

## CONTRIBUTIONS TO THE KNOWLEDGE OF THE FAUNA OF CERAMBYCIDS (COLEOPTERA: CERAMBYCIDAE) FROM HEMEIUȘI DENDROLOGICAL PARK, BACĂU COUNTY

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**Abstract.** The paper presents the species of cerambycids from Hemeiuși Dendrologic Park, Bacău County, preserved in the entomological collections of “Ion Borcea” Natural Sciences Museum Complex of Bacău. Hemeiuși Arboretum is a valuable dendrological collection, which comprises 178 species of coniferous, with origins in (North America - 76 species, Asia - 50 species, and Europe - 48 species). 23 species have been identified (63 specimens), from 16 genera, and respectively four subfamilies of Cerambycidae family: Prioninae, Lepturinae, Cerambycinae, and Lamiinae. The paper presents new data about the diversity of cerambycids from Hemeiuși Dendrologic Park. The author used the nomenclature and systematic published by M. L. Danilevsky (DANILEVSKY, 2003). From zoogeographical origin point of view, the cerambycids fauna of Hemeiuși Dendrologic Park is dominated by European and Central Mediterranean elements. The same aspect can be mentioned if we refer at the fauna of cerambycids from Romania.

**Keywords:** Cerambycidae, zoogeographical origin, entomological collections, Hemeiuși Park.

**Rezumat. Contribuții la cunoașterea faunei de cerambycide (Coleoptera: Cerambycidae) din Parcul Dendrologic Hemeiuși, județul Bacău.** Lucrarea prezintă speciile de cerambycide din Parcul Dendrologic Hemeiuși, județul Bacău, conservate în colecțiile de entomologie ale Complexului Muzeal de Științele Naturii “Ion Borcea” Bacău. Arboretumul Hemeiuși este o valoroasă colecție dendrologică, ce cuprinde 178 specii de conifere, cu origini în America de nord - 76 specii, Asia - 50 specii și Europa - 48 specii). Au fost identificate 23 specii (63 indivizi), ce aparțin la 16 genuri din 4 subfamilii ale familiei Cerambycidae: Prioninae, Lepturinae, Cerambycinae and Lamiinae. Lucrarea prezintă date noi cu privire la diversitatea cerambycidelor din Parcul Dendrologic Hemeiuși. Nomenclatura și sistematica folosite de autor sunt cele publicate de M. L. Danilevsky (DANILEVSKY, 2007). Fauna de cerambycide din Parcul Dendrologic Hemeiuși, este dominată din punct de vedere al originii zoogeografice, de elemente europene și central mediteraneene, lucru valabil și în cazul faunei de cerambycide a României.

**Cuvinte cheie:** Cerambycidae, origine zoogeografică, colecții de entomologie, Parcul Hemeiuși.

### INTRODUCTION

Cerambycidae family is a well-known family of insects, from Coleoptera order, that comprises between 20,000 and 30,000 species, dominated by tropical and equatorial species.

The Palaearctic fauna of cerambycids is relatively poor, only 1,200 species (PANIN & SĂVULESCU, 1961).

In Romania, there are identified 256 species of cerambycids, 107 in the historical province Moldova. Starting with the 18<sup>th</sup> century, the elegance and beauty of cerambycids, as well their large size brought the cerambycids in the attention of both scientists and amateur entomologists. However, in Romania, few researchers have focused on the study of this family. The existing papers are oriented mainly towards the knowledge of cerambycids fauna from the west and south-west of Romania (GURĂU, 2004).

Situated on the Bistrița valley, at 10 km of Bacău city, Hemeiuși Dendrological Park was founded in 1880, and occupies a surface of 49 ha. Hemeiuși Arboretum is a valuable collection of dendrology, which comprises 178 species of conifers (with origins in North America - 76 species, Asia - 50 species and Europe - 48 species).

### MATERIAL AND METHODS

The identified specimens were collected by hand, directly from plants. The collections from our museum were constituted using different sources: acquisitions, donations, collecting trips, etc. Taking this into account, the author drafted the present paper as a biodiversity one.

The terms used in the paper for zoogeographic elements, are those published by PESSARINI & SABBADINI (1994) in “Insetti della Fauna Europea Coleoteri Cerambycidi” in the chapter named “The catalogue of the species of cerambycids from Europe”. The terminology and classifications used in the paper are those published by DANILEVSKY (2007).

### RESULTS AND DISCUSSIONS

For Hemeiuși Dendrological Park, the author identified 63 cerambycids, collected between 1971 and 2002. It comes out that there are present 21 species, from 16 genera, and respectively four subfamilies of Cerambycidae family: Prioninae, Lepturinae, Cerambycinae, and Lamiinae. In Table 1, there are presented the species of cerambycids collected from Hemeiuși Dendrological Park, between 1971 and 2002, from the collections of “Ion Borcea” Natural Sciences Museum of Bacău.

Table 1. Species of cerambicids collected from Hemeiuși Dendrological Park, between 1971 and 2002, from the entomology collections of "Ion Borcea" Natural Sciences Museum of Bacău.  
 Tabel 1. Specii de cerambicide colectate din Parcul Dendrologic Hemeiuși, în perioada 1971-2002, din colecțiile de entomologie ale Complexului Muzeal de Științele Naturii „Ion Borcea” Bacău.

No.	SPECIES	YEAR / NUMBER OF SPECIMENS												Total					
		1971	1972	1975	1979	1980	1981	1985	1990	1994	1995	1996	1997		1998	1999	2000	2001	2002
1.	<i>Pritonus cortarius</i> LINNÉ 1758	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2
2.	<i>Pachyta quadrimaculata</i> LINNÉ 1758	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
3.	<i>Dinoptera collaris</i> LINNÉ 1758	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
4.	<i>Pidonia lurida</i> FABRICIUS 1792	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
5.	<i>Pseudovadonia livida</i> FABRICIUS 1776	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	4
6.	<i>Paracorymbia maculicornis</i> DEGEER 1775	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
7.	<i>Aredolpona rubra</i> LINNÉ 1758	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2	-	-	5
8.	<i>Rutpela maculata</i> PODA 1761	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	5
9.	<i>Stenurella melanura</i> LINNÉ 1758	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
10.	<i>Stenurella bifasciata</i> MÜLLER 1776	-	-	-	-	1	-	-	-	5	-	-	-	-	-	-	-	-	7
11.	<i>Aromia moschata</i> LINNÉ 1758	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
12.	<i>Cerambyx cerdo</i> LINNÉ 1758	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
13.	<i>Ropalopus macropus</i> GERMAR 1824	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
14.	<i>Chlorophorus varius</i> MÜLLER 1766	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-	3
15.	<i>Chlorophorus sator</i> MÜLLER 1766	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	5
16.	<i>Clytus arcticus</i> LINNÉ 1758	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
17.	<i>Clytus rhamni</i> GERMAR 1817	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
18.	<i>Dorcadion fulvum</i> SCOPOLI 1763	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	2
19.	<i>Dorcadion pedestre</i> PODA 1761	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	1	4
20.	<i>Agapanthia villosiviridescens</i> DEGEER 1755	-	-	-	-	-	-	-	-	-	-	-	-	-	4	10	-	-	14
21.	<i>Agapanthia violacea</i> FABRICIUS 1775	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1

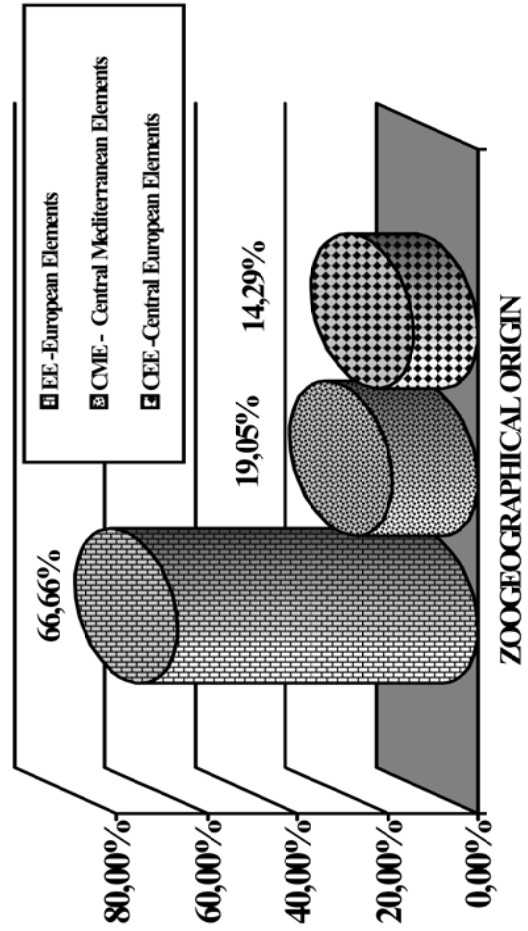


Figure 1. The zoogeographical origin of the analysed species of cerambicids from Hemeiuși Dendrological Park.

Figura 1. Originea zoogeografică a speciilor de cerambicide analizate din Parcul Dendrologic Hemeiuși.

The local distribution of the species of cerambicids is directly influenced by the climate and by the isothermal line of the vegetative period (as well as yearly at national scale).

The data concerning the zoogeographical species for the analysed fauna of cerambicids from Hemeiși Dendrological Park are presented in Table 2 and illustrated in Fig. 1.

It comes out that the European Zoogeographical Elements (EE) are dominant (66.66%). They are followed by Central Mediterranean Elements (CME) - (19.05%) and Central European Elements (CEE) - (14.29%). The situation is similar to the characteristics at national level.

The main core of the fauna of cerambicids from Romania is composed of European and Euro-Siberian Elements, with or without Black Sea and Eastern Mediterranean influence. The Central European Elements are rarely present in this fauna. The elements from Middle Asia and those typical western do not appear (PANIN & SĂVULESCU, 1961).

It comes out that the identified species are part of four subfamilies of the Cerambycidae family (Table 3), represented by different numbers of species, as it follows: Prioninae – 1 species, Lepturinae – 7 species, Cerambycinae – 5 species, Lamiinae – 4 species (Fig. 2).

Table 2. The elements of zoogeographical origin of the analyzed species of cerambicids from Hemeiși Dendrological Park: EE - European Elements; CME – Central Mediterranean Elements; CEE - Central European Elements.

Tabel 2. Elemente de origine zoogeografică a speciilor de cerambicide analizate din Parcul Dendrologic Hemeiși: EE – elemente europene; ECM – european central mediteraneene; ECE - elemente central europene;

No.	SPECIES	ZOOGEOGRAPHICAL ORIGIN
1.	<i>Prionus coriarius</i>	EE
2.	<i>Pachyta quadrimaculata</i>	EE
3.	<i>Dinoptera collaris</i>	EE
4.	<i>Pidonia lurida</i>	EE
5.	<i>Pseudovadonia livida</i>	CME
6.	<i>Paracorymbia maculicornis</i>	CME
7.	<i>Aredolpona rubra</i>	EE
8.	<i>Rupela maculata</i>	EE
9.	<i>Stenurella melanura</i>	EE
10.	<i>Stenurella bifasciata</i>	EE
11.	<i>Aromia moschata</i>	EE
12.	<i>Cerambyx cerdo</i>	EE
13.	<i>Ropalopus macropus</i>	ECE
14.	<i>Chlorophorus varius</i>	EE
15.	<i>Chlorophorus sartor</i>	CME
16.	<i>Clytus arietis</i>	EE
17.	<i>Clytus rhamni</i>	EE
18.	<i>Dorcadion fulvum</i>	ECE
19.	<i>Dorcadion pedestre</i>	ECE
20.	<i>Agapanthia villosviridescens</i>	EE
21.	<i>Agapanthia violacea</i>	CME

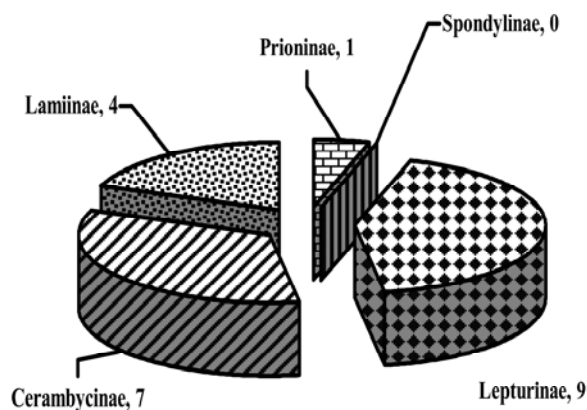


Figure 2. The presence of the species of cerambicids in the subfamilies of the Cerambycidae family from Hemeiși Dendrological Park.

Figura 2. Prezența speciilor de cerambicide în cadrul subfamiliilor familiei Cerambycidae, din Parcul Dendrologic Hemeiși.

Table 3. The presence of the analyzed species of cerambicids in the subfamilies of Cerambycidae family.  
 Tabel 3. Prezența în subfamiliile familiei Cerambycidae a speciilor de cerambicide analizate.

No	SUBFAMILY	SPECIES
1.	Prioninae	<i>Prionus coriarius</i>
2.	Lepturinae	<i>Pachyta quadrimaculata</i>
3.		<i>Dinoptera collaris</i>
4.		<i>Pidonia lurida</i>
5.		<i>Pseudovadonia livida</i>
6.		<i>Paracorymbia maculicornis</i>
7.		<i>Aredolpona rubra</i>
8.		<i>Rutpela maculata</i>
9.		<i>Stenurella melanura</i>
10.		<i>Stenurella bifasciata</i>

11.	Cerambycinae	<i>Aromia moschata</i>
12.		<i>Cerambyx cerdo</i>
13.		<i>Ropalopus macropus</i>
14.		<i>Chlorophorus varius</i>
15.		<i>Chlorophorus sartor</i>
16.		<i>Clytus arietis</i>
17.		<i>Clytus rhamni</i>
18.	Lamiinae	<i>Dorcadion fulvum</i>
19.		<i>Dorcadion pedestre</i>
20.		<i>Agapanthia villosiviridescens</i>
21.		<i>Agapanthia violacea</i>
<b>TOTAL</b>		

### CONCLUSIONS

1. The author collected 63 specimens from Cerambycidae family, between 1971 and 2002.
2. In Hemeiuși Dendrologic Park, there are present 21 species belonging to 16 genera, and respectively four subfamilies of the Cerambycidae family: Prioninae, Lepturinae, Cerambycinae and Lamiinae.
3. The species of cerambicids collected from Hemeiuși Dendrological Park were analysed from zoogeographical origin point of view. It came out that the studied fauna of cerambicids comprises three zoogeographical groups: European Elements (EE) (dominant - 66.66%), followed by Central Mediterranean Elements (CME) - (19.05%) and Central European Elements (CEE) - (14.29%).
4. The special flora of Hemeiuși Dendrological Park determines the presence of a special fauna and also a specific fauna of cerambicids. The cerambicids found here are especially the small ones, which are feeding on the vegetal tissue of the roots, flowers, and straws.

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