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Contribution to the spiders (Arachnida: Araneae) of upper Mureş river valley with some new data for the Romanian fauna

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Abstract

32 species of 11 families were identified from the Mureş' riverhead. *Gnaphosa nigerima* L. KOCH, 1887 and *Centromerus laevitarsis* (SIMON, 1884) are new for the Romanian fauna. Furthermore the occurence of three questinable species [*Lophomma punctatum* (BLACKWALL, 1841), *Walckenaeria kochi* (O.P.-CAMBRIDGE, 1872) and *Clubiona reclusa* O.P.-CAMBRIDGE, 1863] is prooved.

Rezumat

Contrbuţii la cunoaşterea araneelor (Arachnida: Araneae) din bazinul superior al Mureşuli cu date noi pentru fauna României

Programul de cercetare s-a desfăşurat prin colaborarea între Universitatea „Babeş-Bolyai" din Cluj-Napoca, Romania şi Universitatea „Szeged" din Szeged, Ungaria. Lucrarea de faţă prezintă materialul arahnologic colectat în bazinul superior al Mureşului, în Depresiunea Giurgeului, aproape de Vaşlobeni, la 12 km de la izvorul Mureşului. Materialul biologic a fost colectat în iulie, 1999 cu capcane tip Barber. Au fost colectate 285 aranee, 202 adulţi şi 83 juvenili, din 32 specii, 11 familii. *Gnaphosa nigerima* L. KOCH, 1887 (Fam. Gnaphosidae) şi *Centromerus laevitarsis* (SIMON, 1884) (Fam. Linyphiidae) sunt semnalate pentru prima dată în fauna României. Se confirmă prezenţa altor trei specii [*Lophomma punctatum* (BLACKWALL, 1841) (Fam. Linyphiidae), *Walckenaeria kochi* (O.P.-CAMBRIDGE, 1872) (Fam. Linyphiidae) şi *Clubiona reclusa* O.P.-CAMBRIDGE, 1863 (Fam. Clubiondae)] care deşi sunt menţionate în unele publicaţii mai vechi, nu au fost regăsite în colecţii.

Keywords: Aranea, new species, taxonomy, faunistics

Introduction

In the past, descriptive faunistics was frequently regarded as a second-order discipline besides taxonomy and ecology. In the last few decades, however, it has been recognized that these kinds of researches are essential to reach satisfactory information on the biodiversity of different regions. Therefore, studies on local fauna and flora have their renaissance.

Although both classical and recent taxonomic and faunistical publications significantly contribute to the knowledge of spiders of the eastern Carpathian Basin (e.g. FUHN & GHERASIM 1995, FUHN & NICULESCU-BURLACU 1985, HERMAN 1879, LOKSA 1969, 1972, STERGHIU 1985), there are gaps in this field, therefore further faunistical efforts are necessary to obtain a more complete picture.

This paper presents spider faunistical data obtained by a joint expedition by Babeş-Bolyai and Szeged Universities to the Giurgeului Basin, near the spring of River Mureş. A former publication (GALLÉ et al. 1999) dealing with the habitat correlates of the soil fauna, includes ecological studies on wolf spider communities in this region, but without faunistical details (i.e. a complete list of the species).

The study area

The Maros riverhead is surrounded by Harghita, Gurghiului and the Giurgeului mountains. The spring of the river is near Izvorul Mure° (Marosfő) at 856 meters above sea level. This area is covered by various sediments (ANDÓ 1995). The studied area is covered by less than 50 cm deep Peaty soil on the gravelly andezitic and sillicatic substratum in the nearby areas of Mureş (JAKAB 1995).

Our reserch was conducted in July 1999. The sampling sites were near Vaşlobeni (Vasláb), about 12 km from the spring of the river. This 6 square km

area lies between the river and the lower edge of the mountain spurce forest. The following habitat types were distinguished here (MARGÓCZI et al. 1999): 1. Peat bog (*Carici stellulatae (echinatae)-sphagnetum, Carici rostratae - Sphagnetum and Carici flavae Erioforetum*), 2. Moor medow (*Molinietum coeruleae*), 3. Drier sedge medow (*Caricetum rostratae*), 4. Wet sedge medow (*Caricetum rostratae*), 5. Wet pasture (*Agrostio - Deschampsietum caespitosae*), 6. Moorland busy forest (no association name), 7. Dry pasture (*Agrostio - Festucetum rubrae*).

Materials and methods

We used pitfall traps for sampling the spider communities. The traps were plastic jars with 5.6 cm diameter, filled with etylene-glycol. Fifteen traps worked at each site for nine days. The traps were arranged at least 5 meters from each other, in a 3x5 grid or in line, in the Moorland bushy forest, where it was not possible to keep the grid pattern.

Spiders were detemined using various keys (LOCKET & MILLIDGE 1951, LOKSA 1969, 1972, FUHN & NICULESCU-BURLACU 1985, STERGHIU 1985, HEIMER & NENTWIG 1991, FUHN & GHERASIM 1995). The species list was ranged taxonomically according to world spider catalog of PLATNICK (2000).

Results and discussion

We collected 285 specimens, 202 adults and 83 juveniles, belonging to 32 species of 11 families (Table 1.). Out of these species two are new for the Romanian fauna: *Gnaphosa nigerima* L. KOCH, 1887 (Gnaphosidae) and *Centromerus laevitarsis* (SIMON, 1884) (Linyphiidae). The presence of other three species: *Lophomma punctatum* (BLACKWALL, 1841) and *Walckenaeria kochi* (O.P.-Cambridge, 1872) (Linyphiidae) and *Clubiona reclusa* O.P.-CAMBRIDGE, 1863 (Clubionidae) has been questionable in Romanian spider fauna. These species were included in the lists by WEISS and PETRIŞOR (1999), WEISS and URÁK (2000) on the basis of bibliographi-

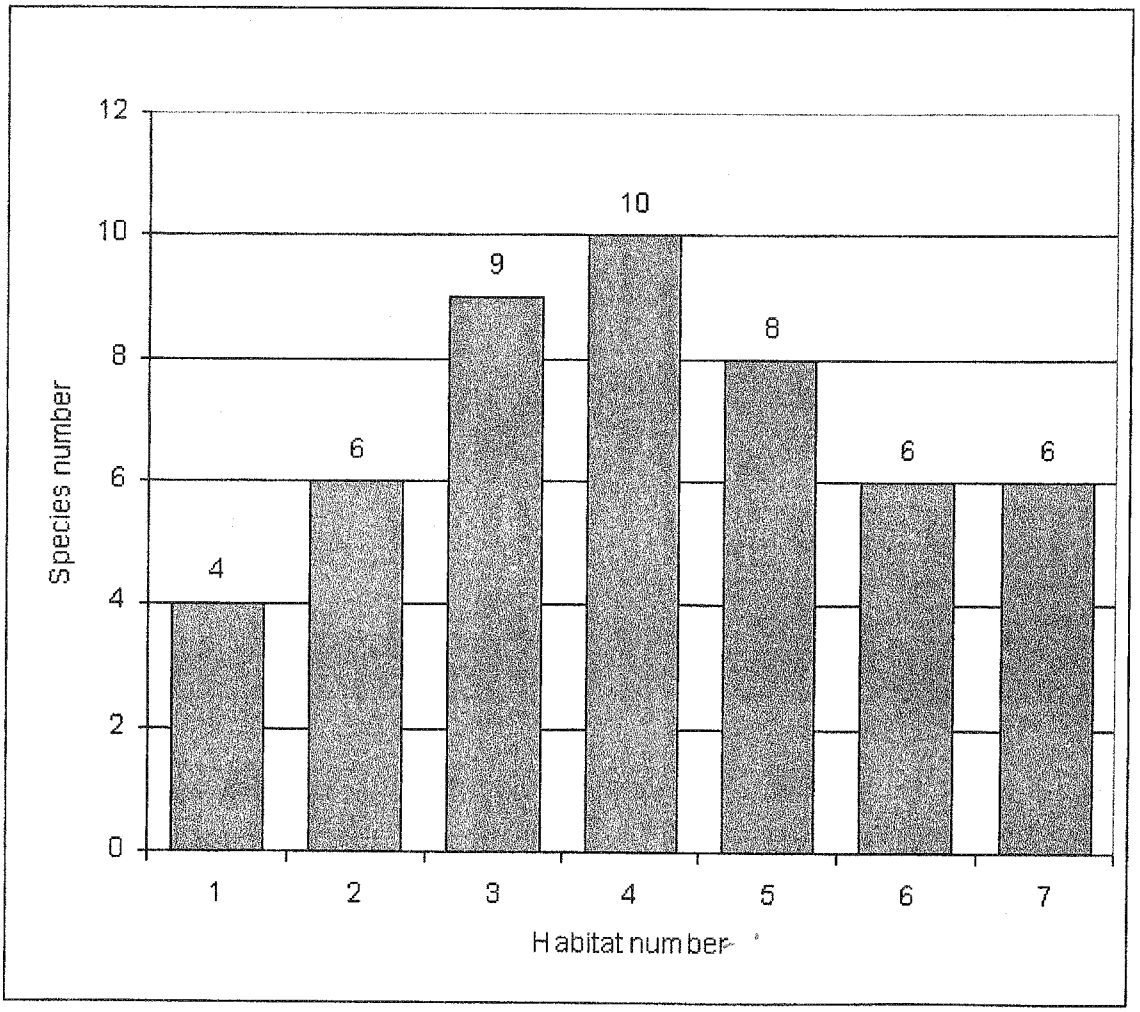

Fig. 1. The species number in habitats

Table 1 The list of the species

Nr. crt.	Taxa	♂	♀	juv	Σ	Habitat types
I	**Theridiidae**	**1**			**1**	
1	*Euryopis flavomaculata* (C.L.Koch, 1836)	1			1	1
II	**Linyphiidae**	**1**	**15**		**16**	
2	*Agyneta cauta* (O.P.-Cambridge, 1902)		1		1	1
3	*Bathyphantes nigrinus* (Westring, 1851)		1		1	6
4	*Centromerus laevitarsis* (Simon, 1884)		1		1	4
5	*Diplostyla concolor* (Wider, 1834)	1			1	6
6	*Lophomma punctatum* (Blackwall, 1841)		1		1	3
7	*Micrargus herbigradus* (Blackwall, 1854)		2		2	5
8	*Pocadicnemis pumila* (Blackwall, 1841)		4		4	2, 5
9	*Walckenaeria antica* (Wider, 1834)		1		1	3
10	*Walckenaeria atrotibialis* O.P.-Cambridge, 1878		2		2	4
11	*Walckenaeria kochi* (O.P.-Cambridge, 1872)		2		2	3, 4
III	**Tetragnathidae**	**9**	**12**	**21**	**42**	
12	*Pachygnatha degeeri* Sundevall, 1830	8	11		19	5, 7
13	*Pachygnatha listeri* Sundevall, 1830	1			1	5
14	*Tetragnatha extensa* (Linnaeus, 1758)		1		1	1
IV	**Lycosidae**	**45**	**78**	**46**	**169**	
15	*Pardosa palustris* (Linnaeus, 1758)	5	16		21	7
16	*Pardosa pullata* (Clerck, 1757)	24	46		70	2, 3, 4, 5, 7
17	*Pirata hygrophilus* Thorell, 1872	2	6		8	3, 4, 6
18	*Pirata latitans* Blackwall, 1841)	7	5		12	3, 4, 6
19	*Trochosa spinipalpis* (O.P.-Cambridge, 1895)	1	5		6	5
20	*Xerolycosa miniata* (C.L.Koch, 1834)	6			6	7
V	**Hahniidae**	**18**	**2**		**20**	
21	*Antistea elegans* (Blackwall, 1841)	18	2		20	3, 4, 6
VI	**Liocranidae**		**1**		**1**	
22	*Phrurolithus festivus* (C.L.Koch, 1835)		1		1	4
VII	**Clubionidae**		**1**		**1**	
23	*Clubiona reclusa* O.P.-Cambridge, 1863		1		1	2
VIII	**Gnaphosidae**	**1**	**4**	**6**	**11**	
24	*Gnaphosa nigerrima* L. Koch, 1887		2		2	1
25	*Zelotes electus* (C.L.Koch, 1839)		2		2	7
26	*Zelotes latreillei* (Simon, 1878)	1			1	7
IX	**Zoridae**	**5**	**2**		**7**	
27	*Zora spinimana* (Sundevall, 1833)	5	2		7	3, 4, 5, 6
X	**Thomisidae**		**4**	**8**	**12**	
28	*Ozyptila atomaria* (Panzer, 1801)		1		1	2
29	*Ozyptila trux* (Blackwall, 1846)		1		1	2
30	*Xysticus cristatus* (Clerck, 1757)		1		1	5
31	*Xysticus lineatus* (Westring, 1851)		1		1	2
XI	**Salticidae**	**2**	**1**	**2**	**5**	
32	*Sitticus caricis* (Westring, 1861)	2	1		3	3, 4

Abbreviations: ♂ = number of male specimens, ♀= number of female specimens, **juv** = number of juvenile specimens, **Σ** = total number of specimens.

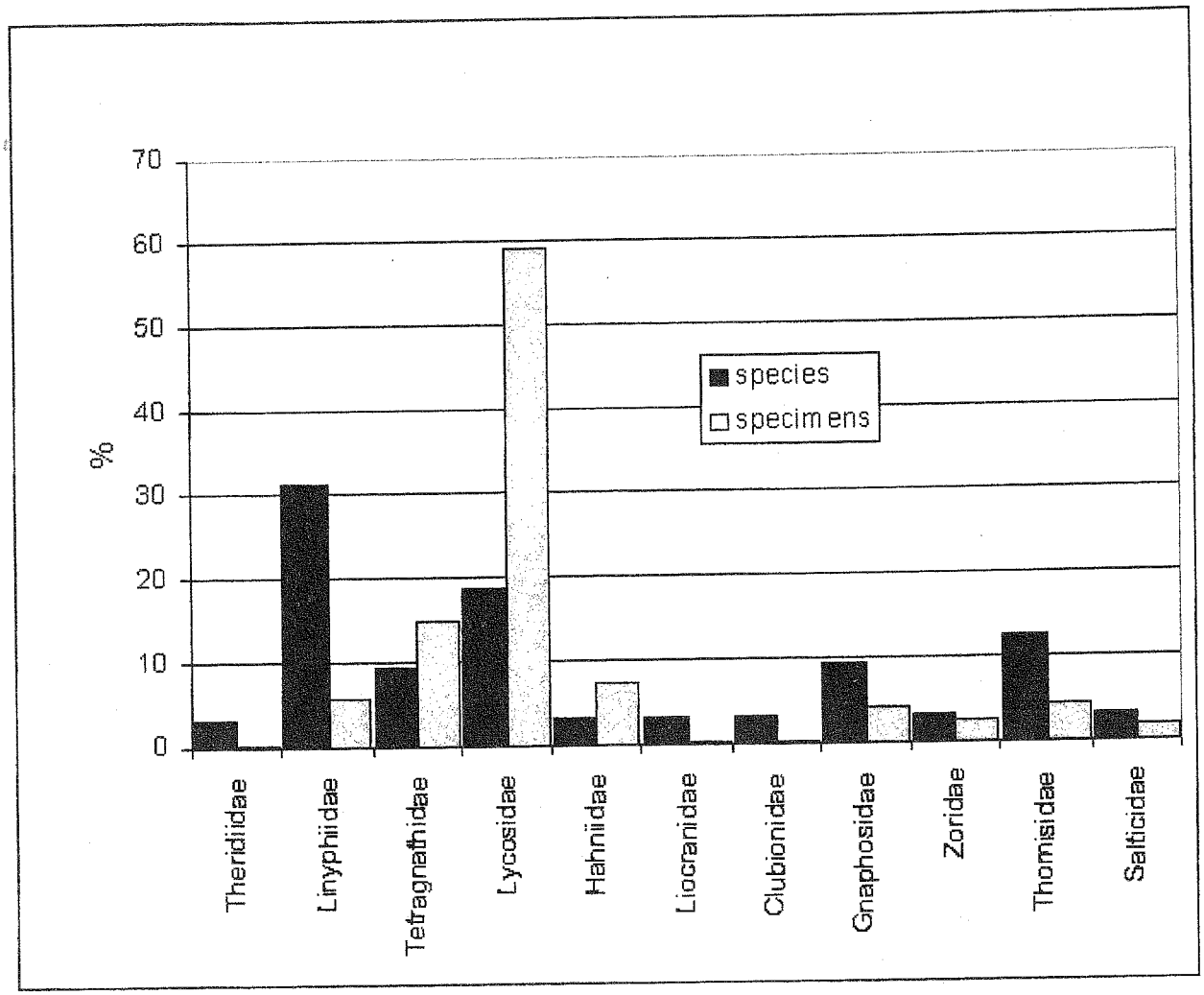

Fig. 2. The percfentile repreyentation of species

cal data up to 1970 (FUHN & OLTEAN 1970). Those data could not be confirmed, because of the absence of specimens in collections from Romania.

Out of these species: *Gnaphosa nigerima* L. KOCH, 1887 prefers wet habitats, damp grasslands, oligotrof marshes (GRIMM 1985). We collected in peat bog. *Centromerus laevitarsis* (SIMON, 1884) is a rare spider of wet forests, shaded marshes (HEIMER & NENTWIG 1991). We collected in wet sedge medow. *Lophomma punctatum* (BLACKWALL, 1841) lives in sunny, damp habitats, possibly on moss (HEIMER & NENTWIG 1991). We collected in drier sedge medow. *Walckenaeria kochi* (O.P.-Cambridge, 1872) prefers shores of waters, wet, mossy habitats (WIEHLE 1960). We collected in drier and wet sedge medow. *Clubiona reclusa* O.P.-Cambridge, 1863 occures on wet grasslands, among shrubs. We collected in moor medow. In the Fauna R. S. R. (STERGHIU 1985), the figures of the males pedipalps of *C. reclusa* and *C. stagnatilis* (KULCZYNSKI, 1897) are mixed. In the different types of habitats we found various number of species. The richest habitats are the wet and the drier sedge medow (as. *Caricetum rostratae*) (10 and 9 species), folloved by the wet pasture (as. *Agrostio - Festucetum rubrae*) (8 species). The same number of species (6 species) were captured in habitat types number 2 (moor medow, as. *Caricetum rostratae*), 6 (morland busy forest), and 7 (dry pasture, as. *Agrostio – Festucetum rubrae*). In the peat bog (as. *Carici stellulatae (echinatae)-sphagnetum, Carici rostratae - Sphagnetum and Carici flavae Erioforetum*) 4 species of spiders were found (Fig. 1.).

The representation of spider families according to the number of specimens and species is given in Fig. 2. The richest families in species are Linyphiidae (31,25%, 10 species), Lycosidae (18,75%, 6 species), Thomisidae (12,5%, 4 species), Tetragnathidae (9,375%, 3 species), Gnaphosidae (9,375%, 3 species). The rest of six families (Theridiidae, Hahniidae, Liocranidae, Clubiidae, Zoridae and Salticidae) are represented by a single species. The most of specimens belong to the family Lycosidae (59,29%, 169 specimens) folloved by Tetragnathidae (14,73%, 42 specimens), Hahniidae (7,01%, 20 specimens), and Linyphiidae (5,61%, 16 specimens). This distribution of families and

species was determined by the ecological condition of studied ecosistems and the collection methodes, too. The pitfall traps captured successfully the epigeical species, the ground wandering spiders, with active hunter lifestyle, when running free on the soil surface. The arboreal species, the web builders or plant wanderers falls into the traps accidentally.

Conclusions

The epigeic spider fauna of the Vaşlobeni region (Upper Mureş district) is rich, out of the 32 recorded species, two are new to Romania and in the case of three others, a firm evidence of their Romanian occurrence is given.

The landscape beauties, the botanical and ornithological values of this habitat complex is well known. The data presented in this paper confirm the intentions to protect this region as a nature reserve.

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