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### *Phytosociology and community boundaries of the British heath foundation*

P. Bridgewater

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APPENDIX I

Synopsis of classification employed in  
Section V.



APPENDIX I.

SYNOPSIS OF CLASSIFICATION

I. Erica cinerea heath

1. THYMUS DRUCEI COMPLEX

- (a) Genista pilosa community
  - (i) Hypnum ericetorum variant.
  - (ii) Campanula rotundifolia variant.
  - (iii) Carex flacca variant.
    - ( $\alpha$ ) Ulex gallii sub-variant.
    - ( $\beta$ ) Hieracium sect. glandulosi sub-var.
    - ( $\gamma$ ) Erica vagans sub-var.
    - ( $\delta$ ) Daucus gummifer sub-var.
- (b) Daucus gummifer-Dactylis glomerata community
  - (i) Genista tinctoria variant.
    - ( $\alpha$ ) Armeria maritima sub-var.
  - (ii) Rumex acetosa variant.
    - ( $\alpha$ ) Ulex europaeus sub-var.
  - (iii) Cladonia rangiformis variant.
  - (iv) Anthoxanthum odoratum variant.
- (c) Thymus drucei community
  - (i) Pedicularis sylvatica variant.
  - (ii) Erica tetralix variant.
  - (iii) Hypnum ericetorum variant.
  - (iv) Agrostis tenuis variant.
    - ( $\alpha$ ) Luzula campestris sub-var.
    - ( $\beta$ ) Anthoxanthum odoratum sub-var.
  - (v) Koeleria cristata variant.
- (d) Hydrocotyle vulgaris community
- (e) Carex panicea community
  - (i) Breutelia chrysocoma variant.
  - (ii) Prunella vulgaris variant.

(ii)

2. ULEX GALLII - AGROSTIS SETACEA COMPLEX

- (a) Erica ciliaris community
  - (i) Carex panicea variant.
  - (ii) Diplophyllum albicans variant.
  - (iii) Erica tetralix variant.
  
- (b) Vaccinium myrtillus community
  - (i) Deschampsia flexuosa variant.
    - (a) Cladonia spp. sub-var.
  - (ii) Erica tetralix variant.
  
- (c) Erica tetralix community
  - (i) Sieglingia decumbens variant.
    - (a) Agrostis setacea sub-var.
    - (B) Calypogeia arguta sub-var.
  - (ii) Cladonia spp. variant.
    - (a) Carex binervis sub-var.
  
- (d) Agrostis setacea community
  - (i) Erica tetralix variant.
  
- (e) Viola lactea community
  - (i) Betonica officinalis variant.
    - (a) Campylopus introflexus sub-var.
    - (B) Plantago maritima sub-var.
  - (iii) Hypericum humifusum variant.
    - (a) Holcus lanatus sub-var.
  
- (f) Agrostis tenuis community
  
- (g) Sieglingia decumbens community
  - (i) Carex binervis variant.
  - (ii) Anthoxanthum odoratum variant.
    - (a) Vaccinium myrtillus sub-var.

3. ERICA VAGANS COMPLEX

(a) Erica tetralix community

- (i) Anagallis tenella variant.
  - ( $\alpha$ ) Carex demissa sub-var.
  - ( $\beta$ ) Zygonium ericetorum sub-var.
- (ii) Genista anglica variant.
- (iii) Agrostis setacea variant.

(b) Daucus gummifer community

- (i) Carlina vulgaris variant.
- (ii) Geranium sanguineum variant.

4. ULEX GALLII COMPLEX

(a) Festuca rubra community

- (i) Agrostis montana variant.
  - ( $\alpha$ ) Campanula rotundifolia sub-var.
- (ii) Hypnum ericetorum variant.

(b) Ulex gallii community

- (i) Molinia caerulea variant.
  - ( $\alpha$ ) Hypnum ericetorum sub-var.
- (ii) Ulex europaeus variant.
- (iii) Scirpus caespitosus variant.

(c) Carex flacca community

- (i) Lotus corniculatus variant.

(d) Polytrichum piliferum community

- (i) Digitalis purpurea variant.
  - ( $\alpha$ ) Teucrium scorodonia sub-var.
- (ii) Cladonia squamosa variant.

5. ERICA CILIARIS COMPLEX

(a) Ulex minor community

- (i) *Scirpus caespitosus* variant.
  - ( $\alpha$ ) *Zygonium ericetorum* sub-var.
  - ( $\beta$ ) *Linum catharticum* sub-var.
  - ( $\gamma$ ) *Ulex europaeus* sub-var.

(b) Erica ciliaris community

- (i) *Lythrum salicaria* variant.
- (ii) *Narthecium ossifragum* variant.
  - ( $\alpha$ ) *Shoenus nigricans* sub-var.
  - ( $\beta$ ) *Eriophorum angustifolium* sub-var.

6. VACCINIUM MYRTILLUS COMPLEX

(a) Hylocomium splendens community

(b) Pohlia nutans community

- (i) *Erica tetralix* variant.
  - ( $\alpha$ ) *Nardus stricta* sub-var.
- (ii) *Carex binervis* variant.
  - ( $\alpha$ ) *Anthoxanthum odoratum* sub-var.
  - ( $\beta$ ) *Cladonia crispata* sub-var.

(c) Agrostis setacea community

(d) Sieglingia decumbens community

- (i) *Nardus stricta* variant.

7. ARCTOSTAPHYLOS UVA-URSI COMPLEX

(a) Vaccinium vitis-idaea community

(b) Arctous alpina community

- (i) *Juniperus nana* variant.
  - ( $\alpha$ ) *Pleurozia purpurea* sub-var.

8. ULEX EUROPAEUS COMPLEX

(a) Ulex europaeus community

- (i) Erica tetralix variant.
- (ii) Serratula tinctoria variant.
  - (α) Sieglingia decumbens sub-var.

9. TEUCRIUM SCORODONIA COMPLEX

(a) Teucrium scorodonia community

- (i) Agrostis stolonifera variant.
- (ii) Festuca ovina variant.
  - (α) Luzula campestris sub-var.
  - (β) Geranium sanguineum sub-var.

10. SCIRPUS CAESPITOSUS COMPLEX

(a) Scirpus caespitosus community

- (i) Diplophyllum albicans variant.
- (ii) Carex binervis variant.
  - (α) Juncus squarrosus sub-var.

(b) Agrostis tenuis community

- (i) Carex pulicaris variant.
- (ii) Carex flacca variant.
  - (α) Carex hostiana sub-var.

II. Calluna vulgaris heath

1. ULEX MINOR COMPLEX

(a) Erica tetralix community

- (i) Leucobryum glaucum variant.
- (ii) Betula spp. variant.
- (iii) Pteridium aquilinum variant.

- (iv) *Agrostis setacea* variant.
  - ( $\alpha$ ) *Pteridium aquilinum* sub-var.
  - ( $\beta$ ) *Ulex europaeus* sub-var.
  - ( $\gamma$ ) *Zygonium ericetorum* sub-var.
  - ( $\delta$ ) *Campylopus brevipilus* sub-var.
- (b) *Deschampsia flexuosa* community
  - (i) *Festuca rubra* variant.
  - (ii) *Vaccinium myrtillus* variant.
    - ( $\alpha$ ) *Agrostis setacea* sub-var.
- (c) *Ulex minor* community
  - (i) *Agrostis setacea* variant.
  - (ii) *Ulex europaeus* variant.

2. DESCHAMPSIA FLEXUOSA COMPLEX

- (a) *Erica cinerea* community
  - (i) *Pteridium aquilinum* variant.
    - ( $\alpha$ ) *Pohlia nutans* sub-var.
  - (ii) *Quercus* spp. variant.
- (b) *Deschampsia flexuosa* community
  - (i) *Betula* spp. variant.
    - ( $\alpha$ ) *Vaccinium myrtillus* sub-var.
  - (ii) *Quercus* spp. variant.
    - ( $\alpha$ ) *Polytrichum commune* sub-var.
    - ( $\beta$ ) *Luzula campestris* sub-var.
    - ( $\gamma$ ) *Potentilla erecta* sub-var.

3. ERICA CINEREA COMPLEX

- (a) *Carex arenaria* community
  - (i) *Cornicularia aculeata* variant.
  - (ii) *Rosa pimpinellifolia* variant.
    - ( $\alpha$ ) *Plantago coronopus* sub-var.
  - (iii) *Cladonia coccifera* variant.
  - (iv) *Potentilla erecta* variant.
  - (v) *Erica tetralix* variant.

(b) Diplophyllum albicans community

- (i) *Agrostis stolonifera* variant.
- (ii) *Agrostis tenuis* variant.
  - (α) *Cladonia chlorophaea* sub-var.
- (iii) *Usnea sub-florida* variant.

4. FESTUCA RUBRA COMPLEX

(a) Carex arenaria community

- (i) *Pteridium aquilinum* variant.
  - (α) *Ulex gallii* sub-var.
  - (β) *Deschampsia flexuosa* sub-var.
- (ii) *Sarothamnus scoparius* variant.
- (iii) *Erica cinerea* variant.
  - (α) *Ammophila arenaria* sub-var.
  - (β) *Cuscuta epithymum* sub-var.

(b) Agrostis tenuis community

- (i) *Lotus corniculatus* variant.
- (ii) *Sieglingia decumbens* variant.
  - (α) *Holcus lanatus* sub-var.
  - (β) *Potentilla erecta* sub-var.

(c) Festuca rubra community

- (i) *Cladonia impexa* variant.
  - (α) *Luzula campestris* sub-var.

5. POHLIA NUTANS COMPLEX

(a) Pohlia nutans community

- (i) *Erica tetralix* variant.
  - (α) *Scirpus caespitosus* sub-var.
  - (β) *Cladonia coccifera* sub-var.
- (ii) *Cladonia coccifera* variant.

6. SIEGLINGIA DECUMBENS COMPLEX

(a) Sieglingia decumbens community

- (i) Campanula rotundifolia variant.
- (ii) Brachypodium pinnatum variant.

7. ULEX GALLII COMPLEX

(a) Ulex gallii community

- (i) Campylopus flexuosus variant.
  - ( $\alpha$ ) Cladonia uncialis sub-var.
- (ii) Carex arenaria variant.
- (iii) Festuca rubra variant.
  - ( $\alpha$ ) Carex pilulifera sub-var.

III. Vaccinium myrtillus heath

1. POHLIA NUTANS COMPLEX

(a) Melampyrum pratense community

- (i) Cladonia chlorophaea variant.
  - ( $\alpha$ ) Cladonia coccifera sub-var.
  - ( $\beta$ ) Erica cinerea sub-var.
  - ( $\gamma$ ) Vaccinium vitis-idaea sub-var.
- (ii) Galium saxatile variant.

(b) Pohlia nutans community

- (i) Vaccinium vitis-idaea variant.
- (ii) Cladonia chlorophaea variant.
  - ( $\alpha$ ) Nardus stricta sub-var.
  - ( $\beta$ ) Cladonia coccifera sub-var.

2. CALLUNA VULGARIS COMPLEX

(a) Calluna vulgaris community

- (i) Erica tetralix variant.
  - (a) Carex binervis sub-var.
- (ii) Pohlia nutans variant.
- (iii) Festuca ovina variant.
- (iv) Luzula multiflora variant.
  - (a) Leucobryum glaucum sub-var.
  - (B) Pteridium aquilinum sub-var.

(b) Erica cinerea community

- (i) Empetrum nigrum variant.

3. DESCHAMPSIA FLEXUOSA COMPLEX

(a) Rhytidiadelphus loreus community

- (i) Carex binervis variant.
  - (a) Molinia caerulea sub-var.
  - (B) Polytrichum commune sub-var.
- (ii) Blechnum spicant variant.
  - (a) Luzula sylvatica sub-var.
- (iii) Campanula rotundifolia variant.
  - (a) Thymus drucei sub-var.
  - (B) Peltigera canina sub-var.

(b) Empetrum nigrum community

- (i) Rhytidiadelphus loreus variant.
- (ii) Juniperus communis variant.
- (iii) Erica cinerea variant.
  - (a) Sieglingia decumbens sub-var.
  - (B) Pohlia nutans sub-var.
- (iv) Gymnocolea inflata variant.
- (v) Juncus squarrosus variant.

(c) Deschampsia flexuosa community

- (i) Carex pilulifera variant.
- (ii) Pteridium aquilinum variant.
  - (α) Diplophyllum albicans sub-var.
- (iii) Molinia caerulea variant.
- (iv) Cladonia arbuscula variant.
  - (α) Carex binervis sub-var.
  - (B) Diplophyllum albicans sub-var.
- (v) Vaccinium vitis-idaea variant.
- (vi) Erica cinerea variant.

4. ERICA CINEREA COMPLEX

(a) Nardus stricta community

- (i) Carex binervis variant.
- (ii) Erica tetralix variant.
- (iii) Sieglingia decumbens variant.

(b) Erica cinerea community

- (i) Pohlia nutans variant.
- (ii) Ulex europaeus variant.
- (iii) Pteridium aquilinum variant.
- (iv) Agrostis tenuis variant.

5. CAREX BIGELOWII COMPLEX

(a) Calluna vulgaris community

- (i) Anastrepta orcadensis variant.
  - (α) Chamaepericlymenum suecicum sub-var.
  - (B) Pleurozia purpurea sub-var.
- (ii) Ochrolechia frigida variant.
  - (α) Juniperus nana sub-var.

(b) Carex bigelowii community

- (i) Ochrolechia frigida variant.
- (ii) Alchemilla alpina variant.
- (iii) Anastrepta orcadensis variant.

IV. Erica tetralix heaths

1. ZYGOGONIUM ERICETORUM COMPLEX

(a) Sphagnum compactum community

(i) Rhynchospora alba variant.

( $\alpha$ ) Drosera rotundifolia sub-var.

(ii) Cladonia impexa variant.

( $\alpha$ ) Sphagnum tenellum sub-var.

( $\beta$ ) Cladonia floerkeana sub-var.

(iii) Campylopus brevopilus variant.

(iv) Gymnocolea inflata variant.

( $\alpha$ ) Campylopus brevopilus sub-var.

( $\beta$ ) Juncus squarrosus sub-var.

(b) Zygogonium ericetorum community

(i) Erica cinerea variant.

( $\alpha$ ) Juncus squarrosus sub-var.

(ii) Pteridium aquilinum variant.

(iii) Polytrichum juniperinum variant.

2. MOLINIA CAERULEA COMPLEX

(a) Dicranum scoparium community

(i) Nardus stricta variant.

(ii) Eriophorum angustifolium variant.

(b) Scirpus caespitosus community

(i) Carex nigra variant.

( $\alpha$ ) Juncus squarrosus sub-var.

( $\beta$ ) Hypnum ericetorum sub-var.

(ii) Cladonia impexa variant.

(c) Deschampsia flexuosa community

(i) Eriophorum vaginatum variant.

( $\alpha$ ) Vaccinium myrtillus sub-var.

(d) Ulex\_gallii\_community

- (i) *Holcus lanatus* variant.
  - ( $\alpha$ ) *Hydrocotyle vulgaris* sub-var.
  - ( $\beta$ ) *Erica cinerea* sub-var.
- (ii) *Shoenus nigricans* variant.
  - ( $\alpha$ ) *Succisa pratensis* sub-war.

APPENDIX II

Key to the vegetation types described  
for British Heathlands.

APPENDIX II.

KEY TO THE VEGETATION TYPES DESCRIBED  
FOR BRITISH HEATHLANDS

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Abbreviations used are as follows:-

- 1) NAA. - The vegetation under examination does not conform to the preceding condition(s).
- 2) AA. - The vegetation under examination conforms to the preceding condition.
- 3) Where two species are cited, separated by a comma, (i.e. *Plantago maritima*, *Carex flacca* present) this should be read as "Plantago maritima and/or Carex flacca present".

-o-o-o-o-o-

- |    |  |             |    |
|----|--|-------------|----|
| 1. | <i>Ulex gallii</i> present.  |             | 2  |
|    | NAA.   |             | 40 |
| 2. | 2 of the 3 following species present:<br><i>Scilla verna</i> , <i>Plantago maritima</i> , <i>Carex flacca</i> .                  | I.1.a.iii.α |    |
|    | NAA.   |             | 3  |
| 3. | <i>Ulex minor</i> present.   | I.8.a.i     |    |
|    | NAA.   |             | 4  |
| 4. | <i>Erica ciliaris</i> present.   | (I.2.a)     | 5  |
|    | NAA.   |             | 6  |
| 5. | 2 of these 3 species present: <i>Carex panicea</i> , <i>Calyptogeia fissa</i> , <i>Polygala vulgaris</i> .                       | I.2.a.i     |    |
|    | <i>Diplophyllum albicans</i> present.  | I.2.a.ii    |    |
|    | <i>Erica tetralix</i> present.   | I.2.a.iii   |    |
|    | AA. with <i>Gymnocolea inflata</i> present.  | I.2.a.iii.α |    |
| 6. | 3 of these 4 species present: <i>Viola lactea</i> , <i>Agrostis stacea</i> , <i>Carex pilulifera</i> , <i>Agrostis montana</i> . |             | 7  |
|    | NAA.   |             | 9  |

(ii)

7. *Betonica officinalis*, *Thymus drucei*  
present. 8  
*Hypericum humifusum* present. I.2.e.ii
8. *Plantago maritima*, *Serratula tinctoria*  
present. I.2.e.i.β  
NAA. I.2.e.i.α
9. 3 of these 5 species present: *Rosa*  
*pimpinellifolia*, *Thymus drucei*, *Rumex*  
*acetosa*, *Dactylis glomerata*, *Agrostis*  
*tenuis*. I.2.f  
NAA. 10
10. 2 of these 3 species present: *Erica*  
*vagans*, *Schoenus nigricans*, *Carex*  
*flacca* (I.3.a). 11  
NAA. 14
11. *Agrostis setacea* present. I.3.a.iii  
NAA. 12
12. *Genista anglica* and *Carex pulicaris*  
present. I.3.a.ii  
NAA. (I.3.a.i). 13
13. 2 of these 3 species present: *Carex*  
*demissa*, *C. hostiana*, *C. pulicaris*. I.3.a.i.α  
NAA. I.3.a.i.β
14. SOUTH WALES ONLY - 2 of these 5  
species present: *Deschampsia flexuosa*,  
*Nardus stricta*, *Vaccinium myrtillus*,  
*Galium saxatile*, *Molinia caerulea*. III.4.c.iii  
NAA. or AA., but not in South Wales. 15
15. 3 of these 4 species present: *Carex*  
*arenaria*, *Dicranum scoparium*, *Hypnum*  
*ericetorum*, *Festuca rubra*. 16  
NAA. 17
16. 2 of these 4 species present: *Campanula*  
*rotundifolia*, *Pteridium aquilinum*, *Rumex*  
*acetosella*, *Pleurozium schreberi*. II.4.a.i  
NAA. II.7.a.ii

17. 3 of these 5 species present: *Agrostis tenuis*, *Molinia caerulea*, *Potentilla erecta*, *Erica tetralix*, *Pleurozium schreberi*. 18  
 NAA. 27
18. *Festuca ovina*, *Holcus lanatus* present.(IV.2.d.i) 19  
 NAA. 20
19. *Ulex europaeus*, *Hydrocotyle vulgaris*  
 present. IV.2.d.i.α  
 NAA. IV.2.d.i.β
20. *Erica tetralix* and *Carex binervis*  
 present. 21  
 NAA. 24
21. *Sieglingia decumbens* present (I.2.c.i) 22  
 NAA. 23
22. *Carex hostiana*, *Polygala serpyllifolia*  
 present. I.2.c.i.α  
*Calypogeia arguta* present. I.2.c.i.β
23. *Polygala serpyllifolia*, *Cladonia* spp.  
 present. I.2.c.ii  
 AA., with *Carex panicea* present. I.2.c.ii.α
24. *Carex binervis*, *Nardus stricta*  
 present. I.2.g.i  
 NAA. 25
25. *Anthoxanthum odoratum*, *Galium saxatile*  
 present. I.2.g.ii  
 AA. with *Vaccinium myrtillus* present. I.2.g.ii.α  
 NAA. 26
26. *Agrostis tenuis*, *Ulex europaeus*  
 present. II.7.a.iii  
 AA. with *Carex pilulifera*, *Quercus*  
 spp. seedlings. II.7.a.iii.α
27. 3 of these 4 species present: *Festuca rubra*, *Anthoxanthum odoratum*, *Galium saxatile*, *Sieglingia decumbens* (I.4.a). 28  
 NAA. 29

28. *Agrostis montana*, *Carex pilulifera*. I.4.a.i  
 AA. with *Campanula rotundifolia*. I.4.a.i.α  
 NAA. I.4.a.ii
29. 2 of these 3 species present: *Carex flacca*, *Thymus drucei*, *Filipendula vulgaris*. I.4.c  
 AA. with *Cirsium acaule*, *Lotus corniculatus*. I.4.c.i  
 NAA. 30
30. 2 of these 3 species present: *Polytrichum piliferum*, *Deschampsia flexuosa*, *Pohlia nutans* (I.4.d). 31  
 NAA. 32
31. *Jasione montana*, *Sarothamnus scoparius* present. I.4.d.i  
 AA. with *Teucrium scorodonia*, *Aira praecox*. I.4.d.i.α  
 NAA. I.4.d.ii
32. 4 of these 5 species present: *Cladonia uncialis*, *C. arbuscula*, *Sphagnum compactum*, *S. tenellum*, *Rhacomitrium lanuginosum*. 33  
*Agrostis tenuis*, *Sieglingia decumbens* present. 35  
 NAA. 36
33. 2 of these 4 species present: *Zygonium ericetorum*, *Cornicularia aculeata*, *Cladonia gracilis*, *Scirpus caespitosus*. 34  
 NAA. IV.2.a.i
34. 2 of these 3 species present: *Carex panicea*, *C. nigra*, *Sieglingia decumbens*. I.4.b.iii  
 NAA. IV.1.a.iii
35. *Ulex europaeus*, *Pteridium aquilinum*. I.4.b.ii  
 NAA. I.4.b.i  
 AA. with *Hypnum ericetorum* present. I.4.b.i.α
36. *Dicranum scoparium*, *Hypnum ericetorum* present. (In East Anglia only). 37  
 NAA. 38

37. *Campylopus flexuosus* present. II.7.a.i  
 AA. with *Cladonia uncialis*, *Polytrichum*  
*juniperinum* present. II.7.a.i.α  
 NAA. II.7.a.iii
38. *Vaccinium myrtillus* present (I.2.b). 39  
 NAA. I.2.d  
 AA. with *Erica tetralix*. I.2.d.i
39. *Deschampsia flexuosa* present. I.2.b.i  
 AA. with *Cladonia arbuscula* present. I.2.b.i.α  
*Erica tetralix* present. I.2.b.ii
40. 4 of these 6 species present: *Festuca*  
*ovina*, *Thymus drucei*, *Hypochoeris radicata*,  
*Plantago lanceolata*, *Viola riviniana*,  
*Holcus lanatus*. 41  
 NAA. 57
41. *Genista pilosa* present (I.1.a). 42  
 NAA. 45
42. 2 of these 4 species present: *Carex flacca*,  
*Plantago maritima*, *Scilla verna*, *Betonica*  
*officinalis* (I.1.a.iii). 43  
 NAA. 44
43. *Schoenus nigricans*, *Carex pulicaris*  
 present. I.1.a.iii.β  
*Erica vagans* present. I.1.a.iii.γ  
*Daucus gummifer* present. I.1.a.iii.δ
44. *Agrostis setacea*, *Hypnum ericetorum*  
 present. I.1.a.i  
*Campanula rotundifolia*, *Anthoxanthum*  
*odoratum* present. I.1.a.ii
45. 2 of these 3 species present: *Daucus*  
*gummifer*, *Dactylis glomerata*, *Anthyllis*  
*vulneraria* (I.1.b). 46  
 NAA. 49
46. *Rumex acetosa*, *Armeria maritima* present. 47  
 NAA. 48

47. *Genista tinctoria*, *Plantago maritima*  
present. I.1.b.i.α  
*Ulex europaeus* present. I.1.b.ii.α  
NAA. I.1.b.ii
48. 2 of these 3 species present: *Scilla*  
*verna*, *Plantago maritima*, *Serratula*  
*tinctoria*. I.1.b.i  
2 of these species present: *Leontodon*  
*taraxacoides*, *Campanula rotundifolia*,  
*Anthoxanthum odoratum*. I.1.b.iv  
*Cladonia rangiformis*, *Hypnum*  
*ericetorum* present. I.1.b.iii
49. *Pedicularis sylvatica* present. I.1.c.i  
NAA. 50
50. *Erica tetralix*, *Plantago maritima*  
present. I.1.c.ii  
NAA. 51
51. *Hypnum ericetorum* present. I.1.c.iii  
NAA. 52
52. *Agrostis tenuis* present (I.1.c.iv). 53  
NAA. 54
53. *Luzula campestris* present. I.1.c.iv.α  
*Anthoxanthum odoratum* present. I.1.c.iv.β
54. *Koeleria cristata*, *Scilla verna*  
present. I.1.c.v  
NAA. 55
55. 2 of these 3 species present: *Hydrocotyle*  
*vulgaris*, *Molinia caerulea*, *Brachypodium*  
*sylvaticum*. I.1.d  
NAA. 56
56. 2 of these 4 species present: *Breutelia*  
*chrysocoma*, *Alchemilla alpina*, *Selaginella*  
*selaginoides*, *Galium boreale*. I.1.e.i  
2 of these 3 species present: *Antennaria*  
*dioica*, *Prunella vulgaris*, *Koeleria*  
*cristata*. I.1.e.ii

57. 2 of these 3 species present: *Erica vagans*, *Schoenus nigricans*, *Sanguisorba officinalis* (I.3.b). 58  
 NAA. 59
58. *Carlina vulgaris* present. I.3.b.i  
*Geranium sanguineum* present. I.3.b.ii
59. *Erica ciliaris* present (I.5). 60  
 NAA. 64
60. *Ulex minor*, *Agrostis setacea* present (I.5.a). 61  
 NAA. 62
61. *Scirpus caespitosus* present. I.5.a.i  
 AA. with *Rhynchospora alba*, *Drosera intermedia*. I.5.a.i.α  
 Or with *Schoenus nigricans*, *Linum catharticum*. I.5.a.i.β  
 Or with *Ulex europaeus* present. I.5.a.i.γ
62. *Nartheccium ossifragum*, *Gentiana pneumonanthe* present (I.5.b.ii). 63  
 NAA. I.5.b.i
63. *Schoenus nigricans* present. I.5.b.ii.α  
*Eriophorum angustifolium* present. I.5.b.ii.β
64. *Erica cinerea* present, with 4 of these 5 species: *Deschampsia flexuosa*, *Potentilla erecta*, *Pleurozium schreberi*, *Dicranum scoparium*, *Vaccinium myrtillus*. 65  
 NAA. 86
65. *Teucrium scorodonia* present (Montgomeryshire only) (I.9.a). 66  
 NAA. 68
66. *Agrostis stolonifera*, *Pseudoscleropodium purum* present. I.9.a.i  
 NAA (I.9.a.ii). 67
67. *Luzula campestris* present. I.9.a.ii.α  
*Geranium sanguineum* present. I.9.a.ii.β
68. *Vaccinium vitis-idaea* and *Hylocomium splendens* present. 69  
 NAA. 70

69. 2 of these 3 species present: *Lathyrus montana*, *Genista anglica*, *Pyrola media*. I.7.a  
NAA. I.6.a
70. 2 of these 3 species present: *Arctostaphylos uva-ursi*, *Diplophyllum albicans*, *Arctous alpina* (I.7.b). 71  
NAA. 72
71. *Juniperus nana* present. I.7.b.i  
AA. with *Pleurozia purpurea* present. I.7.b.i.a
72. 2 of these 3 species present: *Melampyrum pratense*, *Calypogeia mulleriana*, *Pohlia nutans*. III.1.1.a.i.β  
NAA. 73
73. *Pohlia nutans* present (I.6.b). 75  
NAA.
74. *Nardus stricta*, *Scirpus caespitosus* present. I.6.b.i.α  
NAA. I.6.b.i
75. *Carex binervis* present (I.6.b.ii). 76  
NAA. 77
76. *Anthoxanthum odoratum* present. I.6.b.ii.α  
*Melampyrum pratense*, *Cladonia* div. spp. present. I.6.b.ii.β
77. *Agrostis setacea*, *Luzula multiflora* present. I.6.c  
NAA. 78
78. *Juncus squarrosus*, *Polytrichum commune* present. I.6.d  
AA. with *Nardus stricta*, *Rhytidiadelphus loreus*. I.6.d.i  
NAA. 79
79. *Empetrum nigrum* present. 80  
NAA. 82
80. *Festuca rubra*, *Viola canina* present. III.3.b.i  
NAA. (III.4.b.iii). 81

81.	Sieglingia decumbens, Polytrichum juniperinum present.	III.4.b.iii.a	
	Pohlia nutans, Cladonia spp. present.	III.4.b.iii.B	
82.	2 of these 3 species present: Campanula rotundifolia, Thymus drucei, Viola riviniana.	III.4.a.iii.a	
	NAA.		83
83.	Nardus stricta present (II.5.a).		84
	NAA. (II.5.b).		85
84.	Carex binervis present.	III.5.a.i	
	Erica tetralix present.	III.5.a.ii	
	Sieglingia decumbens, Agrostis tenuis present.	III.5.a.iii	
85.	Pohlia nutans present.	III.5.b.i	
	Ulex europaeus present.	III.5.b.ii	
	Pteridium aquilinum present.	III.5.b.iii	
86.	Ulex minor present.		87
	NAA.		107
87.	Ulex europaeus present.		88
	NAA.		92
88.	Serratula tinctoria present.	I.8.a.ii	
	AA. with Sieglingia decumbens present.	I.8.a.iii.a	
	NAA.		89
89.	Erica tetralix present.		90
	NAA.	II.1.c.ii	
90.	Potentilla erecta present.	I.8.a.i	
	NAA.		91
91.	Agrostis setacea present.	II.1.a.iv.B	
	NAA.	II.1.a.iii	
92.	Erica tetralix present (II.1.a).		93
	NAA.		96
93.	Agrostis setacea present (II.1.a.iv).		94
	NAA.		95

94.	<i>Pteridium aquilinum</i> present.	II.1.a.iv.α	
	<i>Zygonium ericetorum</i> present.	II.1.a.iv.β	
	<i>Campylopus brevipilus</i> present.	II.1.a.iv.δ	
95.	<i>Leucobryum glaucum</i> present.	II.1.a.i	
	NAA.	II.1.a.ii	
96.	<i>Agrostis setacea</i> present.		97
	NAA. (II.1.b).		98
97.	<i>Deschampsia flexuosa</i> present.	II.1.b.ii.α	
	NAA.	II.1.c.i	
98.	<i>Vaccinium myrtillus</i> present.	II.1.b.ii	
	<i>Festuca rubra</i> present.	II.1.b.i	
99.	4 of these 5 species present: <i>Rhacomitrium lanuginosum</i> , <i>Scirpus caespitosus</i> , <i>Hylocomium splendens</i> , <i>Molinia caerulea</i> , <i>Rhytidiadelphus loreus</i> .		100
	NAA.		103
100.	<i>Agrostis tenuis</i> , <i>Sieglingia decumbens</i> present (I.10.b).		101
	NAA. (I.10.a).		102
101.	<i>Nardus stricta</i> , <i>Carex flacca</i> present.	I.10.b.ii	
	AA. with <i>Carex hostiana</i> present.	I.10.b.ii.α	
	NAA.	I.10.b.i	
102.	<i>Carex binervis</i> present.	I.10.a.ii	
	AA. with <i>Juncus squarrosus</i> , <i>Nardus stricta</i> .	I.10.a.ii.α	
	NAA.	I.10.a.i	
103.	<i>Carex arenaria</i> present.		104
	NAA.		112
104.	<i>Erica cinerea</i> present.		105
	NAA.		111
105.	2 of these 3 species present: <i>Campanula rotundifolia</i> , <i>Festuca rubra</i> , <i>Rumex acetosella</i> (II.4.a.iii).		106
	NAA.		107

106. *Ammophila arenaria* present. II.4.a.iii.α  
 NAA. III.4.a.iii.β
107. *Cornicularia aculeata*, *Cladonia uncialis*  
 present. II.3.a.i  
 NAA. 108
108. *Rosa pimpinellifolia*, *Lotus corniculatus*  
 present. II.3.a.ii  
 AA. + *Plantago coronopus*. II.3.a.ii.α  
 NAA. 109
109. *Cladonia coccifera* present. II.3.a.iii  
 NAA. 110
110. *Potentilla erecta*, *Luzula multiflora*  
 present. II.3.a.iv  
 NAA. II.3.a.v
111. *Sarothamnus scoparius* present. II.4.a.ii  
 NAA. II.4.a.i  
 AA. with *Deschampsia flexuosa*  
 present. II.4.a.i.β
112. *Carex flacca*, *Helianthemum nummularium*  
 present (II.6). 113  
 NAA. 114
113. *Pohlia nutans*, *Bromus erecta* present. II.6.a.i  
*Brachypodium pinnatum*, *Poterium*  
*sanguisorba* present. II.6.a.ii
114. 2 of these 3 species present: *Deschampsia*  
*flexuosa*, *Dicranum scoparium*, *Hypnum ericetorum*  
 (not in areas disturbed by mining). 115  
 NAA. 153
115. 2 of these 3 species present: *Melampyrum*  
*pratense*, *Calypogeia mulleriana*, *Pteridium*  
*aquilinum* (III.1.a). 116  
 NAA. 118
116. *Cladonia chlorophaea*, *C. crispata*  
 present (III.1.a.i). 117  
*Galium saxatile*, *Agrostis tenuis*. III.1.a.ii

117.	<i>Cladonia coccifera</i> , <i>C. squamosa</i> present.	III.1.a.i.α	
	<i>Vaccinium vitis-idaea</i> .	III.1.a.i.δ	
118.	<i>Pohlia nutans</i> present.		119
	NAA.		124
119.	<i>Vaccinium myrtillus</i> present.		120
	NAA.		124
120.	<i>Vaccinium vitis-idaea</i> present.		121
	NAA.		122
121.	<i>Carex nigra</i> , <i>Eriophorum angustifolium</i> present.	III.1.b.i	
	NAA.	III.4.c.v	
122.	2 of these 3 species present: <i>Rhytidiadelphus</i> <i>squarrosus</i> , <i>Plagiothecium undulatum</i> , <i>Sieglingia decumbens</i> (III.1.b.ii).		123
	NAA.	III.3.a.ii	
123.	<i>Nardus stricta</i> , <i>Juncus squarrosus</i> present.	III.1.b.ii.α	
	<i>Cladonia coccifera</i> present.	III.1.b.ii.β	
124.	<i>Erica tetralix</i> , <i>Scirpus caespitosus</i> present (IV.2.c).		125
	NAA.	II.2.a.i.α	
125.	<i>Eriophorum vaginatum</i> present.	IV.2.c.i	
	AA. with <i>Vaccinium myrtillus</i> present.	IV.2.c.i.α	
126.	<i>Erica cinerea</i> present (II.2.a).		127
	NAA.		128
127.	<i>Pteridium aquilinum</i> .	II.2.a.i	
	<i>Quercus</i> spp. seedlings present.	II.2.a.ii	
128.	<i>Carex bigelowii</i> , <i>Empetrum hermaphroditum</i> present.		129
	NAA.		134
129.	<i>Calluna vulgaris</i> present (III.6.a).		130
	NAA. (III.6.b).		133

130. *Anastrepta orcadensis*, *Listera cordata*  
 present (III.6.a.i). 140  
 NAA. 132
131. *Chamaepericlymenum sueicium*, *Rubus chamaemorus*  
 present. III.6.a.i.α  
*Pleurozia purpurea*, *Herberta*  
*hutchinsiae* present. III.6.a.i.β
132. *Ochrolechia frigida*, *Scirpus caespitosus*  
 present. III.6.a.ii  
 AA. with *Juniperus nana* present. III.6.a.ii.α  
*Blechnum spicant*, *Chamaepericlymenum*  
*sueicium*. III.6.a.iii
133. *Alectoria nigricans*, *Ochrolechia frigida*  
 present. III.6.b.i  
*Alchemilla alpina*, *Festuca ovina*  
 present. III.6.b.ii  
*Anastrepta orcadensis* present. III.6.b.iii
134. *Vaccinium myrtillus* present. 135  
 NAA. 151
135. *Betula* spp. (seedlings) & *Pteridium aquilinum*  
 present (Berkshire only). II.2.b.i.α  
 NAA. 136
136. *Erica tetralix* present. III.3.a.i  
 AA. with *Carex binervis* present. III.3.a.i.α  
 NAA. 137
137. 2 of these 3 species present: *Campanula*  
*rotundifolia*, *Thymus drucei*, *Carex*  
*capillaris*. III.3.a.iii  
 NAA. 138
138. *Luzula multiflora* present (III.3.a.iv). 139  
 NAA. 140
139. *Leucobryum glaucum*, *Anthoxanthum*  
*odoratum*. III.3.a.iv.α  
*Pteridium aquilinum* present. III.3.a.iv.β

140.	2 of these 3 species present: <i>Rhytidiadelphus loreus</i> , <i>Galium saxatile</i> , <i>Agrostis tenuis</i> .		141
	NAA.		150
141.	<i>Empetrum nigrum</i> present.	III.4.b.i	
	NAA.		142
142.	<i>Hylocomium splendens</i> , <i>Sieglingia decumbens</i> present.		143
	NAA.		147
143.	2 of these 3 species present: <i>Carex pilulifera</i> , <i>C. binervis</i> , <i>Anthoxanthum odoratum</i> .	III.4.c.i	
	NAA.		144
144.	<i>Carex binervis</i> present.		145
	NAA.		146
145.	<i>Molinia caerulea</i> present.	III.4.a.i.α	
	<i>Polytrichum commune</i> present.	III.4.a.i.β	
146.	<i>Blechnum spicant</i> present.	III.4.a.ii	
	AA. with <i>Luzula sylvatica</i> present.	III.4.a.ii.α	
	<i>Campanula rotundifolia</i> present.	III.4.a.iii	
	AA. with <i>Peltigera canina</i> present.	III.4.a.iii.β	
147.	<i>Cladonia arbuscula</i> present.		148
	NAA.		149
148.	<i>Carex binervis</i> present.	III.4.c.iv.α	
	<i>Diplophyllum albicans</i> present.	III.4.c.iv.β	
149.	<i>Molinia caerulea</i> present.	III.4.c.iii	
	<i>Pteridium aquilinum</i> present.	III.4.c.ii	
	AA. with <i>Diplophyllum albicans</i> present.	III.4.c.ii.α	
150.	<i>Juniperus communis</i> present.	III.4.b.ii	
	<i>Gymnocolea inflata</i> , <i>Cladonia uncialis</i> present.	III.4.b.iv	
	<i>Juncus squarrosus</i> present.	III.4.b.v	
151.	<i>Betula</i> species (seedlings) present.	II.2.b.i	
	NAA.		152

152.	<i>Fagus sylvatica</i> seedlings, <i>Carex pilulifera</i> present.	II.2.b.ii.α	
	<i>Luzula campestris</i> , <i>Agrostis tenuis</i> present.	II.2.b.ii.β	
	<i>Potentilla erecta</i> , <i>Holcus mollis</i> present.	II.2.b.ii.γ	
153.	<i>Erica tetralix</i> ; <i>Molinia caerulea</i> present.		154
	NAA.		167
154.	<i>Pohlia nutans</i> present.		155
	NAA.		158
155.	<i>Carex nigra</i> , <i>Salix repens</i> present (IV.2.b.i).		156
	NAA. (II.5.a.i).		157
156.	<i>Juncus squarrosus</i> present.	IV.2.b.i.α	
	<i>Hypnum ericetorum</i> present.	IV.2.b.i.β	
157.	<i>Scirpus caespitosus</i> , <i>Gymnocolea inflata</i> present.	II.5.a.i.α	
	<i>Cladonia coccifera</i> present.	II.5.a.i.β	
158.	<i>Sphagnum compactum</i> , <i>Scirpus caespitosus</i> present.		159
	NAA. (IV.1.b).		166
159.	<i>Eriophorum angustifolium</i> and <i>Aulacomnium palustre</i> present.	IV.2.a.ii	
	NAA.		160
160.	<i>Cladonia impexa</i> present.		161
	NAA.		163
161.	<i>Calypogeia mulleriana</i> present.	IV.2.b.ii	
	NAA. (IV.1.a.ii).		162
162.	<i>Sphagnum tenellum</i> , <i>Campylopus atrovirens</i> present.	IV.1.a.ii.α	
	<i>Dicranum scoparium</i> , <i>Odontoschisma denudatum</i> present.	IV.1.a.ii.β	
163.	<i>Campylopus brevipilus</i> , <i>Agrostis setacea</i> present.	IV.1.a.iii	
	NAA.		164

164.	<i>Gymnocolea inflata</i> present (IV.1.a.iv).	165
	NAA.	IV.1.a.i
	AA. with <i>Drosera rotundifolia</i> .	IV.1.a.i.a
165.	<i>Campylopus brevipilus</i> present.	IV.1.a.iv.α
	<i>Juncus squarrosus</i> present.	IV.1.a.iv.β
166.	<i>Pteridium aquilinum</i> present.	IV.1.b.ii
	<i>Polytrichum juniperinum</i> present.	IV.1.b.iii
	<i>Erica cinerea</i> present.	IV.1.b.i
	AA. + <i>Juncus squarrosus</i> , <i>Cladonia floerkeana</i> .	IV.1.b.i.α
167.	3 of these 4 species present: <i>Agrostis tenuis</i> , <i>Festuca rubra</i> , <i>Pleurozium schreberi</i> , <i>Campanula rotundifolia</i> .	168
	NAA.	171
168.	<i>Sieglingia decumbens</i> present (II.4.b.ii).	169
	NAA.	170
169.	<i>Holcus lanatus</i> present.	II.4.b.ii.α
	<i>Nardus stricta</i> present.	II.4.b.ii.β
170.	<i>Lotus corniculatus</i> , <i>Cerastium arvense</i> present.	II.4.b.i
	<i>Cladonia impexa</i> , <i>Cornicularia aculeata</i> present.	II.4.c.i
	AA. with <i>Luzula campestris</i> present.	II.4.c.i.α
171.	<i>Cladonia coccifera</i> , <i>Pohlia nutans</i> present.	II.5.a.ii
	NAA. (II.3.b).	172
172.	<i>Agrostis stolonifera</i> present.	II.3.b.i
	<i>Usnea sub-florida</i> present.	II.3.b.iii
	<i>Agrostis tenuis</i> present.	II.3.b.ii
	AA. with <i>Cladonia chlorophaea</i> present.	II.3.b.ii.α

APPENDIX III

A description of some phytosociological  
scales.

In the literature at present there are a large number of scales, particularly for cover/abundance.

Perhaps two of the commonest scales used are the Hult-Sernander (1887), in Fennoscandia, and the Braun-Blanquet (1928), in Central Europe. They are compared below:-

<u>Hult-Sernander</u>	<u>Braun-Blanquet</u>
+ = minor constituents	r = erratic, cover less than 5%
1 = less than 1/16 cover	+ = occasional, " " " 5%
2 = " " 1/8 "	1 = common, " " " 5%
3 = " " 1/4 "	2 = very common, cover 5%-20%
4 = " " 1/2 "	3 = cover 20%-50%, any no. of individuals
5 = 1/2 to complete cover of the plot	4 = cover 50%-75%, " " " individuals
	5 = cover 75%-100%, " " " individuals

The scales are essentially similar in that they concentrate on the lower amounts of cover and abundance, but the Braun-Blanquet scale is capable of greater sensitivity of description.

Search for a more sensitive and precise scale led to modifications by Domin (1933) and Doing Kraft (1954), detailed below:-

#### Domin

+	sparse, cover very small				
1	sparsely present, cover small				
2	scattered, cover small				
3	plentiful, cover small				
4	very common, c.5% cover				
5	"	"	, c.20% cover		
6	cover 25%-30%	irrespective of number of individuals			
7	" 30%-50%	"	"	"	"
8	" 50%-75%	"	"	"	"
9	" over 75%	"	"	"	"
10	" 100%	"	"	"	"

#### Doing Kraft

r	(raro), sporadic, cover less than 5%
p	(paupulum), occasional, cover less than 5%
a	(amplius), common, " " " 5%
m	(multum), very common, " " " 5%
O1	cover 5%-15%
O2	" 15%-25%

(ii)

03, cover	25%-35%
04, "	35%-45%
05, "	45%-55%
06, "	55%-65%
07, "	65%-75%
08, "	75%-85%
09, "	85%-95%
10, "	95%-100%

Meijer-Drees (1949) proposed an adaption of the Braun-Blanquet scale, such that the numerals from 2-5 had a + or - superscript. Each numerical value then took the % cover value midway in its range, i.e. 3 - cover 37.5%, 3<sup>+</sup> - little under 50% cover, 4<sup>-</sup> - little over 50% cover, etc.

The Domin scale is recommended by Poore (1955b), and has been one of the most frequently used scales in British Phytosociological literature, e.g. McVean & Ratcliffe (1962), Proctor & Ivimey-Cook (1965). The scale is interconvertible with that of Braun-Blanquet, as Poore (loc. cit.) notes.

Although there are some advantages in using this scale, there is a greater likelihood of different workers producing discrepancies than with the + - 5 scale, or the Doing Kraft scale. This latter, however, does not give enough weight to the lower end of the end, where it is of great importance.

Segal and Barkman (1960) attempted to answer these problems by proposing a scale that had an initial geometric increase (to 50% cover), and then continued as an arithmetic increase to 100% cover, using some of the differing ideas contained in the scales described above. Their scale is reproduced below:-

r	=	exists sporadically in the whole vegetation area	
+r	=	sporadic (1-2 individuals) within the plot	
+p	=	small number, (3-20 individuals per plot), cover	1%
+a	=	" " " " " " " "	1-2%
+b	=	" " " " " " " "	2-5%
lp	=	scattered, (20-100 individuals per plot), cover	1%
la	=	" " " " " " " "	1-2%
lb	=	" " " " " " " "	2-5%

(iii)

2m	=	numerous	(	100	individuals	per	plot),	cover	5%
2a	=	regardless	of	the	number	of	individuals,	"	5%-12.5%
2b	=	"	"	"	"	"	"	"	12.5%-25%
3(a,b)	=	"	"	"	"	"	"	"	25%-50%
4(a,b)	=	"	"	"	"	"	"	"	50%-75%
5(a,b)	=	"	"	"	"	"	"	"	75%-100%

With the last three categories the a and b can be used or not, depending on circumstances. If it is used then 3a = cover 25%-37.5%, 3b = cover 37.5%-50%, etc. The symbols p and m are those used in the scale of Doing Kraft (loc. cit.). The scale is interconvertible with that of Braun-Blanquet by the following conversion scheme:-

<u>Barkman &amp; Segal</u>		<u>Braun-Blanquet</u>
r, +r = 0	2a = 6	r = 0
+p = 1	2b = 7	+ = 2 (1-3)
+a, lp = 2	3 = 8	1 = 3 (2-4)
+b, la = 3	4 = 9	2 = 6 (5-7)
lb = 4	5 = 10	3 = 8
2m = 5		4 = 9
		5 = 10

This scale is obviously particularly sensitive and useful, but the amount of time needed in the field to analyse a vegetation plot with this scale is much larger than the normal Braun-Blanquet scale, for relatively little more information. In fact, a numerical technique is probably preferable to this kind of extended analysis. Doing (pers. comm.) has suggested that the usefulness of extended scales such as these is minimal, and that for most purposes the normal Braun-Blanquet scale is perfectly adequate.

Sociability is usually noted as an extra feature, to help create a 'mental picture' of the vegetation in the authors, or any of his readers, mind.

APPENDIX IV

Similarity Coefficients and description of  
quantitative techniques.

I. Similarity Coefficients, used in either divisive or agglomerative methods, vary enormously, particularly with regard to the results they produce. Although of slightly distinct nature, the correlation coefficient  $\chi^2$  or  $\chi$  has been used with extremely good results (Lange, 1968).

Euclidean distance (Williams, Lambert & Lance, 1966), has also been used. In this, individuals are expressed in a spatial model, the j'th coordinate being 1 if the individual is present or 0 if absent. From the typical 2 x 2 table (fig. (i)) this coefficient may be calculated as  $b + c$ .

The largest 'family' of similarity coefficients spawned have been the "non-metric" type. Sneath (1957), following Jaccard (1902), proposed the coefficient  $S = a/(a+b+c)^*$ , for use in the numerical taxonomy of bacteria (see fig. (ii)).

In earlier types of simple ordination the 'Coefficient of Floral Community' proposed by Kulczynski (1928) and used by Sørensen (1948) has been used, i.e.  $CC = 2a/(b+2a+c)$ . These coefficients are all monotonic, and, as Williams & Dale (1965) point out, non-metric, because they ignore the "double negatives" (i.e. the values in the 'd' cell of fig. (i)).

For this reason, they do not present an entirely accurate

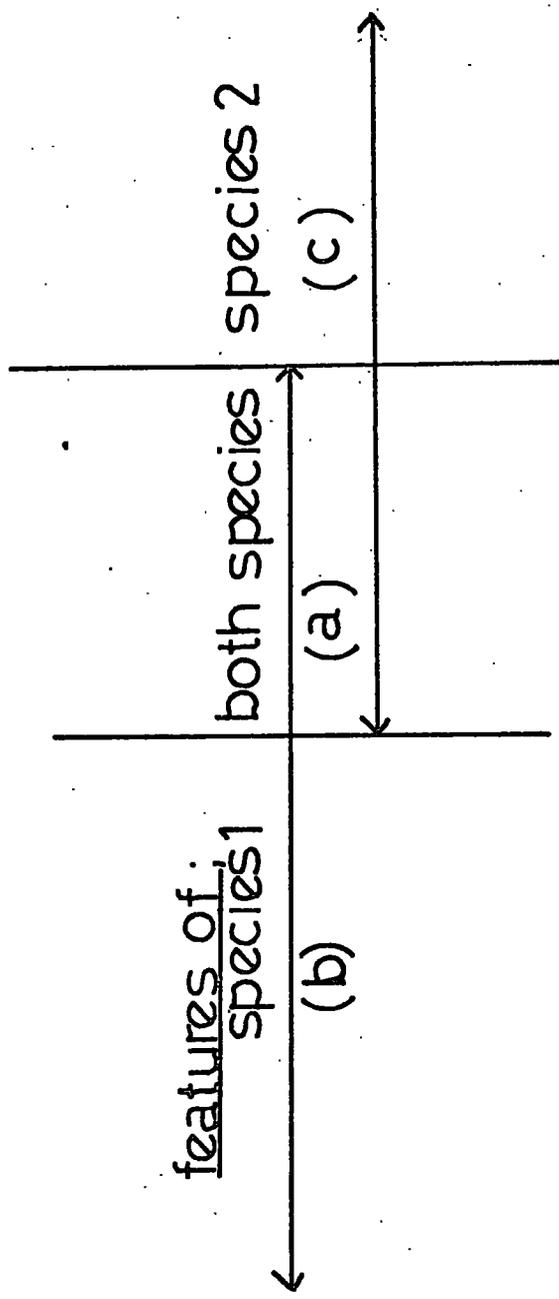
\*N.B. All small letters used in this and the following formulae are all taken from fig. (i).

	+	-	
species 1	a	b	
	-	c	d
			N

(N = total no. of quadrats)

2 X 2 TABLE

fig (i)



N.B. small letters as in fig(i)

fig (ii)

(ii)

picture of the data being analysed, although the general trends are, of course, valid. An example of a metricated coefficient follows:-

$$(a+d)/(a+b+c+d).$$

## II. Association Analysis

This technique was proposed in 1959 by Williams & Lambert. Essentially related to the system of analysis proposed by Goodall (1953), the chief difference being the lack of 'pooling' in the method of Williams & Lambert.

The analysis tests for heterogeneity in vegetation, using an association coefficient, by comparing all species in a simple 2 x 2 table (as fig. (i) ). These coefficients are entered in a species x species matrix, and then summed for each species. The species which has the highest summed coefficient is then used to divide the data set, i.e. all those quadrats with the species form sub-set A and all those without form sub-set B. This process continues until a pre-determined termination level is reached.

Williams & Lambert (1960) suggest several "Indices of Association", i.e.  $\chi^2$ ,  $\chi^2$  with Yates correction,  $\chi^2/N$ ,  $\sqrt{\chi^2/N}$ . As the authors indicate, no one index could be defended as 'right' in any sense. Williams\* noted that the success of method lay simply within the properties of the  $\chi^2$  statistic, and any subsequent refinement could only serve to clarify the basic results obtained.

This technique is more properly known as 'Normal

\*N.B. In a B.B.C. Broadcast, 1964, noted in the B.B.C. publication 'Experiment', 1964.

Association Analysis'.

### III. Group Analysis.

Somewhat analogous to Normal Analysis, this technique uses the concept of species gregarity rather than homogeneity. Crawford & Wishart (1967) in proposing this method suggest that species with high mean sample densities are the 'controlling species' in vegetation units, and suggest the product of the mean sample density (V) and probability of occurrence (P) is a useful measure of the contribution of a species to the species group forming a quadrat. This is termed the 'Group element potential' (GEP), and is rendered absolute by taking the quotient of the GEP and the mean sample density for all quadrats in a population ( $V_m$ ).

These GEP values can then be used as a measure of the contribution of group attribute (x) to any quadrat (j), i.e. the sum of all the GEP's for  $j = S$ . Again, this is rendered absolute by the quotient of S and  $S_m$  (= the sum of all GEP values), and is called the Set Element Potential (SEP). Fig. (iii) shows equations for these operations.

Thus, for any quadrat, there is a value S (representing its positive attributes) and  $\bar{S}$  its negative. Similarly, for each species there is a positive quadrat attribute, obtained by summing the SEP values from all the quadrats in which it occurs ( $\leq S$ ) and a negative attribute, from those in which it does not appear ( $\leq \bar{S}$ ).

From this information a 2 x 2 table can be constructed, as (vi) in Fig. (iii). The statistic  $\mu'^2$  \* can be calculated, i.e.  $\mu'^2 = (A - e_A)^2 + (B - e_B)^2 + (C - e_C)^2 + (D - e_D)^2$ .  
\*(Observed result - expected result)<sup>2</sup>.

$$(i) P = \frac{\text{no. of occurrences of 'x'}}{\text{no. of quadrats in sample}} = \frac{f}{N}$$

$$(ii) V = \frac{\text{total no. of species occurrences with 'x'}}{\text{no. of occurrences of 'x'}} = \frac{M}{f}$$

$$(iii) V_m = \frac{\text{total no. of species occurrences}}{\text{no. of quadrats in sample}} = \frac{\sum M}{N}$$

$$(iv) GEP = \frac{P * V}{V_m}$$

$$(v) SEP = \frac{S}{S_m}$$

(S =  $\sum$  GEP for quadrat j)

(vi) 2X2 TABLE FOR SPECIES 'x'

$\sum \bar{S}_x (A)$	$\sum \bar{S}_x (B)$	$\sum \bar{S}$
$\sum S_x (C)$	$\sum S_x (D)$	$\sum S$
N - f	f	N

N. B.  $\bar{x}$  = all species except 'x'  
 $\underline{x}$  = species 'x'

fig. (iii)

(iv)

Crawford & Wishart (1967) note that this reduces effectively to  $\mu'^2 = (D - P * \sum S)^2$  or  $\mu'^2 = (\sum S_x - (\sum S * S))^2$ . In a way analogous to Association analysis, division of the data takes place on the species with the highest value of  $\mu'^2$ , although termination of division is effected by use of an arbitrarily set value of the 'Group Coefficient' -  $C = (1/N) * \sum S$ .

#### IV. Information Analysis

Several workers have suggested using an 'Information statistic', as a form of similarity coefficient. Williams, Lambert & Lance (1966) suggest the following statistic:-

$$I = pn \log n - \sum_{j=1}^p [a_j \log a_j + (n - a_j) \log (n - a_j)]$$

where  $n$  = no. of individuals,  $p$  = no. of attributes and  $a_j$  = no. of individuals with  $j$ 'th attribute.

This is a rather primitive form of Information statistic, which has been refined many times since. In using the statistic to construct a hierarchy, the most efficient pathway is obtained by fusing those groups which give the lowest increase in 'Information' ( $\Delta I$ ). Qualitatively this reduces to  $2(b+c) \log 2$  (see fig. (i) for nomenclature).

#### V. Inverse Association and Information Analysis

Just as the techniques of Association Inverse analysis outlined above seek to divide a data set of quadrats into groups on the basis of species content, so a data set of species can be divided into groups on the basis of quadrat distribution, the actual technique remaining identical.



## VI. Nodal Analysis

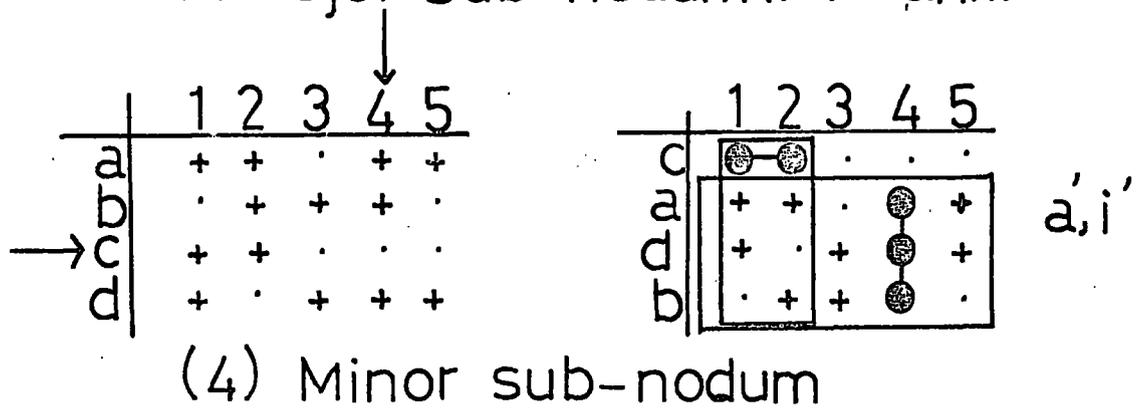
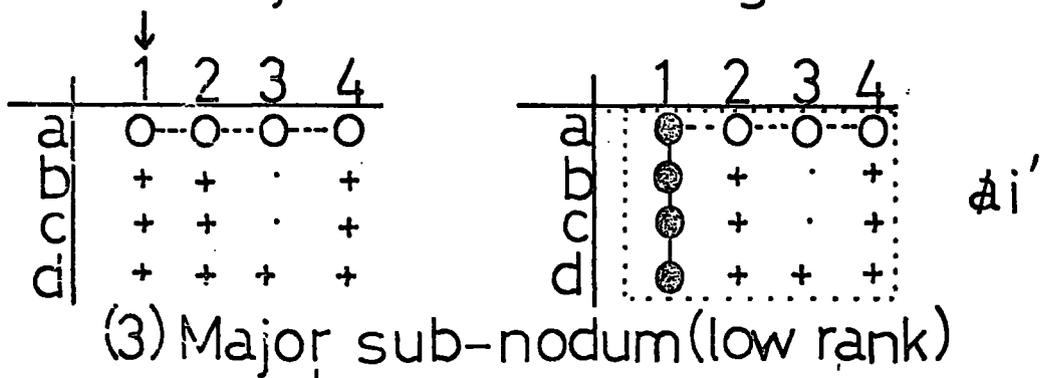
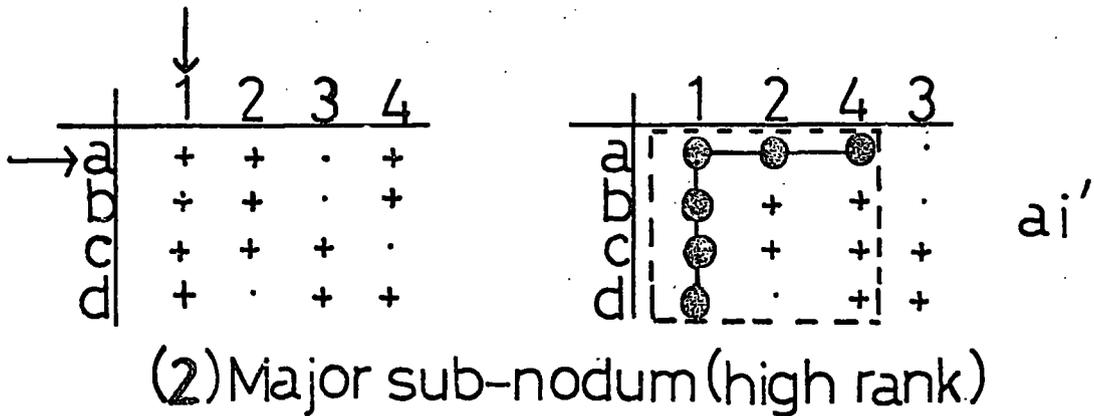
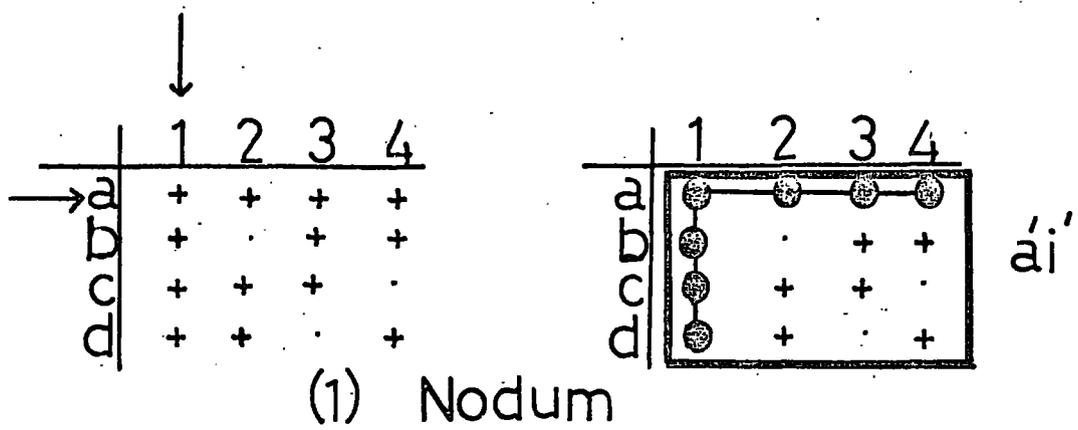
Subsequent refinement of the techniques Normal and Inverse Association analysis led to the development of Nodal analysis, utilizing fully the concept of "species in habitat-habitat in species" (Lambert & Williams, 1962), i.e. the total interdependence of environment and plant community.

The aim of this analysis is to produce abstracted (but not abstract) vegetational units, each with some ecological validity. The groups obtained by division of the data sets of species and quadrats are entered in a two-way table, consisting of 'rows' defined by species groups and 'columns' defined by quadrat groups.

Each intersection of row and column produces a 'cell'. At this stage certain species quadrats are known as parameters, because of their property of dividing the original data-sets. They are known as 'sub-division parameters', and conventionally entered as open circles in the two-way table.

The full 'rows' and 'columns' of this table are again subjected to analysis by the Association index, and any species/quadrat that reaches a significant index value is termed a 'co-incidence parameter' conventionally noted by an arrow.

Individual cells may be characterised as in fig. (iv). These 'units' are obtained by double definition of species/quadrat, and are thus a potentially powerful ecological tool.



→ = coincidence parameter

o-o-o = subdivision parameter

fig. (iv)

## VII. Simple Ordination

There are two main ways of utilising this technique - use of a similarity coefficient, or by use of the 'Wisconsin 2-step conversion' of importance values.

An importance value is defined (Whitaker, 1967) as additional information used to weigh the samples, i.e. density, biomass, frequency, etc., and are expressed as a percentage.

The Braun-Blanquet scale values can be used as such; and were in Section II. They can be converted to percentages as follows:

r = 0.5%	cover	3 = 37.5%	cover
+ = 1 %	"	4 = 62.5%	"
1 = 2.5%	"	5 = 87.5%	"
2 = 10 %	"		

As an illustration of the steps involved in the Wisconsin 2-step method, the following example of 3 species and 4 quadrats is used;

(i) all importance values are placed in a table:

Species	Quadrat			
	1	2	3	4
A	10	10	70*	70
B	80	80*	.	.
C	90*	80	20	30

(ii) all values are then converted to a % of the maximum

(\* in (i) ):

	1	2	3	4
A	14.3	14.3	100	100
B	100	100	.	.
C	100	88.8	22.2	33.3
Σ	214.3	203.1	122.2	133.3

(vii)

(iii) all the columns are then summed, and new values calculated as a % of the column:

	1	2	3	4
A	6.7	70	81.8	75
B	46.6	49	.	.
C	46.6	44	18.2	25

The % similarity (PS) between any two quadrats is then obtained by summing the smallest value obtained for each species in the two quadrats, i.e. for % similarity of 2 and 3 -  $7.0 (A) + 0 (B) + 18.2 (C) = 25.2$ .

Each of these % similarity values is then substrated from 100, to give the spatial separation.

From this, the quadrat with the lowest (100-PS) value is chosen as the first reference point of the x axis, and the quadrat least similar as the second point. All quadrats are then plotted against this axis (the 'x' axis) by the intersecting arcs method, and perpendicular projection gives the linear measure on the x axis for each point. From the cluster of points produced, the pair closest together on the x axis, yet least similar, are chosen as the reference points for the y axis, and the process repeated. As many axes as required may be constructed, but the first three axes (x, y, z) usually contain the maximum of relevant information. From these axes and the quadrat positions on them, 2-dimensional graphs or 3-dimensional models can be constructed to clarify the data.

APPENDIX V

Vegetation Tables.

N.B. For Cladonia squarrosa read Cladonia squamosa.  
All tables designated M/R are constancy tables  
from tables in McVean & Ratcliffe (1962).



I.1.a. GENISTA PILOSA COMMUNITY

Releve number.	59	60	62	63	79	80	81	61	78	21	22	23	28	82	83	84	85	72	23
Exposition.	1	1	1	1	1	1	1	1	1	45	45	45	1	1	1	1	1	1	1
Slope.	E	W	W	W	NW	NW	NW	W	NW	SW	SW	SW	W	S	S	S	S	SW	N
Phanerogam % cover.	2	0	0	0	10	10	10	0	10	5	5	5	20	20	20	20	20	25	25
Cryptogam % cover.	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Releve area (sq. m.).	2	5	10	10	40	15	2	5	15	-	-	-	-	-	-	-	-	-	2
Number of species.	10	10	10	10	10	10	10	10	10	5	5	5	5	10	10	10	10	10	5
	13	11	11	10	10	10	11	8	13	14	13	17	12	18	15	19	15	13	16

Differentials of the variants

Hypnum ericetorum	+	1.3	1.3	1.3	3.4	2.3	+	1.3	2.3											+
Agrostis setacea	+.	2.		1.2	+.				1.2					+.						
Campanula rotundifolia										1.1	1.1	1.1								
Agrostis tenuis	1.2									+	1.2	+						1.2		
Anthoxanthum odoratum											2.1	1.1								
Pteridium aquilinum										+	r	r								
Carex flacca										1.2	1.2	+.	1.2	+	(+)	+	+	+	2.2	1.2
Plantago maritima							+						1.2	+	+	+	+	+	(+)	
Hieracium sabauda														+	+	+	+	+	+	
Serratula tinctoria	1.2												+	+	1.1	1.1	1.1	+	+	
Betonica officinalis														1.1	1.1	+	+	1.1	1.1	
Ulex gallii													2.3	3.3	3.3	3.3	3.3	3.3	3.3	
Hieracium glandulosi																				1.1
Schoenus nigricans																				
Carex pulicaris																				
Agrostis canina																				+
Linum catharticum																				
Poterium sanguisorba																				
Carex caryophyllea																				
Carlina vulgaris																				
Erica vagans																				
Sarothamnus maritimus																				
Daucus gummifer																				

Differentials of community

Genista pilosa	2.2	2.2	2.2	2.2	1.2	2.2	3.3	2.2	+	+	+	1.2	2.3	1.2	+	+	1.3	1.2	1.2	
Carex pilulifera	+.	2.	1.2	2.2				1.2	+				+							1.2
Scilla verna		1.1		+		+							+	+	+	+	+	+		

Differentials of complex

Erica cinerea	4.4	4.4	5.5	4.4	4.4	4.4	4.4	5.5	4.4	4.4	5.5	5.5	4.3	3.3	4.3	3.3	3.3	3.3	3.3	4.4
Calluna vulgaris	2.3	2.3	2.3	3.3	2.3	1.2	1.2	1.3	1.2		1.2			3.3	2.3	3.3	3.3			2.3
Potentilla erecta		1.2	1.2	1.2	1.1	1.2	1.2		1.1	+	1.1	+	1.2	1.2	+	+	1.1	1.2	1.2	
Viola riviniana					1.1	1.1	1.1		+			+	+	+	1.1	+			1.1	1.1
Sieglingia decumbens									+	+	+	+								1.2
Festuca ovina	1.2	1.2	+					1.2		2.2	2.2	2.2	1.2	2.2	1.2	1.2	1.2			
Lotus corniculatus	+					+	+			1.2	1.2	1.2								+
Thymus drucei							+		1.2				2.3	1.2	1.3	2.3			1.2	1.2
Hypochaeris radicata	+		1.1		+						+	+	+		+	+				
Plantago lanceolata											+	+								+
Holcus lanatus	+										+	+								
Polygala vulgaris		+	+	+																

Companion species

Cladonia impexa			1.3	1.3				+.												
Festuca rubra					1.2	1.2	1.2		+											
Galium saxatile	+	1.1						+												
Agrostis montana					1.2					+		+				1.2			1.1	
Galium verum																				
Viola lactea								+	1.1										1.1	
Centaurea erythraea																				
Polygala serpyllifolia																+			+	

Additional species: 78<sub>1</sub>, Cladonia arbuscula 1.2; 42<sub>1</sub>, Minuartia gerardii +.2, Hemeraria ciliata 1.1, Trifolium bocconeii +, Koleria cristata 1.2; 84<sub>1</sub>, Solidago virgaurea +; 76<sub>1</sub>, Pilosella officinarium +; 39<sub>1</sub>, Filipendula vulgaris 1.2; 125<sub>1</sub>, Trifolium striatum +, Genista tinctoria ssp. litoralis +; 124<sub>1</sub>, Silene maritima +; 41<sub>1</sub>, Aira caryophyllea +, Leucanthemum vulgare +; 23<sub>1</sub>, Brachypodium sylvaticum 1.2; 62<sub>1</sub>, Pedicularis sylvatica 1.1.



I.1.b. DAUCUS GUMMIFER-DACTYLIS GLOMERATA COMMUNITY

Releve number.	21	22	48	49	40	38	16	17	18	50	51	20	21	22	11	12	11	12
	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	4
Exposition.	W	SW	S	S	W	W	S	NW	NW	SW	SW	W	S	S	SW	NW	NW	W
Slope.	25	15	15	15	20	20	5	15	15	15	15	10	15	15	10	10	2	15
Phanerogam % cover.	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Cryptogam % cover.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Releve area (sq. m.).	5	10	5	5	5	5	5	5	5	10	10	10	10	10	10	10	10	10
Number of species.	14	15	17	18	16	13	12	15	11	10	11	14	12	13	11	16	11	14

Differentials of variants

Sarothamnus maritimus	+	2.2	1.1	1.1	2.3	2.3	2.2	1.2	2.2	1.1	1.1							
Carex flacca			1.2	1.2	2.2	2.2				+								
Serratula tinctoria	+	2.2	1.1	1.1	2.3	2.3												
Plantago maritima			1.2	2.2			1.2	1.2	1.2			+	+	+				
Scilla verna			+	+			1.1	+	1.1									
Betonica officinalis	+	+	2.1	1.2		+				1.2								+
Campanula rotundifolia																		
Anthoxanthum odoratum													+					
Leontodon taraxacoides																		
Leucanthemum vulgare																		
Koeleria cristata					+								+					
Hypnum ericetorum																		
Campylopus introflexus																		
Cladonia rangiformis																		
Parmelia physodes																		
Cladonia crispata																		
C. squarrosa																		
C. uncialis																		
Rumex acetosa	1.1	1.1										1.1	+	+	1.1	1.1	1.1	+
Armeria maritima	2.2	+									+		+	1.2				+
Ulex europaeus		3.3										+	2.2	4.4	5.5	5.5		
Silene maritima													+	+	+	1.2		

Differentials of community

Daucus gummifer	+	1.1	1.2	+	1.2	1.2	+	+	+	+	+	+	+	+	+	+	+	+
Dactylis glomerata	2.2	1.2	+		1.2						1.2	1.2	1.2	1.2	1.2	1.2	1.2	+2
Jasione montana							+	+				+						
Anthyllis vulneraria							+	+	+				+	+	+	+	+	
Agrostis tenuis															+	1.2	+	1.2

Differentials of complex

Erica cinerea	3.3	4.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	1.2	2.2	3.3	4.4	3.3	+	1.2		3.3
Calluna vulgaris	3.3	2.3		+	2.3	1.2	4.4	1.2	2.2	5.5	4.4	4.4	3.3	3.3			5.5	3.3
Potentilla erecta	1.2	1.2	1.2	1.2				3.3									1.2	1.2
Viola riviniana					1.2			+				+					1.2	+
Sieglingia decumbens					+	+						+						
Festuca ovina	1.2	1.2	3.3	3.3	2.3	2.3	1.2	1.2	3.3	1.2	1.2	1.2	+	1.2	+	1.2	+	
Lotus corniculatus	1.2	1.1		1.2	1.2	1.2	+	+	1.2	1.1	1.1	1.2	1.2	+		+		
Thymus drucei	1.2		2.3	1.2	2.3	2.3												
Hypochaeris radicata	1.2	+	1.2	1.2			+	+	+		+	1.1						
Plantago lanceolata			1.2	+				+	+	+	+			+	+	+		1.1
Holcus lanatus		1.1	1.2	1.2	2.2	2.2	+	1.2	1.2	+	1.2	2.2	1.2	+	+	+		
Polygala vulgaris			+	1.1		+												

Companion species

Rubra pegrina																		1.2
Teucrium scorodonia																	+	1.2
Festuca rubra																		+
Pilosella officinarum																		+
Galium saxatile																	+	+
Agrostis montana				1.2														
Cuscuta epithymum																		2.2
Achillea millefolium																+		
Rubus discoloris																		+
Hedera helix																		
Luzula capestris																		

Additional species: 48<sub>1</sub>, Erica tetralix 1.2; 40<sub>1</sub>, Filipendula vulgaris +; 12<sub>4</sub>, Sedum anglicum +; 14<sub>45</sub>, Rosa pimpinellifolia 2.1; 12<sub>2</sub>, Cladonia coccifera +; 10<sub>4</sub>, Frullania tamarisci 2.3; 24<sub>2</sub>, Galium verum +; 23<sub>2</sub>, Polygala serpyllifolia +; 14<sub>1</sub>, Aira caryophyllea +, Trifolium repens +; 12<sub>1</sub>, Heracleum sphondylium +; 3<sub>5</sub>, Aira praecox +.





5	6	7	1	2	3	4	19	70	20	10	5	7	8	9	10
49	49	49	71	71	71	71	45	1	45	45	71	71	71	71	71
NW	NW	NW	S	S	S	S	S	S	S	SW	S	SE	S	S	S
20	20	20	10	10	30	10	3	20	3	10	15	10	15	10	10
100	100	100	100	100	100	100	100	100	100	95	100	100	100	100	100
5	5	10	-	-	2	-	-	-	-	10	-	10	-	-	-
5	5	5	10	10	10	10	5	5	5	10	10	10	10	10	10
12	14	10	13	12	9	10	9	11	9	7	12	8	16	12	10

1.2 1.2 + + 2.2 1.1  
 + 2.2 1.2 1.2 + 2.2 + +  
 3.2 2.2  
 1.2 1.2 1.2 1.2 1.2 1.2 1.2 + + + 1.2 + 1.1  
 + + 1.1 +  
 + 1.1 + 1.2  
 + 1.1 + 1.2  
 + 1.2 1.2 1.1 2.1 2.1 1.1 1.1 1.1  
 3.3 4.4 5.5 2.2 3.3 4.4 4.4 + 3.3 4.4 5.5 4.4 3.3 3.3 3.3  
 4.4 3.3 2.3 5.5 4.4 3.3 4.4 3.3 3.3 + 4.4 4.4 5.5 +  
 1.2 1.2 1.2 1.1 1.2 1.1 1.1 1.1 1.1 1.2 1.1  
 1.1 1.1 + 1.2 2.1 1.1 +  
 1.2 2.2 2.2 + 1.2 3.3 2.2 1.2 2.2 2.2 3.3 1.2 1.2  
 1.2 1.1 1.2 1.2 + 1.2 1.2 + 1.2  
 1.3 2.3 1.3 + 1.1 + + 1.1 1.1 1.1 1.1 1.1  
 + + 1.2 1.2 + 1.2 1.2 1.2 1.1 1.1 + +  
 1.1 + 1.2 1.2 + 1.2 1.2 1.2 1.1 + +  
 1.2  
 + 1.2 + 3.3 1.2  
 1.2 1.2 1.2 1.2 2.2 2.2 1.2 + 1.1 1.1  
 1.2 1.2 + + +  
 + + +

Additional species: <sup>4</sup>49, Pteridium aquilinum +, Pseudoscleropodium purum 1.2; <sup>26</sup>45, Silene  
 maritima +; <sup>7</sup>71, Leontodon taraxacoides +; <sup>54</sup>1, Galium verum 1.1; <sup>20</sup>45, Leontodon autumalis +;  
<sup>27</sup>45, Taraxacum vulgare +; <sup>28</sup>45, Cladonia chlorophaea +; <sup>10</sup>45, Cladonia fimbriata 2.3;  
<sup>5</sup>71, Primula vulgaris 1.1.

I.1.d. HYDROCOTYLE VULGARIS COMMUNITY

Releve number.	16	17	24	18	19	20	25
	2	2	45	2	2	2	45
Exposition.	W	W	SW	W	W	W	SW
Slope.	25	25	3	25	25	25	3
Phanerogam % area.	100	100	100	100	100	100	100
Cryptogam % area.	-	-	-	-	-	-	-
Releve area (sq. m.).	5	5	5	5	5	5	5
Number of species.	10	8	8	8	9	9	10

Differentials of Community

Hydrocotyle vulgaris	1.2	3.3	3.2	2.3	1.1	2.2	2.2
Brachypodium sylvaticum	1.2	1.2		+	+	1.2	
Primula vulgaris	+	+		(+)	1.1	+	
Molinia caerulea		+2			1.2		1.2

Differentials of complex

Erica cinerea	3.3	3.3					3.3
Calluna vulgaris	4.3	3.3	4.4	5.5	5.5	5.5	4.4
Potentilla erecta	1.2	1.2	+	2.2	2.2	2.2	+
Viola riviniana				+		+	
Sieglingia decumbens	+		+	+			
Festuca ovina					+	+	
Lotus corniculatus			1.2		+		1.2
Thymus drucei	1.2	1.3		1.3	(+)	1.3	
Holcus lanatus			1.2			+	1.2

Companion species

Festuca rubra			2.2				1.2
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Additional species: 25, Galium verum (+),  
45, Angelica sylvestris +; 16, Carex panicea +,  
2, Pulicaria dysenterica +; 24, Carex nigra +.  
45,

I.l.e. CAREX PANICEA COMMUNITY

Releve number.	(MV 1a)	MV 1	(MV 1b)
Exposition.	-		-
Slope.	-		-
Phanerogam % area.	-		-
Cryptogam % area.	-		-
Releve area (sq. m.).	-		-
Number of species.	-		-

Differentials of variants

Breutelia chrysocoma	II	
Selaginella selaginoides	II	
Alchemilla alpina	II	
Anemone nemorosa	II	
Cirsium heterophyllum	II	
Galium boreale	II	
Geum rivale	II	
Primula vulgaris	III	
Ranunculus acris	II	
Trollius europaeus	III	
Acrocladium cuspidatum	II	
Ctenidium molluscum	III	
Rhytidiadelphus squarrosus	III	
Blechnum spicant	II	
Prunella vulgaris		III
Trifolium repens		III
Koleria cristata		III
Antennaria dioica		II
Trifolium pratense		II
Leontodon autumnalis		II
Pilosella officinarum		II
Carex pilulifera		II

Differentials of community

Carex panicea	V
Agrostis canina	V
Anthoxanthum odoratum	V
Festuca rubra	V
Molinia caerulea	IV
Euphrasia officinalis agg.	IV
Hypericum pulchrum	IV
Linum catharticum	IV
Plantago maritima	IV
Polygala serpyllifolia	IV
Succisa pratensis	IV
Hylocomium splendens	IV
Pseudoscleropodium purum	IV
Frullaria tamarisci	IV
Carex pulicaris	IV

Differentials of complex

Erica cinerea	V
Thymus drucei	V
Festuca ovina	V
Sieglingia decumbens	V
Lotus corniculatus	V

I.l.e. Continued

<i>Plantago lanceolata</i>	V
<i>Calluna vulgaris</i>	V
<i>Potentilla erecta</i>	IV
<i>Viola riviniana</i>	IV
<i>Hypochaeris radicata</i>	II

Companion species

<i>Salix repens</i>	II
<i>Nardus stricta</i>	II
<i>Lathyrus montana</i>	III
<i>Hypnum ericetorum</i>	III
<i>Rhytidiadelphus triquetrus</i>	II

I.2.a. ERICA CILIARIS COMMUNITY

Releve number.	159	157	155	156	160	161	158	146	145	148	147	144	150	151	152	149
Exposition.	SE	SE	SE	E	E	E	SE	SW	SW	SW	SW	W	SW	SW	SW	SW
Slope.	10	10	10	10	15	15	10	5	5	5	5	-	20	20	20	20
Phanerogam % cover.	100	100	100	95	100	100	100	95	95	95	95	95	100	100	100	100
Cryptogam % area.	2	15	10	10	2	2	5	30	30	30	30	25	20	40	15	10
Releve area (sq. m.).	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Number of species.	9	9	10	13	11	8	9	9	9	8	9	6	8	8	14	12

Differentials of variants

Carex panicea	2.3	1.2	1.2	1.2	1.2	1.2	+									
Polygala vulgaris	1.2	1.2	1.2	+	+	+	+									
Calypogeia fissa	+	1.3	1.3	+	+	+	1.2									
Cascuta epithymum	+	+	+	+	+	+	+									
Diplophyllum albicans								2.3	3.3	2.3						
Erica tetralix																
Hypnum ericetorum																
Cladonia impexa								1.3	2.3	2.3	+	+	+	2.2	2.2	
Zygonium ericetorum																
Cladonia arbuscula																
Gymnocolea inflata																
Pedicularis sylvatica	+															

Differentials of community

Erica ciliaris	2.3	3.3	4.4	3.3	2.3	4.4	4.4	4.4	5.5	5.5	3.3	3.3	4.4	4.4	+	1.2
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Differentials of complex

Ulex gallii	3.3	2.3	1.2	2.2	2.3	2.3	3.3	2.3	1.2	1.2	3.3	3.3	2.2	1.2	1.2	1.2
Agrostis setacea	1.2	1.2	3.3	3.3	1.2	1.2	1.2	1.2	1.2	1.2	2.2	(+)	+	+	+	1.2
Erica cinerea	3.3	3.3	+	1.2	3.3	2.2	1.2	+	+	+	2.2	3.3				1.2
Potentilla erecta				1.2												+
Calluna vulgaris	1.2	1.2		+	2.2	1.2	1.2	1.2	2.2	2.2	3.2	2.3	1.2	2.2	2.2	3.2
Molinia caerulea	+	1.2	+	1.2	2.2	+	+	+	1.2	1.2	1.2	1.2	+	+	+	1.2

Companion species

Polygala serpyllifolia																+
Carex pilulifera																+
Viola lactea																+
Campylopus introflexus																+
Cephalozia bicuspidata																1.3

Additional species: 156<sub>1</sub>, Viola canina +; 146<sub>1</sub>, Calypogeia trichomanes 2.3; 151<sub>1</sub>, Salix repens +; 152<sub>1</sub>, Sphagnum contortum 2.3.







I.2.e. VIOLA LACTEA COMMUNITY

Releve number.	31	32	33	34	26	71	73	27	29	77	91	92	93	94	95
Exposition.	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Slope.	W	W	W	W	E	SW	SW	E	E	NW	S	S	S	S	S
Phanerogam % cover.	30	30	30	30	2	25	25	2	2	10	20	20	20	20	20
Cryptogam % cover.	100	100	100	95	90	100	100	100	100	100	80	100	100	100	100
Releve area (sq. m.).	5	5	5	5	10	10	10	10	10	10	10	10	10	10	10
Number of species.	13	12	16	13	11	15	10	9	10	7	9	9	10	10	10

Differentials of variants

Betonica officinalis	+	+	+	+	+	+	+	1.1	1.1	+					
Thymus drucei	1.2	2.2	2.2	1.2	1.2	1.2	1.2	1.2	1.2						
Carex flacca	(+)	1.2	+	+	+	+	+								
Campylopus introflexus	1.1	1.1	+	+											
Cladonia rangiformis	+														
C. impexa	+														
Polygala serpyllifolia	+														
Serratula tinctoria						(+)	+								
Plantago maritima						+	+								
Hypericum humifusum											2.2	1.2	2.2	2.2	1.2
Holcus lanatus															+
Agrostis tenuis															+

Differentials of community

Sieglingia decumbens	+														
Carex pilulifera								4.2	+		+	+	+	+	+
Viola canina	+			1.1											+
Agrostis montana															
Viola lactea	1.1	+	+	+	+	+	1.2	+	1.1	1.1	+	+	1.1	1.1	1.1
Hypochoeris radicata	+	+	+												+
Hieracium sabauda	+														+

Differentials of complex

Ulex gallii	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Agrostis setacea															
Erica cinerea	4.4	3.3	4.4	3.3	4.4	4.4	3.3	4.4	3.3	4.4	4.4	4.4	4.4	4.4	3.3
Calluna vulgaris	+	+	+	+	2.3	+	+	+	+	+	1.2	2.3	2.3	2.3	3.3
Potentilla erecta	1.2	1.2	1.2	1.2	+	+	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	+
Molinia caerulea															+

Companion specie

Euphrasia vigursii	1.1														
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Additional species: 77<sub>1</sub>, Hypnum ericetorum 1.2; 34<sub>1</sub>, Pilosella officinarum +.

Additional species: 100<sub>1</sub>, *Parmelia physodes* +, *Juncus conglomeratus* +.2, *J. effusus* r, *Rubus fruticosus* S.L. +,  
*Salix repens* +; 120<sub>1</sub>, *Lotus corniculatus* +, *Calyptogeia fissa* 1.2; 115<sub>1</sub>, *Hypochoeris radicata* +; 101<sub>1</sub>, *Festuca*  
*rubra* +; 109<sub>1</sub>, *Breutelia chrysocoma* +; 111<sub>1</sub>, *Campylopus brevipilus* +.

I.2.f. AGROSTIS TENUIS COMMUNITY

Releve number.	58	57	10	15	13
	1	1	2	2	2
Exposition.	E	E	S	S	NE
Slope.	-	-	15	15	20
Phanerogam % cover.	100	100	100	100	100
Cryptogam % cover.	15	-	-	-	-
Releve area (sq. m.).	10	10	10	10	10
Number of species.	8	9	10	10	5

Differentials of community

Agrostis tenuis	+	+	+	+	
Carex pilulifera	+	+.2			
Viola riviniana		+		+	
Thymus drucei			1.3	1.3	
Dactylis glomerata			1.2	+	+.2
Rumex acetosa			+	+	
Festuca ovina	+.2		1.2		
Rosa pimpinellifolia			+		3.3
Hypnum ericetorum	2.3	+			

Differentials of complex

Ulex gallii	2.3	2.3	3.3	3.3	4.3
Agrostis setacea	+.2	1.2			
Erica cinerea	4.4	4.4	1.2	3.3	2.3
Potentilla erecta		+			
Calluna vulgaris	3.3	2.3	4.3	3.3	3.3

Additional species: <sup>15</sup><sub>2</sub>, Pteridium aquilinum +,  
Holcus lanatus 2.2; <sup>10</sup><sub>2</sub>, Teucrium scorodonia +.

I.2.g. SIEGLINGIA DECUMBENS COMMUNITY

Releve number.	44	45	46	47	48	49
	3	3	3	3	3	3
Exposition.	SW	SW	E	E	W	W
Slope.	-	-	5	5	5	5
Phanerogam % cover.	100	100	100	100	100	100
Cryptogam % cover.	10	-	20	20	15	15
Releve area (sq. m.).	10	10	10	10	10	10
Number of species.	11	10	12	12	13	13

Differentials of variants

<i>Carex binervis</i>	1.2	+				
<i>Nardus stricta</i>	1.2	+ .2				
<i>Anthoxanthum odoratum</i>			+	+	1.2	+
<i>Cascuta epithymum</i>			2.3	(+)	+ .2	+
<i>Galium saxatile</i>			1.2	2.3	2.3	1.2
<i>Vaccinium myrtillus</i>					2.2	1.2

Differentials of community

<i>Sieglingia decumbens</i>	1.2	1.2	1.2	1.2	+	1.2
<i>Festuca rubra</i>	+	+ .2	+ .2	1.2	+	+
<i>Pleurozium schreberi</i>	1.2			1.3	1.2	+
<i>Agrostis tenuis</i>		+	1.2	1.2	+ .2	1.2
<i>Rhytidiadelphus squarrosus</i>	1.2		2.3		+	

Differentials of complex

<i>Ulex gallii</i>	5.5	5.5	5.5	5.5	4.4	4.4
<i>Agrostis setacea</i>		1.2	+ .2	1.2		1.2
<i>Erica cinerea</i>	1.2	2.2	2.2	3.3	3.3	3.3
<i>Potentilla erecta</i>	1.2	+	1.2	+	1.2	2.1
<i>Calluna vulgaris</i>	2.2	1.2	1.2	1.2	2.1	3.3
<i>Molinia caerulea</i>	+ .2					



I.3.b. DAUCUS GUMMIFER COMMUNITY

Releve number.	102	103	104	105	106	107	108
	1	1	1	1	1	1	1
Exposition.	S	S	S	S	S	NW	W
Slope.	5	5	2	4	2	5	20
Phanerogam % area.	100	100	100	100	100	100	100
Cryptogam % area.	-	-	-	-	-	5	-
Releve area (sq. m).	10	10	10	10	10	10	5
Number of species.	17	22	14	16	18	16	19

Differentials of variants

<i>Carlina vulgaris</i>	+	1.1					
<i>Pimpinella saxifraga</i>	+	+					
<i>Lotus corniculatus</i>	+	+			+		
<i>Geranium sanguineum</i>			1.2	+	+		

Differentials of community

<i>Sanguisorba officinalis</i>	+		1.2		(+)	1.1	
<i>Viola riviniana</i>	1.2	+		+		+	1.1
<i>Betonica officinalis</i>	+	+	1.1	+	1.1	+	+
<i>Brachypodium sylvaticum</i>	+	+	2.2	1.2	1.2	2.2	2.2
<i>Daucus gummifer</i>	+	+	+	+	+	+	+
<i>Filipendula vulgaris</i>	1.2	1.2	+	1.2	+	1.2	
<i>Agrostis montana</i>	+		+	+			+
<i>Dactylis glomerata</i>		+	+		+	2.3	
<i>Ulex europaeus</i>	3.3	3.3	1.2	1.2	3.3		
<i>Holcus lanatus</i>		+		+			1.2

Differentials of complex

<i>Erica vagans</i>	3.3	3.3	4.4	4.4	4.4	5.5	4.4
<i>Carex flacca</i>	1.2	1.2	1.2	1.2	+	+	1.2
<i>Schoenus nigricans</i>	2.2	3.2	2.2	2.2	+2	+	
<i>Potentilla erecta</i>	1.2	+		+		1.2	+
<i>Calluna vulgaris</i>			+		1.2		1.2
<i>Hypnum ericetorum</i>						1.3	
<i>Sieglingia decumbens</i>	1.2	1.2		1.2			
<i>Erica cinerea</i>	2.3	+		1.2	1.2	+	2.2

Companion species

<i>Serratula tinctoria</i>		+					+
<i>Sarothamnus maritimus</i>					1.2	1.2	
<i>Festuca rubra</i>			+			+	
<i>Hypochaeris radicata</i>		+		+			
<i>Jasione montana</i>					+		+

Additional species: <sup>103</sup><sub>1</sub>, *Solidago virgaurea* +, *Thymus drucei* +; <sup>106</sup><sub>1</sub>, *Prunus spinosa* 1.2, *Eupatorium cannabinum* r; <sup>107</sup><sub>1</sub>, *Achillea millefolium* +; <sup>108</sup><sub>1</sub>, *Plantago maritima* 1.2, *Festuca ovina* 2.3, *Hypericum pulchrum* 1.1, *Anthoxanthum odoratum* +, *Koeleria cristata* +.



I.4.b. ULEX GALLII COMMUNITY

Releve number. 21 14 13 6 9 10 12 22 8 7 6 3 4 15 16 17 21 23 24 14 44 45  
 49 SE NE 48 71 6 6 6 48 49 SE E 52 S S 52 S S 71 SE E 71 SW NW S 71 SE S 71 S  
 - 15 5 5 - 10 - 5 5 15 5 5 - 10 20 15 15 5 5 10 5  
 100 80 85  
 - 20 15 15 60 50 - - - 10 - - 5 - - 5 15  
 10  
 5 13 7 9 10 7 9 5 8 5 9 6 5 8 7 8 6 7 7 7 13 13

Differentials of variants

Molinia caerulea 2.2 2.3 1.3 2.2 (+) 1.2 2.2 1.2 2.2 2.2  
 Hypnum ericetorum 2.3 1.2 2.3 3.3 3.3  
 Erica tetralix 1.2 1.2 +  
 Ulex europaeus + 1.2  
 Pteridium aquilinum + +  
 Scirpus caespitosus 1.3  
 Zygogonium ericetorum  
 Carex nigra  
 C. panicea

Differentials of community and complex

Ulex gallii 3.3 4.4 4.4 3.3 4.4 4.4 4.4 3.3 3.3 3.3 4.4 4.4 3.3 3.3 1.2 5.5 + 3.3 2.3 1.2  
 Erica cinerea 2.3 3.3 1.2 + 3.3 3.3 3.3 + 3.3 3.3 1.1 1.2 2.2 3.3 1.1 1.2 4.4 3.3 3.3  
 Potentilla erecta 1.2 + 1.2 + 1.2 1.2 2.2 1.1 1.1 +  
 Calluna vulgaris 4.4 2.3 3.3 4.4 3.3 2.3 3.3 4.4 1.3 2.3 5.5 4.4 5.5 5.5 5.5 2.3 3.3 3.3  
 Agrostis tenuis 1.3 + 1.2  
 Sieglingia decumbens 1.2 + + 1.2 1.2 1.2 1.2 2.2 2.2 1.2

Companion species

Galium saxatile 1.2 + + 1.1  
 Deschampsia flexuosa 2.2 + 1.2  
 Festuca ovina  
 Parmelia physodes 1.2 + + 2.2 1.1 (+)  
 Carex binervis  
 Polygala vulgaris + + 2.3  
 Cladonia furcata  
 Pinus sylvestris (seedlings) r (+)  
 Campylopus flexuosus 1.2 1.3  
 Nardus stricta + 1.2

Additional species: 14 48, Pleurozium schreberi 2.3, Rhytidiadelphus squarrosus 1.2; 6 6, Cladonia fimbriata 1.2, C. impexa 1.2,  
 C. coccifera +; 8 6, Carex pilulifera +; 3 52, Rubus fruticosus S.L. +, Agrostis montana +; 17 71, Polytrichum piliferum +;  
 21 71, Carex flacca 1.2; 24 71, Vaccinium myrtillus +; 14 71, Polygala serpyllifolia +; 44 71, Viola riviniana 2.3, Cladonia spp. +;  
 13 71, Lophocolea bidentata 1.2.

I.4.c. CAREX FLACCA COMMUNITY

Releve number.	18	22	15	16	17
	6	57	6	6	6
Exposition.	W	W	W	W	W
Slope.	15	10	10	10	10
Phanerogam % cover.	100	100	100	100	100
Cryptogam % cover.	-	-	-	-	-
Releve area.	10	15	10	10	10
Number of species.	12	19	16	16	20

Differentials of variant

Helictotrichon pratense				+	+
Crataegus monogyna (seedlings)				+	+
Betonica officinalis			+		+
Brachypodium pinnatum			+	+	1.2
Lotus corniculatus			+	+	+
Cirsium acaule			+		+

Differentials of community

Festuca rubra	+	+	+	+	1.2
Viola canina	+			+	
Carex flacca	+	+	+	1.2	1.2
Thymus drucei		+	+	+	+
Filipendula vulgaris		+	+	+	+
Helianthemum nummularium		+		+.2	
Galium verum	+	+	1.2		1.2
Hypericum pulchrum	+	+	+		+
Agrostis stolonifera	+	1.1	1.2	1.2	1.2

Differentials of complex

Ulex gallii	3.3	5.5	4.4	4.4	4.4
Erica cinerea			3.3	3.3	3.3
Potentilla erecta	1.3	1.1	1.2	1.2	2.2
Calluna vulgaris	3.3	1.2	2.3	3.3	2.2
Agrostis tenuis	+				1.2
Sieglingia decumbens			+	+	+

Companion species

Senecio jacobaea		+			+
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Additional species: <sup>8</sup>6, Galium saxatile +, Molinia caerulea 3.3; <sup>22</sup>57, Anthoxanthum odoratum +, Teucrium scorodonia +, Hypochaeris radicata +, Viola riviniana +, Poterium sanguisorba +, Koeleria cristata +, Plantago lanceolata +.

I.4.d. POLYTRICHUM PILIFERUM COMMUNITY

Releve number.	57	47	55	56	52	51	54
	40	40	40	40	40	40	40
Exposition.	S	S	SW	S	S	S	SW
Slope.	35	30	45	45	45	25	30
Phanerogam % cover.	90	95	90	95	90	90	95
Cryptogam % cover.	15	2	30	5	2	15	2
Releve area (sq. m.).	20	16	15	16	10	16	16
Number of species.	26	18	17	20	28	18	15

Differentials of variants

<i>Jasione montana</i>	1.1	+	+	1.2	2.1		
<i>Sarothamnus scoparius</i>	+.2			+.2	r		
<i>Digitalis purpurea</i>	1.1	+	+	+	r		
<i>Festuca ovina</i>			+.2	2.2	2.3		
<i>Teucrium scorodonia</i>			2.2	+.2	+		
<i>Rumex acetosella</i>				1.2	+		
<i>Aira praecox</i>			+	2.3	1.2		
<i>Galium saxatile</i>				+.2	+.2		
<i>Pteridium aquilinum</i>						+	+
<i>Cladonia pityrea</i>					+.2	+	1.2
<i>Parmelia physodes</i>						+	+
<i>Cladonia squarrosa</i>						+	+

Differentials of community

<i>Polytrichum piliferum</i>	2.2	+	2.2	+.2	1.2	+	1.2
<i>Deschampsia flexuosa</i>	1.2	2.2	2.2	2.2	3.3	1.3	2.2
<i>Cladonia floerkeana</i>	+		+.2	+		+	+.2
<i>C. chlorophaea</i>	+	1.2	+.2	+			+
<i>C. crispata</i>	+			1.2		+	
<i>C. coccifera</i>	1.2			+		1.2	
<i>Leceidia quadricolor</i>	2.3	+		1.2		+.3	
<i>Polytrichum juniperinum</i>	+	+	2.3		+		+
<i>Cephaloziella starkei</i>	+.2	+.2	+.2			+	+.2
<i>Pohlia nutans</i>	+				+	+	+.2

Differentials of complex

<i>Ulex gallii</i>	1.3	3.3	2.3	2.2	2.2	1.3	2.3
<i>Erica cinerea</i>	4.3	5.4	4.3	2.3	1.1	2.2	2.2
<i>Calluna vulgaris</i>	2.3	1.1	1.2		1.2	5.5	5.5
<i>Agrostis tenuis</i>	+		+	2.1	+	(+)	+.2

Companion species

<i>Polygala serpyllifolia</i>	+				+		
<i>Vaccinum myrtillus</i>	2.3	+					1.1
<i>Cladonia impexa</i>	+		+				
<i>Cephalozia bicuspidata</i>	+				1.3		

Additional species: <sup>55</sup><sub>40</sub>, *Anthoxanthum odoratum* +.2,  
<sup>57</sup><sub>40</sub>, *Ceratodon purpureus* +; <sup>54</sup><sub>40</sub>, *Cladonia fimbriata* +;  
<sup>52</sup><sub>40</sub>, *Dicrenella varia* +; <sup>54</sup><sub>40</sub>, *Cladonia furcata* 1.2,  
<sup>51</sup><sub>40</sub>, *Lophozia bicrenata* +.2; <sup>51</sup><sub>40</sub>, *Festuca rubra* 1.2;  
<sup>56</sup><sub>40</sub>, *Diplophyllum albicans* +.2.

I.5.a. ULEX MINOR COMMUNITY

Releve number.	29	30	31	26	27	28	40	41	42	52	51	49	50	55	48	57	47
Exposition.	N	N	N	N	N	N	NW	NW	NW	NW	NW	NW	NW	N	N	N	N
Slope.	2	3	-	3	3	3	-	-	-	3	5	-	-	-	-	10	-
Phanerogam % cover.	90	85	80	100	100	100	98	100	100	95	100	100	100	100	85	100	85
Cryptogam % cover.	30	80	95	3	-	3	3	-	-	5	-	-	-	20	20	50	20
Releve area (sq. m.).	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Number of species.	16	14	15	18	13	12	14	12	13	10	8	9	10	10	10	11	9

Differentials of variants

Carex panicea	+	+	1.2	1.2	1.2	+	+	(+)	+	+	1.2	1.2	+				
Scirpus caespitosus	+	2.2	+	+	+												
Drosera intermedia	+	+	+	+	+												
Polytrichum commune	+	+	2.3														
Zygonium ericetorum	2.3	3.3	3.3									+					2.2
Campylopus brevipilus	1.3	3.3	3.3														
Pedicularis sylvatica	+	+	+														
Rhynchospora alba	+	+	+										1.2				
Eriophorum angustifolium	+	+	+	1.2	+	+											
Hypericum pulchrum				+	1.1	+											
Linum catharticum				+	1.2	1.1	+										
Sieglingia decumbens				+	4.4	3.3	1.2										
Schoenus nigricans				+	+	+	2.2										
Myrica gale				+	+	+	1.2										
Succisa pratensis				+	+	+	1.2										
Ulex europaeus				+	+	+	1.2										2.2

Differentials of community

Ulex minor	+	+	+	2.2	2.2	2.2	2.2	1.2	2.2	1.2	2.3	3.3	2.3	1.3	1.2	1.2	1.2
Agrostis setacea				1.2	2.2	2.2	2.2	+	1.2		1.2	2.2	1.2		2.2	1.2	3.2

Differentials of complex

Calluna vulgaris	r	1.2	1.2	+	+	2.3	3.3	2.2	1.2	2.2	1.2	2.2	1.2	3.3	4.4	3.3	4.4	1.2
Potentilla erecta				1.2	+	1.2	+	+	1.2	1.2	1.2							
Molinia caerulea	1.1	1.2	2.2	+	+	1.2	3.2	2.2	2.2	2.2	+	2.2	2.2	2.2	1.2	2.2	+	+
Erica ciliaris	3.3	1.2	2.2	3.3	4.4	4.4	3.3	4.3	4.4	5.5	4.4	2.2	2.2	2.3	1.2	+		
C. cinerea				r	1.2					2.2	1.2				2.2	4.4		
E. tetralix	4.4	4.4	4.4	2.3	3.3	1.2	2.3	3.3	2.3	+	+			2.2	4.4	2.2	1.2	

Companion species

Dicranum scoparium														1.2	3.3		
Polytrichum juniperinum										+					+		
Polygala serpyllifolia															+		
Sphagnum compactum																	
Cladonia floerkeana																	
Erica x watsonii															1.3	3.3	+

Additional species: 29, Narthecium ossifragum +, Mylia anomala +; 41, Salix atrocinerea +; 50, Cladonia uncialis +, Leucobryum glaucum 1.2; 55, Hypnum ericetorum 1.3, Salix repens 1.3; 30, Cladonia furcata +; 57, Cladonia gracilis +, Campylopus flexuosus +; 42, Luzula multiflora +; 26, Anagallis tenella +, Cirsium palustre r, Pinguicula lusitanica +, Serratula tinctoria +, Campylopus stellatum +; 52, Gymnocolea inflata 1.3.

I.5.b. ERICA CILIARIS COMMUNITY

Releve number.	43 <sub>9</sub>	45 <sub>9</sub>	44 <sub>9</sub>	56 <sub>9</sub>	22 <sub>9</sub>	23 <sub>9</sub>	24 <sub>9</sub>	25 <sub>9</sub>
Exposition.	NW	NW	NW	NW	W	W	W	W
Slope.	-	-	-	10	-	-	-	-
Phanerogam % cover.	100	100	100	100	100	100	100	100
Cryptogam % cover.	-	-	-	60	50	80	80	80
Releve area (sq. m.).	10	10	10	10	10	10	10	10
Number of species.	12	11	10	17	10	12	13	9

Differentials of variants

Myrica gale.	3.3	3.3	2.2					
Succisa pratensis		+	+					
Salix atrocinerea	+	+	1.1					
Lythrum salicaria	+	+	+					
Agrostis canina	+		+2					
Galium palustre	+	+						
Hypochaeris radicata	+	+						
Carex demissa		+	+					
Narthecium ossifragum				1.1	+	2.2	2.2	1.1
Gentiana pneumonanthe					+	(+)	+	+
Sphagnum recurvum				2.3			4.4	4.4
Cladonia arbuscula				+	3.3		1.2	
Eriophorum angustifolium				2.2	1.2			
Schoenus nigricans						4.3	4.3	4.3

Differentials of community and complex

Calluna vulgaris				4.4	1.2	+	2.2	2.2
Potentilla erecta	+	+	1.2	+	+	+	+	+
Molinia caerulea	2.2	4.2	3.2	2.2	3.3	1.2	1.2	2.2
Erica ciliaris	3.3	3.3	3.3	1.2	4.4	3.3	3.3	3.3
E. cinerea		(+)						
E. tetralix				1.2	4.3	2.2	1.2	+

Companion species

Rhynchospora alba				+				+
Quercus spp. (seedlings)	+			r				
Betula spp. ( " )					(+)	+	+	
Mylia anomala							1.2	+

Additional species: <sup>56</sup><sub>9</sub>, Scirpus caespitosus +, Polygala serpyllifolia +, Cladonia uncialis +, Leucobryum glaucum +, Sphagnum compactum 3.3, Juncus articulatus +; <sup>43</sup><sub>9</sub>, Erica x watsonii 3.4, Cirsium dissectum +; <sup>23</sup><sub>9</sub>, Hypnum ericetorum 2.3, Rubus fruticosus S.L +, Sphagnum papillosum 3.3.

I.6.a. HYLOCOMIUM SPLENDENS COMMUNITY

Releve number.

M/R11

Differentials of community

<i>Cladonia impexa</i>	IV
<i>Hylocomium splendens</i>	V
<i>Vaccinium vitis-idaea</i>	III
<i>Listera cordata</i>	III
<i>Rhytidiadelphus loreus</i>	III
<i>Scirpus caespitosus</i>	III

Differentials of complex

<i>Vaccinium myrtilus</i>	IV
<i>Hypnum ericetorum</i>	V
<i>Pleurozium schreberi</i>	IV
<i>Deschampsia flexuosa</i>	IV
<i>Calluna vulgaris</i>	V
<i>Potentilla erecta</i>	IV
<i>Erica cinerea</i>	III
<i>Dicranum scoparium</i>	V
<i>Agrostis tenuis</i>	I

Companion species

<i>Cladonia pyxidata</i>	III
<i>C. squarrosa</i>	III
<i>C. arbuscula</i>	II
<i>C. uncialis</i>	III
<i>C. gracilis</i>	I
<i>C. coccifera</i>	II
<i>Peltifera canina</i>	II
<i>P. polydactyla</i>	I
<i>Ptilidium ciliare</i>	I
<i>Lophozia ventricosa</i>	I
<i>L. floerkii</i>	I
<i>Diplophyllum albicans</i>	II
<i>Calypogeia trichomanes</i>	I
<i>Thuidium tamariscinum</i>	I
<i>Sphagnum nemoreum</i>	I
<i>Rhytidiadelphus triquetrus</i>	II
<i>R. squarrosus</i>	II
<i>Rhacomitrium lanuginosum</i>	I
<i>Trientalis europaea</i>	II
<i>Succisa pratensis</i>	I
<i>Hypericum pulchrum</i>	I
<i>Galium saxatile</i>	II
<i>Campanula rotundifolia</i>	I
<i>Carex pilulifera</i>	II
<i>Festuca ovina</i>	II
<i>Agrostis canina</i>	I
<i>Blechnum spicant</i>	I
<i>Pinus sylvestris</i>	I
<i>Genista anglica</i>	I



I.6.c. AGROSTIS SETACEA COMMUNITY

	42	28	29	30	31	32
Releve number.	3	3	3	3	3	3
Exposition.	NE	S	SE	SE	SE	SE
Slope.	-	30	10	-	10	5
Phanerogam % cover.	100	90	100	100	100	100
Cryptogam % cover.	80	90	60	60	10	60
Releve area (sq. m.).	10	10	10	10	10	10
Number of species.	14	13	11	10	13	12

Differentials of community

Agrostis setacea	1.2			1.2	2.2	1.2
Carex binervis	+		+	+	1.2	
Luzula multiflora	+	+	1.2		+	+
Cladonia arbuscula.	3.3	4.4			1.3	

Differentials of complex

Vaccinium myrtillus	1.2	1.2	3.3	1.2	3.3	1.2
Hypnum ericetorum.	4.4	1.3	3.3	4.4		3.3
Pleurozium schreberi	1.2		3.3	+		
Deschampsia flexuosa	1.2	+				
Calluna vulgaris	4.4	4.4	4.4	5.5	4.4	4.4
Potentilla erecta	+		1.2	2.2	1.2	1.2
Erica cinerea	3.3	3.3	3.3	3.3	3.3	3.3
Dicranum scoparium	1.3	3.3				
Festuca rubra			1.2		+	2.2
Agrostis tenuis			+	+	+	1.2

Companion species

Anthoxanthum odoratum					+	1.2
Galium saxatile.		+		+		
Parmelia physodes		2.3	1.3			

Additional species: <sup>42</sup><sub>3</sub>, Molinia caerulea +,  
Erica tetralix 2.2; <sup>28</sup><sub>3</sub>, Cladonia impexa 3.3,  
C. squarrosa +, Carex pilulifera +; <sup>31</sup><sub>3</sub>, Scirpus  
caespitosus +, Sieglingia decumbens 1.2;  
<sup>32</sup><sub>3</sub>, Cladonia floerkeana 1.2, Polytrichum commune 1.2

I.6.d. SIEGLINGIA DECUMBENS COMMUNITY

Releve number.	40	41	39	40	41	42	43
	3	3	71	71	71	71	71
Exposition.	NW	NW	SW	SW	NW	S	NW
Slope.	-	5	35	30	5	25	25
Phanerogam % area.	100	100	100	100	100	100	90
Cryptogam % area.	60	60	80	60	80	80	60
Releve area (sq. m.).	10	10	10	10	10	10	10
Number of species.	15	16	15	19	9	14	11

Differentials of variants

Rhytidiadelphus loreus	+	+					
Molinia caerulea	1.2	3.2	1.2				+ .2
Scirpus caespitosus	+ .2	+ .2	1.2				

Differentials of community

Sieglingia decumbens	1.2		+	1.2		1.2	+
Polytrichum commune			1.3	+	1.2		3.3
Juncus squarrosus		+		1.2		+	1.2

Differentials of complex

Vaccinium myrtillus	3.3	1.2	2.3	2.3	3.3	2.3	
Hypnum ericetorum	1.3	2.2	3.3	3.3	3.3	4.4	2.3
Pleurozium schreberi	3.3	2.3	3.3	1.2	3.3		
Deschampsia flexuosa	+		1.2	1.2	1.2	+ .2	
Calluna vulgaris	5.5	4.4	5.5	5.5	5.5	5.5	5.5
Potentilla erecta	+	+		1.2	1.2	1.2	1.2
Erica cinerea			2.2	1.2		1.2	1.2
Dicranum scoparium	1.2	+	1.2	1.2	2.3	1.2	
Festuca rubra	2.2	+		+			
Agrostis tenuis	+		+	+	1.2	+	1.2

Companion species

Anthoxanthum odoratum			+	+			
Polytrichum juniperinum	+			+			
Ulex gallii			+	1.1			
Lophocolea bidentata				1.2		+	

Additional species: <sup>41</sup><sub>3</sub>, Cladonia impexa +, Carex binervis +, Agrostis setacea +.2, Cladonia arbuscula 3.3, Ulex europaeus +; <sup>39</sup><sub>71</sub>, Hylocomium splendens 1.3; <sup>40</sup><sub>71</sub>, Rhytidiadelphus squarrosus 1.2, Blechnum spicant +; <sup>42</sup><sub>71</sub>, Cladonia floerkeana +, C. squarrosa +, Diplophyllum albicans+; <sup>43</sup><sub>71</sub>, Carex echinata +, Eriophorum angustifolium 1.2.

I.7.a. VACCINIUM VITIS-IDAEA COMMUNITY

Releve number.

MY  
12

Differentials of community

Vaccinium vitis-idaea	V
Genista anglica	IV
Lathyrus montana	V
Lotus corniculatus	IV
Pytola media	IV
Viola riviniana	IV

Differentials of complex

Arctostaphylos uva-ursi	V
Calluna vulgaris	V
Erica cinerea	V
Deschampsia flexuosa	V
Potentilla erecta	IV
Dicranum scoparium	IV
Hylocomium splendens	IV
Hypnum ericetorum	IV
Pleurozium schreberi	IV

Companion species

Peltigera canina	II
Cladonia gracilis	II
C. impexa	III
C. coccifera	II
Rhytidiadelphus triquetrus	II
R. loreus	III
Pseudoscleropodium purum	II
Trientalis europaea	II
Succisa pratensis	II
Galium saxatile	III
Campanula rotundifolia	II
Anemone nemorosa	II
Luzula multiflora	II
L. campestris	II
Festuca ovina	III
Anthoxanthum odoratum	II
Agrostis tenuis	III
Vaccinium myrtillus	III
Empetrum hermaphroditum	II

I.7.b. ARCTOUS ALPINA COMMUNITY

Releve number. MV 14 MV 17(8-15)

Differentials of variants

Pleurozia purpurea	IV	
Herberta spp.	III	
Cladonia impexa	IV	
Juniperus nana	V	II

Differentials of community

Arctous alpina	IV	IV
Scirpus caespitosus	V	IV
Rhacomitrium lanuginosum	V	V
Diplophyllum albicans	IV	IV
Cladonia uncialis	V	IV
Sphaerophorous globosus	IV	IV
Lycopodium selago	III	IV
Frullaria tamariscini	III	IV
Cornicularia aculeata	II	IV
Cladonia arbuscula	III	IV

Differentials of complex

Arctostaphylos uva-ursi	V	IV
Calluna vulgaris	V	V
Erica cinerea	IV	IV
Deschampsia flexuosa	V	II
Potentilla erecta	IV	IV
Dicranum scoparium	II	IV
Hylocomium splendens	III	II
Hypnum ericetorum	V	V
Pleurozium schreberi	III	II

Companion species

Cladonia coccifera	II	III
Vaccinium myrtillus	III	II
Empetrum hermaphroditum	III	II
Molinia caerulea	II	II
Nardus stricta	II	II
Dactylorhiza ericetorum	III	II
Solidago virgaurea	II	II
Cladonia pyxidata	II	II
C. rangiferina	III	II
C. gracilis		IV
C. impexa		II
Rhytidiadelphus loreus	II	
Succisa pratensis		II
Festuca ovina		III
Empetrum nigrum	II	
Carex pilulifera	II	
Euphrasia brevipila	II	
Campylopus flexuosus	II	
Sphagnum nemoreum	II	
Bazzania tricrenata	II	
Herberta hutchinsae	II	
Jamsoniella carringtonii	II	
Scapania gracilis	II	

Agrostis canina	II
Carex binervis	II
Anntenaria dioica	II
Polytrichum alpinum	II
Sphagnum tenellum	II
Scapania nimbose	II
Cetraria islandica	III
Ochrolechia frigida	II
Platysma glaucum	II

I.8.a. ULEX EUROPÆUS COMMUNITY

	43	44	45	14	6	2	1	5	7	8
Releve number.	11	11	11	11	11	11	11	11	11	11
Exposition.	W	W	W	E	E	E	E	E	E	E
Slope.	3	3	3	-	-	-	-	-	-	-
Phanerogam % cover.	100	100	100	100	100	100	100	100	100	100
Cryptogam % cover.	-	-	2	-	-	-	-	-	-	-
Releve area (sq. m.).	10	10	10	10	10	10	10	10	10	10
Number of species.	9	12	13	8	10	6	8	10	10	7

Differentials of variants

<i>Erica tetralix</i>	+	+	1.2	+						
<i>Ulex gallii</i>	+	3.3								
<i>Carex pilulifera</i>		1.2	1.2							
<i>Polygala serpyllifolia</i>		+	+							
<i>Serratula tinctoria</i>							+	+	+	1.2
<i>Sieglingia decumbens</i>					+			+	+	
<i>Hieracium tridentata</i>								(+)	+	

Differentials of community and complex

<i>Erica cinerea</i>	2.2	2.2	3.3	4.4	5.5	3.3	3.3	3.3	5.5	4.4
<i>Ulex minor</i>	2.3	2.2	2.3	1.2	1.2	1.2		1.2		
<i>Molinia caerulea</i>	+	1.2	+	1.2	1.2	2.2	2.2	1.2	1.2	1.2
<i>Ulex europaeus</i>	2.3	+	r	3.3	3.3	3.3	3.3	2.2	2.2	3.3
<i>Potentilla erecta</i>	+	1.2	+	1.2	+	1.2	+	+	+	1.2
<i>Agrostis setacea</i>	2.2	1.2	3.2	3.3	2.2	3.3	3.3	2.2	2.2	2.2
<i>Calluna vulgaris</i>	5.5	4.4	3.3	1.2	1.2		+	4.4	1.2	3.3

Companion species

<i>Hypochaeris radicata</i>						+				+
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Additional species: <sup>44</sup><sub>11</sub>, *Cladonia impexa* +; <sup>45</sup><sub>11</sub>, *Dicranum scoparium* +, *Polygala vulgaris* +, *Solidago virgaurea* +; <sup>6</sup><sub>11</sub>, *Agrostis tenuis* +; <sup>1</sup><sub>11</sub>, *Viola canina* +.

I.9.a. TEUCRIUM SCORODONIA COMMUNITY

	37	30	34	29	27	28	33	32	36	35
Releve number.	47	47	47	47	47	47	47	47	47	47
Exposition.	S	NW	W	N	N	N	W	W	W	W
Slope.	15	30	35	45	25	30	25	30	20	25
Phanerogam % cover.	95	95	95	100	95	95	100	70	90	90
Cryptogam % cover.	40	90	90	85	90	90	85	40	80	40
Releve area (sq. m.).	10	10	10	10	10	10	10	10	10	10
Number of species.	13	12	14	18	20	27	23	18	17	19

Differentials of variants

<i>Agrostis stolonifera</i>					2.2	1.2				
<i>Pseudoscleropodium purum</i>					+	+				
<i>Oxalis acetosella</i>					+	+				
<i>Quercus</i> spp. (seedlings)	r				+	+				
<i>Sorbus aucuparia</i> (seedlings)					r	r				
<i>Fagus sylvatica</i> (seedlings)				r	+	r				
<i>Vaccinium myrtillus</i>							1.2	1.2	2.2	
<i>Festuca ovina</i>					+		1.2	2.2	1.2	1.2
<i>Luzula campestris</i>							+	+		
<i>Cladonia furcata</i>							+	+		
<i>C. pityrea</i>							+	+		
<i>C. arbuscula</i>							+	+		
<i>C. chlorophaea</i>							2.2	1.2	+	
<i>Geranium sanguineum</i>									3.3	2.2
<i>Eurhynchium striatum</i>									2.2	+
<i>Scabiosa columbaria</i>									1.1	1.2
<i>Pilosella peleteranum</i>									+	+
<i>Crataegus monogyna</i> (seedling)									r	r
<i>Helianthemum nummularium</i>									1.2	2.2

Differentials of community and complex

<i>Erica cinerea</i>	5.5	4.4	4.4	4.4	4.4	3.3	5.5	3.3	2.2	
<i>Agrostis tenuis</i>	1.2		1.2	1.2	1.2	+	+	1.2		
<i>Teucrium scorodonia</i>	1.1	2.2	2.2	1.2	2.2	3.3	1.2	1.2	1.2	+
<i>Campanula rotundifolia</i>		+				+	+		1.2	+
<i>Solidago virgaurea</i>	+	+		+		+		+		
<i>Hypericum pulchrum</i>		+	+	1.1						+
<i>Viola hirta</i>		+	1.2	1.2			1.2		+	+
<i>Rubus fruticosus</i> S.L.			+	r			+			
<i>Calluna vulgaris</i>		2.2		2.2	3.3			2.2	2.2	4.4
<i>Deschampsia flexuosa</i>		2.2	2.2	2.2	2.2	1.2	2.2			
<i>Dicranum scoparium</i>	1.2	1.2	2.2	1.2			2.2	2.2	1.2	3.3
<i>Pleurozium schreberi</i>		4.4	4.4	3.3	4.4	4.4	3.3			
<i>Potentilla erecta</i>					2.2	3.3	+			
<i>Galium saxatile</i>				+	2.2	2.2	+			
<i>Hypnum ericetorum</i>	3.3	1.2	+			+	1.2			+

Companion species

Polytrichum piliferum				+		1.2
Aira praecox					+	1.2
Cladonia impexa	1.2	+	+			
Ulex europaeus	r					1.2
Viola riviniana	+		+		+	
Hylocomium splendens		2.2	+			

Additional species: <sup>37</sup>/<sub>47</sub>, Betula sp. r, Cladonia pyxidata +, Pteridium aquilinum 2.1; <sup>34</sup>/<sub>47</sub>, Cladonia fimbriata +, Fraxinus excelsior +; <sup>29</sup>/<sub>47</sub>, Rhytidiadelphus loreus +; <sup>27</sup>/<sub>47</sub>, Acer pseudoplatanus r, Pinus sylvestris r; <sup>28</sup>/<sub>47</sub>, Polytrichum gracile +, Lophozia ventricosa +; <sup>33</sup>/<sub>47</sub>, Ptilidium ciliare +, Lotus corniculatus +; <sup>32</sup>/<sub>47</sub>, Cornicularia aculeata 2.2, Cladonia fimbriata +; <sup>36</sup>/<sub>47</sub>, Rosa pimpinellifolia 2.1, Origanum vulgare 1.2, Leucanthemum vulgare +; <sup>35</sup>/<sub>47</sub>, Thymus drucei +, Arrhenatherum elatius +.

I.10.a. SCIRPUS CAESPITOSUS COMMUNITY

Releve number.	1 105	2 105	1 108	2 108	3 108	3 105	4 105	5 105	4 108	5 108
Exposition.	SE	SE	NW	NW	NW	NW	S	S	SE	E
Slope.	3	3	3	10	15	5	5	5	15	10
Phanerogam % area.	85	90	90	95	100	30	95	95	100	100
Cryptogam % area.	60	45	80	90	60	95	100	100	95	90
Releve area (sq. m.).	10	5	10	10	10	5	10	10	10	10
Number of species.	20	18	19	13	20	15	13	15	14	17

Differentials of variants

Carex binervis			+	1.2	+		+	1.2	+	
Sphagnum rubellum			5.5		3.3	+		1.3	3.3	
Nardus stricta			2.2	1.2	2.2					
Juncus squarrosus			2.2	1.3	3.2					
Sphagnum tenellum			2.3		+					
Blechnum spicant			+	+						
Narthecium ossifragum	1.1	+	2.2		1.1					
Cladonia papillaria	1.3	1.2								
C. chlorophaea	2.2	1.2								
C. floerkeana	+	+2								
Diplophyllum albicans	2.2	+2			+					
Eriophorum angustifolium	+	+	1.2							
Carex panicea	+	+		+						

Differentials of community and complex

Calluna vulgaris	2.3	3.3	4.4	5.5	4.4	2.3	5.5	5.5	5.5	5.5
Cladonia uncialis	2.2	+2				1.3			+	+
C. arbuscula	1.2				+	1.3		1.3	+	+
Rhacomitrium lanuginosum	1.2					5.5			+	+
Scirpus caespitosus	3.4	3.3	2.2	1.2	+	+2	+2		1.2	
Dicranum scoparium	1.2	+	1.3				2.2	1.3	1.3	+
Hylocomium splendens			1.3		1.3		3.3	3.3	2.3	3.3
Rhytidiadelphus loreus			+		1.3			+		2.3
Potentilla erecta	1.2	1.1	2.2	2.2	+	+	2.2	1.1	2.1	1.1
Pleurozium schreberi			+		1.3		3.3	4.4	1.3	1.3
Hypnum ericetorum	2.2	2.3	1.3				3.3	2.3	4.4	
Erica cinerea	1.2	+		1.1	+	1.1			2.2	1.1
Molinia caerulea	3.4	1.1	2.2	2.2	2.2	+	1.2	+	1.2	2.2
Erica tetralix	3.3	3.2		+			1.1	+		+

Companion species

Listera cordata					+		+			
Carex nigra			1.2				+	+		
Mylia anomala				+		+				
Pleurozia purpurea	+2					2.3				
Mylia taylori	+					+				+

Additional species: <sup>2</sup>/<sub>105</sub>, Leucobryum glaucum 2.2, Pinguicula vulgaris +; <sup>5</sup>/<sub>105</sub>, Agrostis tenuis +, Rhytidiadelphus squarrosus +; <sup>1</sup>/<sub>108</sub>, Succisa pratensis +; <sup>2</sup>/<sub>108</sub>, Thelypteris limbosperma +; <sup>3</sup>/<sub>108</sub>, Deschampsia flexuosa +, Cephalozia connivens +; <sup>4</sup>/<sub>108</sub>, Rhytidiadelphus triquetrus +, Sorbus aucuparia (seedling) +, Nowellia curvifolia +; <sup>5</sup>/<sub>108</sub> Plagiothecium denticulatum +,

Cladonia coccifera +, Baeomyces rufus +, Cladonia  
crispata 1.2; <sup>3</sup>105, Hieracium vulgatum S.L. +, Plagiochila  
sp. +, Herberta hutchinsae 2.3, Odontoschisma sphagni +.

I.10.b. AGROSTIS TENUIS COMMUNITY

Releve number.	1	2	3	4	5	6	7	8	9	10
	110	110	110	110	110	110	110	110	110	110
Exposition.	S	S	S	W	NW	NW	W	W	E	E
Slope.	-	20	20	5	5	15	10	2	35	15
Phanerogam % area.	90	95	85	100	95	100	100	100	100	100
Cryptogam % area.	30	20	10	80	60	80	70	60	50	80
Releve area (sq. m.).	10	5	5	10	10	10	10	10	10	10
Number of species.	17	18	17	12	21	23	24	19	14	11

Differentials of variants

<i>Dactylorhiza ericetorum</i>		+	+							+
<i>Carex pulicaris</i>	1.2	1.2	1.2		+					
<i>C. panicea</i>	+	1.2	1.2							
<i>Leucobryum glaucum</i>	+ .3	+ .2	+ .2							
<i>Viola canina</i>		+	1.1				1.2		1.1	
<i>Pilosella officinarium</i>	+	1.2	1.1							
<i>Hyperium pulchrum</i>		+	+						1.1	
<i>Blechnum spicant</i>	1.1	1.2								
<i>Nardus stricta</i>					+	1.2	2.2	2.2		
<i>Festuca vivipara</i>						2.2	+	+		
<i>Euphrasia micrantha</i>			+		+	+	2.1	+		
<i>Carex flacca</i>					1.2	+	1.2	1.2		
<i>C. hostiana</i>					+	1.2				
<i>Scapania gracilis</i>					+	1.3				

Differentials of community

<i>Agrostis tenuis</i>	1.2	2.2	1.2		1.2	1.2	1.2		1.2	1.2
<i>Sieglingia decumbens</i>	1.2	1.2	2.2		+		1.2	1.2		
<i>Polygala serpyllifolia</i>	+	1.2	1.1	1.1		+	+	1.2		+

Differentials of complex

<i>Calluna vulgaris</i>	3.3		2.1	4.4	5.5	5.5	3.3	3.3	4.4	4.4
<i>Cladonia uncialis</i>				+	2.3	+				
<i>C. arbuscula</i>					+	1.3		1.2		
<i>Rhacomitrium lanuginosum</i>					3.3	+		1.2		
<i>Scirpus caespitosus</i>	+ .2	+	+ .2	2.2	2.2	1.2				+
<i>Dicranum scoparium</i>					+	1.3	1.2			
<i>Hylocomium splendens</i>						3.3	2.3	1.2	3.3	3.3
<i>Rhynchospora loreus</i>	1.3				1.2	2.3		1.2	3.3	3.3
<i>Potentilla erecta</i>	2.1	1.2		1.2	1.2	1.2	1.1	1.2	2.2	1.2
<i>Pleurozium schreberi</i>						2.3	3.3	3.3	1.2	
<i>Hypnum ericetorum</i>	2.3	+		4.4	3.3	1.3	1.2			
<i>Erica cinerea</i>	3.3	3.3	4.4	3.3		+	3.3	3.3	3.3	3.3
<i>Molinia caerulea</i>	1.2	+		3.2				1.2	2.2	2.2
<i>Erica tetralix</i>	+				3.3	+				

Companion species

<i>Eriophorum angustifolium</i>				1.2			+			
<i>Juncus squarrosus</i>				1.2		+ .2				
<i>Carex demissa</i>		+						+	+	
<i>Luzula multiflora</i>				1.2		+		+		
<i>Galium saxatile</i>							+		1.1	
<i>Pedicularis sylvatica</i>			+					+		
<i>Breutelia chrysocoma</i>	2.3									1.2
<i>Frullania tamariscini</i>				3.3				1.2		

Additional species: <sup>2</sup> 110, *Diplophyllum albicans* 1.2;  
<sup>3</sup> 110, *Campylopus flexuosus* +, *Cladonia impexa* 2.2;  
<sup>5</sup> 110, *Narthecium ossifragum* +, *Sphagnum tenellum* +,  
*Sphagnum recurvum* 1.3; <sup>7</sup> 110, *Rhytidiadelphus squarrosus*  
+.2, *Polytrichum strictum* +, *Thymus drucei* +, *Plantago*  
*maritima* 1.2, *Taraxacum officinale* S.L. +, *Prunella*  
*vulgaris* 1.1, *Rhinanthus minor* +; <sup>9</sup> 110, *Anthoxanthum odoratum*  
1.2, *Polytrichum commune* +.

II.1.a. ERICA TETRALIX COMMUNITY

Releve number.	55	64	48	20	12	5	6	1	22	13	59	36	29	30	31	32	21	2	11	14	9	7	14	14	5	10	8	14	14	21	2	16	28
Exposition.	SE	E	E	S	W	S	S	S	S	W	W	S	S	N	SE	N	N	S	N	NW	N	N	N	N	SW	SE	N	N	N	N	N	N	SE
Slope.	3	3	-	10	-	5	3	2	-	-	5	5	3	10	10	3	-	-	15	15	-	5	5	5	5	10	10	10	10	10	10	10	10
Phanerogam % cover.	100	100	100	100	100	100	100	95	100	100	100	90	80	100	100	60	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
Cryptogam % cover.	15	10	80	10	-	-	-	20	60	60	15	70	-	-	-	10	-	20	5	5	-	20	-	2	20	20	20	20	20	20	20	20	
Releve area (sq. m.).	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
Number of species.	9	9	12	12	8	10	7	14	9	4	9	4	12	4	7	8	7	6	11	12	8	10	7	7	9	6	5	6	5	7	8		

Differentials of variants

Leucobryum glaucum	2.2	1.2	2.2	2.1	+	r	+	r	+	r	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Betula species (seedling)																																		
Quercus species ( " )																																		
Deschampsia flexuosa																																		
Agrostis setacea																																		
Zygodonium ericetorum																																		
Campylopus brevipilus																																		
Pteridium aquilinum																																		
Ulex europaeus																																		

Differentials of community

Erica tetralix	3.3	1.2	+	2.2	2.2	2.2	(+)	+	1.2	2.2	1.2	2.2	1.1	3.3	2.2	+	2.2	3.3	1.2	+	2.2	3.3	1.2
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Differentials of complex

Calluna vulgaris	3.3	5.5	5.5	5.5	2.2	4.4	3.3	3.3	5.5	2.3	2.2	5.5	5.5	5.5	4.4	3.3	5.5	4.4	4.4	2.2	4.4	5.5	5.5	4.4	5.5	5.5	4.4	3.3	4.4	3.3			
Erica cinerea	+	2.2	1.2	2.3	3.3	3.3	1.2	2.2	2.2	3.2	3.3	2.2	2.2	2.2	2.2	4.4	+	+	2.2	1.2	3.2	+	+	+	+	+	+	+	+	+	+		
Molinia caerulea	3.2	2.2	2.2	+	3.2	2.2	2.2	+	3.2	3.3	1.2	1.2	1.2	1.2	1.2	1.2	1.2	4.2	1.2	3.3	3.3	1.2	1.2	3.3	3.3	1.2	5.5	2.2	1.2	1.2	1.2		
Ulex minor	2.2	1.2	+	1.1	1.2	3.3	3.3	3.3	1.2	4.4	1.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	3.3	3.3	3.3	3.3	2.2	2.2	2.2	2.2	1.1	1.2	2.2	2.2	2.2		
Hypnum ericetorum																																	
Cladonia impexa	2.2	1.3	+	1.2	+	1.2	+	+	2.3	2.3	2.3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Parmelia physodes	+	+	+	+	+	+	+	+	2.3																								
Dicranum scoparium																																	

Companion species

Cladonia uncialis																																		
C. arbuscula																																		
Potentilla erecta																																		
Polygala vulgaris																																		
Cuscuta epithymum																																		
Cladonia floerkeana																																		
C. pyxidata																																		
C. squarrosa																																		
C. fimbriata																																		
Pinus sylvestris (seedling)																																		
Cephalozia bicuspida																																		
Cladonia furcata																																		
Scirpus caespitosus																																		
Polytrichum juniperinum																																		
Cornicularia aculeata																																		
Cladonia gracilis																																		
Campylopus flexuosus																																		
Gymnocolea inflata																																		
Genista anglica																																		

Additional species: <sup>11</sup> Carex binervis 1.1; <sup>12</sup> Polytrichum piluliferum 2.3; <sup>20</sup> Pleurozium schreberi 1.2; <sup>22</sup> Leceidia spp. 2.3; <sup>5</sup> Frangula alnus r; <sup>17</sup> Nardus stricta +.2; <sup>55</sup> Sphagnum compactum +; <sup>36</sup> Narthecium ossifragum 1.2; Sphagnum quinquefarium +; <sup>24</sup> Campylopus atrovirens 1.2, Cladonia macilentata 1.2, C. coccifera +; <sup>17</sup> Sphagnum palustre +; <sup>65</sup> Rubus fruticosus S.L. r; <sup>13</sup> Lophocolea bidentata +; <sup>38</sup> Rubus suberecti +.



II.1.1.b. DESCHAMPSIA FLEXUOSA COMMUNITY

Releve number.	12	11	13	4	13	19	7	22	8	13	17	2	17	3	15	17	13	7	9	13	13	17	10	18
Exposition.	22	N	N	N	W	W	NE	NE	NW	NW	NE	NE	NE	NW	N									
Slope.	10	10	10	5	5	5	-	-	2	-	-	-	25	10	2	-	-	-	-	-	-	-	-	5
Phanerogam % cover.	100	100	100	100	95	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Cryptogam % cover.	-	-	-	60	20	40	-	-	-	5	-	-	20	5	5	-	-	-	-	-	-	-	-	20
Releve area (sq. m.).	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Number of species.	9	12	8	12	8	12	6	7	7	7	9	8	13	8	11	9	8	11	8	11	9	8	15	

Differentials of variants

Festuca rubra	1.2	1.2	1.2	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Quercus spp. (seedlings)																								
Pteridium aquilinum	1.1	+							2.1			2.2	+											
Vaccinium myrtillus												2.3	1.2	+										
Agrostis setacea												2.2	2.2											

Differentials of community

Deschampsia flexuosa	2.2	+	1.2	+	+	1.2	+	+	+	1.2	+	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	2.2
Betula spp. (seedling)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Differentials of complex

Calluna vulgaris	4.4	3.3	5.5	5.5	5.5	5.5	4.4	3.3	5.5	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	4.4	5.5	4.4
Erica cinerea	1.2	3.3	2.2	+	+	+	2.2	2.2	2.3	3.3	4.4	4.4	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.1	3.3	
Molinia caerulea	3.3	1.2	+		(+)	+	+	2.2																	
Ulex minor	2.2	2.3		1.2	2.3		3.3	1.2	2.3	+	2.3	1.3	2.2	1.2	3.3	+	2.3								
Hypnum ericetorum							3.3																	+	
Cladonia impexa																									
Parmelia physodes																									
Dicranum scoparium																								1.2	

Companion species

Campylopus brevipilus																										
Cladonia floerkeana																										
Pinus sylvestris (seedlings)																										
Cladonia furcata																										
Polytrichum juniperinum																										
Rubus discolors																										
<u>Additional species:</u>																										
Carex binervis +, Nardus stricta +, Juncus effusus +;	12	22	Cephalozia bicuspidata	1.2;	11	22	Agrostis tenuis	+	4	14	Zygonium ericetorum	1.3,														
Juncus squarrosus 2.2;	1	13	Pleurozium schreberi	1.3;	7	13	Polytrichum pilliferum	+	9	13	Gymnocola inflata	+														
Genista anglica +;	10	13	Luzula campestris	+	1	17	Lonicera periclymenum	+	18	17	Ulex europaeus	2.2,														
Sorbus aucuparia (seedlings) +, Sieglingia decumbens	1.2,	17	Eurhynchium striatum	+																						

Note: Relève 11 22 was heavily contaminated by agricultural "weeds", i.e. Holcus lanatus +, Lotus uliginosus 1.2, Trifolium dubium +, Cynosurus cristatá +, as a result of cultivation of land ceasing c. 5-6 years previously.

II.1.c. ULEX MINOR COMMUNITY

Releve number.	6 <sub>9</sub>	7 <sub>9</sub>	27 <sub>9</sub>	39 <sub>9</sub>	66 <sub>9</sub>	5 <sub>12</sub>	5 <sub>13</sub>	53 <sub>9</sub>	54 <sub>9</sub>
Exposition.	SW	SW	N	S	N	SW	NW	S	E
Slope.	5	5	3	10	10	5	-	30	20
Phanerogam % cover.	100	100	100	100	100	100	100	85	100
Cryptogam % cover.	-	-	-	20	5	50	-	40	15
Releve area (sq. m.).	10	10	10	10	10	10	10	10	10
Number of species.	7	4	6	9	11	9	6	11	9

Differentials of variants

<i>Ulex europaeus</i>									+ 5.5
<i>Agrostis setacea</i>	1.2	1.2	+ .2	+ .2	+				

Differentials of community and complex

<i>Calluna vulgaris</i>	5.5	5.5	4.4	5.5	5.5	5.5	2.2	3.3	4.4
<i>Erica cinerea</i>	2.2	1.2	3.3	2.2	2.2	3.3	2.2	3.3	2.2
<i>Molinia caerulea</i>				1.1	+	+	+		+
<i>Ulex minor</i>	2.2	2.2	2.2	1.2	1.2	2.3	1.1	3.3	3.3
<i>Hypnum ericetorum</i>	+			2.3					
<i>Cladonia impexa</i>	+				+				+
<i>Parmelia physodes</i>						+			+
<i>Dicranum scoparium</i>			+	+		3.3		1.3	+

Companion species

<i>Pteridium aquilinum</i>					+				+
<i>Festuca rubra</i>			1.1						+
<i>Cladonia arbuscula</i>								1.2	+
<i>Cuscuta epithymum</i>	+				+				
<i>Cladonia furcata</i>				+					+

Additional species: 39<sub>9</sub>, *Cladonia floerkeana* +; 66<sub>9</sub>, *Cladonia gracilis* +, *Campylopus flexuosus* 1.3, *Polygala serpyllifolia* +; 5<sub>12</sub>, *Cladonia uncialis* +, *C. pyxidata* +; 5<sub>13</sub>, *Juncus squarrosus* +; 53<sub>9</sub>, *Betula* spp. (seedlings) r, *Polytrichum juniperinum* 1.1, *Luzula multiflora* +; 54<sub>9</sub>, *Leucobryum glaucum* 1.1.

II.2.a. ERICA CINEREA COMMUNITY

Releve number.	11	12	13	1	7	8	15	14	6	14	19	20
Exposition.	17	17	13	12	17	17	13	13	12	22	22	22
Slope.	W	W	SE	N	E	E	E	E	E	SE	E	E
Phanerogam % cover.	-	-	2	-	-	-	-	-	10	3	3	3
Cryptogam % cover.	100	100	100	100	100	100	100	100	100	60	100	60
Releve area.	60	20	-	60	5	5	-	10	60	40	50	50
Number of species.	10	10	10	10	10	10	10	10	10	10	10	10
	14	15	6	12	10	6	4	5	14	5	2	4

Differentials of variants

Pteridium aquilinum	+ 1.1	1.1	+									
Cladonia floerkeana	+ +	+ +	1.3						2.1			
Pohlia nutans	1.3	+										
Cornicularia aculeata	+ +	+ +							+			
Cladonia pyxidata	2.3	+	+									
C. gracilis	+ +	+ +										
C. uncialis	+ +	+ +							+			
Quercus spp. (seedlings)	r +	+ +							r			
Pinus sylvestris ( " )	+ +	+ +										

Differentials of community

Erica cinerea	+ 1.1	1.1	+	5.5	5.5	4.4	3.3	+	(+)	2.2	1.2
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Differentials of complex

Calluna vulgaris	5.5	5.5	5.5	4.4	+	1.2	1.2	5.5	4.4	5.5	4.4
Deschampsia flexuosa					2.2	1.2	2.2	2.2	+		
Dicranum scoparium	1.3	2.3		3.3	+		2.2	2.3	2.3		2.3
Hypnum ericetorum	3.3	+		2.3	+	1.3		3.3	1.2		
Parmelia physodes	+	1.3		+				2.3	+		

Companion species

Festuca rubra												
Cladonia arbuscula	+								+			
										3.3		

Additional species: <sup>7</sup> 17, Agrostis setacea 1.2, Sorbus aucuparia (seedling) +, Agrostis tenuis 1.2; <sup>14</sup> <sup>13</sup>, Polytrichum juniperinum +; <sup>15</sup> <sup>13</sup>, Rubus discolors +, Teucrium scorodonia 1.1; <sup>6</sup> <sup>12</sup>, Cladonia furcata +; <sup>13</sup> <sup>13</sup>, Cladonia impepa +; <sup>1</sup> <sup>12</sup>, Pleurozium schreberi 3.3, Ulex europaeus 3.1; <sup>12</sup> <sup>17</sup>, Betula species (seedling) +, Polytrichum piliferum +.

II.2.b. DESCHAMPSIA FLEXUOSA COMMUNITY

Releve number.	17	18	22	8	9	10	22	10	4	1	24	3	11	12	24	5	6	24	7	8	24	9	10	24	4	12
Exposition.	W	W	W	W	W	W	W	W	E	E	E	E	NW	NW	NW	W	W	W	SW	SW	SW	SW	SW	SW	E	S
Slope.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
Phanerogam % cover.	100	100	100	100	100	100	100	100	100	100	100	100	90	80	100	100	100	100	100	100	100	100	100	100	100	100
Cryptogam % cover.	5	-	30	30	30	40	10	10	10	10	10	10	50	50	10	-	-	50	70	50	70	70	70	75	30	30
Releve area.	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Number of species.	12	6	5	10	5	4	5	7	13	11	10	7	15	12	13	14	4	15	12	12	13	14	14	4	8	8

Differentials of variants

Betula species (seedlings)	1.1	+	(+)	1.1	(+)	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Vaccinium myrtillus	+	4.4																								
Pteridium aquilinum	3.3	5.5																								
Quercus (seedlings)	r	r																								
Festuca rubra																										
Fagus sylvatica (2m ht.)																										
Polytrichum commune																										
Cladonia fimbriata																										
Carex pilulifera																										
Juncus conglomeratus																										
Luzula campestris																										
Galium saxatile																										
Sieglingia decumbens																										
Potentilla erecta																										
Agrostis tenuis																										
Holcus mollis																										
Rubus discoloris																										
Crataegus monogyna																										
Pseudoscleropodium purum																										
Succisa pratensis																										
Lonicera periclymenum																										
Hieracium tridentata																										

Differentials of community and complex

Calluna vulgaris	2.2	2.3	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
Deschampsia flexuosa	1.2	2.2																								
Hypnum ericetorum			2.3	1.3	3.3	3.3	2.3	2.3	2.3	2.3	2.3	2.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Dicranum scoparium	1.2		2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
Parmelia physodes			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+

Companion species

Ulex minor																										
Polytrichum juniperinum																										
Pohlia nutans																										
Lophocolea bidentata																										
Ulex europaeus	4.4																									

Additional species: <sup>17</sup>22, Rubus fruticosus S.L. +, Teucrium scorodonia 1.2; <sup>5</sup>24, Dicranum majus +; <sup>7</sup>24, Lotus corniculatus +, Rosa arvensis +; <sup>8</sup>24, Betonica officinalis +, Rhytidadelphus squarrosus +; <sup>9</sup>24, Lotus uliginosus +; <sup>10</sup>24, Dryopteris dilatata +, Pleurozium schreberi 4.4; <sup>11</sup>24, Leucobryum glaucum 1.2, Dicrenella heteromalla +, Zygnema spp. 1.2; <sup>12</sup>24, Epilobium angustifolium +; <sup>9</sup>22, Cladonia floerkeana 1.3, Pinus sylvestris (seedling) r, Cladonia chloropoea +; <sup>4</sup>12, Eladonia arbuscula 3.3, C. pyxidata 1.3, Cornicularia aculeata +. (\*add Erica cinerea 2.2, Polytrichum piliferum +.)



Additional species: <sup>28</sup><sub>71</sub>, *Cladonia chlorophaea* +, *C. floerkeana* +, *C. squarrosa* +; <sup>30</sup><sub>71</sub>, *Ceratodon purpureus* 1.2; <sup>31</sup><sub>71</sub>, *Aira caryophyllea* 1.2, *Sedum anglicum* +, *Camptothecium sericeum* 1.2, *Trifolium repens* +; <sup>32</sup><sub>71</sub>, *Cladonia pyxidata* +, *Pilosella officinarum* +.2, *Cladonia foliacea* 1.3, *Leontodon taraxacoides* +; <sup>33</sup><sub>71</sub>, *Ammophila arenaria* +.2; <sup>1</sup><sub>74</sub>, *Cladonia furcata* +; <sup>2</sup><sub>74</sub>, *C. impeza* 2.3, *Tortula ruraliformis* +; <sup>3</sup><sub>74</sub>, *Peltigera canina* +, *Bryum* cf. *pallidum* +; <sup>4</sup><sub>74</sub>, *Hypnum tectorum* 2.3; <sup>5</sup><sub>74</sub>, *Rumex acetosella* 1.1, *Viola canina* +; <sup>6</sup><sub>74</sub>, *Pteridium aquilinum* +; <sup>7</sup><sub>74</sub>, *Drosera rotundifolia* +, *Juncus articulatus* 2.2, *Salix atrocinerea* 1.1; <sup>8</sup><sub>74</sub>, *Carex pilulifera* +.2, *Dactylorhiza ericetorum* +, *Polygala serpyllifolia* +, *Lathyrus montana* 1.1.

II.3.b. DIPLOPHYLLUM ALBICANS COMMUNITY

Releve number. 163 164 165 166 167 168 7 8 9 34 35 36 37 38  
 Exposition. 1 1 1 1 1 1 1 1 1 1 1 1 1 1  
 Slope. S S SW SW W NW NW NW NW W W W W W  
 Phanerogam % cover. 15 15 - 10 10 95 95 100 100 100 100 100 100 100  
 Cryptogam % cover. 100 100 100 100 100 95 80 40 30 40 50 60 50 75  
 Releve area. 50 - 80 90 95 80 40 30 40 50 60 50 50 10 10  
 Number of species. 10 10 10 10 10 10 10 10 10 10 10 10 10 10  
 7 4 5 10 6 10 7 5 5 16 8 9 11 7

Differentials of variants

Agrostis stolonifera 1.2 + 1.2 1.2 + 1.2  
 Usnea sub-florida + 1.2  
 Agrostis tenuis 1.2 + 2.2 1.2 +  
 Calypogeia trichomanes 1.2 + 1.2 +  
 Cladonia squarrosa 1.2 + 1.3 + 1.2  
 Galium saxatile + 1.3 + 1.2  
 Cladonia chlorophaea + + 1.2  
 Pohlia nutans + + 1.2

Differentials of community

Diplophyllum albicans 1.2 2.3 2.3 2.3 2.3 3.3 3.3 3.3 4.4

Differentials of complex

Calluna vulgaris 5.5 4.4 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 4.4 5.5  
 Erica cinerea 2.2 3.3 + 2.2 1.2 1.2 1.2 1.2 3.3 1.2  
 Hypnum ericetorum 3.3 5.5 5.5 5.5 4.4 2.3 3.3 2.3  
 Parmelia physodes 1.2 1.2 1.2 + 1.2 2.2 2.2 2.2 + 1.2 2.3  
 Cladonia arbuscula 1.2 1.3 1.3  
 Dicranum scoparium 1.2 1.3 1.2

Companion species

Cladonia fimbriata 1.2 1.2  
 C. macilenta + 1.2  
 Ulex europaeus 1.2 (+)  
 Holcus lanatus +

Additional species: 164, Cladonia pyxidata 1.2; 166, Armeria maritima 1.1; 167, Pleurozium schreberi 1.3;  
 7 52, Scapania gracilis 1.3; 8 52, Lophozia ventricosa 1.2; 9 52, Gymnocola inflata 1.3; 168 1, Agrostis  
 setacea +, Campylopus atrovirens +, Cephalozia bicuspidata 1.3, Cladonia impexa +; 34 71, Aulacomnium  
 palustre 1.2, Erica tetralix 1.2, Molinia caerulea 1.2, Potentilla erecta 1.2, Sphagnum palustre 1.3, S.  
 recurvum 2.3, Equisetum fluviatile +; 35 71, Deschampsia flexuosa +.2, Lophocolea bidentata 2.3,  
 Rhytidiadelphus squarrosus 2.3, Rubus fruticosus S.L. +; 36 71, Polytrichum piliferum 1.2, Urtica dioica +;  
 37 71, Nardus stricta +.2, Polytrichum gracile 2.2.

II.4.a. CAREX ARENARIA COMMUNITY

Relve number.	4	5	15	13	14	2	3	6	17	7	8	1	2	26	3	26	3	59	60	62	63
Exposition.	E	E	E	W	W	W	E	E	W	S	S	N	N	N	N	N	N	E	N	E	N
Slope.	-	-	-	2	5	-	-	-	5	5	5	-	-	-	-	-	-	15	5	15	20
Phanerogam % cover.	100	100	90	90	100	100	100	100	100	100	100	100	100	100	100	100	100	90	90	100	100
Cryptogam % cover.	60	60	80	30	5	10	60	50	60	80	90	50	20	40	50	50	50	50	5	5	5
Relve area.	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Number of species.	7	11	11	10	7	6	9	10	9	12	12	8	5	6	9	7	5	9	7	5	8

Differentials of variants

Pteridium aquilinum	1.1	1.1	+	1.1	1.1	1.1	+	1.2	+												
Ulex gallii	2.3	2.3	+	1.2																	
Deschampsia flexuosa				2.2	2.2																
Quercus species (seedlings)				+	+																
Sarothamnus scoparius										1.1	2.1										
Senecio jacobaea										+	+										
Galium verum										2.2	1.2										
Holcus lanatus										+	+										
Poa pratensis										+	1.2	+									
Ammophila arenaria																					
Polygala vulgaris										+	+										
Cuscuta epithymum																					
Erica cinerea																					

Differentials of community

Carex arenaria	1.2	1.2	1.2	1.2	+	+	1.2	1.2	2.2	+	+	2.2	2.2	1.2	1.2	+	+				
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Differentials of complex

Calluna vulgaris	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4	5.5	5.5	5.5	5.5
Dicranum scoparium	2.3	3.3	3.3	3.3	1.3	2.3	1.3	1.3	2.3	2.3	2.3	2.3	2.3	1.3	1.3						
Hypnum ericetorum	3.3	3.3	3.3	1.3	2.3	2.3	3.3	2.3	2.3	2.3	2.3	3.3	2.3	3.3	3.3						
Festuca rubra																					
Parmelia physodes																					
Pleurozium schreberi																					
Rumex acetosella																					
Campanula rotundifolia																					

Companion species

Agrostis tenuis																					
Polytrichum piliferum																					
Cladonia chlorophea																					
Holcus mollis																					
Galium saxatile																					
Cladonia impexa																					
C. uncialis																					

Additional species: <sup>15</sup> Carex pilulifera 1.2; <sup>7</sup> 26, Koeleria cristata 1.2; <sup>13</sup> 28, Epilobium angustifolium 1.1; <sup>1</sup> 25, Cladonia fimbriata 1.2; <sup>1</sup> 26, Dicranum bonjeani 1.2; <sup>3</sup> 26, Senecio vulgaris +; <sup>63</sup> 9, Cornicularia aculeata +, Leucobryum glaucum 2.3.

II.4.b. AGROSTIS TENUIS COMMUNITY

Releve number.	4 <sub>28</sub>	3 <sub>28</sub>	5 <sub>26</sub>	4 <sub>26</sub>	2 <sub>27</sub>	1 <sub>27</sub>
Exposition.	NE	NE	NE	NE	NE	NE
Slope.	-	-	-	-	-	-
Phanerogam % cover.	100	100	100	100	100	100
Cryptogam % cover.	10	50	80	10	60	90
Releve area.	10	10	10	10	10	10
Number of species.	11	10	10	10	11	12

Differentials of variants

Pseudoscleropodium purum	2.2	2.2	1.2	+		
Lotus corniculatus	1.1	1.2				
Cerastium arvense	1.2	1.1				
Rhytidiadelphus squarrosus	1.2	2.3				
Sieglingia decumbens			1.2	1.2	1.2	1.2
Holcus lanatus			+	+		
Cladonia arbuscula					2.3	1.2
Nardus stricta					1.2	+ .2
Potentilla erecta					2.2	1.2
Quercus species (seedlings)					+	+

Differentials of community

Agrostis tenuis	2.2		1.2	1.2	1.2	
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Differentials of complex

Calluna vulgaris	5.5	5.5	5.5	5.5	5.5	5.5
Dicranum scoparium	2.3				1.2	2.3
Hypnum ericetorum			2.3			2.3
Festuca rubra	+	1.2	1.2	1.2	1.2	+ .2
Parmelia physodes						+
Pleurozium schreberi	3.3	3.3			4.4	4.4
Campanula rotundifolia		1.1	+			

Companion species

Anthoxanthum odoratum	1.2				+	
Poa pratensis	+			+		
Teucrium scorodonia				+		+

Additional species: 3<sub>28</sub>, Plagiothecium silvaticum +,  
 Lolium perenne 1.2; 4<sub>28</sub>, Lophocolea bidentata +;  
 2<sub>27</sub>, Erica cinerea +, Galium saxatile +; 4<sub>26</sub>, Koeleria  
 cristata 1.2; 1<sub>27</sub>, Carex pilulifera +.2.

II.4.c. FESTUCA RUBRA COMMUNITY

Releve number.	33	34	35	36	37
	3	3	3	3	3
Exposition.	SE	S	S	S	NW
Slope.	20	-	-	-	15
Phanerogam % cover.	90	100	85	100	100
Cryptogam % cover.	60	75	70	60	75
Releve area.	10	10	10	10	10
Number of species.	9	11	14	9	11

Differentials of variants

Cladonia impexa	2.3	+	3.3		3.3
C. uncialis		1.2	1.2		1.2
Cornicularia aculeata	2.3		1.2	+	1.2
Polytrichum gracile	+				1.2
Vaccinium myrtillus		1.3			1.2
Luzula campestris				+	1.2
Anthoxanthum odoratum				+	+

Differentials of complex and community

Calluna vulgaris	5.5	5.5	5.5	5.5	5.5
Dicranum scoparium	3.3	3.3	3.3	2.3	3.3
Hypnum ericetorum		3.3		3.3	1.2
Festuca rubra	+	2.2	1.2	+	
Parmelia physodes	2.3	2.3	2.3		
Pleurozium schreberi					+

Companion species

Agrostis tenuis			+.2		1.2
Deschampsia flexuosa				1.2	+.2
Nardus stricta		+.2	+.2		

Additional species: 33<sub>3</sub>, Ulex europaeus +, Pohlia mutans +; 34<sub>3</sub>, Juncus squarrosus +.2; 35<sub>3</sub>, Cladonia floerkeana +, Polytrichum piliferum +; 36<sub>3</sub>, Carex pilulifera +.2; 37<sub>3</sub>, Cladonia arbuscula +.

II.5.a. POHLIA NUTANS COMMUNITY

	6	7	8	9	10	11	12
Releve number.	28	28	28	28	28	28	28
Exposition.	NE	NE	NE	NE	N	NE	NE
Slope.	-	-	-	-	2	-	-
Phanerogam % slope.	100	100	100	100	100	100	100
Cryptogam % slope.	70	70	30	50	30	20	15
Releve area.	10	10	10	10	10	10	10
Number of species.	14	10	7	11	8	8	4

Differentials of variants

<i>Erica tetralix</i>	4.4	4.4	2.2	1.1			
<i>Molinia caerulea</i>	1.2	2.2	+	+			
<i>Scirpus caespitosus</i>	1.2	+					
<i>Gymnocolea inflata</i>	3.3	4.4					
<i>Campylopus atrovirens</i>	3.3	1.2					
<i>Cladonia coccifera</i>			1.2	1.2	1.2	1.2	

Differentials of community and complex

<i>Calluna vulgaris</i>	3.3	3.3	5.5	5.5	5.5	5.5	5.5
<i>Parmelia physodes</i>	+		1.2	1.2	1.3	1.2	
<i>Pohlia nutans</i>	+		2.2	3.3	2.3	1.2	2.3
<i>Cladonia squarrosa</i>		+			1.2	1.2	1.2
<i>C. crispata</i>	2.2	+		1.2	1.2	1.2	
<i>C. floerkeana</i>	+	+	+	1.2	+	+	+
<i>C. chlorophaea</i>	+			+	1.2	1.2	

Additional species: <sup>6</sup>28, *Carex nigra* 1.2, *Juncus squarrosus* +, *Cladonia arbuscula* 1.2; <sup>7</sup>28, *Betula* species (seedlings) +; <sup>9</sup>28, *Cephalozia bicuspidata* 1.2, *Dicranum scoparium* +.

II.6.a. SIEGLINGIA DECUMBENS COMMUNITY

Releve number.	5	3	4	25	19
	33	33	33	6	6
Exposition.	NW	NW	NW	W	S
Slope.	-	-	-	15	25
Phanerogam % cover.	95	95	95	100	100
Cryptogam % cover.	2	2	2	-	-
Releve area.	10	10	10	10	10
Number of species.	18	18	17	23	26

Differentials of variants

Pohlia nutans	+	+	+		
Galium saxatile	+	1.2	+		
Cladonia macilenta agg.	+	+			
Antennaria dioica	1.2	1.2			
Hypnum ericetorum	+	1.3	+		
Festuca ovina	1.2	2.2	1.2		1.2
Agrostis tenuis	+	+	1.2		
Anthoxanthum odoratum	+	1.1	1.2	1.1	
Campanula rotundifolia	1.1	1.1	+		
Bromus erectus	+		+		
Festuca rubra				1.1	+
Brachypodium pinnatum				4.5	+
Fragaria vesca				+	+
Holcus lanatus				3.3	+
Agrostis montana				1.2	3.2
Poterium sanguisorba				1.2	3.3
Teucrium scorodonia				3.3	+2

Differentials of community and complex

Potentilla erecta	1.2	2.2	2.2	2.1	1.1
Carex flacca		+	+	+	+
Sieglingia decumbens	2.2	2.2	2.2	1.1	2.2
Cirsium acaule	1.2	1.2	1.2		+
Lotus corniculatus		+	1.1	+	1.1
Helianthemum nummularium	+		1.2		+
Viola canina		+	+		+
Calluna vulgaris	5.5	4.4	4.4	1.1	1.2

Additional species: <sup>3</sup>33, Dicranum scoparium +, Polygala serpyllifolia +; <sup>4</sup>33, Thymus drucei +; <sup>5</sup>33, Campylopus flexuosus 1.3, Cladonia fimbriata +, Parmelia physodes +; <sup>19</sup>6, Betula species (seedlings) +, Quercus species (seedlings) +, Camptothecium lutescens +, Hypochaeris radicata +, Erica cinerea 3.3, Galium verum +, Cirsium palustre +, Pilosella officinarum +, Plantago lanceolata +, Leontodon autumnalis +; <sup>25</sup>6, Agrostis stolonifera 1.2, Dactylis glomerata 1.2, Helictotrichon pratense 1.2, Brachypodium sylvaticum +, Briza media +, Viola riviniana +, Arrhenatherum elatius 1.1, Potentilla reptans +, Rubus caesius +, Trisetum flavescens +.

II.7.a. ULEX GALLII COMMUNITY

Releve number.	3	12	24	8	9	25	2	13	25	71	26	27	7	10	4	11	14
Exposition.	27	NE	NE	E	E	E	E	NE	NE	NE	NE	NE	E	E	SE	S	E
Slope.	-	5	2	2	-	-	-	2	-	-	-	-	-	-	-	5	-
Phanerogam % cover.	90	100	100	90	90	100	100	100	100	100	100	100	100	100	95	95	100
Cryptogam % cover.	50	15	15	20	10	20	50	50	10	10	10	5	30	20	20	30	-
Releve area.	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Number of species.	5	5	7	9	8	4	5	7	9	9	7	9	7	11	10	7	5

Differentials of variants

Campylopus flexuosus	3.3	+	1.3	1.2	2.3
Cladonia uncialis				+	2.3
Polytrichum juniperinum			1.2	1.3	
Leceidia spp.			2.3	2.3	
Carex arenaria			1.2	1.2	+
Agrostis tenuis			1.2	1.2	1.2 2.2 1.2 2.2 2.2
Festuca rubra			1.2	1.2	1.2 2.2 1.2 2.2 +.2
Parmelia physodes					+
Ulex europaeus					3.3 4.4 2.3
Quercus species (seedlings)					+
Carex pilulifera					1.2 1.2

Differentials of community and complex

Erica cinerea	(+)	3.3	3.3	2.2	1.2	2.2	2.2	4.4	2.2	4.4	2.2	4.4	3.3	2.2	4.4	5.5
Ulex gallii	2.2	3.3	3.3	2.3	2.3	4.4	3.3	4.4	4.4	4.4	4.4	1.2	1.2	3.3		
Calluna vulgaris	5.5	3.3	4.4	5.5	5.5	3.3	4.4	2.2	3.3	3.3	3.3	1.3	3.3	4.4	2.3	1.2
Cladonia chlorophaea			1.3	1.2	1.3	2.2	+	2.2	+	2.2						
Dicranum scoparium		2.3	1.3			1.3	2.3	+	+	+	2.3					
Hypnum ericetorum						1.3	2.3	1.3	1.3							

Companion species

Cladonia macilenta	2.3		1.3		1.2											
C. pyxidata																1.2
Zygonium ericetorum																1.2

Additional species: 8<sup>25</sup>, Cuscuta epithyllum 1.2.

III.1.a. MELAMPYRUM PRATENSE COMMUNITY

Releve number.	34	37	38	39	15	36	10	4	5	57	58	3	27	35	23	30	28	8	14
Exposition.	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Slope.	35	35	35	30	30	35	15	2	35	5	5	30	42	35	20	25	40	30	30
Phanerogam % cover.	80	90	95	90	100	95	95	98	90	95	85	95	98	80	98	95	95	10	80
Cryptogam % cover.	60	30	30	10	60	30	50	40	60	40	60	50	20	60	15	5	10	90	15
Releve area (sq. m.).	16	16	16	16	16	10	30	15	15	16	16	15	16	16	25	15	16	16	16
Number of species.	14	17	17	13	14	15	19	17	16	21	20	19	16	14	26	20	23	18	30

Differentials of variants

Cladonia floerkeana	+2	+	1.2		+		+	+		+	1.2	+		+	+	+	+	+	2.2	
C. chlorophaea		1.2	+	+		+	(+.2)	+	+	1.2	+	+	+		2.2	+	1.3	1.2	2.2	
C. crispata	3.4	+	1.2		+	+		1.2	2.2	3.3	2.2	2.2	1.2	1.2	+	+	+	+		
Lecidea quadricolor	1.2	2.1	2.2	+	+	2.3		+.2	2.2		2.2	2.2	1.3	2.2	+	+	+		1.2	
Erica cinerea	1.3	2.2	1.2	1.3															r	
Vaccinium vitis-idaea							2.2	2.2	1.1	2.2	3.3	2.2								
Cladonia coccifera										+	1.2			+	+	+	+	+		
C. squarrosa										1.1	1.2	+	1.2	+	+	+	+	+		
C. impexa				+						+	+	+		+			+	1.1	1.1	
C. macilenta agg.										+	+	+		+			+	+		
Polytrichum commune							+.2								+	+	1.3	1.1	1.1	
Betula spp. (K)																			(+)	+
Holcus mollis																				
Oxalis acetosella																				
Agrostis tenuis																				
Galium saxatile																				+

Differentials of community

Melampyrum pratense	1.1	1.1	1.1	+	+	+	1.1	1.1	+	r	1.2	1.1	1.1	+	1.1				1.1
Calyptogeia mülleriana	+				+	1.2		+	+	+.2					1.2	+	+	2.2	
Pteridium aquilinum		+	1.1	2.1	2.1		+	1.1						1.1	(+)	+		1.1	+
Sorbus aucuparia (seedlings)		+							+				+		+		+	+	
Blechnum spicant		+.2																1.3	1.3
Lepidozia reptans					+									+				1.2	
Gymnocolea inflata					1.2	1.2							+.2					+	+
Lophocolea bidentata							+											+	1.3
Empetrum nigrum							+			+	(+)				+			+	
Cephaloziella starkei				1.2									+					+	
Campylopus flexuosus								+						+		+	+	+	+
Calyptogeia fissa								+											
Polytrichum juniperinum			+												+				+

Differentials of complex

Vaccinium myrtillus	3.4	4.5	5.5	4.5	2.3	4.3	5.4	4.5	3.4	2.2	2.2	3.3	2.3	4.3	4.4	2.3	1.3	2.3	2.2
Pohlia nutans	+.2	+	+		2.2	1.2	1.2	+	1.2	1.1	1.2	+	+	1.2	+.2		+	2.2	+
Calluna vulgaris	4.2	2.2	3.3	2.2	5.5	4.3	2.2	3.3	4.4	5.5	4.3	4.3	4.4	4.4	4.4	5.5	5.5	5.5	4.4
Deschampsia flexuosa	1.2	2.2	2.2	3.3	+	1.2	2.2	1.2	1.2	+	1.2	1.2	2.2	2.2	2.2	2.2	1.2	1.2	2.2
Dicranum scoparium			2.3	2.2	1.2	+	+.2	1.2	1.2	+	+.2	+.2		+	+	+	+	+	+
Hypnum ericetorum			1.3	+.2			+.2	3.3	3.3	1.2	1.2			1.3		+	1.3	+	+
Parmelia physodes		+	1.3	+	1.1	+.2	+	+		1.2	1.1	+	+	2.2	+	+	+	1.1	1.1
Potentilla erecta		+																	+
Pleurozium schreberi							1.2												+

Companion species

Lephozia ventricosa										+									1.2
Sphagnum quinquefarium																	+		
Thelypteris limbosperma																			+
Luzula pilosa																			
Dryopteris dilatata																			
Cladonia gracilis					+				+										
Mnium hornum									+										
Anthoxanthum odoratum																			
Lophozia bicrenata																			
Plagiochila asplenioides																			
X Epilobium angustifolium																			
Plagiothecium undulatum																			

Additional species: <sup>19</sup>/<sub>40</sub>, Rhytidiadelphus squarrosus +; <sup>23</sup>/<sub>40</sub>, Eurhynchium praelongum +, Cladonia fimbriata +; <sup>9</sup>/<sub>40</sub>, Salix caprea +; <sup>25</sup>/<sub>40</sub>, Festuca rubra 2.2.



III.1.(b). POHLIA NUTANS COMMUNITY

Releve number.	31	32	33	18	19	20	47	42	43	44	45	46	47	48
Exposition.	40	40	40	43	43	43	40	40	40	40	40	40	40	40
Slope.	2	2	3	-	-	-	E	E	E	E	E	E	E	E
Phanerogam % cover.	100	95	100	100	100	100	100	100	100	100	100	100	100	80
Cryptogam % cover.	40	60	40	40	40	40	80	80	30	40	20	50	40	30
Releve area (sq. m.).	16	16	16	16	16	16	16	16	16	16	16	16	16	16
Number of species.	10	10	11	13	12	13	9	11	11	11	8	11	11	5

Differentials of variants

Vaccinium vitis-idaea	1.1	1.1	1.2											
Carex nigra	(1.3)	+	+2											
Eriophorum angustifolium	2.1	2.1	2.1											
Calyptogeia mülleriana	2.2	+	1.2	+	1.2	1.2	+	2.2	2.2					
Cladonia chlorophaea														
Nardus stricta														
Juncus squarrosus														
Cladonia arbuscula														
C. coccifera														
Lecidia quadricolor														

Differentials of community and complex

Vaccinium myrtillus	2.1	2.2	2.2	2.2	+	1.2	2.2	1.2	3.3	4.4	4.4	3.3	1.2	5.5
Pohlia nutans	3.2	4.3	1.2	1.2	+	1.2	1.2	1.2	1.2	+	1.2	1.2	1.2	1.2
Calluna vulgaris	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	+
Deschampsia flexuosa	+	+	+	2.2	2.2	1.2	2.2	2.2	1.2	2.2	2.2	1.2	1.2	3.3
Dicranum scoparium	+	1.1	+	2.3	2.2	2.2	+	+	+	+	+	+	2.2	
Hypnum ericetorum	+	2.2	3.3	1.2	3.3	4.4	4.4	+	+	+	+	3.3	2.3	
Parmelia physodes														
Potentilla erecta														
Pleurozium schreberi														

Companion species

Polytrichum gracile														
Ulex gallii														
Ptilidium ciliare														
Cladonia pyxidata														
C. crispata														
C. squarrosa														

Additional species: 32, Lepidozia reptans 1.2; 19, Agrostis tenuis +; 42, Lophocolea bidentata +, 40, Galium saxatile +; 43, Polytrichum juniperinum 1.2; 44, Carex pilulifera 1.2; 46, Cladonia impepa +.



Cladonia chlorophaea  
C. fimbriata  
Juncus effusus

1.2  
1.2

+

+

+ .2 +

Additional species: <sup>10</sup>66, Ulex europaeus +, Bryum pseudotriquetrum +, Calypogeia trichomanes 3.3, Hieracium tridentata 1.1, Eurhynchium striatum +; <sup>11</sup>66, Cladonia squarrosa +, Polytrichum juniperinum +, Carex panicea +, Calypogeia arguta +; <sup>11</sup>65, Polytrichum commune +; <sup>2</sup>67, Cornicularia aculeata 1.2; <sup>9</sup>66, Blechnum spicant +; <sup>18</sup>66, Plagiochila asplenoides +; <sup>21</sup>66, Thuidium tamariscini +, Viola riviniana +, Rhytidiadelphus triquetrus +; <sup>5</sup>67, Dicranum bonjeani +, Sphagnum quinquefarium 2.3; <sup>31</sup>66, Agrostis montana +, Euphrasia micrantha +; <sup>4</sup>67, Lotus corniculatus +, Equisetum arvense +, Lathyrus montana +; <sup>2</sup>68, Sorbus aucuparia (seedlings) +, Holcus mollis +.2; <sup>3</sup>68, Sagina procumbens +.

III.2.b. ERICA CINEREA COMMUNITY

Releve number.	30	32	4	9	22	23	28	4	29	5
	66	66	68	69	66	66	66	69	66	69
Exposition.	W	W	N	W	NW	NW	NW	S	SE	S
Slope.	30	30	30	10	10	5	-	2	2	5
Phanerogam % cover.	75	95	100	100	90	100	100	100	100	100
Cryptogam % cover.	20	60	20	95	60	50	60	40	15	40
Releve area.	10	10	10	10	10	10	10	10	10	10
Number of species.	8	12	12	10	10	13	12	10	9	10

Differentials of variants

<i>Empetrum nigrum</i>	1.2	1.2								+
<i>Festuca rubra</i>	+	1.2								
<i>Viola canina</i>	+	+								

Differentials of community

<i>Erica cinerea</i>	1.2	+	5.5	+	4.4	3.3	2.2	+	2.2	1.2
<i>E. tetralix</i>		1.2		1.2	1.2			+	1.2	3.3
									1.2	1.2

Differentials of complex

<i>Calluna vulgaris</i>	4.4	5.5	1.3	5.5	3.3	4.4	5.5	5.5	4.4	5.5
<i>Deschampsia flexuosa</i>	1.2	1.2				+	1.2		1.2	
<i>Hypnum ericetorum</i>	1.2	3.3		2.3	3.3	3.3	4.4	2.3		3.3
<i>Nardus stricta</i>			+	2.2	1.2	+2	1.2	2.2	+	1.2
<i>Rhytidiadelphus squarrosus</i>				+			1.2			
<i>Parmelia physodes</i>			+							
<i>Dicranum scoparium</i>				+				+		+
<i>Pleurozium schreberi</i>				4.4						3.3
<i>Galium saxatile</i>		+			1.2	1.2	1.2	+	1.2	
<i>Agrostis tenuis</i>					2.2	1.2	+	+		+
<i>Sieglingia decumbens</i>	+	+	+	1.2	+	1.2				
<i>Lophocolea bidentata</i>		1.2					1.2			
<i>Potentilla erecta</i>			+	+	+	+				

Companion species

<i>Cladonia chlorophaea</i>						1.2	1.2			
<i>Pohlia nutans</i>								2.3	1.2	
<i>Carex pilulifera</i>			+					+		
<i>Campylopus flexuosus</i>					1.2	1.2				
<i>Lophozia floerkii</i>		1.2								+
<i>Carex binervis</i>								1.2		+
<i>Cladonia fimbriata</i>							+		+	

Additional species: <sup>4</sup>68, *Cladonia coccifera* 2.2, *Pteridium aquilinum* 1.1, *Cladonia squarrosa* +, *Polygala vulgaris* +, *Ulex europaeus* 2.3; <sup>23</sup>66, *Cladonia floerkeana* +; <sup>29</sup>66, *Cladonia furcata* 2.3.



Additional species: <sup>5</sup> 72, Rhytidiadelphus squarrosus +, Sphagnum rubellum +.3; <sup>3</sup> 72, Empetrum nigrum +,  
Racomitrium lanuginosum 3.3; <sup>2</sup> 79, Salix aurita r; <sup>3</sup> 80, Juncus squarrosus +.



Additional species: <sup>1</sup>70, Luzula multiflora 2.1; <sup>5</sup>65, Blechnum spicant +, Calypogeia trichomanes +, Polytrichum commune +, Mylia taylori +, Sphagnum quinquefarium +; <sup>2</sup>65, Carex nigra 2.2, Vaccinium vitis-idaea +; <sup>13</sup>65, Diplophyllum albicans 1.2, Lepidozin reptans +; <sup>5</sup>48, Festuca rubra 1.2, Hylacomium splendens 1.2; <sup>9</sup>65, Cladonia squarrosa +, Oxalis acetosella 1.2; <sup>2</sup>70, Cornicularia aculeata +; <sup>1</sup>65, Cladonia furcata 2.3; <sup>8</sup>65, Dicrenella varia +, Chiloscypus pallescens +; <sup>10</sup>65, Mnium hornum +; <sup>2</sup>61, Erica tetralix 2.2, Sorbus aucuparia +, Sphagnum papillosum 3.3, Juncus effusus 1.2; <sup>11</sup>61, Betula spp. (seedling) r; <sup>12</sup>61, Zygogonium ericetorum 2.4; <sup>16</sup>66, Campanula rotundifolia +; <sup>20</sup>66, Cetraria islandica 1.2, Carex capillaris +, Dicranum bonjeani +.

III.3.c. DESCHAMPSIA FLEXUOSA COMMUNITY

Releve number.	10	31	32	26	6	7	1	2	1	2	3	4	1	2	1	3	11	6	13
	69	45	45	66	70	70	35	35	42	42	42	42	46	46	48	49	70	67	66
Exposition.	W	NW	NW	S	E	E	N	N	SW	S	S	SW	N	N	NW	NW	S	NE	W
Slope.	2	3	3	6	-	5	35	35	10	20	25	10	20	20	30	-	45	20	5
Phanerogam % cover.	100	100	100	95	100	100	100	100	100	100	100	100	100	100	90	100	100	100	100
Cryptogam % cover.	70	30	50	60	10	60	50	50	60	60	60	60	70	80	60	30	15	50	70
Releve area (sq. m.).	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Number of species.	14	13	11	11	7	12	14	18	16	11	9	11	20	17	16	10	9	15	11

Differentials of variants

Carex pilulifera	+	+	+	+		+		+											
Anthoxanthum odoratum		+	+				+												
Carex binervis	1.2	+											1.2	1.2					
Hylocomium splendens	1.3	2.3											1.3						
Pteridium aquilinum					2.1	2.1	1.1	+											
Diplophyllum albicans							1.3	+							2.3	1.2			+
Betula spp. (seedlings).							+	+											
Festuca rubra							1.2	+		+.2		+.2	+.2						
Molinia caerulea									1.2	2.2	1.2	2.2		1.2	+				
Ulex gallii										1.2		1.2							
Cladonia arbuscula									+			+	2.3	1.2	1.2	1.2			
Rhytidiadelphus loreus													1.3	1.3	+				
Lophozia floerkii													1.3	1.2					
Polytrichum formosum													1.2	1.2					
Vaccinium vitis-idaea																			
Pohlia nutans																			
Erica cinerea																			

Differentials of complex and community

Vaccinium myrtillus	2.3	+	1.2	1.2	2.1	4.4	1.3	+	4.4	3.3	3.3	4.4	3.3	3.3	4.4	2.3	3.3	1.2	1.2
Calluna vulgaris	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	4.4	1.3	5.5	5.5
Deschampsia flexuosa		3.3	3.3	1.2	+	2.2	1.2	1.2	1.2	1.2	1.2	1.2	2.2	2.2	1.2		1.2	1.2	+
Hypnum ericetorum	3.3	+	1.3	4.4		2.3	1.3	1.3	3.3	4.4	4.4	4.4	1.3	1.3	3.3	2.3		3.3	3.3
Nardus stricta	2.2								1.2				+.2		1.2	2.2		1.2	
Parmelia physodes				1.3					1.3	+	1.2	1.2				1.2			1.2
Dicranum scoparium	+			1.3	+.2	2.3	1.3	3.3	1.2	+		1.2	1.3	2.2	1.3		2.3		+
Pleurozium schreberi	3.3	2.3	3.3	2.3	1.2	3.3		1.3	3.3				4.4	4.4	3.3	1.3			2.3
Potentilla erecta	+	1.2	1.2		+			+	+	1.2	1.2		1.2	1.2	1.2				1.1
Agrostis tenuis	1.3	1.2				1.2	1.2								1.2		+.2	1.2	
Galium saxatile	+	+	+					+	1.2	1.2		1.2	1.2	1.2		1.2	1.2	1.2	

Companion species

Sorbus aucuparia													+						
Blechnum spicant						+.2		+						1.2					
Dicranum majus											1.2								
Rumex acetosella								+											+
Luzula multiflora																			1.2
Agrostis stolonifera	+																		
Lophozia ventricosa							1.2		1.2										
Cladonia fimbriata								+											+
Rhacomitrium languinosum														1.2	1.2				
Festuca ovina																		1.2	
Lophocolea bidentata				1.2															+
Sieglingia decumbens									+				1.2						+
Plagiothecium undulatum				+					+						1.2			1.2	+
Rhytidiadelphus squarrosus	3.3	2.3	2.3											+				1.2	
Erica tetralix																			

Additional species: <sup>7</sup>70, Cladonia uncialis +, C. floerkeana 1.2; <sup>2</sup>35, Hieracium tridentata +, Pilosella officinarum +, Polytrichum piliferum 1.3; <sup>2</sup>46, Cladonia coccifera 1.2; <sup>11</sup>70, Calypogeia trichomanes +, Cryptogramma crista 4.4; <sup>6</sup>67, Lepidozia reptans +; <sup>13</sup>66, Cladonia chlorophaea +, Campylopus fragilis +; <sup>2</sup>69, Gymnocolea inflata 2.2, Juncus squarrosus 1.2, Carex nigra 1.2, Scirpus caespitosus 2.2; <sup>3</sup>42, Ulex europaeus 2.2; <sup>1</sup>48, Sphagnum tenellum +; <sup>1</sup>46, Plagiochila asplenioides 1.2; <sup>1</sup>35, Luzula campestris +, Peltigera canina +.3; <sup>32</sup>45, Holcus lanatus +; <sup>26</sup>66, Dryopteris dilatata +; <sup>1</sup>61, Empetrum nigrum 1.1, Sphagnum papillosum 2.3, Plagiothecium silvaticum +; <sup>4</sup>61, Sphagnum quinquefarium 3.3, Lepidozia pinnata 2.3, Cladonia squarrosa +; <sup>14</sup>61, Campylopus flexuosus 2.3; <sup>15</sup>61, Cladonia pyxidata +.

14	2	3	4	1	16	19	5	7	14	15	17	26
66	69	61	61	61	61	61	61	61	61	61	61	61
SW	W	W	N	N	E	W	N	S	S	S	E	E
5	5	15	30	5	5	2	-	40	10	10	2	-
100	100	100	100	100	100	100	100	100	100	100	100	100
85	70	30	80	60	20	30	60	70	-	60	60	-
10	10	10	10	10	10	10	10	10	10	10	10	10
9	11	7	16	14	5	7	11	9	5	8	5	4

2.1      2.1 2.1 +            +            2.1 5.5  
                  1.1 +  
 1.2

3.3 2.3 2.2  
 3.3 1.3  
 2.2            + 1.2

+ 1.3 3.3 3.3 1.1 1.2 1.2 3.3            1.3 4.4 1.3 1.2  
 5.5 5.5 5.5 5.5 5.5 5.5 5.5 4.4 5.5 5.5 1.2 5.5 5.5  
 2.2            2.2 1.2            1.2 3.2 1.2            3.3            2.2  
 3.3                       2.3 3.3            2.3 3.3 3.3            3.3 3.3  
                             1.2            1.2 2.2 1.2                       1.2  
 1.2 +                       +            2.1            +  
 1.3 1.3            3.3 1.3            2.3 2.3            2.3 2.3  
           4.4            2.3 3.3            2.3 +                       +  
                             +  
                             +            r            +            +  
                             1.3                       +            +  
 +                                  +            +  
                             +            +  
 +            1.2                       +            1.3  
                             +            +  
 1.2                       2.2



III.3.d. PTERIDIUM AQUILINUM COMMUNITY

	1	2	3	4	5	6
Releve number.	66	66	66	66	66	66
Exposition.	S	S	N	S	E	NE
Slope.	4	4	-	3	-	-
Phanerogam % cover.	100	100	100	100	100	100
Cryptogam % cover.	20	30	5	2	50	50
Releve area (sq. m.).	10	10	10	10	10	10
Number of species.	6	6	9	8	8	11

Differentials of community

<i>Pteridium aquilinum</i>	2.1	+	+	2.1	2.1	1.1
<i>Pohlia nutans</i>	3.3	2.3	1.3	+	3.3	3.3

Differentials of complex

<i>Calluna vulgaris</i>	+	5.5	3.3	5.5	5.5	5.5
<i>Vaccinium myrtillus</i>	4.4		3.3	2.3	2.3	3.3
<i>Deschampsia flexuosa</i>	4.4	1.2	2.2	2.2	3.2	1.2
<i>Hypnum cupressiforme</i>		2.3			+	
<i>Nardus stricta</i>				2.2	+	2.2
<i>Pleurozium schreberi</i>		+				
<i>Potentilla erecta</i>					(+)	+

Companion species

<i>Ulex europaeus</i>			3.3			r
<i>Empetrum nigrum</i>			2.3			2.3
<i>Campylopus flexuosus</i>				+		2.2

Additional species: <sup>1</sup><sub>66</sub>, *Carex pilulifera* +;  
<sup>3</sup><sub>66</sub>, *Agrostis stolonifera* 1.2, *Plagiothecium silvaticum* 1.3;  
<sup>4</sup><sub>66</sub>, *Erica cinerea* +; <sup>6</sup><sub>66</sub>, *Cladonia impexa* +, *Festuca rubra* +.

III.4.a. NARDUS STRICTA COMMUNITY

Releve number.	2 <sub>48</sub>	6 <sub>48</sub>	7 <sub>48</sub>	3 <sub>48</sub>	9 <sub>48</sub>	1 <sub>49</sub>	2 <sub>49</sub>	1 <sub>50</sub>	2 <sub>50</sub>
Exposition.	NW	NW	SW	NW	NW	NW	NW	N	NW
Slope.	35	20	5	10	5	10	-	-	5
Phanerogam % cover.	95	100	100	100	100	100	100	100	100
Cryptogam % cover.	60	50	40	70	50	70	30	60	60
Releve area (sq. m.).	10	10	10	10	10	10	10	10	10
Number of species.	22	16	10	15	13	17	17	15	15

Differentials of variants

Carex binervis	+	1.2	1.2						
Rhacomitrium lanuginosum	1.3	2.3					3.3		
Erica tetralix				2.2	1.2				+ .2
Plagiothecium undulatum				1.2	1.2				
Sieglingia decumbens			1.2			1.2	+	+	1.2
Agrostis tenuis						1.2			+
Cladonia arbuscula	2.3						1.2		1.2

Differentials of community

Nardus stricta	1.2	1.2	+	1.2	1.2	1.2	1.2	+	1.2
----------------	-----	-----	---	-----	-----	-----	-----	---	-----

Differentials of complex

Calluna vulgaris	5.5	4.4	4.4	4.4	5.5	4.4	5.5	5.5	5.5
Vaccinium myrtillus	4.4	3.3	5.5	3.3	2.3	3.3	2.3	1.2	(+)
Erica cinerea	1.2	3.3	1.2	2.2	+	3.3	3.3	1.1	+
Hypnum ericetorum	3.3	3.3	2.3	3.3	3.3	3.3	2.3	3.3	3.3
Dicranum scoparium	2.3	1.2	2.3		1.2	1.3	1.2	1.3	1.2
Pleurozium schreberi	2.3	2.3		3.3		3.3	2.3	3.3	3.3
Potentilla erecta	1.2		+	1.2	+	1.2		1.2	1.2
Deschampsia flexuosa	4.4	3.3	5.5	3.3	2.3	3.3	2.3	1.2	(+)
Parmelia physodes		1.2							+

Companion species

Festuca rubra		1.2							1.2
Galium saxatile				1.2		1.2			
Ptilidium ciliare	+					1.3			
Hylocomium splendens		1.2		1.2		1.2			
Agrostis stolonifera		+			1.2				
Blechnum spicant	1.2					+			
Cladonia fimbriata					1.2			1.2	+
Rhytidiadelphus loreus	+	1.2							
Cetraria islandica	1.2						+		
Ulex gallii				2.2					+

Additional species: 2<sub>48</sub>, Carex pilulifera +, Polytrichum formosum +, Sphagnum tenellum, 1.3, Diplophyllum albicans 1.2, Mnium hornum +, Lepidozia reptans 1.2; 3<sub>48</sub>, Molinia caerulea 1.2, Thelypteris limbosperma +; 1<sub>49</sub>, Polygala serpyllifolia +, Festuca ovina 1.2; 2<sub>49</sub>, Cladonia squarrosa +, C. uncialis 1.2, C. coccifera +, Lophozia ventricosa 1.2; 1<sub>50</sub>, Juncus squarrosus +.2, Sorbus aucuparia +; 6<sub>48</sub>, Polytrichum juniperinum +; 9<sub>48</sub>, P. commune +.

III.4.b. ERICA CINEREA COMMUNITY

Releve number.	4	5	8	70	8	70	9	10	70	3	70	7	66	66	8	48	23	21	22
Exposition.	NE	NE	S	S	S	S	S	S	S	N	S	S	S	S	S	SW	SE	SE	SE
Slope.	5	20	40	40	40	40	40	40	40	20	15	15	15	15	15	25	25	25	25
Phanerogam % cover.	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	85	90	80
Cryptogam % cover.	20	20	50	40	60	60	60	95	95	95	95	95	95	95	95	90	80	60	95
Releve area (sq. m.).	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Number of species.	9	10	7	8	11	14	9	14	15	16	11	12	11	12	11	16	11	11	12

Differentials of variants

<i>Pohlia nutans</i>	1.2	2.3
<i>Cladonia fimbriata</i>	+	1.2
<i>Ulex europaeus</i>	+	+
<i>Pteridium aquilinum</i>	+	3.1
<i>Agrostis tenuis</i>	+	1.1
<i>Polygala vulgaris</i>	+	1.1

Differentials of community and complex

<i>Calluna vulgaris</i>	5.5	5.5	3.3	4.4	5.5	5.5	5.5	5.5	4.4	2.2	3.3	4.4
<i>Vaccinium myrtillus</i>	+	1.1	4.4	3.3	4.4	4.4	2.3	1.3	3.3	4.4	1.2	4.4
<i>Erica cinerea</i>	2.2	1.1	3.3	3.3	3.3	2.2	(+)	2.3	3.3	+	3.3	2.2
<i>Hypnum ericetorum</i>	2.3	1.3	3.3	3.3	3.3	2.3	4.4	4.4	4.4	4.4	2.3	2.3
<i>Dicranum scoparium</i>		1.2			3.3	+	3.3	2.3	2.3	3.3	2.2	2.2
<i>Pleurozium schreberi</i>				1.1	3.3	3.3	2.3	2.3	3.3	4.4	4.4	3.3
<i>Potentilla erecta</i>					1.2		1.2		1.2	+	2.2	
<i>Deschampsia flexuosa</i>	+	1.1	4.4	3.3	4.4	4.4	1.2	3.3	1.2	1.2	1.2	+
<i>Parmelia physodes</i>		2.3	1.2	+	+	2.1	3.3	+	1.2	2.3	2.3	

Companion species

<i>Sieglingia decumbens</i>						1.2
<i>Cladonia impexa</i>	+		1.2	+	2.2	
<i>Leucobryum glaucum</i>					3.3	
<i>Festuca rubra</i>		1.2		+	2.2	
<i>Cladonia arbuscula</i>					1.2	+

Additional species: <sup>3</sup>70, *Galium saxatile* +.2, *Luzula multiflora* +; <sup>4</sup>48, *Rhacomitrium lanuginosum* 2.3, *Blechnum spicant* +, *Polygala serpyllifolia* +, *Hypericum pulchrum* 1.2; <sup>5</sup>70, *Myrica taylori* +; <sup>4</sup>70, *Cladonia gracilis* 1.2; <sup>8</sup>70, *Dryopteris dilatata*; <sup>7</sup>66, *Gymnocolea inflata* 2.3; <sup>8</sup>66, *Hypericum humifusum* +, *Teucrium scorodonia* +, *Dryopteris borrieri* +, *Lophozia floerkii* 3.3; <sup>22</sup>40, *Polytrichum piliferum* 1.2; <sup>23</sup>40, *Viola canina* +.

III.5.a. CALLUNA VULGARIS COMMUNITY

(All M/R)

Releve number.	13a 6/105	13b 3/92	15 4-6/92	16 1-2/92	17	18+ 20a
<u>Differentials of variants</u>						
Listera cordata	IV	III				
Plagiothecium undulatum	V	IV				I
Sphagnum nemoreum	V	V				II
Anastrepta orcadensis	V	V			II	II
Lepidozia pearsonii	III	III				I
Blechnum spicant	III	III				V
Chamaepericlymenum suecicum		V				IV
Eriophorum vaginetum		IV				
Rubus chamaemorus		V				I
Melampyrum pratense	IV	II				
Solidago virgaurea	IV				III	
Dicranodontium uncinatum	V	II				
Dicranum majus	IV	II				III
Anastrophyllum donianum	IV					
Bazzania tricrenata	V	III				
B. pearsonii	V					
Diplophyllum albicans	V	II	I	II	II	I
Herberta hutchinsiae	V					
Jamsoniella carringtonii	V					
Mylia taylori	V	II				
Mastigophora woodsii	V					
Pleurozia purpurea	V		I		II	
Scapania gracilis	V					
S. ornithopoides	V					
Cladonia coccifera	II		III	II	II	
Scirpus caespitosus	II	II	II	II	II	
Cladonia pyxidata		III	II	II	III	
C. rangiferina		II	I	IV	II	I
Lycopodium selago			IV	III	III	I
Cornicularia aculeata			IV	V	III	
Cetraria islandica			V	V	V	II
Ochrolechia frigida			IV	V	IV	
Platysma glaucum			IV	II	III	
Sphaerophorous globosus			IV	II	V	
Lycopodium alpinum			II	II	II	
Alectoria nigricans			III	III	III	
Juniperus nana			II		II	
Festuca ovina			III		II	
Antennaria dioica			III		III	
Loiseleuria procumbens			V	II		
Arctous alpina			IV			
Galium saxatile		II				V
<u>Differential of community</u>						
Calluna vulgaris	V	V	V	V	V	III
<u>Differential of complex</u>						
Carex bigelowii	IV	II	V	V	IV	III
Empetrum hermaphroditum	V	V	V	V	V	V
Vaccinium myrtillus	V	V	IV	III	III	V
Deschampsia flexuosa	V	V	IV	IV	IV	V
Dicranum scoparium	V	V	I	II	II	III
Hylocomium splendens	V	V	I	I	III	V
Hypnum ericetorum	V	III	I	II	IV	I
Pleurozium schreberi	V	V	II	II	III	V
Rhacomitrium lanuginosum	V	II	V	V	V	I
Cladonia uncialis	V	IV	V	V	V	II
C. arbuscula	III	IV	V	V	V	III
C. gracilis	III	II	III	IV	III	II
Ptilidium ciliare	III	III	I	III	III	IV
Vaccinium vitis-idaea	III	IV	III	II	III	III
Rhytidiadelphus loreus	V	V			II	V
Potentilla erecta	III	III	II		II	III
<u>Companion species</u>						
Cladonia impexa	III	II				
C. bellidiflora	II	II		III		II

Sphagnum quinquefarium	III	II				II
Ptilium crista-castrensis	II					I
Polytrichum alpinum	II		I	II		II
Luzula sylvatica	II	II				II
Nardus stricta	II	II	I		III	V
Agrostis canina S.L.	II		I		III	II
Vaccinium uliginosum	III	II	I	I		II
Arctostaphylos uva-ursi			II	I		
Carex panicea			I	I		
C. pilulifera			I	II	II	I
Juncus trifidus			II	II		
Cetraria nivalis			I	II		
Luzula multiflora			I			
Alchemilla alpina			I		III	III
Polytrichum piliferum			I		II	
Dicranum fuscescens			I		II	II
Alectoria ochroleuca			I	II		
Lophozia floerkii		II	I			

(Additional species: see original tables).



RAW TABLE OF HIGHLAND SCOTTISH DATA

INCORPORATED IN TABLE III.5.a. (Collected P.B. 1968).

	1	2	3	4	5	6	6
Releve number.	92	92	92	92	92	92	105
Exposition.	NE	NE	N	SW	SW	W	NW
Slope.	5	5	-	15	10	5	5
Phanerogam % cover.	100	100	90	90	90	30	30
Cryptogam % cover.	50	40	80	60	50	50	70
Releve area (sq. m.).	10	10	5	5	5	5	5
Number of species.	14	18	20	35	32	13	23
<i>Calluna vulgaris</i>	4.5	3.3	1.3	1.2	+		3.3
<i>Vaccinium vitis idaea</i>			+	+	1.2		+
<i>Deschampsia flexuosa</i>		1.2	3.2			+2	
<i>Carex bigelowii</i>	1.2	+	+	+2	2.2	1.2	
<i>Cladonia uncialis</i>	1.3	2.3		+		1.3	+
<i>C. arbuscula</i>	3.3	2.3	1.3	3.3	+	+	1.3
<i>Cornicularia aculeata</i>	1.3	+		+			
<i>Cetraria islandica</i>	+	+		1.1	+	+	
<i>Cladonia papillaria</i>		+					
<i>Carex pilulifera</i>	+2	3.2					
<i>Empetrum hermaphroditum</i>	+3	+	2.3	+2	+	+	+
<i>Lycopodium selago</i>	+2	+		+		+	
<i>Rhacomitrium lanuginosum</i>	1.3	1.3		3.3	2.3	3.3	3.3
<i>Diplophyllum albicans</i>	+						+
<i>Cladonia chloropoea</i>	+	1.3	+	+			
<i>Vaccinium myrtillus</i>	+	1.3	+	1.1	+	1.2	
<i>Scirpus caespitosus</i>		1.2					
<i>Dicranum scoparium</i>		+	1.3				
<i>Luzula multiflora</i>				+	+	+	
<i>Hylocomium splendens</i>			3.3	1.3	1.3		+
<i>Rhytidiadelphus loreus</i>			1.3				+
<i>Mylia anomala</i>			+				+
<i>Alchemilla alpina</i>			+	1.2	+2		
<i>Loisleuria procumbens</i>				2.3	3.3	2.3	
<i>Thalictrum alpinum</i>				1.2	+		
<i>Campanula rotundifolia</i>				+	1.1		
<i>Juncus trifidus</i>				+2		+	
<i>Salix herbacea</i>				1.1	+		
<i>Potentilla erecta</i>				1.1	2.2		1.1
<i>Thymus drucei</i>				+	+		
<i>Festuca vivipara</i>				1.2	2.2		
<i>Polyganum viviparum</i>				+	1.1		
<i>Antennaria dioica</i>				+	1.1		
<i>Carex pulicaris</i>				1.2	1.1		
<i>Deschampsia caespitosa</i>				1.2	+2		
<i>Selaginella selaginoides</i>				+	+		
<i>Galium stemberi</i>				+	+		
<i>Hypnum ericetorum</i>					2.3		+

Additional species: <sup>1</sup>92, *Polytrichum juniperinum* +;  
<sup>2</sup>92, *Carex binervis* 1.2, *Galium saxatile* +; <sup>3</sup>92, *Rubus chamaemorus* 3.3, *Chamaepericlymenum suecicum* 1.1, *Listera*

cordata +, Polytrichum strictum +, Ptilidium ciliare +,  
Nardus stricta +, Juncus squarrosus +; <sup>4</sup><sub>92</sub>, Cladonia  
squarrosa +, Lotus corniculatus +, Botrychium lunaria +,  
Plagiothecium denticulatum +, Pleurozium schreberi 1.3;  
<sup>5</sup><sub>92</sub>, Polygala serpyllifolia +, Cerastium holosteoides +,  
Galium boreale +, Carex capillaris +, Rhytidium rugosum +,  
Rhytidiadelphus triquetrus +, Agrostis tenuis +;  
<sup>6</sup><sub>92</sub>, Dicranum starkei +; <sup>6</sup><sub>105</sub>, Agrostis stolonifera +,  
Bryum pseudotriquetrum +, Hieracium vulgatum S.L. +,  
Pleurozia purpurea 3.3, Odontoschisma sphagni +,  
Herberta hutchinsae 3.3, Hymenophyllum wilsonii +,  
Lepidozia reptans +, Cephalozia connivens +, Orthothecium  
rufescens +.



Additional species: <sup>25</sup>11, *Cladonia coccifera* 3.3; <sup>46</sup>11, *Cladonia squarrosa* +; <sup>7</sup>14, *Deschampsia flexuosa* +; <sup>6</sup>14, *Carex binervis* +; <sup>4</sup>13, *Pohlia nutans* 2.3, *Polytrichum juniperinum* +, *P. piliferum* 1.2; <sup>3</sup>12, *Pleurozium schreberi* 1.3, *Juncus effusus* +; <sup>25</sup>17, *Betula* spp. (seedlings) r; <sup>33</sup>9, *Erica cinerea* 1.2, *Ulex gallii* 3.3, *Vaccinium myrtillus* 1.3, *Calypogeia mulleriana* +, *Cephalozia bicuspidata* +; <sup>77</sup>9, *Ulex europaeus* 1.2, *Carex pilulifera* 1.2; <sup>16</sup>22, *Odontoschisma sphangi* 2.3, *Aulacomnium palustre* +, *Cirsium dissectum* 1.2, *Sphagnum palustre* +, *S. recurvum* 1.2, *S. rubellum* 4.4.

VI.1.b. ZYGOGONIUM ERICETORUM COMMUNITY

Releve number.	4	6	16	18	19	20	14
	17	17	13	13	13	17	17
Exposition.	S	S	S	SE	SE	E	E
Slope.	-	-	10	15	15	-	-
Phanerogam % cover.	100	60	100	100	100	100	100
Cryptogam % cover.	10	60	60	70	-	40	15
Releve area (sq. m.).	10	10	10	10	10	10	10
Number of species.	11	9	9	7	9	6	7

Differentials of variants

<i>Erica cinerea</i>	1.1	1.1	1.2				
<i>Juncus squarrosus</i>	1.2	2.2					+
<i>Cladonia fimbriata</i>	+	1.3				+	
<i>C. floerkeana</i>	1.3	1.3				+	
<i>Pteridium aquilinum</i>			2.1	1.1	+		
<i>Polytrichum juniperinum</i>	+					3.3	1.3

Differentials of community and complex

<i>Erica tetralix</i>			+	+	+	1.2	1.2
<i>Molinia caerulea</i>	1.2	1.2	+			3.2	
<i>Zygonium ericetorum</i>	4.4			2.3		2.3	1.3
<i>Calluna vulgaris</i>	5.5	4.4	5.5	5.5	5.5	5.5	5.5

Companion species

<i>Dicranum scoparium</i>			1.2				
<i>Pinus sylvestris</i> (seedlings)	+	+		+	+		
<i>Betula</i> spp. (seedlings)			+	+		2.1	

Additional species: <sup>4</sup><sub>17</sub>, *Gymnocolea inflata* 1.2,  
*Deschampsia flexuosa* +; <sup>6</sup><sub>17</sub>, *Sorbus aucuparia* +,  
*Agrostis tenuis* +; <sup>16</sup><sub>13</sub>, *Hypnum ericetorum* 3.3, *Leucobryum*  
*glaucum* 2.2; <sup>18</sup><sub>13</sub>, *Teucrium scorodonia* +; <sup>19</sup><sub>13</sub>, *Campylopus*  
*flexuosus* +, *Cladonia gracilis* +, *C. impexa* +;  
<sup>14</sup><sub>17</sub>, *Cladonia furcata* 3.3, *Campylopus brevopilus* 2.3.

IV.2.a. DICRANUM SCOPARIUM COMMUNITY

	15	17	16	2	1	6
Releve number.	43	43	43	40	40	40
Exposition.	W	W	W	NE	NE	SE
Slope.	-	-	-	-	-	2
Phanerogam % cover.	95	90	95	95	95	95
Cryptogam % cover.	70	70	70	70	90	50
Releve area (sq. m.).	10	10	10	10	10	10
Number of species.	15	17	17	14	12	11

Differentials of variants

Cladonia arbuscula	2.3	3.3	3.3			
Juncus squarrosus	2.2	2.2	2.2			
Nardus stricta	1.2	+	1.2			
Carex panicea	+	+	1.2			
Potentilla erecta	+	+	1.2			
Ulex gallii	1.2		1.2			
Sphagnum compactum	1.2	1.2				
Rhacomitrium lanuginosum	+	1.2				
Cladonia uncialis		1.2	+			
Eriophorum angustifolium				2.2	1.2	+
Calyptogeia trichomanes				2.2	1.2	+
Hypnum ericetorum					2.2	4.4

Differentials of community

Dicranum scoparium	3.3	2.2	3.3	2.2	+	2.2
Parmelia physodes		+	+	1.2	+	
Pleurozium schreberi	3.3		3.3		2.2	2.2
Aulacomnium palustre			1.2	3.3	2.3	
Sphagnum tenellum		1.2	1.2	3.3	3.3	
Cladonia impexa	+	+		1.2	+	

Differentials of complex

Calluna vulgaris	4.4	3.3	4.4	4.4	4.4	5.5
Molinia caerulea	3.3	2.3	3.3	+	1.2	1.2
Erica tetralix	1.2	2.2	1.2	3.3	3.3	4.4

Additional species: <sup>17</sup><sub>43</sub>, Carex nigra 3.3, Cladonia gracilis 3.3; <sup>15</sup><sub>43</sub>, Rhytidiadelphus loreus +; <sup>16</sup><sub>43</sub>, Vaccinium myrtillus +; <sup>2</sup><sub>40</sub>, Sphagnum recurvum 3.3; <sup>7</sup><sub>40</sub>, Eriophorum vaginatum 1.2; <sup>6</sup><sub>40</sub>, Cladonia crispata 3.3, Pohlia nutans +.

IV.2.b. SCIRPUS CAESPITOSUS COMMUNITY

Releve number.	1	2	3	4	6	7	8	9	38	39
Exposition.	62 E	62 E	62 E	62 E	62 SE	62 SE	62 SE	62 SE	3 W	3 N
Slope.	-	-	-	-	5	-	-	-	-	2
Phanerogam % cover.	80	80	100	100	100	95	100	100	85	90
Cryptogam % cover.	50	75	50	50	15	15	50	50	80	80
Releve area (sq. m.).	10	10	10	10	10	10	10	10	10	10
Number of species.	10	9	9	7	12	10	19	6	13	10

Differentials of variants

<i>Pohlia nutans</i>			1.2	3.3	2.3	2.2	3.3			
<i>Cladonia chlorophaea</i>				1.2	1.2	1.2	+			
<i>Gymnocolea inflata</i>	3.3	4.4	3.3			2.3				
<i>Salix repens</i>	2.2				+	1.1	1.2			
<i>Carex nigra</i>		1.2	1.2		1.2	1.2	1.2	1.2		
<i>Juncus squarrosus</i>	+.2	2.2	1.2							
<i>Betula</i> spp. (seedlings)						+	+			
<i>Hypnum ericetorum</i>						2.3	3.3	2.3	2.3	1.2
<i>Cladonia impexa</i>									4.4	4.4
<i>Calypogeia mülleriana</i>									2.3	1.2

Differentials of community

<i>Scirpus caespitosus</i>	2.2		3.2				3.2		3.2	2.2
<i>Zygonium ericetorum</i>	3.3	2.3	2.3		+				1.3	2.3

Differentials of complex

<i>Calluna vulgaris</i>	3.3	4.4	4.4	5.5	5.5	4.4	3.2	5.5	2.2	4.4
<i>Molinia caerulea</i>	1.2	1.2	1.2	+		2.2	2.2	+	1.2	1.2
<i>Erica tetralix</i>	3.3	2.2	3.2	+	1.1	3.2	4.2	1.1	3.3	3.3

Companion species

<i>Deschampsia flexuosa</i>				+			1.2			
<i>Drosera rotundifolia</i>	+	1.1								
<i>Cephalozia bicuspidata</i>		+					+			+
<i>Cladonia crispata</i>								1.2	+	

Additional species: <sup>1</sup><sub>62</sub>, *Juncus articulatus* 2.2; <sup>4</sup><sub>62</sub>, *Nardus stricta* 1.2; <sup>6</sup><sub>62</sub>, *Phragmites australis* 1.1, *Mylia taylori* +, *Ulex europaeus* +, *Cladonia floerkeana* 1.2, *C. fimbriata* 1.2; <sup>8</sup><sub>62</sub>, *Potentilla erecta* 1.2, *Calypogeia trichomares* 1.2, *Festuca rubra* +.2, *Pedicularis sylvatica* +, *Luzula multiflora* +, *Anthoxanthum odoratum* +, *Quercus* spp. (seedlings) +; <sup>38</sup><sub>3</sub>, *Rhacomitrium lanuginosum* +, *Cladonia uncialis* 2.3, *Dicranum scoparium* +, *Erica cinerea* +, *Campylopus flexuosus* +; <sup>39</sup><sub>3</sub>, *Campylopus atrovirens* +.2.

IV.2.c. DESCHAMPSIA FLEXUOSA COMMUNITY

Releve number.	10	4	3	1	6	2	2	4	5	3
	57	39	39	57	39	39	57	57	39	57
Exposition.	SW	W	S	SW	NE	N	E	E	W	W
Slope.	10	5	-	5	15	5	-	2	5	-
Phanerogam % cover.	100	100	100	100	100	100	100	100	100	100
Cryptogam % cover.	40	30	10	10	60	50	25	70	15	10
Releve area (sq. m.).	10	10	10	10	10	10	10	10	10	10
Number of species.	11	9	12	8	9	16	14	17	13	11

Differentials of variants

Eriophorum vaginatum	+					+	2.2	+	2.2	1.1
Dicranum scoparium					2.3	3.3	+ .2	+ .2	+	+
Vaccinium myrtillus						2.3	+	+		
Empetrum nigrum							+	+		

Differentials of community

Juncus squarrosus	1.2	1.2	(+)	+	+	+		+	1.2	+
Eriophorum angustifolium		+	+			3.3	+	1.1	+	2.1
Hypnum ericetorum					+ .3			2.3	4.5	
Deschampsia flexuosa	+		+	2.2		+	+	+	+	+
Pohlia nutans			2.3	2.3	1.3	2.3	+	+	+	+
Scirpus caespitosus	1.2	1.2	3.3				(+)	1.2	3.2	+
Carex nigra	2.2		r	+			2.2	+		
Cephalozia bicuspidata	3.3			2.3	3.4	+	+ .2	4.4		

Differentials of complex

Calluna vulgaris	5.5	4.4	2.3	5.5	4.4	5.5	4.4	5.5	2.2	5.5
Molinia caerulea	+	3.2	3.3	+	2.2	+ .2		2.2	2.2	+
Erica tetralix	2.2	2.3	2.2				+	+	3.2	(+)

Companion species

Nardus stricta	+							+		
Dicranella heteromalla		+	+						+	1.2
Cephalozia media					1.2	1.2				

Additional species: <sup>10</sup><sub>57</sub>, Calypogeia trichomares +; <sup>3</sup><sub>39</sub>, Potentilla erecta +, Dicranella varia +; <sup>2</sup><sub>39</sub>, Betula spp. (seedlings) +, Festuca rubra +, Quercus spp. (seedlings) +, Vaccinium vitis-idaea 2.2, Pinus sylvestris seedlings +; <sup>5</sup><sub>39</sub>, Mylia taylori +, Sphagnum recurvum 1.3; <sup>6</sup><sub>39</sub>, Lophocolea bidentata +; <sup>4</sup><sub>39</sub>, Cladonia pyxidata +, Pteridium aquilinum +; <sup>4</sup><sub>57</sub>, Agrostis stolonifera +; <sup>2</sup><sub>57</sub>, Sphagnum rubellum +.

IV.2.d. ULEX GALLII COMMUNITY

Releve number.	170	171	172	173	175	176	177
	1	1	1	1	1	1	1
Exposition.	W	W	S	S	NW	S	S
Slope.	-	-	2	2	-	5	5
Phanerogam % cover.	100	100	100	90	100	100	100
Cryptogam % cover.	-	-	10	15	10	50	60
Releve area (sq. m.).	5	5	10	10	10	10	10
Number of species.	12	10	12	10	6	14	16

Differentials of variants

Holcus lanatus	1.2	1.2	+				
Festuca ovina	2.2			1.2			
Siglingia decumbens		1.2	1.2	1.1			
Agrostis canina	1.2	1.2					
Hydrocotyle vulgaris	2.2	2.2					
Ulex europaeus	+	4.4					
Erica cinerea			+	+			
Zygonium ericetorum			1.3	+ .3			
Cladonia floerkeana			+	1.2			
Schoenus nigricans					3.2	+	3.3
Carex panicea						+	1.1
Pedicularis sylvatica			+			2.1	1.2
Dactylorhiza ericetorum						+	+
Narthecium ossifragum						3.3	1.1
Sphagnum quinquefarium						3.3	3.3
Succisa pratensis						1.1	+

Differentials of community

Ulex gallii	1.2	+	3.3	3.3	3.3	1.2	
Potentilla erecta		+	+	1.1	1.2	1.1	1.2

Differentials of complex

Calluna vulgaris	2.2	1.2	3.3	3.3		1.1	
Erica tetralix	2.2	2.3	3.3	2.2	3.3	3.3	1.1
Molinia caerulea			(+)		2.2	3.3	4.4

Companion species

Hypnum ericetorum					1.3	1.3	
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Additional species: 170<sub>1</sub>, Phragmites communis 1.1,  
 Dactylis glomerata +, Juncus effusus +, Ranunculus repens +;  
 171<sub>1</sub>, Hypochaeris radicata +, Agrostis tenuis 1.2;  
 172<sub>1</sub>, Cladonia furcata 1.3; 173<sub>1</sub>, Carex binervis +.2,  
 Campylopus cf. brevipilus 2.3; 176<sub>1</sub>, Agrostis setacea 1.2;  
 177<sub>1</sub>, Calypogeia mulleriana 2.3, Luzula multiflora +,  
 Anagallis tenella +, Sphagnum contortum 2.3, Hypericum  
 elodes +, Sphagnum palustre 2.3.

APPENDIX VI

Releve numbers and localities from the  
tables in Appendix V.

<u>Releve number</u>	<u>Heath type</u>	<u>Locality</u>	<u>Grid Reference</u>	<u>Altitude (m)</u>
1S-3S	I	Essex Hill, Alderney.	3S9/88	15
11 <sub>1</sub> -14 <sub>1</sub>	I	Bedrathan Steps.	10/849695	60
16 <sub>1</sub> -22 <sub>1</sub>	I	Cape Cornwall.	10/350319	60
23 <sub>1</sub> -37 <sub>1</sub>	I	Chapel Porth.	10/697496	15
38 <sub>1</sub> -42 <sub>1</sub>	I	Kynance Cove.	10/688131	22
44 <sub>1</sub> -47 <sub>1</sub>	I	Lands End.	10/345257	70
48 <sub>1</sub> -51 <sub>1</sub>	I	Pendeen Lighthouse.	10/379359	60
52 <sub>1</sub> -56 <sub>1</sub>	I	Pentire Point.	10/7861	30
57 <sub>1</sub> -63 <sub>1</sub>	I	Perran Porth.	10/746536	30
66 <sub>1</sub>	I	Porthgwarro.	10/365220	46
69 <sub>1</sub> -70 <sub>1</sub>	I	"	"	"
71 <sub>1</sub> -76 <sub>1</sub>	I	Porth Towan.	10/691483	15
77 <sub>1</sub> -89 <sub>1</sub>	I	St. Agnes.	10/7259	15
91 <sub>1</sub> -95 <sub>1</sub>	I	"	"	"
96 <sub>1</sub> -98 <sub>1</sub>	I	Zennor Head.	10/447393	60
100 <sub>1</sub> -101 <sub>1</sub>	I	Ponson Joppa.	10/698170	85

102 <sub>1</sub> -108 <sub>1</sub>	I	Lizard Downs.	10/688133	60
109 <sub>1</sub> -112 <sub>1</sub>	I	Crousa Downs.	10/764790	80
115 <sub>1</sub> -122 <sub>1</sub>	I	Goonhilly Downs.	10/723183	80
124 <sub>1</sub> -125 <sub>1</sub>	I	Kynance Cove.	10/688137	25
126 <sub>1</sub>	I	St. Elena.	10/699159	85
127 <sub>1</sub> -128 <sub>1</sub>	I	Rejerrah.	10/798559	55
129 <sub>1</sub> -130 <sub>1</sub>	I	Nine Maidens.	10/445367	180
131 <sub>1</sub> -132 <sub>1</sub>	I	Trendine.	10/478392	150
133 <sub>1</sub>	I	Trewey.	10/460365	200
134 <sub>1</sub> -136 <sub>1</sub>	I	Wheal Buller.	10/404319	196
137 <sub>1</sub> -138 <sub>1</sub>	I	Wheal Ellen.	10/701469	60
139 <sub>1</sub> -140 <sub>1</sub>	I	St. Agnes Beacon.	10/710504	180
141 <sub>1</sub> -142 <sub>1</sub>	I	Carharrack.	10/748414	105
144 <sub>1</sub> -148 <sub>1</sub>	I	Penhallow moor.	10/833548	46
149 <sub>1</sub> -153 <sub>1</sub>	I	Newlyn East.	10/8354	60
155 <sub>1</sub> -162 <sub>1</sub>	I	Carrine Common.	10/7943	60
163 <sub>1</sub> -164 <sub>1</sub>	II	Caharrack.	10/748414	110

165 <sub>1-166</sub> <sub>1</sub>	II	Mt. Hawke.	10/703469	46
167 <sub>1-168</sub> <sub>1</sub>	II	Newlyn East.	10/836550	60
169 <sub>1-174</sub> <sub>1</sub>	IV	Lands End.	10/342252	46
175 <sub>1</sub>	IV	Rejerrah.	10/798559	55
176 <sub>1-177</sub> <sub>1</sub>	IV	Rosenanon Moor.	10/9769	60
10 <sub>2-12, 15</sub> <sub>2</sub>	I	Widemouth Cliffs.	20/1901	15
13 <sub>2-14</sub> <sub>2</sub>	I	" "	20/1899	10
16 <sub>2-21</sub> <sub>2</sub>	I	Tintagel Castle.	20/048885	15
23 <sub>2-27</sub> <sub>2</sub>	I	Pentire Point.	10/930808	15
28 <sub>2-29</sub> <sub>2</sub>	I	Carpella.	10/970540	225
32 <sub>2-33</sub> <sub>2</sub>	I	Hensbarrow Downs.	10/993578	270
3 <sub>3-5</sub> <sub>3</sub>	I	Gittisham Hill.	30/148974	240
6 <sub>3-7</sub> <sub>3</sub>	I	Blackdown.	31/098068	270
8 <sub>3-13</sub> <sub>3</sub>	I	Hawkerland Common.	30/058897	135
14 <sub>3-17</sub> <sub>3</sub>	I	Lympstone Common.	30/041852	90
22 <sub>3-23</sub> <sub>3</sub>	I	Trinity Hill.	30/309959	200
28 <sub>3</sub>	I	Woodbury Common.	30/031874	165

29 3-32 3	I	Warren House Inn.	20/677806	390
33 3-37 3	II	Cadorer Bridge.	20/563643	230
38 3-39 3	IV	Great Haldon.	20/897843	240
40 3-41 3	I	Devils Elbow.	20/584731	405
42 3		Soussons Down.	20/675803	405
43 3	I	Great Haldon.	20/891843	240
44 3-45 3	I	Hayne Down.	20/740802	315
46 3-47 3	I	Black Hill.	20/766790	330
48 3-49 3	I	Buckland Common.	20/738739	360
50 3-54 3	I	Heathfield.	20/825765	20
55 3-57 3	I	Haldon.	20/918758	235
10 4-12 4	I	Hartland Quay.	21/2225	30
13 4-14 4	I	Brendon Common.	21/7646	360
15 4	I	Bursldon Moor.	21/2227	225
2 5-9 5	I	Crowcombe Park Gate.	31/1538	330
11 5-16 5	I	Staple Hill.	31/231160	285
20 5	I	Crowcombe Park Gate.	31/152380	330

215	I	Codsand Moor.	21/8641	450
245-275	I	" "	"	"
285	I	Hawkcombe Head.	21/845457	405
295-315	I	Lucott Cross.	21/848428	435
325	I	South Hill.	21/898316	
355-385	I	Winsford Hill.	21/8734	405
16-46	I	Blackdown.	31/483575	300
66-106	I	Priddy.	31/5451	250
156-176	I	Crook Peak.	31/385560	150
186	I	Velvet Bottom.	31/505555	240
196	II	Wrington Warren.	31/476652	135
216	I	Burrington Coombe.	31/482582	180
256	II	" "	"	"
19	I	Abbotsbury Castle.	30/557865	195
29	II	Arne Peninsula.	30/913890	15
69-89	II	" "	30/970887	20
119-139	I	Blackdown.	30/607877	210
149	II	Blacknoll.	30/803861	15

159-169	II	Gallows Hill.	30/842910	75
179	IV	Galton Heath.	30/786855	30
209	II	Grip Heath.	30/983882	8
219-319	II, I	Hartland Moor.	30/961855	10
329-339	IV/I	Lamberts Castle.	30/369987	230
349	IV	Morden Bog.	30/913920	8
359-379	II	Morden Heath.	30/914923	15
389-399	II	Moreton Heath.	30/792878	46
409-459	I	Ridge.	30/931860	5
479-579	I, II	Slepe Heath.	30/956865	5
599-609	II	Studland Heath.	40/037858	5
629-639	II	" "	40/034864	6
649-669	II	Studland Heath.	40/025845	10
679	IV	Warmwell Heath.	30/753869	46
689-709	II	" "	"	"
111-211	I	Beaulieu Heath.	41/406049	38
311-411	II	" "	41/418032	33
511-1011	I	" "	41/253998	33

12 <sub>11</sub> -13 <sub>11</sub>	II	Beaulieu Heath.	41/418037	33
14 <sub>11</sub>	I	" "	41/406049	38
15 <sub>11</sub> -18 <sub>11</sub>	II	" "	41/305050	38
19 <sub>11</sub> -21 <sub>11</sub>	IV	Beaulieu Road Station.	41/358058	15
22 <sub>11</sub> -24 <sub>11</sub>	IV	Broomy Walk.	41/222108	110
25 <sub>11</sub> -27 <sub>11</sub>	IV	Deadman Hill.	41/193159	75
28 <sub>11</sub> -33 <sub>11</sub>	II	" "	41/194164	90
34 <sub>11</sub> -37 <sub>11</sub>	IV	" "	41/193160	75
38 <sub>11</sub> -40 <sub>11</sub>	II	Denny Lodge Walk.	41/383067	12
41 <sub>11</sub> -42 <sub>11</sub>	II	Hinchelsea Moor.	41/268017	30
43 <sub>11</sub> -46 <sub>11</sub>	IV, I	Holt Heath.	41/050046	55
47 <sub>11</sub>	II	Matley Wood.	41/330075	37
48 <sub>11</sub>	II	Yew Tree Heath.	41/370062	24
49 <sub>11</sub>	II	Matley Wood.	41/333076	30
55 <sub>11</sub>	II	Stagbury Hill.	41/286160	60
57 <sub>11</sub> -59 <sub>11</sub>	II	Vales Moor.	41/195040	60
60 <sub>11</sub> -61 <sub>11</sub>	IV	Yew Tree Heath.	41/370062	24
64 <sub>11</sub>	III	" "	" "	"

1 <sup>12-4</sup> 12	II, IV	Shorth Heath Common.	41/776369	60
5 <sup>12</sup>	II	Ludshott Common.	41/851358	165
6 <sup>12-7</sup> 12	II, IV	Kingsley Common.	41/794383	75
1 <sup>13</sup>	II	Marley Common.	41/885312	180
2 <sup>13</sup>	II	Linchmere Common.	41/865315	135
3 <sup>13-6</sup> 13	II, IV	Ipping Common.	41/850220	55
7 <sup>13-10</sup> 13	II	Wolbeding Common.	41/866256	120
11 <sup>13, 13</sup> 13	II	Hesworth Common.	51/006193	30
14 <sup>13-16</sup> 13	II, IV	Ambersham Common.	41/914194	60
18 <sup>13-19</sup> 13	IV	" "	" "	"
1 <sup>14-2</sup> 14	II, IV	Ashdown Forest.	51/469304	195
3 <sup>14</sup>	II	" "	51/480319	210
4 <sup>14</sup>	II	" "	51/472309	210
5 <sup>14-6</sup> 14	II, IV	" "	51/461282	135
7 <sup>14-8</sup> 14	II	" "	51/405330	150
9 <sup>14</sup>	II	" "	51/438324	180
10 <sup>14</sup>	II	" "	51/466313	190

11 <sub>14</sub>	II	Ashdown Forest.	51/469324	180
1 <sub>17-3</sub> <sub>17</sub>	II	Bagshot Heath.	41/910590	120
4 <sub>17</sub>	IV, I	White Hill.	41/967607	120
6 <sub>17-8</sub> <sub>17</sub>	II, IV	" "	"	"
9 <sub>17-10</sub> <sub>17</sub>	II	Albury Bottom.	41/976648	60
11 <sub>17-12</sub> <sub>17</sub>	II	Pattenham Common.	41/965455	60
13 <sub>17</sub>	II	Frensham Common.	41/853406	75
14 <sub>17-16</sub> <sub>17</sub>	II, IV	Ockley Common.	41/914415	60
17 <sub>17-18</sub> <sub>17</sub>	II	Hindhead Common.	41/895375	215
19 <sub>17</sub>	II	Frensham Common.	41/852403	75
20 <sub>17-21</sub> <sub>17</sub>	IV	Horsell Birch.	41/986597	25
22 <sub>17-23</sub> <sub>17</sub>		Cholsham Common.	41/965655	50
24 <sub>17</sub>		Westend Common.	51/330559	180
25 <sub>17</sub>	IV	Chobham Common.	41/965655	60
1 <sub>22</sub>		Burghfield Common.	41/652662	90
5 <sub>22-7</sub> <sub>22</sub>	II	Greenham Common.	41/497644	120
8 <sub>22-10</sub> <sub>22</sub>	II	Lower Common, Newbury.	41/560493	120
11 <sub>22-13</sub> <sub>22</sub>	II	Owlsmoor.	41/8462	75

14 <sup>22</sup> , 16 <sup>22</sup>	II, IV	Snelsmore Common.	41/4670	135
17 <sup>22-18</sup> 22	II	Upper Common, Newbury.	41/533693	90
19 <sup>22-20</sup> 22	II	Wellington College.	41/840632	90
1 <sup>24</sup>	II	Burnham Beeches.	41/958857	60
3 <sup>24-4</sup> 24	II	" "	"	"
5 <sup>24-6</sup> 24	II	Farnham Royal.	41/948844	55
7 <sup>24-10</sup> 24	II	Hodgemoor Wood.	41/970933	120
11 <sup>24-12</sup> 24	II	Lodge Wood.	42/865015	190
1 <sup>25-6</sup> 25	II	Sutton Heath.	62/3247	20
7 <sup>25-11</sup> 25	II	Westleton Heath.	62/4669	30
12 <sup>25-14</sup> 25	II	Dunwich Heath.	62/475675	12
15 <sup>25, 17</sup> 25	II	Blaxhall Common.	62/382564	12
1 <sup>26-3</sup> 26	II	Lakenheath Warren.	52/756814	15
4 <sup>26-5</sup> 26	II	Weather Heath.	52/788777	55
7 <sup>26-8</sup> 26	II	Thetford Heath.	52/856795	22
1 <sup>27-2</sup> 27	II	Horsford.	63/175180	30
3 <sup>27</sup>	II	Salthouse Heath.	63/075424	45
4 <sup>27</sup>	II	Edgefield Heath.	63/082369	45

2 <sup>28</sup>	II	Bridgeham Heath.	52/922865	45
3 <sup>28-4</sup> 28	II	Cockley Cleg.	53/807058	45
6 <sup>28-9</sup> 28	II	Roydon Common.	53/685229	30
10 <sup>28-12</sup> 28	II	Cats Bottom.	53/672276	30
13 <sup>28-14</sup> 28	II	Bridgham Heath.	52/913863	30
3 <sup>33-5</sup> 33	II	Cleeve Hill.	32/985264	300
1 <sup>34</sup>	I	Poor's Allotment.	31/559993	205
2 <sup>34-3</sup> 34		Rodway Hill.	31/665755	75
4 <sup>34-5</sup> 34	I	Siston Common.	31/667740	60
6 <sup>34</sup>		Rodway Hill.	31/665755	75
1 <sup>35-2</sup> 35	III	Hollybush.	32/1505	450
2 <sup>39</sup>		Brocton Field.	33/9717	210
3 <sup>39</sup>	IV	Grindon Moor.	43/060559	345
4 <sup>39-5</sup> 39		Rewidge.	43/073598	345
6 <sup>39</sup>		Sherbrook Valley.	33/980180	195
1 <sup>40-2</sup> 40, <sup>6</sup> 40	IV	Hodnet Heath.	33/620264	82
3 <sup>40-5</sup> 40	III	Stiperstones.	32/3699	360
7 <sup>40-40</sup> 40	III	"	"	"

41 40-45 40	III	Long Mynd.	32/426944	495
46 40-48 40	III	" "	32/412938	465
52 40-59 40	III, I	Stiperstones.	32/3699	300
1 41-3 41		Ilot.	21/5692	60
1 42-4 42	III	Brecon Beacons.	22/9920	450
18 43-20 43	IV	Gorddwr Bank.	32/112832	460
21 43-23 43	III	Cefn Gugos.	33/082222	390
10 45	I	Newgale.	12/8523	30
11 45-15 45	I	St. Anne's Head.	12/8103	30
16 45-18 45, 30 45	I	St. David's Head.	12/7328	30
19 45-28 45	I	"	12/7228	30
31 45-32 45	III	Puncheston.	22/0432	270
1 46-2 46	III	Esgair Fraith.	22/5774	420
28 47-37 47	I	Craig Breidden.	33/2914	285
1 48-2 48	III	Myydd Ceiswen.	23/7614	420
3 48-7 48, 9 48	III	Myydd y Gader.	23/7314	510
10 48-14 48	I	Cader Idris.	23/7115	390
1 49-3 49	III	Dyffryn Mymber.	23/674569	435

4 49-7 49	I	Mynydd Cilan.	23/289250	60
8 49-13 49	I	Mynydd Mawr.	23/139259	150
14 49-16 49	I	Graig Ddu.	23/353440	270
17 49	I	Mynydd Cefnamwlch.	23/224343	105
18 49-20 49	I	Mynydd Cilan.	23/291249	90
21 49-22 49	I	Foel Fawr.	23/302319	150
1 50-2 50	III	Nant-y-Garreg.	23/9762	360
3 52-4 52	I	Holyhead Mountain.	23/225824	75
5 52-6 52	I	Mynydd Badafan.	23/475853	120
7 52-9 52	II	Parus Mountain.	23/440908	90
1 57	IV	Beeley Moor.	43/294679	310
2 57-3 57	IV	Big Moor.	43/258755	310
4 57	IV	Bradwell Moor.	43/148799	420
10 57	IV	Hartland Sick.	43/293682	300
22 57	I	Longdale.	43/189608	280
1 61-4 61	III	Baysdale Beck.	45/652074	180
5 61	III	Castleton.	45/681074	235
7 61	III	Cleeve Beck.	35/840202	430

8 61-13 61	III	Kildale Moor.	45/641088	270
14 61-15 61	III	Park Dyke.	45/609084	255
16 61	III	Warren Moor.	45/615080	300
17 61-20 61	III	Westerdale Moor.	45/673028	375
112 61-113 61	III	Moorsholm Moor.	45/672128	225
1 62-6 62	IV	Strensall Common.	44/650615	20
7 62-9 62	IV	" "	44/659617	20
1 65-3 65	III	Askrigg Common.	34/962938	525
5 65	III	Broadshaw Bottom.	35/940071	420
7 65-10 65	III	Healaugh.	44/009983	225
11 65-12 65	III	Thwaite.	45/028103	300
13 65	III	Whitaside Moor.	34/979961	405
1 66-6 66	III	Waldridge Fell.	45/2549	90
7 66-9 66	III	Pallet Crag.	45/028224	270
10 66	III	Brasside.	45/293459	55
11 66	III	Waldridge.	45/250499	120
12 66-15 66	III	Langley Dale Common.	45/038239	353
16 66-21 66	III	Slapestone Syke.	35/813304	465

22 66-23 66	III	Horseshoe Hill.	35/985447	495
26 66-27 66	III	Lanehead.	35/848424	480
28 66-29 66	III	Sandyford.	35/964474	420
30 66-32 66	III	Weatherhill Engine.	35/995414	360
1 67-3 67	III	Blanchland Moor.	35/982538	270
4 67-6 67	III	Colt Crag.	35/927776	195
7 67-8 67	III	Lunga Crag.	35/953832	240
2 68-4 68	III	Corbys Crag.	46/127096	180
1 69-2 69	III	Coupland.	35/718184	180
4 69-7 69	III	Crosby Ravensworth Fell.	35/628099	360
8 69-9 69	III	Fell Beck.	35/690077	255
10 69	III	Middle Bush.	35/683088	300
11 69	III	Ravenstonedale Moor.	35/694065	270
1 70	III	Nenthead.	35/793433	570
2 70	III	Flinty Fell.	35/765423	555
3 70-5 70	III	Blaeberry Hill.	35/515409	195
6 70-7 70	III	" "	35/529403	180
8 70-11 70	III	Whinlatter Pass.	35/192247	375

171-271	I	Maughold Head.	24/497914	45
371	I	Port Caronaa	24/474880	15
471	I	Maughold Head.	24/497914	45
571	I	Fleshwick Bay.	24/202714	15
771-871	I	Langness.	24/284653	10
971-1071	I	Calf Sound.	24/173666	15
1371	I	Eairy.	24/296779	135
1471-1671	I	Craigneish.	24/188677	150
1771-1871	I	Little Ness.	24/366729	15
1971	I	Port Caronaa.	24/474880	30
2171-2471	I	Ballagh Plantation.	24/364918	240
2571-2971	II	Ayre.	25/466047	10
3071-3271	II	Ballaghennie.	25/436035	8
3371	II	Rue Point.	25/410033	6
3471-3571	II	Foxdale.	24/287780	135
3671-3871	II	Glen Rushen Mines.	24/262780	240
3971-4071	I	Druidale.	24/355880	265

4171	I	Guthrie Memorial.	24/436917	315
4271	I	Injerbeck Hill.	24/350856	345
4371	I	South Barrale.	24/272775	300
4471-4571	I	Crank Fedjag.	24/238749	360
172-272	III	Castle O'er.	35/250952	195
372-572, 772	III	Loch Skeen.	36/174160	510
174-874	II	Tors Warren.	35/1254	15
179	III	Annelshope.	36/297157	300
279-379	III	Blacknowe Head.	36/203104	330
479-579	III	Craig Hill.	36/319158	270
779-979	III	Cringie Law.	36/445191	240
1079	III	Esdale Law.	36/442169	325
1279	III	Gatecleuch Hill.	36/283128	330
1379	III	Range Cleuch.	36/197100	270
1479	III	Woll Rig.	36/441237	325
180	III	Bellendean.	36/378147	300

2 <sup>80-3</sup> 80	III	Firestone Edge.	36/406144	325
1 <sup>92-3</sup> 92	III	Devils Elbow.	37/1578	750
4 <sup>92-6</sup> 92	III	Cairnwell.	37/1479	870
1 <sup>105-2</sup> 105	I	Ardachadail.	28/1197	75
3 <sup>105, 6</sup> 105	III	Benn Eighe.	28/0064	300
4 <sup>105-5</sup> 105	I	Inchbae Forest.	28/3871	300
1 <sup>108-5</sup> 108	I	Inchnadamph.	29/2326	240
1 <sup>110-3</sup> 110	I	Ard an Tolmachain.	19/105045	105
4 <sup>110</sup>	I	Aird an Troin.	19/218155	30
5 <sup>110-6</sup> 110	I	Ballallan.	19/314215	15
7 <sup>110-8</sup> 110	I	Ganynahine.	19/230327	30
9 <sup>110-10</sup> 110	I	Loch a'Mhorghain.	19/162052	180

