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CONTENTS

EDITORIAL

Each issue of Wiltshire Botany so far has managed to break new ground. This issue contains the first village flora to be included. Barbara Last has systematically recorded the plants growing in Berwick St James, and her article gives an account of her findings. Hopefully, it will inspire others to do similar work in their own localities.

Our second article is the first systematic account we have published on the vegetation of Salisbury Plain. In this case, Kevin Walker and Richard Pywell describe the grassland communities of the MoD Training Area. Kevin and Richard can be contacted at the Institute of Terrestrial Ecology, Monks Wood, Abbots Ripton, Huntingdon, Cambs., PE17 2LS. Tel. 01487 773381.Fax. 01487 773467. Email; Kwal@ite.ac.uk

Innovation is complemented by continuity. Rob Randall's article continues his account of the history of recording the many different species of bramble in Wiltshire. His account brings us more or less up to the present day. It is hoped that the next issue will contain what is effectively an up-to-date bramble flora of Wiltshire.

As in previous issues, a selection of the Society's plant records is included. This covers 1997 and 1998, and effectively brings us up to date, since the 1999 records would not have been complete at the time of this compilation. Many people have been involved in the process. Malcom Hardstaff has collected the records together, Louisa Kilgallen has combed through them to produce a list fitting our criteria for publication here, and our vice-county recorders Ann Hutchison and Dave Green have checked the information. This work all rests on the activity of many members and others who have sent in records. The substantial contributions of Jack Oliver, Pat Woodruffe, Jeremy Wood, Barbara Last, Paul Darby, Mrs J Hodgkinson and Roger Veall have been particularly helpful.

Some articles are already promised for Issue No 4, but further contributions are welcome. Articles should be submitted to John Presland, 175c Ashley Lane, Winsley, Bradford-on-Avon, BA15 2HR, who will also be pleased to discuss proposed articles informally (Tel: 01225 865125), A leaflet is also available offering guidance to authors on the most helpful forms in which to submit articles

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THE FLORA OF BERWICK ST. JAMES

Barbara Last

Introduction.

This article sets out the results of two years work, 1998-1999, which aimed to provide a comprehensive description of the flora of the parish of Berwick St. James. Some of this ground had been covered during the seven years survey for the Flora Mapping scheme resulting in the publication of the Wiltshire Flora (Gillam et al 1993). More recently, in view of the approach of the millennium, it was suggested that this might be an addition to the Book of Berwick St. James being prepared by Nicky Street to mark both the history of the village and what is now present at this memorable time.

The boundaries and main features of the parish are shown on the map opposite. It has a curious elongated shape, about 18 kms all round but only just over two kms wide at the broadest point. It encompasses a segment of Yarnbury Castle in the west and stretches to the long barrows at Lake in the east. It is difficult to define the boundary on the ground as only in very few places does it follow any recognisable features in the landscape. In one short stretch the boundary coincides with the river Till, but apart from that, old markers have vanished, as have many hedgerows, and the boundary follows a course over arable fields and pastures. There is a fence, but no hedge, along the north west boundary with Parsonage Down. In 1985 and 1989, two expeditions were mounted to trace out and walk the boundary.

As most of the parish lies over chalk subsoil, any naturally occurring vegetation is calcicole but much has been removed and modified by agricultural practices. What remains of natural or semi-natural flora can be found at Yarnbury Castle, an old iron-age fort, although much modified by hard grazing, and along the margins of old trackways such as Langford Way and the path by the former school. Just outside and bordering the parish is found typical chalk downland flora in the chalkpits by the school and suprisingly along the verge of the A303, a trunk road constructed in the 70's using soil from the edge of Yarnbury castle and thus containing a seed bank of unimproved pasture flora. This is of such interest that it has been designated a 'Protected Verge' by the Wiltshire County Council and managed sympathetically. The boundary also skirts Parsonage Down, a National Nature Reserve and an SSSI because of the uninterrupted management as unimproved pasture for generations. Very little remains of downland flora on the lynchets on Druids Lodge Farm as, although too steep to plough, they are too close to arable areas to have escaped spray drift. However, these areas of arable have recently (1998) been sown with a grass ley enriched by wildflower seed and converted to pasture, an interesting development.

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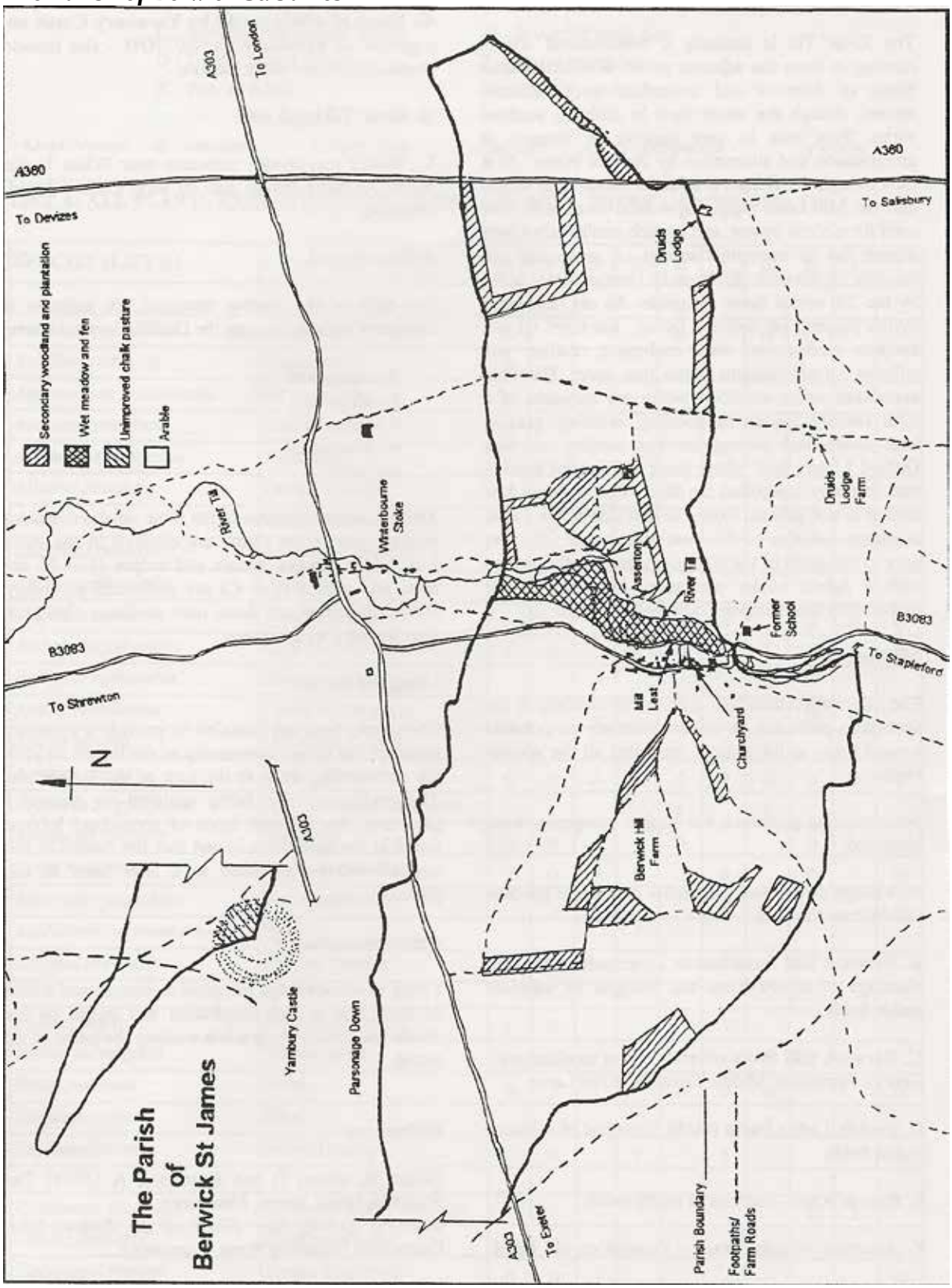
The Parish of Berwick St. James



There is no ancient woodland in the Parish. There are however, a few plantations of secondary woodland providing pheasant cover, and a number of planted shelter belts mainly of beech and some small copses.

The River Till is basically a winterbourne stream running in from the adjacent parish of Winterbourne Stoke to Asserton and thenceforth is a perennial stream, though the water flow in different sections varies from year to year because of changes in precipitation and abstraction by Wessex Water. As it runs though the village, it splits for much of its length into the Mill Leat supplying the old Bean Mill, now used for electric power, and a much smaller subsidiary stream fed by numerous springs. A pond dug out recently on Berwick Hill Farm by George Street is fed by the Till which flows alongside. An old dew pond by the piggery, on Berwick Down, has silted up and become overgrown with reed-mace, nettles and willows but still contains a little open water. There are associated water meadows which are remnants of a 17th century system of flooding, draining, grazing with sheep and cutting for hay, notably on Mrs Gifford Mead's land where there are derelict hatches that formerly controlled the flow. This wet meadow habitat is also present along the east side of the Till at Asserton and also to the west of the river. The wet area to the north of the village has been partly planted with a hybrid poplar plantation, but some is left unmanaged and is impenetrable willow scrub.

Methods

The information here was collected by walking all the accessible pathways as comprehensively as possible several times in the season, recording all the species visible.

For recording purposes, ten habitat categories were identified:

A. Village street and gardens - only those gardens visible from the road.

B. Berwick Hill farm tracks - tracksides with new plantings of native trees and margins of adjacent arable fields.

C. Berwick Hill farm coverts - three small copses, Henry's Plantation, Middle Covert and The Lawn.

D. Druids Lodge Farm tracks - margins of adjacent arable fields.

E. East of A360 - margins of arable fields.

F. Asserton Woods Track - through an old beech plantation, now with much unmanaged regenerating ash and sycamore, with a line of recent small-leaved lime.

G. North of A303; tracks by Yarnbury Castle and segment of Yarnbury Castle/MOD - this includes some unimproved chalk pasture.

H. River Till bank side.

I. Water meadows - remnants near White Lodge, below Asserton House and on Mrs. Gifford Mead's meadow,.

J. Churchyard.

For each of the species recorded, an estimate of frequency was made using the DAFOR system where:

d - dominant
a - abundant
f - frequent
o - occasional
r - rare.

These records are given in the table on the remaining pages, where most plants are covered in the initial List A, but grasses, rushes and sedges (List B) and trees and shrubs (List C) are presented separately. Botanical names are those used in Stace (1991) as also are the popular names.

Using the Results

The results here are intended to provide a reference point for the village community of the wealth of plant life surrounding them at the turn of the millennium. The results are also being analysed to provide a picture of the different types of specialised habitats noted in the table. It is hoped that the results of this analysis will be published in a later issue of this journal.

Acknowledgements

I wish to acknowledge the great assistance and advice of Dick Last in the preparation and layout of this article and his company while walking the paths of the parish.

References

Gillam B, Green D and Hutchison A (1993) *The Wiltshire Flora*. Pisces, Newbury
Stace, C (1991) *New Flora of the British Isles*. Cambridge University Press, Cambridge.

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Flora of Berwick St James 1998/99

Locations:

A - Village street and gardens
B - Berwick Hill Farm tracks
C - Berwick Hill Farm Coverts
D - Druids Lodge Farm tracks
E - East of A360
F - Asserton woods track
G - N. of A303; tracks by Yarnbury castle/ MOD
H - River Till bank side
I - Water meadows
J - Churchyard

Occurrence: **d** - dominant **a** - abundant **f** - frequent **o** - occasional **r** - rare

LIST A: ALL PLANTS EXCEPT GRASSES, RUSHES, SEDGES, TREES AND SHRUBS

SPECIES (LIST A)		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
Achillea millefolium	Yarrow	o				o		o	o		
Achillea ptarmica	Sneezewort	o	r								
Aegopodium podagraria	Ground-elder	o	o								
Aethusa cynapium	Fool's Parsley	o									
Agrimonia eupatoria	Agrimony	o	o					o			
Alliaria petiolata	Garlic Mustard		o	o		o	o	o			
Allium vineale	Wild Onion	o	o				o				
Anagallis arvensis	Scarlet Pimpernel	o						r			
Anchusa officinalis	Alkanet	r					r				
Angelica sylvestris	Wild Angelica				r		o		o	o	o
Anthriscus sylvestris	Cow Parsley	f	a	f	f	o	f	o	o	o	a
Anthyllis vulneraria	Kidney Vetch							o			
Apium nodiflorum	Fool's Water-cress								o	o	
Arabis hirsuta	Hairy Rock-cress							r			
Arctium minus	Lesser Burdock	o	o	o	o	o	o	o	o	o	o
Arenaria serpyllifolia	Thyme-leaved Sandwort					r		r			
Artemesia vulgaris	Mugwort	o	o			o			o		
Arum maculatum	Lords-and-Ladies	o	o	o		o	o		o		o
Asperula cynanchica	Squinancywort							o			
Asplenium ruta-muraria	Wall-rue						r				
Atriplex hortensis	Garden Orache	r									
Ballota nigra	Black Horehound	r	o								
Barbarea vulgaris	Winter-cress	o	o					o	r		
Bellis perennis	Daisy	o	r			o	o	o	o		o
Brassica napus	Rape					r		r			
Bryonia dioica	White Bryony	r	o		r		r				r
Callitriche stagnalis	Common Water-starwort								o	r	
Caltha palustris	Marsh-marigold									o	
Calystegia sepium	Hedge Bindweed	o	o								o

SPECIES (LIST A)		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
Campanula glomerata	Clustered Bellflower							r			
Campanula rotundifolia	Harebell							o			
Capsella bursa-pastoris	Shepherd's-purse	o	o			o					
Cardamine hirsuta	Hairy Bitter-cress	f									
Cardamine pratensis	Cuckooflower								r	o	
Carduus nutans	Musk Thistle		o		r	o		o			
Centaurea cyanus	(Garden) Cornflower		r								
Centaurea nigra	Common Knapweed		r			r		o			
Centaurea scabiosa	Greater Knapweed		o		o			o			
Centaurium erythraea	Common Centaury							r			
Centranthus ruber	Red Valerian	r									
Cerastium fontanum	Common Mouse-ear							f		o	
Chaenorhinum minus	Small Toadflax				r						
Chaerophyllum temulentum	Rough Chervil				r		r				
Chamerion angustifolium	Rosebay Willowherb		r					r	o		
Chelidonium majus	Greater Celandine	r								o	o
Chenopodium album	Fat-hen		o		o	o					
Cirsium acaule	Dwarf Thistle							o			
Cirsium arvense	Creeping Thistle	o	o	o	o	o	r	o	o	o	o
Cirsium eriophorum	Woolly Thistle							o			
Cirsium palustre	Marsh Thistle									o	
Cirsium vulgare	Spear Thistle	o	o	o	o	o	r	o	o	o	o
Clinopodium vulgare	Wild Basil		r						o		
Conium maculatum	Hemlock				a	o		r			
Convolvulus arvensis	Field Bindweed	o	o		o				o		f
Corydalis lutea	Yellow Corydalis	o									
Crepis capillaris	Smooth Hawk's-beard	o	o					o			o
Crepis vesicaria	Beaked Hawk's-beard		o								
Crocosmia crocosmiflora	Montbretia								r		
Cymbalaria muralis	Ivy-leaved Toadflax	o									
Dactylorhiza praetermissa	Southern Marsh-orchid									f	
Daucus carota	Wild Carrot	r	o				r	o			r
Digitalis purpurea	Foxglove	r									
Dipsacus fullonum	Wild Teasel		o						f		
Dryopteris filix-mas	Male-fern						o				
Epilobium hirsutum	Great Willowherb		r						f		f
Epilobium montanum	Broad-leaved Willowherb	o	r								r
Epilobium parviflorum	Hoary Willowherb								o		
Epipactis phyllanthes	Green-flowered Helleborine	r									
Equisetum fluviatile	Water Horsetail									r	

SPECIES (LIST A)		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
Equisetum palustre	Marsh Horsetail									r	
Erophila verna	Common Whitlowgrass	r						f			
Eupatorium cannabinum	Hemp-agrimony						o		o		
Euphorbia exigua	Dwarf Spurge	r									
Euphorbia lathyrus	Caper Spurge							r			
Euphorbia helioscopia	Sun Spurge	f	r								
Euphrasia sp.	Eyebright							r			
Fallopia convolvulus	Black-bindweed				o	r		r			
Filipendula ulmaria	Meadowsweet								o	f	
Filipendula vulgare	Dropwort		r					o			
Fumaria officinalis	Common Fumitory	o	o		o	o		o			
Galanthus nivalis	Snowdrop	o					o				f
Galium aperine	Cleavers	f	f	f	f	o	f	o	o	o	a
Galium mollugo	Hedge Bedstraw	o	o					r			r
Galium verum	Lady's Bedstraw				r	r		o			
Geranium dissectum	Cut-leaved Cranesbill	o	r			o		o	r	o	f
Geranium lucidum	Shining Crane's-bill	r									
Geranium molle	Dove's-foot Crane's-bill	o	o	o	o	o		o	o		o
Geranium pratense	Meadow Cranes-bill	r									
Geranium pyrenaicum	Hedgerow Crane's-bill	o	o				r	r			
Geranium robertianum	Herb-Robert		o				f			o	o
Geum rivale	Water Avens									o	
Geum urbanum	Wood Avens		o	o		o	f				
Glechoma hederacea	Ground-ivy		o	o	o	o	o	o	o		o
Gymnadenia conopsea	Fragrant Orchid							o			
Hedera helix	Ivy	o	o	f		o	f		o		f
Helianthemum nummularium	Common Rock-rose							r			
Heracleum sphondylium	Hogweed	o	f	f	o	o	o	o	o	o	o
Hippocrepis comosa	Horseshoe Vetch							r			
Hesperis matronalis	Dame's-violet						f				
Humulus lupulus	Hop	r					r				o
Hyacinthoides hispanica	Spanish Bluebell	o									r
Hyacinthoides non-scripta	Bluebell		o	o	r		r				
Hypericum perforatum	Perforate St.John's-wort							o			r
Hypochaeris radicata	Cat's-ear		r								
Iris foetidissima	Stinking Iris	o									
Iris pseudacoris	Yellow Iris						o		o	f	
Knautia arvensis	Field Scabious	r	o		r						

SPECIES (LIST A)		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
Lamiastrum galeobdolon	Yellow Archangel	r									
Lamium album	White Dead-nettle	o	o	o	o	o	o	o	o	o	o
Lamium amplexicaule	Henbit Dead-nettle		r		r			r			
Lamium purpureum	Red Dead-nettle	o	o	o	o	o	o	o	o		o
Lapsana communis	Nipplewort	o	o			o			o		o
Lathyrus pratensis	Meadow Vetchling	o	o		r			r		o	
Legousia hybrida	Venus's-looking-glass		r								
Lemna minor	Common Duckweed									o	
Lemna minuta	Least Duckweed	o									
Leontodon autumnalis	Autumn Hawkbit							o			
Leontodon hispidus	Rough Hawkbit		r					o			r
Lepidium draba	Hoary Cress		r								
Leucanthemum vulgare	Oxeye Daisy										o
Linaria vulgaris	Common Toadflax		o		r	r					
Linum catharticum	Fairy Flax							f			
Listera ovata	Common Twayblade						r				
Lonicera periclymenum	Honeysuckle			r							
Lonicera xylosteum	Fly Honeysuckle	r									
Lotus corniculatus	Common Bird's-foot-trefoil		o		o			f			
Lychnis flos-cuculi	Ragged-Robin									o	
Lycopus europaeus	Gipsywort								o	o	
Malva moschata	Musk Mallow	o									
Malva sylvestris	Common Mallow	o	r			r					r
Matricaria discoidea	Pineappleweed		f		f			r			
Medicago lupulina	Black Medick		o		o		r	o			o
Melissa officinalis	Balm								o		
Mentha aquatica	Water Mint								f		
Mentha suaveolens	Round-leaved Mint		o								
Mercurialis annua	Annual Mercury	o									
Mercurialis perennis	Dog's Mercury			o			o				
Mimulus guttatus	Monkeyflower								r	f	
Moehringia trinervia	Three-nerved Sandwort						r				
Mycelis muralis	Wall Lettuce						f				
Myosotis arvensis	Field Forget-me-not	o	o		o			r	o		r
Myosotis scorpioides	Water Forget-me-not								o	o	r
Myosotis sylvatica	Wood Forget-me-not	o					r				
Odontites vernus	Red Bartsia		o					o			
Oenanthe crocata	Hemlock Water-dropwort						o		f	f	r
Onobrychis viciifolia	Sanfoin							o			

SPECIES (LIST A)		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
Ononis repens	Common Restharrow							o			
Ophioglossum vulgatum	Adder's-tongue									r	
Ophrys apifera	Bee Orchid	r									
Orchis ustulata	Burnt Orchid							o/f			
Orobanche elatior	Knapweed Broomrape		r								
Orobanche minor	Lesser Broomrape							r			
Oxalis corniculata	Procumbent Yellow-sorrel	o									
Papaver rhoeas	Common Poppy				o	o		o			
Papaver somniferum	Opium Poppy	r	r								
Pastinaca sativa	Wild Parsnip	r	f		r	r		o			
Persicaria lapathifolia	Pale Persicaria							r	o	o	
Persicaria maculosa	Redshank				o						
Phacelia tanacetifolia	Phacelia	r									
Phyllitis scolopendrium	Hart's-tongue						f				
Pilosella officinarum	Mouse-ear-hawkweed							o			
Pimpinella saxifraga	Burnet-saxifrage							o			
Plantago media	Hoary Plantain	r	r				r	o			r
Plantago major	Greater Plantain	o	o	o	o	o	o	o	o	o	o
Plantago lanceolata	Ribwort Plantain	o	o	o	o	o	r	o	o	o	o
Polygala calcearea	Chalk Milkwort							o			
Polygonum aviculare	Knotgrass	o	o		o	r		r			
Polypodium interjectum	Intermediate Polypody									r	
Potentilla reptans	Creeping Cinquefoil	o			o	o		o	o	o	
Potentilla anserina	Silverweed		o		o	o		o	o	o	
Primula veris	Cowslip		o	o			r	r			
Prunella vulgaris	Selfheal	f			r						o
Pulicaria dysenterica	Common Fleabane	r								f	f
Ranunculus acris	Meadow Buttercup					r					
Ranunculus bulbosus	Bulbous Buttercup							f			r
Ranunculus ficaria	Lesser Celandine	o					o		o	o	f
Ranunculus peltatus	Pond Water-Crowfoot								a	a	
Ranunculus penicillatus	Stream Water-Crowfoot								a	o	
Ranunculus repens	Creeping Buttercup	o	o		o	o	o	o	o	o	f
Rhinanthus minor	Yellow-rattle							r			
Reseda lutea	Wild Mignonette		f		r	o		o			
Ribes uva-crispa	Gooseberry						o				
Rorippa nasturtium-aquaticum	Water-cress								f	f	
Rosa canina	Dog-rose					r		o			
Rubus fruticosus	Bramble					r		o			o
Rumex acetosa	Common Sorrel							o		o	o

SPECIES (LIST A)		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
Rumex crispus	Curled Dock	o					r		o		
Rumex obtusifolius	Broad-leaved Dock	o	o	o	o	o	o	o	o	o	a
Rumex sanguineus	Wood Dock					o	o			o	o
Salvia verbenaca	Wild Clary	r									
Sanguisorba minor	Salad Burnet				r	r		o			
Scabiosa columbaria	Small Scabious							o			
Scrophularia auriculata	Water figwort								f	o	
Sedum acre	Biting Stonecrop	r									
Senecio aquaticus	Marsh Ragwort									o	
Senecio jacobaea	Common Ragwort	o	o			r	r	r			r
Senecio vulgaris	Groundsel	o	o				r	r			o
Sherardia arvensis	Field Madder					r					
Silene dioica	Red Campion		r								r
Silene x hampeana	Hybrid Campion		r								
Silene latifolia	White Campion		f		o	o		o	o		r
Silene vulgaris	Bladder Campion		o		r	r	r	r			
Sinapsis arvensis	Charlock	r	r		o	o	o		r		
Sisymbrium officinale	Hedge Mustard		o	o	o						
Solanum dulcamara	Bittersweet					r		r			
Soleirolia soleirolii	Mind-your-own-business	o									
Sonchus arvensis	Perennial Sow-thistle	r	r								
Sonchus asper	Prickly Sow-thistle	o	o				o		o	o	o
Sonchus oleraceus	Smooth Sow-thistle	o	r		o	o	o	o	o		o
Stachys palustris	Marsh Woundwort								o		
Stachys sylvatica	Hedge Woundwort	o			r		o		o	o	
Stellaria media	Common Chickweed	o		r	o	o	o	o			o
Stellaria uliginosa	Bog Stitchwort									r	
Succisa pratense	Devil's-bit Scabious							r			
Symphoricarpos albus	Snowberry		o		r						
Symphytum officinale	Common Comfrey						r		o		
Taraxacum erythrosperma	Lesser Dandelion							r			
Taraxacum ruderalia	Dandelion	o	o	o	o	o	o	o	o	o	o
Tephroseris integrifolia ssp integrifolia	Field Fleawort							o			
Thymus polytrichus	Wild Thyme							r			
Torilis japonica	Upright Hedge-parsley	r	o								
Tragopogon pratensis	Goat's-beard	o			r			r			
Trifolium dubium	Lesser Trefoil	o								o	
Trifolium campestre	Hop Trefoil							r			
Trifolium micranthum	Slender Trefoil	o									
Trifolium pratense	Red Clover		o					o		o	

SPECIES (LIST A)		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
Trifolium repens	White Clover	o	o	o	o	o	o	o	o	o	
Tripleurospermum inodorum	Scentless Mayweed	r	o		r	o		r			r
Ulex europeus	Gorse							r			
Urtica dioica	Common Nettle	o	a	d	a	f	f	f	o	o	a
Valeriana dioica	Marsh Valerian									o	
Valerianella locusta	Common Cornsalad	r					r				o
Verbascum thapsus	Great Mullein	r						r			
Verbena officinalis	Vervain	r									
Veronica anagallis-aquatica	Blue Water Speedwell								o	o	
Veronica arvensis	Wall Speedwell	o			o	o		o			o
Veronica beccabunga	Brooklime								o	o	
Veronica chamaedrys	Germander Speedwell	o	r		o	o		r	o		f
Veronica filiformis	Slender Speedwell	o									
Veronica hederifolia	Ivy-leaved Speedwell	f							o		o
Veronica persica	Common Field-speedwell	o	r		o	o		o			
Vicia cracca	Tufted Vetch							r			
Vicia sepium	Bush Vetch				r						
Vicia sativa	Common Vetch	o	o					r	o		
Viola arvensis	Field Pansy	o	o		o	o		r			
Viola odorata	Sweet Violet	o	o			o	o				
Viola riviniana	Common Dog Violet			o							

LIST B: GRASSES, RUSHES AND SEDGES

SPECIES (LIST B)		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
Agrostis stolonifera	Creeping Bent	o	o	o		o		o	o		o
Alopecurus geniculatus	Marsh Foxtail									o	
Alopecurus myosuroides	Black-grass		r								
Alopecurus pratensis	Meadow Foxtail									o	o
Anisantha sterilis	Barren brome		r		r	o			o	o	o
Anthoxanthum odoratum	Sweet Vernal-grass									o	
Arrhenatherum elatius	False Oat-grass	o	f	f	f	f		f	a	f	f
Avenula pubescens	Downy Oat-grass									o	
Brachypodium sylvaticum	False Brome		o	o		o	f		o		
Briza media	Quaking-grass							o		o	
Bromopsis erecta	Upright Brome				o			o	o		o
Bromopsis ramosa	Hairy-Brome	o			r						
Bromus commutatus	Meadow Brome									o	
Bromus hordeaceus	Soft-brome	o	o					o	o		

SPECIES (LIST B)		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
Carex acutiformis	Lesser Pond sedge									f	
Carex flacca	Glaucous Sedge							o			
Carex hirta	Hairy Sedge	r								o	
Carex humilis	Dwarf Sedge							o			
Carex obtrubae	False Fox-sedge									o	
Carex riparia	Greater Pond-sedge									f	
Cynosurus cristatus	Crested Dog's-tail		o					o		f	f
Dactylis glomerata	Cock's-foot	f	f	f	f	f	r	f	f	f	o
Eleocharis palustris	Common Spike-rush									o	
Elytrigia repens	Common Couch	o	o		r			o			o
Festuca gigantea	Giant Fescue						r		o	o	
Festuca ovina	Sheep's-fescue		o			o		o		f	
Festuca pratensis	Meadow Fescue		o	o						f	o
Festuca rubra	Red Fescue	o	o		o				o	o	o
Festulolium loliaceum	Hybrid Fescue		r								
Glyceria declinata	Small Sweet-grass									o	
Glyceria fluitans	Floating Sweet-grass								o	o	
Glyceria maxima	Reed Sweet-grass								f	o	
Helictotrichon pratense	Meadow Oat-grass							o			
Holcus lanatus	Yorkshire-fog		o		o			f	f	f	f
Hordeum murinum	Wall Barley		r					o			
Juncus inflexus	Hard Rush								o	f	
Koeleria macrantha	Crested Hair-grass							r			
Lolium multiflorum	Italian Rye-grass				f						
Lolium perenne	Perennial Rye-grass		f		o		f		o	o	o
Phalaris arundinacea	Reed Canary-grass				r				f	f	
Phleum bertolonii	Smaller Cat's-tail		f					o			
Phleum pratense	Timothy		o		o	o	o	o			o
Poa annua	Annual Meadow-grass	o	o		f	f		o	o		o
Poa nemoralis	Wood Meadow-grass						o				
Poa pratensis	Smooth Meadow-grass		o			f			o		
Poa trivialis	Rough Meadow-grass	f	f		o	f		o	f	f	o
Trisetum flavescens	Yellow Oat-grass		o					o			

SPECIES (LIST B)		A	B	C	D	E	F	G	H	I	J
Typha latifolia	Bulrush		r							r	
Vulpia myuros	Rat's-tail Fescue	r									

LIST C: TREES AND SHRUBS

* = Present

SPECIES (LIST C)		A	B	C	D	E	F	G	H	I	J
Acer negundo	Ashleaf Maple										*
Acer platanoides	Norway Maple	*									
Acer pseudoplatanus	Sycamore			*							
Acer saccharinum	Silver Maple	*									
Aesculus hippocastanum	Horse Chestnut	*		*					*		
Alnus glutinosa	Alder			*							
Alnus cordata	Italian Alder			*							
Betula pendula	Silver Birch	*									
Buxus sempervirens	Box	*		*	*		*				
Carpinus betulus	Hornbeam	*									
Chamaecyperus lawsoniana	Lawson's Cypress			*		*					
Cornus sanguinea	Dogwood						*		*		
Corylus avellana	Hazel			*							
Cotoneaster sp				*							
Crataegus x lavallei	Cockspur Thorn hybrid	*									
Crataegus monogyna	Hawthorn	*		*				*			*
Escallonia sp.	Escallonia				*						
Euonymus europaeus	Spindle			*				*	*	*	*
Fagus sylvatica	Beech	*		*	*	*	*				*
Fraxinus excelsior	Ash			*							*
Ilex aquifolium	Holly	*		*			*		*		*
Juglans regia	Walnut	*									
Laburnum anagyroides	Laburnum	*									*
Larix decidua.	European Larch			*							
Ligustrum ovalifolium	Garden Privet	*		*							
Ligustrum vulgare	Wild Privet		*				*	*		*	*

SPECIES (LIST C)		**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
Malus domestica	Apple	*		*							
Mespilus germanica	Medlar	*									
Picea abies	Norway Spruce			*							
Picea sitchensis	Sitka Spruce			*	*						
Pinus sylvestris	Scot's Pine			*		*					
Pinus nigra	Austrian Pine			*	*						
Platanus hybrida	Plane			*							
Populus alba	White Poplar			*					*		
Populus canescens	Grey Poplar						*				
Populus trichocarpa	Balsam Poplar	*									
Prunus avium	Wild Cherry			*							
Prunus spinosa	Blackthorn	*		*				*			
Quercus robur	Oak						*				
Rhamnus catharticus	Purging Buckthorn	*		*				*			*
Rhus hirta	Stag’s-horn Sumach						*				
Salix caprea	Goat Willow								*		
Salix fragilis	Crack Willow								*		
Salix viminalis	Almond Willow						*				
Sambucus nigra	Elder			*	*		*				
Sorbus aria	Whitebeam	*		*	*						
Taxus baccata	Yew										*
Tilia vulgaris	Lime	*									
Tilia cordata	Small-leaved Lime						*				
Ulmus procera	Elm	*		*			*				
Viburnum lantana	Wayfaring Tree			*							
Viburnum opulus	Guelder Rose	*									

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GRASSLAND COMMUNITIES ON SALISBURY PLAIN TRAINING AREA

Results of the ITE ecological survey

Kevin Walker & Richard Pywell

Introduction

Salisbury Plain Training Area (SPTA), which occupies 38,000 hectares of central Wiltshire, is one of the most important wildlife sites in lowland Britain. It is also the U.K.'s largest military training area, offering sufficient space and variety of terrain for large-scale manoeuvres of armoured and mechanised troops. Although something of a paradox, military occupancy, which began in 1897, has preserved if not enhanced this importance for wildlife. Land purchases this century have limited the extent of intensive agricultural production, thereby minimising the detrimental impacts of modern farming activities.

As a result, the SPTA now comprises the largest continuous expanse of unimproved chalk grassland in north-west Europe and 41% of Britain's remaining area of this rich wildlife habitat (English Nature 1993; Toynton et al 1994). Much of this area has an exceptionally rich flora, supporting in places as many as 30-40 species per square metre. The SPTA is known to hold populations of 12 species of nationally rare and scarce plants, 67 species of rare and scarce invertebrates and over 10% of Britain's remaining Stone Curlew population (Carter & Rankine 1993). In recognition of its undoubted national importance, the SPTA has received a multitude of designations. At about 20,000 hectares it is one of the U.K.'s largest Sites of Special Scientific Interest (SSSIs) (re-notified in 1993); it is also a Special Protection Area (SPA) for its populations of breeding Stone Curlew and wintering Hen Harrier (Carter & Rankine 1993) and in 1995 it was proposed as a Special Area of Conservation (SpSAC) due to the presence of a number of European listed habitat types and species (Anonymous 1995). Furthermore, it is one of the most important archaeological landscapes in north-west Europe containing some 1,700 ancient monuments over 500 of which are scheduled (Brown 1995).

However, during the 1990s it became increasingly apparent that changes in defence policy (Anonymous 1995) would pose new and unprecedented threats to the ecology of the training areas. Of greatest concern was the predicted rise in UK-based military activity following the loss of continental NATO training facilities. This was likely to impact primarily on the SPTA because of its suitability for large-scale armoured manoeuvres (Coe 1997). Furthermore, the introduction of heavier and more mobile armoured vehicles (particularly armoured personnel carriers and AS90s) was likely to increase the intensity and frequency of disturbance in areas where previous impacts had been slight.

In order to minimise the adverse effects of these changes on threatened species and habitats the MoD decided to develop a land management plan (ILMPs) for each of its military ranges (Anonymous 1998). As a result the Institute of Terrestrial Ecology was commissioned to provide a vegetation survey, based on the National Vegetation Classification (NVC) as described by Rodwell (1992), which would help guide them in their management of the area and provide a baseline from which changes as a result of both military activity and land management could be monitored. This article:

- describes how the survey was carried out;
- records the NVC plant communities identified and their composition, quality and extent, and the relationship of these features to disturbance;
- notes and provides information on the distribution of plants notable because of their rarity;
- discusses applications of the data and their significance for management.

Methodology

The survey was carried out by over 20 field botanists during the summers of 1996 and 1997. It took approximately 1,500 field days to complete and represents one of the largest NVC surveys ever undertaken, with detailed coverage of over 32,000 hectares, within which 7,000 stands of vegetation were mapped and over 5,800 quadrats recorded; a remarkable feat given the restricted access into many areas. For management purposes the SPTA had been divided up into over 1,800 "compartments" prior to the survey. Within each of these, homogeneous stands of vegetation were identified, mapped and assigned an NVC community name. All the species within each community were recorded and two quadrats placed at random. In addition information on the type and cause of disturbance, management, and presence of rare or notable plants and animals were noted.

Plant communities

Over 20 NVC community types were found during the course of the survey as well as numerous mosaics. These are listed in Table 1 opposite, which also shows the extent of their occurrence. In this table, they are classified into calcareous (in this case chalk) grasslands and the more nutrient containing (mesotrophic) grasslands resulting from cultivation or other causes. A greatly simplified map of the distribution of these two main types is given in Figure 1 below. This identifies the three major areas or ranges into which the SPTA is divided: SPTA West (including Warminster and Imber Ranges); SPTA

Fig 1: Simplified map of the grassland types on the SPTA

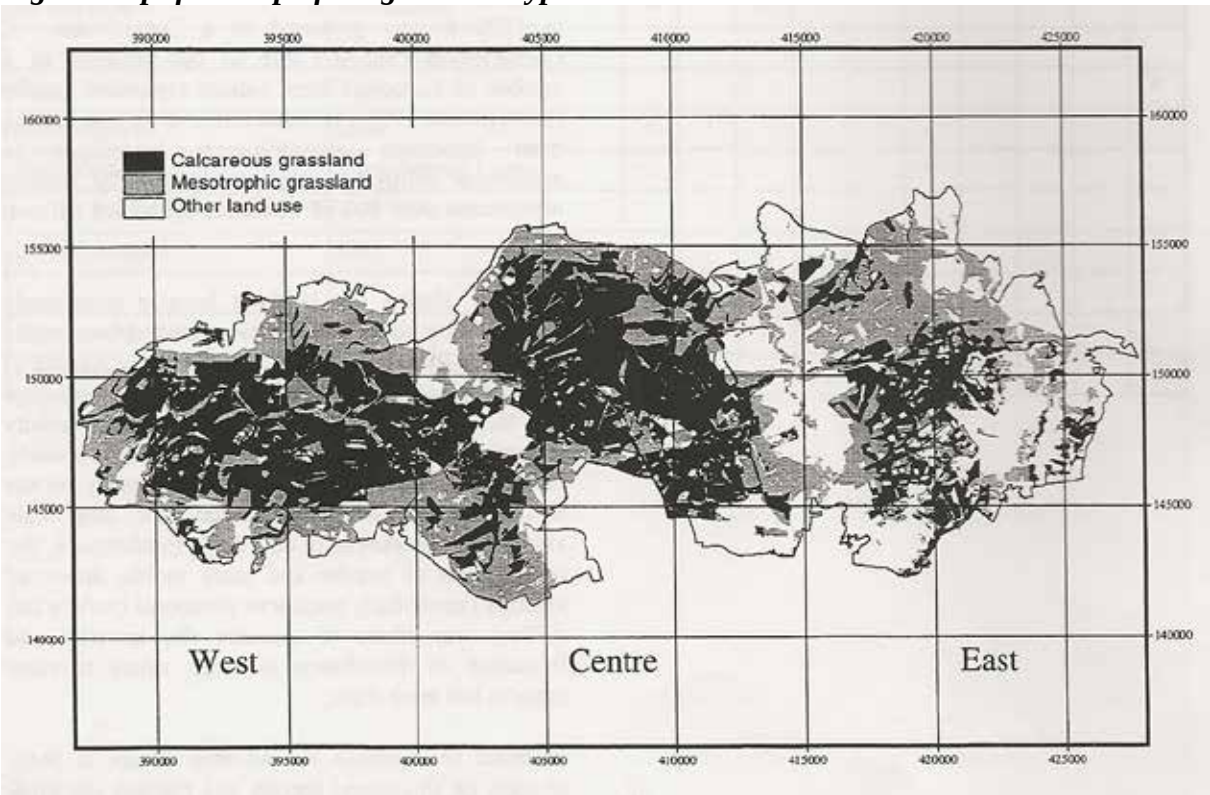


Table 1: NVC grassland types recorded on the SPTA and their extent

CALCAREOUS GRASSLANDS		**COMMON NAMES**	**AREA**	**%**
CG1	*Festuca ovina – Carlina vulgaris* grassland	Sheep's Fescue-Carline Thistle	22	0.1
CG2	*Festuca ovina – Avenula pratensis* grassland	Sheep's-Fescue-Meadow Oat-grass	203	0.6
CG2a	*Cirsium acaule – Asperula cynanchica* sub-community	Dwarf Thistle-Squinancywort	332	1
CG2c	*Holcus lanatus – Trifolium repens* sub-community	Yorkshire Fog-White Clover	109	0.3
CG3	*Bromus erectus* grassland	Upright Brome	167	0.5
CG3a	Typical sub-community		1,101	3.4
CG3b	*Centaurea nigra* sub-community	Lesser Knapweed	52	0.2
CG3c	*Knautia arvensis – Bellis perennis* sub-community	Field Scabious-Common Daisy	162	0.5
CG3d	*Festuca rubra – Festuca arundinacea* sub-community	Red Fescue-Tall Fescue	6,806	21.2
CG3di	*Filipendula vulgaris* variant (Porley 1986)	Meadowsweet	433	1.4
CG4	*Brachypodium pinnatum* grassland	Tor-grass	3	<0.1
CG5	*Bromus erectus – Brachypodium pinnatum* grassland	Upright Brome-Tor-grass	2	<0.1
CG6	*Avenula pubescens* grassland	Downy Oat-grass	272	0.8
CG7	*Festuca ovina – Hieracium pilosella – Thymus praecox/pulegioides* grassland	Sheep's Fescue-Mouse-ear Hawkweed-Thyme-Large Thyme	20	0.1
-	Chalk heath		14	<0.1
	TOTAL		9,698	31

MESOTROPHIC GRASSLANDS		**COMMON NAMES**	**AREA**	**%**
MG1	*Arrhenatherum elatius* grassland	False Oat-grass	3,937	12.3
MG5	*Cynosurus cristatus - Centaurea nigra* pasture	Crested Dog's-tail-Lesser Knapweed	87	0.3
MG6	*Lolium perenne - Cynosurus cristatus* pasture	Perennial Rye-grass-Crested Dog's-tail	304	0.9
MG7	*Lolium perenne* leys and related grasslands	Perennial Rye-grass	499	15.6
MG11	*Festuca rubra - Agrostis stolonifera - Potentilla anserina* inundation grassland	Red Fescue-Creeping Bent-Silverweed	274	0.9
MG12	*Festuca arundinacea* grassland	Tall Fescue	13	<0.1
	Other (MG mosaics/unclassified)		2,265	7
	TOTAL		11,871	38

MOSAICS OF CALCAREOUS AND MESOTROPHIC		**AREA**	**%**
	TOTAL	4,461	14
OTHER		**AREA**	**%**
-	Woodland (including plantations)	2,770	7
-	Arable (not including Schedule I)	2,647	8
-	Other land use	589	2
-	TOTAL	6,006	17

OVERALL		**AREA**	
	TOTAL	32,036	

Centre (including Larkhill and Westdown Ranges); SPTA East (including Bulford/Perham Down Ranges and the Driver Training Area). The map shows the extent to which the core of chalk grassland has been preserved in the SPTA West and Centre, and to a lesser extent in the East, and the restriction of improved grasslands to marginal areas. Areas shown in white include arable land, urban areas and land which was not surveyed because it was included in Schedule 1 of the Agricultural and Holdings Act. (Schedule 1 land is let out on full, secure tenancies with full freedom of cropping to act as a buffer zone between civilian and military areas).

The NVC communities are described in the following sections. Calcareous grasslands are covered by the sections on *Bromus erectus* grasslands, *Festuca ovina-Avenula pratensis* grasslands and other calcareous grasslands. A section on mesotrophic grasslands follows. Some plant species have undergone name changes since Rodwell's classification. Where this is so, nomenclature follows Rodwell (1992) for community names and Stace (1997) for vascular plant names elsewhere.

Bromus erectus grasslands (CG3)

Bromus erectus (Upright Brome) grassland (CG3) is defined in the NVC as those swards in which *Bromopsis erecta* (formerly *Bromus erectus*) makes up more than 10% of the cover. It is by far the most abundant vegetation type on the SPTA, covering over 8,000 ha, which represents over 90% of the total for Wiltshire (English Nature 1993). Its proximity to the Atlantic has also led to a marked regional character with typically a higher constancy and abundance of *Serratula tinctoria* (Saw-wort), *Stachys officinalis* (Betony), *Succisa pratensis* (Devil's-bit Scabious) and *Thesium humifusum* (Bastard Toadflax) than occur on CG3 grasslands elsewhere (English Nature 1993). On the SPTA it typically forms extensive "prairies" of varying aspects and topographies, particularly in central and western areas, where grazing intensity is low or absent. However, the complicated history of ploughing, abandonment and grazing has led to a great deal of floristic variation within the community as a whole and the development of a number of distinct sub-community types, some of which are not described in the NVC (Table 1).

The typical sub-community (CG3a) is the most species-rich CG3 grassland encountered on the SPTA, and often approaches the *Festuca ovina-Avenula pratensis* (Sheep's-Fescue-Meadow Oat-grass) (CG2) grassland in overall floristics and physiognomy. Although lacking many of the typical plants of closely-grazed turf which survive the winter through buds close to the ground (chamaephytes) (Rodwell 1992), it shares many of the species which prefer chalk downland such as *Asperula cynanchica* (Squinancywort), *Hippocrepis comosa* (Horseshoe Vetch) and *Polygala calcarea* (Chalk Milkwort). Only small areas of this sub-community were found on the SPTA (3.4%), where it typically occurred within irregular mosaics of *Festuca ovina-Avenula pratensis* grassland (CG2) and the *Festuca rubra-Festuca arundinacea* (Red Fescue-Tall Fescue) sub-community (CG3d) where rabbit-grazing was more intense. These sub-communities may have been much more abundant on the SPTA in the past under light grazing regimes (personal communication, Paul Toynton 1999).

Occasionally there is a conspicuous abundance of anthills, which are often colonised by *Thymus polytrichus* (Wild Thyme), *Helianthemum nummularium* (Common Rock-rose) and fine-leafed grasses, as at Bulford. These grasslands are similar to those first described by Wells on Porton Ranges to the south (Wells et al 1976) which were shown to have developed following centuries of rabbit-grazing (and exclusion of livestock). As a result the turf can be quite fine-structured with frequent scattered tussocks of *Bromopsis erecta* and *Festuca rubra* (Red Rescue) and patches of more open herb-rich ground. Diminutive grasses such as *Festuca ovina* (Sheep's-Fescue), *Koeleria macrantha* (Crested Hair-grass), *Briza media* (Quaking-grass) and *Helictotrichon pratense* (Meadow Oat-grass) are prominent and are accompanied by a number of rosette-forming hemicryptophytes (plants which survive the winter through buds in the soil surface), the most notable of which are *Cirsium acaule* (Dwarf Thistle), *Scabiosa columbaria* (Small Scabious) and *Plantago media* (Hoary Plantain). Particularly fine stands of this sub-community were found on the steep south-facing slopes of Great Cheverell Hill where there was a notable abundance of the rarities *Gentianella anglica* (Early Gentian), *Orchis ustulata* (Burnt-tip Orchid), *Platanthera bifolia* (Lesser Butterfly-Orchid) and *Thesium humifusum*. *Astragalus danicus* (Purple Milk-vetch), a species at the southern edge of its range on the SPTA, was also often associated with this grassland type, particularly at Bulford in the east.

By far the most dominant vegetation-type found during the survey was the *Festuca rubra-Festuca arundinacea* sub-community (CG3d), which alone accounted for 21% of the vegetation surveyed. This is often the least species-rich of the *Bromus erectus* grasslands, largely because of the overwhelming dominance of *Bromopsis erecta*, the coarse bulky foliage and accumulating litter of which frequently suppresses the growth of all but the most vigorous herbaceous species. It is frequently associated with

an understorey of *Festuca rubra* (occasionally *F. ovina*) and scattered tussocks of *F. arundinacea*, which in places (often suggestive of burning) can achieve local dominance. The most frequently associated herbs are *Sanguisorba minor* (Salad Burnet), *Plantago lanceolata* (Ribwort Plantain), *Centaurea nigra* (Lesser Knapweed), *Helianthemum nummularium*, *Leontodon hispidus* (Rough Hawk's-beard) and *Centaurea scabiosa* (Greater Knapweed). The last species is particularly notable within the open grasslands of the SPTA as an important nectar-source for a range of insect species including Dark-green Fritillary (*Argynnis aglaja*), Essex Skipper (*Thymelicus lineola*) and Forester moths (*Adscita* spp.). In addition, it is also the primary host of *Orobanche elatior* (Knapweed Broomrape), which Lousley thought to occur in "greater quantity" on the SPTA "... than in any other part of Britain" (Lousley 1969).

Of more limited distribution, but closely related to this sub-community is the *Filipendula vulgaris* (Meadowsweet) variant (CG3di) which was first described from the SPTA in 1986 (Porley et al 1986) and apparently known from only one other site in Britain - Martin Down NNR (personal comunication, Paul Toynton 1999). It differs from the CG3d in having many of the associates of CG3a but with a greater constancy of *Bromopsis erecta* than would normally be found in this community. In addition, *Filipendula vulgaris* often forms quite dense stands between *B. erectus* tussocks and is frequently associated with "lawns" of *Helianthemum nummularium*. Uncommon species, more typical of grazed downland, are also present (e.g. *Asperula cynanchica*, *Thesium humifusum*, *Hippocrepis comosa*, *Polygala calcarea* and *Plantago media*), but at a lower abundance than would normally be expected in CG3a. This variant probably represents an intermediate form between CG3a and CG3d, possibly suggesting a lighter grazing regime or past burning.

Grazing, particularly of cattle and to a lesser extent sheep, has been integral to the ecology of chalk grassland on Salisbury Plain for at least the last 1,600 years (Smith 1980). Maps from the 1800s and 1900s show that even at times of great agricultural prosperity or strategic insecurity (such as the Crimean War, 2nd World War) much of the Plain remained as rough pasture. However, military occupancy has led to a decline this century, particularly in the SPTA West and Centre, where hazards to livestock are greatest. As a result areas of shorter turf have presumably declined at the expense of ranker grasslands, such as CG3 and MG1, particularly away from farms and folding areas (personal communications, Paul Toynton & Dominic Ash 1999). Elsewhere some of the poorest stands of CG3, where *Bromopsis erecta* is often associated with mesotrophic species, presumably represent abandoned arable fields, the present composition of which giving an indication of their age.

Festuca ovina-Avenula pratensis* grassland *(CG2)

The *Festuca ovina-Avenula pratensis* (Sheep's-Fescue-Meadow Oat-grass) grassland (CG2) is of limited distribution on the SPTA (less than 2%), typically confined to "relict" south-facing downland slopes, rabbit warrens, old earthworks and banks. Despite its undoubted national importance, this community is of lesser conservation value on the SPTA, given the extent and species-richness of the more abundant CG3 grasslands. However, this community is the focus of a number of national and county rarities, many of which also occur within CG3.

CG2 comprises a rich and intimate mixture of grasses and diminutive herbs in a tight closed sward, in which it is not unusual to find over 40 species per square metre. Predominant among the grasses is *Festuca ovina*, less occasionally *F. rubra*, with usually a little *Helictotrichon pratense* (formerly *Avenula pratensis*), *Koeleria macrantha* and *Briza media*. On the SPTA *Bromopsis erecta* occurs at low abundance in this community although it is often constant and kept in check by close-grazing. Herbaceous hemicrypto- phytes - *Sanguisorba minor*, *Plantago lanceolata*, *Lotus corniculatus* (Bird's-foor Trefoil), *Leontodon spp*., (Hawkbits), *Scabiosa columbaria*, (Small Scabious) *Prunella vulgaris* (Self-heal), *Campanula rotundifolia* (Harebell) and *Galium verum* (Lady's Bedstraw) - are particularly prominent, often forming tiny rosettes and sprawling mats amongst the grasses. These are joined by the chamaephytes *Thymus polytrichus* (*T. pulegioides*, or Large Thyme, is rare on the SPTA) and *Helianthemum nummularium* and a number of short-lived annuals (therophytes) of disturbed, often open ground such as *Gentianella amarella*, *Euphrasia officinalis* agg. (Eyebright) and *Linum catharticum* (Fairy Flax). Many of these species are of only occasional occurrence in ranker grasslands on the SPTA and are also national rarities. Most notable are *Thesium humifusum*, *Cirsium acaule*, *Hippocrepis comosa* (Horseshoe Vetch), *Asperula cynanchica*, *Orchis ustulata*, *Polygala calcarea*, *Gentianella anglica*, *Carex humilis* (Dwarf Sedge) and *Astragalus danicus*. However, *Thesium humifusum*, *Cirsium acaule* and *Asperula cynanchica* do occur in longer CG3 grasslands on the SPTA and Martin Down NNR where they can be even abundant (personal comunication, Paul Toynton 1999).

Many of these rarities occur within the *Cirsium acaule-Asperula cynanchica* sub-community (CG2a and variants), which has the greatest representation

on the SPTA. This is typical "chalk downland", comprising a very short, closed grazed and species-rich turf of conservation value. Much of this type is referable to the *Filipendula vulgaris- Helianthemum nummularium* variant (CG2ai) due to the constancy of *Filipendula vulgaris* which joins *Sanguisorba minor* and *Helianthemum nummularium* as the most conspicuous features of the sward. Of more localised distribution, usually on north-facing slopes, this grassland type is replaced by the less species-rich *Holcus lanatus-Trifolium repens* (York- shire Fog-White Clover) sub-community (CG2c). Here many of the rarer chalk-preferring species such as *Asperula cynanchica* and *Helianthemum nummularium* are much reduced and replaced by coarse grasses and a number of low-growing herbs of a more catholic habit, such as *Trifolium repens/ pratense* (White/Red Clover), *Achillea millefolium* (Yarrow) and *Medicago lupulina* (Black Medick).

Other calcareous grasslands

Other calcareous grasslands have a very limited distribution on the SPTA. Rank grasslands containing *Brachypodium pinnatum* (Tor-grass) (CG4, CG5) are extremely localised given the scarcity of *B. pinnatum* in the southern half of Wiltshire (Gillam et al 1993). Small pockets of the *Avenula pubescens* (Downy Oat-grass) grassland (CG6), often of less than a hundred metres in extent, occur in the east on Bulford Ranges where it forms a very rank sward dominated by large tussocks of *Festuca rubra*, *Helictotrichon pratens*e and *H. pubescens* (formerly *Avenula pubescens*). Although much more restricted in distribution than *Bromus erectus* grasslands these small areas represent around 95% of CG6 found in Wiltshire (English Nature 1995). The *Festuca ovina-Hieracium pilosella-Thymus praecox/pulegioides* (Sheep's Fescue-Mouse-ear Hawkweed-Wild Thyme- Large Thyme) grassland (CG7) is an important vegetation type on the SPTA, occurring where military disturbance or severe rabbit grazing has exposed the chalk. The core of its distribution is in the "impact area" where it is typical of exposed soils in or around bomb craters and demolition pits. It is also extensive (unusually so) on the Driver Training Area to the south of Sidbury Hill, where large areas of chalk have been exposed by repeated military activity. Under such conditions *Pilosella officinarum* - formerly *Hieracium pilosella* (Mouse-ear Hawkweed), *Thymus polytrichus* and *Carex flacca* (Glaucous Sedge) are usually dominant and often associated with a number of annuals such as *Saxifraga tridactylites* Rue-leaved Saxifrage), *Erophila verna* (Common Whitlowgrass), *Arabis hirsuta* Hairy Rockcress) and *Catapodium rigida* (Fern-grass) which are uncommon on the SPTA as a whole.

"Chalk heath" is an unusual habitat which occurs where superficial acidic deposits overly calcareous substrates. On the SPTA isolated pockets occur within the central impact area where the chalk is overlain by clay with flints, presumably of glacial origin. Here calcicoles (species with a preference for limestone) and bushes of *Calluna vulgaris* (Ling) occur within scattered *Ulex europaeus* (Gorse) scrub, which in the absence of management threatens to overwhelm this rare community type.

Mesotrophic grasslands

Improved mesotrophic grasslands are largely confined to Schedule I land (Figure 1). This land is predominantly used for cereal production (personal communication, Dominic Ash & Paul Toynton 1999). Schedule III land**,** though heavily used for training, is let out on temporary licenses to tenant farmers who are subject to a number of restrictions. Because there is no compensation for damage caused by military training, rents are correspondingly low and only small areas are cultivated, and consequently also mesotrophic.

Depending on the degree and age of improvement some of these grasslands display affinities to the "core" chalk grasslands. Unimproved *Arrhenatherum elatius* (False Oat-grass) grassland (MG1) is the most important in this respect and can often be difficult to separate from the ranker stands of CG3d. It is dominated by *Arrhenatherum elatius* which thrives in the absence of grazing, with lesser amounts of *Holcus lanatus*, *Dactylis glomerata* (Cock's-foot) and umbellifers, particularly *Heracleum sphondylium* (Hogweed) and *Pastinaca sativa* (Wild Parsnip), with an understorey of *Festuca rubra* and herbaceous perennials. It can be very species-rich, particularly within the *Festuca rubra* (MG1a), *Pastinaca sativa* (MG1d) and *Centaurea nigra* (MG1e) sub-communities. These were the most abundant types found on the SPTA and most similar to calcareous grasslands having distinct calcicolous elements often marked by the abundance of *Pastinaca sativa*. Elsewhere these grasslands have been shown to indicate past improvement or cultivation, and are usually less than 50 years old (Wells et al 1976). This is presumably the case for large areas of the SPTA where there is a mixture of *A. elatius* and *Bromopsis erecta*, which often raises the question as to whether they should be classified as CG3 or MG1.

Typically MG1 grasslands are confined to unmanaged and unimproved waysides. However, on the SPTA they are particularly widespread, occurring in a variety of situations where soil fertility is higher than on the surrounding chalk, particularly in areas where there has been some form of disturbance. MG1 is particularly abundant on disturbed ground where conspicuous tall herbs such as *Pastinaca sativa* and

Daucus carota (Wild Carrot) can be used to indicate the location of old track networks (or even single tank passes) and former arable fields amongst unimproved CG3d. In addition, MG1 was often found to occur on deeper soils within a variety of situations including on the floor of dry valleys between chalk slopes.

Seeded *Lolium perenne* (Perennial Rye-grass) leys (MG7) were the most abundant mesotrophic grasslands found on the SPTA (16%). Many had apparently been sown for hay/silage and aftermath grazing. *L. perenne* (and cultivars) was usually constant within a typically species-poor sward with some *Trifolium repens*, *Taraxacum officinale* (Dandelion), *Ranunculus repens* (Creeping Buttercup) and *Trifolium pratense*. Other grasslands which appeared to have had some agricultural improvement but maintained a good proportion of calcicolous herbs and grasses (MG5, MG6) were of restricted distribution, often occurring within permanent "penning" areas on Schedule III land.

Small areas of a number of unimproved mesotrophic grassland were also found. *Festuca rubra-Agrostis stolonifera-Potentilla anserina* (Red Fescue-Creeping Bent-Silverweed) inundation grassland (MG11) was typically confined to seasonally waterlogged soils adjacent to "winterbournes", such as Nine Mile River in the East, and old "dew-ponds" or clay pits. *Festuca arundinacea* grassland (MG12) on the other hand had a more restricted distribution which often suggested old burning or waterlogged soils within rank CG3d.

Notable plants

Rare plants recorded in the survey are dealt with in following sections under three categories:

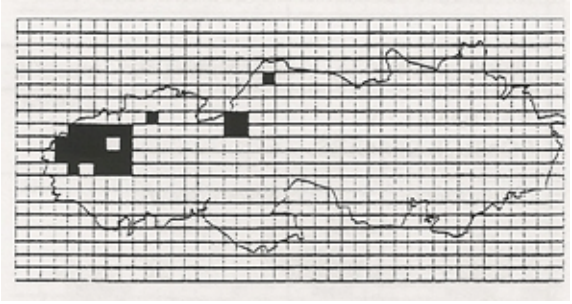
- Red Data species - found in not more than 15 different 10 km squares in the British Isles, and listed in Perring and Farrell (1983) - shown in Table 2 overleaf.
- Nationally scarce - found in not more than 100 10 km squares - shown in Table 2 overleaf.
- County rarities - found in less than 4% (148) of Wiltshire's 1 km squares (Gillam et al 1993) - shown in Table 3 on pages 24 and 25.

Red Data species

These are shown in Table 2 overleaf along with the number of records made during the survey and the number of 1km squares in which the species has been recorded in Wiltshire (after Gillam *et al* 1993). The SPTA is home to two Red Data Book plants. A single plant of *Salvia pratensis* (Meadow Clary) survives at Tenantry Down where it has been known for over 75 years (Gillam et al 1993). In contrast the SPTA holds the majority of the British population of *Cirsium tuberosum* - Tuberous Thistle (Everett, 1993).

Eighteen populations of *Cirsium tuberosum* were found during the survey, with all but one (on Penning Down, north of Larkhill Range) being confined to SPTA West (Figure 2). The distribution is concentrated around the valleys west and north-west

Figure 2: Distribution of Cirsium tuberosum



of Imber, where the plant has been known for some time (Everett, 1993). However, a number of outlying populations were also found to the west, and most significantly one north-west of the central Impact Area. Population sizes range from thousands of plants at Warden's Down/High Down to just single individuals at Tenantry Down and Ranscombe Bottom. With the exception of one population within MG1 at High Down, all populations occurred within ungrazed, rank CG3d (and 3di) or less frequently more species-rich CG3a. As a result plants were often large, some exceeding 1m in diameter and having hundreds of flowers. Over half the populations were accompanied by hybrids with the Dwarf Thistle *C. acaule* (*C.* x *medium*), which in some populations outnumbered its parents. The distribution of the plant on the SPTA has recently been mapped in relation to the extent of past cultivation, as shown on the 1830 Tithe map and 1880 1st Edition OS map. The results show that, with the exception of one population (at Dilton Down), *Cirsium tuberosum* is confined to grasslands which have not been ploughed for at least 150 years.

Nationally scarce species

These are shown in Table 2 overleaf, again with the number of records made during the survey and the number of 1km squares in which the species has been recorded in Wiltshire.

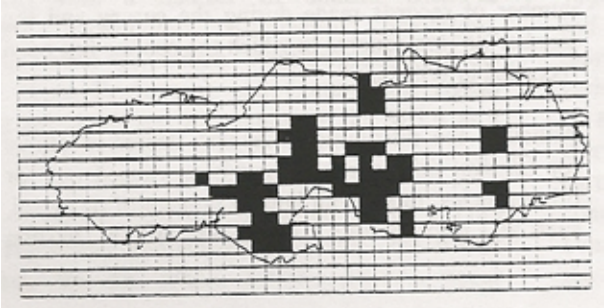
Although the distribution mapping described above for *Cirsium tuberosum* has not been carried out for other species, those with limited powers of dispersal, such as *Carex humilis* (Dwarf Sedge) and *Thesium*

Table 2. Red Data and Nationally Scarce plants on the SPTA.

	COMMON NAME	SPTA REC-ORDS	NO OF WILTS. 1KM SQUARES	PRINCIPLE HABITAT AND % OCCURRENCE WITHIN NVC TYPES
RED DATA BOOK SPECIES				
Cirsium tuberosum	Tuberous Thistle	20	13	Chalk grassland: CG3d (45%), CG3a (10%)
Salvia pratensis	Meadow Clary	1	1	Chalk grassland: CG3d
NATIONALLY SCARCE SPECIES				
Carex humilis	Dwarf Sedge	82	78	Chalk grassland, earthworks: CG2 (4%), CG2a (7%), CG3 (10%), CG3a (38%), CG3d (27%)
Cerastium pumilum	Dwarf Mouse-ear	3	1	Disturbed chalk: CG2/3a/7
Fumaria densiflora	Dense-flowered Fumitory	15	26	Disturbed track edges, bare ground, arable margins
Galeopsis angustifolia	Red Hempnettle	18	14	Disturbed track edges, bare ground, arable margins
Galium pumilum	Slender Bedstraw	3	2	Chalk grassland: CG3 (100%)
Gentianella anglica	Early Gentian	2	22	Chalk slopes: CG2 (100%)
Helleborus foetidus	Stinking Hellebore	1	13	Woodland
Minuartia hybrida	Fine-leaved Sandwort	6	14	Disturbed track edges, bare ground
Orchis ustulata	Burnt-tip Orchid	4	37	Chalk slopes: CG2, CG3, CG3a
Thesium humifisum	Bastard Toadflax	71	96	Chalk grassland: CG2 (7%), CG2a (18%), CG3a (37%), CG3d (14%)

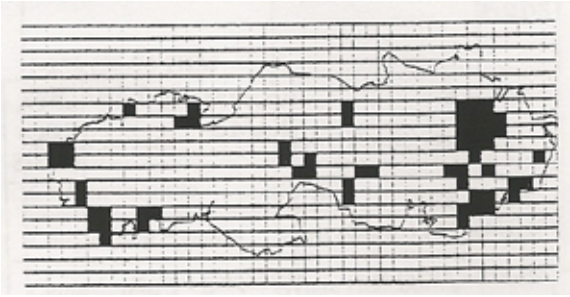
humifusum (Bastard Toadflax), may show a similar pattern, although at Martin Down some populations of *C. humilis* are known to occur in grasslands which are less than 50 years old (personal communication, Paul Toynton 1999). Both these species have notable populations on the SPTA. *Carex humilis* (Figure 3) was found in over 80 sites, mainly in the south central
SPTA, where it was typically associated with short CG2/3a grassland on ancient earthworks, tumuli and dykes, which have presumably escaped cultivation for many centuries (David, 1993). Although uncommon in ranker grasslands (CG3d), its ability to spread vegetatively presumably allows it to persist in grasslands which have not been grazed for many decades.

Figure 3: Distribution of Carex humilis



Although easily overlooked the hemi-parasite *Thesium humifusum* (Figure 4 overleaf) was recorded from 71 sites, and like *Carex humilis* had a preference for short heavily-grazed CG2/3a ***Figure***

Figure 4: Distribution of Thesium humifusum



grasslands. The core of its distribution is on SPTA East, suggesting that it is probably less tolerant than *C. humilis* to a lack of grazing. However, populations were recorded from ungrazed sites where it was often conspicuous, forming large vigorous patches with hundreds of flowers. This species has been observed to become abundant in rank CG3 after about 10 years of grazing (personal communication, Paul Toynton 1999). Without further research the extent to which it can survive within rank grassland or recolonise following reinstatement of grazing is largely a question of debate.

Two Nationally Scarce species more typically associated with arable habitats, *Fumaria densiflora* (Dense-flowered Fumitory) and *Galeopsis angustifolia* (Red Hempnettle) (Figure 5), were found to be more widespread on the SPTA than previous records suggest. Although both were recorded on the edge of cultivated plots, they were more commonly associated with open ground by the side of periodically flooded tracks. Here frequent tank disturbance presumably suppresses more competitive species, allowing the persistence of an ephemeral weed flora which has declined elsewhere due to herbicide spraying and changing farming operations. Notable "weeds" still common on the SPTA include *Kickxia spuria* (Round-leaved Fluellen), *Kickxia elatine* (Sharp-leaved Fluellen), *Clinopodium acinos* (Basil Thyme) (Figure 6), *Chaenorhinum minus* (Small Toadflax), *Erigeron acer* (Blue Fleabane), *Euphorbia exigua* (Dwarf Spurge) and the now ubiquitous introduction on the SPTA *Erucastrum gallicum* (Hairy rocket), which probably arrived from Europe during the First World War. Of more localised distribution are the rarities *Lotus glaber* (Narrow-leaved Bird's-foot-trefoil), which has almost certainly been under-recorded on the SPTA in the past, *Linum bienne* (Pale Flax), *Valerianella dentata* (Narrow-fruited Cornsalad) and *Legousia hybrida* (Venus' Looking-glass).

Two nationally scarce specialities of disturbed ground on SPTA East are *Minuartia hybrida* (Fine-leaved

Figure 5: Distribution of Galeopsis angustifolia

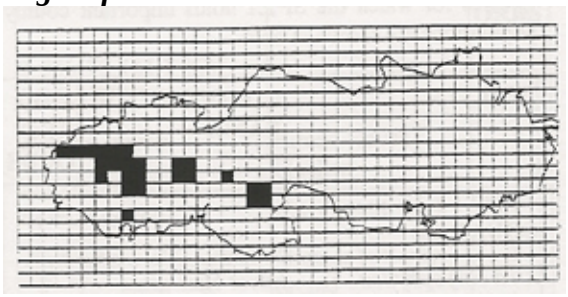
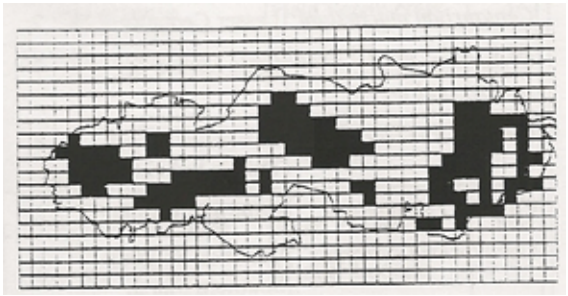


Figure 6: Distribution of Clinopodium acinos



Sandwort) and *Cerastium pumilum* (Dwarf Mouse-ear). *Minuartia hybrida* was recorded sporadically from remote localities across the SPTA but has a notable core of populations in the east where it is most frequently found on or by the edge of revegetating tracks, pits and scrapes. Probably the most inconspicuous of all the plants on the SPTA, *Cerastium pumilum*, was recorded from only one site, the Driver Training Area north of Bulford (although given its early flowering and small size it may be overlooked in others).

Classic downland is a rarity on the SPTA, occuring as relicts on steep grazed slopes which have escaped the plough. Those that have survived are home to a number of specialities of the SPTA including the Marsh Fritillary, Adonis Blue, Duke of Burgundy, *Gentianella anglica* (Early Gentian), at least six species of orchid including *Orchis ustulata* (Burnt-tip Orchid) and the county rarity *Platanthera bifolia* (Lesser Butterfly-orchid), as well as spectacular displays of *Polyygala calcarea* (Chalk Milkwort) and *Onobrychis viciifolia* (Sainfoin).

County rarities

There are over 60 county rarities present on the SPTA. These are listed in Table 3 overleaf, which classifies them according to their frequency of occurrence in Wiltshire generally and notes for each species the number of records made in this survey.

Table 3: County rarities on the SPTA

Species for which the SPTA holds important county populations are shown in bold.

SPECIES	**COMMON NAME**	**SPTA REC-ORDS**
<1 (37 1 KM SQUARES)		
Aira caryophyllea	Silver Hair-grass	3
Anthemis arvensis	Corn Chamomile	2
Astragalus danicus	**Purple Milk-vetch**	**23**
Centaurium pulchellum	Lesser Centaury	2
Cerastium semidecandrum	Little Mouse-ear	7
Cirsium x medium	**Tuberous/Dwarf Thistle hybrid**	**8**
Cuscuta epithymium	**Common Dodder**	**7**
Dactylorhiza x *grandis*	Common Spotted/ Southern Marsh Orchid hybrid	1
Diplotaxis tenuifolia	Perennial wall-rocket	1
Euphorbia cyparissias	**Cypress Spurge**	**27**
Euphorbia* x *pseudovirgata	**Twiggy Spurge**	**6**
Filago vulgaris	Common Cudweed	1
Hieracium* sect. *Tridentata	**Hawkweed**	**1**
Hyoscamus niger	Henbane	1
Lathyrus nissolia	**Grass Vetchling**	**32**
Lepidium campestre	**Field Pepperwort**	**38**
Lepidium heterophyllum	**Smith's Cress**	**3**
Linum bienne	**Pale Flax**	**56**
Lotus glaber	**Narrow-leaved Bird's-foot-Trefoil**	**11**
Mentha x *villosa*	Apple Mint	3
Myosotis secunda	Creeping Forget-me-not	1
		(cont.)

SPECIES	**COMMON NAME**	**SPTA REC-ORDS**
<1 (37 1 KM SQUARES) (cont.)		
Myosotis secunda	Creeping Forget-me-not	1
Neottia nidus-avis	Bird's-nest Orchid	2
Petroselinum segetum	Corn Parsley	3
Pimpinella major	**Great Burnet-saxifrage**	**2**
Platanthera bifolia	Lesser Butterfly-orchid	1
Poa angustifolia	**Narrow-leaved Meadow-grass**	**88**
Poa humilis	**Spreading Meadow-grass**	**439**
Populus alba	**White Poplar**	**11**
Potamogeton perfoliatus	Perfoliate Pondweed	5
Ranunculus lingua	Greater Spearwort	1
Ranunculus trichophyllus	Thread-leaved Water-crowfoot	2
Rosa micrantha	Small-flowered Sweet-briar	1
Rosa rubiginosa agg	Sweet-briar	3
Sagina nodosa	**Knotted Pearlwort**	**5**
Salix* x *reichardtii	**Goat/Grey Willow hybrid**	**1**
Salix* x *smithiana	**Silky-leaved Osier**	**2**
Salvia verbenaca	Wild Clary	1
Scleranthus annus	**Annual Knawel**	**3**
Spiranthes spiralis	Autumn Lady's-tresses	**4**
Thymus pulegioides	**Large Thyme**	**20**
Ulmus minor	**Elm**	**3**
Zanichellia palustris	Horned Pondweed	4
		(cont.)

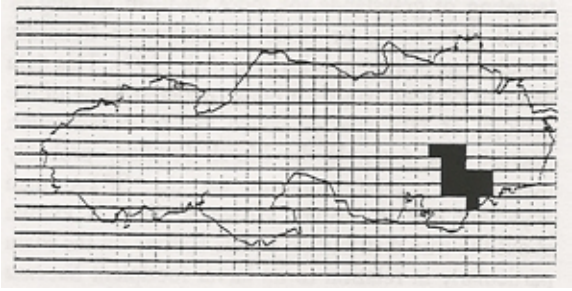
SPECIES	**COMMON NAME**	**SPTA REC-ORDS**
1-2% (38-74 1KM SQUARES)		
Arabis hirsuta	**Hairy Rockcress**	**116**
Calluna vulgaris	Ling	12
Catapodium rigidum	**Fern Grass**	**25**
Cephalanthera damasonium	White Helleborine	15
Coeloglossum viride	Frog Orchid	11
Dactylorhiza maculata	Heath Spotted-orchid	1
Dactylorhiza praetermissa	Southern Marsh-orchid	4
Danthonia decumbens	Heath-grass	30
Epipactis helleborine	Common Helleborine	9
Erigeron acer	**Blue Fleabane**	**54**
Juniperus communis* ssp. *communis	**Juniper**	**67**
Kickxia elatine	Sharp-leaved Fluellen	6
Lemna trisulca	Ivy-leaved Duckweed	1
Ophioglossum vulgatum	Adder's-tongue	7
Orchis morio	Green-winged Orchid	2
Potamogeton pectinatus	Fennel Pondweed	1
Salix pupurea	Purple Willow	4

Sparganium emersum	Unbranched Bur-reed	3
		(cont.)

SPECIES	**COMMON NAME**	**SPTA RECORDS**
2-3%(75-111 1 KM SQUARES)		
Kickxia spuria	Round-leaved Fluellen	18
Ophrys apifera	Bee Orchid	3
Platanthera chlorantha	Greater butterfly-orchid	2
Saxifraga tridactylites	Rue-leaved Saxifrage	2
Thlaspi arvense	Field Penny-cress	3
Trifolium medium	**Zigzag Clover**	**132**
3-4%(112-148 1 KM SQUARES)		
Clinopodium acinos	**Basil Thyme**	**186**
Legousia hybrida	Venus' Looking-glass	5
Saxifraga granulata	**Meadow Saxifrage**	**5**
Verbascum nigrum	Dark Mullein	12

large proportion of these are uncommon species of chalk - e.g. *Astragalus danicus* (Purple Milk-vetch) (Figure 7), *Platanthera bifolia* (Lesser Butterfly-orchid), *Thymus pulegioides*) (Large Thyme), disturbed ground - e.g. *Lepidium spp*., *Linum bienne* (Pale Flax), *Lotus glaber* (Narrow-leaved Bird's-foot-trefoil) - and aquatic habitats. In addition there are a number of species which are likely to have been underrecorded in the past - e.g. *Mentha x villosa* (Apple Mint), *Euphorbia x pseudovirgata* (Twiggy Spurge), *Rosa spp*. In many cases these are apparently more abundant on the SPTA than elsewhere in Wiltshire, the most notable of which are shown in bold in Table 3.

Figure 7: Distribution of Astragalus danicus



Disturbance and the ecology of the chalk

Disturbance on chalk grasslands does not have to be extreme to create habitats of great conservation value. On the SPTA these vary from the small-scale, such as single vehicle passes, animal scrapes etc. to the very large; missile impacts, tank tracks, wild fires etc. However, whatever the scale, they are all vital to the ecology of chalk grasslands we see today. Although many of the ranker grasslands are now being brought back into grazing management, through the hard work of Paul Toynton, there are still large tracts, in particular within the Impact Areas, where disturbance is the only form of "management" keeping the grasslands open. At its most extreme, disturbance has even created habitats of great conservation value, such as the ephemeral pools of Imber Valley which are home to internationally important populations of the Fairy Shrimp (Gillam & Pile 1992). At lower levels disturbance probably accounts for the abundance of "arable weeds" such as *Kickxia* spp., *Fumaria densiflora* (Dense-flowered Fumitory), etc. which survive along the less disturbed edges of tracks. Although often unsightly, the heavily disturbed Imber Valley, with its deeply rutted muddy tracks is probably only mimicking what would have occurred in the winter along old coach-roads (personal comunication, Paul Toynton 1999).

However, to what extent disturbance will become irreversible with increasing levels of military activity is impossible to predict without more information on the ability of these grasslands to regenerate at differing levels of intensity and duration. As a result there are now a number of studies which are assessing the consequences of past and present disturbance in terms of vegetation dynamics, as well as the resilience of grasslands in relation to known disturbance events.

Applications of the vegetation data

The vegetation maps and species data have now been inputted into a Geographical Information System (GIS). This allows the military and conservation managers to access the survey information on specific compartments (species lists, management, disturbance) in order to assist with conservation management on the SPTA. This has included the targeting of grasslands for more frequent grazing or where disturbance or scrub encroachment threatens populations of rare species (e.g. Ash 1997). This data can also be used to gain a better understanding of the ecology of rare species which are of conservation interest. For example the Marsh Fritillary probably occurs in greater numbers on the SPTA than anywhere else in Britain. However, little is known about the true distribution of this species on the Plain particularly in relation to its larval foodplant *Succisa*

pratensis (Devil's-bit Scabious). However, by mapping the distribution of this species we can start to predict where it may occur given appropriate management or, more importantly, identify why it is absent from sites which are apparently suitable. Ideally these data will allow the military to identify sensitive areas which should be avoided during excercises or even excluded from training altogether. In recent years the willingness of the military to protect breeding Stone Curlews and archaeological sites suggests that the future of this extraordinary and fascinating corner of Wiltshire is in good hands.

Acknowledgements

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Wiltshire Botany 3, 2000, pages 28-32

THE RECENT HISTORY OF BATOLOGY IN WILTSHIRE

Rob Randall

Introduction

A systematic assessment of the bramble flora (known technically as batology) was not attempted for Wiltshire until Donald Grose embarked on his project for a new county flora in the 1940s. Many decades of less systematic work had preceded this. The period leading up to the First World War, when field work concentrated predominantly on Savernake Forest and the Vale of Wardour, was covered in the last issue of this journal (Randall 1999). The current article describes progress made since that time, both before and after the key contribution made by Grose. Between them, the two articles provide a history of Wiltshire batology from its beginnings in the eighteenth century to the present day.

There were a few important bramble records for the county between the start of the First World War and Grose's first batological field trips in 1948. The most notable additions to the flora during this period will be mentioned before the methods employed by Grose are discussed. Finally, developments after Grose will be described, culminating in progress made during the Wiltshire Flora Mapping Project in the 1980s and early 1990s.

Miss Roper's trip to Alfred's Tower

Ida M Roper was a very active botanist from Bristol, a good friend of J W White of 1912 Bristol Flora fame, and president of the Bristol Naturalists' Society at the time when she made an important addition to the Wiltshire flora, finding:

> *R. durotrigum* R P Murray Alfred's Tower, Stourton in 1915 (**BM**) det. WMR. This rare species had previously been known only from Dorset. Miss Roper's visit provided new records for Vc 6 and Vc8.

Rilstone's visits to Martinsell

Francis Rilstone, famous for his work on Cornish brambles, collected in the Marlborough area in 1929 and 1930, visiting Martinsell and Clench Common. New records for Vc 7 included:

R. dumnoniensis Bab. Summit slope of Mart- insell Hill, 1929 (**BM**), conf. AN. This was a considerable extension of the known range of this western species.

'R. villicaulis Koehl.' Martinsell Hill, 1929 (**BM**),
R. villicaulis Koehl. forma det. HJR in J.Bot. 1931,
R. armipotens W C Barton ex Newton ? det. AN,
possibly *R. boudiccae* A L Bull & Edees, but prickles abnormally short and curved, comm. DEA. The short curved prickles suggest another possibility,
R. stenopetalus Lef. & Mueller. A visit to Martinsell

might be productive, as either of the last two species would be important NCRs.

R. dentatifolius (Briggs) W C R Watson Martin- sell, 1929 (**BM**), det. HJR, J.Bot., 1931, conf. AN.

Riddelsdell's visit to Aldbourne

H J Riddelsdell visited the county in 1932. It was perhaps then that he checked Miss Todd's herbarium and suggested the names which, in many cases, William Watson was later to dispute (Randall 1999). Whether or not he did visit Miss Todd on this occasion, he certainly found time to visit the Aldbourne and Savernake area and a number of important new records for Vc 7 were the result:

R. rhombifolius Weihe ex Boenn. Savernake Forest, 1932 (**BM**), conf. DEA.

R. radula Weihe ex Boenn. Savernake Forest, 1932 (**BM**), conf. DEA.

R. rufescens Lef. & P J Mueller near Aldbourne, 1932 (**BM**), conf. DEA.

Barton's trip to West Dean

Riddelsdell described a number of new species in collaboration with W C Barton. Barton too, made a foray into Wiltshire, visiting West Dean, Vc 8, on its south-east border on 12th September, 1941. Although his identifications were often incorrect, he collected a number of important specimens:

R. leucostachys Schleicher ex Sm. near Church (**BM**), det. DEA, conf. AN. First confirmation that the true *R. leucostachys* as well as *R. vestitus* (long recorded as *R. leucostachys*) were present in the county.

R. moylei W C Barton & Riddelsd. (**BM**) det. DEA, *R. leightonii* Lees ex Leighton det. WCB.

Review of Wiltshire Rubi by Grose and Watson

Donald Grose quite wisely left the study of brambles till 1948, about halfway through his flora fieldwork, but prior to that, *Rubus* specimens were occasionally collected by Captain Dunston (around Donhead, Vc 8) and others:

R. laciniatus Willd. Donhead St. Mary, 8/1947, AEAD, conf. WCRW.

'R. silurum (Ley) Ley' Starveacre, Donhead St. Andrew, 8/1947, AEAD (**DZS**), *R. silurum* (Ley) Ley det. WCRW. Should be checked against *R. riparius* W C Barton ex Newton, comm. DEA.

R. armeniacus Focke Donhead St. Mary, 8/1947, AEAD (**DZS**) conf. RDR, [syn.] *R. procerus* P J Mueller det. WCRW.

When preparing his account of brambles for 'The Flora of Wiltshire', Donald Grose relied heavily on the expertise of W C R Watson, who was invited on a number of bramble forays in 1948 and 1949. Watson also had a look at Miss Todd's herbarium (**SDN**) but it seems that the herbaria at Marlborough College (**MBH**) and Devizes Museum (**DZS**) were not checked. Most of the important new records added by Grose and Watson are represented by material in herb. Grose (**DZS**) and it has been possible to check the accuracy of their determinations. A number of other Wiltshire botanists assisted in the collection of specimens, but in the main the contemporary records in Grose's flora are a combination of the personal records of Grose and Watson.

Their investigations confirmed Flower's (1866) suggestion that *R. cardiophyllus*, *R. ulmifolius* and *R. vestitus* were frequent and widespread in the county. They also identified new localities for *R. lindleianus*, *R. polyanthemus*, *R. echinatus*, *R. dasyphyllus*, *R. conjungens*, *R. pruinosus* and *R. caesius*.

Unfortunately many of the identifications made, and later published in the Flora (Grose 1957), were incorrect. Records for Wiltshire no longer accepted include:

R. acutifrons, R. acutipetalus, R. alterniflorus,
R. angustifrons, R. babingtonianus, R. badius,
R. chaerophyllus, R. cinerosus, R. diversus,
R. drymophilus, R. euanthinus, R. euryanthemus,
R. fuscus, R. griffithianus, R. hiernii, R. hirtus,
R. hystrix, R. incurvatus, R. koehleri, R. lentiginosus,
R. macrophylloides, R. mercicus, R. mollissimus,
R. mucronatoides, R. myriacanthus, R. propinquus,
R. purpureicaulis, R. raduliformis, R. rhodanthus,
R. scabripes, R. scabrosus, R. silurum,
R. tenuiarmatus, R. tuberculatus, R. villicaulis.

Nevertheless, the localities visited were carefully chosen to be those most likely to be rich in bramble species and many important records were made.

In the following list, records (probably field records) have been accepted without a supporting specimen only if the species is still known to frequent the mentioned locality. Determinations below are by Watson unless specified otherwise:

R. divaricatus P J Mueller Vc 8: Plaitford Common, Hants., 10/7/1949 (**DZS**), det. RDR, *R. nitidus* Weihe & Nees det. WCRW.

R. plicatus Weihe & Nees Vc 8: Redway Plain, 19/7/1949 (**DZS**), conf. RDR.

R. scissus W C R Watson Vc 8 Eastleigh Wood, 19/7/1949 (**DZS**), *R. rhombifolius* det. WCRW. A mixed collection of *R. rhombifolius* Weihe ex Boenn. (panicle and one leaf) and *R. scissus* W C R Watson (stem-piece) det. RDR.

R. calvatus Lees ex Bloxam Vc 7: Somerford Common, 20/7/1948 (**DZS**). Vc 8: Spye Park, 21/7/1948 (**DZS**); Longleat Park, 25/8/1948 (**DZS**), all conf. RDR.

R. leucandriformis Edees & Newton Vc 7: Postern Hill, Savernake Forest, 22/7/1948 (**DZS**), det. RDR, *R. leucandrus* Focke det. WCRW.

R. pyramidalis Kaltenb. Vc 7: Cobham Frith, 18/7/1949 (**DZS**), conf. RDR; London Ride, Bedwyn Common (Grose 1957). Vc 8: Long-leat, Newbury and Eastleigh Wood (Grose 1957).

R. sciocharis (Sudre) W C R Watson Vc 8: Longleat Park, 19/7/1949 (**DZS**), conf. RDR; Little Bradley Wood (Grose 1957).

R. amplificatus Lees Vc 7: near Cobham Frith (Grose 1957). No specimens have been located, but it has recently been confirmed for Savernake.

R. nemoralis P J Mueller Vc 7: Spye Park (Grose 1957).

R. prolongatus Boulay & Letendre ex Corbiere Vc 7: Spye Park and Silverstreet Wood (Grose 1957).

R. rhombifolius Weihe ex Boenn. Vc 8: Longleat Park, 19/7/1949 (**DZS**), conf. RDR; Southleigh Wood, 19/7/1949 (**DZS**), conf. RDR; Eastleigh Wood, 19/7/1949 (**DZS**), det. RDR [a mixed collection, see *R. scissus* W C R Watson above].

R. rubritinctus W C R Watson (syn. *R. crypt-adenes* Sudre) Vc 7: Leigh Hill; Round Hill Downs (Grose 1957).

R. arrhenii (Lange) Lange Vc 8: Longleat Park, 19/7/1949 (**DZS**), det. WCRW. First British record.

R. sprengelii Weihe Vc 8: Redway Plain, 19/7/1949 (**DZS**); Longleat (Grose 1957).

R. armeniacus Focke (syn. *R. procerus* P J Mueller) Vc 7: Sound Bottom (Grose 1957). Vc 8: roadside between Wilcot Green and Bristow Bridge (Grose 1957).

R. armipotens W C Barton ex Newton (*R. pseudo-bifrons* sensu Watson) Vc 7: London Ride, Bedwyn Common and Cobham Frith (Grose 1957). Vc 8: open scrub, Grafton Down, 22/7/1948 (**DZS**), det. RDR; Sidbury Hill (Grose 1957).

R. stenopetalus Lef. & P J Mueller Vc 8: Everleigh Ashes, 7/7/1949 (**SLBI**), conf. DEA. First British record.

R. glareosus Rogers Vc 7: Lawn Coppice, 11/8/1948 (**DZS**), conf. RDR.

R. heterobelus Sudre Vc 8: Everleigh Ashes, 2/8/1948 (**DZS**), conf. RDR.

R. micans Godron Vc 8: near Wilcot Green Cross-roads, 2/8/1948 (**DZS**), det. DEA, *R. heterobelus* Sudre det. WCRW; near Lugmarsh Farm, 15/9/1948 (**DZS**), det. DEA, *R. badius* Focke det. WCRW.

R. raduloides (Rogers) Sudre Vc 8: Eastleigh Wood, 1951 (**SLBI**) det. WCRW, conf. AN.

R. cantianus (W C R Watson) Edees & Newton Vc 7: London Road, Savernake Forest, 18/7/1949 (**DZS**), det. RDR, *R. prionodontus* det. WCRW. Vc 8: Collingbourne Wood, 22/7/1948 (**DZS**), det. RDR, *R. prionodontus* Lef. & P J Mueller det. WCRW.

R. flexuosus Mueller & Lef. Vc 7: Spye Park; London Ride, Bedwyn Common and Cobham Frith (Grose 1957). Vc 8: Lake, Woodford, 1/9/1948 (**DZS**), conf. RDR; Longleat Park and Eastleigh Wood (Grose 1957).

R. fuscicaulis Edees Vc 7: near Cadley, Savernake Forest, 22/7/1948 (**DZS**), det. RDR, *R. fusciformis* Sudre det. WCRW.

R. pallidus Weihe Vc 7: Cobham Frith, 18/7/1949 (**DZS**), conf. RDR; Bedwyn Common (Grose 1957).

R. asperidens Sudre ex Bouvet (syn. *R. milesii* Newton) Vc 7: hedge, near Wilcot Green, 21/7/1948 (**DZS**), det. RDR, *R. adenolobus* W C R Watson det. WCRW.

R. bercheriensis (Druce ex Rogers) Rogers (*R. apricus var.sparsipilus* sensu Watson) Vc 7: London Ride, Bedwyn Common, 18/7/1949 (**DZS**), conf. RDR. Vc 8: South bank of Shear

Water, 6/6/1949 (**DZS**), conf. RDR.

R. phaeocarpus W C R Watson Vc 7: Lawn Coppice, Littlecote, 11/8/1948 (**DZS**), conf. RDR.

R. adenoleucus Chaboiss. This is the probable identity of the plant recorded from Chittoe and Prickmoor Wood, Vc 7, (Grose 1957) as *R. babingtonianus* W C R Watson. The former is frequent in that area, but none of Watson's or Grose's specimens have yet been located.

R. britannicus Rogers Vc 8: Sunton Heath, 22/7/1948 (**DZS**) det. WCRW. The specimen in question is the plant commonly known as *R. britannicus* Rogers, but Watson's plant does not match material collected by Rogers and Marshall from Munstead, the locus typicus (Miles 1974).

Supplementary work (1957-1975)

After publication of Grose's flora in 1957, Wiltshire botanists did not remain idle and the annual 'Wiltshire Plant Notes' appearing in the 'Magazine of the Wiltshire Archaeological and Natural History Society' (Grose 1964 and Stevenson 1970, for example) were eventually compiled into a 'Supplement' to the flora (Stearn 1975). Although it contained many new records, only two important additions to the bramble flora were included:

R. phoenicolasius Maxim (Japanese Vc 7: Conkwell Wood, 1970, Mrs E Curtis. This ornamental species has long been grown in the grounds of Claverton Manor across the Avon valley from Conkwell, and it was doubtless spread from there by birds.

R. silvaticus Weihe & Nees Vc 7: Somerford Common, 1964, Miss K M Marks (**DZS**), det. BAM. The first localised record for Wiltshire.

Wiltshire Flora Mapping Project (1984-1992)

Wiltshire, along with many other counties, embarked on a project to systematically map its local flora, an exercise that Grose (1957) had undertaken for only a few species.

A very strict time-scale was adhered to, and only records for the period of the project were accepted, so that a 'snapshot' of the county's flora could be obtained. This inevitably required the recruitment and training of a team of resident botanists to accomplish such a daunting task, a process that was highly successful as far as general botany was concerned.

But it is not so easy to convince someone that they should embark on a decade of studying hawkweeds, dandelions or brambles. The help of experts was enlisted when Dave Green, BSBI recorder for North Wiltshire, arranged a BSBI batological field trip in 1986.

The mapping project culminated in publication of 'The Wiltshire Flora' (Gillam, Green and Hutchison 1993) and the list of bramble species included is largely the result of intensive field work on the occasion of the BSBI field trip, and of a few excursions by David Allen and the current author (who, in 1986, had only just embarked on a study of the genus).

Unfortunately the published list was incomplete, with some widespread species like *R. vestitus* ommitted and *R. cissburiensis* appeared as *R. cornubiensis*. No localised records were published in the Flora, so the most important are listed below:

R. divaricatus P J Mueller Vc 8: Furzley Comm- on, Hants., 1983, DEA.

R. nessensis W Hall Vc 7: Bird's Marsh near Chippenham, BSBI field trip, 3/8/1986.

R. albionis W C R Watson Vc 7: Bird's Marsh, BSBI field trip, 3/8/1986.

R. confertiflorus W C R Watson Vc 8: Furzley Common, Hants., 1983, det. DEA, conf. AN.

R. leucandriformis Edees & Newton Vc 8: Woodside Bottom, Nomansland, Hants., 1983, DEA.

R. platyacanthus P J Mueller & Lef. Vc 8: Barford Farms, Penn Common, Hants., 1983, DEA.

R. subintegribasis Druce Vc 8: Penn Common, Hants., 1983, DEA.

R. cissburiensis W C Barton & Riddelsd. Vc 8: Picket Wood, 28/7/1987, RDR, det. AN.

R. nemoralis P J Mueller Vc 8: Picket Wood, 28/7/1987, RDR, det. DEA.

R. arrhenii (Lange) Lange Vc 8: Picket Wood, 28/7/1987, RDR, conf. AN (originally identified as *R. sprengelii* Weihe but recently redetermined).

R. stenopetalus Lef. & P J Mueller Vc 8: Stockton Down and Sunton Heath, 1986, AN.

R. winteri P J Mueller ex Focke Vc 7: The Warren, Sandy Lane, 1986, AN.

R. adscitus Genev. Vc 8: Wood east of Hale, Redlynch, Lady Anne Brewis ca. 1980, conf. DEA 1982.

R. lanaticaulis Edees & Newton Vc 7: The Warren, Sandy Lane, 1986, AN.

R. norvicensis A L Bull & Edees Vc 7: in small quantity near Grand Avenue, Savernake, BSBI field trip, 2/8/1986, det. DEA, conf. ALB.

R. adamsii Sudre Vc 8: Sunton Heath, 1983, R J Pankhurst and P J Stafford (**BM**) det. AN.

R. bloxamii (Bab.) Lees Vc 7: in small quantity beside Grand Avenue, Savernake, BSBI field trip, 2/8/1986. Vc 8: roadside Limpley Stoke, 7/8/1988, RDR (originally identified as *R. insectifolius* Lef. & P J Mueller but recently redetermined).

R. insectifolius Lef. & P J Mueller Vc 7: Oak Hill Wood, Seagry, BSBI field trip, 3/8/1986.

R. hylocharis W C R Watson Vc 7: Bird's Marsh, BSBI field trip, 3/8/1986.

R. nemorosus Hayne & Willd. Vc 8: Bemerton, Salisbury, 1985, J Hindley, det. AN.

The briefness of the account of *Rubus* given in the Flora channelled my own field work, which had hitherto concentrated on the former county of Avon, to the task of recording bramble distribution in Wiltshire. David Allen offered to lead a batological field trip for the Wiltshire Botanical Society in 1996 and similar meetings have been arranged annually since then. Enough data has now been amassed to allow the production of an interim set of distribution maps and it is hoped that these can be published shortly.

Abbreviations

comm.	communicated by
conf.	confirmed by
det.	determined by
NCR	new county (or vice-county) record
syn.	synonym

AEAD	Capt. A E A Dunston
AN	A Newton
BAM	B A Miles
BSBI	Botanical Society of the British Isles
DEA	D E Allen
HJR	H J Riddelsdell
RDR	R D Randall
WCB	W C Barton
WCRW	W C R Watson
WMR	W M Rogers

Acknowledgements

Thanks are due to David Allen for continuing to forward historical records resulting from his study of material in **BM**, also the results of his own field work in the south of the county.

Herbaria consulted

BM: British Museum (Natural History), London: H J Riddelsdell; F Rilstone; W C Barton
DZS: Museum of the Wiltshire Archaeological & Natural History Society, Devizes: D Grose
SLBI: South London Botanical Institute

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PLANT RECORDS 1997

Explanatory notes

- The following is a selection from the records of Wiltshire Botanical Society in 1997. Records of common species and updates of 1993 Wiltshire Flora are not included unless there is some special reason. Unconfirmed records have been omitted.
- An asterisk indicates that the species is not native.
- Where a record is identified as being a new 10 km square record, this refers to the period since the flora mapping in the 1980s and 1990s for the 1993 Wiltshire Flora - and recorded there.
- For new county and vice-county records, an unqualified statement means that it is the first known to the vice-county recorders. Where the word "recent" is inserted, this means that it is the first such record since the flora mapping, though it may well have been there earlier.
- Where a recording square is partly in Wiltshire and partly outside, any comment on the status of a record in that square applies only to the part within Wiltshire.
- Recorders are identified by initials as follows:
-

AD – A. Dale
AH – Ann Hutchison
BG – Beatrice Gillam
BL – Barbara Last
CB – Clive Beeley
CH – Catherine Hosie
CM – Christine Mc Quitty
DB – D. Blackford
DG – David Green
DH – D. Hodgson
DJW – Jeremy Wood
DOG – Daphne Graiff
DPT – Dave Pickett
GY – Gwyneth Yerrington
IA – I. Adgie
IB – Ian Burt
JEO – Jack Oliver
JH – J. Hodgkinson
JP – John Presland
JR – J. Robinson
LD – Mrs L. Dale
PD – Paul Darby
PW – Phil Wilson
PMW – Pat Woodruffe
RG – Rita Grose
RMV – Roger Veall

Vc 7 records

Arabis glabra – JP, Chittoe, one plant on roadside verge, refind of nationally scarce plant at site where not seen for some years
Cirsium dissectum – DB/DH/JR, Tockenham Wick, Grove Farm, species rich pasture

Galinsoga quadriradiata * – JP, Melksham town centre, base of wall of building, new 10km record
Hesperis matronalis * – JP, Bradford on Avon, several plants on rubbish tip
Hyacinthoides non-scripta x hispanica * – JP, Winsley, locally abundant under trees at edge of meadow
Melampyrum pratense – PD/DPT/JP, Grittenham, Great Wood, along main ride, new 10km record
Prunus cerasifera * – DH/DB, Bremhill, Hazeland Mill, copse near River Marden
Pulmonaria officinalis * – DH/DB, Bremhill, Hazeland Mill, copse near River Marden , known to J Swanborough in the 1970s
Rapistrum rugosum * – JP, Winsley, abundant on verges of new bypass, 2nd recent vc record
Sedum telephium – PD/DPT, Grittenham, Great Wood, along main ride, new 10km record

Vc 8 records

Agrimonia procera – RMV, Odstock, clearing on northern edge of Great Yews
Anchusa arvensis – CM, Burbage, field gateway, Westcourt Lane, new 10km record
Anthemis cotula – PMW/DJW, Tollard Royal, along an arable field, and West Chase Farm, new 10km records, extends range
Astragalus glycyphyllos – BL, Chilmark, re-find of site recorded by D. Forbes in 1984
Betula pubescens – PMW/DJW, Tollard Royal, Chase Woods, new 10km record
Calamagrostis epigejos – PMW/DJW, Tollard Royal, Chase Woods, small patch along the General's Avenue, new 10km record
Carex humilis – PMW/DJW, Tollard Royal, new 10km record
Centaurium pulchellum – BL, Middleton, Gorse Down, 12 plants
Chrysanthemum segetum * – PMW/JW, Ashmore, Tollard Green, single plant in arable field
Dryopteris affinis – PMW/DJW, Tollard Royal, Chase Woods
Epipactis helleborine – BG, Beckhampton, Knoll Down
Epipactis phyllanthes – BL, Berwick St James, new location, 6 spikes
Galeopsis bifida – DJW, Tollard Royal, Cranborne Chase, field to the north of Rotherly Down SSSI, 1st vc record for 100 years, conf by RM Harley
Gentianella anglica – BL, Broadchalke, Middleton Down, 17 spikes
Helleborus viridis – PMW/DJW, Tollard Royal, Clap Wood, this large population was incorrectly listed in the Wiltshire Flora as H. foetidus
Heracleum mantegazzianum * – JH, Salisbury, Crane Bridge
Hieracium maculatum * – AD/LD, Winterbourne, Thorny Down, on A30 protected verge, new 10km record
Hyoscyamus niger – PW, Porton, near redevelopment area, new location for this nationally scarce species; JW, Berwick St John, Gallows Hill, several plants near farm track at foot of down, same or adjacent to site noted by Grose, unusual for this plant to survive 45 years
Hypericum androsaemum – PMW/DJW, Tollard Royal, Chase Wood and another site
Juniperus communis – DJW and PD separately, Berwick St John, Gallows Hill, single old bush on steep SW-facing down
Lactuca serriola * – PMV/DJW, Tollard Royal, Chase Woods, coppiced woodland, new 10km record
Lepidum campestre – GY, Trowbridge, near Tescos
Lepidium draba * – BL, East of Amesbury, along verges of A303
Mentha x gracilis * – PMW/DJW Ashmore, edge of Farnham Woods and also Wiltshire Coppice, conf. RM Harley
Mentha x villosa * – PMW/DJW, Ashmore, Farnham Woods, several plants in hedge, possible garden escape, conf by RM Harley
Misopates orontium – PMW, West Tytherley, Bentley Wood, several plants flowering on disturbed ground, new 10km record
Neottia nidus-avis – PMW/DJW, Tollard Royal, Chase Woods, dense conifer stand in former ancient woodland, new 10km record
Oenanthe pimpinelloides – RG/IA, West Grimstead, Broadmead Farm, conf. DG, site known in 1992
Ophioglossum vulgatum – CH, near Monkton Deverill, chalk grassland, new 10km square
Ophrys insectifera – IB/PMW/DJW, Tollard Royal, fenced meadow, new 10km record
Pedicularis sylvatica – PD, Chapmanslade, on grassy slope overlooking Black Dog Wood, new 10 km record
Phyteuma orbiculare – CB, Porton, Roche Court Down, new site; PD, Pewsey White Horse, north facing chalk grassland scarp, latter is a new 10km record for this nationally scarce species
Platanthera chlorantha – PMW/DJW, Ashmore, Wiltshire Coppice; Tollard Royal, new 10km records
Quercus cerris * – PMW/JDW, Tollard Royal, Chase Woods
Quercus petraea – PMW/DJW, Tollard Royal, Chase Woods, several specimens near the great circle, new 10km record
Rorippa sylvestris – BL, Berwick St James, garden weed, new 10 km record
Saponaria officinalis *– DOG, near Boscombe, South Marston and Idmiston, Idmiston Down; PMW/DJW, Tollard Royal, orchard, new 10km records
Stellaria pallida – DG, East Knoyle, Winmill Hill, 1st vc record (not found by AH 1988 or 1999)
Tanacetum parthenium * – DJW/PMW, Tollard Royal, Rushmoor Estate, clearing between Leys Coppice and Inner Park, unusual double form

Thalictrum simplex ssp galioides * – DG, SW of Tilshead, 1st English record, id. D M Mullin, conf. E J Clement
Tilia cordata – BL, Berwick St James, Asserton Farm, avenue of trees approx. 15 yrs old, conf JEO
Veronica agrestis – RMV, West Wellow, weed in rough turf near garden gate, 2nd vc record

ADDDITION TO 1996 RECORDS

Medicago arabica – BG, Devizes, small public garden

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PLANT RECORDS 1998

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CB - Clive Beeley
DJW - Jeremy Wood
DOG - Daphne Graiff
DS - Not known
DW - David Wall
ER - Eileen Rollo
JH - J. Hodgkinson
JP - John Presland
JO - John Ounsted
JEO - Jack Oliver
LD - Mrs L. Dale
MB - Monica Blake
MF - Mr Fleming
PD - Paul Darby
PM - Piers Mobsby
PW - Phil Wilson
PMW - Pat Woodruffe
RMV - Roger Veall
RN - Rosemary Nicholls
UMW - Una Milne-White

Vc 7 records

Berberis vulgaris - PD, Ashton Keynes, bushes and hedges, new 10km square record

Centaurea cyanus * - WBS group, Swindon, disused railway line, new 10km square record

Ceratophyllum demersum - DS, Wilton, Flouse-hole, pond

Conyza canadensis * - WBS group, Swindon, disused railway line, previously recorded DG 1987

Daphne laureola - PD, North of Brinkworth, Somerford Common, one plant in wood

Geum x intermedium (G. urbanum x G. rivale) - PD, Kington St Michael, roadside, previously recorded by J Swanborough in 1970s
Lysimachia vulgaris - PD, Dauntsey, river bank
Muscari armeniacum * - JEO, Marlborough, waste ground, garden throwout, recorded as agg. in Flora
Ophrys apifera - PD/MB/MF, Chippenham, grassland to north of Lordsmead
Prunus cerasifera * - JP, Winsley, 3 plants at edge of wood, new 10km square record
Salix x reichardtii (S. caprea x S. cinerea) - WBS group, Swindon, disused railway line, new 10km square record
Salix eleagnos * - WBS group, Swindon, disused railway line, new county record
Solidago giganteum * - JP, between Holt and Melksham, roadside, recorded as agg. in Flora
Viscum album - DW, Malmesbury, on Tilia x europaea, new 10km square record

Vc 8 records

Anagallis arvensis ssp caerulea - JH, Netherhampton, new 10km square record
Athyrium felix-femina - PMW/DJW, Sixpenny Handley, new 10km square record
Betula pubescens - PMW/DJW, northeast of Tollard Royal
Callitriche obtusangula - RMV, East Harnham, water meadows and ditches
Calystegia silvatica * - JEO, East Harnham Farm, extensive
Carex humilis - BL, Yarnbury Castle, grazed turf
Chrysanthemum segetum * - RN, Alderbury, large number on clay soil
Circerbita macrophylla * - BL, Bowerchalke, new 10km square record; BL, Broadchalke
Coeloglossum viride - PMW/DJW, Ashmore, new 10km square record
Conyza canadensis * - PMW/DJW, Ashmore, Ashgrove Farm, a few plants on waste ground, new 10km square record
Cotoneaster horizontalis * - JEO, Urchfont, wall, new 10km square record
Dactylorhiza praetermissa - WBS group, East Harnham, water meadows
Dactylorhiza praetermissa (pure white) - WBS group, East Harnham, water meadows
Daphne laureola - PMW/DJW, Tollard Royal, new 10km square record
Doronicum pardalianches * - AD, East of Salisbury, Clarendon, new 10km square record
Dryopteris affinis - PMW/DJW, Tollard Royal
Eleocharis palustris - PMW/DJW, south of Berwick St John, Rotherley Bottom, dewpond, new 10km square record
Euphorbia lathyris * - BL, west of Winterbourne Stoke, track by Yarnbury Castle, on tree stump as epiphyte, new 10km square record
Fallopia japonica * - PMW/DJW, Tollard Royal, 2 sites, new 10km square record
Gentianella anglica - DJW, south of Berwick St John, Rotherley Bottom, one plant at one site, 60-70 at another**,** new 10km square record; AD, south of Pewsey, Pewsey Down, one only, new 10km square record
Geranium columbinum - PMW/DJW, Ashmore, arable field above Quarry Bottom, new 10km square record
Gladiolus communis ssp byzantinus * - PMW/DJW, Tollard Royal, a few plants established for years in Ian Burt's conservation meadow, no history of nearby cultivation, new county record
Glyceria notata (G. plicata) - JEO, East Harnham, water meadows, new 10km square record
Gymnadenia conopsea - PMW/DJW, Ashmore, new 10km square record
Helleborus foetidus - PMW/DJW, Tollard Royal, 2 plants in woodland close to North Lodge, very possibly from a garden 60 m away
Heracleum mantegazzianum * - AD, Salisbury, Crane Bridge
Hyoscyamus niger - BL, Bishopstone, lare swathe on site of barn conversion, new 10km square record for this nationally scarce plant
Impatiens glandulifera * - BL, Bowerchalke
Inula conyzae - PMW/DJW, Tollard Royal
Iris foetidisssima - PMW/DJW, Tollard Royal, new 10km square record
Lagarosiphon major * - JEO, Urchfont, extensive in pond, new 10km square record
Lamiastrum galeobdolon ssp argentatum * - PMW/DJW, Tollard Royal, a large patch along the path to Little Wood; JEO, Vernditch; new 10km square record
Lathraea squamaria - PMW/DJW, Ashmore and Tollard Royal, several localities
Lathyrus latifolius * - BL, Salisbury, Churchfields, waste ground, new 10km square record
Legousia hybrida - BL, Berwick St James, 3 plants on edge of arable
Lemna minuta * - JEO, North of Urchfont, pond, new 10km square record
Lepidium draba * - BL, Berwick St James, one large stand on farm track
Lepidium heterophyllum - JH, Salisbury, new 10km square record
Leucojum vernum - JEO, NW of Urchfont, one plant, new 10km square record for this Red Data Book species, with only 2 known sites in Vc8.
Mahonia aquifolium * - PMW/DJW, Tollard Royal, edge of wood near South Lodge, new 10km square record
Mentha x villosa (M. spicata x M. suaveolens) * - PMW/DJW, Tollard Royal, localities not noted in Flora
Muscari armeniacum * - JEO, Pewsey, old grassy banks and rough ground north of station, garden throwout, recorded as agg. in Flora
Ophrys insectifera - PMW/DJW, north of Sixpenny

Handley, new 10km square record

Orchis ustulata - AD, south of Pewsey, Pewsey Down; JH, south of Odstock, Odstock Down, 2 only, known site; nationally scarce plant

Papaver hybridum - BL, south of Broadchalke, arable patch**,** new 10km square record

Paris quadrifolia - PMW/DJW, north of Tollard Royal, 2 small colonies in Jagdens Wood, near Ashcombe Farm, mentioned by Grose in Flora of Wiltshire, new 10km square record

Persicaria capitatum * - JO, Salisbury, North Street, crack between wall and pavement, new county record

Petasites fragrans * - PMW/DJW, Tollard Royal, roadsides**,** new 10km square record

Petroselinum segetum - PM, Coombe Bissett, Coombe Bissett Down

Phacelia tanacetifolia * - UMW, south of West Grimstead, Witherington Farm, on set aside, locations not noted in Flora

Platanthera bifolia - AD, south of Pewsey, Pewsey Down, lots

Potamogeton berchtoldii - JEO, East Harnham, water meadows,and ditches, new 10km square record

Primula x polyantha (P. vulgaris x P. veris) - PMW/DJW, Ashmore, strip of woodland along farm track, new 10km square record

Ranunculus aquatilis - PMW/DJW, south of Berwick St James, Rotherley Bottom, dewpond, new 10km square record

Ribes sanguineum * - JEO, Pewsey, rough ground north of station, second vc record

Salix x rubens (S. alba x S. fragilis) - RMV, East Harnham, water meadows

Saponaria officinalis * - AD, Salisbury, Maltings, new 10km square record

Saxifraga tridactylites - JH, Salisbury, Scots Lane

Silene noctiflora - PM, south of Broadchalke, arable patch, new 10km square record for this nationally scarce plant

Spergula arvensis - BL, West Lavington, building site

Spiranthes spiralis - PMW/DJW, Tollard Royal, a few plants on steep downland, perhaps that mentioned by Grose in Flora of Wiltshire, new 10km square record

Stachys x ambigua (S. sylvatica x S. palustris) - PMW/DJW, Ashmore, near Ashgrove Farm, 3 small colonies, one of them beside S. sylvatica, conf. R M Harley

Symphytum grandiflorum * JEO, north of Urchfont, pond edge, new 10km square record

Symphytum orientale * - JEO, Urchfont, wide-spread, new 10km square record

Symphytum x uplandicum (S. officinale x S. asperum) * - PMW/DJW, Ashmore, near Ashcombe Farm, presumably Grose's colony of "S. peregrinum", new 10km square record

Tephroseris integrifolius - AD, south of Pewsey, Pewsey Down, old site for this nationally scarce plant

Thesium humifusum - JH, Odstock, south of Clearbury Ring

Thymus pulegioides - PMW/DJW, Ashmore, near Ashgrove Farm, several on steep grass/chalk bank, conf. DG, new 10km square record

Trifolium medium - BL/JEO, Bowerchalke, Chickengrove Bottom, large clump

Triglochin palustre - PW, East Harnham, water meadows

Veronica catenata - WBS group, East Harnham, water meadows and ditches

Ophrys apifera - West Lavington, one plant in meadow; PMW/DJW, south of Berwick St James, Rotherley Bottom, 2 plants; BL, Broadchalke, Middleton Down; recorded as agg. in Flora