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The epigeic spider fauna (Arachnida: Araneae) of some fens in north-eastern Iceland - a comparison of areas differing in ground moisture and vegetation

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The investigation dealt with the epigeic spider fauna of a fen area in north-eastern Iceland. The mires in question consisted of a mosaic of subparts differing in ground moisture and vegetation. The aim of the study was to determine whether the spider communities differed correspondingly. Pitfall trapping, vegetation mapping and ground moisture estimation were carried out at 11 different sites.

7958 adult spider individuals belonging to 41 species collected. The study sites varied more in abundance of the spiders than in species composition. Grouping of spider species according to their main occurrences along the two gradients of ground moisture and shrub cover is decribed.

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INTRODUCTION

Some decades ago, a large part of the surface of Iceland was covered with wetlands of various kinds. But now most of the original area has been influenced by drainage or cultivation, so that only a small part of it has been preserved in relatively natural condition. Hardly any ecological studies concerning spiders have been undertaken in those vanishing habitats.

Therefore an investigation of the epigeic spider fauna of some fens around Lake Myvatn in north-eastern Iceland was carried out in summer 1994. The research areas consisted largely of relatively small patches differing considerably in moisture and vegetation, implying both a varying extent of shade on the ground surface and different structures of habitat for the fauna.

As many spiders are known to show more or less distinct habitat preferences (e.g. Duffey 1962, Platen 1984), it was supposed that spider species would not be evenly or randomly distributed throughout the whole of the studied wetland. On the contrary, they were expected to be found in different habitat conditions.

The aim of this study was to determine whether species composition and abundance of characteristic ground-living spider communities vary according to the vegetation and moisture mosaic pattern.

THE STUDY AREA

The wetlands studied are situated around Lake Myvatn in north-eastern Iceland (65°33´N, 17°20´W). Lava blocking the waterflow out of the Myvatn basin has formed the lake as well as mires in the south and west of it (Sæmundsson 1991). Both the fen south of Myvatn (Framengjar) and mires on the Neslandatangi Peninsula in the north-west of the lake were chosen as study areas.

Framengjar is largely composed of a mosaic of wet to only slightly moist patches dominated by fen mosses and sedges and of shrub-covered drier ground. Sampling sites were located in ungrazed (Fr) as well as in grazed parts of northern Framengjar (Frgr), so that areas of the same ground moisture but of a different vegetation structure could be compared.

The moderately damp and wet sampling sites on Neslandatangi (Nes) show hummock-like structures and are overgrown with dwarf birches and other scrub vegetation with *Sphagnum* and other mosses underneath.

METHODS

Spider sampling

Spiders were collected by pitfall trapping, using plastic yoghurt containers as traps. They measured 9.3 cm in diameter and contained 5 % formaldehyde solution along with a detergent. Transparent roofs were installed about 15 cm above the traps as a shelter against wind and rain. Eleven groups of 5 traps were placed in differently structured parts of the mire. Sampling was continuous from 20 May to 26 September1994, collections were made 12 times at intervals of 11-12 days.

Vegetation analysis and water level data

The vegetation was mapped according to Braun-Blanquet (Dierssen 1990) at all sampling sites in July 1994, each trap being in the centre of a 4 m^2 sized plot. In addition ground water level was estimated monthly using holes dug into the ground.

RESULTS

Vegetation and moisture data

An overview of the vegetation mapping and the moisture estimation data is given in Table 1. More precise information about the vegetation at each study site can be found in Tables 2-4.

The sampling sites in the ungrazed part of Framengjar (Fr) were arranged along a ground water level gradient. The wettest site, Fr5, was dominated by a plant community consisting of *Carex rostrata*, *Menyanthes trifoliata* and the fen moss *Calliergion giganteum*. Sites that were not quite as wet as Fr5 or merely of a moderate dampness (Fr4-Fr2) were fen moss-sedge (mainly *Carex chordorrhiza*) associations with dwarf birch (*Betula nana*) and willow (*Salix* spec.) shrubs beginning to come up in the driest places. Finally, the elevations (Fr1) were covered with thick shrub 40-120 cm in height, the most abundant plant species being *Betula nana*, *Salix* species, *Empetrum nigrum*, *Vaccinium uliginosum* and the moss *Hylocomium splendens* (Table 2).

On the grazed part of Framengjar (Frgr1-3) the study site arrangement was chosen to follow the same moisture gradient as in Fr, but sheep-grazing caused a more open and lower vegetation in the dry, more elevated areas (Frgr1), which encouraged considerable growth of herbs and lichens underneath the shrub layer (Table 3).

On Neslandatangi, traps were placed in damp (Nes2) and in wet (Nes3) shrub vegetation consisting largely of *B. nana*, *Salix* species, *V. uliginosum*, *E. nigrum* with *Sphagnum* and other mosses (e.g. *Aulacomnium palustre*) growing underneath. One study site (Nes1) was located around small ponds in a peat moss carpet with *Carex rostrata*, *Carex chordorrhiza*, *Menyanthes trifoliata* and *Potentilla palustris* (Table 4).

The epigeic spider fauna

Altogether 41 species of spiders (7958 adult individuals) belonging to 5 families were caught between 20 May and 26 September 1994. More than 80 % of those species (55 % of the individuals) belonged to the family Linyphiidae, almost 10 % of the species (43 % of the individuals) to the family Lycosidae.

Many spiders were trapped in considerably varying numbers at different study sites, having their main occurrence in certain types of study area and being found less frequently or even appearing to be totally absent in other sites (Table 5). On the other hand, different study sites are shown to be dominated by different spider species.

A comparison of the relative activity abundance (activity dominance) of frequently caught spider species on different study sites is given in Figure 1 a-d, combined with information about each study site. It was found that the relative abundance values changed along vegetation or moisture gradients, which can be seen, for example, by *Pardosa sphagnicola* dominating in shrubby, preferably dry areas, *Allomengea scopigera* in damp sedge reeds, etc.

Table 1. Summary of study site properties.

Study site	Fr1	Fr2	Fr3	Fr4	Fr5
Location	in Framengjar (south of Lake Myvatn)				
Grazing	none				
Ground structure	hummock-like	plain	plain	plain	plain
Ground material	mineral soil	peat	peat	peat	peat
Ground water level compared to Frgr3 = 0 (cm)	-20 to < -45	-12	-6	0	8
Moisture classification	more or less dry	slightly moist	moist	wet	extremely wet
Vegetation*	dwarf birch/ willow scrub	scrub/ fen moss-sedge vegetation	fen moss-sedge vegetation	fen moss-sedge vegetation	*Menyanthes*-fen moss-sedge vegetation
Vegetation height (cm)	40-120	30-80	25	25	25-35
Shade on ground surface	98% (= very shady	50% half open, patchy)	3% (very open)	3% (= very open)	10% (= very open)

Study site	Frgr1	Frgr2	Frgr3	Nes1	Nes2	Nes3
Location	in Framengjar (south of Lake Myvatn)			on Neslandatangi (north-west of Lake Myvatn)		
Grazing	Sheep grazing in June and September			none		
Ground surface	hummock-like	plain	plain	plain	hummock-like	hummock-like
Ground material	mineral soil	peat	peat	peat	peat	peat
Ground water level compared to Frgr3 = 0 (cm)	-20 to < -45	-5	0	0	-8 to < -35	0 to < -20
Moisture classification	more or less dry	moist	wet	wet	moist	wet
Vegetation*	dwarf birch/ willow scrub	fen moss-sedge vegetation	fen moss-sedge vegetation	peat moss-sedge vegetation	peat moss-dwarf birch scrub	peat moss-dwarf birch scrub
Vegetation height (cm)	20-45	25	25	25	25-50	25-45
Shade on ground surface	50% (= rather shady)	3% (= very open)	3% (= very open)	2% (= very open)	85% (= shady)	80% (= shady)

* For more detailed information see tab. 2-4.

Table 2

Study site	Fr5					Fr4					Fr3					Fr2					Fr1				
Trap site No.	1	2	3	4	5	4	1	3	2	5	3	4	1	2	5	1	2	5	3	4	1	2	3	4	5
Area type	fen area																				lava ground elevation				
Moisture	very wet					wet					moist					slightly moist					more or less dry				
Vegetation	*Menyanthes*/fen moss/sedges					fen moss/ sedges					fen moss/sedges					fen moss/sedges					dwarf birches/willows				
Carex nigra					+	1b	1b	1b	1b	2a	1a	1a	+	1a	1a	1a	1a	1a	1a	1a	+	+	+	+	r
*Calliergion giganteum**	5	5	5	5	5	5	5	5	5	4	5	5	5	5	5	5	5	5	5	3					
Carex rostrata	2a	2a	1b	1a	1b																				
Menyanthes trifoliata	2b	2a	2b	2b	2b																				
Eriophorum angustifolium					r	r	+		r	r	+	r													
Carex saxatilis						+	+	+	+	+	+	+	r												
*Pseudobryum linelidioides**						+	+	+	+	+	+								+						
*Campylium spicatum**						1a	+	+	1a	+	+	+	+	+	+	+	+	+	+						
Carex chordorrhiza						1a	+	1b	+	1b	+	1a	2a	+	+	1a	1a	+	+	+					
Salix phylicifolia									+	+	1b		+	+	1b	+	1b	1b	+	+	1b	3	3	3	2a
Betula nana													r	+		1a	1b	1b	1a	1b	4	3	1a	2a	2a
*Salix lanata/arctica***																2a	2a	2a	2a	2a	+	2a	1a	1a	1b
Bistorta vivipara																+	+		+	1a	+	+	+	+	+
*Sphagnum teres**							+									1a		1a	+	1a	+	1a	+		
Thalictrum alpinum																+			+	+			+	+	+
Luzula multiflora																+	+	+	+	+					
Potentilla palustris																	+		+	+					
Tofielda pusilla																		+	+	+					
Selaginella selaginelloides																			+	+					
*Hylocomium splendens**																				3	5	5	5	5	5
Empetrum nigrum																				+	1b	2a	2a	1b	1b
Vaccinium uliginosum														r							2b	2a	1b	2a	2a
Equisetum arvense																					+	+	+	+	+
Bartsia alpina																					+	+		+	+
Gramineae																						+	+	+	
Juncus alpinus																						+			
Festuca vivipara																					+				
Anthoxanthum odoratum																					+				
*Rhytidiadelphus squarrosus**																					+				
Carex capillaris																									+
Juncus arcticus																									+
Platanthera hyperborea																								+	
Cardamine pratensis															r										
Carex rariflora																		+							
Rumex spec.													+												
Pinguicula vulgaris																			+						
Carex limosa								1a																	

* = moss, ** = no distinguishing of species

Table 3. Vegetation mapping results from around each trap site in the grazed part of Framengjar (July 1994). Cover abundance values see table 2.

Study site	Frgr3					Frgr2					Frgr1				
Trap site No.	2	3	1	4	5	1	2	3	4	5	5	3	1	4	2
Area type	fen area										Lava ground elevation				
Moisture	wet					moist					more or less dry				
Vegetation	fen moss-sedge vegetation					fen moss-sedge vegetation					dwarf birch-willow scrub				
Carex nigra	1a	+	1a	1a	1a	1b	1b	1b	1a	1b	1a	+	+	+	1a
C. limosa	+	+													
C. saxatilis	+	+	+	+											
*Calliergon giganteum**	5	5	5	5	5	5	5	5	5	5					
Carex chordorrhiza	1b	1a	1a	1b	1b	1a	1a	1a	+	1a					
Eriophorum angustifolium	+	+	+	+	+				1a	+					
Cardamine pratensis							+	r							
Salix phylicifolia						+	+	+	+	+	1a	+	+		
*Salix lanata/arctica****						+		+	+	+		+	+		1a
Betula nana							+	+	1a	+	2a	2a	2a	1b	2a
Bistorta vivipara						+		+		+	+	+	+	+	+
Pinguicula vulgaris									r	+	+	+	r	+	+
Tofielda pusilla									r		+	+	+	+	+
Luzula multiflora										+	+		+	+	+
Vaccinium uliginosum											2a	2b	2b	2a	2a
Empetrum nigrum											+	1a	2a	2a	1a
*Hylocomium splendens**											5	5	+	+	4
*Bartramia ithyphylla**											1a	+	2a	1a	2a
Bartsia alpina											+	+	+	1a	+
Thalictrum alpinum											+		1a	+	1a
*Sphagnum teres**											1b	1a	+	+	
Platanthera hyperhorea												+	+	+	
Juncus arctica												+	1a		+
Dryas octopetala													+	1a	+
Silene acaulis													+	1a	+
Selaginella selaginoides													+	+	+
*Rachomitrium lanuginosum**														1a	1a
Carex capitata														+	+
C. capillaris														+	+
Kobresia myosuroides														+	+
Juncus trifidus													+	+	
*Drepanocladus revolvens**													+	+	
*Cetraria islandica***													+	+	
*Ochroleuca frigida***													+	1a	
*Cladonia chlorophaea***													+		
Leucorchis albida													+		
Equisetum arvense													+		
Carex rariflora														+	
Gramineae														+	
*Cetraria nivalis***														+	
*Peltigera aphtosa***															+
Loiseleuria procumbeus															+
Equisetum variegatum															+

* = moss, **= lichen, *** no distinguishing of species

Table 4. Vegetation mapping results from around each trap site north-west of Lake Myvatn. Cover abundance values see table 2.

Study site	Nes3					Nes2					Nes1				
Trap site No.	5	1	3	2	4	1	4	5	2	3	5	1	3	4	2
Moisture	wet					moist					wet				
Vegetation	peat moss-dwarf birch scrub					peat moss-dwarf birch scrub					peat moss-sedge vegetation				
Luzula multiflora		+	+	+	+	+	+	+	1a	+	+	+	+	+	
Betula nana	1b	2a	1b	2a	1b	3	2b	2a	2b	2b	+				
Salix phylicifolia	1b	2a	1a	1a	1a	1b	2a	+	1b	1a	r				
Vaccinium uliginosum	2b	3	2b	1b	2a	1b	2a	2a	1a	2a	2a				
Carex nigra	1a	+	+	+	1a	+	+	1b	1a	1a	+				
Empetrum nigrum	2a	2b	2b	2a	1b	2a	2a	2a	+	+					
*Aulacomnium palustre**	2a	1a	1b	2a	2a	1a		2a	+	5					
*Rhytidiadelphus squarrosus**				+	+	+	3	3							
*Dicranum fuscencens**	1a	+	1b	1a	2a										
Equisetum arvense	+	+	1a	+	+										
Calluna vulgaris		+	+	+	1a										
*Calliergion sarmentosum**	+	1a	1a		1a										
*Drepanocladus revolvens**	1b	+	+	1a	2a										
*Calliergion richardsonii**	+	+	+	1a	+										
*Sphagnum teres**	2b	2a	2a	2a	2a						3	5	4	4	5
Potentilla palustris											1b	+	2a	1a	+
Carex rostrata											1b	+	2a	2a	2a
Carex rariflora											1b	2a	1b	1a	+
Menyanthes trifoliata										+	+	1a	1a	+	1a
Carex chordorrhiza	+										+			+	+
Calamagrostis stricta												+	+	+	
Carex canescens											+		+	+	
Equisetum palustre						+		+	+	+	+	+	+	+	+
*Sphagnum fimbriatum**						2a	2a	1a	4	1b	3	+	3	3	
Vaccinium oxycoccus							+	+	+	1a		+			
Bistorta vivipara							+		+	+		r			
*Salix lanata/arctica****						1a	1a	+	+	+	r				
Deschampsia flexuosa						2a	2a								
Festuca richardsohnii							+	+							
Pinguicula vulgaris	+							+							
*Pseudobryum cinclidioides**	+		+												
Pyrola minor			+						+						
Viola palustris											+	+			
Epilobium palustre												+			
Festuca vivipara								1a							
Potentilla crantzii								+							
Hieracium spec.								r							
Equisetum variegatum							+								
Thalictrum alpinum							+								
Tofielda pusilla				+											
*Peltigera canina***	+														
Carex limosa	+														

* = moss, **= lichen, *** no distinguishing of species

Table 5. Distribution of the trapped spider species on the different study sites. Nomenclature according to Platnick (1993) in Hänggi et al. (1995)

Vegetation		dwarf birch-willow scrub	fen moss-sedge vegetation	fen moss-sedge vegetation	dwarf birch-willow scrub	n moss-sedge vegetation/ scrub	fen moss-sedge vegetation	fen moss-sedge vegetation	Menyanthes/ fen moss sedge vevetation	peat mosses/ dwarf birch- willow scrub	peat mosses/ dwarf birch- willow scrub	peat moss-sedge vegetation	
Study site		1	Frgr 2	3	1	2	Fr 3	4	5	2	Nes 3	1	Total number of individuals
Family	Moisture	rather dry	moist	wet	dry	slightly moist	moist	wet	very wet	moist	wet	wet	
lyc	*Pardosa sphagnicola* (Dahl)	98	71	32	689	166	120	87	7	543	382	191	2386
lin	*Allomengea scopigera* (Grube)	11	567	38	1	151	357	184	4	32		62	1407
lin	*Erigone psychrophila* Thorell		82	641	1	7	9	24	40				804
lyc	*Arctosa alpigena* (Doleschall)	68	87	3	31	152	131	69		33	6	15	595
lin	*Lepthyphantes mengei* Kulczynski	42	2	3	136	1	1	1		241	2	34	463
lin	*Latithorax faustus* (O.P.-Cambridge)	3			26					158	158	69	414
lyc	*Pardosa palustris* (Linnaeus)	190	58	1	10	2	9	4		64	44	27	409
lin	*Savignia frontata* (Blackwall)	14	12	15	4	47	31	10	5	6	56	71	271
lin	*Gonatium rubens* (Blackwall)	121	2	1	14					4			142
lin	*Leptorhoptrum robustrum* (Westring)	4	3		23	29	9	1		5	34	25	133
tho	*Xysticus cristatus* (Clerck)	7	1		5					57	14	32	116
lin	*Hilaira frigida* (Thorell)	21			50	2		1		14	3	14	105
lin	*Dismodicus bifrons* (Blackwall)	23			20					25	15	3	86
lin	*Erigone capra* Simon		4	26		10	2	2	2			40	86
lin	*Wabasso questio* (Chamberlin)		1			75							76
lin	*Agyneta decora* (O.P.-Cambridge)	10				6	1			3	42	2	64
lin	*Walckenaeria cuspidata* Blackwall				22	7	1			9	3	18	60
lin	*Walckenaeria nudipalpis* (Westring)	1								20	10	20	51
lin	*Walckenaeria clavicornis* (Emerton)	35	2		2	6					5		50
lin	*Bathyphantes gracilis* (Blackwall)	2	1	1	6	2	6	2	1	12	4	8	45
lin	*Meioneta similis* (Kulczynski)	35	3	2		1	1				1		43
lin	*Bolyphantes index* (Thorell)				1			1		10	4	11	27
lin	*Cnephalocotes obscurus* (Blackwall)	8			1			1		9		7	26
the	*Robertus lyrifer* Holm									17		3	20
lyc	*Pardosa hyperborea* (Thorell)	9	1		2						3		15
lin	*Diplocentria bidentata* (Emerton)										11		11
gna	*Gnaphosa lapponum* (L.Koch)	8	2										10
lin	*Erigone atra* Blackwall		1			2						6	9
gna	*Haplodrassus signifer* (C.L.Koch)	4								1	1	1	7
lin	*Walckenaeria nodosa* O.P-Cambridge											6	6
lin	*Mecynargus morulus* (O.P.-Cambridge)	1	1		3								5
lin	*Drepanotylus uncatus* (O.P.-Cambridge)							1				3	4
lin	*Leptothrix hardyi* (Blackwall)	1								1			2
lin	*Lepthyphantes zimmermanni* Bertkau											2	2
lin	*Silometopus ambiguus* (O.P.-Cambridge)									1		1	2
lin	*Erigone arctica* (White)											1	1
lin	*Lepthyphantes complicatus* (Emerton)			1									1
lin	*Maso sundevalli* (Westring)									1			1
lin	*Porrhomma convexum* (Westring)									1			1
lin	*Tiso aestivus* (L.Koch)									1			1
lin	*Walckenaeria atrotibialis* (O.P.-Cambridge)										1		1
	Total	716	901	764	1047	666	238	388	59	1268	799	672	7958

lin= Linyphiidae, lyc= Lycosidae, gna= Gnaphosidae, the= Theridiidae, tho= Thomisidae

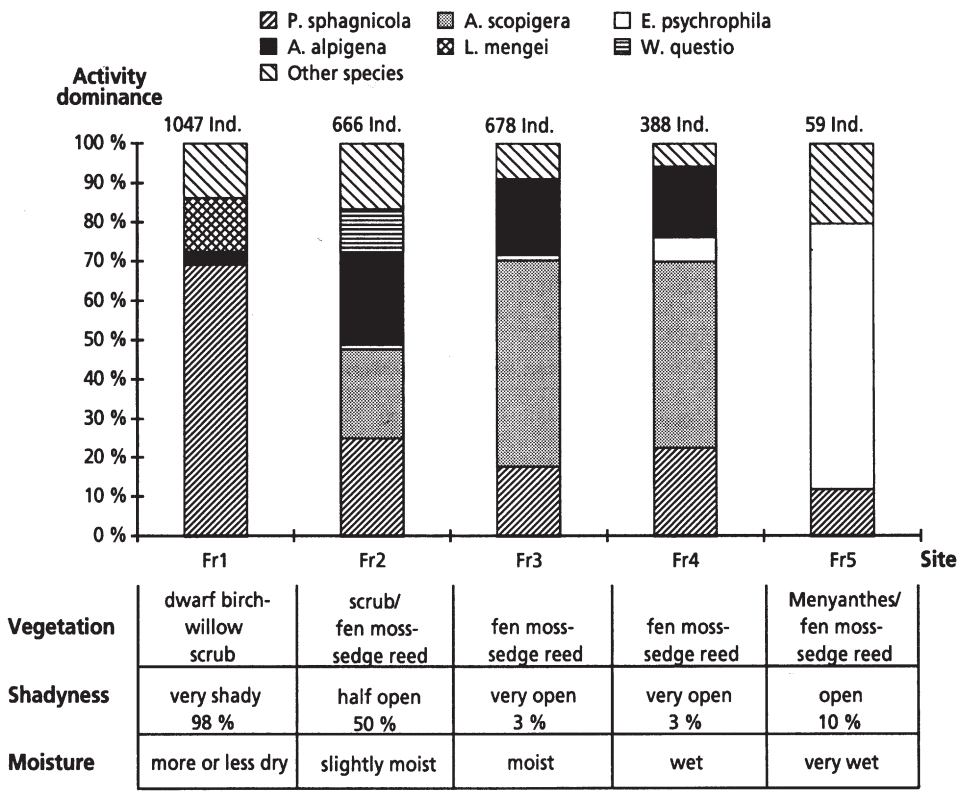


Figure 1a
Activity dominance of the most frequent spider species on the ungrazed part Framengjar (all species shown that occur in >9 individuals at one of the sites)

Figure 1b
Activity dominance of the most abundant spider species on the grazed areas in Framengjar (all species shown that occur in >9 individuals at one of the sites)

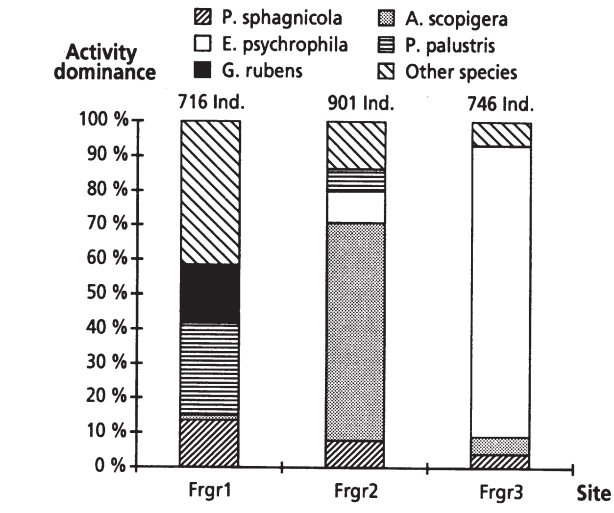
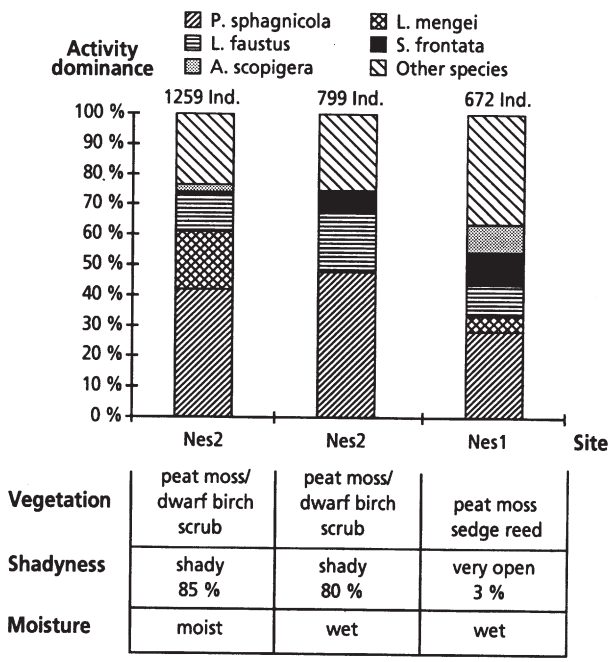


Figure 1c
Activity dominance of the most abundant spider species on the study areas north-west of Lake Mývatn (all species shown that occur in >9 individuals at one of the sites)



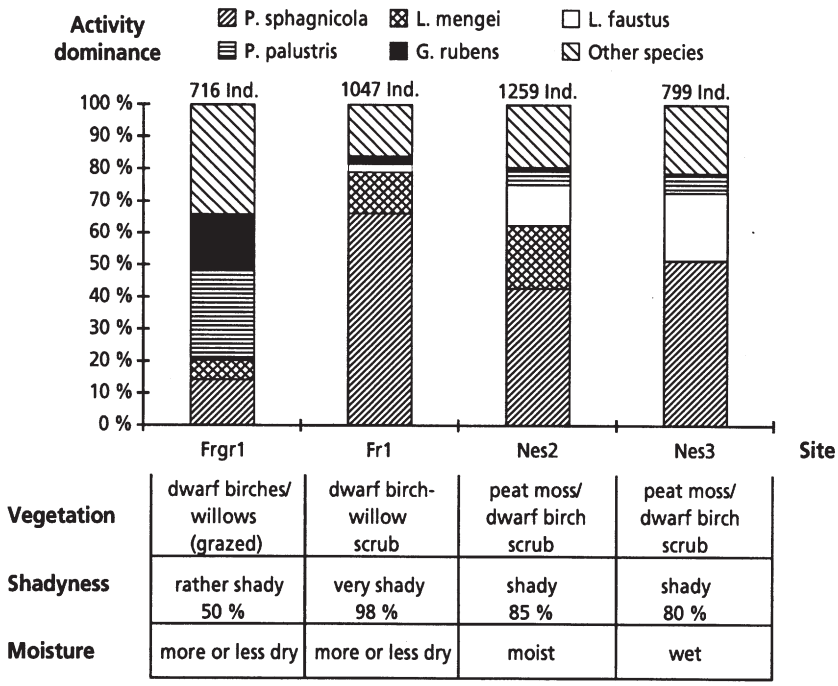


Figure 1d
Activity dominance of the most frequent spider species on the shrubby study areas Frgr1, Fr1, Nes2 and Nes3 (all species shown that occur in >9 individuals at one of the sites)

DISCUSSION

It is not surprising that the different trapping sites can be distinguished by numbers of spider individuals rather than by species composition, considering the patchiness of the mosaic-like habitat, the relative similarity of the subparts and that all study sites were part of one larger wetland complex. Similar results were obtained by several other authors, e.g. by Duffey (1962) in calcareous grassland, by Clausen (1987) in a sand dune habitat and by Villepoux (1990) in a *Sphagnum* bog.

Because a centre of occurrence could be identified for numerous trapped spider species on wetland areas of a certain character, the spider species were grouped according to types of habitat. The 11 study sites naturally differed in various parameters, but the gradient of moisture and the degree of vegetation cover (including both aspects of shade on the ground surface and increasing complexity and height of structure from open moss carpet to scrub thicket) were considered to be the most relevant (compare also Tretzel 1952, Platen 1984, Martin 1991).

In Figure 2 a-y, the study sites were arranged along two axes, moisture and vegetation cover, with activity abundances shown for all species occurring in at least one of the trapping areas in more than 10 individuals. From these diagrams and Table 5 for less abundant species (but >3 individuals altogether), spider species were grouped according to occurrence in the same habitat types (Table 6). Relatively rarely trapped species were included because they could possibly be particularly specialized, but on the other hand those finds might not be representative and could even be accidental. Some of the less frequently trapped species also

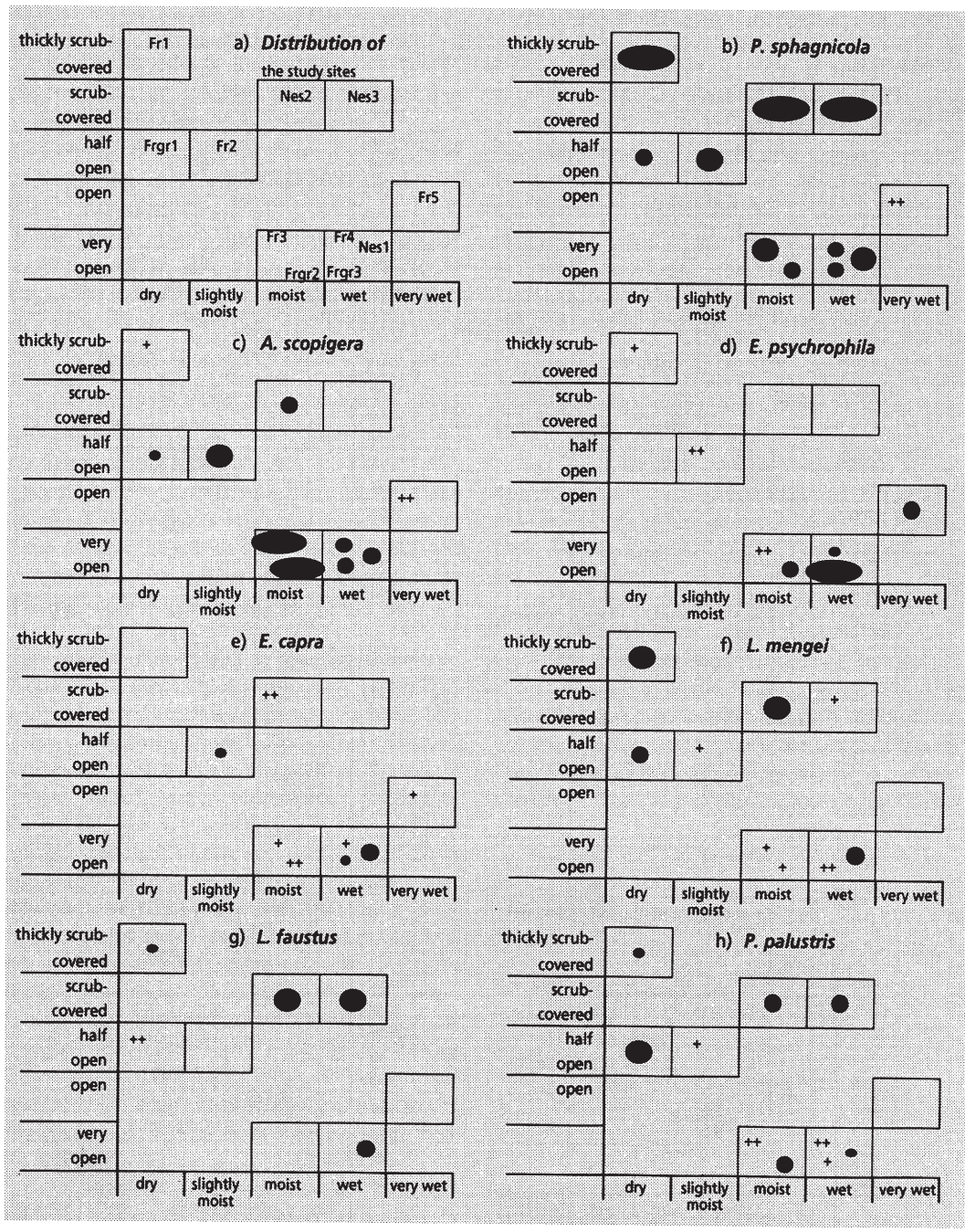


Figure 2 a-y
Activity abundance values of the more frequently caught spider species (>9 individuals in at least one trap group) at the different study sites. The study sites are arranged along the gradients if moisture and shrub cover

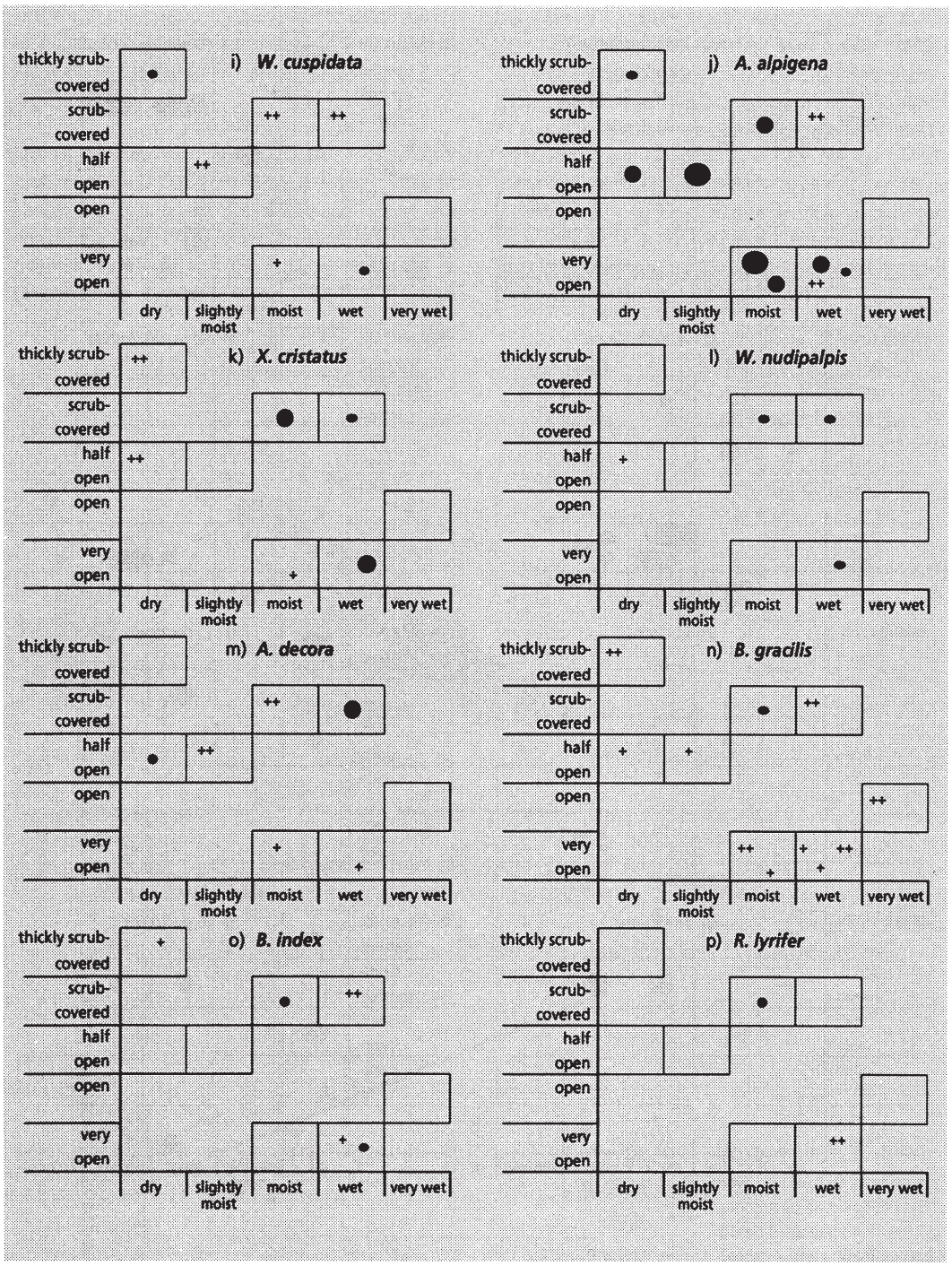


Figure 2 i-p.

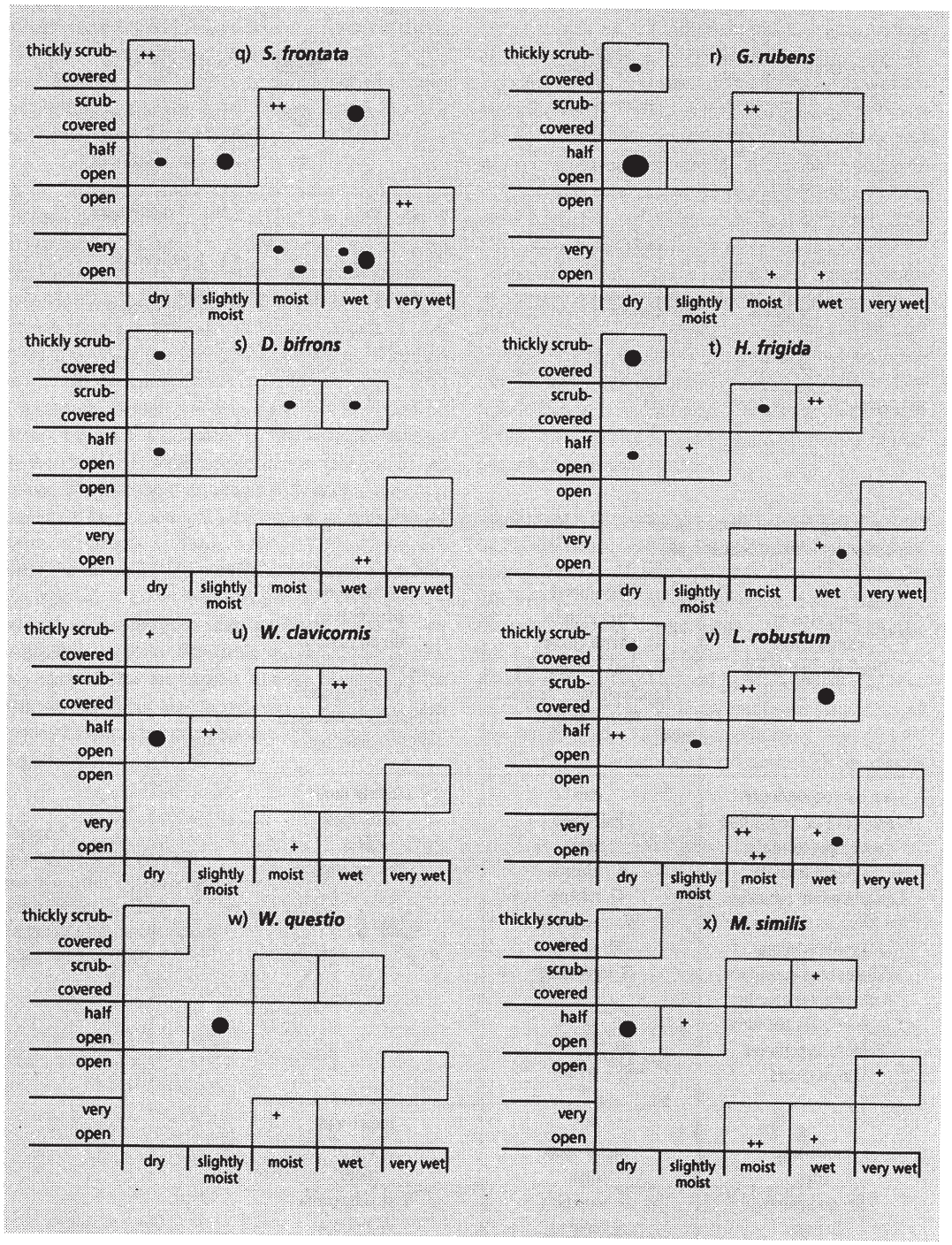


Figure 2 q-x.

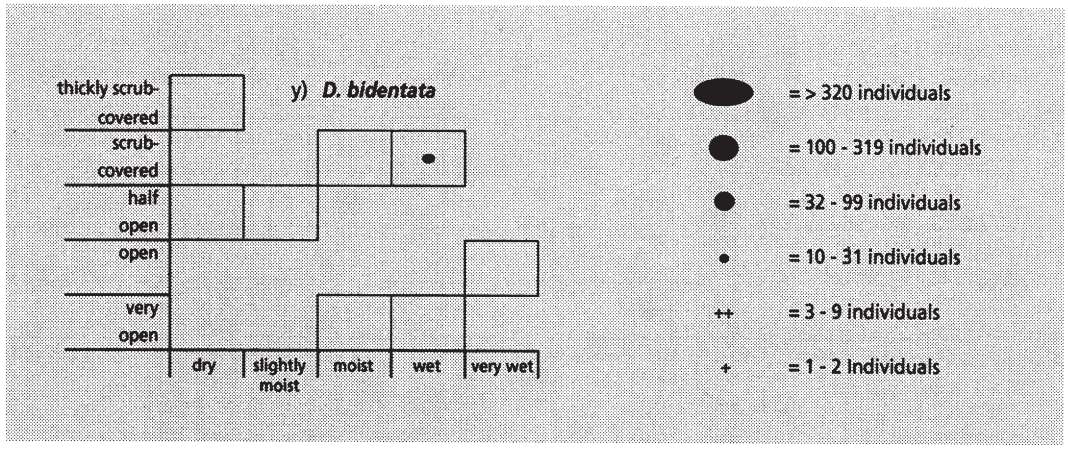


Figure 2 y.

Table 6. Assignment of trapped spider species (>3individuals) to groups according to their distribution in different habitat types

sites rich in shrub cover	**dry-moist sites rich in shrub cover**	**moist-wet sites rich in shrub cover**
Dismodicus bifrons	Pardosa sphagnicola Lepthyphantes mengei Hilaira frigida	Latithorax faustus Robertus lyrifer Diplocentria bidentata Bolyphantes index
no correspondence to moisture or vegetation cover perceivable	**dry half open sites**	**slightly moist half open sites**
Savignia frontata Leptorhoptrum robustum Xysticus cristatus Agyneta decora Walckenaeria cuspidata Bathyphantes gracilis Cnephalocotes obscurus Pardosa hyperborea Erigone atra	P. palustris G. rubens W. clavicornis M. similis G. lapponum	W. questio
moist-wet sites	**moist open sites**	**moist-wet open sites**
W. nudipalpis E. capra	A. scopigera A. alpigena	E. psychrophila W. nodosa D. uncatus

have a considerable part of their activity period during the cold part of the year, as known for instance for *Drepanotylus uncatus*, *Diplocentria bidentata* and *Bolyphantes index* (Koponen 1976, Huhta & Viramo 1979, Agnarsson 1996). In such cases the assignment to a particular group should be viewed as only preliminary (compare Duffey 1993). For the interpretation of Figure 2 a-y, the study site Nes1 needs to be considered separately, because the peat moss carpets around the ponds are rather small and directly surrounded by dwarf birch scrub. Therefore, although Nes1 itself is an extremely open site, it is not astonishing to find comparatively large numbers of species there that are usually found in more shrubby habitats, such as *Lepthyphantes mengei* and *Latithorax faustus*.

The main outcome of this grouping is as follows: in the wetlands around Lake Myvatn a number of species is found most abundantly in densely shrub-covered places. Of those *Pardosa sphagnicola*, *Lepthyphantes mengei* and *Hilaira frigida* prefer drier areas, whereas *Latithorax faustus*, *Robertus lyrifer*, *Diplocentria bidentata* and *Bolyphantes index* have their principal distribution on sites that are classified as moist or wet. A relatively large group of species (*Pardosa palustris*, *Gonatium rubens*, *Walckenaeria clavicornis*, *Meioneta similis*, *Haplodrassus signifer* and *Gnaphosa lapponum*) is assigned to half-open, dry habitat conditions. Of these species *Pardosa palustris* was trapped in wetter and more shrub-covered areas, sometimes even in considerable numbers (compare Table 5), but because maximum catches were clearly obtained in Frgr1, it was still felt appropriate to place it in this group. Species mainly found in open areas can be divided into those that seem to prefer only a medium degree of moisture (*Allomengea scopigera*, *Arctosa alpigena*) and into those that occur preferably in wet places (*Erigone psychrophila*, *Walckenaeria nodosa*, *Drepanotylus uncatus*). However, for some species no correspondence to habitat characteristics could be found.

On the whole, the resulting groups of spiders that were found to be characteristic for certain habitat types correspond with the results obtained by other authors, particularly in northern Europe (e.g. Holm 1950, Brændegård 1958, Palmgren 1972, 1975, 1976, Vilbaste 1972, Hauge et al. 1978, Hauge & Refseth 1979, Platen 1984). For example, *Pardosa sphagnicola*, a species generally viewed as hygrophilous (e.g. Koponen 1968, 1976, Bengtson et al. 1976), has been found on an Estonian raised bog complex mostly on areas not entirely lacking trees (Vilbaste 1972) and in Fennoscandia in treeless, but dwarf shrub-covered bog and wet tundra habitats (Itämies & Jarva-Kärenlampi 1989, Holm 1950). From Iceland records exist of the species having been found in birch woodland (Koponen 1980). *Allomengea scopigera*, a species more common in Scandinavia than further south, has been described there as characteristic for wet meadows, and fen areas rich in sedges (Palmgren 1972, 1976, Hänggi et al. 1995). The general conditions necessary for the occurrence of *Lepthyphantes mengei* in northern Finland are said to be «light sufficient for the development of a shrub stratum over a more or less continuous moss carpet» (Palmgren 1972). The northern-subarctic species *Latithorax faustus* has typically been found in the moss cover (particularly *Sphagnum*) in dark spruce forests in southern and middle Fennoscandia (Palmgren 1976), whereas in Lapland and at high altitudes it occurs abundantly in open heath- or moorland (e.g. Hauge & Refseth 1979, Palmgren 1976, Koponen 1976). Consequently, the occurrence of *L. faustus* in the study area agrees more with the situation in southern Fennoscandia than with the descriptions from Lapland.

Only for a few species does the coincidence between the results of this study and the data in literature fail to agree, which in the case of *Hilaira frigida* and *Dismodicus bifrons* might well be due to lack of sufficiently detailed data. *Walckenaeria cuspidata*, however, is usually described from moist to wet, slightly shady habitats (Palmgren 1976, Platen 1984), but in the study area this species occurs in all kinds of places.

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SAMMENDRAG

Edderkoppfauna (Arachnida: Aranea) fra myrer nordøst på Island - sammenlikning av områder med ulik fuktighet og vegetasjon

Undersøkelsen omfattet overflatefaunaen av edderkopper i et myrområde nordøst på Island. Fuktighet og vegetasjon varierte i området. Målet med undersøkelsen var å undersøke om edderkopp-samfunnene varierte tilsvarende. Fangst med fall-feller, vegetasjonskartlegging og estimering av fuktigheten i jordsmonnet ble utført i 11 ulike lokaliteter.

Totalt ble det samlet 7958 voksne edderkopper fra 41 arter. Lokalitetene varierte mer i edderkopptetthet enn i artssammensetning. Gruppering av edderkopparter på grunnlag av artenes hovedforekomst langs en av fuktighets-gradient og en busksjikt-gradient beskrives.

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