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The Gloucestershire Naturalist



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CONTENTS

Editorial		1
Notes on Contributors		2
Gloucestershire Botany Report 2013	Mark & Clare Kitchen	4
Odonata Report for 2013	Ingrid Twissell	25
Gloucestershire Moth Report 2012-13	Robert Homan	30
Molluscs in Gloucestershire 2013	David Long	41
Gloucestershire Bryophyte Report 2013	Richard Lansdown & Peter Martin	42
Hoverfly Report 2013	David Iliff	47
Gloucestershire Lichen Report 2013	Juliet Bailey	49
Colour Plates		56-58
The Gloucester Mecopteran	Martin Matthews	59
Cardinals and Woolly Bears – Gloucestershire's other old growth habitats	Keith Alexander	63
Heteroptera (Bugs) in Gloucestershire 2013	John Widgery	70
Grasshoppers, Crickets & allies in Gloucestershire 2013	John Widgery	74
The Two-winged Flies (Diptera) of Gloucestershire: Part 1.		
Soldier flies to Bee flies ("Larger Brachycera")	Keith Alexander	75
Ladybird Report 2013	David Iliff	114
Wildlife Recording In Gloucestershire		115
County Recorders' contact details		116
Notes for Contributors		Inside back cover

Cover photo: The lichen (*Xanthoria parietina*) on *Prunus* twigs in Cirencester Park, 26th January 2013. (Photo: David Scott-Langley)

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Editorial

The weather in 2013 was somewhat different from 2012 with a long cold first half which included snow and frost but lower than average rainfall. This was followed by a warm third quarter with some record temperatures giving the driest, warmest and sunniest summer since 2006. Autumn was long and slow with some terrific leaf colours followed by a mild start to the winter.

Keith Alexander moved out of county ten years ago but has remained as county recorder for Coleoptera and Diptera. At some point he will be publishing his "Coleoptera of Gloucestershire" which will be a welcome update on David Atty's original from 1983. He now feels it is time to give up the county recorderships and the Editor has taken on the Coleoptera for the time being. In this edition of TGN Keith has produced Part 1 of the Diptera of Gloucestershire, creating a benchmark of the fly fauna of the county for his successors. David Iliff, who already records the county's hoverflies has been joined by John Phillips and Martin Matthews as joint Diptera recorders. Their contact details can be found at the end of this volume. Keith has also contributed his final part of the trilogy on the county's oldgrowth tree habitats and their fauna.

Richard Lansdown and Peter Martin have given us our first glimpse of the bryophytes of the county and this follows on from the county red data book published by Richard earlier this year as TGN No25. Robert Homan has written his first report as joint moth recorder covering the years 2012 and 2013. Martin Matthews has also produced a newsletter, sent to a select few, covering the Scorpionflies which the Scientific & Publications Sub-committee felt should reach a wider audience so both editions are included in the following pages. Once again we have a wide range of recorders' reports and I would like to take this opportunity to thank all the contributors for all the hard work behind the scenes that goes into preparing these reports, work which is often not recognised by the general public or the organisations that make use of the information we supply.

Articles on the county's flora and fauna are always welcome and can be sent to the Editor at the addresses below. There are "Notes for Contributors" inside the back cover and a blank page setup can be emailed if requested.

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Notes on Contributors

David Scott-Langley has been GNS county recorder for Myriapods, Isopods, Harvestmen and Pseudoscorpions since 2000 and is caretaker for a number of other groups. He is currently Chairman of the GNS Scientific & Publications Subcommittee and of the Society's Cirencester branch. He finds that working in the landscaping industry gives him access to otherwise unavailable sites for recording. He has also published works on the fauna of Foula, Shetland.

Mark Kitchen and Clare Kitchen are a husband and wife team who have contributed very substantially to botanical recording since 1981, especially to the north-east of Bristol, their home being near Berkeley. They have jointly acted, since 1993, as Recorders for the Botanical Society of the British Isles for vice-counties 33 (East Gloucestershire) and 34 (West Gloucestershire). In 2008, in recognition of their considerable contribution to the county flora, the Gloucestershire Wildlife Trust presented them with the Armstrong Award.

Ingrid Twissell has been the Dragonfly recorder for Gloucestershire since 1993, taking over from Sonia Holland. Her interests are not solely confined to this group as she enjoys other facets of the Natural World.

David Iliff was born in Dublin and grew up in southeast England. He moved to Gloucestershire in 1965 and joined the GNS, mainly for bird watching. During the 1970s he became increasingly interested in entomology and was appointed county hoverfly recorder after reviewing a book on the subject for the GNS Journal. He is the editor of the Hoverfly Newsletter which is published twice yearly by the Dipterists Forum. He has been the ladybird recorder since the early 1990s.

John Widgery was born in Hertfordshire and only moved to Gloucestershire in 2006, although involved in biological recording in the County since the mid-1990s. Has had a lifelong interest in natural history. Contributed to the botanical recording of Hertfordshire and Middlesex until the 1970s. Intensively involved in ornithology up to late 1980s during which he ringed over 50,000 birds for the British Trust for Ornithology. Serious involvement with entomology since 1990, he became recorder for Orthoptera and terrestrial Heteroptera in Hertfordshire soon afterwards. Held the position of National Recorder for Orthoptera between 1996 and 2002.

Juliet Bailey spent her childhood in Gloucestershire and after university worked for 15 years as an ecologist in London then Warwickshire. She returned to Gloucestershire in 1996 and now is fully occupied as an amateur naturalist and gardener.

Keith Alexander was formerly the county recorder for Coleoptera (other than ladybirds) and Diptera (other than hoverflies). He is currently the National Recorder for Barkflies (Psocoptera). He now lives in Exeter and is delighted that resident entomologists in Gloucestershire have taken over the baton for recording these insects.

Robert Homan moved to Gloucestershire, via Essex, Hertfordshire, Yorkshire and Cumbria, in 1976. He taught geography in Cheltenham for 33 years. Since retiring in 2009 he has spent even more time in the field recording moths, leaf mines and plant galls. Robert is the county recorder for plant galls and joint county moth recorder.

David Long has been county recorder for Molluscs since the 1980s, but has been recording land and freshwater molluscs since 1967. He is a Vice-President of the Conchological Society, chaired the Gloucestershire Wildlife Trust's Conservation Committee from 1980 to 1992, and now chairs the Gloucestershire Invertebrate Group. He has published papers on non-marine molluscs and (in one case) marine fossils both in the UK and in Australia.

Martin Matthews has been an active member of the Gloucestershire Invertebrate Group for many years and has joined David Iliff and John Phillips as joint Diptera recorders.

Richard Lansdown and **Peter Martin** have been recording the county bryophyte flora for many years will be leading instructional field meetings on behalf of the Gloucestershire Naturalists' Society.

GLOUCESTERSHIRE BOTANY REPORT 2013

Clare and Mark Kitchen

The highlight of the botanical year proved to be, as anticipated, a three day meeting in the Forest of Dean of the BSBI *Rubus* Group. With the records made it was possible to update the county database for many species. In addition a number of the brambles recorded were new to the county. We are indebted to Rob Randall who came over from Bath to co-lead this meeting. He was responsible for the identification of most of the species, sometimes with the aid of Mike Porter, joint VC recorder for Breconshire, another enthusiastic batologist. We would like to thank Rob for the time he devoted to this meeting, for his unassuming expertise and for his great patience with those of us who still have persistent problems with this rather enigmatic and puzzling genus.

Two of the records published here are the result of the reappraisal of the identification originally given to herbarium specimens. There are a few botanists who seek out the dark dusty corridors of museum or university herbaria to re-examine collections and to this breed of botanist we are grateful.

Sadly Mary Palfrey died during the year. She was well regarded as a pharmacist in Stow-on-the-Wold and was a stalwart member of the GNS who contributed many botanical records over a protracted period as well as providing records for the 1986 Supplement to the Flora. Latterly she surveyed many of the county's farms for the local FWAG branch and handed many records to us for safe keeping shortly before her death.

We would like to thank each and every one of you who have submitted records during the year. Your records are important no matter how few you send. Without you there would be no annual botanical report for the county.

Finally, a request. The BSBI plan to produce an on-line, updated national flora in 2020. West Gloucestershire, V-c 34, has reasonable coverage to date but records for East Gloucestershire, V-C 33, are looking rather thin on the ground. Consequently we are appealing to you to do some recording. Ideally we should like you all to adopt a 10km square each but failing this a number of tetrads or even a single tetrad or 1km square would be a great help. Please give this some thought and contact us soon.

Names of recorders and initials

Arnold P	PA	Bird S	BS
Astle M	MA	Boocock SK	SKB
Atkinson B	BA	Booth J	JBo
Atkinson T	TA	Broughton DA	DAB
Bailey J	JB	Brown L	LB
Bailey JA	JAB	Burton R	BR
Barnfield R	BR	Caster K	KC

Colls HV	HVC	Martin JP	JPM
Davies K	KD	McCosh DJ	JDM
Davies V	VD	McGrath P	PM
Dickenson H	HD	Oakley J	JO
Doe JR	JRD	Perkins DW	DWP
Dray M	MD	Perkins J	JP
Fenton T	TF	Phillips B	BP
Fleming JM	JMF	Phillips VE	VEP
Flint R	RF	Putley J	JPu
Frost D	DF	Quin PR	PRQ
Gaunt RG	RGG	Ralphs IL	ILR
Goodfellow G	GG	Randall RD	RDR
Harley RM	RMH	Rich TCG	TCGR
Higgins RJ	RJH	Rowlatt S	SR
Hollom A	AH	Rumsey FJ	FJR
Jannink M	MJ	Simpson N	NS
Jones D	DJ	Smith A	AS
Kelsall R	RK	Spencer J	JS
Kingscote K	KK	Spyvee RS	RSS
Kirby J	JK	Titchen AC	ACT
Kitchen C	CK	Wilson P	PW
Kitchen MAR	MARK	Wilson R	RW

The records

Unless otherwise stated all records lie within the administrative county of Gloucestershire. All nomenclature and taxonomic order follows *New Flora of the British Isles*, 3rd edition, Clive Stace, Cambridge University Press 2010 and updates as published in BSBI News, excepting *Hieracia* which follows McCosh D.J. and Rich T.C.G. *Atlas of British and Irish Hawkweeds*, BSBI, London (2011).

Abbreviations used in the text:

BSBI - Botanical Society of the British Isles

FWAG - Farming and Wildlife Advisory Group

GNS - Gloucestershire Naturalists' Society

V-c - Vice-county

VCCC - Vice-county Census Catalogue

VCR - Vice-county record.

4/1/1 *Ophioglossum vulgatum* L., Adder's-Tongue. Native. V-c 34. Wick Wick, Kendleshire, Westerleigh C.P., ST67U. 17/06/2013 (PW and RW).

13/1/9bxc *Asplenium trichomanes* L. nothosp. *staufferi* Lovis & Reichstein, Maidenhair Spleenwort. Native. V-c 34. Coleford, Coleford C.P., SO51Q. 8/2/2013 (SKB conf. FJR).

13/1/9c *Asplenium trichomanes* L. ssp. *pachyrachis* (H. Christ) Lovis & Reichst., Maidenhair Spleenwort. Native. V-c 34. Coleford, Coleford C.P., SO51Q. 30/01/2013 (SKB conf. FJR). A further visit on 8/02/2013 revealed a total of about twenty plants. 18/3/10 *Dryopteris carthusiana* (Vill.) H.P.Fuchs, Narrow Buckler-fern. Native. V-c 34. Woorgreens Lake, Cinderford C.P., SO61G. 13/07/2013 (CK and MARK on BSBI meeting).

30/1/5 *Papaver dubium* L., Long-headed Poppy. Archaeophyte. V-c 33. Hartley Hill, Coberley C.P., SO91P. 7/07/2013 (ILR). Two plants along field margin.

32/3/1 *Helleborus foetidus* L., Stinking Hellebore. Probably native. V-c 33. Birdlip Hill, Cowley C.P., SO91H. 11/03/2012 (MJ). Single plant on lip of quarry. Buckholt Wood, Cranham C.P., SO81W. 23/06/2012 (MJ). V-c 34. Ash Hill Plantation, Sapperton C.P., SO91L. 13/06/2013 (JRD). Small patch near road.

32/3/3 *Helleborus viridis* L., Green Hellebore. Native. V-c 33. Foulwell Wood, Withington C.P., SP01C. 21/01/2012 (MJ). Large patch, just emerging. Staple Copse, Withington C.P., SP01C. 21/01/2012 (MJ). Known locality.

32/9/3 *Anemone apennina* L., Blue Anemone. Introduced-naturalised. V-c 33. Lower Swell, Swell C.P., SP12S. 23/04/2013 (JRD). On road verge.

32/11/1 *Pulsatilla vulgaris* Mill., Pasqueflower. Native. V-c 33. Taylors Hill, Hilcot, Withington C.P., SP01C. 4/06/2013 (BA, PA and TA). Four plants not yet fully open and later than those at Barnsley Warren which were in flower at least three weeks previously. Known locality.

32/13/8 *Ranunculus arvensis* L., Corn Buttercup. Archaeophyte. V-c 34. Acton Court, Iron Acton C.P., ST68S. 16/06/2013 (JPM). One tiny plant in flower and fruit growing out of an old wall. Cornfield annuals planted in nearby walled garden/meadow/orchard but this species was not observed there.

32/13/10 *Ranunculus auricomus* L., Goldilocks Buttercup. Native. V-c 33. Coates, Coates C.P., SO90V. 2/05/2013 (JRD). Locally abundant on wide road verge and in broad-leaved plantation. Heath Hill, Wick Rissington C.P., SP12W. 9/05/2013 (JRD). In small semi-natural woodland. The Leasowes, Duntisbourne Rouse C.P., SO90M. 1/05/2013 (JRD). Locally frequent under mature beech. Trantershill Plantation (Laurie Lee Wood NR), Painswick C.P., SO80T. 13/06/2013 (JRD and JMF). V-c 34. Chavenage, Beverstone C.P., ST89S. 2/05/2013 (JRD). On wide road verge beneath avenue of trees. Tuns Wood, Taynton C.P., SO72A. 7/06/2013 (JRD).

32/13/18 *Ranunculus hederaceus* L., Ivy-leaved Crowfoot. Native. V-c 34. Staunton Meend, Staunton Coleford C.P., SO51K. 18/06/2013 (SB and JRD). In shallow pond.

38/5/23 *Saxifraga tridactylites* L., Rue-leaved Saxifrage. Native. V-c 33. Brunswick Road, Gloucester, SO81J. 22/04/2013 (JAB).

38/6/2 *Chrysosplenium alternifolium* L., Alternate-leaved Golden-saxifrage. Native. V-c 33. Crickley Hill, Badgeworth C.P., SO91H. 11/03/2012 (MJ). Scattered plants.

38/9/1 *Tellima grandiflora* (Pursh) Douglas ex Lindl., Fringecups. Introduced-naturalised. V-c 33. Halliday's Wood, Harescombe C.P., SO80J. 26/09/13 (JRD). Beside bridleway.

40/2/1 *Myriophyllum verticillatum* L., Whorled Water-milfoil. Native. V-c 34. Cherington Lake, Cherington C.P., ST89Z. 15/08/2013 (JRD). Confirms continued presence at a known locality.

42/8/2 *Astragalus danicus* Retz., Purple Milk-vetch. Native. V-c 33. Barnsley Warren, Chedworth C.P., SP00N. 8/06/2013 (GG). Small patch.

42/14/3 *Ornithopus perpusillus* L., Bird's-foot. Native. V-c 34. Staunton Meend, Staunton Coleford C.P., SO51L. 29/06/2013 (VEP). Several plants in recently scraped area at eastern edge of heath.

42/28/17 *Trifolium medium* L., Zig-zag Clover. Native. V-c 33. Cockleford Marsh SSSI, Elkstone C.P., SO91R. 25/06/2013 (JRD) and 10/07/2013 (JRD and JMF).

42/34/4 *Genista anglica* L., Petty Whin. Native. V-c 34. Laymoor Quag, Cinderford C.P., SO61M. 8/06/2013 (RGG leading GNS meeting). Only two flowering stems on a site almost totally covered in heavily matted grasses.

43/1/3 *Polygala calcarea* F.W. Schultz, Chalk Milkwort. Native. V-c 33. Cranham Common, Cranham C.P., SO81W. 5/07/2013 (JPM). V-c 34. Minchinhampton Quarry, Minchinhampton C.P., SO80K. 27/05/2013 (RF).

44/6/1 *Kerria japonica* (L.) DC., Kerria. Introduced-naturalised. V-c 34. Haywood Inclosure, Cinderford C.P., SO61M. 6/05/2013 (CK and MARK). Single bush well inside the woodland.

44/18/70 *Cotoneaster franchetii* Bois, Franchet's Cotoneaster. Introduced-naturalised. V-c 34.

Aust Services/Severn Bridge footpath/slip road, Aust C.P., ST58U. 10/09/2013 (JPM).

44/22/1 *Filipendula vulgaris* Moench, Dropwort. Native. V-c 33. Turkdean, Turkdean C.P., SP01Y. 30/06/2013 (VEP). In unimproved grassland which is becoming undergrazed.

44/23/15 *Rubus bertramii* G. Braun. Native. V-c 34. Meering Meend, Mitcheldean C.P., SO61N. 14/07/2013 (RDR on BSBI meeting). Poor's Allotment, Tidenham C.P., ST59P. 12/07/2013 (RDR on BSBI meeting).

44/23/28 *Rubus scissus* W.C.R. Watson. Native. V-c 34. Barnhill Plantation, West Dean C.P., SO61A. 13/07/2013 (RDR on BSBI meeting). Clearwell Meend, Newland C.P., SO50Z. 12/07/2013 (RDR on BSBI meeting).

44/23/34 *Rubus albionis* W.C.R. Watson. Native. V-c 34. Meering Meend, Mitcheldean C.P., SO61N. 14/07/2013 (RDR on BSBI meeting). Wenckford, Awre C.P., SO60P. 14/07/2013 (RDR on BSBI meeting). Woorgreens Lake, Cinderford C.P., SO61G. 13/07/2013 (RDR on BSBI meeting). Rare in the county and only occurring in V-c 34.

44/23/52 *Rubus gratus* Focke. Native. V-c 34. Pit House Bog, Wigpool Common, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). Very rare in the county and only occurring in V-c 34. Mainly in Lancashire and Norfolk and very rare elsewhere in the country.

44/23/54 *Rubus imbricatus* F.J.A. Hort. Native. V-c 34. Barnhill Plantation, West Dean C.P., SO61A. 13/07/2013 (RDR on BSBI meeting). Eastbachmeend Inclosure, West Dean C.P., SO51X. 12/07/2013 (RDR on BSBI meeting). Pit House Bog, Wigpool Common, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). A species restricted to southern Britain.

44/23/60 *Rubus lindleianus* Lees. Native. V-c 34. Cannop Wharf, West Dean C.P., SO61A. 13/07/2013 (RDR on BSBI meeting). Poor's Allotment, Tidenham C.P., ST59P. 12/07/2013 (RDR on BSBI meeting).

44/23/62 *Rubus macrophyllus* Weihe & Nees. Native. V-c 34. Dymock Wood, Dymock C.P., SO62Z. 8/8/2013 (CK, MARK and RDR, det RDR).

44/23/69 *Rubus platyacanthus* P.J. Mueller & Lef. Native. V-c 34. Barnhill Plantation, West Dean C.P., SO61A. 13/07/2013 (RDR on BSBI meeting). Broom Hill, Ruspidge C.P., SO60P. 14/07/2013 (RDR on BSBI meeting). Clearwell Meend, Newland C.P., SO50U and Z. 12/07/2013 (RDR on BSBI meeting). Eastbachmeend Inclosure, West Dean C.P., SO51X. 12/07/2013 (RDR on BSBI meeting). Meering Meend, Mitcheldean C.P., SO61N. 14/07/2013 (RDR on BSBI meeting). New Fancy View, West Dean C.P., SO60J. 13/07/2013 (RDR on BSBI meeting). A species of southern Britain.

44/23/82 *Rubus silurum* (Ley) Ley. Native. V-c 34. Meering Meend, Mitcheldean C.P., SO61N. 14/07/2013 (RDR on BSBI meeting).

44/23/93 *Rubus cardiophyllus* Lef. & P.J. Mueller. Native. V-c 34. Clearwell Meend, Newland C.P., SO50Z. 12/07/2013 (RDR on BSBI meeting). Eastbachmeend Inclosure, West Dean C.P., SO51X. 12/07/2013 (RDR on BSBI meeting). Haind Park Wood, Dymock C.P., SO63Y. 8/8/2013 (CK, MARK and RDR, det RDR). New Fancy View, West Dean C.P., SO60J. 13/07/2013 (RDR on BSBI meeting). Wenchoford, Awre C.P., SO60P. 14/07/2013 (RDR on BSBI meeting). Widespread and frequent in southern Britain.

44/23/117 *Rubus polyanthemus* Lindeb. Native. V-C 34. Cannop Wharf, West Dean C.P., SO61A. 13/07/2013 (RDR on BSBI meeting). Poor's Allotment, Tidenham C.P., ST59P. 12/07/2013 (RDR on BSBI meeting). Woorgreens Lake, Cinderford C.P., SO61G. 13/07/2013 (RDR on BSBI meeting).

44/23/118 *Rubus prolongatus* Boulay & Letendre ex Corbière. Native. V-c 34. Meering Meend, Cinderford C.P., SO61N. 14/07/2013 (RDR on BSBI meeting). Slip Wood, St Briavels C.P., SO50M. 12/07/2013 (RDR on BSBI meeting). The Park, Tidenham C.P., ST59P. 12/07/2013 (RDR on BSBI meeting). A species of south-west England and southern Wales.

44/23/122 *Rubus rubritinctus* W.C.R. Watson. Native. V-c 34. Bowen's Grove, Newland C.P., SO50I. 12/07/2013 (RDR on BSBI meeting). Broom Hill, Ruspidge C.P., SO60P. 14/07/2013 (RDR on BSBI meeting). Little Dean Walk, Ruspidge C.P., SO61V. 14/07/2013 (RDR on BSBI meeting). Mitcheldean Meend, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). New Fancy View, West Dean C.P.,

SO60J. 13/07/2013 (RDR on BSBI meeting). Wenchoford, Awre C.P., SO60P. (RDR on BSBI meeting).

44/23/132 *Rubus sprengelii* Weihe. Native. V-c 34. Barnhill Plantation, West Dean C.P., SO61A. 13/07/2013 (RDR on BSBI meeting). Cannop Wharf, Cinderford C.P., SO61A. 13/07/2013 (RDR on BSBI meeting). Eastbachmeend Inclosure, West Dean C.P., SO51X. 12/07/2013 (RDR on BSBI meeting). Poor's Allotment, Tidenham C.P., ST59P. 12/07/2013 (RDR on BSBI meeting). Woorgreens Lake, Cinderford C.P., SO61G. 13/07/2013 (RDR on BSBI meeting).

44/23/134 *Rubus pictorum* Edees. Native. V-c 34. Pit House Bog, Wigpool Common, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). A species with a curious disjunct distribution covering central Scotland and south-east Wales. There is no previous record for V-c 34 in the VCCR and only a pre-1970 record for V-c33.

44/23/140 *Rubus rossensis* Newton. Native. V-c 34. Allums Grove, Dymock C.P., SO63V. 8/8/2013 (CK, MARK and RDR, det RDR). Clearwell Meend, Newland C.P., SO50Z. 12/07/2013 (RDR on BSBI meeting). Collinpark Wood, Pauntley C.P., SO72N. 8/8/2013 (CK, MARK and RDR, det RDR). Flaxley Woods, Blaisdon C.P., SO61T. 14/07/2013 (RDR on BSBI meeting). Little Dean Walk, Ruspidge C.P., SO61W. 14/07/2013 (RDR on BSBI meeting). Meering Meend Cinderford C.P., SO61N. 14/07/2013 (RDR on BSBI meeting).

44/23/151 *Rubus euanthus* W.C.R. Watson. Native. V-c 34. Chase End Hill, Bromsberrow C.P., SO73M. 8/8/2013 (CK, MARK and RDR, det RDR). Pit House Bog, Wigpool Common, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). First post 1970 record for what is a Forest of Dean speciality.

44/23/154 *Rubus lanaticaulis* Edees and Newton. Native. V-c 34. Dymock Wood, Dymock C.P., SO62Z. 8/8/2013 (CK, MARK and RDR, det RDR). Frequent. Symonds Yat, English Bicknor C.P., SO51S. 12/07/2013 (RDR on BSBI meeting).

44/23/157 *Rubus longus* (Rogers & Ley) Newton. Native. V-c 34. Haind Park Wood, Dymock C.P., SO63V. 8/8/2013 (CK, MARK and RDR, det RDR). Meering Meend, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). Poor's Allotment, Tidenham C.P., ST59P. 12/07/2013 (RDR on BSBI meeting). Symonds Yat, English Bicknor C.P., SO51S. 12/07/2013 (RDR on BSBI meeting). Wenchoford, Awre C.P., SO60P. 14/07/2013 (RDR on BSBI meeting).

44/23/170 *Rubus melanocladus* (Sudre) Riddelsd. Native. V-c 34. Meering Meend, Mitcheldean C.P., SO61N. 14/07/2013 (RDR on BSBI meeting). Pit House Bog, Wigpool Common, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting).

44/23/173 *Rubus mucronulatus* Boreau. Native. V-c 34. Meering Meend, Mitcheldean C.P., SO61N. 14/07/2013 (RDR on BSBI meeting). This is mainly a species of northern England and Scotland. Seemingly with no Gloucestershire records in the VCCR this is a first county and vice-county record. Mitcheldean Meend, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). Frequent. Second county and vice-county record.

- 44/23/174 *Rubus wirralensis* Newton. Native. V-c 34. Collinpark Wood, Pauntley C.P., SO72N. 8/8/2013 (CK, MARK and RDR, det RDR).
- 44/23/180 *Rubus diversus* W.C.R. Watson. Native. V-c 34. Flaxley Woods, Blaisdon C.P., SO61X. 14/07/2013 (RDR on BSBI meeting). Infrequent. Little Dean Walk, Ruspidge C.P., SO61V. 14/07/2013 (RDR on BSBI meeting). Slip Wood, St Briavels C.P., SO50M. 12/07/2013 (RDR on BSBI meeting). Uncommon.
- 44/23/195 *Rubus moylei* W.C. Barton & Ridd. var. *cuneatus*. Native. V-c 34. Eastbachmeend Inclosure, West Dean C.P., SO51X. 12/07/2013 (RDR on BSBI meeting). Wenckford, Awre C.P., SO60P. 14/07/2013 (RDR on BSBI meeting).
- 44/23/209 *Rubus dentatifolius* (Briggs) W.C.R. Watson. Native. V-c 34. Poor's Allotment, Tidenham C.P., ST59P. 12/07/2013 (RDR on BSBI meeting).
- 44/23/vect *Rubus vectensis* W.C.R. Watson. Native. V-c 34. Mitcheldean Meend, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). A newly described species not mentioned in VCCR or Newton and Randall's "Atlas of British and Irish Brambles".
- 44/23/216 *Rubus hibernicus* (Rogers) Rogers. Native. V-c 34. Wenckford, Awre C.P., SO60P. 14/07/2013 (RDR on BSBI meeting). Mainly occurs in south Wales and with no Gloucestershire records in the VCCR, seemingly a first record for the county.
- 44/23/218 *Rubus leyanus* Rogers. Native. V-c 34. Slip Wood, St Briavels C.P., SO50M. 12/07/2013 (RDR on BSBI meeting). Abundant. Symonds Yat, English Bicknor C.P., SO51S. 12/07/2013 (RDR on BSBI meeting). By the hillfort ramparts.
- 44/23/232 *Rubus echinatus* Lindley. Native. V-c 34. Collinpark Wood, Pauntley C.P., SO72N. 8/8/2013 (CK, MARK and RDR, det RDR). Dymock Wood, Dymock C.P., SO62Z. 8/8/2013 (CK, MARK and RDR, det RDR).
- 44/23/233 *Rubus euryanthemus* W.C.R. Watson. Native. V-c 34. Barnhill Plantation, West Dean C.P., SO61A. 13/07/2013 (RDR on BSBI meeting). Cannop Wharf, West Dean C.P., SO61A. 13/07/2013 (RDR on BSBI meeting). Chase End Hill, Bromsberrow C.P., SO73M. 8/8/2013 (CK, MARK and RDR, det RDR). Dymock Wood, Dymock C.P., SO62Z. 8/8/2013 (CK, MARK and RDR, det RDR). Eastbachmeend Inclosure, West Dean C.P., SO51X. 12/07/2013 (RDR on BSBI meeting). Meering Meend, Mitcheldean, Mitcheldean C.P., SO61N. 14/07/2013 (RDR on BSBI meeting). Woorgreens Lake, Cinderford C.P., SO61G. 13/07/2013 (RDR on BSBI meeting). A Forest of Dean speciality which is rare in England and absent from V-c 33.
- 44/23/234 *Rubus flexuosus* P.J. Mueller & Lef. Native. V-c 34. Allums Grove, Dymock C.P., SO63V. 8/8/2013 (CK, MARK and RDR, det RDR). Collinpark Wood, Pauntley C.P., SO72N. 8/8/2013 (CK, MARK and RDR, det RDR). Dymock Wood, Dymock C.P., SO62Z. 8/8/2013 (CK, MARK and RDR, det RDR). Flaxley Woods, Blaisdon C.P., SO61S. 14/07/2013 (RDR on BSBI meeting). Haind Park Wood, Dymock C.P., SO63V. 8/8/2013 (CK, MARK and RDR, det RDR). Mitcheldean Meend, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). The Park, Tidenham C.P., ST59P. 12/07/2013 (RDR on BSBI meeting).

- 44/23/235 *Rubus fuscicaulis* Edees. Native. V-c 34. Barnhill Plantation, West Dean C.P., SO61A. 13/07/2013 (RDR on BSBI meeting). Broom Hill, Ruspidge C.P., SO60P. 14/07/2013 (RDR on BSBI meeting). Cannop Ponds, West Dean C.P., SO61A. 13/07/2013 (RDR on BSBI meeting). Clearwell Meend, Newland C.P., SO50Z. 12/07/2013 (RDR on BSBI meeting). Flaxley Woods, Blaisdon C.P., SO61S, X and Y. 14/07/2013 (RDR on BSBI meeting). Little Dean Walk, Ruspidge C.P., SO61V. 14/07/2013 (RDR on BSBI meeting). Meering Meend, Cinderford C.P., SO61N. 14/07/2013 (RDR on BSBI meeting). New Fancy View, West Dean C.P., SO60J. 13/07/2013 (RDR on BSBI meeting). Pit House Bog, Wigpool Common, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). Wenckford, Awre C.P., SO60P. 14/07/2013 (RDR on BSBI meeting). Woorgreens Lake, Cinderford C.P., SO61G. 13/07/2013 (RDR on BSBI meeting).
- 44/23/239 *Rubus insectifolius* Lef. & P.J. Mueller. Native. V-c 34. Cannop Ponds, West Dean C.P., SO61A. 13/07/2013 (RDR on BSBI meeting). Eastbachmeend Inclosure, West Dean C.P., SO51X. 12/07/2013 (RDR on BSBI meeting). Poor's Allotment, Tidenham C.P., ST59P. 12/07/2013 (RDR on BSBI meeting). Woorgreens Lake, Cinderford C.P., SO61G. 13/07/2013 (RDR on BSBI meeting).
- 44/23/242 *Rubus longithyriger* Lees ex Focke. Native. V-c 34. Dymock Wood, Dymock C.P., SO62Z. 8/8/2013 (CK, MARK and RDR, det RDR). Meering Meend, Cinderford C.P., SO61N. 14/07/2013 (RDR on BSBI meeting). Mitcheldean Meend, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). Symonds Yat, English Bicknor C.P., SO51S. 12/07/2013 (RDR on BSBI meeting). No post 1970 records for the county in the VCCR.
- 44/23/251 *Rubus regillus* Ley. Native. V-c 34. Dymock Wood, Dymock C.P., SO62Z. 8/8/2013 (CK, MARK and RDR, det RDR). An endemic species restricted to SO62.
- 44/23/253 *Rubus rudis* Weihe. Native. V-c 34. Flaxley Woods, Blaisdon C.P., SO61X. 14/07/2013 (RDR on BSBI meeting).
- 44/23/254 *Rubus rufescens* Lef. & P.J. Mueller. Native. V-c 34. Bowen's Grove, Newland C.P., SO50I. 12/07/2013 (RDR on BSBI meeting). Collinpark Wood, Pauntley C.P., SO72N. 8/8/2013 (CK, MARK and RDR, det RDR). Dymock Wood, Dymock C.P., SO62Z. 8/8/2013 (CK, MARK and RDR, det RDR). Flaxley Woods, Blaisdon C.P., SO61X. 14/07/2013 (RDR on BSBI meeting). Haind Park Wood, Dymock C.P., SO63V. 8/8/2013 (CK, MARK and RDR, det RDR). Meering Meend, Cinderford C.P., SO61N. 14/07/2013 (RDR on BSBI meeting). Mitcheldean Meend, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). Slip Wood, St Briavels C.P., SO50M. 12/07/2013 (RDR on BSBI meeting). Symonds Yat, English Bicknor C.P., SO51S. 12/07/2013 (RDR on BSBI meeting).
- 44/23/260 *Rubus troiensis* Newton. Native. V-c 34. Haind Park Wood, Dymock C.P., SO63V. 8/8/2013 (CK, MARK and RDR, det RDR).
- 44/23/262 *Rubus angusticuspis* Sudre. Native. V-c 34. Cannop Wharf, West Dean C.P., SO60A. 13/07/2013 (RDR on BSBI meeting). Clearwell Meend, Newland C.P., SO50U. 12/07/2013 (RDR on BSBI meeting). Slip Wood, St Briavels C.P., SO50M.

12/07/2013 (RDR on BSBI meeting). Wenchford, Awre C.P., SO60P. 14/07/2013 (RDR on BSBI meeting). A speciality of the Forest of Dean and the Lower Wye Valley.

44/23/268 *Rubus dasycarpus* (Rogers) E. Marshall. Native. V-c 34. Cannop Wharf, West Dean C.P., SO61A. 13/07/2013 (RDR on BSBI meeting). Clearwell Meend, Newland C.P., SO50U and Z. 12/07/2013 (RDR on BSBI meeting). Eastbachmeend Inclosure, West Dean C.P., SO51X. 12/07/2013 (RDR on BSBI meeting). Meering Meend, Mitcheldean C.P., SO61N. 14/07/2013 (RDR on BSBI meeting). Widespread and frequent throughout southern Britain.

44/23/273 *Rubus marshallii* Focke & Rogers. Native. V-c 34. Pit House Bog, Wigpool Common, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting).

44/23/275 *Rubus asperidens* (Sudre ex Bouvet) Bouvet. (= *R. milesii* Newton). Native. V-c 34. Mitcheldean Meend, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). Rare in Gloucestershire and only occurs in V-c 34.

44/23/279 *Rubus pallidesetus* Sudre. Native. V-c 34. Broom Hill, Coleford C.P., SO51R. 12/07/2013 (RDR on BSBI meeting). Symonds Yat, English Bicknor C.P., SO51S. 12/07/2013 (RDR on BSBI meeting). A species restricted to south-west England and south-east Wales and, even there, very rare.

44/23/283 *Rubus purchasianus* W.M. Rogers. Native. V-c 34. Barnhill Plantation, West Dean C.P., SO61A. 13/07/2013 (RDR on BSBI meeting). New Fancy View, West Dean C.P., SO60J. 13/07/2013 (RDR on BSBI meeting). An endemic speciality of the Forest of Dean and Wye Valley with a very restricted range.

44/23/290 *Rubus thyrigeriformis* (Sudre) D. Allen. Native. V-c 34. Clearwell Meend, Newland C.P., SO50Z. 12/07/2013 (RDR on BSBI meeting). Extension of range for a species thought to have been restricted to the Bristol area and the New Forest.

44/23/319 *Rubus tuberculatus* Bab. Native. V-c 34. Clearwell Meend, Newland C.P., SO50U. 12/07/2013 (RDR on BSBI meeting). Eastbachmeend Inclosure, West Dean C.P., SO51X. 12/07/2013 (RDR on BSBI meeting). Flaxley Woods, Blaisdon C.P., SO61X. 14/07/2013 (RDR on BSBI meeting). Meering Meend, Mitcheldean C.P., SO61N. 14/07/2013 (RDR on BSBI meeting). Mitcheldean Meend, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). Pit House Bog, Wigpool Common, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting).

44/23/vag *Rubus vagensis* Newton & M. Porter. Native. V-c 34. Mitcheldean Meend, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). Pit House Bog, Wigpool Common, Mitcheldean C.P., SO61P. 14/07/2013 (RDR on BSBI meeting). The Park, Tidenham C.P., ST59U. 12/07/2013 (RDR on BSBI meeting).

44/24/14 *Potentilla anglica* Laichard, Trailing Tormentil. Native. V-c 34. Taynton, Taynton C.P., SO72G. 7/06/2013 (JRD). On side of access track to Drew's Farm.

44/31/1 *Sanguisorba officinalis* L., Great Burnet. Native. V-c 33. Stow Bridge, Wick Rissington C.P., SP12R. 28/04/2013 (CK and MARK). Two small non-flowering patches in meadow.

44/34/2 *Alchemilla conjuncta* Bab., Silver Lady's-mantle. Introduced-naturalised. V-c 34. Dyrham Park, Dyrham and Hinton C.P., ST77M. 28/04/2013 (JPM). In between flagstones outside the house.

44/34/10b *Alchemilla filicaulis* Buser ssp. *vestita* (Buser) M.E. Bradshaw., Hairy Lady's-mantle. Native. V-c 33. Cranham Common, Cranham C.P., SO81W. 5/07/2013 (JPM).

60/03/11 *Euphorbia exigua* L., Dwarf Spurge. Archaeophyte. V-c 33. Bubb's Hill, Cowley C.P., SO91R. 30/09/2013 (JRD). Locally frequent in roadside margin of wheatfield. V-c 34. Aust Services, Aust C.P., ST58U. 10/09/2013 (JPM). Rare, in adjacent arable field.

65/1/19 *Hypericum elodes* L., St. John's-wort. Native. V-c 34. Woorgreens Lake, Cinderford C.P., SO61G. 27/07/2013 (JAB *et al.* on GNS field meeting). Smothering the lake margin in places. Known locality.

68/4/3 *Oenothera biennis* L., Common Evening-primrose. Introduced-naturalised. V-c 34. Aust Services/Severn Bridge footpath/slip road, Aust C.P., ST58U. 10/09/2013 (JPM).

75/9/1 *Tilia platyphyllos* Scop., Large-leaved Lime. Native. V-c 34. Glasshouse, Taynton C.P., SO72A. 7/06/2013 (JRD). Several old coppiced trees in narrow wooded area by roadside and in two hedges.

75/9/3 *Tilia cordata* Mill., Small-leaved Lime. Native. V-c 34. Shipton Wood, Shipton Moyne C.P., ST99V. 13/09/2013 (JRD). Large ancient coppice ring.

81/11/5 *Cardamine amara* L., Large Bitter-cress. Native. V-c 33. Bowbridge Lock, Bowbridge, Stroud, SO80M. 11/05/2013 (JRD). By Stroudwater Canal. Lodgemoor, Stroud, SO80M. 02/06/2013 (JRD). By Stroudwater Canal. V-c 34. Pendock's Grove, Bromsberrow C.P., SO73M. 4/05/2013 (MJ). In four places, one good patch, the others small.

81/11/6 *Cardamine raphanifolia* Pourr., Greater Cuckooflower. Introduced-naturalised. V-c 33. Stow Bridge Coppice, Wick Rissington C.P., SP12R. 28/04/2013 (CK and MARK). Two flowering amongst dense patch 2m x 17m in woodland beside River Dickler.

81/11/8 *Cardamine impatiens* L., Narrow-leaved Bitter-cress. Native. V-c 34. Ban-y-gor, Tidenham C.P., ST59N. 14/08/2013 (JRD). Scattered plants on trackside. Coldwell Rocks, English Bicknor C.P., SO51S. 17/06/2012 (MJ). A few plants. Reddings Inclosure, Staunton Coleford C.P., SO51L. 18/06/2013 (SB and JRD). On trackside and in semi-natural woodland.

81/12/6 *Lepidium rudemale* L., Narrow-leaved Pepperwort. Archaeophyte. V-c 34. Aust Services/Severn Bridge footpath/slip road, Aust C.P., ST58U. 10/09/2013 (JPM). Frequent.

81/25/2 *Erophila verna* (L.) DC., Common Whitlowgrass. Native. V-C 34. New Passage, Pilning and Severn Beach C.P., ST58N. 31/01/2013 (JPM). In flower.

- 81/51/6 *Cochlearia danica* L., Danish Scurvygrass. Native. V-c 33. Stow-on-the-Wold, Maugersbury C.P., SP12W. 11/05/2013 (JRD). Beside A424 and SP12X beside A429.
- 82/2/1 *Viscum album* L., Mistletoe. Native. V-c 34. Kilcot, Newent C.P., SO62X. 5/01/2013 (JAB). One small bunch on hazel at edge of heavily infested orchard. Appropriately beside a kissing gate.
- 88/5/7 *Stellaria graminea* L., Lesser Stitchwort. Native. V-c 34. Lassington Wood, Highnam C.P., SO82A. 2013 (JPu). Abundant in field adjacent to wood. Recorded as *S. palustris* but redetermined at a later visit by CK and MARK.
- 97/1/2 *Impatiens capensis* Meerb., Orange Balsam. Introduced-naturalised. V-c 34. Ashleworth, Ashleworth C.P., SO82H. 30/07/2013 (LB). Plentiful in roadside ditch but destroyed by hedge and ditch work in late August. Also noted by recorder at the same place in 2011.
- 99/8/1 *Cyclamen hederifolium* Aiton, Sowbread. Introduced-naturalised. V-c 33. Scottsquar Hill, Pitchcombe C.P., SO80P. 26/09/2013 (JRD). Beside roadside layby. V-c 34. Woodside Lane, Leonard Stanley, King's Stanley C.P., SO80B. 20/09/2013 (JRD). Beside road.
- 99/9/1 *Samolus valerendi* L., Brookweed. Native. V-c 34. Slade Well, Tidenham C.P., ST59U. 18/07/2013 (JRD and RK). In field pond.
- 102/14/1 *Pyrola minor* L., Common Wintergreen. Native. V-c 33. Buckholt Wood, Cranham C.P., SO81W. 23/06/2012 (MJ). Five flowering plants. Longridge Wood, Painswick C.P., SO80Z. 9/09/2013 (JRD). Small patch on woodland edge. V-c 34. Tidenham Chase, Tidenham C.P., ST59P. 18/07/2013 (JRD, RK, NS and VEP). In old wooded quarry.
- 102/17/1 *Hypopitys monotropa* Crantz, Yellow Bird's-nest. Native. V-c 33. The Peak, Birdlip, Cowley C.P., SO91H. 12/08/2013 (JS). Two hundred spikes. V-c 34. Cherington, Cherington C.P., ST89Z. 15/08/2013 (JRD). More than twenty-eight spikes under beech and sycamore. Kingscote Wood, Horsley, Kingscote C.P., ST89I. 11/08/2013. (AS).
- 104/6/3 *Galium uliginosum* L., Fen Bedstraw. Native. V-c 33. Brassey Nature Reserve, Naunton C.P., SP12G. 8/08/2013 (DAB). At the edge of the marsh.
- 104/6/14 *Galium parisiense* L., Wall Bedstraw. Casual in Gloucestershire. V-c 34. Bristol, ST57V. 12/08/2013 (JPM). Patch under bridge beside cycle path about 1.2km south-east of main population which was reported in 2012.
- 105/5/3 *Gentianella amarella* (L.) Börner ssp. *amarella*, Autumn Gentian. Native. V-c 33. Daneway Banks, Bisley-with-Lypiatt C.P., SO90L. 8/06/2013 (GG).
- 107/1/2 *Lithospermum officinale* L., Common Gromwell. Native. V-c 34. New Beechenhurst/Serridge Inclosure, Cinderford C.P., SO61B. 24/11/2013 (VEP). Three spikes.
- 107/2/1 *Echium vulgare* L., Viper's-bugloss. Native. V-c33. Swift's Hill, Painswick C.P., SO80T. 30/06/2012 (MJ). Scattered plants.

- 107/4/6 *Symphytum grandiflorum* DC., Creeping Comfrey. Introduced-naturalised. V-c 33. Rough Plantation, Duntisbourne Rouse C.P., SO90T. 24/04/2013 (JRD). Large stand at north of plantation with other garden plants.
- 107/19/1 *Phacelia tanacetifolia* Benth., Phacelia. Introduced-naturalised. V-c 34. Aust Services/Severn Bridge footpath/slip road, Aust C.P., ST58U. 10/09/2013 (JPM). One plant.
- 107/Not in Stace *Nonea lutea* (Desr.)DC., Yellow Nonea. Casual. V-c 33. Ashcroft Gardens, Cirencester, SP00F. 15/05/2013 (HD). Single plant beside pavement crack and subsequently destroyed by canine defecation. A plant of eastern Europe and south-west Asia.
- 108/2/2b *Calystegia sepium* (L.) R. Br. ssp. *roseata* Brummitt, Hedge Bindweed. Perhaps introduced. Possibly derived from hybrids between ssp. *sepium* and ssp. *americana* (Sims) Brummitt. V-c 34. Near Lydney Station, Lydney C.P., SO60F. 21/08/2013 (HVC, CK, MARK and JPM).
- 109/2/1 *Atropa belladonna* L., Deadly Nightshade. Native. V-c 33. Witcombe Wood, Great Witcombe C.P., SO91B. 23/06/2012 (MJ). Three plants.
- 109/4/1 *Nicandra physalodes* (L.) Gaertn., Apple-of-Peru. Introduced-naturalised. V-c 34. Near Avonmouth, ST58. 2012 (AH). One plant in vegetable garden where plants have occurred for several years.
- 109/5/1 *Datura stramonium* L., Thorn-apple. Introduced-naturalised. V-c 34. Hallen Marsh, Bristol. 13/11/2013 (PRQ). Fifteen plants near farm gateway near site of former dwelling. Uley, Uley C.P., ST79Z. Sept. 2013 (RB). In garden where appeared first in 2010 but was absent in 2012.
- 113/6/2 *Chaenorhinum minus* (L.) Lange, Small Toadflax. Archaeophyte. V-c 33. Bubb's Hill, Cowley C.P., SO91R. 30/09/2013 (JRD). Locally frequent in roadside margin of wheatfield. V-c 34. Greathough Brook, Brierley, Drybrook C.P., SO61C. 30/09/2013 (JAB and HVC). Frequent along valley track.
- 113/10/1 *Kickxia elatine* (L.) Dumort., Sharp-leaved Fluellen. Archaeophyte. V-c 34. Aust Services, Aust C.P., ST58U. 10/09/2013 (JPM). Scarce in adjacent arable field. Known locality.
- 113/10/2 *Kickxia spuria* (L.) Dumort., Round-leaved Fluellen. Archaeophyte. V-c 34. Aust Services, Aust C.P., ST58U. 10/09/2013 (JPM). Frequent in adjacent arable field. Known locality.
- 113/11/arv *Linaria arvensis* (L.) Desf., Corn Toadflax. Casual. V-c 34. Landcare Tree Nursery, Old Sodbury, Sodbury C.P., ST78K. 2013 (PW det RB). In poly-tunnel probably introduced with plants imported from Italy. No post 1930 records for Britain in Clement and Foster's 'Alien Plants of the British Isles' (BSBI 1994). A weed of non-calcareous fields and vineyards which occurs right across the Mediterranean region.
- 114/1/1 *Plantago coronopus* L., Buck's-horn Plantain. Native. V-c 33. Westgate, Gloucester, SO81J. 4/06/2013 (JRD). On pedestrian footbridge.

- 118/1/3 *Stachys alpina* L., Limestone Woundwort. Possibly native. V-c 34. Westridge Woods, Wotton-under-Edge C.P., ST79M. 5/07/2013 (MJ). Known locality.
- 118/19/5 *Clinopodium acinos* (L.) Kuntze, Basil Thyme. Native. V-c 34. Dark Wood, Woodchester C.P., SO80G. 15/07/2012 (MJ).
- 118/24/2 *Mentha x verticillata* L. (= *M. arvensis* x *M. aquatica*), Whorled Mint. Native. V-c 34. Greathough Brook, Brierley, Drybrook C.P., SO61C. 30/09/2013 (JAB and HVC).
- 121/7/2 *Pedicularis sylvatica* L., Lousewort. Native. V-c 33. Doverow Hill, Stonehouse C.P., SO80C. 20/09/2013 (JRD). In damp neutral grassland.
- 121/8/1 *Lathraea squamaria* L., Toothwort. Native. V-c 33. Daglingworth Wicks, Daglingworth C.P., SO90X. 16/04/2013 (JRD). V-c 34. Coalpit Hill, Staunton, Staunton Coleford C.P., SO51L. 13/04/2013 (JB). Ruardean Woodside, Ruardean C.P., SO61D. 8/05/2013 (JO). Scattered over large area between Ruardean and Drybrook.
- 124/1/1 *Verbena officinalis* L., Vervain. Archaeophyte. V-c 34. Greathough Brook, Brierley, Drybrook C.P., SO61C. 30/09/2013 (JAB and HVC). Frequent along valley track.
- 126/1/4 *Campanula persicifolia* L., Peach-leaved Bellflower. Introduced-naturalised. V-c 33. Hartley Hill, Leckhampton C.P., SO91P. 30/06/2012 (MJ). Large clump on bank in Daisybank Road.
- 126/1/7 *Campanula glomerata* L., Clustered Bellflower. Native. V-c 33. Brassey Nature Reserve, Upper Slaughter C.P., SP12L. 8/08/2013 (DAB).
- 126/1/12 *Campanula latifolia* L., Giant Bellflower. Native. V-c 33. Cockleford, Elkstone C.P., SO91S. 10/07/2013 (JRD and JMF). Single clump beside bridlepath.
- 126/1/13 *Campanula trachelium* L., Nettle-leaved Bellflower. Native. V-c 34. Westfield Woods, Dursley, Cam C.P., ST79P. 24/07/2013 (TF). Three spikes by path in woodland.
- 127/1/1 *Menyanthes trifoliata* L., Bogbean. Native. V-c 33. Cockleford Marsh SSSI, Elkstone C.P., SO91R. 25/06/2013 (JRD) and 10/07/2013 (JRD and JMF). V-c 34. Staunton Meend, Staunton Coleford C.P., SO51L. 18/06/2013 (SB and JRD). In pond.
- 127/2/1 *Nymphoides peltata* Kuntze, Fringed Water-lily. Introduced-naturalised. V-c 34. Staunton Meend, Staunton Coleford C.P., SO51L. 18/06/2013 (SB and JRD). In pond.
- 128/10/1 *Serratula tinctoria* L., Saw-wort. Native. V-c 34. Tidenham Chase, Tidenham C.P., ST59P. 18/07/2013 (JRD, RK, NS and VEP). In old wooded quarry.
- 128/12/13 *Centaurea debeauxii* Gren. & Godr. ssp. *nemoralis*. Native. V-c 33. Brassey Nature Reserve, Upper Slaughter C.P., SP12G and L. 8/08/2013 (DAB). The non-radiate plants are ssp. *nemoralis*.
- 128/23/1a *Picris hieracioides* L. ssp. *hieracioides*, Hawkweed Oxtongue. Native. V-c 33. Brassey Nature Reserve, Upper Slaughter C.P., SP12L. 8/08/2013 (DAB).
- 128/26/2 *Tragopogon porrifolius* L., Salsify. Introduced-naturalised. V-c 34. Easter Compton, Almondsbury C.P., ST58R. 28/04/2013 (JPM). Flowering along road

- verge. V-c 37 (Gloucestershire Administrative County). Teddington, Teddington C.P., SO93R. 28/6/2013 (MD). Single strong fruiting plant in garden.
- 128/36/glev *Hieracium glevense* (Pugsley) P.D. Sell & C. West, Gloucester Hawkweed. Endemic. V-c 33. Cranham Woods, Cranham C.P., SO91B. 24/06/1955 (RMH conf. DJM 2013 and comm. TCGR). By woodland path. Herbarium, National Museum of Wales. Listed in Flora of Great Britain and Ireland Vol. 4 (Sell & Murrell, 2006). Previously included within *H. stenstroemii* by Sell & West (1968).
- 128/42/5 *Gnaphalium uliginosum* L., Marsh Cudweed. Native. V-c 34. Greathough Brook, Brierley, Drybrook C.P., SO61C. 30/09/2013 (JAB and HVC). Frequent along valley track.
- 128/74/19 *Senecio sylvaticus* L., Heath Groundsel. Native. V-c 34. Howler's Heath, Bromsberrow C.P., SO73M. 1/04/2012 (MJ). A few rosettes in old quarry.
- 132/2/3 *Valeriana dioica* L., Marsh Valerian. Native. V-c 33. Cockleford Marsh SSSI, Elkstone C.P., SO91R. 25/06/2013 (JRD) and 10/07/2013 (JRD and JMF).
- 133/1/4 *Dipsacus pilosus* L., Small Teasel. Native. V-c 34. Shipton Wood, Shipton Moyne C.P., ST99V. 13/09/2013 (JRD). Locally frequent along damp woodland edge.
- 138/1/1 *Sanicula europaea* L., Sanicle. Native. V-c 34. Blaisdon Wood, Blaisdon C.P., SO71D. 30/04/2013 (DF).
- 138/2/1 *Astrantia major* L., Astrantia. Introduced-naturalised. V-c 33. Cliff Wood, Haresfield C.P., SO80J. 20/07/2013 (DWP and JP). Small patch by woodland edge footpath.
- 138/18/3 *Oenanthe pimpinelloides* L., Corky-fruited Water-dropwort. Native. V-c 33. Westgate, Gloucester, SO81J. 4/06/2013 (JRD). On uncut margin of 'boating lake'. Hucclecote Meadows, Hucclecote Green, Gloucester, SO81T. 1/08/2013 (JRD). In meadow adjacent to SSSI. Haycroft Drive, Matson, Gloucester, SO81M. 24/06/2013 (JRD). Whaddon Green, Brookthorpe-with-Whaddon C.P., SO81H. 24/06/2013 (JRD). In damp grassland with *Carex leporina* and *Carex otrubae*. Winneycroft, Upton St Leonards C.P., SO81M. 24/06/2013 (JRD). In several semi-improved meadows. V-c 34. Elton, Westbury-on-Severn C.P., SO61X. 26/06/2013 (VEP). Locally frequent in hay fields to east of Elton Lane. Additionally a single plant in nearby orchard. Niblett's Patch's Land, Pleasant View, Littledean C.P., SO61X. 1/07/2013 (VEP). Locally frequent in field which had undergone change of grazing regime from sheep to the occasional horse and had not previously been visible. Lower Milton End, Arlingham, Arlingham C.P., SO71A. 11/06/2013 (JRD and DJ). In unimproved meadow. Pope's Hill, Littledean C.P., SO61X. 24/06/2013 (VEP). Two plants, a possible accidental introduction into cottage yard. Wick Court, Fretherne with Saul C.P., SO70P. 11/06/2013 (JRD and DJ). Rare in a good semi-improved meadow, and SO71K in unimproved and semi-improved meadows.
- 138/47/2 *Heracleum mantegazzianum* Sommier and Levier, Giant Hogweed. Introduced-naturalised. V-c 33. Lodgemore, Stroud, SO80M. 2/06/2013 (JRD). Along the side of the Stroudwater Canal.

138/49/2 *Torilis arvensis* (Huds.) Link, Spreading Hedge-parsley. Archaeophyte. V-c 34. Aust Services, Aust C.P., ST58U. 10/09/2013 (JPM). Occasional in adjacent arable field. Known locality. Littleton Warth, Aust C.P., ST59Q. 27/07/2013 (JPM). Only one plant seen in the usual field corner. The field had been heavily sprayed.

138/49/3 *Torilis nodosa* (L.) Gaertn., Knotted Hedge-parsley. Native. V-c 33. Hartley Hill, Coberley C.P., SO91P. 7/07/2013 (ILR det CK and MARK). Several thousand plants in arable field margin.

140/1/1 *Lysichiton americanus* Hultén & H.St. John. American Skunk-cabbage. Introduced-naturalised. V-c 33. Stow Bridge Coppice, Wick Rissington C.P., SO12R. 28/04/2013 (CK and MARK). In several places along River Dikler and tributaries in woodland. Originally published as undetermined *Lysichiton* species when discovered by JRD in 2012. V-c 34. Lydney Park Deer Park, Lydney C.P., SO60B. 24/04/2013 (CK, MARK and ACT). Single plant in pond in deer park possibly planted but more probably washed downstream from colony in Lydney Park Gardens. No other non-native species present in the pond.

140/4/26 *Arum italicum* Mill. ssp. *italicum*, Italian Lords-and-Ladies. Introduced-naturalised. V-c 34. Lydney Park Deer Park, Lydney C.P., SO60B. 24/04/2013 (CK, MARK and ACT). Locally frequent in rough grassland in deer park near perimeter fence by the house. Sea Mills, Bristol, ST57M. 21/08/2013 (CK and MARK). Small roadside patch above south bank of River Trym.

144/1/1 *Butomus umbellatus* L., Flowering-rush. Native. V-c 33. Alney Island, Gloucester, SO81J. 12/07/2013 (JRD). Several along side of scrape. V-c 34. Joyce's Pool, Didmarton, Didmarton C.P., ST88T. 28/08/2013 (JRD).

154/1/1 *Paris quadrifolia* L., Herb-Paris. Native. V-c 33. The Leasowes, Duntisbourne Rouse C.P., SO90M. 1/05/2013 (JRD). More than a hundred plants between spring and old wall. Ward's Wood, Elkstone C.P., SO91R. 10/07/2013 (JRD and JMF). A few plants beside track.

156/1/1 *Colchicum autumnale* L., Meadow Saffron. Native. V-c 33. Bull Banks, Winstone C.P., SO90P. 5/09/2013 (JRD and SB). Locally frequent along edge of grassy paths. Cowley Wood, Cowley C.P., SO91R. 30/09/2013 (JRD). Occasional in wide grassy ride. Sherborne Park, Sherborne C.P., SP11S. (MD). Widespread and naturalised in the Park. V-c 34. Bodkin Hazel Wood, Horton C.P., ST78S and X. 12/03/2012 (MJ). Three colonies.

157/1/1 *Gagea lutea* (L.) Ker Gawl., Yellow Star-of-Bethlehem. Native. V-c 33. Chedworth Wood, Chedworth C.P., SP01R. 7/04/2013 (MJ). Nine flowering plants with many non-flowering in two patches. Cleevely Wood, Shipton C.P., SP01I. 3/03/2013 (MJ). Two leaves only. Duntisbourne Abbots, Duntisbourne Abbots C.P., SO90U. 3/03/2013 (MJ). Small patch. Winstone, Winstone C.P., SO90U. 11/04/2013 (JRD). Single flowering plant in hedgebank. V-c 34. Hailey Wood, Sapperton C.P., SO90Q. 11/04/2013 (JRD). Locally frequent at one site with a second colony of just four flowering plants. Tarlton Wood, Rodmarton C.P., SO90K. 11/04/2013 (JRD).

Between twelve and fifteen plants in flower. Tunnel House Inn, Sapperton C.P., SO90Q. 11/04/2013 (JRD). More than a hundred flowering plants by side of track.

158/2/1 *Cephalanthera damasonium* (Mill.) Druce, White Helleborine. Native. V-c 33. Buckholt Wood, Cranham C.P., SO91B. 5/07/2013 (JPM). Cooper's Hill Wood, Brockworth C.P., SO81X. 23/06/2012 (MJ). One plant. Shurdington Hill, Coberley C.P., SO91I. 27/06/2013 (MD). Four or five small plants in roadside hedge. South Hill, Coberley C.P., SO91M. 27/06/2013 (MD). Two or three in semi-shade by track junction. Swift's Hill, Painswick C.P., SO80T. 31/05/2013 (JS). Thirty six spikes. Trantershill Plantation (Laurie Lee Wood NR), Painswick C.P., SO80T. 13/06/2013 (JRD and JMF). Locally frequent. Turkdean, Turkdean C.P., SP11D. 16/06/2013 (VEP). Twenty flowering spikes. Witcombe Wood, Great Witcombe C.P., SO91B. 23/06/2013 (MJ). V-c 34. Ash Hill Plantation Sapperton C.P., SO90G. 13/06/2013 (JRD). Hundreds, mainly on old spoil mounds. Casseywell Bottom, Sapperton C.P., SO90L. 25/06/2013 (JRD). More than ten plants in beech woodland. Dursley Wood, Dursley C.P., ST79T. 15/07/2013 (MJ). One plant. Middleton Hill Plantation, Sapperton C.P., SO90L. 13/06/2013 (JRD). Locally frequent in woodland and scrub on tip around air shaft, plus another twenty-five in nearby woodland. Sapperton Tump, Sapperton C.P., SO90L. 25/06/2013 (JRD). Several on wooded spoil heap. Westridge Wood, Wotton-under-Edge C.P., ST79M. 5/07/2013 (MJ). Fourteen plants by side of track. Known locality.

158/2/2 *Cephalanthera longifolia* (L.) Fritsch, Narrow-leaved Helleborine. Native V-c 34. Rodborough Common, Rodborough C.P., SO80L. 8/06/2013 (JS). A single spike at the known site.

158/3/3 *Epipactis purpurata* Sm., Violet Helleborine. Native. V-c 7 (Gloucestershire Administrative County). Westonbirt Arboretum, Didmarton C.P., ST88P. 19/08/2013 (JS). Eleven spikes recorded at known locality. V-c 33 Hailes Wood, Stanway C.P., SO02P. 25/08/2013 (AS). Eight flowering plants at known locality also 31/08/2013 (JS). Seventeen spikes. V-c 34. Kingscote Wood, Horsley, Kingscote C.P., ST89D. 11/08/2013 (AS). Ten flowering spikes.

158/3/4 *Epipactis helleborine* (L.) Crantz, Broad-leaved Helleborine. Native. V-c 33. Stockend Wood, Harescombe C.P., SO80P. 26/09/2013 (JRD). Two plants at woodland edge. V-c 34. Casseywell Bottom, Sapperton C.P., SO90L. 25/06/2013 (JRD). More than fifteen plants in beech woodland. Lower Woods, Hawkesbury C.P., ST78N. Aug 2013 (Recorder confidentiality requested). Single spike as var *monotropoides*. New Beechenhurst Inclosure, Cinderford C.P., SO61B. 22/09/2013 (KD and VD). Two colonies. Nibley Knoll, North Nibley C.P., ST79M. 3/09/2013 (JRD). Along side of wooded path.

158/3/5 *Epipactis leptochila* (Godfery) Godfery, Narrow-lipped Helleborine. Native. V-c 33. Buckle Wood, Brimpsfield C.P., SO91B & G. 29/07/2013 (JS). Twenty-three spikes. Cooper's Hill Wood, Brockworth C.P., SO81X. 23/06/2013 (MJ). One plant. Piedmont, Bisley-with-Lypiatt C.P., SO80Y. 13/08/2013 (JS). Three spikes.

158/3/8 *Epipactis phyllanthos* G.E. Sm. var. *degenerata* D.P. Young, Green-flowered Helleborine. Native. V-c 33. Painswick, Painswick C.P., SO81Q. 29/07/2013 (JS). Six spikes.

158/4/1 *Neottia ovata* (L.) Bluff & Fingerh., Common Twayblade. Native. V-c 33. Coates, Coates C.P., SO90V. 2/05/2013 (JRD). Locally abundant in broad-leaved woodland.

158/4/3 *Neottia nidus-avis* (L.) Rich., Bird's-nest Orchid. Native. V-c 33. Buckholt Wood, Cranham C.P., SO81V. 23/06/2013 (MJ). About fifty plants. Oldhills Wood, Chalford C.P., SO90B. 16/07/2013 (JRD). Single spike by wood entrance. Siccaridge Wood, Bisley-with-Lypiatt C.P., SO90G. 15/06/2013 (JRD and JMF). Clump of five or six on pathside. "The Leasowes" near Sapperton, Duntisbourne Rouse C.P., SO90M. 1/06/2013 (MA). About fifty-eight spikes, a similar number to that recorded in 2009. The Peak, Birdlip, Cowley C.P., SO91H. 17/06/2013 (JS). Seventy-one spikes. Trantershill Plantation (Laurie Lee Wood NR), Painswick C.P., SO80T. 13/06/2013 (JRD and JMF). A single previous years spike. V-c 34. Ash Hill Plantation, Sapperton C.P., SO90L. 28/05/2013 (JRD). Eight or more spikes. Casseywell Bottom, Sapperton C.P., SO91L. 25/06/2013 (JRD). More than twenty spikes in beech woodland. Chapmans Cross Wood, Sapperton C.P., SO90F. 28/05/2013 (JRD). More than ten fresh spikes plus some from previous years. Kingscote Wood, Horsley, Kingscote C.P., ST89I. 11/08/2013 (AS). Lancut, Tidenham C.P., ST59I. 14/08/2013 (JRD). A single spike near lime kiln. Sapperton Tump, Sapperton C.P., SO90L. 25/06/2013 (JRD). Several on wooded spoil heap. Tuns Wood, Taynton C.P., SO72A. 7/06/2013 (JRD). Single spike at side of access track.

158/9/1 *Spiranthes spiralis* (L.) Chevall., Autumn Lady's-tresses. Native. V-c 33. Swift's Hill, Painswick C.P., SO80T. 10/09/2013 (JS).

158/11/1 *Herminium monorchis* L., Musk Orchid. Native. V-c 33. Barrow Wake, Cowley C.P., SO91H. 23/06/2012 (MJ). Six colonies recorded with populations of about twenty, twenty-four, eight, about twenty, six and more than forty plants. Charlton Kings Common, Leckhampton C.P., SO91U. 30/06/2012 (MJ). More than two hundred flowering plants. Painswick Beacon, Painswick C.P., SO81Q and R. 30/06/2012 (MJ). Four colonies with more than one hundred and twenty, fifteen, one and seven flowering spikes.

158/12/1 *Platanthera chlorantha* (Custer) Rchb., Greater Butterfly-orchid. Native. V-c 33. Buckle Wood, Brimpsfield C.P., SO91B. 21/06/2013 (JS). Thirty-five spikes. Bulls Cross, Painswick C.P., SO80U. 13/06/2013 (JS). Three plants. Edge Common, Painswick C.P., SO80P. 11/06/2013 (JS). Rough Bank, Miserden C.P., SO90E. 3/06/2013 (JS). Five spikes. Shippy Plantation, Snowhill C.P., SP13B. 18/06/2013 (JBo). Two spikes by bridleway along the edge of Freeboard Wood. V-c 34. Ash Hill Plantation, Sapperton C.P., SO90G. 13/06/2013 (JRD). Scattered individuals. Badminton Plantation, Sapperton C.P., SO90K. 11/06/2013 (JRD). A single flowering plant. Lady Park Wood NNR, Staunton Coleford C.P., SO51L. 22/06/2013 (HVC).

Single spike by boundary fence. Reddings Inclosure, Staunton Coleford C.P., SO51L. 18/06/2013 (SB and JRD). In semi-natural woodland.

158/12/2 *Platanthera bifolia* (L.) Rich., Lesser Butterfly-orchid. Native. V-c 33. Buckholt Wood, Cranham C.P., SO81W. 23/06/2012 (MJ). Two plants in open area and again two on 5/07/2013. Bulls Cross, Painswick C.P., SO80U. 13/06/2013 (JS). Cranham Common, Cranham C.P., SO81W. 5/07/2013 (JPM). Known locality. Edge Common, Painswick C.P., SO80P. 11/06/2013 (JS). Ninety-two spikes. Sheepscombe Common, Painswick C.P., SO81V. 21/06/2013 (JS). Fifty spikes.

158/14/1 *Gymnadenia conopsea* (L.) R. Br., Chalk Fragrant-orchid. Native. V-c 33. Leckhampton Hill Hillfort, Leckhampton C.P., SO91P. June 2013 (BP and PM). Two spikes.

158/14/2 *Gymnadenia densiflora* (Wahlenb.) A. Dietr., Marsh Fragrant-orchid. Native. V-c 33. Swift's Hill, Painswick C.P., SO80T. 13/06/2013 (JS). A single spike.

158/15/1 *Coeloglossum viride* (L.) Hartm., Frog Orchid. Native. V-c 33. Swift's Hill, Painswick C.P., SO80T. 13/06/2013 (JS). Twenty plants.

158/16/1 *Dactylorhiza fuchsii* (Druce) S6o, Common Spotted-orchid. Native. V-c 33. Gloucester Golf Course, Robinswood Hill, Gloucester, SO81H. 9/07/2013 (KK). Single spike in unimproved grassland. Also one in unimproved grassland by ski-slope. Old Airfield (West), Brockworth, Upton St Leonards C.P., SO81T. 26/06/2013 (KK). One hundred and twenty in unimproved grassland. V-c 34. Wick Wick, Kendleshire, Westerleigh C.P., ST67U. 17/06/2013 (PW and RW). At least eight hundred.

158/16/1x4 *Dactylorhiza x grandis* (Druce) P.F. Hunt. Native. V-c 34. Slimbridge Wetland Centre, Slimbridge C.P., SO70H. 30/06/2013 (JPM). One flowering plant.

158/16/4 *Dactylorhiza praetermissa* (Druce) S6o, Southern Marsh-orchid. Native. V-c 34. Slimbridge Wetland Centre, Slimbridge C.P., SO70H. 30/06/2013 (JPM). Several plants. Staunton Meend, Staunton Coleford C.P., SO51L. 18/06/2013 (SB and JRD). About six plants in rough grassland.

158/17/1 *Orchis mascula* (L.) L., Early-purple Orchid. Native. V-c 33. Daglingworth Wicks, Daglingworth C.P., SO90X. 16/04/2013 (JRD). Two plants. V-c 34. Badminton Plantation, Sapperton C.P., SO90K. 11/06/2013 (JRD). In low numbers.

158/19/1 *Anacamptis pyramidalis* (L.) Rich., Pyramidal Orchid. Native. V-c 33. Alney Island, Gloucester, SO81E. 10/07/2013 (FD). Two spikes in former railway sidings on edge of flat waste ground. Gloucester Golf Course, Robinswood Hill, Gloucester, SO81H. 16/07/2013 (KK). Fifteen plants in unimproved grassland. Also SO81M, twenty one plants in unimproved grassland. Turkdean, Turkdean C.P., SP01Y. In unimproved grassland which is becoming undergrazed. V-c 34. Wick, Wick, Kendleshire, Westerleigh C.P., ST67U. 17/06/2013 (PW and RW). Several in bud.

158/19/3 *Anacamptis morio* (L.) R.M. Bateman, Pridgeon & M.W. Chase, Green-winged Orchid. Native. V-c 33. Groveridge Hill, Brimpsfield C.P., SO91G. 7/06/2013 (JS). Seven spikes. Swift's Hill, Painswick C.P., SO80T. 31/05/2013 (JS). Eleven

spikes. V-c 34. Pope's Hill, Littledean C.P., SO61X. 22/05/2013 (VEP). A single spike, the first seen here in a grazed field in sixteen years. Ruardean Woodside, Ruardean C.P., SO61D. 1/06/2013 (JO). About twenty spikes in field.

158/20/1 *Himantoglossum hircinum* (L.) Spreng. Native. V-c 34. Wick, Wick, Kendleshire, Westerleigh C.P., ST67U. 17/06/2013 (PW and RW). Three only, in bud.

158/22/1 *Ophrys insectifera* L., Fly Orchid. Native. V-c 33. Swift's Hill, Painswick C.P., SO80T. 17/05/2013 (JS). Ten spikes.

158/22/3 *Ophrys apifera* Huds., Bee Orchid. Native. V-c 33. Bamfurlong, Badgeworth C.P., SO82V. 20/06/2013 (JS). Two spikes at M5/A40 intersection, as var *trollii*, Wasp Orchid. Birdlip, Cowley C.P., SO91H. 8/07/2013 (JS). A single spike. Robinswood Hill, Gloucester, SO81H. 9/07/2013 (KK). Single spike by ski slope. V-v 34. Dark Wood, Woodchester C.P., SO80G. 5/07/2013 (MJ). One plant. Slimbridge Wetland Centre, Slimbridge C.P., SO70H. 30/06/2013 (JPM). One plant in flowerbed by the café.

161/1/10 *Allium paradoxum* (M. Bieb) G. Don, Few-flowered Garlic. Introduced-naturalised. V-c 33. Daglingworth, Bagendon C.P., SO90X. 1/05/2013 (JRD). On narrow road verge. Hailey Wood, Coates C.P., SO90Q. 16/04/2013 (JRD). Large stand near saw-mill. Jarvis's Quarry, Coates C.P., SO90V. 23/05/2013 (JRD). Dominant over a large part of broad-leaved woodland on north side of A433. V-c 34. Chapmans Cross Wood, Sapperton C.P., SO90F. 28/05/2013 (JRD). A single large patch.

161/2/1 *Nectaroscordum siculum* (Ucria) Lindl., Honey Garlic. Introduced-naturalised. V-c 33. Tin Shed Copse, Daglingworth, Daglingworth C.P., SP00C. 16/04/2013 (JRD). On rough ground by woodland edge.

161/12/16 *Narcissus pseudonarcissus* L., Daffodil. Native. V-c 33. Eastleach Martin, Eastleach Martin C.P., SP20C. 2013 (JK). Small clump in churchyard. V-c 34. Lancaut NR, Tidenham C.P., ST59I. 8/02/2013 (KC and JRD). Locally frequent. Monk Woods, St Catherine C.P., ST77K. 21/03/2012 (MJ). Frequent at known locality. Park Farm, near North Nibley, North Nibley C.P., ST79N. 16/03/2012 (VP conf. SR). Two colonies close together in pasture. Along drive to farm and in patches in nearby field. Tuns Wood, Taynton C.P., SO72A. 7/06/2013 (JRD). Westley Farm, near Chalford, Sapperton C.P., SO90B. 15/03/2011 (VP).

162/1/1 *Convallaria majalis* L., Lily-of-the-Valley. Native. V-c 33. Witcombe Wood, Great Witcombe C.P., SO91B. 23/06/2012 (MJ). Abundant on north facing slope.

162/2/3 *Polygonatum odoratum* (Mill.) Druce, Angular Solomon's-seal. Native. V-c 33. Witcombe Wood, Great Witcombe C.P., SO91B. 23/06/2012 (MJ). Two small patches.

162/5/2 *Ornithogalum umbellatum* L., Star-of-Bethlehem. Introduced-naturalised. V-c 33. Perrot's Brook, Baunton C.P., SP00I. 7/04/2013 (MJ). Several clumps below footpath. V-c 34. Staunton, Staunton Coleford C.P., SO51L. 18/06/2013 (SB and JRD). On side of minor road.

168/1/3 *Juncus subnodulosus* Shrank, Blunt-flowered Rush. Native. V-c 33. Brassey Nature Reserve, Naunton C.P., SP12G. 8/08/2013 (DAB).

168/1/15 *Juncus tenuis* Willd., Slender Rush. Introduced-naturalised. V-c 34. Coldwell Rocks, English Bicknor C.P., SO51S. 17/06/2012 (MJ). Along track.

168/1/18 *Juncus compressus* Jacq., Round-fruited Rush. Native. V-c 34. Henleaze Lake, Henleaze, Bristol. 5/07/2013 (RJH comm. JPM).

168/2/1 *Luzula forsteri* (Sm.) DC., Southern Wood-rush. Native. V-c 34. Pope's Hill, Littledean C.P., SO61X. Abundant on roadside bank below Chapel House, New Road.

169/1/1 *Eriophorum angustifolium* Honck., Common Cottongrass. Native. V-c 33. Cockleford Marsh SSSI, Elkstone C.P., SO91R. 25/06/2013 (JRD) and 10/07/2013 (JRD and JMF).

169/4/1 *Scirpus sylvaticus* L., Wood Club-rush. Native. V-c 34. Joyces Pool, Didmarton, Didmarton C.P., ST88I. 28/08/2013 (JRD).

169/10/2 *Cyperus eragrostis* Lam., Pale Galingale. Introduced-naturalised. V-c 34. Near Lydney Station, Lydney C.P., SO60F. 21/08/2013 (HVC, CK, MARK and JPM). Single clump on lake margin.

169/16/1 *Carex paniculata* L., Greater Tussock-sedge. Native. V-c 33. Cockleford Marsh SSSI, Elkstone C.P., SO91R. 25/06/2013 (JRD) and 10/07/2013 (JRD and JMF). Lower Swell, Swell C.P., SP12S. 23/04/2013 (JRD and RJ). Six plants on side of ditch within wet woodland.

169/16/17 *Carex echinata* Murray, Star Sedge. Native. V-c 33. Cockleford Marsh SSSI, Elkstone, C.P., SO91R. 25/06/2013 (JRD) and 10/07/2013 (JRD and JMF).

169/16/27 *Carex pseudocyperus* L., Cyperus Sedge. Native. V-c 33. Crowfield Marsh, Ashchurch C.P., SO93C. 22/07/2013 (JRD). In the marsh. V-c 34. Estcourt Part, Shipton Moyne C.P., ST99V. 13/09/2013 (JRD). Small stand by River Avon margin.

169/16/28 *Carex rostrata* Stokes, Bottle Sedge. Native. V-c 33. Brassey Nature Reserve, Naunton C.P., SP12G. 8/08/2013 (DAB).

169/16/47 *Carex lepidocarpa* Tausch, Long-stalked Yellow-sedge. Native. V-c 33. Bull Banks, Winstone C.P., SO90P. 5/09/2013 (SB and JRD). Locally frequent in flushes, confirming continued existence at a known locality. Cockleford Marsh SSSI, Elkstone C.P., SO91R. 25/06/2013 (JRD) and 10/07/2013 (JRD and JMF).

169/16/51 *Carex digitata* L., Fingered Sedge. Native. V-c 33. Buckholt Wood, Cranham C.P., SO90W and SO91B. 21/01/2012 (MJ). In three places. Longridge Wood, Painswick C.P., SO80Z. 9/09/2013 (JRD). Several clumps. Monk's Ditch, Buckholt Wood, Cranham C.P., SO91B. 21/01/2012 (MJ). Three plants.

169/16/57 *Carex montana* L., Soft-leaved Sedge. Native. V-c 34. Tidenham Chase, Tidenham C.P., ST59P. 18/07/2013 (JRD, RK, NS and VEP). In old wooded quarry.

170/26/10 *Poa compressa* L., Flattened Meadow-grass. Native. V-c 34. Near Lydney Station, Lydney C.P., SO60F. 21/08/2013 (HVC, CK, MARK and JPM). Two clumps on road verge.

170/29/2 *Catapodium marinum* (L.) C.E. Hubb., Sea Fern-grass. Native. V-c 34. Severn Beach, Pilning and Severn Beach C.P., ST58H. 23/06/2013 (JPM). Along seawall towards Second Severn crossing and near the seawall on the landward side.

170/49/1 *Calamagrostis epigejos* (L.) Roth, Wood Small-reed. Native. V-c 33. Siccaridge Wood, Bisley-with-Lypiatt C.P., SO90L. 15/06/2013 (JRD and JMF).

170/55/2 *Polypogon viridis* (Gouan) Breistre., Water Bent. Introduced-naturalised. V-c 34. Slimbridge Wetland Centre, Slimbridge C.P., SO70H. 30/06/2013 (JPM). By the café.

170/63/2 *Bromopsis benekenii* (Lange) Holub, Lesser Hairy-brome. Native. V-c 33. Buckholt Wood, Cranham C.P., SO81W. 23/06/2012 (MJ). Fifteen plants in flower. Also 2013. V-c 34. Dark Wood, Woodchester C.P., SO80G. 15/07/2012 (MJ). One flowering plant.

170/67/1x3 *Elytrigia x drucei* Stace (= *Elytrigia repens* x *E. atherica*). Native. V-c 34. Avonmouth Docks, Bristol, ST57 probably E. 17/10/1987 (FH det MW 2/09/2013). First county and VCR. Cliffe Castle Herb., Keighley, W. Yorks. Originally recorded as *Agropyron pungens*.

170/69/1 *Hordelymus europaeus* (L.) Jess. ex Harz, Wood Barley. Native. V-c 33. Buckholt Wood, Cranham C.P., SO81W. 23/06/2012 (MJ). A few plants in open area. Also SO91B. 21/01/2012 (MJ). Frequent previous year's spikes and 5/07/2013 (JPM). In several spots. Frith Wood, Bussage, Chalford C.P., SO80W. 4/09/2013 (JRD). Three colonies found at this known location. V-c 34. Dark Wood, Woodchester C.P., SO80G. 5/07/2013 (MJ).

170/78/1a *Molinia caerulea* (L.) Moench. ssp *caerulea*, Purple Moor-grass. Native. V-c 33. Brassey Nature Reserve, Naunton C.P., SP12G. 8/08/2013 (DAB).

GLOUCESTERSHIRE ODONATA REPORT 2013

Ingrid Twissell

Owing to the prolonged wet winter and late spring, dragonfly recording didn't begin in Gloucestershire until May 2013, but then a total of 18 species were recorded by the end of that month, being approximately half of the county's total number of species.

The first to make an appearance was **Large Red Damselfly** *Pyrrhosoma nymphula* on 2nd May at Coombe Hill Canal (CT and IT), with **Blue-tailed Damselfly** *Ischnura elegans* on 7th May as well as an exceedingly early date for a newly-emerged **Common Darter** *Sympetrum striolatum* on the same day at Castle Meads, Gloucester (IE). Other notably early dates for Common Darter, **Ruddy Darter** *Sympetrum sanguineum*, and **Southern Hawker** *Aeshna cyanea* all occurred on 16th May at Woorgreens NR in the Forest of Dean (BA). It makes one wonder why these dragonflies emerged so early in the year and what specific climatic conditions occurred in the preceding months to promote their metamorphosis from larvae to adulthood.

Hairy Dragonfly *Brachytron pratense*: there were good numbers at WWT Slimbridge with emergence starting in mid-May, newly-emerged adults seen in June, and still on the wing in July, their presence later than usual owing to the late start of the season (DP). On 12th July, a male Hairy Dragonfly was spotted clashing wings with a male **Golden-ringed Dragonfly** *Cordulegaster boltonii* at the gate from Green Lane into WWT 100-acre (CT and IT) – a rare sight! At another location, Woodchester Park, a Hairy Dragonfly was seen on 15th July (MM), this being another late date.

Scarce Chaser *Libellula fulva*: along the rivers Severn and Avon, at various locations, this species has been recorded since first being seen in the county in 2004, and on 1st June there were two new locations, both near Tewkesbury (JR). One male was seen at Coombe Hill Canal NR on 26th June (CT and IT), this being the second year running, with the first ever sighting at this location in 2012; this year's male showed signs of mating, so one hopes that there is a breeding colony here. In late May and early June only small numbers were seen at The Mythe (MM, CT and IT) and 3 immatures were recorded at Twynning on 19th June (CT and IT). There was also a male seen at WWT Slimbridge in July (DP), with an unconfirmed report of one at Frampton Pools.

Common Clubtail *Gomphus vulgatissimus*: only small numbers were seen in 2013, with one male along the R. Severn at Apperley on 11th July for the second year

running (CT and IT) where a female was first seen in July 2012. Individuals were also seen in June at Twynning - a female was photographed on 19th June (CT and IT), and their presence was noted at English Bicknor along the R. Wye on 4th June and at The Mythe on 24th June (MM).

Downy Emerald *Cordulia aenea*: the best numbers ever recorded at The Dilke Lagoon were on 25th May, when 15 adults including 6 pre-flight emergents were seen and 13 exuviae collected (CT and IT). It was notable that no **Four-spotted Chasers** *Libellula quadrimaculata* were present on site as they are usually much in evidence. Downy Emeralds were also present in June at Cinderford Linear Park-North on 7th (CT and IT), Fairplay on 18th (MM), and Woorgreens Lake and the new pondscape (NJP and VEP) on 19th June, all in the Forest of Dean. The sighting of a male at the pondscape on 27th July (TE) was a very late date.

Golden-ringed Dragonfly *Cordulegaster boltonii*: in July, there were two new locations, the first a new 10km square record at Oxenhall, SO72 (MM) on 12th July, and the second at WWT Slimbridge 100-acre (SO70) on 11th July (MMcG) on the day before the clash of wings with the Hairy Dragonfly. Subsequently, I heard that there may be an old record of Golden-ringed at WWT 20 years before. The species was also present at New Fancy View (AJ) and Laymoor Quag (NJP, VEP and IT) in June, Cinderford Linear Park-South (DL), near Kensley Lagoon (IT) and in a ditch north of Woorgreens Lake (BA, DL, MM) in July, at Viney Hill (PhM) and Titanic Steelworks (DD) as well as a ditch north of Woorgreens Lake (BA) in August, and at the Woorgreens pondscape (CT and IT) in September; all these sightings being in the stronghold of the species in the Forest of Dean.

Vagrant Emperor *Anax ephippiger*: a male of this migrant species was recorded, and photographed, in a suburb of Bristol on 25th October (RL). This sighting is just within the boundary of VC34 and has been submitted on-line to the British Dragonfly Society, and is the first sighting in VC34. Within the UK there have been a good number of sightings in the autumn of 2013 from late September to November mainly in the southwest of England, Wales, and Ireland. A female was seen ovipositing in Devon in November, this being only the second time that this has been recorded in the UK. This is a strongly migratory species usually found in the desert areas of Africa, the Middle East and south-west Asia, and although seen in southern Europe is rarely seen in the UK.

Keeled Skimmer *Orthetrum coerulescens*: this is a very rare/scarce dragonfly in Gloucestershire, the last recorded sighting being in 2009, until a male was spotted at the new pondscape at Woorgreens on 17th July (BA), and which was present until 30th July. Several people had the opportunity to see this lovely insect over the time that it was present at the pondscape: NJP and VEP on 21st July, PM on 26th July,

photographed by AJ on 28th July, as well as posing nicely for a photograph on 30th July (IT). A second male was recorded at a ditch on the north-east side of Woorgreens Lake, some distance away from the first location, on 9th August (BA).

Red-veined Darter *Sympetrum fonscolombii*: two males were spotted for the second year running at the same pond at the new pondscape near Woorgreens Lake on July 30th (CT and IT). The only two previous sightings of this migrant species occurred in Gloucestershire in July 2002, although in South Gloucestershire at Severn Beach approx 100 were seen, with breeding evidence, in 2012.

Black Darter *Sympetrum danae*: this species is rarely seen in the Forest of Dean, with only two locations where they were recorded this year – the first sighting was on 26th July in the Cinderford Linear Park-North, where three or four were present including a male, an ovipositing female and a teneral insect (NJP and VEP), and at the new pondscape near Woorgreens Lake where during several visits mainly in August a small number of males and a single female were seen and photographed, with a very quick sighting of a mating pair on the GNS Field Meeting on 10th August. The first sighting was on 25th July, when a male was seen (AJ), and the latest date was on 3rd September when three males were counted (CT and IT), the maximum number of males seen were 4 on 22nd August and single females were seen on 7th August (PM) and 20th August (AJ).

Scarce Blue-tailed Damselfly *Ischnura pumilio*: the species was confirmed at the new pondscape near Woorgreens Lake where a small, probably breeding population was present, the first sightings being on 19th June when 12 were counted (NJP), with 7 males on 21st June (CT and IT) and 2 males on 30th June (AJ). The only sightings in July occurred on 21st when 2 males were present (NJP and VEP). (There was a probable sighting of one male on site in 2012). The small population was still present at Laymoor Quag new ponds and breeding was again confirmed with the sighting of 12 males including an immature male and one exuvia on 25th June (CT and IT, NJP and VEP), with a further sighting on 29th June (MM).

Small Red-eyed Damselfly *Erythromma viridulum*: two new locations were discovered in August 2013 for this newly UK-colonised species with 6 at Apperley Hall Farm, in the north of the county, on 22nd August (NJP and VEP), and one male present at the Barnwood Horsebere Brook Flood Alleviation area, near Gloucester, on 31st August (CT and IT). There is a good breeding population at The Mythe, near Tewkesbury where one male was first seen on 24th July (MM) and approx 150 were present on 6th August with numerous ovipositing pairs (CT and IT). There was only one sighting of a mating pair at Coombe Hill Canal NR on 15th August (CT and IT), maybe the lack of numbers being due to much flooding of the area over the winter and spring.

Small Red Damselfly *Ceriagrion tenellum*: a report of a male Small Red Damselfly along the disused Thames and Severn Canal near the Cotswold Water Park Spine Road on 4th July (LW) was subsequently confirmed. This is the first time that this species has been recorded in Gloucestershire (VC33) to my knowledge.

After the slow start, the season got well under way in the summer and produced some good sightings, continuing until the autumn. I was sent a report of an interesting occurrence on 15th October at WWT Slimbridge when a larger Southern Hawker was snatched from reeds by a smaller **Migrant Hawker** *Aeshna mixta* patrolling the pool, which then tried to drown it unsuccessfully. The Migrant Hawker then flew off leaving the Southern Hawker struggling in the water (JW). The final records that I received were sightings all on 10th November of several Migrant Hawkers and three Common Darters at WWT Slimbridge (MMcG), another Common Darter at Over Ponds, near Gloucester (IE), and three or four Common Darters along the R. Severn near Hock Cliff on the GNS meeting led by Andrew Bluett.

On 16th March, at the British Dragonfly Society's Vice-County Recorders Day at Wallingford, I was presented with an award for submitting the one millionth record to the BDS as part of the "Dragonflies in Focus" project, the culmination of which will be a new National Dragonfly Atlas of Britain and Ireland to be published in May 2014. This award was of a print of a Ruddy Darter painted by Richard Lewington, and the record submitted was of a Ruddy Darter at The Mythe in August 2012. This award would not have been presented to me if I had not received the many sightings/records that have been sent to me over the years, for which I am very grateful, and thanks go to all who sent them in, including those not mentioned in this report.

I led two meetings in 2013, one for the Cotswold Water Park Trust on 14th July at the disused Thames and Severn Canal and Lake 6, and one for GNS on 10th August at Woorgreens. I also took part in a Family Fun Day event at Churchdown Park Ponds, for which The Friends of Churchdown Park Ponds were presented with a CPRE Award in October. I gave two talks in the autumn, both for Bird Clubs, one at Dursley on 30th September, and the other for Cheltenham on 21st October.

May I reiterate my thanks to all who sent me records during the year, to Gareth Harris with verification/validation of records from Adrian Bicker's Living Record, to Linda Moore at GCER and Mark Yeates for help with MapMate importing files, and to Steve Prentice of the BDS for help with synchronisation of records to their database.

List of Contributors mentioned in the report: BA – Beth Adams, DD – David Dewsbury, IE – Ian Elphick, TE – Tony Eveleigh, AJ – Andy Jayne, DL – Daphne Lane, RL – Rob Laughton, PM – Paul Masters, MM – Martin Matthews, MMcG –

Martin McGill, PhM – Phil Mugridge, DP – Dave Paynter, NJP and VEP – John and Viv Phillips, JR – Joanna Rutherford, CT and IT – Colin and Ingrid Twissell, LW – Lyn White, JW – John Widgery.

GLOUCESTERSHIRE MOTH REPORT 2012 & 2013

Robert Homan

Following the retirement of Roger Gaunt as County Moth Recorder for Gloucestershire, the task of collating records and publishing feedback was split between three recorders covering East Gloucestershire (vice county 33), West Gloucestershire west of the River Severn (part of vice county 34) and West Gloucestershire east of the River Severn (part of vice county 34). The new system of recorders took some time to bed in, hence the absence of a county-wide report for 2012, a gap which has been filled in this review, which also contains material for 2013.

It is a truism that no two years are ever the same, but it is rare for two consecutive years to be characterised by such contrasting weather conditions which were clearly reflected in the overall pattern of moth records in 2012 and 2013. The spring of 2012 was marked by a March heatwave which perhaps raised the expectations of recorders for the year ahead. Certainly many spring species had a good year with some high counts from woodland sites. Such optimism, however, was soon dispelled as after April the year degenerated into the second wettest on record in the UK as a whole. These conditions had an effect on the number and variety of moths recorded as recorders decided not to bother running traps in the dire weather and species were restricted in terms of when they could fly. 2013 had a reverse pattern of weather with a spring that never was and generally low temperatures through until June. Thereafter temperatures soared and the summer was a hot one. This "year of two halves" brought about some interesting records of aberrant forms of common species as well as a prolonged second generation emergence for some taxa. As shown below, a more persistent southerly air flow in 2013 brought about higher numbers of migrant species compared to 2012.

Early in 2014, a new checklist of the Lepidoptera of the British Isles was published. This introduced a range of name changes which brought a high degree of convergence between the names used in Britain and those used in the rest of Europe. More radically, the new list introduced a revised ordering of species and a new numbering system. The recording software used by many amateur entomologists has yet to take on these dramatic changes producing, in effect, an interregnum between the old and the new. For the convenience of the author and perhaps the readers, this report uses the "old" familiar names and code numbers.

The headline events of the past two years concern two micro-moth species. Firstly, a moth trapped at Chester Park, Bristol on 31st July 2013 by Neale Jordan-Mellersh was

initially thought to be an unusual "knothorn" pyralid of the subfamily Phycitinae and went on to puzzle a number of experts. It was taken to the Natural History Museum in London and eventually identified as *Noorda moringae*. This is the first time the moth has been taken at large in Britain, although, as with many other adventive species, it has been recorded as an intercept by the Food and Environment Research Agency (FERA). The moth, which indeed is a pyralid, feeds on, and can be a serious pest of, various species of trees in the tropical and sub-tropical genus of *Moringa* (drumstick trees). What it was doing in north Bristol is anyone's guess. (See Atropos, 51, 2014, p.30) Secondly, in May 2013 Guy Meredith swept a male *Elachista* species from the grassland on Cleeve Common, which on dissection, was identified as *Elachista orstadii*. Guy went on to find the moth at three other sites in the north Cotswolds and on revisiting a specimen of what was thought to be *E. humilis*, from the Brassey nature reserve in 2012, found that this was also *E. orstadii*. Until Guy's records the moth was considered to be restricted to a group of six Scottish vice-counties and so the Cotswold grasslands were the location of the first English records of *E. orstadii*. (See Entomologist's Record and Journal of Variation, 125, 2013, pp.231 - 235)

Gloucestershire specialities

There is a handful of species which have a highly localised distribution pattern in Britain and for which Gloucestershire and adjacent parts of the southwest Midlands are national hotspots. Several of these species received focussed attention in 2012-3 and the results are reviewed here.

102 *Stigmella aceris*. This leafminer continues to spread slowly in the Severn Vale and up onto the scarp slope of the Cotswolds at a rate of between 1 and 2 kilometres annually. A disjunct record from Brandon Hill in Bristol of mines in Field Maple in August 2012 was therefore something of a surprise.

864 *Dichomeris ustalella*. Restricted nationally to sites in Worcestershire and the Wye Valley in both Monmouthshire and Gloucestershire where Small-leaved Lime (*Tilia cordata*) occurs, this Red Data Book species was found in August 2013 in an entirely new area at the Flaxley/Welshbury Wood complex.

1650 *Sabra harpagula* Scarce Hook-tip. This is another species dependent on Small-leaved Lime. More than 40 were recorded in a targeted trapping session in the Lower Wye Valley on 29th June 2013. With the demise of the population in Leigh Woods, Bristol, in the 1930s, the Scarce Hook-tip is now restricted in Britain to the lime-rich woodlands around Tintern, on both sides of the river.

1785 *Pareulype berberata* Barberry Carpet. Given that Westonbirt has long been known as a breeding site for this fully protected species, it is heartening to record the presence of larvae at the arboretum in 2013.

2181 *Egira conspicillaris* Silver Cloud. Past records show that this species could occur anywhere in the Severn Vale between Long Marston in the far north of VC33 (and now in Warwickshire) to Dursley towards the south of VC 34. However, in recent years the moth has been recorded in both smaller numbers and fewer locations (in 2012-13 just The Parks, Newent; Hempsted and Cambridge). Flying in the late spring this apparent decline might be the result of the wet May of 2012 and the low temperatures of May 2013.

2013 *Ptilophora plumigera* Plumed Prominent. Targeted trapping at the known sites in Chedworth Woods produced a maximum count of 17 in November 2012 and 58 in November 2013. A very interesting record of 4 moths in November 2013 came from Hailey Wood, the first record from this woodland complex west of Cirencester since 2005.

Summary of records of migrant species in 2012

Code	Taxon	Common Name	No. of records	Date(s)
464	<i>Plutella xylostella</i>	Diamond-back Moth	42	24/05/12 – 08/11/12
1262	<i>Cydia amplana</i>		1	18/08/12 *
1395	<i>Udea ferrugalis</i>	Rusty-dot Pearl	4	24/03/12 – 19/10/12
1398	<i>Nomophila noctuella</i>	Rush Veneer	8	28/05/12 – 31/08/12
1716	<i>Rhodometra sacraria</i>	Vestal	1	18/08/12
1720	<i>Orthonama obstipata</i>	Gem	2	01/05/12 and 23/10/12
1984	<i>Macroglossum stellatarum</i>	Humming-bird Hawk-moth	2	19/06/12 and 14/08/12
1990	<i>Hyles livornica</i>	Striped Hawk-moth	1	28/06/12
2091	<i>Agrotis ipsilon</i>	Dark Sword-grass	3	20/03/12 – 22/10/12
2119	<i>Peridroma saucia</i>	Pearly Underwing	1	18/10/12
2203	<i>Mythimna</i>	White-speck	1	19/07/12 *

	<i>unipuncta</i>			
2400	<i>Helicoverpa armigera</i>	Scarce Bordered Straw	2	05/10/12 and 18/10/12
2403	<i>Heliothis peltigera</i>	Bordered Straw	1	25/07/12
2441	<i>Autographa gamma</i>	Silver Y	255	07/04/12 – 15/11/12

* = new vice-county records; see below for more details.

Summary of records of migrant species in 2013

Code	Taxon	Common Name	No. of records	Date(s)
464	<i>Plutella xylostella</i>	Diamond-back Moth	111	18/05/13 – 07/10/13
1395	<i>Udea ferrugalis</i>	Rusty-dot Pearl	8	18/06/13 – 07/11/13
1398	<i>Nomophila noctuella</i>	Rush Veneer	23	23/07/13 – 10/10/12
1716	<i>Rhodometra sacraria</i>	Vestal	8	22/07/13 – 09/10/13
1720	<i>Orthonama obstipata</i>	Gem	3	04/10/13 and 02/11/13
1984	<i>Macroglossum stellatarum</i>	Humming-bird Hawk-moth	10	25/07/13 - 20/10/13
2091	<i>Agrotis ipsilon</i>	Dark Sword-grass	48	09/05/13 – 17/11/13
2119	<i>Peridroma saucia</i>	Pearly Underwing	1	27/07/13
2195	<i>Mythimna vitellina</i>	Delicate	2	29/06/13 and 27/07/13
2385	<i>Spodoptera exigua</i>	Small Mottled Willow	1	No date
2400	<i>Helicoverpa armigera</i>	Scarce Bordered Straw	1	01/11/13
2441	<i>Autographa</i>	Silver Y	451	04/02/13 –

gamma	11/12/13
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In both years the number of records of Diamond-back Moth and Silver Y reflects adults developing from eggs laid by primary migrants in the early summer. The high number of Silver Y records is also a reflection of the frequency with which the moth is encountered in the day time in gardens and roadside verges.

Additions to the East Gloucestershire (VC 33) list in 2012.

With this list and indeed the other three below, it is evident that the majority of new records relate to micro-moths. This is a consequence of the much greater degree of attention given of late to this disparate group and of the fact that as time passes it becomes increasingly more difficult to record new macro-moth species.

36a *Ectoedemia heringella*. Vacated mines in Holm Oak (*Quercus ilex*) found in 7 different 1 km squares, Cheltenham, SO92, 18th May 2012. A species that is extending its range westwards. R. Homan.

44 *Trifurcula headleyella*. Adults swept from Butterfly Conservation's Rough Bank Reserve, SO9008, 4th April 2012 & 10th June 2012, both males and identification confirmed by dissection. The larvae mine the leaves of Self-heal (*Prunella vulgaris*). G. Meredith.

146 *Nemophora cupriacella*. Rough Bank Butterfly Conservation Reserve, SO9008, 14th July 2012. A species associated with *Scabious*. G. Meredith.

239 *Tinea columbariella*. Cheltenham, SO9519, 26th July 2012, a female, identification confirmed by dissection. A species associated with bird nest detritus. G. Meredith.

482 *Epermenia insecurella*. GWT Pasque Flower Reserve near Cirencester, SP0506, 19th July 2012. The larva feeds on Bastard Toadflax (*Thesium humifusum*). G. Meredith.

561 *Coleophora therinella*. BC's Rough Bank Reserve, SO9108, 26th July 2012, a female, identification confirmed by dissection. The larva feeds on Black-bindweed (*Fallopia convolvulus*). G. Meredith.

568 *Coleophora versurella*. Charlton Kings Common, SO9618, 6th August 2012, a male, identification confirmed by dissection. The moth is associated with orache and goosefoot. G. Meredith.

638a *Denisia albimaculea*. Pavlo Zaltowski trapped and photographed an individual of this species in Gloucester, SO8317, on 25th May 2012.

668 *Luquetia lobella*. Swindon Lane, Cheltenham, SO9424, 28th June 2012, adult in an actinic light trap. The larvae feed on Blackthorn (*Prunus spinosa*). R. Homan.

911 *Scythris grandipennis*. Charlton Kings Common, SO9618, 4th July 2012, a male, identification confirmed by dissection. The gregarious larvae feed in a web on Gorse (*Ulex*) shoots. G. Meredith.

1034 *Spatalistis bifasciana*. An adult was trapped by Peter Hugo and Roger Wasley on the National Trust's Sherborne Estate, SP1614, on 14th July 2012.

1079 *Piniphila bifasciana*. One of a pair of "conifer firsts" in 2012. Roger Ward trapped 2 adults at Ryeworth, Cheltenham, SO9721, on 8th August 2012. Jon Brock took two more at Woodmancote, near Bishop's Cleeve, SO9627, on 10th August 2012.

1262 *Cydia amplana*. An example of this migrant species was trapped by Andy Lodge at Charlton Kings, SO9619, on 18th August 2012.

1461 *Assara terebrella*. Studdridge, Eastcombe, SO9804, 18th August 2012, an adult in an MV trap, Tony Perry. The second of the "conifer firsts".

2132 *Xestia castanea* Neglected Rustic. An adult was trapped at Bagendon in the Churn Valley, SP0005, 14th August 2012 by Hilary and Hugh Purkess. This macro moth is regarded as a moorland species and this individual must be seen as a wanderer.

2379 *Coenobia rufa* Small Rufous. An adult was trapped at Hempsted, Gloucester, SO8218, 25th July 2012. This record of a typically wetland species replaces an earlier Small Rufous "vice-county first" from Swillbrook Lakes in the Cotswold Water Park as the site is in VC 7 (North Wiltshire). G. Avery.

Additions to the East Gloucestershire (VC 33) list in 2013.

119 *Opotege salaciella*. Trapped at Swindon Lane, Cheltenham, SO9424, on 26th July 2013. The larva is thought to feed on Sheep's Sorrel (*Rumex acetosella*). R. Homan.

276 *Bucculatrix demaryella*. A male was taken at Siccaridge Wood, SO9303, on 19th June 2013 and its identity confirmed by dissection. The main food plant is Birch. G. Meredith.

407 *Argyresthia dilectella*. Adults were knocked out of Junipers, the species' food plant, at Painswick Common, SO8611, on 12th July 2013. R. Homan.

409b *Argyresthia cupressella*. An adult was trapped in a garden moth trap in Prestbury, Cheltenham, SO9623, on 8th July 2013. This is a relative newcomer to the British list and the spread has no doubt been helped by its feeding on a variety of garden conifers. K. Heron and J. Jones.

484 *Epermenia aequidentellus*. An adult was trapped at Leckhampton, Cheltenham, SO9519, on 1st August 2013. The food plants are Wild Carrot and Burnet-saxifrage. G. Meredith.

511 *Coleophora orbitella*. A feeding case was found on a Birch tree at Plock Court, Gloucester, SO8320, on 31st October 2013. A. Simpson.

767 *Carpatolechia decorella*. An adult of this Oak woodland species was trapped at Ryeworth, Cheltenham, SO9721, on 1st July 2013. Identity confirmed by dissection. R. Ward.

844 *Syncopacma larseniella*. An adult, identity confirmed by dissection, was trapped at Leckhampton, Cheltenham, SO9519, on 13th July 2013. G. Meredith.

849 *Syncopacma cinctella*. An adult was taken at Chalford, SO8902, on 29th June 2013 and dissected to secure the identification. This is the first confirmed VC record since the publication of identification details for the species in 1935. Before then 844 and 849 were considered to be one species. Both moths are linked to Bird's-foot Trefoil (*Lotus corniculatus*). B. Smith.

890 *Mompha jurassicella*. An adult male was found indoors at Swindon Lane, Cheltenham, SO9424, on 9th February 2013 and confirmed by dissection. As with many other *Mompha* species, *jurassicella* feeds on Willow-herbs. R. Homan.

1019 *Cnephasia conspersana*. An adult was trapped at Woodmancote, near Cheltenham, SO9627, on 7th July 2013. The moth was dissected and found to be a female. J. Brock.

1094 *Apotomis capreana*. What a night it was at Brookthorpe, SO8312, on 13th July 2013 with this and the next species being added to the VC micro list. As the name suggests, *capreana* is a *Salix* feeder. S. Chappell.

1135 *Epinotia demarniana*. 11 adults were trapped at Brookthorpe, SO8312, on 13th July 2013. The catkins of Birch, Alder and Goat Willow are the food source. S. Chappell.

1215 *Thaumatotibia leucotreta*. An adult False Codling Moth was trapped at Swindon Lane, Cheltenham, SO9424, on 25th July 2013. This is an adventive species that is imported into the UK in sub-tropical and tropical fruit. R. Homan.

1335 *Scoparia ancipitella*. More evidence of the need to approach the identification of some groups of micros with considerable care, this is the first confirmed record of *ancipitella*. Trapped at Stow-on-the-Wold, SP1926, on 18th July 2013 and dissected. J. Langmaid.

1409a *Diaphania perspectali*. Another recent arrival in the UK and known as the Box Tree Moth. An adult of the unusual unicoloured form was trapped at Prestbury, Cheltenham, SO9623, on 6th July 2013. K. Heron and J. Jones.

2286 *Acronicta menyanthidis* Light Knot Grass. An adult was taken at light at Brookthorpe, SO8312, on 13th July 2013 and its identity confirmed by dissection. The last time this species appeared in the county, at Rodborough in 1963, Les Price described it as "a wanderer, perhaps from Wales". There is every chance that the same description could be applied to the 2013 specimen.

Additions to the West Gloucestershire (VC 34) list in 2012.

36a *Ectoedemia heringella*. Leaf mines in Holm Oak (*Quercus ilex*). Brandon Hill, Bristol, ST5872, 4th May 2012. R. Homan.

289 *Caloptilia falconipennella*. An adult was trapped at Lower Lodge Wood, near Wotton-under-Edge, ST7892, 7th April 2012. A species associated with Alder (*Alnus* sp) which is expanding its range in southern England and was added to the VC33 list in 2007. P. Cranswick.

340 *Phyllonorycter scopariella*. Mines. Trooper s Hill, Bristol, ST6273, 4th May 2012. One of a small group of micro-moths that mine the stems of Broom (*Cytisus scoparius*). R. Homan.

633 *Cosmiotes stabilella*. An adult at Breakheart Quarry, Dursley, ST7596, 25th June 2012, identification confirmed by dissection. A grassland species with the larvae mining a range of grasses. S. Chappell.

642a *Metalampra italica*. An adult was trapped at Ryalls Cottage, Cambridge, SO7404, 14th July 2012, identification confirmed by dissection. Only added to the British list in 2003, this Italian endemic has since spread across southern England. The larvae feed on decaying wood, especially oak. S. Chappell.

902 *Chrysoclista lathamella*. A dead adult was found at New Fancy in the Forest of Dean. Despite the widespread distribution of its food plant, White Willow (*Salix alba*), this is a rare species. G. Meredith.

1022a *Cnephasia pumicana*. An adult female was trapped at Dymock Wood, SO6928, identification confirmed by dissection. Recognised as a good species as recently as 2010, like others in the genus considerable care is needed with identification, which is next to impossible on external features. M. Bradley.

1023 *Cnephasia genitalana*. An adult was trapped at Breakheart Quarry, Dursley, ST7596, 18th August 2012, identification confirmed by dissection. As with the last species, detailed examination is necessary to confirm the identification of *C. genitalana*. S. Chappell.

1051 *Acleris logiana*. An adult was trapped at Lower Woods nature reserve, ST7386, 24th March 2012. Another relatively new species in southern England, *A. logiana* was formerly restricted to Scottish Birch woods. P. Cranswick.

1129 *Ancylis apicella*. An adult was taken at Ryalls Cottage, Cambridge, SO7404, 28th June 2012. This species feeds on Buckthorn (*Rhamnus catharticus*) and Alder Buckthorn (*Frangula alnus*) and is nationally notable (Nb). S. Chappell.

1238 *Pammene ochsenheimeriana*. Two adults were seen at two locations in the Forest of Dean on 9th June 2012. The species is thought to be associated with various species of coniferous tree. G. Meredith.

1300 *Crambus pratella*. An adult was trapped at Breakheart Quarry, Dursley, ST7596, 15th June 2012. A distinctive looking "grass moth" usually found in areas of dry grassland. S. Chappell.

2203 *Mythimna unipuncta* White-speck. One trapped at Ryalls Cottage Cambridge, SO7404, 19th July 2012. A migrant macro-moth. S. Chappell.

Additions to the West Gloucestershire (VC 34) list in 2013.

45 *Trifurcula subnitidella*. Adults swept from grassland, Scar Hill Nailsworth, ST8599, 3rd June 2013. Larvae mine leaves of Bird's-foot Trefoil (*Lotus corniculatus*). G. Meredith.

59 *Stigmella poterii*. Known already from several Cotswold grassland sites in VC 33, it is not surprising that this leaf miner was recorded from Rodborough Common where mines, one vacated and one with a dead larva, were found in Salad Burnet (*Sanguisorba minor*), SO8404, 12th September 2013. R. Homan.

365 *Phyllonorycter comparella*. Leaf mines in White Poplar (*Populus alba*), Hotwells, Bristol, ST5772, 29th August 2013. R. Homan.

0828 *Caryocolum viscariella*. An adult was taken at the Edge Hill Heathland Restoration site, SO6615, 19th July 2013. The larvae feed on various members of the Campion (*Silene*) family. M. Bradley.

1012 *Sparganothis pilleriana*. An adult was taken at Breakheart Quarry, Dursley, ST7596, 21st June 2013, identification confirmed by dissection. The larvae feed on a range of shrubby plants. S. Chappell.

1822 *Eupithecia pygmaeata* Marsh Pug. An adult was recorded at Pilning flying over flower-rich waste ground, ST5834, 1st June 2013, determined by R. Barnett. J. Martin.

Acknowledgements

During the course of the two years some 60000 records covering both vice-counties have been submitted. A report such as this can only scratch the surface of such a magnificent recording effort and whether a record has been specifically mentioned here or not, the information provided is important in order to refine our knowledge of Gloucestershire's moths. The following have contributed records in 2012 and or 2013 and considerable thanks are extended to them all:

H. Adams, C. Andrews, P. Andrews, T. Atkinson, G. & M. Avery, R. Axworthy, G. Bailey, H. Bailey, J. Bailey, P. Barden, S. Barker, T. Bellars, R. Benson-Bunch, A. Bolton, J. Bolton, J. Booth, V. Box, M. Bradley, G. Breeze, J. Brock, S. Chappell, P. Clement, R. Cox, P. Cranswick, D. Cross, K. Cservenska, A. D'Elia, M. Dale, S. & D. Dewsbury, M. Elson, R. Faulkner, N. Felstead, P. Fitchett, D. & C. Foster, M. Hammond, R. Hemming, M. Hollands, P. Hugo, R. Gaunt, D. Gladstone, S. Glover, I. Grange, D. Grundy, N. Hayward, K. Heron & J. Jones, D. Iliff, S. Jones, N. Jordan-Mellersh, J. Knowler, S. La Bouchard, R. Lamb, J. Langmaid, A. Lodge, R. Mabbett, J. Martin, P. Masters, J. Matthews, G. Meredith, J. Oakley, S. Owen, M. Parsons, P.

Parsons, J. Paterson, J. Paton, R. Pearce, H. & H. Perkiss, D. Perkins, T. Perry, J. & V. Phillips, V. Polley, B. Prater, D. Priddis, A. Prior, E. Rose, P. Sansum, A. Sharpe, D. Shenton, A. Simpson, B. Smith, G. Stansfield, T. Taylor, C. & E. Trendall, C. Tracey, C. Twissell, R. Ward, R. Wasley, J. Weaver, V. Weston, J. Widgery, P. Wilkins, N. Williams, K. Wollen, R. Wollen, R. Woods, P. Wood, M. Wright and P. Zaltowski.

MOLLUSCS IN GLOUCESTERSHIRE 2013

David Long

This was a generally quiet year for mollusc records but there were a couple of highlights:

John Fleming found the rare species, *Lauria sempronii*, at two sites in May. One of these was near a previously-recorded site in 2003; the other was, we believe, a re-find of the site where A.G. Stubbs collected *Lauria sempronii* in 1894, but failed to recognize it. It has now been reported from some 5 sites associated with the Stroud valleys and escarpment, and occurs on old drystone walls, avoiding Ivy.

Julian Gould's find on 25th October of a shelled slug, *Testacella*, (probably *maugei*), on a wet pavement in Gloucester (when unfortunately he was unable to collect the specimen or photograph it) is noteworthy because these animals very rarely appear as they mostly burrow in soil after worms. They are usually flushed out by heavy rain.

The introduced Girdled Snail (*Hygromia cinctella*) is usually found in or near gardens so two under woodland debris in open country near Roel Gate, on the Cotswold dip slope at an altitude of c.270m may be symptomatic of acclimatisation.

I would still like records of any snails, slugs, freshwater snails or bivalves – photographs or specimens welcome.

Many thanks to all who passed me specimens or information in the last year.

GLOUCESTERSHIRE BRYOPHYTE REPORT 2013

Richard Lansdown and Peter Martin

As we have not provided a review of activity in the county for some time, this report serves as an update on the state of bryophyte recording, as well as information on notable records in recent years. In the last ten years, we have carried out a certain amount of "tetrad-bashing", simple documentation of the bryophytes in each tetrad in the county both to contribute to the National Atlas which will be published in 2014 and to improve our understanding of the status of bryophytes in the county. We have also visited some sites to search for known populations of rare species and held ten meetings of the Gloucestershire Bryophyte Group, including excursions to The Slaughter, Symonds Yat and Ban-y-gor Woods in the Wye Valley, Blaise Hamlet, Cleeve Common, Buckstone and Rodge Woods, The Gully in the Avon Gorge, Penn Wood near Leonard Stanley, Chedworth Woods and the Lamplighters site at Shirehampton. These have all contributed records to the database, which at the start of 2014 held a little over 30,000 records. We intend to run a series of meetings in Gloucestershire in 2014-2015, hopefully including microscopy sessions if a suitable location and the necessary funding can be found.

Other achievements in the last few years include publication of a Provisional Red Data Book of Gloucestershire Bryophytes, funded by GNS and an Annotated Checklist of the Bryophytes of Cleeve Common, funded by the Cleeve Common Board of Conservators. Both of these publications relied heavily on review of specimens in the herbarium of H.H. Knight in the Cheltenham Museum and Art Galleries and the herbarium of the British Bryological Society held at the National Museums and Galleries of Wales (NMW) in Cardiff. Other work on Cleeve Common has included restoration of an extinct habitat, when in collaboration with the Conservation Officer, Ellie Phillips (again funded by the Cleeve Common Board of Conservators), we initiated a pilot study to look at how mud-capped walls, which once supported a number of mosses which are now very rare or extinct in the UK, may have functioned. This project has resulted in one wall acquiring a very rich moss flora, including a large population of *Microbryum floerkeianum*, as well as the Nationally Scarce *Didymodon acutus*. We have also started to look at restoration of some of the acid habitat for bryophytes on Cleeve Common, although it will be a little longer before this starts to yield results. Prestbury Butterfly Reserve on Cleeve Hill has been shown to host the only population of *Atrichum angustatum* currently known in the UK, whilst Peter Martin made the remarkable discovery of *Ceratodon conicus*, a species thought at the time to be extinct in Britain and formerly mainly found on mud-capped walls, on the old Lamplighters site at Shirehampton. Other conservation

action includes work to restore and protect the peat-forming *Sphagnum* species at Foxes Bridge Bog in the Forest of Dean with the support of the Forestry Commission.

Review of herbarium specimens by the late A.J.E. Smith resulted in the discovery of *Tortula schimperi* new to Gloucestershire and we were subsequently able to show that it still occurs. Similarly, review of herbarium specimens by Sam Bosanquet showed that *Entosthodon mouretii* had also been recorded in the county, although we have yet to find it growing and this is also the case with *Hedwigia ciliata* identified as a herbarium specimen in NMW. The Red Data Book has showed that the county supports very healthy populations of a number of species which are of national conservation concern, including *Campylophyllum calcareum*, *Ephemerum recurvifolium*, *Fissidens rivularis*, *Grimmia tergestina*, *Leptobarbula berica*, *Plasteurhynchium striatulum*, *Platygyrium repens*, *Pleurochaete squarrosa*, *Seligeria pusilla*, *Tortella inclinata* and *Tortella inflexa*. Gloucestershire can be seen to have a national responsibility for these species. *Grimmia tergestina* is now of particular interest to Gloucestershire, occurring on many Cotswold stone roof tiles throughout the county, it has spread northwards through Europe in recent times and Gloucestershire is its UK stronghold. The stone roofs we have in the Cotswolds would have been very familiar to Knight in the last century who would almost certainly have found the species if it had occurred then. Another taxon found scattered in Europe is *Syntrichia montana* var. *calva* which turned up in Gloucestershire in 2011 at Colesbourne, currently the only British site, and perhaps will be more widely recorded in future.

The last few years have seen many new records, as well as rediscovery of populations of a number of species that were recorded up to the early part of the 20th Century but had not been seen since. These include: *Brachythecium salebrosum*, *Dicranella rufescens*, *Drepanocladus sendtneri*, *Fissidens fontanus*, *Grimmia laevigata*, *Jubula hutchinsiae*, *Leptodontium gemmascens*, *Leucobryum glaucum*, *Lophozia excisa*, *Orthotrichum obtusifolium*, *Pogonatum nanum*, *Scapania scandica*, *Scleropodium tourettii*, *Scorpidium cossonii* and *Tritomaria exectiformis*. The Cotswold Oolitic Limestone grassland has also been shown to be important for a number of rare bryophytes, particularly *Weissia* species, such as *W. condensata* and *W. sterilis*. Likewise the Wye Valley has been shown to be nationally important for a number of bryophytes, including *Anomodon longifolius*, *Antitrichia curtipendula*, *Conardia compacta*, *Metzgeria pubescens*, *Orthothecium intricatum* and *Seligeria campylopoda*. A total of 513 bryophyte taxa have now been recorded from Gloucestershire, 387 in Vc 33 and 489 in Vc 34, the total including five subspecies, forty-two varieties and two hybrid combinations.

Finally, submission of specimens for confirmation by national specialists has highlighted some areas where there is a need for taxonomic clarification. For

example, the distinction between *Rhynchostegiella curviseta* and *R. teneriffae* in the county overlaps and many populations cannot be reliably distinguished. Equally, a number of populations of *Syntrichia* in the Cotswolds resembling *S. ruralis* have been shown to be intermediate between *S. ruralis* and *S. ruraliformis*. This is also the case with our populations of *Abietinella abietina* which fall between vars. *abietina* and *hystricosa*.

The table below shows the new taxa which were recorded from the two vice counties from 2004 onwards in bold, the other taxa listed are those which were recorded in each vice county for the first time since the beginning of 1960.

	Vice county 33	Vice county 34
2004		<i>Amblystegium confervoides</i>
2005		<i>Bryum violaceum</i> <i>Cololejeunea minutissima</i> <i>Seligeria campylopoda</i>
2006	<i>Entosthodon fascicularis</i> <i>Grimmia dissimulata</i> <i>Pleuridium subulatum</i> <i>Pohlia lescuriana</i> <i>Weissia condensa</i> <i>Weissia squarrosa</i>	<i>Leiocolea badensis</i> <i>Phascum cuspidatum</i> var. <i>piliferum</i> <i>Platydictya jungermannioides</i> <i>Rhynchostegiella curviseta</i>
2007	<i>Drepanocladus aduncus</i>	<i>Grimmia tergestina</i>

	<i>Acaulon muticum</i> <i>Calypogeia arguta</i> <i>Campylum protensum</i> <i>Didymodon nicholsonii</i> <i>Fissidens fontanus</i> <i>Grimmia orbicularis</i> <i>Grimmia tergestina</i> <i>Microbryum floerkeanum</i> <i>Mnium marginatum</i> <i>Orthotrichum cupulatum</i> <i>Orthotrichum striatum</i> <i>Orthotrichum tenellum</i> <i>Phascum cuspidatum</i> var. <i>piliferum</i> <i>Plagiochila brittanica</i> <i>Plagiothecium succulentum</i> <i>Plasteurhynchium striatulum</i> <i>Pleurochaete squarrosa</i> <i>Pseudocrossidium revolutum</i> <i>Pylaisia polyantha</i> <i>Riccardia chamedryfolia</i> <i>Schistidium elegantulum</i> var. <i>wilsonii</i> <i>Syntrichia papillosa</i> <i>Thuidium abietinum</i> subsp. <i>abietinum</i> <i>Tortella inclinata</i> <i>Ulotia phyllantha</i> <i>Weissia longifolia</i> var. <i>longifolia</i> <i>Zygodon viridissimus</i> var. <i>stirtonii</i>	<i>Leptobarbula berica</i> <i>Microbryum curvicolle</i> <i>Orthotrichum tenellum</i> <i>Phascum cuspidatum</i> var. <i>schreberianum</i> <i>Schistidium elegantulum</i> <i>Syntrichia papillosa</i> <i>Weissia longifolia</i> var. <i>angustifolia</i> <i>Weissia squarrosa</i>
2008	<i>Cephalozia lunulifolia</i> <i>Chiloscyphus pallescens</i> <i>Fossombronia pusilla</i> <i>Pleuridium acuminatum</i> <i>Pleurozium schreberi</i> <i>Riccardia palmata</i>	<i>Fissidens fontanus</i>

2010	<i>Didymodon umbrosus</i> <i>Orthotrichum sprucei</i> <i>Phascum cuspidatum</i> var. <i>schreberianum</i> <i>Philonotis fontana</i> <i>Plagiomnium ellipticum</i> <i>Schistidium robustum</i> <i>Weissia longifolia</i> var. <i>angustifolia</i>	<i>Grimmia orbicularis</i>
2011	<i>Aphanorrhegma patens</i> <i>Cololejeunea minutissima</i> <i>Dialytrichia saxicola</i> <i>Ditrichum flexicaule</i> <i>Drepanocladus sendtneri</i> <i>Epipterygium tozeri</i> <i>Leptobryum pyriforme</i> <i>Loeskeobryum brevirostre</i> <i>Pohlia lutescens</i> <i>Porella obtusata</i> <i>Racomitrium aciculare</i> <i>Rhynchostegiella curviseta</i> <i>Schistidium apocarpum</i> <i>Scorpidium cossonii</i>	<i>Antitrichia curtipendula</i> <i>Aphanorrhegma patens</i> <i>Didymodon nicholsonii</i> <i>Hedwigia stellata</i> <i>Leptodontium gemmascens</i> <i>Riccia cavernosa</i> <i>Syntrichia ruralis</i> var. <i>ruraliformis</i>
2012	<i>Didymodon acutus</i> <i>Hygroamblystegium varium</i> <i>Myrinia pulvinata</i> <i>Orthotrichum obtusifolium</i> <i>Syntrichia montana</i> var. <i>calva</i> <i>Tortula amplexa</i> <i>Weissia controversa</i> var. <i>crispata</i>	<i>Cephalozia lunulifolia</i> <i>Dicranum scottianum</i> <i>Entosthodon pulchellus</i> <i>Grimmia dissimulata</i> <i>Leptodontium flexifolium</i> <i>Racomitrium heterostichum</i> <i>Syntrichia virescens</i>
2013	<i>Brachythecium salebrosum</i> <i>Bryum pseudotriquetrum</i> var. <i>bimum</i> <i>Cephalozia divaricata</i> <i>Plagiothecium laetum</i> <i>Tortella bambergeri</i>	<i>Brachythecium salebrosum</i> <i>Jubula hutchinsiae</i> <i>Oxyrrhynchium speciosum</i> <i>Scapania scandica</i>

HOVERFLY REPORT 2013

David Iliff

In the previous year's report 2012 was described as having been a difficult year for finding hoverflies. When making such a judgement on a particularly unproductive season the thought can occur that the situation was so bad that it can only get better in the following year. Unfortunately such misguided optimism proved unfounded, and 2013 was notably even worse than its predecessor.

Nevertheless even in bad years there are usually some records of high interest to report and 2013 was no exception. Foremost among these was the discovery by Maris Midgley of a male *Didea intermedia* (see Plate 5) north of Mallard's Pike SO639103 on 26th August. This was the first county record, and the UK recording scheme holds no other records of this nationally scarce species within a distance of 80 miles, in any direction, from this site. On 23rd August John Phillips had a female *Myolepta potens* (see Plate 6) on his land at Pope's Hill SO6814. John had found a male of this Critically Endangered BAP species at Welshbury Wood in 2009 (illustrated in The Gloucestershire Naturalist No. 21).

On 25th June Maris Midgley collected a *Sphegina sibirica* at Clanna Wood SO584023; this was the second county record for this species which was added to the British list as recently as 1994; the previous record was from The Wilderness on 23rd May 2006 where it was found by Nigel Jones. John Phillips had a female *Pipiza lugubris* at Blaisdon Wood SO7017 on 30th August, the second county record for this nationally scarce species which has very sharply defined wing clouds; the first record, also a female, was from nearby Flaxley Flushes on 7th July 2007 by David Gibbs.

Paragus haemorrhous is probably under-recorded because it is a very small inconspicuous hoverfly. A female was taken by David Haigh at the Pasque Flower Reserve, Barnsley SP049073 on 4th August.

The large and spectacular *Sericomyia silentis* is common in the Forest of Dean and its surroundings, but records east of the Severn are rare, so it was a surprise to find an example (a female) at Michaelwood Cottage ST708944 on 7th September. The much scarcer *Sericomyia lappona* was recorded once in 2013, at Edgehills Bog SO6615 on 18th August by John Phillips.

John Phillips provided the first county record since 2009 of the formerly common *Chrysotoxum cautum* when he found one at Pope's Hill SO6814 on 21st June. *Chrysotoxum arcuatum*, which is confined to the far west of the county, was recorded

on three occasions: on 24th June at Blakeney Straits SO655080 (Maris Midgley), at Staunton Meend SO5412 on 29th June (Martin Matthews) and at Mallards Pike SO637092 on 2nd September (also Maris Midgley); all were females. *Chrysotoxum verralli*, new to the county in 2006 but seen regularly since, was found on three occasions: 7th July at Flaxley Flushes SO6914 and 22nd July at Pope's Hill SO6814 (both John Phillips) and 8th August at The Mythe SO8834 (Martin Matthews).

Volucella inanis, *Volucella zonaria* and *Rhingia rostrata* have consistently merited a mention in these reports since the start of the new millennium, the first two because they were newcomers to the county and the third because of its former great rarity. All were recorded in Gloucestershire in 2013 but in reduced numbers.

Other records of interest were as follows:

Sphegina verecunda: Blakes Wood SO5511, 29th June (Maris Midgley)

Sphegina elegans: Millrough Woods SO634046, 19th August (Maris Midgley)

Chalcosyrphus nemorum: Stanway SP0632, 23rd August (David Iliff)

Sphaerophoria taeniata: Toddington SP0432, 23rd August (David Iliff)

Xylota jakutorum: Foxes Bridge SO6312, 6th July (John Phillips)

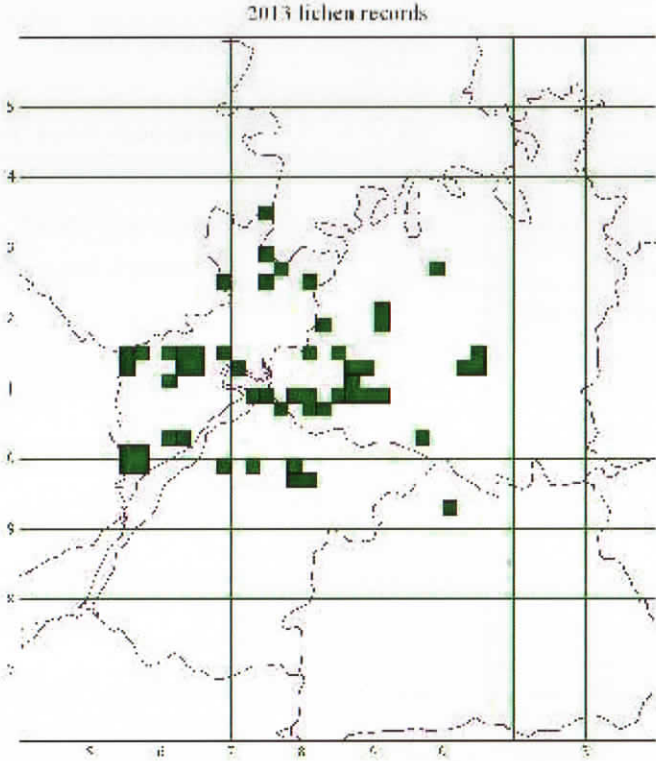
For readers who would like to identify hoverflies but who do not wish to purchase a specialised book on the subject, I strongly recommend the recently-published Comprehensive Guide to Insects of Britain and Ireland by Paul D Brock (Pisces Publications 2014). This book includes excellent colour photographs and descriptions of a large percentage of the UK's hoverfly fauna (and is similarly impressive for many other groups).

My thanks to the following who supplied me with records: David Haigh, John Harper, Martin Matthews, Maris Midgley, John Phillips, Tony Taylor, John Widgery

GLOUCESTERSHIRE LICHEN REPORT 2013

Juliet Bailey

In 2013 1256 lichen records were made in Gloucestershire comprising 241 taxa in 53 tetrads.



Thirty three species were recorded in 2013, but not in the previous four years, 2009-2012:

Species	New record for V-c 33 and V-c34 combined	Location and comment
<i>Aspicilia contorta</i> subsp. <i>hoffmanniana</i>	Yes	Snows Farm reserve

<i>Bacidia arceutina</i>		
<i>Bacidia arnoldiana</i>		
<i>Bacidia chlorotricula</i>	Yes	Greathough Brook, Brierley
<i>Bacidia fuscoviridis</i>	Yes	Badgeworth Church
<i>Bacidia viridifarinsa</i>		
<i>Caloplaca holocarpa</i> s. str.	Yes	Berkeley Church
<i>Chaenotheca brachypoda</i>		
<i>Chaenotheca furfuracea</i>	Yes	Greathough Brook, Brierley
<i>Cladonia caespiticia</i>		
<i>Collema multipartitum</i>	Yes	Badgeworth Church
<i>Dimerella lutea</i>	Yes	Greathough Brook, Brierley
<i>Diploschistes scruposus</i>		
<i>Hypotrachyna revoluta</i> s. str.	Yes	Many locations – this is the result of a taxonomic split
<i>Lecanora gangaleoides</i>		
<i>Lecanora intricata</i>		
<i>Lecanora rupicola</i> var. <i>rupicola</i>		
<i>Lecanora sambuci</i>	Yes	Yanworth
<i>Lecanora varia</i>		
<i>Lecidea fuscoatra</i> s. str.	Yes	Badgeworth Church and Berkeley Church. This is the result of a taxonomic split.
<i>Lepraria ecorticata</i>		
<i>Leptogium pulvinatum</i>	Yes	Snows Farm reserve – will be common; this is the newly named fimbriate version of the frequent species <i>Leptogium gelatinosum</i> .

<i>Leptogium subtile</i>		
<i>Micarea subviridescens</i>	Yes	Greathough Brook, Brierley
<i>Opegrapha ochrocheila</i>		
<i>Pachyphiale carneola</i>		
<i>Thelidium pluvium</i>	Yes	Snows Farm reserve
<i>Thelidium zwackhii</i>		Greathough Brook, Brierley
<i>Toninia verrucarioides</i>		
<i>Verrucaria calciseda</i>		Snows Farm reserve and Berkeley Church; a common species, previously lumped in field recording with <i>Verrucaria baldensis</i> .
<i>Verrucaria murina</i>		Greathough Brook, Brierley
<i>Xanthoparmelia loxodes</i>		

The top 20 species recorded in 2013 were:

Species	sites
<i>Xanthoria parietina</i>	55
<i>Physcia tenella</i>	41
<i>Lecanora chlorotera</i>	41
<i>Parmelia sulcata</i>	36
<i>Lecidella elaeochroma</i> f. <i>elaeochroma</i>	35
<i>Melanelixia subaurifera</i>	31
<i>Physcia adscendens</i>	28
<i>Evernia prunastri</i>	26
<i>Ramalina farinacea</i>	25
<i>Flavoparmelia caperata</i>	24
<i>Parmotrema perlatum</i>	23

<i>Lepraria lobificans</i>	21
<i>Hypogymnia physodes</i>	20
<i>Punctelia subrudecta</i> s. str.	17
<i>Arthonia radiata</i>	17
<i>Verrucaria nigrescens</i> f. <i>nigrescens</i>	17
<i>Xanthoria polycarpa</i>	15
<i>Amandinea punctata</i>	15
<i>Cladonia coniocraea</i>	15
<i>Physcia aipolia</i>	15

As usual, the nitrophile *Xanthoria parietina* heads the list, and indeed the top end of the list is virtually unchanged from last year. Pleasing new appearances are *Parmotrema perlatum* and *Hypogymnia physodes* which are sensitive to SO₂ pollution and are recolonising with improving air quality. However, this could be a reflection of the distribution of sites visited this year, with more effort on the Dean and the Cotswolds. On the Cotswolds sheltered pockets will have escaped the worst and the Dean is improving for lichens since the cessation of major industry.

The GNS Lichen Group met throughout the spring, summer and autumn on the second Tuesday in the month. On four occasions Dr David Hill joined us. He is enormously generous with his expertise and has instructed 11 of us over the year. As well as "face time", David takes difficult and critical specimens home for identification. We are building up a very good picture of the lichen flora in Gloucestershire, which I intend to present as an on-line atlas.

12th March 2013, Oakley Wood, near Cirencester, SO9703. The aim of this meeting was to look for *Lobaria pulmonaria* (tree lungwort), as part of a national resurvey of known sites by the British Lichen Society. The species was recorded here in December 1985 by Keith Alexander on a large, standing dead Wych Elm (see GNS Journal volume 37, No 2, 1986). The tree fell over shortly thereafter and an attempt was made to save the specimen by nailing it to a bare trunk of a nearby tree with a galvanised staple, 3 inches long. In March 1988 Karen Colebourn (then Regini), Jeremy Doe and Ian Ralphs tried to resurrect the specimen, which was swinging in the wind in a shrivelled state. They found a moss-covered tree in a damp and sheltered spot in the same general area. The *Lobaria* was carefully inserted into the moss mat on the trunk, about one and a half metres off the ground, and secured in place by a

small square of fine denier nylon stocking. Ian visited the site some months later and the re-introduction site was intact and the *Lobaria* visible, but still looking dead. The rescue attempt was before the era of GPS, so we did not have a precise grid reference, and failed to refind it.

9th April 2013, Yanworth, SP0514. This visit was to check out another *Lobaria pulmonaria* site. It was recorded here in 1990 by Francis Rose who has since died. Once again, the grid reference was not precise and we failed to locate the species. This was in private woodland, with no public access, and the estate kindly directed us to the area with the oldest trees. Though the woodland looked rather open and dry, it might conceivably be there as there were other members of the lobarion community present:

Lecanora argentata - this is a scarce species of western Britain. There are only two other Gloucestershire records.

Normandina pulchella - fairly common in the county, but one of the species indicating that conditions are probably suitable for *Lobaria*.

Pachyphiale carneola - only two other Gloucestershire records, one of which is from nearby woodland in 2000, the other from woodland near Guiting Power where we refound *L. pulmonaria* last year.

Thelotrema lepadinum - in Gloucestershire this is an indicator of ancient woodland sites.

14th May 2013, Cinderford Northern Quarter, SO6415. This 30 hectare site is proposed for development, with much opposition from naturalists, as it has developed major wildlife interest over 40 or so years since mining activity largely ceased. 14 May was a foul wet day and quite sensibly none of the rest of the lichen group attended, giving me the opportunity to investigate rapidly the whole area. There are several broad features of lichenological interest. The waste tips in the Hawkwell Inclosure, subject to regular gulleying, are developing a very interesting heathland flora including heather (*Calluna*). Very unusually for Gloucestershire, I found 9 species of the lichen genus *Cladonia*. Sincere thanks to Alan Orange, then at the National Museum of Wales, Cardiff, for his help and confirmation with their identification. Some of the old fence posts that marked the railway are superb. I understand they are, or have been, very good for hole-nesting birds too. The Hawkwell Inclosure also contains areas of ancient woodland with big old oaks, but unlike the waste tips and standing lignin, it is surely unlikely that these will be destroyed.

11th June 2014, Badgeworth Reserve SO9120 and Badgeworth Church SO9019. A lichen survey of the Badgeworth Nature Reserve from the 1970s produced a miserable 16 species with *Lecanora conizaeoides*, the most SO₂ tolerant species, the most abundant. We found nothing rare on this occasion, but the number of species has

climbed to 29. *Lecanora conizaeoides* was not found, but leafy lichens such as *Parmelia sulcata* and *Melanelixia subaurifera* are now present. We continued in the afternoon to Badgeworth Church. This is surprisingly good for lichens, considering its position in the Vale and adjacent to a farm, with 76 species recorded. Perhaps it is an indication that the stone of the memorials was able to buffer the worst effects of the acid rain of the second half of the twentieth century.

9th July 2014, Snows Farm, Gloucestershire Wildlife Trust reserve, Painswick, SO8808.

We examined the lichen flora of this secluded Cotswold valley in advance of a rewrite of the management plan. Fifty two species were recorded, mostly from trees, though some derelict walls provided a short list of saxicolous species. The most unusual lichen encountered was *Thelidium pluvium*, a species of streams and wet rock faces. The stream habitat is little studied in Gloucestershire. Turbid, deeply shaded or polluted water courses are unlikely to have aquatic lichens in any case. The better streams would merit study, though, as in this case, the lichens they support tend to be the especially difficult group of inconspicuous pyrenocarpous species that need microscopic examination to determine.

13th August 2014, Tidenham Chase, Forest of Dean, ST5599. We visited the Park where the trees planted in the twentieth century have been removed with the aim of restoring heathland. Currently the lichen flora is very poor, with only 27 species recorded and the only indication of heathland being a scrap of *Cladonia portentosa* and *C. subulata*. It will be interesting to watch its progress. In the afternoon we looked at the group of trees on the west side of Poor's Allotment where the usual suite of corticolous Dean lichens was growing in some abundance.

10th September 2014, Greathough Brook, Brierley, SO6115. Fifty species were recorded. One might have hoped that this sheltered valley with old trees and rock exposures would have produced a long list of scarcities, but the lichens of the Forest of Dean, with its history of industry, still tell the story of pollution. However, many of the species encountered are rarely recorded. It is due to the presence of Alan Orange, who is expert in the very difficult pyrenocarpous lichens, that we recorded as many as we did.

8th October 2014, Berkeley Church, ST69. This is a very good churchyard for lichens, with 86 species recorded on the stone memorials, church and surrounding walls of the site. The Gloucestershire Lichen Group visited it in 2003 when we found 57 species but the apparent increase probably does not reflect an improvement in the site. Whereas previously the senior lichenologist present, Joy Ricketts, had a pack of neophytes trailing round after her and noted that the survey was incomplete, this time we have gained experience and there were two lichenologists of national standing

present, David Hill and Alan Orange. That does not mean that every last species will have been seen. Most species are small or very small, requiring at least a hand lens, and often microscopic examination to determine. Furthermore, lichen taxonomy is in a constant state of flux, so where Joy would have recorded *Caloplaca citrina* as a very variable species, it has since been split into numerous taxa of which we recorded 4 here – *C. arcis*, *C. austrocitrina*, *C. dichroa* and *C. limonia*.

I am very grateful for the generosity of the experts that have patiently coached us over the years, whilst furthering the knowledge of the distribution of lichens in the county. The volunteer ethic in natural history remains strong, and I acknowledge the role of the Gloucestershire Naturalists' Society with its continuing support and encouragement for the study of lichens.

My thanks to the following for their records and company in 2013 – Gordon Avery, Heather Colls, Terry Hackwill, David Hill, Rita Holmes, Mark Kitchen, Jill Lang, Gavin Lindsay, Alan Orange, Gary Powell, Sheila Quin - and to all the landowners and managers for granting access.



Plate 1. Keeled Skimmer (*Orthetrum coerulescens*) male at Woorgreens, July 2013 (photo: Ingrid Twissell)



Plate 2. Vagrant Emperor (*Hemianax ephippiger*) in VC 34 (photo: Rob Laughton)



Plate 3. Click Beetle (*Ctenicera cuprea*) female at Staunton Meend, 29th June 2013 (photo: David Iliff)



Plate 4. Conopid Fly (*Myopa pellucida*) at Woodmancote, Cheltenham, 6th May 2013 (photo: David Iliff)



Plate 5. Hoverfly (*Didea intermedia*) male, near Mallard's Pike, 26th August 2014 (photo: Maris Midgley)



Plate 6. Hoverfly *Myolepta potens*) female, Pope's Hill, 23rd August 2014 (photo: John Phillips)

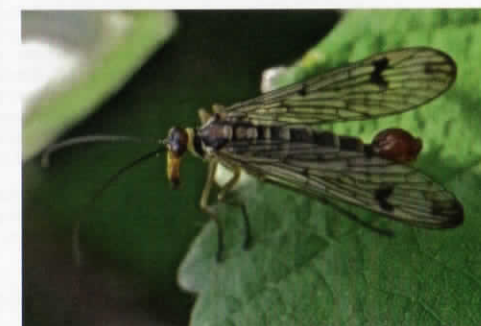
The Gloucester Mecopteran

incorporating the *Germanica Zeitung*, *Cognata Courier* and *Communis Worker*

Vol 1, No 1: October 2013

Not so scarce?

A second site for *P. cognata*



A male scarce scorpionfly at the Cleeve Hill site

Editorial:

It is a sad reflection on our times that neither the Citizen nor the Echo carries a column dedicated to the fascinating winged scorpionflies that populate the meadows, woodlands and hillsides of our local countryside. National publications such as Dragonfly News and the Hoverfly Newsletter cover some of our more extensive hexapod groups but, as is all too often the case with minority populations, the scorpionflies suffer unjust neglect, and are totally ignored, by both the communications industry and the entomological establishment.

The Gloucester Mecopteran intends to rectify this position, albeit on a modest scale and with a limited, regional focus.

All three of the winged scorpionfly species recorded in the British Isles (*Panorpa cognata*, *P. communis* and *P. germanica*) are found within the county boundaries of Gloucestershire and they surely deserve at least as much deference and recognition as other, less ancient, lineages such as those to be found inhabiting Badminton House, Cirencester and Gatcombe Parks and Frampton Court.

So, welcome to this glossy new venture which may, who knows, even stretch to a second issue in due course.

* * *

The September 2012 edition of GNS News included an item on the discovery of *Panorpa cognata* (the scarce scorpionfly) in Butterfly Conservation's Masts Reserve on Cleeve Hill. This seems to have been the first county record of our most elusive winged scorpionfly.

By chance, Martin Matthews saw a male of this species on 21 June 2013 while he was on a Cotswold walk with friends. There are now, therefore, two known sites for the scarce scorpionfly in Gloucestershire. It is presumably a coincidence that the second site at Rough Bank is, like the first, a Butterfly Conservation reserve. Perhaps it is more relevant that in both cases the insects were found on sunny limestone grassland slopes, and in the vicinity of bramble patches.

On 4 July 2013 scarce scorpionflies were seen again on the Masts Reserve, around the same bramble patch that yielded the first record in 2012.

There are probably more sites for the scarce scorpionfly awaiting discovery in the county, along the Cotswold scarp and perhaps elsewhere. Seeking them out could provide a good excuse for a few midsummer rambles.

Identifying your scorpionfly

Check out those calipers



Panorpa germanica, caliper shape - ii *Panorpa cognata*, caliper shape - V *Panorpa communis*, caliper shape - ()

The experts insist that scorpionflies should only be identified by examination of the calipers on the male genital capsule (that's the red scorpion-like tail end of the abdomen) or by dissection of the female genitalia. In the field, and perhaps at home too, identification of males is likely to be your preferred option.

The calipers are on the underside of the genital capsule but they are visible from above when a male is curling his tail up over the rest of his abdomen. A x10 hand lens helps to check out this feature. Males of the three species are illustrated above.

In *P. germanica* the calipers look like a pair of parallel clubs, broadening slightly at their ends. These can usually be seen fairly easily, making *P. germanica* the most readily identifiable species. In *P. cognata* the calipers are straight and form a V-shape; in *P. communis* they are slightly curved, turning in towards each other at their ends like a pair of typists' brackets.

A captive scorpionfly will continually wave his tail as a distraction and defence, so examining the calipers may require patience and persistence.

Where are Gloucestershire's scorpionflies?

Scorpionflies forage in tangled vegetation, such as bramble patches, nettle beds, long grass and dense herbage. As the three species share this broad habitat preference, they may all occur at the same site, but it is possible that they occupy different ecological niches. There is some evidence, from limited observations, that within the county each species is most likely to be found in a particular type of countryside. Adults are usually seen from May to July. Late sightings in the autumn will almost certainly be of *P. germanica*.

The **common scorpionfly** (*P. communis*) is, perhaps, the species most likely to be encountered at damper lowland sites where lush grass is growing close to neglected hedgerows. Among the places where the common scorpionfly has been recorded are Severn valley flood meadows, the banks of the Wye and a Forest of Dean bog. However, it can also be found at drier grassland sites in the Cotswolds and, occasionally, in woodlands.

The **saxon scorpionfly** (*P. germanica*) is found at some of the same lowland sites as the common scorpionfly but, more typically, it appears to be the most common species at Cotswold grassland sites. It has also been found under woodland tree cover, unprotected by long grass or hedgerow shrubbery.



Panorpa cognata female - Cleeve Hill

Both known sites for the **scarce scorpionfly** (*P. cognata*) are rough grasslands on the Cotswold scarp.

The Gloucester Mecopteran

Incorporating the *Germanica Zeitung*, *Cognata Courier* and *Communis Worker*

Vol 1, No 2 : March 2014

Editorial:

Spring is in the air, and it is time for *The Gloucester Mecopteran* to come out of hibernation and refresh readers' interest in the county's common, saxon and scarce scorpionflies.

The first edition was greeted with unexpected rapture and attracted attention from as far afield as Gwent and Worcestershire. It also stimulated some helpful correspondence, which included details of a third county record for the scarce scorpionfly (see page 2). Encouraged by this reception, the editor is already planning a third, perhaps even a fourth, edition...

* * *

Two picture stories in this issue draw attention to the intimate relationship between our favourite insects and the fierce, predatory spiders who share their space in the green, labyrinthine undergrowth. Do wings have the advantage over sticky silk and extra legs in their covert evolutionary arms race?

A late record

An item in our previous issue headed 'Where are Gloucestershire's scorpionflies?' foolishly stated that: 'Late sightings in the autumn will almost certainly be of *P. germanica*'.

However, on 28 September 2013 Martin Matthews took a male *P. communis* in grassland on the northern side of Bredon Hill, just across the vice-county boundary in Worcestershire.

Such a late date implies that a partial second generation of the common scorpionfly may have occurred as a result of last year's exceptional summer.

Confrontation: Drama in Welshbury Wood



Scorpionfly and spider in a tense stand-off

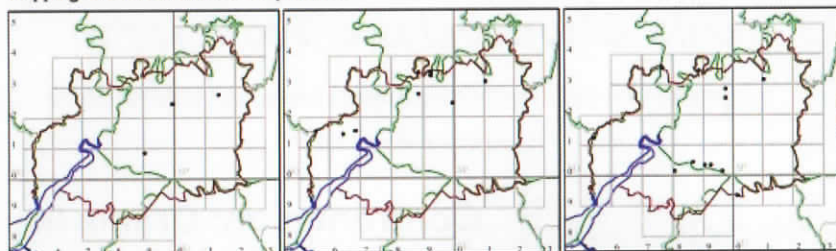
A harmless mecopterist wandering through Welshbury Wood one day in June 2013 witnessed this confrontation between a male common scorpionfly (*P. communis*) and a spider (believed to be a female *Pisaura mirabilis*). Both of the participants were on a large leaf (*dock?* - Ed.) among ground vegetation in the main track through the wood.

The scorpionfly was continually rotating its whole body with sudden, jerky movements, as if it was performing a dance in front of the spider. After remaining relatively motionless for a while, the spider was provoked into making a run at the scorpionfly, which instantly took off and flew away.

We can only guess at what was going on in the tiny minds of the two antagonists. As the scorpionfly could have taken to the air at any time, its behaviour appears to have been deliberate. Perhaps the scorpionfly was hoping to distract the spider into dropping her egg sac. It seems unlikely that the scorpionfly would have seen the spider herself as a potential lunch, but her eggs might have made a satisfying and nutritious meal.

The jerking dance of the scorpionfly may have triggered a very specific instinctive response in the spider, possibly a territorial reaction to an intruder rather than a lunge at a potential prey item. Perhaps the arachnological community could clarify what was happening that day in Welshbury Wood.

Mapping Gloucestershire's scorpionflies



Panorpa cognata (3)

Panorpa communis (9)

Panorpa germanica (12)

The maps above display recent records of identified adult males of our three winged scorpionflies. They were compiled by *The Gloucester Macropod* at the start of 2014. The number of 1Km grid squares in which each species has been recorded is shown in brackets.

Don't be confused by the squiggly lines: the green ones mark vice-county boundaries, the brown one outlines the administrative county (nb this excludes South Gloucestershire), and the blue ones pick out the River Severn and the Bristol Avon.

In their current state, these maps should be seen as palimpsests (*nice one!* - Ed.) awaiting metamorphosis into matured, authoritative versions as the decades roll on by.

The scarce scorpionfly - a third site

On 25 July 2013 David Scott-Langley was cutting a beech hedge in an isolated rural garden near Condicote when he noticed a scorpionfly crawling around on the cuttings. It was easily caught as one wing had been damaged by the hedgecutter. David noticed the sparseness of the insect's wing markings and later, at home, confirmed that it was a male *P. cognata*, our third county record for the scarce scorpionfly.

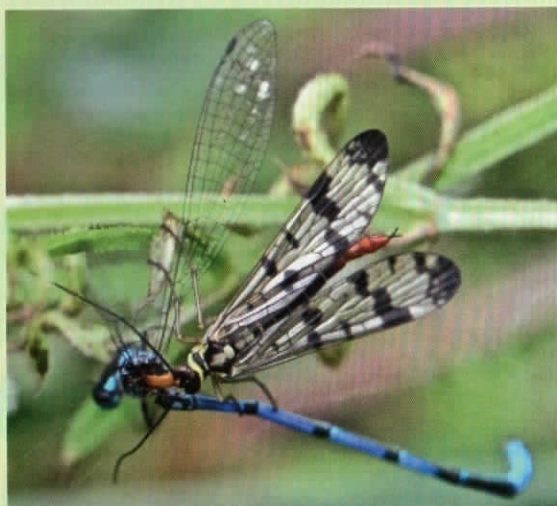
It's not clear where David's specimen might have come from before its unfortunate accident, as the garden is surrounded by arable fields and livestock grazing land, which are not typical habitats for scorpionflies.

A matter of life and death

It looks as if this azure damselfly (*Coenagrion puella*) got caught on a strand of spider silk while flying through some tangled herbage. A foraging female panorpid (almost certainly a common scorpionfly) has taken advantage of the damselfly's misfortune to make a meal of it.

It seems unlikely that the damselfly could have broken off its own abdomen while struggling to escape. It was probably bitten off by the scorpionfly in its attempts to feed on the meaty interior of the victim's thorax.

This miniature scene of an opportunistic scavenger in action was photographed in a neglected meadow beside the River Severn near Tewkesbury.



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CARDINALS AND WOOLLY BEARS - GLOUCESTERSHIRE'S OTHER OLD GROWTH TREE HABITATS

Keith Alexander

Introduction

In previous articles I have emphasised the landscape-scale presence of ancient and veteran trees across the county – the Cotswold ash pollards (Alexander, 2010) and the traditional orchards (Alexander, 2011). Interestingly this aspect of the county – a landscape well-endowed with trees – was acknowledged as long ago as the Tudor period when Christopher Saxton was producing his county maps (Saxton, 1577). He shows the west of the county especially rich in trees, from the river Wye virtually as far as Tewkesbury, covering the area of the Forest of Dean as well as what is now the richest orchard country. East of the Severn it is the Cotswolds which are shown as having plenty of tree cover, albeit sparser and patchier than that shown for the west side – consistent with the ash pollard landscape. This historical continuity of areas full of trees is a key factor in conserving our richest tree biodiversity.

Individual sites of importance

Gloucestershire also has a number of major individual 'old growth' tree sites, each worthy of SSSI status in their own right – both for their concentrations of ancient and veteran trees, and for the wildlife that depends on the habitats provided by such trees. The sites include typical survivals of ancient deer parks (at Berkeley, Brockworth, Lydney, Pinbury and Rendcomb Parks), former royal hunting chases (Forest of Dean and Cirencester Park Woods), ancient wooded commons (Chedworth Woods and Sherborne Common & Old Park), as well as more conventional ancient wood pastures (at Crickley Hill, Forthampton, and Queenswood Farm, Southam). Some of these feature on Saxton's map too, although they have generally gone through changes in land use patterns over the past millennium and so some may seem oddly categorised but this will be explained later. These changes may also have led to dramatic changes in the composition of the associated wildlife, and this article also aims to explain these changes to some extent.

Ancient deer parks

The county is fortunate in retaining two working historic deer parks – Berkeley and Lydney – while Rendcomb Park is now used solely for commercial livestock grazing and Pinbury is partially converted to woodland. Brockworth has fared the worst and may no longer exist – it was planned for housing development and may now have been lost. All five have important concentrations of ancient trees, especially oak.

Berkeley Deer Park is a modern name for Whitcliff Park which was enclosed in 1243 (Cantor, 1983). The enclosed park contains about 100 veteran oaks including four ancient pollards; there are also three old ash pollards, a large number of hawthorns, many horse chestnuts and some ornamental conifers. Although ancient trees are now rare, the oaks do support a small population of the nationally rare black woolly bear cobweb beetle *Trinodes hirtus*. Although poorly recorded, other species known include the British Red Data Book (BRDB) (Vulnerable) darkling beetle *Prionychus melanarius* (found in one of the horse chestnuts) as well as the nationally scarce black-tipped cardinal click beetle *Ampedus elongatulus*.

The history of **Brockworth Park** goes back at least as far as 1243 (Cantor, 1983). When visited in 2001, only a few ancient oaks survived within arable farmland, although part of the ancient park pale was still very evident as a substantial ditch and bank. The neighbouring farmland to the south and east also contained some excellent ancient oak trees and so the site was diminished but not isolated. One of the species noted on this visit was Oak Polypore *Piptoporus quercinus*, a bracket fungus species supposedly with full legal protection under the Wildlife & Countryside Act 1981, but no effective protection of course from housing development. A contract beetle survey had previously revealed that the small group of ancient parkland oaks were supporting an exceptional fauna (see Whitehead, 2005). The species list was fairly short but was dominated by two British Red Data Book species: the Cardinal Click Beetle *Ampedus cardinalis* and the small dark *Scaptia fuscula*, both at the time not previously known from the county - and completely unexpected, especially the latter as it had only previously been known from Windsor Great Park and a few other areas in the far south-east of England. The cardinal click has subsequently been found at Forthampton Oaks (see below).

Lydney Deer Park was enclosed from the Forest of Dean relatively recently: the licence to empark is dated about 1620 and, between 1634 and 1656, Sir John Winter enclosed with a stone wall a parcel of land called the Sneed and Kidnells containing by estimate 200 acres, being "his Highness' wast soyl" (Hart, 1995). This effectively protected a large chunk of the Forest's open wood pasture and protected it from subsequent degradation - see below. The limited research into the wood-decay beetle fauna that has been possible so far suggests an impressively rich site. The rare hisster beetle *Aeletes atomarius* was discovered here in a lying rotting ash trunk in 1987 together with an abundant population of the nationally scarce *Prionocyphon serricornis*, an unusual species which has larvae developing in small pools held amongst root buttresses. This remains the only county record for the hisster. Part of the Forest's population of the rare click beetle *Ampedus cinnabarinus* - see later - lives here.

Pinbury Park appears to date back at least as far as the 14th century and has been known as Penneberie (Domesday Book, 1087) and Pendebury, when in the 14th century the Abbess of Caen proved her right to free warren here, i.e. there was an enclosed hunting park already present. The site still has many ancient oak pollards along the western slopes above the river Frome and formerly had a few ancient ash pollards too; the ashes were lost following plantation forestry but the oaks have largely been kept clear. The eastern side of the valley has a more typical parkland structure but lacks much by way of important trees. The site is most notable for the discovery of the BRDB Vulnerable false darkling beetle *Hypulus quercinus* during a Gloucestershire Invertebrate Group (GIG) visit in 1998, the only known county site for this relict old forest species which develops in large volumes of red-rotted timber in ancient trees.

Rendcomb Park had a long aristocratic past before it became the property of Rendcomb College, having been owned variously by the Crown and the earls of Gloucester, amongst others. It was acquired by the College in 1924 and the College has proved an important aspect of its history as it brought in various teachers and pupils who investigated the natural history of the area and found it to be exceptionally rich. It was the activities of Ernest Neal in particular, and pupils such as Ian Menzies, H.K. Airy Shaw and others, who first found nationally scarce wood-decay beetles here such as the click beetle *Calambus bipustulatus*, the checkered beetle *Tillus elongatus* and the red-necked *Ischnomera sanguinicollis* here in the 1940s. Beetle studies resumed in the 1980s and 1990s with a series of visits by GNS and GIG members which added the spider beetle *Ptinus subpilosus* and the small *Euglenes oculatus* to the growing list of scarce old oak beetles known to be present, also adding the bracket fungus beetle *Dorcatoma dresdensis* to the county list, and rediscovering *Calambus* in Conygre Wood to the north. The *Dorcatoma* has subsequently proved to be more widespread once its bracket fungi habitat was targeted.

Royal hunting chases

The royal Forest of Dean is the major site under this heading, although not the only one. **Oakley Wood** on the **Cirencester Park Estate** is one of the largest areas of ancient semi-natural woodland in the county but it was used as a royal hunting chase through the medieval period. King Henry I granted the wood called 'Acley', with the forest and all its lands, retaining only 'my hunting' to the Abbey of Cirencester. After the Dissolution, it passed through various hands until sold to the Bathurst family in 1695. Its relatively recent conversion to productive forestry appears however to have largely eliminated much of the old growth beetle fauna which might otherwise be expected. It is nonetheless remarkably rich in wood-decay beetles, with a particularly diverse fauna of beetles which breed in freshly-dead woody stems and branches - the fauna of heartwood decay is however noticeably absent. Species of particular interest present include the nationally scarce click beetle *Calambus bipustulatus* and the

weevil *Cossonus parallelepipedus* as well as the beech-associated *Cicones variegatus* and *Diplocoelus fagi*. The shadier and permanently damp conditions of the woodland structure make this area suitable for *Stenichnus bicolor*, a western species only known from two other sites in the county. Its early wood pasture history is hinted at by the discovery here of the relatively large and very pretty fungus gnat *Neoempheria lineola* which now forms the logo of the Gloucestershire Invertebrate Group – this old growth beech species is otherwise only known in Britain from a small area of the New Forest.

The **Forest of Dean** is in contrast very disappointing for wood-decay beetles –due to its longer exploitation history and more recent conversion to conifer forestry. This was a royal hunting area from at least Saxon times and designated a royal forest by William the Conqueror; it was gifted to the Nation by King George V. It was not a compartmentalised forest and there were common rights to pasture throughout. It was a source of large oak timber in the medieval period and so clearly held much large oak at that time, but oak plantation forestry began under Crown ownership in the early 19th century and most of the old trees were removed. Subsequently the area has become dominated by commercial plantations of non-native conifers under the Forestry Commission. So, the area has had a long history of large old native trees but one which has been broken. It should be no surprise therefore that the area is nowhere as rich in old growth species as one might otherwise expect.

Old records of, presumably, now long-extinct inhabitants include the feather-winged beetle *Ptinella limbata*, the rove beetle *Quedius scitus*, the tiny *Euplectus tholini* and the large and impressive Tanner Beetle *Prionus coriarius*; the spider beetle *Ptinus subpilosus* was also last reported in the Forest record c1900, but populations have now also been discovered in Rendcomb Park and at Forthampton Oaks. These all testify to a rich oak fauna in the Forest as recently as Victorian times. While most of these are small species, perhaps easily overlooked, the Tanner is a notably large black longhorn beetle which flies at dusk and is attracted to artificial lights, and so certainly not easy to overlook. Speech House Oaks SSSI remains a key area for the old oak fauna, especially the rare old forest red click beetle *Ampedus cinnabarinus* – although one has to be careful as the superficially similar *Ampedus pomorum* also occurs here. In Britain *A. cinnabarinus* is largely confined to the Forest of Dean, the New Forest and Arundel Forest – a characteristic old forest species. The rare false darkling beetle *Phloiortya vaudoueri* also occurs in dead oak stems around Cannop Ponds.

Ancient wooded commons

Wooded commons no longer exist in the county but two former sites continue to make their historic presence felt through the wildlife which has survived the changes. The lands of Guy Beauchamp, Earl of Warwick in the time of Kings Edward I and II included 200 acres of wooded common in the manor of Chedworth (Rudder, 1779).

Chedworth Woods today are relatively rich in wood-decay beetles, much richer than any ancient woodland of equivalent size, e.g. the adjoining ancient semi-natural woodland of Withington Wood. The beetle fauna was first studied in any detail by the late Peter Skidmore who had relatives living close by. He discovered the false click beetle *Epiphanis cornutus* here, new to Britain, in 1964 and 1965 (Skidmore, 1966). The beetle appears to be equally comfortable breeding in conifer logs as in broad-leaves and so is not inconvenienced by coniferisation. Although it has been regarded as an introduced species, from North America, it does appear to have a Holarctic distribution, being clearly native in certain wooded alpine valleys in France. Interestingly H.K. Airy Shaw also found a great rarity here a few decades before in 1944, the dasytid *Aplocnemus nigricornis* (Atty, 1983), and this remains the only county record for this small dark beetle. Knowledge of the beetle fauna has steadily built up since then and we now know these woods to be particularly rich in wood decay beetles. False click beetles are especially diverse, with the nationally scarce *Melasis buprestoides* found here in 1986 and *Microrhagus pygmaeus* in 2002. These woods are also rich in epiphytic lichens.

Sherborne Old Park. The common pastures of the manor of Sherborne clearly contained a large number of infield trees as the manor had no woodlands, and so pasture trees seem to have been the only source of wood products for the village. The manor was owned by Winchcombe Abbey from the Saxon period until the Dissolution, and the Abbot was granted free warren there in 1251 – this may imply the presence of a park or maybe just gave the right to hunt across the well-wooded common fields. The present extent of formal parkland appears to date from the late 16th century when the land was taken out of the common pasture and open fields by William Dutton. The area appears to have been over-looked by GNS recorders until the National Trust acquired the estate. Their first biological survey investigation of the estate discovered the hister beetle *Abraeus granulum* in a huge recently felled oak in an area of enclosed woodland named **Sherborne Common** in 1985; this remains the only county record of this old forest beetle. Subsequent surveys revealed a wider range of wood-decay interest across what is now pasture land with scattered old parkland trees, with the few remaining ancient ash and oak trees supporting special interest. Old oak were found to be rich in those rare species of red-rotten heartwood; the woodworm beetle *Anitya rubens* and the hairy fungus beetle *Mycetophagus piceus* were discovered on parkland at Wadlens Hill in 1992, together with *Lyctus brunneus*. The *Anitya* was the first record from the county at the time but has since proved capable of breeding in old orchard trees; this remains the only modern county record for the *Lyctus*.

Other wood pastures

Crickley Hill Country Park is one of the county's gem sites with ancient wood pasture beeches in the hill fort area and the ancient Short Wood behind. The special

interest of this area's wood-decay beetles was discovered by the late Ian Carter who made some astonishing discoveries from the old beeches in 1985. This remains the only county record for the rot-hole inhabiting feather-winged beetle *Ptenidium gressneri* and one of very few for the sap beetle *Epuraea angustula* which lives in the galleries of the ambrosia beetle *Trypodendron domesticum* in freshly dead tree trunks. KA discovered the nationally scarce *Tetratoma desmaresti* in the Short Wood parkland in 1991, characteristically developing in aerial dead branches on large open-grown parkland oak trees. Crickley Hill is also rich in fungi and is one of few places where the beech bracket fungus *Inonotus cuticularius* is known to be present in the county.

Forthampton Oaks is another exceptional area, this time for its ancient oak trees. Rudder (1779) was a typical improver landlord as shown by his shock: 'The oak flourishes here but the tenants have committed intolerable waste, by polling the trees, that they may afterwards take the top'. In fact, those tenants had preserved the trees by making them that much poorer for timber! Pollarding initially saved the trees but modern industrialised farming is now killing them. Limited survey has found a remarkable assemblage of British Red Data Book and nationally scarce species here. Outstanding are the cobweb beetles which include at least three of the four British species: the black woolly bear *Trinodes hirtus* (the county's only large colony, there being a smaller one in Berkeley Deer Park), the BRDB Endangered *Globicornis nigripes* (the only known site in the county), and the much more widespread ginger woolly bear *Ctesias serra*. The heartwood decay in the old oaks supports one of the county's two known sites for Cardinal Click Beetle *Ampedus cardinalis* – in active red-rot – as well as the darkling beetle *Prionychus melanarius*. The latter fortunately has found the wood mould provided by traditional orchards equally suitable and so the county has Britain's largest populations of this RDB Vulnerable species. Unfortunately, the cardinal click requires large volumes of red-rot and so transfer to orchard trees is not possible; its other site, at Brockworth Park, is presumably now compromised.

Last but by no means least, **Queenswood Farm at Southam** is one of the more recent discoveries in the county rich in wood-decay beetles. Its history is difficult to interpret but it may be coincident with the Bishop of Worcester's deer park at Bishop's Cleeve, dating from at least 1339 (Cantor, 1983) which may be the deer park shown at Southam on Christopher Saxton's map. Shirley (1867) says that the deer park at Southam was long dis-parked at his time, but the area still retains many typical ancient parkland trees. When first investigated in 1997 and 1998 it proved to be remarkably rich in wood-decay beetles. The rare red-winged cardinal click beetle *Ampedus rufipennis* – a BAP Priority Species – was found in veteran ash trees, and aerial dead branches on open-grown oaks produced the false darkling beetle *Abdera quadrifasciata* in 2002, the first time this species had been seen in the county since its

loss from the Forest of Dean. Paul Whitehead has also been recording here and added another old forest red click beetle *Ampedus cinnabarinus* and the extremely rare false click beetle *Eucnemis capucina* to the list in 2000.

Conclusions

This is the third and last article on the county's old growth tree habitats. The Cotswold pollard landscapes and the traditional orchards are the main landscape-scale situations with ancient and veteran trees. The ancient deer parks, former royal hunting chases, ancient wooded commons, as well as more conventional ancient wood pastures, contribute the main patches of ancient and veteran trees outside of these landscapes. Within the overall mosaic however there are also individual ancient and veteran trees, both infield and along field boundaries. Basically the county is an especially rich one for its old tree heritage, and – as a result – an exciting place for any resident naturalist interested in these trees and the special wildlife that they support. We should not be complacent however as there are many threats to this heritage – as Brockworth Park's fate illustrates as well as the inexcusable neglect of the Cotswold pollards and the traditional orchards. Naturalists should not just confine themselves to recording, they need to campaign for conservation too or there will not be much left to inspire future generations.

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HETEROPTERA(BUGS) IN GLOUCESTERSHIRE – 2013

John Widgery

Whilst my recording activities through much of 2013 were somewhat disrupted it turned out to be rather a good year and the fieldwork I was able to carry out produced not only good numbers of the more common bugs, but several scarce species. The good weather no doubt influenced the success of many species which have been scarce in recent years.

There were instances at my residence in Woodmancote (SO9727) during early Autumn when several species were attracted, during hours of darkness, to light from either a moth trap or normal indoor lighting. Included were some of the common shieldbugs but also scarcer species amongst which were numbers of aquatic bugs thus representing just a minute sample of what must be vast numbers of insects dispersing or migrating at night just as birds do.

There are two new species to report, firstly, the nationally rare *Chlamydatus evanescens*, which was quite unexpected and then *Dicyphus pallidus*, which had been anticipated, it being a rapidly increasing recent coloniser in Britain. Both are detailed in the following summary.

The most interesting finds are summarised, with comment as to county status, as follows:-

Aradidae (Flatbugs)

Aradus depressus **Not uncommon but difficult to find**

Whilst sweeping roadside herbage near Slimbridge (SO7204) on 3rd May I was surprised to find this Flatbug in the sweep net. Whilst not an uncommon insect it is not recorded very often, largely because of the difficulty of locating it owing to its life-cycle being almost exclusively under the bark of trees where it feeds on mycelia and fruiting bodies of fungi. It is normally only seen outside of this environment as an adult when dispersing in the spring.

Coreidae (Squashbugs)

Box Bug, *Gonocerus acuteangulatus* Recent coloniser – becoming established

Whilst I was unable to search for this species until October, I then found it on just about all mature Box trees or hedges searched and there were new records from Woolstone (SO9530), Bagendon (SP0006) and Pittville Park, Cheltenham (SO9523). It is obviously well established in the county now which is quite remarkable considering its extreme rarity in the UK until a decade or so ago.

Rhopalidae

Stictopleurus abutilon **Recent coloniser – status to date rare**

First recorded in Gloucestershire in 2006 and then once in 2007 but no records since. Found again after a gap of 6 years near Twynning (SO8936) on 5th October.

Stictopleurus punctatonervosus **Recent coloniser – status to date scarce**

Two records of this warmth-loving species in 2013. Two were swept from trackside herbage near Great Rissington (SP1915) on 6th October and 3 from abandoned arable at Bishop's Cleeve (SO9628) on 10th October.

Berytidae(Stiltbugs)

Beritinus signoreti **Status rare**

This county rarity was found on Cleeve Common (SO9825) on 8th July. It is a species of calcareous grassland and sand dunes and whilst there is plenty of suitable habitat there have been only four previous records for Gloucestershire.

Miridae (Plantbugs)

Chlamydatus evanescens **New to county – status uncertain at present**

This was actually first discovered by Rob Ryan in 2012 and came to light through an article in the British Journal of Entomology and Natural History published in June 2013. He found two in Stonecrop, *Sedum* sp. on the edge of a road next to the disused airfield at Chedworth (SP0313). The species has always been regarded as rare in the UK (RDB 3) but Rob has been finding it in other counties recently including adjacent Oxfordshire and the question has been raised as to whether it has been previously overlooked or is it a species responding to climate change. This tiny bug (c.2.5mm) is found on extensive areas of Stonecrops growing on stone walls, rocks and disused concrete surfaces such as old runways or roads etc., and although suitable surfaces are present in the county they do not usually support a sufficiently large area of *Sedum* to hold the insect. However, this year on 29th September, I did come across a c.4m X 4m patch of this plant growing on a long-abandoned concrete surface at Waterhatch near Winchcombe (SP0325) and on searching a small sample I got a second county record when I found two specimens of the insect. The fact that it had not been found in the county before these records despite the presence of many competent entomologists and now two records occur in consecutive years suggests it is a comparatively new arrival and is in the process of range expansion.

Dicyphus pallidus **New to county- apparently already well established**

New to Britain in 2009 this species has been spreading quickly in southern counties. It has recently been recorded in the adjacent county of Oxfordshire and its early arrival in Gloucestershire was expected. I looked for it in 2012 without success but this year I got the first county record when, on 22nd September, I found it in some

abundance in Bushcombe Wood, near Woodmancote (SO9728). Thereafter, further searches revealed its presence in woods at Waterhatch (SP0325), The Warren, near Winchcombe (SP0526) and near Snowhill (SP0833). It is found on Hedge Woundwort, *Stachys sylvatica*, growing in shaded areas (usually woodland). It would appear that it is already well established here.

Cyrtorrhinus caricis **Status scarce but probably overlooked**

This species is widespread in Britain but for some reason has always been scarce in Gloucestershire and this is borne out by the fact that there have only been three records since 1955. That said, I would guess it is probably overlooked. It was certainly quite unexpected to find at least 10 individuals of this insect in my house at Woodmancote (SO9727) on the evening of 23rd August attracted to an indoor light near an open patio door. It is usually found at the bases of clumps of sedge and rushes which, so far as I am aware, are not present near my abode and the individuals involved were probably in the process of dispersal or migration.

Saldidae (Shorebugs)

Saldula orthochila **Uncommon but probably overlooked**

Whilst not uncommon nationally, this shorebug is not found in the county very often and there had only been five records since 1955, three of these being in a comparatively limited area of the Forest of Dean. Like other shorebug species it tends to partially jump rather than just walk and when, on 29th September, I saw an insect on my concrete patio in Woodmancote (SO9727) performing in this way I immediately suspected this species particularly as it is the only shorebug that occurs away from aquatic habitats. Upon trapping it, closer examination did indeed confirm that it was this species. It is only the fourth record for Gloucestershire.

Corixidae (Waterbugs)

Due to the fact that circumstances meant that I could not do any fieldwork for much of the summer, I decided to try moth trapping in my garden at Woodmancote (SO9727) and so I invested in a moth trap. To my amazement there were several sessions in which I trapped not only moths but a wide range of aquatic bugs in the family *Corixidae*, collectively known as Lesser Water Boatmen. These bugs are usually found in pools, ponds, lakes or rivers and yet there are no such habitats nearby – not even a garden pond in any of the properties in my street. They were obviously attracted to light whilst dispersing or migrating at night. What was particularly surprising were the numbers involved and also the variety of species some of which are rarely seen in Gloucestershire. The first overnight session for my moth trap was on the night of 19th/20th August and this immediately saw a catch of seven. Various

species continued to turn up in the trap fairly regularly up to 5th October and some nights produced high numbers, for instance, 17 involving 4 species on 30th August and 24 involving 3 species on 5th September. The species involved were:-

Callicorixa praeusta (most abundant species)

Hesperocorixa sahlbergi (second most abundant species)

Sigara dorsalis

Sigara limitata (first record since 1938)

Sigara lateralis (only 7 modern records)

Sigara nigrolineata (only 6 modern records)

Because of the limited amount of interest in the aquatic bugs in the past and the consequential paucity of records the true status of these species in the county is unknown.

I would like to thank all those that submitted records, particularly Phil & Chris Andrews, Lin Callard, David Haigh, David Iliff, Maris Midgley and Colin & Ingrid Twissell.

ORTHOPTERA (GRASSHOPPERS & CRICKETS) AND RELATED SPECIES IN GLOUCESTERSHIRE 2013

John Widgery

There is not much to report regarding the more common species but I did find **Lesser Earwig**, *Labia minor*, in a dung heap near Winchcombe (SP0327) on 29th September. This insect is not often seen unless looked for especially in such habitats. I also got a late record of **Speckled Bush-cricket**, *Leptophyes punctatissima*, which was stridulating in my garden until 22nd October.

Of the scarcer species, the **Woodland Grasshopper**, *Omocestus rufipes*, was found by Michael Foley on a visit to Cirencester Park (SO9603) on 8th August. He also recorded **Rufous Grasshopper**, *Gomphorippus rufus*, at Neu Lindsey (SO8401), one of its known sites, on 3rd September.

The only other record of note concerned the occurrence of a probable **Saddle-backed Bush-cricket**, *Eppiphiger eppiphiger*, found by Chris McLaren at his home at Hatherop (SP1505) on 6th September. The description suggested that it was this species but its identity could not be confirmed. This species is not native to Britain but is found on the near continent where it is common. Although a flightless insect, it is a contender for future colonisation by way of accidental introduction through transportation on plants, in luggage or goods. It has spread northwards in this way on the continent in recent years.

It is surprising that I get very few reports (only two since 2007) of our largest native orthopteroid insect, the **Great Green Bush-cricket**, *Tettigonia tettigonia*, and I am wondering, therefore, whether it is declining. An explanation may be that its main known colonies are in a comparatively small area centring around a point just south of Stroud and because it is familiar in that area it is not reported. I have not been able to carry out any searches myself in recent years and any records would be welcome. The best time to locate it is when it is stridulating between about late July and mid-September.

Thanks to all those who submitted records, particularly Michael Foley, James Lees, Chris McLaren and Colin & Ingrid Twissell.

THE TWO-WINGED FLIES (DIPTERA) OF GLOUCESTERSHIRE: PART 1. SOLDIER FLIES TO BEE FLIES ('LARGER' BRACHYCERA)

Keith N.A. Alexander

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It would be difficult to improve on the introduction to these flies provided in Stubbs and Drake's (2001) book and so it seems sensible to repeat it here: The group of flies covered by this review include some of the most exciting and extraordinary insects that one could hope to find in the British fauna. Some species are very attractive, such as soldierflies with poster-paint or metallic colours, and horseflies with beautifully coloured eyes. But it is the complex behaviour of many of these flies that makes them so remarkable. The hunting habits of robberflies, the aerobatic performance of horseflies and the strategies of bee-flies as parasitic insects illustrate some of the contrasts in life-style. The larvae also show an amazing breadth of life-styles from sluggish eaters of detritus to active predators, and occupy habitats ranging from fast streams to arid marram dunes. Their behaviours can be as bizarre as that of the adult flies – what adaptations does it take, for instance, to parasitise a spider or a ferocious-looking sand-wasp?

This review covers a wide variety of mostly large and distinctive two-winged flies which form five superfamilies within the Brachycera, widely known collectively as the 'Larger' Brachycera. The eleven families included are the awl-flies (Xylophagidae), water-snipeflies (Athericidae), snipeflies (Rhagionidae), horseflies and clegs (Tabanidae), wood soldiers (Xylomyiidae), soldier flies (Stratiomyidae), hunchback-flies (Acroceridae), bee-flies (Bombyliidae), stiletto flies (Therevidae), window flies (Scenopinidae) and robberflies (Asilidae). These are all relatively popular with recorders and especially so since the publication of a comprehensive guide to them (Stubbs & Drake, 2001). A total of 103 of the British list of 159 species are on record for the county, although one of these is almost certainly the result of a casual windblown specimen and others require confirmation, so the county list reliably stands at 93 species (58% of the British list). Of these, 11 species have not been recorded in the county since 1950 and may now be locally extinct (12% of the 92).

The key habitats in the county are almost predictable, the same areas of relatively wild country, least damaged by modern intensive land-use, that characterises the

focus of so much nature conservation effort. These are very much features of the long-established traditional cultural landscapes:

- Veteran trees – wood-decay species
 - *Chrysopilus laetus* (Endangered) Highnam Woods
 - *Pandivirilia melaleuca* (Endangered) orchards at Oakle Street, Churcham
 - *Eupachygaster tarsalis* (Nationally Scarce) wood pasture on Dumbleton Hill
 - *Scenopinus niger* (Nationally Scarce) no modern records
- Cotswold springs and streams:
 - Unshaded - *Oxycera analis* (Vulnerable), *Oxycera morrisii*, *O. pyraea* & *Vanoyia tenuicornis* (Nationally Scarce), *Nemotelus nigrinus* & *N. pantherinus* (County Rare)
 - Shaded - *Oxycera terminata* (Vulnerable) Three Groves Wood Reserve
 - Open/shade - *Oxycera pardalina* (Nationally Scarce) widely
- Landscape-scale rough pastures
 - Cotswold grasslands
 - Sheltered wood edge mosaics *Villa cingulata* (Endangered)
 - Rough & scrubby *Ogcodes pallipes* (Nationally Scarce)
 - Early successional *Thereva plebeja* (Nationally Scarce)
 - Heathy pastures of the Forest of Dean
 - *Paracrocera orbiculus* & *Machimus cingulatus* (County Rare), *Tabanus sudeticus* (County Scarce)
- Severn Vale
 - Saltmarsh & brackish marsh: *Haematopota bigoti* & *H. grandis* (RDB3), *Stratiomys singularior* (Nationally Scarce), *Nemotelus notatus* & *N. uliginosus* (County Rare)
 - Fens and wet pastures/meadows *Odontomyia ornata* (Vulnerable) & *O. tigrina* (Nationally Scarce)
- Wye Gorge
 - Rivers with macrophyte vegetation: *Atrichops crassipes* (RDB Rare)

This may imply that these species depend on old-fashioned and uneconomic land-use but in reality they are best actively conserved through a return to sustainable land management systems, moving forwards with the natural productivity of the land rather than relying on damaging intensive and industrial land-use systems for short-term profit which merely store up serious problems for the future. While Society remains trapped in an unsustainable economic system it should come as no surprise to

find that a high proportion of these species are rare and threatened, both nationally and locally.

SOURCES OF RECORDS

The starting point for the compilation of this county list has been Audcent's *Bristol Insect Fauna - Diptera* which was published in 1949 and 1950. That list incorporated Charbonnier's 1912 Bristol list and included the whole of Gloucestershire within its scope. Nonetheless, recording activity had been centred on the Bristol area, where a number of active dipterists were living at the time. Recording in the county is now much more evenly spread, with recorders living both sides of the River Severn and with more visiting by dipterists living outside of the county.

AREA OF STUDY

The present list aims to cover both East and West Gloucester Vice-counties, rather than the present administrative county. This decision is based on the stability of the vice county system in contrast with the vagaries of political boundaries. The area of Monmouth Community – the Welsh equivalent to Civil Parish – which lies on the east bank of the River Wye is also included to provide a complete record of the fauna of the eastern half of the Wye Gorge, although strictly this does lie in Vice-county 35 (Monmouthshire).

NOMENCLATURE

Species names and taxonomic order largely follow Chandler's (1998) monumental checklist, with a few adjustments to keep this as up-to-date as possible. Common names are from Stubbs & Falk (2001).

STATUS

Where a species has been accorded "Nationally Scarce" or "British Red Data Book" status in Falk (1991) this is shown immediately following the species name. Those statuses are however very out of date and in need of reappraisal in the light of improved knowledge; some may no longer have any real validity. An updated review is known to exist in draft form awaiting approval by the Joint Nature Conservation Committee but the timescale for publication appears protracted.

County status follows the following guidelines:

- County Rarity – 3 or fewer sites known in the county since 1950.
- County Scarce – 10 or fewer sites known in county; or an obvious decline since 1950.

Some flexibility has been applied to the last two categories to allow for relative under-recording, where this is strongly suspected.

ABBREVIATIONS USED FOR MAIN RECORDERS

Except where stated in full, recorder's names are abbreviated as follows:

AES - Alan Stubbs	JWS - J.W.Saunt
APF - Andy Foster	KNAA - Keith Alexander
AT - Tony Taylor	MAH - Mike Howe
BNB - B.N. Blood	MGM - Martin Matthews
CJW - C.J. Watkins	MMY - Maris Midgley
CMD - Martin Drake	MNS - Matt Smith
CT - Colin Twissell	MRO - Matthew Oates
DI - David Iliff	NJP - John Phillips
DJG - Dave Gibbs	PFW - Paul Whitehead
DKC - Dave Clements	PJC - Peter Chandler
DSL - David Scott-Langley	PK - Pete Kirby
EAF - E.A. Fonseca	RH - Rob Homan
EEL - E.E.Lowe	RHP - Ray Poulding
HA - Henri Audcent	TBF - T. Bainbrigge Fletcher
HJC - H.J. Charbonnier	VEP - Viv Phillips
ISM - Ian Menzies	VRP - V.R.Perkins
IT - Ingrid Twissell	
JH - John Harper	
JHB - John Bratton	

CATALOGUE OF GLOUCESTERSHIRE FLIES - PART 1

ORDER DIPTERA

Suborder BRACHYCERA Short-horns

Superfamily XYLOPHAGOIDEA

Family XYLOPHAGIDAE Awl-flies

There are 3 species on the British List (Chandler 1998); just one is known in the county.

Xylophagus ater Meigen - The Awl-fly. Larvae develop beneath bark attached to freshly dead trunks and branches in ancient woodland and wood pasture situations; they feed on the larvae of other insects, especially longhorn beetles. Adults are short-lived and rarely seen. Widespread in the Forest of Dean and localised on the

Cotswolds - on the very south-eastern edge of its British range here. This species has been targeted by the author and is relatively well-recorded as a result.

SO50 Highbury Wood NNR, 17.ix.1989; Bearse Farm, 26.iv.1992; Coed Ithel Weir, larva willow, 31.iii.1995, KNAA.

SO51 Lady Park Wood, 7.x.1984, KNAA.

SO60 Nagshead SSSI, Dean, 25.ix.1983; Lydney Park, 17.vi.1990; Churchhill Oaks & Russells Bank, 17.ii.1991; Blackpool Bridge, 14.iii.1991; Nagshead Plantation, 14.ix.1991; The Tufts, 26.iv.1992; all KNAA.

SO61 Cannop Marsh, 15.vii.1989; Cannop Brook, 28.iv.1990; Speech House Oaks SSSI, 18.iii.1990, 1.xii.1992; Cannop Valley FNR, 28.iv.1990; Chestnuts Hill, 14.iii.1991; Ruddell Marsh, 1.xii.1992, 3.ix.1993, all KNAA.

SO72 Collin Park Wood, 29.iii.1984; Newent Lake, in alder log along stream, 21.iv.2001, KNAA.

SO81 Workman's Wood, ix.1985, DKC.

SO90 Oakley Wood, 1985, 1989, Hailey Wood, 1986, Pinbury Park, 27.iv.1986, 7.v.1989, Sapperton Common, 3.xii.1989; Siccaridge Wood, larva in ash, 11.vi.2003, KNAA.

SO91 Colesbourne Park, 27.x.1985; Chescombe/Pinswell, 7.ii.1999; Lineover Wood, 3.iii.1987, 14.xi.1987, KNAA. Pinchley Wood, 21.v.1989, DKC. Dowdeswell Wood, larva, 2.x.1994, KNAA.

SO92 Dowdeswell Wood, larva, 2.x.1994, adult, 29.v.1995, KNAA.

SP01 Cleevely Wood, Shipton, 13.x.1985; Chedworth Woods, 1986, 1989, 1990, KNAA.

SP03 Dumbleton Hill, larva in oak branch, 28.ii.2002, PFW.

ST57 Blaise Castle Woods, larva, 2.xi.1998, KNAA (Alexander, 2002).

ST59 Ashwell Grove, 25.vii.1972, PJC. Ban-y-Gor-Wood, 12.vii.1997, KNAA.

Superfamily TABANOIDEA

Family ATHERICIDAE

There are 3 species on the British List (Chandler 1998); one, probably two, is known in the county.

Atherix ibis (Fabricius) - Yellow-legged Water-Snipefly. **County Scarce.** The distinctive larvae develop in sandy sections of fast-flowing streams and rivers. When fully grown they leave the water and burrow into light gravelly soil under moss on the river bank where they pupate. Female flies are well-known for their curious oviposition habits, gathering in clusters on twigs and branches overhanging the water and remaining there until they die in a mass of flies and eggs. The eggs ultimately hatch and the young larvae fall into the water. Long known from the Wye, it has only relatively recently been found to be widespread on the Cotswold dip-slope rivers.

- SO51 Slaughter, Curtis (Audcent, 1950); Wye banks, 23-29.v.1982, BENHS field meeting.
- SO83 River Severn, at The Mythe, 29.v.2004, MGM.
- SP01 River Coln, at Chedworth Woods and Yanworth, iv.1978 (Mackey et al 1982).
- SP10 River Coln, Fairford-Quenington, iv.1978 (Mackey et al 1982).
- SP11 River Windrush, Sherborne, one dead, 28.v.1985, KNAA.
- SU29 River Coln, Roundhouse, Lechlade, iv.1978 (Mackey et al 1982).

Atrichops crassipes (Meigen) – **RDB (Rare)**. Although not officially on the county list, this species is included as it is known to occur along the Monmouthshire side of the Wye Gorge and presumably also occurs on the Gloucestershire side. Falk (1992) notes 'it has been taken in a deep fast-flowing river just above the tidal limits (River Wye at Redbrook, Monmouthshire).' Redbrook is of course on the east bank of the Wye in Gloucestershire and it is not obvious that the record relates to the west bank opposite. Stubbs & Drake (2001) indicate that this record comes from the 1980s. Most records are from meandering middle sections of rivers with moderate flow pattern; the larvae are aquatic, developing amongst abundant macrophyte vegetation. The species has two centres in Britain: Monmouthshire (Redbrook and Skenfrith) and SE England (Rivers Rother and Test).

Family RHAGIONIDAE Snipe flies

There are 15 species on the British List (Chandler 1998); nine are known in the county.

Chrysopilus asiliformis (Preyssler) syn. *aureus* (Meigen) – Little Snipefly. A frequent species, found in woodlands and in tall damp vegetation in the open. Regarded as fairly common in the county by Audcent (1950) and still so.

- SO50 Bigsweir Woods & Highbury Fields, 2000, PK.
- SO51 Lady Park Wood, 1985, DJG. Symonds Yat, by River Wye, 10.vi.1997, L.W. Hardwick & R. Underwood (Howe 1998).
- SO61 Stenders Quarry, numerous, 2003, KNAA.
- SO72 Glasshouse Orchard, Taynton, 4.vii.2001, KNAA.
- SO90 Sapperton Wood, 17.vii.2002, KNAA.
- SO91 Bubb's Hill, 20.vii.1991, KNAA.
- SP03 Thrift Wood, 22.vi.1997, KNAA.
- SP12 Hyde Mill Meadow, 22.vi.1997; Stow Bridge Coppice, 17.vii.1999, KNAA.
- SP13 Dovedale, Bourton Woods, 31.v.1993, KNAA.
- ST57 Coombe Dingle, 30.vi.1998, KNAA.
- ST59 Lancaut NR, 16.vii.1989, KNAA.
- ST77 Monk Woods, 20.vii.2000, DJG.
- ST89 Highgrove House, 17.vii.1996, 2.vii.1997, KNAA.

Chrysopilus cristatus (Fabricius) – Black Snipefly. Found in many open damp habitats, especially in rush-pastures, marsh and fen. Regarded as common in the county by Audcent (1950) and still reasonably so.

- SO50 Slade Bottom, 10.14.vi.1997, S. Ball, K. & R. Merrifield & AES (Howe 1998).
- SO51 Mailsot Wood, 10.vi.1997, L.W. Hardwick & R. Underwood (Howe 1998).
- SO60 Lydney Park, 17.vi.1990; Moseley Green, 18.vii.1998, KNAA. Blakeney Straits, Lydney & Mallard's Pike, vi.2010; many sites, 2011, MMy.
- SO61 Foxes Bridge, 17.vi.1990; Chestnuts Hill, 16.vii.1994, KNAA. Cannop Ponds, 7.10.vi.1997, M.Ackland, L.W. Hardwick & R. Underwood (Howe 1998). Speech House Pond, 10.vi.2005 & 11.vi.2007; Little Staple Edge Wood, 12.vii.2008, MGM. Cannop, 22.vi.2010; many sites, 2011, MMy.
- SO62 May Hill, 15.vi.1998, KNAA.
- SO71 Highnam Wood, 6.vi.2007, MGM.
- SO72 Bulley Woods, 2.vii.1997, KNAA. Oxenhall, 9.vi.2007 & 4.vii.2008, MGM.
- SO80 Stroudwater Canal, Ebley, 19.vi.2000, APF. Stratford Park, Stroud, 21.vi.2005, MGM.
- SO90 Westley Wood, 7.viii.1994; Francombe Wood, 21.vi.1998, KNAA.
- SO91 Bubb's Hill, 20.vii.1991; Cockleford Marsh, 14.vii.1996; Bushley Muzzard SSSI, Brimpsfield, 9.viii.1998, KNAA. Workman's Wood, 10.vi.1998, AES.
- SP00 Perrotts Brook Marsh, 20.vii.1991, KNAA.
- SP01 Clifffordine Wood, 12.vi.1988; Colesbourne Park, 14.vii.1996; Hedgley Bottom, 17.vii.1999, KNAA.
- SP03 Thrift Wood, marshy pasture on lower edge, 22.vi.1997, KNAA.
- SP10 Rack Isle, Bibury, 1.vii.2001, KNAA; photographed here 2003, M. Jones.
- SP12 Temple Ham, 16.vi.1991; Salmonsbury Meadows, 17.vi.2000, KNAA.
- SP13 Batsford, 16.vi.2007, MGM.
- ST57 Lawrence Weston Moor, 1999, DJG.
- ST67 Coombe Brook, 27.vi.2001, DJG.
- ST78 Lower Woods, 10.viii.1997, MAH.
- ST89 Cherington, 27.v.2008, MGM.
- ST99 Aston Farm, Cherington, 16.vii.2000, KNAA.

Chrysopilus laetus Zett. – Tree Snipefly. **RDB (Endangered)**. Larvae develop in moist wood mould in decaying stumps, rot holes and aerial dead boughs, nearly always in beech. It appears to be a relict old forest species and is most widespread in Windsor Forest; also known from Wimpole Park (Cambs), Burnham Beeches (Bucks), Cobham Woods (Kent), etc. Its recent discovery in the county is

remarkable and may suggest that other populations may be present in the more extensive old beech stands of the Wye Gorge and Cotswold Escarpment.

SO72 Highnam Wood, 24.vii.2008, DJG (2009).

Rhagio annulatus (De Geer) – Wood Snipefly. **RDB (Rare)**. Associated with the edges of broad-leaved woodland on well-drained soils, especially on chalk and limestone; adults associated with dappled shade. Only one old record locally but possibly overlooked.

SP00 Cirencester, 4.vii.1923 (Audcent, 1930; Falk, 1991)

Rhagio lineola Fabricius – Small Fleck-winged Snipefly. Very widespread, on tree foliage.

SO50 Woolaston Lime Coppice, 26.vi.1999, KNAA. Cadora & Bigsweir Woods, 2000, PK.

SO60 Fairmoor Green, Cannop, 18.vii.1998, KNAA.

SO61 Speech House Oaks, 10.viii.2002, KNAA. Flaxley Woods, 20.vii.2006, NJP. Astonbridgehill Incl., 8.vii.2007, NJP.

SO62 May Hill, 2.vii.2009, NJP.

SO71 Broadway Farm, 2003, KNAA.

SO80 Stroud, Watkins; Painswick, JWS (Audcent, 1950).

SO90 Famish Hill, 17.vii.1994, KNAA.

SP02 Guiting Wood, 19.vii.1992, KNAA.

SP12 Salmonsbury Meadows, 17.vi.2000, KNAA.

ST59 Poor's Allotment, 25.vi.1972, PJC. Ban-y-Gor-Wood, 12.vii.1997, KNAA.

ST79 Wotton-under-Edge, VRP (Audcent, 1950). Coombe Hill, 27.vi.1998, MAH.

Rhagio notatus (Meigen) – Large Fleck-winged Snipefly. **County Rare**. A local species, mostly at exposed riverine sediments in sheltered, generally wooded landscapes; commoner in the north and west. Only one old record locally but possibly overlooked.

SO80 Sheepscombe, 29.vi.1924, JWS (Audcent, 1950).

Rhagio scolopaceus (Linnaeus) – Downlooker Snipefly. Very widespread, in a wide variety of habitats. Has long been common in the county (Audcent, 1950).

SO61 Flaxley Flushes; Pope's Hill; Welshbury, all 2006, NJP.

SO70 Frampton on Severn, 20.v.2007, 18.v.2008, 15.v.2010, MGM.

SO71 Broadway Farm, 2003, KNAA. Ley Park Wood, 26.v.2006, NJP.

SO80 Rabbit Warren Wood, Selsley, 25.v.1998, KNAA. Stroudwater Canal, Ebley, 19.vi.2000, APF.

SO83 Chaceley Meadow, 15.v.1993, KNAA. Brockeridge Common, 5.vi.2006, NJP.

SO90 Misarden Park, 1998, KNAA.

SO91 Pinswell, Mercombe Wood, 15.vi.1985, KNAA.

SP03 Warren Park Farm, Toddington, 19.v.2002, KNAA.

SP11 Sherborne Estate, 29.v.1985, KNAA.

SP12 Salmonsbury Meadows, 17.vi.2000, KNAA.

ST57 Lawrence Weston Moor, 20.v. & 18.vi.1999, DJG.

ST58 ICI Severnside Estate, Severn Beach, 1997, MNS.

ST59 Littleton Brick Pit, 22.v.2000, DJG

ST67 Emerson's Green, 12.v.2001, DJG.

ST77 Doddington Park, 30.v.1982, RHP.

ST78 Lower Woods, 31.v.1997, MGM.

ST79 Alderley Wood, 1998, AT.

ST89 Cherington, 27.v.2008, MGM.

Rhagio tringarius (Linnaeus) – Marsh Snipefly. Widespread, in a variety of habitats. Has long been common in the county (Audcent, 1950).

SO50 Cadora Wood, 2000, PK. Townsend Farm, Brockweir, 6.vi.2006; Bigsweir House, wooded riverside, 20.vi.2006, KNAA.

SO51 Symonds Yat, by River Wye, 10.vi.1997, L.W. Hardwick & R. Underwood (Howe 1998).

SO60 Clarkes Pool Meadow Reserve, 25.v.2007, NJP.

SO61 Stenders Quarry, 2003, KNAA. Welshbury Wood, 4.vi.2005 & Pope's Hill, 5.vi.2005; Blaisdon Wood, 6.vi.2006; Flaxley Flushes, 11.vi.2006; Blaize Bailey, 8.vi.2007, NJP.

SO71 Ley Park Wood, 19.vii.2006, 4.vi.2007, NJP.

SO72 Glasshouse Orchard, Taynton, 4.vii.2001, KNAA. Oxenhall, 4.vii.2008, MGM.

SO80 Rabbit Warren Wood, Selsley, viii.1996, KNAA.

SO83 The Mythe, numerous, 2005, 2007, 2008, MGM.

SO90 Famish Hill, 17.vii.1994, KNAA.

SO91 Crickley Hill, 14.vii.2007, MGM.

SP00 Perrotts Brook Marsh, 20.vii.1991, KNAA.

SP12 Hyde Mill Meadow, 22.vi.1997; Stow Bridge Coppice, 17.vii.1999; Salmonsbury Meadows, 17.vi.2000, KNAA.

SP13 Cutsdean Quarry, 24.vi.2006; Batsford, 16.vi.2007, MGM.

ST58 Green Lane, Severn Beach, 1996/97, MNS.

ST89 Highgrove House, 2.vii.1997, KNAA.

Ptiolina obscura (Fallén) – Black-fringed Moss-snipefly. **Nationally Scarce**. Adults associated with wooded streamsides and fens; the larvae develop in thin moss on tree trunks. Only recently discovered in the county, but potentially widespread.

SO50 Slade Bottom, 10 & 14.vi.1997, S. Ball, K. & R. Merrifield & AES (Howe 1998).

Family TABANIDAE Horse flies, Gad flies, Stouts & Clegs

There are 30 species on the British List (Chandler 1998); 17 reported from the county, although three of these unconfirmed.

Chrysops caecutiens (Linnaeus) – Splayed Deerfly. Widespread in wet woodland, carr and fen. Common (Audcent, 1950); much more localised now, probably due to so much drainage of wetlands and agricultural improvement generally.

- SO50 Highbury Fields, 2000, PK.
 SO51 Lady Park Wood, 1985, DJG.
 SO61 Cannop Marsh, 25.vii.1998, KNAA. Pope's Hill, male, 15.vii.2006 & females seen more widely; 28.vi.2010, NJP.
 SO70 Awre, 21.vii.2008; Whitminster, 16.vi.2010, NJP.
 SO72 Collin Park Wood, 4.vii.2008, MGM. Hartpury, 31.v.2010, CT.
 SO90 Siccaridge Wood, males numerous on dogwood along central ride, 11.vi.2003, KNAA.
 SO91 Climperwell Valley, 14.vi.2003, CT. New Seal Wood, male, black form, 22.vii.2003, DI.
 SP00 Baunton, 5.vii.1998, KNAA.
 SP01 Chedworth, female dead in swimming pool, 5.vii.2001, DSL.
 SP10 Rack Isle, Bibury, presumably this species, 1.vii.2001, KNAA.
 SP11 Newbridge Meadow, 16.vi.1991, KNAA.
 ST57 Avonmouth Sewage Farm, 29.v.2001, DJG.
 ST58 Red Rhyne, 5.vii.1996; Green Lane, Severn Beach, 2.vi.1997, MNS.
 SU19 Whelford Pools, 10.vii.2008, CT.

Chrysops relictus Meigen – Twin-lobed Deerfly. **County Rare**. Fens, bogs and riverside pastures. Widespread nationally. Probably concentrated locally in the lower Severn Vale area.

- SO80 Painswick, CJW (Audcent, 1950).
 ST59 Littleton Brick Pits, 11.vii.1987, RHP.
 ST68 Olveston, viii.1916, HJC (Audcent, 1950).
 ST79 Wotton-under-Edge, VRP (Audcent, 1950).

Chrysops viduatus (Fab.) syn. *pictus* Meigen – Square-spot Deerfly. **County Rare**. A wetland species, known from fens, wet grasslands and mires.

- SO60 Bream, 19.vii.1981, RHP.
 ST58 ICI Severnside Estate, Severn Beach, 5.vii.1996; & Old Tip, 9.vi.1996, MNS.

Haematopota bigoti Gobert – Big-spotted Cleg. **RDB (Rare)**. Restricted to saltmarshes. Only relatively recently recognised in the county but assumed to be long-established.

- ST59 Sedbury Cliffs, 20.vii.1980, M.Edwards. Littleton Brick Pits, 24.viii.1986 & 10.viii.1987, RHP.

Haematopota crassicornis Wahlberg – Black-horned Cleg. **County Scarce**. Widespread nationally in wet woodland, carr and poorly-drained pastures. Apparently very localised in the county.

- SO50 Bream's Cross, male in wet pasture, 7.vi.2008, NJP & VEP.

- SO51 Symonds Yat, by River Wye, 10.vi.1997, L.W. Hardwick & R. Underwood (Howe 1998).
 SO62 May Hill, 2 & 25.vii.2009, NJP.
 SO70 Awre, 15.vii.2008, NJP, confirmed by KNAA.
 SO81 Sheepscombe, 21.vi.1925, JWS (Audcent, 1950).
 SO82 Coombe Hill Meadows, 17.vi.2007, CT.
 SP03 Cutsdean/Taddington stream, males on bridge, 2.vi.2007, MGM.
 ST57 Lawrence Weston Moor, 20.v.1999, DJG.
 ST58 Crook's Marsh, Avonmouth, 29.v.2009, CMD.

Haematopota grandis Meigen – Long-horned Cleg. **RDB (Rare)**. Restricted to coastal localities, possibly slightly brackish, transitional marsh. Recent record from the Gloucestershire Severn (Drake, 1991).

- ST58 ICI Severnside Estate, Severn Beach, 29.vi.1996; 1997, MNS.
 ST59 Littleton Brick Pit, 17 & 24.viii.1986, RHP; single female, 4.viii.2000, DJG (2002).

Haematopota pluvialis (Linnaeus) – Notch-horned Cleg. Widespread in damp habitats generally. Very common (Audcent, 1950); this is the common cleg in the county.

- SO50 Slade Bottom, 25.vii.1998, KNAA. Bigsweir Woods & Highbury Fields, 2000, PK.
 SO60 Old Park Wood, Lydney, 23.vii.1980, M.Pugh.
 SO61 Blaisdon Wood, several, 8.vii.2006, NJP.
 SO72 Glasshouse Orchard, Taynton, 4.vii.2001, KNAA.
 SO80 Stroudwater Canal, Ebley, 19.vi.2000, APF.
 SO81 Butlers Grove Pasture, Sheepscombe, 31.vii.1998, KNAA.
 SO82 Coombe Hill, 2.vii.2005, DSL, MGM & K Heron.
 SO90 Edgeworth, 21.vi.1998, KNAA. Siccaridge Wood, 2003, KNAA; 2010, MGM. Strawberry Banks, 23.vi.2005; Daneway Banks, 2010, MGM.
 SO91 Cockleford Marsh, 14.vii.1996, KNAA. Climperwell & Workman's Wood, 2010, MGM.
 SP00 Cirencester Golf course, 1.vii.2001, KNAA.
 SP01 Colesbourne Park, 14.vii.1996, KNAA.
 SP03 Pipers Grove, 29.vi.1995, APF. Lidcombe Wood, 2010, MGM.
 SP11 Sherborne Farm, 16.vii.1992, KNAA.
 ST57 Coombe Dingle, 30.vi.1998, KNAA. Lawrence Weston Moor, 20.v.1999; Kings Weston Down, 6.vi. & 15.vii.1999, DJG.
 ST58 Red Rhyne, Severn Beach, 1996; Green Lane, 1997, MNS.
 ST59 Beachley Point, 14.vii.1990, KNAA.
 ST77 Doddington Park, 1982-83, RHP.
 ST78 Horton, 11.vi.1978, RHP. Midger Wood, 25.vi.1994, JHB.
 ST89 Highgrove House, 2.vii.1997, KNAA.

Hybomitra bimaculata (Macquart) – Hairy-legged Horsefly. Moderately frequent nationally, mostly recorded from woodland edge habitats or sheltered fen and marsh. Common (Audcent, 1950), but currently very localised in the county.

- SO60 Fairmoor Green, 18.vii.1998, KNAA. Oakenhill Wood, 19.v.2011, male, NJP.
 SO61 Woorgreens Reserve, 10.vii.2001, CT & 30.v.2006, MGM. Pope's Hill, 18.v.2004, 27.vi.2006, 11.vi.2010; Great Palescott, 30.vi.2006, NJP. Wigpool, 5.vi.2010, MGM.
 SO70 Frampton-on-Severn, 18.v.2008, 15.v.2010, MGM.
 SO80 Rodborough, 11.vi.1947, TBF.
 SO81 Churchdown Hill, female in house, 29.vi.2001, CT.
 SO82 Coombe Hill Canal, 15.v.1993, MGM.
 ST57 Lawrence Weston Moor, 20.v.1999, DJG.
 ST58 Old Tip, ICI Severnside Estate, Severn Beach, 3.vi.1997, MNS.
 ST59 Littleton Brick Pit, 1984-87, RHP; 22.v.2000, DJG
 ST78 Wetmoor Reserve, 8.vii.1984, via RHP.
 SU09 Swillbrook Lakes Reserve, female biting, 18.vii.2006, CT.

Hybomitra distinguenda (Verrall) – Bright Horsefly. **County Rare**. Widespread in wet heath, bog, wet woodland fringes and wet pastures. Common (Audcent, 1950), but only one modern record.

- SO62 May Hill, 15.vi.1998, KNAA.

Hybomitra lurida (Fallén) – Broad-headed Horsefly. **RDB (Rare) but unconfirmed**. A bog species, and known mainly from Scotland and the Cheshire/Shropshire mosses. This old record is almost certainly a misidentification.

- SO80 Painswick, 19.vi.1924, JWS (Audcent, 1950).

Hybomitra micans (Meigen) – Black-legged Horsefly. **RDB (Vulnerable)**. Heathy woodland glades and boggy areas in woods.

- ST68 Olveston, 1929, HJC (Audcent, 1950).

Hybomitra solstitialis (Meigen) – Scarce Forest Horsefly. **Uncertain status**. Confusion with other species means that all old records need re-examination.

- SO80 Painswick, 22.vi.1889, CJW (Audcent, 1950).

Tabanus autumnalis Linnaeus – Large Marsh Horsefly. Frequent in marshes in the southern counties, especially coastal grazing levels; also in wet woods and wet heaths. Fairly common (Audcent, 1950), but few modern records.

- SO60 Lydney, in garage, 30.vi.2010, MMy det DJG.
 SO61 Blaisdon, 24.vii.1986, M.Edwards. Flaxley Flushes, female, 20.vi.2009, 20.vi.2010, NJP.
 SO62 May Hill, female ovipositing on stem of *Myosotis* emerging from shallow pond, 2.vii.2009, NJP.
 SO71 Broadway Farm, Westbury, 1.vii.2011, NJP.
 SO82 Coombe Hill Canal, 7.vi.2010, MGM.
 SO83 The Mythe, 5.vii.2008, MGM.

- SO92 Swindon Village, 11.vi.2010, RH.

- ST57 Henleaze, 6.vii.1987, RHP. Avonmouth Sewage Farm, 29.v.2001, DJG.

- ST58 Hallen, 12.vii.1978, RHP. Middle Compton Rhyne, Severn Beach, 23.vi.1996; Old Tip, 23.vi.1997, MNS.

- ST59 Littleton Brick Pit, 21.ix.1986, RHP; 4.viii.2000, DJG.

Tabanus bovinus Linnaeus – Pale Giant Horsefly. **RDB (Insufficiently known) but unconfirmed**. The only reliable records are from the New Forest and Somerset, but a thorough review of all material is needed.

- ST79 Wotton-under-Edge, VRP (Audcent, 1950).

Tabanus bromius Linnaeus – Band-eyed Brown Horsefly. In woodland and adjacent damp pastures. Very common (Audcent, 1950), but clearly less so today.

- SO50 Cadora & Bigsweir Woods, 2000, PK.

- SO60 Clarke's Pool Meadow Reserve, 25.v.2007, NJP. Cannop Valley, 9.vii.2010, MGM.

- SO61 Forest of Dean, 28.vii.1896, via J.E.Chainey. Hay Farm, Elton, 7.vii.2002, KNAA. Pope's Hill, 2005, 2006, 2011, and quite common in area;. Blaisdon Wood, 29.vi.2006; Chestnuts Inclosure, 13.vii.2006; Flaxley Woods, about 50, 21.vii.2006; 27.vii.2007, NJP. Ruspidge Woods, 21.vii.2008, JH.

- SO71 Boseley, near Westbury-on-Severn, 20.vii.2008, NJP & VEP.

- SO72 Newent Woods, in some numbers, 11.vii.2003; Collin Park Wood, 4.vii.2008, MGM.

- SO80 Minchinhampton, 9.vi.1892, J.E. Chainey. Ruscombe, inside conservatory, 1.vii.2010, NJP.

- SO90 Daneway, 18.vii.1982, KNAA, det. AES; 2.vii.2007 & 23.vi.2008, 6.vii.2010, MGM.

- SP03 Lidcombe Wood, 28.vi.2010, MGM.

- ST57 Kings Weston Down, 15.viii.1943; Westbury on Trym, 4.vii.1944; Coombe Hill, 6.viii.1944, E.E. Lowe.

- ST78 Wetmoor Reserve, 20.vii.1985, RHP.

Tabanus maculicornis Zetterstedt – Narrow-winged Horsefly. **County Rare**. Uncommon southern species, mostly in woods.

- SO80 Minchinhampton, 23.vi.1896, J.E. Chainey.

- SO81 Sheepscombe, 21.vi.1925, JWS (Audcent, 1950).

- SO91 Cockleford Marsh, 14.vii.1996, KNAA.

Tabanus sudeticus Zeller – Dark Giant Horsefly. **County Scarce**. A strongly northern and western species of acid upland areas, but with lowland populations on wet heaths.

- SO61 Woorgreens, not caught, 21.vii.2005, MGM. Occasionally seen in Forest of Dean, NJP, pers.comm., 2005. Blaisdon Wood, 8.vii.2006 & Pope's Hill, 19.vii.2006, 29.vi.2008, NJP & VEP. Cinderford Linear Park, 2009, K. Heron.

- SO62 May Hill, 15.vi.1998, KNAA.
ST79 Wotton-under-Edge, VRP (Audcent, 1950).

Superfamily STRATIOMYOIDEA

Family XYLOMYIIDAE Wood Soldier Flies

There are 3 species on the British List (Chandler 1998); only one known from the county.

Solva marginata (Meigen) – Drab Wood-soldierfly. **Nationally Scarce.** Lowland woodlands, where larvae mostly found in decaying poplar timber; also in dead oak, ash, sycamore, etc. An overlooked species.

- ST78 Unlocalised record, 14.viii.1984, J. Dobson. A possible specimen sighted on a poplar log in Bays Wood, outside Lower Woods SSSI, 1.viii.1992, JHB.

Family STRATIOMYIDAE Soldier flies

There are 48 species on the British List (Chandler 1998); 38, possibly 39, known locally.

Beris chalybata (Forster) – Murky-legged Black Legionnaire. Larvae in decaying vegetable matter, adults in damp shaded situations; widespread. Common in Gloucestershire at the time of Audcent (1950) and still so.

- SO50 Slade Bottom, 10.v.1992, 24.iv.1999, KNAA. Bigsweir Woods, Causeway Grove & Highbury Fields, 2000, PK.
SO51 Blakes Wood, 14.v.1994, KNAA.
SO60 Clarke's Pool Meadows. 14.v.2003, KNAA.
SO61 Pope's Hill, 25.v.2007, NJP.
SO80 Rabbit Warren Wood, Selsley, 25.v.1998, KNAA. Stroudwater Canal, Ebley, 19.vi.2000, APF. Bisley Road Cemetery, 20.v.2001, KNAA.
SO82 Handkerchief Pool, 1989; Sandhurst Brickpits, 18.iv.1999, KNAA.
SO83 Chaceley Meadow, 15.v.1993, KNAA.
SO90 Hailey Wood, 4.v.1992, KNAA.
SO91 Pinchley Wood, 21.v.1989, DKC. Hilcot Wood, 16.v.1999, KNAA.
SO92 Dowdeswell Wood, 29.v.1995, KNAA.
SP01 Cott Plantation, Colesbourne, 16.v.1999, KNAA.
SP13 Campden Wood & Weston Park, 15.v.1995, KNAA.
SP14 Aston-sub-Edge, 31.v.1993, KNAA. Meon Hill, Warks (VC33), 8.v.1994, S. Falk.
ST57 Ashton Court, 19.v.1991, DKC.
ST58 Crook's Marsh, Avonmouth, 29.v.2009, CMD.
ST59 Littleton Brick Pit, 22.v.2000, DJG. Ridley Bottom, 15.v.2003, KNAA.
ST67 Emerson's Green, 12.v.2001, DJG.
ST78 Midger Wood, 18.v.1991, KNAA.
ST79 Alderley Wood, 23.v.1998, KNAA.

Beris clavipes (Linnaeus) – Scarce Orange Legionnaire. **Nationally Scarce & Locally Extinct.** Larvae in decaying vegetable matter by water; associated with lush marshes and fens. Widespread nationally, but uncommon. Only one very old record from the county.

- ST79 Wotton-under-Edge, VRP (Audcent, 1950).

Beris fuscipes Meigen – Short-horned Black Legionnaire. **County Rare.** Associated with sheltered fen and marsh situations, and most widespread in Britain in the South West. Its past absence from local records has been surprising.

- SO61 Popes Hill, a female in garden summer house, 1.vii.2009, NJP.

Beris geniculata Haliday – Long-horned Black Legionnaire. **County Rare.** Widespread in damp shaded situations nationally but only reported from a few sites in the south of the county.

- ST57 Blaise Castle, viii.1921, HA; Coombe Dingle, 6.vii.1947, EAF (Audcent, 1950). Lawrence Weston Moor, 30.vii.1999; Avonmouth Sewage Farm, 5.vii.2001, DJG.
ST67 Filton, 7.vii.1947, EAF (Audcent, 1950).
ST79 Newark Park, 16.v.1985, DKC.

Beris morrisii Dale – Yellow-legged Black Legionnaire. A local species, most frequent in southern Britain. Usually at damp woodland margins, where larvae develop in decomposing vegetation. Fonseca knew it from a few sites around Bristol and it still appears to be very localised in the county - its survival at Coombe Dingle despite severe disruption of the local drainage is encouraging.

- SO50 Slade Wood, one swept, 25.vii.1998, KNAA.
SO51 Lady Park Wood, two taken, 1985, DJG.
SO61 Pope's Hill, 16.vi.2010, NJP.
SO90 Francombe Wood, male swept along valley bottom, 21.vi.1998; Sapperton Wood, 17.vii.2002; Siccaridge Wood, 2003, KNAA.
ST57 Coombe Dingle, 15.vi.1946, EAF; 30.vi.1998, KNAA. Durdham Down, 19.vii.1946, EAF (Audcent, 1950).
ST67 Coombe Brook, 29.viii.2001, DJG.
ST69 Morton, 11.vii.1947, EAF (Audcent, 1950).
ST77 Monk Woods, 24.vii.1999, 20.vii.2000, DJG.
ST79 Coombe Hill, 27.vi.1998, MAH.

Beris vallata (Forster) – Common Orange Legionnaire. Widespread, in a variety of damp habitats. Audcent (1950) regarded it as common in the county and it remains widespread here.

- SO50 Woolaston Lime Coppice, 26.vi.1999, KNAA. Cadora & Bigsweir Woods, & Highbury Fields, 2000, PK.
SO60 Lydney Park, 17.vi.1990; Clarke's Pool Meadows, 25.vi.1999, KNAA.
SO61 Pope's Hill, 17.vii.2006, NJP.
SO71 Ley Park Wood, 19.vi.2007, NJP.
SO90 The Camp, seepage field, 17.vii.1994, KNAA.

- SO91 Cockleford Valley & Bubb's Hill, 20.vii.1991; Cockleford Marsh, 14.vii.1996, KNAA. Dowdeswell Reservoir, 12.v.2009, K.Heron.
 SO92 Dowdeswell Wood, 8.vii.1995, KNAA. Badgeworth Reserve, 28.vi.2003, APF.
 SP02 Guiting Wood, 19.vii.1992, KNAA.
 SP12 Hyde Mill Meadow, 22.vi.1997; Stow Bridge Coppice, 17.vii.1999; Salmonsbury Meadows, 17.vi.2000, KNAA.
 ST57 Coombe Dingle, 30.vi.1998, KNAA. Lawrence Weston Moor, 18.vi.1999, DJG. Kings Weston Down, 15.vii.1999, DJG.
 ST58 Crook's Marsh, Avonmouth, 29.v.2009, CMD.
 ST67 Emerson's Green, 19.vi.2001; Coombe Brook, 27.vi.2001, DJG.
 ST88 Midger Wood, 26.ix.2010, CMD.
 ST89 Box Farm Meadows, 2003, KNAA.

Chorisops nagatomii Rozkošni – Bright Four-spined Legionnaire. **Nationally Scarce.** Larvae may live in damp leaf litter; adults recorded from woods and parks, wetlands and riversides; not uncommon in southern Britain. First described in 1979, so all earlier records for *C. tibialis* need re-examination.

- SO61 Pope's Hill, 22 & 23.vii.2008, NJP, confirmed KNAA.
 SO80 Rabbit Warren Wood, Selsley, dead fly, 4.viii.1996; Bisley Road Cemetery, m + f, 16.viii.1997, KNAA.
 SO90 Sapperton Wood, teneral, 17.vii.2002, KNAA.
 SP10 Quenington and Cirencester, 1990, DKC.
 ST59 Sedbury, 20.vii.1980, R. Crossley.
 ST67 Troopers Hill, 16.viii.2000; Coombe Brook, 29.viii.2001, DJG.
 ST79 Coombe Hill, 9.viii.1997, MAH; 29.viii.2001, DJG.

Chorisops tibialis (Meigen) – Dull Four-spined Legionnaire. Widespread in shady places, such as wood margins, scrub and fen. Older records could well refer to *C. nagatomi* from which it was only relatively recently distinguished. Under-recorded in the county.

- SO51 Lady Park Wood, frequent, 1985, DJG.
 SO80 Painswick, C.J. Watkins. Highfield Bank, Sheepscombe, 31.vii.1998, KNAA.
 SO92 Queenswood Farm, Southam, from oak canopy, 29.vii.1998, KNAA.
 ST57 Kings Weston Down, 15.vii.1999, DJG.
 ST58 Hallen, 12.vii.1924, H. Audcent. Crook's Marsh, Avonmouth, 20.vii.2009, CMD.
 ST59 Sedbury Marsh, 20.vii.1980, I.F.G. McLean. Lancaut, 16.vii.1993, DKC. Beachley Point, 3.ix.1993, KNAA.
 ST68 Olveston, 5.ix.1922, H.A.
 ST89 Highgrove House, 17.vii.1996, KNAA.

Nemotelus nigrinus Fallén – All-black Snout. **County Rare.** Nationally widespread in inland fens and marshes, especially with base-rich influence. The larvae are

presumably amphibious. Only recently recognised in the county - a rarity here apparently.

- SO91 Bushley Muzzard SSSI, Brimpsfield, 9.viii.1998, KNAA.
 SP11 River Leach, Lodge Park, Sherborne, 28.v.1985, KNAA.
 ST57 Lawrence Weston Moor, 18.vi.1999, DJG.

Nemotelus notatus Zetterstedt – Flecked Snout. **County Rare.** Nationally a widespread species of coastal marsh, the larvae developing in saline ditches and pools.

- ST57 Kingsweston, 16.vi.1922, H. Womersley (Audcent, 1950).
 ST58 Hallen, 12.vii.1924, HA (Audcent, 1950). ICI Severnside Estate, Pilning, 30.vi.1996 & 24.vi.1997, MNS.
 ST59 Littleton Brick Pits NR, Payne et al (1984); 29.vi.1987, RHP; 12.vii.2000, 4.viii.2000, DJG. Sedbury Marsh, 20.vii.1980, I.F.G. McLean.
 ST69 Shepperdine, 12.viii.1924, HA (Audcent, 1950).

Nemotelus pantherinus (Linnaeus) – Fen Snout. **County Rare.** Nationally widespread in marshes, fens and meadows with seepages; amphibious larvae.

- SO80 Chalford, Stroud, C.J. Wainwright (Audcent, 1950).
 SO91 Bubbs Hill, calcareous seepage fen, 20.vii.1991, KNAA.
 SP10 River Coln, Fairford-Quenington (Mackey et al, 1978).
 ST59 Littleton Brick Pits, 27.vii.1986, RHP.

Nemotelus uliginosus (Linnaeus) – Barred Snout. **County Rare.** Widespread in coastal marshes nationally, larvae in drying saline pools.

- SO60 Lydney: the Cut & lakeside, 11 & 14.vii.2011, MMy.
 SO70 The Warth, 4.viii.1992, JHB.
 ST58 Hallen, 11.vii.1929, BNB (Audcent, 1950).
 ST59 Littleton Brick Pit, 4.viii.2000, DJG.
 ST69 Sheppardine, 12.viii.1924, Audcent (1950).

Oxycera analis Meigen – Dark-winged Soldier. **RDB Category 2 (Vulnerable).**

Associated with fens, seepage marshes and wooded streamsides; larvae probably developing in shallow water or wet vegetation at the edges of ponds or rivers; strong dependence on stream sediment, partly exposed. Most sites are on chalk or limestone. The Bristol colonies are probably long extinct, so it is good to know it survives elsewhere in the county.

- SO60 Lydney Park, 19.vi.1990, DKC.
 SO91 Bubbs Hill, 20.vii.1991, DKC.
 ST57 Coombe Dingle, 26.vi.1947, EAF (Audcent, 1950); not seen here since stream diverted in 1948, EAF (NCC, 1986).
 ST67 Filton, vi.1946, EAF (Audcent, 1950).

Oxycera morrisii Curtis – White-barred Soldier. **Nationally Scarce & County Rare.**

Larvae probably develop in shallow water or wet vegetation associated with wet seepages, especially on coastal sites.

SP01 Hedgley Bottom, adult swept from calcareous spring, 17.vii.1999, KNAA.

SP12 Guiting Power Reserve, larvae abundantly amongst moss on sluice outflow of lake, 1.vi.1970, AES (p.c).

ST57 Blaise Castle Woods; not seen here since stream diverted in 1948, EAF (NCC, 1986).

ST78 River Frome, Dodington, silty stream, 2.iii.2004, CMD.

Oxycera nigricornis Olivier syn. *formosa* Meigen – Delicate Soldier. **County Rare.** Widespread in southern Britain, breeding in seepages in fens and marshes; larvae aquatic in shallowly submerged vegetation or are amphibious in water-logged litter.

SO60 Lydney Park, 17.vi.1990, DKC.

SO61 near Flaxley Flushes, female photographed, 3.vii.2010, NJP.

ST57 Coombe Dingle, 14.vii.1946, 26.vi.1948, EAF (Audcent, 1950); not seen here since stream diverted in 1948, EAF (NCC, 1986). Lawrence Weston Moor, 30.vii.1999, DJG.

ST59 Sedbury Marsh, 20.vii.1980, I.F.G. McLean.

ST77 Dyrham Park, larvae in spring system in Old Pond Plantation, 20.iv.1993, MRO. River Frome headwaters, Dodington, 2.iii.2004, CMD.

ST79 Wotton-under-Edge, VRP (Audcent, 1950).

Oxycera pardalina Meigen – Hill Soldier. **Nationally Scarce.** Larvae develop amongst algae and in wet moss cushions, preferring the clear water of calcareous springs and streams. It is clearly widespread on the Cotswolds, both along the scarp and in the dipslope valleys.

SO91 Bubbs Hill, Churn Valley, 1991; Cockleford Marsh, 14.vii.1996, KNAA.

SP00 Ampney Brook, Ampney St Mary, one on shrub leaf over brook, 2.vii.2000, KNAA.

SP03 Pipers Grove Spring, larvae, 24.viii.1992, MRO, & adult, 29.vi.1995, APF.

SP11 Arnold's Spring, Sherborne, larva, 28.iv.1992, MRO; adult, 16.vii.1992, KNAA.

SP12 Guiting Power NR, 1.vi.1970 (Stubbs, 1987).

ST57 Coombe Dingle, 26.vi.1948, EAF (Audcent, 1950); not seen here since stream diverted in 1948, EAF (NCC, 1986).

ST77 Monk Woods, female swept beside springs, 24.vii.1999, DJG (2002). Dodington, River Frome headwaters, 2.iii.2004, CMD.

Oxycera pygmaea (Fallén) – Pygmy Soldier. **Nationally Scarce & County Rare.** Breeds in small base-rich seepages with short or sparse herbage on hillsides or coastal cliffs. Sites are usually open in character. A county rarity.

SO91 Bubbs Hill, 20.vii.1991, DKC.

ST57 Blaise Castle Woods, EAF (NCC, 1986); not seen here since stream diverted in 1948, EAF (NCC, 1986).

Oxycera rara (Scopoli) syn. *pulchella* Meigen – Four-barred Major. A localised species of wet meadows, grazing marshes, ponds, fens, and springs and seepages on coastal cliffs and hillsides. Larvae develop in moss in open seepages and in hoof prints in wet pastures.

SO61 Blaisdon Wood, 2005; one or two, 29.vi.2006 & 14.vii.2006; Great Palescott, 2005 & 30.vi.2006; Flaxley Flushes, 20.vi.2009 & Flaxley Woods, 27.vii.2009, NJP.

SO70 Awre, 15.vii.2008, NJP.

SO72 Oxenhall, by canal, 8.vii.2010, MGM.

SO80 Painswick, 10.viii.1892, C.J. Wainwright (Audcent, 1950).

SO92 Cheltenham, 5.vii.1919, H. Womersley (Audcent, 1950). Woodmancote, f in garden, 5.vii., & m, 6.vii.2005, f 3.vii.2010, DI.

SP01 Chedworth, one dead in swimming pool, 5.vii.2001, DSL.

ST58 Hallen, 17.vii.1924, BNB (Audcent, 1950). Crook's Marsh, Avonmouth, 20.vii.2009, CMD.

ST67 Emerson's Green, 19.vi.2001, DJG.

ST78 Dodington, River Frome, silty stream, 2.iii.2004, CMD.

ST79 Hunt's Court, North Nibley, 10.vii.1992, DI.

Oxycera terminata Meigen – Yellow-tipped Soldier. **RDB (Vulnerable).** Larvae on small stones at watersides in calcareous hill country, generally shaded or semi-shaded spring-fed streams. Best known in Britain from the South West & the West Midlands.

SO90 Three Groves Wood, Oakridge, 5.vi.2003, KNAA.

ST57 Blaise Castle, 8.vii.1948, EAF (Audcent, 1950), in great numbers on one occasion (Oldroyd, 1969); not seen here since stream diverted in 1948, EAF (NCC, 1986).

Oxycera trilineata (Linnaeus) – Three-lined Soldier. **County Scarce.** A local southern species, most frequent on coastal grazing marshes, but also in fens, wet meadows, and coastal springs and seepages. Larvae amphibious and tolerant of mildly brackish conditions. Very local in the county.

SO60 Lydney Park, 19.vi.1990, KNAA.

SO61 Blaisdon Wood, 14.vii.2006, NJP.

SO90 The Camp, seepage field, 17.vii.1994, KNAA.

SO91 Cockleford Marsh, 14.vii.1996, KNAA.

ST58 Hallen, 17.vii.1924, BNB (Audcent, 1950).

ST67 Filton, 30.vi.1947, EAF (Audcent, 1950).

ST78 Dodington, River Frome, silty stream, 2.iii.2004, CMD.

Vanoyia tenuicornis (Macquart) – Long-horned Soldier. **Nationally Scarce & County Rare.** An uncommon species of coastal marshes and landslips, fens and wet meadows.

SO91 Cockleford Marsh, 14.vii.1996, KNAA.

Eupachygaster tarsalis (Zetterstedt) – Scarce Black Soldier. **Nationally Scarce & County Rare.** Develops in rot-holes in open-grown veteran trees. Best known from the ancient wood pastures of the New and Windsor Forests, but also scattered elsewhere.

SP03 Dumbleton Hill, larva in wood mould of a veteran ash tree, ii/iii.2002, PFW.

Pachygaster atra (Panzer) – Dark-winged Black. Larvae in burrows of elm bark beetles, in decaying timber, and possibly decaying leaves. Widespread, although most frequent in south and east. It was regarded as common by Audcent (1950) and is still so.

SO50 Cadora Wood, Causeway Grove & Highbury Fields, 2000, P Kirby.

SO51 Lady Park Wood, one taken, 1985, DJG.

SO60 Lydney Park, 17.vi.1990, DKC.

SO61 Welshbury, 16.vii.1994; Wigpool Common, 12.viii.2000, KNAA. Pope's Hill, 28.vi.2010, NJP.

SO72 Bulley Woods, 2.vii.1997, KNAA.

SO73 Redmarley, 5.viii.2005, KNAA.

SO80 Swifts Hill, 2003, KNAA.

SO81 Nut Hill, Upton St Leonards, 18.vii.1998; Lords Wood, Sheepscombe, 31.vii.1998, KNAA.

SO90 Pinbury Park, 21.vi.1998, KNAA.

SO91 Brimpsfield, 23.vii.2000, KNAA.

SO92 Badgeworth Reserve, 28.vi.2003, APF.

SO93 Ashchurch Depot, 29.vi.1985, KNAA.

SP03 Stanton Hill, 19.vi.1994, KNAA. Pipers Grove, 29.vi.1995, APF. Dumbleton, 25.vi.1998, PFW.

SP10 Rack Isle, Bibury, 1.vii.2001, KNAA.

SP12 Salmonsbury Meadows, 17.vi.2000, KNAA.

ST57 Coombe Dingle, 30.vi.1998, KNAA. Kings Weston Down, 15.vii.1999, DJG.

ST67 Coombe Brook, 27.vi.2001, DJG.

ST76 Banner Down, 6.vii.1985, AES.

ST79 Coombe Hill, 27.vi.1998, MAH.

ST89 Highgrove House, 17.vii.1996, 2.vii.1997, KNAA.

SU09 Claymeadow Farm, South Cerney, 3.viii.1996, KNAA.

Pachygaster leachii Stephens – Yellow-legged Black. Larvae in decaying broad-leaved timber and in umbellifer roots. Not infrequent in southern Britain. Widespread in the county.

SO51 Lady Park Wood, one taken, 1985, DJG.

SO60 Lydney, 20.vii.1980, R.Crossley.

SO71 Highnam Wood, 23.vii.1984, I.F.G.McLean.

SO72 Bulley Woods, 2.vii.1997, KNAA.

SO80 Stroud, C.J.Wainwright (Audcent, 1950).

SO81 Lords Wood, Sheepscombe, 31.vii.1998, KNAA.

SO91 Bubbs Hill, 20.vii.1991, KNAA.

SO93 Tewkesbury, bramble, 22.vii.2001, KNAA.

ST57 Bristol, 17.viii.1907, HJC, & 22.vii.1926, 9.vii.1947, EAF; Durdham Down, 26.viii.1946, EAF (Audcent, 1950). Coombe Dingle, 30.vi.1998, KNAA. Avonmouth Sewage Farm, 5.vii.2001, DJG.

ST58 Crook's Marsh, Avonmouth, 20.vii.2009, CMD.

ST67 Filton, 6.vii.1948, EAF (Audcent, 1950). Coombe Brook, 27.vi.2001, DJG. Emerson's Green, 13.vii.2001, DJG.

ST69 Morton, 11.vii.1947, EAF (Audcent, 1950).

ST89 Silk Wood, 5.viii.1984; Highgrove House, 2.vii.1997, KNAA.

Chloromyia formosa (Scopoli) – Broad Centurion. Widespread in damp habitats, larvae developing in rotting vegetation. Regarded as very common locally by Audcent (1950) and still so.

SO50 Slade Bottom, 10.14.vi.1997, S. Ball, K. & R. Merrifield & AES (Howe 1998). Highbury Fields, 2000, PK.

SO60 Purton Timber Ponds, 15.viii.1992, KNAA. Mallard's Pike, dead female, 8.vii.2005, DI. Lydney, vi.vii.2010, MMY.

SO61 Flaxley Flushes, 7.vii.2002, KNAA.

SO70 Whitminster, 1996, JB. Frampton on Severn, 20.v.2007, MGM.

SO71 Westbury Garden Cliff, 16.vii.1994, KNAA.

SO72 Glasshouse Orchard, Taynton, 4.vii.2001, KNAA. Oxenhall, 2008, 2010, MGM.

SO73 Bromesberrow Place, 14.vi.2000, KNAA.

SO80 Bisley Road Cemetary, 1997; Swifts Hill, 1997, KNAA. Selsley Common, 1997, MAH. Rodborough Common, 1999, 2000, PJ Hodge. Stroudwater Canal, Ebley, 2000, APF. Haresfield Hill, 2008, JH.

SO81 Nut Hill, Upton St Leonards, 18.vii.1998, KNAA.

SO82 Long Pool, Coombe Hill Canal SSSI, 1996, JB. Coombe Hill Canal, 2003, APF.

SO83 The Mythe, 2007, 2008, MGM.

SO90 Wittantree Farm, Bisley, 2002; Sapperton Wood Meadows, 2002, KNAA.

SO91 Cockleford Valley, 1991; Cockleford Marsh, common at hogweed flowers, 14.vii.1996, KNAA.

SO92 Badgeworth Reserve, 28.vi.2003, APF. Hesters Way Park, 16.vi.2008, 2010, MGM. Woodmancote, 30.v.2010, DI.

SO93 Ashchurch Depot, 29.vi.1985, KNAA. Ashchurch, 23.vi.2006, MGM.

SP00 Baunton, 4.vi.1995; Ampney Crucis, 2001, KNAA.

SP02 Guiting Wood, 19.vii.1992, KNAA.

- SP03 Lidcombe Wood, 2010, MGM.
 SP10 Rack Isle, Bibury, 1.vii.2001, KNAA.
 SP12 Hyde Mill Meadow, 1997; Stow Bridge Coppice, 1999, KNAA. Brassey Reserve, 6.vi.2004, DI.
 SP13 Batsford, 16.vi.2007, MGM.
 ST57 Lawrence Weston Moor, 1999; Kings Weston Down, 1999; Avon Gorge, 2000; Avonmouth Sewage Farm, 2001, DJG.
 ST58 ICI Severnside Estate, Severn Beach, 1996/97, MNS.
 ST67 Emerson's Green, 19.vi.2001, DJG. Coombe Brook, 27.vi.2001, DJG.
 ST78 Lower Woods, 10.viii.1997, MAH.
 ST79 Coombe Hill, 9.viii.1997 & 27.vi.1998, MAH.
 ST89 Highgrove House, 17.vii.1996, 2.vii.1997; Box Farm Meadows, 2003, KNAA.

Microchrysa cyaneiventris (Zetterstedt) – Black Gem. **County Rare.** Widespread, but most frequent in the north and west of Britain, usually in broad-leaved woodland or by shaded water margins. Larvae develop in decaying vegetation. Almost certainly under-recorded locally.

- SO61 Pope's Hill, 2f on window in summerhouse, 26.vi.2010, NJP.
 ST57 Coombe Dingle, 19.vii.1947, EAF (Audcent, 1950).
 ST69 Stone, 27.vi.1928, HA; Morton, 8.vii.1947, EAF (Audcent, 1950).
 ST79 Coombe Hill, 27.vi.1998, MAH.

Microchrysa flavicornis (Meigen) – Green Gem. Widespread in a variety of habitats, especially woods, gardens, hedgerows and fens.

- SO50 Prior's Mesne, Aylburton, dead, 8.ix.2002, KNAA.
 SO60 Lydney, 1.ix.2010, MMy det P. Beuk.
 SO61 Pope's Hill, 18.vii.2006, NJP.
 SO80 Painswick, CJW (Audcent, 1950). Selsley Common, 19.viii.1993, CMD.
 SO82 Maisemore, 26.v.2005, KNAA.
 SO92 Badgeworth Reserve, 28.vi.2003, APF.
 SP11 Temple Ham, 16.vi.1991, KNAA.
 ST57 Lawrence Weston Moor, 30.vii.1999, DJG.
 ST58 Hallen, 12.vii.1924, HA (Audcent, 1950). Middle Compton Rhyne, Severn Beach, 24.vi.1997, MNS. Crook's Marsh, Avonmouth, 29.v.2009, CMD.
 ST59 Littleton Brick Pit, 12.vii.2000, DJG.
 ST68 Olveston, Charbonnier, & 4.vi.1922, HA, (Audcent, 1950).
 ST69 Shepperdine, 30.vii.1924, Stone, 21.v.1927, HA; Morton, 11.vii.1947, EAF (Audcent, 1950).

Microchrysa polita (Linnaeus) – Black-horned Gem. Widespread; larvae develop in decaying vegetable matter and dung. Regarded as common locally by Audcent (1950) and probably still so.

- SO50 Bigsweir Woods & Highbury Fields, 2000, PK.

- SO51 Lady Park Wood, one taken, 1985, DJG.
 SO60 Cannop Marsh, 16.vii.1989, KNAA.
 SO61 Popes Hill, 2.vii.2009, NJP.
 SO80 Swift's Hill, 2.vi.1991, KNAA.
 SO90 Bull Banks, 26.v.1991, KNAA.
 SP12 Guiting Power, 10.vi.2004, DSL.
 ST57 Westbury-on-Trym, 3.v.1943, C.R.Billups.
 ST59 Littleton Brick Pits, 20.vi.1987, RHP. Sedbury Marsh, 15.viii.1993, KNAA.
 ST67 Troopers Hill, 15.vi.2000, DJG.

Sargus bipunctatus (Scopoli) – Twin-spot Centurion. Larvae develop in decaying vegetation and dung, usually in woodland edge situations. Widespread in the county, but local.

- SO51 Elliots Wood, 13.ix.1992, KNAA. Lower Lydbrook, dead female in house, 1.i.2007, NJP.
 SO61 Pope's Hill, 19.ix.2006, 24.viii.2007, 29.ix.2007; Flaxley Woods, 24.ix.2007, NJP.
 SO80 Far End, Sheepscombe, & Saltridge Woods, ix.1985, KNAA.
 SO90 Parish & Oldhills Woods, 12.x.1979, AES (NCC, 1979). Frampton Mansell, 4.x.1998, KNAA.
 SO92 Pittville Park, Cheltenham, 16.ix.2001, KNAA. Woodmancote, 22.24.28.ix.2004, DI.
 SP12 Guiting Power, in swimming pool, 10.vi.2004, DSL.
 ST57 Bristol, 1.x.1944; Durdham Down, 9.viii.1946, EAF (Audcent, 1950). Westbury on Trym, 3.x.1944, E.E. Lowe. Henleaze, ix.x.1977, RHP (1977).
 ST67 Filton, 13.x.1944, EAF (Audcent, 1950). Emerson's Green, 20.ix.2001, DJG.
 ST68 Olveston, 25.ix.1914, Charbonnier, & 2.ix.1923, HA (Audcent, 1950).
 ST78 Lower Woods, m & f, 12.x.2003, JH.
 ST79 Wotton-under-Edge, VRP (Audcent, 1950).
 ST89 Nailsworth & Cherington Pond, 14.x.1979, AES (NCC, 1979). Abbots Wood, Boxwell Valley, 18.ix.1993, KNAA.

Sargus cuprarius (Linnaeus) – Clouded Centurion. **Locally Extinct.** Throughout Britain, although localised, and confused in the past with *S. iridatus*. Larvae develop in cow pats and even garden compost; possibly associated more with grazing levels in river floodplains, although the following records do not fit this pattern. No modern records for the county.

- ST57 Kingsweston, 9.vi.1929, HA; Blaise Castle, 8.v.1948, & Coombe Dingle, 9.v.1948, EAF (Audcent, 1950).
 ST79 Wotton-under-Edge, VRP (Audcent, 1950).
 SO80 Painswick, Watkins; Stroud, Wainwright (Audcent, 1950).

Sargus flavipes Meigen – Yellow-legged Centurion. **County Rare**. Larvae develop in decaying vegetation and dung, usually in woodland edge situations; widespread nationally, and probably under-recorded locally.

SO60 Purton, 23.vii.1980, M. Edwards.

SO61 Pope's Hill, 10.viii.2006, NJP.

SO90 Miserden Park, 23.vii.1989, KNAA.

SO92 Stoke Orchard, female, 24.ix.2008, DI.

ST57 Clifton, 4.viii.1916, H. Womersley (Audcent, 1950). Bristol, a female, 27.ix.1937, EAF (Oldroyd, 1969).

ST79 Wotton-under-Edge, VRP (Audcent, 1950).

Sargus iridatus (Scopoli) – Iridescent Centurion. **County Scarce**. Larvae develop in decaying vegetation and dung, usually in woodland edge situations; widespread nationally. Regarded as common by Audcent (1950), but few recent reports.

SO61 Pope's Hill, on bush foliage in garden, 28.v.2009; Chestnuts Inclosure, 26.v.2010; Blaisdon Wood, 17.vi.2010, NJP.

SO71 Broadway Farm, Westbury, 2.v.2011, NJP.

SO83 Chaceley Meadow, 15.v.1993, KNAA. The Mythe, 13.vi.2010, MGM.

SO92 Prestbury, 1.x.2009, K. Heron. Woodmancote, 20.v.2010, DI.

SP00 Bagendon, 30.v.1999, KNAA.

ST58 Green Lane, Severn Beach, 9.vi.1997, MNS.

ST59 Littleton Brick Pits, 1986 & 1987, RHP.

Odontomyia argentata (Fabricius) – Silver Colonel. **RDB (Vulnerable)**. A southern fen and marsh species which has become increasingly scarce nationally. The larvae have been found in shallow seasonally flooded areas.

SU09 Cotswold Water Park, swarming SW corner of Pit No.48, v.1996, MRO.

Odontomyia ornata (Meigen) – Ornate Brigadier. **RDB (Vulnerable)**. A speciality of lowland grazing levels, especially those on peaty soils. The larvae live amongst duckweed *Lemna* or other floating vegetation in wide ditches and at the margins of ponds with rich submergent vegetation. Adults are attracted to the blossom of umbels. Best known from the Somerset and Gwent Levels, and the coastal levels of East Sussex. Severn records detailed in Phillips & Matthews (2010).

SO61 Flaxley Flushes, male at corky-fruited water-dropwort blossom, 16.vi.2008; female ovipositing on bamboo stick in mud in edge of pond, 20.vi.2009 & 20.vi.2010, NJP.

SO70 Near Whitminster, about 4 seen, 16.vi.2010, NJP.

SO83 The Mythe, 14.vi.2005; three along the embankment between the fishing lake and the river, 1.vi.2007, MGM.

ST58 Crook's Marsh, Avonmouth, 20.vii.2009, CMD.

Odontomyia tigrina (Fabricius) – Black Colonel. **Nationally Scarce & County Rare**. Larvae aquatic and develop in shallow water in ponds, canals, ditches and marshes, amongst vegetable matter. Prefers water bodies with a rich flora and

where both emergent and floating vegetation is present. Confined in the county to a few sites along the Severn Vale.

SO61 Popes Hill, female on foliage by small garden pond, 18.v.2009, NJP.

SO71 Walmore Common, 2.vi.2011, NJP.

SO82 Handkerchief Pool, one on *Typha* stem, 18.vi.1989, & Coombe Hill Canal, frequent, 15.v.1993, KNAA.

ST58 Old Tip, ICI Severnside Estate, Severn Beach, 13.v.1997, MNS.

Oplodontha viridula (Fabricius) – Green Colonel. **County Scarce**. Aquatic larvae, in a range of well-vegetated water bodies. Widespread nationally, but few reports in the county.

SO61 Hay Farm & Flaxley Flushes, Elton, 7.vii.2002, KNAA.

SO71 Walmore, 19.viii.1943, TBF (Audcent, 1950).

SO72 Oxenhall, 9.vi.2007, MGM.

SO82 Coombe Hill Canal, 25.v.2003, APF; Coombe Hill Meadows, many, 11.17.vii.2004, DI. Coombe Hill, 2.vii.2005, DI & K. Heron.

SO91 Bushley Muzzard SSSI, Brimpsfield, 9.viii.1998, JH.

ST57 Lawrence Weston Moor, 18.vi. & 30.vii.1999, DJG.

Stratiomys chamaeleon (Linnaeus) – Clubbed General. **RDB (Endangered) but unconfirmed**. Larvae believed to develop in base-rich seepages; fens, carr and damp woods. Formerly more widespread but has become increasingly scarce due to habitat loss and degradation.

ST79 Wotton-under-Edge, VRP (Audcent, 1950) - record not recognised in the British Red Data Book (Shirt, 1987), so may need confirmation as a Gloucestershire species.

Stratiomys potamida Meigen – Banded General. Larvae amphibious and live mainly in shaded seepages, as at stream margins, in woods and on valley sides. It appears to have become commoner everywhere from the 1980s.

SO60 Mallard's Pike, dead female, 8.vii.2005, DI.

SO61 Hay Farm, Elton, 7.vii.2002, DJG. Flaxley Flushes, 10 or more at Oenanthe pimpinelloides flowers, 26.vi.2005; 23.vi.2009; Blaisdon Wood, 10.vii.2005 & two 29.vi.2006, 17.vi.2010; near Lightmoor Inclosure, 2.viii.2005; Great Palescott, 30.vi.2006; Hope Wood, Flaxley, 27.vii.2007, NJP. Soudley, 29.vii.2010, MMY.

SO70 Awre, 15.vii.2008, NJP.

SO71 Blaisdon Wood, 6.viii.2007, NJP.

SO72 Oxenhall, along canal, 8.vii.2010, MGM.

SO80 Painswick, CJW (Audcent, 1950). Woodchester Park, 1967-1992, Manchester University records. Bunkers Bank, 31.vii.1998, APF. Haresfield Hill, 16.vii.2008, JH.

SO81 Churchdown, 15.vii.1999, one at hogweed, CT.

SO83 The Mythe Reserve, 8.vii.1999, 14.vii. & 4.viii.2005, 13.vii.2008, 17.vii.2010, MGM.

- SO91 Crickley Hill, no date, DI; 14.vii.2007, MM.. Cockleford Marsh, three on hogweed flowers, 14.vii.1996, DI & KNAA. Climperwell, 3.vii.2005, MGM.
- SO92 Glenfall, m + f, a few years ago; Charlton Kings, one in garden, 15.vii.1994; Woodmancote, in garden, 13.vii.2002; male, 19.vii.2012; Gotherington Wood, 9.vii.2003, DI.
- SP02 Spoonley Wood, 18.vii.1987, KNAA.
- ST57 Bristol, HJC, & Coombe Dingle, 26.vi.1947, EEL (Audcent, 1950).
- ST59 Littleton Brick Pits, 29.vi.1987, RHP.
- ST67 Filton, 17.vi.1947, EAF (Audcent, 1950).
- ST69 Shepperdine, 12.viii.1924, HA (Audcent, 1950).
- ST79 Dursley, 26.vi.1930, HA (Audcent, 1950).

Stratiomys singularior (Harris) – Flecked General. **Nationally Scarce**. High quality wetlands, especially coastal grazing marsh; larvae develop in a variety of mildly brackish ponds and ditches, especially where *Scirpus maritimus* is present. Also the occasional inland marsh site.

- SO61 Flaxley Flushes, female ovip. on stick in mud in edge of pond, 20.vi.2010, NJP.
- SO70 Stroudwater Canal, Whitminster, f, 31.vii.1996, JHB. Awre, two seen, 15.vii.2008, NJP.
- SO72 Hartpury, 3.v.2010, CT *teste* KNAA.
- SO82 Coombe Hill Canal, west end, 2.viii.1992, JHB. Coombe Hill Wharf, 20.vi.2006, CT.
- SO83 The Mythe, 2.viii.2005, MGM.
- SO91 Badgeworth NR, 1990, coll. S. Holland (Alexander 1991).
- ST58 ICI Severnside Estate, Severn Beach, 11.vii.1996 & 23.vi.1997, MNS.
- ST59 Sedbury Marsh, by ditch near salt marshes, 5.vi.2003, DI.

Superfamily NEMESTRINOIDEA

Family ACROCERIDAE Hunchback-flies

There are 3 species on the British List (Chandler 1998); two reported from the county; the larvae are internal parasitoids of spiders.

Paracrocera orbiculus (Fabricius) – Top-horned Hunchback. **County Rarity**. Dry grasslands and heaths, but also known from fens and bogs. Mainly southern in Britain.

- ST59 Poor's Allotment, 20.vii.1980, I.F.G. McLean.
- ST79 Wotton-under-Edge, VRP (Audcent, 1950).

Ogcodes pallipes Latreille – Black-rimmed Hunchback. **Nationally Scarce & County Rare**. Most associated with rough scrubby calcareous grasslands. A southern species which has become increasingly scarce.

- SO80 Rodborough Common, several, 7.vii.1991, DKC.
- ST58 Hallen, 12.vii.1924, HA (Audcent, 1950).

- ST68 Winterbourne, 20.vii.1923, J.P. Kryger (Audcent, 1950).
- ST89 Horsley, 15.vii.1951, F.D. Buck.

Superfamily ASILOIDEA

Family BOMBYLIIDAE Bee flies

There are 9 species on the British List (Chandler 1998); 4 reported from the county.

Bombylius canescens Mikan – Western Bee-fly. **Nationally Scarce**. Larvae in cells of *Halictus* solitary mining bees, sand dunes, heathland, calcareous grassland; mostly in south-west of Britain.

- SO50 Dark Hill Mine, Ellwood, 18.vi.2005; Clearwell Meend, 16.vi.2006, CT.
- SO61 Flaxley Woods, photographed on partly vegetated ground in damp area, 12.vi.2006; Pope's Hill, one feeding at bird's-eye speedwell flowers, 29.v.2007; one in Joey's Pitch hay field, 2.vi.2008 & another in yard of Yorkleigh Cottage, 4.vii.2008; two nectaring at flowers in garden, 27.vi.2010; 6.v.2011, NJP.
- SO72 Queens Wood, Newent, vi.1945, ISM.
- SO80 South Rodborough, 25.v.1936, 20.v.1944, TBF.
- SP01 Cliffrdine Wood, vi.1942; Conegre Wood, 1943, ISM.
- ST57 Henbury, 1.vi.1903, C. Bartlett; Coombe Dingle, 28.v.1944, EAF (Audcent, 1950).
- ST67 Hanham, HJC (Audcent, 1950).

Bombylius discolor Mikan – Dotted Bee-fly. **Nationally Scarce**. Mainly open areas within broad-leaved woods and other sheltered sunny situations, adults flying along sheltered rides and margins; larvae in cells of *Andrena* solitary mining bees. Fairly common in spring (Audcent, 1950). This also proved to be the case in 1996, and more widely and in even greater numbers in 1997, but not in the preceding 10-15 years when very few sightings were reported.

- SO80 Rodborough, 8.v.1937, 11.iv., 15.iv.1943, TBF. Devil's Churchyard, Minchinhampton, 19.iv.1949, C.O. Hammond; 27.iv.1986, KNAA. Rodborough & Minchinhampton Commons, early v.1996; Rodborough Common, end iii.1997, MRO.
- SO83 The Mythe, quite numerous here in 1990s but disappeared for a few years and then was seen again in 2004: iv.1993, v.1997, 1999, 23.iv.2004, 9.v.2004; 22.iv., 30.iv. & 15.v.2005, 19.iv.2007, 10.v.2008, 15.v.2010, MGM; 12.iv.2011, CT.
- SO90 Strawberry Banks & Cirencester Park Woods, early v.1996 & end iii.1997; Daneway Banks, end iii.1997, MRO.
- SO91 Pilley, Leckhampton, 23.iv.1944, HKAS.
- SO92 Boddington, common at side of a wood, 20.iii.1943, C.C. Townsend.
- SP00 Cirencester, 27.iv.1999, M. Oates. Cirencester College, 2.vi.2011, DI.
- SP01 pre1970 (Drake, 1991).

- ST67 Troopers Hill, 5 adults seen, incl. one nectaring at *Veronica arvensis*, 2 newly emerged at *Andrena* colony; nine exuviae found, 6.iv.; more on 8.iv.1999; at least 6 egg-laying females, 2.v.2000, DJG.
- ST69 Berkeley Deer Park, 2004, J. Melling.
- ST77 Marshfield, 1 hillside scrubby pasture close to stream, 13.iv.1996, MGM.
- ST79 Wotton-under-Edge, at colony of *Andrena labialis* (Kirby) in cutting in road to Coombe, v.1876, VRP (Perkins, 1892). Coombe Hill, 27.iv.1944, EEL. Breakheart Hill, Wotton-under-Edge, 19.v.1990, DI. Near Owlpen Wood, 1 visiting flowers, 24.iv.1996, I. Gray. Lower Lodge Woods, 24.iv.2004, DI & MGM.
- ST88 Midger Wood, 17.iv.1979, Poulding (1979).
- ST99 Culkerton, 1 in garden, iv.1996; also in 1998. MRO. Ashley Manor, 31.iii.1997, APF.
- SU09 Cotswold Water Park, end iii.1997, MRO; 18.iv.2009, CT.

Bombylius major Linnaeus – Dark-edged Bee-fly. Brood parasites of solitary bees; very widespread. Common in spring (Audcent, 1950) and still so.

- SO50 Slade Bottom, 24.iv.1999, KNAA.
- SO51 Symonds Yat Rock area, 2012, P.Andrews.
- SO60 Sharpness, 21.iv.2007, MGM. Lydney, iv.2010, 22.iii.2011, MMy.
- SO61 Welshbury, 26.iv.2006, NJP.
- SO70 Frampton, 2011, CT.
- SO72 Newent Lake, 21.iv.2001, KNAA.
- SO80 Iron Mills Common, 12.iv.1984, J.H.Hemsley. Standish Woods, 4.vi.1985; Bisley Road Cemetery, 20.v.2001, KNAA. Woodchester Park, 2010, MGM.
- SO82 Sandhurst Brickpits, 18.iv.1999, KNAA.
- SO83 The Mythe, 2004, 2005, 2007, 2008, 2010, MM; 2011, CT. Chaceley Meadow, 16.iv.2011, M Midgley. Chaceley Meadow, 2011, CT. Tywning, 2010, P Andrews.
- SO90 Cirencester Park Woods, many dates, KNAA; 2008, MM. Frome Valley, many dates, KNAA & MGM. Pinbury, 7.iv.2002, KNAA.
- SO91 Coberley, 23.iv.1984, J.H.Hemsley; Gulf Scrubs, Colesbourne, 1.vi.1985, KNAA. Pinchley Wood, 21.v.1989, DKC. Hazel Hanger Wood, 7.iv.2007, MGM.
- SO92 Queenswood Farm, up to three at *Glechoma* flowers, 10.iv.1997, KNAA. Tetrads S & X, 2004, K.Heron. Hesters Way Park, Cheltenham, iv.2007, 2010, MGM. Cleeve Hill, 2011, RH.
- SO93 Ashchurch, 9.iv.2007, MGM.
- SP00 Cirencester Park, 1.v.1997, KNAA.
- SP03 Lidcombe Wood, 28.iv.2007, MGM. Stanway Park, 2011, RH.
- SP12 Brassey Reserve, 10.iv.1997, M. Button.

- SP13 Near Cutsdean Quarry, 2010, MGM.
- SP14 Meon Hill, Warks (VC33), 8.v.1994, S. Falk.
- ST57 Henleaze, 1977 & 1979, Poulding (1977, 1979); Sea Mills, Durdham Downs, 1978, Poulding (1978); Sea Mills & Henleaze, 1981, Poulding (1981). Kings Weston & Blaise Castle, 1999, DJG.
- ST67 Troopers Hill, 2.v.2000, DJG. Staple Hill, 17.ix.2001, DJG.
- ST78 Midger Wood, Poulding (1979). Burnt Wood & Bay Wood, 1999, DJG.
- ST79 Uleybury & Westridge Woods, 12.iv.1987; Cam Long Down, 2.iv.1995, KNAA. Lower Lodge Woods, 24.iv.2004, MGM.
- ST89 Kingscote Wood, 4.v.1980, KNAA.
- SU09 Cotswold Water Park, 1.iv.1997, 19-31.iii.1998, APF.

Villa cingulata (Meigen) – Downland Villa. **RDB (Endangered)**. Associated with sheltered calcareous grassland and especially the grassland/woodland edge habitat, but a very little known species, believed to develop as a parasitoid of either moth, bee or wasp larvae. Mainly known from a few sites in Oxfordshire, Marlborough Downs, New Forest, Dartmoor Valleys and, until 2000, last seen in GB in 1937 in Kent. Its discovery in the Cotswolds is difficult to explain as it is such a distinctive species that it could not have been overlooked; it must be a recent arrival (Alexander, 2012).

- SO80 Scotland Bank, Woodchester, one female, 2.viii.2002, DJG. Rodborough Common, 2003, MRO; 1.vii.2011, G. Meredith. Swellshill Bank, MRO.
- SO90 Daneway Banks, one seen 23.vi.2000, MRO; common, 2003, APF; 23.vi.2008, MM; at least two females, apparently ovipositing by "flicking" in c.10cm tall turf, 6.vii.2009, NJP; 6.vii.2010, MGM. Sapperton Canal & Siccridge Field, three seen, 1.vii.2001, DI. Sapperton Wood Meadows, one swept, 17.vii.2002, IT. Strawberry Banks, 23.vi.2005, MGM. North bank of canal below Siccridge Wood, 2.vii.2007, 6.vii.2010; Miserden Park, 16.vii.2007, MGM.
- ST89 Nailsworth, 4.vi.2011, MRO.

Family THEREVIDAE Stiletto flies

There are 14 species on the British List (Chandler 1998); only three reported from the county.

Pandivirilia melaleuca (Loew) Forest Silver-Stiletto - **RDB (Endangered)**. Relict old forest species, long thought to be confined to the Windsor Forest area, but with a thin scatter of unconfirmed records elsewhere across southern and south-eastern Britain. Larvae in dry powdery, red-rotten heartwood in old hollow trees, especially oak at Windsor, but also other broadleaves; active predators of beetle larvae. The Oakle Street female was the first confirmed occurrence away from the Windsor area, but others are now also known.

- SO71 Oakle Street, Churcham, reared from larva in red-rot wood mould in base of hollow pear tree in traditional orchard, 27.ix.2006, KNAA; adult female emerged Spring 2007 & det. A.E. Stubbs (Alexander, 2008).
- SO90 Hailey Wood, Cirencester Park, larva - almost certainly this species - in dry red-rotted heartwood of old oak stump, 1993, KNAA (Alexander, 1994).

Thereva nobilitata (Fabricius) – Common Stiletto. **County Scarce?** The commonest in the genus, but still a local species; it frequents scrubby habitats, hedgerows, tall grassland and dry heaths. Has been reared from deadwood inside a hollow ash tree.

- SO51 Lady Park Wood, 1985, DJG.
- SO70/81 Moorend, 4.viii.1945, J. Bowden (Audcent, 1950).
- SO80 Painswick, 29.vi.1924, JWS (Audcent, 1950). Bisley Road Cemetery, f, 16.viii.1997, KNAA.
- SO81 Brockworth Park, 24.v.2000, PFW.
- SO82 Coombe Hill, 2/3.vii.2005, K.Heron.
- SP14 Hidcote Combe, 2 larvae, i.2000, PFW.
- ST58 Green Lane, Severn Beach, 10.vi.1997, MNS.

Thereva plebeja (Linnaeus) – Crochet-hooked Stiletto. **Nationally Scarce & County Rare.** Associated with a range of dry exposed habitats, including rocky limestone grasslands, heaths, and disturbed ground situations. Requires areas of loose soil and sparse vegetation; the larvae live amongst disturbed soil where they are active predators. It has become increasingly scarce throughout its British range and was thought to be extinct in the county until re-discovered in 2006.

- SO80 Selsley Common, 2.vi.1900, C.J. Wainwright, teste AES.
- SP00 Cirencester, 20.vi.1924, A.T. Thornley (Audcent, 1950).
- SP13 Cutsdean Quarry, 24.vi.2006, MGM.

The following records are almost certainly due to misidentification.

T. bipunctata Meigen – Twin-spot Stiletto. An uncommon species of coastal dune systems and lowland heaths.

- ST57 Blaise Castle, vii.1921, HA (Audcent, 1950).
- ST79 Wotton-under-Edge, VRP (Audcent, 1950).

T. fulva (Meigen) – Small Plain Stiletto. **RDB (Rare).** Associated with areas of fixed sand, with well-established vegetation and small patches of bare sand; mostly sand dunes.

- SO81 Cranham, HJC (Audcent, 1950). Stubbs & Drake (2001) refer to this record but state that a voucher specimen needs to be found before accepting its authenticity.

Therevid larvae, species unconfirmed by rearing, but most probably *T. nobilitata*, with the possibility of a few *Pandivirilia melaleuca*:

- SO71 Bulley, larvae in red-rot wood mould in old hollow plum trees, 10.x.2006, KNAA.
- SO73 Redmarley, larva in red-rot powder inside ancient pear tree, 5.viii.2005, KNAA.
- SO82 Lords Hill Orchard, Ashleworth, larva with *Prionychus* in white rot wood mould in apple, 6.x.2001, KNAA.
- SO83 Whorley Grove & Woodend Farm, Twynning, larvae with alleculine beetle larvae, 24.x.2007, KNAA.
- SO92 Queenswood Farm, Southam, larvae from wood mould in old hollow ash pollard, 26.iv.1998, KNAA.
- SO93 Tibblestone Farm, Teddington, larva in dry red-rot debris in old pear tree, 25.x.2007, KNAA.
- SP03 Stanton, 6.vii.1998 & Snowhill, 20.vii.1998, larvae in ash; Dumbleton Hill, larva in old willow, 12.iii.2002, PFW.
- SP12 Stow Bridge Coppice, larva from interior of large old red-rotten field oak, 17.vii.1999, KNAA.
- SP13 Saintbury, larvae from white rot wood mould in old hollow boundary pollard ash, 23.iv.1998, KNAA.

Family SCENOPINIDAE Window flies

There are two species on the British List (Chandler 1998); both reported from the county.

Scenopinus fenestralis (Linnaeus) – House Windowfly. Nationally uncommon. As homes become more synthetic, mills more hygienic, and stables disappear, these traditional habitats may support fewer fleas and clothes moths - the larval food - than previously. Common, especially indoors (Audcent, 1950); probably very over-looked in the county.

- SO80 Rodborough, 19.vii.1941, via A.G. Irwin.
- SP00 Cecily Hill, Cirencester, regularly indoors 1989-92, DKC.
- ST57 Redland, 19.vi.1959, A.C. Pont.

Scenopinus niger (De Geer) – Forest Windowfly. **Nationally Scarce & Locally Extinct?** Broad-leaved woodlands and parklands, where larvae predatory on beetles in rotten heartwood of veteran trees. No modern records from the county, but an elusive species best found by flight trapping inside hollow trees; it could still be present.

- ST57 Bristol, 30.vi.1928, H. Womersley (Audcent, 1950).
- ST68 Elberton, 21.vi.1914, HJC (Audcent, 1950).

Family ASILIDAE Robberflies

There are 29 species on the British List (Chandler 1998); 17 reported from the county, but some old records of additional species may be valid but casual strays.

Asilus crabroniformis Linnaeus – Hornet Robberfly. **Nationally Scarce & County**

Rare. Associated with rough pastures; larvae probably specialist predators of dung beetle larvae. Formerly widespread but has become increasingly scarce nationally as a result of intensification of agriculture in the latter half of the 20th century. The recent sightings may suggest a recolonisation of the area as it seems inconceivable that such a large and distinctive species could have been so overlooked in recent decades.

SO80 Painswick, Watkins (Audcent, 1950). "Seems to occur here [Stroud] every year in small numbers but in 1935 it was common" (Bainbridge Fletcher, 1936).

SO70/81 Moorend, 15.ix.1945, J. Bowden (Audcent, 1950).

SO72 Oxenhill, one, 13.viii.2004, MGM.

SP10 Hatherop Estate, Eastleach, pair *in cop.*, 21.viii.2011, J. Widgery.

ST57 Shirehampton & Bristol, HJC (Audcent, 1950). Kings Weston, 15.viii.1943, EEL.

ST68 Olveston, 1.viii.1913, HJC, & viii.1916, HA (Audcent, 1950).

ST77 Monkswood Valley, 1.ix.1999, DJG.

ST79 Wotton-under-Edge, VRP (Audcent, 1950).

Dysmachus trigonus (Meigen) – Fan-bristled Robberfly. **County Rare.** A speciality of fixed sand dunes and sandy heaths, but also occurs inland on hot dry slopes. Mainly a southern species.

SO50 Highbury Fields, 2000, PK.

SP03 Stanton Hill, 6.vii.1998, PFW.

ST66 Bitton, HJC (Audcent, 1950).

ST67 Troopers Hill, 14.v., 3.7.vi.1999, 2.v.2000; 26.v.2001, DJG.

Machimus atricapillus (Fallén) – Kite-tailed Robberfly. Open dry habitats such as grasslands, heaths and dunes; also in open woodland. Common (Audcent, 1950) and still reasonably so.

SO50 Brockweir, 19.viii.2006; Nagshead Reserve, 8.ix.2007, NJP.

SO51 Mile End, 18.ix.2004, MGM.

SO60 Nagshead Reserve, 8.ix.2007, NJP.

SO61 Leymoor Quag, 13.ix.1997; Cannop Ponds, 25.vii.1998; Stenders Quarry, 2003, KNAA. Pope's Hill, 6.vii.2005 & subsequently, 4.vii.2006, 11.vii.2007, quite common in area; Blaisdon Wood, 8.vii.2006, NJP.

SO62 May Hill, 25.vii.2009, NJP.

SO70 Awre, 21.vii.2008, NJP & VEP.

SO71 Boseley, near Wetsbury-on-Severn, 20.vii.2008, NJP & VEP.

SO73 Chase End Hill, 13.ix.2008, MGM.

SO80 Rabbit Warren Wood, Selsley, 4.viii.1996; Bisley Road Cemetery, 16.viii.1997; Highfield Bank, Sheepscombe, 31.vii.1998, KNAA. Selsley Common, 9.viii.1997, MAH.

SO81 Butlers Grove Pasture & Highfield Bank, Sheepscombe, 31.vii.1998, KNAA.

SO90 Duntisbourne House, 8.ix.1985, KNAA. Daneway, 2.vii.2007, MGM.

SO91 Crickley Hill, 14.vii.2007, MGM.

SO92 Nottingham Hill, 14.ix.2002; Cleeve Hill, numerous & widespread, 2005; 17.viii.2008, 31.vii.2010, MGM.

SP01 Withington, 11.ix.1988; Hedgley Bottom, 17.vii.1999, KNAA. Withington Banks, 14.viii.2004, MGM.

SP02 Puckham Woods, 21.ix.1997, KNAA.

SP12 Brassey Reserve. Woodbridge Banks, 14.viii.2004, MGM.

SP13 Hornsleasow Roughs, 24.vi.2006, MGM.

ST57 Kings Weston Down, 15.vii.1999, DJG.

ST79 Uleybury, 21.viii.1993, KNAA, & m + f, 17.ix.1996, I. Gray.

ST89 Lower Lutheridge Farm, 10.viii.1997, MAH.

ST99 Aston Farm, Cherington, 16.vii.2000, KNAA.

Machimus cingulatus (Fabricius) – Brown Heath Robberfly. **County Rare.** A species of sandy soils, occurring in dry grasslands and heaths.

SO61 Pope's Hill, 8.viii.2006, male keyed out & a few others seen; 11.viii.2006, 24.viii.2007, 7.ix.2007; Pudding Hill, Flaxley, 8.viii.2007, NJP.

SO70/81 Moorend, 4.viii.1945, J. Bowden (Audcent, 1950).

SO72 Oxenhill, moderate numbers along tow path of disused canal, 6.13.21.viii.2004, MGM; male voucher confirmed by KNAA; several seen 29.viii.2005, MGM.

ST67 Troopers Hill, 30.viii.1999, 30.vii.2000, DJG.

ST68 Olveston, vii.1916, HA (Audcent, 1950).

Machimus rusticus (Meigen) – Downland Robberfly. **RDB (Vulnerable).** Confined to calcareous grasslands across southern England. A nationally important population on the Stroud commons and elsewhere along the Cotswolds.

SO80 Painswick, 7.vii.1923, JWS; Stroud, 25.vi.1936, TBF (Audcent, 1950); Rodborough Common, 1994, MRO. Selsley Common, 4.viii.1996, KNAA.

SO81 post 1970, (in Drake, 1990).

ST57 Bristol, HJC (Audcent, 1950).

ST79 Coombe Hill, 27.vi.1998, MAH.

ST89 Gillhays Bottom, 16.vii.2000, K. Heron.

Neoitamus cyanurus (Loew) – Common Awl Robberfly. **County Rare.** Ancient woodland, especially oak, the adult living amongst foliage along woodland rides..

SO50 Bigsweir Woods, 2000, PK.

- SO51 Redding's Inclosure, 14.vi.1973, AES. Staunton, 1992, P.M. Pavett.
 SO60 Nagshead Reserve, 16.vii.2007, NJP.
 SO61 Foxes Bridge, one in dapple shade on fallen trunk and leaves, photographed, 4.vii.2006; Astonbridgehill Incl., 8.vii.2007; Upper Lydbrook, 8.vii.2007, NJP.
 SO73 Redmarley Woods, 16.v.2009, K. Heron.
 SO80 Painswick, 7.vii.1923, JWS (Audcent, 1950).

Pamponerus germanicus (Linnaeus) – Pied-winged Robberfly. **RDB (Rare) but unconfirmed locally.** A rare sand dune species, with strays occasionally reported inland. It is unclear if the following record truly relates to Gloucestershire.

- ST57 Bristol, Millard in Curtis (Audcent, 1950).

Philonicus albiceps (Meigen) – Dune Robberfly. **Uncertain local status.** A coastal sand dune speciality, but also on a few inland sandy heaths.

- ST57 Bristol, HJC & C. Bartlett (Audcent, 1950).

Dasygogon diadema (Fabricius) – **RDB (Endangered).** Another coastal dune species, but last reported anywhere in Britain in 1947. One of the 19th century records was given as 'Bristol'.

Leptarthrus brevisrostris (Meigen) – Slender-footed Robberfly. **County Scarce.** In southern England almost confined to rough calcareous pastures, but in the north and west more associated with moorland and open-canopied woodland, especially on base-rich soils.

- SO80 Painswick, 7.vii.1923, JWS; Selsley, C.J. Wainwright; Stroud, 6.vi.1940, EAF (Audcent, 1950). Rodborough Common, 3.vi.1985, DKC; 18.vi.1999, 18.vi.2000, P.J. Hodge. Swifts Hill, male with pale hind tarsi, 2.vi.1991; 3.vi.1997, KNAA.
 SO91 Groveridge Banks, 16.vi.1985, & *in cop.*, 9.viii.1998; Leckhampton Hill, 16.vi.1985, KNAA.
 SO92 Cleeve Hill, 23.vi.2003, 13.vii.2006, 2.vi.2007, 3.vii.2010, MGM.
 SP01 Kilkenny Viewpoint, 8.vi.2002, KNAA.
 SP12 Eyford Warren & Brassey Reserve, 19.vii.1992, KNAA.
 ST57 Bristol, HJC (Audcent, 1950).

Choerades marginatus (Linnaeus) – Golden-haired Robberfly. **Nationally Scarce & County Rare.** Confined to the ancient oak forests of southern England, where the larvae develop in decaying wood. Discovered in the Forest of Dean by T. Jermyn and a population is still present on the east side of the Forest.

- SO61 Blaisdon Wood, one photographed, 29.vi.2006; pair *in cop.* & several others seen, 15.vi.2007 & with prey, 18.vii.2007; 17.vi.2010, NJP & DI. Mugglewort Wood, Flaxley, 8.viii.2007; Flaxley Woods, 5.vii.2008, NJP.
 SO73 Chase End Hill, MRO (pers.comm.).
 SO78 Wetmoor Reserve, 20.vii.1985, RHP. Lower Woods, 10.viii.1997, MAH; 18.vii.1999, JH.

Leptogaster cylindrica (De Geer) – Striped Slender Robberfly. Frequent in dense long grassland on freely-draining soils. Fairly common (Audcent, 1950) and still so.

- SO51 Symonds Yat, by River Wye, 10.vi.1997, L.W. Hardwick & R. Underwood (Howe 1998).
 SO60 Clarke's Pool Meadows, 25.vi.1999, KNAA.
 SO61 Great Palescott, 30.vi.2006, NJP.
 SO71 Adsett, near Westbury-on-Severn, 19.vii.2008; near Blaisdon Wood, not caught but presumed this species, 17.vi.2010, NJP.
 SO72 Glasshouse Orchard, Taynton, 4.vii.2001, KNAA.
 SO81 Nut Hill, Upton St Leonards, 18.vii.1998; Butlers Grove Pasture, Sheepscombe, 31.vii.1998, KNAA.
 SO82 Coombe Hill Canal, 22.vii.2001, KNAA.
 SO92 Badgeworth, 14.vi.2006, MGM.
 SO93 Ashchurch Depot, 29.vi.1985, KNAA.
 SP12 Hyde Mill Meadow, 22.vi.1997; Salmonsbury Meadows & Debdene, Condicote, 17.vi.2000, KNAA.
 ST57 Lawrence Weston Moor, 18.vi. & 30.vii.1999; Avonmouth Sewage Farm, 5.vii.2001, DJG.
 ST58 ICI Severnside Estate, Severn Beach, 1997, MNS.
 ST59 Box Farm Meadows, 2003; Lancut Farm, 9.vi.2005, KNAA.
 ST67 Troopers Hill, 7.vi.1999; Emerson's Green, 19.vi.2001; Coombe Brook, 27.vi.2001, DJG.

Leptogaster guttiventris Zetterstedt – Dashed Slender Robberfly. **Locally Extinct.** Dry grasslands, often where scrubby at edge with woodland. May be overlooked due to similarity with common *L. cylindrica*.

- SO80 Selsley, C.J. Wainwright (Audcent, 1950).
 SO92 Cleeve Hill, JWS (Audcent, 1950).

Dioctria atricapilla Meigen – Violet Black-legged Robberfly. Found mainly on dry grasslands and heaths, and less frequently in damp grassland or woodland edge habitats. Common in low vegetation (Audcent, 1950), but much more localised in the county today.

- SO51 Mailscot Wood, 10.vi.1997, L.W. Hardwick & R. Underwood (Howe 1998).
 SO61 Cannop Ponds, 7.10.vi.1997, M. Ackland, L.W. Hardwick & R. Underwood (Howe 1998). Flaxley Pool, 28.vi.2005; Mugglewort Wood, Flaxley, 1.vi.2007, NJP.
 SO70 Awre Peninsula, 10.vi.2005, NJP.
 SO71 Ley Park Wood, 7.vi.2005 & 4.vi.2007, NJP.
 SO73 Bromsberrow Heath, 5.v.2007, JH.
 SO80 Woodchester Park, 1967-1992, Manchester University records. Minchinhampton Common, 3.vi.1985; Short Wood, 30.vi.1985; Haresfield Beacon, 3.vi.1985, DKC. Randwick Slopes, 5.vi., Iron Mills

- Common & Rodborough Common, 30.vi.1985; Bisley Road Cemetery, 26.v.1997, 20.v.2001; Swifts Hill, 3.vi.1997, KNAA.
- SO82 Handkerchief Pool, 18.vi.1989, KNAA.
- SO83 Brockeridge Common, several, 5.vi.2006, NJP. The Mythe, 1.vii.2007, MGM.
- SP01 Kilkenny Viewpoint, 8.vi.2002, KNAA.
- SP03 Stanton Hill, 19.vi.1994, KNAA.
- SP11 Sherborne Estate, 19.vi.1985, KNAA.
- SP12 Debdene, Condicote, 17.vi.2000, KNAA.
- SP13 Cutsdean Quarry, 24.vi.2006 & 2.vi.2007; Hornsleasow Roughs, 24.vi.2006, MGM.
- ST57 Kings Weston Down, 30.vi.1998, KNAA; 6.vi.1999, DJG. Avon Gorge, 8.vi.2000, DJG.
- ST58 Old Tip, ICI Severnside Estate, Severn Beach, 29.vi.1996; Green Lane, Severn Beach, 10.vi.1997, MNS.
- ST59 Parson's Allotment, 20.vii.1980, M. Edwards.
- ST76 Banner Down, 6.vii.1985, AES.
- ST79 Uleybury, 9.vi.1985, KNAA.
- ST89 Iron Mills Common, 3.vi.1985, DKC. Box Farm Meadows, 2003, KNAA.

Dioctra cothurnata Meigen – Scarce Red-legged Robberfly. **RDB (Rare)**. A woodland margin species, associated with the edges of heaths and marshes. Increasingly scarce nationally.

- SO50 Highbury Fields, 2000, PK.
- ST57 Bristol, Verrall (Audcent, 1950).

Dioctria hyalipennis (Fabricius) syn. *baumhaueri* Meigen – Stripe-legged Robberfly. **County Scarce**. A species of woodland edge and scrubby hedgerows. Widespread over much of southern England.

- SO50 Highbury Fields, 2000, PK.
- SO51 Mailscot Wood, 10.vi.1997, L.W. Hardwick & R. Underwood (Howe 1998).
- SO61 Pope's Hill, 7 & 16.vii.2005, 31.vii.2007, 30.vii.2008; Foundry Wood, 11.vii.2006; Astonbridgehill Incl., 8.vii.2007, NJP.
- ST57 Kingsweston, 25.vi.1931, HA.
- ST67 Troopers Hill, 15.vi.2000, DJG.

Dioctria linearis (Fabricius) – Small Yellow-legged Robberfly. Woods and their margins. Widespread nationally as well as locally.

- SO50 Bigsweir Woods, Causeway Grove & Highbury Fields, 2000, PK. Bigsweir House, Brockweir, wooded riverbank, 6.vi.2006, KNAA
- SO51 Lady Park Wood, 1985, DJG.
- SO60 Lydney Park, 17.vi.1990, KNAA. Nagshead Reserve, 16.vii.2007, NJP.

- SO61 Welshbury, 16.vii.1994, KNAA. Pope's Hill, 27.vi.2005, 31.v.2006, 25.v.2007, 25.vi.2010; Blaisdon Wood, 23.vii.2005, 6.vi.2006, 18.vii.2007, 28.vi.2010; Chestnuts Inclosure, 13.vii.2006; Flaxley Woods, 21.vii.2006; Foundry Wood, 11.vii.2006, NJP. Great Palescot, 12.vii.2008, MGM.
- SO62 Betty Daws Wood, Dymock, frequent, 18.viii.1991, KNAA. May Hill, 19.vi.2010, NJP.
- SO71 Bulley Woods, 2.vii.1997, KNAA. Ley Park Wood, 3.viii.2005 & 26.v.2006, NJP.
- SO80 Rabbit Warren Wood, Selsley, 4.viii.1996, KNAA.
- SO82 Chaceley Stock, swept riverside, 21.vi.2006, KNAA.
- SO90 Siccaridge Wood, 2003, KNAA.
- SP03 Thrift Wood, 22.vi.1997, KNAA.
- ST57 Coombe Dingle, 14.vii.1946, EAF (Audcent, 1950); & 30.vi.1998, KNAA.
- ST59 Ridley Bottom, 2003, KNAA.
- ST79 Coombe Hill, 27.vi.1998, MAH.
- ST89 Downend, 24.vi.1937, JWS. Highgrove House, 2.vii.1997, KNAA.

Dioctria oelandica (Linnaeus) – Orange-legged Robberfly. **Nationally Scarce & County Rare** Associated with rides and glades and other open-canopied situations in oak woodland, perhaps with a preference for coppices. Widespread over much of western and southern Britain, with most local records coming from the Forest of Dean fringes.

- SO51 High Meadow Woods, 4.vi.1939, anon. Staunton, 1992, P.M. Pavett.
- SO60 Soudley, one thought to be this species viewed in woods in spring, 2006, NJP. Brierley, 3.vi.2007, NJP.
- SO61 Ware Slade, Brierley, 3.vi.2007, NJP.
- ST79 Wotton-under-Edge, VRP (Audcent, 1950).

Dioctria rufipes (De Geer) – Common Red-legged Robberfly. Common in many habitats, especially open areas in or by woodland and scrub. Common in low vegetation (Audcent, 1950) and still reasonably so.

- SO50 Highbury Fields, 2000, PK. Brockweir House Park, 9.vi.2005, KNAA
- SO60 Clarks Pool Meadows, 29.v.2005, 25.v.2007; Box Grove, 30.v.2005, NJP.
- SO61 Pope's Hill, 7.vii.2005, 6.v.2007, 20.vi.2010; Morse's Grove, 19.v.2007; Blaize Bailey, 8.vi.2007; Laymoor Quagg, 12.vi.2007, NJP.
- SO72 Oxenhall, 9.vi.2007, MGM.
- SO80 Haresfield Beacon & Minchinhampton Common, 3.vi.1985, DKC. Rodborough Common, 30.v.1985, DKC & KNAA. Swift's Hill, 2.vi.1991, KNAA.
- SO83 Severn Ham, Tewkesbury, 8.vi.2005, KNAA.

- SO90 Bagendon Valley, 24.vi.1984; Oakley Wood, 27.v.1991; Hailey Wood, frequent, 1.vi.1997, KNAA.
 SP01 Clifffordine Wood, 12.vi.1988, Pinswell, 28.v.1995, KNAA.
 SP11 Sherborne Estate, 19.vi.1985, KNAA.
 SP12 Brassey Reserve. Rissington Mill, 16.vi.1993; Salmonsbury Meadows, 17.vi.2000, KNAA.
 ST57 Kings Weston Down, 6.vi.1999, DJG.
 ST76 Banner Down, 6.vii.1985, AES.
 ST79 Coombe Hill, 16.v.1999, MAH.

***Lasiopogon cinctus* (Fab.)** – Spring Heath Robberfly. **Nationally Scarce & Locally Casual?** Typically associated with dry sandy soils, usually in the proximity of trees. Lowland heaths of south-eastern England, but scattered northwards as far as Cumbria. The following record presumably represents a windblown stray as the site is unlikely to provide breeding habitat.
 SO80 Rodborough, 29.v.1944, TBF.

ACKNOWLEDGEMENTS

I would like to record my thanks to all of the recorders who have so willingly passed their records to me and have encouraged the production of this review. Thanks also to Dave Clements for the loan of his copy of Audcent's Bristol Diptera publications, and to Martin Drake for releasing records from the national recording scheme database.

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LADYBIRD REPORT 2013

David Iliff

Last year's report described the substantial decline in ladybird numbers in the county after the middle of 2012. This situation continued for much of 2013 with very few records for the first half of the year. After July numbers began to recover. The 7-Spot Ladybird (*Coccinella 7-punctata*) had been especially abundant in the early months of each of the four previous years, but only two examples were recorded before June in 2013. Even the Harlequin Ladybird (*Harmonia axyridis*) was considerably less common except during its customary autumn surge.

The two *Adalia* species, the 2-Spot Ladybird (*A. 2-punctata*) and 10-Spot Ladybird (*A. 10-punctata*), both of which are considered to have declined since the arrival of the Harlequin, did comparatively well in Gloucestershire, and the 14-Spot Ladybird (*Propylea 14-punctata*), the numbers of which seem to fluctuate very little from year to year, was seen regularly in the second half of 2013. 24-Spot Ladybirds (*Subcoccinella 24-punctata*) were recorded on four occasions.

Last year's report mentioned the sudden reduction in records of the 22-Spot Ladybird (*Psyllobora 22-punctata*). This usually common species is represented in most years by many county records, but in 2012 there were only two (covering three individuals). The situation in 2013 was little better with only four records for the entire year. These were at Pegmore Farm SO8624 on 20th April (David Haigh), near Hazelton SP095194 on 6th May (John Widgery), Saul SO7409 on 24th July (Ned Harris) and Woolstone SO962302 on 8th October (John Widgery).

Other species for which records were in low single figures in 2013 were the Pine Ladybird (*Exochomus 4-pustulatus*) and the Kidney-spot Ladybird (*Chilocorus renipustulatus*) each with only two records, and the Orange Ladybird (*Halyzia 16-guttata*) and the Cream-spot Ladybird (*Calvia 14-guttata*) each with just one record.

Among the species that are normally scarce, or which have become so in recent years, there was a single record of the Larch Ladybird (*Aphidecta oblitterata*) by Maris Midgley at Mallard's Pike SO637092 on 15th April and one each from John Widgery for the Adonis Ladybird (*Hippodamia variegata*) adjacent to Shorncote Reedbed SU035966 on 9th October and the 11-Spot Ladybird (*Coccinella 11-punctata*) at Church End, Frampton-on-Severn SO743069 on 23rd October. Species not mentioned in this report were not recorded at all during the year.

My thanks to the following who supplied me with records: David Haigh, Ned Harris, Emma Hartley, David Long, Maris Midgley, Andrew Moody, Colin Twissell, and John Widgery.

WILDLIFE RECORDING INFORMATION

The Society's official recording area is the whole of the vice-counties 33 (East Gloucestershire) and 34 (West Gloucestershire). However, for practical purposes, certain recorders only cover the administrative county of Gloucestershire, comprising the districts of Cotswold, Stroud, Forest of Dean, Cheltenham, Gloucester and Tewkesbury, since the Bristol Naturalists' Society covers the Unitary Authority of South Gloucestershire and the City of Bristol (further details available from the individual recorders as listed below).

The Society welcomes observations and records from members and others, and these should be sent to the Recorders as detailed below. Records may be submitted in any form (so long as they are legible and intelligible); some Recorders prefer them on A6 cards (one per species), or, for certain groups, on the appropriate recording form (available from the Recorders - see below), though a simple list (preferably in systematic order) is acceptable for groups such as moths.

Ideally the following information should be supplied:

- * Species name.
- * Where seen (name of location, preferably using names on the 1:50000/1:25000 Ordnance Survey maps; if in doubt include a sketch map of the site) plus six figure map reference. It is helpful to Recorders if the tetrad number is also given. For sightings in the Cotswold Water Park observers are asked to quote the official County Council pit numbers whenever possible.
- * Date.
- * Observer's name and address.

Also useful:

- * Number or abundance.
- * Habitat.
- * Where appropriate a description of the species or a note of how identification was made including details of any guidebook used.
- * Any other relevant information.

These details should be sent to the appropriate Recorder from the list below. The precise location of rare species will be kept confidential in the interests of conservation - records should be clearly labelled **CONFIDENTIAL** if they are to be so treated. Straightforward records are too numerous to be acknowledged individually by the Recorders, but *when a reply is required please enclose a stamped addressed envelope* if the recorder asks for a voucher specimen.

It is also possible to record your sightings online - see details below.

The most interesting records are published in the Society's "GNS News", but all records (common species or not) are valuable in building up a picture of the present status and distribution of species in our county, for compiling annual reports and for updating our records and those at the Gloucestershire Centre for Environmental Records and the national Biological Records Centre, CEH, Wallingford.

Under the Data Protection Act the GNS advises members and other observers that their personal details (name, address, telephone number, email address) will be stored, either on paper or electronically, as part of the Society's recording system. These details will not be passed on, or sold, to third parties with the exception of the Gloucestershire Centre for Environmental Records, subject to the Memorandum of Understanding between the two organisations. Should the observer wish that certain parts of a record remain confidential (e.g. for reasons such as sensitive species, sensitive site, restriction of access to land, anonymity), they should contact the relevant Recorder and discuss the matter, stating their reasons.

COUNTY RECORDERS' CONTACT DETAILS

Details of checklists and other GNS-published articles are available on the website and in The Gloucestershire Naturalist.

BIRDS: Richard Baatsen (01452 740161); email: baatsen@surfbirder.com. For those observers who are reporting a county rarity or BBRC species, the appropriate forms can be obtained from the Recorder; a guidance document listing all the species that require detailed descriptions is also available (please send sae); submission of records by email preferred (see also Gloucestershire Bird Report 2005 pp 18-20). The GNS website has a recording form showing all required information that can be printed off.

British Trust for Ornithology Representative: Gordon Kirk (01452 741724); email: GordonKirk@aol.com

MAMMALS: John Field, c/o The Gloucestershire Wildlife Trust, Conservation Centre, Robinswood Hill Country Park, Reservoir Road, Gloucester GL4 6SX (01452 383333); email: john.field@gloucestershirewildlifetrust.co.uk
Gloucestershire Bat Group Recorder: David Wells email: dave-wells@mypostoffice.co.uk

REPTILES & AMPHIBIANS: David Dewsbury (01594 832068); email: david.dewsbury@btinternet.com

FISH: Pete Bradshaw, c/o The Gloucestershire Wildlife Trust, Conservation Centre, Robinswood Hill Country Park, Reservoir Road, Gloucester GL4 6SX (01452 383333); email: peter.bradshaw@gloucestershirewildlifetrust.co.uk

CRAYFISH: John Field, c/o The Gloucestershire Wildlife Trust, Conservation Centre, Robinswood Hill Country Park, Reservoir Road, Gloucester GL4 6SX (01452 383333); email: john.field@gloucestershirewildlifetrust.co.uk

INVERTEBRATES:

Gloucestershire Invertebrate Group (GIG): Andrew Leach, c/o The Gloucestershire Wildlife Trust, Conservation Centre, Robinswood Hill Country Park, Reservoir Road, Gloucester GL4 6SX. (01452 383333); email: Andrew.leach@gloucestershirewildlifetrust.co.uk

BUTTERFLIES: Chris Wiltshire (01453 545509); email: chriswiltshire164@o2.co.uk
Butterfly Conservation Gloucestershire Branch: www.gloucestershire-butterflies.org.uk

MOTHS: VC33 East Gloucestershire: Robert Homan (01242 235408); email: theapiary@hotmail.com
VC34 West Gloucestershire (west of the Severn): Michael Bradley (01531 822315); email: michaelw1184w@hotmail.co.uk
VC34 West Gloucestershire (east of the Severn): Neale Jordan-Mellersh (0117 9854730); email: sneale48@hotmail.co.uk
Online distribution maps and additional information for Gloucestershire moths can be found at http://www.gloucestershire-butterflies.org.uk/Guys_maps/mothmap.html

DRAGONFLIES: Ingrid Twissell (01452 714413); email: canditwissell@btinternet.com

HOVERFLIES, CONOPID FLIES & LADYBIRDS: David Iliff (01242 674398); email: davidiliff@talk21.com

DIPTERA (part) LOWER BRACHYCERA (Robberflies, Hunchback-flies, Water-Snipeflies, Beeflies, Snipeflies, Windowflies, Soldierflies, Horseflies, Stiletto-flies, Awl-flies, Wood-Soldierflies):

Martin Matthews email: martmatt@btinternet.com

John Phillips email: jandvphillips@talktalk.net

ANTS, BEES & WASPS: Tony Taylor (01452 728734); email: taylor.ant@cotswoldwireless.co.uk

SPIDERS: David Haigh (01242 513544); email: djrhaigh@hotmail.co.uk

BEETLES (other than Ladybirds), **BARKFLIES, WOODLICE, CENTIPEDES, MILLIPEDES, HARVESTMEN, FALSE SCORPIONS, LACEWINGS, SPRINGTAILS & FRESHWATER INVERTEBRATES:** David Scott-Langley email: dscottlangley@hotmail.co.uk.

GRASSHOPPERS, BUSH-CRICKETS, EARWIGS, & COCKROACHES, BUGS (HEMIPTERA): John Widgery (01242 673873); email: johnwidgery@waitrose.com

LAND & FRESHWATER MOLLUSCS: David Long (01242 527673); email: david@long55.wanadoo.co.uk

ECTOPARASITES (Lice, louse-flies): Robin Sellers (01946 725453); email: sellers@craghouse7.freeserve.co.uk

FRESHWATER TRICLADS: Larry Bellamy (01594 516420); email: lar.amy@btinternet.com

FLOWERING PLANTS, FERNS & STONEWORTS: Mark and Clare Kitchen (01453 810958); email: markarkitchen@yahoo.com

MOSSES AND LIVERWORTS: Peter Martin (01666 503791); email: petermartin@btinternet.com

FUNGI: Cotswold Fungus Group & VC33 County recorder email: recorder@cotswoldfungusgroup.com.
Dean Fungus Group & VC34 recorders: Keith & Valerie Davies (01452 760278); email: keith.val@hotmail.com

LICHENS: Juliet Bailey email: glos.lichens@gmail.com

PLANT GALLS: Robert Homan (01242 235408) email: theapiary@hotmail.com

ONLINE RECORDING at www.universalquestions.com/nature

There is now an online county wildlife recording system at Richard Beal's website covering Birds, Butterflies, Dragonflies & Damselflies, Mammals and Orchids. It is a straightforward, but nevertheless sophisticated way, of getting your sightings from your desktop to the county recorders and by using the system you can make a valuable contribution to the GNS ongoing recording effort. After a simple registration procedure you can start recording straightaway and you can return to the web site at any time by simply logging in.

NEW RECORDERS

The Society is always looking for new Recorders to fill vacant positions (particularly parts of **DIPTERA** not covered above, and **FRESHWATER FAUNA**) or to cover groups not listed above (no matter how obscure!). Anyone willing to undertake these tasks or to organise (or help organise) surveys in the county is invited to contact David Scott-Langley (Chairman, GNS Scientific & Publications Sub-committee), 19 Chesterton Grove, Cirencester, Gloucestershire GL7 1XN; Tel 01285 659631; email: dscottlangley@hotmail.co.uk

OTHER USEFUL CONTACTS AND ADDRESSES

GNS Web site: www.glosnats.org for sightings, recorders, events, archives and species information.

GNS Webmaster: Richard Beal; email: richard.beal@richardbeal.com

GNS Library: our library has moved to the main house at Hartpur College. Phone 01452 702160 before visiting to check the room is free for use.

GNS Chairman: Mike Smart, 143 Cheltenham Road, Gloucester GL2 0JH (01452 421131); email: smartmike@btinternet.com

GNS Membership Secretary: Andrew Bluett, 50 Kingsmead, Abbeydale, Gloucester, GL4 5DY (01452 610085); email: gnsmembership@btinternet.com. See also Membership page on GNS Website.

GNS Secretary: Lynne Garner (01452 614354); email: lynne@moorend1989.plus.com.

GNS Cirencester Branch Chairman: David Scott-Langley, 19 Chesterton Grove, Cirencester, Glos GL7 1XN (01285 659631); email: dscottlangley@hotmail.co.uk.

Editor of the GNS News (records and general matters; appears quarterly): Kate Kibble; email: kkibble@sky.com

Editor of The Gloucestershire Naturalist David Scott-Langley, 19 Chesterton Grove, Cirencester, Gloucestershire GL7 1XN (01285 659631); email: dscottlangley@hotmail.co.uk. Articles and reports for *TGN* should be sent to the Editor by February 28th of the year of publication. Notes for contributors and page layout are available from the same source.

Natural England (Southwest Region) Natural England, First Floor, Temple Quay House, 2 The Square, Bristol, BS1 6EB Tel: 0300 060 2065

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Gloucestershire Wildlife Trust: Conservation Centre, Robinswood Hill Country Park, Reservoir Road, Gloucester GL4 6SX (01452 383333). Web site: www.gloucestershirewildlifetrust.co.uk

Gloucestershire Orchard Trust: Ann Smith (secretary/coordinator) 01452 855677 www.gloucestershireorchardtrust.org.uk; email: info@gloucestershireorchardtrust.org.uk

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Notes for Contributors

1. The Editor will be pleased to receive papers relating to the fauna and flora of Gloucestershire, of a more scientific nature than would be published in the GNS News, as well as annual reports from the County Recorders.
2. Wherever possible, papers for publication in The Gloucestershire Naturalist should be in Microsoft Word and saved as (.doc) files. Please do not embed photographs etc in the text. Formatting will be done by the editor.
3. The font is to be Times New Roman size 10.
4. Titles and section headings should be as in 3. above and will be formatted by the editor.
5. Page size is to be A5 Portrait. The editor will be pleased to email a formatted page for use by the contributor.
6. Drawings and sketches should be camera-ready and, unless the contributor has the technology to incorporate them into his paper, should be supplied on good quality paper or Polydraw drafting film.
7. Maps should be as in 6. above unless they can be electronically generated using programmes such as DMAP or Mapmate.
8. Photographs should be supplied as digital images, sent separately and not embedded in the text, or on good quality photographic paper.
9. All digital images should be as large as possible and saved as .tif or .jpg files and sent to the editor on Compact Disc or via email. Please do not embed photographs within articles as they may appear outside the colour section.
10. For those using traditional methods, manuscripts should be double-line spaced and clearly legible or they will be returned. Drawings, maps and photographs should be supplied as in 6., 7. & 8. above.
11. Contributors will be sent a copy of their paper for proofreading and final alterations before publication if requested.
12. Submission date shall be no later than February 28th.
13. New contributors are asked to submit two or three lines about themselves with their article for inclusion in the section "Notes on Contributors".