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*The phytosociology of calcareous grasslands in the
British Isles.*

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TABLE 31a. ASSOCIATION CARICETUM LEPIDOCARPAE-HOSTIANAE

b. ASSOCIATION SCHOENETUM NIGRICANTIS

	(a)								(b)	
	NP	NP	NP	NP	D	NP	NP	NP		
Aufnahme No.	10	9	43	126	128	101	104	105	5	6
Species No.	33	34	29	34	36	32	34	33		
Aspect.	SE	W	SW	S	.	E	W	NW		
Slope °.	30	40	2	.	.	2	.	.		
Cover %: Herbs.	90	90	80	100	90	90	80	90		
Bryophytes										
etc.	30	25	40	30	45	40	40	30		
Quadrat size (m ²)	2	2	4	4	2	2	2	2		
Av. sp. no.	33					Av. sp. no.			24	29
						33				

Association Character species

Carex lepidocarpa	2.3	2.3	3.3	+	1.2	1.2	+	2.3	.	I
C. hostiana	+	2.2	1.2	2.3	.	2.3	3.4	1.1	III	III

Differentials of Sub-ass.
molinietosum

Molinia coerulea	3.3	2.3	1.2	2.2	1.2	+	.	.	V	III
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Differential of Sub-ass.
kobresietosum

Kobresia simpliciuscula	3.4	1.2	3.3	.	.
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Differentials of Schoenetum
nigricantis

Schoenus nigricans	V	V
Eleocharis quinqueflora	V

Alliance Character species

Carex dioica	1.1	+	1.2	3.3	+	1.2	.	1.2	I	I
Cratoneuron commutatum	+3	2.3	+3	.	+	+3	1.3	2.3	I	II
Primula farinosa	2.1	1.1	+	+	.	+	+	+	III	III
Campyllum stellatum	.	1.2	+3	+	+	1.3	+	+	III	V
Pinguicula vulgaris	1.1	1.1	.	1.1	+	+	.	+	V	V
Eriophorum latifolium	+	1.1	+	+	.	.	.	.	II	II
Carex capillaris	.	.	.	+	.	+	1.2	+	.	.
Scorpidium scorpioides	.	.	+3	.	.	+	.	1.3	IV	V
Equisetum variegatum	.	.	.	.	.	+	+	+	.	.
Philonotis calcarea	.	.	.	.	+	1.3	.	.	I	.
Bartsia alpina	.	.	+	.	.	.	+	.	.	.
Tofieldia pusilla	.	.	.	.	.	.	+	+	.	.

Companions

Carex panicea	1.1	1.1	1.1	1.2	2.3	1.1	+	+	V	V
Carex pulicaris	+2	+	+2	+2	.	+2	2.2	+	I	II
Thymus drucei	+2	+	.	+2	+	+	+	+	.	I
Linum catharticum	+	+	+	+	+	.	+	+	I	I
Juncus articulatus	1.1	1.2	1.1	+	1.1	1.1	.	+	I	.
Potentilla erecta	.	.	+2	+	+	1.2	+2	+	IV	IV
Prunella vulgaris	.	+	+	+	+	+	.	+	I	II
Sesleria caerulea	1.2	+2	+2	.	.	+2	.	+2	.	I
Deschampsia caespitosa	1.2	+2	.	+	+2	.	+2	.	.	I
Succisa pratensis	+	+	+	.	.	+	+	.	IV	V
Cirsium palustre	+	+	+	.	+	.	+	.	I	II
Leontodon hispidus	.	+	+2	.	+	.	+	+	.	I
Bryum pseudotriquetrum	+2	+	+	.	+2	.	.	+2	I	II
Triglochin palustre	.	+	1.1	+	+	.	+	.	I	I
Pellia fabbroniana	+	+	.	+	+	.	.	+	II	I
Ctenidium molluscum	.	+2	+2	3.3	+	.	+2	.	II	III
Eriophorum angustifolium	.	.	.	.	+	+	+	+	II	I
Parnassia palustris	1.1	+	.	.	+	+	.	.	I	III

Mnium affine	+	.	+	+	.	.	+	.	I	I
Festuca rubra	+.2	+	.	.	+.2	.	.	+	.	I
Selaginella selaginoides	.	+	+	.	.	+	+	.	I	II
Carex nigra	.	.	.	.	+	1.1	+.2	1.2	II	I
Briza media	+	+	+	.	+	.	.	.	.	I
Agrostis stolonifera	.	.	.	+.2	+	+.2	+.2	.	V	V
Drepanocladus revolvens	.	.	.	1.2	+.2	+	1.2	.	IV	IV
Campanula rotundifolia	+	+	.	+	.	.	.	+	.	I
Festuca ovina	+	+	.	+	.	+	.	.	.	I
Carex flacca	1.1	+	.	1.1	.	.	.	1.1	III	IV

Also (10) Scabiosa columbaria +; Helictotrichon pratense +.2;
Fissidens-cristatus +; Seligeria sp. +; Galium verum +; Euphrasia
nemorosa +; Polygala vulgaris +;

(9) Carex demissa +; Equisetum palustre +; Tussilago
farfara +;

(43) Thalictrum alpinum 1.1; Drepanocladus uncinatus +;
Galium sternerii +;

(126) Valeriana dioica 1.1; Anthoxanthum odoratum 2.2;
Carex echlinata 1.2; Ranunculus acris +; Acrocladium cuspidatum
3.3; Achillea ptarmica +; Cardamine pratensis +; Erica tetralix
+.2;

(128) Blysmus compressus 1.2; Carex hirta +; Caltha palustris
+; Sagina nodosa +; Tussilago farfara +; Acrocladium cuspidatum
1.3; Fissidens adianthoides +; Aulacomnium palustre +; Solenostoma
triste +;

(101) Carex echinata 1.1; Ditrichum flexicaule +; Bryum
pallens +; Catasopium nigrum +;

(104) Juncus triglumis +; Plantago maritima +.2; Minuartia
verna +.2; Tritomaria quinquedentata +; Barbilophozia hatcheri +;
Peltidea apthosa +.2;

(105) Bellis perennis +; Thalictrum alpinum +; Drepanocladus
uncinatus +.3; Diplophyllum albicans +; Solenostoma triste +;

Also in Schoenetum typicum Cirsium dissectum III, Euphrasia scotica
III, Fissidens adianthoides III;

eleocharietosum Cirsium dissectum III,
Euphrasia scotica III, Fissidens adianthoides III, Riccardia pinguis
III.

TABLE 32.

NARDO-GALIETUM SAXATILIS PRSG. 1949

	D	D	D	D	D	NP	NP	NP	SW	SW	NP
Aufnahmen No.	43	102	27	104	91	74	36	88	44	49	37
Species No.	24	24	18	15	16	25	21	24	25	22	24
Aspect.	NE	.	SW	N	SW	S	W	SW	W	W	SW
Slope °.	20	.	30	10	20	5	10	25	10	5	15
Cover %: Herbs.	100	100	100	100	100	100	100	100	100	100	95
Bryophytes.	5	2	5	5	10	5	10	15	10	10	20
Quadrat size (m ²).	4	4	4	4	10	10	10	4	4	4	10

Average sp. no. 21

Association and Alliance character species

<i>Nardus stricta</i>	3.3	2.3	3.4	2.3	4.4	3.3	4.4	4.5	3.4	3.3	+2
<i>Galium saxatile</i>	2.3	1.2	+2	2.3	+	2.3	1.2	3.2	1.2	2.2	3.4

Order and Class
character species

<i>Calluna vulgaris</i>	+2	3.3	.	+2	+	+2	+2	+	+	+	+2
<i>Vaccinium myrtillus</i>	1.2	1.2	.	+	+	+2	+	+	+	+2	+2
<i>Luzula multiflora</i>	+2	+	+	+	+	1.1	+	1.1	+	.	1.1
<i>Deschampsia flexuosa</i>	3.3	1.2	1.2	.	+	1.2	.	.	1.2	.	+
<i>Lathyrus montanus</i>	1.1	+	+	.	.	+	.	+	+	.	.
<i>Rumex acetosella</i>	+2	.	.	+	+	.	.	.	.	+	+
<i>Carex pilulifera</i>	.	+	.	.	.	.	+	1.2	+	1.1	+

Companions

<i>Potentilla erecta</i>	1.2	1.2	1.1	+	.	1.2	1.2	+2	.	1.2	+2
<i>Festuca rubra</i>	+2	+	+	.	1.1	+2	+	1.1	.	+2	.
<i>Agrostis tenuis</i>	+2	2.2	+	1.2	.	.	1.2	.	1.2	+	.
<i>Anthoxanthum odoratum</i>	1.2	1.1	.	1.1	+	1.1	.	1.1	.	.	.
<i>Campanula rotundifolia</i>	+	+	+	.	.	+	+	+	+	.	+
<i>Dactylis glomerata</i>	+	.	+	+	.	+	+	+	+	.	.
<i>Holcus lanatus</i>	+	+	1.1	.	.	+	+	.	+	+	.
<i>Deschampsia caespitosa</i>	+	+2	+2	.	.	+2	.	+	.	+	+2
<i>Molinia caerulea</i>	.	1.1	.	1.1	.	+	1.1	+	+	.	+
<i>Hypnum cupressiforme</i>	+	+2	.	.	+	.	+	+	1.1	+	1.1
<i>Agrostis canina</i>	.	+	+	.	.	2.2	.	1.1	.	+	1.1
<i>Dicranum scoparium</i>	.	+	.	.	+2	+	+2	.	+2	1.2	.
<i>Lophocolea bidentata</i>	+	+	.	.	.	+	+	+	.	.	+
<i>Lathyrus pratensis</i>	+	.	1.1	.	.	+	+	.	+	.	.
<i>Festuca ovina</i>	.	+	.	1.2	.	.	.	+	1.1	.	1.1
<i>Chamaenerion angustifolium</i>	+	.	+	.	+	.	.	+	.	+	.
<i>Polytrichum commune</i>	.	.	.	.	.	+2	+	.	1.2	1.2	+
<i>Hylocomium splendens</i>	.	.	.	+	.	.	+	1.2	.	+	1.2
<i>Juncus squarrosus</i>	.	.	.	.	.	+	.	+	1.1	+	.
<i>Pleurozium schreberi</i>	.	.	+	.	.	.	.	+	.	1.2	1.2
<i>Lotus corniculatus</i>	.	+2	.	+	.	.	.	+	.	.	.
<i>Achillea millefolium</i>	.	.	.	.	.	.	+	.	+	+	.
<i>Ranunculus acris</i>	.	+	.	.	.	.	.	.	+	.	+
<i>Eriophorum vaginatum</i>	.	.	.	.	.	+2	.	.	.	+	.
<i>Pteridium aquilinum</i>	1.3	.	4.5	.	+	.	.	.	.	.	.
<i>Rhytidiadelphus squarrosus</i>	.	.	.	.	.	.	.	.	1.2	+	.

Also in : Auf (43) *Galium verum* +; *Cynosurus cristatus* +; *Urtica dioica* +; (102) *Centaurea nigra* +; (27) *Ulex europaeus* +2; (104) *Minuartia verna* +2; *Rhytidiadelphus loreus* +; (91) *Conopodium majus* 1.1; *Polytrichum juniperinum* +; *Aira praecox* +; (74) *Carex nigra* 1.1; *Aulacomnium palustre* +; *Agrostis stolonifera* +; *Plagiothecium sylvaticum* +; (36) *Trichocolea tomentella* +; (44) *Polytrichum strictum* +2; *Poa annua* +2; *Oxalis acetosella* +; (37) *Barbilophozia attenuata* +; *Tritomaria quinquidentata* +; *Thuidium tamariscinum* +; *Plagiothecium denticulatum* +.

TABLE 33.

ASSOCIATION AGROSTO-ULICETUM GALLII
(Tansley 1939)

	SW	SW	SW	SW	ML	ML	NW	NW	NW	D	D	ML
Aufnahme No.	51	56	14A	15A	53	5	7	17A	47	4	79	16
Species No.	23	22	35	37	39	34	31	29	20	31	23	25
Aspect.	SE	NW	SE	SW	W	S	N	N	NW	W	W	N
Slope °.	10	15	2	5	10	20	2	2	.	10	5	30
Cover %: Shrubs.	100	100	80	80	90	.	100	90	90	80	90	100
Herbs.	60	70	100	90	100	.	80	80	20	70	70	40
Bryophytes.	15	10	10	5	5	10	5	2	50	10	5	2
Quadrat size (m ²).	10	10	4	4	10	10	10	10	10	10	4	10

Av. sp. no. 29

Av. sp. no. 29

Association & Alliance CharacterSpecies

<i>Ulex gallii</i>	4.3	4.4	3.3	3.3	3.4	1.2	4.5	2.3	3.4	5.5	3.4	+2
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Order & Class CharacterSpecies

<i>Erica cinerea</i>	1.2	1.2	+2	2.3	3.3	3.3	1.2	3.4	2.3	.	+	+
<i>Hypericum pulchrum</i>	1.1	1.1	1.1	1.1	.	+	+	1.1	+	+	+	2.1
<i>Calluna vulgaris</i>	1.2	+2	.	+	.	1.2	+	.	2.3	1.2	+2	+2
<i>Ulex europaeus</i>	.	.	+2	+	.	+	1.3	.	2.3	.	.	5.5;
<i>Polygala serpyllifolia</i>	.	.	+	+	+	.	+	+	.	1.1	.	.
<i>Nardus stricta</i>	.	.	.	.	.	.	+2	.	1.2	+	.	.
<i>Antennaria dioica</i>	.	+2	.	.	.	.	.	.	.	.	.	.
<i>Lathyrus montanus</i>	.	.	.	.	.	.	.	.	.	1.1	.	.

Differential species of Sub-Ass. of Agrostis setacea

<i>Agrostis setacea</i>	3.3	3.3	2.3	+2
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Companions

<i>Agrostis canina</i>	1.2	+	+	1.1	2.3	3.4	2.3	2.3	+	2.3	3.3	+
<i>Campanula rotundifolia</i>	+	+	+	+	+	.	+	+	+	+	+	.
<i>Festuca rubra</i>	1.1	+	1.2	+2	2.2	+	1.2	+2	.	+2	+	+2
<i>Potentilla erecta</i>	+2	1.2	.	+	+	.	1.2	1.2	1.2	1.1	.	+
<i>Anthoxanthum odoratum</i>	1.1	1.1	2.2	1.2	1.2	.	1.2	+2	.	+	1.2	.
<i>Agrostis tenuis</i>	+2	.	+	+	+	+2	+	+	.	1.2	.	2.2
<i>A. stolonifera</i>	.	1.2	+	+	.	1.2	+	1.1	+	1.1	+2	1.2
<i>Sieglingia decumbens</i>	1.2	+2	+	+	2.2	2.2	1.2	1.2	.	+2	.	.
<i>Hypnum cupressiforme</i>	1.3	1.3	.	+3	+2	+	+3	+	2.3	.	+3	+
<i>Pteridium aquilinum</i>	+	.	3.3	+2	1.1	.	1.1	.	1.1	.	+	+
<i>Galium saxatile</i>	.	.	+	+2	.	+	+2	+2	2.3	+2	1.2	.
<i>Pseudoscleropodium purum</i>	+2	1.2	.	1.3	2.3	.	+	+3	.	+	+3	.
<i>Poterium sanguisorba</i>	+	+	1.2	+	.	3.2	.	1.2	.	+	+	.
<i>Viola canina</i>	+	.	+	1.1	1.1	.	+	+	.	+	.	.
<i>Cirsium palustre</i>	.	.	+	.	+	.	+	+	.	+	+	+
<i>Senecio jacobaea</i>	.	.	+	+	.	+	.	+	.	+	.	+
<i>Hypochaeris radicata</i>	.	+	+	+	.	+	+	.	.	+	.	.
<i>Holcus lanatus</i>	.	+	1.1	1.1	+	+	.	.	+	.	.	1.1
<i>Dactylis glomerata</i>	.	.	+	+	+	.	+	+	.	.	+	+
<i>Plantago lanceolata</i>	.	+	+	+	+	+	.	.	+	.	+	.
<i>Galium verum</i>	.	.	.	+	1.1	+	1.1	.	.	+	+	.
<i>Carex flacca</i>	.	.	1.1	+	+	+	.	+	.	+	.	.
<i>Festuca ovina</i>	.	.	.	1.2	+	1.2	.	.	.	+	1.2	.
<i>Koeleria cristata</i>	.	.	.	.	+	+	.	+	.	+	+	.
<i>Briza media</i>	.	.	+	+	+	+	.	.	.	.	+	.
<i>Lotus corniculatus</i>	.	.	+	+2	+	1.1	.	.	.	.	1.2	.
<i>Teucrium scorodonia</i>	.	.	+2	.	1.1	+2	+	.	.	.	.	.
<i>Helianthemum chamaecistus</i>	+	.	.	.	.	+	+	+2	.	.	.	.
<i>Viola riviniana</i>	.	.	+	.	.	+	.	.	.	.	.	+
<i>Filipendula vulgaris</i>	.	.	.	.	.	.	.	+2	.	+	.	+
<i>Brachypodium sylvaticum</i>	.	.	.	.	.	+	+	.	.	.	.	2.2
<i>Rubus ulmifolius</i>	.	.	1.3	.	.	+	.	.	.	.	.	2.1

Helictotrichon pratense	.	.	.	.	+	.	.	+	.	.	.	+
Chamaenerion angustifolium	.	.	.	+	+	.	.	.	1.1	.	.	.
Cirsium acaulon	.	.	.	.	+	+2	.	.	.	+2	.	.
Plagiothecium denticulatum	.	.	.	+	+2	.	.	.	.	+	.	.
Dicranum scoparium	.	.	.	+2	+2	.	.	+2	.	.	.	.
Lophocolea bidentata	.	+	.	.	.	.	.	+	.	.	.	+

Also (51) *Molinia caerulea* 3.3; *Cirsium arvense* +; *Carex pulicaris* +.2; *Rhytidiadelphus triquetrus* +.3; *Cephaloziella bicuspidata* +; (56) *Carex montana* +.2; *Molinia caerulea* +.2; *Calyptoglia trichomanis* +; (14A) *Cynosurus cristatus* 1.1; *Trifolium repens* +.2; *Cerastium holosteioides* +; *Rumex acetosa* +; *Crepis capillaris* +; *Eurynchium praelongum* +.3; (15A) *Trifolium medium* +.2; *Sonchus oleraceus* +; *Glechoma hederacea* +; (53) *Viburnum lantana* 1.1; *Ligustrum vulgare* +; *Cerastium holosteioides* +; *Crataegus* seedling +; *Fragaria vesca* +.2; *Arrhenatherum elatius* +; *Gallium mollugo* +.2; *Viola hirta* +; *Prunella vulgaris* +; (5) *Quercus* seedling +; *Leontodon autumnalis* +; *Festuca pratensis* +; *Betula* seedling +; *Carlina vulgaris* +; (7) *Helictotrichon pubescens* +.2; *Trisetum flavescens* +; *Pseudoscleropodium purum* +.3; (17A) *Cotoneaster* sp. +.2; *Eurynchium swartzii* +.3; *Mnium hornum* +.2; (47) *Juncus squarrosus* +.2; *Pohlia nutans* 2.3; *Campylopus flexuosus* 1.3; *C. fragilis* +.3; (4) *Carex pulicaris* +.2; *Euphrasia nemorosa* +; *Luzula campestris* +.2; (79) *Cladonia rangiformis* +.2; (16) *Calamagrostis epigejos* 1.3; *Eupatorium cannabinum* +.2; *Potentilla sterilis* 1.1; *Festuca arundinacea* +.2.

TABLE 34.

ASSOCIATION ARCTOSTAPHYLETO-DRYADETUM
(Iv.-Ck. & Proct. 1966)

	I	I	I	I	SL	SL		
Aufnahme No.	24	25	39	40	29	51		
Species No.	26	34	40	30	30	30		
Aspect.	NW	NW	SW	W	NE	W		
Slope °.	2	2	10	5	20	15		
Cover %: Herbs.	100	100	90	100	100	95		
Bryo- phytes.	20	30	25	30	30	40		
Quadrat size (m ²).	10	10	4	10	10	4		
				Av. sp. no.	31		28	24
<u>Association Character species</u>								
Arctostaphylos uva-ursi.	3.4	4.4	2.3	3.4	3.5	3.4	V	V
<u>Alliance & Class Character Species</u>								
Juniperus communis ssp. nana	2.3	+3	4.1	1.3	2.3	3.4	III	V
Empetrum nigrum	+2	+2	1.2	1.2	+	+	IV	III ^x
Erica cinerea	1.1	1.2	2.3	1.1	+	1.2	IV	IV
Vaccinium myrtillus	.	+	.	.	+2	+	.	II
Pyrola minor	.	.	.	.	.	+	.	.
<u>Differential species of Scottish Juniperetum nanae</u>								
Deschampsia flexuosa	.	.	.	.	.	.	.	V
Rhacomitrium lanuginosum	.	.	1.2	.	.	1.2	I	V
Trichophorum caespitosum	.	.	.	.	.	.	.	V
Cladonia uncialis	.	.	.	.	.	.	.	V
Pleurozia purpurea	.	.	.	.	.	+	.	IV
Cladonia impexa	.	.	+	.	.	.	.	IV
Arctous alpina	.	.	.	.	.	.	.	III
<u>Companions</u>								
Calluna vulgaris	1.2	2.2	2.2	+2	+2	1.2	V	V
Dryas octopetala	1.2	1.2	2.2	1.2	.	1.2	V	.
Sesleria caerulea	1.1	1.2	+	+2	.	.	V	.
Breutelia chrysocoma	1.3	+3	+	+	.	+3	V	.
Carex flacca	+	+	1.1	.	+	+	V	.
Festuca ovina	+2	1.2	+	.	1.2	+2	V	I
Potentilla erecta	.	+2	1.2	1.2	1.2	+	V	III
Campanula rotundifolia	+	+	+	+	+	.	V	.
Thymus drucei	+	1.2	+2	+2	.	+2	V	I
Hypericum pulchrum	+	+	+	.	+	+	IV	.
Succisa pratensis	.	+	+	+	.	+	IV	I
Carex pulicaris	.	1.2	+	+	1.2	+	IV	.
Linum catharticum	+	+	+	.	+	+	III	.
Polygala vulgaris	.	+2	+	+	+	.	III	.
Antennaria dioica	+	.	+	+2	1.2	.	III	I
Hypnum cupressiforme	.	+3	1.3	.	+3	1.3	IV	V
Neckera crispa	1.3	+	+	+	.	.	IV	.
Pseudoscleropodium purum	.	+	.	+	1.3	+	IV	.
Ctenidium molluscum	.	+	.	+	+3	.	IV	.
Thuidium tamariscinum	+	+	+	.	.	+	III	.
Tortella tortuosa	+	.	+3	+3	+3	.	III	.
Dicranum scoparium	.	+3	.	.	+3	+3	II	II
Solidago virgaurea	+	.	+	+	.	.	IV	II
Euphrasia nemorosa	+	+	+	.	.	.	II	.
Galium sternerii	.	+2	1.2	+	.	.	II	.
Koeleria cristata	.	1.1	+	+	.	.	III	.
Lotus corniculatus	+	.	+	.	+	.	II	.
Molinia coerulea	.	1.2	+	.	.	1.1	II	II
Plantago maritima	.	+	+	.	.	+	II	.
Sieglingia decumbens	+2	.	.	+	.	+2	II	.
Fissidens cristatus	.	+	+	.	+	.	III	.

(^x Including *E. hermaphroditum*)

Also: (24) *Asperula cynanchica* 1.2; *Rhinanthus minor* +; *Hylocomium brevirostre* +.3; *Frullania tamarisci* +;

(25) *Anthoxanthum odoratum* 1.2; *Festuca rubra* +.2; *Scapania aspera* +;

(39) *Geranium sanguineum* +.2; *Gentiana verna* +; *Viola riviniana* +; *Rhytidiadelphus triquetrus* +.3; *R. squarrosus* +; *Hylocomium brevirostre* +; *Cladonia rangiformis* +.2;

(40) *Teucrium scorodonia* +.2; *Lathyrus montanus* +; *Hedera helix* +; *Rhinanthus minor* +; *Scapania aspera* +; *Hylocomium splendens* +.3; *Frullania tamarisci* +;

(29) *Helianthemum chamaecistus* 1.2; *Plantago lanceolata* +; *Carex capillaris* 1.2; *Cynosurus cristatus* +; *Pedicularis sylvatica* +; *Camptothecium lutescens* +.3; *Lophozia excisa* +; *Tritomaria quinquedentata* +;

(51) *Agrostis tenuis* +.2; *Plantago lanceolata* +; *Epipactis atrorubens* +; *Hylocomium splendens* +.3.

Also in Iv.-Ck. & Proct. Constancy: IV

Viola riviniana. II. *Festuca rubra*, *Geranium sanguineum*, *Rhinanthus minor*, *Hylocomium brevirostre*, *H. splendens*, *Rhytidiadelphus squarrosus*, *Frullania tamarisci*, *Rhytidiadelphus triquetrus*, *Scapania aspera*, *Cladonia rangiformis*.

McV. & Rat. III. *Dactyorchis maculata*, *Diplophyllum albicans*, *Frullania tamarisci*, *Herberta* sp., *Cladonia gracilis*, *C. arbuscula*, *Sphaerophorus globosus*. II. *Campylopus flexuosus*, *Hylocomium splendens*, *Pleurozium schreberi*, *Rhytidiadelphus loreus*, *Sphagnum nemoreum*, *Scapania gracilis*, *Cladonia rangiferina* agg.

TABLE 35.

ASSOCIATION GERANIO-CORYLETUM

	D	D	D	D	D	D	D	D	D	D	D
Aufnahme No.	77	32	109	124	40	67	94	53	96		54
Species No.	46	47	41	43	44	43	40	42	35		35
Aspect.	N	N	N	NW	W	NW	W	NW	W		NW
Slope °.	30	40	25	30	35	40	40	40	40		35
Cover %: Shrubs.	40	40	30	40	50	40	20	30	20		70
Herbs.	80	90	90	90	80	90	90	70	80		80
Bryophytes etc.	20	10	20	40	20	20	10	10	25		10
Quadrat size (m ²)	10	10	10	10	10	10	10	10	10		10

Av. sp. no. 41

Alliance and Association CharacterSpecies

<i>Geranium sanguineum</i>	+2	+	2.2	3.3	1.2	.	2.3	1.2	+		2.2
<i>Melica nutans</i>	1.2	1.2	+2	2.2	2.2	1.2	1.2	.	1.1		.
<i>Epipactis helleborine</i>	1.1	(+)	+	+	1.1	+	.	1.1	1.1		+
<i>Origanum vulgare</i>	+2	1.2	1.2	+2	1.2	2.3	2.3	.	+		1.2
<i>Silene nutans</i>	.	+	1.1	1.1	+	1.1	2.2	+	.		.
<i>Aquilegia vulgaris</i>	1.1	.	+	+	+	.	.	+	2.2		.
<i>Convallaria majalis</i>	2.3	2.3	.	+	3.4	+2	.	1.2	.		.
<i>Trollius europaeus</i>	+	.	1.2	1.2	.	+	+	1.2	.		1.2
<i>Rubus saxatilis</i>	+2	1.2	+	.	1.2	+	.	.	2.3		+2

?Differential Species

<i>Populus tremula</i>		4.2
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Mesobromion Species

<i>Poterium sanguisorba</i>	1.2	1.2	+2	1.2	+	+2	+2	1.2	+		.
<i>Helianthemum chamaecistus</i>	2.2	2.2	1.2	+2	+2	+2	+	1.2	1.2		.
<i>Helictotrichon pratense</i>	1.2	1.2	2.2	+	.	+	+	.	+		.
<i>Gentianella amarella</i>	+	+	+	+	+	.	.	.	+		.
<i>Koeleria cristata</i>	.	1.2	+2	1.2	+	+	+	.	.		.
<i>Galium sternerii</i>	+	1.2	+	+2	.	.	.	+	1.2		.
<i>Scabiosa columbaria</i>	+	1.1	.	+	.	.	+	1.1	.		.
<i>Picris hieracioides</i>	1.1	+	.	1.1	.	+	.	+	.		.

Companions: Shrubs

<i>Corylus avellana</i>	2.3	3.3	1.2	+2	1.2	1.2	2.2	2.3	+2		2.2
<i>Viburnum opulus</i>	1.2	1.2	+2	.	.	.	1.2	1.2	+		.
<i>Thelycranea sanguinea</i>	1.2	+2	+	.	+2	+2	.	1.2	.		1.2
<i>Crataegus monogyna</i>	+	+	.	+	.	.	+	+	.		+
<i>Fraxinus excelsior</i>	1.1	+	.	1.1	.	.	+	.	.		+
<i>Prunus spinosa</i>	.	.	1.1	.	2.3	+	.	.	+2		1.2

Other Species

<i>Brachypodium sylvaticum</i>	1.1	1.2	+	+	+2	2.3	+	1.2	+		1.2
<i>Mercurialis perennis</i>	1.2	+	2.3	+3	1.1	+	+2	1.2	2.2		1.2
<i>Melica uniflora</i>	+	1.2	1.2	+	.	1.2	1.2	+	+		1.1
<i>Thymus drucei</i>	+	+2	+	.	1.2	+	+	+	.		.
<i>Pimpinella saxifraga</i>	+	+	+	+	.	+	+	.	1.1		+
<i>Carex flacca</i>	1.1	1.1	+	+	1.1	+	.	.	.		.
<i>Briza media</i>	+	.	+	1.1	.	+	+	1.1	.		.
<i>Linum catharticum</i>	.	+	+	.	+	+	+	+	.		.
<i>Ctenidium molluscum</i>	1.3	+3	+	.	2.3	.	1.3	+3	.		+3
<i>Euphrasia nemorosa</i>	+	+	.	+	.	1.1	+	.	.		.
<i>Leontodon hispidus</i>	.	.	+	+	1.2	1.2	+	.	.		.
<i>Hylacomium splendens</i>	.	1.3	+3	1.3	.	.	.	1.3	2.3		+
<i>Viola riviniana</i>	+	.	+2	.	1.2	+2	1.2	.	.		+
<i>Arrhenatherum elatius</i>	1.1	.	.	.	+	1.1	+	.	.		1.1
<i>Teucrium scorodonia</i>	.	2.3	.	+	1.2	.	1.2	.	.		1.2
<i>Centaurea nigra</i>	+	1.1	.	.	+	+	.	.	.		+
<i>Campanula rotundifolia</i>	.	.	+	+	+	.	.	.	+		.

Anthoxanthum odoratum	.	.	.	+	.	+	.	+	1.2	.
Medicago lupulina	.	.	1.1	.	.	+	+	+	.	.
Hieracium pilosella	1.2	1.2	.	.	+.2	.	1.2	.	.	.
Hypericum perforatum	.	.	.	+	+	.	.	+	+	.
Clinopodium vulgare	.	+.2	1.2	.	.	1.2	.	+.2	.	1.2
Geranium robertianum	1.1	.	.	.	+	.	+	.	.	.
Gymnadenia conopsea	+	.	1.1	.	.	.	.	+	.	+
Fissidens cristatus	.	.	.	+	1.3	.	.	.	.	.
Thuidium tamariscinum	.	.	+	.	.	+.3	.	+	+	.
Porella platyphylla	.	.	.	.	.	.	+	.	+.2	.
Veronica chamaedrys	.	.	.	+	.	.	.	+	.	1.1
Urtica dioica	.	+	.	.	+	.	.	+	.	+
Lotus corniculatus	+	.	1.2	.	.	.	+	.	.	+
Vicia sepium	.	+	.	+	.	.	.	.	.	+
Festuca ovina	1.2	.	.	.	.	1.2	.	+.2	.	+
Epilobium montanum	.	+	.	.	+	.	+	.	.	+
Bromus ramosus	.	.	+	.	+.2	.	.	.	+	.
Fragaria vesca	.	1.2	.	.	.	1.2	.	.	+.2	1.2

Also: (77) *Betula pubescens* +(K); *Salix capraea* +; *Rubus fruticosus* +.2; *Tussilago farfara* +; *Succisa pratensis* +; *Angelica sylvestris* +; *Polygala vulgaris* +; *Hypericum hirsutum* +; *Pimpinella major* +.

(32) *Rosa villosa* +; *Rubus caesius* +.2; *Ligustrum vulgare* +.2; *Lithospermum officinale* +; *Primula veris* +.2; *Polystichum aculeatum* +; *Encalypta vulgaris* +.2; *Eurynchium striatum* +.2; *Lophocolea bidentata* +;

(109) *Rhamnus catharticus* +; *Pyrola minor* +; *Arctium lappa* +; *Dicranella-heteromalla* +.3

(124) *Allium oleracium* +; *Rhytidiadelphus triquetrus* 1.3; *Breutelia chrysocoma* +.3; *Rhytidium rugosum* +.3; *Rhytidiadelphus loreus* +; *Arabidopsis thaliana* +; *Deschampsia caespitosa* +.2; *Succisa pratensis* +.

(40) *Rubus idaeus* +.2; *Trisetum flavescens* +.2; *Festuca arundinacea* +.2; *Allium ursinum* 1.1; *Thalictrum minus* +; *Oxalis acetosella* +.2; *Peltigera canina* +.2; *Encalypta vulgaris* +.3; *Tortula* sp. +.

(67) *Rubus fruticosus* +.2; *Bellis perennis* +; *Poa pratensis* +.2; *Sorbus aucuparia* (seedling) +; *Valeriana officinalis* +; *Lapsana communis* +; *Dicranum majus* +.3; *Frullaria tamarisci* +.3.

(94) *Prunus padus* +.2; *Potentilla tabernaemontana* +; *Hieracium lachenalii* +; *Helictotrichon pubescens* +.2; *Carex caryophylla* 1.1; *Rhytidiadelphus squarrosus* +.2; *Pseudoscleropodium purum* +.3

(53) *Thalictrum minus* +; *Stachys sylvatica* +; *Epipactis atrorubens*-; *Allium ursinum* 1.1; *Plagiothecium sylvaticum* +; *Pimpinella major* 1.1; *Mycelis muralis* +; *Cruciata chersonensis* +.2; *Encalypta streptocarpa* +.2

(96) *Rubus caesius* +.2; *Angelica sylvestris* +; *Succisa pratensis* +; *Lophocolea cuspidata* +.2; *L. bidentata* +; *Rhytidium rugosum* +.2; *Thelypteris robertiana* 1.1.

(54) *Rhamnus catharticus* +; *Deschampsia caespitosa* 1.2; *Filipendula ulmaria* +; *Galium verum* +; *Vicia cracca* +; *Potentilla erecta* 1.1; *Eurynchium praelongum* +.3

TABLE 36.

ASSOCIATIONS OF THE ORDER
PRUNETALIA R. TX. 1952

Association Number.	1	2	3	4
Number of Aufnahmen.	6	5	3	6
<u>Character species of (1)</u>				
<i>Rosa pimpinellifolia</i>	V	.	.	.
<u>Character species of (2)</u>				
<i>Clematis vitalba</i>	.	V	.	.
<u>Character species of (3)</u>				
<i>Salix repens</i> ssp. <i>Argentea</i>	.	.	3	.
<i>S. nigricans</i>	.	.	3	.
<i>S. repens</i> x <i>nigricans</i>	.	.	2	.
<u>Character species of (4)</u>				
<i>Rubus</i> cf. <i>ulmifolius</i>	.	.	.	V
<i>Ligustrum vulgare</i>	.	.	.	IV
<i>Iris foetidissima</i>	.	.	.	III
<i>Lonicera periclymenum</i>	.	I	.	III
<u>Order Character species</u>				
<i>Crataegus monogyna</i>	V	V	1	IV
<i>Prunus spinosa</i>	IV	IV	2	V
<i>Thelycranea sanguinea</i>	.	II	.	I
<i>Rosa canina</i> agg.	II	.	.	I
<u>Mesobromion character species</u>				
<i>Helictotrichon pratense</i>	II	II	3	I
<i>Koeleria cristata</i>	II	.	2	.
<i>Poterium sanguisorba</i>	IV	.	2	I
<i>Scabiosa columbaria</i>	II	I	1	.
<i>Bromus erectus</i>	.	II	.	.
<i>Brachypodium pinnatum</i>	.	II	.	.
<i>Picris hieracioides</i>	.	II	.	.
<i>Sesleria caerulea</i>	II	.	1	.
<u>Companions</u>				
<i>Teucrium scorodonia</i>	II	V	1	V
<i>Brachypodium sylvaticum</i>	IV	V	1	IV
<i>Mercurialis perennis</i>	II	III	.	II
<i>Pteridium aquilinum</i>	.	I	.	IV
<i>Senecio jacobaea</i>	III	I	1	II
<i>Dactylis glomerata</i>	III	.	1	I
<i>Bromus ramosus</i>	.	I	.	III
<i>Sonchus arvensis</i>	.	.	.	III
<i>Erica cinerea</i>	.	.	.	III
<i>Festuca ovina</i>	II	.	2	.
<i>Arrhenatherum elatius</i>	II	I	.	I
<i>Helictotrichon pubescens</i>	II	.	.	I
<i>Briza media</i>	I	II	.	.
<i>Hieracium</i> sect./ <i>vulgatum</i>	.	II	.	I
<i>H.</i> sect./ <i>umbellatum</i>	.	.	.	II
<i>Linaria vulgaris</i>	.	.	.	II
<i>Sonchus asper</i>	.	.	.	II

Also of Constancy 1 in (1) *Silene nutans*, *Cirsium eriophorum*, *Agrimonia eupatoria*, *Lophocolea bidentata*, *Hypnum cupressiforme*, *Mnium hornum*, *M. undulatum*, *Origanum vulgare*;

(2) *Clinopodium vulgare*, *Origanum vulgare*, *Cirsium vulgare*, *Carduus acanthoides*, *Bromus sterilis*, *Mnium undulatum*, *Tortella tortuosa*, *Dicranella heteromalla*, *Thuidium tamariscinum*, *Sambucus nigra*;

(3) *Pseudoscleropodium purum*,
Geranium sanguineum, *Centaurea nigra*, *Campylium stellatum*,
Eurynchium praelongum, *Campylium chrysophyllum*, *Chamaenerion*
angustifolium, *Festuca rubra*;

(4) *Betonica officinalis*, *Hedera helix*,
Solidago virgaurea, *Armeria maritima*, *Bryum sp.*, *Festuca rubra*,
Calluna vulgaris, *Hypnum cupressiforme*, *Plagiothecium sylvaticum*;

1. Crataegus-Rosa pimpinellifolia Ass.) } - PRUNION FRUITI-
2. Clematito-Prunetum. } - COSAE R.Tx.1952.
3. Salicetum repentini-nigricantis - ? SÁLICION ARENARIAE
R.Tx.1952.
4. Ligustro-Rubetum ulmifolii - RUBION SUBATLANTICUM
R.Tx.1952.

TABLE 30. SEDUM FOSTERANUM COMMUNITIES

	ML	WB	WB
Aufnahme No.	42	4	5
Species No.	11	15	17
Aspect.	E	W	SW
Slope .	30	50	45
Cover %: Herbs.	30	30	30
Bryophytes.	+	20	10
Quadrat size (m ²).	5	5	5

Av. sp. no. 14

Character Species

<i>Sedum fosteranum</i> ssp. <i>elegans</i>	1.2	2.3	2.3
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Companions

<i>Teucrium scorodonia</i>	+	1.2	1.2
<i>Geranium robertianum</i>	1.1	+	+
<i>Mycelis muralis</i>	+	+	(+)
<i>Arrhenatherum elatius</i>	1.1	.	1.1
<i>Polypodium interjectum</i>	.	1.2	+
<i>Dicranum scoparium</i>	.	2.3	1.2
<i>Hypnum cupressiforme</i>	.	1.3	+
<i>Senecio jacobaea</i>	.	+	+
<i>Epilobium montanum</i>	.	+	+
<i>Dryopteris filix-mas</i>	.	1.2	+ .2

Also in: (42) *Kentranthus ruber* 2.2; *Scabiosa columbaria* +; *Leontodon hispidus* +; *Picris hieracioides* +; *Poterium sanguisorba* +; *Encalypta vulgaris* +;
 (4) *Urtica dioica* +; *Fraxinus* (seedling) +; *Oxalis acetosella* 1.2; *Mnium hornum* +; *Solidago virgaurea* +;
 (5) *Hypericum perforatum* +; *Aira praecox* 1.1; *Asplenium trichomanes* +.2; *Tussilago farfara* +; *Hieracium sect./umbellatum* +; *Festuca rubra* +.2.

TABLE 37.

ASSOCIATION POTENTILLETUM
FRUTICOSAE

	NP	I	NP	I	I	L	NP	NP	
Aufnahme No.	82	51	84	50	59	W	85	83	9
Species No.	.	.	.	.	.	.	.	.	.
Aspect	.	SW	.	E	SE	NE	NE	.	SW
Slope °	.	2	.	5	2	50	20	.	2
Cover %:									
Shrubs.	.	.	90	90	60	40	90	80	60
Herbs.	100	80	50	70	90	100	90	80	100
Bryops.	10	30	20	20	20	10	10	5	5
Quadrat size (m ²)	2	4	2	10	10	2	4	4	10

Association & AllianceCharacter species

Potentilla fruticosa	+2	1.2	4.5	4.5	3.4	2.3	4.5	1.2	2.2	+2
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Order Character species

Prunus spinosa	.	.	1.2	+	+2	.	+	+	+	.
Crataegus monogyna	.	.	+	1.1	1.2	+	.	+	.	1.1
Rosa pimpinellifolia	.	.	+	+	+

Molinietales species

Succisa pratensis	1.1	+	+	+	+	.	.	+	.	+
Filipendula ulmaria	+	+	+	+	+	.	.	+	+	1.1
Deschampsia caespitosa	1.2	+	.	+	1.1	.	.	+	+	+2
Heracleum sphondylium	.	+2	.	.	+	1.2	.	+	+	.
Valeriana dioica	+	+	.	.	.	+	+	.	.	+
Angelica sylvestris	.	+	.	+	.	.	.	.	+	+

Differentials of Sub-
ass. salicetosum

Salix phylicifolia	.	.	.	.	.	.	.	4.5	2.3	.
S. capraea	.	.	.	.	.	.	.	1.1	1.1	+2
Prunus padus	.	.	.	.	.	.	.	1.1	(+)	1.1
Fraxinus excelsior	.	.	.	.	+	.	.	+	+	3.1
Alnus glutinosa	.	.	.	.	.	.	.	(+)	(+)	3.1

Companions

Festuca ovina	2.3	3.3	1.2	1.2	+2	.	+2	+2	+2	.
Sesleria caerulea	+2	1.2	+2	1.2	2.3	.	+2	.	.	.
Thymus drucei	1.2	1.2	1.2	1.2	+2	1.2	+	.	.	.
Campanula rotundifolia	+	+	+	+	+	.	.	+	.	.
Carex flacca	1.1	+	1.1	+	1.1	+	.	+	1.1	.
Plantago lanceolata	+	+	.	.	.	+	+	.	.	.
Potentilla erecta	+	+2	+	+	.	+	+	.	.	.
Prunella vulgaris	1.2	+	+	+	+2	.	.	.	+2	+2
Galium boreale	1.1	1.1	+	+	+	.	.	.	.	.
Leontodon autumnalis	.	1.2	.	+2	+	+2	.	+2	.	.
Breutelia chrysocoma	1.3	+3	+3	.	+3	+3	.	.	.	.
Ctenidium molluscum	.	+	.	+	+	+	+3	.	+3	.
Carex panicea	.	1.1	.	.	1.1	+	+	.	.	.
Bellis perennis	1.2	+	.	+	.	.	.	.	.	.
Agrostis stolonifera	.	1.2	.	1.2	+2	.	+	.	.	.
Linum catharticum	1.1	+	.	.	+	.	.	.	.	.
Lotus corniculatus	.	+2	+2	.	+	+2	.	.	.	.
Acrocladium cuspidatum	+3	.	1.3	.	.	+3	.	.	.	1.3
Rhinanthus minor	+	+	+	1.1	.	.	.	1.1	+	+
Viola riviniana	.	.	.	.	.	.	.	.	+3	.
Drepanocladus revolvens	.	.	+	1.3	+	.	.	.	.	.
Pissidens adianthoides	+	.	+	.	.	+	+	.	.	.
Pseudoscleropodium purum	1.3	+3	.	.	+	.	1.3	.	.	.
Rhytidadelphus triquetrus	.	.	+	+3	.	.	+	1.3	.	.
Ditricum flexicaule	+	.	.	+	+	.	.	.	+	.
Ranunculus repens	.	+	+	+	+	.	.	.	.	.
Molinia coerulea	.	.	.	+	1.1	+	.	.	.	.
Teucrium scorodonia	.	.	.	.	.	.	.	1.2	+	+2
Euphrasia nemorosa	.	+	+	.	.	.	.	.	+	.
Eriza media	+	.	.	.	.	.	1.1	1.1	.	.
Calluna vulgaris	+	+2	.	.	.	.	.	+2	.	.
Hypnum cupressiforme	.	.	1.3	.	+3	+	.	.	.	.
Tortella tortuosa	+	.	+	.	.	.	.	.	.	.
Hylocomium splendens	.	.	.	.	1.3	+	.	.	.	2.3
Dicranum scoparium	.	+	.	1.3	.	.	.	.	+3	.
Helictotrichon pratense	+	.	.	.	1.1	.	.	.	.	.
Centaurea nigra	.	1.1	.	.	.	.	.	1.1	+	.
Mercurialis perennis	.	.	.	.	.	.	.	+	1.2	1.2

Also: (82) Equisetum arvense +; Plantago maritima 2.3; Anthoxanthum odoratum 1.2; Alchemilla glabra +; Trifolium pratense +; Geum rivale 1.1; Carex demissa +2; Polygonum viviparum +; Nardus stricta +2; Rhacomitrium canescens +2; Coeloglossum viride +; Equisetum pratense +; Preissia quadrata +.
(51) Achillea ptarmica +; Galium palustre +; Viola canina +; Brachythecium rutabulum +; Ranunculus acris +.
(84) Equisetum arvense +; Koeleria cristata +; Cirsium palustre +; C. arvense +; Mnium undulatum +; Cirriphyllum piliferum +2; Bryum pseudotriquetrum +2.
(50) Sieglingia decumbens 1.2; Mentha aquatica +2; Poa pratensis +; P. trivialis +; Parnassia palustris +; Cratoneuron commutatum +3; Philonotis fontana +3; Pellia fabronniana +; Campyllum stellatum +.
(59) Rubus saxatilis 1.2; Fragaria vesca +2; Eurynchium praelongum +3; Leontodon hispidus +; Solidago virgaurea +; Geranium robertianum +; G. sanguineum +; Hylocomium brevirostre +3; Scapania aspera +.
(W.) Lycopodium selago +; Rhacomitrium lanuginosum 2.3; Sedum rosea +2; Alchemilla alpina +; Thalictrum minus +; Saxifraga aizoides +; Thalictrum alpinum +; Carex pulicaris +2; Festuca vivipara 2.3; Diplophyllum albicans +2; Tritomaria quinqueidentata +.
(85) Galium saxatile +2; Oxalis acetosella +2; Sanicula europaea +; Lophocolea bidentata +; Lophozia incisa +; Tritomaria quinqueidentata +; Plagiochila asplenioides +;
(83) Salix capraea x phylicifolia ? 1.1; Helictotrichon pubescens +; Conopodium majus +; Anemone nemorosa 1.1; Sanguisorba officinalis 1.1; Alchemilla vestita +; Rubus saxatilis +2; Brachypodium sylvaticum +2; Luzula sylvatica +2; Campyllum stellatum +3; Hygrohypnum luridum +.
(90) Carex demissa +2; Sagina nodosa +; Plantago media +; Helleborus lanatus +2; Hypericum perforatum +; Alchemilla glabra +; A. xanthochlora +; Veronica chamaedrys +; Bryum pseudotriquetrum +3; Equisetum arvense +.
(86) Rosa villosa +; Lonicera periclymenum +; Geum urbanum +2; Silene dioica +; Veronica montana +; Anemone nemorosa +2; Asperula odorata 1.2; Sanicula europaea +; Bromus ramosus +; Brachypodium sylvaticum 1.2; Eurynchium praelongum 1.3; Plagiothecium denticulatum +3; Brachythecium albicans +.

TABLE 8.

Association *Caricetum montanae*

	SW	SW	SW	SW	SW	SW	SW
Aufnahme No.	54	55	53	50	52	63	64
Species No.	39	40	35	37	38	44	50
Aspect.	SE	SE	E	SE	NW	SW	SW
Slope °	35	35	20	25	20	45	45
Cover % Herbs.	100	100	100	100	95	90	100
Bryophytes.	30	10	20	10	15	5	5
Quadrat size m ² .	10	10	5	10	10	10	10
	Av. sp. no. 38					Av. sp. no. 47	
<u>Association Differential species</u>							
<i>Carex montana</i>	1.2	4.3	4.4	2.2	1.2	2.3	2.2
<u>Differential species of Sub-ass. typicum (Ch)</u>							
<i>Cirsium acaulon</i>	2.2	2.2	1.2	1.2	1.2	.	.
<i>Koeleria cristata</i>	1.1	1.1	1.1	+	+	.	.
<i>Asperula cynanchica</i>	1.1	2.2	+	+	1.2	.	.
<i>Viola hirta</i> ssp. <i>calcarea</i>	1.1	1.1	1.1	.	+	.	.
<i>Polygala calcarea</i>	+	+	+	.	.	.	.
<u>Differential species of Sub-ass. Galium & Melica</u>							
<i>Galium sternerii</i>	.	.	.	.	.	1.1	+
<i>Valerianella locusta</i>	.	.	.	.	.	+	1.1
<i>Melica uniflora</i>	.	.	.	.	.	+	+
<i>Arrhenatherum elatius</i>	.	.	.	.	.	+	1.1
<u>Alliance & Order Character species</u>							
<i>Poterium sanguisorba</i>	1.2	1.1	3.2	1.2	3.2	1.1	1.1
<i>Helianthemum chamaecistus</i>	4.3	2.3	2.2	.	3.3	2.2	2.2
<i>Carlina vulgaris</i>	+	+	+	+	.	+	+
<i>Gentianella amarella</i>	+	+	.	+	+	+	+
<i>Scabiosa columbaria</i>	.	.	.	+	.	+2	+
<u>Companions</u>							
<i>Festuca ovina</i>	1.2	1.2	1.2	+	2.2	2.2	2.2
<i>Plantago lanceolata</i>	1.1	1.1	1.1	1.1	+	+	1.1
<i>Euphrasia nemorosa</i>	1.1	+	1.1	+	+	+	1.1
<i>Thymus drucei</i>	1.2	1.2	1.2	2.2	+2	+2	1.2
<i>Carex flacca</i>	1.1	1.1	1.1	+	1.1	1.1	+
<i>Hieracium pilosella</i>	2.2	1.2	+2	+2	+	1.1	1.2
<i>Hypericum pulchrum</i>	+	+	+	+	+	+	+
<i>Briza media</i>	1.2	+	1.1	.	+	1.2	+
<i>Lotus corniculatus</i>	1.2	+2	1.2	.	1.1	1.2	1.1
<i>Brachypodium sylvaticum</i>	+	+2	+	+	.	+2	+2
<i>Pseudoscleropodium purum</i>	1.2	+2	+2	+	.	+	.
<i>Camptothecium lutescens</i>	1.2	1.2	+	+	+	+	.
<i>Dicranum scoparium</i>	+3	+2	+	+	+2	+	.
<i>Sieglingia decumbens</i>	3.2	1.1	2.3	1.1	1.1	.	.
<i>Agrostis tenuis</i>	2.2	2.2	2.2	3.3	+2	.	.
<i>Campanula rotundifolia</i>	+	.	+	+	+	+	+
<i>Linum catharticum</i>	.	+	+	+	+	+	+
<i>Carex caryophyllaea</i>	.	1.1	+	.	+	+	+
<i>Leontodon hispidus</i>	+	+	.	+	+	+	+
<i>Polygala vulgaris</i>	.	+	.	+	+	+	+
<i>Cladonia rangiformis</i>	+2	+2	+2	1.2	+	.	.
<i>Erica cinerea</i>	+	+	1.1	+	.	.	.
<i>Prunella vulgaris</i>	1.1	.	+	.	+	.	+
<i>Carex pulicaris</i>	1.1	.	1.1	+2	+	.	.
<i>Ctenidium molluscum</i>	.	.	+2	.	+2	+2	1.2
<i>Frullania tamarisci</i>	+2	+2	.	+	.	.	+
<i>Neckera crispa</i>	+2	+2	.	.	+2	.	+2
<i>Tortella tortuosa</i>	+2	+2	+2	.	+2	.	.
<i>Acrocladium cuspidatum</i>	+	+2	.	1.2	+	.	.
<i>Rhytidadelphus squarrosus</i>	.	+	.	+	.	.	.
<i>Agrostis canina</i>	1.1	.	.	.	.	.	.
<i>Anthoxanthum odoratum</i>	1.1	1.1	.	.	1.1	.	.
<i>Centaurium erythraea</i>	+	+	.	+	.	.	.
<i>Bellis perennis</i>	.	.	.	.	.	.	.
<i>Cerastium vulgatum</i>	.	.	.	.	.	.	.
<i>Pimpinella saxifraga</i>	.	.	.	+	.	+	+
<i>Euphrasia anglica</i>	.	.	.	+	.	+	+
<i>Ranunculus bulbosus</i>	.	.	.	.	+	+	+
<i>Galium verum</i>	.	.	.	.	+	+	+
<i>Dactylis glomerata</i>	.	.	.	.	.	+	+
<i>Carduus nutans</i>	.	.	.	.	.	+	+
<i>Cirsium vulgare</i>	.	.	.	.	.	+	+
<i>Myosotis arvensis</i>	.	.	.	.	.	+	+
<i>Senecio jacobaea</i>	.	.	.	.	+	.	.
<i>Taraxacum sect./vulgaria</i>	.	.	.	.	.	+	+
<i>Pleurozium schreberi</i>	.	.	.	.	.	+	+

(Ch) = Mesobromion and Brometalia character species.

Also in Auf (54) *Dicranum bonjeanii* +; (55) *Cirsium arvense* +; (53) *Tricholoma* sp. +; (50) *Erigeron acer* +; *Hypnum cupressiforme* +; (52) *Lophocolea bidentata* +; (63) *Geranium molle* +; *Leontodon taraxacoides* +; *Trifolium dubium* +; *Cladonia pyxidata* +; (64) *Festuca rubra* +2; *Rumex acetosa* +; *Helictotrichon pubescens* +2; *Hypochaeris radicata* +; *Potentilla sterilis* +; *Saxifraga granulata* +; *Solidago virgaurea* +; *Teucrium scorodonia* +2; *Trifolium repens* +.

TABLE 4.

The Phytogeographical Relationships of the
British Associations of the Sub-alliance
Xerobromion

Number of Aufnahmen.	(a) 7	(b) 9	(c) .	(d) 13	(e) 11	(f) .	(g) 26
<u>Character species of the Association-group</u>							
Koeleria vallesiana	V	.	IV	V	.	+	III
Helianthemum apenninum	V	V	V	II	II	.	III
Trinia glauca	.	II	.	V	V	+	II
<u>Association & sub-association differential species</u>							
Carex humilis	V	.	.	.	V	+	V
Euphorbia portlandica	.	IV	.	.	.	.	.
Scilla autumnalis	.	IV	I	.	.	+	I
Alyssum alyssoides	.	.	IV	.	.	+	.
Phleum phleoides	.	.	IV	.	.	+	.
Festuca sulcata	.	.	.	.	V	+	I
Prunella grandiflora	.	.	.	.	IV	.	.
Onobrychis arenaria	.	.	.	r	.	.	V
Bromus erectus	.	.	.	.	.	.	.
<u>Mesobromion & Brometalia character species in British Xerobromion</u>							
Poterium sanguisorba	V	V	V	V	III	+	II
Carlina vulgaris	V	III	.	IV	III	+	II
Scabiosa columbaria	II	II	II	V	I	+	I
Hippocrepis comosa	III	I	.	II	III	+	III
Centaurea scabiosa	II	II	.	I	IV	+	I
Asperula cynanchica	.	.	V	I	IV	+	III
Potentilla tabernaemontani	.	.	V	I	III	+	III
Anthyllis vulneraria	.	III	.	III	IV	+	III
Cerastium pumilum	III	I	.	r	.	+	I
Helictotrichon pratense	.	II	.	V	V	+	.
Koeleria cristata (inc. K. pyramidata)	.	IV	.	II	III	.	I
Cirsium acaulon	.	.	II	III	III	.	II
Helianthemum chamaecistus	.	.	.	II	III	+	I
Brachypodium pinnatum	.	.	.	r	III	+	II
Thymus pulegioides	.	.	.	I	I	+	.
Blackstonia perfoliata	V	.	.	III	.	.	.
Viola hirta ssp. calcarea	III	.	.	I	.	.	.
Filipendula vulgaris	.	I	.	II	.	.	.
<u>Continental Xerobromion, Mesobromion & Brometalia character species (Constancy V & IV)</u>							
Eryngium campestre	.	.	V	.	III	+	II
Medicago minima	.	.	V	.	.	+	I
Coronilla minima	.	.	IV	.	.	+	V
Crinitaria linosyris	.	.	.	r	V	+	I
Pulsatilla vulgaris	.	.	.	.	V	+	II
Linum tenuifolium	.	.	.	.	V	+	IV
Teucrium chamaedrys	.	.	.	.	IV	+	V
Euphorbia cyparissias	.	.	.	.	IV	+	III
Salvia pratensis	.	.	.	.	IV	+	I
<u>Companions (Constancy V & IV)</u>							
Festuca ovina s.l.	V	V	.	V	III	+	V
Thymus drucei (o)	V	V	.	V	V'	.	V''
Hieracium pilosella	V	II	N	V	III	+	III
Lotus corniculatus	IV	II	O	V	III	.	.
Galium verum	V	II	.	V	+	.	.
Camptothecium lutescens	IV	r	D	V	II	.	.
Euphrasia nemorosa	V	II	E	III	.	+	.
Dactylis glomerata	V	V	T	V	.	.	.
Caldonia rangiformis	V	III	A	III	.	.	.
Plantago lanceolata	I	IV	I	V	.	.	.
Centaureum erythraea	V	r	L	III	.	.	.
Weissia microstoma	III	IV	S	II	.	INCOMPLETE	.
Linum catharticum	III	II	.	IV	.	DETAILS	.
Bromus ferronii	IV	r	.	II	.	.	.
Tortella nitida	r	IV	.	.	.	.	.
Crepis capillaris	IV	.	.	III	.	.	.
Trisetum flavescens	III	.	.	IV	.	.	.
Teucrium scorodonia	IV	.	.	r	.	.	.
Pimpinella saxifraga	.	.	.	r	IV	+	.
Cladonia furcata	.	.	.	r	IV	.	.
Briza media	.	.	.	V	.	.	.

(o) Thymus drucei - including T. serpyllum (") and T. praecox (').

(a) Poterio-Koelerietum s-a. caricetosum humilis.

(b) Helianthemum apenninum-Euphorbia portlandica nodum.

(c) Koeleria vallesiana-Helianthemum apenninum Association (Luguet)Br.-Bl.&Moor 1938.

(d) Poterio-Koelerietum s-a. trinietosum.

(e) Trinio-Caricetum humilis Volk 1937.

(f) Koeleria vallesiana-Brometum (Oberd. 1957) Korneck mscr. 1967 = Xerobrometum alsaticum (M.v.Roch.51) Oberd. 1957.

(g) Xerobrometum divionense (Hagene)Br.-Bl.&Moor 1938.

TABLE 2.

Helianthemum apenninum-Euphorbia portlandica Nodum

(9 Aufnahmen, 7 from Proctor (1956) and
2 from Bridgewater (1967) mscr).

(Figures on the Domin scale).

<u>Character species</u>	<u>Companions (to Constancy Class II)</u>
V Helianthemum apenninum	V Dactylis glomerata
II Trinia glauca	V Thymus drucei
	V Festuca ovina
<u>Differential species</u>	IV Weissia cf. microstoma
IV Scilla autumnalis	IV Plantago lanceolata
IV Euphorbia portlandica	IV Tortella nitida
	III Cladonia rangiformis
<u>Character spp. of Xerobromion & Brometalia erecti</u>	III Inula conyza
V Poterium sanguisorba	III Leontodon taraxacoides
IV Koeleria cristata	III Catapodium rigidum
III Anthyllis vulneraria	III Daucus carota ssp. gingidum
III Carlina vulgaris	III Sedum acre
II Scabiosa columbaria	III S. fosterianum
II Centaurea scabiosa	II Lotus corniculatus
II Helictotrichon pratense	II Linum catharticum
I Cerastium pumilum	II Aira caryophyllea
I Filipendula vulgaris	II Senecio cineraria
I Hippocrepis comosa	II Cladonia spp.

TABLE 1.

Association *Poterio-Koelerietum vallesianae*sub-ass. *caricetosum humilis*sub-ass. *trinetosum*

→ Mesobromion

Aufnahme No.	sub-ass. <i>caricetosum humilis</i>							sub-ass. <i>trinetosum</i>											
	ML	ML	ML	ML	ML	ML	ML	ML	ML	ML	ML	ML	ML	ML	ML	ML	ML	ML	ML
30	27	32	33	29	1	34	2	12	11	17	19	18	14	24	21	23	10	15	54
Aspect	S	SW	S	S	W	S	S	W	W	W	W	SW	S	W	W	W	W	S	NW
Slope	35	45	25	45	20	30	45	30	30	20	25	45	30	20	40	45	25	30	20
Quadrat size m ²	10	5	10	10	5	10	5	5	5	5	10	5	10	5	5	5	5	10	5
Cover % Herbs.	95	90	100	100	100	80	90	100	80	100	100	40	80	90	70	80	100	100	95
Mosses/Lichens.	10	0,5	2	5	5	10	5	2	5	2	50	5	5	20	10	30	2	2	50
Species No.	30	39	27	31	28	39	32	29	38	34	34	38	33	31	32	40	36	40	37
	Av. sp. no. 32							Av. sp. no. 36											

Association character species

<i>Koeleria vallesiana</i>	+	1.2	+	+	2.2	2.2	+	+	2.2	2.2	+	+	2.2	2.2	2.2	2.2	.	+	1.2
<i>Helianthemum apenninum</i>	1.1	1.2	+	+	1.1	2.2	2.2	1.2	1.1	2.2	.	.	.	.	.	.	.	.	.
<i>H. x sulphureum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Differential species of sub-ass. *caricetosum*

<i>Carex humilis</i>	4.3	2.2	4.4	4.5	3.2	1.2	3.3
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Differential species of sub-ass. *trinetosum*
and Mesobromion character species

<i>Trinia glauca</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Helictotrichon pratense</i>	.	.	.	.	.	.	.	1.1	1.1	1.1	+	1.1	1.1	+	1.1	1.1	+	1.1	+
<i>Cirsium acaulon</i>	.	.	.	.	.	.	.	1.1	2.2	+	2.2	+	+	2.2	1.1	1.1	1.1	2.2	2.2
<i>Anthyllis vulneraria</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.2	+	+	2.3	2.1
<i>Koeleria cristata</i>	.	.	.	.	.	.	.	.	.	1.1	3.2	2.2	.	2.2	1.1	2.3	.	.	.
<i>Filipendula vulgaris</i>	.	.	.	.	.	.	.	.	.	1.2	.	.	.	.	.	.	.	.	.
<i>Helianthemum chamaecistus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Asperula cynanchica</i>	.	.	.	.	.	.	.	.	.	.	.	.	1.1	.	.	.	.	.	.
<i>Potentilla tabernaemontani</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	2.2
<i>Thymus pulegioides</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.2
<i>Bromus erectus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Brachypodium pinnatum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Gentianella amarella</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+

Differential species of Mesobromion

<i>Plantago lanceolata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Briza media</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Carex flacca</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Cynosurus cristatus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Carex caryophylla</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Order and Class character species

<i>Poterium sanguisorba</i>	.	2.2	3.2	3.3	2.2	1.1	3.2	3.2	2.3	1.1	3.2	2.2	1.2	2.2	2.2	2.2	2.2	2.2	1.1
<i>Carlina vulgaris</i>	+	+	1.1	1.1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Scabiosa columbaria</i>	1.1	1.1	1.1	1.1	+	+	+	+	+	+	+	+	+	+	1.1	+	+	+	+
<i>Blackstonia perfoliata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Hippocrepis comosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Viola hirta ssp. calcarea</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Centaurea scabiosa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.2	+	1.2	.	.
<i>Cerastium pumilum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.1

Species of high constancy (V & VI)

<i>Plantago lanceolata</i>	2.2	3.3	2.2	2.2	3.3	3.3	3.3	4.2	2.2	4.2	4.4	3.3	3.3	3.3	3.3	3.3	3.3	1.1	3.3
<i>Hieracium pilosella</i>	3.2	2.2	+	1.2	3.2	2.2	3.2	4.2	2.2	4.2	4.4	3.3	3.3	3.3	3.3	3.3	3.3	1.1	3.3
<i>Thymus drucei</i>	2.2	1.2	1.1	1.2	1.2	2.2	1.2	1.2	2.3	2.2	3.3	+	+	1.2	2.2	1.1	2.2	1.2	1.2
<i>Lotus corniculatus</i>	1.1	1.1	1.1	1.1	2.2	1.2	1.1	2.2	1.2	2.2	2.2	+	+	1.2	1.1	+	2.2	1.1	1.2
<i>Dactylis glomerata</i>	+	+	+	+	1.1	+	+	2.2	+	2.2	+	+	+	1.2	1.1	+	2.2	1.1	1.2
<i>Galium verum</i>	+	+	+	+	+	1.2	1.2	1.1	1.1	+	1.1	1.1	+	+	+	+	+	+	+
<i>Camptothecium lutescens</i>	+	+	+	+	+	+	+	2.1	+	+	1.1	+	+	+	+	+	+	+	1.1
<i>Euphrasia nemorosa</i>	1.1	+	+	+	+	+	+	+	+	+	+	+	+	+	1.3	1.2	1.3	+	2.3
<i>Linum catharticum</i>	+	+	+	+	+	+	+	1.1	+	+	+	+	+	+	+	+	+	+	1.1
<i>Centaurea erythraea</i>	+	1.1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
<i>Cladonia rangiformis</i>	1.2	+	1.2	+	+	+	1.1	+	+	+	+	+	+	+	+	+	+	+	+

Other species

<i>Crepis capillaris</i>	+	1.1	.	+	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Trisetum flavescens</i>	.	1.1	.	.	2.2	+	+	2.1	+	.	.	.	.	.	.	.	.	.	.
<i>Sedum acre</i>	.	.	.	.	1.2	1.2	+	+	+	1.1	1.1	.	.	.	.	.	.	.	.
<i>Hypochaeris radicata</i>	.	.	.	.	.	.	.	+	+	+	+	.	.	.	.	.	.	.	.
<i>Bromus ferronii</i>	.	.	.	.	+	+	+	+	+	+	+	.	.	.	.	.	.	1.1	+
<i>Daucus carota ssp.</i>	.	.	.	.	1.1	+	+	1.1	+	1.1	+	.	.	.	.	.	.	.	+
<i>Medicago lupulina</i>	.	.	.	.	.	.	.	1.1	x	.	.	.	.	.	.	.	.	.	.
<i>Pseudoscleropodium purum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Leontodon taraxacoides</i>	1.2	1.2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Poa pratensis</i>	.	.	1.1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.1	2.2
<i>Weissia microstoma</i>	.	.	.	.	.	.	.	1.1	x	.	.	.	.	.	.	.	.	.	.
<i>Catapodium rigidum</i>	+	+	.	+	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.
<i>Ranunculus bulbosus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Teucrium scorodonia</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+
<i>Senecio jacobaea</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sonchus asper</i>	x	x	x	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Agrostis tenuis</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Parmelia cf. laevigata</i>	.	.	.	.	.	.	.	1.2	.	.	.	.	.	+	2.2	.	.	.	.
<i>Holcus lanatus</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Squamaria crassa</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Sieglingia decumbens</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Helictotrichon pubescens</i>	.	.	.	.	1.1	+	+	3.2	.	.	.	.	.	.	.	.	.	1.1	3.3
<i>Cerastium glomeratum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.2
<i>Achillea millefolium</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Aira caryophylla</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Plantago media</i>	.	1.1	.	.	.	.	.	.	1.1	+	.	.	.	.	.	.	.	.	.
<i>Ligustrum vulgare</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Arenaria serpyllifolia</i>	.	.	1.3	+	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Dicranum scoparium</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Crataegus monogyna</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Phleum bertolonii</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Chrysanthemum leucanthemum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Centaurea nigra</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Prunella vulgaris</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Polygala vulgaris</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Hypericum montanum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Cladonia pyxidata</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Encalypta vulgaris</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.2	.
<i>Inula conyza</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Allium vineale</i>	.	.	.	.	.	.	.	.	.	.	1.1	+	.	.	.	.	.	.	.
<i>Scorpiurium circinatum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
<i>Brachypodium sylvaticum</i>	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Also:- In Aufn. (30) *Taraxacum sect./spectabilia* +; *Leontodon autumnalis* +; *Anacamptis pyramidalis* x; *Pteridium aquilinum* x; (27) *Plantago coronopus* +; *Fissidens cristatus* +.2; *Porella platyphylla* +; (32) *Dicranum bonjeani* +.2; *Weissia cf. fortillis* +; (33) *Cotoneaster microphylla* +.2; *Verbascum thapsus* x; (29) *Eurynchium swartzii* +; *Rhinanthus minor* +; (1) *Plantago coronopus* 1.1; *Porella platyphylla* +; *Anagallis arvensis* +; *Orobancha minor* +; *Trifolium scabrum* +; (34) *Verbascum thapsus* +; *Tortella nitida* +.2; (2) *Cirsium vulgare* +; *Pastinaca sativa* (1.1); (12) *Cirsium vulgare* (+); (11) *Cladonia squarrosa* +; (17) *Trifolium dubium* 1.1; *Salvia horminioides* 1.1; *Eurynchium striatum* +; *Vicia angustifolia* 1.1; *Convolvulus arvensis* +; *Kentranthus ruber* x; *Sedum anglicum* +; *Poa annua* +; *Primula veris* x; *Pimpinella saxifraga* +; (19) *Rhinanthus minor* 3.1; *Vicia angustifolia* +; *Phleum pratense* +; *Trifolium pratense* 1.1; (18) *Taraxacum sect./spectabilia* +; *Sedum anglicum* +; *Eurynchium megalopolitanum* +; *Leucidea sp.* 1.3; (24) *Ononis repens* +; (21) *Crinitaria linoxyris* 1.1; *Ononis repens* +.2; *Hypnum cupressiforme* +; (23) *Anacamptis pyramidalis* x; *Peltigera polydactyla* +.2; *Rhytidiadelphus loreus* +; (10) *Anthoxanthum odoratum* 2.2; *Trifolium pratense* 1.1; *Trifolium repens* +; (15) *Anthoxanthum odoratum* +; *Luzula campestris* +; *Agrostis canina* +.2; *Hypericum pulchrum* x; *Centaurium capitatum* +; (54) *Ulex sp.* (seedling) +; *Frullania tamarisci* 2.3; *Neckera crispa* 2.3; *Tortella tortuosa* 1.2; *Viola riviniana* +; *Cladonia arbuscula</*

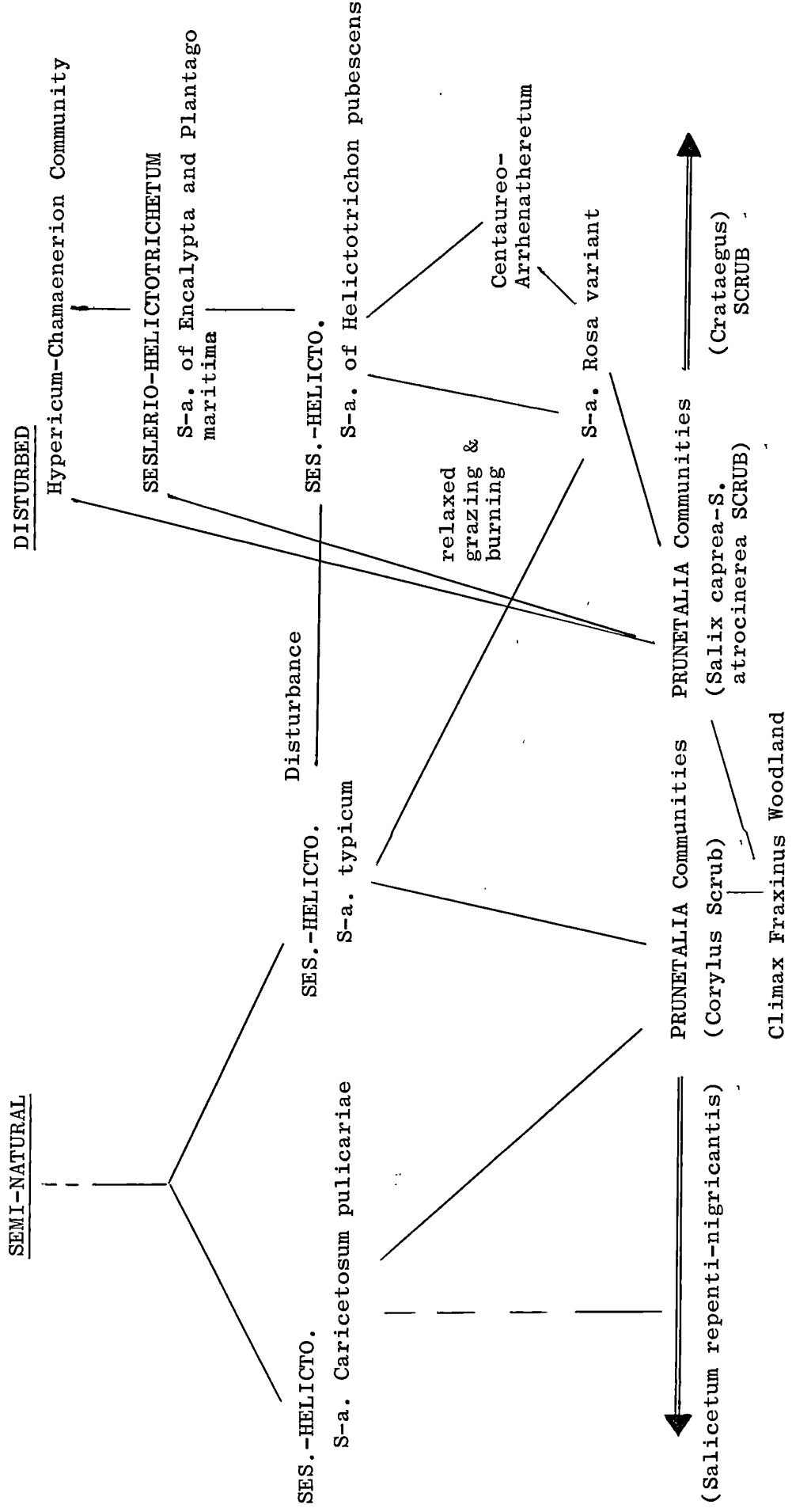


FIGURE 21. The seral relationships of the Association Seslerio-Helictotrichetum.

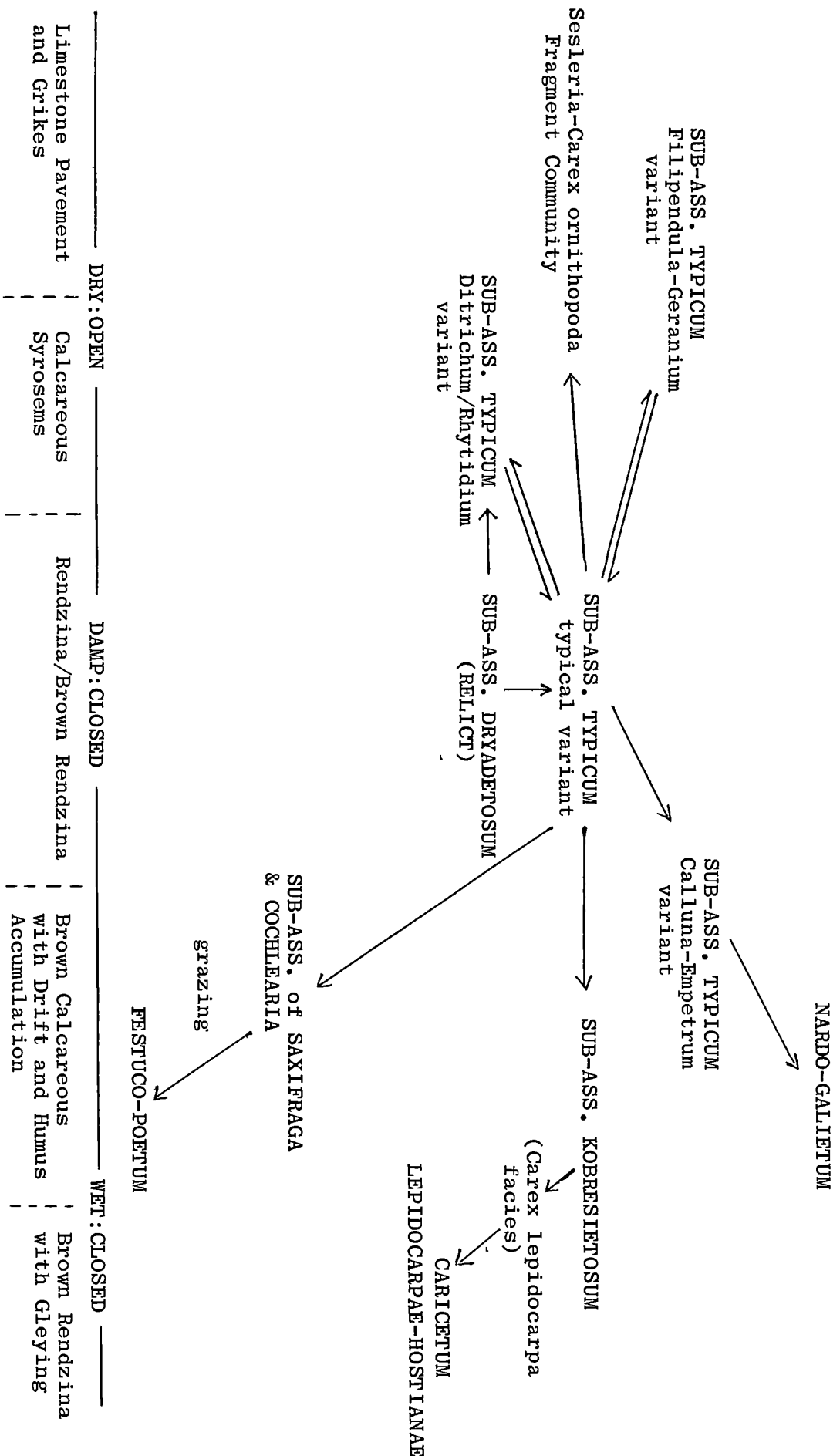


FIGURE 22. The seral and zonal relationships of the Association Seslerio-Caricetum pulicariae.

TABLE 21. ASSOCIATION SALICO-DRYADETUM
(McV. & Rat. 1962)

	SL	SL	SL	SL	SL	SL	SL	SL
Aufnahme No.	2	1	3	4	6	31	38	39
Species No.	44	39	44	33	32	31	39	29
Aspect	E	SE	SE	SW	SW	W	SW	SE
Slope	45	55	50	50	40	15	2	20
Cover %: Herbs & Shrubs.	80	90	100	80	80	80	100	100
Bryophytes.	30	30	40	30	30	10	30	20
Quadrat size (m ²).	1	1	1	1	1	1	4	2

Av. sp. no. 37

Association Character species

<i>Salix reticulata</i>	1.2	.	2.3	2.3	2.3	.	(+)	.
<i>S. arbuscula</i>	+	2.3	+	+	+	.	.	.
<i>S. myrsinites</i>	+	+2	+	.	+	1.3	.	.
<i>S. lapponum</i>	.	.	.	.	1.2	1.2	.	.
<i>S. lapponum x reticulata</i>	.	.	.	.	1.3	.	.	.
<i>S. lapponum x myrsinites</i>	.	.	.	.	.	2.3	.	.

Alliance and Order Character Species

<i>Dryas octopetala</i>	+2	3.4	1.2	1.2	1.2	+2	2.3	.
<i>Saxifraga oppositifolia</i>	1.2	.	+2	1.2	2.2	1.2	1.2	1.2
<i>Silene acaulis</i>	1.2	2.2	+2	2.2	.	+2	+2	+2
<i>Cerastium alpinum</i>	1.1	+	+	+	1.1	.	+	+
<i>Potentilla crantzii</i>	+	+	1.1	+	+	.	1.1	1.1
<i>Sesleria caerulea</i>	3.3	1.2	.	1.2	.	.	+	.
<i>Carex rupestris</i>	.	.	1.1	1.2	.	.	2.2	3.4
<i>Minuartia rubella</i>	.	.	.	(+)	.	.	+3	.
<i>Oxytropis halleri</i>	.	.	.	.	.	.	.	1.1
<i>Astragalus alpinus</i>	.	.	.	.	.	.	.	2.3

Alliance and Order Differential Species

<i>Saxifraga aizoides</i>	1.1	1.1	+	+	1.1	+	+	+
<i>Polygonum viviparum</i>	1.1	+	+	1.1	+	1.1	2.2	1.1

Companions

<i>Festuca ovina</i>	1.1	2.2	1.2	2.2	1.2	2.2	1.1	1.2
<i>Thymus drucei</i>	1.2	+2	1.2	+2	+	+2	1.2	+2
<i>Linum catharticum</i>	+	+	.	+	+	+	+	+
<i>Selaginella selaginoides</i>	+	+	+	+	+	.	+	+
<i>Galium sternerii</i>	+2	+	+	+	+	.	+2	.
<i>Salix herbacea</i>	+2	.	.	+	+2	+	1.2	+2
<i>Carex capillaris</i>	1.1	+	1.2	2.2	+	.	1.2	.
<i>Alchemilla alpina</i>	1.2	+	+2	.	1.2	.	+2	+2
<i>Thalictrum alpinum</i>	+	+	+	.	1.1	.	1.1	1.1
<i>Rhacomitrium lanuginosum</i>	+3	+3	2.3	.	.	1.3	1.3	+3
<i>Ctenidium molluscum</i>	+	+	+	.	1.3	.	1.3	1.3
<i>Carex pulicaris</i>	+2	+	1.1	+	1.1	.	.	.
<i>Galium boreale</i>	.	+	1.1	.	.	1.1	+	+
<i>Pinguicula vulgaris</i>	+	+	+	+	.	.	.	.
<i>Tofieldia pusilla</i>	1.1	+	1.1	+	.	.	.	.
<i>Ditrichum flexicaule</i>	+3	.	1.3	2.3	.	.	+3	.
<i>Hylocomium splendens</i>	.	.	.	+	1.3	1.3	1.3	1.3
<i>Rhytidiadelphus triquetrus</i>	+	1.3	.	.	.	1.3	.	+
<i>Festuca rubra</i>	+	.	+	+	.	.	.	.
<i>Draba incana</i>	+	.	+	.	.	.	.	+
<i>Rubus saxatilis</i>	+2	.	+2	.	.	+2	.	.
<i>Trollius europaeus</i>	+	.	.	.	.	+	.	+
<i>Alchemilla glabra</i>	+	.	+	+	.	.	.	.
<i>Luzula multiflora</i>	.	+	+	+	.	.	.	.
<i>Parnassia palustris</i>	+	.	+	.	.	.	+	.
<i>Viola riviniana</i>	.	1.2	.	.	.	2.2	+2	.
<i>V. lutea</i>	+	.	+	+	.	.	.	.

Tortella tortuosa	.	+.2	.	.	.	+.2	+.2	.
Scapania aspera	+	.	+	.	.	.	+	.
Distichum capillaceum	1.3	+	.	+	.	.	.	.
Rhytidium rugosum	.	+	+	.	.	.	+.3	.
Certraria aculeata	+.2	.	.	+.2	.	.	+.2	.

Also: (2) *Alchemilla glomerulans* +; *Carex bigelowii* +; *Juncus triglumis* +; *Lycopodium selago* +; *Cerastium arctium* +; *Pohlia cruda* +; *Mnium undulatum* +;

(1) *Chelaria sedoides* +.3; *Galium saxatile* +; *Anthyllis vulneraria* +; *Philonotis fontana* +.3; *Hypnum* sp. +; *Caldonia gracilis* +; *Coeloglossum viride* +; *Ptilidium ciliare* +; *Lophocolea bidentata* +; *Tritomaria quinquedentata* +;

(3) *Euphrasia scotica* +; *Carex atrata* +; *Anthoxanthum odoratum* +.2; *Pleurozium schreberi* +.2; *Plagiochila asplenioides* +; *Dicranum majus* +.3; *Entodon concinnus* +; *Hypnum cupressiforme* +; *Fissidens cristatus* +.2; *Breutelia chrysocoma* +.3;

(4) *Myosotis alpestris* +; *Poa balfouri* (+); *Plagiobryum zierii* +;

(6) *Veronica fruticans* +.2; *Anoetangium compactum* +.3; *Dicranum scoparium* +.2; *Hypnum cupressiforme* +; *Cerastium arcticum* +; *Viola canina* +; *Agrostis tenuis* +.2; *Campanula rotundifolia* +; *Potentilla erecta* +.2; *Bellis perennis* +.2;

(31) *Calluna vulgaris* +; *Hypericum pulchrum* +.2; *Anthoxanthum odoratum* +.2; *Ptilidium ciliare* +; *Mnium hornum* +; *M. undulatum* +; *Fissidens cristatus* +.2; *Geranium robertianum* +.2; *Polystichum lonchitis* +; *Breutelia chrysocoma* +.3; *Thuidium tamariscinum* +;

(38) *Empetrum hermaphroditum* +.2; *Vaccinium myrtillus* +.2; *Potentilla erecta* +; *Leontodon autumnalis* +; *Certraria islandica* +; *Cladonia gracilis* +; *Alectoria nigricans* +; *Frullania tamarisci* +;

(39) *Veronica serpyllifolia* +; *Prunella vulgaris* +; *Galium saxatile* +; *Carex bigelowii* +; *Lophocolea bidentata* +; *Cladonia pyxidata* +.2.

TABLE 22. THE PHYTOGEOGRAPHICAL RELATIONSHIPS OF THE ASSOCIATIONS OF THE ALLIANCE KOBRESIO-DRYADION

	A	B	C	D	E	F	G
No. of Aufnahmen.	14	7	7	14	20	10	2
<u>Alliance Character species</u>							
Dryas octopetala	V	V	V	V	IV	V	1
Carex rupestris	III	III	III	V	V	V	2
Salix reticulata	.	.	IV	V	V	.	2
Potentilla crantzii	.	.	V	V	III	.	.
Silene acaulis	II	.	V	V	V	.	2
Saxifraga oppositifolia	r	.	V	III	IV	IV	.
Cerastium alpinum	.	.	V	IV	V	.	.
Astragalus alpinus	.	.	(I)	V	IV	III	.
Carex atrata	.	.	I	III	I	.	.
Salix myrsinites	.	.	IV	.	.	.	.
Minuartia rubella	.	.	II	.	I	.	.
Arenaria norvegica	1	.	.	.	.	.	.
Sesleria caerulea	.	.	III	.	.	.	.
<u>Association and Sub-association</u>							
<u>Differential species</u>							
(AB) Plantago lanceolata	V	IV	.	.	.	.	.
P. maritima	IV	V	.	.	.	.	.
Carex flacca	IV	V	.	.	.	.	.
Bellis perennis	IV	IV	I	.	.	.	.
Cynosurus cristatus	III	II	.	.	.	.	.
Cerastium holosteoides	II	II	.	.	.	.	.
(B) Koeleria cristata	.	V	.	.	.	.	.
Scabiosa columbaria	.	V	.	.	.	.	.
Anthyllis vulneraria	.	IV	I	.	.	.	.
Sieglingia decumbens	I	IV	.	.	.	.	.
Achillea millefolium	.	III	.	.	.	.	.
Leontodon autumnalis	I	III	I	.	.	.	.
Cerastium atrovirens	.	IV	.	.	.	.	.
Scilla verna	.	III	.	.	.	.	.
(C) Salix arbuscula	.	.	IV	.	.	.	.
S. myrsinites	.	.	IV	.	.	.	.
Alchemilla alpina	.	.	IV	.	.	.	.
Salix lapponum	.	.	II	.	.	.	.
(D) Carex vaginata	.	.	.	V	II	.	.
Pedicularis oederi	.	.	.	V	.	.	1
Hieracium alpinum (Coll.)	.	.	.	V	.	.	1
Viola biflora	.	.	.	V	I	.	.
Phyllodoce coerulea	.	.	.	IV	.	.	.
Cassiope hypnoides	.	.	.	IV	.	.	.
(E) Kobresia myosuroides	.	.	.	III	V	.	.
Oxytropis lapponica	.	.	.	II	V	.	.
(F) Arctostaphylos uva-ursi	.	.	.	.	.	V	.
Agropyron latiglume	.	.	.	.	I	IV	.
Festuca rubra	I	V	III	I	.	V	.
(G) Diapensia lapponica	.	.	.	.	.	.	2
<u>Companions:- Phanerogams</u>							
<u>(Constancy V and IV)</u>							
Festuca ovina (+ vivipara)	V	V	V	V	V	.	2
Thymus drucei	V	V	V	.	.	.	.
Linum catharticum	V	V	IV	.	.	.	.
Polygonum viviparum	IV	IV	V	V	V	I	2
Saxifraga aizoides	IV	IV	V	I	I	I	.

Lotus corniculatus	IV	V	I	.	.	.	.
Euphrasia officinalis agg.	IV	IV	.	V	.	.	.
Antennaria dioica	III	V	.	II	.	.	.
Selaginella selaginoides	III	V	IV	V	I	.	.
Hypericum pulchrum	IV	IV	.	.	.	.	.
Potentilla erecta	IV	III	I	.	.	.	.
Viola riviniana	V	.	II	.	.	.	.
Polygala vulgaris	III	IV	.	.	.	.	.
Calluna vulgaris	IV	III	.	.	.	.	.
Carex pulicaris	III	IV	III	.	.	.	.
Prunella vulgaris	IV	II	I	.	.	.	.
Gentianella amarella	III	IV	I	.	.	.	.
Empetrum nigrum	II	IV	I	III	.	.	1
Thalictrum alpinum	II	IV	IV	V	V	.	2
Campanula rotundifolia	II	IV	I	V	IV	V	.
Agrostis tenuis	II	IV	I	.	.	.	.
Parnassia palustris	I	IV	II	IV	II	.	.
Carex panicea	I	IV	.	.	.	.	.
Galium sternerii	I	.	IV	.	.	.	.
Salix herbacea	.	.	IV	V	I	.	2
Carex capillaris	I	III	IV	II	I	.	.
Vaccinium vitis-idaea	.	.	.	V	II	.	2
V. uliginosum	.	.	.	IV	III	.	2
Juncus trifidus	.	.	.	V	III	.	1
Luzula spicata	.	.	I	V	III	.	1
Astragalus oroboides	.	.	.	IV	II	.	.
Pinguicula vulgaris	II	II	III	IV	II	.	.
Saussurea alpina	.	.	.	V	III	III	2
Tofieldia pusilla	.	.	III	IV	I	.	.

Companions:- Cryptogams

Hylocomium splendens	IV	II	III	V	.	.	.
Ditrichum flexicaule	II	V	III	.	.	.	.
Tortella tortuosa	II	IV	II	.	.	.	.
Rhacomitrium lanuginosum	II	II	IV	I	.	.	2
Ctenidium molluscum	III	III	IV	.	.	.	.
Dicranum muhlenbeckii	.	.	.	V	.	.	.
Polytrichum alpinum	.	.	.	IV	.	.	.
Certraria cucullata	.	.	.	V	.	.	2
C. islandica s.l.	.	.	II	V	.	.	2
C. nivalis	.	.	.	V	.	.	2
Cladonia gracilis	.	.	I	V	.	.	2
C. arbuscula	.	.	.	V	.	.	2
Ochrolechia tartarea	.	.	.	IV	.	.	2
Thamnotia vermicularis	.	.	.	IV	.	.	2

NO DETAILS

See text pages 164, 165 for explanation.

TABLE 23.

ASSOCIATION CENTAUREO-ARRHENATHERETUM
O'Sullivan 1965

	ML	MG	MG	MG	D	D	D	D	D	D
Aufnahme No.	47A	24	54	72A	121	37	14	114	74	64
Species No.	38	35	30	32	31	36	34	34	30	36
Aspect.	SE	NE	SW	N	SW	SW	SE	SE	S	SE
Slope °.	35	20	30	2	40	30	40	40	35	30
Cover %: Herbs.	100	100	90	100	100	100	100	100	100	100
Bryophytes.	20	35	10	20	20	10	10	20	10	10
Quadrat size (m ²).	10	4	4	4	10	4	10	10	10	10

Av. sp. no. 34

Association, Alliance & OrderCharacter species

<i>Arrhenatherum elatius</i>	1.1	2.3	3.3	1.2	3.4	4.4	2.2	1.2	3.4	2.3
<i>Trisetum flavescens</i>	1.2	1.1	.	1.2	1.1	+	+	1.1	1.1	1.1
<i>Heracleum sphondylium</i>	1.1	+	1.1	+	.	1.1	+	+	+	+
<i>Helictotrichon pubescens</i>	3.4	2.3	2.3	1.2	+	.	1.1	2.3	.	+2
<i>Veronica chamaedrys</i>	+	+	+	.	1.1	+	.	.	+	+
<i>Chrysanthemum leucanthemum</i>	+	.	+	1.1	.	+	.	+	+	+
<i>Knautia arvensis</i>	.	+	+	1.1	.	+	+	+	1.1	+
<i>Anthriscus sylvestris</i>	.	+2	2.2	.	+2	+	+	.	.	.

Differential species of Sub-ass.
of Galium verum O'Sullivan 1965

<i>Lotus corniculatus</i>	1.2	1.2	1.2	2.3	+	1.2	1.2	1.2	1.2	+2
<i>Galium verum</i>	1.2	+2	+	1.2	.	+	+2	+	1.2	+2
<i>Pimpinella saxifraga</i>	2.3	1.1	.	1.2	.	1.1	+	1.1	1.1	1.1
<i>Agrimonia eupatoria</i>	+2	+	.	1.2	1.1	.	1.2	.	2.3	2.3
<i>A. odorata</i>	.	.	.	.	.	.	+	1.2	.	.

Class Character species

<i>Rumex acetosa</i>	1.1	+	1.1	+	1.1	1.1	+	+	.	+
<i>Poa pratensis</i>	1.1	+	1.1	.	+	.	+	+	+	.
<i>Holcus lanatus</i>	+	1.2	.	+2	1.1	1.2	.	1.2	.	1.2
<i>Cerastium holosteioides</i>	+2	+	+	.	+	.	+2	.	.	+
<i>Lathyrus pratensis</i>	+2	+2	+	+2	.	+	.	.	+	+
<i>Ranunculus acris</i>	.	+	+	.	.	+	+	+	.	.
<i>Festuca rubra</i>	.	.	1.2	.	+2	.	.	.	1.2	.
<i>Poa trivialis</i>	.	.	+	+	.	.	+	+	.	.

Companions

<i>Centaurea nigra</i>	2.2	1.2	+2	2.2	+	2.3	2.3	1.2	2.2	3.3
<i>Dactylis glomerata</i>	1.1	1.1	2.2	1.1	1.1	+	+	2.2	1.1	+
<i>Achillea millefolium</i>	+	+	1.2	+	.	+	1.1	+	+	1.2
<i>Plantago lanceolata</i>	+	1.1	1.1	1.1	+	1.1	.	.	+	1.2
<i>Senecio jacobaea</i>	.	+	1.1	+	.	1.1	+	+	+	+
<i>Pseudoscleropodium purum</i>	1.3	1.3	.	+	+3	+3	+3	.	.	+
<i>Silene nutans</i>	.	.	.	.	1.1	1.1	.	1.1	+	+
<i>Pimpinella major</i>	+	.	.	.	3.3	.	.	3.2	1.2	+
<i>Hypericum perforatum</i>	+	.	.	+	+	+	+	+	.	.
<i>Brachypodium sylvaticum</i>	1.2	.	.	+2	.	1.2	+2	3.4	1.2	.
<i>Festuca ovina</i>	+	+2	+2	.	+2	.	.	.	.	+2
<i>Briza media</i>	1.1	1.1	.	1.1	.	.	.	+	.	1.1
<i>Succisa pratensis</i>	+	+	.	+	+	.	.	1.2	.	.
<i>Acrocladium cuspidatum</i>	1.3	2.3	.	1.3	.	.	1.3	.	.	+3
<i>Lophocolea bidentata</i>	+	+	.	.	.	+	+	+	+	.
<i>Campanula rotundifolia</i>	.	.	+	+	.	.	.	+	.	+
<i>Hypericum hirsutum</i>	+	.	.	.	+	+	+	.	.	.
<i>Hylocomium splendens</i>	+3	.	.	.	+3	.	.	+3	+	.
<i>Malva moschata</i>	.	.	.	.	.	1.2	1.2	.	.	+2
<i>Cirsium eriophorum</i>	.	.	.	.	.	.	1.1	.	+	+
<i>Origanum vulgare</i>	+2	.	.	.	.	1.2	2.2	.	.	.

Vicia sepium	+	.	.	.	+	+	.	.	.	.
Anthoxanthum odoratum	.	+.2	+	.	.	.	.	+.2	.	.
Conium maculatum	.	.	.	.	.	+	1.1	.	.	+
Conopodium majus	.	+	.	.	.	+	.	.	.	+
Brachythecium rutabulum	.	.	+.2	.	+.2	.	.	.	+.2	.
Urtica dioica	+	.	+	.	.	+	.	.	.	.

Also in: Auf (47A) *Thalictrum minus* 2.1; *Geum rivale* +; *Eurynchium swartzii* +; *Mnium-affine* +; *Thuidium tamariscinum* +.3; (24) *Trollius europaeus* +; *Primula veris* +; *Carex pulicaris* +.2; *Carex flacca* +; *Mnium undulatum* +; (54) *Daucus carota* +; *Chamaenerion angustifolium* 1.1; *Pohlia nutans* +; *Funaria hygrometrica* +.2; (72A) *Sesleria caerulea* +.2; *Viola hirta* +; *Dactylorhiza fuchsii* +; *Orchis mascula* +; *Plagiothecium denticulatum* +; *Carex flacca* +; (121) *Dryopteris filix-mas* +.2; *Deschampsia caespitosa* +.2; *Valeriana officinalis* +.2; *Mnium affine* +; *Lophocolea cuspidata* +; *Plagiochila asplenioides* +; (37) *Crataegus* seedling +; *Clinopodium vulgare* +; *Alchemilla vestita* +; *Centaurea scabiosa* +.2; *Leontodon hispidus* 1.2; (14) *Arctium lappa* +.2; *Verbascum thapsus* +; *Cirsium palustre* +; *Agrostis canina* +.2; *Eurynchium swartzii* +.3; (114) *Festuca gigantea* +.2; *Hieracium umbellatum* +; *Solidago virgaurea* 1.1; *Cirsium heterophyllum* +.2; *Angelica sylvestris* +; *Parnassia palustris* +; (74) *Geranium sanguineum* +.2; *Hypericum maculatum* +; *Solidago virgaurea* +.2; *Parnassia palustris* +; *Dactylorhiza fuchsii* +; (64) *Leontodon hispidus* +.2; *Helictotrichon pratense* +.2; *Thymus drucei* +.2; *Scabiosa columbaria* +; *Primula veris* +.

TABLE 24. ARRHENATHERUM-MERCURIALIS COMMUNITY

	DS	DS	DS	DS	DS	ML
Aufnahme No.	3	4	1	2	5	51
Species No.	25	23	17	21	24	15
Aspect.	SW	NE	NW	SW	NW	W
Slope °.	40	45	40	20	40	45
Cover %: Herbs.	50	60	40	40	50	40
Bryophytes.	10	5	2	5	10	5
Quadrat size (m ²).	50	10	10	10	20	20

Av. sp. no. 21

Community Character species

<i>Arrhenatherum elatius</i>	2.3	3.4	3.3	2.3	1.2	1.2
<i>Mercurialis perennis</i>	1.2	+2	+2	2.3	1.2	1.2
<i>Teucrium scorodonia</i>	3.4	1.2	1.2	+2	+2	+2
<i>Geranium robertianum</i>	1.1	1.1	2.2	+	2.3	+
<i>Brachypodium sylvaticum</i>	+2	2.3	+2	.	+2	3.3

Companions

<i>Festuca ovina</i>	+2	+	+2	+	+	.
<i>Mycelis muralis</i>	+	+	+	.	+	1.1
<i>Viola riviniana</i>	1.2	+	.	+	+	+2
<i>Cirsium vulgare</i>	+	+	.	+	+	.
<i>Galium sternerii</i>	+	+	.	+	+	.
<i>Scabiosa columbaria</i>	+	+	1.1	.	+	.
<i>Ctenidium molluscum</i>	1.3	.	+	+	.	1.3
<i>Fissidens cristatus</i>	+	+3	.	+	.	+3
<i>Leontodon hispidus</i>	.	+2	+2	.	+	+
<i>Fraxinus</i> (seedlings)	+	+	+	.	+	.
<i>Dicranum scoparium</i>	.	+3	+3	+3	.	+
<i>Veronica chamaedrys</i>	+	.	.	+	+	+
<i>Rumex acetosa</i>	.	+	+	.	+	.
<i>Senecio jacobaea</i>	+	.	+	.	+	.
<i>Campanula rotundifolia</i>	+	.	.	+	+	.
<i>Origanum vulgare</i>	.	+2	.	+	.	+2
<i>Thymus drucei</i>	.	+	+2	+	.	.
<i>Cardamine hirsuta</i>	+	.	+	.	+	.
<i>Arabis hirsuta</i>	.	+	.	+	+	.

Also: (3) *Galeopsis angustifolia* 1.1; *Hornungia petraea* +; *Hypericum-montanum* +; *Grimmia apocarpa* +2; *Tortula subulata* +2; *Euphrasia nemorosa* +; *Ulex* seedling +;

(4) *Festuca arundinacea* +2; *Epipactis atrorubens* +; *Carlina vulgaris* +; *Tortella tortuosa* +.3;

(1) *Galium aparine* +;

(2) *Cardamine impatiens* +; *Hylocomium splendens* +.3; *Senecio jacobaea* +; *Hieracium cf. britannicum* +; *Acinos arvensis* +;

(5) *Arabidopsis thaliana* +; *Rubus saxatilis* +.2; *Draba incana* +.2; *Rhytidium rugosum* +.3; *Hylocomium splendens* +;

(51) *Clematis vitalba* +.3; *Lithospermum officinale* +.

TABLE 28.

ASSOCIATION MINUARTIO-THLASPEETUM

	LM	LM	LM	LM	LM	LM	NP	LM	LM	LM	LM	NP	LM	LM	LM	LM	LM	LM	LM	LM	ML	LM	LM	LM
Aufnahme No.	7	15	3	2	6	8	13	16	28	27	30	12	34	32	1	9	21	24	14	18	47	35	13	17
Species No.	9	9	12	9	10	10	17	15	15	19	13	14	18	16	18	17	25	15	17	20	29	27	29	20
Aspect.	NW	S	SE	SW	SW	W	SE	S	NE	W	NW	S	W	NE	W	W	NW	S	SW	N	N	SW	N	W
Slope	5	2	2	2	5	10	2	15	2	5	5	5	2	2	5	5	2	.	.	5	5	2	30	5
Cover %: Herbs.	40	55	50	80	70	80	45	65	40	55	40	50	70	40	90	100	95	80	95	70	75	95	85	100
Bryophytes etc.	.	2	2	1	2	.	5	30	50	60	60	70	40	80	10	10	25	10	5	10	10	5	10	20
Quadrat size (m ²).	4	2	2	1	2	2	1	4	2	2	2	2	2	2	2	2	2	2	2	4	4	2	2	2
	Av. sp. no. 11							Av. sp. no. 16							Av. sp. no. 20					Av. sp. no. 25				

Alliance and Association
Character species

Sub-ass. TYPICUM

s.-a. CLADONIETOSUM

S.-a. ACHILLETOSUM
typical var.Mesobromion
var.

Minuartia verna	3.4	2.3	3.4	4.4	1.3	2.3	+2	1.2	1.2	+2	3.4	2.3	3.3	3.3	1.2	3.4	3.4	3.4	1.3	+3	1.2	2.3	1.3	1.3
Thlaspi alpestre	+	+2	1.1	1.1	1.1	+3	1.1	+	+	+	.	1.1	1.1	.	+	+	.	1.1	.	.	.	1.1	1.1	.

Differential species of
Sub-ass. Cladonietosum

Cladonia rangiformis	.	.	.	.	.	.	.	2.3	+3	+3	.	+3	2.3	2.4	.	.	.	.	.	.	+2	.	.	.
C. chlorophaea	.	.	.	.	.	.	.	1.2	1.2	1.2	2.3	.	1.3	1.2	.	.	.	.	.	.	.	.	.	.
Cornicularia aculeata	.	.	.	.	.	.	.	+	+	+3	2.3	+2	.	1.2	.	.	.	.	.	.	.	.	.	.
Cladonia pyxidata	.	.	.	.	.	.	+2	+	1.3	1.3	.	+2	+2	+2	.	.	.	.	.	.	.	.	.	.
Calluna vulgaris	.	.	.	.	.	.	.	+	1.2	.	1.2	+2	.	+	.	.	.	.	.	.	.	.	.	.

Differential species of
Sub-ass. achilletesum

Achillea millefolium	.	.	.	.	.	.	(+)	.	.	.	.	.	.	.	2.2	1.2	1.1	1.1	1.1	+	+	1.1	1.1	+
Euphrasia nemorosa	.	.	.	.	.	.	+	.	.	.	.	.	+	.	1.1	+	+	+	1.1	+	1.1	+	+	+
Anthoxanthum odoratum	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+2	2.2	1.2	2.2	.	+	.	+2	.	.
Plantago lanceolata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.1	.	1.1	+	+	.	1.1	.	1.1	1.1
Rhytidadelphus squarrosus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.3	1.3	+2	.	.	+3	+2	+3	+3	+

Mesobromion species

Anthyllis vulneraria	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.3	.	1.2
Koeleria cristata	.	.	.	.	.	.	.	.	.	.	.	.	+2	.	.	.	.	.	.	.	+	1.2	1.2	.
Helictotrichon pratense	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.1	1.1
Scabiosa columbaria	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	1.1	.

Companions

Festuca ovina	+2	1.2	+2	.	+	3.3	4.4	.	.	+3	1.3	4.4	2.3	+3	1.2	1.2	3.3	2.3	2.3	+3	3.2	1.3	2.3	2.3
Agrostis tenuis	1.3	+3	+	2.3	3.4	+	1.2	1.2	+2	+	.	2.2	+	1.2	.	+	.	+2	.	+	+	+	+	.
Rumex acetosa	+	+	1.1	+	+	+	+	.	+	+	+	+	+	2.2	+	+	+	.	.	.	+	.	+	+
Campanula rotundifolia	+	.	+	+	1.1	+	+	+	+	+	+	+	+	.	+	+	+	+	1.1	+	+	1.1	+	.
Thymus drucei	+	1.2	.	.	.	+	.	1.2	+2	.	.	.	1.2	.	1.2	+2	2.2	1.2	+2	+	2.2	1.2	+2	1.2
Linum catharticum	.	.	+	.	+	.	.	.	1.1	+	+	.	.	.	1.1	+	+	+	.	+	1.1	1.1	+	+
Trifolium repens	.	+2	.	.	+2	.	+	+2	.	.	.	.	+2	+2	+2	+	1.2	.	+	+	+2	1.2	+2	.
Lotus corniculatus	.	.	1.2	.	.	+2	.	.	.	.	1.2	.	+2	1.2	1.2	+	.	+2	1.2	1.2	1.2	+	+	1.2
Geranium robertianum	+	+	.	+	.	.	.	.	+	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.
Senecio jacobaea	.	.	+	.	.	.	.	.	.	.	+	+	.	.	.	+	+	.	.	.	.	+	+	+
Cerastium holosteoides	.	.	.	.	.	.	+	.	.	.	.	.	.	.	+	+	+	.	.	+	+	.	.	.
Cirsium vulgare	.	+	.	.	+	.	.	.	.	.	.	+	.	.	.	.	+	.	.	.	+	+	.	.
Agrostis stolonifera	.	.	.	+2	.	1.2	.	+2	.	.	.	.	.	1.2	.	.	.	.	.	.	.	.	.	+2
Dicranum scoparium	.	.	.	.	.	.	.	.	.	.	.	.	+3	.	.	.	.	.	.	.	.	.	.	.
Viola lutea	.	.	1.1	.	.	.	.	.	+	+	.	.	.	.	.	.	+3	.	+3	.	.	1.3	.	.
Bryum pallens	.	.	.	.	.	.	+3	.	.	.	1.3	.	+3	.	.	.	.	.	.	.	.	.	.	.
Leontodon hispidus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Galium saxatile	.	.	.	.	.	.	+	.	.	.	1.2	.	.	.	.	.	.	.	.	.	.	.	.	1.1
Hylocomium splendens	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.3	.	.	.	.	.	+
Dactylis glomerata	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	.	.	.	.
Saxifraga granulata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.	+
Arrhenatherum elatius	.	.	.	.	1.1	.	.	.	.	.	.	.	.	.	.	.	.	.	1.1	.	.	.	.	.
Pohlia nutans	.	.	.	.	.	.	.	.	.	.	+3	.	.	1.3	.	.	.	.	.	.	.	.	.	1.2
Ranunculus acris	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	+	.	.	.	.
Carex flacca	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.1	1.1	1.1
Hieracium pilosella	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	+2
Carex caryophyllea	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.2	.	+2	+2
Festuca rubra	.	.	.	.	.	1.3	.	.	.	.	.	+	.	+3	.	.	.	.	.	.	.	.	.	.
Galium verum	.	.	.	2.3	.	.	.	.	.	.	.	.	.	.	.	.	+	.	.	.	1.1	.	.	.

Also: (7) Cardamine hirsuta +; (3) Holcus lanatus +3; (8) Tortula subulata +2; Bryum capillare +; (13) Urtica dioica +; Parmelia saxatilis +; Polytrichum piliferum +2; (16) Tussilago farfara 1.1; Equisetum arvense +; Bryum sp. +3; (28) Cochlearia officinale +2; Peltigera canina +2; Lophozia ventricosa +; (27) Cochlearia officinale +; Parmelia omphalodes +; Cladonia verticillata +2; Parmelia physodes +2; (30) Lophozia ventricosa +; (12) Grimmia sp. +2; Polytrichum piliferum +2; Parmelia saxatilis +; (34) Lecidea sp. +2; (32) Cladonia verticillata 1.2; Luzula campestris 1.2; Polygala vulgaris +; Cladonia sp. +2; (1) Trisetum flavescens +2; (9) Lathyrus pratensis +; Gentianella amarella +; (21) Botrychium lunaria +; Pseudoscleropodium purum 1.3; Pleurozium schreberi +3; Bryum sp. +2; (14) Ulex seedling +; Erophila verna +; Rhytidadelphus loreus +3; Camptothecium lutescens +3; (18) Sagina apetala +2; Luzula multiflora +; Chamaenerion angustifolium 1.1; (47) Gentianella amarella +; Polygala vulgaris 1.1; Molinia caerulea +2; Silene maritima 1.2; Viola riviniana 1.1; Galium mollugo +; Centaurium erythraea +; (35) Poterium sanguisorba 2.3; Viola riviniana +; Carlina vulgaris +; Coeloglossum viride 1.1; Rhacomitrium lanuginosum 1.2; Mnium hornum 1.2; Camptothecium lutescens +; (17) Primula veris +; Galium sternerii +; Holcus lanatus +2; (3) Centaurea nigra +; Dianthus deltoides 1.1; Pimpinella saxifraga 1.2; Prunella vulgaris +; Cirsium palustre +; Pseudoscleropodium purum +3.

TABLE 29.

DRYOPTERIDETUM ROBERTIANAE (KUHN 1937) TX. 1937.

	D	D	D	SW	ML	NG	D	D	SW	D	D	D	NP
Aufnahme No.	142	100	84	61	52	26	120	132	62	133	141	122	86
Species No.	18	14	9	14	16	8	16	17	21	17	22	20	6
Aspect.	N	S	N	SW	W	SW	NE	NW	SW	NW	N	N	.
Slope.	40	30	40	45	45	30	35	40	40	40	40	45	.
Cover %: Herbs.	75	45	60	60	60	80	65	80	80	100	80	60	85
Bryophytes.	60	25	10	15	.	.	40	25	30	30	40	80	.
Quadrat size (m ²).	1	1	1	4	4	1	4	4	10	4	4	10	0.25
	Av. sp. no. 13						Av. sp. no. 16		Av. sp. no. 20				
<u>Association Character species</u>													
<i>Thelypteris robertiana</i>	4.3	2.3	4.5	3.3	5.5	4.5	3.3	3.4	5.3	2.3	4.3	3.3	5.5
<u>Differential species of Sub-Association</u>													
<i>Rubus saxatilis</i>	.	.	.	.	.	.	3.4	4.4	.	.	.	.	.
<i>Carex flacca</i>	.	.	.	.	.	.	.	.	2.2	2.2	1.1	1.2	.
<i>Centaurea nigra</i>	.	.	.	.	.	.	.	.	1.1	1.1	1.1	+	.
<i>Festuca ovina</i>	.	.	.	.	.	.	.	.	2.3	1.2	3.3	1.2	.
<i>Helictotrichon pratense</i>	.	.	.	.	.	.	.	.	1.1	+2	1.2	2.2	.
<i>Poa nemoralis</i>	.	.	.	.	.	.	.	.	.	.	.	.	1.1
<i>Phyllitis scolopendrium</i>	.	.	.	.	.	.	.	.	.	.	.	.	+2
<u>Companion species</u>													
<i>Geranium robertianum</i>	.	+	+	+	+	1.1	+2	+2	+	+	1.2	1.2	+
<i>Teucrium scorodonia</i>	+2	+	+2	.	1.2	1.2	1.2	+2	1.2	+2	+2	+	+2
<i>Arrhenatherum elatius</i>	1.2	1.1	.	1.1	.	1.1	2.2	1.2	1.1	+	+	+2	.
<i>Brachypodium sylvaticum</i>	1.1	.	.	2.2	1.1	.	1.2	1.2	+2	.	1.2	2.2	.
<i>Mycelis muralis</i>	+	+	+	.	+	+	.	+	.	+	+	.	+
<i>Mercurialis perennis</i>	1.1	+	+	.	+	.	1.2	1.2	.	+	.	.	.
<i>Ctenidium molluscum</i>	4.4	1.2	+	+2	.	.	.	1.2	1.2	.	.	+2	.
<i>Dicranum scoparium</i>	1.3	2.3	.	1.3	.	.	2.3	1.3	1.3	.	.	2.3	.
<i>Origanum vulgare</i>	+	+	.	+	2.2	.	+	1.2	+	+2	.	.	.
<i>Senecio jacobaea</i>	+	+	.	.	+	.	+	.	+	.	+	.	.
<i>Viola riviniana</i>	+2	.	+	.	.	.	1.2	.	+2	.	+	2.3	.
<i>Fissidens cristatus</i>	.	.	.	.	.	+2	1.3	+	.	+	+	.	.
<i>Hylocomium splendens</i>	1.2	.	.	+2	.	.	+	+3	.	.	.	1.3	.
<i>Festuca arundinacea</i>	.	.	.	.	1.1	.	+2	.	.	.	.	+2	.
<i>Dactylis glomerata</i>	+	+	.	.	+	.	.	.	.	.	.	.	.
<i>Acrocladium cuspidatum</i>	1.3	.	.	.	.	.	.	.	+3	.	.	+3	.
<i>Poterium sanguisorba</i>	.	.	.	.	+	.	.	.	.	+2	+	.	.
<i>Galium sternerii</i>	+2	.	.	+2	.	.	.	.	2.2	.	.	.	.
<i>Arabis hirsuta</i>	.	+	+	.	.	.	+	.	.	.	.	.	.
<i>Leontodon hispidus</i>	+2	.	.	.	.	.	+2	.	.	.	+2	.	.
<i>Fragaria vesca</i>	.	.	.	.	+	.	.	.	.	+	+2	.	.
<i>Hieracium pilosella</i>	.	.	.	+	.	.	.	+2	.	+	.	.	.
<i>Campanula rotundifolia</i>	.	+	.	+	.	.	.	.	+	.	.	.	.

Also in (142) *Tussilago farfara* +; *Saxifraga tridactylites* +; (100) *Epipactis atrorubens* 1.1; *Rhytidium rugosum* +2; (84) *Corylus avellana* +; (61) *Myosotis arvensis* +; *Gentianella amarella* +; *Geranium molle* +; (52) *Rubus sect. Vestiti* 2.2; *Holcus lanatus* +2; *Galium mollugo* +; *Rubia peregrina* +; (26) *Carex digitata* +2; *Verbascum thapsus* +; (132) *Aquilegia vulgaris* +; *Corylus avellana* +; *Hypnum cupressiforme* +2; (62) *Bellis perennis* +; *Geranium molle* +; *Encalypta vulgaris* +2; *Polygala vulgaris* +; (133) *Aquilegia vulgaris* +; *Hypericum hirsutum* +2; (141) *Hypericum hirsutum* +; *Heracleum sphondylium* +; *Plantago lanceolata* +; *Saxifraga tridactylites* +; *Porella laevigata* +2; *Tussilago farfara* +; (122) *Anthoxanthum odoratum* 2.2; *Holcus lanatus* +; *Cirsium arvense* +; *Dicranum majus* 3.3.

TABLE 27.

ASSOCIATION FESTUCO-POETUM

	SW	SW	SW	SW	SW	SW	NP	NP	NP	NP	NP	NP	NP	NP	NP	
Aufnahme No.	50	51	59	53	52	58	D	16	64	72	92	93	94	95	79	80
Species No.	43	39	41	35	33	27	33	33	39	38	44	42	50	41	42	45
Aspect.	SE	NE	SW	S	SW	NW	W	SW	E	SE	SE	NW	SE	NW	N	E
Slope °.	30	30	20	20	20	30	2	10	40	40	10	30	40	30	20	30
Cover %: Herbs.	100	95	100	100	100	95	100	100	100	95	100	90	90	100	90	100
Bryophytes.	30	30	40	40	40	30	5	20	25	30	40	25	35	40	30	40
Quadrat size (m ²).	10	10	10	10	10	10	4	10	10	10	10	10	10	10	10	10
	Av. sp. no. 36										Av. sp. no. 44					
<u>Association Character species</u>																
Poa subcaerulea	1.2	+	+	1.1	+	1.1	+	1.1	+	2.2	1.1	2.3	+	1.1	2.2	+
<u>Association Differential species</u>																
Thymus drucei	1.2	2.3	+	+2	2.3	+2	+2	1.2	+2	2.2	+2	1.2	1.2	1.2	1.2	1.2
Ctenidium molluscum	+	+	1.3	+	2.3	+	+	.	2.3	1.3	+	+3	+3	+	1.3	+
Saxifraga hypnoides	+2	+	.	+	+2	1.2	+	.	+	+	2.3	1.2	+2	1.2	+2	+
Galium sternerii	1.1	+	+	.	1.1	+	+2	.	1.2	1.2	+	+	1.2	.	.	+
Carex caryophylla	1.1	2.2	+	+	+	.	.	+	1.2	.	.	+	+2	3.3	.	+
<u>Differential species of Sub-ass. cynosuretosum</u>																
Cynosurus cristatus	1.1	1.1	+	2.2	+	1.1	+	+	1.1	+	.	.	.	.	.	.
Holcus lanatus	.	+	1.2	.	+2	+	2.2	+2	.	1.2	.	.	.	.	.	.
<u>Differential species of Sub-ass. sub-alpinum</u>																
Euphrasia confusa	.	.	.	.	.	.	.	.	.	+	+	+	1.1	+	+	.
Achillea ptarmica	.	.	.	.	.	.	.	.	.	.	+	.	+	+	+	+
Ranunculus repens	.	.	.	.	.	.	.	.	.	.	.	+	+	+	.	+
Barbilophozia barbata	.	.	.	.	.	.	.	.	.	.	+2	+2	+	.	+	.
Tritomaria quinqueidentata	.	.	.	.	.	.	.	.	.	.	.	.	+	+	+	+
Plagiochila asplenoides	.	.	.	.	.	.	.	.	.	.	.	.	+	1.3	+	+
<u>Alliance, Order and Class</u>																
<u>Character species</u>																
Festuca rubra	+	3.3	+2	2.3	2.3	1.2	+2	1.2	+	1.2	2.3	+2	1.2	1.2	2.3	+2
Ranunculus acris	1.1	+	1.1	2.2	+	1.1	1.1	1.1	+	+	+	.	+	+	+	+
Achillea millefolium	+	.	1.1	2.2	+	+	+	+	+	+	+	2.3	2.2	.	+	+
Trifolium repens	1.2	+	1.2	.	+2	.	1.2	1.2	+2	+2	1.2	+	+2	.	.	+2
Cerastium holosteoides	1.1	+	+	.	+	.	+	+	+	1.1	+	+	.	1.1	.	+
Rumex acetosa	.	1.1	+	+	.	+	+	1.1	+	.	1.1	1.1	2.2	.	1.2	+
Bellis perennis	+	+	+	+2	.	+	+	+	+	1.2	.	+	+	+	.	.
Veronica chamaedrys	.	.	.	+	+	+	+	.	+	.	.	.	.	1.1	1.1	+
V. officinalis	+	+	.	+	+	+	.	.	.	.	+	.	+	+	.	.
Deschampsia caespitosa	.	.	+2	.	.	.	4.3	+2	.	1.2	.	.	+2	.	+2	+2
<u>Companions</u>																
Festuca ovina	3.4	+	1.2	+2	+	+	.	3.4	4.4	+2	1.2	2.3	3.4	2.3	1.2	3.4
Agrostis tenuis	+2	+	3.4	1.2	2.3	3.3	2.3	3.3	+2	1.2	3.4	2.3	.	2.3	1.2	3.3
Anthoxanthum odoratum	1.2	+2	.	1.1	1.1	1.1	1.2	1.2	+	+	1.2	1.2	2.2	.	1.2	+2
Plantago lanceolata	+	1.1	1.1	1.1	+	.	1.1	.	+	+	.	+	+	1.1	+	+
Prunella vulgaris	+2	.	.	1.2	+	.	+	1.2	1.2	1.2	.	1.2	.	1.2	+	+
Viola riviniana	+	+	+	+	.	+	.	1.1	+	+	1.1	1.1	1.1	.	.	1.1
Galium saxatile	+2	1.2	2.2	2.2	+	.	.	2.2	.	+	+2	.	+2	.	2.2	+
Hylocomium splendens	+	1.3	.	2.3	.	1.3	.	+	+3	+3	+	2.3	+	.	.	1.3
Rhynchospora squarrosa	+2	.	1.3	+	+	.	.	+	+	1.3	1.3	+	.	.	1.3	+
Lophocolea bidentata	+	.	.	.	+	+	.	+	+	.	.	.	+	+	.	+
Hypnum cupressiforme	.	+	+	+3	.	.	2.3	.	+	.	.	1.3	+	.	.	+
Thuidium tamariscinum	1.3	.	+	+	.	.	.	.	.	+	.	.	1.3	+3	1.3	+
Luzula campestris	1.1	+2	1.1	.	1.2	+	.	1.2	.	.	1.1	+	.	.	.	2.2;
Linum catharticum	+	.	+	+	.	.	.	+	+	.	.	.	+	.	+	+
Hieracium pilosella	2.2	1.2	.	1.2	+2	.	.	.	.	+2	1.2	+2	1.2	+	.	1.2
Selaginella selaginoides	.	.	+	.	.	+	+	+	+	+	+	.	.	+	+	+
Leontodon autumnalis	1.2	.	+	.	.	+	+	.	.	.	.	.	+	+	1.2	+
Potentilla erecta	+	+	.	.	.	.	.	.	+	1.2	1.2	+2	.	+	+2	+2
Cladonia rangiformis	.	.	+3	+	+	.	.	.	.	+	+	+	.	.	1.3	+
Briza media	+	.	1.1	+	.	.	.	+	+	+	+	.	.	.	.	+3
Carex flacca	.	.	+	+	+	+	.	.	.	1.2	+	.	.	1.1	+	+
Taraxacum officinale agg.	.	+	.	+	+	+	.	.	.	+	.	+	.	+	.	.
Lotus corniculatus	+2	+2	.	+2	+2	.	+2	.	.	+2	.	+	.	.	.	.
Rhacomitrium lanuginosum	.	.	+	+2	.	.	.	1.2	+2	+	.	.	1.3	+3	+3	.
Sagina procumbens	+2	.	+	+	+	.	.	.	.	.	.	+2	+2	.	.	.
Alchemilla glabra	.	.	.	.	.	+2	+2	.	+	+2	.	.	.	+	+2	+
Cirsium palustre	.	.	.	.	.	.	+	+	.	.	+	+	.	.	.	+
Carex panicea	.	.	.	.	.	.	.	+	+	+	+	+	.	1.1	.	+
Aira caryophylla	+	.	+	+	+	+	.	.	.	.	.	.	.	.	.	.
Helianthemum chamaecistus	+2	+2	.	+2	.	.	.	.	.	+2	.	.	+	.	.	.
Poterium sanguisorba	+	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.
Climacium dendroides	.	.	.	.	.	.	.	+3	.	.	.	+3	.	+	+	.

TABLE 25.

ASSOCIATION FILIPENDULO-ARRHENATHERETUM

	D	D	D	NP	NP	NP	D	D	D	D	NP	N	MA	MB
Aufnahme No.	59	96	X	6	77	19	38	12	60	99	25	13	47	2
Species No.	43	36	46	49	32	44	46	40	42	38	48	41	41	53
Aspect.	NW	NE	NE	NE	N	NW	N	NW	N	NE	W	NW	NW	N
Slope %.	45	40	40	45	10	50	40	50	50	55	45	55	25	2
Cover %: Herbs.	100	100	90	100	100	100	100	100	80	90	95	80	80	100
Bryophytes.	20	40	30	35	30	30	40	60	40	60	40	50	50	50
Quadrat size (m ²).	10	10	4	4	4	4	10	4	2	4	10	2	10	10
	Av. sp. no. 42						Av. sp.no. 43							
	S.-ass. typicum						S.-ass. polemonietosum							
<u>Association character species and</u>														
<u>Order character species: (A)</u>														
<u>Arrhenatheretalia; (M) Molinietaalia</u>														
Filipendula ulmaria (M)	1.2	3.3	1.2	3.4	2.3	3.3	.	2.3	2.3	+2	1.2	2.3	+2	2.3
Arrhenatherum elatius (A)	3.3	1.2	1.2	+	1.2	2.2	3.3	3.4	3.4	1.2	3.4	2.3	+	+
Angelica sylvestris (M)	+	1.1	+	+	+	+	+	+	1.1	+	+	+	.	+
Valeriana officinalis (M)	1.2	1.1	2.2	+	1.1	1.1	1.1	.	+2	+	+	1.1	+	.
Veronica chamaedrys (A)	+	+	+2	.	+	.	+	+	.	1.1	+	+	+	.
Cirsium palustre (M)	+	+	+	+	.	.	.	+	+	+	+	+	.	.
Heracleum sphondylium (A)	+	+	+	.	+	1.1	1.1	+	+	.	+	.	.	+
Trisetum flavescens (A)	+2	1.1	1.1	.	1.1	1.1	+	.	1.2	3.3	2.3	.	.	.
Helictotrichon pubescens (A)	.	1.1	1.2	.	+	.	+	.	+2	.	.	.	.	.
<u>Association Differential species</u>														
Mercurialis perennis	.	2.3	2.3	+	2.3	+2	1.2	1.1	+2	1.2	1.2	1.2	3.4	1.2
Silene dioica	+	+	1.2	+	+	+	+	1.2	+	1.2	+	+	+	+
Epilobium montanum	+	1.1	1.1	+	1.1	+	+	1.1	1.1	+	+	+	+	+
Dryopteris filix-mas	+2	1.2	2.2	+2	.	.	+2	+2	+	+	.	1.2	+2	+
Plagiothecium denticulatum	+2	+	+2	+	.	+2	+3	+	+	.	+2	1.3	.	+2
<u>Differential species of Sub-ass.</u>														
Polemonium caeruleum	.	.	.	.	.	.	3.3	2.3	1.2	3.4	3.3	1.2	1.1	.
<u>Class Character species</u>														
Festuca rubra	1.2	1.1	1.1	+2	+2	+	2.2	2.3	1.2	+2	+2	2.3	1.2	.
Holcus lanatus	3.3	1.2	1.2	1.2	.	.	2.2	.	+	.	+	.	.	+2
Poa trivialis	.	+	1.2	+	1.2	.	+	1.1	+	.	1.2	.	+	+
Rumex acetosa	+	+	+	+	+	+	+	+	+	2.3	1.1	.	.	+
Cerastium holosteoides	.	+2	+	+	+2	.	.	.	+	+	+	.	.	.
Poa pratensis	+	.	+	.	+	+	+	.	.	.	.	.	.	.
Ranunculus acris	.	+	.	.	.	+	+	.	.	+	.	+	.	.
<u>Character species of Alno-Padion</u>														
Prunus padus	.	.	.	.	.	.	.	.	.	.	.	1.2	+2	3.1
Fraxinus excelsior	.	.	.	.	.	.	.	(+)	.	.	+	+	4.1	4.1
Alnus glutinosa	.	.	.	.	.	.	.	.	.	.	.	.	.	3.1
<u>Companions</u>														
Cruciata chersonensis	1.2	1.2	1.2	+	+	+2	1.2	+2	1.2	.	+2	+	1.2	+2
Geum rivale	.	2.3	2.3	2.2	1.2	2.2	+	2.3	+	+2	1.2	+	1.2	+
Dactylis glomerata	+	.	1.1	1.1	+	+	1.1	1.1	+	1.2	2.2	+	.	1.1
Urtica dioica	+2	+	+	1.1	+	+	1.1	1.1	+2	.	+	1.1	1.1	+
Eurynchium swartzii	+	+	.	+	+	+3	+3	3.3	.	1.3	+	+	.	+2
Lophocolea bidentata	+	.	+	+	+	+	+2	1.2	+	+2	.	.	+2	1.3
Acrocladium cuspidatum	1.3	.	.	2.3	+3	+	+3	.	+	+	+	+	.	+3
Anthoxanthum odoratum	+2	.	.	1.1	.	1.1	+	.	+2	+	1.1	+2	.	.
Anthriscus sylvestris	.	.	+	+	+	.	+	+	+	+	+	+	.	+
Mnium undulatum	+	.	+	+	+	+2	+	+	+	+	+	+	.	+
Saxifraga hypnoides	1.3	.	+	1.2	.	+2	+2	.	1.2	+2	+2	.	2.3	.
Campanula rotundifolia	1.1	.	.	+	.	+	.	+	1.1	+	+	.	.	.
Hylocomium splendens	.	+2	+	2.3	+	.	.	.	+	+3	1.2	1.3	1.3	1.3
Myosotis arvensis	+	.	+	+	.	.	.	+	+	+	+	+	.	+
Oxalis acetosella	.	.	+	.	+2	.	+	+2	.	1.2	+	1.2	1.2	1.2
Vicia sepium	+2	+	+	1.1	.	.	+	+	+2	.	.	.	+	+
Stellaria holostea	.	.	+	.	.	1.1	+	+	.	.	+	+	+	+
Scrophularia nodosa	+	.	+	.	+	+	+	.	.	.	.	.	+	+
Rhodiadelphus squarrosus	.	+	2.3	1.3	.	.	1.3	.	.	2.3	2.3	.	+	+3
Mnium affine	.	.	.	.	.	+2	+	+	.	+	+	+2	+2	+
Brachythecium rutabulum	+	.	+2	.	.	.	+	1.3	.	+2	.	1.3	.	.
Plagiochila asplenoides	.	.	.	+	+	.	+	+	.	+	+	.	+	+
Senecio jacobaea	+	+	+	.	+	.	.	.	1.1	.	+	.	.	+
Hypericum hirsutum	+	.	+	+	.	.	+	+	+	.	.	+	+	+
Sanguisorba officinalis	1.2	.	1.2	+	.	.	.	+2	.	+	.	.	.	+
Origanum vulgare	.	+	+2	+	.	.	.	+2	.	.	1.2	.	.	+2
Betonica officinalis	.	+	1.2	.	.	.	.	+	.	.	.	.	.	.
Deschampsia caespitosa	.	.	+2	1.2	.	.	.	+2	.	+2	.	.	+	+2
Prunella vulgaris	.	.	.	+	.	.	.	.	+	.	.	+	+2	+
Potentilla erecta	.	.	+2	1.2	.	+	.	.	.	.	.	.	.	.
Alchemilla glabra	.	.	1.2	1.1	.	.	.	.	.	.	+2	.	.	+
Galium verum	.	.	.	+	.	.	+	.	.	.	+	.	.	.
Pimpinella major	.	+	.	.	.	+	.	1.2	.	.	.	.	.	.

Lathyrus pratensis	+	+	.	.	.	+	.	.	.	.	.	.	.	.	.	.	.	.
Viola riviniana	.	1.1	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	1.1
Pseudoscleropodium purum	.	.	.	.	.	1.2	.	+	2	.	.	1.2	.	.	.	.	.	+2 1.3
Thuidium tamariscinum	.	.	.	.	.	+	.	.	+	.	.	.	+	3	.	.	.	2.3
Succisa pratensis	+	.	.	.	.	.	.	.	.	2.3	.	.	.	.	.	.	.	+
Galium aparine	.	+	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	+
Briza media	+	.	.	.	1.1	.	.	.	.	+	.	.	.	.	.	.	.	.
Pimpinella saxifraga	3.2	.	.	.	.	.	.	.	.	.	1.1	.	.	.	.	.	.	.
Teucrium scorodonia	.	.	.	.	.	.	.	.	.	.	.	.	.	+	2	1.2	.	+

Also: (59) *Cirsium arvense* +; *Silene nutans* 1.2; *Achillea millefolium* +; *Sedum telephium* +.2; *Linaria vulgaris* +; *Mnium hornum* +; (96) *Allium vineale* +; *Crataegus* seedling +; (X) *Festuca pratensis* 1.1; *Dicranum scoparium* +.3; (6) *Fragaria vesca* 1.2; *Sesleria caerulea* +.2; *Primula veris* +; *Festuca ovina* +.2; *Anemones nemorosa* +; *Geranium sanguineum* +; *Ctenidium molluscum* +.2; *Rhytidiadelphus loreus* +.3; (77) *Alchemilla xanthochlora* +; *A. subcrenata* +; *Rhacomitrium canescens* +.3; *Rhytidiadelphus triquetrus* +.3; (19) *Geranium sylvaticum* +; *Polypodium vulgare* +.2; *Helictotrichon pratense* +; *Sesleria caerulea* +.2; *Thalictrum minus* 1.1; *Brachypodium sylvaticum* 1.2; *Geranium robertianum* +; *Thymus drucei* +.2; *Parnassia palustris* +.

(38) *Galium sternerii* +; *Mnium hornum* +.2; *Hypnum cupressiforme* +.2; *Climacium dendroides* +; (12) *Geranium robertianum* +; (60) *Festuca ovina* 2.2; *Geranium pratense* +.2; *Leontodon hispidus* 2.1; *Chamaenerion angustifolium* +; *Scabiosa columbaria* +; (99) *Cochlearia alpina* +.2; *Plagiothecium undulatum* +.2; *Dicranum majus* 2.3; (25) *Leontodon hispidus* 1.1; *Clinopodium vulgare* +; *Torilis japonica* +; *Trifolium repens* 1.2; (13) *Luzula sylvatica* 2.3; *Geranium sylvaticum* 1.1; *Ranunculus ficaria* +; *Stachys sylvatica* 1.2; *Pleurozium schreberi* +; *Tritomaria quinqueidentata* +; (47) *Bromus ramosus* +; *Holcus mollis* 1.2; *Dicranum scoparium* +.3; *Dicranella heteromalla* +; *Corylus avellana* 2.3; (2) *Corylus avellana* 3.4; *Carex sylvatica* +.2; *Cirsium heterophyllum* +; *Agrostis stolonifera* +.2; *Brachypodium sylvaticum* 2.3; *Asperula odorata* +; *Cirriphyllum piliferum* 1.3; *Fissidens taxifolius* +; *Eurynchium striatum* 1.3; *Atrichum undulatum* 1.3.

TABLE 26.

THE ALLIANCE RANUNCULO-ANTHOXANTHION IN SCOTLAND

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
	MR	MR	MR	KN	KN	KN	KN	MR	KN	KN	MR	MR	MR	MR
Table No.	26b	29a	26a	6	10	9	8	30b	4	5	30a	25	24	28a
No. of stands.	12	8	16	18	10	12	7	8	8	10	8	19	20	14

Wet facies RANUNCULO-ANTHOXANTHION NARDO-GALION →

Alliance, Order & Class Character
Species

<i>Festuca rubra</i>	III	II	V	V	V	V	IV	IV	V	IV	I	II	I	I
<i>Ranunculus acris</i>	V	V	V	IV	V	IV	IV	V	.	I	II	III	III	I
<i>Rumex acetosa</i> (B)	.	.	II	IV	IV	II	V	V	V	II	V	II	II	I
<i>Holcus lanatus</i>	.	III	I	III	V	III	V	.	II	I	.	.	I	I
<i>Poa pratensis</i> agg.	.	.	I	II	III	I	V	.	V	I	I	.	.	.
<i>Cerastium holosteoides</i>	II	III	III	II	IV	IV	I	IV	I	II	I	r	II	r
<i>Trifolium repens</i>	II	III	III	III	V	IV	II	.	II	I	.	I	II	I
<i>Plantago lanceolata</i>	III	II	III	I	III	IV	I	.	.	II	.	.	II	I
<i>Achillea millefolium</i>	II	.	II	.	.	II	.	I	III	II	.	.	I	I
<i>Succisa pratensis</i>	II	III	III	I	.	I	.	I	.	II	.	II	I	r
<i>Veronica officinalis</i>	II	I	II	I	.	IV	.	II	.	III	I	II	I	I
<i>Luzula campestris</i>	r	.	II	I	II	I	III	I	.	III	III	.	II	I
<i>Taraxacum officinalis</i> agg.	II	III	II	I	II	.	III	.	.	.	I	I	I	.
<i>Cirsium palustre</i>	r	I	r	II	IV	.	III	.	.	.	.	.	.	.
<i>Cardamine pratensis</i>	r	.	r	II	IV	.	I	.	.	.	.	.	.	.
<i>Molinia coerulea</i>	.	I	r	II	III	I	.	.	.	I	.	I	r	I
<i>Filipendula ulmaria</i>	I	I	I	I	III	.	III	.	.	.	r	.	.	.
<i>Achillea ptarmica</i>	.	II	.	I	II	.	.	.	.	.	.	.	.	.
<i>Veronica chamaedrys</i>	.	I	I	.	I	I	I	.	.	.	.	.	r	.
<i>Helictotrichon pubescens</i>	.	.	.	I	II	II	II	.	.	I	.	.	.	.

Differential species of Noda

<i>Saxifraga aizoides</i>	V	.	.	.	.	.	.	I	.	.	I	I	.	.
<i>Linum catharticum</i>	V	I	II	.	.	I	.	I	.	.	.	.	.	.
<i>Polygonum viviparum</i>	V	III	II	I	.	I	.	II	.	.	.	I	r	.
<i>Ctenidium molluscum</i>	V	I	III	.	.	I	.	III	.	.	.	I	r	I
<i>Juncus squarrosus</i>	.	V	.	III	II	II	II	.	I	II	.	.	.	.
<i>Carex echinata</i>	.	V	.	II	I	.	II	.	.	.	.	I	III	III
<i>Polytrichum commune</i>	.	.	I	V	I	I	II	.	.	III	.	r	II	II
<i>Cynosurus cristatus</i>	.	.	I	.	IV	I	.	.	.	.	.	.	.	.
<i>Thymus drucei</i>	V	I	V	.	.	V	.	II	.	.	I	V	.	.
<i>Carex ovalis</i>	.	.	.	II	II	.	V	.	.	.	.	.	.	.
<i>Juncus effusus</i>	.	.	.	III	III	.	.	.	.	.	.	.	I	r

Companions - Phanerogams

<i>Anthoxanthum odoratum</i>	III	V	V	V	V	V	V	IV	V	V	V	V	V	V
<i>Agrostis tenuis</i>	IV	V	V	V	V	V	V	V	V	V	V	V	V	V
<i>A. canina</i>	V	V	III	V	V	V	II	V	IV	V	IV	III	IV	IV
<i>Festuca ovina</i> agg.	V	V	V	V	V	V	V	V	V	V	III	V	V	V
<i>Nardus stricta</i>	III	V	IV	V	IV	III	V	I	II	IV	IV	V	V	V
<i>Galium saxatile</i>	II	V	III	IV	II	V	IV	III	IV	IV	V	V	V	V
<i>Potentilla erecta</i>	IV	V	IV	V	V	V	IV	II	I	V	III	IV	V	V
<i>Deschampsia caespitosa</i>	II	II	II	V	V	III	V	V	III	I	V	III	III	III
<i>Luzula multiflora</i>	I	V	II	III	IV	II	IV	III	.	II	III	III	III	IV
<i>Carex pilulifera</i>	.	.	II	III	II	V	II	I	I	V	I	III	III	V
<i>Viola riviniana</i>	V	III	IV	I	.	IV	II	V	.	I	III	IV	IV	III
<i>Carex panicea</i>	V	V	II	V	V	II	III	I	.	II	.	I	II	II
<i>Campanula rotundifolia</i>	III	II	II	I	.	III	.	III	IV	V	r	III	I	II
<i>Vaccinium myrtillus</i>	.	I	II	II	.	III	.	IV	.	III	IV	IV	III	IV
<i>Deschampsia flexuosa</i>	.	.	I	I	.	I	.	V	III	III	IV	II	III	III
<i>Carex pulicaris</i>	V	V	III	III	III	II	.	I	.	I	.	I	I	.
<i>Alchemilla alpina</i>	III	II	III	.	.	I	.	V	.	I	V	V	I	.
<i>Prunella vulgaris</i>	V	III	V	II	III	.	I	I	.	I	.	I	II	.
<i>Leontodon autumnalis</i>	III	IV	II	I	I	.	.	I	.	I	.	I	II	I

Companions - Cryptogams

<i>Rhizidiadelphus squarrosus</i>	III	V	V	V	V	V	V	V	V	V	V	III	IV	V
<i>Hylocomium splendens</i>	III	V	V	V	IV	V	III	V	I	IV	V	V	V	IV
<i>Pseudoscleropodium purum</i>	II	III	III	V	V	V	V	II	III	V	.	I	III	II
<i>Pleurozium schreberi</i>	.	I	I	IV	I	III	.	I	II	IV	III	IV	III	IV
<i>Thuidium tamariscinum</i>	I	IV	II	V	IV	III	III	IV	.	II	II	II	III	II
<i>Lophocolea bidentata</i>	I	IV	II	IV	IV	III	IV	.	III	I	r	I	II	II
<i>Hypnum cupressiforme</i>	III	.	II	IV	I	IV	.	II	III	IV	.	II	II	II
<i>Rhizidiadelphus loreus</i>	I	I	III	I	.	I	.	V	.	I	IV	IV	III	II
<i>Acrocladium cuspidatum</i>	II	III	II	II	V	I	II	I	.	.	.	r	.	II
<i>Polytrichum alpinum</i>	I	I	III	.	.	.	.	V	.	.	V	III	II	II
<i>Eurynchium praelongum</i>	.	.	.	III	IV	I	V	.	I	.	.	.	.	.

(B) including *R. acetosella* agg. of King & Nicholson.

KN = King & Nicholson, 1964.

MR = McVean & Ratcliffe, 1962.

H 30b *Deschampsia caespitosa* alpinum (MR).I 4 *Agrostis-Festuca-Poa* (KN).J 5 *Festuca-Agrostis* type (KN).B 26a *Saxifraga-Agrostis-Festuca* (MR).L 25 *Alchemilleto-Agrosto-Festucetum* (MR).C 26a *Species-rich Agrostis-Festucetum* (MR).M 24 *Species-poor Agrostis-Festucetum* (MR).D 6 *Festuca-Agrostis*-(*Nardus*)-type (KN).N 28a *Nardetum sub-alpinum* (MR).E 10 *Agrostis-Festuca* type (KN).F 9 *Festuca-Agrostis* type (KN).G 8 *Deschampsia-Festuca-Agrostis* type (KN).

TABLE 15.

ASSOCIATION CIRSIO-BROMETUM

Aufnahme No.	3	8	9	1	2	4	5	6	7	20	15	16	17	18	13	10	11	12	14
Species No.	39	36	32	32	33	43	47	45	40	39	25	31	34	33	29	19	23	21	30
Aspect.	S	SE	S	SE	SW	S	SW	S	SE	SE	NW	NW	NW	W	SW	SW	S	SE	NW
Slope °	25	35	30	25	30	10	20	30	20	10	30	40	30	30	10	10	20	15	20
Cover %: Herbs.	100	100	100	100	100	95	95	100	95	100	100	100	100	100	100	100	100	100	100
Bryophytes.	5	2	5	2					5	5	2	10		20	2				2
Quadrat size (m ²).	10	10	10	10	10	4	4	4	4	4	10	10	10	10	10	10	10	10	10
Average species no.	34					43					31				24				

Association Character species

<i>Cirsium acaulon</i> (Ch)	1.2	2.3	2.3	2.2	2.2	2.1	1.1	1.2	2.1	2.2	2.2	+	+	+	2.2	1.2	1.2	+	1.1
<i>Bromus erectus</i> (Ch)	3.3	3.4	2.3	2.3	3.4	2.2	1.2	1.2	+	1.2	1.2	2.2	+	1.2	2.3	2.3	+	+	2.3
<i>Asperula cynanchica</i> (Ch)	2.2	1.1	1.2	2.2	1.2	2.2	1.2	2.2	+	1.2	1.2	+	2.2	.	+	.	+	.	.

Differential species of Sub-ass. ofOnobrychis & Serratula

<i>Onobrychis vicicifolia</i> (Ch)	+	+	.	.	.	1.2	+	1.2	1.2	+	.	.	.	.	.	.	.	.	.
<i>Serratula tinctoria</i>	.	1.1	+	.	.	1.2	1.1	+	1.2	1.1	.	.	.	.	.	.	.	.	.
<i>Gentianella anglica</i> (Ch)	+	.	.	.	.	+	1.1	+	+	+	.	.	.	.	.	.	.	.	.
<i>Coeloglossum viride</i>	.	.	.	.	.	+	+	+	+	+	.	.	.	.	.	.	.	.	.
<i>Blackstonia perfoliata</i> (Ch)	.	.	.	.	.	.	+	+	+	+	.	.	.	.	.	.	.	.	.
<i>Orchis ustulata</i> (Ch)	.	.	.	.	.	+	+	1.1	+	+	.	.	.	.	.	.	.	.	.
<i>Thesium humifusum</i> (Ch)	.	.	.	.	.	+	1.1	1.1	+	+	.	.	.	.	.	.	.	.	.
<i>Cirsium tuberosum</i>	.	.	.	.	.	1.1	+	1.1	+	+	.	.	.	.	.	.	.	.	.

Differential of Sub-ass.brachypodietosum

<i>Brachypodium pinnatum</i> (Ch)	3.4	4.4	3.3	3.4
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Differentials of Sub-ass. ofAnthoxanthum and Holcus

<i>Anthoxanthum odoratum</i>	.	.	.	+	+	+	+	.	2.2	1.2	2.3	2.2	2.2
<i>Holcus lanatus</i>	.	.	.	.	.	.	.	.	.	.	.	.	+	.	+	+	1.1	1.2	1.1

Alliance and Order CharacterSpecies (Ch)

<i>Poterium sanguisorba</i>	+	+	1.1	+	2.3	1.3	1.1	+	1.2	2.2	+	1.1	+	2.1	2.2	.	1.2	2.3	+
<i>Campanula glomerata</i>	+	1.1	+	+	.	+	+	1.1	+	+	+	+	+	1.1	1.1	.	.	.	.
<i>Phyteuma tenerum</i>	+	1.1	.	+	.	+	+	.	+	1.1	+	1.1	+	+	1.1	1.1	.	.	.
<i>Helianthemum chamaecistus</i>	+	+	1.2	1.2	2.2	1.1	1.1	1.1	+	.	+	1.2	+	1.2	1.1	1.1	.	.	1.1
<i>Helictotrichon pratense</i>	1.2	2.2	2.2	1.2	+	+	1.1	+	1.1	1.1	+	+	+	1.1	1.1	.	.	.	.
<i>Hippocrepis comosa</i>	+	1.1	+	+	1.2	1.2	2.2	+	1.2	+	+	+	+	1.1	1.1	.	.	.	.
<i>Scabiosa columbaria</i>	1.1	1.1	1.1	.	+	+	+	+	1.1	+	+	1.1	+	+	+	.	.	.	.
<i>Carlina vulgaris</i>	1.1	+	+	+	+	.	.	.	.	.	+	+	+	+	+	.	.	.	.
<i>Anthyllis vulneraria</i>	+	+	.	1.1	+	+	1.1	+	+	.	+	+	+	+	+	.	.	.	.
<i>Gentianella amarella</i>	1.1	+	+	+	1.1	1.1	+	1.1	.	.	.	1.1	.	+	.	.	.	.	.
<i>Koeleria cristata</i>	.	+	1.1	1.1	+	+	.	.	.	+	+	.	.	.	.	.	.	.	.
<i>Picris hieracioides</i>	.	+	.	.	.	+	+	.	.	+	+	.	.	.	.	.	.	.	.
<i>Polygala calcarea</i>	+	.	+	.	.	.	.	1.2	+	.	.	+	.	.	.	.	.	.	.

Companions

<i>Carex flacca</i>	1.1	1.1	1.2	2.2	2.2	1.2	1.2	1.2	1.1	2.2	+	+	+	1.1	+	2.2	+	1.1	+
<i>Festuca rubra</i>	+	1.2	+	2.2	+	+	2.2	2.2	3.3	.	2.3	2.3	+	2.2	+	1.2	1.2	2.2	1.1
<i>Briza media</i>	1.1	+	+	+	+	.	+	+	1.1	+	.	+	1.1	+	+	.	.	.	1.1
<i>Festuca ovina</i>	2.3	1.2	1.2	1.2	1.2	2.3	+	1.2	+	4.4	+	.	+	1.1	+	.	.	.	.
<i>Linum catharticum</i>	1.1	+	+	+	+	+	+	+	+	+	+	+	+	+	+	.	.	.	.
<i>Carex caryophyllea</i>	+	2.2	1.1	1.1	+	2.3	2.2	+	+	1.2	+	1.2	1.2	+	.	.	.	.	+
<i>Thymus crucei</i>	2.2	1.2	+	+	1.2	1.2	2.3	+	1.2	+	1.2	+	+	+	.	.	.	.	+
<i>Lotus corniculatus</i>	+	1.2	.	+	1.2	+	.	+	+	.	.	1.1	+	+	1.2	+	1.2	+	.
<i>Plantago lanceolata</i>	+	+	.	.	1.1	1.1	1.1	1.1	1.1	+	.	+	+	+	.	.	.	.	+
<i>Campanula rotundifolia</i>	.	+	+	+	+	+	+	+	+	+	.	.	+	+	+	+	+	.	+
<i>Leontodon taraxacoides</i>	+	.	1.1	1.2	+	1.1	+	1.1	1.2	+	+	.	.	+	.	.	.	.	+
<i>Agrostis tenuis</i>	+	.	.	.	+	.	1.1	.	+	+	+	1.1	+	.	1.2	.	1.1	+	2.2
<i>Leontodon hispidus</i>	+	.	+	1.1	.	.	+	.	.	.	1.1	+	+	.	.	.	.	.	+
<i>Prunella vulgaris</i>	1.1	+	.	+	.	+	.	.	1.1	.	.	+	+	+	+	1.1	+	.	.
<i>Chrysanthemum leucanthemum</i>	+	.	.	.	+	+	1.1	.	+	+	+	+	+	+	+	+	+	.	+
<i>Galium verum</i>	1.1	.	+	.	.	1.1	1.1	+	.	+	.	.	.	+	+	.	.	.	1.1
<i>Centaurea nigra</i> ssp. <i>nemoralis</i>	+	.	1.1	.	1.1	.	.	1.1	+	.	.	.	.	+	.	.	.	.	1.1
<i>Cynosurus cristatus</i>	.	+	.	.	.	1.2	2.2	2.2	1.2	+	.	.	.	+	.	.	.	.	.
<i>Trisetum flavescens</i>	.	.	.	.	+	+	1.1	1.1	+	+	.	.	.	+	.	.	.	.	.
<i>Hieracium pilosella</i>	.	+	.	.	+	1.2	+	+	.	1.2	.	.	.	.	.	.	.	.	.
<i>Euphrasia nemoralis</i>	.	+	.	1.1	.	+	+	.	.	.	+	.	.	.	.	.	.	.	+
<i>Betonica officinalis</i>	1.1	.	+	.	.	+	+	1.1	.	+	+	.	.	.	.	.	.	.	.
<i>Senecio jacobaea</i>	+	+	.	.	+	+	.	.	+	+	+	.	.	.	.	.	.	.	+
<i>Trifolium repens</i>	1.2	.	+	.	.	.	1.2	.	+	.	+	.	.	.	.	.	.	.	+
<i>Dactylis glomerata</i>	+	+	.	.	.	.	.	.	+	+	+	.	.	.	.	.	.	.	+
<i>Pimpinella saxifraga</i>	.	+	+	.	+	.	.	.	+	.	.	.	.	+	.	.	.	.	+
<i>Plantago media</i>	+	.	.	.	.	.	.	.	+	.	.	.	.	+	.	.	.	.	+
<i>Medicago lupulina</i>	.	.	+	.	.	.	+	.	.	+	.	.	.	+	.	.	.	.	.
<i>Trifolium pratense</i>	.	+	.	1.1	.	.	.	.	.	.	.	+	.	1.1	.	.	.	.	.

Polygala vulgaris	.	.	.	.	.	.	.	.	.	+	.	+	.	+	+	.	.	.	.
Agrostis stolonifera	.	.	.	.	.	.	.	.	+	.	.	.	+	.	+	.	1.1	.	+
Camptothecium lutescens	.	+	.	+	+	.	.	.	.	.	.	+	.	.	.	.	.	.	.
Dicranum scoparium	.	+.2	.	.	+	.	.	.	.	.	+.2	.	.	.	.	.	.	.	.

Also: (3) and (8) Fissidens cristatus +; (9) Rhytidiadelphus squarrosus +; (4) Prunella laciniata +; Taraxacum sect./erythrosperma +; Leontodon autumnalis +; (5) Taraxacum sect./erythrosperma +; Leontodon autumnalis +; Achillea millefolium +; Succisa pratensis +; Centaurium erythraea +; Rumex acetosa +; Rhinanthus minor +; (6) Prunella laciniata +; Achillea millefolium +; Succisa pratensis +; (7) Tortula sp. +.2; (20) Weissia cf. microstoma +.2; Cirsium vulgare +; (15) Festuca arundinacea +.2; (16) Pseudoscleropodium purum +.3; Ctenidium molluscum +.3; (17) Cirsium vulgare +; (18) Rhytidiadelphus squarrosus +.3; Pseudoscleropodium purum 1.3; (13) Hypnum cupressiforme +; (10) Phleum bertolonii +; (11) Ononis spinosa +.2; (14) Hypnum cupressiforme +; Ranunculus bulbosus +; Crepis capillaris +; Bellis perennis +.

TABLE 19.

THE PHYTOGEOGRAPHICAL RELATIONSHIPS OF THE ASSOCIATIONS
OF THE SUB-ALLIANCE SESLERIO-MESOBROMION IN NW-EUROPE

	A	B	C	D	E	F	G	H	J	K	L	M	N	O		
No. of Aufnahmen.	9	8	19	8	29	5	5	8	6	7	12	12	21	19		
<u>Differential species of Sub-Alliance (D)</u>																
Sesleria caerulea	V	V	V	V	V	V	V	V	V	V	V	V	V	V	(X) including	
Galium sterneri (X)	.	.	.	.	IV	V	V	V	III	IV	III	.	.	II	Galium
Cornicularia aculeata	.	.	.	.	III	IV	IV	V	.	.	.	.	.	.	pumillum.
Gentiana verna	.	.	.	.	I	IV	I	II	IV	.	II	.	.	.	II
Epipactis atrorubens	IV	I	r	.	r	.	r	.	.	I	II	.	I	III	.	
Euphrasia salisburgensis	.	.	.	.	.	.	.	.	II	.	II	.	.	.	II
Polygala amara	.	.	.	.	I	.	I	.	.	.	.	r	II	II	.
Viola rupestris	.	.	.	.	I	.	.	.	.	.	.	.	.	.	.
<u>Association & Sub-association Differential species</u>																
Acrocladium cuspidatum	r	.	.	.	r	.	.	.	I	.	.	.	.	.	.
Carex pulicaris	.	V	.	.	V	V	V	V	III	.	III	.	.	.	.
Helictotrichon pubescens	I	.	V	I	.	.	.	.	.	.	.	.	.	.	.
Dactylis glomerata	.	.	V	I	r	.	.	.	.	.	.	.	.	.	.
Daucus carota	.	.	IV	I	.	.	.	.	.	.	.	.	.	.	.
Hypochaeris radicata	.	.	.	V	.	.	I	.	I	.	II	.	.	.	.
Encalypta vulgaris	.	.	.	V	.	.	.	.	.	I	.	.	.	.	.
Hypericum montanum	.	.	.	V	.	.	.	.	.	.	.	.	.	.	.
Plantago maritima	.	.	r	IV	r	.	.	.	III	I	IV	.	.	.	.
Kobresia simpliciuscula	.	.	.	.	.	V	.	.	.	.	.	.	.	.	.
Dryas octopetala (D)	.	.	.	.	.	.	V	.	.	.	V	.	.	.	.
Helianthemum canum (Ch)	.	.	.	.	.	.	II	.	.	IV	IV	.	.	.	.
Saxifraga hypnoides	.	.	.	.	r	.	.	V	.	.	.	.	.	.	.
Cochlearia alpina	.	.	.	.	.	.	.	V	.	.	.	.	.	.	.
Draba incana	.	.	.	.	.	.	.	V	.	.	.	.	.	.	.
Myosotis alpestris	.	.	.	.	.	.	.	III	.	.	.	.	.	.	.
Asperula cynanchica (Ch)	.	.	.	.	.	.	.	.	V	V	V	r	II	V	.
Breutelia chrysocoma	.	.	.	.	r	.	.	.	III	.	IV	.	.	.	.
Camptothecium lutescens	.	.	.	.	I	.	.	.	V	IV	III	.	II	I	.
Vincetoxicum officinale	.	.	.	.	.	.	.	.	.	.	.	.	IV	III	I
Hypericum perforatum	.	.	.	.	.	.	.	.	.	.	.	.	IV	II	.
Origanum vulgare	.	.	.	.	r	.	.	.	.	.	.	.	III	I	.
Brachypodium pinnatum (Ch)	.	.	.	.	.	.	.	.	.	.	.	.	I	IV	III
Cirsium acaulon (Ch)	.	.	.	.	.	.	.	.	.	.	.	.	.	III	II
Euphorbia cyparissias (Ch)	.	.	.	.	.	.	.	.	.	.	.	.	.	III	.
Carlina acaulis (Ch)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	V
Euphthalmum salicifolium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	V
Aster bellidiflorus (D)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	IV
Prunella grandiflora	.	.	.	.	.	.	.	.	.	.	.	.	.	.	IV
Carex montana	.	.	.	.	.	.	.	.	.	.	.	.	.	.	IV
<u>Alliance & Order Character Species (Ch)</u>																
Koeleria cristata	IV	III	III	V	V	IV	IV	III	V	V	V	I	III	IV	.	
Helictotrichon pratense	IV	V	IV	V	IV	III	IV	IV	.	II	I	.	.	II	.	
Helianthemum chamaecistus	V	V	IV	IV	V	V	V	III	.	IV	.	.	.	V	.	
Poterium sanguisorba	V	V	V	V	III	.	III	.	I	II	I	III	IV	V	.	
Viola hirta ssp. calcarea	IV	III	IV	V	II	.	III	I	.	IV	.	.	r	III	.	
Scabiosa columbaria	V	III	IV	III	II	.	I	.	.	IV	.	.	I	III	IV	
Gentianella amarella	IV	III	III	V	II	.	III	.	II	I	.	.	.	.	IV
Anthyllis vulneraria	V	III	III	III	II	.	.	.	III	I	.	.	.	II	IV	
Carlina vulgaris	IV	I	I	.	II	.	II	.	III	III	IV	.	r	II	.	
Centaurea scabiosa	I	I	IV	III	II	.	.	.	.	.	.	.	r	I	I
Hippocrepis comosa	.	.	.	.	II	.	III	.	.	IV	.	.	II	II	V
Potentilla tabernaemontani	.	.	.	.	r	.	.	.	.	II	.	.	I	II	.
Carex ericetorum	.	.	.	.	r	.	II	.	.	II	.	.	.	.	.
Blackstonia perfoliata	.	.	.	.	.	.	.	.	II	.	.	.	.	.	.
Bromus erectus	.	I	.	.	.	.	.	.	.	.	.	.	.	.	V
Filipendula vulgaris	.	.	.	.	I	.	.	.	.	.	.	.	.	.	I
<u>Companions (of Constancy V & IV)</u>																
Carex flacca	V	V	V	V	IV	V	V	III	IV	IV	V	r	II	IV	(x) including	
Thymus drucei (x)	V	V	V	V	V	IV	V	V	V	V	V	.	I	IV	Thymus	
Lotus corniculatus	IV	V	IV	III	V	.	IV	II	V	IV	IV	r	II	V	serpyllum.	
Plantago lanceolata	V	III	IV	III	III	II	II	IV	IV	III	V	.	.	.	II	
<u>(x) including</u>																
Festuca ovina (x)	V	V	II	III	IV	IV	V	V	IV	V	V	.	I	III	V	Festuca longi-
Linum catharticum	IV	IV	IV	III	IV	IV	V	III	IV	IV	V	.	I	III	II	folia & F.
Carex caryophylla	IV	II	IV	V	III	I	III	V	IV	II	III	.	.	.	II	vulgaris.
Briza media	III	IV	IV	II	IV	II	IV	III	V	.	III	.	.	II	V	.
Potentilla erecta	IV	IV	III	V	III	III	IV	.	.	.	II	.
Carex panicea	IV	V	IV	II	r
Viola riviniana	I	III	r	.	IV	III	II	V	IV	III	IV
Pseudoscleropodium purum	IV	IV	IV	II	II	II	IV	.	I	.	II	.
Hylocomium splendens	I	II	.	.	IV	III	V	III	I	.	I	r	I	III	.	.
Succisa pratensis	II	I	.	I	II	I	I	I	V	II	IV
Antennaria dioica	.	III	.	.	.	III	I	.	V	.	IV	.	.	.	II	.
Pimpinella saxifraga	IV	IV	III	I	II	.	II	II	III	V
Leontodon hispidus	V	V	I	II	II	.	II	.	II	III	.	.	.	II	II	II
Hieracium pilosella	II	II	II	V	I	.	I	.	III	.	I	.	I	II	II	II
Gymnadenia conopsea	IV	I	r	V	II	.	II	.	r	I	IV	IV
Ctenidium molluscum	I	V	r	III	III	IV	IV	III	III	IV	III	II	I	II	II	II
Galium verum	IV	III	II	III	II	.	.	.	IV	I	III	.	.	.	IV	.
Centaurea nigra	II	II	IV	I	III
Primula veris	IV	I	II	I	I	II	I	V	.
Trifolium repens	I	I	IV	I	II	I	I	III	.	.	I
Betonica officinalis	IV	III	I
Rhynchospora squarrosa	II	IV	I	.	II	.	.	I	II	.	I
Tortella tortuosa	I	I	.	.	IV	I	III	III	IV	IV	IV
Euphrasia nemorosa	III	II	III	II	IV	III	III	I	III	II	III
Campanula rotundifolia	III	III	II	II	IV	III	IV	III	III	III	IV	III	III	III	III	III
Hypnum cupressiforme	I	I	I	I	II	III	IV	V	II	II	III	II	I	II	II	II
Frullania tamarisci	II	IV	II	II	II	II	IV
Sieglingia decumbens	I	.	II	I	III	II	IV
Dicranum scoparium	.	.	I	.	II	II	III	I	II	IV	III
Ditrichum flexicaule	I	I	II	I	II	IV	III	r

(See Appendix for details of Associations).

TABLE 18.

THE PHYTOGEOGRAPHICAL RELATIONSHIPS OF THE ASSOCIATION
OF THE "AVENETUM" AND "WESTERN" GRASSLAND TYPES IN
N. W. EUROPE

	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	
No. of Aufnahmen	19	34	9	21	33	5	2	7	7	11	4	4	13	16	12	
	British "Aveneta"			Western (Wales & Ireland) Mesobrometa						Scandinavian "Aveneta"						
<u>"Avenetum", Alliance & Order</u>																
<u>Character Species (Ch)</u>																
Helictotrichon pratense	V	V	I	V	.	.	.	.	.	.	.	.	4	V	V	V
Helianthemum chamaecistus	V	V	V	V	V	IV	2	.	.	.	.	.	.	IV	.	II
Poterium sanguisorba	V	V	V	V	V	V	2	.	.	.	.	.	4	.	.	.
Koeleria cristata	IV	IV	V	V	V	V	.	I	IV	V	4	.	3	.	.	.
Scabiosa columbaria	IV	IV	I	II	III	1	2	.	.	.	.	.	.	I	.	II
Carlina vulgaris	V	III	III	III	IV	IV	2	V	IV	IV	1	.	.	I	I	I
Gentianella amarilla	III	III	.	IV	.	IV	2	.	IV	II	1	.	.	.	.	.
Anthyllis vulneraria	II	II	IV	II	IV	.	.	III	II	IV	1	.	3	I	III	II
Viola hirta s.l.	II	II	.	.	.	IV	.	.	.	.	.	.	3	II	.	II
Cirsium acaulon	II	II	.	.	.	V	.	.	.	.	.	.	.	III	.	III
Centaurea scabiosa	II	II	.	II	.	.	.	.	I	I	.	.	.	II	.	IV
Filipendula vulgaris	I	II	I	III	.	.	.	.	.	.	.	.	.	4	II	V
Blackstonia perfoliata	II	I	.	II	II	.	.	II	I	II	2	.	.	.	.	.
Acinos arvensis	I	I	.	.	I	.	.	.	.	.	.	.	.	1	.	.
Picris hieracioides	I	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Potentilla tabernaemontani	.	I	.	II	.	.	.	.	.	.	.	.	.	IV	.	I
<u>Association & Sub-association</u>																
<u>Differential Species</u>																
Holcus lanatus	I	IV	I	.	.	.	.	I	I	.	.	.	.	.	.	.
Trifolium repens	r	IV	I	I	III	.	.	I	V	III	3	.	.	.	I	II
Trisetum flavescens	.	IV	I	II	I	.	.	I	.	.	.	.	.	.	.	.
Arrhenatherum elatius	I	III	.	.	.	.	2	.	.	.	.	.	.	.	.	.
Festuca rubra	I	III	.	I	III	.	1	III	V	V	4	.	.	.	.	III
Cynosurus cristatus	.	III	II	I	V	.	.	I	.	I	.	.	.	.	.	I
Helianthemum canum (Ch)	.	.	II	III	II	.	.	.	.	.	.	.	.	.	.	.
Scilla verna	.	.	.	.	IV	.	.	.	.	.	.	.	.	.	.	.
Eromus feronii	.	.	.	.	III	.	.	.	.	.	.	.	.	.	.	.
Asperula cynanchica (Ch)	.	.	.	.	III	V	.	V	.	V	4	.	.	.	.	.
Centaurea minus	.	.	I	.	III	.	.	III	I	II	2	.	.	.	.	.
Trifolium scabrum	.	.	.	.	III	.	.	.	.	.	.	.	.	.	.	.
Euphorbia portlandica	.	.	.	.	II	.	.	.	.	I	.	.	.	.	.	.
Carex montana	.	.	.	.	.	V	2	.	.	.	.	.	.	.	.	.
Polygala calcarea	.	.	.	.	.	III	.	.	.	.	.	.	.	.	.	.
Galium sternerii	II	III	.	.	.	.	2	.	.	.	.	.	.	.	.	.
Melica uniflora	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.
Antennaria dioica	.	.	r	.	.	.	.	V	V	.	.	.	.	.	V	.
Polygala oxyptera	.	.	.	.	.	.	.	IV	II	.	.	.	.	.	.	.
Plantago maritima	r	.	.	.	I	.	.	.	V	I	2	.	.	.	.	I
Bellis perennis	I	I	II	III	III	I	2	.	V	III	1	.	.	.	.	.
Gentiana verna	.	.	.	.	.	.	.	.	IV	.	3	.	.	.	.	.
Ranunculus bulbosus	III	II	I	I	III	I	1	I	V	V	4	.	4	III	I	V
Campothecium lutescens	III	II	.	I	I	V	1	.	V	V	4	.	3	V	I	III
Agrostis stolonifera	.	.	r	I	.	.	.	.	II	II	V	2	.	.	.	.
Entodon concinnus	.	.	.	.	.	.	.	.	I	V	2	.	.	.	.	.
Poa pratensis	r	r	.	.	II	.	.	.	.	V	.	.	.	.	.	II
Carex arenaria	.	.	.	.	.	.	.	.	.	V	.	.	.	.	I	.
Tortula ruraliformis	.	.	.	.	.	.	.	.	.	V	.	.	.	.	.	.
Sedum acre	r	r	.	.	I	.	.	.	.	IV	.	.	.	I	.	II
Rhytidadelphus squarrosus	I	I	II	III	I	II	2	II	.	.	4	.	.	.	.	.
Orobanche alba	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.	.
Hylcomium splendens	r	r	II	III	r	.	.	I	IV	.	3	.	.	.	I	.
Pulsatilla vulgaris (Ch)	.	.	.	.	.	.	.	.	.	.	.	.	.	3	V	II
Senecio integrifolius (Ch)	.	.	.	.	.	.	.	.	.	.	.	.	.	3	II	.
Campanula glomerata (Ch)	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	I
Medicago falcata (Ch)	.	.	.	.	.	.	.	.	.	.	.	.	.	.	III	II
Rhytidium rugosum	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	V
Fragaria viridis	.	.	.	.	.	.	.	.	.	.	.	.	.	.	I	IV
Centaurea jacea	.	.	.	.	.	.	.	.	.	.	.	.	.	.	IV	V
<u>Companions (Constancy V & IV)</u>																
Festuca ovina s.l.	V	V	V	V	V	V	2	III	II	III	.	.	.	V	V	II
Carex flacca	V	V	IV	III	V	V	2	III	V	IV	4	.	4	II	.	III
Thymus drucei (inc. T. serpyllum)	V	V	V	V	V	V	2	III	V	V	4	.	.	V	.	II
Lotus corniculatus	V	V	IV	IV	V	IV	2	V	III	IV	4	.	.	III	V	III
Linum catharticum	IV	V	IV	III	III	IV	1	V	V	V	III	.	.	II	IV	II
Briza media	IV	V	II	III	II	IV	2	V	V	II	3	.	4	V	III	V
Plantago lanceolata	IV	V	IV	IV	IV	V	2	V	V	V	4	.	.	II	III	V
Hieracium pilosella	V	IV	IV	III	IV	V	2	IV	II	IV	4	.	3	IV	III	II
Leontodon hispidus	IV	V	.	.	IV	III	2	III	II	.	.	.	.	I	.	I
Agrostis tenuis	IV	III	IV	IV	I	V	.	I	.	II	3	.	.	.	I	II
Carex caryophylla	IV	III	V	III	IV	III	2	V	V	I	.	.	.	IV	V	II
Dactylis glomerata	II	IV	II	I	IV	.	2	I	I	.	1	.	4	.	.	IV
Leontodon taraxacoides	IV	IV	II	IV	III	.	1	III	II	V	2	.	.	.	.	II
Senecio jacobaea	IV	II	I	I	II	I	1	I	.	.	3	.	.	.	.	.
Euphrasia nemorosa	II	III	IV	IV	V	.	2	.	I	IV	3	.	.	.	.	.
Alra caryophylla	.	.	IV	II	IV	.	.	.	.	.	.	.	.	.	.	.
Cerastium atrovirens	.	.	I	II	V	.	.	.	.	IV	2	.	.	.	.	.
Polygala vulgaris	I	II	IV	I	IV	III	3	.	II	I	3	.	.	II	.	II
Galium verum	III	III	IV	III	II	I	1	V	V	V	4	.	4	V	V	V
Pimpinella saxifraga	III	III	IV	III	I	I	2	V	.	.	.	.	.	.	.	.
Campanula rotundifolia	III	III	IV	III	I	III	2	I	V	II	4	.	.	.	.	I
Hypericum pulchrum	.	.	II	II	II	.	.	.	.	.	.	.	.	.	.	.
Brachypodium sylvaticum	II	II	I	III	I	IV	2	I	.	.	.	.	.	.	.	.
Pseudoscleropodium purum	II	III	II	III	II	IV	2	IV	V	III	4	.	.	.	.	.
Dicranum scoparium	II	II	I	I	I	V	1	III	II	.	.	.	.	.	.	II
Sieglingia decumbens	III	II	I	III	I	V	.	.	V	III	.	.	.	.	.	IV
Cladonia rangiformis	II	I	.	.	.	V	.	.	I	IV	.	.	.	.	.	IV
Erica cinerea	.	.	.	.	I	IV	.	.	.	.	.	.	.	.	.	.
Carex pulicaris	.	r	.	.	.	IV	.	.	IV	I	.	.	.	.	.	.
Tortella tortuosa	I	I	I	I	I	IV	.	.	I	I	.	.	.	.	.	.
Acrocladium cuspidatum	r	.	.	.	.	IV	.	.	.	.	1	.	.	.	.	.
Centaurea nigra	II	II	I	I	.	.	.	.	V	.	.	.	.	.	.	.
Succisa pratensis	r	I	.	.	.	.	.	.	V	V	.	.	.	2	.	.
Prunella vulgaris	II	II	II	I	I	.	.	.	III	V	.	.	.	.	III	III
Achillea millefolium	I	II	.	.	II	.	.	.	II	V	V	3	.	.	IV	V
Potentilla erecta	I	I	.	.	.	.	.	.	III	IV	.	.	.	.	.	I
Chrysanthemum leucanthemum	II	I	.	.	.	.	.	.	I	IV	IV	.	.	.	.	I
Viola riviniana	II	II	I	.	.	.	.	.	I	IV	I	.	.	.	.	.
Ctenidium molluscum	I	I	.	II	I	II	2	.	IV	II	.	.	.	2	.	.
Campylidium chrysophyllum	I	.	.	.	.	.	.	.	IV	.	.	.	.	.	IV	.
Hypnum cupressiforme	I	r	.	.	.	.	.	.	I	IV	II	2	.	1	II	V
Scapania aspera	.	.	II	I	II	.	.	.	IV	.	.	.	.	.	.	.
Hypochaeris radicata	II	I	.	.	.	.	1	II	.	V	3	.	.	.	.	I
Viola canina	.	r	.	.	.	.	.	.	I	.	.	.	.	.	I	IV
Plantago media	I	I	.	.	r	.	.	.	II	.	.	.	.	.	I	I

(See appendix for details).

Breutelia chrysocoma	+	.	1.3	1.3	.	1.2	.	1	III	.	.	.	.	.	.	.	2.3	.	1.2	+	+	1.3	2.3	1.2	.	.	1.2	2.3	V							
Antennaria dioica (X)	1.3	+	2.3	2.3	1.2	+	3	3	IV	.	.	.	.	.	.	.	+	2.3	2.3	1.2	1.2	.	1.1	+	2.3	.	.	1.2	2.3	I						
Plantago maritima	1.1	.	1.1	1.1	.	+	2	2	IV	.	.	.	.	.	.	+	+	1.2	+	2.1	2.1	+	.	+	+	+	+	+					
Frullania tamarisci	.	.	+	+	.	.	.	.	II	.	.	.	.	.	.	.	+	+	+	+	+	+	+	+	1.1	.	.	.	1.3	.	.	.	V			
Hypericum pulchrum	.	+	.	.	.	.	.	1	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Galium verum	+	+	+	+	+	+	3	2	IV	.	.	.	.	1.1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Briza media	1.1	+	1.1	1.1	1.1	+	3	2	IV	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Pseudoscleropodium purum	.	.	+	+	.	+	2	2	IV	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Dicranum scoparium	.	+	+	+	.	.	.	.	I	.	.	+	+	+	.	.	.	+	+	.	.	.	1.2	+	+	.	.	.	.	.	.	.	.	.
Ctenidium molluscum	+	+	.	.	+	+	2	1	IV	+	+	+	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Ditrichum flexicaule	.	.	.	1.2	.	1.3	.	1	IV	+	+	1.3	.	1.3	.	+	+	+	+	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.
Euphrasia nemorosa	1.1	+	.	.	.	+	1.1	2	3	III	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Achillea millefolium	.	.	1.1	+	+	.	.	2	1	IV	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Scapania aspera	.	.	.	.	.	.	.	1	IV	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hypnum cupressiforme	.	+	+	.	.	+	+	1	IV	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rhytidiadelphus triquetrus	+	+	1.3	1.3	.	+	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Fissidens cristatus	.	+	+	.	.	+	.	2	1	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Calluna vulgaris	.	.	+	+	.	.	.	.	III	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Carex pulicaris	.	+	+	.	.	+	+	2	1	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Festuca rubra	.	.	.	.	1.2	1.2	.	3	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Geranium sanguineum	.	.	.	.	.	.	.	1	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rubia peregrina	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Neckera crispa	+	+	+	.	.	.	.	1	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hylacomium brevirostre	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Polygala vulgaris	.	+	+	.	.	.	.	3	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Bellis perennis	.	.	.	1.1	.	.	.	.	V	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Thalictrum minus	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hypochaeris radicata	.	.	.	.	.	.	.	2	III	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Thuidium tamariscinum	+	.	.	.	1.3	.	.	2	1	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cladonia rangiformis	.	+	+	.	+	+	.	1	.	I	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Leontodon hispidus	1.1	.	.	.	.	.	.	.	.	.	1.1	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Gymnadenia conopsea	.	.	.	.	.	.	.	2	II	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rhytidiadelphus squarrosus	.	+	.	.	+	+	.	2	.	I	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Rhinanthus minor	1.1	.	1.1	.	.	.	.	1	.	III	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hylacomium splendens	.	+	I
Teucrium scorodonia	.	.	+	+
Agrostis tenuis	+	+	.	3	1	II
Weissia microstoma	.	.	.	.	.	.	.	.	.	.	.	1.2	+	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Weissia spp.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.2	+	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hieracium pilosella	.	+	+	.	+	+	.	2	2	IV
Pteridium aquilinum
Rosa pimpinellifolia	.	.	1.1	1	II
Prunella vulgaris	+	1	2	V
Trifolium repens	3	IV
Solidago virgaurea	II
Centaurea nigra	1.1	.	1.1	3	.	III
Chrysanthemum leucanthemum	+	.	+	.	.	.	+	2	2	IV

Also: (24) Juniperus communis +; Carex panicea +; Luzula campestris +; Cirsium arvense +; Acrocladium cuspidatum +.2; (28) Entodon concinnus +.2; (25) Selaginella selaginoides +; Trifolium pratense +; (26) As 25; (62) Acrocladium cuspidatum 1.3; Trifolium pratense 1.1; Cynosurus cristatus 1.1; (18) Anacamptis pyramidalis +; Entodon concinnus 1.3; L (1) Sedum acre +; Minuartia verna +; (3) Encalypta vulgaris +; Grimmia apocarpa +.2; (4) Hieracium sp. +; Sorbus seedling +; I (1) Taraxacum sect./spectabilia +; Metzgeria furcata +; (2) Rumex acetosa +; Luzula campestris +; Campyllum chrysophyllum +; (4) Coeloglossum viride +; Dactylorchis fuchsii +; Primula vulgaris +; Tortella cf. densa +.3; (8) Hieracium sp. +; (9) Pleurozium schreberi +; Rhacomitrium lanuginosum 1.3; Climacium dendroides +; Lejeunea patens +; (13) Cladonia pyxidata +; (15) Anthoxanthum odoratum 2.2; (16) Trichostomum hibernicum 1.3; Neckera complanata 1.3; Scapania gracilis +.2.

(A) 3 Trifolium pratense, Molinia caerulea; 2 Pimpinella saxifraga, Acrocladium cuspidatum, Anacamptis pyramidalis, Cerastium caespitosum, Medicago lupulina, Avena pubescens, Cynosurus cristatus.

(B) 2 Anacamptis pyramidalis, Centaurea scabiosa, Dactylorchis fuchsii, Leontodon taraxacoides, Centaurium erythraea, Primula veris, Trifolium pratense, Vicia cracca.

(C) V Fissidens adianthoides; III Centaurium erythraea, Trifolium pratense, Acrocladium cuspidatum; II Agrostis canina, A. stolonifera, Anthoxanthum odoratum, Carex panicea, Cynosurus cristatus, Leontodon taraxacoides, Molinia caerulea, Lophocolea bidentata, Trichostomum brachydontium, Weissia cf. microstoma.

(D) IV Rhacomitrium lanuginosum; II Colura calyptrifolia.

TABLE 13.

SESLERIA CAERULEA-CAREX ORNITHOPODA
FRAGMENT COMMUNITY

Aufnahmen No.	84	87	S9	85	83	86
Species No.	6	5	10	9	5	9
Cover %: Herbs.	100	100	90	100	100	100
Bryophytes.	40	30	30	10	15	5
Grike depth (cms.).	.	6	.	14	26	8
Quadrat size (m ²).	1	0.25	1	0.25	0.25	0.25
	Typical facies			'Grike' facies		
Sesleria caerulea	2.3	4.5	4.5	4.5	4.5	4.4
Carex ornithopoda	1.2	1.2	+	2.2	2.2	2.2
<u>Differential species</u>						
Viola riviniana	.	.	.	+	+	.
Oxalis acetosella	.	.	.	.	.	+
<u>Companions</u>						
Neckera crispa	3.3	2.3	1.3	+	1.2	+ .3
Tortella tortuosa	2.3	.	+ .3	+ .3	.	+ .3
Festuca ovina	1.2	+ .2	+	.	.	1.2
Frullania tamarisci	.	+	+ .2	.	.	.
Grimmia pulvinata	1.2	.	+ .2	.	.	.
Preissia quadrata	.	.	+	+ .2	.	.
Saxifraga tridactylites	.	.	+	+	.	.

Also in: Auf (S9) Arabis hirsuta +; (85) Euphrasia nemorosa +; Eurhynchium praelongum +.2; (83) Mycelis muralis +; (86) Thymus drucei 1.2; Fissidens cristatus +; Nostoc commune +.

TABLE 16.

ASSOCIATION CIRSIO-BROMETUM
SUB-ASS. CARICETOSUM HUMILIS

	CW	CW	CW
Aufnahme No.	20	21	22
Species No.	36	37	41
Aspect.	SW	W	SE
Slope °.	15	20	10
Cover %: Herbs.	100	100	100
Bryophytes.	5	10	5
Quadrat size (m ²)	10	10	10
	Av. sp. no. 38		
<u>Differential species of Sub-ass.</u>			
Carex humilis	3.4	3.3	3.3
<u>Association Character species</u>			
Cirsium acaulon	1.2	1.2	1.2
Bromus erectus	+	+ .2	+
Asperula cynanchica	1.1	+	+
Brachypodium pinnatum	+	.	.
<u>Alliance & Order Character Species</u>			
Poterium sanguisorba	2.3	1.2	1.2
Helictotrichon pratense	1.1	+	+
Koeleria cristata	+	+	1.1
Helianthemum chamaecistus	1.2	+	.
Hippocrepis comosa	+	2.2	.
Filipendula vulgaris	+	.	+
Polygala calcarea	+	.	+
Picris hieracioides	.	1.1	+
Campanula glomerata	.	+	.
Gentianella amarella	.	+	.
Anthyllis vulneraria	.	.	+
Scabiosa columbaria	.	.	1.1
<u>Companions</u>			
Festuca ovina	3.3	2.3	2.3
Thymus drucei	1.2	1.2	1.2
Carex flacca	1.1	1.1	+
Primula veris	+	+	+
Prunella vulgaris	+	+ .2	+
Trifolium pratense	1.1	+	+
Polygala vulgaris	+	+	+
Plantago lanceolata	+	1.1	+
Briza media	+	1.1	+
Linum catharticum	+	+	+
Lotus corniculatus	1.2	+	+
Leontodon hispidus	+	+	+ .2
Campanula rotundifolia	+	+	.
Hieracium pilosella	+	1.2	.
Galium verum	1.2	+	.
Crepis capillaris	.	+	+
Carex caryophyllea	.	1.1	1.1
Cynosurus cristatus	.	1.1	+
Ctenidium molluscum	.	1.3	+ .3
Fissidens cristatus	.	+	+
Pseudoscleropodium purum	.	+	+
Euphrasia nemorosa	+	.	+
Dactylis glomerata	+	.	+
Hypnum cupressiforme	+	.	+
Plantago media	.	+	+
Serratula tinctoria	.	+	1.1

Also (20) *Achillea millefolium* +; *Agrostis stolonifera* +; *Phleum bertolonii* +; *Medicago lupulina* +; *Weissia* sp. +.2; *Dicranum scoparium* +.3.

(21) *Succisa pratensis* +; *Tortella tortuosa* +;

(22) *Pimpinella saxifraga* +; *Daucus carota* +; *Ononis repens* +; *Campyllum chrysophyllum* +; *Dicranum bonjeanii* +.3; *Acrocladium cuspidatum* +.3.

TABLE 20.

ASSOCIATION PLANTAGINO-DRYADETUM

	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	E	E	E	E	SL	SL	SL	SL	SL	SL	SL	SL								
Aufnahme No.	31	32	38	36	11	16	17	18	14	15	74	73	72	71	19	20	21	22	23	24	26									
Species No.	32	37	32	34	36	35	35	32	33	29	28	27	29	25	42	52	50	36	47	45	36									
Aspect.	NW	W	W	SW	SW	W	NW	NW	NW	NE	NW	SE	W	NE	SW	N	.	W	NW	NE	NE									
Slope °.	30	10	25	40	30	5	30	30	20	25	65	60	50	55	2	2	.	10	2	45	25									
Cover %: Herbs.	90	100	100	80	80	100	80	80	70	80	100	100	100	100	100	100	90	90	90	90	80									
Bryops.	40	20	10	20	20	10	10	10	10	20	20	20	40	50	20	20	20	30	20	10	20									
Quadrat size (m ²).	10	4	4	4	2	2	4	4	10	4	4	4	4	4	4	4	4	10	10	4	4									
	Av. sp. no. 32.														Av. sp. no. 44.															
<u>Association character species</u>															<u>Sub-ass. typicum</u>								<u>Maritime Sub-ass.</u>							
Dryas octopetala	3.4	3.3	2.3	4.4	3.3	4.4	2.3	3.3	2.2	2.3	7	8	5	6	2.2	3.4	1.2	1.2	2.3	4.4	4.5									
Carex rupestris	1.1	+	2.2	1.1	.	.	.	.	+	1.2	.	.	.	.	1.2	.	2.3	+2	2.2	.	.	
<u>Association differential species</u>																														
(x)																														
Plantago lanceolata	+	+	+	+	+	+	1.1	+	.	.	2	4	2	3	.	+	1.1	.	+	+	+									
P. maritima	1.1	+	1.1	+	1.1	+	.	+	+	.	.	.	.	.	+	1.1	2.1	2.1	1.1	2.1	+				
Carex flacca	+	1.1	1.1	.	2.3	3.3	4.3	3.3	2.2	2.3	.	.	.	.	2.2	1.2	3.4	2.2	2.3	1.2	1.1					
Bellis perennis	+	.	+2	+	+	+	1.1	1.1	+	1.1	.	.	1	1	1.1	+	.	.	1.1	+	+									
Cynosurus cristatus	.	+	+	+	.	+	+	1.1	.	.	.	.	2	.	.	.	+	+	.	+	+					
Cerastium holosteoides	.	+	+2	+	.	.	+	+	.	.	.	.	.	.	.	+	+	.	.	.	.
<u>Differential species of</u>																														
<u>maritime Sub-association</u>																														
Koeleria cristata	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.2	2.3	1.1	2.3	2.2	1.2	1.2
Scabiosa columbaria	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.1	1.1	1.1	+	1.1	+	+
Anthyllis vulneraria	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	+	1.1	.	+	+	+
Sieglingia decumbens	.	.	.	.	.	.	.	.	.	.	.	1	1	.	1.2	+	1.1	+	1.2	1.1	.
Achillea millefolium	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	1.1	.	+	+	+
Leontodon autumnalis	.	.	.	.	.	.	.	.	.	.	.	.	.	2	+	1.1	.	1.2	+	+	+
Cerastium atrovirens	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.1	+	+	1.1	1.1
Scilla verna	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	+	.	1.1	.	1.1	+
<u>Alliance & Order Character</u>																														
(ch) & Differential species (d)																														
Saxifraga aizoides (d)	+	+	+	.	+	.	.	.	+	+	1	1	.	.	+	1.1	.	+	.	1.1	+									
Polygonum viviparum (d)	1.1	.	.	1.1	1.1	+	+	+	1.1	1.1	.	.	.	.	+	+	+	+	1.1	.	+					
Silene acaulis (ch)	.	.	.	+2	.	.	.	.	.	+	1	2									
Arenaria norvegica (ch)	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	.	.	.	.	.	.
<u>Companions</u>																														
Festuca ovina	1.2	1.2	3.3	1.2	1.1	2.2	2.2	2.2	2.3	2.2	3	1	3	1	+	1.2	1.2	+	+	1.1	+									
Thymus drucei	1.2	+2	+2	2.2	1.2	+2	1.2	2.2	1.2	1.2	4	4	4	5	+2	2.2	+2	2.2	+2	1.2	1.2									
Linum catharticum	+	+	+	+	+	+	+	+	+	+	1	3	3	1	+	+	+	+	+	+	+									
Lotus corniculatus	+2	1.2	+	1.2	.	1.2	+	1.2	1.1	+2	.	4	2	.	+	+	1.2	+2	+	+	+									
Euphrasia cf. scotica	+	.	1.1	+	+	+	+	+	.	.	.	1	2	1	+	+	+	.	+	+	+									
Antennaria dioica (x)	.	1.1	+	+	+	.	1.1	+	.	1.1	.	.	1	1	+	1.2	+	+	1.1	+	1.1									
Polygala vulgaris	+	.	.	+	+	+	+	+	.	.	.	1	1	.	+	+	.	.	+	+	1.1									
Hypericum pulchrum	.	+2	+	+	+	+	+	+	.	.	1	1	1	1	+	+	.	+	+	+	.									
Selaginella selaginoides	1.1	+	+	+	+	+	+	+	+	1.1	.	1	.	.	+	1.1	+	1.1	+	+	+									
Potentilla erecta	1.2	1.2	1.2	+	+	1.2	+2	1.2	.	.	2	.	1	1	.	.	1.1	+	1.2	+	+									
Calluna vulgaris	.	+2	+	.	+	+	+	.	.	.	7	2	1	5	.	.	+2	+2	+	+2	.									
Ditrichum flexicaule	+3	.	.	.	+	+	+	.	.	.	.	.	.	.	1.3	1.3	+	+	1.3	+	+		
Carex pulicaris	.	1.2	.	+2	+	+	+	+	1.1	.	.	.	.	.	+2	1.2	+	.	1.2	+	.				
Prunella vulgaris	.	+	1.2	.	.	+	+	+2	+	+2	2	1	2	.	+	+	.	.	.	.	1.1					
Hylocomium splendens	.	1.2	+	+	2.3	+	+	1.2	+	1.2	.	.	.	.	.	+	1.2	.	+	1.2	.				
Viola riviniana	+	+	+	+	1.1	+	+	.	1.1	+	1	1	1	1									
Rhynchospora squarrosa	+	+	+	+	+	+	1.3	+	+	+	+	.	+	+	+									
Ctenidium molluscum	1.3	+	.	+	1.1	.	.	+	1.3	2.3	.	.	.	.	1.1	+	.	+	.	+	.					
Camptothecium lutescens	+3	+	.	1.3	+	+	+	+	.	.	.	.	.	.	+	+	+	.	+	+	1.2			
Gentianella amarella	.	+	+	+	+	+	+	+	.	.	.	.	.	.	+	+	+	+	1.1	.	.			
Viola canina	+	.	+	1.1	.	+	+	1.1	+	+	+	.	+	+	.									
Empetrum nigrum	.	+2	.	+2	.	+	+	.	.	.	1	.	.	4	+2	1.2	.	+2	.	1.2	+2									
Thalictrum alpinum	.	.	1.1	.	.	.	.	.	1.1	2.3	.	.	.	.	1.1	1.1	1.1	.	+	+	.
Festuca rubra	.	+	.	.	.	.	.	.	.	.	.	.	.	.	1.1	1.1	+	+	1.2	1.2	1.1
Tortella tortuosa	+2	.	.	1.2	.	1.2	.	.	.	.	.	.	.	.	+	+	+	+	1.1	.	+	
Scapania aspera	+	+	.	+	+	+	+	+	+	+	+	.	+	+	.									
Campanula rotundifolia	.	.	+	1.1	.	+	+	+	.	.	.	.	.	.	+	1.1	+	+	1.1	+	.			
Agrostis tenuis	.	+2	+	.	.	.	.	.	+	.	.	.	.	.	1.1	+	.	+	+	+	.
Coeloglossum viride	1.1	.	.	+	.	+	.	.	1.1	+	+	+	.	+	.	.	.									
Luzula campestris	.	.	+	.	.	+	+	+	+	.	+	.	.									
Anthoxanthum odoratum	.	+2	.	.	.	.	.	.	.	.	2	1	.	.	.	+	+	.	+	.	.	
Parnassia palustris	.	.	.	+	.	.	.	.	.	.	.	.	.	.	+	+	+	.	+	+	+
Carex panicea	.	.	1.2	.	.	.	.	.	.	.	.	.	.	.	1.1	+	+	.	+	+	+
Galium saxatile	.	.	.	.	+	.	.	.	.	.	.	.	.	.	.	+	+	1.2	+2	+2	.
Pinguicula vulgaris	.	.	.	+	.	.	.	.	.	.	.	.	1	1	.	.	+				
Rhacomitrium lanuginosum	.	.	.	.	.	.	.	.	1.2	+3	.	.	.	1	.	.	+	.	+	.	.	
Solorina saccata	.	.	.	.	.	.	.	.	+	+	.	.	.	.	.	+	.	.	+	.	.
Carex capillaris	.	-2	.	.	.	.	.	.	.	.	.	.	.	.	1.1	1.1	1.1	.	+	.	.

AUFNAHMEN LOCALITIES

The following prefixes are used for various regions and geological formations:-

- Br.-Bl. & Tx. - Braun-Blanquet & Tuxen (1952).
- CW - Chalk: Wiltshire.
- D - Derbyshire Limestone (includes parts of Staffordshire).
- (DS) - Derbyshire Screes.
- E - Elkington (1962).
- I - Western Ireland.
- JL - Jurassic Limestones.
- L - Lake District.
- LM - Lead Mines.
- MG - Magnesian Limestone.
- ML - Mendip Limestone.
- N - Northumberland.
- NG - N.W. Germany.
- NP - Northern Pennine Limestones.
- NW - North Wales Limestones.
- SL - Scottish Limestones.
- SW - South Wales Limestones.
- WB - Welsh Borders.
- (DL) - Dorset Limestone (P. Bridgewater).

TABLE 1.

Association Poterio-Koelerietum vallesianae

Aufnahmen numbers - 30, 27, 32, 33, 29, 1, 34 & 2, all from Brean Down, Somerset.

- | | |
|---------------------------------|------------------------|
| 30. ST 289587, Altitude 140 ft. | 27. ST 293587, 200 ft. |
| 32. ST 286587, 100 ft. | 33. ST 284590, 100 ft. |
| 29. ST 290588, 150 ft. | 1. ST 296588, 150 ft. |
| 34. ST 282591, 100 ft. | 2. ST 297588, 150 ft. |
12. Purn Hill (Bleadon parish), Somerset, ST 332574, 125 ft.
11. Purn Hill, ST 332573, 125 ft.
17. Uphill, Somerset, ST 316584, 100 ft.
19. Uphill, ST 316582, 75 ft.
18. Uphill, ST 316582, 50 ft.
14. Crook Peak, Somerset, ST 392552, 250 ft.
24. Walborough, nr. Uphill, ST 315579, 25 ft.
21. Uphill, ST 316582, 60 ft.
23. Walborough, ST 315579, 25 ft.
10. Purn Hill, ST 332572, 100 ft.
15. Crook Peak, ST 392552, 300 ft.
54. Crook Peak, ST 377561, 450 ft.

TABLE 2.

Association Helianthemum apenninum-Euphorbia portlandica Nodum.

(All 1m² quadrats).

Lists 6-12 inclusive from Proctor (1956), Table 8, from Daddy Hole and Anstey's Cove, Torquay, Devon, and Berry Head, Brixham, Devon. 2 lists from Bridgewater, P. (unpubl.) from Daddy Hole Cliffs, SX 927628, Alt. 170 ft., and Berry Head, SX 947566, Alt. 150 ft.

TABLES 3 & 4.

See Text for details.

TABLE 5.

Association Cirsio-Brometum

Sub-ass. typicum, typical variant

33. Charlton Kings Common, Cheltenham, Gloucs., SO 951185, 900 ft.
40. Blackheath Clump Quarries, Burford, Oxon., SP 257157, 600 ft.
 1. Stinchcombe Hill, Dursley, Gloucs., ST 742982, 600 ft.
24. Barrow Wake, Cheltenham, Gloucs., SO 930155, 800 ft.
13. Purn Hill, Weston-super-Mare, Somerset, ST 332574, 100 ft.
10. Stanley Wood, Stroud, Gloucs., SO 812024, 600 ft.
19. Painswick Hill, Painswick, Gloucs., SO 866108, 600 ft.
22. Barrow Wake, Cheltenham, SO 930155, 800 ft.
34. Charlton Kings Common, Cheltenham, SO 952185, 800 ft.
 5. Drakestone Point, Stinchcombe, Gloucs., ST 736979, 600 ft.
 6. Stinchcombe Hill, Dursley, ST 736981, 700 ft.
 7. Stanley Wood, Stroud, SO 804021, 600 ft.
 8. Selsey Common, Stroud, SO 826032, 600 ft.
- 3,4. Stinchcombe Hill, Dursley, ST 744983, 600 ft.; ST 739982, 700 ft.
23. The Peak, Birdlip, Gloucs., SO 925152, 800 ft.
29. Leckhampton Common, Cheltenham, SO 749183, 950 ft.
32. Leckhampton Hill, Cheltenham, SO 948185, 900 ft.
 2. Drakestone Point, Stinchcombe, ST 736978, 700 ft.
13. Standish Park, Stroud, SO 824082, 500 ft.

Carex variant

- 2 & 1. Markland Grips, Creswell, Derbyshire, SK 508746, 350 ft.; SK 509750, 350 ft.
- 4 & 3. Lindrick Common (Golf Course), S. Yorks., SK 545828, 200 ft.; SK 550827, 200 ft.
6. The Bottoms, Burton Leonard, Yorks., SE 323630, 250 ft.

Sub-ass. astragaletosum

- 40a. Byards Leap, Sleaford, Lincs., SK 990490, 250 ft.
 5. The Bottoms, Burton Leonard, Yorks., SE 323630, 250 ft.
28. Devils Chimney, Leckhampton Hill, Cheltenham, SO 946184, 900 ft.
31. Leckhampton Common, Cheltenham, SO 948185, 900 ft.
43. Roadside at Wilsford, Lincs., TF 010430, 100 ft.
42. Byards Leap, Sleaford, SK 990490, 250 ft.
54. Bloody Oaks Quarry, Rutland, SK 972108, 250 ft.
- 41a. High Dike, Leadenham, Lincs., SK 992524, 250 ft.
46. Copper Hill, Ancaster, Lincs., SK 978424, 320 ft.
47. Barnack Hills & Holes, Stamford, Northants., TF 075045, 150 ft.
53. Bloody Oaks Quarry, Rutland, SK 972108, 250 ft.
- 44,45. Heydour Warren, Grantham, Lincs., SK 990402, 300 ft.
- 48,49. Barnack Hills & Holes, Stamford, TF 075045, 150 ft.

- 51. Collyweston, Stamford, Northants., TF 005037, 300 ft.
- 50. Barnack Hills & Holes, TF 075045, 150 ft.
- 52. Collyweston, Stamford, TF 005037, 300 ft.

Sub-ass. brachypodietosum

- 9,8,7. Wyke Regis, Dorset, ST 653777, 100 ft. (collected by P. Bridgewater).
- 1. Flag Dale, Wormhill, Derbyshire, SK 118727, 850 ft.
- 55,56. Crook Peak, Somerset, ST 385562, 300 ft.; 450 ft.
- 12. Standish Park, Stroud, Gloucs., SO 829083, 600 ft.
- 20. Painswick Hill, Painswick, Gloucs., SO 866108, 600 ft.
- 25. Barrow Wake, Cheltenham, SO 930155, 700-750 ft.
- 26. Crickley Hill, Cheltenham, SO 926162, 800 ft.
- 37. Bourton Downs, Bourton, Warwicks., SP 144328, 750 ft.
- 39. Scarborough Pits, Stow-on-the-Wold, Warwicks., SP 116317, 800 ft.
- 37. Brean Down, Somerset, ST 282593, 100 ft.
- 11. Amberley, Minchinhampton Common, Stroud, SO 853008, 450 ft.
- 16. Haresfield Beacon, Stroud, SO 822088, 550-600 ft.
- 27. Crickley Hill, Cheltenham, SO 926159, 750 ft.
- 35. Cleve Common, Cheltenham, SO 989270, 850 ft.
- 38. Bourton Downs, Bourton, Warwicks., SP 145325, 750 ft.
- 41. Blackheath Clump Quarries, Burford, Oxon., SP 257157, 600 ft.
- 36. Cleve Cloud, Cheltenham, SO 984260, 1000 ft.
- 52. Cressbrook Dale, Derbyshire, SK 174748, 850 ft.
- 14. Rodborough Common, Stroud, SO 847038, 500 ft.
- 17. Haresfield Beacon, Stroud, SO 820087, 650 ft.

TABLE 6.

Association Helictotricho-Caricetum flacca

Sub-ass. typicum - typical variant

- 25. Pantasaph, Holywell, N. Wales, SJ 165759, 750 ft.
- 104. Hart Banks, Co. Durham, NZ 493363, 50 ft.
- 66. Biggin Dale, Derbys., SK 143574, 750 ft.
- 94. Back Dale, Chelmsorton, Derbys., SK 094705, 950 ft.
- 4. Long Dale, Elton, Derbys., SK 194600, 900 ft.
- 9. Sand Point, Somerset, ST 325660, 100 ft.
- 105. Thrislington Plantation, Co. Durham, NZ 318331, 450 ft.
- 109. Castle Eden Dene Mouth, Co. Durham, NZ 457407, 50 ft.
- 63. Wolfscote Dale, Derbys., SK 138574, 850 ft.
- 65. Biggin Dale, Derbys., SK 144578, 900 ft.
- 80. Long Dale, Hartington, Derbys., SK 138617, 950 ft.
- 82,83. Fin Cop, Monsal Dale, Derbys., SK174713, 800-850 ft.; SK 174711, 800 ft.

Brachypodium sylvaticum variant

- 3,4,6. Goblin Coombe, Somerset, ST 474653, 450 ft.;
ST 476652, 450 ft.; ST 477652, 450 ft.
45. Cheddar Gorge, Somerset, ST 470543, 400 ft.
49,51. Burrington Coombe, Somerset, ST 482582, 550 ft.

Sub-ass. of Holcus & Trifolium - typical variant

- 8,7. Gratton Dale, Derbys., SK 205603, 850 ft.
28. Lathkill Dale, Derbys., SK 173658, 650 ft.
2. Hand Dale, Hartington, Derbys., SK 143607, 950 ft.
47. Middleton Dale, Derbys., SK 218758, 700 ft.
62. Wolfscote Dale, Staffs., SK 134575, 800-850 ft.
6. Long Dale, Derbys., SK 192599, 950 ft.
17. Bradford Dale, Derbys., SK 201638, 650 ft.
29. Lathkill Dale, Derbys., SK 178657, 700 ft.
X Hand Dale, Hartington, Derbys., SK 148612, 1000 ft.
60. Wolfscote Dale, Staffs., SK 142568, 800 ft.
25. Walborough Hill, Uphill, Somerset, ST 315579, 50 ft.
22. Uphill, Weston-super-Mare, Somerset, ST 316582, 75 ft.
20. Uphill, Weston-super-Mare, Somerset, ST 316579, 50 ft.
41. Coombsdale, Derbys., SK 222745, 700 ft.
50,51. Cressbrook Dale, Derbys., SK173750, 900 ft.;
SK 175746, 850 ft.
11. Wooden Steps, Bradford Dale, Derbys., SK 201633, 600 ft.
85. Deep Dale, Ashford, Derbys., SK 161695, 950 ft.
90. Baley Hill, Dove Dale, Derbys., SK 143541, 750 ft.
98. Monks Dale, Derbys., SK 137740, 800 ft.
84. Conies Dale, Peak Forest, Derbys., SK 126805, 1300 ft.
81. Parkhouse Hill, Earl Sterndale, Derbys., SK 080669,
1050 ft.
61. Wolfscote Dale, Derbys., SK 138573, 800 ft.
24. Pantasaph, Holywell, N. Wales, SJ 165759, 750 ft.
26. Walborough Hill, Uphill, Somerset, ST 316580, 50 ft.

Brachypodium sylvaticum variant

86. Deep Dale, Ashford, Derbys., SK 164696, 850 ft.
1. Long Dale, Derbyshire, SK 178611, 1000 ft.
61. Trwyn-y-Witch, Southerndown, Glamorgan, SS 885725, 200 ft.
40,41. Cheddar Gorge, Somerset, ST 469541, 250 ft.;
ST 470543, 400 ft.
60. Trwyn-y-Witch, Southerndown, Glamorgan, SS 885725, 150 ft.
42. Coombsdale, Derbys., SK 215741, 850 ft.
101. Longstone Edge, Derbys., SK 199730, 1100 ft.

TABLE 7.

Association Helianthemo-Koelerietum

Sub-ass. typicum

- 1,2,3,4,8,9. Bwrrd Arthur, Anglesey, SH 585814, 500 ft.
10. Nr. Penmon Priory, Anglesey, SH 628806, 150 ft.
12,18. Great Orme's Head, N. Wales, SH 768825, 300 ft.;
SH 753840, 450 ft.

Sub-ass. Helictotrichon pratense

typical variant

- 11,15. Great Orme's Head, SH 771824, 300 ft.; SH 763832, 400 ft.
37,38. Slopes of Moel Hiraddog, Dyserth, N. Wales, SJ 063782,
600 ft.; SJ 063786, 650 ft.
35,36. Rhyd-y-foel, nr. Llanddulas, N. Wales, SH 914766,
400 ft.
30. Nr. Llysfaen, Colwyn Bay, N. Wales, SH 906767, 400 ft.

Sieglingia-Filipendula variant

- 13,14; 16,17; 19. Great Orme's Head, SH 770826, 400 ft.;
SH 762832, 450 ft.; SH 753840, 500 ft.
41,42,43. Bryn Pydew, nr. Llandudno, N. Wales, SH 808790, 300 ft.
44,45. Penrhyn Side, nr. Llandudno, SH 808818, 250 ft.
27,28,29,31. Nr. Llysfaen, SH 897766, 904764, 200-250 ft.

Sub-ass. Asperula & Bromus ferronii

typical variant

- 34,36,37. between Foxhole Slade and Blackhole Gut, Gower,
Glamorgan, SS 440855, 150-200 ft.
28,29,31,32. between Kitchen Corner & Tears Point, nr.
Rhossilli, Gower, Glamorgan, SS 405874, 100-150 ft.
14. Deep Slade, Gower, SS 563868, 150 ft.
11. Pwlldu Head, Gower, SS 568864, 200 ft.
15,17,18. High Tor, Gower, SS 555869, 100-150 ft.
19. Shire Coombe, Gower, SS 545874, 50 ft.
38. Overton Cliff, nr. Port Eynon, Gower, SS 459848, 100 ft.
39,40. above Holy's Wash, nr. Oxwich, Gower, SS 495853, 150 ft.
10. Elegug Stacks, Pembroke, SR 928946, 100 ft.
8. Huntsman's Leap, St. Gowan's Head, Pembroke, SR 962929,
150 ft.
3. Stackpole Head, Pembroke, SR 993948, 100ft.
2. Stackpole Quay, Pembroke, SR 994955, 75 ft.
1. Gilman Point, Pendine, Carmarthen, SN 228077, 250 ft.
5. Stackpole Head, Pembroke, SR 995944, 100 ft.

Centaurea-Geranium variant

- 20,21. High Tor, Gower, SS 554869, 50-100 ft.
30. Great Tor, Gower, SS 530876, 100 ft.
12. below High Pennand, Gower, SS 565865, 200 ft.

13. Deep Slade, Gower, SS 562869, 100 ft.
 41. Holy's Wash, Gower, SS 490855, 150 ft.
 22,23,24. between Fox Hole and Shire Combe, Gower, SS 553872,
 544873, 150 ft.
 33,35. Foxhole Slade, Gower, SS 440858, 150 ft.

TABLE 8.

Association Caricetum montanae

Sub-ass. typicum

SW 50,52,53,54,55. Pant St. Brides, nr. Ewenny, Glamorgan,
 SS 897758/764, 100-200 ft.

Sub-ass. of Galium & Melica

SW 63,64. Wyrlod-ddu, Afon Taf Fawr, nr. Merthyr Tydfil,
 Brecknockshire, SO 022098, 900-1000 ft.

TABLE 9.

Association Antennarietum hibernicae Br.-Bl.&Tx.1952

Sub-ass. typicum (sub-ass. polygalietosum dubiae Br.-Bl.&Tx.
 1952, Table 39, p.320).

7. Aufnahmen from near Nurney, Tullamore and Clonmacheise in
 Co. Offaly and near Clonaslee, Co. Laoighise.

Sub-ass. asperuletosum

44. Ballyeighter Loughs, Co. Clare, R33/92, 75 ft.
 45. Lough Bunny, Co. Clare, R37/97, 100 ft.
 46. Lough Cullaun, Co. Clare, R31/90, 100 ft.
 K1. Fenit Point, Co. Kerry, Q72/15, 75 ft.
 K2. " " " " Q71/17, 50 ft.
 498,504. from Ivimey-Cook & Proctor (1966), Table XXVIII,
 Ballyvaghan, Co. Clare.

TABLE 10.

Association Camptothecio-Asperuletum cynanchicae
Br.-Bl. & Tx. 1952

Sub-ass. of Carex arenaria

- 34,35. Dogs Bay, Roundstone, Connemara, Co. Galway, 68/38,
 50 ft.
 36. Earawalla Point, Roundstone, L68/37, 60 ft.
 37. Gorteen Bay, Roundstone, L69/37, 60 ft.
 Tx. 210,211. Roundstone (no details).

Vulpia variant

- 9,10,11. Stackpole Warren, Pembrokeshire.
 9 - SR 990948, 100 ft.; 10 - SR 985944, 130 ft.; 11 - SR
 979945, 75 ft.
 16. Brownslade Burrows, Pembrokeshire, SR 894986, 180 ft.
 82. Pennard Burrows, Gower, Glamorgan, SS 542880, 150 ft.

Sub-ass. of Rhytidiadelphus squarrosus

- Tx. 162,164, BB 115. near Ballyvaughan, Co. Clare.
52. near Ballyvaughan, Co. Clare, M21/09.
I.CP. Table XXII from Ballyvaughan, Fanore (M14/009) &
Lehinch (R09/88).

TABLE 11.

Association Seslerio-Helictotrichetum (All localities in Co.
Durham).

Sub-ass. typicum

- 70,71,72,57. Thrislington Plantation, NZ 317328, 450 ft.
52,53. Thornley Dene, NZ 362382, 450 ft.
73,74. Quarrington Hill, NZ 327386, 500 ft.; NZ 330378, 450 ft.
68. Silent Bank, NZ 340399, 400 ft.

Sub-ass. caricetosum pulicariae

Pinguicula-Selaginella variant

- C1,C2,C3. Cassop Vale, NZ 340383, 500-550 ft.

Antennaria variant

- 59,60,61,62,63. Thrislington Plantation, NZ 317328, 450 ft.

Sub-ass. of Helictotrichon pubescens

typical variant

14. High Moorsley, NZ 334456, 450 ft.
13,10. Pittington Hill, NZ 334452; NZ 333449, 450 ft.
9. Houghton Scarp, NZ 345504, 600 ft.
6. Strawberry Hill, NZ 345396, 550 ft.
17. Cassop Vale, NZ 342383, 500 ft.
8. Houghton Scarp, NZ 347504, 600 ft.
7. Quarrington Hill, NZ 330378, 450 ft.
3,5. Sherburn Hill, NZ 334418, 500 ft.
12. Pittington Hill, NZ 332445, 450 ft.
1,2. Sherburn Hill, NZ 331417, 450 ft.; NZ 328418, 450 ft.

Rosa variant

15. Sherburn Hill, NZ 331417, 450 ft.
16,19. Thrislington Plantation, NZ 317328, 450 ft.

Bromus variant

- B0. Garmondsway, NZ 335344, 500 ft.
B1. Highland House, NZ 331328, 400 ft.
B2. Tunstall Hills, NZ 392546, 350 ft.

Sub-ass. of Encalypta & Plantago

31. Sherburn Hill, NZ 328418, 450 ft.
32,33. Pittington Quarry, NZ 332447, 450 ft.
56,54. Cassop Vale Quarry, NZ 341383, 550 ft.
58. Highland House, NZ 332326, 400 ft.
48,55. Bishop Middleham, NZ 336319; NZ 333324, 350 ft.

TABLE 12.

Association Seslerio-Caricetosum pulicariae

Sub-ass. typicum

typical variant

- 24. Yew Cogar Scar, Littondale, Yorks., SD 917704, 1050 ft.
- 28. Malham Cove, Yorks., SD 897901, 950 ft.
- 1,2. Dib Scar, Conistone, Yorks., SD 985675/6, 900 ft.
- 3. Conistone Old Pasture, Yorks., SD 988.
- 8,11. Park Gill Beck, Wharfedale, Yorks., SD 977736, 950 ft.;
SD 980742, 1050 ft.
- 30,31. Great Close Scar, Malham Tarn, Yorks., SD 902666,
1300 ft.
- 43. Trollers Gill, Wharfedale, Yorks., SE 069617, 800 ft.
- 89. Orton Scar, Orton, Westmorland, NY 633103, 1150 ft.
- 88. Grange Scar, Westmorland, NY 678092, 1150 ft.
- 90. Beacon Hill, Westmorland, NY 635095, 1150 ft.
- 91. Grange Scar, Westmorland, NY 685094, 1050 ft.
- 89. Sunbiggin Tarn, Westmorland, NY 675080, 900 ft.
- 56. Cronkley Fell, Teesdale, Yorks., NZ 848284, 1750 ft.
- 45. Widdybank Fell, Teesdale, Durham, NZ 818297, 1650 ft.
- 9. Ratcheugh Crag, nr. Alnwick, Northumberland, NU 225146,
350 ft.

Calluna-Empetrum variant

- 58,61. Cronkley Fell, Teesdale, Yorks, NZ 843283, 1750 ft.;
NZ 850285, 1700 ft.
- 49. Widdybank Fell, Teesdale, Durham, NZ 818306, 1650 ft.

Filipendula-Geranium variant

- 17. Cross Field Knotts, Gordale, Yorks., SD 915638, 1000 ft.
- 18. Gordale Scar, Yorks., SD 915639, 1100 ft.
- 4. Dib Scar, Conistone, Yorks., SD 985676, 950 ft.
- 5. Kilnsey Crag, Wharfedale, Yorks., SD 973684, 750 ft.

Ditrichum-Rhytidium variant

- 48. Slapstone Sike, Widdybank Fell, Teesdale, NY 813304,
1650 ft.
- 51,52. Red Sike, Widdybank Fell, Teesdale, NY 818296; NY
817294, 1700 ft.
- 57. Thistle Green, Cronkley Fell, Teesdale, NY 844283, 1750 ft.

Sub-ass. Kobresietosum

- 46,47,50,53,54. Widdybank Fell, Teesdale, Co. Durham, NY
817298; 827291; 816302; 812303; 814303; 1650-1700 ft.

Sub-ass. dryadetosum

- 26. Nab End, Arncliffe, Littondale, Yorks., SD 912704, 1050 ft.
- 27. Cowside Beck, Arncliffe, Yorks., SD 920710, 1000 ft.
- 59,60. Cronkley Fell, Teesdale, Yorks., NZ 840283; NZ 842283,
1750 ft.
- 25. Yew Cogar Scar, Arncliffe, Yorks., SD 918705, 1100 ft.

Sub-ass. of Saxifraga & Cochlearia

- 63. Lang Hurst, Cronkley Fell, Yorks., NZ 833264, 1950 ft.
- 64. Mickle Fell, Yorks., NZ 806247, 2400 ft.
- 65. Boot of Mickle Fell, Yorks., NZ 809241, 2250 ft.
- LF. Little Fell, Westmorland, NZ 780209, 2200 ft.
- 93,94. Great Dun Fell, Westmorland, NZ 701300, 2250 ft.
- 72. High Raise Band, Dufton Fell, Westmorland, NZ 738312, 2200 ft.
- 55. Widdybank Fell, Durham, NZ 814312, 1750 ft.

TABLE 13.

Sesleria-Carex ornithopoda fragment Community

All locality on the limestone pavements above Grange Scar, Westmorland, NY 677095, 1050-1250 ft.

TABLE 14.

Association Asperulo-Seslerietum (Br.-Bl.&Tx.1952) comb. nov.

Sub-ass. typicum

typical variant

- 24. Ballinderreen, Co. Galway, M3914, 50 ft.
- 28. Caheradrine, Co. Galway, M4024, 50 ft.
- 25. Ballindooly, Co. Galway, M3129, 200 ft.
- 26. Menlough, Co. Galway, M2828, 100 ft.
- 62. Lough Derg, Portumna, Co. Galway, M8703, 100 ft.
- 18. Ballyvaughan Dunes, Co. Clare, M2508, 50 ft.

Helianthemum variant

- 1,2. Scout Scar, N. of Brigsteer, Westmorland, SD 486902, 600ft; SD 486905, 600 ft.
- 3. Underbarrow Scar, Westmorland, SD 486913, 700 ft.
- 4,5. Whitbarrow Scar (South), Lancashire, SD 445856, 400 ft.; SD 447853, 450 ft.
- 6,7. Humphrey Head, Lancashire, SD 392735, 150 ft.; SD 391740, 150 ft.

Sub-ass. dryadetosum

- 1-4. Slopes of Cappanawalla, Co. Clare, M1909-M2109, 200-700 ft.
- 5,6. Aghagfinny North, Gleninagh Mt., Co. Clare, M1810, 300 & 400 ft.
- 8,9. Black Head, Co. Clare, M1511, 300 & 550 ft.
- 10. Turlough Hill, Co. Galway, M3207, 450 ft.
- 13. Glasgeivnagh Hill, Co. Clare, R3196, 300 ft.
- 15,16. Mullagh More, Co. Clare, R3395, 600 & 450 ft.

Constancy figures

(A) (Antennarietum hibernicae Sub-ass. of Sesleria)

3 Aufnahmen from Braun-Blanquet & Tüxen (1952), Table 39, p.320, from Portumna, Co. Galway.

- (B) (Camptothecio-Asperuletum cynanchicae, Sub-ass. of Sesleria)
 3 Aufnahmen from Braun-Blanquet & Tüxen (1952), Table 40, p.328,
 from Ballyvaughan and Black Head, Co. Clare.
- (C) 7 Aufnahmen from Ivimey-Cook & Proctor (1966), Table 28,
Antennaria-Hieracium Nodum, p.288. List nos. 68, 250,
 307, 136, 177, 348, 360, from the Burren District of Co.
 Clare.
- (D) Empetrum nigrum-Epipactis atrorubens Nodum
 5 lists from Table 27a, p.287 of Ivimey Cook & Proctor (1966).

TABLE 15.

Association Cirsio-Brometum

Sub-ass. typicum

3. Milk Hill, Pewsey, Wilts., SU 101637, 750 ft.
 8,9. Huish Hill, Oare, Wilts., SU 150641, 700 ft.
 1,2. Walkers Hill, Pewsey, Wilts., SU 114635, 800 ft.;
 SU 111633, 700 ft.

Sub-ass. of Onobrychis & Serratula

4. Milk Hill, Pewsey, Wilts., SU 101637, 850 ft.
 5,6,7. Knap Hill, Pewsey, Wilts., SU 119636, 700 ft.;
 SU 122635, 750 ft.; SU 123637, 800 ft.
 20. Martinsell Hill, Oare, Wilts., SU 178638, 850 ft.

Sub-ass. brachypodietosum

15. Hackpen Hill, Marlborough Downs, Wilts., SU 125745, 750 ft.
 16,17. Cherhill Down, Yatesbury, Wilts., SU 048699, 700 ft.;
 SU 039694, 600 ft.
 18. Oliver's Castle, Devizes, Wilts., SU 004646, 550 ft.

Sub-ass. of Anthoxanthum & Holcus

13. Milk Hill, Pewsey, Wilts., SU 098638, 800 ft.
 10.. Huish Hill, Oare, Wilts., SU 148643, 750 ft.
 11. Golden Ball Hill, Pewsey, Wilts., SU 127637, 800 ft.
 12. Walkers Hill, Pewsey, Wilts., SU 112638, 850 ft.
 14. Hackpen Hill, Marlborough Downs, Wilts., SU 125743, 850 ft.

TABLE 16.

Association Cirsio-Brometum Caricetosum Humilis

20. Starveall Down, nr. Stockton, Wilts., ST 994398, 400 ft.
 21. Stockton Down, Wilts., ST 958367, 500 ft.
 22. Well Bottom, nr. Chicklade, Wilts., ST 916375, 500 ft.

TABLE 17.

The Phytogeographical Relationships of the Association of
 the "Cirsio-Brometum" Grassland type in N.W. Europe

- | | | | |
|----|-------------------------|---|--------------|
| A. | Cirsio-Brometum typicum |) | |
| B. | Carex variant |) | see Table 5. |
| C. | astragaletosum |) | |
| D. | brachypodietosum |) | |

- E. Cirsio-Brometum typicum)
 F. Onobrychis-Serratula) see Table 15.
 G. brachypodietosum)
 H. Anthoxanthum-Holcus)
 J. Cirsio-Brometum caricetosum humilis - see Table 16.
 K. Tansley & Adamson (1926), p.16, Table 1, from the South
 Downs, England.
 L. Watt (1957), p.864, Table 2, Ungrazed details only,
 Foxhole Heath, Breckland, E. Anglia.
 M. de Litardiere (1928), Localities 1-9 - N. W. France.
 N,O. de Blangermont & Liger (1964), Tables 1 & 2, Bresle
 Valley, Seine-Maritime, N. W. France.
 P,Q. Mesobrometum Koelerietosum cristatae from Diemont & Van
 den Ven (1953) from S. Limburg, Netherlands. (No
 bryophyte details presented in this paper, but details
 derived from Barkmann (1953)); P - sandy variant;
 Q - mesophilous variant.
 R,S,T,U,V,W. Gentiano-Koelerietum boreoatlanticum Knapp 1942,
 116 unpublished Aufnahmen from Prof. R. Tüxen for
 N. W. Germany and incorporating the Gentiano-
 Koelerietum and Euphorbio-Brachypodietum of Bornkamm
 (1960).
 R. brometosum typical var. U. typicum Euphorbia var.
 S. " Euphorbia var. V. sieglinglietosum
 T. typicum typical var. typical var.
 W. sieglinglietosum
 Euphorbia var.

TABLE 18.

The Phytogeographical Relationships of the Associations of
 the "Avenetum" and "Western" grassland types in N.W. Europe

- Column A. Helictotricho-Caricetum flaccae typicum.
 B. " " " Holcus-Trifolium.
 (see Table 6).
 C. Helianthemo-Koelerietum typicum.
 D. " " Helictotrichon pratense.
 E. " " Asperula-Bromus ferronii.
 (see Table 7).
 F. Caricetum montanae typicum.
 G. " " Galium-Melica (see Table 8).
 H. Antennarietum hibernicae typicum.
 J. " " asperuletosum (see Table 9).
 K. Camptothecio-Asperuletum, Carex arenaria.
 L. " " Rhytidiadelphus squarrosus
 (see Table 10).
 M. Table in Böcher (1944), lists 2-5, N. Denmark.
 N. Table 4 in Andersson (1950), p. 164-9, "Meadow
 Grass Heath" - Avenetum, Aufnahmen 21-33,
 Denmark.
 O. Table in Hallberg (1959). 16 Aufnahmen of an
 autecological study of Rhytidium rugosum in the
 province of Bohuslän, Sweden.
 P. Unpublished Aufnahmen from Prof. R. Tüxen, from the
 southern region of Scania, Sweden.

TABLE 19.

The Phytogeographical Relationships of the Associations of the Sub-Alliance Seslerio-Mesobromion in N. W. Europe.

- Column A-D. Seslerio-Helictotrichetum (see Table 11)
4 sub-associations.
- E-H. Seslerio-Caricetum pulicariae (Table 12)
4 sub-associations.
- J-L. Asperulo-Seslerietum (Table 14)
2 sub-associations and 1 variant.
- M,N. Vincetoxico-Seslerietum Tx.1967, ass. prov. (unpubl.).
- M. Sub-ass. relictum - 12 Aufnahmen
- N. Sub-ass. mesobrometosum - 21 Aufnahmen -
from N. W. Germany.
- O. Seslerio-Koelerietum typicum Oberd. 1957, from Oberdorfer (1957), p.295. 19 Aufnahmen from Kuhn (1937) from the Schwäbischen Alb region of southern Germany between 500 and 900 m. altitude.

TABLE 20.

Association Plantagino-Dryadetum

Sub-ass. typicum

31. Above Loch an Loin, Kishorn, Ross-shire, NG 863445, 800 ft.
- 32,38. Glasschock, Kishorn, NG 865454, 500 ft.
36. Coille Dhubh, Kishorn, NG 869447, 1050 ft.
11. Traligill Burn, Inchnadamph, NC 263215, 450 ft.
16. Blar nam Fiadhag, Inchnadamph, NC 252208, 700 ft.
- 17,18. Knockanrock, Elphin, Sutherland, NC 188092, 900 ft.;
NC 197098, 1000 ft.
- 14,15. Ben nan Cnaimhseag, Inchnadamph, NC 280186, 1250 ft.
74. Rubha na Leac, Raasay, NG 598379, 250 ft.
73. Druim an Aonaich, Raasay, NG 583424, 850 ft.
72. nr. South Screapadal, Raasay, NG 578439, 500 ft.
71. Creag na Bruaich, Raasay, NG 583437, 750 ft.

Maritime Sub-ass.

19. E. of L. Borrallie, Durness, Sutherland, NC 390667, 150 ft.
20. nr. L. Caladail, Durness, NC 393666, 150 ft.
21. Durness, NC 394674, 100 ft.
22. Leirinbeg, Durness, NC 414678, 100 ft.
23. Smoo, Durness, NC 413671, 150 ft.
- 24,26. Druim Chuibhe, Bettyhill, Sutherland, NC 700608,
250 and 200 ft.

TABLE 21.

Association Salico-Dryadetum (McV. & Rat. 1962).

2. Creag an Lochan, Breadalbane, Perthshire, NN 592405, 2250 ft.
1. Creag an Lochan, NN 594398, 2400 ft.
3. Meall nan Tarmachan, Perthshire, NN 586392, 3000 ft.
4. Western Rocks, Ben Lawers, Perthshire, NN 635411, 3250 ft.
6. Caenlochan Cliffs, Angus, NO 180773, 2600 ft.
31. Crag above Traligill Burn, Inchadamph, Sutherland, NC 264211.
38. The Cairnwell, Perthshire, NO 128782, 2950 ft.
39. Ben Vrackie, Perthshire, NN 952629, 2200 ft.

TABLE 22.

The Phytogeographical Relationships of the Associations of the Alliance Kobresio-Dryadion

- A. Plantagino-Dryadetum typicum.
- B. " " Maritime Sub-ass.
- C. Salico-Dryadetum.
- D. Artenreiche Dryas-Ass. Nordhagen 1927-28
Table 34, p. 243.
- E. Elyna bellardii-Certraria nivalis-Ochrolechia tartarea -
Soz.- Nordhagen 1936, p.38.
- F. Arctostaphylos uva-ursi - Soz.-Nordhagen 1936, p.38.
- G. Artenreiche Diapensia-Ass. Nordhagen 1927-28, Table 33,
p.241.

TABLE 23.

Association Centaureo-Arrhenatheretum O'Sullivan 1965

- 47A. Cheddar Gorge, Somerset, ST 469543, 500 ft.
24. Cassop Vale, Durham, NZ 343383, 500 ft.
54. Sherburn Hill, Durham, NZ 335418, 450 ft.
- 72A. Thrislington Plantation, Durham, NZ 318328, 450 ft.
121. Deep Dale, Derbyshire, SK 097713, 850 ft.
37. Middleton Dale, Derbys., SK 222758, 700 ft.
14. Bradford Dale, Derbys., SK 218644, 450 ft.
114. Tideswell Dale, Derbys., SK 154735, 750 ft.
74. Miller's Dale, Derbys., SK 155732, 650 ft.
64. Coombsdale, Derbys., SK 223743, 650 ft.

TABLE 24.

Arrhenatherum-Mercurialis Community

3. Biggin Dale, Derbys., SK 146584, 800-900 ft.
4. Coombsdale, Derbys., SK 222743, 750 ft.
2. Lathkill Dale, Derbys., SK 173657, 700 ft.
1. Bradford Dale, Derbys., SK 201637, 600 ft.
5. Deep Dale, Derbys., SK 098717, 900 ft.
51. Burrington Coombe, Somerset, ST 477586, 450 ft.

TABLE 25.

Association Filipendulo-Arrhenatheretum

Sub-ass. typicum

- 59. Wolfscote Dale, Staffordshire, SK 132580, 750 ft.
- 96. Tideswell Dale, Derbyshire, SK 154737, 750 ft.
- X. Flag Dale, Derbyshire, SK 118737.
- 6. Kilnsey Crag, Wharfedale, Yorks., SD 973682, 700 ft.
- 77. Riverside, Teesdale, NY 917270, 800 ft.
- 19. Gordale Scar, Yorks., SD 915640, 1100 ft.

Sub-ass. polemonietosum

- 38. Lathkill Dale, Derbys., SK 168659, 700 ft.
- 12. Thor's Cave, Manifold Valley, Staffs., SK 098549, 700 ft.
- 60. Mill Dale, Derbys., SK 145558, 650 ft.
- 99. The Winnats, Castleton, Derbys., SK 136826, 1100 ft.
- 25. Malham Cove, Yorkshire, SD 898640, 900 ft.
- N13. Linbriggs, Alwinton, Cheviot, Northumberland, NT 894067, 750 ft.
- MA47. Taddington Dale, Derbyshire, SK 167706, 550 ft.
- MB2. Mill Beck Wood, Teesdale, Yorkshire, NY 915266, 850 ft.

TABLE 26.

The Alliance Ranunculo-Anthoxanthion in Scotland

Columns A,B,C,H,K,L,M,N.

McVean & Ratcliffe (1962) A: Table 26b, p.239; B: Table 29a, p.250; C: Table 26a, p.238; H: Table 30b, p.257; K: Table 30a, p.256; L: Table 25, p.234; M: Table 24, p.230; N: Table 28a, p.246.

Columns D,E,F,G,I,J.

King & Nicholson (1964) I,J: Tables 4 & 5, p.216; D,E,F,G: Tables 6, 8, 9 & 10, p.219.

TABLE 27.

Association Festuco-Poetum

Sub-ass. cynosuretosum

- 50. Cribarth, Breconshire, SN 840146, 1050 ft.
- 51. Pant y Wal, Brecon., SN 838148, 1100 ft.
- 59. Twyn-y-Glog, Brecon., SN 958086, 1000 ft.
- 53. Carneg Cadno, Brecon., SN 872158, 1500 ft.
- 52. Carneg-goch, Brecon., SN 814168, 1550 ft.
- 58. Carw-dyle, Brecon., SN 960093, 1100 ft.
- D. Dam Cliff, Peak Forest, Derbys., SK 124782, 1250 ft.
- 16. Malham Lings, Malham, Yorks., SD 892655, 1250 ft.
- 64. Sware Gill Head, Ingleborough, Yorks., SD 737745, 2000 ft.
- 72. Combe Scar, Whernside, Yorks., SD 733796, 1750 ft.

Sub-ass. sub-alpinum

92. High Hurst, Cronkley Fell, Teesdale, Yorks., NY 852273,
1750 ft.
93. Lang Hurst, Cronkley, Teesdale, NY 833264, 1950 ft.
94. Boot of Mickle Fell, Yorks., NY 808243, 2300 ft.
95. " " " " " NY 804245, 2500 ft.
79. High Raise Band, Dufton Fell, Westmorland, NY 738312,
2250 ft.
80. Meldon Hill, Dufton Fell, NY 779296, 2100 ft.

TABLE 28.

Association Minuartio-Thlaspeetum

Sub-ass. typicum

- LM 7. New Dam, Youlgrave, Derbys., SK 215638, 500 ft.
LM15. Slaley, nr. Bonsall, Derbys., SK 264573, 950 ft.
LM 3. Moatlow, Youlgrave, Derbys., SK 208638, 550 ft.
LM 2. " " " " SK 204637, 650 ft.
LM 6. Blyth Mines, Alport, Derbys., SK 217639, 500 ft.
LM 8. Rough Pitty Side, Wirksworth, Derbys., SK 270532, 750 ft.
NP13. Grassington Moor, Yorks., SE 029668, 1250 ft.

Sub-ass. Cladonietosum

- LM16. Eyam Edge, Derbys., SK 213772, 1000 ft.
LM28,27,30. Moorhouse N.N.R., Westmorland, NY 758327, 1850 ft.
NP12. Grassington Moor, Yorks., SE 029668, 1250 ft.
LM34. Bonsall Moor, Derbys., SK 252595, 1100 ft.
LM32. New Engines, Eyam, Derbys., SK 224773, 1200 ft.

Sub-ass. achilletosum

- LM 1. New Dam, Youlgrave, Derbys., SK 215638, 500 ft.
LM 9. Blyth Mines, Alport, Derbys., SK 217639, 500 ft.
LM21. Widdybank Pasture, Durham, NY 822305, 1650 ft.
LM24. Windy Brow, nr. Alston, Cumberland, NY 771381, 1800 ft.
LM14. Bonsall Moor, Derbys., SK 252595, 1100 ft.
LM18. Watersaw Rake, Derbys., SK 198734, 1200 ft.
ML47. Velvet Bottom, Somerset, ST 505555, 800 ft.
LM35. Bonsall Moor, Derbys., SK 252595, 1100 ft.
LM13. By R. Bradford, Youlgrave, Derbys., SK 215642, 500 ft.
LM17. Ox Low Rake, Peak Forest, Derbys., SK 125801, 1300 ft.

TABLE 29.

Association Dryopteridetum robertianae

Sub-ass. typicum

- D142. Middleton Dale, Derbys., SK 207759, 750 ft.
D100. Longstone Edge, Derbys., SK 204730, 1000 ft.

- D 84. Viagellia, Derbys., SK 268566, 650 ft.
 SW61. Wyrllod-ddu, Breconshire, SO 022099, 1000 ft.
 ML52. Burrington Coombe, Somerset, ST 477585, 450 ft.
 NG26. Hohenstein Süntel, Wesergebirge, N. W. Germany, 700 ft.

Sub-ass. of Rubus saxatilis

- D120. Coombs Dale, Derbys., SK 223743, 700 ft.
 D132. Deep Dale, Derbys., SK 164697, 850 ft.

Sub-ass. Mesobrometosum

- SW62. Wyrllod-ddu, Breconshire, SO 022099, 1000 ft.
 D133. Deep Dale, Derbys., SK 164697, 850 ft.
 D141. Middleton Dale, Derbys., SK 207759, 800 ft.
 D122. Coombs Dale, Derbys., SK 219742, 850 ft.
 Grike facies. Limestone pavement above Sunbiggin Tarn,
 Westmorland, NY 677095, 1100 ft.

TABLE 30.

Sedum fosteranum communities

- ML42. Cheddar Gorge, Somerset, ST 470543, 450 ft.
 WB4 & 5. Craig Breidden, Montgomeryshire, SJ 295149, 550 ft.

TABLE 31a.

Association Caricetum lepidocarpae-hostianae

Sub-ass. molinietosum

- NP10. Pasture opposite Yew Cogar Scar, Littondale, Yorks.,
 SD 922709, 900 ft.
 NP 9. Park Gill Beck, Wharfedale, Yorks., SD 977736, 900 ft.
 NP43. Great Close Scar Mire, Malham, Yorks., SD 905666, 1250 ft.
 NP126. Sunbiggin Tarn, Westmorland, NY 672077, 800 ft.
 D 128. Monks Dale, Derbyshire, SK 136738, 750 ft.

Sub-ass. kobresietosum

- NP101. Sand Sike, Widdybank Fell, Durham, NY 845308, 1300 ft.
 NP104,105. Red Sike, Widdybank Fell, Durham, NY 816296, 1550 ft.

TABLE 31b.

Association Schoenetum nigricantis

Sub-ass. typicum

- 5 Aufnahmen from:- Sunbiggin Tarn, Westmorland (NY 670075),
 Kishorn, Ross-shire (NG 842426), Lough Derg. near Portumná
 (M 8604), Lough Bunny, Co. Cláre (R 3897).

Sub-ass. eleocharietosum

- 6 Aufnahmen from the above localities, two from Sunbiggin
 Tarn, and one from each of the remainder.

TABLE 32.

Association Nardo-Galietum saxatilis

- D 43. Coombs Dale, Derbys., SK 216739, 1000 ft.
D102. Deep Dale, Derbys., SK 158687, 1000 ft.
D 27. Lathkill Dale, Derbys., SK 178658, 1050 ft.
D104. Wartlow Hay Cop, Derbys., SK 174743, 950 ft.
D 91. Parwich Moor, Derbys., SK 175580, 1100 ft.
NP74. Malham Lings., Yorks., SD 885656, 1250 ft.
NP88. Conistone Old Pasture, Wharfedale, Yorks., SD 990677,
1000 ft.
SW44. Pant-y-wal, Breconshire, SN 833145, 1250 ft.
SW49. Wyrllod-ddu, Breconshire, SO 023101, 1250 ft.
NP37. Malham Lings, Yorks., SD 889658, 1250 ft.

TABLE 33.

Association Agrostu-Ulicetum gallii (Tansley 1939)

Sub-ass. of Agrostis setacea

- 51,56. Ewenny Down, Glamorgan, SS 897758, 250 ft.
14A. Deep Slade, Gower, SS 563868, 200 ft.
15A. High Pennard, Gower, SS 570864, 300 ft.

Sub-ass. typicum

53. Burrington Coombe, Somerset, ST 482582, 600 ft.
5. Goblin Coombe, Somerset, ST 476652, 450 ft.
7. Bwrrd Arthur, Anglesey, SH 586816, 450 ft.
17A. Great Ormes Head, Llandudno, SH 756836, 500 ft.
47. Halkyn Mountain, Halkyn, Flints, SJ 200713, 900 ft.
4. Long Dale, Derbys., SK 188605, 950 ft.
79. Bonsall Moor, Derbys., SK 250596, 1100 ft.
16. Crook Peak, Somerset, ST 385562, 325 ft.

TABLE 34.

Association Arctostaphyleto-Dryadetum (Iv.-Ck. & Proct. 1966).

- 24,25. Black Head, Burren, Co. Clare, M 1611, 750 & 900 ft.
39,40. Gleninagh Mt., Burren, Co. Clare, M 1610, M 7709,
800 & 900 ft.
29. Above Lochan an Daim, Ben Schichallion, Perthshire,
NN 712572, 1250 ft.
51. Glassnock, Kishorn, Ross-shire, NG 860445, 500 ft.

Column 7. Constancy figures for 8 lists from the
Arctostaphylos uva-ursi - Dryas octopetala Nodum, Table
XXIXb of Ivimey-Cook & Proctor (1966), p.289.

Column 8. Constancy figures for 10 lists of Juniperetum
nanae, Table 14 of McVean & Ratcliffe (1962), p.203.

TABLE 35.

Association Geranio-Coryletum

77. Nimblejack, Via Gellia, Derbys., SK 263564, 750 ft.
i32. Lathkill Dale, Derbys., SK 186657, 750 ft.
109. Priestcliffe Lees, Millers Dale, Derbys., SK 148730, 900 ft.
124. Topley Pike, Derbys., SK 104725, 900 ft.
40. Coombesdale, Derbys., SK 224744, 700 ft.
67. Biggin Dale, Derbys., SK 145583, 800 ft.
94. Monks Dale, Derbys., SK 134752, 900 ft.
53. Ravens Dale, Derbys., SK 174744, 850 ft.
96. Deep Dale, Ashford, Derbys., SK 164696, 900 ft.
54. Ravens Dale, Derbys., SK 173745, 750 ft.

TABLE 36.

Associations of the Order Prunetalia

1. Crataegus-Rosa pimpinellifolia Ass.
6 Aufnahmen: 2 from Middleton Dale, Derbys.; 2 from Thrislington Plantation, Co. Durham, and 2 from Bishop Middleham, Co. Durham.
2. Clematito-Prunetum
5 Aufnahmen from Stinchcombe Hill and Dursley, Cotswold Hills, and from Ticknall, S. Derbys.
3. Salicetum repenti-nigricanti
3 Aufnahmen from Thrislington Plantation, Castle Eden Dene Mouth and Blackhall Rocks, Co. Durham.
4. Ligustro-Rubetum ulmifolii
6 Aufnahmen from Pendine, S. Wales, Brean Down and Sand Point, Somerset, Beer Head, Devon and Sark, Channel Islands.

TABLE 37.

Association Potentilletum fruticosae

- NP82. Holwick Bridge, Teesdale, NY 890283, 900 ft.
I 51. Coolreash Lough, Co. Clare, R 3294, 100 ft.

Sub-ass. typicum

- NP84. High Force, Teesdale, NY 882285, 1000 ft.
I 50. Coolreash Lough, Co. Clare, R 3294, 100 ft.
I 59. Lough Bunny, Co. Clare, R 3897, 100 ft.
LW. Wastwater Screes, Cumberland, NY 168044, 1350 ft.
NP85. Cronkley Scar, Teesdale, NY 842295, 1400 ft.

Sub-ass. salicetosum phyllicifoliae

- NP83. Holwick Bridge, Teesdale, NY 894283, 900 ft.
NP90. Dent Bank, Teesdale, NY 934258, 800 ft.
NP86. Mill Beck Wood, Teesdale, NY 915266, 850 ft.