

Shropshire Botanical Society Newsletter

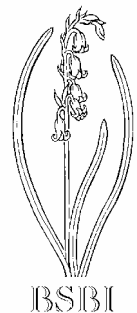
~ Spring 2002 ~



Field Meeting at Jones's Rough and Moelydd to see *Carex muricata* L. ssp. *muricata*

Also in this issue

- Charles Sinker's guide to willow hybrids
- Earl's Hill Nature Reserve
- Mr. Henry Spare
- The Botanical Society on the Web



Shropshire Botanical Society Newsletter No. 6 Spring 2002

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Shropshire Botanical Society web site: shropshirebotany.org.uk

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Botanical Society News

Sarah Whild

Please accept my apologies for the lack of a newsletter last autumn. The foot & mouth epidemic prevented much recording, and we felt that there wasn't enough material for a second newsletter last year.

The Annual General Meeting is in a couple of weeks. My apologies also for the short notice of this. Nominations to posts on the committee will be accepted up to the day of the meeting, if need be. All the current officers are happy to stand for re-election, and I would like to nominate Mags Cousins to join the committee. I would also like to propose a change to our constitution giving us the option to hold just one meeting a year and to produce just one newsletter. The reason for this is because some people are considering the possibility of starting up a naturalists society in the county, and if one is set up then perhaps we could alternate newsletters and meetings with them, to give them a good start.

The main subject of the meeting will be recording for the new edition of *Rare Plants of Shropshire* and, possibly, discussion of the forthcoming repeat of the BSBI Monitoring Scheme.

AGM
Saturday April 27th 2002
Preston Montford Field Centre
2:30 pm

The most significant development of the last few months has been the creation of an internet database for the Botanical Society. All our records up to 1985 (i.e. the published ones) have been loaded up in full onto a searchable database on our new web site. There is still much work to be done, but a start has been made, and progress can be viewed at the new web site. Preston Montford Field Centre has kindly contributed 50% of the funding, and we hope it will be a valuable education resource. The address is:-

www.shropshirebotany.org.uk

You can read more about the web site on pages 6-8 of this newsletter.

In the autumn the committee decided to make Charles Sinker an honorary member of the Botanical Society for life. Charles was founder of the Flora Group and, despite illness, is still an interested and active contributor. Last autumn we sent Charles Sinker's willow herbarium to the National Museum of Wales, where Tim Rich has promised to take good care of it. The herbarium contains specimens of most of the species and hybrids of lowland willows to be found in Britain, and is quite an important collection, which will now be widely available for public consultation. Our thanks are due to Charles for this generous contribution to science. From this collection Charles constructed an innovative guide to willow hybrids which is reproduced here in the middle pages of the newsletter. I think it is fairly self-explanatory. Alex is computerising the catalogue to the herbarium onto the Threatened Plants and the Shropshire Flora databases.

Other ongoing tasks include the curation of Mary Fuller's field notebooks and slide collection. This includes many species lists (already assimilated into the Flora database and the TPDB) and about 1,000 slides, which ideally should be scanned and catalogued. A small collection of record cards left by E.A. Wilson to the Field Studies Council has also been databased and will hopefully be reported on in a future newsletter. R. de G. Benson's herbarium at Shrewsbury School is still being databased, as is Edward Williams's MS Catalogue of Shropshire Plants.

Please could everyone note that we have a new membership procedure, which was agreed at the last AGM. Details are given on the last page of this newsletter. In the meantime may I wish you all happy botanising and I hope you have been making the most of the excellent spring weather to generate some early records!

Field Meetings for 2002

Sarah Whild

We always ask people to phone beforehand if they are planning to attend a meeting. Sometimes they have to be cancelled or the details changed, and to avoid disappointment it really is a good idea to check a day or two in advance. However, we hope they will all go ahead as planned.

As usual, bring waterproofs, boots or Wellingtons and a packed lunch if it's an all-day meeting. Hand lenses and plastic bags are useful, plus a notebook and identification guide if you have one. All are welcome on these recording days and we are all willing to help out with identification, so please don't feel intimidated – come along to learn, or record or both.

For bookings or queries regarding the field meetings please phone me at work, 01743 355137, at home on 01743 343789 or on my mobile, 07885 700368.

Saturday April 27th

AGM at Preston Montford Field Centre, starting at 2.30pm for tea and coffee, with business starting at 3.00pm followed by organizing field work for the Rare Plants resurvey 2002. Please bring any specimens you may want identifying and any records you have made.

Wednesday 22nd May

Wenlock Edge woodlands.

Surprisingly, perhaps, these woodlands at the southern end of Wenlock Edge are under-recorded so this early evening foray will hope to uncover Herb Paris and other calcicolous woodland herbs. Meet at 6.00pm at the Harton Hollow car park at SO479875.

Friday 14th June

Trip to Moelydd to see *Carex muricata* ssp. *muricata* in Shropshire's newest SSSI. Meet at 10.30 in the car park of the Mountain Bike Centre at Nantmawr Quarry. Bring lunch. Park at the centre, grid reference SJ252248.

Saturday 29th June

Trip to survey Gatten Plantation (see back cover) on the Stiperstones, following English Nature's Back to Purple scheme to remove the conifers. It will be interesting to see what plants have colonised from the surrounding moorland. Bring lunch. Meet at 10.30 in the main car park of the Stiperstones National Nature Reserve, grid reference SO369976.

Wednesday 3rd July

Training session on sedges of flushes. Meet in the National Trust car park in Carding Mill Valley to explore Lightspout Hollow with a view to looking at sedge identification. Just a reminder that if you are not a National Trust member, it costs to park there (only £2 per car). Meet at grid reference SO441947 at 6.00pm.

Saturday 21st September

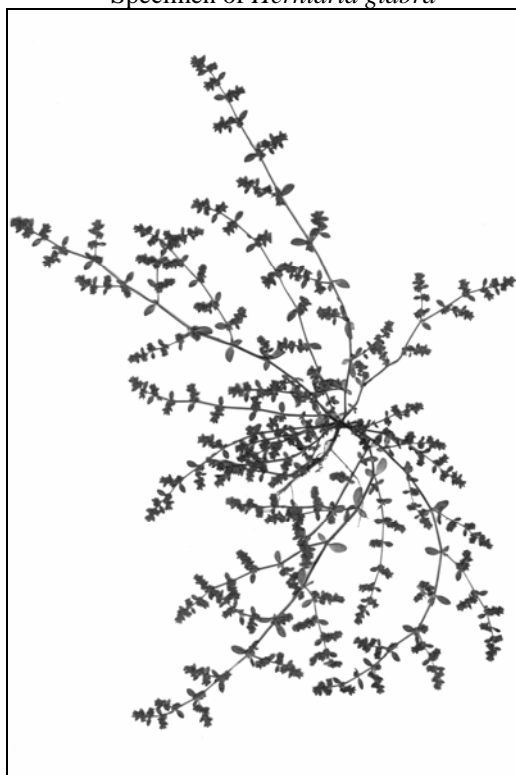
Rhos Fiddle Wildlife Trust Reserve.

Meet at SO212852 at 11.00am; bring lunch and Wellingtons. This can be a training day on wet heath vegetation in this varied and interesting site.

First County Records for 2001

The rarest plant found this year was the Red Data Book species **Smooth Rupturewort**, *Herniaria glabra* L. This species is considered a native of East Anglia and Lincolnshire, where it grows on disturbed, compacted soils in gravel pits, car parks, golf courses and along rides in forestry plantations. It is one of the success stories of recent years, having spread right across the country, as the maps in the forthcoming Atlas of the Flora of Britain and Ireland will doubtless show. Rob Stokes found it in a typical habitat, in the car park by the Montgomery Canal at Queen's Head, SJ33882681, at the start of the Botanical Society's meeting there on 14th July 2001 (Herb. SFG). About twelve plants were present, with a revealing selection of associates, including Sweet Alison, *Lobularia maritima*, the Lady's-mantle *Alchemilla mollis*, Procrumbent Yellow-sorrel, *Oxalis corniculata*, Lamb's-ear, *Stachys byzantina* and Garden Lobelia, *Lobelia erinus*.

Specimen of *Herniaria glabra*



Rob also found **Stinking Tutsan**, *Hypericum hircinum* L., at The Moors, Ellesmere, in a patch of scrub by the entrance to the Oteley Estate, SJ410342 (conf. S.J. Whild, Herb. SFG).

Finally, Rob Stokes also spotted **Garden Speedwell**, *Veronica longifolia* L., on the cliff below Bridgnorth Castle, SO717927, on August 1st. This species, which is commonly grown in

gardens, has not previously been recorded as naturalised in the county.

The hybrid sedge *Carex x elytroides* Fr., *C. acuta* L., **Slender Tufted-sedge**, x *C. nigra* (L.) Reichard, **Common Sedge**, was found by Kate Thorne on a farm near Edgerley, SJ348181, in August 2001. A specimen has been confirmed by Clive Jermy and is in Hb. SFG. It was growing in an inundation community not far from the River Severn, in an area that is flooded each winter. *C. acuta* is a particularly interesting plant in Shropshire, having been recorded in the past around several meres, but it does not seem to grow there now – we can only find it along the Severn. Possibly the old records are all errors.

Another invader is **Reflexed Saltmarsh-grass**, *Puccinellia distans* (Jacq.) Parl., which was found by John Mason on the side of the A5 at Overley Hill (SJ610104) on 2nd July 2001 (Herb. SFG). This has followed the now well-established *Cochlearia danica* along the salt-treated trunk roads, and had already spread for miles by summer. Collecting specimens is a hazardous process, however, so it will probably remain under-recorded. This is not quite a first county record, as it has been recorded twice in the past: Isaac Watkin, in his *History of the Parish of Llanyblodwell*, ca. 1900, gave *Sclerochloa distans* as one of the species on the farm at Blodwel Hall (SJ22), and Lloyd & Rutter, in their *Handlist of the Shropshire Flora*, 1957, say that there is "one old record, from Shrewsbury;" but they are probably both errors.

Lesser Hairy-brome, *Bromopsis benekenii* (Lange) Holub, is an altogether more native species of the county. There is an old record for it on the Wenlock Edge by Augustin Ley, in 1909, and another tentative record by Charles Sinker in 1963, possibly in the same place, at Harton Hollow, SO482878. It was with some surprise that Sarah Whild found it again at Harton Hollow on 23rd June 2001, in some abundance. A specimen sent to Clive Stace for confirmation is in the herbarium at the University of Leicester (LTR).

It is quite similar in appearance to Hairy Brome, *Bromopsis ramosa* (Hudson) Holub, but smaller, being about the same size as False-brome, *Brachypodium sylvaticum* (Hudson) P. Beauv. The three tend to grow together. Once you are aware of the differences, they do appear to be quite distinct, but the diagnostic characters are not completely exclusive: *B. benekenii* tends to

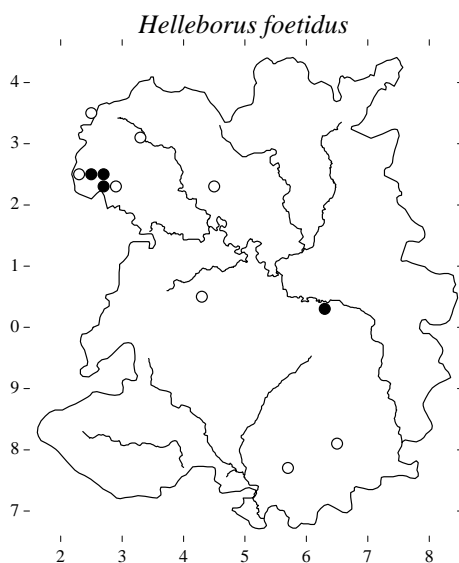
have three lower spikelets each with just one or two flowers, whereas *B. ramosa* has two spikelets with more flowers; the hairiness of the leaf sheaths is also a character, but is not always consistent. Some authorities consider *B. benekenii* to be merely a subspecies, and the taxonomy is under review.

Natasha Coombs found *Arum italicum* ssp. *italicum*, **Italian Lords-and-Ladies**, in a hedgerow at Radbrook, Shrewsbury, SJ481116, det. S.J. Whild, on 31st March 2001. This appears to be a first county record for what is probably a common garden escape.

Rare Plants

In July this year Nick Hodgetts surveyed Cramer Gutter nature reserve on behalf of the Shropshire Wildlife Trust, and was asked to look for the extremely rare **liverwort** *Cephaloziella elachista* (J.B. Jack ex Gottsche & Rabenh.) Schiffn., which has not been recorded there since Martin Wigginton found it in 1981. Happily he found it to be quite common in the most boggy parts of the reserve, so this rarest of Shropshire bryophytes is still with us.

Rob Stokes noticed a large patch of the nationally scarce *Helleborus foetidus* L., **Stinking Hellebore**, on a roadside bank at Farley Dingle, SJ634023 & SJ633023, on March 14th 2002. At first he suspected that the sudden arrival of some 30 mature plants and numerous seedlings suggested some deliberate introductions, but it seems that this patch has been known in this precise spot for over 200 years, since Edward Williams first noticed it there in the late 18th century. Subsequently William Penny Brooks (c. 1841), William Beckwith (c. 1876), George Potts (1902 & 1928) and Winifred Hutton (1988) have all made records of it.

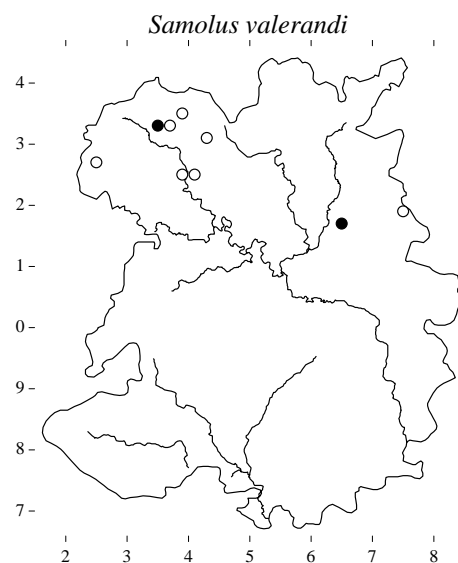


This intriguing smattering of records suggests that it may be appearing in particular abundance in some years. Sarah Whild observes that seeds sometimes germinate in large numbers following

hard winters, and there were some very hard frosts two years ago. *Helleborus foetidus* is not quite rare in Shropshire, having four current tetrads. After eliminating the probable introductions, the current distribution map is as shown below.

John Pagett found *Helianthemum nummularium* (L.) Miller, **Common Rock-rose**, in an area of open space in Madeley, Telford, in May 2000 (SJ701042). Although this is not a rare species in the limestone areas of the northwest, it is certainly unusual in the east of the county - the nearest site is more than 10km away. John explains that the soil in this part of the county is boulder clay deposited here during the ice age, and contains fragments of calcareous mudstones and sandstones dislodged from the underlying Keele bedrock laid down during the Carboniferous. The plants were growing on an anthill, apparently constructed from this calcareous sand.

Kate Thorne found a patch of Brookweed, *Samolus valerandi* L., in a damp set-aside field near Welsh Frankton, SJ3432, in September 2001 (conf. S.J. Whild, Hb. SFG). This is a very rare plant in the county, with only two other known sites in the last twenty years. It was last recorded in Welsh Frankton in 1891, by Thomas Diamond.



Kate also collected the uncommon **hawkweed** *Hieracium eboracense* Pugsley (det. D.J. McCosh) at Llanymynech Rocks, SJ267218, on 25th July 2001. This is the first record since 1909, when Augustin Ley found it at Buildwas (SJ60) and Diddlebury (SO58). He might also have recorded it at Roman Bank (SO59, 1904), but the latter has not been confirmed.

Kate also re-found the *Hieracium lasiophyllum* Koch at Earl's Hill, SJ409046, growing on the east side on rock outcrops and in short grassland. It has been recorded regularly at Earl's Hill since 1888, when John Fraser found it there. The only other known site for it in the county is in Carding Mill Valley. A record for SJ41 in the *Critical Supplement to the Atlas of the British Flora* may be an error.

The Database on the Web

Alex Lockton

During the field meeting at Queen's Head last year, everyone present expressed enthusiasm at having the Flora database available over the internet. We discussed the perennial question of confidentiality, and agreed that it would be worth giving it a try to see whether there really were any ill effects from releasing the data. A few years ago it was generally seen as desirable to keep the locations of any uncommon plants highly secret, but a widespread feeling today is that any danger of deliberate harm to these plants is more than offset by the damage caused when site owners and managers do not know they are present on their land. In my experience this is true: organisations such as the Wildlife Trust, the National Trust and English Nature often have so little knowledge about the ecology of their sites that their management plans can cause more harm than good. Meanwhile, at Granville Country Park in Telford you can see people walking their dogs within inches of the huge spikes of *Dactylorhiza x kerneriorum*, and no-one seems to pick them. If the general public can be trusted, who, precisely, are we concealing this information from?

The main problem I come across when making data available is plagiarism by other botanists. I've supplied data to students and later found it repeated, almost verbatim, in their theses, masquerading as their own work. I've also supplied data to consultants and surveyors who, instead of then surveying properly, have simply copied our lists into their reports. This generates false records, so it is particularly undesirable. Finally, of course, there are lots of would-be records centres and other suppliers of botanical data, who love free handouts from naturalists societies but rarely give anything back. But these are all problems we can tackle through education and awareness-raising. The Botanical Society doesn't really lose anything if people behave irresponsibly. As I see it, we might as well get on and do our job properly and worry about other people later.

What is on the web site?

For this first attempt we have loaded up all the records of vascular plants and bryophytes prior to 1985. You can search by species, by grid square, or by site. When you complete a search, you are presented with a list showing the summary details of each record, as shown overleaf. Clicking on the site name or recorder's name gives you a full list of the records for that site or by that recorder. Clicking on the curly arrow to the left of any record shows you the full details of the record. Not everything on the database is actually loaded onto the web site, and you cannot (yet) perform many of the analyses that I can on the original data, but this does present you will almost everything that you would expect.

In addition to viewing lists, you can download all the records in your list as a csv (comma delimited) file, which allows you to study the data in your own time, or use it in other applications such as spreadsheets or mapping programs. The web site will also draw a map for you of any species, which can be viewed on screen or saved for printing. On screen, you can click on a dot and see what records there are for the species in question in that square.

What is not on the web site?

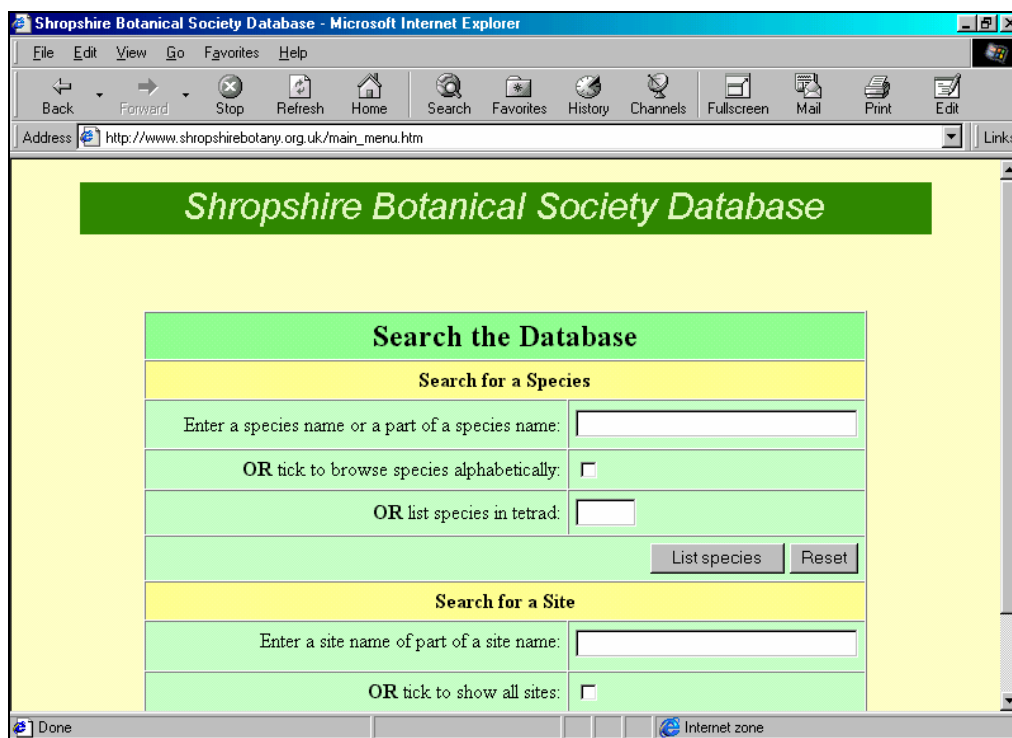
Nothing after 1985 is displayed on the internet, for several reasons. Firstly, the data we have collected since then is not systematic, and could lead to misapprehensions about any decline or increase in the distribution and abundance of a species. By using records up to Sinker's *Flora*, we have a relatively systematic and well-checked data set. But the main reason not to include the more up-to-date data is that it has a far greater potential to create problems. In general, the pre-1985 data is "historical" and probably won't lead to complications. But what about a recent survey by a living, practicing botanist who may, for instance, have made mistakes which we have rejected? Would we then include those errors and risk offending them? Or exclude them without

explanation, and thereby present the audience with a data set that does not seem to accurately reflect the original survey?

Another potentially difficult situation is where a surveyor has collected records on private land. The recent CROW Act seems to make it illegal to record whilst walking along a public footpath. I would like to see this clarified before risking prosecution for any of our members.

Finally, I don't want to risk the Botanical Society being completely exploited. It costs the society a lot of money to collect and manage this data, and I hope we can raise the funds to allow us to continue to develop these services. This web site puts Shropshire in the forefront of natural history recording, but we will need to maintain the momentum if we are to stay there.

The main search window in the Shropshire Botany database



What next?

The biggest task for me is to continue to tidy up and structure the database. A lot of our records are without a site or a recorder. Many of these are irredeemable – simply tetrad records collected for the B species during the Flora Project, or on the M cards after that. These records are particularly difficult to use within a database. They're fine for producing dot maps, but when you generate a list of 160,000 records for the site of "Shropshire," the computer tends to stop responding. Also, they're useless if you need to know precisely where the plant was. I much prefer to have a site, partly as a way of breaking down the data, and partly because it is useful, ecologically, to know this information. There is the world of difference between a plant at "Earl's Hill" and one in "Habberley Brook," even though they may be in the same tetrad.

There are some changes I can make to improve the data. I could, for instance, assign all the Flora Project records to the 10km square coordinators. This would be partly justified on the grounds that the coordinators were supposed to be responsible for making sure the records were correct. This goes some way towards improving the data. In some counties people give names to grid squares, for instance every tetrad could have a name corresponding to a village in that square. This at least allows the viewer to get a rough idea about the location of a plant. "Diddlebury" is a lot more helpful than "SO5085" to the human eye. But this strikes me as a really drastic fudge, and it needs serious consideration. A tetrad can contain several sites, and the thought of assigning all the woodland plants that were pretty obviously recorded in Clunton Coppice to an arbitrary site called "Purslow Hall" does not appeal to me.

Fortunately, the information that most people want to see – the rarer plants – is generally better defined, and can be assigned to sites and recorders. This is an ongoing task, because although 6-figure grid references were given during the Flora Project, site names generally were not. It takes quite a lot of time to look up each record on the map and assign a suitable site, but we're getting there. In addition to that, eventually I need to look over all the records of each species and make sure the site names are assigned systematically. If you look on the web site at *Helleborus foetidus*, you will see a very different account to that given in this newsletter, because I have tidied up the records since sending them to our web designer, Alan Hale. The Farley Dingle population had multiplied itself into half a dozen sites and sprawled across three tetrads before I realised that there was just the one spot where it had always been.

Give us a few years, then, and the database will be much more usable. We should soon have a feedback form if anyone wants to make comments. Eventually you will be able to submit records across the internet. I don't see any reason why we should not bring forward the cut-off date to, say, 2000, in a few years' time, and if people are interested, we could easily add in other taxonomic groups such as dragonflies and moths. But there are also opportunities for members to get more involved. If we wanted, we could have written accounts and photographs for each species, site and recorder. You can see how that works on my other web site – www.tpdb.org.uk. If the group wanted to take on this task, there is enough work there to keep everyone busy for quite a long time.

A typical list of records

The screenshot shows a Microsoft Internet Explorer window titled "Shropshire Botanical Society database - Microsoft Internet Explorer". The address bar contains the URL http://www.shropshirebotany.org.uk/sb_query8.php?spid=3944. The main content area has a green header with the text "Shropshire Botanical Society Database" and a sub-header "Records for *Anagallis arvensis* ssp. *foemina*". Below this is a link for "Tetrad Distribution Map Download as csv file". The table below lists seven records:

	Site Name	Grid Ref	Recorder	Year
↗	Eaton Constantine	SJ5906	Mr W.E Beckwith	1876
↗	Hill Top	SO5696	Rev W.A Leighton	1841
↗	Hopton Hill	SJ3820	Mr T.C Eyton	1841
↗	Llynclys Hill	SJ2723	Mrs Comber	1951
↗	Radbrook	SJ4711	Mr R.H Bentley	1892
↗	Shotton Hall	SJ4922	Dr T.W Wilson	1841
↗	Shrewsbury	SJ4912	Miss N.M Mackenzie	1954

Acknowledgements

The Shropshire Botanical Society web pages are maintained by Margaret Cole, records centre manager at Herefordshire County Council.

The internet database is managed by Alan Hale of Aberystwyth with funding from the Shropshire Botanical Society and Preston Montford Field Centre, using a data model developed by the Botanical Society of the British Isles.

The Vegetation of the Stiperstones mines

Sarah Whild

There is a range of plants that are considered to be indicators – they choose only to grow in certain conditions – so, when we see those plants, we can predict the underlying soil and geology. Plants and plant communities respond to climate in the form of rainfall, exposure to wind and sunshine, to altitude, to soil type resulting often from underlying geology and drainage. Contrary to horticultural wisdom, semi-natural plants communities are often more diverse and species-rich on thinner, nutrient poor soils where competitive species do not have the opportunity to dominate.

The Stiperstones range is primarily a quartzite ridge which gives rise to acidic and extremely nutrient-poor soils resulting in species-poor heathland vegetation. The slopes lie mainly on Mytton Flags which are generally acidic in reaction, with some slight base enrichment where springs percolate through to the surface producing flushes of wetland vegetation. Therefore, the typical Stiperstones semi-natural vegetation is heathland and acidic grassland.

Following mining in areas such as the Stiperstones, the spoil mounds that are left are relatively nutrient poor and verging on toxic with heavy metals and salts. Colonization is slow and usually follows a sequence of algae, then lichens, bryophytes, and finally higher plant species such as *Festuca ovina*, Sheep's Fescue, which shows a degree of lead tolerance. Eventually woody species such as *Calluna vulgaris*, Heather, which can fix phosphorus and *Ulex* sp., Gorse, and *Cytisus scoparius*, Broom, which can fix nitrogen, result finally in a heathy woodland vegetation dominated by *Betula* sp., Birch, with a *Calluna vulgaris* understorey as at Gravels and Pennerley mines.

At Pennerley there is extensive colonization by willows and birch, with *Quercus* spp., Oaks, replacing the birches where deeper soils have formed. There are some interesting botanical features associated with the Pennerley area, resulting from past mining activities. As most miners in this area were also small holders, they managed small hay meadows and pastures on the poor soils of the slopes of the Stiperstones. To reduce the acidity and in an attempt to improve the soils, it is possible that they added calcite in lieu of agricultural lime. Calcite (calcium carbonate) is highly insoluble and does not produce a very basic substrate. However, weak acids such as carbonic acid from rain gradually

react to produce calcium bicarbonate, which is soluble, and can produce a basic reaction in the soil. This may have led to a gradual increase in pH in the soils and may help to explain the rather unique hay meadow flora that is found, with many indicators typical of limestone pastures such as *Platanthera chlorantha*, Greater Butterfly-orchid) and *Leontodon hispidus*, Rough Hawkbit. Perhaps one of the most curious botanical occurrences in this area is the extent of *Laburnum anagyroides*, Laburnum, hedges, used in an agricultural context. The only other place where this occurs is in mining areas of south Wales. There is no connection with use of the timber for mining. One anecdotal explanation is that 'flax' was spun from the silky fibres in the seed pods; this was provided by a student, some years ago, who came from south Wales and could remember his grandmother referring to laburnum flax. But I have not found anyone to corroborate that story for the Stiperstones area.

Bog Mine shows a good range of successional processes, from uncolonized waste, through algal crusts and lichen/bryophyte communities, to occasional patches of grass, usually *Festuca ovina* with some *Agrostis capillaris*, Common Bent. The least disturbed spoil mounds here have some heather and gorse and birch with *Salix* spp., willows, on the damper soils. One of the major issues is the friable nature of the soils; problems facing the colonizing plants are not just the toxicity and low nutrient levels but the physical nature of the substrate, not helped by the use of mountain bikes and the general visitor impact on the barer spoil slopes. Even when bryophytes, lichens and the first grasses have colonised, there is still a negligible soil layer – it is only when deeper rooted woody species have colonised that the slopes become stable.

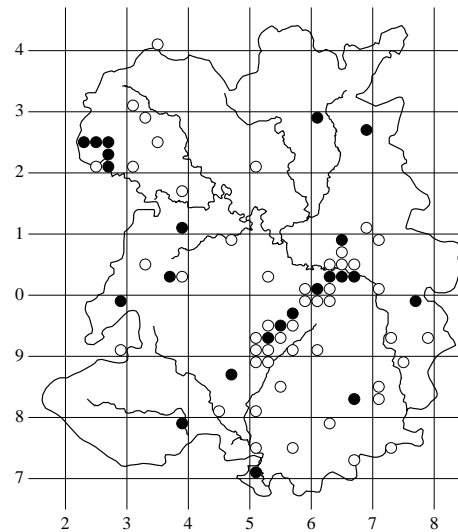
Snailbeach is now a rather interesting area to attempt to interpret. The calcite spoil heaps abandoned in the 1950s did not appear to colonise with any vegetation and these were levelled off with topsoil by Shropshire County Council during the reclamation scheme. The area of grassland just east of the car park was originally sown with a wildflower cornfield mix including *Chrysanthemum segetum*, Corn Marigold, and *Centaurea cyanus*, Cornflower. Following this a perennial mix was included with typical seed mix calcicoles such as *Daucus carota*, Wild Carrot, and other species including *Centaurea nigra*, Common Knapweed, which is a common species of unimproved neutral grassland – however the

variety included here has long ray florets, not normally seen in the Midlands (but reasonably common in Kent and on the continent). Seed mixes such as this make interpretation difficult. Small calcicole species such as *Linum catharticum*, Fairy Flax, are present around the mine workings. This is not usually a 'conservation seed-mix' constituent and so its presence may be a genuine indication of base-rich conditions.

One of the most surprising finds within the Snailbeach area is of large quantities of *Daphne laureola*, Spurge Laurel, which is an ancient woodland indicator and also an indicator of base-rich conditions. At Tankerville mine, it picks out the rectangular shape of the old walls, probably picking up on lime-rich mortar, but at Snailbeach, it is present with a number of calcicole ancient woodland indicators such as *Brachypodium sylvaticum*, False-brome, and *Galium odoratum*, Woodruff.

Where the walls have not been over-zealously cleaned, a number of species of fern are present, most of which are calcicoles, including *Phyllitis scolopendrium*, Hart's-tongue, *Asplenium adiantum-nigrum*, Black Spleenwort, and *Dryopteris filix-mas*, Male Fern. Again, the presence of these species is undoubtedly determined by the presence of large amounts of lime in the old mortar, and we would not normally expect to find them in this particular area but for these human influences.

Map: distribution of *Daphne laureola* in Shropshire. This species is a strong indicator of base-richness, and is only common along the Wenlock Edge and in the Oswestry uplands. The Stiperstones mines are in the square SJ30.



References

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The enigmatic Mr. Henry Spare

Alex Lockton & Sarah Whild

Following on from “The Uncertain Legacy” (Autumn 2000) and “In Defence of Mary McGhie” (Spring 2001), it might be worthwhile to explore some more of the “interesting” records for Shropshire. Remember, we don’t delete records or change them irrevocably, instead we mark things “unconfirmed” so that automatic analyses by computer reflect as accurately as possibly what we believe to be a correct account of the county’s natural history.

Mark Lawley’s article has not persuaded us to restore any of Mary McGhie’s dubious records. The only one that seems controversial is the Juniper. This shrub would certainly have been common enough in Shropshire at some point after the last ice age. The question is, did it persist long enough for Miss McGhie to spot it? The balance of evidence seems to suggest not, and we certainly hope that there is no conservation plan to reintroduce it. Philip Oswald emailed to point out that there is another unlikely-sounding record in the list, that was missed:-

“I was particularly interested by the two articles about Mary McGhie, about whom I was unable to find out anything for ‘Ecological Flora’ (see p. 27, col. 2). One of her records which I now think MUST be a wrong identification is that of *Cynoglossum germanicum*, which I see you list among “garden plants, or species which can only have been naturalised” and which I did not mention at all on p. 28 (I’m not sure why now). Even Mark Lawley makes no attempt to defend this one. Charles Darwin made the same mistake, of which more another time!”

P.H. Oswald, 11th November 2001

Cynoglossum germanicum, Green Hound’s-tongue, is a Red Data Book species in Britain, with only four dots on the national distribution map. It is a woodland plant that occurs on chalk and limestone. The Shropshire dot – Mary McGhie’s – is somewhat isolated from the rest, being out to the north-west, but not so far that it could be eliminated purely on grounds of geographical range. As for ecology, it is unfortunately listed as occurring as a casual on roadsides, so we cannot strike it off for that reason alone. The only justification I can put forward for rejecting it is that it has always been

so rare, and so important, that if any botanist with the skill to recognise it had found it in a new county, they would surely have collected voucher specimens and submitted them to referees. I think this is no more than a simple error for *Cynoglossum officinale*, Common Hound’s-tongue, which does indeed occur in the neighbourhood of Ludlow.

Henry Spare

The main subject of this article, however, is Henry Spare (1793-1864), also from the Ludlow area. Philip Oswald devotes several column inches to him in Sinker’s *Flora* (pp. 27-28), and suggests that he may have been a farmer or a gardener at Oakly Park. He questions the records of *Ophrys sphegodes*, *Sesleria caerulea* and *Salvia pratensis*, and points out that there isn’t a single sedge in Spare’s list – often the least favourite group of plants for an untrained botanist. There are other records of Spare’s that could be questioned. Take, for instance, his record of *Pyrola rotundifolia*, Round-leaved Wintergreen, at Whitcliffe. The Common Wintergreen, *P. minor*, was seen there by Thomas Salwey, Andrew Bloxam (both ca. 1841), William Beckwith (ca. 1880), George Claridge Druce (1892), and more recently by J. Vaycey (1962 & 1965) and S.R. Turner (1971). Intermediate Wintergreen, *P. intermedia*, was recorded by Frederick Westcott (1842) and William Phillips (1889, conf. Arthur Bennett). But Henry Spare got neither of these, just the much rarer *P. rotundifolia*.

Spare’s records of *Dianthus plumarius* around Ludlow can be accounted for and almost excused. Virtually every prominent botanist in Britain for 300 years made this mistake until Eric Clement pointed out that it was actually *Silene schafta* (*BSBI News* 85 (2000) pp. 46-47). We do not believe his Wood Bitter-vetch, *Vicia orobus*, which seems likely to be an error for *Vicia sylvatica*. His *Melampyrum sylvaticum* is undoubtedly *M. pratense*. One that is particularly troubling is Shining Pondweed, *Potamogeton lucens*, at Oakly Park. This has been recorded in Shropshire several times, but only one record is accepted, and that is probably from a canal, which tells us nothing about the native flora of ponds and rivers. On balance, it seems best to consider Spare’s record to be wrong, but this issue is worth studying further.

It seems unlikely that anyone could misidentify *Cladium mariscus*, but equally unlikely that it could have occurred as a native species at Oakly

Park. Henry Spare might not have been averse to recording plants that were introduced - *Oxalis corniculata*, *Lonicera caprifolium* – and it is altogether possible that *C. mariscus* could have been planted around ornamental lakes. *Anchusa officinalis*, Alkanet, is sometimes grown in gardens, but has never been recorded in the wild in Britain, according to Stace (1997). Spare's is the only record for it in Shropshire: a mistake for Evergreen Alkanet, *Pentaglottis sempervirens*, perhaps?

Philip Oswald points out that Spare's *Picris echioides*, Bristly Oxtongue, record would be a first for the county. The only other person, historically, to have recorded it was Griffith Griffiths (1870), who is definitely a suitable

subject for a future article of this sort. In 1975 Henry Hand made the first proper record for this species, and it has been found in a number of places since then, usually in very disturbed and industrial areas. If it is reasonable to reject anything by Henry Spare that is not actually likely, then the *Cerastium arvense*, *Apera spica-venti*, *Phalaris canariensis*, *Thalictrum flavum*, *Oxalis corniculata*, *Sanguisorba officinalis*, *Hordeum secalinum*, *Alopecurus myosuroides* and *Vicia lathyroides* should perhaps all go, as well.

A complete list of Henry Spare's records is given below, for readers to consider and comment on if they so choose. Records we have marked unconfirmed are enclosed in square brackets.

Records by Henry Spare

<i>Nymphaea alba</i>	White Water-lily	Hopton Castle	SO3678
<i>Clematis vitalba</i>	Traveller's Joy	Whitcliffe Wood	SO4974
<i>Ranunculus arvensis</i>	Corn Buttercup	Oakly Park	SO4876
<i>Adonis annua</i>	Pheasant's Eye	Ludlow	SO5175
<i>Aquilegia vulgaris</i>	Columbine	Oakly Park	SO4876
<i>Thalictrum flavum</i>	Common Meadow-rue	Oakly Park	SO4876
<i>Papaver somniferum</i>	Opium Poppy	Bromfield	SO4876
<i>P. rhoeas</i>	Common Poppy	Ludlow	SO5175
<i>P. argemone</i>	Prickly Poppy	Ludlow	SO5175
<i>Chelidonium majus</i>	Greater Celandine	Priors Halton	SO4975
<i>Parietaria judaica</i>	Pellitory-of-the-Wall	Bromfield Churchyard	SO4876
<i>Chenopodium bonus-henricus</i>	Good King Henry	Bromfield	SO4876
<i>C. polyspermum</i>	Many-seeded Goosefoot	Ludlow	SO5175
<i>Moehringia trinervia</i>	Three-nerved Sandwort	Oakly Park	SO4876
[<i>Cerastium arvense</i>	Field Mouse-ear	Oakly Park	SO4876]
<i>Scleranthus annuus</i>	Annual Knawel	Bromfield	SO4876
<i>Spergularia rubra</i>	Sand Spurrey	Bromfield	SO4876
[<i>Dianthus plumarius</i>	Pink	Ludlow Castle	SO5074]
[<i>D. plumarius</i>	Pink	Ludford	SO5173]
<i>Dianthus deltoides</i>	Maiden Pink	Ludlow	SO5175
<i>D. deltoides</i>	Maiden Pink	Ludford	SO5173
<i>Persicaria bistorta</i>	Common Bistort	Ludlow	SO5175
<i>Hypericum tetrapterum</i>	Square-stalked St. John's-wort	Oakly Park	SO4876
<i>H. humifusum</i>	Trailing St. John's-wort	Whitcliffe Wood	SO4974
<i>H. pulchrum</i>	Slender St. John's-wort	Whitcliffe Wood	SO4974
<i>Helianthemum nummularium</i>	Common Rock-rose	Whitcliffe Wood	SO4974
<i>Viola lutea</i>	Yellow Mountain Pansy	Titterstone Clew	SO5977
<i>Arabidopsis thaliana</i>	Thale Cress	Bromfield	SO4876
<i>Barbarea vulgaris</i>	Winter-cress	Oakly Park	SO4876
<i>Coronopus squamatus</i>	Swine-cress	Ludlow	SO5175
<i>Brassica nigra</i>	Black Mustard	Ludlow	SO5175
[<i>Pyrola rotundifolia</i>	Round-leaved Wintergreen	Whitcliffe Wood	SO4974]
<i>Primula x polyantha</i>	False Oxlip	Oakly Park	SO4876
<i>Lysimachia nummularia</i>	Creeping-Jenny	Oakly Park	SO4876
<i>L. vulgaris</i>	Yellow Loosestrife	Oakly Park	SO4876
<i>Anagallis tenella</i>	Bog Pimpernel	Felton Farm	SO5076
<i>Sedum telephium</i>	Orpine	Titterstone Clew	SO5977
<i>S. dasyphyllum</i>	Thick-leaved Stonecrop	Ludlow	SO5175
<i>Saxifraga granulata</i>	Meadow Saxifrage	Oakly Park	SO4876
<i>S. hypnoides</i>	Mossy Saxifrage	Titterstone Clew	SO5977
<i>S. tridactylites</i>	Rue-leaved Saxifrage	Oakly Park	SO4876

<i>Chrysosplenium oppositifolium</i>	Opposite-leaved Golden-saxifrage	Oakly Park	SO4876
<i>Parnassia palustris</i>	Grass of Parnassus	Felton Farm	SO5076
<i>Sanguisorba officinalis</i>	Great Burnet	Oakly Park	SO4876
<i>Alchemilla vulgaris</i> agg.	Lady's-mantle	Oakly Park	SO4876
<i>Ornithopus perpusillus</i>	Bird's-foot	Shelderton	SO4077
[<i>Vicia orobus</i>	Wood Bitter-vetch	Whitcliffe Wood	SO4974]
<i>V. tetrasperma</i>	Smooth Tare	Whitcliffe Wood	SO4974
<i>V. lathyroides</i>	Spring Vetch	Whitcliffe Wood	SO4974
<i>Melilotus officinalis</i>	Ribbed Melilot	Whitcliffe Wood	SO4974
<i>Trifolium arvense</i>	Hare's-foot Clover	Ludlow	SO5175
<i>Genista tinctoria</i>	Dyer's Greenweed	Whitcliffe Wood	SO4974
<i>G. anglica</i>	Petty Whin	Whitcliffe Wood	SO4974
<i>Myriophyllum spicatum</i>	Spiked Water-milfoil	Oakly Park	SO4876
<i>Epilobium palustre</i>	Marsh Willowherb	Oakly Park	SO4876
<i>Chamerion angustifolium</i>	Rosebay Willowherb	Oakly Park	SO4876
<i>Euphorbia cyparissias</i>	Cypress Spurge	Whitcliffe Wood	SO4974
<i>Polygala vulgaris</i>	Common Milkwort	Whitcliffe Wood	SO4974
<i>Oxalis corniculata</i>	Procumbent Yellow-sorrel	Oakly Park	SO4876
<i>Geranium pratense</i>	Meadow Crane's-bill	Oakly Park	SO4876
<i>G. lucidum</i>	Shining Crane's-bill	Oakly Park	SO4876
<i>Erodium cicutarium</i>	Common Stork's-bill	Bromfield	SO4876
<i>Sanicula europaea</i>	Sanicle	Oakly Park	SO4876
<i>Conopodium majus</i>	Pignut	Oakly Park	SO4876
<i>Aegopodium podagraria</i>	Ground-elder	Ludlow Castle	SO5074
<i>Silaum silaus</i>	Pepper-saxifrage	Oakly Park	SO4876
<i>Conium maculatum</i>	Hemlock	Oakly Park	SO4876
<i>Centaurium erythraea</i>	Common Centaury	Oakly Park	SO4876
<i>Blackstonia perfoliata</i>	Yellow-wort	Downton Hall	SO5279
<i>Hyoscyamus niger</i>	Henbane	Shelderton	SO4077
<i>Calystegia sepium</i> agg.	Hedge Bindweed	Ludlow	SO5175
<i>Menyanthes trifoliata</i>	Bogbean	Poles Farm, Bromfield	SO4674
<i>Lithospermum officinale</i>	Common Gromwell	Whitcliffe Wood	SO4974
<i>L. arvense</i>	Field Gromwell	Ludlow	SO5175
<i>Echium vulgare</i>	Viper's Bugloss	Shelderton	SO4077
<i>Symphytum officinale</i>	Common Comfrey	Whitcliffe Wood	SO4974
<i>S. officinale</i>	Common Comfrey	Oakly Park	SO4876
[<i>Anchusa officinalis</i>	Alkanet	Oakly Park	SO4876]
<i>A. arvensis</i>	Bugloss	Ludlow	SO5175
<i>Borago officinalis</i>	Borage	Oakly Park	SO4876
<i>Lycopus europaeus</i>	Gipsywort	Oakly Park	SO4876
<i>Salvia pratensis</i>	Meadow Clary	Oakly Park	SO4876
<i>Plantago media</i>	Hoary Plantain	Oakly Park	SO4876
<i>Verbascum lychnitis</i>	White Mullein	Downton Hall	SO5279
<i>Cymbalaria muralis</i>	Ivy-leaved Toadflax	Ludlow Castle	SO5074
<i>Veronica scutellata</i>	Marsh Speedwell	Oakly Park	SO4876
<i>Melampyrum pratense</i>	Common Cow-wheat	Whitcliffe Wood	SO4974
[<i>M. sylvaticum</i>	Small Cow-wheat	Whitcliffe Wood	SO4974]
<i>Pedicularis palustris</i>	Marsh Lousewort	Oakly Park	SO4876
<i>Pinguicula vulgaris</i>	Common Butterwort	Downton Hall	SO5279
<i>Campanula patula</i>	Spreading Bellflower	Oakly Park	SO4876
<i>C. trachelium</i>	Nettle-leaved Bellflower	Oakly Park	SO4876
<i>Jasione montana</i>	Sheep's-bit	Whitcliffe Wood	SO4974
<i>Galium odoratum</i>	Woodruff	Oakly Park	SO4876
<i>Lonicera caprifolium</i>	Perfoliate Honeysuckle	Whitcliffe Wood	SO4974
<i>Adoxa moschatellina</i>	Moschatel	Oakly Park	SO4876
<i>Valeriana officinalis</i>	Common Valerian	Oakly Park	SO4876
<i>V. dioica</i>	Marsh Valerian	Oakly Park	SO4876
<i>Dipsacus fullonum</i>	Wild Teasel	Oakly Park	SO4876
<i>Succisa pratensis</i>	Devil's-bit Scabious	Oakly Park	SO4876
<i>Scabiosa columbaria</i>	Small Scabious	Oakly Park	SO4876
<i>Serratula tinctoria</i>	Saw-wort	Whitcliffe Wood	SO4974
<i>Centaurea cyanus</i>	Cornflower	Oakly Park	SO4876
<i>Leontodon saxatilis</i>	Lesser Hawkbit	Oakly Park	SO4876
[<i>Picris echioides</i>	Bristly Oxtongue	Stanton Lacy	SO4978]
<i>Tragopogon pratensis</i>	Goat's-beard	Oakly Park	SO4876
<i>Lactuca virosa</i>	Greater Lettuce	Stanton Lacy	SO4978

<i>Mycelis muralis</i>	Wall Lettuce	Ludlow	SO5175
<i>Hieracium sabaudum</i>	a hawkweed	Whitcliffe Wood	SO4974
<i>Inula helenium</i>	Elecampane	Oakly Park	SO4876
<i>Pulicaria dysenterica</i>	Common Fleabane	Oakly Park	SO4876
<i>Solidago virgaurea</i>	Goldenrod	Whitcliffe Wood	SO4974
<i>Tanacetum parthenium</i>	Feverfew	Oakly Park	SO4876
<i>Achillea ptarmica</i>	Sneezewort	Oakly Park	SO4876
<i>Anthemis arvensis</i>	Corn Chamomile	Oakly Park	SO4876
<i>Chrysanthemum segetum</i>	Corn Marigold	Oakly Park	SO4876
<i>Petasites hybridus</i>	Butterbur	Oakly Park	SO4876
<i>Bidens tripartita</i>	Trifid Bur-marigold	Oakly Park	SO4876
[<i>Potamogeton lucens</i>	Shining Pondweed	Oakly Park	SO4876]
<i>P. perfoliatus</i>	Perfoliate Pondweed	Oakly Park	SO4876
<i>Juncus squarrosus</i>	Heath Rush	Oakly Park	SO4876
<i>J. bufonius</i>	Toad Rush	Oakly Park	SO4876
<i>Luzula pilosa</i>	Hairy Wood-rush	Whitcliffe Wood	SO4974
<i>Eriophorum vaginatum</i>	Hare's-tail Cottongrass	Felton Farm	SO5076
<i>Eleocharis palustris</i>	Common Spike-rush	Oakly Park	SO4876
[<i>Cladium mariscus</i>	Great Fen-sedge	Oakly Park	SO4876]
<i>Nardus stricta</i>	Mat-grass	Oakly Park	SO4876
<i>Vulpia myuros</i>	Rat's-tail Fescue	Oakly Park	SO4876
<i>Catabrosa aquatica</i>	Whorl-grass	Oakly Park	SO4876
[<i>Sesleria caerulea</i>	Blue Moor-grass	Oakly Park	SO4876]
<i>Glyceria maxima</i>	Reed Sweet-grass	Oakly Park	SO4876
<i>Aira praecox</i>	Early Hair-grass	Oakly Park	SO4876
[<i>Phalaris canariensis</i>	Canary-grass	Oakly Park	SO4876]
<i>Agrostis stolonifera</i>	Creeping Bent	Oakly Park	SO4876
[<i>Apera spica-venti</i>	Loose Silky-bent	Oakly Park	SO4876]
<i>Alopecurus geniculatus</i>	Marsh Foxtail	Oakly Park	SO4876
<i>A. myosuroides</i>	Black-grass	Oakly Park	SO4876
<i>Bromus secalinus</i>	Rye Brome	Oakly Park	SO4876
<i>Hordeum secalinum</i>	Meadow Barley	Oakly Park	SO4876
<i>Phragmites australis</i>	Common Reed	Oakly Park	SO4876
<i>Sparganium erectum</i>	Branched Bur-reed	Oakly Park	SO4876
<i>Typha latifolia</i>	Great Reedmace	Oakly Park	SO4876
<i>T. angustifolia</i>	Lesser Bulrush	Oakly Park	SO4876
<i>Narthecium ossifragum</i>	Bog Asphodel	Titterstone Clee	SO6077
<i>Allium ursinum</i>	Ramsons	Oakly Park	SO4876
<i>Iris pseudacorus</i>	Yellow Iris	Oakly Park	SO4876
" <i>Orchis latifolia</i> "	a marsh orchid	Oakly Park	SO4876
<i>Epipactis helleborine</i>	Broad-leaved Helleborine	Oakly Park	SO4876
<i>Neottia nidus-avis</i>	Bird's-nest Orchid	Whitcliffe Wood	SO4974
<i>Listera ovata</i>	Common Twayblade	Oakly Park	SO4876
<i>Spiranthes spiralis</i>	Autumn Lady's-tresses	Priors Halton	SO4975
<i>Platanthera bifolia</i>	Lesser Butterfly-orchid	Oakly Park	SO4876
<i>Gymnadenia conopsea</i>	Fragrant Orchid	Oakly Park	SO4876
<i>Dactylorhiza fuchsii</i>	Common Spotted-orchid	Oakly Park	SO4876
<i>Orchis mascula</i>	Early-purple Orchid	Oakly Park	SO4876
<i>O. morio</i>	Green-winged Orchid	Oakly Park	SO4876
[<i>Ophrys sphegodes</i>	Early Spider-orchid	Priors Halton	SO4975]

Earl's Hill Nature Reserve

Alex Lockton & Sarah Whild

Earl's Hill is without doubt still the finest of the Wildlife Trust's reserves. It was given to the then Conservation Trust by Dr & Mrs Chitty in 1962, although half of the total area (Pontesford Hill) was signed over to the Forestry Commission on a 999 year lease. The reserve is some 42 hectares of grassland and woodland, rising from 160m in the valley of the Habberley Brook to 320m at the summit.

An aerial photograph in Sinker's Flora (p. 167), taken in 1952, shows Earl's Hill at its finest. There was a small amount of woodland along the brook, and the neighbouring Oaks Wood was not yet felled and replanted, but the slopes and plateaux of Earl's Hill and Pontesford Hill were all closely grazed grassland. Since then Pontesford Hill and much of Oaks Wood has been planted up with conifers, and scrub has advanced up the eastern slope of Earl's Hill, changing its character significantly.

The oldest record for Earl's Hill is by Edward Williams, who recorded *Luzula sylvatica*, Great Wood-rush, in "woods about Ponsort Hill" in about 1800. This species is an indicator of ancient woodland, which lines the brook and extends along the escarpment of Oaks Wood to the east. *L. sylvatica* still occurs within the reserve, but must have been particularly abundant on the acid soils of Oaks Wood, while it is only frequent in the deeper soils on the lower slopes of the base-rich Earl's Hill.

William Leighton recorded seventeen species at Earl's Hill in the 1830s, and an additional six species at Lyd Hole. This is a waterfall along the Habberley Brook a short distance below the reserve, which was originally given to the Trust as part of the reserve, but was handed over to a local landowner, as it was an isolated portion. This may not have been a very wise decision, as it is quite a species-rich area.

Leighton's list for Earl's Hill is given below. He made a comment about the *Urtica dioica*, which on the summit of the hill was at the highest point where he had seen it. Among his records are some of the important plants of the site. The *Sedum forsterianum* is significant, as it is now considered a nationally scarce species. It grows on the scree on the east of the hill, where it is slowly being overwhelmed by woodland, and it formerly grew on the south side of the hill, too. The list is dominated by plants of U1 *Festuca ovina*-*Agrostis capillaries*-*Rumex acetosella*

grassland, showing that the habitat then must have been very similar to that seen in the photograph of 1952. This U1 grassland is one of the key features of the reserve, but a lot has been lost in recent decades to scrub encroachment. It may soon be embarrassing to find that the best remaining areas of grassland are outside the reserve in the farmland.

Leighton's list for Earl's Hill

<i>Urtica dioica</i>	Common Nettle
<i>Moenchia erecta</i>	Upright Chickweed
<i>Teesdalia nudicaulis</i>	Shepherd's Cress
<i>Umbilicus rupestris</i>	Navelwort
<i>Sedum telephium</i>	Orpine
<i>Sedum forsterianum</i>	Rock Stonecrop
<i>Alchemilla vulgaris</i> agg.	Lady's-mantle
<i>Crataegus monogyna</i>	Hawthorn
<i>Geranium lucidum</i>	Shining Crane's-bill
<i>Galium saxatile</i>	Heath Bedstraw
<i>Hypochaeris glabra</i>	Smooth Cat's-ear
<i>Filago minima</i>	Small Cudweed
<i>Solidago virgaurea</i>	Goldenrod
<i>Carex muricata</i>	Prickly Sedge
<i>Vulpia bromoides</i>	Squirrel-tail Fescue
<i>Aira caryophyllea</i>	Silver Hair-grass
<i>A. praecox</i>	Early Hair-grass

At Lyd Hole he recorded *Hypericum androsaemum*, Tutsan, *Hypericum pulchrum*, Slender St. John's-wort, *Jasione montana*, Sheep's-bit, *Hieracium "murorum"* & *H. "sylvaticum"* (hawkweeds), *Carex pendula*, Pendulous Sedge and *Deschampsia flexuosa*, Wavy Hair-grass.

The only other record for Earl's Hill listed in Leighton's Flora is by Thomas Bodenham, who found *Hypericum humifusum*, Trailing St. John's-wort, "at the foot of Pontesford Hill." Curiously, it had never been recorded there again until 1998, which shows that it is always worth looking for plants, even in well-recorded sites.

In 1888 Dr John Fraser of Wolverhampton found the uncommon hawkweed *Hieracium lasiophyllum*. This is known in Shropshire in only two sites, and has been recorded at Earl's Hill at many times since then. It grows on the east side, and may eventually be threatened by the advancement of the woodland.

The bryophyte records for Earl's Hill are superb. From 1891 to 1906 William Hamilton and Richard Benson made numerous surveys and recorded dozens of species. Their thorough survey was then repeated by Martha Newton, Francis Rose, Charles Sinker and Gordon

Graham in the 1960s, again by Jeff Duckett and Martha Newton in the 1970s, and finally by Ron Porley in the 1980s. This gives us a superb account of the bryophytes and seems to show an increase in diversity. For instance, the rare moss *Grimmia montana* was only recorded in the 1980s. It occurs on and around the rock outcrops at the summit of the hill, which was apparently quite scrubbed-over in the 1960s, when the Wildlife Trust acquired the reserve. Charles Sinker's plan to burn off this gorse scrub was entirely successful, and since then sheep grazing has kept this area clear. So here we have an apparent example of conservation management achieving its full potential of creating the desired habitat through good management, and being rewarded by the arrival of a rare species. If there had been a Biodiversity Action Plan in the 1970s, this would have been heralded as a great accomplishment...

There are a few scattered records over the years. For instance, W. Yelland apparently recorded *Vicia sylvatica*, Wood Vetch, near Pontesford Hill in 1893. It has never been recorded in the vicinity again. A.G. Lawson first recorded the *Ophioglossum vulgatum*, Adder's-tongue, in 1894. This is associated with the richer grassland swards on the east side of the hill, but has almost vanished from the reserve. It is still abundant in the nearby farmland, however. *Myosotis discolor*, Changing Forget-me-not, was first seen here by Hamilton in 1896. This is another species typical of the U1 grassland.

Honor Leeke (later Mrs Pendlebury) wrote a very useful account of Earl's Hill in 1939, which lists, among other things, *Orobancha rapum-genistae*, Greater Broomrape, *Genista tinctoria*, Dyer's Greenweed, *Menyanthes trifoliata*, Bogbean, *Lychnis flos-cuculi*, Ragged Robin, and *Kickxia elatine*, Sharp-leaved Fluellen. These all appear to have been lost from the hill since then. One of Pendlebury's comments is quite intriguing. She points out that there is no *Calluna vulgaris* anywhere on Earl's Hill. This is in contrast to the comment in Sinker's Flora, page 98, where it is suggested that some of the ant hills "may even bear a clump of heather." In fact they don't – at least not any more.

The first record for *Lathraea squamaria*, Toothwort, was by J.B. Johnson in 1939. It seems to have migrated across the reserve since then, starting out at Earlsdale, to the north of the reserve, and moving southwards along the course of the Habberley Brook. It is also becoming more numerous – one of the species to benefit from the increase in woodland. In 1999 Richard Gulliver counted 55 spikes.

Charles Sinker found *Geranium sanguineum*, Bloody Crane's-bill, on the scree in 1958. That has now gone. So has his *Dianthus deltooides*, Maiden Pink, and *Botrychium lunaria*, Moonwort, both probably from the U1. However, Sinker was also the first to notice the importance of the woodland. At Earl's Hill there seem to be, remarkably, five different forms of W8 *Fraxinus excelsior-Acer campestre-Mercurialis perennis* woodland. In general this is not an uncommon woodland type in Shropshire, being the normal climax community on all the more base-rich dry soils. It can be very species-rich and of considerable conservation importance, or it can be pretty ordinary and uninteresting. What determines which it is are its age and its subcommunities.

At Earl's Hill there are two areas where the woodland can be said to be ancient and semi-natural, and therefore most worthy of conservation. These areas are the bottom of the valley and the top of the cliffs. In between, it is all secondary growth that has sprung up since the 1950s. At the bottom of the valley there is, as Sinker noticed, *Circaea x intermedia*, Upland Enchanter's-nightshade. This species is the hybrid between the ordinary Enchanter's-nightshade *C. lutetiana* and the Alpine species, *C. alpina*. It often occurs in the absence of its parents, but is thought to indicate areas where *C. alpina* was present in the past, when the climate was much colder. As it is now known to occur at the headwaters of the Habberley Brook, on the Stiperstones, this is probably the origin of the large population at Earl's Hill – although it may well have been there for hundreds, if not thousands, of years. Also in this woodland are some huge old trees of *Tilia platyphyllos*, Large-leaved Lime, and *T. cordata*, Small-leaved Lime, which are probably also ancient woodland indicators here. This low-lying damp woodland is of the W8f *Allium ursinum* and the W8c *Deschampsia cespitosa* subcommunities.

At the top of the cliffs are some more trees that have probably been there for a very long time, owing to their inaccessibility. These include *Sorbus torminalis*, Wild Service-tree, and *Tilia platyphyllos*, in what we believe is one of the few examples in Shropshire of the W8g *Teucrium scorodonia* subcommunity. In between the ancient woodlands at the top and bottom of the hill are secondary communities of varying age, including the W8a *Glechoma hederacea* and the W8d *Hedera helix* subcommunities of ash wood.

Conservation

It seems that Earl's Hill has several vegetation communities that give it its particular character, and also contain most of the species of interest. The primary ones are the areas of ancient woodland and the richer patches of grassland. A lot of Earl's Hill, particularly on the west side, is less interesting, but still valuable, U4 *Festuca ovina* grassland. The question for the Wildlife Trust is whether to attempt to control the advance of the woodland or not. On the one hand, it is generally desirable to allow areas of ancient woodland to expand, because this probably works better than creating entirely new woods. On the other hand, the area that it is expanding into is the area of most ecological importance for its grassland and bare scree. The *Dianthus deltooides*, *Botrychium lunaria* and *Geranium sanguineum* have already gone: the *Sedum forsterianum*, *Ophioglossum vulgatum* and *Hieracium lasiophyllum* may not be far behind. There isn't really anything in the woodland of equal value to replace these losses.

The solution, perhaps, should be to allow the woodland to advance so far and no further. Erect a fence and put a firm boundary to the woodland edge, cutting and/or grazing the grassland beyond. That will not be easy to do on the scree, but unfortunately that is where it is most needed.

Of course there are other places in the vicinity where semi-natural woodland could be re-established – in Oaks Wood, perhaps, or along the valley towards Lyd Hole Even on Pontesford

Hill, where the grassland has largely been destroyed by the conifer plantations already. These areas are not currently in conservation management, but with Earl's Hill being such an important site, perhaps they should be amongst the highest priorities for targeting conservation schemes or future land purchases.

Bibliography of Earl's Hill

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Species list for Earl's Hill

(Showing date of last record).

<i>Lepidozia reptans</i>	1986	<i>L. heterophylla</i>	1998
<i>Bazzania trilobata</i>	1986	<i>Chiloscyphus polyanthos</i>	1986
<i>Calypogeia fissa</i>	1986	<i>Plagiochila porelloides</i>	1986
<i>C. muelleriana</i>	1975	<i>P. asplenioides</i>	1986
<i>C. arguta</i>	1986	<i>Radula complanata</i>	1986
<i>Cephalozia bicuspidata</i>	1986	<i>Ptilidium ciliare</i>	1997
<i>C. lunulifolia</i>	1969	<i>P. pulcherrimum</i>	1969
<i>Nowellia curvifolia</i>	1997	<i>Porella platyphylla</i>	1998
<i>Cephaloziella divaricata</i>	1986	<i>P. cordaeana</i>	1983
<i>Barbilophozia floerkei</i>	1978	<i>Frullania tamarisci</i>	1975
<i>B. attenuata</i>	1986	<i>F. dilatata</i>	1997
<i>B. barbata</i>	1960	<i>Lejeunea cavifolia</i>	1986
<i>Lophozia ventricosa</i>	1986	<i>L. lamacerina</i>	1960
<i>L. excisa</i>	1986	<i>Fossombronia pusilla</i>	1986
<i>Jungermannia atrovirens</i>	1962	<i>Pellia epiphylla</i>	1998
<i>Marsupella emarginata</i> var. <i>emarginata</i>	1975	<i>P. endiviifolia</i>	1986
<i>Diplophyllum albicans</i>	1986	<i>Aneura pinguis</i>	1975
<i>Scapania compacta</i>	1986	<i>Metzgeria furcata</i>	1998
<i>S. nemorea</i>	1975	<i>Lunularia cruciata</i>	1978
<i>S. undulata</i>	1975	<i>Conocephalum conicum</i>	1997
<i>Lophocolea bidentata</i>	1998	<i>Marchantia polymorpha</i>	1998

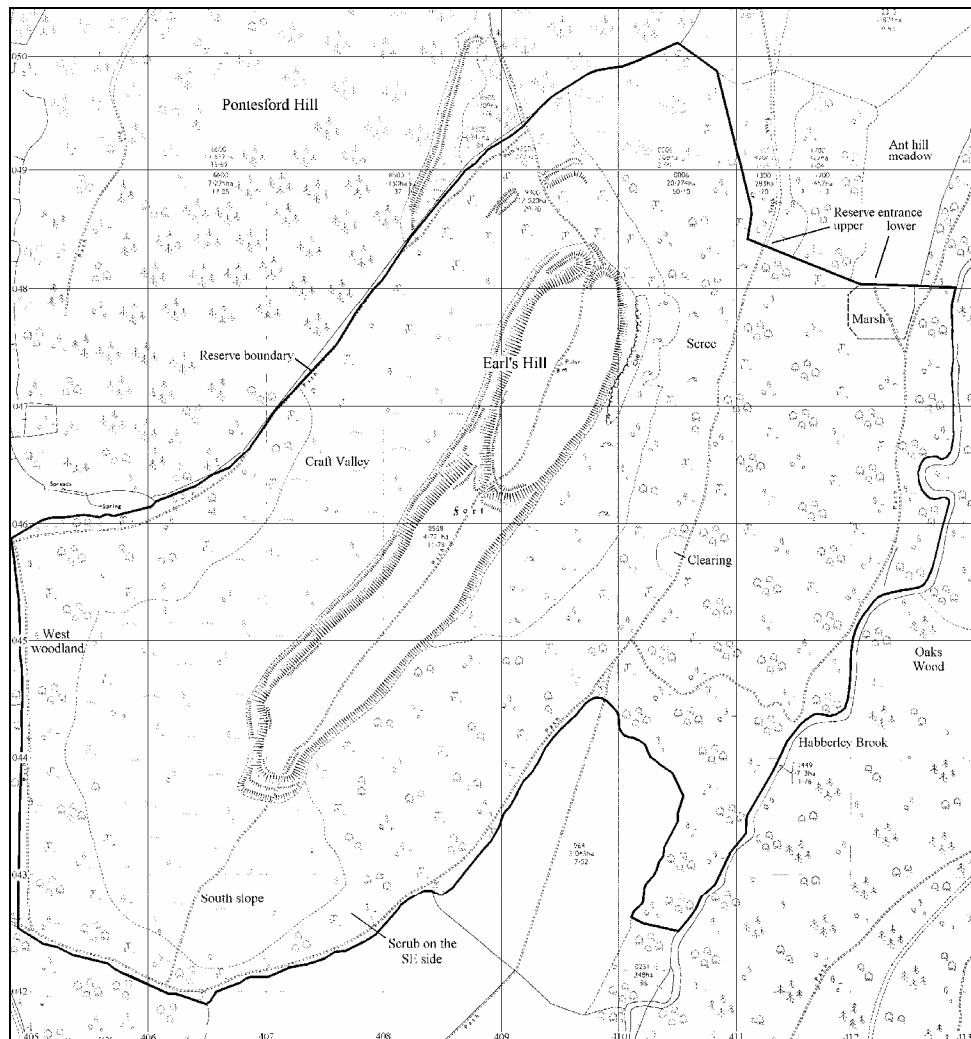
<i>Riccia sorocarpa</i>	1997	<i>Rhodobryum roseum</i>	1986
<i>Andreaea rupestris</i> var. <i>rupestris</i>	1986	<i>Mnium hornum</i>	1998
<i>A. rothii</i> ssp. <i>rothii</i>	1986	<i>Rhizomnium punctatum</i>	1998
<i>Tetraphis pellucida</i>	1986	<i>Plagiomnium affine</i>	1998
<i>Pogonatum aloides</i>	1997	<i>P. undulatum</i>	1998
<i>P. urnigerum</i>	1978	<i>P. rostratum</i>	1998
<i>Polytrichum formosum</i>	1986	<i>Aulacomnium androgynum</i>	1986
<i>P. commune</i>	1978	<i>Bartramia pomiformis</i>	1986
<i>P. piliferum</i>	1998	<i>Philonotis arnellii</i>	1986
<i>P. juniperinum</i>	1998	<i>Amphidium mougeotii</i>	1893
<i>Atrichum undulatum</i>	1986	<i>Zygodon viridissimus</i> var. <i>viridissimus</i>	1986
<i>Diphyscium foliosum</i>	1960	<i>Z. conoideus</i>	1986
<i>Pleuridium acuminatum</i>	1986	<i>Orthotrichum lyellii</i>	1986
<i>Pseudephemerum nitidum</i>	1986	<i>O. affine</i>	1997
<i>Ditrichum heteromallum</i>	1986	<i>O. rivulare</i>	1986
<i>Ceratodon purpureus</i>	1998	<i>O. stramineum</i>	1997
<i>Cynodontium bruntonii</i>	1977	<i>O. diaphanum</i>	1986
<i>Dichodontium pellucidum</i>	1978	<i>O. pulchellum</i>	1997
<i>Dicranella schreberiana</i>	1986	<i>Ulota crispa</i>	1997
<i>D. rufescens</i>	1978	<i>Fontinalis antipyretica</i>	1978
<i>D. heteromalla</i>	1986	<i>Climacium dendroides</i>	1975
<i>Dicranoweisia cirrata</i>	1986	<i>Neckera complanata</i>	1960
<i>Dicranum scoparium</i>	1998	<i>Homalia trichomanoides</i>	1986
<i>D. majus</i>	1986	<i>Thamnobryum alopecurum</i>	1986
<i>D. fuscescens</i>	1977	<i>Heterocladium heteropterum</i>	1975
<i>Campylopus fragilis</i>	1975	<i>Thuidium tamariscinum</i>	1998
<i>C. flexuosus</i>	1986	<i>Palustriella commutata</i>	1969
<i>C. introflexus</i>	1998	<i>Cratoneuron filicinum</i>	1975
<i>Leucobryum glaucum</i>	1986	<i>Amblystegium serpens</i>	1986
<i>L. juniperoideum</i>	1980	<i>A. fluviatile</i>	1986
<i>Fissidens viridulus</i>	1986	<i>A. tenax</i>	1960
<i>F. bryoides</i>	1997	<i>Leptodictyum riparium</i>	1986
<i>F. exilis</i>	1986	<i>Calliergonella cuspidata</i>	1998
<i>F. taxifolius</i>	1998	<i>Isoetecium alopecuroides</i>	1998
<i>Eucladium verticillatum</i>	1969	<i>Homalothecium sericeum</i>	1998
<i>Weissia controversa</i>	1986	<i>Brachythecium albicans</i>	1986
<i>Tortella tortuosa</i>	1998	<i>B. rutabulum</i>	1998
<i>Trichostomum brachydontium</i>	1975	<i>B. rivulare</i>	1986
<i>Pseudocrossidium hornschuchianum</i>	1978	<i>B. velutinum</i>	1986
<i>Bryoerythrophyllum recurvirostrum</i>	1986	<i>B. plumosum</i>	1986
<i>Barbula convoluta</i>	1986	<i>Scleropodium purum</i>	1998
<i>B. unguiculata</i>	1986	<i>Cirriphyllum piliferum</i>	1997
<i>Didymodon rigidulus</i>	1975	<i>Rhynchostegium riparioides</i>	1986
<i>D. insulanus</i>	1986	<i>R. confertum</i>	1986
<i>Tortula muralis</i>	1998	<i>Eurhynchium striatum</i>	1998
<i>T. truncata</i>	1997	<i>E. pumilum</i>	1975
<i>Syntrichia princeps</i>	1895	<i>E. praelongum</i>	1998
<i>Schistidium rivulare</i>	1986	<i>E. hians</i>	1986
<i>S. apocarpum</i>	1986	<i>E. crassinervium</i>	1998
<i>Grimmia montana</i>	1998	<i>Rhynchostegiella teneriffae</i>	1975
<i>G. pulvinata</i>	1998	<i>Plagiothecium denticulatum</i>	1986
<i>G. trichophylla</i>	1997	<i>P. curvifolium</i>	1986
<i>Racomitrium aciculare</i>	1986	<i>P. succulentum</i>	1986
<i>R. heterostichum</i>	1986	<i>P. nemorale</i>	1997
<i>R. lanuginosum</i>	1975	<i>P. undulatum</i>	1997
<i>Ptychomitrium polyphyllum</i>	1986	<i>Pseudotaxiphyllum elegans</i>	1986
<i>Funaria hygrometrica</i>	1998	<i>Taxiphyllum wissgrillii</i>	1960
<i>Orthodontium lineare</i>	1986	<i>Pleurozium schreberi</i>	1998
<i>Pohlia elongata</i> ssp. <i>elongata</i>	1986	<i>Hypnum cupressiforme</i>	1998
<i>P. nutans</i>	1986	<i>H. lacunosum</i>	1986
<i>P. melanodon</i>	1983	<i>H. resupinatum</i>	1986
<i>Pohlia wahlenbergii</i>	1982	<i>H. andoi</i>	1997
<i>Bryum capillare</i>	1997	<i>H. jutlandicum</i>	1986
<i>B. argenteum</i>	1986	<i>Ctenidium molluscum</i>	1975
<i>B. bicolor</i>	1986	<i>Rhytidiadelphus triquetrus</i>	1986
<i>B. subapiculatum</i>	1986	<i>R. squarrosus</i>	1998
<i>B. rubens</i>	1986	<i>R. loreus</i>	1986

<i>Hylocomium splendens</i>	1998	<i>H. humifusum</i>	1998
<i>Equisetum fluviatile</i>	1987	<i>Tilia platyphyllos</i>	1998
<i>E. palustre</i>	1998	<i>T. cordata</i>	1998
<i>Ophioglossum vulgatum</i>	1998	<i>Malva moschata</i>	1945
<i>Botrychium lunaria</i>	1960	<i>Viola riviniana</i>	1998
<i>Polypodium vulgare</i>	1998	<i>V. reichenbachiana</i>	1998
<i>Pteridium aquilinum</i>	1998	<i>Bryonia dioica</i>	1904
<i>Phyllitis scolopendrium</i>	1960	<i>Salix caprea</i>	1969
<i>Asplenium adiantum-nigrum</i>	1998	<i>S. cinerea</i> ssp. <i>oleifolia</i>	1998
<i>A. trichomanes</i> ssp. <i>quadrivalens</i>	1998	<i>Alliaria petiolata</i>	1998
<i>Athyrium filix-femina</i>	1998	<i>Arabidopsis thaliana</i>	1896
<i>Polystichum setiferum</i>	1998	<i>Cardamine pratensis</i>	1998
<i>P. aculeatum</i>	1998	<i>C. flexuosa</i>	1998
<i>Dryopteris filix-mas</i>	1998	<i>C. hirsuta</i>	1998
<i>D. affinis</i>	1998	<i>Erophila verna</i>	1998
<i>D. dilatata</i>	1998	<i>Teesdalia nudicaulis</i>	2000
<i>Blechnum spicant</i>	1969	<i>Lepidium heterophyllum</i>	1941
<i>Pseudotsuga menziesii</i>	1980	<i>Calluna vulgaris</i>	1969
<i>Larix decidua</i>	1978	<i>Vaccinium myrtillus</i>	1998
<i>Pinus sylvestris</i>	1994	<i>Primula vulgaris</i>	1998
<i>Taxus baccata</i>	1998	<i>P. veris</i>	1994
<i>Caltha palustris</i>	1998	<i>Lysimachia nemorum</i>	1998
<i>Aconitum napellus</i>	1975	<i>Anagallis tenella</i>	1941
<i>Anemone nemorosa</i>	1998	<i>Ribes uva-crispa</i>	1994
<i>Ranunculus acris</i>	1998	<i>Umbilicus rupestris</i>	1998
<i>R. repens</i>	1998	<i>Sedum telephium</i>	1966
<i>R. bulbosus</i>	1998	<i>S. forsterianum</i>	1998
<i>R. auricomus</i>	1998	<i>Chrysosplenium oppositifolium</i>	2000
<i>R. flammula</i>	1998	<i>C. alternifolium</i>	2000
<i>R. ficaria</i> ssp. <i>ficaria</i>	1998	<i>Filipendula ulmaria</i>	1998
<i>Meconopsis cambrica</i>	1998	<i>Rubus idaeus</i>	1998
<i>Chelidonium majus</i>	1941	<i>R. fruticosus</i> agg.	1998
<i>Fumaria officinalis</i>	1941	<i>R. ulmifolius</i>	1975
<i>Ulmus glabra</i>	1998	<i>R. vestitus</i>	1975
<i>Urtica dioica</i>	1998	<i>R. diversus</i>	1975
<i>Fagus sylvatica</i>	1998	<i>R. raduloides</i>	1985
<i>Quercus petraea</i>	1998	<i>Potentilla erecta</i>	1998
<i>Q. x rosacea</i>	1998	<i>P. anglica</i>	1966
<i>Q. robur</i>	1998	<i>P. reptans</i>	1998
<i>Betula pendula</i>	1998	<i>P. sterilis</i>	1998
<i>Alnus glutinosa</i>	1998	<i>Fragaria vesca</i>	1994
<i>Corylus avellana</i>	1998	<i>Geum urbanum</i>	1998
<i>Chenopodium bonus-henricus</i>	1941	<i>Agrimonia eupatoria</i>	1966
<i>Montia fontana</i>	1995	<i>Alchemilla filicaulis</i>	1966
<i>Moehringia trinervia</i>	1998	<i>Aphanes australis</i>	1998
<i>Stellaria media</i>	1998	<i>Rosa arvensis</i>	1998
<i>S. pallida</i>	2000	<i>R. canina</i> agg.	1998
<i>S. holostea</i>	1998	<i>R. canina</i>	1961
<i>S. graminea</i>	1998	<i>R. x dumalis</i>	1997
<i>S. uliginosa</i>	1998	<i>R. caesia</i> ssp. <i>glauca</i>	1997
<i>Cerastium fontanum</i>	1998	<i>Prunus spinosa</i>	1998
<i>C. glomeratum</i>	1998	<i>P. domestica</i> ssp. <i>insititia</i>	1978
<i>C. semidecandrum</i>	1998	<i>Malus sylvestris</i>	1998
<i>Moenchia erecta</i>	1998	<i>M. domestica</i>	1998
<i>Sagina procumbens</i>	1998	<i>Sorbus aucuparia</i>	1998
<i>S. apetala</i>	1995	<i>S. torminalis</i>	1998
<i>Lychnis flos-cuculi</i>	1966	<i>Crataegus monogyna</i>	1998
<i>Silene dioica</i>	1998	<i>Lotus corniculatus</i>	1998
<i>Dianthus deltoides</i>	1958	<i>L. pedunculatus</i>	1966
<i>Persicaria hydropiper</i>	1998	<i>Vicia cracca</i>	1987
<i>Rumex acetosella</i>	1998	<i>V. sylvatica</i>	1893
<i>R. acetosa</i>	1998	<i>V. sepium</i>	1998
<i>R. crispus</i>	1998	<i>V. sativa</i>	1998
<i>R. conglomeratus</i>	1994	<i>V. sativa</i> ssp. <i>nigra</i>	1939
<i>R. sanguineus</i>	1994	<i>Lathyrus pratensis</i>	1998
<i>R. obtusifolius</i>	1998	<i>Medicago lupulina</i>	1995
<i>Hypericum tetrapterum</i>	1939	<i>Trifolium repens</i>	1998

<i>T. dubium</i>	1998	<i>V. montana</i>	1998
<i>T. pratense</i>	1998	<i>V. beccabunga</i>	1998
<i>T. striatum</i>	1988	<i>V. arvensis</i>	1998
<i>Laburnum anagyroides</i>	1941	<i>V. persica</i>	1987
<i>Cytisus scoparius</i>	1998	<i>V. hederifolia</i> ssp. <i>lucorum</i>	1998
<i>Genista tinctoria</i>	1939	<i>Euphrasia officinalis</i> agg.	1987
<i>Ulex europaeus</i>	1998	<i>Lathraea squamaria</i>	1999
<i>U. gallii</i>	1998	<i>Orobanche rapum-genistae</i>	1939
<i>Epilobium montanum</i>	1998	<i>Campanula rotundifolia</i>	1998
<i>E. obscurum</i>	1966	<i>Jasione montana</i>	1998
<i>Chamerion angustifolium</i>	1998	<i>Sherardia arvensis</i>	1941
<i>Circaea lutetiana</i>	1998	<i>Galium odoratum</i>	1966
<i>C. x intermedia</i>	1998	<i>G. palustre</i>	1998
<i>Cornus sanguinea</i>	1998	<i>G. verum</i>	1998
<i>Euonymus europaeus</i>	1969	<i>G. saxatile</i>	1998
<i>Ilex aquifolium</i>	1998	<i>G. aparine</i>	1998
<i>Mercurialis perennis</i>	1998	<i>Cruciata laevipes</i>	1994
<i>Polygala vulgaris</i>	1995	<i>Sambucus nigra</i>	1998
<i>Acer campestre</i>	1998	<i>Viburnum opulus</i>	1994
<i>A. pseudoplatanus</i>	1998	<i>Lonicera periclymenum</i>	1998
<i>Oxalis acetosella</i>	1998	<i>Adoxa moschatellina</i>	1998
<i>Geranium sanguineum</i>	1977	<i>Valerianella locusta</i>	1941
<i>G. columbinum</i>	1941	<i>V. officinalis</i>	1998
<i>G. dissectum</i>	1998	<i>Carlina vulgaris</i>	1995
<i>G. molle</i>	1998	<i>Arctium minus</i>	1998
<i>G. lucidum</i>	1998	<i>Cirsium vulgare</i>	1998
<i>G. robertianum</i>	1998	<i>C. palustre</i>	1994
<i>Erodium cicutarium</i>	1941	<i>C. arvense</i>	1998
<i>Hedera helix</i>	1998	<i>Centaurea nigra</i>	1998
<i>Sanicula europaea</i>	1998	<i>Lapsana communis</i>	1998
<i>Chaerophyllum temulum</i>	1966	<i>Hypochaeris radicata</i>	1998
<i>Anthriscus sylvestris</i>	1998	<i>H. glabra</i>	1966
<i>Conopodium majus</i>	1998	<i>Leontodon autumnalis</i>	1987
<i>Pimpinella saxifraga</i>	1998	<i>Mycelis muralis</i>	1998
<i>Silaum silaus</i>	1961	<i>Taraxacum officinale</i> agg.	1998
<i>Angelica sylvestris</i>	1998	<i>T. laevigatum</i> agg.	1966
<i>Heracleum sphondylium</i>	1998	<i>T. spectabile</i> agg.	1966
<i>Solanum dulcamara</i>	1998	<i>Crepis capillaris</i>	1998
<i>Menyanthes trifoliata</i>	1941	<i>Pilosella officinarum</i>	1998
<i>Symphytum officinale</i>	1939	<i>Hieracium acuminatum</i>	2001
<i>Myosotis arvensis</i>	1998	<i>H. lasiophyllum</i>	2001
<i>M. discolor</i>	1998	<i>Filago minima</i>	2000
<i>Cynoglossum officinale</i>	1941	<i>Solidago virgaurea</i>	1841
<i>Stachys officinalis</i>	1994	<i>Bellis perennis</i>	1998
<i>S. sylvatica</i>	1998	<i>Achillea ptarmica</i>	1966
<i>S. palustris</i>	1941	<i>A. millefolium</i>	1998
<i>Lamiastrum galeobdolon montanum</i>	1999	<i>Senecio jacobaea</i>	1998
<i>L. purpureum</i>	1994	<i>S. aquaticus</i>	1966
<i>Galeopsis tetrahit</i>	1998	<i>S. vulgaris</i>	1994
<i>Teucrium scorodonia</i>	1998	<i>S. sylvaticus</i>	1998
<i>Ajuga reptans</i>	1998	<i>Arum maculatum</i>	1998
<i>Glechoma hederacea</i>	1998	<i>Juncus articulatus</i>	1998
<i>Prunella vulgaris</i>	1998	<i>J. acutiflorus</i>	1966
<i>Clinopodium vulgare</i>	1998	<i>J. inflexus</i>	1998
<i>Thymus polytrichus</i>	1998	<i>J. effusus</i>	1998
<i>Mentha aquatica</i>	1987	<i>J. conglomeratus</i>	1966
<i>Plantago major</i>	1998	<i>Luzula pilosa</i>	1987
<i>P. lanceolata</i>	1998	<i>L. sylvatica</i>	1998
<i>Fraxinus excelsior</i>	1998	<i>L. campestris</i>	1998
<i>Syringa vulgaris</i>	1941	<i>L. multiflora</i>	1966
<i>Ligustrum vulgare</i>	1998	<i>Carex muricata</i> ssp. <i>lamprocarpa</i>	1998
<i>Verbascum thapsus</i>	1998	<i>C. remota</i>	1998
<i>Kickxia elatine</i>	1939	<i>C. ovalis</i>	1998
<i>Digitalis purpurea</i>	1998	<i>C. pendula</i>	1998
<i>Veronica serpyllifolia</i>	1998	<i>C. sylvatica</i>	1998
<i>V. officinalis</i>	1998	<i>C. flacca</i>	1998
<i>V. chamaedrys</i>	1998	<i>C. panicea</i>	1998

<i>C. caryophylla</i>	1994	<i>D. flexuosa</i>	1987
<i>C. nigra</i>	1998	<i>Holcus lanatus</i>	1998
<i>Milium effusum</i>	1998	<i>H. mollis</i>	1987
<i>Festuca gigantea</i>	1998	<i>Aira caryophylla</i>	1841
<i>F. rubra</i>	1998	<i>A. praecox</i>	1998
<i>F. ovina</i>	1998	<i>Anthoxanthum odoratum</i>	1998
<i>Lolium perenne</i>	1998	<i>Agrostis capillaris</i>	1998
<i>Vulpia bromoides</i>	1966	<i>A. stolonifera</i>	1998
<i>Cynosurus cristatus</i>	1998	<i>A. canina</i>	1966
<i>Briza media</i>	1966	<i>Bromopsis ramosa</i>	1998
<i>Poa annua</i>	1998	<i>Brachypodium sylvaticum</i>	1998
<i>P. trivialis</i>	1998	<i>Elymus caninus</i>	1966
<i>P. humilis</i>	1970	<i>Colchicum autumnale</i>	1998
<i>P. nemoralis</i>	1998	<i>Hyacinthoides non-scripta</i>	1998
<i>Dactylis glomerata</i>	1998	<i>Allium ursinum</i>	1998
<i>Glyceria fluitans</i>	1998	<i>Tamus communis</i>	1987
<i>Melica uniflora</i>	1994	<i>Listera ovata</i>	1966
<i>Arrhenatherum elatius</i>	1998	<i>Dactylorhiza fuchsii</i>	1994
<i>Trisetum flavescens</i>	1966	<i>Orchis mascula</i>	1966
<i>Deschampsia cespitosa</i>	1998		

Plan of Earl's Hill



Shropshire Botanical Society

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Gatten Plantation, where English Nature has felled the conifer plantation in the hope of restoring heathland.

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