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# CONTRIBUTIONS TO (COLEOPTERA: STAPHYLINIDAE) IN DUMBRAVA SIBIULUI FOREST, ROMANIA IN TERMS OF THE YEARS 2013-2014

**Cristina STANCĂ-MOISE**

"Lucian Blaga" University of Sibiu, Faculty of Faculty of Agricultural Sciences, Food Industry and Environmental Protection, Sibiu, Romania, Phone: 0040269234111, Fax: 0040269234111, E-mail: cristinamoise1@yahoo.com

***Corresponding author*:** cristinamoise1@yahoo.com

***Abstract***

*This research study describes the results obtained during the years 2013-2014 by capturing in the soil traps, the epigenous artropodofauna in the Dumbrava Sibiului Forest. In addition, the entomofauna structure was studied and ecological interpretations were achieved regarding aspects such as: abundance, dominance, phenology of the collected species collected making a their description from an ecological and ethological point of view. Also the Species were presented and biologically described at the capture data. The experience was run in the period 2013-2014 (April 2, 2013 and March 21, 2014) and some of the data were taken from a study conducted from 2011-2014 by author together with the IV year students IPMA Framed discipline to control pest populations. The material was weekly collected, determined, labelled and assembled forming a collection which includes species caught in the study area.*

***Key words*:** *Dumbrava Sibiului Forest, entomofauna, Staphylinidae*

## INTRODUCTION

*Staphylinidae* is one of the largest groups of beetles, with over 20.000 known species characteristic of the sheath short, membranous wings refolded under sheath, as "model" seen to dermapteres [1,2]. The abdomen is found often kept folded back when walking, as a kind of threat. Often the elytra are even missing. Inability to fly is compensated, may in part caused by these insects adapt to fast walking, and he tied predatory life of most representatives of the group. Some species feed on corpses or are phytophagous. Over 300 species are myrmecophylous [3,5,6,7,8,9].

*Staphylinus olens*, Completely black and *St. caesareus* with elitrele redheads are the large group, common in our country[14,15,16,17].

*Manosella fungus* beetle is best known, with only ¼ mm long. Live in Neotropical lands and feeds on fungi[11,12].

This paper is a contribution to the study of fauna and ecological Staphylinidae Dumbrava Sibiului Forest (Photo 1.). The research we conducted in years 2013-2014. Collection sites were chosen based on vegetation. In Dumbrava Sibiului Forest on 21 March 2014 and 13 April 2013 were installed experiences that have aimed to collect specific epigenous forest insect populations. To capture entomofauna installed a set of 12 traps on the circumference of a circle with a radius of 12.5 m which have defined an area of 981.25 $m^2$ inside the forest [4,10]. The traps used in the installation experience was made of PET bottles in two sizes. A 2 liter glass vessel where it is placed the protective 1.5 l represents the receptacle (Photo 2.). Below are the GPS coordinates for each trap in hand.

Photo 1. Aspects of the forest, the location of soil traps (Original photo)

Each trap was composed of a protective container in the bottom of which were practiced a few holes to avoid water stagnation derived from precipitation, then she introduced a receptacle with a capacity in which to put water and detergent (for lowering blood, shallow water). The two vessels forming trap were placed in a hole dug in the ground, then set the ground as well to avoid circumventing the fauna epigenous small areas, installing on each vessel mouth protector funnel made of foil PVC, dark.

Photo 2. Mounting experience ( Original photo)

Trap 1 Coordinates: Latitude 43 ° 73'480" Longitude 24 ° 104'10"
• Trap 2 Coordinates: Latitude 45 ° 737'79" Longitude 24 ° 737'414"
• Trap 3 Coordinates: Latitude 45 ° 737'78" Longitude 24 ° 104'15"
• Trap 4 Coordinates: Latitude 45 ° 737'71" Longitude 24 ° 104'13"
• Trap 5 Coordinates: Latitude 45 ° 737'68" Longitude 24 ° 104'111"
• Trap 6 Coordinates: Latitude 45 ° 737'70" Longitude 24 ° 104'09"
Trap 7 Coordinates: Latitude 45 ° 737'67" Longitude 24 ° 103'90"
• Trap 8 Coordinates: Latitude 45 ° 737'67" Longitude 24 ° 103'96"
• Trap 9 Coordinates: Latitude 45 ° 737'71" Longitude 24 ° 103'96"
• Trap 10 Coordinates: Latitude 45 ° 737'71" Longitude 24 ° 104'01"
• Trap 11 Coordinates: Latitude 45 ° 737'75" Longitude 24 ° 103'94"
• Trap 12 Coordinates: Latitude 45 ° 737'75" Longitude 24 ° 103'95"

## MATERIALS AND METHODS

The raising the captured material was made periodically picking 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. Pitfalls worked from early March to late October 2013 and in 2014 all of March to November. Collection whole diameter is 12 cm, with an area of 226.08 $cm^2$ catching possible, thus occupying 29.37% of the circumference of the circle catching possibilities. The circumscribed area was 981.25 $m^2$. To achieve interpretations it was made a number of statistical calculations. This is just the beginning of the research that we want to perform in this biotope for a period of at least three years.

## RESULTS AND DISCUSSIONS

The insect species which have been collected and their systematic classification are presented below.
***Staphylinus erythropterus*** L.
5 ex., 17.05.2014, 7; 11 ex., 24.06.2013 Lc = 14 mm. (Photo 3.). Biology: edges of forests, areas covered by vegetation; Food regime: zoofage, especially entomophage.

Photo 3. Staphylinus erythropterus L.
(http://www.insektenbox.de)

***Staphylinus olenus*** Mull.
7 ex., 4, 7, 21, 29. 05. 2014, 13 ex. 13,18,22,29.05.2013, C5, Lc = 19 mm. (Photo

4.). Biology: forest, field crops, in association with *S. caesareus*. Food regime: entomophage.

Photo 4.Staphylinus olenus Mull. (http://www.de.wikipedia.org)

***Staphylinus caesareus*** Cederh.
6 ex., 1, 6, 11, 17.05.2014, 7, 15 ex., 1, 6, 14, 22, 19, 06.2013, Lc = 18 to 19 mm. (Photo 5). Biology: almost all biotopes in which optimal conditions present in field crops, food regime: in general zoofage, but with predilection entomophage.

Photo 5. Staphylinus caesareus Cederh. (http://www.zin.ru)

***Staphylinus sp.***
7 ex., 22.04.2014, 8 ex., 1, 6, 13, 21, 29, 06.28.2013, C4; Lc = 17-19 mm. (Photo 6). Biology: larvae, like all staphylides of galleries in the soil where they hunt prey. Food regime: most species are zoofage.

Photo 6. *Staphylinus sp.* (http://www.insektenwelt.ch)

***Velleius dilatatus***
13 ex., 3, 7, 18, 22, 30.04.2014, C5; 4.06., C2, 05.07.2013, C4, Lc = 15 mm, (Photo 7). Biology: Forest, with a preferred moisture, tree, food regime: mixofage.

Photo 7. Velleius dilatatus (http://www.insect.at)

***Velleius sp.***
5 ex., 13, 22.04.2014, 9 ex., 2, 6, 14, 18, 29.06.2013, $C_4$, $C_7$; $L_c$=11-12,5 mm.(Photo 8).

Photo 8.Velleius sp. (http://www.insect.at)

***Philonthus sp.***
10 ex., 3, 7, 18, 22, 30.04.2014, C7; 11 ex., 2, 7, 14, 21, 29.05.2013, C4; Lc = 13 mm; (Photo 9). Biology: forests, tree. Rt: entomophaga.

Photo 9. Philonthus sp. (http://www.aramel.free.fr)

After capturing insects, the material was punctured, labeled, determined by determinatoarelor specialized in the laboratory of Plant Protection. Conservation of material was made boxes insectary. To determine the species of insects collected and taking pictures with their morphology, along research using IPM Scope camera (Photo 10).


Photo 10. IPM Scope camera

## CONCLUSIONS

This research work aimed to analyze insect population from the Oak Forest Grove Sibiu. It is located in the Sibiu Depression at the contact with the Cindrel Mountains and the sediment basin itself and now it occupies the piedmont plain and hills, located in the South-West part of Sibiu.

It has an area of 978 ha divided into four forest bodies.

Frequently used in the environmental research, abundance corresponds to the number of individuals per unit area. This is actually the numerical abundance.

In this research it was used the relative abundance (in terms of proportions or probabilities of participation of each species in the studied population [3,11].

Of the taxa to reveal the presence of 14 species of Carabidae in this research work, the species representing Staphylinidae 7 species, 122 copies, of the genera *Staphylinus* (80%) and *Philontus* (20%) were studied (Photo 11.).

Photo 11. Entomological Collection captured material (Original photo)

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