ten families are known to attack *T. viridana* as primary parasitoids or hyperparasitoids. Amongst them, *C. simplex* has already been recorded to attack pupae of many moth species of Gelechiidae and Tortricidae (Citation). On the other hand, the associations of *Monodontomerus aeneus* to its known lepidopteran hosts are still thought as uncertain (Noyes 2014).

Material and Methods

The material of caterpillars and pupae of *T. viridana* was collected by hand sampling in oak stands of *Q. cerris* and *Q. petraea* during April-June, 2011. The parasitoids were reared in laboratory conditions only from collected moth's pupae and were identified following Grissell (2000), Graham (1969), Zerova, Seryogina (2002) and Dzhanokmen, Grissell (2002). The identification of the pupae was done using Kuslickij, Narol'skij (1986).

Results

Pteromalidae

Cyclogastrella simplex (Walker, 1834)

Material examined: Lyulin Mt., Bonsovi polyani, 42°39'24"N/23°12'18"E, 892 m, 09 June 2011, 3♀, 1♂, em. 21.VI.2011 from a single pupa.

Distribution: Holarctic.

Torymidae

Monodontomerus aeneus (Fonscolombe, 1832)

Material examined: Lyulin Mt., Bonsovi polyani, 42°39'24"N/23°12'18"E, 892 m, 09 June 2011,

2♀, 1♂, em. 21 June 2011 from the same host pupa of *C. simplex*; 3♀, em. 27 June from a single pupa.

Distribution: Holarctic.

Discussion

The pteromalid *Cyclogastrella simplex* is already known to emerge from *T. viridana* in Europe (Bouček 1961, Garrido Torres, Nieves Aldrey 1999). Therefore, finding of this species in our material is not surprising. The second chalcidoid, *M. aeneus*, is known to parasitise only two tortricid moths: *Lobesia botrana* (Den. & Schiff.) (Xiao *et al.* 2012) and *S. pilleriana* (Noyes 2014). In our study a new parasitoid-host relation of *M. aeneus* with *T. viridana* is found. The emergence of *C. simplex* and *M. aeneus* from a single pupa are considered here as a form of secondary parasitism, in which *M. aeneus* attacks *T. viridana* through its primary pteromalid parasitoid. It is most likely that *M. aeneus* attacks *C. simplex* into the moth pupa using ectoparasitic feeding strategy.

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