

Endemic Parasitoids of *Dryocosmus kuriphilus* Yasumatsu (Hymenoptera: Cinipidae) in Central Italy

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Abstract

The presence of chestnut gall wasp was reported for the first time in Northern Italy in 2002 and has subsequently spread rapidly in Central and Southern Italy. Knowing the harmfulness of this wasp for chestnut growing, we considered essential to inquire the cohort of parasitoids of this new insect for the Italian fauna. This research reports on preliminary results obtained in 2007 on the *D. kuriphilus* parasitoids in Central Italy. In particular, eight parasitoids species have been found: two Euritomidae [*Sycophila biguttata* (Swederus) *Eurytoma brunniventris* (Ratzeburg)], one Pteromalidae [*Mosopolobus sericeus* (Forster)], three Torymidae [*Torymus flavipes* (Walker), *T. erucarum* (Schrank), *Megastigmus dorsalis* (Fabricius)], one Eupelmidae [*Eupelmus urozonus* (Dalaman)] and one Ormyridae [*Ormyrus pomaceus* (Geoffroy)]. We report for the first time the presence of the *Torymus erucarum* as parasitoid of *D. kuriphilus*.

INTRODUCTION

The chestnut gall wasp has been reported for the first time in northern Italy in 2002 (Brussino et al., 2002), it has spread rapidly in Central (Paparatti et al., 2005) and Southern Italy. *Dryocosmus kuriphilus* has thus become the key insect pest for the chestnut orchards in Italy and Europe. The chemical control is very hard to achieve due to the complexity of the biology of such insect. Many scientific efforts are directed to the biological control by the aid of natural enemies. Besides the well known *T. sinensis*, already imported in Northern Latium in May 2008 by Prof. A. Alma, Torino University (Italy) and in Central Italy by the cooperation of the Department of plant protection of the University of Tuscia (Viterbo, Italy) and the Prof. Alma, it is absolutely essential to improve the knowledge of the cohort of natural parasitoids of this insect, novel for the Italian fauna. The aim of this research was to enhance the state of the art concerning the insect natural enemies of *D. kuriphilus* (Aebi et al., 2006; Cooper et al., 2007; Payne, 1978).

MATERIAL AND METHODS

Several galls of *D. kuriphilus* were collected in various chestnut orchards in the province of Viterbo (Central Italy); the parasitoids emerged from parasitized galls were sent for the specific determination, to Dr. George Melika of Systematic Parasitoid Laboratory, Plant Protection & Soil Conservation Service of Vas County (Tanakajd, Hungary).

RESULTS

Due to the harmfulness of *D. kuriphilus* for chestnut, we considered essential to study the cohort of parasitoids of this new insect for the Italian fauna. This research reports on preliminary results obtained in 2007 on the *D. kuriphilus* parasitoids in Central Italy. In details, eight parasitoids species have been found (Table 1): two Euritomidae [*Sycophila biguttata* (Swederus) *Eurytoma brunniventris* (Ratzeburg)], one Pteromalidae

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[*Mesopolobus sericeus* (Forster)], three Torymidae [*Torymus flavipes* (Walker), *T. erucarum* (Schrank), *Megastigmus dorsalis* (Fabricius)], one Eupelmidae [*Eupelmus urozonus* (Dalaman)] and one Ormyridae [*Ormyrus pomaceus* (Geoffroy)].

Among them it should be noted that some are able to act as hyperparasitoids, as reported by other authors (Quacchia, 2007; Aebi et al., 2007).

The 69.6% of the examined parasitoids belongs to the *Mesopolobus sericeus* species (Hymenoptera, Pteromalidae) and the 81.2% of the individuals of such species were females.

Particularly interesting it seems to be the first-time report of *Torymus erucarum* as parasitoid of *D. kuriphilus*.

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Tables

Table 1. Comparison between parasitoids of *D. kuriphilus* reported in Piedmont and Latium (*T. sinensis* is an imported species).

Italy				
	Parasitoid species	Family	Region:	
1	<i>Sycophila iracemae</i>	Eurytomidae	-	Piemonte
2	<i>Sycophila variegata</i>	Eurytomidae	-	Piemonte
3	<i>Sycophila biguttata</i>	Eurytomidae	Alto Lazio	Piemonte
4	<i>Eurytoma pistacina</i>	Eurytomidae	-	Piemonte
5	<i>Eurytoma brunniventris</i>	Eurytomidae	Alto Lazio	Piemonte
6	<i>Mesopolobus mediterraneus</i>	Pteromalidae	-	Piemonte
7	<i>Mesopolobus sericeus</i>	Pteromalidae	Alto Lazio	Piemonte
8	<i>Mesopolobus tarsatus</i>	Pteromalidae	-	Piemonte
9	<i>Torymus auratus</i>	Torymidae	-	Piemonte
10	<i>Torymus sinensis</i>	Torymidae	Alto Lazio	Piemonte
11	<i>Torymus flavipes</i>	Torymidae	Alto Lazio	Piemonte
12	<i>Torymus scutellaris</i>	Torymidae	-	Piemonte
13	<i>Torymus erucarum</i>	Torymidae	Alto Lazio	-
14	<i>Megastigmus dorsalis</i>	Torymidae	Alto Lazio	Piemonte
15	<i>Eupelmus urozonus</i>	Eupelmidae	Alto Lazio	Piemonte
16	<i>Baryscapus pallidae</i>	Eulophidae	-	Piemonte
17	<i>Ormyrus pomaceus</i>	Ormyridae	Alto Lazio	Piemonte

