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Cover photo: Wasp Beetle (*Clytus arietis*) at Westonbirt Arboretum *(photo: David Scott-Langley).*

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Editorial

2009 seemed a more "normal" year, if such a thing is possible, with no major unseasonal flooding. Maybe this accounts for the apparent reduction in the spread of John Widgery's alien terrestrial bugs (see page 63). Keith Alexander has produced a fascinating article on one of the neglected features that makes the Cotswolds what they are – the Ash pollards, their history and their fauna (see page 4). A continuing study by David Scott-Langley on the effects of the 2007 floods at Coombe Hill Canal and Meadows has shown up how ground beetle ans spider assemblages have changed as a result (see page 91). Larry Bellamy, having discussed the county flatworm fauna in the very first Gloucestershire Naturalist magazine in 1984, returns to describe an alien triclad (flatworm) that has invaded our county (see page 66).

Once again we have a wide range of recorders' reports. Mark and Clare Kitchen continue their amazing workload, reporting on the county flora. David Haigh mentions Cave and Crab spiders. Large numbers of moth trappers around the county keep Roger Gaunt very busy. Chris Wiltshire reports on a better year for the county's butterflies in general. Read on to find out more about the county's flora and fauna.

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 me 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 2010

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 Sub-Committee 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.

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.

Keith Alexander is the county recorder for Coleoptera (other than ladybirds), Diptera (other than hoverflies), Sawflies (Hymenoptera: Symphyta) and Barkflies (Psocoptera). He currently lives in Exeter and would be delighted if someone resident in the county would like to take over the baton for recording these insects.

David Haigh was born in Scotland and completed his education in Wales. He started teaching in 1960 in the Midlands and in 1965 came to Cheltenham where he continued to teach until 2002. Since 1967, when he joined the GNS, he has been recording spiders in the county. He is a member of The British Arachnological Society and is Area Organiser for the Spider Recording Scheme.

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.

Colin Twissell took over from Peter Burns as Reptile and Amphibian Recorder for Gloucestershire in 1973. He has had a lifelong interest in all aspects of natural history.

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.

Roger Gaunt was born and educated in Yorkshire. After National Service he trained as a Work Study Engineer, before changing to teaching and moving to Gloucestershire in 1962. He moved to his present address in 1968 and soon became interested in and recording the moths that came to his windows. Soon after taking early retirement he was invited to become moth recorder, in

about 1988. He produces an electronic newsletter several times a year, and his 'Gloucestershire Moths - A Second Account' was published in 2006.

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 was born and brought up in Gloucestershire, and, with a BSc in Agricultural Botany and MSc in Conservation, spent 15 years as a professional ecologist working mostly in farm wildlife conservation in Warwickshire. She returned to Gloucestershire 8 years ago and now divides her time between volunteering as a naturalist, and restoring an old farmhouse.

Larry Bellamy is the National Scheme Organiser / Recorder for freshwater triclads for the NBN/NFBR/BRC and also the Gloucestershire county recorder. His early research career was on competition and behaviour in these triclads. Until he took early retirement, he was head of biology at Gloucester College of Technology/Gloscat in Brunswick Road. From childhood he has had a love of freshwater. He is a life-member of the Freshwater Biological Association.

THE COTWOLD ASH POLLARDS – A UNIQUE HERITAGE IN NEED OF ACTIVE CONSERVATION

Keith Alexander

Introduction

The Cotswolds are well known for their limestone grasslands and drystone walls, but ask people about tree heritage and they will undoubtedly talk about ancient woodlands and fail to mention the old ash pollards. And yet the Cotswolds are virtually unique in Britain for their special heritage of ash pollarding. These old ash pollards are living history, a characteristic feature of the sustainable land management systems of past centuries. They also support biodiversity of European significance.

Pollarding for fodder and fuel

Pollarding is the practice of cutting trees above the reach of browsing animals in order to generate a sustainable resource from the branches. The length of cutting cycle varies according to the type of product desired, as does the proportion of the crown that is removed on any one occasion. If cut sympathetically the tree is able to re-grow its crown time and time again, without any loss of structural integrity. Cut badly and the tree may decline in health, become structurally unsound, and even die.

But what were the products of pollarding? Old ash pollards are very widespread across the Cotswolds, especially in the north and through the river valleys. It follows that pollarding was once a common activity and clearly the products were in great demand. Unfortunately, as with so many everyday essentials, little or nothing has been written down about how the trees were managed and why. Good clues are, however, available from other parts of Britain and Europe.

The other part of England where there are large numbers of old ash pollards is the central and eastern Lake District. Here the trees were cut primarily as leaf fodder, as an alternative to hay. Similar pollarded trees can be seen in southern Norway and Sweden, which are also known to have been used for leaf-fodder. In these areas the growing season for hay meadows was short and it was often difficult to grow enough hay to get the livestock through the long winters, and so the nutritious foliage of ash trees was cut, dried and stored in barns in a similar way to hay making.

Ash is a very palatable tree to large herbivores such as sheep, cattle and deer. The foliage and thin bark of branches is eaten with relish – the animals recognise this as being especially enjoyable to eat and will target it. The thick bark of the trunks is less

nutritious and offers some physical protection from gnawing, but may be vulnerable if the animals are desperate for nutrition.

Leaf-foddering has died out in these northern climates but can still be seen in other parts of Europe, notably in the mountains of northern Spain. Here the ash trees are mostly shreds rather than pollards, the trunks being left taller and small branches are cut from the sides as well as the tops. Freshly cut branches are fed to the animals soon after cutting and provide a nutritious supplement especially in the spring, after the long cold winters in the mountains.

In east Devon, old ash pollards around Branscombe were cut primarily for the wood from the poles which provided high quality fuel for the bread ovens of the local bakery. The old trees stand in old pastures and it seems likely that the cut branches were left for the local livestock to strip the leaves and bark, as part of the seasoning of the wood prior to removal and burning.

It seems likely therefore that the Cotswold ash pollards were similarly a multi-purpose resource for the local people, providing both leaf fodder and fuel wood, and probably also a handy source of long straight branches for short-term repair of walls, etc, etc. Perhaps the leaf fodder was most needed in high summer when the pastures had become droughted, or in the spring as a boost after the long winter – as in northern Spain, or maybe the bark of freshly cut branches could be important during periods when deep snow covered the pastures? We just don't know.

Biodiversity values of open-grown trees

Large old trees can provide important habitat for specialist wood-decay (saproxylic) fungi and invertebrates as well as bark-living (epiphytic) lichens, mosses and invertebrates. The most important trees for this wildlife tend to be open-grown, and for a variety of reasons.

Enclosed and ungrazed woodlands predominantly comprise relatively young trees; woods are poor places for trees - they die young under these overcrowded conditions. If they are not cut down by people, they will suffer from canopy competition with their neighbours, and younger more vigorous trees will eventually overtop and shade-out older and aging individuals. While an open-grown ash tree may live for many centuries and develop a broad and strong trunk (see Plate 1), a woodland-grown ash tends to be drawn up tall and thin, and rarely achieves its full potential. Woodland trees therefore tend to support a restricted range of deadwood fungi and invertebrates as wood volumes are relatively small, while the shady conditions are poor for epiphyte development.

Open-grown trees have the potential to develop large old trunks full of habitats for specialist wood-decay fungi and invertebrates. The well-lit trunks provide a very favourable surface for epiphytes which is potentially available for many centuries and so the epiphytic communities can develop and diversify over long timescales.

Wood-decay fungi and invertebrates

Recent investigation of the invertebrates which live in the old ash pollards across the Cotswolds has demonstrated that these trees support an extremely interesting fauna and one of European significance. Conservationists were alerted to this importance as a result of beetle-recording by a local amateur naturalist (Whitehead, 1996) on Bredon Hill in Worcestershire – an outlier of the Cotswolds - and this work has subsequently been extended into the north Cotswolds (Alexander, 1999 & 2003; Whitehead, 2002).

The most important wildlife habitats are provided by the large old living trunks of the ash pollards. In trees only the outermost growth rings have living tissue; the older growth rings deep within the trunk are dead tissues which can be exploited only by specialist heartwood decay fungi. The most widespread of these fungi in the Cotswolds is the weeping polypore *Inonotus hispidus*, but southern polypore *Ganoderma australe* and other bracket-fungi may also decay the ash trunks. The central woody tissues are broken down by the fungi and the trunks begin to hollow. Debris accumulates in the base of the hollows and composts down to form a wood mould. It is this wood mould – the end product of centuries of tree growth followed by fungal decay – that provides the most important habitat for rare and threatened wood-decay invertebrates.

Violet click beetle

The flagship species for the conservation of the old Cotswold ash pollards is the Violet Click Beetle *Limoniscus violaceus* – a medium-sized black click beetle with a violet metallic sheen (see Plate 2). This is a rare species throughout its European range, and this range is now extremely fragmented and its populations highly isolated as a result. Suitable old hollow trees have become extremely rare and localised across Europe, and landscapes with sufficient old trees to maintain viable populations of this beetle are now being designated as Special Areas of Conservation (SAC) under the EU Habitats Directive. Violet Click Beetle was found to be present on Bredon Hill and its habitat there now has special protection as a SAC. It is unclear however if this population is sustainable as the population of host trees has a poor age structure.

A very limited investigation of the similar habitats that extend across the north Cotswolds immediately discovered another population, at Dixton Wood. Here the beetle was found developing in the hollow base of an old ash coppice stool. One of its few known French sites is also old coppice, but it seems unlikely that such old coppice stools provide a viable long-term habitat for the beetle as the wood volumes are much smaller than those provided by old open-grown trees. Such sites also tend to be coppices where the trees have been singled for conversion to high forest and, as such, do not have a future unless coppicing resumes.

Other rare beetles in the old pollards

Violet is not the only rare click beetle inhabiting the old ash pollards. *Ampedus rufipennis* is one of the cardinal click beetles, somewhat larger and with vivid scarlet wing-cases. This too was originally discovered on Bredon Hill, but has now been found on a number of sites in the north Cotswolds, across Alderton, Alstone, Dumbleton, Gotherington, Southam, Stanton and Toddington parishes. If this species is this widespread in the old ash pollards then so might Violet Click Beetle also be! Another rare click beetle *Ischnodes sanguinicollis* – black but with a red pronotum or 'collar' - is often associated with Violet in its European sites and is also known from the old ash pollards across Alderton, Alstone and Dumbleton. The old pollards also support populations of another rarity, the medium-sized black click beetle *Procraerus tibialis*.

While the Cotswold ash pollards are exceptional for their rare click beetles alone, there are also a whole host of other nationally rare and scarce wood-decay beetles present. Another wood mould specialist present is the rare darkling beetle *Prionychus melanarius*, although this is more widespread in the county in the traditional orchards of west Gloucestershire.

Site quality

The quality of this wood-decay beetle fauna in the Cotswold ash pollards is so high that comparisons have to be made with the single most outstanding British site, Windsor Forest and Great Park, recognised throughout Europe as the top British site. Windsor is the only other British site for Violet Click Beetle, and is the other major British site for *Ampedus rufipennis*, and yet it does not have *Prionychus melanarius*. While to suggest that the north Cotswolds are of similar conservation importance to Windsor would be going too far, it is true to say that - like Windsor - the old ash pollard landscapes of the north Cotswolds are of European significance for their rare beetles.

One of the more striking features of this exceptional wood-decay beetle fauna is that it had been so overlooked by earlier entomologists. All of the species mentioned were

unknown in the Cotswolds until Whitehead's work stimulated investigation of the old ash pollards – see Atty (1983) – although it seems likely that Atty (pers. comm.) had seen *A. rufipennis* but misidentified it as *A. cinnabarinus*, which at the time was the only red click beetle known from the county (the Forest of Dean is one of its national strongholds). This does not imply recent colonisation of the county however, as the species concerned are widely acknowledged to be relict species of the primeval forests of Europe. They are difficult to detect unless specifically sought, and with specialist knowledge of how to find them. They are species which require the type of knowledge only developed by expert field naturalists, but unfortunately such people just had not been investigating the old pollards

Conservation requirements

The current population of ash pollards is in a very precarious state. Many of the trees are very old, and most have developed heavy crowns through neglect of active pollarding. New generations of trees are not coming on. With the trees now being out of the normal cycle of pollarding their restoration needs to be taken very carefully. The heavy crowns run the risk of the trunk failing through the weight, and collapse being a serious risk; these were working trees, responding to past human interventions in their growth - continued human intervention is needed if we are to retain this historic feature of the Cotswold landscape and protect the rare and threatened wildlife that has adopted them. But re-cutting the entire old crown may be more damaging than continued neglect. It is important to apply expert arboricultural knowledge to any future programmes of cutting. Consideration needs to be given to promoting new generations of trees to support the considerable biodiversity interests and whether or not new pollards are the way forward for both biodiversity and landscape heritage.

Interestingly, Green (2010) suggests that we should be rediscovering the benefits of pollards not only for their essential contribution to sustainable farming and especially healthy and productive soils, but also for being capital assets creating beautiful landscapes, maintaining biodiversity and offsetting carbon to reduce climate change. He points out that trees provide many products, such as timber, fuel, fruits and shade, especially on low productivity soils.

Ancient Tree Forum and the Gloucestershire Invertebrate Group leading the way

Just two organisations have been leading the way on drawing attention to the trees. The Gloucestershire Invertebrate Group have been recording the invertebrates while the Ancient Tree Forum has held two of its national field meetings locally to discuss the special interest of the trees and their conservation management needs.

The Cotswold AONB Partnership would appear to be ideally placed to take an active role in promoting interest in - and conservation of - this heritage. They are the most obvious body to provide a constructive overview of the resource, while environmental stewardship under Natural England can hopefully provide the site-by-site advice and contribute resources.

Conclusions

The old Cotswold ash pollards provide links with a past historic land-use pattern which was closely tied in with livestock-rearing. They are as much part of our Cotswold heritage as are the limestone pastures and drystone walls. They too have considerable biodiversity interest. The evidence in support of the national - and even European - significance of the old Cotswold ash pollards is incontrovertible and yet the trees are not attracting the attention of the conservation bodies which are active in the county. It is very difficult to understand why this should be.

What needs to be done?

1. Document the locations of the trees, eg through the Ancient Tree Hunt project (www.ancient-tree-hunt.org).
2. Research their history and promote interest in them.
3. Assess their conservation management needs and initiate sympathetic action.
4. Establish new young pollards.
5. Bring the pollards back into everyday use by using the products as livestock fodder and firewood.

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GLOUCESTERSHIRE MOTH REPORT – 2009

Roger Gaunt

Following two rather wet years, 2009 followed more normal patterns with generally mixed weather conditions in the summer, including a hot humid spell at the end of June, followed by a fine autumn.

There continue to be a good number of active moth recorders contributing to our knowledge of the county's moth fauna. So far 13000 records have been received and more are expected.

MACROLEPIDOPTERA

There were two new county records, if one ignores a century old reference to 'Gloucestershire' linked to the **Small Ranunculus.** This species was recorded by Gordon Avery in Hempsted on 3rd July. It was considered extinct in Britain for many years (Skinner 1984) but reappeared in Kent in 1998, Newport (Mon.) in 2001 and since then in Bristol and Hereford among other places so the arrival with us was not unexpected.

The other new county record was of a **Rannoch Looper** recorded by Peter Cranswick at Horsley on 2nd June. This is a migrant though resident in part of Scotland. There was an influx this year and this moth was recorded in several English counties.

Two new vice-county records for VC33 was those of **Round-winged Muslin** recorded at Swillbrook Lakes in the Cotswold Water Park by Nick Adams on 3rd July and **Small Rufous** at the same site on 24th July.

Three notable moths not seen for a number of years were recorded. Our last **Barred Tooth-striped** was seen in 1958 so when Matthew Oates trapped one at Culkerton on 31st March this was a pleasant surprise. This is Notable Na and a BAP species.

The **Silver Cloud** Notable Na has been giving some concern as records had dried up so one recorded near Cambridge by Steve Chappell on 7th May was a relief.

A **Red Sword-grass** Notable Nb recorded by Guy Meredith in Cheltenham on 14th October was the first since 2001.

The continued presence of **Barberry Carpet** (RDB) at Westonbirt was confirmed by Peter Hugo who found larvae by beating on 12th September. Other sites for the food-plant *Berberis vulgata* have been searched in vain.

Monitoring of the **Silky Wave** (RDB) in the Avon Gorge continues – this is one of only three sites in the British Isles for this species.

The BAP species **Drab Looper** is well established in the Forest of Dean and parts of the Cotswolds. A record from Simon Barker of one in Newent Woods is from a new area and 10km square.

A rarer BAP species the **Common Fan-foot** was recorded by Guy Meredith a few hundred metres north of the last sighting in the Cannop Valley. More work needs to be done on determining the present status of this moth in the Forest of Dean.

Robert Homan has continued to find evidence of the **Hornet Moth** mostly in the Cheltenham and Deerhurst area.

The **Lappet** was recorded by Steve Chappell near Cambridge on 25th June, the first record since 1998.

Apart from the Rannoch Looper above, other macro-moth migrants included five **Humming-bird Hawk-moths** and the following:-

Striped Hawk-moth photographed nectaring at Viper's Bugloss on Swift's Hill on 28th June by Mike McCrea.

Convolvulus Hawk-moth Culkerton 18th September Matthew Oates

Bordered Straw St Briavels 8th August Roger Gaunt, Highnam 15th August John Wells, NE Bristol 4th June Neale Jordan-Mellersh, Cinderford 12th June Liz Radcliffe and Dursley 20th June Steve Chappell.

Pearly Underwing Thrupp 4th September Peter Hugo and Culkerton (2) 18th September Matthew Oates.

Scarce Bordered Straw Lower Woods 29th August Peter Hugo and Peter Cranswick.

Small Mottled Willow Bishop's Cleeve 14th September Jon Brock.

A field meeting I held at Cinderford Linear Park on 27th June yielded three rare species all targets for the meeting. They were **Clouded Buff, Forester** and **Small Argent and Sable. Clouded Buff** was also recorded by Susan and David Dewsbury on Gorsty Knoll.

There was little recording on the heathland restoration sites in the Forest of Dean but high hopes are held for the 'new' site at Edgehills. The best record was of **Heath Rustic** at Crabtree Hill on 12th August after I left two traps overnight. This has extended the range from the previous sites on Tidenham Chase.

MICROLEPIDOPTERA

The following list shows all the new county records and vice-county records in check-list order. (Recorders' initials given below).

22	*Ectoedemia louisella*	Ley Park, 12.ix.09, GM; mine, new to Vc34
25	*Ectoedemia intimella*	Queen's Wood, 19.xi.09, RH; mine, new to Vc33
30	*Ectoedemia arcuatella*	Horsley Wood, 28.ix.09, GM; mine, new to Vc34
86	*Stigmella roborella*	Serridge Green, 18.viii.09, GM; adult, new to Gloucestershire
101	*Stigmella pyri*	Gwen & Vera's Fields, 10.ix.09, GM; mine, new to Vc34
285	*Caloptilia azaleella*	Fishponds, Bristol, 24.v.09, N JM; adult, new to Gloucestershire
352	*Phyllonorycter schreberella*	Highnam Woods, 4.ix.09, GM; mine, new to Vc34
401	*Argyresthia laevigatella*	Lineover Wood, 29.vi.09, GM; adult, new to Vc33
403	*Argyresthia glabratella*	Lineover Wood, 2.vii.09, GM; adult, new to Vc33
502	*Coleophora trigeminella*	N of New Beechenhurst, 24.vi.09, GM; adult, new to Gloucestershire
535	*Coleophora ibipennella*	Swindon Village, 3.ix.09, RH; case, new to Vc33
583	*Coleophora tamesis*	Edgehills, 18.viii.09, GM; case, new to Vc34
660	*Pseudatemelia josephinae*	Siccaridge Wood, 4.vii.09, GM; adult, new to Vc33
673	*Depressaria pimpinellae*	Pilning, 12.vi.09, JM; adult, new to Vc34
734	*Argolamprotes micella*	Lower Woods, 4.vii.09, PC and PH; adult, new to Gloucestershire
801a	*Gelechia senticetella*	Cheltenham, 24.vii.09, RH; adult, new to Gloucestershire
818	*Scrobipalpa atriplicella*	Cheltenham, 25.v.09, GM; adult, new to vc33
974	*Argyrotaenia ljungiana*	Cheltenham, 15.ix.09, RH; bred ex larva, new to Vc33
1209	*Pseudococcyx turionella*	Lower Woods, 9.v.09, GM; adult, new to Gloucestershire
1210	*Rhyacionia buoliana*	Hempsted, 28.vi.09, GA; adult, new to Vc33

1228a	*Pammene ignorata*	Lineover Wood, 2.vi.09, GM; adult, new to Vc33

The recorders were Guy Meredith (GM), Robert Homan (RH), John Martin (JM), Gordon Avery (GA), Peter Cranswick (PC), Peter Hugo (PH) and Neale Jordan-Mellersh (N JM).

As the list indicates there has been a lot of recording of micromoths and it is difficult to highlight particular records. There are however a few that I should mention.

Pammene ignorata in the table above was first recorded in Wetmoor in 2006. The two records that year were the second and third British records. Subsequently I believe that it has been recorded elsewhere. This record from Lineover Wood suggests that it may well have been overlooked as genitalia examination is required.

Caloptilia hemidactylella (pRDB1) was recorded at Daneway in 1954 and 1955 and these constituted the only certain British records, apart from century old records from Northamptonshire. Guy Meredith found and photographed a specimen in Siccaridge Wood on 7th October. The identity was confirmed by dissection. This was found within 1 km of the old records.

Pselnophorus heterodactyla (pRDB1) is a plume moth that has been known from the Cranham area for many years and has one of the few British populations there. The larvae feed on *Lactuca muralis* and the distinctive feeding signs, once recognised, have enabled Guy to extend the known range within the area. It is now known from three 10 km squares and the population may be considered a strong one.

Celypha woodiana (pRDB2) otherwise known as the Mistletoe Marble is another BAP species. The larvae mine in mistletoe and Gloucestershire is a stronghold for this species. Most records are of mines however an adult was trapped by Steve Chappell when 10 traps were run near Cambridge on 11th July.

The full list of recorders is below. However I must mention separately the amount of work done by a number of individuals. Guy Meredith has set himself the task of recording every Gloucestershire moth as well as others that might be expected. He is systematically working through the various habitats throughout the county at different times of the year and has I believe recorded 750 species in 2009. Robert Homan is pursuing various lines of enquiry with particular rare species and in some cases finding they are not as rare as was thought. Peter Hugo has continued to scatter traps far and wide east of the Severn returning in the morning to count the results. A particularly concentrated effort on the Lower Woods Reserve has been supported enthusiastically by Peter Cranswick.

The following have sent in more than one record and I am grateful to them all for their contributions.

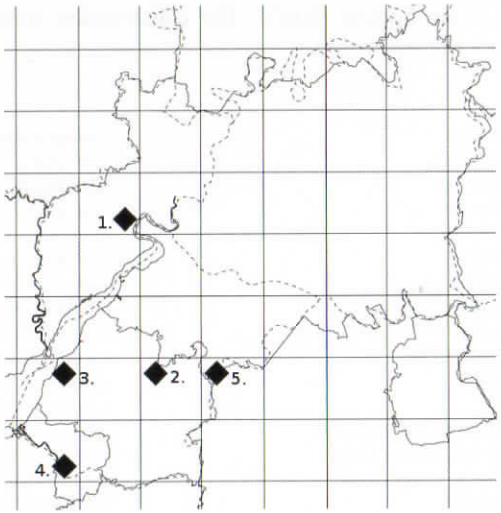
Nick Adams, Paul Attaway, Gordon Avery, Juliet Bailey, Philip Barden, Simon Barker, Rick Benson-Bunch, Michael Bradley, Jon Brock, Steve Chappell, Patrick Clements, John Coates, Peter Cranswick, David Cross, George Davis, Susan Dewsbury, Jeremy Doe, Alastair Driver, Peter Fitchett, Simon Glover, David Haigh, Michael Harper, Ken Heron and Jenny Jones, Robert Homan, Peter Hugo, Val Jackson, Neale Jordan-Mellersh, Leslie Kent, John Knowler, Richard Maisey, John Martin, Martin Matthews, Mike McCrea, James McGill, Guy Meredith, Richard Morris, Joan Oakley, Matthew Oates, Steve Owen, Mark Parsons, Roger Pearce, Tony Perry, John and Viv Phillips, Luke Phillips, Ben Pollard, Vic Polley, Alan Prior, Hilary and Hugh Purkess, Liz Radcliffe, Bob Smith, Eric Soons, Tony Taylor, Chris Tracey, Richard Tyler, Roger Ward, John Wells, Val Weston, John Widgery, Paul Wilkins, Robert Woods and Neil Woodward.

Gloucestershire Lichens 2009

Juliet Bailey

The GNS Lichen Group had five field days in 2009, with more than 30 people taking part. We were very fortunate to have David Hill, ex-president of the British Lichen Society and chairman of its data committee, with us. In all, nearly 400 records were made over the year, involving 159 species. Most lichen records were made during the field meetings, with a few additional records made by myself outside of meetings. All records have been forwarded to the British Lichen Society, and the Gloucestershire Centre for Environmental Records, or other local records centre as appropriate.

The Lichen Group had hitherto restricted its activities largely to the modern county of Gloucestershire; there had been little recent recording in the parts of historic Gloucestershire that are now in South Gloucestershire or Bristol. It was decided therefore to concentrate efforts in 2009 in the southern parts of Vice-county 34.



GNS Lichen Group field days
1. Upper Soudley, Blue Rock Trail, 14 April 2009
2. Iron Acton Church and land at Rangeworthy, 8 May 2009
3. Aust, St John Ancient Chapelry and the Old Severn Crossing, 9 June 2009
4. Clifton Downs and Black Rock Gulley, Avon Gorge, 11 August 2009
5. Westonbirt, Silk Wood, 8 September 2009
---------- Vice-county boundary

The Clifton visit was particularly interesting to those of us only familiar with Gloucestershire. In the Avon gorge which sweeps past Clifton Downs, there are exposures of hard carboniferous limestone, where the list of limestone lichens we were familiar with from the oolite is augmented by such species as *Squamarina cartilaginea* and *Caloplaca cirrochroa*. Also remarkable was the relatively lush lichen growth on the trees on the Downs. Though nothing rare was found here, such luxuriance of the Parmelias in an urban setting was a surprise to me, not at all what one would expect in an equivalent park in, say, Gloucester or Cheltenham. One can only suppose that this is due to the prevailing wind carrying fresh rain from the Mendips for the Clifton lichens, whereas further north we suffer from pollution from Bristol and Avonmouth.

The lichen list for 2009 is as follows, given in alphabetical order as is the custom in British lichenology. The number is the number of sites where the species was recorded. Unless marked otherwise, the conservation status of these species is Least Concern (reference A Conservation Evaluation of British Lichens, R G Woods and B J Coppins, British Lichen Society, 2003). The conservation status or comments are given against the more unusual records.

2	*Acarospora fuscata*
1	*Acarospora rufescens*
2	*Acrocordia conoidea*
1	*Agonimia tristicula*
8	*Amandinea punctata*
6	*Arthonia radiata*
2	*Aspicilia caesiocinerea*
4	*Aspicilia calcarea*
4	*Aspicilia contorta*
1	*Bacidia delicata*, LC, NS
1	*Buellia aethalea*
1	*Buellia ocellata*
1	*Buellia pulverea*, LC, NS, on lignin of an old trailer left at a field edge.
1	*Caloplaca arcis*
3	*Caloplaca aurantia*
2	*Caloplaca cerinella*
1	*Caloplaca chlorina*
1	*Caloplaca cirrochroa*
2	*Caloplaca citrina*
2	*Caloplaca citrina* s.str.
3	*Caloplaca crenularia*
1	*Caloplaca crenulatella*, LC, NS
1	*Caloplaca dalmatica*
2	*Caloplaca dichroa*
4	*Caloplaca flavescens*
2	*Caloplaca flavocitrina*
3	*Caloplaca holocarpa*
1	*Caloplaca ochracea*, LC, NS
1	*Caloplaca saxicola*
2	*Caloplaca teicholyta*
1	*Caloplaca variabilis*
1	*Candelaria concolor*
1	*Candelariella medians* f. *medians*
2	*Candelariella reflexa*
5	*Candelariella vitellina* f. *vitellina*
1	*Catillaria atomarioides*
2	*Catillaria lenticularis*
2	*Catillaria nigroclavata*, LC, NS
2	*Chaenotheca ferruginea*
1	*Chrysothrix candelaris*
2	*Cladonia coniocraea*
1	*Cladonia ochrochlora*
1	*Clauzadea immersa*
1	*Clauzadea metzleri*, LC, NS
2	*Clauzadea monticola*
1	*Cliostomum griffithii*
1	*Collema cristatum*
1	*Collema tenax* var. *ceranoides*
2	*Diploicia canescens*
1	*Dirina massiliensis* f. *sorediata*
9	*Evernia prunastri*
6	*Flavoparmelia caperata*
3	*Fuscidea lightfootii*

2	*Graphis scripta*
1	*Hyperphyscia adglutinata*
5	*Hypogymnia physodes*
2	*Hypogymnia tubulosa*
6	*Hypotrachyna revoluta*
2	*Lecanactis abietina*
1	*Lecania cyrtella*
1	*Lecania inundata*, LC, NS
1	*Lecania naegelii*
6	*Lecanora albescens*
3	*Lecanora campestris* subsp. *campestris*
3	*Lecanora carpinea*
10	*Lecanora chlarotera*
1	*Lecanora conferta*
4	*Lecanora dispersa*
4	*Lecanora expallens*
1	*Lecanora horiza*, NT, NS, on the sleepers of the Old Severn Crossing
2	*Lecanora muralis*
2	*Lecanora orosthea*
1	*Lecanora persimilis*, LC, NS
2	*Lecanora polytropa*
1	*Lecanora pulicaris*
2	*Lecanora sulphurea*
3	*Lecanora symmicta*
1	*Lecidea fuscoatra*
3	*Lecidella carpathica*
10	*Lecidella elaeochroma* f. *elaeochroma*
1	*Lepraria incana*
1	*Lepraria lobificans*
1	*Leptogium schraderi*
1	*Melanelia exasperatula*
2	*Melanelixia fuliginosa fuliginosa*
5	*Melanelixia fuliginosa glabratula*
7	*Melanelixia subaurifera*
1	*Micarea denigrata*
1	*Micarea prasina* s.lat.
1	*Neofuscelia verruculifera*
2	*Normandina pulchella*
2	*Ochrolechia parella*
1	*Opegrapha calcarea*
1	*Opegrapha gyrocarpa*
1	*Opegrapha rupestris*, LC, NS. Parasitic on *Verrucaria baldensis* at St John Ancient Chapelry
3	*Parmelia saxatilis*
9	*Parmelia sulcata*
3	*Parmotrema perlatum*
1	*Peltigera praetextata*
2	*Pertusaria amara*
1	*Pertusaria hymenea*
1	*Pertusaria leioplaca*
1	*Pertusaria pertusa*
1	*Petractis clausa*
4	*Phaeophyscia orbicularis*
3	*Phlyctis argena*
4	*Physcia adscendens*
2	*Physcia aipolia*
2	*Physcia dubia*
8	*Physcia tenella*
1	*Physconia distorta*
1	*Physconia grisea*
1	*Placidium squamulosum*
3	*Placynthiella icmalea*
1	*Placynthium nigrum*
3	*Platismatia glauca*
1	*Polysporina simplex*
1	*Porina aenea*
1	*Porpidia macrocarpa* f. *macrocarpa*
2	*Porpidia tuberculosa*
1	*Protoblastenia cyclospora*, DD, NR
4	*Protoblastenia rupestris*
2	*Psilolechia lucida*
7	*Punctelia jeckeri*, LC, NS
6	*Punctelia subrudecta* s.str.
6	*Ramalina farinacea*
1	*Ramalina fastigiata*
2	*Rhizocarpon petraeum*
3	*Rhizocarpon reductum*
1	*Rinodina bischoffii*, LC, NS
3	*Rinodina oleae*
1	*Rinodina teichophila*
5	*Sarcogyne regularis*
2	*Scoliciosporum chlorococcum*
3	*Scoliciosporum umbrinum*
1	*Solenopsora candicans*
1	*Squamarina cartilaginea*
2	*Tephromela atra* var. *atra*
3	*Toninia aromatica*
1	*Trapelia coarctata*
1	*Trapeliopsis flexuosa*
1	*Tuckermanopsis chlorophylla*
1	*Usnea subfloridana*
1	*Verrucaria aethiobola*
3	*Verrucaria baldensis*
1	*Verrucaria dolosa*
1	*Verrucaria dufourii*, LC, NS
1	*Verrucaria elaeina*, LC, NS
1	*Verrucaria funckii*, LC, NS
3	*Verrucaria fuscella*
2	*Verrucaria hochstetteri*

2	*Verrucaria macrostoma* f. *macrostoma*	4	*Xanthoria candelaria* s.lat.
2	*Verrucaria muralis*	9	*Xanthoria parietina*
6	*Verrucaria nigrescens*	3	*Xanthoria polycarpa*
2	*Verrucaria viridula*	1	*Xanthoria ucrainica*

The status codes:

LC, NS - Least Concern, Nationally Scarce - this status indicates that though the lichen appears to be scarce it is probably under-recorded (sometimes the result of recent taxonomic splitting)
DD Data Deficient
NR Nationally Rare
NT Near Threatened

I would also like to bring to your attention a survey of the Speech House Oaks SSSI conducted by Neil Sanderson for Natural England in 2008. He encountered 106 species, including the BAP species *Bacidia incompta* for which there is only one other recent Gloucestershire record.

Botany Report 2009

Clare and Mark Kitchen

Introduction

Organised field work concentrated on those species selected by the BSBI for the second year of the Threatened Plants Project. The species involved were *Cephalanthera longifolia* (Narrow-leaved Helleborine), *Coeloglossum viride* (Frog Orchid), *Dianthus deltoides* (Maiden Pink), *Gnaphalium sylvaticum* (Heath Cudweed), *Groenlandia densa* (Opposite-leaved Pondweed) and *Oenanthe fistulosa* (Tubular Water-dropwort). No sites were found in the county for the *Gnaphalium*.

The year proved to be an exceptional one with ten species new to the county. *Crocus speciosus* (Bieberstein's Crocus) near Condicote, *Cyrtomium fortunei* (Fortune's Holly-fern) at Wallsworth, *Juncus ambiguus* (Frog Rush) near Coombe Hill Canal, *Lemna turionifera* (a Duckweed) on the Coombe Hill Canal, *Lavandula angustifolia* at Crickley Hill, *Nonea lutea* (Yellow Nonea) in Tewkesbury and *Sedum kamtschaticum* (Kamchatka Stonecrop) in Gloucester were all found in V-c 33 whilst the other three new county records *Acaena novae-zelandiae* (Pirri-pirri-bur) dominant in area in Eastbachmeend and looking likely to spread further, *Schizostylus coccinea* (Kaffir Lily) near Lydney Junction, and *Selaginella kraussiana* (Krauss's Clubmoss) at Westonbirt were found in V-c 34.

Alopecurus aequalis (Orange Foxtail) was considered in the Supplement to no longer be a Gloucestershire species but, however, it was found growing abundantly in a pond near Boughspring during the year. A record for *Cerastium arvense* (Field Mouse-ear) near Coates was the first record for SO90 and a southern extension to its county distribution. Finally a new locality for the BAP species *Galeopsis angustifolia* (Red Hemp-nettle) was discovered in the Cotswold Water Park.

Names and initials of recorders

Angus H.	HA	McAllister H.	HMcA
Bailey J.	JB	Menendez C.	CM
Bailey J.A.	JAB	Meredith G.H.J.	GHJM
Beal J.	JBe	Oakley J.	JO
Birch J.L.	JLB	Perkins D.W.	DWP
Brown L.	LB	Phillips E.	EP
Button M.R.	MRB	Pickard M.	MP
Button P.	PB	Poland J.	JP

Clement E.J.	EJC	Pollard B.J.	BJP
Colls H.V.	HVC	Quinn P.R.	PRQ
Crouch H.	HC	Ralphs I.L.	ILR
Davies K.	KD	Rees J.S.	JSR
Davies V.	VD	Reid A.W.	AWR
Doe J.R.	JRD	Reid P.L.	PLR
Durn A.	AD	Rich T.C.G.	TGCR
Elphick I.	IE	Richards A.J.	AJR
Elworthy J.	JE	Rumsey F.J.	FJR
Fells A.	AF	Ryves T.B.	TBR
Gainey P.	PG	Shorten D.	DS
Gamez K.	KG	Smart M.	MS
Garrett V.	VG	Smith S.	SS
Glos. Plant Group	GPG	Spencer J.	JS
Godfrey M.	MG	Spyvee R.	RS
Golding E.	EG	Stewart N.F.	NFS
Green D.E.	DEG	Taylor Keith	KeT
Grindey B.A.	BAG	Taylor Kit	KiT
Haigh D.J.R.	DJRH	Taylor R.	RTa
Harris G.	GH	Thomson L.	LT
Hilton P.B.	PBH	Titchen A.C.	ACT
Hudson N.	NH	Turner R.	RT
Hutchinson R.	RH	Twissell C.F.	CFT
John R.	RJ	Twissell I.	IT
Kitchen C.	CK	Westgate M.	MW
Kitchen M.A.R.	MARK	Westgate R.	RW
Lane S.	SL	Widgery J.	JW
Laney B.J.	BJL	Widgery P.	PW
Lansdown R.E.	REL	Withall L.	LW
Lansdown R.V.	RVL	Wood A.C.	ACW
Martin J.P.	JPM	Wood E.G.	EGW
Martin P.	PM		

The records

Unless otherwise stated all records lie within the administrative county of Gloucestershire. Nomenclature follows the Vice-county Census Catalogue of the Vascular Plants of Great Britain (Stace, Ellis, Kent and McCosh, 2003), with English plant names taken from C. A. Stace's "New Flora of the British Isles", second edition 1997.

* An asterisk denotes a species not native to the county.
Numbers prefixing species indicate taxonomic order taken from "List of Vascular Plants of the British Isles" (D H Kent 1992).

1/2/2 **Selaginella kraussiana*(Kunze) A. Braun, **Krauss's Clubmoss.** V-c 34. Westonbirt School, Westonbirt with Lasborough C.P., ST 88U. 26/07/2009 (CK, MARK, BAG, EG & ACT). Patch 0.5 x 1 m in school grounds under yew tree. First county and V-c record. (See plate 8)

5/1/1 *Ophioglossum vulgatum* L., **Adder's-tongue**. V-c 34. Clearwell Meend, Newland C.P., SO50Z. 9/05/2009 (DEG). More than 300 in an area of open heathy ground.

15/2/5c *Asplenium trichomanes* L. subsp. *pachyrachis* (Christ) Lois & Reichst, **Maidenhair Spleenwort**. V-c 34. Court Wood, English Bicknor C.P., SO51S. 8/11/2009 (PLR). 20-30 plants at cliff base.

17/2/for **Cyrtomium fortunei* J. Sm. var *fortunei*, **Fortune's Holly-fern**. V-c 33. Wallsworth Hall, Wallsworth, Sandhurst C.P., SO82L. 20/09/2009 (CK & MARK det FJR). Three plants growing out of brick garden wall close to, but not within, the outline of a former lean-to glass-house. First county and V-c record. (See plate 7)

20/7/6 **Pinus strobus* L., **Weymouth Pine**. V-c 34. Boysgrave Oak, West Dean C.P., SO61F. August 2009 (ACT). About ten trees.

20/7/wal **Pinus wallichiana* A.B. Jacks, **Bhutan Pine**. V-c 34. Pillowell, West Dean C.P., SO60I. 13/03/2009 (CK & MARK). Single tree by roadside.

27/1/1 *Ceratophyllum demersum* L., **Rigid Hornwort**. V-c 33. Coombe Hill Canal, Deerhurst C.P. and Leigh C.P., SO82T. 24/07/2009 (RVL). Abundant in the canal for at least 1km. Lechlade, Lechlade C.P., SP20F. 28/05/2008 (JRD, CM & NFS). Lake 120, Cotswold Water Park.

28/3/1 *Helleborus foetidus* L., **Stinking Hellebore.** V-c 33. Crickley Hill, Coberley C.P., SO91I. 2009 (DWP).

28/3/2 *Helleborus viridis* L., **Green Hellebore.** V-c 34. Coalpit Hill, Staunton Coleford C.P., SO51L. 18/04/2009. (VD & DS). Two large patches.

28/11/1 *Pulsatilla vulgaris* Miller, **Pasqueflower**. V-c 33. Barnsley Warren, Coln St. Dennis C.P., SP00N. 20/04/2009 (PG & PBH). Good numbers flowering at this well

known locality. 14/09/2009 (SS). Most unusually a plant in full flower at this late date. Bowman's Hay, Upper Slaughter C.P., SP12K. 23/04/2009 (MRB & PB). Nine plants flowering.

28/13/7 *Ranunculus parviflorus* L., **Small-flowered Buttercup**. V-c 33. Ripple, Twyning C.P., SO83Y. 29/09/2009 (BL). Frequent in cornfield stubble. V-c 34. Foscombe, Ashleworth C.P., SO82D. 29/04/2009 and 2/6/2009 (JAB). More than 4,000 plants on bare weedy field margin.

28/13/10 *Ranunculus auricomus* L., **Goldilocks Buttercup.** V-c 33. Near Juniper Hill, Painswick C.P., SO80U. 21/04/2009 (JE). Known here by JE for many years.

28/13/24 *Ranunculus peltatus* Shrank, **Pond Water-crowfoot.** V-c 34. Near Thorn Covert, Shipton Moyne C.P., ST89V. 28/5/2009 (RVL). In tributary to River Avon (Tetbury Branch).

28/13/25 *Ranunculus pencillatus* (Dumort.) Bab. subsp. *pseudofluitans* (Syme) S.D. Webster, **Stream Water-crowfoot.** V-c 34. Near Thorn Covert, Shipton Moyne C.P., ST89V. 28/5/2009 (RVL). In tributary to River Avon (Tetbury Branch).

28/13/27 *Ranunculus cercinatus* Stbth., **Fan-leaved Water-crowfoot**. V-c 33. 28/05/2008 (JRD, CM & NFS). Lake 120, Cotswold Water Park.

28/16/1 *Aquilegia vulgaris* L., **Columbine**. V-c 34. Coaley Peak Viewpoint, Nympsfield C.P., SO70V. 5/06/2008 and 1/05/2009 (MG). Several clumps in car park and spreading rapidly.

31/5/7 *Fumaria officinalis* L., **Common Fumitory.** V-c 34. Bromsberrow Heath, Dymock C.P., SO73G. 1/12/2009 (BL det TCGR). Probably subsp. *wirtgenii.*

43/4/1a *Beta vulgaris* L. subsp. *maritima* (L.) Arcang. V-c 34. Awre, Awre C.P., SO70E. 8/09/2009 (JRD). On the foreshore.

44/1/2 **Amaranthus hybridus* L., **Green Amaranth.** V-c 34. Plusterwine, Woolaston C.P., ST59Z. 20/09/2009 (JAB). Abundant in maize field with *Echinochloa crus-galli.*

46/7/2 *Cerastium arvense* L., **Field Mouse-ear.** V-c 33. Coates, Coates C.P., SO90Q. 23/10/2009 (CK & MARK). Non-flowering patch along the base of a drystone wall amongst narrow strip of *Bromopsis erecta* grassland in otherwise

improved grass ley. New 10km record and no localised record further south in the county although Riddelsdell stated it to be frequent and well distributed in District 7.

46/10/0 *Sagina nodosa* (L.) Frenzl., **Knotted Pearlwort.** V-c 34. Crabtree Hill, Cinderford C.P., SO61G. 3/07/2009 (JRD).

46/18/2 *Lychnis flos-cuculi* L., **Ragged Robin.** V-c 33. Windmill Hill, Norton C.P., SO82S. 29/05/2009 (MS). Stand of several hundred plants in damp haymeadow south of River Chelt.

47/1/6 *Persicaria bistorta* (L.) Samp., **Common Bistort**. V-c 33. Eastleach Martin, Eastleach C.P., SP20C. 30/06/2009 (JRD). Abundant in churchyard.

47/1/15 *Persicaria mitis* (Shrank) Opiz ex Assenov, **Tasteless Water-pepper**. V-c 34. Lydney Marsh, Lydney C.P., SO60F, G and L. 16/10/2009 (CK & MARK). Plentiful in the vicinity of one of the lakes.

47/1/16 *Persicaria minor* (Hudson)Opiz, **Small Water–pepper**. V-c 33. Coombe Hill Canal, Deerhurst C.P., SO82T. 24/07/2009 (RVL). At least 20 plants in poached ditch margin near the Long Pool.

47/3/1 **Fagopyrum esculentum* Moench, **Buckwheat**. V-c 33. South of Emmerson Plantation, Sapperton C.P., SO90F. 30/09/2009 (RVL). In field with sweetcorn and *Phacelia* sp..

47/5/1 **Fallopia japonica* (Houtt)Ronse Decr., **Japanese Knotweed**. V-c 34. Lorridge Brake, Stinchcombe C.P., ST79E. 21/07/2009 (MP). 5m x 5m square patch.

47/8/21 *Rumex maritimus* L., **Golden Dock.** V-c 33. Coombe Hill Canal, Deerhurst C.P., SO82T. 2009 (RVL). Doing well in the Long Pool.

51/1/10 *Hypericum humifusum* L., **Trailing St John's-wort.** V-c 34. East Wood, Tidenham C.P., SO50Q. 14/09/2009 (JAB, CK, MARK and RT). A few plants by woodland path.

53/2/1 *Lavatera arborea* L., **Tree-mallow**. V-c 34. Ryton, Dymock C.P., SO73G. 1/12/2009 (BL det EJC & JP). Four juvenile plants by M50. Not native here.

61/1/3a *Populus nigra* L. subsp. *betulifolia* (Pursh) Dippel, **Black Poplar,** V-c 33. Brickhampton Court golf course, Churchdown C.P., and Down Hatherley C.P.,

SO82R. 30/10/2009 (JRD). Five trees including a dead one along the Hatherley Brook. SCH recorded nine in the general vicinity during the Black Poplar survey.

61/2/5 *Salix purpurea* L., **Purple Willow.** V-c 34. Hartland's Hill, Westbury-on-Severn C.P., SO71M. 7/04/2009 (HVC). Two clumps by banks of River Severn at this known locality with some possible hybrids nearby.

62/11/2 *Barbarea stricta* Andrz., **Small-flowered Winter-cress.** V-c 34. Walmore Common, Westbury-on-Severn, SO71M. 2/06/2009 (CK, MARK amd GPG). A few plants in one of the rhynes.

62/11/4 **Barbarea verna* (Miller)Asch., **American Winter-cress.** V-c 33. Brockeridge Common, Twyning C.P., SO83Y. 19/05/2009 (CK & MARK). Nine plants by roadside.

62/12/1 *Rorippa nasturtium-aquaticum* (L.) Hayek, **Water-cress.** V-c 34. Near Thorn Covert, Shipton-Moyne C.P., ST89V. 28/05/2009 (RVL). In tributary of the River Avon (Tetbury Branch).

62/12/2 *Rorippa microphylla* (Boenn.) N. Hylander ex A. Löve & D. Löve, **Narrow-fruited Water-cress.** V-c 34. Near Thorn Covert, Shipton-Moyne C.P., ST89V. 28/05/2009 (RVL). In tributary of the River Avon (Tetbury Branch).

62/14/4 **Cardamine raphanifolium* Pourret, **Greater Cuckooflower.** V-c 33. Hyde Mill, Upper Slaughter C.P., SP12S. 14/05/2009 (CK & MARK). Abundant by River Dikler.

62/15/2 *Arabis glabra* (L.)Bernh., **Tower Mustard**. V-c 34. Bromsberrow Heath, Bromsberrow C.P., SO73L. 1/12/2009 (SL & BL). Two rosettes on roadside bank with a third found on 12/12/2009.

65/15/6 *Arabis hirsuta* (L.)Scop., **Hairy Rock-cress.** V-c 34. Near Tintern Quarry, Tidenham C.P., ST59N. May and June 2009. (ACW & EGW). More than four hundred plants on limestone scree by disused rail line.

62/21/4 *Draba muralis* L., **Wall Whitlow-grass.** V-c 34. Stowe, St Briavels C.P., SO50T. 6/04/2009 (DEG). More than fifty plants forming two colonies on a long disused carboniferous limestone quarry outcrop. HVC counted more than a hundred plants two weeks later. Recorded on walls in this area since 1975.

62/23/5 *Cochlearia danica* L., **Danish Scurvygrass.** V-c 33. Cheltenham, SO92L. 29/04/2009 (DJRH). Patch of about 10 plants at tree base, Oriel Road.

62/28/1 *Thlaspi arvese* L., **Field Penny-cress.** V-c 33. South of Ladbarrow Farm, Aldsworth C.P., SP10U. June 2009 (ILR). Several plants in corner of barley field.

62/28/3 *Thlaspi perfoliatum* L., **Perfoliate Penny-cress.** V-c 33. Compton Abdale, Compton Abdale C.P., SP01T. 20/04/2009 (PG & PBH). Only two very poor plants on the inside of the drystone wall this year at this well known site. Windrush Valley, Upper Slaughter C.P., SP12K and L. 23/04/2009 (MRB & PB). Very low number of plants recorded for the second year running at this cluster of sites.

62/35/2 **Sinapis alba* L., **White Mustard**. V-c 33. Near Downs Brake, Hazleton C.P., SP01Y. 18/10/2009 (CK & MARK). Few plants in maize/sunflower field.

66/1/1 *Pyrola minor* L., **Common Wintergreen**. V-c 33. Blackstable Wood, Painswick C.P., SO80Z. 21/06/2009 (GHJM). A few plants. 15/07/2009 (RJ). Three colonies of 19, 14 and 39 flowering stems. A fourth population previously known to RJ could not be refound.

67/1/1 *Monotropa hypopitys* L., **Yellow Bird's-nest.** V-c 7 (Gloucestershire Admin. County). Westonbirt Arboretum, Sherston C.P., ST88P. 2009 (RW). V-c 33. Blackstable Wood, Painswick C.P., SO80Z. 15/07/2009 (RJ). V-c 33. Cleeve Hill, Prestbury C.P., SO92X. 8/08/2009 (GHJM). Two spikes in beech hanger at this known locality. Water Lane, Bisley-with-Lypiatt C.P., SO90H. 19/08/2009 (GHJM). Single spike. V-c 34. Symonds Yat, English Bicknor C.P., SO51S. 18/08/2009 (AWR). At least 20 fruiting spikes.

69/1/1x3 *Primula x polyantha* Mill., **False Oxlip.** V-c 33. Toddington, Toddington C.P., SP03G. 2/04/2009 (JW). Single plant on laneside verge.

69/6/1 *Anagallis tenella* (L.)L., **Bog Pimpernel**. V-c 34. Awres Glow, Ruspidge C.P., SO61K. 5/07/2009 (GHJM).

73/5/4 **Sedum spectabile* Boreau, **Butterfly Stonecrop.** V-c 34. Aust Cliff, Aust C.P., ST58U. 28/09/2009 (JPM). Flowering clump in woodland at foot of cliff. 2nd V-c record.

73/5/5 *Sedum telephium* L., **Orpine.** V-c 7(Gloucestershire Admin. County). Westonbirt Arboretum. Sherston C.P., ST88P. August 2009 (RW).

74/5/19 *Saxifraga tridactylites* L., **Rue-leaved Saxifrage.** V-c 33. Hammersmith Bottom, Southrop C.P., SP10X. 17/05/2009 (ILR). Scattered to locally common at old works site.

74/8/1 **Tellima grandiflora* (Pursh) Douglas ex Lindl., **Fringe Cups.** V-c 34. Coaley Wood, Coaley C.P., ST79Z. 25/04/2009 (VG). Several clumps. A northerly extension to the range of the plant in this wood.

74/9/2 *Chrysosplenium alternifolium* L., **Alternate-leaved Golden-saxifrage.** V-c 33. The Horns, Stroud C.P., SO80S. 17/11/2009 (RVL). Painswick stream valley, Painswick C.P., SO80N. 19/11/2009 (RVL).

75/18/1 **Acaena novae-zelandiae* Kirk, **Pirri-pirri-bur.** V-c 34. Eastbachmeend Enclosure, West Dean C.P., SO51X. 18/08/2009 (AWR). Locally abundant along rather bare edges of rides. First county and V-c record. (See Plate 3)

75/28/1 **Sorbus aucuparia* L. 'Joseph Rock', **Rowan.** V-c 33. Cleeve Common, Southam C.P., SO92X. 21/09/2009 (CK, MARK and EP det HMcA). Single plant in scrub woodland above Jurassic limestone disused quarry cliff. Assumed planted and not previously reported in the county. A cultivar with an unusual translucent cream coloured berry.

75/28/24 *Sorbus torminalis* (L.) Crantz, **Wild Service-tree.** V-c 33. Hammersmith Bottom, Southrop C.P., SP10W. 17/05/2009 (ILR). Growing on an ancient hedgerow bank. V-c 34. Blackwells-end, Hartpury C.P., SO72X. 2/06/2009 (JAB).

75/32/16 **Cotoneaster integrifolius* (Roxb.)Klotz., **Small-leaved Cotoneaster.** V-c 33. Swift's Hill, Painswick C.P., SO80T. 9/05/2009 (JS). Five bushes.

75/35/7 x 8 *Crataegus x media* Bechst.= *C. monogyna x C. media.* V-c 33. Hyde Mill, Upper Slaughter C.P., SP12S. 14/ 05/2009 (CK & MARK). Single tree by bank of River Dikler.

77/4/2 *Astragalus danicus* Retz., **Purple Milk-vetch.** V-c 33. Brassey NR, Upper Slaughter C.P., SP12G. 28/05/2009. (MRB & PB). Four plants just coming into flower. Cleeve Hill, Southam C.P., SO92Y. 5/06/2009 (GHJM). Both known localities.

77/6/1 *Onobrychis viciifolia* Scop., **Sainfoin**. V-c 33. North of Nut Tree Brake, Hazleton C.P., SP01Y. 16/06/2009 (JW). Growing in limestone grassland.

77/8/1 *Lotus glaber* Miller, **Narrow-leaved Bird's-foot-trefoil**, V-c 33. Coln County Park, CWP, Kempsford C.P., SP10V. 1/09/2009 (CK, MARK and BJP). V-c 34. Awre, Awre C.P., SO70D. 8/09/2009 (JRD). In the corner of permanent pasture and on flood embankment of River Severn. Near Cliff View, Broadoak, Westbury-on-Severn C.P., SO71B. 31/07/2009 (JRD). Locally frequent in rough grassland beside R. Severn.

77/15/12 Lathyrus *nissolia* L., **Grass Vetchling.** V-c 34. Blackwells-end, Hartpury C.P., SO72X. 2/06/2009 (JAB). Around forty plants flowering in abandoned field which was becoming scrub. Foscombe, Ashleworth C.P., SO82D. 2/06/2009 (JAB). Two flowering plants at field edge. Walmore Common, Westbury-on-Severn C.P., SO71N. 2/06/2009 (CK, MARK & GPG).

77/18/5 *Medicago arabica* (L.) Hudson, **Spotted Medick.** V-c 33. Ripple, Twyning C.P., SO83Y. 29/09/2009 (BL). One plant amongst cornfield stubble.

77/19/8 *Trifolium fragiferum* L., **Strawberry Clover.** V-c 34. Awre, Awre C.P., SO70D. 8/09/2009 (JRD). On flood embankment.

77/19/15 *Trifolium medium* L., **Zigzag Clover.** V-c 33. Charlton Kings Common, Charlton Kings C.P., SO91U. 23/06/2009 (BL). Edge of golf course. Kilkenny Viewpoint car park, Dowdeswell C.P., SP01E. 10/07/2009 (JS).

77/19/23 *Trifolium arvense* L., **Hare's-foot Clover.** V-c 34. Bromsberrow Heath, Dymock C.P., SO73G. 1/12/2009 (BL). In sandpit by M50 motorway.

77/25/2 *Genista tinctoria* L., **Dyer's Greenweed.** V-c 33. Charlton Kings Common, Charlton King's C.P., SO91U. 23/06/2009 (BL).

79/2/3 *Myriophyllum spicatum* L., **Spiked Water-milfoil.** Lechlade, Lechlade C.P., SP20F. 28/05/2008 (JRD, CM & NFS). Lake 120, CWP.

81/1/3 *Lythrum portula* (L.) D.Webb, **Water-purslane.** V-c 34. Tidenham Chase, Tidenham C.P., ST59N. 13/05/2009 (CK & MARK). Plentiful in pond.

91/2/7 *Euphorbia serrulata* Thuill, **Tintern Spurge/Upright Spurge,** V-c 34. Near Braceland, Staunton Coleford C.P., SO51L. 26/09/2009 (GHJM). Three plants along path edge. Possible new 10km record. SG Charles 'Redbrook' record of c.1942 in the Flora may have been either SO50 or SO51. Shaden Tuft, West Dean C.P., SO60J. 11/03/2009 (CK & MARK). Hundreds of plants growing along woodland ride.

91/2/10 *Euphorbia exigua* L., **Dwarf Spurge.** V-c 33. South of Emmerson Plantation, Sapperton C.P., SO90F. 30/09/2009 (RVL). In field with sweetcorn and *Phacelia* sp. Ripple, Twyning C.P., SO83Y. 29/09/2009 (BL). Amongst cornfield stubble.

91/2/15 *Euphorbia cyparissias* L., **Cypress Spurge**. V-c 34. Near Lizens Wood, Hawkesbury C.P., ST78Z. 6/05/2009 (RS det JRD & SP). Locally frequent on steep grassy slope at this well known locality.

93/1/1 **Vitis vinifera* L., **Grape-vine.** The Noards, Chaxhill, Westbury-on-Severn C.P., SO71M. 4/09/2009 (JRD). Rambling over derelict building and into adjacent scrub/orchard.

105/1/3 **Impatiens parviflora* DC., **Small Balsam.** V-c 7 (Gloucestershire Admin. County). Westonbirt Arboretum, Sherston C.P., ST88P. August 2009 (RW). V-c 33. Abbotswood Park, Swell C.P., SP12T. 22/07/2009 (JRD & RS). Patch in wet woodland.

107/1/1 *Hydrocotyle vulgaris* L., **Marsh Pennywort.** V-c 33. Ripple, Twyning C.P., SO83T. 29/09/2009 (BL). In marshy field.

107/13/1 *Pimpinella major* (L.) Hudson, **Greater Burnet-saxifrage.** V-C 33. Postlip, Winchcombe C.P., SP02D. 11/08/2009 (CK, MARK & EP). Along 50 metres of green lane.

107/19/1 *Oenanthe fistulosa* L., **Tubular Water-dropwort.** V-c 33. Coombe Hill southern meadows, South Leigh C.P., SO82T. 4/06/2009 (CK, MARK & GPG). Eleven plants in track rut in meadow. Also 9/07/2009 (JRD & JLB). About twelve plants in an area of the meadows where supressed by *Agrostis stolonifera, Carex acuta and Eleocharis palustris.* V-c 34. Walmore Common, Westbury-on-Severn C.P., SO71M and N. 2/06/2009 (CK, MARK & GPG). Three populations located.

107/19/4 *Oenanthe lachenalii* C.C.Gmel., **Parsley Water-dropwort.** V-c 33. Ripple, Twyning C.P., SO83T. 29/09/2009 (BL). Present in a rushy field.

107/29/2 *Petroselinum segetum* (L.)W.D.J.Koch, **Corn Parsley.** V-c 33. Ripple, Twyning C.P., SO83Y. 29/09/2009 (BL). At edge of maize field entrance, with *Kickxia spuria.*

108/3/2 *Centaurium erythraea* Rafn., **Common Centaury.** V-c 33. Little Haresfield, Standish C.P., SO80E. 3/08/2009 (JAB). Single plant on thin soil on made up ground under beech hedge.

108/3/4 *Centaurium pulchellum* (Sw.) Druce, **Lesser Centaury.** V-c 33. Coln Country Park, CWP, Kempsford C.P., SP10V.2008 (BJP). Warren's Cross Lake, CWP, Lechlade C.P., SU19Z. 1/09/2009 (CK, MARK & BJP). Single plant near lakeside.

108/5/4 *Gentianella amarella* (L.)Boerner, **Autumn Gentian.** V-c 33. Leckhampton Hill, Leckhampton C.P., SO91P. 17/09/2009 (JW). A few plants in disused quarry.

109/1/3 *Vinca major* L. var *oxyloba* Stearn, **Greater Periwinkle.** V-c33. Cerneywick, South Cerney C.P., SU09S. 29/04/2006 (JW). Pathside patch.

112/1/2 *Cuscuta europaea* L., **Greater Dodder.** V-c 33. The Mythe, Tewkesbury C.P., SO83X. 16/07/2009 (JLB). Growing on nettles. Twyning, Twyning C.P., SO93C. 20/07/2009 (CT & IT). Along bank of River Avon. V-c 34 Ashleworth Ham NR, Ashleworth C.P., SO82I. 22/08/2009 (JAB). Hasfield Ham, Hasfield C.P., SO82 I. 27/06/2009 (KeT & KiT). In Stanks Lane.

114/1/1 **Polemonium caeruleum* L., **Jacob's-ladder.** V-c 34. Coaley Peak Viewpoint, Nympsfield C.P., SO70V. 5/06/2008 one clump and on 1/05/2009 two clumps, (MG). Introduced into the viewpoint car park.

116/5/1 **Brunnera macrophylla* (Adams) IM Johnston, **Great forget-me-not.** V-c 33. Cirencester, Cirencester C.P., SP00B. 13/10/2009 (CK & MARK). Flowering by streamside.

116/6/4 *Anchusa arvensis* (L.)M.Bieb, **Bugloss.** V-c 33. Private quarry adjoining Kilkenny Viewpoint car park, Withington C.P., SP01E. 10/07/2009 (JS). Ten plants. V-c 34. Ryton, Dymock C.P., SO73G. 1/12/2009 (BL). Single rosette by south side of M50 motorway.

118/5/6 *Lamium amplexicaule* L., **Henbit Dead-nettle.** V-c 33. South of Emmerson Plantation, Sapperton C.P., SO90F. 30/09/2009 (RVL). In field with sweetcorn and *Phacelia* sp..

118/6/2 *Galeopsis angustifolia* Ehrh. ex. Hoffm., **Red Hemp-nettle.** V-c 33. East of Whelford, CWP, Lechlade C.P., SU19Z. 2009 (BJP). Single plant near lake edge.

118/6/5 *Galeopsis bifida* Boenn., **Bifid Hemp-nettle.** V-c 34. East Wood, Tidenham C.P., SO50Q. 14/09/2009 (JAB, CK, MARK & RT). Three flowering plants in wood clearing.

118/18/3 *Clinopodium calamintha* (L.) Stace, **Lesser Calamint.** V-c 34. Staunton, Staunton Coleford C.P., SO51L. May 2009 (DEG). Hundreds of plants within Staunton Reservoir compound near the Buckstone.

118/18/5 *Clinopodium acinos* (L.)Kuntze, **Basil Thyme.** V-c 33. Kilkenny Viewpoint car park, Dowdeswell C.P., SP01E. 10/07/2009 (JS). Twelve plants.

* *Lavandula angustifolia* Mill., **Garden Lavender,** V-c 33. Crickley Hill, Coberley C.P., SO91I. 7/08/2009 (CK & MARK). Intermittant along hundred metre length of rim and face of disused limestone quarry. First county and V-c record. (See plate 9)

119/1/1 *Hippuris vulgaris* L., **Mare's-tail.** V-c 33. Abbotswood Park, Swell C.P., SP12T. 22/07/2009 (JRD & RS). Intermittant along River Dikler.

120/1/5 *Callitriche obtusangula* La Gall, **Blunt-flowered Water-starwort.** V-c 34. Near Thorn Covert, Shipton Moyne C.P., ST89V. 28/05/2009 (RVL). In tributary to River Avon (Tetbury Branch).

121/1/1 *Plantago coronopus* L., **Buck's-horn Plantain.** V-c 34 Bromsberrow Heath, Dymock C.P., SO73G. 1/12/2009 (BL). Single plant at edge of M50. Westbury Court, Westbury-on-Severn C.P., SO71B. 31/07/2009 (JRD). Mown verge alongside A48 by Westbury Court Gardens.

124/12/1 *Kickxia elatine* (L.) Dumort, **Sharp-leaved Fluellen**. V-c 33. South of Emmerson Plantation, Sapperton C.P., SO90F. 30/09/2009 (RVL). In field with sweetcorn and *Phacelia* sp.. Longhill, Daglingworth C.P., SO90S. 30/09/2009 (RVL). Ripple, Twyning C.P., SO83Y. 29/09/2009 (BL). Frequent in field with wide Amaranth strip along with *Echinochloa crus-galli.*

124/12/2 *Kickxia spuria* (L.) Dumort, **Round-leaved Fluellen.** V-c 33. South of Claydon Covert, Fairford C.P., SU19Z. 1/09/2009 (CK, MARK & BJP). South of Emmerson Plantation, Sapperton C.P., SO90F. 30/09/2009 (RVL). In field with sweetcorn and *Phacelia* sp.. Ripple, Twyning C.P., SO83Y. 29/09/2009 (BL). Amongst cornfield stubble and in
maize field. Garden Cliff, Westbury-on-Severn C.P., SO71B. 6/09/2009 (JRD). Along edge of maize field.

124/14/1 *Digitalis purpurea* L., **Foxglove.** V-c 33. Hans Brake, Sezincote C.P., SP13K. 19/04/2009 (CK & MARK). Large patch in conifer plantation.

124/16/20 *Veronica polita* Fr., **Grey Field-speedwell.** V-c 33. Ripple, Twyning C.P., SO83T and Y. 29/09/2009 (BL). Amongst cornfield stubble.

124/25/1 *Pedicularis palustris* L., **Marsh Lousewort.** V-c 33. Brassey Marsh, Naunton C.P., SP12G. 28/05/2009 (MRB & PB). Still present at this known locality.

125/1/1 *Lathraea squamaria* L., **Toothwort.** V-c 34. Coalpit Hill, Staunton Coleford C.P., SO51L. 18/04/2009 (VD & DS). Large population.

125/2/8 *Orobanche hederae* Duby, **Ivy Broomrape**. V-c 33. Cheltenham, SO92K. 2/06/2009. (DJRH). About twenty spikes, Bath road.

125/2/10 *Orobanche minor* Smith, **Common Broomrape**. V-c 33. Cotswold Farm, Duntisbourne Abbots C.P., SO90Z. 13/06/2009 (DJRH). More than thirty spikes in recently muck-spread clover ley.

129/1/1 *Campanula patula* L., **Spreading Bellflower.** V-c 7 (Gloucestershire Admin. County). Westonbirt Arboretum, Sherston C.P., ST88P. 10/07/2009 (HA). Good numbers present growing outside the area that was prepared for its management during the previous winter. V-c 33. Hidcote Manor House, Ebrington C.P., SP14R. 5/07/2009 (MW & RW). Single robust flowering plant by edge of path in the National Trust Garden. Probably introduced as there are no historical records for this locality.

130/6/6x7 *Galium x pomeranicum* Retz, = *G. mollugo x G. verum.* V-c 34 Selsley Common, King's Stanley C.P., SO80G. 2/07/2009 (CK & MARK on GPG meeting). Several plants in limestone grassland.

130/8/1 *Rubia peregrina* L., **Wild Madder.** V-c 34. North side of Lancaut Lane, Tidenham C.P., ST59I. 27/07/2009 (JS). More than fifty plants.

132/1/1 *Adoxa moschatellina* L., **Moschatel.** V-c 33. Overtown, Cranham C.P., SO91B. April 2009 (DWP).

133/1/2 *Valerianella carinata.* Loisel., **Keel-fruited Cornsalad.** V-c 33. Chedworth Nature Reserve, Withington C.P., SO01M. 15/05/2009 (JAB). Around twenty plants on top of stony disused railway embankment.

133/2/3 *Valeriana dioica* L., **Marsh Valerian.** V-c 33. Brassey Marsh, Naunton C.P., SP12G. 28/05/2009 (MRB & PB). Still present at this known locality.

134/1/3 *Dipsacus pilosus* L., **Small Teasel** V-c 34. East Tidenham, Tidenham C.P., SO50Q. 14/09/2009 (JAB, CK, MARK & RT).

135/6/1 *Cirsium eriophorum* (L.)Scop., **Woolly Thistle.** V-c 34. 4/12/2009 (BL). By M50 motorway.

135/23/2 **Cicerbita macrophylla* (Willd.)Wallr., **Common Blue-sow-thistle.** V-c 33. Private quarry adjoining Kilkenny Viewpoint car park, Withington C.P., SP01E. 10/07/2009 (JS). Six plants.

135/25/130 *Taraxacum dilatatum* H Lindb., a **Dandelion.** V-c 33. Near Brockeridge Common, Twyning C.P., SO83Y. 18/03/2009 (AWR det AJR).

135/30/1 *Filago vulgaris* Lam., **Common Cudweed.** V-c 34. Bromsberrow Heath, Dymock C.P., SO73G. 1/12/2009 (BL). In sandpit quarry.

135/30/4 *Filago minima* (Sm.) Pers., **Small Cudweed.** V-c 34. Bromsberrow Heath, Dymock C.P., SO73G. 1/12/2009 (BL). Sandpit quarry by M50 motorway.

135/37/1 *Pulicaria dysenterica* (L.) Bernh., **Common Fleabane.** V-c 33. Abbeymead, Gloucester, SO81T. 30/09/2009 (DWP). Growing out of pavement.

135/56/1 *Chrysanthemum segetum* L., **Corn Marigold.** V-c 34. Near Bromsberrow Heath, Dymock C.P., SO73G. 4/07/2009 (JW). Single plant at edge of weedy arable field.

135/61/1 **Cotula coronopifolia* L., **Buttonweed.** V-c 34. Lydney Marsh, Lydney C.P., SO60F and K. 16/10/2009 (CK & MARK). Well established along twenty-seven metres of lake margin. Second V-c and third county record. The other records being in a derelict nursery grounds Cirencester 1981 and a single plant at Avonmouth Sewage Works, 1990. (See plate 5)

135/62/17 *Senecio sylvaticus* L., **Heath Groundsel.** V-c 34. Bromsberrow Heath, Dymock C.P., SO73G. 1/12/2009 (BL). A few plants in ephemeral strip beside M50 motorway.

135/81/4 **Bidens frondosa* L., **Beggarticks.** V-c 33. Gloucester Docks, Gloucester SO81J. 2/08/2009 (ILR). Known locality.

136/1/1 *Butomus umbellatus* L., **Flowering-rush.** Coombe Hill meadows, Deerhurst C.P., and Leigh C.P., SO82N and T. 18/07/2009 (MS). Up to six plants in three different ditches.

138/4/1 **Elodea nuttallii* Michaux, **Nuttall's Water-weed.** V-c 33. Lechlade, Lechlade C.P., SP20F. 28/05/2008 (JRD, CM & NFS). Lake 120, CWP. V-c 34. Ashleworth Ham, Hasfield C.P., SO82I. 22/08/2009 (JAB). In rhyne outside the nature reserve.

142/1/6 *Potamogeton trichoides* Cham. & Schlol., **Hairlike Pondweed.** V-c 34. Ashleworth Ham, Ashleworth C.P., SO82I. 22/08/2009 (JAB). In rhyne outside the nature reserve. Hasfield Ham, Hasfield C.P., SO82I. 22/08/2009 (JAB).

142/1/9 *Potamogeton perfoliatus* L., **Perfoliate Pondweed.** V-c 33. River Churn between Conigree Wood and Perrotts Brook, North Cerney C.P., SP00E and I. 15/6/2009 (JRD & RS). Locally abundant.

142/1/19 *Potomogeton crispus* L., **Curled Pondweed.** V-c 34. Near Thorn Covert, Shipton Moyne C.P., ST89V. 28/05/2009 (RVL). In tributary of the River Avon (Tetbury Branch).

142/1/21 *Potomogeton pectinatus* L., **Fennel Pondweed.** V-c 33. Lechlade, Lechlade C.P., SP20F. 28/05/2008 (JRD, CM & NFS). Lake 120, CWP. V-c 34. Ashleworth Ham, Hasfield C.P., SO82I. 22/08/2009 (JAB). In rhyne outside the nature reserve.

142/2/1 *Groenlandia densa* (L.) Fourr., **Opposite-leaved Pondweed.** V-c 33. Postlip, Winchcombe C.P., SP02D. 11/08/2009 (CK, MARK & EP). Very small quantity in recently restored mill pond.

145/1/1 *Zannichellia palustris* L., **Horned Pondweed.** V-c 33. Postlip, Winchcombe C.P., SP02D. 11/08/2009 (CK, MARK & EP). Rare in lake.

148/1/1 *Spirodela polyrhiza* (L.) Schleiden, **Greater Duckweed.** V-c 34. Ashleworth Ham Nature Reserve, Ashleworth C.P., SO82I. 22/08/2009 (JAB). About twenty plants in main ditch.

148/2/tur * *Lemna turionifera* Landolt, **Red Duckweed.** V-c 33. Coombe Hill Canal, Deerhurst C.P., SO82T. 24/07/2009 (RVL). Dominant to abundant in all ditches. First county and V-c record.

151/1/3 *Juncus compressus* Jacq., **Round-fruited Rush**. V-c 33. Abbotswood Park, Swell C.P., SP12S. 22/07/2009 (JRD & RS). Abundant beside lake.

151/1/8 *Juncus ambiguus* Guss, **Frog Rush.** V-c 33. Coombe Hill Canal Nature Reserve, Deerhurst C.P., SO82T. 24/07/2009 (RVL). In newish pond in the north meadows. First county and V-c record.

152/1/1 *Eriophorum angustifolium* Honck., **Common Cottongrass.** V-c 34. Edgehills, Littledean C.P., SO61S. 18/08/2009 (GHJM). Very small patch in heathland. Also 23/08/2009 (JAB). A few spikes.

152/3/6 *Eleocharis acicularis* (L.)Roemer and Schultes, **Needle Spike-rush.** V-c 7 (Gloucestershire Admin. County). Lower Mill Estate, CWP, Somerford Keynes C.P., SU09G. 16/07/2009 (GH). The large populations recorded in 2006 along the margins of Lake 57 largely disappeared following landscaping works but extensive areas have now been recolonised particularly along the south side of the lake. V-c 33 Near Wildmoorway Bridge, CWP, South Cerney C.P., SU09T. 13/09/2009 (REL & RVL). Small patch along landscaped edge of lake.

152/4/1 *Bolboschoenus maritimus* (L.)Palla, **Sea Club-rush.** V-c 34. Ashleworth Ham Nature Reserve, Ashleworth C.P., SO82I. 22/08/2009 (JAB). Abundant around pool edge.

152/11/1 * *Cyperus longus* L., **Galingale.** V-c 34. Lydney Marsh, Lydney C.P., SO60F. 16/10/2009 (CK & MARK). Single clump at lake edge.

152/16/1 *Carex paniculata* L., **Tussock Sedge.** V-c 33. Hyde Mill, Maugersbury C.P., SP12S. 2/07/2009 (JRD). Two tussocks beside short ditch.

152/16/4 *Carex vulpina* L., **True Fox-sedge.** V-c 33. Coombe Hill Nature Reserve, Leigh C.P., SO82T. 9/07/2009 (JLB & JRD). One tussock in the southern meadows.

152/16/18 *Carex dioica* L., **Dioecious Sedge.** V-c 33. Brassey Marsh, Naunton C.P., SP12G. 28/05/2009 (MRB & PB). Two good patches.

152/16/52 *Carex filiformis* L., **Downy-fruited Sedge.** V-c 34. Sapperton Wood, Sapperton C.P., SO80L. 24/05/2009 (NH on GPG meeting). Fruiting patch 1m x 1metre by track in open area. First VC record since 1923 and from Sapperton since 1918. (See Plate 4)

152/16/65 *Carex acuta* L., **Slender Tufted-sedge.** V-c 33. Coombe Hill Canal, Leigh C.P., SO82T. 9/07/2009 (JLB & JRD). In the southern meadows.

152/16/65x67 *Carex x elytroides* Fries, = *C. acuta x C nigra.* V-c 34. Berkeley Heath, Hamfallow C.P., SO60V. 2009 (AF). In water meadows.

153/21/2 *Catapodium marinum* (L). C.E.Hubb., **Sea Fern-grass.** V-c 33. Gloucester Docks, Gloucester, SO81J. 2/08/2009 (ILR). Two small patches growing out of dock kerb edges. Second V-c record, the other being F.H.Perrings 1962 Ashchurch railway embankment record where it did not persist.

153/46/1 * *Polypogon monspeliensis* (L.) Desf., **Annual Beard-grass.** V-c 33. Gloucester Business Park, Brockworth C.P., SO81X. 29/10/2009 (JRD). First V-c record since that of Haines from Hucclecote in the 1948 Flora.

153/47/14 *Alopecurus aequalis* Sobel., **Orange Foxtail.** V-c 34. Tidenham Chase, Tidenham C.P., ST59N. 13/05/2009 (CK& MARK conf. TBR). Dominant in pond. Holland et al in the Supplement took the view that this should no longer be considered a Gloucestershire species and questioned the two records in the Flora. These were 1867 Brody, banks of R. Severn near Gloucester Docks (V-c 33) and 1909 Rogers unconfirmed record from between Ebley and Kings Stanley (V-c 34).

153/50/7 **Bromus secalinus* L., **Rye Brome.** V-c 34. Blackwells-end Green, Hartpury C.P., SO72X. 15/11/2009 (JAB, CK & MARK on GNS meeting). Few plants at field edge in improved grass ley by Colliers Brook.

153/68/1 **Echinochloa crus-galli* (L.)P.Beauv., **Cockspur.** V-c 33. Ripple, Twyning C.P., SO83Y. 29/09/2009 (BL). Probable pheasant feed in field with wide Amaranth strip with *Kickxia elatine*. V-c 34. Near Lorridge Brake, Stinchcombe C.P., ST79E. 21/07/2009 (MP). Alien grass mix alongside of tracks and woodland margin. Plusterwine, Woolaston C.P., ST59Z. 20/9/2009 (JAB). In maize field with *Amaranthus hybridus.*

153/70/pum **Setaria pumila* (Poir.)Roem. & Schult., **Yellow Bristle-grass.** V-c 33. Ripple, Twyning C.P., SO83Y. 29/09/2009 (BL). In edge of cornfield.

Panicum capillare* L., **Witch-grass. V-c 34. East of Lorridge Brake, Stinchcombe C.P., ST79E. 21/07/2009 (MP).

Panicum miliaceum* L., **Common Millet. V-c 34. Norman Hill, Cam C.P., ST79P. 15/10/2009 (MP). Single plant in Marlstone Road growing at road/ kerb interface.

154/1/1 *Sparganium erectum* L., **Branched Bur-reed.** V-c 34. Ashleworth Ham Nature Reserve, Ashleworth C.P., SO82I. 22/08/2009 (JAB).

155/1/1 *Typha angustifolia* L., **Lesser Bulrush.** V-c 33. Hawling, Hawling C.P., SP02B. 10/10/2009 (JW). In pond surrounded by lawn in house grounds but open to and near to road. Probably introduced.

158/2/1 *Narthecium ossifragum* (L.) Hudson, **Bog Asphodel.** V-c 34. Pit House Pond, Mitcheldean C.P., SO61P. 3/07/2009 (JRD). Doing well at this known locality.

158/7/1 *Colchicum autumnale* L., **Meadow Saffron.** V-c 34. East of Blakeney Walk, Ruspidge and Soudley C.P., SO60P. 5/09/2009 (AD, KD & VD). One large patch with a second colony now lost to bracken and bramble incursion.

158/9/1 *Gagea lutea* (L.) Ker Gawler, **Yellow Star-of-Bethlehem.** V-c 33. Paul's Hill, Eastleach C.P., SP10T. 20/04/2009 (PG & PBH). Known locality. Some plants carrying the species specific rust, *Uromyces gagea* (det PG) which has only twenty-two British records, twenty of which are pre-1972 mainly SW, S and NE Yorkshire and two from Durham in 2004.

158/10/1 **Tulipa sylvestris* L. **Wild Tulip.** V-c 33. Notgrove, Notgrove C.P., SP12A. 20/04/2009 (PG & PBH). Nineteen flowering at this recently discovered colony. Some waste material was found to have been dumped onto the site.

158/17/1 *Paris quadrifolia* L., **Herb Paris** V-c 33. Lineover Wood, Dowdeswell C.P., SO91Z. 18/04/2009 (DWP). Between 500 and 1,000 plants.

158/18/2 *Ornithogalum umbellatum* L., **Star-of-Bethlehem.** V-c 33. Down's Copse, Fairford C.P., SP10G. 23/05/2009 (LW). Colony of about twenty plants.

158/24/9 **Allium paradoxum* (M.Bieb) Don, **Few-flowered Garlic**. V-c 33. Colesbourne, Colesbourne C.P., SO91W. 4/05/2009 (CK & MARK).

158/24/11 *Allium oleraceum* L., **Field Garlic.** V-c 33. Swifts Hill, Painswick C.P., SO80T. 22/09/2009 (JS).

158/25/1 **Nectaroscordum siculum* (Ucria) Lindley, **Honey Garlic.** V-c 33. Nether Lypiatt, Thrupp C.P., SO80R. 8/06/2009 (JSR). Two large patches by the side of lane. Known by JSR for several years.

159/8/8 **Crocus speciosus* M Bieb., **Bierberstein's Crocus.** V-c 33. Ryknild Street, Swell C.P., SP12N. 14/10/2009 (JW& PW). Colony of sixteen flowering spikes growing on track verge. First county and V-c record. (See plate 6)

Schizostylis coccinea* Backh. & Harv. ex. Hock. f., **Kaffir Lily. V-c 34. Lydney Industrial estate, Lydney C.P., SO60K. 10/11/2009 (CK & MARK det HC & FJR). One plant on made up bank of industrial estate perimeter and overlooking open fields. First county and V-c record.

162/2/1 *Cephalanthera damasonium* (Miller) Druce, **White Helleborine**. V-c 33. Barton Bushes, Temple Guiting C.P., SP12D. 30/05/2009 (PB & MRB). Colony of sixteen flowering spikes. Charlton King's Common, Charlton Kings C.P., SO91U. 23/06/2009 (BL). Frequent at this well known locality.

162/3/3 *Epipactis purpurata* Sm. var *chlorotica.* V-c 7 (Gloucestershire Admin. County). Westonbirt Arboretum, Sherston C.P., ST88P. July 2009 (RW).

162/3/4 *Epipactis helleborine* (L.)Crantz, **Broad-leaved Helleborine.** V-c 33. Birdlip Hill, Witcombe C.P., SO91H. 2/10/2009 (JRD). The Peak, Birdlip Hill C.P., SO91H. 2/10/2009 (JRD). Many plants in beech woodland.

162/3/6 *Epipactis leptochila* (Godfery)Godfery, **Narrow-lipped Helleborine.** V-c 33. Buckle Wood, Brimpsfield C.P., SO91B & G. 15/07/2009 (JS). Twenty six spikes.

162/3/7 *Epipactis phyllanthes* G.E. Sm., **Green-flowered Helleborine.** V-c 33. Edge Common (otherwise known as Rudge Hill Common), Painswick C.P., SO80P. 5/08/2009 (KG). At least ten to fifteen plants at the usual locality. CWP east of Whelford, Fairford C.P., SU19Z. 2007 (RH). Group of about twenty plants by lake edge.

var *degenerata* D.P. Young. V-c 33. Edge Common, Scottsquar Hill, Pitchcombe C.P., SO80P. 20/07/2009 (JS). Thirty seven spikes.

var *pendula*(C.A. Thomas)D.P. Young. V-c 33. Painswick, Painswick C.P., SO81Q. 25/07/2009 (JS). Seven spikes in beechwood.

162/5/1 *Neottia nidus-avis* (L.) Rich., **Bird's-nest Orchid**. V-c 33. Birdlip Hill, Witcombe C.P., SO91H. 2/10/2009 (JRD). Single spike in beechwood. V-c 34.

Hangerberry Hill, English Bicknor C.P., SO51X. 26/05/2009 (LT). Twenty three spikes on beechwood slope. Noxon Park, Newland C.P., SO50Y. 23/05/2009 (JB).

162/6/1 *Listera ovata* (L.)R.Br., **Common Twayblade.** V-c 33. Caudle Green, Brimpsfield C.P., SO91F. 19/06/2009 (JB).

162/12/1 *Herminium monorchis* (L.)R. Br., **Musk Orchid**. V-c 33. Charlton Kings Common, Charlton Kings C.P., SO91U. 23/06/2009 (BL). Two spikes. Painswick Beacon, Painswick C.P., SO81R. 4/07/2009 (PM). Patch of 96 spikes.

162/14/1 *Anacamptis pyramidalis* (L.) Rich, **Pyramidal Orchid.** V-c 33. Caudle Green, Brimsfield C.P., SO91F. 28/06/2009 (JB). Hucclecote Meadows, Gloucester, SO81T. 25/06/2009 (IE). Little Haresfield, Standish C.P., SO80E. 3/08/2009 (JAB). Single plant in rough grass in garden shrubbery. Near Over, Longford C.P., SO81E. 19/06/2009 (IE). Single spike by Telford's Bridge. Near Over Ponds, Gloucester, SO81J. 24/06/2009 (IE). Twelve on isolated abandoned section of old A40. Phelps Bros. yard, close to River Severn, east of Sud Meadow, Gloucester, SO81J. 20/06/2009 (JS). Nine spikes. Richard's Wood (North), Gloucester, SO81J. 19/06/2009 (IE). Single spike and observed here infrequently for five years. Robinswood Hill Country Park, Gloucester SO81M. Colonising new parts of the hill.

162/16/1b *Gymnadenia conopsea* (L.)R.Br. subsp. *densiflora* (Wahlenb.) E.G. Camus, Bergon & A. Camus. V-c 33. Painswick Beacon, Painswick C.P., SO81R. 16/07/2009 (JS). Single spike.

162/18/1 *Dactylorhiza fuchsii* (Druce) Soó, **Common Spotted-orchid.** V-c 33. Caudle Green, Brimpsfield C.P., SO91F. 28/06/2009 (JB). Kilkenny Viewpoint Car Park, Dowdeswell C.P., SP01E. 10/07/2009 (JS). Fifty spikes. Robinswood Hill Country Park, Gloucester and Upton St Leonards C.P., SO81M. 19/06/2009 (IE). Single spike first record on this part of the park since the re-introduction of grazing here eight years ago. Additionally sudden increase in size of population at another part of the park.

var *rhodochila* Turner Ettl. V-c 33. Swift's Hill, Painswick C.P., SO80J. 16/06/2009 (JS). Single spike.

162/18/4 *Dactylorhiza praetermissa* (Druce)Soó, **Southern Marsh-orchid.** V-c 33. Brassey Marsh, Naunton C.P., SP12G. 28/05/2009 (MRB & PB). Twelve plants in this known locality. Eastleach Martin, Eastleach C.P., SP20C. 30/06/2009 (JRD). Wet meadow adjacent to River Leach. Upper Slaughter, Upper Slaughter C.P., SP12L. 3/06/2009 (JW). Around about twenty plants adjacent to River Eye.

162/20/2 *Orchis mascula* (L.)L., **Early-purple Orchid.** V-c 33. Hammersmith Bottom, Southrop C.P., SP10W. 17/05/2009 (ILR). On ancient hedgerow bank.

162/20/3 *Orchis morio* L., **Green-winged Orchid.** V-c 34. Ruardean Woodside, Ruardean C.P., SO61D. May 2009 (JO).

162/23/1 *Ophrys insectifera* L., **Fly Orchid**. V-c 33. Charlton Kings Common, Charlton Kings C.P., SO91U. 23/06/2009 (BL). Seven flowering spikes.

forma *luteomarginata* V-c 33. Sheepscombe Common, Painswick C.P., SO81V. 13/06/2009 (JS). Five spikes.

162/23/3 *Ophrys apifera* Huds. **Bee Orchid**. V-c 33. Kilkenny Viewpoint car park, Dowdeswell C.P., SP01E. 10/07/2009 (JS). Two spikes. Phelp Bros. yard, close to River Severn, East of Sud Meadow, Gloucester, SO81J. 20/06/2009 (JS). Single spike. Postlip Mills, Winchcombe C.P., SP02D, around about thirty very tall fruiting spikes on lawn of works which had been very carefully and closely mown around the orchids. V-c 34. Laymoor Quag, Cinderford C.P., SO61M. 2/07/2009 (JO). Single spike on the edge of the nature reserve. New 10km record.

var *trollii* (Hegetschw) Nelson, **Wasp Orchid.** V-c 33. Phelp Bros. yard, close to River Severn, east of Sud Meadow, Gloucester, SO81J. 20/06/2009 (JS). Five spikes

Chara contraria A.Brown ex Kütz, **Opposite Stonewort.** V-c 33. Lechlade, Lechlade C.P., SP20F. 28/05/2008 (JRD, CM & NFS). CWP Lake 120.

Nitella opaca (Bruz.) Agardh. V-c 33. Lechlade, Lechlade C.P., SP20F. 28/05/2008 (JRD, CM & NFS). CWP Lake 120.

BEETLE RECORDING IN GLOUCESTERSHIRE 2010

Keith Alexander

A very quiet year for beetle recording. We were fortunate in having a short visit from Colin Johnson who demonstrated his expertise in minute beetles which nobody else notices by adding two overlooked species to the county list. John Widgery has also found an addition, but a recent arrival in this case. The most interesting records received are detailed below.

Melyridae

Anthocomus rufus (Herbst) – A fen speciality, associated mainly with reed-beds and only discovered in the Cotswold Water Park as recently as 2005. This is the second record for the county.

SU09 Lower Mill Estate, one swept from *Phragmites*, 16.viii.2009, Colin Twissell (confirmed by KA).

Corylophidae – a very difficult group of minute beetles

Orthoperus aequalis Sharp – **British Red Data Book Category K (Insufficiently Known) & New county record.** Associated with mouldy wood. Very few reliable records known.

SU09 Cerney Wick, ix.2009, Colin Johnson.

Latridiidae

Cartodere constricta (Gyllenhal) – **New county record**. Found beneath bark on dead wood. A little-known species.

SU09 Cerney Wick, ix.2009, C Johnson (pers comm.)

Meloidae – oil beetles

Meloe rugosus Marsham – **British Red Data Book Category 3 (Rare) & BAP Priority Species.** A speciality of open flowery places on limestone, and increasingly being found in recent years. Three new localities:

SO80 Snows Hill Reserve, iv.2009, via Kathy Meakin.

SO90 Caudle Green, in garden, 20.iii.2009, Richard Beal; Duntisbourne Rouse, in swimming pool, 8.iv.2009, David Scott-Langley.

Curculionidae - weevils

Pachyrhinus lethierryi (Desbrochers) – A recently established leaf weevil which is spreading out from SE England. It feeds on the foliage of *X Cupressocyparis leylandii*, favouring mature trees, and is also known from *Juniperus* and *Thuja* spp. on the Continent.

SP03 Toddington, one beaten from *Thuja*, 24.v.2009, John Widgery.

Other interesting reports during the year include:

Lucanus cervus (Linnaeus) - The Stag Beetle. **Nationally Scarce Category B & BAP Priority Species**. In Gloucestershire primarily in the Vale, where it was rediscovered in 1998 after a gap of nearly 30 years, following a public appeal for sightings, and it is now known to survive in its north-western strongholds. The old sites around the major Cheltenham & Gloucester conurbations have not however been confirmed – the following report suggests that it may still persist locally.

SO91 Leckhampton, male and female in garden more than 5 years previously, but a possible larva was found in March 2009, Amy Woolacott.

ORTHOPTERA (GRASSHOPPERS & CRICKETS) AND RELATED SPECIES IN GLOUCESTERSHIRE 2009

John Widgery

Whilst there were no outstanding records, the season did produce some interesting elements which are summarised, by species, hereunder:-

ORTHOPTERA

Oak Bush-cricket, *Meconema thalassinum*
A remarkable record from Graham Wallhead of 17 found together, probably attracted to light, in a garage at Stow-on-the-Wold (SP1826) on 24 August.

Roesel's Bush-cricket, *Metrioptera roeselii*
Well established now over the whole of the County. This year saw over 130 records and included five new 10km squares. Whilst quite abundant in places it could well be overlooked without the aid of a bat detector which enables its stridulation to be heard more easily. Last record was on 14 October.

Long-winged Conehead, *Conocephalis discolor*
Also widespread throughout Gloucestershire although populations are often smaller than the former species. A bat detector is vital to get a proper idea of the distribution of this insect because the very high frequency at which it delivers its stridulation is beyond most people's hearing. There were about 80 records in 2009 up to the very late date of 2 November.

Speckled Bush-cricket, *Leptophyes punctatissima*
An abundant species but worthy of mention are notably early and late dates. The first nymph was seen on 29 April which is the earliest record I have for the species. The last record of the year, no doubt influenced by the mild and prolonged Autumn, was on the exceptionally late date of 25 November when a single was heard, by way of the indispensible bat detector, stridulating weakly in my garden soon after dusk.

Lesser Marsh Grasshopper, *Chorthippus albomarginatus*
Recorded in a few places through the season, mainly in the vicinity of the River Severn which is its stronghold. The one new 10km square record was away from this area at Down Ampney (SU1096) on 13 August.

Rufous Grasshopper, *Gomphocerippus rufus*
This species, which is at the northern edge of its range in Gloucestershire, only occurs in a few localities in the County. David Haigh and Colin Twissell refound it this year at one of its known sites, Strawberry Banks (SO9103), on 4 October.

DERMAPTERA (EARWIGS)

Lesne's Earwig, *Forficula lesnei*
Apart from one record in the Cotswold Water Park near South Cerney this species has only been recorded within 12km of the River Severn with most occurrences centred around the Arlingham/Westbury-on-Severn area. During 2009 I searched for it at other likely riverside locations from which there had been no previous sightings. This resulted in two new 10 km square records at Maisemore (SO8122) on 29 September and Purton (SO6804) on 30 September although it did seem to be very sparsely distributed in these areas. I also got another 10 km sq. record just a couple of km. away from the river near Walton Cardiff (SO9131) on 31 August.

I would like to thank all those who submitted records, especially David Haigh, Colin & Ingrid Twissell, Graham Wallhead, David Dewsbury and Kenneth Heron.

Amphibian and Reptile Report 2009

Colin Twissell

As so often happens when sites are threatened by developers, the **Great Crested Newt** (*Triturus cristatus*) comes to the fore. 2009 was no exception; a Churchdown garden was earmarked for housing, but was refused on appeal, due in part, to the presence of a nearby breeding population of Great Crested Newts - a European protected species.
An illegal travellers' site near Newent prompted an investigation into the presence of this newt close to the area. Adult newts had been found in the cellar of a property of a nearby resident, so a visit to look at the ponds in June was arranged. There was a cluster of field ponds, several of which had been neglected and shaded out by trees, but one newly created pond produced several Great Crested Newt efts.
A Great Crested Newt breeding site on the outskirts of Tewkesbury has finally succumbed to hardcore and industrial units. Although the pond, believed to be part of an old moat, has been conserved, the loss of the four-acre marshy site, which was part of the newt's terrestrial habitat, is of great concern. Only time will tell whether the conservation efforts put in by ecologists are successful.
Eighteen Great Crested Newt records were received, several from known sites, but also some new locations – efts were seen in a garden pond in Preston near Cirencester (see plate 10), also Great Crested Newts have been seen in a couple of garden ponds in Berkeley and there were reports from Hatherley Park, Cheltenham, and Hartpury of further sightings; the latter two worthy of further investigation in 2010.

When investigating the presence of Great Crested Newts, other newt species are often encountered. **Smooth Newts** (*Lissotriton vulgaris*) were found at both the Churchdown and Newent sites as mentioned above. Turning logs, stones etc can be rewarding. Fifteen were found under a piece of corrugated sheet at Bentham in March. The presence of seven Smooth Newts under drift wood below Garden Cliff at Westbury-upon-Severn (GNS meeting 21st February) remains a mystery. The most plausible conclusion would be that they had, during their terrestrial wanderings, descended from the field above. Three smooth newts were discovered under a log at Twigworth and two under refugia at Lower Mill Estate, Cotswold Water Park. (JF)

Only four **Palmate Newt** (*Lissotriton helveticus*) records were received; one from Duntisbourne Abbotts, one from Churchdown, and two from the Forest of Dean area.

The **Common Toad** (*Bufo bufo*) activities began around the middle of March. A count of thirty-eight toads in a garden pond in Foxcote, on 17 March, was quite impressive (MG). Other records were from observers who encountered toads of

varying ages during the toad's terrestrial stage and quite often found when disturbing their place of shelter.

The first frogspawn was noted at St Briavels on 28 January (RG), but a rather cold and snowy start to February slowed the amorous antics of the **Common Frog** (*Rana temporaria*) for a few weeks into February. The owner of a garden pond in Nailsworth reported seeing a total of fifty-five frogs and twenty-one clumps of spawn on 28 February (TG). Throughout March there were further sightings of spawn followed by random encounters of individual frogs throughout the year.

Not an indication of climate change, but the irresponsible release of non-native species into the wild, was of three reports of the **Red-eared Terrapin** (*Trachemys scripta*). One was from a resident of Newent who was worried about terrapins in a nearby pond and whether they were a threat to the fish in his fish-pond, and whether these terrapins could be removed.
A fisherman, Jason Williams, had a surprise, when fishing in Pittville Lake, Cheltenham, when he landed a Red-eared Terrapin the size of a dinner plate.
A picture of a Little Egret (*Egretta garzetta*) at Woorgreens Lake, which was put onto the Gloster Birder website, revealed a terrapin basking at the edge of the lake. The presence of this terrapin was only discovered when the photographer (MK) was viewing the results of his field trip.

Eighteen **Common Lizard** (*Zootoca vivipara*) records were received, seven from the Cotswolds and eleven from the Forest of Dean. Maybe this is why a great grey shrike (*Lanius excubitor*) spends some time in the Forest during the winter months, as observed before, and noted again on the Gloster Birder website, that a great grey shrike was seen to take a common lizard on 7 March 2009 at Boy's Grave (BM, JK, JO).

Nine sightings of **Slow Worm** (*Anguis fragilis*) were received. These are not often seen in the open, but more likely encountered in compost heaps or under discarded objects. Putting down artificial refugia in areas of known Slow Worm territory can be rewarding as indicated by the results of Slow Worm numbers at Ringhill Farm Nature Reserve where maximum numbers reached double figures (RP). At Lower Woods Nature Reserve, where "tins" were placed for a reptile survey, Slow Worm numbers under one refugium reached thirty (TB).

The fifteen records of **Grass Snake** (*Natrix natrix*) received from sites across the county indicate a good distribution. The varying sizes seen shows some breeding success. A positive indication of this was a record from Pauntley where a yearling Grass Snake was seen as well as empty egg cases in an old dung heap (MB). The

same "tin" at Lower Woods, that attracted the slow worms, was also favoured by half a dozen Grass Snakes. (TB)

2009 was yet another year when the **Adder** (*Vipera berus*), hit the headlines of the local newspaper. This time it was the death of a dog from an Adder bite on Cleeve Hill Common. Fortunately the Adder was not blamed – rather, the lack of anti-venom held by the veterinary practitioners. With increased urbanisation and easier access to the countryside one feels these incidents will increase. It also puts pressure on our only venomous snake from disturbance. Once emerged from hibernation, the Adder needs to bask to raise its body temperature and depending upon the weather patterns each spring, this activity can continue over several weeks culminating in ecdysis, male combat, and mating, before moving out to their home range. Ten records were received, five from the Cotswold Scarp and five from the Forest of Dean, with eight Adders - the highest number seen - at New Fancy, published on the Gloster Birder website on 10 May 2009 (BS, J & PM).

Thanks to:- T. Bacon, J. Bailey, A. Bingle, J. Black, M. Bradley, T. Burditt, B. Butcher, J. Chapman, E. Collis, B. Dumbleton, N. Everall, J. & L. Fleming, L. Garner, R. Gaunt, M. Glenny, T. Grant, D. Haigh, S. Harris, K. Heron, J. Doe, A. King, J. King*, M. King*, G. & T. & J. Mabbett*, B. Macdonald*, G. Meredith, P. & A. Mingins, A. Mullany, J. Overfield*, C. Parsons, R. Pearce, J. & V. Phillips, M. Pywell, A. Robbins, B. Stephenson*, A. Taylor, H. Taylor*, C. Twissell, I. Twissell, F. Valentine, J. Widgery, Jason Williams, R. Woolley.
(* Records taken from the Gloster Birder website.)

Thanks also to GCER for entering the records onto their database.

LADYBIRD REPORT 2009

David Iliff

As in each of the previous years since it was first recorded here in 2006, numerous records of the Harlequin Ladybird (*Harmonia axyridis*) were obtained throughout the county, but the great majority of these were during the final quarter of the year. A spectacular example was at Bishops Cleeve parish church on 14 October when all the sunlit walls of the building were covered with these insects. It had of course been feared that the correctly-forecast rapid spread of the Harlequin would result in a correspondingly rapid decline in the populations of native species, so it is especially satisfying to report that good numbers (comparable to those of pre-Harlequin years) of nearly all the conspicuous native species were also found in Gloucestershire during 2009, in particular the 7-Spot Ladybird (*Coccinella 7-punctata*). The situation seems to have been similar nationally, with vast swarms of 7-Spot occurring at various locations in Britain during the year.

The native member of the *Harmonia* genus, the Cream-streaked Ladybird (*H. 4-punctata*) was seen at its habitual site at Pittville Park, Cheltenham on 22 June (a larva) and 3 August (2 adults), and John Widgery saw an adult near Woolstone on 27 September.

Ivan Proctor recorded a Hieroglyphic Ladybird (*Coccinella hieroglyphica*) and an Eyed Ladybird (*Anatis ocellata*) in the Kensley-Crabtree Hill area on 7 August. An Eyed Ladybird was found near Down Ampney on 13 August and I discovered one, to my surprise, on the wall of my house in Woodmancote on 19 August. I suspect that it had been attracted to the outside light during the night. An example of the infrequently-observed larva of this species (see Plate 21) was beaten at Cotswold Farm by David Scott-Langley on 10 June.

The 19-Spot Ladybird (*Anisosticta 19-punctata*) was seen at Alney island on 8 July (Jeremy Doe), by myself at Highnam Court on 2 August and by John Widgery at the Cotswold Water Park on 18 August. John also recorded the Adonis Ladybird (*Hippodamia variegata*) from three sites: Woodmancote near Cheltenham on 25 July (indoors); near Paxford on 2 August; and Westbury-on-Severn on 25 September.

The Kidney-Spot Ladybird (*Chilocorus renipustulatus*) was seen in numbers on an ash trunk beside Farmhouse Lake on the Lower Mill Estate in the Cotswold Water Park on 16 August (John Fleming) and several larvae and adults of the 22-Spot Ladybird (see Plate 20) were present on the hornbeam hedge in my garden at Woodmancote for much of the summer.

The Orange Ladybird (*Halyzia16-guttata*) was recorded from several sites and records of both the Larch Ladybird (*Aphidecta obliterata*) and the 24-Spot Ladybird (*Subcoccinella 24-punctata*) were significantly higher than in other recent years.

Plate 1. Ash pollard at Duntisbourne Rouse. (Photo: David Scott-Langley)

Plate 2. Violet Click Beetle (*Limoniscus violaceus*). (Photo: Roger Key)

Plate 3. *Acaena novae-zelandiae*. (Photo: Mark & Clare Kitchen)

Plate 4. Downy-fruited Sedge (*Carex filiformis*). (Photo: Mark & Clare Kitchen)

Plate 5. Buttonweed (*Cotula coronopifolia*). (Photo: Mark & Clare Kitchen)

Plate 6. Bierberstein's Crocus (*Crocus speciosus*). (Photo: Mark & Clare Kitchen)

Plate 7. Fortune's Holly-fern (*Cyrtomium fortunei*). (Photo: Mark & Clare Kitchen)

Plate 8. Krauss's Clubmoss (*Selaginella kraussiana*). (Photo: Mark & Clare Kitchen)

Plate 9. Garden Lavender (*Lavandula angustifolia*). (Photo: Mark & Clare Kitchen)

Plate 10. Great-Crested Newt eft. (Photo: Colin Twissell)

Plate 11. Western Conifer Seed Bug (*Leptoglossus occidentalis*). (Photo: John Widgery)

Plate 12. Heather Shieldbug (*Rhacognathus punctatus*). (Photo: John Widgery)

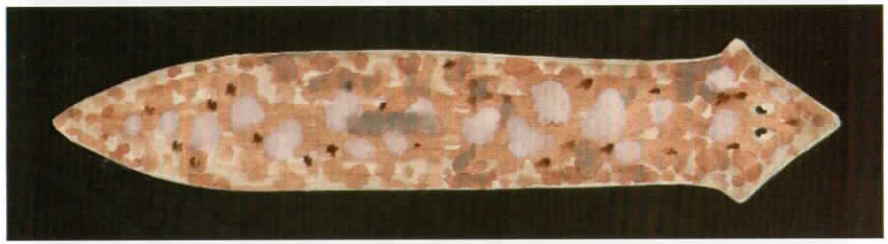


Plate 13. The North American flatworm *Dugesia tigrina*

Plate 14. Hoverfly ***Pocota personata*** (male) at Highnam Woods RSPB Reserve, 21st April 2009 (photo: David Gibbs)

Plate 15. Hoverfly ***Scaeva selenitica*** (male), Woodmancote, 22nd July (photo: David Iliff)

Plate 16. Hoverfly ***Sphaerophoria philanthus*** pair at Edge Hills, 18th July (photo: David Iliff)

Plate 17. Tachinid Fly ***Tachina grossa*** at Edge Hills, 18th July (photo: David Iliff)

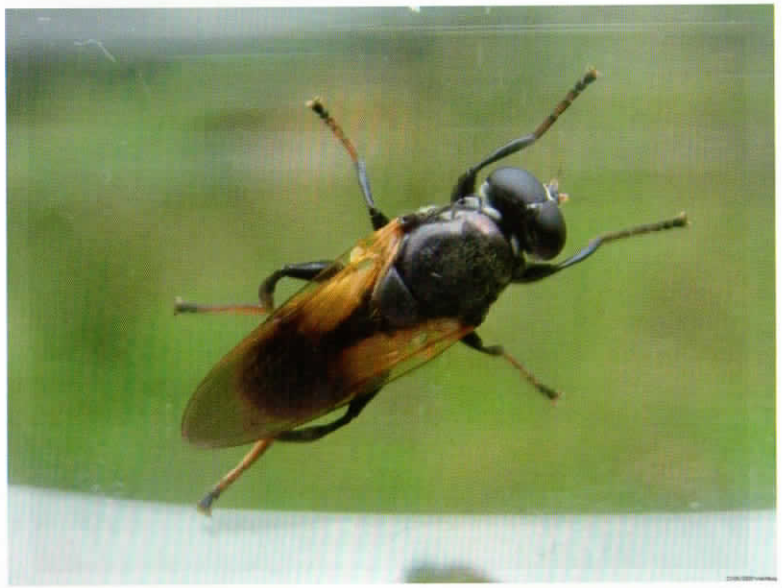


Plate 18. Hoverfly ***Myolepta potens*** (male) taken at Welshbury Wood, 22nd June (photo: John Phillips)

Plate 19. Hoverfly ***Meligramma guttatum*** (female) at Lower Mill, 16th August (photo: David Iliff)

Plate 20. 22 Spot Ladybird (***Psyllobora 22-punctata***) at Woodmancote, 23rd July (photo: David Iliff)

Plate 21 (above). Eyed Ladybird (***Anatis ocellata***) larva from Cotswold Farm, 10th June (photo: David Iliff)

Plate 22 (left). The Cave Spider, (***Meta menardi***) on egg sac, Ice House, Tidenham. (photo: David Priddis)

Plate 23. Pale green form of the crab spider, *Misumena vatia* on an umbel with prey, Coombe Hill, September 4th 2004. (Photo: Colin Twissell)

Plate 24. White form of the crab spider ***Misumena vatia,*** showing the genetic variant 'with red lines', Padgett's Road, Bishop's Cleeve, June 4th 2009. (Photo: David Iliff)

Plate 25. Yellow form of the crab spider, *Misumena vatia* on Carline thistle, Strawberry Banks, October 4th, 2009. (Photo: Colin Twissell)

Plate 26. The carabid ground beetle *Amara strenua* from Coombe Hill Meadows. (Photo: David Scott-Langley)

Plate 27. Aerial view, looking east, of Coombe Hill Canal and Meadows as the 2007 floods receded. The Long Pool is in the foreground, the withy beds are left of centre, and the vegetation in the adjoining brown fields was killed by the floods when at their highest. (Photo: Colin Twissell)

TERRESTRIAL HETEROPTERA (LAND BUGS) IN GLOUCESTERSHIRE 2009

John Widgery

Whilst the summer of 2009 was a considerable improvement as compared with the previous two years it was not particularly outstanding although, importantly, there was an extended period of warmth and predominantly dry weather into late Autumn which would have favoured those species that have a late season.

The accumulative effect of the recent series of cooler, wetter, summers seems to have halted the hitherto strong range expansions of many of the species that were beginning to spread into the County during the first half of the decade although, of course, this may only be a temporary phenomenon should the warming trend resume. In this regard, species in the families Coreidae, the closely related Rhopalidae and the Lygaeidae have been badly affected. For instance, the reasonably familiar Dock Bug, *Coreus marginatus*, first discovered in the County in 1997 has again become quite scarce with only a few records in 2009 and the Rhopalid species, *Stictopleurus punctatonervosus* and *S. abutilon*, which were spreading quickly northwards through the UK (first Glos. record in 2000) have disappeared with no records since 2006. The Lygid bug, *Orsillus depressus,* found on species of Cypress trees, which spread strongly into the UK from the Mediterranean two decades ago, and had become well established in the County, has been found just once since 2007 and was not recorded at all this year. The shield bug, *Aelia acuminata,* has only been seen once since 2006 and that was only a single in 2007. Also, yet another species that recently had spread strongly into Gloucestershire, the Mirid bug *Lygus pratensis* , produced no records. To add to this tale of woe, the Nationally Scarce thyme bug, *Heterogaster artemesiae,* (which was refound on Cleeve Hill in 2006 after an absence of many years and has since reappeared in 2008) was again missing this year, suggesting the possibility of a biennial life cycle (at least in this population) although this needs to be confirmed by future observations. The one exception to this trend has been the finding of the bright scarlet bug *Corizus hyoscyami,* also a recent arrival in Gloucestershire (2003), at three sites, two of which are new. To put all this into context, these observations are made following approximately fifty 'field' searches, usually covering wide areas, between April and October which, I would suggest, enables a reasonably accurate picture to be drawn of population levels and also illustrates how sensitive some species are to climate and the importance of monitoring them at this time of climate uncertainties.

A report received early in the year concerned a 2008 record of the Western Conifer Seed Bug, *Leptoglossus occidentalis*, which is new to Gloucestershire. It was found by Graham Wallhead at Stow-on-the-Wold (SP1826) on 22 October 2008 in a garage,

presumably, having been attracted to light. This is a large, 20mm long, North American insect which feeds on the flowers, developing cones and seeds of a wide range of conifer trees and it can become a pest (see Plate 11). It was accidentally introduced into Europe (Italy) in 1999 and since then has spread rapidly. It was first found in Britain as recently as 2007 in Dorset but no further specimens turned up until late summer 2008 when many were found in light traps along the south coast of England suggesting a large migration across the English Channel. It was then recorded at a number of inland locations, mainly in the south of England, including this record. This spread has continued through the UK in 2009 with numerous additional records, the most northerly of which was from Cumbria. The species is known to be a strong flier and is expected to become readily established in Britain and anyone using light traps should be aware that it may turn up in their catches.

The more significant records for 2009 are summarised as follows:-

Heather Shieldbug, *Rhacognathus punctatus*
This is the rarest of the shieldbugs known to occur in the County and had only been found at two Forest of Dean locations prior to 2009 when Colin Twissell got it at a third Forest site at Edgehills (SO6615) on 18 July (see Plate 12).

Corizus hyoscyami
Found on three occasions this year. The first at Gotherington (SO9629) on 24 April – exactly the same site as it was seen in 2007. It was also swept from grass at Kildanes Bottom, near Bourton-on-the-Hill (SP1432) on 27 August and near Laverton (SP0636) on the very late date of 31 October, these latter two records being new.

Spruce-cone Bug, *Gastrodes abietum*
This species is usually found in Norway Spruce cones in which it shelters following nocturnal feeding on the sap from needles and seeds. It is probably very widespread but difficult to record because of the inaccessible height at which mature cones usually occur. Two were found in a freshly fallen cone after windy weather at Woodmancote (SO9727) on 18 January. This was only the fourth record for the County.

Anthocoris butleri
This species feeds specifically on Box, *Buxus sempervirens*. It was found for the third time in Gloucestershire on its host plant at Snowshill (SP0933) on 27 August. Because of the specific requirements of this insect it is probably overlooked.

Macrotylus solitarius
This County scarce species which feeds specifically on Hedge Woundwort, *Stachys sylvatica* was found at a further seven sites over a wide area in 2009 suggesting that it is more common than previously thought. It has possibly been overlooked before.

Oncotylus viridiflavus
There were two records of this County rare species. The first at Coln St. Dennis (SP0911) on 7 August and the second near Snowshill (SP1333) on 27 August. These were the sixth and seventh records for Gloucestershire.

Miridius quadrivirgatus
This scarce grass bug was found yet again this year at a further three locations – at Aston Magna (SP2035) and near Paxford (SP1937) on 2 August and near Bourton-on-the-Hill (SP1432) on 27 August. This brings the total records for the County to ten.

Pilophorus clavatus
Certainly one of the most notable highlights of the year was the surprise finding of this nationally very local species which is usually only found on Willows (*Salix* spp.). It had only been found once before in the County at Ashleworth Ham in 2002 on its usual host but I came across it quite unexpectedly at Walton Cardiff (SO9032) when beating Scots Pine (*Pinus sylvestris*),on 31 August. At the time I was fairly convinced that it would be the very similar *Pilophorus cinnamopterus* which is normally found on Scots Pine and is itself a very scarce insect in Gloucestershire. It was only when thoroughly examined later that it proved to be *P. clavatus*. Although not noticed at the time, it is probable that its normal host i.e. *Salix* spp. was growing in the area.

Thanks must go to all those who submitted records, particularly, David Iliff, Colin & Ingrid Twissell, Graham Wallhead and Kenneth Heron.

OVER HERE

Larry Bellamy

When the last glaciers retreated and the North Sea sundered the British Isles from continental Europe, we were left with a fauna and flora that derived from a) those species that had survived the glaciation (glacial relict species) and b) those that had already spread into the region before it was cut off. This left us with decidedly less biodiversity than that in mainland Europe. Freshwater organisms in general, cannot tolerate 100% sea water, so subsequent spread from Europe was difficult.

Birds could come and go, but (for many years) insects would also have had to contend with numbing air temperatures. But, at least they had the equipment with which to spread actively. Those freshwater organisms without wings could only spread passively, hitching lifts. Despite the passage of millennia, the active and passive spread of species from Europe to the British Isles has been insufficient to restore our biodiversity to that of mainland Europe - to the extent that naturalists can call some species "native" and others "introduced", "immigrant" or "alien".

There are various ways for species to spread passively, but the activities of *Homo sapiens* have been of great help. In recent years (on a geological time-scale) we have contributed to the spread of species to this country not only from Europe, but from around the world. I have mentioned previously (Bellamy, TGN 1, 1984) that the distribution in the U.K. of the freshwater triclad *Planaria torva* (Muller) seemed to be linked to the presence of timber yards (Ball et al., 1969). Historically, we have imported timber from Scandinavia and *Planaria torva* occurs there, even in the Baltic Sea - which is brackish in the shallows, because of the huge input of freshwater from the surrounding land.

A North American triclad, called *Phagocata woodworthi* Hyman, has appeared in Loch Ness (Reynoldson et al., 1981) almost certainly as a result of the bringing over from the U.S.A. of equipment for hunting the Loch Ness "monster". So far, it seems to be confined to Loch Ness and hopefully, will remain so.

Of much more concern is another N. American species - *Dugesia tigrina* Girard. It has probably been in this country since at least the 1920s (Young and Reynoldson, 1999) and has been introduced by two possible routes - the aquarist trade and fish-stocking for anglers. What has aided its spread in the U.K. has been repeated, separate introductions over the last century. The concern arises because *D. tigrina* is a very successful species and its introduction into new bodies of water has repeatedly resulted in the displacement of the "native" British species. It should be added, that it

has been introduced also to mainland Europe and Japan. Under conditions of good food supply and not too low temperatures, its population quickly outstrips those of any indigenous triclads and these may disappear from the site. The reasons for the competitive success of *D. tigrina* include a wide spectrum of food (prey) species that it is prepared to eat and its ability to reproduce asexually by spontaneous transverse fission. This last, means (in theory) that only one individual needs to be introduced to a site and it can multiply to produce an ever-increasing clone. Three other British triclads can reproduce asexually - *Phagocata vitta* (Dugès), *Polycelis felina* (Dalyell) and *Crenobia alpina* (Dana), but their other ecological requirements restrict their distributions to small streams and groundwater.

The food species for *D. tigrina* include virtually all freshly dead, or wounded animals and some whole, live animals (e.g. crustaceans, insects, gastropods and oligochaetes) (Pickavance, 1971). What does appear to limit the spread of this triclad is its poor tolerance of low-temperature habitats and those with soft water and consequently limited range of prey species. These properties of course often go together. So, wherever there are hard-water, biodiverse and slightly warmer bodies of water, *D. tigrina* can thrive. The species has long been in Gloucestershire therefore and we may mirror the national picture of an unstoppable alien taking over, replacing the native species and reducing the biodiversity in our lowland freshwater habitats.

Recorded occurrences of *D. tigrina* in Gloucestershire are:-

V.C.33
SO862105 Rococo Garden, Painswick
SO880347 Shuthonger
SO828200 Walham
SU063966 South Cerney
SU111954 Down Ampney
SU029962 Keynes Park
SU174995 Whelford
SP221011 Lechlade

V.C.34
SO754079 Frampton
SO748070 Frampton
SO749092 Saul
SO608102 Cannop
SO795192 Highnam Court
I am hoping to review the situation this coming year.

Dugesia tigrina is one of the easiest species of triclad to identify; no native species resembles it (see Plate 13). The first impressions are of a blotchy, pinkish-grey flatworm that is very tenacious when you try to remove it from the underside of a stone (many native species are quite easy to wash off, by shaking the stone from side to side in a bowl of water). I use a blunted scalpel to detach individual triclads from stones, or from the leaf-bases of emergent water plants. The underside of water-lily leaves can be good. Using a camel-hair brush, which might seem kinder, can result in the triclad being pushed around, losing its slime and being rendered difficult to identify, because of its mangled appearance.

D. tigrina usually aggregates in collections that may be centimetres across. The length of an individual may be up to 18mm and about 3mm wide, but often smaller as a result of the regrowth after transverse fission of the body. This species has an arrow-shaped, or triangular head, with a pointed front end and two, mobile, lateral lobes. In the centre of this head is a pair of "eyes" (see picture).

If anyone finds a population, I'd be pleased to hear of it. *(Editor – See website or GNS News for contact details of all recorders)*

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GLOUCESTERSHIRE DIPTERA REPORT 2009

Keith Alexander

It was not an outstanding year for Diptera, and potentially the most interesting find is unconfirmed as the record is based solely on a digital image, without the actual specimen being available for critical examination. However, the image has been seen by a national authority and so it does seem acceptable to declare David Scott-Langley's *Chyliza extenuata* as 'Fly of the Year 2009'. Its association with broomrape is intriguing and the species merits further study in the county. [*Regrettably the image file is not large enough to reproduce in this magazine. Ed.*] Otherwise there were three new county records, although two of these from garden plants. Rob Homan's work on leaf-miners is proving very productive in finding overlooked species.

Bibionidae

Bibio pomonae (Fabricius) - **County Rarity.** A hill country species, mainly known across northern and western Britain, but also in the Weald. Until this year only known in the county from two old records in the south Cotswolds. This is the first report of this distinctive fly in over 80 years.
SO62 May Hill, pair in cop., 11.viii.2009, John Phillips (pers. comm.).

Stratiomyidae – soldier flies

Beris fuscipes Meigen – Short-horned Black Legionnaire. **New county record**. Associated with sheltered fen and marsh situations, and most widespread in Britain in the South West. The absence of local records has been surprising but it has clearly been overlooked in the past.
SO61 Popes Hill, a female in garden summer house, 1.vii.2009, JP.

Sargus iridatus (Scopoli) – Iridescent Centurion. **County Rarity**. The larvae develop in decaying vegetation and dung, usually in sheltered woodland edge situations; widespread nationally. Regarded as common in the county by Audcent (1950), but there have been very few recent reports.
SO61 Popes Hill, on bush foliage in garden, 28.v.2009, JP.
SO92 Prestbury, 1.x.2009, Ken Heron.

Odontomyia tigrina (Fabricius) – Black Colonel. **Nationally Scarce & County Rarity**. The larvae are aquatic and develop in shallow water in ponds, canals, ditches and marshes, amongst vegetable matter. It 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, JP.

Asilidae – robber flies

Neoitamus cyanurus (Loew) – Common Awl Robberfly. **County Rarity**. Ancient woodland, especially oak, and mainly known in the county from the Forest of Dean area.
SO73 Redmarley Woods, 16.v.2009, Ken Heron.

Psilidae
Chyliza extenuata (Rossi) – **British Red Data Book Category 3 (Rare)**. Larvae develop in the rootstocks of *Orobanche rapum-genistae*. Known in the county from two old records
SP00 Cotswold Farm, 10.vi.2009, DSL; image almost certainly this species, PJC.
Agromyzidae – leaf-mining flies
Aulagromyza luteoscutellata. **New county record**.
SO92 Swindon Lane, Cheltenham, vacated mines in honeysuckle in garden, viii. 2009, Rob Homan.
Phytomyza astrantiae (Hendel) – **New county record**. Discovered new to GB from leaf-mines in Cheltenham (*Dipterists Digest* 2009 16: 183-4). Rob Homan has been noting leaf-mines on *Astrantia major* in his garden every year since 2005, but only succeeded in rearing some adults in May 2009. Dave Gibbs has confirmed their identity. Similar mines have been seen in Cumbria and widely across SE England, so it is presumably widespread but overlooked.
SO92 Cheltenham, reared from leaf-mines in *Astrantia* in garden, 2009, RH.

Scathophagidae
Parallelomma paridis Hering – **British Red Data Book Category 2 (Vulnerable)**. The larvae develop in leaf-mines on herb Paris. Very widespread nationally, although thinly scattered. Overlooked in the county until discovered by KA in Cirencester Park Woods in 1993; Andy Foster found mines in Woodchester Park in 1994.
SO92 Nottingham Hill, 2 occupied mines, 29.v.2009, Rob Homan.

Two important records from 2008 only came to the attention of the GNS Recorder when they were published in *Dipterists Digest*. Both are assumed to be overlooked native species:

Rhagionidae
Chrysopilus laetus Zett. – Tree Snipefly. **British Red Data Book Category 1 (Endangered)**. The larvae develop in moist wood mould in decaying stumps, rot holes and large dead aerial branches, nearly always found in old beeches. It appears to be a relict old forest species and is most widespread in

Windsor Forest, but also known from Burnham Beeches, Cobham Woods, etc.
SO72 Highnam Wood, 24.vii.2008, Dave Gibbs.

Drosophilidae – fruit flies
Amiota collini Beuk & Máca – Added to the British list only in 1995, although from a specimen collected in 1951; only two other known sites - Chippenham Fen, Cambs & Ashridge Estate, Herts. Presumably develops either in tree sap or wood-decay fungi.
SO72 Highnam Wood, 24.vii.2008, Dave Gibbs.

Butterfly Report for Gloucestershire 2009

Chris Wiltshire

Introduction

After the two atrocious summers of 2007 and 2008 we, or rather the butterflies, desperately needed a good summer to allow the very low populations to begin the process towards recovery. They were not disappointed because after a proper cold winter we had a warm summer with less rain and more sun. Although many of you tell me that it was not a good summer we will disagree on that point. There were many more "flying days" throughout 2009 allowing the butterflies to fly, meet, mate and lay their eggs to produce the next generation.

Some of you may have seen the Autumn issue of "Antennae", the Gloucestershire branch newsletter of Butterfly Conservation; the somewhat edited report in there was based on transect data and personal records because at the time (late September) very few records had been received. The following data has been produced from records received up to 31 January 2009 and there is still a slow trickle of data coming in. If you have sent in data – thank you very much it has now been fed into the database; if you have not done so yet then it is not too late, I will gratefully receive any records going back as far as possible, historical records are of great use.

Certain transect data has only been presented to me in annual summary form and thus it does not give numbers or dates of the weekly counts consequently there may be revisions to this data and it should be considered provisional.

Table 1 shows the species in the first column, names in bold type are the Biodiversity Action Plan (BAP) species. Column two is the earliest date on which the species was recorded while last date is in column three. Maximum number in column four is subject to inaccuracies caused by people rounding up or estimating numbers and also due to using butterfly conservation abundance codes which cover a range, A is 1, B is 2-9 etc. The last column is not something that is usually presented but it does serve a useful purpose, it is the number of records received for that species. I am sorry if you prefer your list to be in taxonomic order but this time it is arranged in ascending order of the number of records to emphasise the scarcity or abundance of those records and probably the species.

The Gloucestershire Naturalist No. 21, 2010

Table 1. Butterfly records for 2009

Species	Earliest	Latest	Max. No.	No. of records
Grayling	7 Aug	12 Aug	30	3
White Admiral	1 July	27 July	1	5
Wood White	30 May	28 July	5	7
White-letter Hairstreak	18 July	13 Aug	6	11
Marsh Fritillary	10 May	19 June	79	12
Dark Green Fritillary	14 July	21 Aug	18	12
Clouded Yellow	25 July	17 Nov	15	13
Wall Brown	24 May	5 Sept	5	14
Purple Hairstreak	22 June	19 Aug	16	15
Essex Skipper	1 July	18 Aug	6	29
Pearl-bordered Fritillary	3 May	4 June	73	31
Grizzled Skipper	13 April	16 June	7	33
Small Pearl-bordered Fritillary	23 May	27 June	20	36
Duke of Burgundy	24 April	15 Aug	18	37
Chalkhill Blue	10 July	12 Sept	116	41
Holly Blue	21 Mar	20 Sept	7	49
Silver-washed Fritillary	27 June	25 Aug	74	49
Adonis Blue	12 May	19 Sept	37	51
Green Hairstreak	2 April	14 June	20	59
Small Blue	10 May	31 Aug	162	73
Small Skipper	12 May	19 Aug	c.100	97
Small Copper	10 May	21 Oct	8	100
Large Skipper	12 May	23 Aug	10	119
Marbled White	30 May	25 Aug	112	123
Brown Argus	1 May	16 Sept	17	129
Brimstone	1 March	26 Oct	5	141
Dingy Skipper	13 April	7 Aug	34	142
Orange Tip	29 Mar	3 June	21	148
Ringlet	12 May	19 Aug	143	153
Small Heath	2 May	20 Sept	23	154
Red Admiral	2 Feb	7 Nov	5	162
Gatekeeper	12 May	24 Sept	56	193
Small White	21 Mar	8 Oct	308	199
Comma	15 Mar	1 Nov	20	208
Small Tortoiseshell	20 Feb	2 Nov	74	229
Green-veined White	1 April	16 Oct	199	257
Common Blue	9 May	16 Sept	122	272
Meadow Brown	12 May	20 Sept	372	300
Speckled Wood	4 April	2 Nov	22	315
Peacock	21 Feb	2 Nov	39	320
Large White	19 Mar	29 Sept	96	337

Painted Lady	1 April	17 Nov	2160	391
Brown Hairstreak	n/a	n/a	n/a	None
Large Blue	n/a	n/a	n/a	None

Species details

The notes below are in taxonomic order and just give a brief indication of how the species "performed" in 2009.

Skippers

Small Skipper was seen in reasonable numbers with "about 100" being seen on one occasion by Roger Gaunt. The **Essex Skipper** which can easily be confused with the former species was recorded in modest numbers with more records than for the last few years. **Large Skippers** although 119 records received in the majority of cases they were in low numbers with the maximum being 10.

Both **Dingy** and **Grizzled Skippers** appeared on 13 April but Dingy produced a second generation in Gloucestershire for the second year running with several being recorded on 7 August in different locations. Grizzled Skipper numbers were less than a quarter of the Dingies.

Whites

Wood White is declining nationally although in Gloucestershire it is doing reasonably well where it is found in the Forest of Dean; it is believed that there are more records to come for this species and so the figures in the table may not tell the whole story.

Clouded Yellow is a migrant species to this county although it does breed on the south coast of mainland Britain and is now classified as a resident. There were scattered observations of it across the county from late July until mid November.

The **Brimstone** was recorded from 1 March across the county but in small numbers although the overall count was about average.

The **Large White** did well this season with the resident population boosted by a good influx of migrants, the highest number recorded was 96 by Jenna Poole at Brazen Church Hill. It was probably the second most numerous species in Gloucestershire.

Small White was seen in modest numbers by most people but again Jenna Poole recorded 308 at Brazen Church Hill.

Green-veined White did very well with numbers well up again (it did well in 2008) and the highest number recorded was by the author at Silk Wood where 199 were seen one morning.

Orange Tip had an average sort of year with more modest numbers than the preceding three species.

Hairstreaks, Coppers and Blues

Green Hairstreak appeared in better numbers than the last few years but although John Heathcott noted 20 at West Down there is still room for improvement here.

Brown Hairstreak was notably absent in 2009 and despite about twenty people, over two days, checking out an unconfirmed site at Harnhill, nothing was found.

Purple Hairstreak was noted in modest numbers but this is a much under-recorded species and one has to make an effort to look at the oak and ash canopy around 6 - 7.00pm to be sure to find them.

White-letter Hairstreak is another species which is predominantly a canopy dweller although it will come down to nectar on bramble or thistle but otherwise you have to scan hedge top or Elm tree. Only 11 records were received with a maximum of six.

Small Copper was more abundant than recently with 100 records received and it remained on the wing until late October.

Small Blue had a patchy year with an astonishing 162 being noted by Peter Hugo on 3 June at Barnsley Warren but in contrast a small site near Kemble airfield is likely to have had its last year there due to the fact that there was only one Kidney Vetch flower head poking out of the long grass and it was laden with eggs almost certainly doomed to failure.

Brown Argus numbers were lower than last year but, like all the following Blues, it soldiered on into the second half of September.

Common Blue lived up to its name and was not only the most numerous of the Blues but also the most widespread and thus had a thoroughly good year. The maximum number recorded on any single visit was 122 seen by Peter Hugo at Barnsley Warren.

Chalkhill Blue is another species which seems to be declining in the county with numbers generally low. The best place to see it in quantity is Coombe Hill near Wotton-under-Edge where Vic Polley carries out the transect.

Adonis Blue is now quite well scattered across the Cotswolds after just nine years since its arrival. There were 51 records from 18 1km grid squares in three 100km grid squares from Coombe Hill in the south to Nottingham Scrubs in the north and Barnsley Warren in the east where Peter Hugo recorded the highest count of 37 on the Pasqueflower reserve.

Holly Blue is at the lower end of its unusual cyclic trend and relatively few were seen.

Large Blue – there were no records received for this species in 2009 and although the author walks the transect at Daneway Banks even he did not see any. The numbers were exceedingly low in 2008 and the grazing was unsuitable for much of 2009 and so the chances of it continuing are very remote.

Duke of Burgundy, which is now "lumped with the Lycaenids" had a good year in contrast to the previous seasons. It was seen in reasonable numbers on many of its sites and even rediscovered on two of its former sites and seen on a new one although

the latter could just be a wanderer. The outlook is still precarious and only 37 records were received with the maximum of 18 seen at once on Edge Common by Peter Chapman.

Admirals and Fritillaries

White Admiral would appear to be at a very low ebb with only five individuals being recorded by five recorders in just four weeks in July. This species is one that we should make an effort to look for in 2010 and check some of its former sites.

Red Admiral got off to a slow start after the harder winter which may have caused some mortality amongst those individuals trying to overwinter here. The numbers were particularly low until mid summer when they began to increase after an infusion of migrants but even then the maximum number recorded was only five.

Painted Lady – this is the butterfly which hogged the limelight for much of 2009 and streams of migrants were seen from about the 23 May in Gloucestershire although the first was recorded on 1 April. To date 391 records have been received which is considerably more than usual and that is the highest number of records for any species in 2009 and it is quite likely that it was the most numerous butterfly in the county, beating the Large White into second place. Chris Tracey and Matthew Oates counted an amazing 528 in Oakley Wood on 30 May but that is an insignificant number when compared to the 2,160 that Hugh Tollemache counted passing through his garden on 23 May. The numbers fluctuated as the season progressed rising again later in the summer when their offspring emerged continuing quite late into November; Juliet Bailey reported 8 at Foscombe on 7 November and the last was noted on 17 November. In 2009 it was finally established that there is a reverse migration in Autumn with the butterflies observed in numbers flying south and out to sea across the Channel. There is no doubt that this was a good "Painted Lady Year" but despite all the excitement it did not match the numbers of 1996 in Gloucestershire.

Small Tortoiseshell made a considerable recovery towards the numbers that were seen a few years ago but this was overshadowed by the Painted Lady. It is possible that if *Sturmia bella* is responsible for the decline, then the colder winter may have affected its survival because *S. bella* is a European parasite. Whatever the reason, Small Tortoiseshell numbers were definitely up and the maximum number seen on any single visit was 74 at Stratton.

Peacock was abundant again with generally good numbers seen especially in the summer emergence.

Comma is another species which did well; seen from 15 March to 1 November with a healthy maximum of 20 seen at Haresfield Hill by Chris Tracey.

Small Pearl-bordered Fritillary is definitely on the endangered list for the county because only five records were received with a maximum of three near Moseley Green. All the records were from the Forest of Dean. Butterfly Conservation, West

Midlands branch conducted a survey for this species although the author has not received any feedback on this at the time of writing.

Pearl-bordered Fritillary would on the face of it appear to be better off than the previous species but it should be noted that of the 31 records received all but two were from the Bathurst Estate. Of the two other records, Guy Meredith found one at Linear Park indicating that it is just hanging on in the Forest of Dean and Mike McCrea found a singleton at Standish Wood where it has not been seen for well over twenty years.

Dark Green Fritillary numbers were variable judging by the 12 records sent in. 47 were recorded over the whole flight period by Ron Hatton on the Bill Smyllie reserve transect (Prestbury Hill) but 18 were seen on Edge Common by Mike McCrea.

Silver-washed Fritillary numbers have declined over the last year or two but are still above average and Peter Hugo noted 74 at Lower Woods which is one of the largest colonies in the area. (It is a GWT reserve just over in South Gloucestershire, VC34.)

Marsh Fritillary is another species which made a remarkable recovery considering that we were all full of doom and gloom about its survival after a very poor season in 2008. Matthew Oates will testify that it is recovering and he recorded 79 on 24 March at its main site in the county. There were a few strays found nearby in the beginning of June and a singleton at Ravensgate Common where a few have been seen over the last few years.

Browns

Speckled Wood built up in numbers throughout the year with relatively high numbers by late August and into September.

Wall Brown is struggling and most of those seen were on the higher parts of the Cotswolds with Cleeve Common being one of the best areas with five seen on one visit. Selsley Common is another good site for them and four were seen at once here.

Marbled White was another of those variable species which did well in some places and poorly in others. The highest number was 112 reported by Tricia Atkinson at Ravensgate Hill.

Grayling claims the prize for the fewest records received, just three from Cleeve Common, Bill Smyllie Reserve and Selsley Common where a healthy 30 were reported by Mike McCrea. This is another species that deserves to be on Gloucestershire's endangered list.

Gatekeeper numbers were down in many places but nonetheless it had a reasonable year remaining on the wing until a very late – 24 September.

Meadow Brown was as numerous and widespread as ever Kenneth Heron reporting a singleton as early as 12 May, Peter Hugo recording 372 from the SW section of Barnsley Warren.

Ringlet did reasonably well after the previous wet seasons although with a shorter flight period it only produced half the records of the Meadow Brown.

Small Heath produced as many records as Ringlet but this is spread over five months. This is a distinct improvement over previous years and nationally it is in decline. Peter Hugo recorded the maximum number of 23 at Barnsley Warren.

"Extras"

There was a single record of **Camberwell Beauty** from Bulley but the most unusual record was that of a **Large Copper** at Edge Common. Subsequent enquiries have revealed that a gentleman was breeding Large Copper but had "a security issue" and several escaped. It is quite possible that that was the origin of the Edge Common specimen.

Summary

The mass migration of Painted Ladies is probably the event which most people will remember for 2009 and indeed it was a spectacular sight if you were lucky enough to be in the right place at the right time to witness it. However we should not forget some of the other events which happened last season like the partial recovery of the Small Tortoiseshell, the Marsh Fritillary back from the brink of local extinction, the Adonis Blue continuing to extend its range and find new sites to breed. Unfortunately the possible (probable?) local extinction of the Large Blue was another such event.

On a lighter note Ros John recorded more first of season and last of season sightings than anyone else and Peter Hugo managed to record more maximum numbers than anyone else!

Overall it appeared to be a much better year for the butterflies; probably due to the weather which also affected recorders, resulting in a substantial increase in the volume of records received.

STOP PRESS

Just received is a list of records of Small Pearl-bordered Fritillary from the Forest of Dean Survey; it contains records for 5 different 1km grid squares although this is probably only three main sites. The maximum number seen was 20. Table 1 has been updated with this information.

The Gloucestershire Naturalist No. 21, 2010

HOVERFLY REPORT 2009

David Iliff

Rediscovery of *Myolepta potens*

The highlight of 2009 hoverfly recording in the county was unquestionably John Phillips' discovery of the RDB1/BAP species *Myolepta potens* (see Plate 18) in Welshbury Wood on 22 June together with the confirmation that a *Myolepta* species, probably *M. potens*, has been present in Blaisdon Wood since at least 2007.

There are two British species of *Myolepta*: *M. dubia* is Nationally Notable, and apparently confined to the southern coastal counties and the south-east. British records of *M. potens* consist of a small number from North Somerset and the Bristol area (including some within VC34), the last record of an adult being from Blaise Castle in 1949. Larvae were found near Bristol in 1961, but subsequently the species was feared extinct until further larvae were found in Herefordshire in 2002.

On 15 June 2007 John saw and photographed what he strongly suspected to be a *Myolepta* in Blaisdon Wood. I saw the photograph, but felt unable to accept it as a firm record, particularly as I had never myself seen a live *Myolepta* and was therefore unfamiliar with the appearance of this genus in the field. However in June of this year I saw and photographed several *Myolepta dubia* at a site in the New Forest. I caught a male which I gave to Martin Matthews for his collection. Comparison of this specimen with John's photograph from Blaisdon Wood convinced me at last that what he had seen was indeed a *Myolepta*. I gave John this news at the GIG field meeting that he led on 20 June. This meeting took place at Flaxley Flushes with the option of going on to Welshbury Wood afterwards if time permitted. Although I and some other GIG members (including Martin) did spend some time in Welshbury Wood that day and recorded some hoverflies there, John did not go. However he went to the wood two days later and found a male *M. potens*, which he swiftly brought to me to verify the identification. This specimen was then also passed to an understandably astonished Martin for his collection.

This discovery caused considerable excitement when relayed to the national Hoverfly Recording Scheme, and articles in the Hoverfly Newsletter and Dipterists Digest followed.

First County Record of *Pocota personata*

Another county hoverfly event of major significance was the discovery of a recently-emerged male *Pocota personata* (see Plate 14) in the Highnam Woods RSPB Reserve by Barry Embling and David Gibbs on 21 April. This RDB2 species, probably the

most convincing bumblebee mimic of all British hoverflies, had not previously been recorded in the county. The insect, which was unable to fly owing to malformed wings, fell at the feet of the recorders under a large old beech tree.

Arle Grove Hoverflies

Early in the year GNS recorders were encouraged to visit Arle Grove (SO9921) which was due to be adopted as a GWT nature reserve later in the year. I visited the site on 1 and 25 June and although my cumulative hoverfly species total for the site was only 11, 5 of these were primary woodland indicator species, among them *Criorhina berberina*, *Criorhina asilica* (11th county record and only the 4th since 1947) and *Brachypalpoides lentus* (only recorded twice previously, and not since 1941, in VC33).

Other Significant Records

I found a female *Meligramma guttatum* (see Plate 19) on angelica at Lower Mill in CWP on 16 August. This was the first county record and my first ever sighting of this Nationally Notable species. John Phillips recorded another Notable member of the genus, *Meligramma trianguliferum*, at Popes Hill on 20 May.

In recent years the heathland specialist species *Sphaerophoria philanthus* has been found at two of the restored heathland sites in the Forest of Dean, Wigpool and Crabtree Hill. On 18 July several examples of this hoverfly, including mating pairs, were present at another such site, Edge Hills (see Plate 16).

The once very rare RDB3 species *Rhingia rostrata* and the Nationally Notable county newcomers *Volucella inanis* and *Volucella zonaria* now seem to be well established in Gloucestershire and were recorded extensively. I had all three in my garden (*R. rostrata* for the first time). Both the *Volucella* were often, as in other recent years, to be seen on the flowers of the *Hebe* "Great Orme".

Another, somewhat surprising, newcomer to my garden, also found on the *Hebe*, was *Scaeva selenitica* (see Plate 15), a female of which was present on 22 July and a male on 5 August. All but one of the previous county records have been from VC34 (Forest of Dean, Southern Cotswolds and the Bristol area), the only other VC33 sighting having been from Bishops Cleeve in October 1993 when a male was seen on ivy flowers.

Other scarce hoverfly records for the year were:
Anasimyia transfuga Oxenhall, 6 July (Martin Matthews)
Chalcosyrphus nemorum The Mythe, 18 April (Martin Matthews)

Chrysotoxum arcuatum Edge Hills, 6 August (John Phillips)
Chrysotoxum verralli Popes Hill, 17 August (John Phillips)
Criorhina asilica (notable) Blaisdon Wood, 8 August (John Phillips)
Criorhina ranunculi (notable) Speech House, 28 May (John Phillips)
Epistrophe diaphana (notable) Clarke's Pool Meadow, 13 June (John Phillips)
Eristalis abusiva Awre Peninsula, 30 July (John Phillips)
Eupeodes nitens (notable) Ley Park Wood, 12 September (John Phillips, David Iliff)
Pipiza luteitarsis The Mythe, 9 May (Martin Matthews)
Trichopsomyia flavitarsis May Hill, 25 July (John Phillips)
Xylota jakutorum (notable) Great Palescot, 29 May; Hay Wood, 30 May; May Hill, 25 July (John Phillips)

Recent Hoverfly Literature

When I reviewed Mark van Veen's "Hoverflies of Northwestern Europe" (2004) in the 2005 Hoverfly Report (TGN no. 16) I commented on the recent proliferation of books about hoverflies. This trend has since continued apace with the publication of three new books on the subject, each of which is a lavish volume (in one case two volumes) of coffee-table book proportions. 2007 saw the arrival of "Suomen Kukkakärpaset" by Haarto and Kerpola, covering Finnish Hoverflies; it is in Finnish, but the extensive keys are also duplicated in English. It has numerous colour figures but in most cases the colours used in the paintings are far from realistic. In 2009 "De Nederlandse Zweefvliegen", a joint effort by most of the established Syrphid experts of the Netherlands, appeared. This is a Dutch hoverfly atlas well illustrated with colour photographs and paintings of representative species of each genus. Later in 2009 the two volumes of "Tvåvingar: Blomflugor" by Hans Bartsch were published. This is a most impressive work, which features superb large size paintings of all the predatory species (in Volume 1) and all but a few of the remaining species in Volume 2. Although the main text is in Swedish, the comprehensive keys are also given in English and there is an English summary of the key facts for each species. Collectively these new books provide details of many European species not (yet) found in Britain and it will be surprising if the information they contain does not lead to the addition of further species to the British list.

Molluscs in Gloucestershire 2009

David Long

Recording was limited in 2009 due to the need for David Haigh and me to recover from hip surgery. One new name was added to records from Gloucester East, v.c.33 – *Balea haydeni*. A reappraisal of *Balea* species in Europe (Gittenberger E., Preece R.C. and Ripken T.E.J., Journal of Conchology **39(2)**: 145-150) has established that 2 species of *Balea* , a small Clausiliid "door" snail, are present in Britain; two finds of *Balea haydeni* in Gloucestershire East were confirmed in 2009 by Adrian Norris, the Conchological Society's Non-marine Mollusc Recorder:

a) one specimen from leaf litter at Ladlecombe (SO901129) found by John Fleming on 1 January 2007;
b) 4 juveniles from leaf litter at the foot of a wall found by Conchological Society member Dr Tom Walker at Baunton (SO020045) on 4 May 2009.

Earlier records of *Balea* species in Gloucestershire (v.c. 33 or v.c.34) could be *Balea perversa* or *B haydeni*.

Otherwise an examination of the Edgeworth *Lauria sempronii* site on 8 May 2009 failed to refind it, but this does not necessarily mean it is not there, as failure to find it has happened before. The site was visited because Cotswold District Council contacted me over a planning application covering part of the site for *Lauria sempronii*. The application was later withdrawn. BAPs work sometimes!

But the Edgeworth site visit on 8 May did turn up the Wall whorl snail, *Vertigo pusilla,* living, so that species is still present. Escarpment grassland on the south side of Cleeve Hill (SO 92) produced the typical limestone grassland species *Abida secale*, *Pupilla muscorum* and *Helicella itala*

In the Spring a lady with weekend accommodation in Rendcomb contacted the GWT over what appeared to be a large-scale, but not total, death of Roman Snails (*Helix pomatia*). About a year ago something similar was noted in the Chilterns; I was unable to contact the person supplying the information. A note will be in the spring edition of the Conchologists' newsletter, Mollusc World, asking for reports of similar events.

Records for 2009 are being passed to the GCER and Conchological Society. Many thanks to all who found molluscs or sent in records in 2009, in particular David Haigh, John Fleming, John Widgery, Jeremy Doe and Joy Elworthy.

Odonata Report 2009

Ingrid Twissell

The summer of 2009 was rather mixed weather-wise, but it did produce some excellent finds. The highlight of the year was the discovery of a new large breeding population (50+) of ***Sympetrum danae*** - Black Darter, at a site in the Forest of Dean at Edgehills, where a pond had been dug three years earlier. This area was previously a conifer plantation but is now one of the Dean's heathland restoration sites, and, as such, with its many acid runnels, scattered gorse and heather, is ideal habitat for the Black Darter. This species has declined alarmingly since 1989 when it was at its most numerous, and over recent years very few sightings have been reported, with none in 2008.

Since the Gloucestershire Invertebrate Group meeting held in mid-July 2009, a total of 14 species have been seen at Edgehills, including the only sighting of the year of ***Orthetrum coerulescens*** – Keeled Skimmer, on 6 August; one of several sightings of ***Cordulegaster boltonii*** – Golden-ringed Dragonfly, also on 6 August; and a breeding population of ***Aeshna juncea*** – Common Hawker. All these species are Forest of Dean specialists.

Golden-ringed Dragonfly was also present at Stoneworks Marsh, Blaisdon Wood, Cinderford Linear Park, Washery Woods, Woorgreens, Dilke Lagoon, Cannop Brook, Welshbury Wood, and May Hill.

Common Hawker was recorded from Washery Woods, Dilke Lagoon, Fairplay Mine Reserve, Poor's Allotment, The Park and May Hill. I also received a record from Lake 117 in the Eastern Section of the Cotswold Water Park, from 17 August 2008, which is a first for the Gloucestershire section of the CWP.

Cordulia aenea – Downy Emerald, was found at three new locations in the Forest of Dean, at Little Staple Edge Wood, Cinderford Linear Park – Washery Woods, and Wigpool. It was also present at the Dilke Lagoon. In the Cotswold Water Park there was a sighting at Lake 63, a new location, which occurred in May 2008, but this was not reported until 2009. There were also records from two new locations in the CWP in 2008, at Netherwood Lake (L50) and Lower Mill Estate (L42), and at Swillbrook Lakes NR. Sightings at Whelford NR occurred earlier than usual in 2009, the first being on 29 April.

Brachytron pratense – Hairy Dragonfly, had a good breeding year at WWT Slimbridge, including 100-acres and Green Lane, with approx 20 adults seen including a mating pair, and an exuvia was found on the reserve. This species was seen on the wing earlier than usual, on 23 April. There was also a sighting of a single adult at Saul. I also received a record of a sighting, from May 2008, at a new location at Southrop Water Meadow, which was not reported until 2009.

Gomphus vulgatissimus – Common Clubtail, was sighted for the second year running in the Alney Island area of Gloucester (Port Ham in 2008, Alney Island in 2009), was also present at Symond's Yat, and 12 were counted along the R. Wye from Lydbrook. The sighting on 9 May at The Mythe was an early date, and 6 were present on 21 May, this site being their stronghold in the county where breeding occurs each year.
Libellula fulva – Scarce Chaser, was present in small numbers only, at The Mythe, Twyning and WWT Slimbridge.
Erythromma viridulum – Small Red-eyed Damselfly, had a successful year at The Mythe with a good breeding population of approx 50 adults in August, this being the largest number ever recorded here. There was also a small number (10+) at Wallsworth Hall pond in July, the only other known site in the county.
Ischnura pumilio – Scarce Blue-tailed Damselfly, was recorded for the first time for many years in the county, in June 2008, at Lake 117 in the Eastern section of the Cotswold Water Park. Several were seen on three separate occasions, with breeding evidence. The only record I have received so far, in 2009, was a sighting of a single female which was photographed at Lake 63 in the CWP in August, this being another new location.
Other noteworthy sightings were: ***Aeshna cyanea*** – Southern Hawker, 15 at Coombe Hill on 3rd August; ***Orthetrum cancellatum*** – Black-tailed Skimmer, approx 150 at WWT Slimbridge and a first breeding record at Washery Woods; ***Libellula quadrimaculata*** – Four-spotted Chaser, 50 at the Dilke Lagoon. WWT Slimbridge also had good numbers of ***Anax imperator*** – Emperor Dragonfly, and thousands of ***Enallagma cyathigerum*** – Common Blue Damselfly, ***Ischnura elegans*** – Blue-tailed Damselfly, and ***Coenagrion puella*** – Azure Damselfly, with a glimpse of a possible ***Anax parthenope*** – Lesser Emperor on 25 June.
There were early dates at The Mythe for ***Calopteryx splendens*** – Banded Demoiselle, ***Calopteryx virgo*** – Beautiful Demoiselle, ***Erythromma najas*** – Red-eyed Damselfly, and Common Clubtail all on 9 May, and late dates for ***Pyrrhosoma nymphula*** – Large Red Damselfly, on 31 August at Walton Cardiff, ***Libellula depressa*** – Broad-bodied Dragonfly, on 27 August at Nagshead NR, Emperor Dragonfly on 27 October at Ellwood, and ***Sympetrum striolatum*** – Common Darter, on 15 November at Hartpury where mating and ovipositing was seen.
Many visits have been made throughout the season to the Old Airfield at Brockworth which is now a building site for nearly 2000 houses. There are several ponds, including balancing ponds, and a good number of species have been recorded here in 2009. It will be interesting to note how the species now present increase or decline in future years.
Recording for the British Dragonfly Society/ Dragonfly Recording Network UK Dragonfly Atlas, as well as the Cotswold Water Park Atlas, is ongoing, with three more seasons to try to fill any gaps in the records. The aim is to get as complete coverage as possible from recording in 2008 to 2012, with the use of records back to

2000 if necessary. Records before 2000 will be classified as historical records. A BDS/DRN Pilot Dragonfly Monitoring Scheme took place in 2009, with locations throughout the UK, including several in Gloucestershire.

My thanks as always to all who sent in records:
Juliet Bailey, Richard and Jenny Beal, Jackie Birch, Andy Bluett, Michael Bradley, John Buckley, David Dewsbury, Mike Dodd, Ian Elphick, Peter Fitchett, John Fleming, Roger Gaunt, Terry Grant, David Haigh, Derek Hale, Gareth Harris, Ken Heron, Paul Hopkins, David Iliff, Andy Jayne, Krysia Kolodziejek, Red Liford, Martin Matthews, Martin McGill, Guy Meredith, John and Viv Phillips, Laurie Pierce, Ian Ralphs, Rosie Ray, Andy Sharpe, Eric Soons, Darryl Sutcliffe, Peter Tonks, Caroline Twissell, Colin Twissell, John Widgery.
These include records received throughout the year from the Richard Beal's On-line Recording System.

SPIDERS IN GLOUCESTERSHIRE 2009

David Haigh

I was able to attend 7 GIG Field Meetings where spider recording ranged from the Cotswolds, Water Park and Forest of Dean. In addition visits were made to Badgeworth Nature Reserve, Whelford Pools, Pate's Grammar School Nature Area and the Jenner Garden in Cheltenham. I am grateful to Chris Wiltshire for leading myself and Lin Callard to the site of *Argiope bruennichi*, (The Wasp Spider) at Coombe Hill, Wotton-under-Edge in September. In the company of Ellie Phillips, Conservation Officer for Cleeve Common and David Long we located the site of *Atypus affinis* (The Purse Web Spider) in August.
The status of 'rare' spiders is still under review. I shall indicate current status and the draft IUCN status. (The draft IUCN status categories have no grounding until they are officially published and do not reflect current status. They are simply used to enable feedback from arachnologists and as a result changes have indeed been made.) There were no New County Records but many of the county's interesting records were refinds on known sites and encouragingly from new sites.

Argiope bruennichi, Nationally Scarce Nb, IUCN LC (Least Concern)
Following up the initial discovery of a single female of the 'Wasp Spider' by Rosalind John and Chris Wiltshire at Coombe Hill, Wotton –u- Edge, in September 2008 a return visit was made to the site on 8 September this year. With Chris' guidance 13 adult females were found in their webs and adjacent to 3 webs large brownish egg cocoons were noted. This confirms a breeding population in what is the only known site for Argiope in Gloucestershire. The site is towards the top of a steep well vegetated limestone slope above the B4058. It will be interesting to revisit the site in 2010 and discover if the spider has survived the severe weather this winter.

Segestria florentina, Introduced, described as Scarce in the Provisional Atlas of British Spiders, 2002 (PABS)
Three further sightings of this large wall dwelling spider were received,
a) Stonehouse, Stroud, female, 2 February. Record from Dr. Geoff Oxford.
b) Wickwar, male and female, 15 August. Record from John Harper.
c) Tredworth, dislodged from chimney stack brickwork on a Victorian terrace, 9 metres above ground, November. Record from Tony Taylor.

Atypus affinis, Local, IUCN Vulnerable
A tube of this spider was found in August on Cleeve Hill. This is confirmation of its presence since its first discovery here by Colin Twissell in 1998. Excavation of the soil revealed the tube some 30cms long inside which was a female with young. After

photography by Ellie Phillips the spider and young were carefully reinstated below ground. Cleeve Hill is one of only 3 sites in the county where The Purse Web Spider is known to occur.

Micrommata virescens, Local, IUCN Vulnerable
John Widgery recorded a sub-adult female at Symonds Yat, August 6. This is the 17th record since the first in 1930. This increasingly rare spider favours sunny glades and rides within mature woodland.

Nigma walckenaeri, Nationally Scarce Na, IUCN LC (Nb)
First recorded at Alderton in 1993 by Nigel Burston, *N. walckenaeri* is spreading with records from the 10km squares, SO82, 92, 93 and SP03. I recorded it for a second time at Pate's Grammar School Nature Area, July 16th. John Widgery contributed 10 records from sites ranging from Apperley to Woodmancote, 4 tetrads in all, August to October. In November I found a female in a groove on my garage door in Cheltenham. See TGN No 16 for photograph (Colin Twissell).

Zilla diodia, Nationally Scarce Nb, IUCN LC
A sub-adult female was beaten from *Cupressus* at the Jenner Garden in Cheltenham, 28 October. This is the first record for v.c. 33 and the second, east of the River Severn.

Thyreosthenius biovatus, Local, IUCN LC (Na)
A second visit to Ley Park Wood, 12 September produced a further 5 females from nest mounds of *Formica rufa*. 3 of the females taken from an apparently deserted nest, whilst mature, were very small, less than 1.5mm. The other 2 were taken from active nests and were more than 2mm.

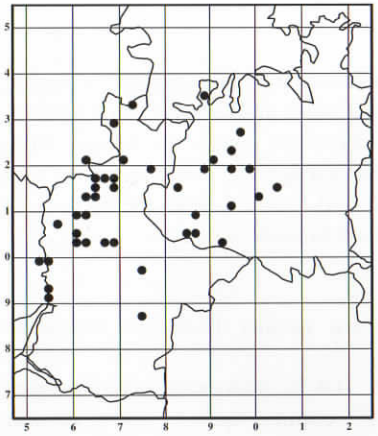
Lepthyphantes leprosus
"Common and probably very under- recorded because its main habitat is inside houses" (PABS). John Harper recorded a male in cellars at Wickwar, 31 October. This would appear to be the first record for v.c. 34. Previous county records are from Gloucester Cathedral, Churchdown, Cheltenham and Quedgeley. – all v.c. 33. There are several "house-bound" spiders, poorly recorded, and I would welcome records of spiders from inside houses, cellars, greenhouses and on outside walls.

Summary of other noteworthy spiders.
Two spiders which seem to have a preference for quality herb-rich limestone grassland are:-
Xysticus bifasciatus, male Nationally Scarce Nb, IUCN Vulnerable, Whittington Lodge Farm, 24 May found by ColinTwissell, 5th county record and ***Cercidia***

prominens, Nationally Local, IUCN Vulnerable, Strawberry Banks, 4 October, recorded from 12 sites.
Hyptiotes paradoxus, RDB3, IUCN LC (Na)
An adult male was beaten from yew by Tony Taylor at Ley Park Wood, 12 September. Apart from Painswick Churchyard, v.c. 33 all other county records are from west of the River Severn, v.c. 34.

The Cotswold Water Park produced a number of interesting records:-
Microlinyphia impigra, Nationally Local, Lake 42, Lower Mill, 16 August. 4th county record.
Larinioides sclopetarius, Nationally Local, On notice board Lake 42, Lower Mill, 16 August. Records are confined to the Gloucester-Sharpness Canal, Stroudwater Canal and the Cotswold Water Park.
Tetragnatha nigrita, Nationally Local, Whelford Pools, 2 males, 24 June. 6th county record.
Philodromus albidus, Nationally Scarce Nb, IUCN LC. Whelford Pools, 24 June.

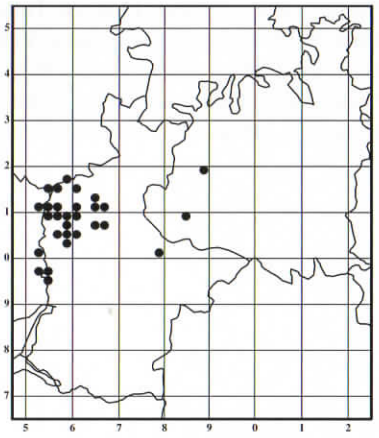
Pit-fall Trapping has continued at Ashleworth Ham and Coombe Hill and once again 2 provisionally Vulnerable spiders have been identified:
Halorates distinctus, Nationally Local, IUCN Vulnerable, 5 males present at Ashleworth Ham, the 2nd record for this site. This wetland spider was first recorded at Coombe Hill, June 2000.
Trochosa spinipalpis, Nationally Local, IUCN Vulnerable, a single male at Coombe Hill, May/June, 6th county record.



Of all enquiries I receive about spiders the most frequent must be those for the crab spider *Misumena vatia.* It is fairly common in the county and is included in Bristowe's 1939 county lists and R.S. George's 1957 list. I have 53 records dating back to 1972 (See map at left). It is widespread in southern England, the Midlands being its northerly limit. Females mature in early summer and can be found sitting on a flower head waiting for prey. The colour of the female varies through white, pale green to yellow and the spider frequently matches the flower colour. This cryptic colouring confers advantage to catching their prey and protection

against predators. David Iliff provided a photograph for GNS News Winter 2007 of the white form with its prey, the hoverfly *Episyrphus balteatus.* David has also photographed a further colour variant, white with 2 red dorso-lateral lines, which appears to be genetically determined and unaffected by background colour. An observation from Cainscross Road, Stroud in July was of the yellow form on Evening Primrose, *Oenothera* sp. (See plates 23-25). Flower-rich scrubby areas, wood margins, and hedgerows are favoured habitats with *Rubus* flowers, Ox-eye daisy and umbelliferous plants being common flower choices.

A recent 'Countryfile' programme on BBC1, 7 February, showed the 'Cave Spider' (*Meta menardi*) being translocated in the Yorkshire Dales from stone buildings to a cave system. Apparently 'cavers' had brought the spiders out on their back packs from below ground and then the spiders 'got off' and built up a large colony inside the buildings. It was felt that if the buildings were to be used for accommodation then 'Cave Spiders' were not fit co-habitees.



Like many 'house-bound' spiders, The Cave Spider is probably under-recorded due to its specific habitat preferences. In Gloucestershire the bulk of 'Cave Spider' records have been received from David Priddis while surveying bat roosts in the Forest of Dean. The 50 records from mines, disused railway tunnels, caves and an ice-house also includes records of hibernating Herald moths, Peacock and Small Tortoiseshell butterflies, no doubt prey for the 'Cave Spiders'. A very visible feature of a 'Cave Spider' colony is the large white pendant egg sacs (see Plate 22). One record by myself is from inside a dumped galvanised water tank within deep woodland at Ban-y-Gor Nature Reserve. (See map at right)

Related to the 'Cave Spider' is *Meta bourneti*, Nationally Scarce Nb and recorded at just 2 sites, an air-raid shelter at Rendcomb, 1947 and cellars in the 'Old Rectory' Haresfield, 1969. There may be under-recording of this species as it closely resembles *Meta menardi.*

I recently reviewed spider records for Gloucestershire. Bristowe (1939) produced a check list of British spiders, county by county. R. S. George (1957) produced a list of spiders recorded from Gloucestershire and since the 1970s further recording has been undertaken. Bristowe's list totalled 190 species while that of R.S. George's 204.

Since 1970 there has been an increase in confirmed records and now the county total is 341 with 2 doubtful. It is noted that 14 species present on the Bristowe and George lists have not been recorded in the last 40 years. The status of county rarities stands at present:- RDB 3 --- 4; Na --- 11; Nb --- 24.
The UK total of spider species is 646.
May I thank those contributors mentioned in the text and others who have given me records, often by means of the Internet.

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Comparison of Ground beetle (Carabidae) and Spider populations before and after the 2007 flood at Coombe Hill Meadows Nature Reserve.

David Scott-Langley

Summary: A continuing study of the after-effects of the June/July 2007 floods at Coombe Hill Meadows Nature Reserve in Gloucestershire, comparing the population levels of Carabids (Ground beetles) and Spiders before and after the event.

Introduction

In July 2007 a major flooding event in the Severn Vale, Gloucestershire, affected several nature reserves including Coombe Hill Canal and Meadows Reserve between Tewkesbury and Gloucester (see Plate 27). The reserve consists of the canal and its banks (designated a Site of Special Scientific Interest in 1954 for its rare invertebrates and plants), an old withy bed (Broad Mere) connected to the Long Pool by a wide water-filled ditch (all part of the SSSI), all purchased by the Gloucestershire Wildlife Trust in 1985, the north meadows purchased in 2000, and the south meadows in 2004. The whole reserve is subject to annual winter flooding, often making the area inaccessible, and occasional unseasonal summer flooding, which, when it occurs, usually only results in shallow floods that drain away after a few days into the River Severn at the western end of the canal. However in late June 2007, a series of slow-moving weather fronts moved in from the Atlantic, depositing heavy rain over the Severn catchment area as well as other parts of the country. This flooded the reserve to a depth of 2.4 metres, submerging everything except the tops of hedges and trees. The flood water remained on the reserve until the latter half of July when the Severn level had dropped enough to allow it to drain off. This was considered to be a once-in-forty-year flood.

The damage done by the flood was very clear. The water had turned black and foul-smelling, and caused anoxic conditions that resulted in the death of all above-ground herbaceous vegetation, as well as killing scrub and small trees. Grasses had been laid flat and dried out producing a brittle crust several centimetres above soil level. The top few centimetres of soil had been affected, turning black with an oily surface scum, which forced worms upwards in search of fresh air but only resulted in them dying in huge numbers, their remains lying in puddles and ruts and adding to the smell of death and decay over the area. The extent of the flooding was clear to see from the air. Between 22nd May and 5th June 2007 (prior to the main events above), an ecologist from the RSPB (Andrew Stanbury) carried out a survey of invertebrates on four of the north meadows as part of a nationwide project. Even this survey was affected by waterlogging of one of the transects, rendering it unusable for his survey. However

this survey produced enough baseline evidence to do post-flood comparisons in subsequent years of populations of certain groups of species.
The summer of 2008 also turned out to be a wet one and the May/June survey was similarly affected and so there is sampling from field 7916 West only for 2009. Later, in September, there was a repeat of the previous year's event although only to a depth of 1.2 metres. This also killed off vegetation causing foul black water, but drained away after only a few days.
This on-going survey was initiated as part of a year-long survey to monitor the effects and recovery, if any, of certain invertebrate populations on this reserve and Ashleworth Ham Nature Reserve across the River Severn, requested and funded by the Gloucestershire Wildlife Trust with a view to using some of the recorder skills of the Gloucestershire Naturalists' Society.

Survey areas
In the RSPB survey, four fields were selected from the north meadows: DEFRA field numbers 7916 East, 7916 West, 2948 and 1037 and these have been used in the continuing study.
Fields 7916W and 7916E (transects 1 and 2) are on low-lying level ground that floods regularly. They were ploughed in the 1990s. Since Gloucestershire Wildlife Trust took over in 2000 it has reverted to a natural grassland dominated by grasses such as Creeping Bent (*Agrostis stolonifera*), Marsh Foxtail (*Alopecurus geniculatus*), Rough Meadow-grass (*Poa trivialis*), Reed Canary-grass (*Phalaris arundinacea*) and broadleaves such as Creeping Buttercup (*Ranunculus repens*), White Clover (*Trifolium repens*), Autumn Hawkbit (*Leontodon autumnalis*) and Cuckoo Flower (*Cardamine pratensis*).

Field 2948 (transect 3) is the most varied field on the reserve. The northern end of the field is relatively high and floods rarely. It has a rich flora with abundant broadleaves such as Meadow Buttercup (*Ranunculus acris*), Meadowsweet (*Filipendula ulmaria*), Red Clover (*Trifolium pratense*), Bird's-foot Trefoil (*Lotus corniculatus*), Meadow Vetchling (*Lathyrus pratensis*), Sorrel (*Rumex acetosa*), Ragged Robin (*Lychnis flos-cuculi*) and Great Burnet (*Sanguisorba officinalis*). The floods of 2007 had a very noticeable impact on the flora; where Knapweed (*Centaurea nigra*) had been abundant, it was not seen at all in 2008, and just one plant of this species was noted in 2009. The southern half of the field is a much lower and wetter flood-sward with Creeping Buttercup, Meadow Foxtail (*Alopecurus pratensis*), Rough Meadow-grass and Reed Canary-grass.

Field 1037 (transect 4) floods regularly. According to Richard Hanby, the farmer who sold the land to the Wildlife Trust and still farms it, it has not been ploughed but

it is much less varied than the previous field. It is dominated by the grasses of flood meadows mentioned above.

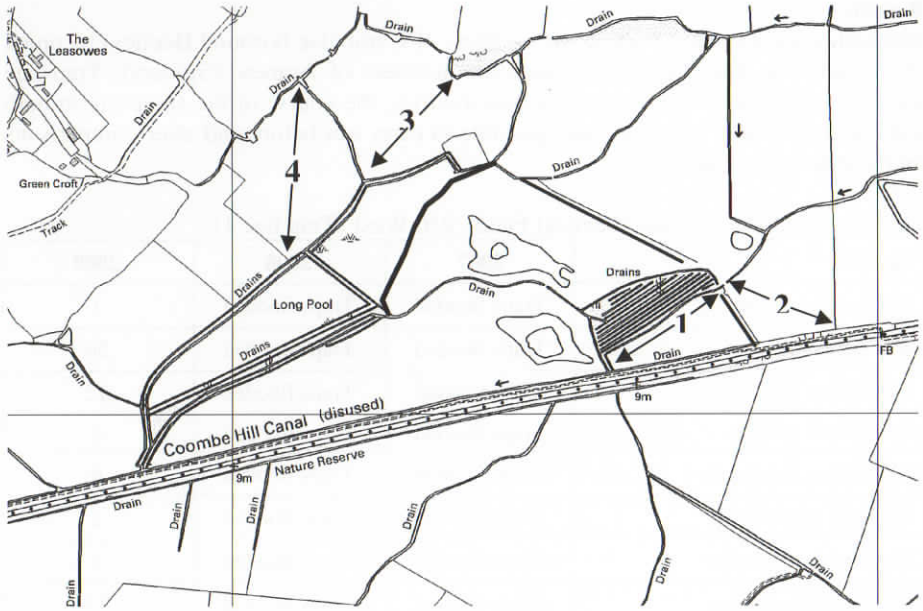

Figure 1. Map of part of Coombe Hill Meadows and Canal showing positions of pitfall transects (Nos 1 – 4).

Methods:
The method used by the RSPB was followed by the author in subsequent years. Within each of the fields, four survey points were located at regular intervals along one of the diagonals. A pitfall trap was laid at each survey point. The transect lines are shown on the map in Figure 1. Each trap consisted of a plastic coffee beaker set into the ground so that the rim was level with the soil surface, filled to a depth of 20mm with a 20% solution of antifreeze (blue), and then covered with a square lid supported 1cm above the rim of the cup by wires to keep rain out and any small mammals. The annual sampling sessions were carried out from 22nd May to 5th June. After collection the samples were sorted into 70% isopropyl alcohol (in tubes marked Carabidae, Spiders and Others) and, after identification, the number of, and the number of each, species counted. The RSPB survey only identified to Order and size class, but Andrew Stanbury made his samples available to the author for further

identification and counting. The tubes containing "Others" will be identified at a later date.

Results

The following Tables 1-4 show the numbers of Carabidae (Ground Beetles) recorded from each trap line. Tables 5-8 show the numbers of Araneae (Spiders). Trap line number 1 in Field 7916 West was flooded during the course of the sampling in both 2007 and 2008 and so it was only possible to carry out before and after comparisons on the other three trap lines.

Table 1. Carabidae (Ground beetles) Field 7916 West (Trap line 1)

Species	2007	2008	2009
Notiophilus biguttatus	Traps flooded	Traps flooded	1
Bembidion aeneum	Traps flooded	Traps flooded	56
Bembidion biguttatum	Traps flooded	Traps flooded	12
Bembidion guttula	Traps flooded	Traps flooded	8
Bembidion lunulatum	Traps flooded	Traps flooded	6
Poecilus cupreus	Traps flooded	Traps flooded	2
Pterostichus vernalis	Traps flooded	Traps flooded	1
Agonum marginatum	Traps flooded	Traps flooded	11
Agonum muelleri	Traps flooded	Traps flooded	2
Amara strenua **RDB3**	Traps flooded	Traps flooded	1
Chlaenius nigricornis **Nb**	Traps flooded	Traps flooded	1

Table 2. Carabidae (Ground beetles) Field 7916 East (Trap line 2)

Species	2007	2008	2009
Carabus granulatus	1	3	2
Loricera pilicornis	-	1	-
Clivina fossor	4	-	1
Bembidion dentellum	?	-	-
Bembidion doris	?	-	-
Poecilus cupreus	16	2	7
Pterostichus nigrita	5	-	1

Agonum marginatum	-	-	10
Agonum muelleri	-	-	2
Amara strenua **RDB3**	2	-	-
Harpalus rufipes	4	1	-
Chlaenius nigricornis **Nb**	3	2	7

Table 3. Carabidae (Ground beetles) Field 2948 (Trap line 3)

Species	2007	2008	2009
Carabus granulatus	2	1	4
Nebria brevicollis	-	-	3
Bembidion dentellum	1	-	-
Bembidion doris	-	1	-
Bembidion biguttatum	-	1	-
Bembidion guttula	-	-	1
Bembidion lunulatum	-	-	4
Poecilus cupreus	32	1	-
Pterostichus anthracinus **Nb**	-	1	-
Pterostichus nigrita	29	6	33
Pterostichus vernalis	1	-	1
Agonum micans	-	-	1
Agonum emarginatum	-	-	1
Agonum muelleri	2	-	-
Harpalus rufipes	4	1	-
Chlaenius nigricornis **Nb**	5	1	21

Table 4. Carabidae (Ground beetles) Field 1037 (Trap line 4)

Species	2007	2008	2009
Carabus granulatus	1	-	-
Bembidion biguttatum	-	-	7

Bembidion lunulatum	-	-	11
Poecilus cupreus	24	-	-
Pterostichus nigrita	8	1	-
Agonum marginatum	-	-	4
Harpalus rufipes	1	-	-
Chlaenius nigricornis **Nb**	6	-	3

Table 5. Araneae (Spiders) Field 7916 West (Trap line 1)

Species	**2007**	**2008**	**2009**
Oedothorax fuscus	Traps flooded	Traps flooded	3
Oedothorax retusus	Traps flooded	Traps flooded	4
Erigone atra	Traps flooded	Traps flooded	2
Erigone dentipalpis	Traps flooded	Traps flooded	1
Bathyphantes gracilis	Traps flooded	Traps flooded	3

Table 6. Araneae (Spiders) Field 7916 East (Trap line 2)

Species	**2007**	**2008**	**2009**
Oedothorax agrestis	-	1	-
Oedothorax fuscus	5	1	-
Oedothorax retusus	8	1	7
Savignia frontata	-	-	3
Erigone atra	16	2	3
Erigone dentipalpis	23	-	-
Meioneta rurestris	2	-	-
Lepthyphantes tenuis	1	-	-
Pachygnatha clercki	-	-	1
Pardosa palustris	49	-	3
Pardosa prativaga	1	-	-
Trochosa ruricola	8	-	-

Trochosa spinipalpis	1	-	1
Arctosa leopardus	1	-	-
Pirata piraticus	4	-	3
Ozyptila simplex	4	-	-

Table 7. Araneae (Spiders) Field 2948 (Trap line 3)

Species	**2007**	**2008**	**2009**
Oedothorax fuscus	10	-	4
Oedothorax retusus	3	1	2
Erigone atra	19	-	3
Erigone dentipalpis	29	-	-
Porhomma pygmaeum	-	-	1
Meioneta rurestris	2	-	-
Bathyphantes gracilis	1	1	1
Lepthyphantes tenuis	1	-	1
Pachygnatha clercki	1	-	-
Pachygnatha degeeri	3	-	-
Pardosa purbeckensis	104	-	1
Pardosa amentata	3	-	-
Pardosa palustris	199	-	1
Pardosa prativaga	1	-	-
Trochosa ruricola	3	-	2
Arctosa leopardus	9	-	-
Pirata latitans	1	-	-
Pirata piraticus	22	1	3
Ozyptila simplex	2	-	-

Table 8. Araneae (Spiders) Field 1037 (Trap line 4)

Species	**2007**	**2008**	**2009**
Robertus arundineti	1	-	-

Oedothorax fuscus	2	-	-
Oedothorax retusus	-	-	1
Erigone atra	4	2	1
Erigone dentipalpis	4	3	1
Meioneta rurestris	1	-	-
Lepthyphantes tenuis	-	1	-
Pardosa purbeckensis	31	-	-
Pardosa palustris	79	-	3
Pardosa prativaga	2	-	-
Arctosa leopardus	2	-	-
Pirata piraticus	8	-	-

Discussion

Even a cursory glance at the Tables above is enough to give the impression that there was a significant change in population sizes after the flood. The most notable changes occurred in the lycosid group of spiders (*Pardosa, Trochosa, Arctosa* and *Pirata*). These are the so-called "wolf spiders" that hunt for prey by prowling through grass and low vegetation and do not make webs. Pardosids carry their eggsacs around with them and then carry their young on their backs for a time after hatching while *Arctosa* and *Trochosa* shelter in shallow burrows with their eggsacs and young. *Pirata* builds a silken tube in mosses to protect itself and its eggsac. This family of spiders does not "balloon" on gossamer threads when young and so if a population is affected by flood or some other natural occurrence the area has to be repopulated by individuals walking in from neighbouring, unaffected areas. It is possible that this population may take some years to re-establish.

Spiders of the family Linyphiidae (the majority known as "money" spiders) have also suffered, in particular the genus *Erigone* (see Tables 6 & 7). The two species listed here are often found as aeronauts ballooning in the summer so although the population at Coombe Hill Meadows has not recovered as yet, it might be expected to do so fairly quickly.

The Ground Beetle populations have also been affected by the flooding event. However their position is different from spiders in that some are able to move away from a site. Of the 22 species listed above, 17 (77%) are winged and have the ability to escape. Indeed, some of these species spend part of their lives away from their breeding grounds, usually to escape seasonal flooding in the winter (Lott, 2003). The other 5 species (23%) have both wingless and winged forms so part of a population

may escape, leaving the rest to die when the site floods unseasonally. In the species lists in Lott (2003) he gives an indication of the fidelity of each species to wetlands on a scale from A (mainly dependent on wetlands to sustain viable populations) to C (recorded from wetlands but predominantly from terrestrial habitats). Ten of the species recorded above are A-listed, 5 as B, 2 as C and 5 not at all. It is interesting to note that he does not list *Poecilus cupreus* from his extensive database, and in Luff (2007) the habitat is given as dry habitats and fields. In Tables 2, 3 & 4 above it is the most abundant species before the flood in 2007, in a site that is regularly flooded every winter and often has standing water at other times of the year. However, it can also be seen that the population was all but effectively wiped out in Fields 2948 and 1037 and, oddly enough recovered to a certain extent in the second wettest of the four fields, 7916 East.

Pterostichus nigrita is as likely to be found in wetter habitats as drier ones and is one of the fully-winged species. The population has recovered well in Field 2948, probably due to individuals flying in from surrounding areas, but has not done so in the other fields.

Amara strenua is a Red Data Book category 3 (Rare) species of ground beetle that is recorded here as new to the county (see Plate 26), the nearest area where it is also found is the Somerset Levels, otherwise it is a species of only a few southeastern estuarine marshes. This species is declining across its known range (both European and the UK) but has recently been removed from the latest UK Biodiversity Action Plan.

Because of flooding affecting the sampling in Field 7916 West, it is not possible to make any comparisons but the large numbers of *Bembidion* species recorded here in 2009 is of interest. These species are small (2.5-5mm) predatory beetles that feed on other small insects such as springtails (Collembola) (Lott, 2003) and it was noticeable that springtails were around in large numbers once the floods receded so *Bembidion* was most likely benefitting from this abundance.

Conclusions

The populations of Ground Beetles and Spiders at Coombe Hill Meadows Nature Reserve have suffered severely as a result of the floods in 2007 in particular, and any recovery there might have been would have been affected by the similar but smaller flood in 2008. Subsequent sampling has shown that population recovery may be slow for some of the species. This survey will be continued annually to monitor recovery.

Acknowledgements

I am grateful to David Haigh (Gloucestershire county spider recorder) in particular, who identified all the spiders and commented on the distribution and habitat preferences of each species; to Juliet Bailey for describing the vegetation of the survey areas; to Mark Telfer (National Carabidae Recording Scheme organiser) for

confirming my identification of *Amara strenua* and refereeing some of the *Agonum* species; to Keith Alexander (Gloucestershire county coleoptera recorder) for advice; to Mike Smart (Chairman of Gloucestershire Naturalists' Society) for support, encouragement and information; to Andrew Stanbury of the RSPB for making his survey results and samples available to the author; and finally to Colin Studholme, Sarah Rowlatt and Jackie Birch, all of Gloucestershire Wildlife Trust, for encouragement, support and organising funding of the overall project.

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Lott, D. A., 2003. An annotated List of Wetland Ground Beetles (Carabidae) and Rove Beetles (Staphylinidae) found in the British Isles, including a literature review of their ecology. *English Nature Research Report* No. 488.

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RECORDING GLOUCESTERSHIRE'S WILDLIFE

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***.

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 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, Monks Wood. The Society's recording is well described in "Dot Mapping and the Recording of Species' Distribution in Gloucestershire" in *The Gloucestershire Naturalist (TGN)*, No.1, 1984, price £2.00 plus £1.00 p. & p., available from the Chairman of the Scientific & Publications Sub-committee (for address see below).

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.

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.

The Society is always on the look out for new Recorders to fill vacant positions (e.g. beetles and flies) 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: **david@scott-langley.freeserve.co.uk**.

NAMES AND ADDRESSES OF RECORDERS
with information on the most up-to-date sources for check-lists

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. Checklist in *TGN* **5** (1992). Fuller account in *Birds of Gloucestershire* by C.M.Swaine (1982).

- **British Trust for Ornithology Representative**: Mike Smart (01452 421131); email: **smartmike@btinternet.com.**
- **Gloucestershire Bird Report** (annual report on the county's avifauna) published by Gloucestershire Ornithological Coordinating Committee (GOCC).

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**. Checklist in *TGN* **5** (1992).

- **Gloucestershire Bat Group**: Andy Smart (Chairman)

REPTILES & AMPHIBIANS: Colin Twissell (01452 714413); email: **canditwissell@btinternet.com**. Special recording form available. Checklists in *TGN* **5** (1992) & *TGN* **17** (2006).

FISH & CRAYFISH: Pete Bradshaw, c/o The Gloucestershire Wildlife Trust, Church House, Standish, Stonehouse, Gloucestershire GL10 3EU; email: **peter.bradshaw@gloucestershirewildlifetrust.co.uk**. Fish checklist in *TGN* **5** (1992).

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**. *The Butterflies of Gloucestershire* by Guy Meredith is at **www.gloucestershire-butterflies.org.uk/bflyglos/bflyglos.html**. Butterfly Conservation Gloucestershire Branch: **www.gloucestershire-butterflies.org.uk**.

- **MOTHS**: Roger Gaunt (01594 530475); email: **roger.gaunt@btinternet.com**. *Gloucestershire Moths – An Account* by Roger Gaunt (2000), (2nd edition 2006); *Set of Moth Distribution Maps* by Roger Gaunt (80 maps showing distribution of selected species) (2003).

- **DRAGONFLIES**: Ingrid Twissell (01452 714413); email: **canditwissell@btinternet.com**. *Distribution of Dragonflies in Gloucestershire* by S.C.Holland (1991). Checklist in **TGN 20,** also available from Ingrid Twissell.

- **HOVERFLIES & LADYBIRDS**: David Iliff (01242 674398); email: **davidiliff@talk21.com**. Ladybirds in *Coleoptera of Gloucestershire* by D.B. Atty (1983).

- **ANTS, BEES & WASPS**: Tony Taylor (01452 728734); email: **taylor.ant@cotswoldwireless.co.uk**.

- **SPIDERS**: David Haigh (01242 513544); email: **djrhaigh@hotmail.co.uk**. Animals for identification can be sent by post in an envelope containing a small flat non-crushable box holding some moss or slightly damp cotton wool.

- **BARKFLIES, WOODLICE, CENTIPEDES, MILLIPEDES, HARVESTMEN, FALSE SCORPIONS, LACEWINGS, SPRINGTAILS & FRESHWATER INVERTEBRATES**: David Scott-Langley 19 Chesterton Grove, Cirencester, Gloucestershire GL7 1XN (01285 659631); email: **david@scott-langley.freeserve.co.uk**. Check-lists for millipedes and false scorpions in *TGN* **12** (1999); centipedes in *TGN* **18** (2007); springtails in *TGN* **16** (2005) & **18** (2007); Checklists for bark flies in *TGN* **17** (2006).

- **BEETLES (other than ladybirds), SAWFLIES, FLIES (other than hoverflies)**: Keith Alexander (01392 413092); email: **keith.alexander@waitrose.com**. *Coleoptera of Gloucestershire* by D.B. Atty (1983).

- **GRASSHOPPERS, BUSH-CRICKETS, EARWIGS, & COCKROACHES, BUGS (HEMIPTERA)**: John Widgery (01242 673873); email: **johnwidgery@waitrose.com** . Checklists for bugs in *TGN* **8, 9, 16 & 19** (1995, 1996, 2005 & 2008), Checklist for Orthopteroids in *TGN* **15** (2004)

- **LAND & FRESHWATER MOLLUSCS**: David Long (01242 527673); email: **david@long55.wanadoo.co.uk**. Checklist in *TGN* **3** (1989).

- **FLEAS**: Bob George (01202 515238); no email.

- **ECTOPARASITES (Lice, louse-flies)**: Robin Sellers (01946 725453); email: **sellers@craghouse7.freeserve.co.uk**. Checklist of louse-flies in *TGN* **1** (1984).

- **FRESHWATER TRICLADS**: Larry Bellamy (01594 516420); email: **lar.amy@btinternet.com** Checklist in *TGN* **1** (1984).

FLOWERING PLANTS, FERNS & STONEWORTS: Mark and Clare Kitchen (01453 810958); email: **markarkitchen@yahoo.com**. *Supplement to the Flora of Gloucestershire* by S.C.Holland, H.M.Caddick and D.S.Dudley-Smith (1986); *The Flora of the Bristol Region* by I.P.Green, R.J.Higgins, C.Kitchen & M.A.R.Kitchen (2000); *Stephen Bishop's New Flora of Gloucestershire*, Part 1 edited by R. Cooper: *TGN* **13** (2000), and Part 2 edited by C. & M.A.R. Kitchen and I. Carle: *TGN* **14** (2008).

GLOUCESTERSHIRE ORCHARD GROUP (GOG) Ann Smith (secretary/coordinator) 01452 855677 www.gloucestershireorchardgroup.org.uk email: info@gloucestershireorchardgroup.org.uk

MOSSES AND LIVERWORTS: Peter Martin (01666 503791); email: **petergmartin@btinternet.com**.

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- **Cotswold Fungus Group & County recorder**: Dave Shorten (01793 764649) email: **daveshorten@cotswoldfungusgroup.com**.
- **Dean Fungus Group**: Keith & Valerie Davies (01452 760278); email: **davieskkvv@tiscali.co.uk**.

LICHENS: Juliet Bailey email: **gnsnews@potsherd.demon.co.uk**.

PLANT GALLS: Robert Homan email: **theapiary@gmail.com**

ONLINE RECORDING at www.universalquestions.com/nature

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.
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 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 for publication the following May/June of the same year.
13. New contributors are asked to submit two or three lines about themselves with their article.