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OBSERVATIONS ON COLEOPTERA FAUNA FROM THE DUMBRAVA SIBIULUI FOREST (SIBIU, ROMANIA) IN THE 2015 YEAR

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Abstract

The present paper deals with the fauna of 8 families of Coleoptera: Carcabidae, Scarabeidae, Cerambycidae, Silphidae, Elateridae and Staphylinidae in the Dumbrava Sibiului Forest of district Sibiu. The list of the 32 species of coleoptera is shown in the chart. Each species has also data of the microhabitat, the trophic spectrum, the ecology ant the geographical spreading.

***Key words*:** *Coleoptera, fauna, ecology, species*

INTRODUCTION

Dumbrava Sibiu Forest is a unique geomorphological unit, both morpho structurally and landscape.

The area is well studied in terms of vegetation and vertebrate fauna. The invertebrate fauna were studied over time as follows: Macrolepidoptere daytime [13,14] epigenous entomofauna inside the forest [8,15,19,20,21,26], xylophagous beetles [2,3,4,5,6].

Analyzing the climatic conditions of the area may be said to be characterized by middle and upper terraces with poorly evolved soils and hydrophobic soils whose genesis is linked to the presence of shallow to start alluvial aquifer with brown soils. The mineral substrate is everywhere gravel and sandy-skeletal deposits, which makes the natural drainage brown [7].

Some papers on carabids from mixed forests in Moldova (Romania) were published by Solomon L., Varvara M., (1986) [22] and also Varvara (2004, 2005) [23,24,]; while those in beech forests and in coniferous forests and besides it some collaborators published many papers on structure of the carabid communities in the field of potatoes, sugar beet, wheat, maize, sunflower, clover and in apple orchards in Moldova.

The observations on the taxonomic composition and ecological structure of populations of *Carabidae* in the same forest ecosystems are published in the other papers [1,21,25].

The analysis in terms of climate, the study area is located in Romania, in Sibiu in a region with sub-humid climate. Average annual rainfall is 662 mm. The average annual temperature is between 9.4 ° C. Aridity index has a value of 35 annual and monthly aridity of two clues about the value of 28 and only one falls below this value (in September) but without reaching the limit of dryness. From the analysis above parameters we can say that terrace where grasslands are located under forest to forest steppe zone limit.

MATERIALS AND METHODS

Because 2015 was not considered a quantitative analysis fauna of beetles, but qualitative collection was done using ground traps by fixed points collection.

The captured material was made periodically by taking out of each trap catches in cloth bags, with appropriate label. Were targeted geographically and numbered from 1-12 clockwise, from trap located at N.

The collected material was already dead introduced in glass containers in rubbing

alcohol, measurements being performed at the end of the study period [21].

The insects were collected in the Dumbrava Sibiului oak forest (Photo 1) situated in the Municipality Sibiu, in Sibiu County, at the contact between the Cindrel Mountains and the sediments of the piemontan plaine and hills in the S of the city Sibiu. „Dumbrava Sibiului" (GPS: 45°44'35''N, 24°05'51''E) has a surface of 978 ha and it is distributed in four forests. The traps were set in a circle of 12.5 m diameter [20].

The material was collected from April to August 2015.

Photo 1. Experience (Original photo)

RESULTS AND DISCUSSIONS

The list of species collected is presented in Table 1. Each species is accompanied by data on the microclimate, eco-geography, trophic spectrum and floor (sublevel) where vegetation was collected [12]. There were collected 32 species of beetles belonging to six families: *Carabidae* (14 species) [17], *Scarabeidae* (5 species) [18], *Cerambycidae* (1 specie), *Silphydae* (6 species), *Elateridae* (2 species), *Staphylinidae* (4 species).

Five *Carabid* species are springbreeders, and 4 species autumn breeders. The majority of species were forest species, mesophilic, zoophagous, Palaearctic.

The percentage of species in each family number is: *Coleoptera* with 14 species, *Silphydae* with 6 species, 5 species *Scarabeidae*, 4 *Staphylinidae* species *Elateridae* 2 and one representative species *Cerambrycidae* fine family.

Table 1. List of species collected in Dumbrava Sibiului Forest, in terms of 2015

Taxon	Microhabitat	Specrtu trofic	Ecogeografic element	Spreading
Carabidae Family				
Carabus cancellatus	Ground	Zoophagous	Oreal	Carpatic
Carabus gigas	Ground	Zoophagous	Arboreal	Palearctic
Carabus coriaceus	Ground	Zoophagous	Arboreal	Palearctic
Carabus violaceus	Ground	Zoophagous	Arboreal	Euro-Siberian
Carabus ullrichi	Ground	Zoophagous	Arboreal	European
Carabus scheidleri	Ground	Zoophagous	Arboreal	European
Carabus nemoralis	Ground	Zoophagous	Arboreal	Euro-Siberian
Harpalus latus	Ground	Zoophagous	Eremial	Euro-Asiatic
Pterostichus niger	Ground	Zoophagous	Oreal	Euro-Asiatic
Pterostichus melanarius	Ground	Zoophagous	Oreal	Euro-Asiatic
Pterostichus oblongopunctatus	Ground	Zoophagous	Oreal	Euro-Asiatic
Pterostichus assimilis	Ground	Zoophagous	Oreal	Palearctic
Agonum binotatum	Ground	Zoophagous	Eremial	Palearctic
Lonicera pilicornis	Ground	Zoophagous	Arboreal	Euro-Siberian
Scarabeidae Family				
Geotrupes mutator	Manure	Coprophagus	Eremial	Balcanic
Geotrupesstercorarius	Manure	Coprophagus	Arboreal	European
Geotrupes vernalis	Manure	Coprophagus	Arboreal	European
Onthophagus taurus	Manure	Coprophagus	Eremial	Palearctic
Onthophagus ovatus	Manure	Coprophagus	Arboreal	Euro-Asiatic
Silphidae Family				
Phosphuga atrata	decaying organic matter	Saprophagus	Eremial	Transpalaearctic
Silfa obscura	decaying organic matter	Saprophagus	Eremial	Euro-Asiatic
Thanotophilus rugosus	decaying organic matter	Saprophagus	Eremial	Euro-Asiatic
Oeceoptoma thoracica	decaying organic matter	Saprophagus	Arboreal	Euro-Siberian
Necrophorus vespillo	decaying organic matter	Saprophagus	Arboreal	Euro-Siberian
Necrophorus humator	decaying organic matter	Saprophagus	Arboreal	European
Staphylinidae Family				
Staphylinus erythropterus	Ground	Zoophagous	Arboreal	Euro-Siberian
Staphylinus olenus	Ground	Zoophagous	Arboreal	Transpalaearctic
Staphylinus caesareus	Ground	Zoophagous	Eremial	Euro-Siberian
Velleius dilatatus	Ground	Mixophagus	Eremial	Transpalaearctic
Elateridae Family				
Athous niger	Epigaion	Phytophagous	Arboreal	Euro-Siberian
Lacon murinus	Epigaion	Phytophagous	Ground	Euro-Siberian
Cerambycidae Family				
Morimus funereus	Ground	Phytophagous	Ground	Transpalaearctic

Photo 2. *Carabus gigas* Creutz, Carabidae Family (Original photo)

Photo 3. *Carabus violaceus* L. Carabidae Family (Original photo)

Photo 4. *Staphylinus erythropterus* L., Staphylinidae Family (Original photo)

Photo 5. *Oeceoptoma thoracica* L., Silphydae Family (Original photo)

Photo 6. *Necrophorus vespillo* L. Silphydae Family (Original photo)

Photo 7. *Morimus funereus*, Cerambycidae Family (Original photo)

Observe dominant species of the family followed by species of *Coleoptera* and *Silphydae* family.These species are zoofage and saprofage, feeding on other species of insect or decaying organisms. In terms of the food spectrum stands zoophagous dominant species, phytophagous and xilophagous [9,10,11,16].

CONCLUSIONS

No Coleoptera discovered rare species, common species being collected. The only exception was a copy of *Morimus funereus* taxon Near Threatened.

Note the tree and codominant elements eremiale on the oreale.

In terms are dominant Eurasian zoogeographic species followed by Euro-Siberian ones.

One last observation to be emphasized is that the study had an exclusive quantitative character, but also from this point of view it is insufficient, the research work and collections will continue in the future.

Therefore I believe that the results are partial, they only reflects a certain extent of the structure of beetles communities in the Dumbrava Sibiului forest.

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