Anhang

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Table 6. The percent frequency is shown for 102 understory "species" (herbs, shrubs, tree seedlings, bare ground) based on 25 quadrats in each of 25 stands. Various totals and averages are shown at the bottom of the table. Frequency-class units were determined from this table and were the basis of the ordination.

Column groups: Group A = stands 13, 14, 10, 4, 11, 15, 12, 3, 9 · Group B = stands 6, 1, 21, 8, 7, 2 · Group C = stands 16, 17, 24, 5, 18, 19, 20 · Group D = stands 25, 23, 22. Last column = Group of ave. max. freq.[1]

Ferns, graminoids, monocot herbs

Species	13	14	10	4	11	15	12	3	9	6	1	21	8	7	2	16	17	24	5	18	19	20	25	23	22	Group
Pteridium aquilinum		4	4	4	4	8	16	36		4				24												A
Luzula nemorosa	52	12	8	4	20	8	44	44	60	4	12	4			20	4			12		4					A
L. silvatica	4				4	92	8	4					4	4			4		8	4						A
L. pilosa				4	8		20	4					4	4	4											A
Athyrium filix-femina								4	16	16	36	8	20	20	8	4	4							8	28	B
Dryopteris filix-mas									4	4	4	4	4			4		4	4					4	4	B
Carex silvatica										12	36	20	28	12	24	20	12	4	8	4			16	16	28	B
Maianthemum bifolium							4															8	16			C
Milium effusum												4			4	4	4									C
Carex flacca										4					8	4	4							28	8	C
Neottia nidus-avis										4					4	4	4		4	4						C
Cephalanthera damasonium/longifolia															4	4	4		4	4	4	4				C
Platanthera bifolia																4										C
Festuca gigantea																4			4	16	4					C
Carex montana																			8	48	16					C
Melica nutans																				4	4					C
Tamus communis																						8				C
Brachypodium silvaticum																4	4	8					4			C
Carex digitata																4	12	4				4	16			D
Polygonatum multiflorum							4	8		12				4	4		16	8	12	4	4		4	16	16	D
Paris quadrifolia										4	4	4	4	4	4	16	16	4			4	4	4	20	28	D
Dryopteris spinulosa										4	4	4											4	4	4	D
Deschampsia caespitosa																			4		4		4	4	4	D
Allium ursinum																							100	100	44	D
Arum maculatum																							4	28	20	D
Carex pendula																								4	4	D

Dicot herbs

Species	13	14	10	4	11	15	12	3	9	6	1	21	8	7	2	16	17	24	5	18	19	20	25	23	22	Group
Melampyrum pratense	8																									A
Teucrium scorodonia						4																				A
Prenanthes purpurea				4	4	4	8	24	4	16																A
Hieracium murorum				4		20	12	8		4						4	12				4		4	4		A
Galeopsis tetrahit								8		4	4			4												B
Oxalis acetosella					24	8		20	96	100	100	100	100	100	100	52	36	8						44	100	B
Galium odoratum				8	4	20	16	20	4	80	92	88	88	64	100	100	92	92	68	28	76	4	4	8	56	B
Cirsium oleraceum										4																B
Moehringia trinervia														4												B

Dicot herbs (cont.)

Species	13	14	10	4	11	15	12	3	9	6	1	21	8	7	2	16	17	24	5	18	19	20	25	23	22	Group
Lysimachia nemorum										16		12		8	8											B
Veronica montana												8					8									B
Mycelis muralis										4	4					4							4			B
Geranium robertianum										4	28	24	36	52			4						8	8	8	B
Ajuga reptans										8	4			4	8								4			B
Melittis melissophyllum								4								4	4		24	4	68					C
Solidago virga-aurea						4	8	24		8	4				8		4		4	20	16	8				C
Viola silvestris						4	8			64	8	12	40		36	68	92	12	12	4	48	16	40	12	16	C
Fragaria vesca										4					4	24		4	8	8	8	40				C
Vicia sepium											8					20	20		4	4	24	4				C
Epilobium montanum																4			4							C
Actaea spicata																	4									C
Lathyrus montanus																	4									C
Aquilegia vulgaris																						8				C
Euphorbia dulcis																						12	4			C
Anemone nemorosa						84	8			80				8			68		40	16	92	60	20	96	80	D
Phyteuma spicatum						4				4	52		4		4	8	4	8			44	4	4	36	8	D
Aegopodium podograria												4											4	36		D
Circaea lutetiana												4	16	12	24	4							12	4	60	D
Sanicula europaea										8			4			4	4			8			16			D
Lamium galeobdolon											68						68						36	16	96	D
Geum urbanum										4						4								4	8	D
Mercurialis perennis																	4					92	88	16	60	D
Primula elatior																			4			4	4	20	4	D
Knautia silvatica																					8		4			D
Angelica silvestris																							4			D
Filipendula ulmaria																							4	4		D
Caltha palustris																							4		4	D
Stachys silvatica																							8	4	24	D
Cardamine pentaphylla																							4			D
Lathraea squamaria																							4			D
Crepis paludosa																							4		4	D
Aruncus silvester																									4	D
Impatiens noli-tangeri																								80		D
Ranunculus ficaria																								20		D
Silene dioeca																									4	D
Total frequencies of herb species	60	20	12	48	60	220	156	224	200	300	640	304	316	392	352	392	512	168	204	140	452	392	432	488	852	ACBD[2]

Shrubs

Species	13	14	10	4	11	15	12	3	9	6	1	21	8	7	2	16	17	24	5	18	19	20	25	23	22	Group
Vaccinium myrtillus	76	76	20	48	56	8	56	76		12		8														A
Sambucus racemosa										8				8												B
Rubus idaeus										12	8	4	4	8											12	B
Ilex aquifolium	4				4			4	4	4						4	4		4				4			C
Rubus fruticosus								4	4	16	12	8	4	24	56	52	12	8	44	4	12	16			8	C
Hedera helix					4	32				8	4					80	100	60	20	76	80	96	88	32	44	C
Crataegus monogyna/oxyacantha										4						4	4	8	16	8	24	4	4			C
Daphne mezereum															4	4	4			4	8	24	4			C
Ligustrum vulgare															4	8	4	12	32	4	60	44	4			C
Viburnum opulus														4		8	4	40	28	8	40	24	4	4	8	C
Evonymus europaea																	4	4								C
Rhamnus cathartica																				28						C
Cornus sanguinea																4	4	4	8	4	8	28	4			C
Viburnum lantana																12	4	4	4	4	20	12	4			C
Corylus avellana																		4	8	16	4	16	4			C
Rosa canina																8	4	12	28	4	32	4		4		C
Lonicera xylosteum																12	4	32	20	24	28	8	4	4		C
Sambucus nigra										16	4												4	4	4	D
Berberis vulgaris																						8	4			D
Rubus caesius																						20	16			D
Prunus padus																							4	4	4	D
Ribes grossularia																									4	D
Total frequencies of shrub species	80	76	20	48	64	40	60	84	0	68	24	20	28	48	60	196	168	192	228	140	344	304	148	60	80	BADC[2]

Tree seedlings

Species	13	14	10	4	11	15	12	3	9	6	1	21	8	7	2	16	17	24	5	18	19	20	25	23	22	Group
Sorbus aucuparia		4			4	4													4					4		A
Fagus silvatica	84	20	28	52	20	20	40	36	36	56	16	68	84	28	88	44	28	80	88	24	68	36	8	16	60	B
Fraxinus excelsior					8			28			60	20	80	88	20	60	88	88	44	44	4	60	44	36	60	C
Prunus avium							12			8	8	4			4	12	32	20	16	4	12	20	4		4	C
Quercus petraea		4			4	12				12									4	12	20	8	4			C
Acer campestre																16	4	12		12	20	12				C
Carpinus betulus																16	4	12								C
Acer pseudoplatanus		4	4	4						8	12	12	4		52	76	8						52	56	52	D
Total number of understory species	5	8	5	10	15	11	15	21	9	29	30	22	21	27	24	43	45	31	34	30	37	40	47	38	39	ABCD[3]
Average number of species per group	A = 11									B = 25.5						C = 37							D = 41			ABCD
Total frequencies of understory species	224	128	64	160	152	292	260	384	236	440	760	428	512	612	556	720	920	556	604	376	920	832	692	660	1052	ABCD
Average total frequency per group	A = 211									B = 551						C = 704							D = 801			ABCD
Total of frequency-class units[4]	10	10	5	12	16	15	18	26	13	34	43	28	30	35	33	53	60	39	41	33	50	51	57	46	55	ABCD
Bare ground (Freq.%, qdrts with no plants)		20	56	12	28		12	4	4																	(BCD)A
Estimated ground cover %[5]	2	1	1	2	1	2	2	2	1	4	5	3	4	4	5	4	4	3	3	2	3	4	5	5	5	ACBD

Table 6, Footnote 1. Total frequency of a group divided by number of stands in a group gives the group of average maximum frequency.

Footnote 2. Order of the groups from low to high average frequency is shown.

Footnote 3. Order of the groups from low to high totals, averages, etc. are shown.

Footnote 4. Frequency values were assigned for each species in each stand as follows: 1, 4-32% freq.; 2, 36-64%; 3, 68-100%. These frequency-class units were the basis of the similarity table (Table 2) and of the ordination (Figures 1-3).

Footnote 5. Estimates were made in the field by the following categories: 1, < 10% cover; 2, 10-25%; 3, 25-50%; 4, 50-75%; 5, > 75%.

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Table 9. Basal area (B.A.) in square inches per acre is shown for each species. The smaller fractional number below the B.A. for each species is relative B.A. (which sums to 100.0% for each stand). Relative B.A. is used as a measure of relative importance. For each stand, the most important or dominant tree species, and the second most important species on the basis of relative B.A. is shown (by underlining). Various totals and average sizes are also shown.

Each cell is shown as "B.A. / relative %".

Tree species	Group A									B							C						D		
Stand	13	14	10	4	11	15	12	3	9	6	1	21	8	7	2	16	17	24	5	18	19	20	25	23	22
Abies alba				447 / 3.0	1530 / 8.8		167 / 1.0	80 / 0.4		1645 / 8.4	9645 / 44.9	2020 / 11.7	11575 / 39.4	14480 / 56.9	885 / 4.3	5702 / 25.0	13984 / 70.0	425 / 2.0		3350 / 27.2	115 / 0.8		7340 / 32.4	2484 / 12.8	2552 / 10.1
Larix decidua								1055 / 4.7					1700 / 5.8												
Picea abies			10520 / 55.0	1921 / 12.7	2735 / 15.7	1504 / 7.5	307 / 1.9	6100 / 27.4	3515 / 21.3	8900 / 45.5	5710 / 26.6	1025 / 5.9	3425 / 11.7	3345 / 13.1	12685 / 61.2	4869 / 21.4		2470 / 11.7		590 / 4.8		1860 / 9.9	1720 / 7.6		
Pinus silvestris	13250 / 54.6	14275 / 62.6	900 / 4.7	1000 / 6.6	5470 / 31.5	7564 / 37.9	6997 / 43.0	7975 / 35.7					1600 / 5.5			834 / 3.7						11564 / 61.8			1256 / 5.0
Total relative B.A. (conifers)	54.6	62.6	59.7	22.3	56.0	45.4	45.9	68.2	21.3	53.9	71.5	17.6	62.4	70.0	65.5	50.0	70.0	13.7	0.0	32.0	0.8	71.7	40.0	12.8	15.1
Fagus silvatica	5725 / 23.7	2955 / 13.0	7092 / 37.1	9511 / 62.9	7140 / 41.1	9580 / 47.9	8811 / 54.1	3820 / 17.2	13020 / 78.7	9035 / 46.1	6085 / 28.5	14255 / 82.4	10570 / 36.0	5495 / 21.7	7150 / 34.5	11379 / 50.0	4008 / 20.1	12130 / 57.2	12328 / 72.5	7630 / 62.0	14455 / 99.2	5228 / 27.9	1332 / 5.9	584 / 3.0	584 / 2.3
Quercus petraea			620 / 3.2	2241 / 14.8	510 / 2.9	1340 / 6.7		2850 / 12.8						2100 / 8.3				4760 / 22.6	4692 / 27.5				1500 / 6.6		520 / 2.1
Fraxinus excelsior	5265 / 21.7	5050 / 22.2											475 / 1.6				1104 / 5.5			660 / 5.4		60 / 0.4	7580 / 33.4	13388 / 69.2	12720 / 50.5
Acer pseudoplatanus																	888 / 4.4						2560 / 11.3	1796 / 9.3	7204 / 28.6
Carpinus betulus																		185 / 0.9					240 / 1.1	320 / 1.7	
Alnus glutinosa																							380 / 1.7	364 / 1.9	364 / 1.4
Betula pendula		510 / 2.2						400 / 1.8										1180 / 5.6							
Prunus avium																				80 / 0.6					
Total relative B.A. (angiosperms)	45.4	37.4	40.3	77.7	44.0	54.6	54.1	31.8	78.7	46.1	28.5	82.4	37.6	30.0	34.5	50.0	30.0	86.3	100.0	68.0	99.2	28.3	60.0	87.2	84.9
Total B.A. per acre	24240	22790	19132	15120	17385	19988	16282	22280	16535	19580	21440	17300	29945	25420	20720	22780	19984	21150	17020	12310	14570	18712	22652	19340	25200
Average size tree (sq. in.)	131	123	106	71	56	77	61	86	107	122	116	94	189	104	99	64	73	103	77	46	66	71	90	83	126
Average size tree (sq. cm)	845	793	684	458	361	497	393	555	690	787	748	606	1219	671	639	471	471	664	497	297	426	458	580	535	813

Tab. 1 — Classi di presenza delle principali specie caratteristiche, differenziali e compagne delle associazioni seguenti.

A. Associazioni da noi rilevate (N° rilievi e Nr° rilievi dei posa meridionale delle Alpi)

1. Anthyllido-Teucrietum hircanicum [1961] Braun-Blanquet 1954 [Rilievi 4 di Bertossi 1957 , 1 di Ubbi 1952 , 5 di sequ.]
2. Anthyropogorum gryllii tenothyrsum Koch 1943, variante acidofila
3, 4. Calliosnytiliterum secundo Oberdorfer 1957
...

Titolo	Numero di rilievi																			