

A New Flora of North Northumberland

Field Handbook

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4th Edn 2014**



Introduction

This handbook is intended for the use of recorders surveying for the New Flora of North Northumberland project. A recording card, optimised for the project, is also available, both in Latin and English. It is hoped that recorders will take this booklet out into the field, and use the contents to assist the survey process.

It must be stressed that this booklet is only intended for use in VC68 as the species, subspecies and hybrid lists and details have been optimised for North Northumberland and may well not apply elsewhere.

Please report any errors or recommend improvements to the VCR:

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The booklet contains four sections below.

Taking Specimens lists those genera and species for which specimens are requested.

The **Species** section deals with the recording of a few of the more difficult taxa.

The **Subspecies** section lists those subspecies which may be expected to occur in VC68 and gives identification details.

The **Hybrids** section provides similar information for a small selection of the more common hybrids.

Taking specimens.

Specimens are requested (with 8 fig GR) for the following:

Euphrasia - six specimens, preferably with roots, flowers and fruiting capsules. See below for notes.

Dryopteris affinis group - not *D. borrierii* (frond cut from base of stipe with ripe sporangia. Folding is quite OK) – see below for notes.

Polypodium (frond cut from base of stipe with ripe sporangia).

Montia fontana – with flowers or seeding capsules.

Hieracium – Not *H. vulgatum* unless unsure of determination. (typical specimen cut from above tap root) – see below for notes.

Species.

Dryopteris affinis group.

Have a reputation, deservedly, for being difficult. However only one species appears to be common in VC68, *D. borrierii*, mostly found in woodland

Score one for each of the following:

Plant dull, not glossy

Pinnae thin and soft

Pinnules lobed

Pinnules adjacent to rachis slightly longer than next pair

Pinnules adjacent to rachis more or less stalked

Pinnules square ended

Pinnules with conspicuous, acute apical teeth

Indusium when ripe splits and shrivels into a shape like a chanterelle mushroom

A score of five or more suggests *D. borrierii*, anything less may be a different species in which case a specimen should be taken, if appropriate.

Hieracium.

Only one species is recorded as being at all common in VC68, *H. vulgatum*, and accordingly, if a certain determination can be made in the field is not necessary to take specimens of this species, a description of which follows:

H. vulgatum – stem with numerous simple eglandular hairs in the lower part becoming fewer toward the upper part, numerous stellate hairs and a few short, dark glandular hairs; basal leaves few, often red-purple beneath, petioles long hairy, cauline leaves 2-8, subentire to denticulate, either with simple eglandular hairs on both surfaces and margins or with upper surface glabrous; 1-30 capitula, peduncles straight with dense stellate hairs, with variable quantities of simple eglandular and glandular hairs; phyllaries acute, inner with pale margins, with numerous dark-based simple eglandular hairs, and variable numbers of short dark glandular hairs and stellate hairs, especially on the margins. Styles discoloured.

Euphrasia.

The following is a key to the species of *Euphrasia* so far found in the VC. It does not include *E. frigida* which is only rarely found on the high rock ledges of Cheviot. Unfortunately *Euphrasia* responds dramatically to its environment and plants of the same species can look very different from habitat to habitat and small, condensed specimens may be impossible to place. They also hybridise which complicates matters considerably. However the key should enable a start to be made. All except *E. arctica*, *E. confusa* and *E. tetraquetra* should be collected for confirmation.

| | | |
|---|-----------------------------------------------------------------------------------------|-----------------------|
| 1 | At least upper leaves with long glandular hairs (stem 10-12 x as long as glandular tip) | <i>E. rostkoviana</i> |
| | Plant glabrous or with short glandular hairs and/or long or short eglandular hairs | 2 |
| 2 | Corollas purple | <i>E. micrantha</i> |
| | Corollas white or lilac or mixed lilac and white | 3 |
| 3 | Corolla upper lip >7mm | <i>E. arctica</i> |
| | Corolla upper lip ≤ 7mm | 4 |
| 4 | Stems unbranched, corollas with bottom lip ≤ upper | <i>E. scottica</i> |
| | Stems branched or if unbranched then corollas with bottom lip > upper. | 5 |
| 5 | Lowest flower at node 9 or above | 6 |
| | Lowest flower at node 8 or below | 7 |
| 6 | Lowest bract with aristate teeth | <i>E. nemorosa</i> |
| | Lowest bract with obtuse to acute teeth | <i>E. confusa</i> |
| 7 | Cauline internodes mostly 2-6 times as long as leaves | 8 |
| | Cauline internodes mostly < 2 times as long as leaves | <i>E. tetraquetra</i> |
| 8 | Basal teeth of lower bracts patent | <i>E. arctica</i> |
| | Basal teeth of lower bracts directed towards tip of bract | <i>E. confusa</i> |

Rubus.

The following is a key to the species of *Rubus* so far found in the Vice County. That does not of course mean that there aren't any others but this should work for most species. A primocane is a first year flowerless shoot or barren stem.

| | | |
|-------------------------|------------------------------------------------------------------------------------|-----------------------|
| 1. | Leaflets not overlapping, basal leaflets stalked. | 2. |
| | (<i>Section Rubus</i>) | |
| | Leaflets overlapping, basal leaflets sessile/subsessile. | 27. |
| | (<i>Section Coryifolii</i>) | |
| 2. | Stems more or less erect, not rooting at tips but suckering from roots. Deciduous. | 3. |
| | Stems rooting at tips in autumn, suckers not produced at roots. Leaves persistent. | 4. |
| 3. | Leaflets large, stamens reflexed after anthesis, young carpels hairy, fruits red. | <i>R. nessensis</i> |
| | Leaflets small, stamens not reflexed, young carpels glabrous, fruits black. | <i>R. fissus</i> |
| 4. | Primocane without stalked glands. | 5. |
| | Primocane with stalked glands. | 17. |
| 5. | Leaflets not felted or chalky white beneath (sometimes hairy) | 6. |
| | Leaflets felted or chalky white beneath | 11. |
| <i>Series Sylvatici</i> | | |
| 6. | Flowers white or faintly pink. | 7. |
| | Flowers pink or red | 8. |
| 7. | Terminal leaflets with a cordate base. | <i>R. sciocharis</i> |
| | Terminal leaflets with a subentire base. | <i>R. leptothyros</i> |

- | | | |
|-----------------------------------------|--------------------------------------------------------------------------------------------------|-----------------------------|
| 8. | Anthers hairy | 10. |
| | Anthers glabrous | <i>R. laciniatus</i> |
| 10. | Primocane leaves with mostly 5 leaflets. | <i>R. errabundus</i> |
| | Primocane leaves with mostly 3 leaflets | <i>R. newtonii</i> |
| 11. | Leaflets grey/white felted beneath with a few stalked glands on rachis and floral branches. | 12. |
| | Leaflets chalky white beneath, stalked glands absent. | 16. |
| <i>Series Rhamnifolii</i> | | |
| 12. | Flowers white or faintly pink. | 13. |
| | Flowers pink | 14. |
| 13. | Petiole of terminal leaflet long, anthers with pink sutures | <i>R. amplificatus</i> |
| | Petiole of terminal leaflet long, anthers not as above | <i>R. lindebergii</i> |
| 14. | Stems glabrous/glabrescent | 15. |
| | Stems hairy | <i>R. polyanthemus</i> |
| 15. | Sepals reflexed, stamens long | <i>R. elegantispinosus.</i> |
| | Sepals patent, stamens short | <i>R. nemoralis</i> |
| <i>Series Discolores (white petals)</i> | | |
| 16. | Stems subglabrous, shining | <i>R. ulmifolius</i> |
| | Stems hairy | <i>R. armeniacus</i> |
| 17. | Prickles confined to angles of stems, not grading into pricklets. | 18. |
| | Prickles present all round stems and grading into pricklets. | 24. |
| <i>Series Vestiti</i> | | |
| 18. | Stems densely hairy, stalked glands less conspicuous than hairs. | <i>R. vestitus</i> |
| | Stems either glabrous or if somewhat hairy, hairs less obvious than stalked glands | 19. |
| 19. | Terminal leaflet obovate, broad, with short cuspidate apex and serrulate margin. | 20. |
| | Not as above. | 21. |
| <i>Series Mucronati</i> | | |
| 20. | Sepals reflexed | <i>R. wirralensis</i> |
| | Sepals patent to erect. | <i>R. mucronulatus</i> |
| 21. | Stems rough with short, subequal stalked glands and acicles. | 22. |
| | Stalked glands and acicles unequal. (<i>Series Micantes</i>) <i>R. raduloides</i> | |
| <i>Series Radulae</i> | | |
| 22. | Petals white/pale pink | 23. |
| | Petals pink. | <i>R. radula</i> |
| 23. | Stems glabrous/glabrescent | <i>R. echinatoides</i> |
| | Stems hairy | <i>R. adenanthoides</i> |
| 24. | Prickles strong, pricklets often more numerous than stalked glands. (<i>Series Hysterices</i>) | <i>R. dasyphyllus</i> |
| | Prickles weak, stalked glands and acicles numerous. (<i>Series Glandulosi</i>) | <i>R. pedemontanus</i> |
| | Prickles and stalked glands in variable quantity on same bush. | 25. |
| <i>Series Aniscanthi</i> | | |
| 25. | Stems glabrous/glabrescent. | <i>R. infestus</i> |
| | Stems hairy. | 26. |
| 26. | Young carpels hairy. | <i>R. aniscanthos</i> |
| | Young carpels glabrous. | <i>R. drejeri</i> |
| <i>Section Corylifolii</i> | | |
| 27. | Petals white | 28. |
| | Petals pink | 30. |
| 28. | Young carpels glabrous | <i>R. pruinosis</i> |
| | Young carpels hairy at tip | 29. |

- | | | |
|-----|----------------------------------------------------------------------------------------|------------------------------------------------|
| 29. | Prickles on angles, < 20 per 5cm. Prickles on faces as well as angles, >20 per 5cm. | <i>R. latifolius</i> <i>R. tuberculatus</i> |
| 30. | Prickles < 12 per 5cm. Prickles >15 per 5cm. | <i>R. eboracensis</i> <i>R. hindii</i> |

Arenaria.

Here the problem lies in distinguishing two species which, until recently were subspecies of *A. serpyllifolia*. Both are known to occur in VC68 and it would be very interesting to elucidate their distributions. Both species have petals shorter than the sepals.

Arenaria serpyllifolia - sepals 3-4x1-1.8mm.

Arenaria leptoclados - sepals 2-3x0.5-0.8mm, whole plant generally slenderer.

Subspecies.

The following notes outline subspecies which may, or are likely to be, found in VC68. The list is not exclusive but all those most likely to be encountered should be here. Remember to take 8 figure grid references if the subspecies is not on the main list. (Specimens may be helpful in some of those cases if circumstances are appropriate.

Anthyllis vulneraria ssp. vulneraria

Anthyllis vulneraria ssp. polyphylla

Anthyllis vulneraria ssp. carpathica

Anthyllis vulneraria ssp. lapponica

ssp. vulneraria - decumbent to ascending, stems rarely hairy below, leaflets equal sized, calyx with red tip, corolla yellow or red. Common – in VC68.

ssp. polyphylla – upright, stems hairy below, leaflets equal sized, calyx usually without red tip, corolla pale yellow. (Introduced as forage etc. - escapes)

ssp. carpathica – Upright, large (up to 1m), leaflets unequal, concentrated at base of stem, calyx with red tip, corolla yellow or white. (Introduced as forage etc. - escapes). In VC68.

ssp. lapponica - decumbent to ascending, leaflets unequal, calyx hairy with red tip, corolla yellow. Mountains and rocks near sea. In VC68.

Arctium minus subsp. minus

Arctium minus subsp. pubens

ssp. minus – capitula 15-25mm, peduncles 0-0.8cm. Common – in VC68.

ssp. pubens – capitula 20-32mm, peduncles 0.5-4(12)cm. Leaves and capitula hairier than *ssp. minus*. In VC68.

Asplenium trichomanes ssp. quadrivalens
Asplenium trichomanes ssp. trichomanes

Both in VC68.

| | | |
|----------|----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| | <i>A. trichomanes ssp trichomanes</i> | <i>A. trichomanes ssp. quadrivalens.</i> |
| Habitat | Calicifuge. Acid rocks. | Calciicole. Mortared walls and basic rocks. |
| Stipe | Thin, wiry. Persistent after pinnae shed. | Thick, not as persistent as subs. trichomanes |
| Pinnae | <8mm. Round to oval. Widely spaced, mostly alternate, with distinct stalk. | <11mm. Oblong, almost symmetrical. Crowded, mostly opposite, almost sessile. |
| Sorus | <2mm. Up to 6 per pinna. | <3mm. Up to 9 per pinna. |
| Indusium | Narrow, delicate. | Broad, conspicuous. |

Betula pubescens ssp. pubescens
Betula pubescens ssp. tortuosa

ssp. pubescens – Tree with usually a single stem, young twigs very pubescent, buds not viscid, leaves 3-4cm. Lowland. In VC68.

ssp. tortuosa – Shrub or small tree, young twigs glabrescent with sticky (sweet smelling) glands, buds viscid, leaves <3cm. Upland. In VC68.

Bromus hordeaceus ssp. hordeaceus
Bromus hordeaceus ssp. thominii
Bromus hordeaceus ssp. ferronii
B x pseudothominii

All occur in VC68. Other subsp. occur elsewhere.

| | <i>ssp. hordeaceus</i> | <i>ssp. ferronii</i> | <i>ssp. thominii</i> | <i>B x. pseudothominii</i> |
|----------|-------------------------|----------------------------------|-------------------------------------|----------------------------------------|
| Habit | to 80cm. Erect. | To 15(20)cm. Erect to ascending. | To 8(12)cm. Prostrate to ascending. | To 60cm. |
| Habitat | Common. | Cliff tops | Sand, inland and on coast. | Grassland, rough ground, verges. |
| Spikelet | 12-25mm. Usually hairy. | 8-12mm. Hairy or glabrous. | 8-18mm. Glabrous. | 8-25. Often hairy, sometimes glabrous. |
| Awns | 4-11. ± straight. | 2-6. Recurved. | 2-5.5. Straight to recurved. | 3-7. Straight. |
| Lemma | 8-11mm. Hairy. | 6.5-8mm. Hairy. | 6.5-7.5mm. Usually glabrous. | 6.5-8mm. Usually glabrous. |

Cerastium fontanum ssp. vulgare
Cerastium fontanum ssp. holostoides

ssp. vulgare – lower stem internodes with hairs all round, leaves hairy on both sides. Common.

ssp. holostoides – lower stem internodes glabrous or with 1-2 lines of hairs. Leaves \pm glabrous, or sparsely hairy mostly on margin or lower midrib. Mostly wet places. May be in VC68.

Cochlearia pyrenaica ssp. pyrenaica
Cochlearia pyrenaica ssp. alpina

ssp. pyrenaica – leaves not succulent, fruit cuneate at base. Not recorded for VC68 but might be present.

ssp. alpina – leaves succulent, fruit rounded at base. In VC68.

Cornus sanguinea subsp. sanguinea
Cornus sanguinea subsp. australis

ssp. sanguinea – hairs on lower leaf surface mostly 2 armed but many unevenly so and with 1 arm directed away from surface. Native. Common.

ssp. australis - hairs on lower leaf surface all with 2 \pm arms, both appressed to surface. Introduced, probably in VC68.

Dactylorhiza incarnata ssp. incarnata
Dactylorhiza incarnata ssp. coccinea
Dactylorhiza incarnata ssp. pulchella

ssp. incarnata – to 40cm, flowers a rather fleshy pink, no anthocyanin (red pigment) present. Occasional spots on leaves. In VC68.

ssp. coccinea – to 20cm, flowers vivid ruby or crimson, anthocyanin present. No spots on leaves. In VC 68 on Holy Island and may be elsewhere.

ssp. pulchella - 20-40cm, flowers reddish purple, anthocyanin present. Sometimes a few spots on leaves. In VC68.

Deschampsia cespitosa ssp. cespitosa
Deschampsia cespitosa ssp. parviflora

ssp. parviflora - spikelets 2-3.5mm, hairs at base of rachilla shorter than rachilla itself. Generally a shade tolerant plant, often in woodland, with leaves bright green on top surface.

ssp. cespitosa - spikelets 3.5-6mm, hairs at base of rachilla longer than rachilla itself. Generally a plant of more open habitats, with leaves bluish-green on top surface.

Ficaria verna ssp. verna
Ficaria verna ssp. fertilis
Ficaria verna ssp. ficariiformis
Ficaria verna ssp. chrysocephala

ssp. verna and *fertilis* both in VC68. Other two may be present as introductions/escapes.

| | <i>ssp. verna</i> | <i>ssp. fertilis</i> | <i>ssp. ficariiformis</i> | <i>ssp. chyocephala</i> |
|--------------------------------------|-------------------|----------------------|---------------------------|-------------------------|
| Tubers in leaf axils after flowering | Yes | No | Yes | No |
| Petals | 6-11mm | 10-20mm | 17-26mm | 18-25mm |

Fumaria officinalis ssp. officinalis

Fumaria officinalis ssp. wirtgenii

ssp. officinalis – racemes 20-60 flowered, sepals >2.5mm long. Common.

ssp. wirtgenii – racemes 5-20 flowered, sepals <2.5mm long. In VC68.

Galium palustre ssp. palustre

Galium palustre ssp. elongatum

ssp. palustre – most leaves <20mm, inflorescence ±cylindrical, flowers 2-3.5mm. Common.

ssp. elongatum – most leaves >20mm, inflorescence ±conical, flowers 3-4.5mm. In VC68.

Gentianella amarella ssp. amarella

Gentianella amarella ssp. septentrionalis

ssp amarella – corolla dull purple (occasionally pale blue, pink or whitish), 14-17mm. In VC68.

ssp septentrionalis – corolla creamy white, suffused red or purple on outside, (14)16-22mm. In VC68.

Juncus bulbosus ssp. bulbosus

Juncus bulbosus ssp. kochii

ssp. bulbosus – stems normally decumbent, inner tepals obtuse/rounded, outer anthers 5-7mm. Capsule matt light brown. Probably common in VC68.

ssp kochii – stems usually erect, inner tepals acute/acuminate, outer anthers 3-5mm. Capsule shiny dark brown. Probably common in VC68.

Lamiaeum galeobdolon ssp. argentatum

Lamiaeum galeobdolon ssp. galeobdolon

Lamiaeum galeobdolon ssp. montanum

ssp. argentatum – leaves with large, bright silvery blotches. Rampant with long stolons. In VC68.

ssp. montanum – leaves with dullish silver grey flecks. Less vigorous, although creeping. Hairs on flowering stems on faces as well as angles.

ssp. galeobdolon – leaves often without silver markings. Hairs on flowering stems only on 4 angles.

Ornithogallum umbellatum ssp. campestre
Ornithogallum umbellatum ssp. umbellatum

ssp. umbellatum – leaves per bulb ≤ 10 , flowers ≤ 20 , outer tepals 20-30mm. Almost certainly in VC68.

ssp. campestre – leaves per bulb ≤ 35 , flowers ≤ 12 , outer tepals 15-20mm. In VC68.

Pilosella aurantica ssp. carpathicola
Pilosella aurantica ssp. aurantica

ssp. carpathicola – basal leaves 6-10cm, phyllaries 5-8mm. Common.

ssp. aurantica – basal leaves 10-20cm, phyllaries 8-11mm. In VC68.

Plantago major subsp. major
Plantago major subsp. intermedia

ssp. major – leaves subcordate to cordate at base, 5-9 veined, capsule with < 13 seeds. Common.

ssp. intermedia – leaves cuneate, 3-5 veined, capsule with 13+ seeds. In VC68.

Potentilla erecta ssp. erecta
Potentilla erecta ssp. strictissima

ssp. erecta – weak, often decumbent, stems to 25cm, petals 2.5-4.5mm, stem leaves serrate in distal half. Common.

ssp. strictissima – erect, stems to 45cm, petals 4-6mm, stem leaves serrate over most of length. A much more robust, coarse looking plant. Upland. In VC68.

Rhinanthus minor ssp. minor
Rhinanthus minor ssp. stenophyllus
Rhinanthus minor ssp. monticola

ssp. minor – intercalary leaves (ie between topmost branches and lowest bract) mostly 0(1) pairs, lowest flower at node 6-9, leaves mostly with parallel sides. Common in VC68.

ssp. stenophyllus – intercalary leaves 1-2(4) pairs, lowest flower at node 8-13, leaves mostly tapering from near base, stems < 50 cm with several pairs of long flowering branches from basal and middle parts, corolla yellow. In VC68, under-recorded.

ssp. monticola - intercalary leaves 1-2(4) pairs, lowest flower at node 8-13, leaves mostly tapering from near base, stems < 25 cm with several pairs of long flowering branches from near base, corolla dull- or brownish-yellow. In VC68 Cheviot.

Rosa caesia ssp. caesia
Rosa caesia ssp. vosagiaca

ssp. caesia – stems green or somewhat red, leaflets rugose, scarcely glaucous, hairy on lower side. In VC68.

ssp. vosagiaca - stems often strongly red, leaflets scarcely rugose, glaucous, glabrous. In VC 68 common.

Rumex crispus ssp. crispus
Rumex crispus ssp. littoreus

ssp. crispus – achene 1.3-2.5mm, tubercles usually <2.5mm, often only one developed. Common.

ssp. littoreus – achene 2.5-2.5mm, tubercles <3.5mm, usually subequal. Maritime. In VC68.

Solidago canadensis ssp. canadensis
Solidago canadensis ssp. altissima

ssp. canadensis – stems hairy just in upper half, ligules 6-12mm. In VC68.

ssp. altissima – stems hairy throughout, ligules 10-15mm. Possibly in VC68.

Sparganium erectum ssp. erectum
Sparganium erectum ssp. neglectum

ssp. erectum – fruits with a distinct shoulder beneath the beak. In VC68.

ssp. neglectum – fruits gradually tapered beneath the beak. In VC68.

Tragopogon pratensis ssp. minor
Tragopogon pratensis ssp. pratensis

ssp. minor – ligules shorter than phyllaries. Common.

ssp. pratensis – ligules as long or longer than phyllaries. Just possibly in VC68.

Veronica hederifolia ssp. hederifolia
Veronica hederifolia ssp. lucorum.

Difficult. Even using a combination of characters many plants will be impossible to name. Both occur in VC68.

ssp. hederifolia – leaves thick, dark green, apical leaf wider than long, corolla mostly ≥ 6 mm, anthers blue, 0.7-1.2mm, fruiting pedicels 2-4x as long as calyx, calyx with marginal hairs mostly ≥ 9 mm.

ssp. lucorum – leaves thin, light green, apical leaf longer than wide, corolla mostly ≤ 6 mm, anthers white to pale blue, 0.4-0.8mm, fruiting pedicels > 3.5 x as long as calyx, calyx with marginal hairs mostly ≤ 9 mm.

Veronica serpyllifolia ssp. serpyllifolia
Veronica serpyllifolia ssp. humifusa

ssp. serpyllifolia – \pm half of flowering stem erect, racemes hairless or with eglandular hairs, pedicels about = to calyx, corolla 5-8mm. Montane forms are more procumbent and glandular. Common.

ssp. humifusa – most of flowering stem procumbent, racemes with glandular hairs, pedicels longer than calyx, corolla 6-10mm. In VC68. Wet rock ledges in the Cheviots.

Vicia sativa ssp. nigra
Vicia sativa ssp. segetalis

ssp. nigra – strongly heterophyllous (leaflets of upper leaves much, and abruptly, narrower than those of lower leaves), flowers ±concolorous usually bright pink-purple. Common.

ssp. segetalis - ±isophyllous (leaflets of upper leaves little, and gradually, narrower than those of lower leaves), flowers bicolorous. Probably equally common in VC68.

Viola tricolor ssp. tricolor

Viola tricolor ssp. curtsii

ssp. tricolor – rhizomes zero or underdeveloped. In VC68.

ssp. curtsii – rhizomes well developed. In VC68 but not seen for many years.

Hybrids.

It is not possible to consider even all the most common hybrids here. However it is hoped that the following may assist.

Elytrigia hybrids.

These can be difficult, but are, unfortunately, common along the coast of VC68 and are well worth careful recording. *E. juncea* is believed to be very rare in VC68.

| | <i>E. repens</i> | <i>E. atherica</i> | <i>E. juncea</i> | <i>E x drucei</i> (<i>E. repens</i> x <i>E. atherica</i>) | <i>E. x acuta</i> (<i>E. atherica</i> x <i>E. juncea</i>) | <i>E x laxa</i> (<i>E. repens</i> x <i>E. juncea</i>) |
|----------------|------------------------|----------------------------------------------------|----------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------|
| Fertility | Fertile | Fertile | Fertile | Male Sterile | Male Sterile | Male Sterile |
| Rachis | Tough. Rough on angles | Tough. Rough on angles | Weak. Glabrous on angles | Tough. Rough on angles | Weak. Glabrous on angles | Weak. Glabrous on angles |
| Sheath margins | Glabrous | Middle and lower sheath margins with minute hairs. | Middle and lower sheath margins with minute hairs. | Middle and lowers sheath margins with few minute hairs. | Middle and lowers sheath margins with minute hairs. | Glabrous |
| Leaf blades | Few long hairs | Scabrid | Minutely pubescent | | | |

Geum x intermedium (*G. rivale* x *G. urbanum*) is intermediate between the parents and common where they both occur.

Hyacinthoides x massartiana (*H. non-scripta* x *H. hispanica*).

The hybrid is variable and very common, whereas pure *H. hispanica* is uncommon.

| | <i>H. hispanica</i> | <i>H. non-scripta</i> | <i>H. x massartiana</i> |
|---------------------------|-----------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|
| Leaves | 10-35mm | 7-15mm | 10-30mm |
| Inflorescence | Not 1-sided, erect or spreading | 1-sided, drooping at tip | Not 1-sided, usually spreading |
| Perianth | Segments widely spreading, flowers becoming saucer-shaped | Segments parallel sided, flowers appearing tubular | Segments moderately spreading, flowers bell-shaped |
| Tips of perianth segments | Not reflexed | Strongly reflexed | Scarcely reflexed |
| Anthers | Blue | Cream | Variable |
| Outer filaments | Inserted below middle of perianth segment | Inserted just above middle of perianth segment | Inserted just below middle of perianth segment. |

Hypericum x desetangii (*H. perforatum* x *H. maculatum*).

Common in VC68.

Would key out as *H. perforatum*, however the tips of the sepals are denticulate, with an apical apiculus, whereas in *H. perforatum* they are entire.

Larix x marschlinsii (*L. decidua* x *L. kaempferi*).

Very commonly planted in VC68. Often originating anew in mixed plantations.

| | <i>L. decidua</i> | <i>L. kaempferi</i> | <i>L. x marschlinsii</i> |
|--------------------|--------------------------------|---------------------|--------------------------|
| Female cone scales | Erect | Tips recurved | Tips somewhat recurved |
| Cones | Ovoid | Globose | Ovoid |
| Leaf undersides | Inconspicuous greenish stripes | White stripes | Grey or white stripes |
| Young twigs | Straw coloured | Reddish | Pink brown |

Mimulus hybrids.

Mimulus guttatus and *M. luteus* are fully fertile. Sterile, or partially sterile plants are hybrids, but may otherwise be indistinguishable, and unidentifiable.

Two hybrids are known to occur in VC68 but others may be present and care is needed.

Mimulus x robertsii (*M. guttatus* x *M. luteus*) is sterile with a yellow corolla often spotted with orange, red or purple. Calyx never petaloid.

Mimulus x burnetii (*M. cupreus x M. guttatus*) is sterile with a copper coloured corolla, often spotted red in throat but not on lobes. Calyx sometimes petaloid.

Nasturtium x sterilis (*N. officinale x N. microphyllum*)

Differs from the parent species in having <5 seeds per fruit (species have >10) and very little pollen.

Quercus x rosacea (*Q. petraea x Q. robur*).

It has been suggested that hybrids form up to 13% of populations, possibly considerably more. Accordingly the hybrid should be carefully considered when identifying specimens.

Try this method as used by Prof. Mick Crawley:

| | Score |
|------------------------------------------------|-------|
| Sessile acorns | 1 |
| Pedunculate acorns | 2 |
| Simple hairs or none in axils of leaf veins | 2 |
| Stellate hairs in axils of leaf veins | 1 |
| Leaf base lobed | 2 |
| Leaf base cuneate | 1 |
| Leaf base lobed on 1 side and cuneate on other | 1.5 |
| Petiole <1 cm | 2 |
| Petiole >1 | 1 |

Add the scores up:

8 points = *Q. robur*

5-7 points = *Q. x rosacea*

4 points = *Q. petraea*

Rumex x pratensis (*R. crispus x obtusifolius*)

Very common in VC68. Highly fertile and backcrossing is likely. Intermediate between parents, the leaves are wider than normal *R. crispus*, but with undulate margins and hairy petioles and midribs. Fruits generally have fewer lateral teeth than *R. obtusifolius* (2-4 typically).

Silene x hampeana (*S. dioica x S. latifolia*)

Very common in VC68 (perhaps our commonest hybrid). Often occurring without the *S. latifolia* parent. It is highly fertile and hybrid swarms are also common. Normally easily told by its pink petals, however, some *S. dioica* plants also have pink petals and the calyx teeth should also be checked in fruit (rolled back in *S. dioica*, recurved in *S. x hampeana*) if possible.

Symphytum x uplandicum (*S. officinale* x *S. asperum*)

Also very common in VC68, and somewhat variable.

The *S. asperum* parent has not been recorded in VC68. The hybrid can be told from *S. officinale* as follows:

S. officinale – upper leaf bases broadly decurrent, flowers purplish or cream, calyx ± half as long as corolla.

S. x uplandicum – upper leaf bases sessile, shortly decurrent or clasping stem, flowers blue to violet or purplish, calyx > half as long as corolla. generally a much more bristly plant.

Tilia x europaea (*T. cordata* x *T. platyphyllos*)

Commonly planted in VC68.

Told from *T. platyphyllos* by the presence of tufts of hairs in the vein axils on the undersides of the leaf (*T. platyphyllos* leaves are hairy all over undersides). Told from *T. cordata* (which is rare in VC68) by its pendant cymes (erect in *T. cordata*) and mostly larger leaves (3-6cm in *T. cordata*, 6-9cm in the hybrid). It also has prominent tertiary veining on the tops of the leaves.