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P 34. ABUNDANCE AND DIVERSITY OF HETEROPTERAN SPECIMENS IN PORTUGUESE OLIVE GROVES

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The olive tree canopy is a habitat for phytophagous and predaceous Heteropteran specimens whose biodiversity is important to be characterized. The aim of this work was to study the abundance and diversity of Heteropteran specimens in Portuguese olive groves with different plant protection systems (conventional, integrated protection and organic farming groves). Therefore, data were obtained in olive groves located in the main olive Portuguese regions (Alto Alentejo and Trás-os-Montes). Sampling occurred in 1999, 2000, 2002 and 2003 and samples were obtained through the beating technique, on a weekly or fortnight basis from March to November of each year. The captured heteropteran specimens were identified to family level and, when possible, to genera or species level. Experimental results showed that specimens belonged to six families that were, for order of importance: Anthocoridae, Miridae, Lygaeidae, Tingidae, Pentatomidae and Nabidae. Beneficial predaceous specimens like *Anthocoris* sp. and *Deraeocoris lutescens* (Schilling, 1837) were the most abundant of the Anthocoridae and Miridae families, respectively. These families were more abundant from the beginning to the middle of June which coincided with the antophagous larval stage of the olive moth, *Prays oleae* (Bernard).

KEYWORDS: HETEROPTERA, BIODIVERSITY, PREDATORS, ANTHOCORIS SP., DERAEOCORIS LUTESCENS

ABUNDANCE AND DIVERSITY OF HETEROPTERAN SPECIMENS IN PORTUGUESE OLIVE GROVES

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INTRODUCTION

- The olive tree canopy is a habitat for phytophagous and predaceous heteropteran specimens whose biodiversity is important to be characterized.
- The aim of this work was to study the abundance and diversity of heteropteran specimens in Portuguese olive groves.

MATERIAL AND METHODS

- Data presented in this work were obtained in olive groves located in the main olive Portuguese regions (Alto Alentejo and Trás-os-Montes). In Alto Alentejo, four olive groves were sampled, two were conducted under conventional regime and the other two under organic farming regime. In Trás-os-Montes, eight olive groves were sampled, three were conducted under conventional regime, one under the integrated protection regime and four under the organic farming regime.
- The sampling period occurred in 1999, 2000, 2002 and 2003 and samples were obtained through the beating technique, on a weekly or fortnight basis from March to November of each year.
- The captured heteropteran specimens were identified to family level, sorted by morphospecies and when possible, identified to genera or species level.

RESULTS

- A total of 3694 heteropteran specimens were captured in Portuguese olive groves. This abundance was separated by 43 morphospecies.
- Morphospecies belonged to seven families that were, for order of importance: Miridae, Anthocoridae, Lygaeidae, Tingidae, Pentatomidae, Reduviidae and Leptopodidae.
- The family Miridae was simultaneously, the most abundant and diverse, particularly in Trás-os-Montes. In Alentejo, the family Anthocoridae was the most relevant group sampled.
- Beneficial predaceous specimens like *Deraeocoris lutescens* (morphospecies 1) and *Anthocoris* sp. (morphospecies 15) were the most abundant of the Miridae and Anthocoridae families, respectively.
- These families were more abundant from the beginning to the middle of June which coincided with the anthophagous larval stage of the olive moth, *Prays oleae* (Bernard).
- In future studies, it will be interesting to investigate the functional group of each species, i.e., to distinguish between phytophagous and predators.

Table 1: Abundance and richness of morphospecies for the different heteropteran families captured in the olive grove.

Family	Trás-os-Montes		Alentejo	
	Abundance	Richness of morphospecies	Abundance	Richness of morphospecies
Miridae	1991	16	172	2
Anthocoridae	93	9	1083	3
Lygaeidae	54	8	32	1
Tingidae	16	3	224	3
Pentatomidae	1	1	26	1
Reduviidae	1	1	0	0
Leptopodidae	1	1	0	0
Total	2157		1537	

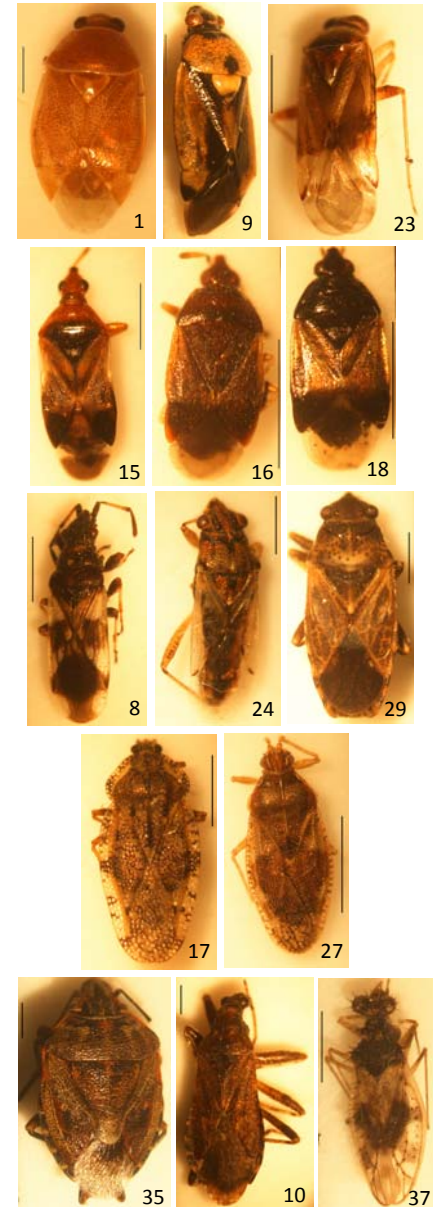


Figure 1. Some representative morphospecies captured in Portuguese olive groves.

Family Miridae: 1, 9 and 23; Family Anthocoridae: 15, 16 and 18;; Family Lygaeidae: 8, 24 and 29; Family Tingidae: 17 and 27; Family Pentatomidae: 35; Family Reduviidae: 10; Family Leptopodidae: 37. Scale bar = 1 mm.