

## Contribution to the knowledge on spiders (Araneae) of the Strážovské vrchy Mts

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**Abstract:** The author deals with faunistic research of spiders (Araneae) of the Strážovské vrchy Mts. He mentions 274 spider species from this territory; 62 of them were not been cited from this orographic unit. Some of them rank among rare species with a high bioindicative value. It especially concerns *Dysdera crocota*, *Eresus cinnaberinus*, *Dipoena prona*, *Acartauchenius scurrilis*, *Cinetata gradata*, *Megalephyphantes pseudocollinus*, *Metopobactrus prominulus*, *Theonina cornix*, *Trichoncus affinis*, *Arctosa figurata*, *Liocranum rutilans*, *Cheiracanthium onconathum*, *Clubiona genevensis*, *Gnaphosa opaca*, *Haplodrassus dalmatensis*, *Zelotes pygmaeus*, *Ozyptila simplex*, *O. scabricula*, *Chalcoscirtus pseudoinfimus*, *Marpissa nivoyi*, *Pellenes nigrociliatus*, etc.; they are often cited in accessible Red Lists throughout Europe. Despite this mountain complex overtops 1 200 m a. s. l., the occurrence of many clearly thermophilic spiders in this area including higher altitudes is remarkable and sometimes surprising.

**Key words:** spiders (Araneae), faunistics, Strážovské vrchy Mts.

### Introduction

Strážovské vrchy Mts is an attractive mountain massif, prevailingly situated in north-western Slovakia, but the southern part of this orographic unit is clearly influenced by the thermophilic zone of Sub-Carpathian basins. The Protected Landscape Area (later only “PLA”) has been established here in 1989. Although a relatively large number of records about spiders is available, this concerns only several sites: Nature Reserve (later only “NR”) Súľovské skaly on the north, which is often classified as a separate orographic unit (Miller & Svatoň 1974), or the sites in the ‘southern sector’ – NR Veľký vrch (Gajdoš 1986a) and Kňazí stôl (Gajdoš 1986b); several records are accessible in the graduation thesis by Pekár (1994) and in an older paper by Bartoš (1938) which deals with spiders of the surroundings of the Žilina city. A big majority of this area, including central part of the Strážovské vrchy Mts, hitherto has not been studied from arachnological point of view. Moreover, the southern part of this orographic unit is totally out of the territorial protection – the PLA boundary has been stated asymmetrically in the northern and central part of this orographic unit.

Therefore, I have tried to improve the level of knowledge on spiders in this remarkable territory. The research of spiders has been carried out during the last decade; and the preliminary results are available in this paper.

### Material and methods

My research of spiders has been carried out in the following two administratively different areas.

❶ The sites belonging to the PLA Strážovské vrchy:

NR Vápeč (7075d/7076c)\* [Vá]\*\*, Projected NR Rohatín (6976c/7076a) [Ro] and NR Strážov (7076b/d) [St]. Habitats: xerothermic rocky grasslands, screes, open deciduous (prevailingly beech) and pine forests, ancient beech forests – especially in the NR Strážov.

❷ The sites in the Southern sector of this orographic unit, contemporarily out of the PLA boundary:

Surroundings of ‘Dolné Vestenice’ village (7276c) [DV] and ‘Horné Vestenice’ village (7276d) [HV]. Habitats: xerothermic rocky pastures, abandoned orchards, shrubby slopes, open oak-and-pine forest; ‘Hradištnica’ valley (7276c) [Hr] and ‘Stredná dolina’ valley (7276c) [Sd]. Habitats: xerothermic rocky and scree slopes, open oak-beech-and-pine forest, ancient beech forest in the close part of the first valley.

\* the grid mapping square code of the Databank of the Slovak republic

\*\* abbreviations are used in the table 1 and the following text as well

The spiders were obtained by current methods of collecting. The material was determined according the key by Miller (1971), Roberts (1995) and Heimer & Nentwig (1991).

The scarcer spider species are often mentioned in Red Lists of separate European countries; it concerns the Red List of Slovakia (Gajdoš & Svatoň 2001), Czech republic (Buchar & Růžička 2002), Germany (Platen, Blick, Sacher & Malten 1996), Slovenia (Polenec 1992), Great Britain (Merrett 1991), Belgium (Maelfait, Baert, Janssen & Alderweireldt 1998), Sweden [Gärdenfors (ed.), 2000] and Finland [Rassi, Alanen, Kanerva & Mannerkoxi (eds.), 2001]. Their ecosozological status (ESS) in separate countries is also discussed in the table 1.

## Results (Systematic review of species)

Systematic review of spiders is available in the table 1. The following species (marked by ‘◀’) deserve special note:

**1** – DV, 18<sup>th</sup> May 2002, 2 ♀. A very rare, partially synanthropic species, known from a few scattered records: “Bratislava” (7868), Aug. 1956, ♂, F. Miller lgt. et coll. (Kůrka 1994); NR Devínska Kobyla (7867b/7868a), 10<sup>th</sup> Nov. 1978, ♀, O. Žitňanská lgt. (Svatoň, Gajdoš & Pekár 2000); Malá Fatra Mts, surroundings of the Terchová village (6780), J. Baum lgt. before 1931; unpublished record is available from the ‘Krupinská planina’ Mts, J. Vachold lgt. (Gajdoš, Svatoň & Sloboda 1999). **2** – Hr, 19<sup>th</sup> June 2002, ♂. A very rare species of xerothermic rocky habitats. **3** – DV, 1<sup>st</sup> July 1995, ♂. **4** – Hr, 19<sup>th</sup> June 2002, 2 ♂; Sd, 2<sup>nd</sup> July 2002, 2 ♂. **5** – DV, 20<sup>th</sup> Apr. 2002, ♀; HV, 1<sup>st</sup> May 1993, ♀; and 28<sup>th</sup> Apr. 2002, ♂ + 2 ♀. A rare species, found always in the colonies of *Tetramorium caespitum* under stones (synoecious myrmecophile). **6** – Ro, swept from the forest vegetation 26<sup>th</sup> May 2003, ♀; St, in the litter of scree beech forest 10<sup>th</sup> June 2004, ♂. A very rare species, known from a few sporadic records: Kremnické vrchy Mts – Lavrín (7380a), in the litter of ancient beech-and-fir forest 8<sup>th</sup> July 1995, ♂, V. Franc & A. Hanzelová lgt. et coll.; Slovenský raj Mts (7187), dateless, the site is not mentioned (Gajdoš & Svatoň 1993); Slovenský raj Mts – Klauzy (7188a), May, year is not specified, ♂ + ♀ (Žitňanská 1987). **7** – Vá, 11<sup>th</sup> June 2004, ♀ (P. Gajdoš det.). A little-known rare species of open deciduous forests. **8** – Hr, 19<sup>th</sup> June 2002, ♂. A little-known species of warmer open forests and scree habitats; only four unpublished records are available (Gajdoš, Svatoň & Prídavka 1999). This recently described species is usually considered to be very rare (Buchar & Růžička, 2002), but it may be misidentified with *M. collinus* (C. L. K. 1872); nevertheless its tibial apophysis is apparently shorter with basal lobe. The distribution of these species in Slovakia and neighbouring countries remains to be open question, the revision of voucher material is necessary. **9** – Hr, 19<sup>th</sup> June 2002, ♂. A very rare species of warmer open forests, grasslands, etc. Known from a few sporadic records: Malá Fatra Mts – NR Starhrad (6879a) (Svatoň 1984); Veľká Fatra Mts – Kráľova studňa (7180a) July 1973, ♂ (a very remarkable finding in subalpine zone!); unpublished records are known from Krupinská planina Mts, J. Vachold lgt. and Moravsko-Sliezske Beskydy Mts, Z. Krumpálová & A. Krajča lgt. (Gajdoš, Svatoň & Sloboda 1999). **10** – Vá, in the litter of open scree forest 27<sup>th</sup> May 2003, ♀. A rare species, surprisingly living in contrasting habitats, including anthropogenic ones (Buchar & Růžička 2002).

**11** – HV, 28<sup>th</sup> Apr. 2002, 2 ♂. It occurs locally and rarely in xerothermic habitats. **12** – Vá, in the litter of xerothermic shrubby slope 10<sup>th</sup> June 2002, 2 ♂ + ♀; HV, 28<sup>th</sup> Apr. 2002, ♂. A rare species which indicates well-preserved xerothermic habitats. **13** – DV, 2<sup>nd</sup> July 2002, ♂; HV, 28<sup>th</sup> Apr. 2002, ♂. **14** – Vá, under the stone in a forest clearing 3<sup>rd</sup> Apr. 2003, 2 ♀. **15** – Vá, in a web between hazel branches 10<sup>th</sup> June 2003, ♀. **16** – Ro, running on the ground surface of a xerothermic grassland 26<sup>th</sup> May 2003, ♂. **17** – Ro, the same circumstances, ♀. A sporadic species, occurring rarely in well-preserved xerothermic habitats. **18** – a locally abundant species, in Czech republic is considered to be very rare. Widespread and frequent in the southern sector of Strážovské vrchy Mts; nevertheless indicates rich xerothermic habitats. **19** – DV, under stones on a xerothermic slope 23<sup>rd</sup> Apr. 1994, 2 ♂ + 3 ♀. **20** – Hr, under the bark of a drying oak 19<sup>th</sup> June 2002, 2 ♀. A very rare species of open deciduous forests, occurring locally in well-preserved warm regions of Slovakia.

**21** – Vá, between grass and stones in a xerothermic grassland 27<sup>th</sup> June 2003, ♀. **22** – Ro, the same circumstances 4<sup>th</sup> Apr. 2003, ♂ + ♀; DV, 28<sup>th</sup> Apr. 2002, ♂; HV, 23<sup>rd</sup> Apr. 1994, ♂. A rare, but locally quite abundant species of rich xerothermic habitats; in Czech republic is considered to be utmost rare. **23** – DV,

Tab. 1: Spiders (Araneae) of the Strážovské vrchy Mts

Family/Species	Site →	PLA			»Southern sector«				Ecosozological status (ESS)							
		Vá	Ro	St	DV	HV	Hr	Sd	Sk	Cz	G*	Sl	GB	B	Sw	F
<b>Pholcidae</b>																
<i>Pholcus opilionoides</i> (Schr. 1781)		-/1		<u>1</u> /-	<u>2</u> /-						■					
<b>Segestriidae</b>																
<i>Segestria senoculata</i> (L. 1758)			1/-	-/1				<u>2</u> /-								LR
<b>Dysderidae</b>																
<i>Dysdera crocota</i> C. L. K. 1838 <sup>41</sup> +					-/2				EN	∅	■					LR
<i>D. erythrina</i> (Walck. 1802)		-/1														EN
<i>Harpactea hombergi</i> (Scop. 1763)		-/1	-/2	1/-		<u>2</u> /-	1/-					VU				EN
<i>H. rubicunda</i> (C. L. K. 1839)		1/-				1/-	-/1									
<b>Eresidae</b>																
<i>Eresus cinnaberinus</i> (Oliv. 1789)					<u>1</u> /-	<u>1</u> /-					Sg	VU	EN			DD
<b>Theridiidae</b>																
<i>Achearanea lunata</i> (Cl. 1757)		2/1														LR
<i>Crustulina guttata</i> (Wid. 1834) +		1/1						1/2								VU
<i>Dipoena melanogaster</i> (C. L. K. 1845)			2/2								■		VU		EN	DD
<i>D. prona</i> (Menge 1868) <sup>42</sup>									VU	EN	Sg				EN	
<i>Enoplognatha ovata</i> (Cl. 1757)			1/-					2/1	2/1						LR	
<i>E. thoracica</i> (Hahn 1833)		1/1	-/1		1/-	-/1						VU			LR	
<i>Episinus truncatus</i> Latr. 1809			2/1		-/1			1/-							CR	
<i>Euryopis flavomaculata</i> (C. L. K. 1836)		1/-													VU	
<i>Laseola</i> [= <i>Dipoena</i> ] <i>tristis</i> (Hahn 1833)		1/2									■	VU			CR	
<i>Neottiura bimaculata</i> (L. 1767)		3/-	2/-					3/-								
<i>N. suaveolens</i> Sim. 1879 <sup>43</sup> +					1/-					NT	Sg					
<i>Pholcomma gibbum</i> (Westr. 1851) +			2/-	-/2				-/1							VU	
<i>Robertus arundineti</i> (O. P.-Cbr. 1871)		-/1													EN	
<i>R. lividus</i> (Bl. 1836)		-/1	-/1	-/1				-/2							LR	
<i>Simitidion</i> [= <i>Theridion</i> ] <i>simile</i> C. L. K. 1836					1/-			-/1				VU			LR	
<i>Steatoda phalerata</i> (Panz. 1801)								-/1			■				VU	
<i>Theridion impressum</i> L. K. 1881		1/-			4/-				1/-						LR	
<i>Th. mystaceum</i> L. K. 1870 +		1/-	1/-						-/1		■				LR	
<i>Th. nigrovariegatum</i> Sim. 1873 <sup>44</sup>			1/-					2/-	2/-		NT	G				
<i>Th. pinastris</i> L. K. 1872		-/1												IK	LR	
<i>Th. sisyphium</i> (Cl. 1757)		2/-	1/-	1/-											LR	
<i>Th. tinctum</i> (Walck. 1802)		-/1	-/1						-/1			VU			LR	
<i>Th. varians</i> Hahn 1833			1/-												LR	
<b>Linyphiidae</b>																
<i>Abacoproeces saltuum</i> (L. K. 1872) +			-/1		2/-						■					
<i>Acartauchenius scurrilis</i> (O. P.-Cbr. 1872) <sup>45</sup>					-/1	1/3			LC	VU	G				EN	NT
<i>Centromerus incilium</i> (L. K. 1881)		-/1									■					
<i>C. sellarius</i> (Sim. 1884) +		-/2	-/2								U					
<i>Ceratinella brevis</i> (Wid. 1834)				2/3											LR	
<i>C. scabrosa</i> (O. P.-Cbr. 1871) +		2/-									■				LR	
<i>Cinetata gradata</i> (Sim. 1844) <sup>46</sup> +			-/1	1/-					CR	DD	■					
<i>Diplocephalus cristatus</i> (Bl. 1833)		1/1		-/1											LR	
<i>D. latifrons</i> (O. P.-Cbr. 1863) +				2/2											LR	
<i>D. picinus</i> (Bl. 1841)		2/1													LR	
<i>Diplostyla concolor</i> (Wid. 1834)			-/2	1/1											LR	
<i>Entelecara acuminata</i> (Wid. 1834)		2/2	3/-	1/1	1/-										LR	
<i>E. congenera</i> (O. P.-Cbr. 1879)		1/-													R	
<i>E. flavipes</i> (Bl. 1834) <sup>47</sup> +		-/1							VU	VU	■				En <sup>p</sup>	
<i>Erigone atra</i> Bl. 1833								1/-							LR	
<i>E. dentipalpis</i> (Wid. 1834)								1/-							LR	

Tab. 1 (continued)

Family/Species	Site →	PLA			»Southern sector«				Ecosozological status (ESS)							
		Vá	Ro	St	DV	HV	Hr	Sd	Sk	Cz	G*	SI	GB	B	Sw	F
<i>Frontinellina frutetorum</i> (C. L. K. 1834)			1/-		3/1		1/-			VU	U			R		
<i>Gongylidiellum latebricola</i> (O. P.-Cbr. 1871)	-/1													LR		
<i>Hypomma cornutum</i> (Bl. 1833)					-/1				LC		U			LR		
<i>Lepthyphantes flavipes</i> (Bl. 1854)				-/2										LR		
<i>L. keyserlingi</i> (Auss. 1867) +							-/3				G				DD	NT
<i>L. leprosus</i> (Ohl. 1865)							-/2							LR		
<i>L. nodifer</i> Sim. 1884 +							-/1		LC		■			LR		
<i>L. obscurus</i> (Bl. 1841)	1/-										■			LR		
<i>L. tenebricola</i> (Wid. 1834)				-/1										LR		
<i>L. tenuis</i> (Bl. 1852)				-/1										LR		
<i>Linyphia hortensis</i> Sund. 1830	1/-	-/1												LR		
<i>Maso sundevalli</i> (Westr. 1851) +	1/-	1/3	-/1				-/4							LR		
<i>Megalephyphantes pseudocollinus</i> Saaristo 1997 <sup>48</sup> +							1/-		DD	VU						
<i>Meioneta affinis</i> (Kulcz. 1898)			-/1								■			EN		
[= <i>M. baeta</i> (O. P.-Cbr. 1906)] +																
<i>Meioneta equestris</i> (L. K. 1881) <sup>49</sup> +							1/-		VU	NT	Sg					
<i>Metopobactrus prominulus</i> (O. P.-Cbr. 1872) <sup>10</sup> +	-/1								VU	NT				VU		
<i>Micrargus herbigradus</i> (Bl. 1856)	2/-	1/-	1/-				-/1							LR		
<i>M. subaequalis</i> (Westr. 1851)	-/1										■			LR		
<i>Microlyniphia pusilla</i> (Sund. 1830)	1/-						1/-							LR		
<i>Microneta viaria</i> (Bl. 1841)			-/1		-/1									LR		
<i>Minicia marginella</i> (Wid. 1834) +	3/3	1/3			-/3		-/3				G					
<i>Neriene clathrata</i> (Sund. 1830)			-/1											LR		
<i>N. emphana</i> (Walck. 1842)	-/1													VU		
<i>N. peltata</i> (Wid. 1834)		1/-	1/-								■			LR		
<i>N. radiata</i> (Walck. 1841)	1/-										■			CR		
<i>Oedothorax apicatus</i> (Bl. 1850)	1/-	1/-	1/-				1/1	1/-						LR		
<i>Panamomops fagei</i> Mill. & Krat. 1939	1/1				1/-	1/-	-/1				R					
<i>Pocadicnemis pumila</i> (Bl. 1841)	1/1													LR		
<i>Porrhomma microphthalmum</i> (O. P.-Cbr. 1871)	-/1													LR		
<i>Saloca diceros</i> (O. P.-Cbr. 1871) +			-/1								■			VU		
<i>Sintula corniger</i> (Bl. 1856) +			-/1								G			En <sup>p</sup>		
<i>Tapinocyba affinis</i> (Less. 1907) +	-/1	-/1									■					
<i>T. insecta</i> (L. K. 1869)		-/1			1/2									LR		
<i>Theonina cornix</i> (Sim. 1881) <sup>11</sup>							2/-		NT	NT	G					
<i>Thyreosthenius parasiticus</i> (Westr. 1851) +			-/4				1/3							LR		
<i>Tiso vagans</i> (Bl. 1834)	-/1													LR		
<i>Trematocephalus cristatus</i> (Wid. 1834)	1/-	3/1					2/1				■	VU		VU		
<i>Trichoncus affinis</i> Kulcz. 1894 <sup>12</sup> +	2/1						1/-			VU	G		VU			
<i>T. auritus</i> (L. K. 1869) [= <i>kulczynskii</i> Mill. 1935] <sup>13</sup>					1/-	1/-				NT						
<i>Walckenaeria antica</i> (Wid. 1834)			1/-											LR		
<i>W. atrotibialis</i> (O. P.-Cbr. 1878)														LR		
[= <i>melanocephala</i> (O. P.-Cbr. 1881)]	-/1															
<i>W. capito</i> (Westr. 1861) +		-/1									■			En <sup>p</sup>		
<i>W. cucullata</i> (C. L. K. 1836) +					1/1									LR		
<i>W. simplex</i> (Chyz. 1894) <sup>14</sup> +	-/2								NT							
<b>Tetragnathidae</b>																
<i>Meta menardi</i> (Latr. 1804)			-/2													EN

Tab. 1 (continued)

Family/Species	Site →	PLA			»Southern sector«				Ecosozological status (ESS)							
		Vá	Ro	St	DV	HV	Hr	Sd	Sk	Cz	G*	SI	GB	B	Sw	F
<i>Metellina menzei</i> (Bl. 1870)	1/1	2/-	-1				2/-							LR		
<i>Pachygnatha degeeri</i> Sund. 1830	-1	1/-					2/-							LR		
<i>Tetragnatha pinicola</i> L. K. 1870		3/-			2/-		1/-					VU		LR		
<b>Araneidae</b>																
<i>Aculepeira ceropegia</i> (Walck. 1802)	2 s.	-2	1/-				-1				■				DD	EN
<i>Agalenatea redii</i> (Scop. 1763)						-1		-1			■			VU		
<i>Araneus alsine</i> (Walck. 1802) + <i>A. angulatus</i> Cl. 1757 <sup>▲15</sup>	-1				-1						G	VU		VU		
<i>A. [= Atea] sturmi</i> (Hahn 1831)	-1	-1									G			EN	NT	VU
<i>A. [= Atea] triguttatus</i> (F. 1775)						-2					U			LR	DD	
<i>Araniella cucurbitina</i> (Cl. 1757)	1/-	-2			1/-		2/1							LR		
<i>Argiope bruennichi</i> (Scop. 1772) + <i>Cercidia prominens</i> (Westr. 1851) + <i>Cyclosa conica</i> (Pall. 1772)	juv				juv									R		
<i>Gibbaranea bituberculata</i> (Walck. 1802)					-1		2/-				■		EN	En <sup>p</sup>	Ex <sup>f</sup>	
<i>Hypsosinga sanguinea</i> (C. L. K. 1844)	2/4		1/2	1/4			1/-				G			EN		
<i>Mangora acalypha</i> (Walck. 1802)	2/-	2/1		4/-										LR		
<i>Nuctenea umbratica</i> (Cl. 1757)		-1												LR		
<i>Zilla diodia</i> (Walck. 1802)								-1						LR	DD	
<b>Lycosidae</b>																
<i>Alopecosa accentuata</i> (Latr. 1817)	1/1						-1	1/2			■					
<i>A. aculeata</i> (Cl. 1757)								1/1			G					
<i>A. cuneata</i> (Cl. 1757)							1/-							VU		
<i>A. inquilina</i> (Cl. 1757)		-1									G	VU				
<i>A. pulverulenta</i> (Cl. 1757)		1/-												LR		
<i>A. sulzeri</i> (Pav. 1873) <sup>▲16</sup>		1/-					1/2				Sg					
<i>A. trabalis</i> (Cl. 1757)					2/-						■			CR		
<i>Arctosa figurata</i> (Sim. 1876) <sup>▲17</sup>		-1									G	VU		R	NT	DD
<i>Aulonia albimana</i> (Walck. 1805)	1/3						2/-	1/-			■		EN	Ex <sup>f</sup>		VU
<i>Pardosa amentata</i> (Cl. 1757)			1/-											LR		
<i>P. bifasciata</i> (C. L. K. 1834)	-1										G					
<i>P. hortensis</i> (Thor. 1872)								1/-			■			R		
<i>P. lugubris</i> (Walck. 1802)	1/-	1/-	4/-						1/-					VU		
<i>P. paludicola</i> (Cl. 1757)		1/-									■		R	Ex <sup>f</sup>		
<i>P. pullata</i> (Cl. 1757)			2/-											LR		
<i>P. riparia</i> (C. L. K. 1833)	-1							1/-								
<i>Trochosa terricola</i> Thor. 1856	-1	-1	-1				1/-							LR		
<i>Xerolycosa nemoralis</i> (Westr. 1861)		1/-			1/-		1/1							VU		
<b>Pisauridae</b>																
<i>Pisaura mirabilis</i> (Cl. 1757)		2/1			2/3	2/4								LR		
<b>Agelenidae</b>																
<i>Agelena labyrinthica</i> (Cl. 1757)	-1													LR		Ex <sup>f</sup>
<i>Histopona torpida</i> (C. L. K. 1834)			-2				1/1							R		
<i>Tegenaria agrestis</i> (Walck. 1802)			1/-											LR		
<i>T. atrica</i> C. L. K. 1843 + <i>T. campestris</i> C. L. K. 1834							-2	1/-						LR		
<i>T. domestica</i> (Cl. 1757)					1/-	1/-					U					
<i>T. ferruginea</i> (Panz. 1804)								-1						LR		
<i>T. silvestris</i> L. K. 1872		1/-	1/1											VU		
<i>Textrix denticulata</i> (Oliv. 1789) +	-1	-1					-1				■			LR		
<b>Cybaeidae</b>																
<i>Cybaeus angustiarum</i> L. K. 1868			2/-								■			DD		
<b>Hahniidae</b>																
<i>Cryphoea silvicola</i> (C. L. K. 1834) + <i>Hahnia helveola</i> Sim. 1875		-1		1/-					LC		R			EN		VU

Tab. 1 (continued)

Family/Species	Site →	PLA			»Southern sector«				Ecosozological status (ESS)							
		Vá	Ro	St	DV	HV	Hr	Sd	Sk	Cz	G*	SI	GB	B	Sw	F
<i>Hahnina nava</i> (Bl. 1841)						-/1					■			EN		
<b>Dictynidae</b>																
<i>Cicurina cicur</i> (F. 1793)		-/1	-/2											LR	DD	VU
<i>Dictyna arundinacea</i> (L. 1758)		-/1			1/-									LR		
<i>D. latens</i> (F. 1775) ◀ <sup>18</sup>					2/3		-/2	1/-		EN	G			EN		
<i>D. uncinata</i> Thor. 1856		1/-												LR		
<i>Nigma flavescens</i> (Walck. 1830)			5/2				3/-							LR		
<b>Amaurobiidae</b>																
<i>Amaurobius fenestralis</i> (Ström 1768)			-/1				1/1							LR		
<i>Callobius claustrarius</i> (Hahn 1833)							-/2				■					
<i>Coelotes atropos</i> (Walck. 1830)							-/1				Sg			DD	NT	
<i>C. inermis</i> (L. K. 1855)			-/3	-/3										R		
<i>C. terrestris</i> (Wid. 1834)		-/1	-/3	-/1										VU		
<b>Titanoecidae</b>																
<i>Titanoeca quadriguttata</i> (Hahn 1833)		1/-	1/-			1/-					■	VU		CR		NT
<i>T. schineri</i> L. K. 1872 ◀ <sup>19</sup>					2/3					VU						
<b>Anyphaenidae</b>																
<i>Anyphaena accentuata</i> (Walck. 1802)			1/-				1/-								NT	
<b>Liocranidae</b>																
<i>Agroeca cuprea</i> Menge 1873		-/1	-/1								G			EN		
<i>Apostenus fuscus</i> Westr. 1851		2/6		-/1			-/1						EN	EN		DD
<i>Liocranum rupicola</i> (Walck. 1830)			-/1								■			LR		
<i>L. rutilans</i> (Thor. 1875) ◀ <sup>20</sup> +							-/2		VU	VU	Sg	R				
<i>Phrurolithus festivus</i> (C. L. K. 1835)		1/-	-/2		1/-	1/-	-/2							LR		
<i>Ph. minimus</i> C. L. K. 1839 ◀ <sup>21</sup> +		-/1								NT	■			CR		
<i>Ph. szilyi</i> Herm. 1879 ◀ <sup>22</sup>			1/1		1/-	1/-				CR						
<i>Scotina celans</i> (Bl. 1841) ◀ <sup>23</sup>					1/2		1/-			VU	G			R	NT	
<b>Clubionidae</b>																
<i>Cheiracanthium erraticum</i> (Walck. 1802) +		1/-												LR		
<i>Ch. oncognathum</i> Thor. 1871 ◀ <sup>24</sup>					1/2				EN	EN	■					
<i>Clubiona caerulea</i> L. K. 1867 +			-/1											EN		
<i>C. compta</i> C. L. K. 1839			1/1		-/1									LR		
<i>C. diversa</i> O. P.-Cbr. 1862			1/-											LR		
<i>C. genevensis</i> L. K. 1866 ◀ <sup>25</sup>					1/-				LC	VU	G		R	CR	DD	
<i>C. lutescens</i> Westr. 1851			1/-											LR		
<i>C. neglecta</i> O. P.-Cbr. 1862					1/-									LR		
<i>C. saxatilis</i> L. K. 1866 [= <i>dvoraki</i> Mill. 1943] ◀ <sup>26</sup>		-/1		-/1					LC	EN						
<i>C. terrestris</i> Westr. 1851 +		-/1	-/1											LR		
<b>Zodariidae</b>																
<i>Zodarion germanicum</i> (C. L. K. 1837)		-/1	1/-			1/-	-/2				G	VU				
<b>Gnaphosidae</b>																
<i>Callilepis nocturna</i> (L. 1758)		-/2			-/1						G		EN	R		
<i>C. schuszeri</i> (Herm. 1879)			1/1								Sg					
<i>Drassodes lapidosus</i> (Walck. 1802)		1/-			1/-									LR		
<i>D. pubescens</i> (Thor. 1856)			1/-								■			EN		
<i>Drassyllus</i> [= <i>Zelotes</i> ] <i>praeficus</i> (L. K. 1866)		-/1	-/2								■			CR		
<i>D.</i> [= <i>Zelotes</i> ] <i>pumilus</i> (C. L. K. 1839) ◀ <sup>27</sup> +						1/-				NT	G					
<i>D.</i> [= <i>Zelotes</i> ] <i>villicus</i> (Thor. 1875)			-/1		1/-						G					
<i>Gnaphosa bicolor</i> (Hahn 1833) ◀ <sup>28</sup>		1/1		-/1	1/-						G					
<i>G. lucifuga</i> (Walck. 1802) +							-/2				G	VU		CR		
<i>G. opaca</i> Herm. 1879 ◀ <sup>29</sup>					1/-					NT	Sg	VU		R		
<i>Haplodrassus dalmatensis</i> (L. K. 1866) ◀ <sup>30</sup> +					1/-				NT	VU	G	VU		EN		

Tab. 1 (continued)

Family/Species	Site →	PLA			»Southern sector«				Ecosozological status (ESS)							
		Vá	Ro	St	DV	HV	Hr	Sd	Sk	Cz	G*	SI	GB	B	Sw	F
<i>Haplodrassus kulczynskii</i> Lohm. 1942 <sup>31</sup>			-1		2/-	-2			LC		G	VU				
<i>H. signifer</i> (C. L. K. 1839)			-1				1/-								LR	
<i>H. silvestris</i> (Bl. 1833)			-3		1/1		-1								EN	
<i>Micaria fulgens</i> (Walck. 1802)			1/1								■				EN	NT
<i>Scotophaeus scutulatus</i> (L. K. 1866) +							-1				■				LR	
<i>S. quadripunctatus</i> (L. 1758) +			-1								■					
<i>Zelotes apricorum</i> (L. K. 1876)	-1	1/-	1/2								■				En <sup>P</sup>	
<i>Z. electus</i> (C. L. K. 1839) +						-2									VU	NT
<i>Z. hermani</i> (Chyz. 1897) <sup>32</sup>					2/-	1/-				∅						
<i>Z. petrensis</i> (C. L. K. 1839)			-1			-2	1/-				■				VU	
<i>Z. pygmaeus</i> Mill. 1943 <sup>33</sup> +					-2				EN	NT						
<i>Z. subterraneus</i> (C. L. K. 1833)			-2	-2			1/1								LR	
<b>Zoridae</b>																
<i>Zora nemoralis</i> (Bl. 1861)	1/1	-2	1/1				1/1								CR	
<b>Heteropodidae</b>																
<i>Micrommata virescens</i> (Cl. 1757)		2 j.			2/-						■				CR	
<b>Philodromidae</b>																
<i>Philodromus albidus</i> Kulcz. 1911 +		1/-							DD						EN	
<i>Ph. aureolus</i> (Cl. 1757)		-1													LR	
<i>Ph. caespitum</i> (Walck. 1802) +					1/-										LR	
<i>Ph. dispar</i> Walck. 1826		1/1													LR	
<i>Ph. emarginatus</i> (Schr. 1803)					-1						U				En <sup>P</sup>	
<i>Thanatus formicinus</i> (Cl. 1757)			1/-		1/1		1/-				G		VU		En <sup>P</sup>	
<i>Tibellus oblongus</i> (Walck. 1802)	1/-				1/-										VU	
<b>Thomisidae</b>																
<i>Coriarachne depressa</i> (C. L. K. 1837) +					1/-						■				R	
<i>Diaea dorsata</i> (F. 1777)	1/1	1/2	-1												LR	
<i>Misumena vatia</i> (Cl. 1757)	2/-	3/1														
<i>Misumenops tricuspoidatus</i> (F. 1775)					1/-						■				R	
<i>Ozyptila atomaria</i> (Panz. 1801)		-1	-1												EN	
<i>O. nigrita</i> (Thor. 1875) [= <i>claveata</i> (Walck. 1837)]	-1										G	VU			CR	NT
<i>O. scabricula</i> (Westr. 1851) <sup>34</sup>					-1						G				EN	
<i>O. simplex</i> (O. P.-Cbr. 1862) <sup>35</sup>					1/-					VU		VU			LR	
<i>Pistius truncatus</i> (Pall. 1772) +	1/-	-1					-2				G		EN	CR	DD	
<i>Synema globosum</i> (F. 1775) +		-2				1/-		1/1			G				R	
<i>Tmarus piger</i> (Walck. 1802)	1/1					1/-	1/-				G				R	
<i>T. stellio</i> Sim. 1875 <sup>36</sup> +					1/-	1/-			LC	EN						
<i>Xysticus audax</i> (Schr. 1803)	2/-	1/-													LR	
<i>X. bifasciatus</i> C. L. K. 1837	-1	1/-	2/-	-1							■				CR	
<i>X. cristatus</i> (Cl. 1757)	1/-	1/-		1/-											LR	
<i>X. erraticus</i> (Bl. 1834)		2/-		1/-							■				EN	
<i>X. kochi</i> Thor. 1872	1/-			7/-											LR	
<i>X. lanio</i> C. L. K. 1835	1/-	2/-									■				LR	
<i>X. ninnii</i> Thor. 1872 <sup>37</sup>						1/-					Sg				EN	
<i>X. robustus</i> (Hahn 1832)								-1			G					
<i>X. ulmi</i> (Hahn 1831) +					1/-										LR	
<b>Salticidae</b>																
<i>Aelurillus v-insignitus</i> (Cl. 1757)					1/-						■				VU	
<i>Ballus chalybeius</i> (Walck. 1802)		1/2			1/-						■				LR	
<i>Carrhotus xanthogramma</i> (Latr. 1819) [= <i>bicolor</i> (Walck. 1802)] <sup>38</sup> +		1/-								VU	G					
<i>Chalcoscirtus pseudoinfimus</i> Ovtsh. 1978 [= <i>infimus</i> (Sim. 1868)] <sup>39</sup>					1/-				VU	VU	VAb					
<i>Euophrys frontalis</i> (Walck. 1802)	1/1	1/-													LR	

Tab. 1 (continued)

Family/Species	Site →	PLA			»Southern sector«				Ecosozological status (ESS)							
		Vá	Ro	St	DV	HV	Hr	Sd	Sk	Cz	G*	SI	GB	B	Sw	F
<i>Evarcha arcuata</i> (Cl. 1757)		3/-	2/-	1/-	3/-											LR
<i>E. falcata</i> (Cl. 1757)		1/1	2/1	-1				3/-								LR
<i>E. laetabunda</i> (C. L. K. 1846)		1/-	1/-		4/-						G				EN	
<i>Heliophanus aeneus</i> (Hahn 1832)					1/-				LC		G				Ex <sup>r</sup>	
<i>H. auratus</i> C. L. K. 1835 +				-2	1/-						■		VU		EN	
<i>H. cupreus</i> (Walck. 1802)		1/-	5/1	1/-	4/-			3/-							LR	
<i>H. dubius</i> C. L. K. 1835		2/-									■				R	
<i>H. flavipes</i> (Hahn 1832)					2/-										LR	
<i>Leptorchestes berolinensis</i> (C. L. K. 1846) +						1/-	-2	1/-		VU	U					
<i>Marpissa muscosa</i> (Cl. 1757)								1/1			■				LR	
<i>M. [= Hyctia] nivoyi</i> (Luc. 1846) ◀ <sup>40</sup> +			1/-		3 j.			1/-	NT	VU	VAb	VU			EN	
<i>Myrmarachne formicaria</i> (De Geer 1778)						1/-				VU	■				LR	
<i>Neon laevis</i> (Sim. 1871) ◀ <sup>41</sup> +		1/-							VU	EN	G					
<i>N. reticulatus</i> (Bl. 1853) +			-1					2/-			■				LR	
<i>Pellenes nigrociliatus</i> (Sim. 1875) ◀ <sup>42</sup> +								1/-		VU	Sg					
<i>P. tripunctatus</i> (Walck. 1802)		1/-			-2						G	VU	EN	EN	NT	
<i>Philaeus chrysops</i> (Poda 1761) ◀ <sup>43</sup> +			-1		1/-						VAb	VU				
<i>Phlegra fasciata</i> (Hahn 1826)			-1		1/-								R	VU		
<i>Ph. festiva</i> (C. L. K. 1834)					-1	-1					G			DD		
<i>Pseudeuophrys [= Euophrys] erratica</i> (Walck. 1826) +				3/-					LC		■					
<i>Pseudicius encarpatus</i> (Walck. 1802) +								2/-	1/-	LC	■			DD	DD	
<i>Salticus scenicus</i> (Cl. 1757)		-1												LR		
<i>S. zebraneus</i> (C. L. K. 1837)								1/-			■			LR		
<i>Sitticus pubescens</i> (F. 1775)				-1							■	VU		LR		
<i>S. rupicola</i> (C. L. K. 1837) +				-1						DD	Sg			LR		
<i>S. saxicola</i> (C. L. K. 1846) ◀ <sup>44</sup>								2/-	NT	NT	■					
<i>Synageles venator</i> (Luc. 1846) +			-1					-1			■				LR	

ESS (countries): Sk – Slovakia, Cz – Czech republic, G – Germany, SI – Slovenia, GB – Great Britain, B – Belgium, Sw – Sweden, F – Finland; ESS (categories): Ex<sup>r</sup> – regionally extinct, CR – critically endangered, EN – endangered, En<sup>p</sup> – probably endangered, VU – vulnerable, R – rare, CD – care demanding, DD – data deficiency, IK – insufficiently known, LR – lower risk, LC – (lower risk) least concern, NT – (lower risk) near threatened, R – rare; \* different system of ecosozological categories is used in Germany, nevertheless is more-or-less easily compatible with ones according to IUCN: VAb – ‘Vom Aussterben bedroht’ (it means CR according to IUCN), Sg – ‘stark gefährdet’ (≅ EN according to IUCN), G – ‘gefährdet’ (≅ VU), R – ‘Arten mit geographischer Restriktion’ (≅ LR nt), U – ‘Arten, deren Gefährdungsstatus unsicher ist’ (≅ IK), ■ – unspecified species, Ø – the species has not been documented in the Czech republic till now; 1/2 – one male and two females were collected, 1/- one male was collected, but more individuals were registered and left; ◀ – detailed data are supplemented below; + species has not been cited from the Strážovské vrchy Mts. (Gajdoš, Svatoň & Sloboda 1999)

20<sup>th</sup> Apr. 2002, ♂ + 2 ♀; Hr, 19<sup>th</sup> June 2002, ♂. **24** – DV, swept from xerothermic vegetation 18<sup>th</sup> May 2002, ♂ + 2 ♀. A very rare species, known only from two further records: NR Súľovské skaly (6877a/b), 1971, pitfall trap, ♀ (Miller & Svatoň 1974); and Zemplínske vrchy (7596), unpublished, Zbytek lgt. (Gajdoš, Svatoň & Sloboda 1999). **25** – DV, xerothermic rocky pasture 20<sup>th</sup> Apr. 2002, ♂. **26** – St, in the litter of sunny scree slope 24<sup>th</sup> June 2004, ♀. Its occurrence in the mountain massif of Strážov is remarkable. **27** – HV, 28<sup>th</sup> Apr. 2002, ♂. **28** – relatively abundant throughout the region. The occurrence of this thermophilic species in the mountain massif of Strážov is very remarkable! **29** – DV, 2<sup>nd</sup> July 2002, ♂. A rare species of the warmest habitats. **30** – DV, 20<sup>th</sup> Apr. 2002, ♂; the same as in ‘29’.

**31** – relatively abundant throughout the region, nevertheless indicates rich xerothermic habitats. **32** – DV, 1<sup>st</sup> May 1993, 2 ♂; HV, 28<sup>th</sup> Apr. 2002, ♂. A rare species of xerothermic habitats. **33** – DV, 2<sup>nd</sup> July 2002,



♀. A very rare Ponto-Mediterranean species, known only from a few sporadic records: Ostrôžky Mts – Nedelište (7682a/b), rocky steppe, 28<sup>th</sup> June 2000, ♂; Nová Bašta: ‘Borievka’, xerothermic pasture, 16<sup>th</sup> May 2001, 2 ♂, V. Franc lgt. et coll.; Štúrovo – obviously surroundings (8178), 10<sup>th</sup> June 1956, 3 ♀, F. Miller lgt. – the first record for the Slovakian fauna! (Kúrka 1994); „Považské podolie“ (490), P. Gajdoš lgt. (Gajdoš, Svatoň & Sloboda 1999) and Sered’ (7772a), xerothermic grassy and shrubby succession on nickel leach dumps (Krajča & Krumpálová 1998). The last mentioned site is notable due to its clearly anthropogenic creation. **34** – DV, 18<sup>th</sup> May 2002, ♀. A rare species of xerothermic habitats; the same concerns the following species till ‘38’. **35** – DV, 2<sup>nd</sup> July 2002, ♂. **36** – DV, 2<sup>nd</sup> July 2002, ♂; HV, 1<sup>st</sup> May 1993, ♂. **37** – HV, 6<sup>th</sup> July 1993, ♂. **38** – Ro, 4<sup>th</sup> Apr. 2003, ♂. **39** – DV, 2<sup>nd</sup> July 2002, ♂. A very rare and little-known species of the warmest habitats. **40** – Ro, 9<sup>th</sup> June 2003, ♂; Hr, 19<sup>th</sup> June 2002, ♂; DV, 20<sup>th</sup> Apr. 2002, 3 juvenile individuals.

**41** – Vá, 11<sup>th</sup> June 2004, ♂ (P. Gajdoš det.). A little-known rare species of scree slopes, known only from a few recent records. **42** – Hr, 19<sup>th</sup> June 2002, ♂. **43** – Ro, 25<sup>th</sup> June 2003, ♀; DV, 23<sup>rd</sup> Apr. 1994, ♂. A conspicuous, quite rare species of xerothermic habitats. **44** – Hr, scree beech forest 19<sup>th</sup> June 2002, 2 ♂.

## Conclusions

I have documented 274 spider species in the Strážovské vrchy Mts, including 62 species ‘new’ for this orographic unit (distinguished by ‘+’ in the table 1) which are not mentioned in the Catalogue of Slovakian Spiders (Gajdoš, Svatoň & Sloboda 1999). Many of referred spiders prove very high value of this territory from both genofund and environmental point of view. They are often less abundant or even rare, listed in several Red Lists throughout Central, Western and Northern Europe.

More or less clearly thermophilic species are highly prevailing here, occurring in both xerothermic rocky slopes and forests. It especially concerns *Dysdera crocota*, *Eresus cinnaberinus*, *Diplocephalus pronus*, *Acartauchenius scurrilis*, *Megalephthiphantes pseudocollinus*, *Theonina cornix*, *Trichoncus affinis*, *Arctosa figurata*, *Liocranum rutilans*, *Phrurolithus szilyi*, *Cheiracanthium oncognathum*, *Clubiona genevensis*, *Gnaphosa opaca*, *Haplodrassus dalmatensis*, *Zelotes pygmaeus*, *Ozyptila scabricula*, *O. simplex*, *Carphotus xanthogramma*, *Chalcoscirtus pseudoinfirmus*, *Marpissa nivoyi*, *Pellenes nigrociliatus*, *Philaeus chrysops*, etc. Only a few species prefer colder mountain habitats: *Cinetata gradata*, *Coelotes atropos* and *Sitticus rupicola*.

The list of spider species is not definitive, of course. I would be glad to continue the spider research in this considerable area ranking among one of the richest »spider sites« in the whole Slovakia. On the other hand, effective nature conservation management of this territory will not be easy, because it will be necessary to deal with the following problems seriously:

- progressive forest succession in many sites (extensive sheep grazing would be the best solution!);
- development of intensive forestry in less-extreme slopes with all the consequences, mainly clean-cutting wood exploitation and conversion of natural forests towards monocultures in the whole area [allochthonous black pine (*Pinus nigra*) canopy ought to be totally reduced];
- burning out the vegetation of xerothermic grasslands (fortunately, it is not so frequent here);
- expansion of both cottage and suburban ‘garden colonies’ in the marginal area of Strážovské vrchy;
- conversion of meadows and woodlands towards urban environment;
- development of stone-extraction industry in the whole area (a lot of quarries appear as a serious subject of the landscape disturbance).

Finally, it will be necessary to solve the dilemma of territorial protection of the “forgotten” southern part of this orographic unit.

## References

- Bartoš E., 1938: Pavouci Žilinského okolí. Sborník Entom. odd. Nár. musea (Praha) **16**: 97–107.
- Buchar J. & Růžička V., 2002: Catalogue of Spiders of the Czech republic. Peres Publ., Praha, 349 pp.
- Gajdoš P., 1986a: Pavúky (Araneae) ŠPR Veľký vrch. In: Gregor J. (ed.), Zborník odborných prác západoslovenského TOPu, Topoľčianske Podhradie 1984 (Bratislava) **2**: 73–99.

- Gajdoš P., 1986b: K výskytu pavúkov (Araneae) v okrese Topoľčany. In: Gregor J. (ed.), Zborník odborných prác západoslovenského TOPu, Topoľčianske Podhradie 1984 (Bratislava) **2**: 101–114.
- Gajdoš P. & Svatoň J., 1993: The red list of spiders of Slovakia. *Boll. Acc. Gioenia Sci. Nat. (Catania)* **26**: 115–133.
- Gajdoš P. & Svatoň J., 2001: Červený (ekosozologický) zoznam pavúkov (Araneae) Slovenska, p. 80–86. In: Baláž D., Marhold K. & Urban P. (eds.), Červený zoznam rastlín a živočíchov Slovenska. Ochrana prírody (ŠOP SR Banská Bystrica) Suppl. **20**: 1–159.
- Gajdoš P., Svatoň J. & Sloboda K., 1999: Katalóg pavúkov Slovenska. Ústav krajinej ekológie SAV, Bratislava, 337 pp.
- Gärdenfors U. (ed.), 2000: The 2000 Red List of Swedish Species. ArtDatabanken, SLU, Uppsala, 397 pp.
- Heimer S. & Nentwig W., 1991: Spinnen Mitteleuropas. Paul Parey Verl., Berlin – Hamburg, 543 pp.
- Krajča A. & Krumpálová Z., 1998: Epigeic spider (Araneae) communities of nickel leach dumps and their surroundings near Sereď (Slovakia). *Biologia (Bratislava)* **52**: 173–187.
- Kúrka A., 1994: Přehled druhů pavouků (Araneida) ve sbírce prof. F. Millera (Zoologické sbírky Přírodovědeckého muzea – Národního muzea). *Časopis Nár. muzea (Praha)* **163**: 43–54.
- Maelfait J. P., Baert L., Janssen M. & Alderweireldt M., 1998: A Red list for the spiders of Flanders. *Bulletin van het Koninklijk, Belgisch Instituut voor Natuurwetenschappen, Entomologie* **68**: 131–142.
- Merrett P., 1991: Spiders (Araneae), p. 126–217. In: Bratton J. H. (ed.), *British Red Data Books, 3. Invertebrates other than Insects. Joint Nature Conservation Committee, Peterborough*, 253 pp.
- Miller F., 1971: Pavouci (Araneida), p. 51–306. In: Daniel M. & Černý V. (eds.), *Klíč zvířeny ČSR, 4. Academia, Praha*, 603 pp.
- Miller F. & Svatoň J., 1974: Príspevok k poznaniu fauny pavúkov Súľovských skál. In: Štollmann A. (ed.), *Súľovské skaly, štátna prírodná rezervácia. Vlastivedný zborník Považia, č. 1 (Osveta, Martin)*, p. 243–284.
- Pekár S., 1994: Príspevok k poznaniu arachnofauny Horného Ponitria. [Diplomová práca; depon. in: Přírodovědecká fakulta UK, Praha], 90 pp.
- Platen R., Blick T., Sacher P. & Malten A., 1996: Rote Liste der Webspinnen (Arachnida: Araneae). *Arachnol. Mitt., Basel*, **11**: 5–31.
- Polenec A., 1992: Rdeči seznam ogroženih pajkov (Araneae) Slovenije. *Varstvo Narave (Ljubljana)* **17**: 173–176.
- Rassi P., Alanen A., Kanerva T. & Mannerkoxi I. (eds.), 2001: Suomen lajien uhanalaisuus 2000. *Ympäristöministeriö & Suomen ympäristökeskus, Helsinki*, 432 pp.
- Roberts M. J., 1995: Spiders of Britain and Northern Europe. Harper Collins Publ., London, 383 pp.
- Svatoň J. 1983: Weitere neue oder unvollkommen Bekannte Spinnenarten aus der Slowakei. *Biológia (Bratislava)* **38/6**: 569–580.
- Svatoň J., 1984: Príspevok k poznaniu pavúkov (Araneida) ŠPR Starhrad v Malej Fatre. *Kmetianum (Martin)* **7**: 227–259.
- Svatoň J., Gajdoš P. & Pekár S., 2000: Spiders (Araneae) of the Biele Karpaty Mountains. *Biodiversitas Slovaca (Nitra)* **1**: 16–61.
- Žitňanská O., 1987: Notes on Spiders (Aranea) of Slovenský raj. *Acta Facult. rer. natur. Univ. Comen. (Bratislava) Zoologia* **32**: 5–16.