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STUDY ON CARABIDAE FAUNA (COLEOPTERA: CARABIDAE) IN A FOREST BIOTA OF OAK IN SIBIU (ROMANIA)

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Abstract

The paper presents the results obtained in 2015 from May to October, by capturing the soil traps type Barber and adapted by the author made of recyclable material, 2l and 1.5l bottles of pet, of the epigenous arthropods in the oak forest of Sibiu Grove. This renders the research results and study refers only to species belonging to the family Carabidae, amounting to a total of 283 exemplares belonging to 14 species. Benea the the entomofauna structure there are some interpretations of abundance and dominance, phenology research and ecological interpretations, ethological, biological and references on food regime.

Key words**:** *Carabidae, entomofauna, Dumbrava Sibiului Forest, Sibiu- Romania*

INTRODUCTION

Thorough research on the structure and activity of the epigenous entomofauna based on an ordered system of catching traps were started within biota cultivated with sugar beet in 1997, which over the years has been expanded into other agrobiotas and forest biotas after the system in Brasov [5]. We cannot overlook the fact that in our country there have been extensive studies on Coleoptera fauna [1-4,11-17] specifically and systematically spread with few elements of ecology are addressed especially in the works of [6] and generally the epigenous entomofauna, but collections were strictly on fauna not having an own the system of collecting in interpreting relations in general and the trophic special survival. The natural complex of Sub Arini, Dumbrava Sibiu were also made collections of insects and especially Coleoptera, material, some of which are in the collections of the Museum of Natural Sciences in Sibiu, partially published by members of the Naturalists Society in Transylvania, referring it specifically to structure and distribution.

MATERIALS AND METHODS

In this paper it is presented the beetle biology and evolution of species in a biotope well defined at the edge of the city of Sibiu, Sibiu Dumbrava oak forest in terms of collection we used traps 2015. The traps used were Barber which were made of recyclable material (PET bottles) easy to use and resistant to water and detergent which we introduced to odorless insect that is not repellent for the insects [7,14-16, 23]. It was used a set of 25 traps placed at 50-100 m spaced, spread over an area of 3-4 km^2, which we regularly inspected every 7-10 days, from April to October by doing so, a total of 20 collections, as follows: 19.05, 29.05, 4.06, 20.06, 17.06, 24.06, 30.06, 9.07, 18.07, 2.08, 7.08, 13.08, 21.08, 28.08, 10.09, 22.09, 2.10, 11.10, 21.10, 30.10., all with 2015.

RESULTS AND DISCUSSIONS

In total 283 specimens were collected belonging to the genus Carabus and 14 species were identified (Table 1).

Table 1.Variation of relative abundance and dominance of species of Carabidae Forest Oak Grove Sibiu

No. Crt.	Species	Number of copies
1	*P. oblongopunctatus*	57
2	*Platynus assimilis*	43
3	*Pterostichus niger*	61
4	*P.melanarius*	43
5	*Carabus violaceus*	9
6	*Carabus ullrichi*	12
7	*Carabus gigas*	6
8	*Harpalus latus*	7
9	*Carabus coriaceus*	4
10	*Carabus monilis scheidleri*	9
11	*Carabus nemoralis*	11
12	*Agonum sp*	5
13	*Anisodactylus binotatus*	3
14	*Loricera pilicornis*	13
	Total copies	**283**

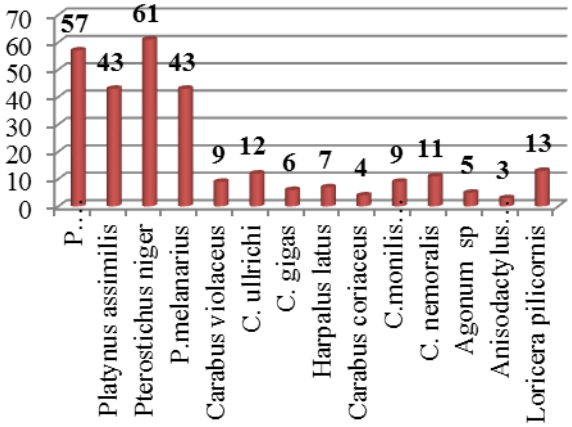

Fig. 1. The results beetle species collections in May-October 2015 conditions

Pterostichus niger

Lc = 20-21 mm (Fig.2.). **Biology**: from the lowlands to the mountains, forests, gardens, meadows. In the surroundings of Cluj [6] collected her from IV to IX frequent species also in forest of beech and oak, but it is also present in crops (potato, sugarbeet) which provide survival conditions. **Food regime**: entomofague [5].

Fig. 2. *Pterostichus niger* (orig.)

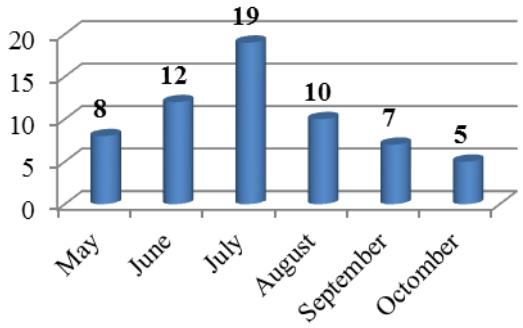

Fig. 2. Phaenological curve of *Pterostichus niger* în forest area in 2015 year

Pterostichus oblongopunctatus

Lc = 11 to 13 mm. (Fig.3.). **Biology**: straw prefer forests, it is listed as a species characteristic of beech forests present in litter [15]. **Food regime**: zoophague.

Fig.3. *Pterostichus oblongopunctatus* (orig.)

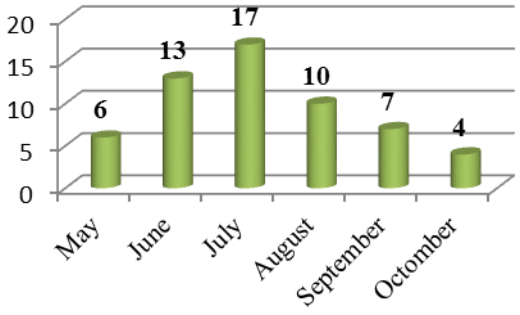

Fig.4. Phaenological curve of *Pterostichus oblongopunctatus* în forest area, in 2015 year

Platynus asimilis

Lc = 11 to 14 mm. (Fig.5.). **Biology**: prefers the more humid forests under foliage, moss, under stones, waters edge, etc. **Food regime**: predator and parasite.

Fig. 5. *Platynus asimilis* (orig.)

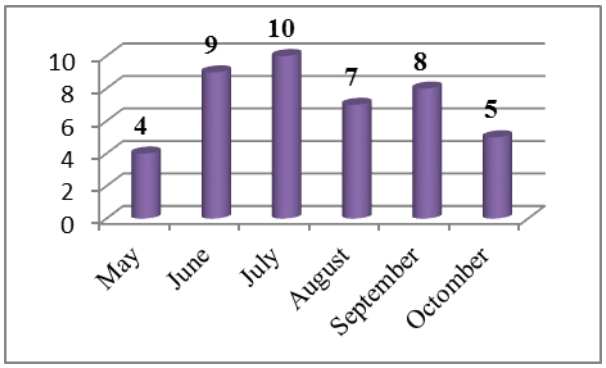

Fig. 6. Phaenological curve of *Platynus asimilis* în forest area, in 2015 year

Pterostichus melanarius

Lc = 15-17 mm. (Fig.7.). **Biology**: frequent species in crops especially in the field, is dominating the culture of sugar beet and potato since IV-IX. **Food regime**: carnivorous.

Fig. 7. *Pterostichus melanarius* (orig.)

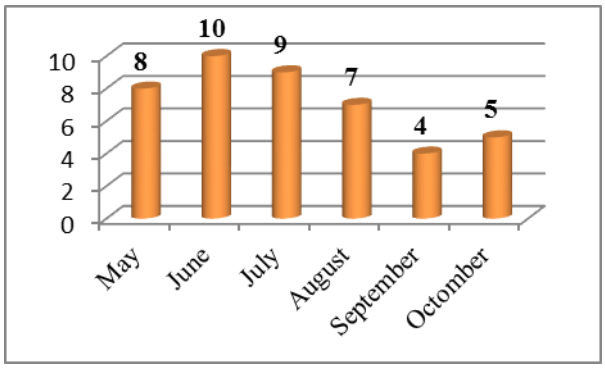

Fig. 8. Phaenological curve of *Pterostichus melanarius* în forest area, in 2015 year

CONCLUSIONS

The 14 species represented by 283 carabidae copies would have returned 5.49 m^2/insect, so a possible coverage in terms of food and protection against insects phytophase cenosis those whom lies an area of 57.72 m^2, mixophagus adding the species whose surface area (327.08 m^2) were well above their means, but their contribution as predators entomophagus added to other entomophagus can raise potential limitation phytophagus, who often do some of the insects that attack the tree crowns, root or stem, as if insects and wood decay. As a survival space it was up to each copy of the captured 4.78 m^2/insect, the surface due to competition laws vital for survival looks quite small but dividing total seizures (283) the number of days (183) note that were 1.12 specimens/day which have the total surface of 876 m^2. Of course everything in nature is closely linked to abiotic factors and relationships can be changed in one way or another[8-10, 18-22].

Several species of Carabide captured in Oak Forest Grove Sibiu inhabit the surrounding areas and crops to forest area and Poplaca and Răşinari follows with: *Carabus coriaceus, Carabus violaceus, Carabus ullrich, Pterostichus niger, P. melanarius, Harpalus sp*., proving a promiscuous spread with a broad food spectrum.

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