

***Eriococcus spurius* (Hemiptera: Eriococcidae) and its natural enemies in Tbilisi**

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Abstract: Biological information on *Eriococcus spuriosus* (Modeer) and its complex of natural enemies in Tbilisi is given. *E. spuriosus* has one a generation a year in Tbilisi and overwinters as the second nymphal instar. Among the complex of natural enemies, the dominant parasitoid is *Coccophagus gossypariae* Gahan (Aphelinidae). However, *Zaomma eriococci* (Ferriere) (Encyrtidae) was also recorded and attacks mainly the adult females, and *Metaphycus delucchii* Viggiani (Encyrtidae) is recorded for the first time from Caucasus. This latter record is also the first outside Italy, from where it was originally described.

Key words: *Eriococcus*, Elm, *Metaphycus delucchii*, Georgia.

Introduction

The European elm scale (EES), *Eriococcus spuriosus* (Modeer), is a rather common holarctic species, causing severe damage to mainly ornamental elms (*Ulmus* spp.) in some places. This insect was first found in the USA in 1884 infesting elm trees in a nursery at Rye, Westchester County, N.Y. Subsequently, the scale invaded the western part of the USA, where its morphology (mainly of pre-imaginal stages), bionomics and natural enemies were studied (Herbert, 1924; Viggiani, 1990). Mass damage to elm trees has been recorded in Lithuania, Latvia, Russia (Kaliningrad), Denmark, Norway, Sweden, Ukraine and Caucasus (Kozarzhevskaya, 1992).

EES is found throughout Georgia, including the high mountainous zone, but is not considered very harmful (Hadzibeyli, 1983).

The complex of natural enemies of the elm scale in Europe has been investigated only in Italy (Viggiani, 1990). In this preliminary note, an account is given on the biology of EES and the complex of its natural enemies in the city of Tbilisi, Georgia.

Materials and methods

In order to determine the parasitoids of EES during 2006 and 2007, samples were collected regularly from the elm trees infested by EES in the surroundings of Turtles Lake, Tbilisi. Investigations were carried out in the laboratory and in the field. Ten cm shoots infested by *E. spuriosus* were collected from elm trees and taken to the laboratory. Shoots were placed in glass bottles covered with a fine mesh and held at room temperature and humidity (40-45) in order to rear the parasitoids.

Results and discussion

EES over winters as the second-stage female and male nymphs. Young females and adult males appear at the end of April. At the beginning of May, the eggs, hatch and the crawlers easily move around on the plants.

Our investigation showed that the density of EES on elms averaged 12 females on each 10 cm of shoot.

Three species of parasitoids were recorded during our survey: *Coccophagus gossypariae* (Aphelinidae), and *Zaomma eriococci* and *Metaphycus delucchii* (Encyrtidae). Total parasitism

was 29% and the dominant parasitoid was *Coccophagus gossyparia*. Only two female *Z. eriococci* and 1 female *M. delucchi* were recorded during this study.

M. delucchi was first described by Viggiani (1990) from Italy, but there have been no further reports of this species from elsewhere. Therefore, our record is the first subsequent report for this species since its initial description.

C. gossypariae had been recorded from the Caucasus prior this study (Nikolskaya & Yasnosh, 1966), but no exact collection data were presented. In our investigation, we recorded this species from Turtles Lake and believe that this record should be considered as a new record for Georgia.

In conclusion, we would like to note that all discussions regarding distribution and statements regarding zoogeographical records of taxa need to be based on a complete faunistic study, at least in similar habitats.

The voucher specimens of each of the parasitoids reared from EES are deposited in the Museum of Institute of Zoology, Tbilisi, Georgia.

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