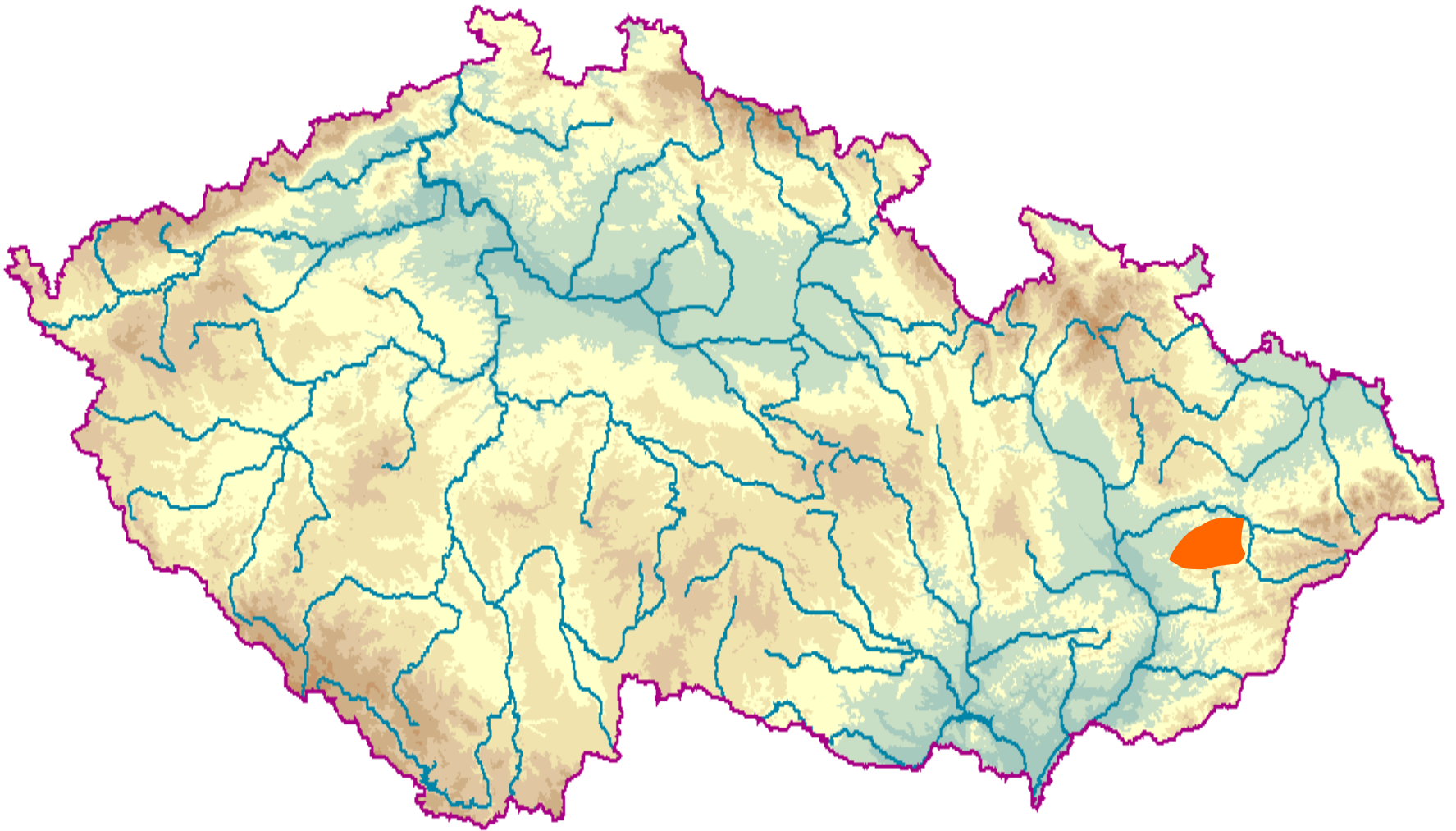


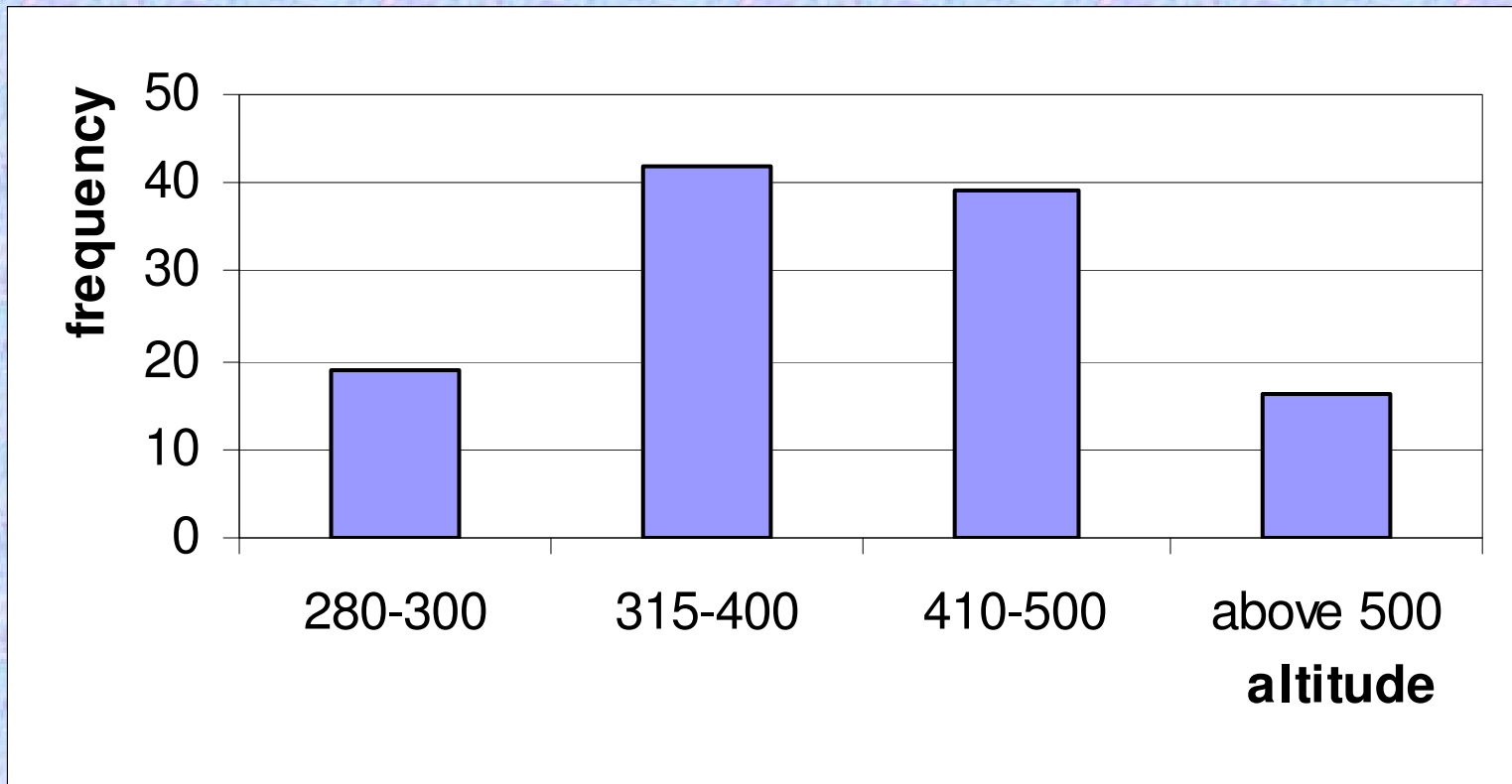
# **WEED VEGETATION IN MORAVIA: PATTERNS IN SPACE AND TIME**

**Zdenka Otýpková**

# Location of the Hostýnské vrchy Mts. in the Czech Republic



## Distribution of relevés according to the altitude



# Main types of weed communities in cereals and root-crops

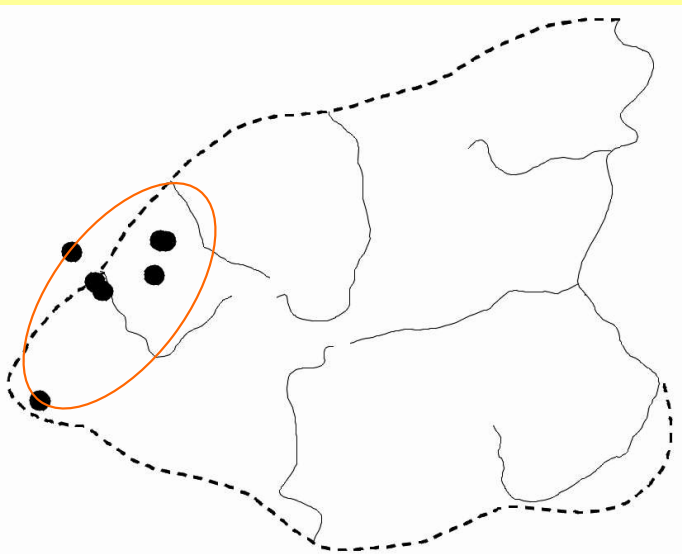
diagnostic species with fidelity  $\Phi > 0.45$  are marked with asterisk, species values are frequencies

	Number of relevés	7	17	21	17	31
<b><u>Caucalidion lappulae</u></b>						
Euphorbio-Melandrietum	<i>Sherardia arvensis</i>	86*	6	5	.	3
	<i>Euphorbia exigua</i>	43*	.	.	6	.
	<i>Silene noctiflora</i>	100*	35	10	.	13
	<i>Euphorbia platyphyllos</i>	29*	.	.	.	.
	<i>Lathyrus tuberosus</i>	29*	6	.	.	.
<b><u>Scleranthion annui</u></b>	<i>Matricaria chamomilla</i>	14	71*	14	12	3
Aphano-Matricarietum	<i>Apera spica-venti</i>	43	94*	52	35	3
	<i>Papaver rhoeas</i>	29	59*	19	.	3
Spergulo-Scleranthetum	<i>Scleranthus annuus</i>	.	.	76*	65	10
	<i>Anthemis arvensis</i>	.	12	86*	53	26
	<i>Centaurea cyanus</i>	.	12	52*	18	6
	<i>Vicia angustifolia</i>	14	12	71*	59	10
- typicum	<i>Persicaria hydropiper</i>	.	.	19	65*	13
- var. with <i>Raphanus raphanistrum</i>	<i>Galeopsis bifida</i>	.	.	.	53*	13
	<i>Holcus mollis</i>	.	6	10	41*	3
	<i>Raphanus raphanistrum</i>	.	.	.	41*	10
	<i>Galeopsis tetrahit</i>	.	.	38	76*	26
	<i>Spergula arvensis</i>	.	6	14	59*	35
<b><u>Spergulo-Oxalidion</u></b>	<i>Galinsoga quadriradiata</i>	14	12	14	.	94*
Panico-Chenopodietum	<i>Echinochloa crus-galli</i>	.	6	5	.	61*
	<i>Chenopodium album agg.</i>	57	18	24	41	94*
	<i>Sonchus oleraceus</i>	57	35	24	29	55
	<i>Sonchus arvensis</i>	14	24	19	24	35

## Species richness in the weed communities of cereals and root-crops

	<b>Mean</b>	<b>Min</b>	<b>Max</b>	<b>Number of relevés</b>
<i>Euphorbio-Melandrietum</i>	34.5	19	47	7
<i>Aphano-Matricarietum</i>	28.18	16	37	17
<i>Spergulo-Scleranthetum</i> typicum	29.67	16	47	21
<i>Spergulo-Scleranthetum</i> var. with <i>Raphanus</i> <i>raphanistrum</i>	33.24	20	48	17
<i>Panico-Chenopodietum</i>	29.10	12	44	31

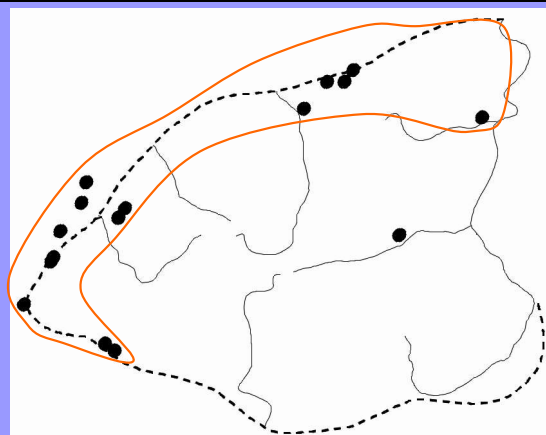
# Caucalidion lappulae



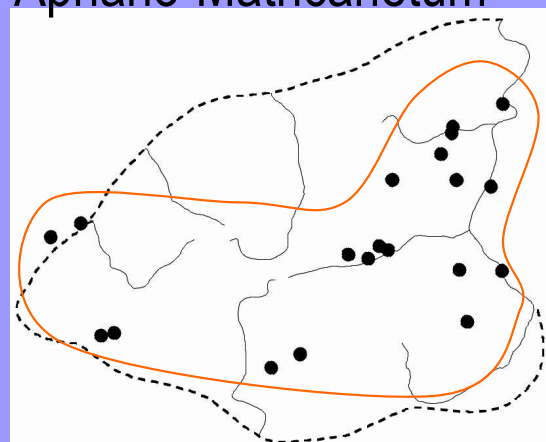
Euphorbio-Melandrietum



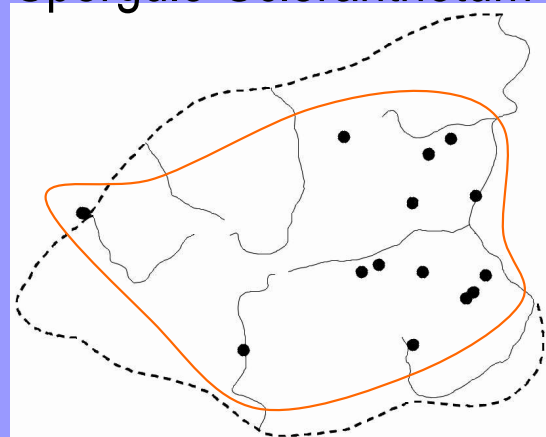
# Scleranthion annui



Aphano-Matricarietum



Spergulo-Scleranthetum typ.



S.-S. var. with Raphanus

# Spergulo-Oxalidion



Panico-Chenopodietum



Division of the Hostýnské vrchy Mts. into eight areas according to the settlement density



# Study area of old botanists in the Hostýnské vrchy Mts.

(years in parenthesis mean date of published papers)

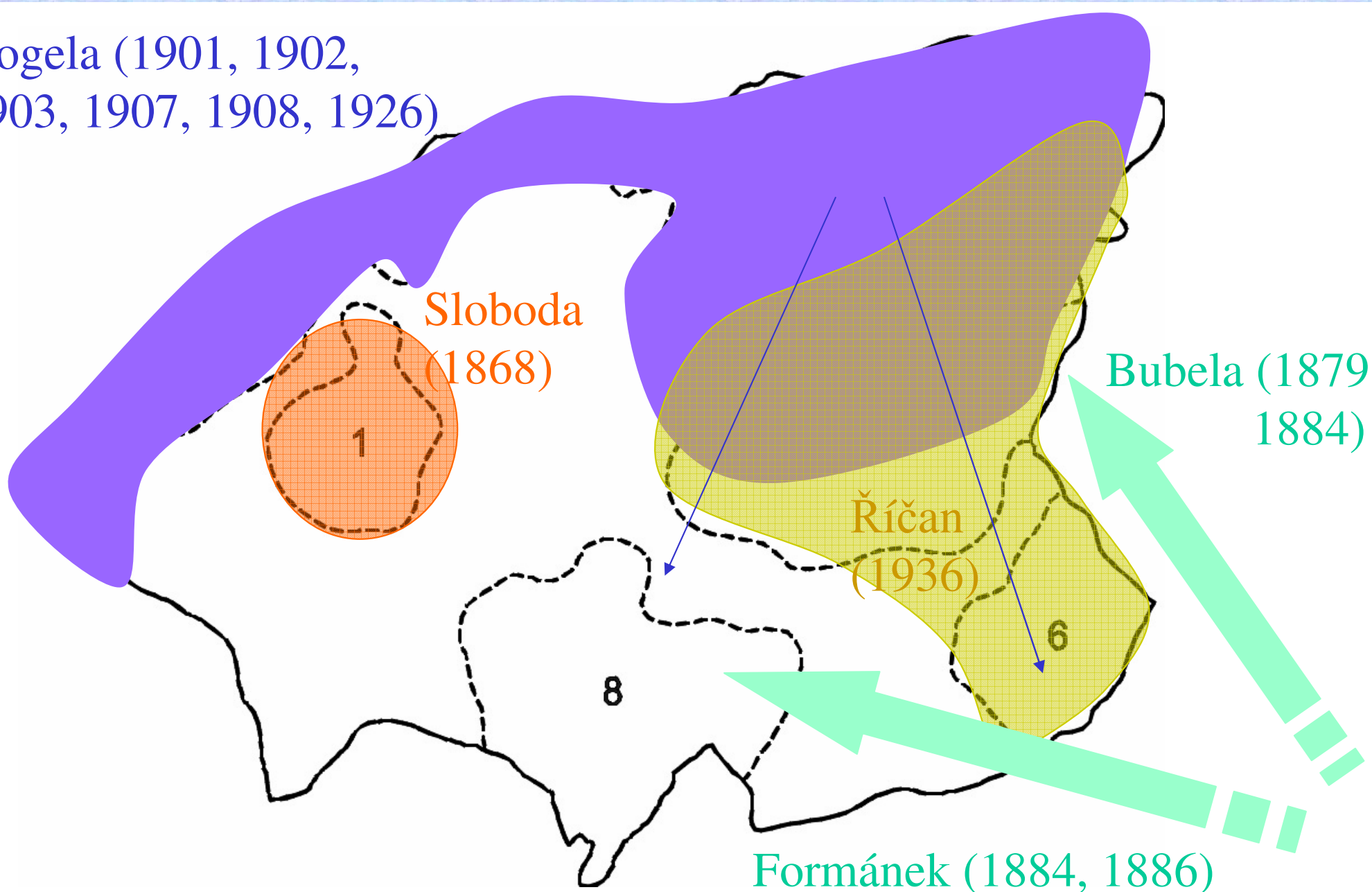
Gogela (1901, 1902,  
1903, 1907, 1908, 1926)

Sloboda  
(1868)

Bubela (1879,  
1884)

Říčán  
(1936)

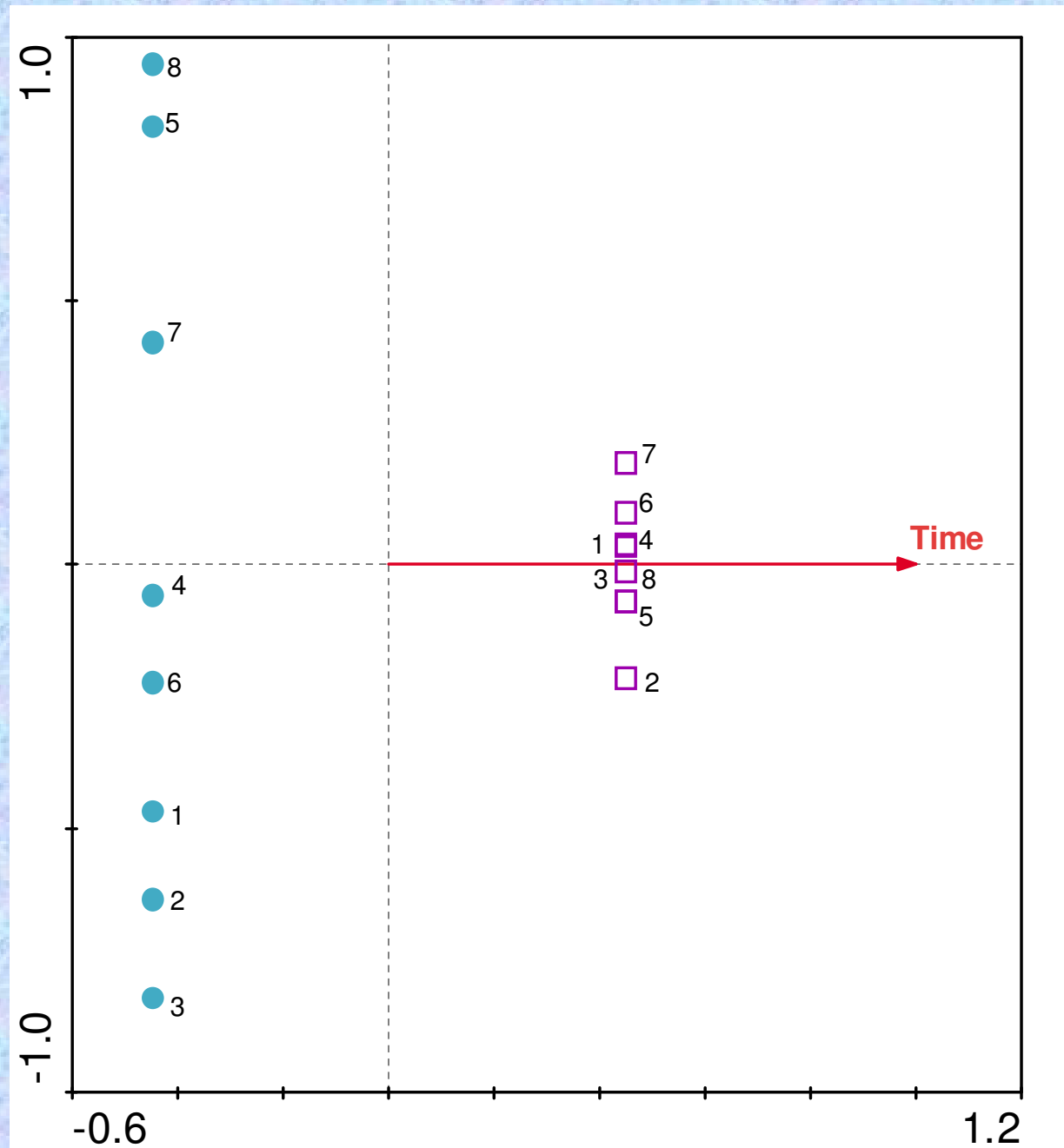
Formánek (1884, 1886)



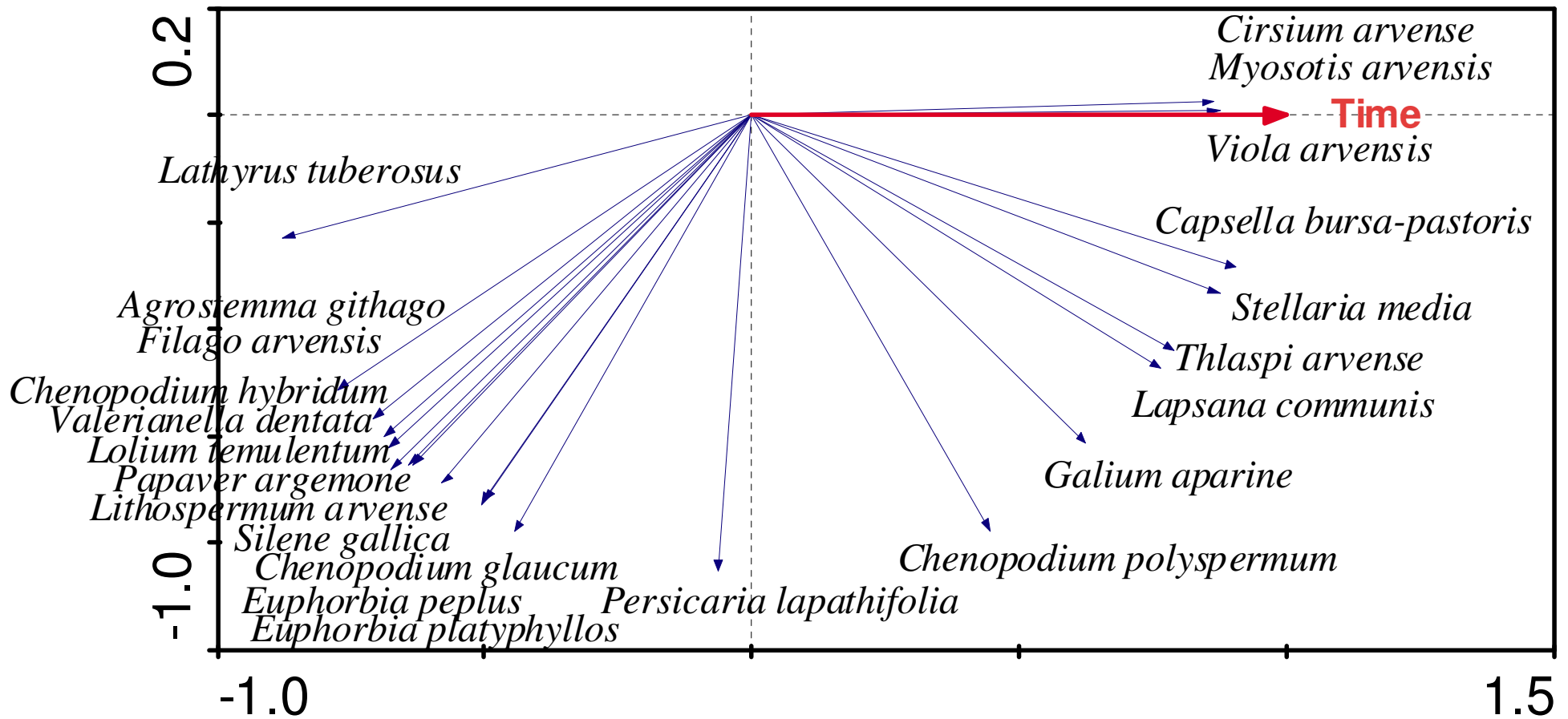


# CCA analysis of 8 areas with *Time* as a variable

- eight subareas in past
- eight subareas in present



# RDA analysis of species composition with *Time* as a variable for both past and present datasets



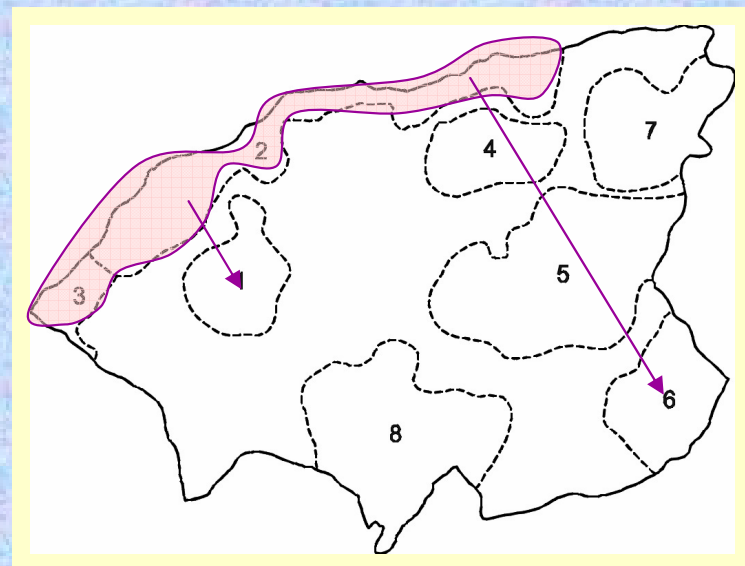


# The most thermophilous species of *Caucalidion lappulae* alliance that are missing nowadays

	1	2	3	4	5	6	7	8
<i>Adonis aestivalis</i>	1	2	1					
<i>Agrostemma githago</i>	1	1	1	1		1	1	
<i>Ajuga chamaepitys</i>						1		
<i>Anagallis foemina</i>	1	1						
<i>Bupleurum rotundifolium</i>		2	2					
<i>Caucalis platycarpus</i>		1	2					
<i>Conringia orientalis</i>		1	1					
<i>Euphorbia falcata</i>			1					
<i>Galium tricornutum</i>			2			1		
<i>Nigella arvensis</i>		1	2					
<i>Scandix pecten-veneris</i>		2	1			1		
<i>Stachys arvensis</i>	1							

?

**Caucalido-Conringietum**

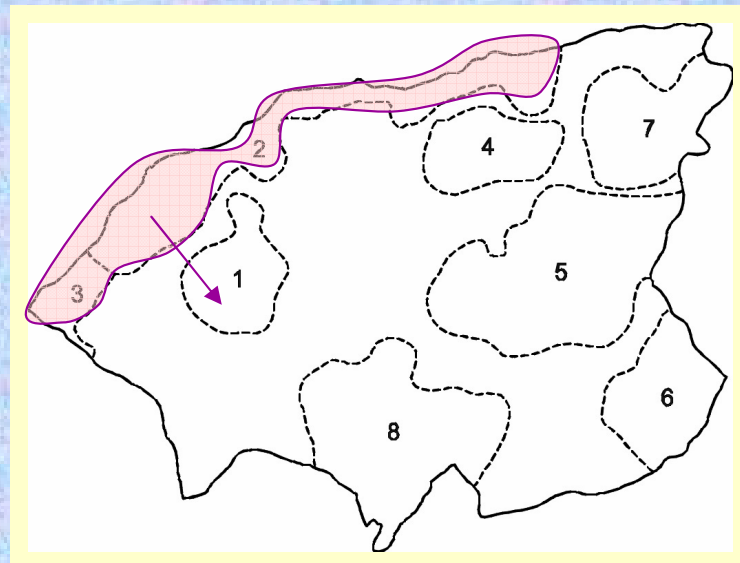


# Thermophilous species of Veronico-Euphorbion alliance that are missing nowadays

	1	2	3	4	5	6	7	8
<i>Descurainia sophia</i>	1							
<i>Digitaria sanguinalis</i>		1	2					
<i>Conyza canadensis</i>							2	
<i>Gagea arvensis</i>		3	2					
<i>Holosteum umbellatum</i>	1		2					
<i>Mercurialis annua</i>	1	2	1	1				
<i>Mercurialis perennis</i>							1	
<i>Setaria verticillata</i>	1		2					
<i>Setaria viridis</i>	2		2	2		2	1	
<i>Thlaspi perfoliatum</i>		1	1					2
<i>Urtica urens</i>	1		1	1				
<i>Veronica agrestis</i>			3					
<i>Veronica opaca</i>		2	1					
<i>Veronica triphyllos</i>		1		1				1

?

Setario-Veronicetum

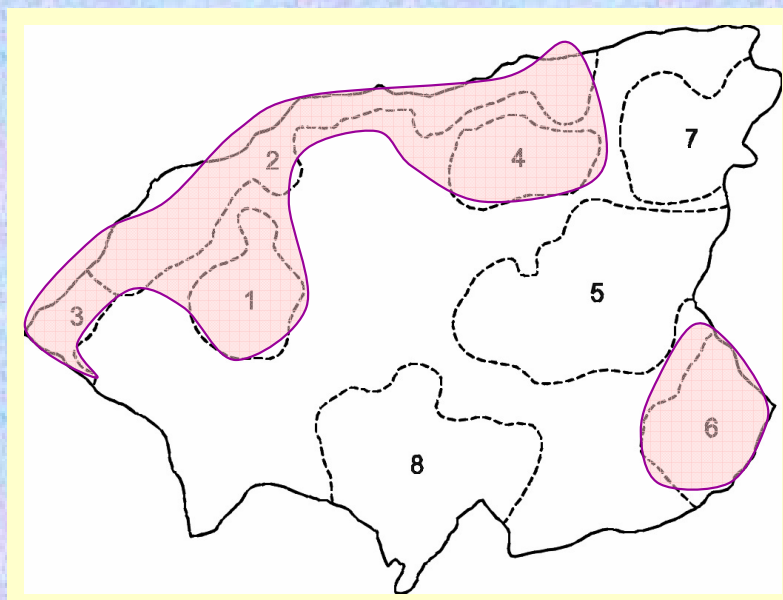


# Species present in both periods but rarer nowadays

PAST

PRESENT

	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
<i>Consolida regalis</i>		3	3			1	1			1						
<i>Euphorbia exigua</i>	1	2	1	2	1	3				1			2		1	1
<i>Euphorbia platyphyllos</i>	1	3	2	1		1				1						
<i>Lathyrus tuberosus</i>	2	2	2	1	1	2	1	2		1						
<i>Lithospermum arvense</i>	2	2	3	1		3	1						1			
<i>Silene noctiflora</i>	1	2	2	2		2		1		2	2					1
<i>Stachys annua</i>	1	3	1			1				1						



?

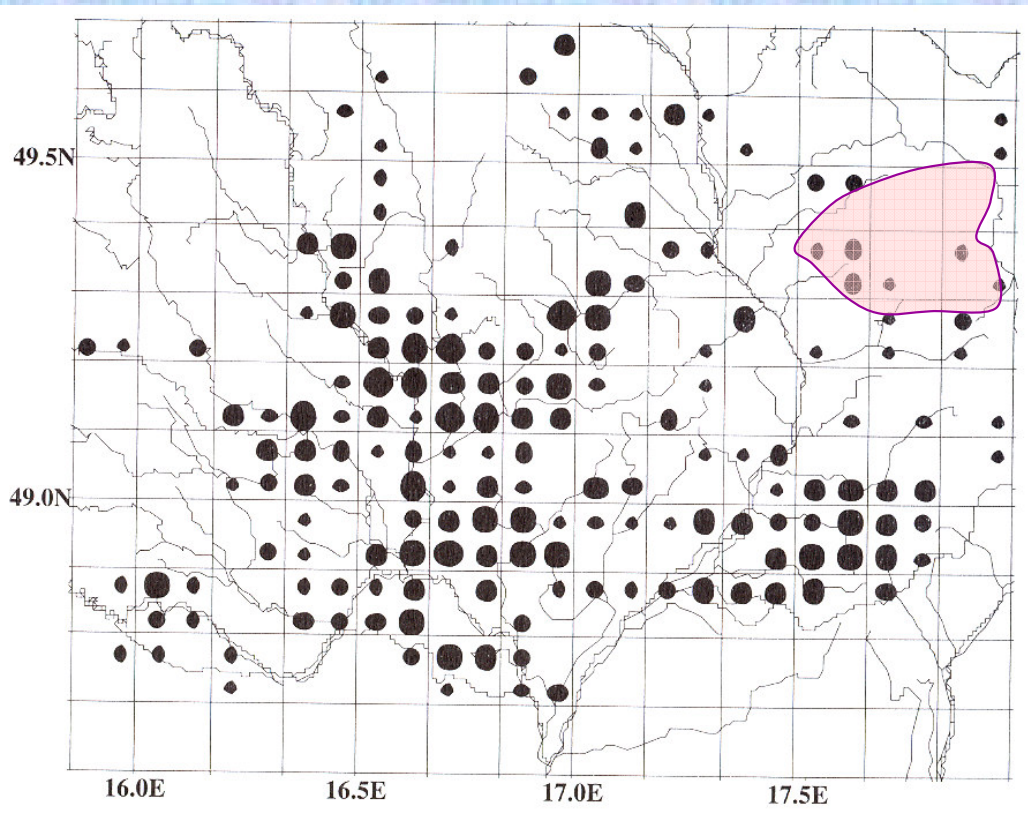
*Euphorbio-Melandrietum  
noctiflorae*

## Diagnostic species of *Caucalido-Conringietum*

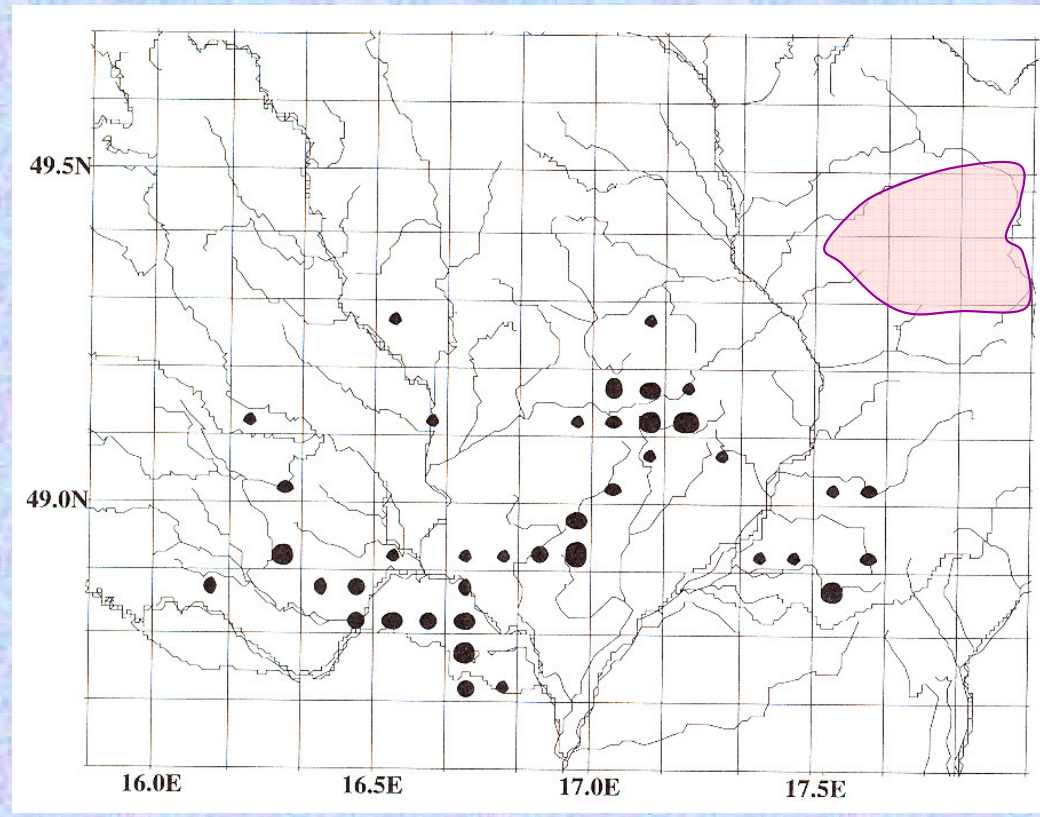
*Caucalis platycarpus*  
*Bupleurum rotundifolium*  
*Thymelaea passerina*  
*Nigella arvensis*  
*Ajuga chamaepitys*  
*Scandix pecten-veneris*

Lososová Z. (2003): Estimating past distribution of vanishing weed vegetation in South Moravia. - *Preslia* 75: 71-79.

# Distribution of *Caucalido-Conringietum* in the past and present in South Moravia



BEFORE 1950







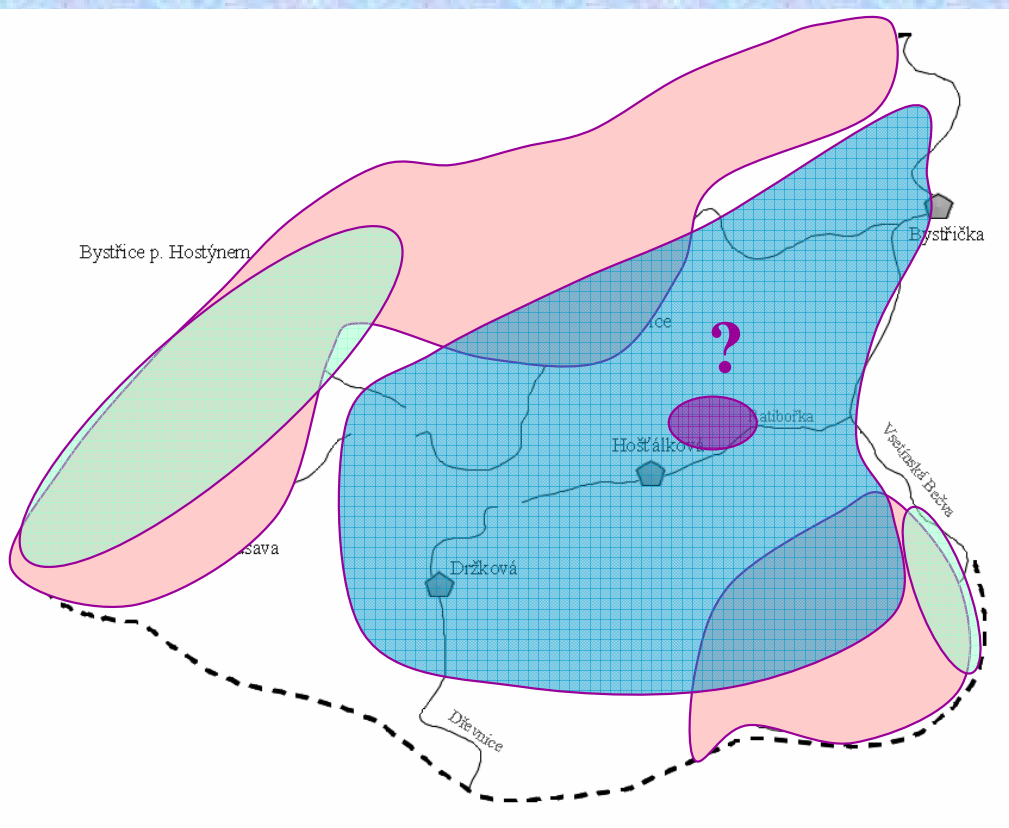
IN 1990-2000

(Lososová 2003)

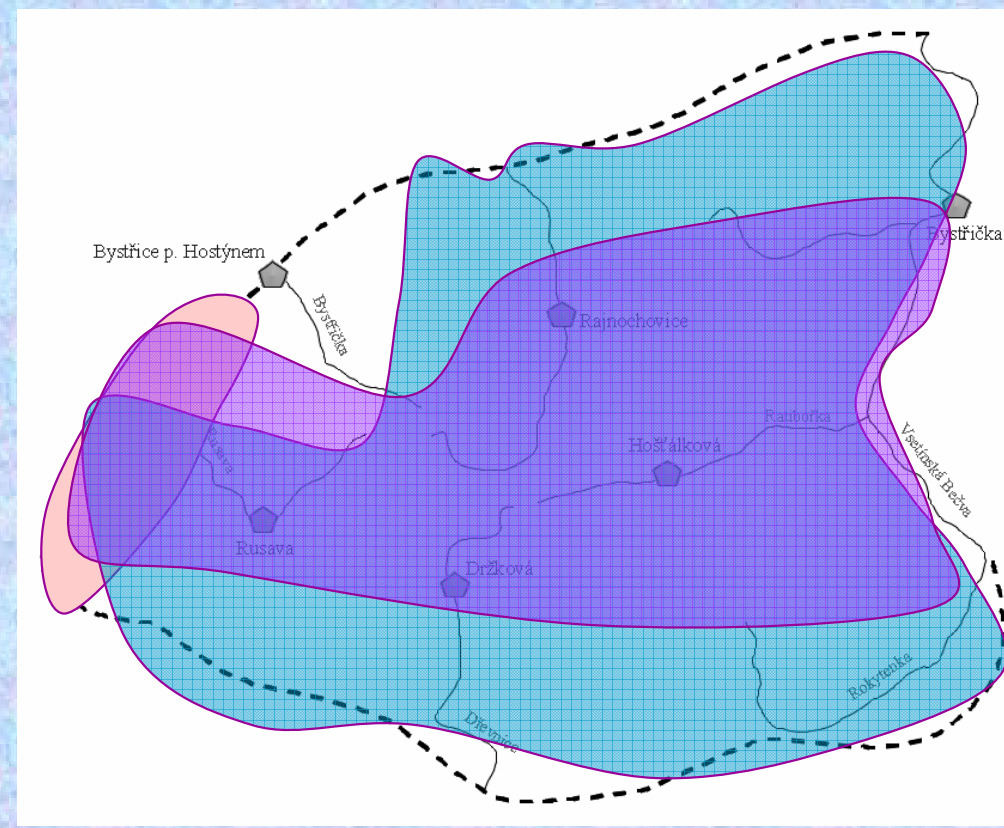


# Changes in the weed communities in the Hostýnské vrchy Mts. during one century

-  *Caucalidion lappulae*
-  *Scleranthion annui*
-  *Veronico-Euphorbion*
-  *Spergulo-Oxalidion*



PAST



PRESENT