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TERRESTRIAL MACROINVERTEBRATES OF SEED BUGS (LYGAEIDAE HEMIPTERA) IN DIFFERENT ECOSYSTEMS

Eltjon Halimi[1*], Anila Paparisto[1], Dritan Topi[2], Kastriot Misja[1]

[1]*University of Tirana; Faculty of Natural Science; Department of Biology, Boulevard Zog 1, Tirana, eltjonhalimi@hotmail.com*
[1]*University of Tirana; Faculty of Natural Science; Department of Biology, Boulevard Zog 1, Tirana, anila.paparisto@yahoo.com*
[1]*University of Tirana; Faculty of Natural Science; Department of Biology, Boulevard Zog 1, Tirana, kastriotmisja@hotmail.com*
[2]*University of Tirana; Faculty of Natural Science; Department of Chemistry, Boulevard Zog 1, Tirana, dritan.topi@fshn.edu.al*

Abstract

The *Lygaeidae* family includes species of small to middle dimensions. Their scutellum looks like Y letter, and their legs own tarsus composed by 3 segments. They are phytofage species, but it has been found that some species can feed also with the vegetative parts. In that family are identified some predators. This paper present studying of *Lygaeidaephauna* for the different ecosystems in Spille, M. Robit, Golem, Divjaka and Kolonja stations. This stydy is important on the taxonomycal and ecologycal aspects to the fauna. The biological material is collected during the expeditions of 2011-2012. The collection of biological samples was achieved through the use of entomological nets of 80cm diameter, and Pitt's traps. Entomological mowing nets of 80cm diameter, aspirators and Pitt's traps were employed. Mowing with Entomological nets is achieved according to the diagonals for surfaces of 100 m^2 (10m x 10m), passing five times across each square' diagonal. The fine biological materials were placed in plastic flacons 150-200 ml. They were preserved to the scientific laboratory in bottles of ethanol solution 95%, acetic acid, distilled water in 80:5:20 ml, and some ether drops. The biological samples were analyzed and determined by Stereomicroscope *ZEISS*. In that study it has been determined 29 individuals. The family *Lygaeidae* was presented by 8 genus and 13 species. The *Lygaeus* genus was represented by the highest number of speies, by 3 species, and frecuency 23.08%. Analyzing of the material to the stations, it has been found that the station with highest number of species, resulted the Golem station, with 10 species or frequency 76.92%. Based on their morphology, like tiny insects, we have compared our findings with previous monitorations, and it has resulted that thier status is constant.

***Key words**: Hemiptera, Lygaeidae, ecosystems*

Introduction

The *Lygaeidae* family includes species of small to middle dimensions, or too small. Some of them show bright colors, red, black and yellow, but mainly are dominated by the red and black color (Dolling, 1991); (Péricart, 1988). Scutellum contain on swelling like Y letter, their legs have composed tarsus from 3 segments (Slater, 1975). They are phytofage species, which feed by seed, but some species can feed also with the vegetative parts, like flowers. In that family are identified some predators ((Servadei, Fauna d'Italia. Rhynchota: Heteroptera, Homoptera, Auchenorrhyncha, 1967); (Miller, 1971); (Servadei, Zangheri, & Masutti, 1972); (Silvestri, 1939). They are distinguished from two simple eyes and two composed eyes, and the head is very small. They have one trumpet with four segments, and their antennas are composed of four segments.
This paper presents our study on the species belonging to this family for the different ecosystems attempting to give a thorough analyze of the species from this family.

Materials and Methods

The biological material is collected during the expeditions of 2008-2010 in the different ecosystem of Spille, M.Robit, Golem, Divjaka and Kolonja station. Samplings of the biological material were realized randomly in the May-September period, respectively during the 09^{00}-15^{00} day hours. Entomological mowing nets of 80cm diameter, aspirators and Pitt's traps were employed. Mowing with Entomological nets is achieved according to the diagonals for surfaces of 100 m^2 (10m x 10m), passing five times across each square' diagonal (Colas, 1969); (Chapman, 1988). After collection, the individuals are placed in plastic bottles, labelled with the date and station. The fine biological materials are placed in plastic flacons 150-200 cc. they were sent to the scientific laboratory and preserved in bottles of ethanol solution 95%, acetic acid, distilled water in 80:5:20 ml, and some ether drops (Colas, 1969); (Chapman, 1988). Determination of the collected material was analyzed by observing with stereomicroscope *ZEISS (Carl Zeiss)*, and use of determination keys to this family, previous collections, and other article for this family ((Aukema & Rieger, 1999); (Çagatay, 1989); (Misja, 1973); (Halimi, Paparisto, & Topi, 2013);).

Results and Discussion

In this study are determined species of the *Lygaeidae* family by listing them in the table according to the encountered species in the different ecosystem of Spille, M.Robit, Golem, Divjaka and Kolonja station.

Table 1: List of species for *Lygaeidae* family

No.	Scientific name	No.exemplar	Spille	M.Robit	Golem	Divjakë	Kolonjë
1	Genus Beosus						
1	*Beosus maritimus Scopoli, 1763*	2	1		1	1	

2	*Beosus quadripunctatus* O.F. Müller, 1766	3		1	1		1
2	Genus Geocoris						
3	*Geocoris ater* Fabricius, 1787	1		1	1		
4	*Geocoris erythrocephalus Le Peletier – Serville, 1825*	2				1	1
3	Genus Henestaris						
5	*Henestaris laticeps Curtis, 1836*	1					1
4	Genus Heterogaster						
6	*Heterogaster urticae Fabricius, 1775*	2				1	1
5	Genus Lygaeus						
7	*Lygaeus equestris* Linnaeus, 1758	4	1	1	1	1	
8	*Lygaeus pandurus* Scopoli, 1763	3		1	1		
9	*Lygaeus saxatilis* Scopoli, 1763	5		1	1		1
6	Genus Nysius						
10	*Nysius graminicola* Kolenati, 1846	2		1	1		
11	*Nysius senecionis Schilling, 1829*	1	1		1	1	1
7	Genus Orsillus						
12	*Orsillus maculatus Fieber, 1861*	1			1	1	1
8	Genus Platyplax						
13	*Platyplax salviae Schilling, 1829*	2	1		1		

From analyzing of the scientific material collected in the area under study, from a total of 29 encountered individuals, are present 8 genera and 13 species to *Lygaeidae* family (Table 2, Figure 1).

Table 2: Species numbers according to the genera for the *Lygaeidae* family

No	Scientific name	No. of Species	Species frequency
1	*Beosus*	2	15.38
2	*Geocoris*	2	15.38
3	*Henestaris*	1	7.69
4	*Heterogaster*	1	7.69
5	*Lygaeus*	3	23.08
6	*Nysius*	2	15.38
7	*Orsillus*	1	7.69
8	*Platyplax*	1	7.69

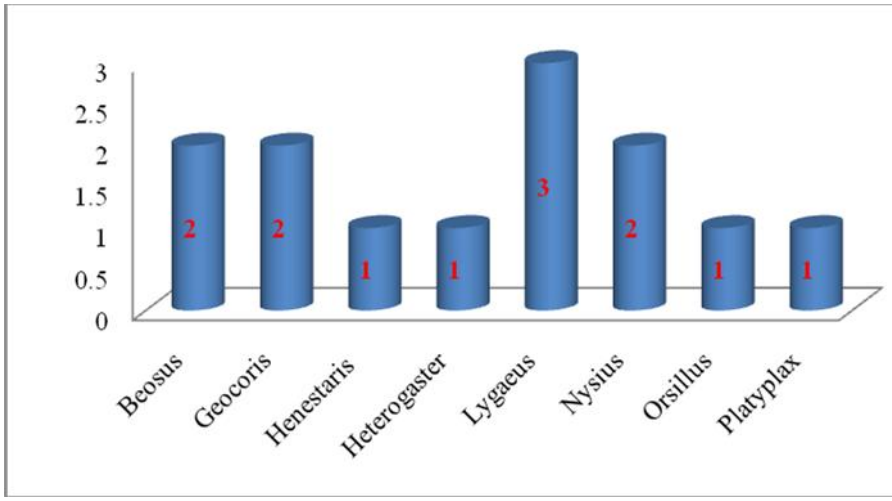

Figure 1: Distribution of No. for species according to the genera on the Lygaeidae

Analysis of the results based on the diversity for the *Lygaeidae* family, genera *Lygaeus* is the most represented by 3 species or by 23.08%, followed by *Beosus, Geocoris* and *Nysius* genera by 2 species or 11.76%, *Henestaris, Heterogaste*r, *Orsillus and Platyplax* are represented by one specie or by 5.88%.

Analyzing of the diversity to the different stations, indicates that most represented regarding to the *Lygaeidae* family, is the Golem stations by 10 species, or 76.92%, followed by Kolonja station with 7 species, or 53.85%, M.Robit and Divjaka station by 6 species, or 46.15%, Spille by 4 species or 30.77%. (Table 4, Figure 2).

Table 3: The number of species according to the stations

Station	Species number	Species frequency
Spille	4	30.77
M. Robit	6	46.15
Golem	10	76.92
Divjaka	6	46.15
Kolonja	7	53.85

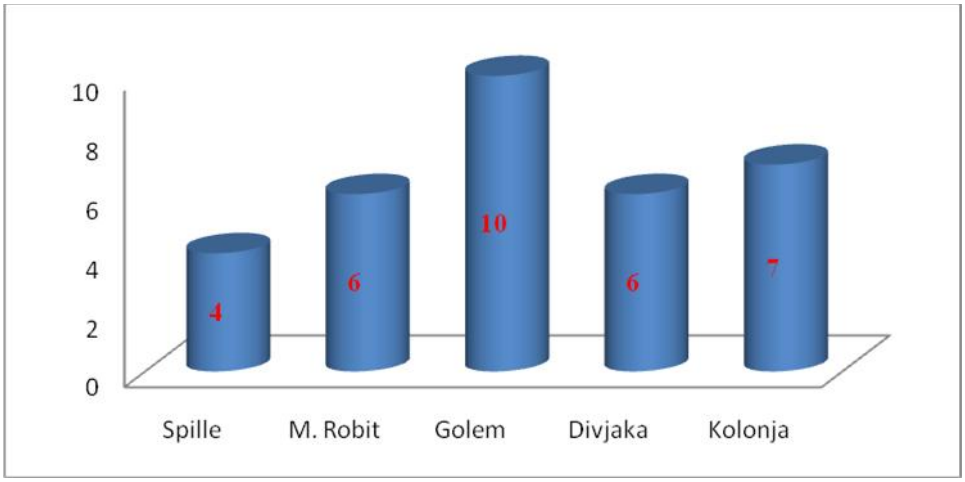

Figure 2: Distribution of number for specis according to the stations

Conclusions

This study presents results for 29 exemplars in the ecosystems of the Tirana region. In total are encountered 8 genera and 13 species to the *Lygaeidae* family.
Highest diversity to the *Lygaeidae* family is *Lygaeus* genera by 3 species, or 23.08%.
To the *Lygaeidae* family, most represented is the Golem station by 10 species, or 76.92%, while with less species, is Spille with with 4 species or frequency 30.77%.

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