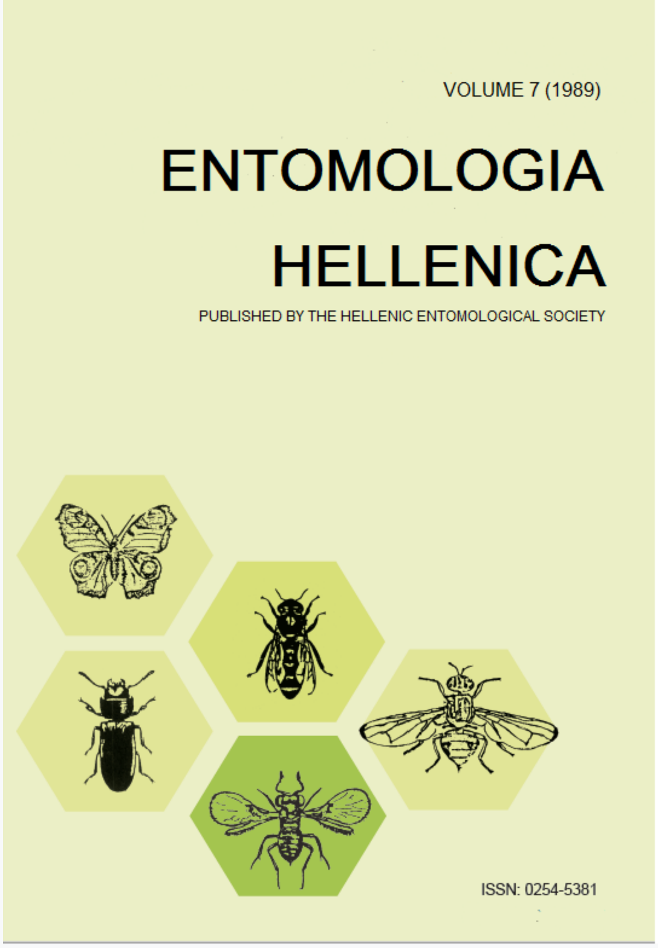
ENTOMOLOGIA HELLENICA

Vol 7 (1989)



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doi: 10.12681/eh.13962

To cite this article:

Buchelos C. T. (1989). A contribution to Lasioderma spp. and other coleoptera collected from thistles in Southern Greece. *ENTOMOLOGIA HELLENICA*, *7*, 7–12. https://doi.org/10.12681/eh.13962

ENTOMOLOGIA HELLENICA 7 (1989): 7-12

A Contribution to *Lasioderma* spp. and Other Coleoptera Collected from Thistles in Southern Greece[1]

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ABSTRACT

Coleoptera adults belonging to at least 64 species were collected in a 2-year survey held in 5 regions of southeastern Greece on different plants, members of the subfamily Cynaroideae: Compositae, commonly known as thistles. In the cited list is depicted the presence of each species according to its host, the plant part of the host, the season and the region it was collected. Species which are considered to be stored product insects are noticed while a special reference is made to *Lasioderma* spp. found on thistles.

Introduction

Thistles are members of the subfamily Cynaroideae (tribe Cardueae s. lat.) which form a well defined group of the family Compositae (Asteraceae). These plants invade crops and uncultivated areas as weeds and despite their spines, support a rich fauna of herbivorous insects together with their predators, parasites and commensals; especially their flower heads with their appearence, structure and the food they offer (seeds, receptacle), are extremely attractive to insects. The insects found on thistles are either monophagous or show varying degrees of specialization, being found on a large number of Compositae as well (Zwölfer 1965). The plants themselves provide a succession of microenvironments. Communities associated with the flower heads develop during summer, detrital feeders colonise the brown dead heads during late autumn and winter and more enter when the heads and stems have fallen to the ground (Redfern 1983). Among them, there is a considerable number of species such as *Tribolium, Rhyzopertha, Lasioderma, Enichmus* etc. considered to be stored product insects as they find in this environment a "wooden warehouse" with perfect insulation and lots of food.

The study of species richness in combination with their interdependence and interaction together with the large ecological information and subsequent biocontrol possibilities, make insect-thistle complexes a fascinating subject for community ecology (Zwölfer 1987, 1988).

Materials and Methods

This study has been realized in 5 regions of Greece, namely Attica, Evia, Corinthia, Argolis, and Arcadia (Fig. 1) in a 2-year period and concerns the adult Coleoptera found on the following thistles: *Carlina (C. acanthifolia* Allioni, *C. corymbosa* L., *C. graeca* Heldreich et Sartorelli, *C. lanata* L.*), Cirsium (C. arvense* Scopoli, *C. candelabrum* Grisbach, *C. creticum* Urville, *C. italicum* De Candolle, *C. fruticosum* Petrak, *C. lanceolatum* Scopoli*), Carduus (C. armatus* Boissier et Heldreich, *C. pycnocephalus* L.*), Carthamus (C. dentatus* Vahl, *C. lannatus* L., *C. ruber* Link), *Cynara (C. cardunculus* L., *C. scolymus* L.*), Notobasis syriaca* Cassini, *Onopordum (O. acanthium* L., *O. caulescens* Urville, *O. illyricum* L., *O. laconicum* Heldreich et Sartorelli, *O. messeniacum* Halacsy*), Picnomon acarna* Cassinni, *Silybum marianum* Gaertner (Diapoulis 1949).

Samples were collected and trap setting together with *in situ* observations had taken place all over the

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[1] Received for publication May 16, 1989.

FIG. 1. Regions of Greece where the insect collection took place: 1. Attica, 2. Evia, 3. Corinthia, 4. Argolis, and 5. Arcadia.

year. Sticky traps consisting of white paper strips 30×8 cm, adhesive on both sides ("Lasiotrap" B.A.T., West Germany) were hanged firmly in upright position at about 1 m hight from the ground level, preferably in places protected from sun and rain, in or next to sites occupied by thistles. To lure *Lasioderma* adults, a pheromone (2,6 - diethyl - 3, 5 dimethyl - 3, 4 - dihydro - 2H - pyran = anhydroserricornin) in pervious dispenser (capsule) has been used. A capsule containing 10 mg of the pheromone was attached to a number of traps for about 3 weeks. When the traps were replaced with new ones, a new capsule was supplied. The old traps were wrapped in transparent cellophan paper and taken to the laboratory for the examination and identification of insects captured. Foreign laboratories and museums have contributed to the identification or verification of several insect species.

Results and Discussion

The insects collected from thistles are listed in Table 1 according to their families cited in alphabetical order. Among them, 16 species are also found in stores of agricultural products and foodstuffs and most of them are considered to be exclusive stored product insects (Aitken 1975).

Almost all thistle species (expect *Notobasis* and *Picnomon*) were found to support 4 or 5 different *Lasioderma* species. The highly polyphagus *L. serricorne* adults were numerous in flower heads and stems of *Carduus, Cynara, Onopordum* and *Silybum* but also on the same parts of *Crysanthemum segetum* L., in all regions from March to November; its larvae seem to feed on all dry plant parts being phytophagus as well as predators of other insect inhabitants (Sobhian and Zwölfer 1985). The same seems to happen with all *Lasioderma* species. The existance of thistles near or around tobacco fields and stores helps in breeding this species which is the main and most dangerous pest of stored tobacco. *L. haemorrhoidale* is very common on *Onopordum* in Attica and Evia and less on *Silybum* and other thistles on which it has been observed. *L. redtenbacheri* showed a high preference in *Cynara* spp. (mainly *C. scolymus*) and *Carduus* (mainly *C. pycnocephalus*) flower heads from spring to autumn. It is worthwhile to note that 68 larvae and 24 adults of *L. redtenbacheri* were counted in and on a single large dry *C. scolymus* head in September 1987 at Candia (Argolis).

A considerable number of specimens resembling to *L. serricorne* could not be identified

TABLE 1. Coleoptera species adults (listed under alphabetical order of families) per host plant, plant part of the host, season and region collected. Those being or considered to be stored product insects are marked with an asterisk.

	Host (genus)									Plant part				Season				Region				
Insect species	*Carlina*	*Cirsium*	*Carduus*	*Carthamus*	*Cynara*	*Notobasis*	*Onopordum*	*Picnomon*	*Sibilum*	Flowers	Stems	Roots	Leaves	Spring	Summer	Autumn	Winter	Attica	Evia	Corinthia	Argolis	Arcadia
Alleculidae																						
Podonta sp. Mulsant			+	+	+		+		+	+				+	+			+		+		
Anobiidae																						
Lasioderma serricorne F.*		+	+	+	+		+		+	+	+			+	+	+		+	+	+	+	+
Lasioderma haemorrhoidale Illiger		+	+	+			+		+	+	+			+	+	+		+	+			
Lasioderma redtenbacheri Bach	+		+		+		+		+	+	+			+	+	+		+	+	+	+	+
Lasioderma spp. (2;) Stephens)		+	+		+		+		+	+				+	+			+	+		+	
Anthicidae																						
Anthicus floralis L.*	+	+		+		+		+	+	+	+		+	+			+	+			+	+
Bostrychidae																						
Rhyzopertha dominica Stephens*				+			+			+						+		+				
Bruchidae																						
Spermophagus sericeus (Fourcroy)*		+		+					+	+					+	+		+		+		
Spermophagus spp. Steven (2)					+	+				+						+	+		+	+		
Chrysomelidae																						
Chrysomela gypsophilae Küster		+	+	+	+		+	+	+				+	+	+			+		+	+	
Clytra affinis Illiger	+		+				+			+				+					+			+
Cryptocephalus bilineatus L.		+	+		+		+		+	+				+	+			+		+		+
Cryptocephalus sp. Geoffroy	+	+			+				+	+				+	+					+		+
Longitarsus succineus Foudras	+				+			+			+		+	+	+			+	+			
Cleridae																						
Denops albofasciatus Charpentier		+							+	+	+		+		+	+		+			+	
Necrobia violacea L.*			+				+		+	+			+			+		+			+	+
Tarsostenus univittatus Rossi	+		+			+	+		+		+			+		+		+	+			+
Trichodes apiarius L.		+	+		+		+		+	+				+				+		+		+
Trichodes favarius Illiger		+	+		+		+		+	+				+				+		+	+	+
Trichodes quadriguttatus Adams	+	+	+		+		+		+	+				+	+			+	+	+	+	+

Coccinelidae																						
Coccinella septempunctata L.	+	+	+		+		+	+	+	+	+			+	+			+	+	+	+	+
Hippodamia variegata (Goeze)	+		+				+		+	+	+		+	+				+		+		+
Nephus redtenbacheri (Mulsant)		+			+		+		+	+	+		+	+			+		+	+	+	
Scymnus apetzi Mulsant		+		+		+		+		+	+		+		+	+			+		+	+
Cryptophagidae																						
Cryptophagus saginatus Sturm*	+						+				+		+		+	+		+		+		+
Micrambe aubrooki Donisthorpe			+				+		+		+		+		+	+		+		+		
Curculionidae																						
Acales hypocrita Boheman			+				+			+	+					+	+					+
Apion carduorum Kirby		+	+		+		+		+	+			+	+	+	+		+	+	+	+	+
Apion longirostre Olivier			+		+		+		+	+	+		+		+	+		+	+	+	+	
Apion rufirostre F.		+					+		+	+	+		+	+	+	+		+		+	+	+
Brachytemnus porquatus Germar*									+		+					+		+				
Cycloderes canescens Rossi			+		+						+	+			+	+					+	+
Hypera pastinacae Rossi					+							+				+					+	
Gymnaetron melinum Reitter	+		+		+				+					+		+		+	+			+
Gymnaetron plagiatum Gyllendal		+				+	+		+		+			+	+	+		+		+		
Gymnaetron tetrum F.			+		+		+	+		+	+		+	+		+		+			+	+
Larinus latus Herbst			+		+				+	+					+	+			+		+	+
Lixus elegantulus Boheman		+								+				+				+				
Otiorrhynchus anatolicus Boheman					+								+			+					+	
Otiorrhynchus cribricollis Gyllenhal					+		+				+	+	+			+	+			+	+	
Rhinocyllus conicus Fröhlich		+	+		+		+	+	+	+					+	+	+	+	+	+	+	+
Tanymecus palliatus F.			+		+							+	+		+	+		+		+	+	
Histeridae																						
Carcinops pumilio Erichson*							+		+	+			+			+	+	+		+		
Lathrididae																						
Corticaria sp. Marshall*					+		+		+	+	+					+	+	+			+	+
Enichmus minutus L.*				+					+	+	+					+	+	+		+		+
Malachiidae (Melyridae)																						
Malachius bipustulatus F.*		+	+	+	+			+	+	+	+			+	+	+		+	+	+	+	+
Psilothrix cyaneus Olivier	+		+				+		+	+	+		+	+	+	+	+		+	+		+
Meloidae																						
Mylabris quadripunctata L.			+					+		+					+							+
Mylabris variabilis Pallas			+			+		+		+				+					+			+
Mordellidae																						
Mordellistena spp. (2) Costa	+		+							+				+	+			+		+		+
Stenalia bisecta Baudi	+		+	+						+				+	+				+			+
Mycetophagidae																						
Typhea stercorea (L.)*							+		+	+	+				+			+				
Nitidulidae																						
Brachypterus glaber Stephens*							+			+					+	+		+				
Carpophilus ligneus Murray*					+					+					+						+	
Carpophilus pilosellus Motschulsky*	+	+							+	+	+				+	+		+				+
Nitidula carnaria Schaller*			+	+						+			+			+		+				+
Phalacridae																						
Olibrus affinis Sturm		+								+					+					+		
Scarabeidae																						
Ammoecius elevatus F.	+									+							+	+				
Cetonia aurata L.	+		+	+	+	+	+		+	+				+	+			+	+	+	+	+
Epicometris hirta Poda	+		+	+	+	+	+	+	+	+				+	+			+	+	+	+	
Oxythyrea funesta Poda		+	+	+	+		+		+	+				+	+			+	+	+	+	+
Scraptiidae																						
Anaspis sp. Geoffroy		+	+		+		+		+	+				+	+			+			+	
Scolytidae																						
Scolytus rugulosus (Müller)		+							+			+	+			+	+	+		+	+	
Tenebrionidae																						
Tribolium castaneum (Herbst)*					+		+			+					+			+			+	

TABLE 2. Mean number per trap of each *Lasioderma* species adults, counted on 10 traps with and 10 without the pheromone Anhydroserricornin, during the 2-year period in the regions studied.

Kind of trap	*L. serricorne*		*L. haemorrhoidale*		*L. redtenbacheri*		*Lasioderma* spp.	
	Mean no./trap	%	Mean no./trap	%	Mean no./trap	%	Mean no./trap	%
Pheromone	108	72.0	52	62.6	80	65.1	94	69.6
Control	42	28.0	31	37.4	43	34.9	41	30.4

by the author or by Mr R. G. Adams of the Slough Laboratory of the M.A.F.F., the British Museum (N. H.), Dr White of the U.S.D.A. and the Bayerische Staatssamlung München. So far we can say that some of these specimens could possibly be *Lasioderma torquatum* Chevrolat or that all these belong to a polymorphic species (Halperin and Español 1978, Porta 1929, Portevin 1931).

The use of adhesive traps with Anhydroserricornin revealed that all *Lasioderma* species are more or less lured by the pheromone. The mean number of each *Lasioderma* species counted per trap with or without (control) pheromone in the 2-year period is shown in Table 2. Traps with Anydroserricornin lured 2.57 times more *L. serricorne,* 1.67 times more *L. haemorrhoidale,* 1.86 times more *L. redtenbacheri,* and 2.29 times more adults of the unidentified *Lasioderma* species than traps without pheromone.

Acknowledgment

Appreciation is expressed to the Goulandri Museum of Natural History and the Dept. of Weeds, Benaki Phytopathological Institute, Kiphissia, for the identification of thistle species; also to Mr R. G. Adams, Slough Laboratory of the M.A.F.F., the British Museum (N. H.), England, Dr White of the U.S.D.A., and Prof. P. Angelov, Plovdiv, Bulgaria for the identification or confirmation of several insect species.

References

Aitken, A. D. 1975. Insect Travellers. Technical Bulletin 31, H.M.S.O. London Vol. 1.

Diapoulis, H. 1949. Synopsis Florae Graecae. Vol. B (Sympetalae). Ministère d'Agriculture de Grèce.

Halperin, J. and F. Español. 1978. The Anobiidae (Coleoptera) of Israel and Near East. Isr. J. of Entomol. Vol. XII: 5-18.

Porta, A. 1929. Fauna Coleopterum Italica. Vol. III: 438.

Portevin, G. 1931. Coleoptéres de France. Paul Lechevalier, Paris. II: 487.

Redfern, M. 1983. Insects and thistles. Naturalists' Handbooks: 4, Cambridge University Press.

Sobhian, R. and H. Zwölfer. 1985. Phytophagous insect species associated with flower heads of yellow starthistle (*Centaurea solstitialis* L.). Z. ang. Ent. 99: 301-321.

Zwölfer, H. 1965. Preliminary list of phytophagous insects attacking wild Cynarae (Compositae) in Europe. Tech. Bull. Commonw. Inst. Biol. Control 6: 81-154.

Zwölfer, H. 1987. Species Richness, Species, Packing and Evolution in Insect-Plant Systems. Ecological Studies. Springer-Verlag, Berlin-Heildeberger. Vol. 61: 301-319.

Zwölfer, H. 1988. Evolutionary and Ecological Relationships of the Insect Fauna of Thistles. Ann. Rev. Entomol. 33: 103-22.

KEY WORDS: Coleoptera, Thistles, Cynaroidae: Compositae, *Lasioderma* spp., *Lasioderma* pheromone

Συμβολή στην Πανίδα των *Lasioderma* spp. και Άλλων Κολεοπτέρων που Βρέθηκαν σε «Αγκάθια» (Cynaroideae: Compositae) στη Νοτιοδυτική Ελλάδα

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ΠΕΡΙΛΗΨΗ

Με δειγματοληψίες και παγιδοθετήσεις που έγιναν επί διετία σε είδη της υποοικ. Cynaroideae των Compositae στις περιοχές Αττική, Εύβοια, Κορινθία, Αργολίδα και Αρκαδία (Νοτιοδυτική Ελλάδα), βρέθηκαν τουλάχιστον 64 διαφορετικά είδη ακμαίων κολεοπτέρων. Τα ονόματα των ειδών εντόμων κατά οικογένεια, η παρουσία του καθενός από αυτά σε κάθε ξενιστή, η εποχή και η περιοχή όπου έγινε η συλλογή τους εμφανίζονται σε λεπτομερή κατάλογο. Επίσης σημειώνονται όσα είδη είναι ή συνήθως θεωρούνται έντομα αποθηκών ενώ γίνεται ειδική αναφορά στα είδη του γένους *Lasioderma* που βρέθηκαν και στην κατανομή τους στα διάφορα είδη «αγκαθιών».