



British Lichen Society *Bulletin*



BRITISH LICHEN SOCIETY OFFICERS AND CONTACTS 2012

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British Lichen Society Bulletin no. 111

Winter 2012

Welcome to the Winter 2012 Bulletin. This issue we have not one but two Presidential communications, a guest Editorial (see below) by our immediate Past President Stephen Ward, and an article by our current President Barbara Hilton.

We communicate with our members via *The Bulletin* and with lichenologists worldwide via our prestigious journal *The Lichenologist*. On a wider level we communicate with the world of natural history via *British Wildlife* - subtitled *the magazine for the modern naturalist* which is edited by one of our members, Andrew Branson. This excellent magazine carries a series of wildlife reports, that for lichens usually being contributed by Sandy Coppins, sometimes by Neil Sanderson. Compared with the Society's membership of several hundred, *British Wildlife's* circulation of several thousand has the power to reach many more potential lichenologists.

British Wildlife rarely carries an editorial but last October, Andrew Branson provided the context for a commentary entitled *The 2011 Environmental Revolution* in which Peter Marren considered the cascade of consultative documents under the Coalition Government to be the "the greatest shake-up of environmental regulation and practice ... probably in our lifetime ... in effect an environmental revolution."

At this time last year, the revolution had begun and this Society had responded to DEFRA's *Invitation to shape the Nature of England* and to the Welsh Government's proposals outlined in *A Living Wales – a New Framework for our Environment*. We are in Wales and this afternoon, Ray Woods will whet our appetites with some of Wales's lichen delights and of his concerns about their welfare. We will then have an opportunity not only to hear from Diana Reynolds of the Welsh Government how those ideas have developed, but to engage with her in discussion. This presents an exceptional opportunity for the Society to discuss our concerns and to influence policy.

A further aspect of the revolution is DEFRA's 'red tape challenge'. The government's website says it is committed to being 'the greenest government ever' and goes on to say 'protecting and enhancing the natural environment is crucial to our long-term economic success and quality of life. But ... we have to make sure that ... our environmental regulations are not strangling businesses and individuals with red tape.' On this Society's behalf, I responded during September to the challenge by detailing those pieces of legislation of value for lichens and their habitats.

Front cover: Anointed by dogs for 4500 years? Lichens on the standing stones of Castlerigg Stone Circle, Keswick, Cumbria. The well-developed bright yellow patches at the base of the stones are primarily colonies of *Candelariella coralliza*.

In his autumn statement in November 2011 Chancellor Osborne decried '*green policies as a "burden" and a "ridiculous cost" to British businesses*' (Harvey 2011). He hinted at a watering down of regulations protecting British wildlife by reviewing implementation of the EU Habitat and Wild Birds Directives, saying '*We'll make sure goldplating of EU rules on things like habitats aren't placing ridiculous costs on British businesses*'.

Presaging a new approach, Andrew Branson says '*What is needed is a more effective way of communicating the importance of diverse habitats rich in wildlife to decision-makers at all levels, and of promulgating policy initiatives that will raise the nature and quality of the debate*'.

How is this 'revolution' likely to impinge on lichens, lichenologists and the British Lichen Society?

- Lichens were around long before man and are likely to remain long into the future. If your focal point is lichens *per se*, then you have nothing to worry about.
- If however, your interest is in lichen communities, some of which are fragile, then the suggestion that their habitats may be considered of less value than a commercial development is of concern.
- As lichenologists we have to find better ways of communicating our interest and fascination with lichens. OPEN Air Laboratories (OPAL) was one such initiative, but some way has to be found of maintaining that momentum. A political party in these circumstances would say that it had '*failed to get its message across*' – so what is our message and are we articulating it in simple enough terms to engage the public?
- This is a very successful Society in terms of our achievements and longevity, but judged in terms of membership numbers we are still remarkably small. Our activities received a boost as a direct result of resources channelled into lichen survey under the Biodiversity Action Plan but, as Andrew Branson notes, we have perhaps '*failed to engage an indifferent, or even hostile, wider audience*'. One sector of potential interest with which we have yet to fully engage is those drawn to lichens by their beauty of form, texture and colour or by a mild curiosity as to what a lichen is. The Bristol Downs Lichen Trail is an excellent initiative in this regard which could well be emulated in many more locations.

In considering Chancellor Osborne's suggested weakening of wildlife legislation, it is sobering to note that this is the *Biodiversity Decade 2010 - 2020 Living in Harmony with Nature* – the decade in which it is intended to halt the loss of wildlife! If anyone is to speak up for lichens as a key feature of our surroundings, then it must be us, the members of the British Lichen Society. It is often said of this Society that we punch above our weight, but in terms of our impact on environmental policy and decision-making, we are not making the impact we should. Decision-makers appear to take the view that if the statutory conservation agency has no comment to make, then there is no case to answer. Wales stands at the crossroads of the formation of a new environmental body; given the hitherto potentially avoidable loss of key lichen habitats, such as trees hosting internationally rare lichens in the course of road

realignments, it is essential the new Welsh Environment body is aware of, and takes into account, the expert views of a learned Society such as our own.

References

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Stephen Ward

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A new perspective – a letter from the President

A privilege of the President is to view the Society with new perspective. Throughout 2010 and 2011 my familiarity with the work of individuals and of BLS committees increased; in my current role I can take a long view both of the work of the Society and also its future. Such an opportunity came in September when I attended one of a series of plenary sessions of the Taxonomic and Systematics Group of the Linnean Society.

Representatives of museums, research institutes and societies were gathered to hear of proposals from this working group. As introduction, Professor David Cutler, past President of the Linnean Society, explained that the group was a response to the House of Lords Science and Technology Committee report (2008) that highlighted concerns over the state of taxonomy and systematics in the UK, that had been followed by the Taxonomy and Systematics Review by NERC (2011). The latter states that the science of taxonomy and systematics has a unique set of features that make the explicit development of a national strategy very advantageous. These include the role of collections, the great importance of the non-university sector, the very disparate sources through which the subject is funded and the importance of volunteer scientists. These sentiments may seem obvious, or even altruistic, though at the Linnean meeting a practical approach was taken.

Using a pyramid as illustration, attention was drawn to the shrinkage over recent years in the number of people who can reliably recognise life forms and identify species. Yet these people form the base from which taxonomists emerge with, importantly, alpha-taxonomists at the very apex. Without beginners and those who progress to become more skilled, we cannot replenish the experts on whom taxonomy, ultimately, relies.

During the first part of the meeting we heard of initiatives in training and courses, including the OPAL project, and fieldwork and training by the Field Studies

Council. A lecturer from Oxford Brookes University described the challenge of including taxonomy and ID in undergraduate and MSc courses for current students, many of whom lack background knowledge and also persistence, necessitating information and activities to be provided in bite-sized chunks. The approach throughout these talks was on providing information, materials and activities that engage interest and enable people to observe, name and gain skills in identifying and understanding species. The focus of the second part of the meeting switched to contributions provided by museums and collections. The value of listing items in collections across the UK was explained by a curator from the Horniman Museum, who spoke as representative of the Natural Sciences Collections Association Strategy. This was followed by a summary of national programmes designed to foster collaboration and partnership across museums, by an officer from the Arts Council that administers the museums and galleries accreditation scheme in England (in partnership with colleagues in Wales, Scotland and Northern Ireland). Finally, a vivid account of progress made in mapping collections was given by the head of Museums and Development in the Welsh body, CyMAL, that is responsible for museums, archives and libraries in the principality. They have revealed that biological specimens are held in (about) 112 Welsh museums, with 98% of specimens in the National Museum of Wales. Thus, awareness has been raised that among the small, even the smallest, collections there may be interesting material including some that is historic. Without access to expert taxonomic knowledge and advice its value may not be recognised.

Themes running throughout the day were brought together in David Cutler's final message: the benefit of working together. He proposes the setting up of a national database of training and courses at various levels in taxonomy and systematics, and also the fostering of collaboration across museums to strengthen knowledge of collections and support available for staff. Within the society we can be proud of our activities in both of these areas as we already contribute much to the broader picture and would hope to play an effective role in future developments.

The vital and more regular work of the Society has continued vigorously. Always popular are meetings and courses, that this year have included a workshop on Splits and Look-alikes (February) and field meetings on the genus *Caloplaca* (April), the Isle of Muck (June) and in Bedfordshire (October); local organisers and Steve Price are to be greatly thanked for all of these. The collection of data, planning and writing of reports and surveys, and response to queries by individuals and organisations have involved many members of the Society.

In September we contributed to the Scottish Government's consultation on the 2020 Challenge for Biodiversity. The consultation document explained that: *Biodiversity plays an essential role in meeting the Scottish Government's vision of a smart, sustainable Scotland, and lies at the heart of our economic strategy. Measures to protect that 'rich and diverse natural environment' are central to this, and are described in detail in this far-sighted 2020 Challenge.* Our response was strong and direct, describing the outcomes as highly aspirational and generalised so that potential conflicts of interest may be hidden. The danger in ignoring such conflicts could be that the majority of

biodiversity is either discounted, and / or traded off against other biodiversity elements that may be considered of equal or greater value for the part they play in the delivery of ecosystem services. The Scottish Government's report on their consultation is due at the beginning of 2013 and it is important that we continue to collaborate on their interpretation of biodiversity and how this unfolds.

A highlight of 2012 is www.britishlichensociety.org! Many members have contributed to the revamping of our website – and commitment to its future development will enrich further its content and use. Janet Simkin and Alan Hale amply deserve our warmest thanks for their expert leadership and technical skills in creating this superb new resource, initiated by Stephen Ward. The new website presents a very attractive and informative picture of the BLS for the general public and is a valuable resource for all of us in the Society. While the new site has been organised and uploaded, Howard Oakley has been extremely helpful in keeping our 'old' website in working order and for this we are very grateful.

Our regular publications: the *Bulletin* and *The Lichenologist*, go from strength to strength. Each of these has expanded over the last few years with plenty of enlightening articles and attractive illustrations. The *Bulletin* is transformed and provides many hours of satisfying reading for members, while *The Lichenologist* does an excellent job worldwide in extending the boundaries of knowledge of lichens and lichenology. Recently three articles on the lichen photobiont have been published in *The Lichenologist*: one in the July issue (by Werth) followed by two in September (by De Oliveira *et al* and by Rupecht *et al*). Are we perhaps witnessing a resurgence of interest in the algal partner in lichen symbiosis?

The significance of leadership is illustrated by the distinctions and prominence three well-known members of the Society have gained over the last few months: Cecile Gueidan, Pat Wolseley and Christopher Ellis. Cecile has gained the IMA 2011 Elias Magnus Fries Award for young mycologists – though she has to wait until IMC10 in Thailand, 2014, before formally receiving her prize! In 2010 Cecile was appointed as research scientist in the Department of Life Sciences, the Natural History Museum, London, where she is working on the molecular systematics of verrucarioid lichen-forming fungi and also other ascomycetes. Before coming to London, Cecile researched in Europe and the USA and her effective collaboration with a wide range of lichenologists and other mycologists makes her especially suitable as recipient of this award. Pat Wolseley's latest exceptional contribution was to reach millions of listeners of the Radio 4 programme 'The Life Scientific'. Pat's fluent and relaxed communication of her work on lichens and their uses, with small contributions from other well-known colleagues, Peter Crittenden and Begoña Aguirre-Hudson, together with the girls of La Sainte Union School, Camden, provided an entertaining and very informative programme. Christopher Ellis spreads his sphere of influence in his promotion to Head of Cryptogams at the Royal Botanic Garden Edinburgh. This reflects well on the high quality of his work and the effectiveness of the lichen team in Edinburgh. There may be other BLS members, of whom I am unaware at present, who are quietly achieving distinction, or about to do so. This autumn a natural history series on Channel 4 will feature Sally Eaton, chair

of Education and Promotions Committee and now working at RBG Edinburgh; we look forward to watching her introduce us (and millions more) to lichens in varied habitats!

In writing about some of my perceptions of the BLS' work over the last few months I am conscious that I have mentioned only a fraction of the whole. We all contribute, in our individual ways, to the work of the Society and its strength is that it represents the summation of our efforts. The year 2012 will be drawing to a close as you read this letter, that brings my greetings for Christmas and all good wishes for 2013.

Barbara Hilton

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BLS Website news

The new BLS website was launched on 30th September. It has a new web address, www.britishlichensociety.org.uk, but the old address should redirect to it for the next year or two at least. If you have a website that links to our, please update your links to point to the new address.

Everything that was on the old website is still available but much of it has been updated, and there are many new features. It is divided into seven sections, corresponding to the tabs on the green menu bar along the top.

- **The Society** pages include a News section and Events Calendar.
- **About Lichens** has pages on Lichen Biology, Habitats and Communities. These are still being developed and further contributions will be welcome. There is also a page on Indices of Ecological Continuity, a Glossary of Terms, and an explanation of the mysteries of Lichen Names and authorities.
- **Identification** covers Field Work, Collecting, Microscope Work, and Chemical Tests.
- **Records** provides guidance on making and submitting records. Record cards and the spreadsheet can be downloaded, together with lists of the cards in the database. Links to the NBN Gateway make it easy to explore the BLS database online.
- The **Activities** section covers our various projects and surveys, including the OPAL air survey, Next Steps, Churchyards, Gardens, and the Lobarion. Support materials can be downloaded, and the Lobarion page also has an interactive map of *Lobaria* records showing when each was last seen. The churchyards pages include sections on the churchyard survey and conservation, downloads, and an interactive map of the churchyards surveyed and when they last visited.

- **Resources** includes the catalogue of BLS Publications and other Items for Sale, pages on Herbaria and the BLS Library, the Grey Literature, and project resources for Schools and Students. There is also a Taxon Dictionary (a searchable database of names and synonyms with BLS number and conservation status) and a Bibliographic Database. A few species accounts have been included as examples of what may be developed in the future.
- Finally, **Getting in Touch** provides contact details for the society, and lists of local contacts.

This is only the beginning, there is plenty more to do and we won't be stopping here. Do let us know if you spot any glaring errors, and if you have any suitable material or photographs for the website please send them to the webmaster, Alan Hale.

Map of Churchyards Surveyed

The interactive map below shows the location of churchyards and cemeteries surveyed by BLS members. Clicking on a dot will reveal details of site, the number of lichens recorded and the date of the last survey there. For full details of taxon records visit the NBN Gateway where you can view interactive maps for [English](#) and [Welsh](#) churchyard records, or browse the general [Scottish Lichen Database](#) maps. Alternatively, you can make a request to the [BLS Data Manager](#) for the data you require.

Watch a [short video](#) on using the BLS interactive maps.

BLS Churchyards Survey

VC: VC14c East Sussex
 Location: Brede - St. George churchyard
 Grid Ref: TQ825183
 Species count: 105
 Latest visit: 14/08/1989
 Latest recorders: Keith Palmer

Key to Churchyard Survey Map

- Up to 50 taxa
- Up to 100 taxa
- Up to 150 taxa
- Up to 200 taxa

One of the interactive maps on the new website, this one showing churchyard surveys and the detail of one that has been clicked on.

I'm sure you will agree with me that Alan has done a fantastic job in developing this website. Many other people have contributed as well, by writing new pages, reviewing them, and sending in photographs, and we are most grateful for all the time and effort they have put in to this. It hasn't been easy and a lot of midnight oil has been burned, but the result is a website that will serve the Society well for many years.

Janet Simkin
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[THE SOCIETY](#) | [ABOUT LICHENS](#) | [IDENTIFICATION](#) | [RECORDS](#) | [ACTIVITIES](#) | [RESOURCES](#) | [GET IN TOUCH](#)

Home » Resources » Lichen Taxon Dictionary

Lichen Taxon Dictionary

For more information see the Supplementary Notes for the Taxon Dictionary and these Instructions on how to use the online Taxon Dictionary. There is also an introductory video available on YouTube (best viewed in HD at full-screen).

Name: Is Current Name? Conservation Evaluation: [AND] Conservation Evaluation: Group: Items per page:

Count	Taxon Name	Authority	Is Current Name?	Current Taxon Name	Synonyms	BLS Number	Comments	Conservation Evaluation	Group
1	<i>Xanthoria candelaria</i>	auct. p.p.	N	Xanthoria fulva		1918	name or specific epithet valid but has been misused in the past	DD NR	L
2	<i>Xanthoria candelaria</i>	auct. p.p.	N	Xanthoria ucrainica		950	name or specific epithet valid but has been misused in the past	LC NS	L
3	<i>Xanthoria candelaria</i>	auct. p.p.	N	Xanthoria ulophyllodes		1909	name or specific epithet valid but has been misused in the past	LC NS	L
4	<i>Xanthoria candelaria s. lat.</i>	s. lat.	Y	Xanthoria candelaria s. lat.		1527		LC	L
5	<i>Xanthoria candelaria s. str.</i>	(L.) Th. Fr. s. str. (1861)	Y	Xanthoria candelaria s. str.	Xanthoria lichnea	2364			L

[CSV](#)

The Lichen Taxon Dictionary on the new website

The BLS Database Project

The database project seems to have been going on for ever, but as I write this we are nearly at the end of ten years of hard work for the Society. It is worth reminding ourselves of what we have achieved.

Looking back

Of course it all started with the Mapping Scheme, now fast approaching its 50th anniversary and still going strong, but the compilation of our site-based database really got going when we started work on the Threatened Lichens Database in 2003. That is now known as Rare and Threatened Lichens and has been updated several times since with major reviews in 2007 and 2011.

The Scottish project also started in 2003 and digitised 256,000 records in three years, a huge achievement given the technical limitations of the software we were working with at the time. As soon as that finished we were planning the England and Wales project. Grants weren't easy to come by then and it took a long time to negotiate the necessary funding, so this last phase didn't get started until early 2009. It is now virtually complete, with just a few loose ends to tie up over the next few months. These include the final stage of working with the NBN to develop software

which should improve the quality of lichen data put on the NBN by other data providers.

Between the Scottish and English projects we migrated the database from BioBase, through Recorder 2002 to Recorder 6. This was a difficult process but necessary if we were ever to handle the volume of records we now have. It also made it possible to streamline the flow of records into the database, using a suite of easy-to-use spreadsheets. The new database and the spreadsheets together made it possible for us to computerise three times as many records for England and Wales as we did for Scotland, in roughly the same time.

So what has all this hard work achieved?

- We now have a database of 1.2 million records, with tools to find and extract information.
- The full database is available to anyone who wants to use it on the internet through the NBN Gateway.
- We also have mapping software that produces dot maps with any combination of colours, map layouts and date breaks required. These may be national, regional or local, with dots at 10km, 5km, 2km or 1km level.
- All the records for nationally rare and scarce species have been through expert review, most of them several times.
- Most of the duplicate records have been removed.
- A great deal of work has been done to clean up errors in grid references, vice counties and recorder names.
- Location names have been standardised to group sites for the same area together, with the spelling used on OS maps.
- Where substrate and position information was available this has been coded so it can be used to extract records and analyse them.
- We also have a copy of the Mapping Scheme in the same database so the two can be used together to trace records and produce distribution maps.

Above all we seem to have reached the point where the database is taken for granted, which is just as it should be!

All this was far beyond what could be done just by volunteers. £160,500 of funding (over the ten years) from English Nature, Scottish Natural Heritage, the Countryside Council for Wales, Natural England, the National Biodiversity Network, the Welsh Biodiversity Partnership, and most recently the Environment Agency and Plantlife, has covered much of the cost of input, setting up the database, and project management. The BLS put in another £25,000, and the rest, particularly the expert reviews and much of the data cleaning, has been done on a voluntary basis.

Many digitisation projects for biological records are no more than the collection of records into a database, accepting that there will be a high rate (usually about 8%) of taxon and grid reference errors. Such databases are cheap to produce but of limited use, so we decided to follow the other path and put our effort into data

validation and verification. There will always be errors in a database of this size but work we have done to ensure a high standard of data quality should ensure that the BLS database will be a valuable resource for the society for many years to come.

Some statistics

Of the 1.2 million records now in the database, 63% are for England, 27% for Scotland, 9% for Wales, and 1% for the Channel Islands. Overall 35% are for churchyards, almost all of them from England. Taken together with the Mapping Scheme we now hold 1.7m records.

	<u>General</u>	<u>Churchyards</u>	<u>Total</u>
England	376,282	403,662	779,944
Scotland	316,086	11,000	327,086
Wales	99,022	15,230	114,252
Channel Isles	7,810		7,810
	799,200	429,892	1,229,092
Mapping scheme – Britain			422,023
Mapping scheme – Channel Isles			3,458
Mapping scheme – Ireland			72,203
			1,726,766

The most recorded vice counties are, for England East Suffolk (49.9K records) and South Devon (49.2K), for Scotland Argyll (28.3K) and mid-Perthshire (26.4K), and for Wales Breconshire (17.6K) and Pembrokeshire (16.7K). The least recorded vice county is West Lothian with only 564 records.

Records are held for 2,383 species, subspecies, varieties and forms. There are also records for 234 genera, mostly to note specimens that have not yet been determined to species. Some are records for new species that are not yet in the species dictionary, and these will be transferred to the correct name when the dictionary is updated. The most frequently recorded species are *Xanthoria parietina* (18.3K records), *Lepraria incana* (17.0K) and *Parmelia sulcata* (16.7K).

Our most prolific recorders have made an impressive contribution. Brian Coppins tops the league table with 168,676 records, followed by Francis Rose with 126,758, Chris Hitch 73,446 and Peter James 61,681. Ivan Pedley heads the churchyard league with 58,304, then Tom Chester 53,685 and Don Smith 51,872.

NBN Gateway

All our data is now on the NBN Gateway. The BLS records are organised into eight datasets:

- England Rare and Threatened, General and Churchyards
- Wales Rare and Threatened, General and Churchyards
- Scotland
- Mapping Scheme

These datasets can be explored one by one by taking the links from the BLS website, or you can call up all the records for a particular species by using the species search on the NBN Gateway itself. The new interactive map allows you to call up the detail of each individual record if required, and the records for a particular grid square or vice county can be downloaded.

The database holds more detail than we can put on the NBN Gateway and will always be more up to date, so it is always worth checking critical records with me as well.

The NBN Gateway now holds nearly 80 million records, covering most animal, plant and fungal groups. This is more than the current software can handle so it will be upgraded in December to make it faster and easier to use. If you are unfamiliar with the NBN there is a useful video demonstration that shows how to use the different maps and search facilities, just follow the links from www.searchnbn.net to the YouTube video.

The lichen data on the NBN Gateway includes records that have not been through BLS review so you may want to deselect (click off) any datasets that may not be reliable. Brian Coppins and I are working with the NBN to develop software (called the Record Cleaner) which will check these records and highlight any that are beyond their expected range or of species which are particularly difficult to identify. This should help the local record centres to identify dodgy records and encourage them to refer them to an expert for checking.

If you notice an error in the BLS data on the NBN Gateway do let me know. It will be corrected immediately in the database, and on the NBN Gateway when we next send them an update. Email me or put a comment against the record on the NBN Gateway, preferably both. These comments are visible to other users and help us all to avoid wasting time investigating errors that are already known.

The future

We must keep the database up to date if it is to be of any use in the future, so new records are always welcome. The BLS spreadsheet has just been updated (version 6b) to show the latest species names and conservation evaluation. We can take records in other formats, but they take longer to process. Records should continue to be sent to me by email, as before.

The maps shown below are produced from the database. The coverage plot shows the number of records in the database per 5km square (10km hectad records are not

included). If a site has been recorded repeatedly or in great detail it shows in dark red as a hot spot. Areas for which we have very few records are pale blue, and those with none are white. The species richness plot shows the number of species recorded for each 10km square, and includes records from the Mapping Scheme.

Both reveal the patchiness of our recording over the years, and an understandable tendency to return to known hotspots rather than exploring new and less promising areas. The Bedfordshire meeting this autumn showed us how productive and surprising such areas can be, so I hope this map will inspire us to get our hand lenses out and visit the less recorded areas in our own parts of the country. Even lists of common species help to build up a picture, and you never know what they will be used for in the future.

As well as keeping the database up to date we are now turning our attention to the many ways in which it can be used. Distribution maps, nationally and for local floras, are no problem, and we can easily produce site lists, vice county checklists, and the sort of information needed to support projects such as the Lobarion and churchyard surveys. The data can also be analysed for information on lichen ecology, and to relate distribution changes over time to recording effort. The next steps could be to calculate habitat quality indices automatically, and to pull out information on associated species and lichen communities. We have only just started on all this, but the initial results are very promising. Some brief examples are included in this Bulletin as Case Studies.

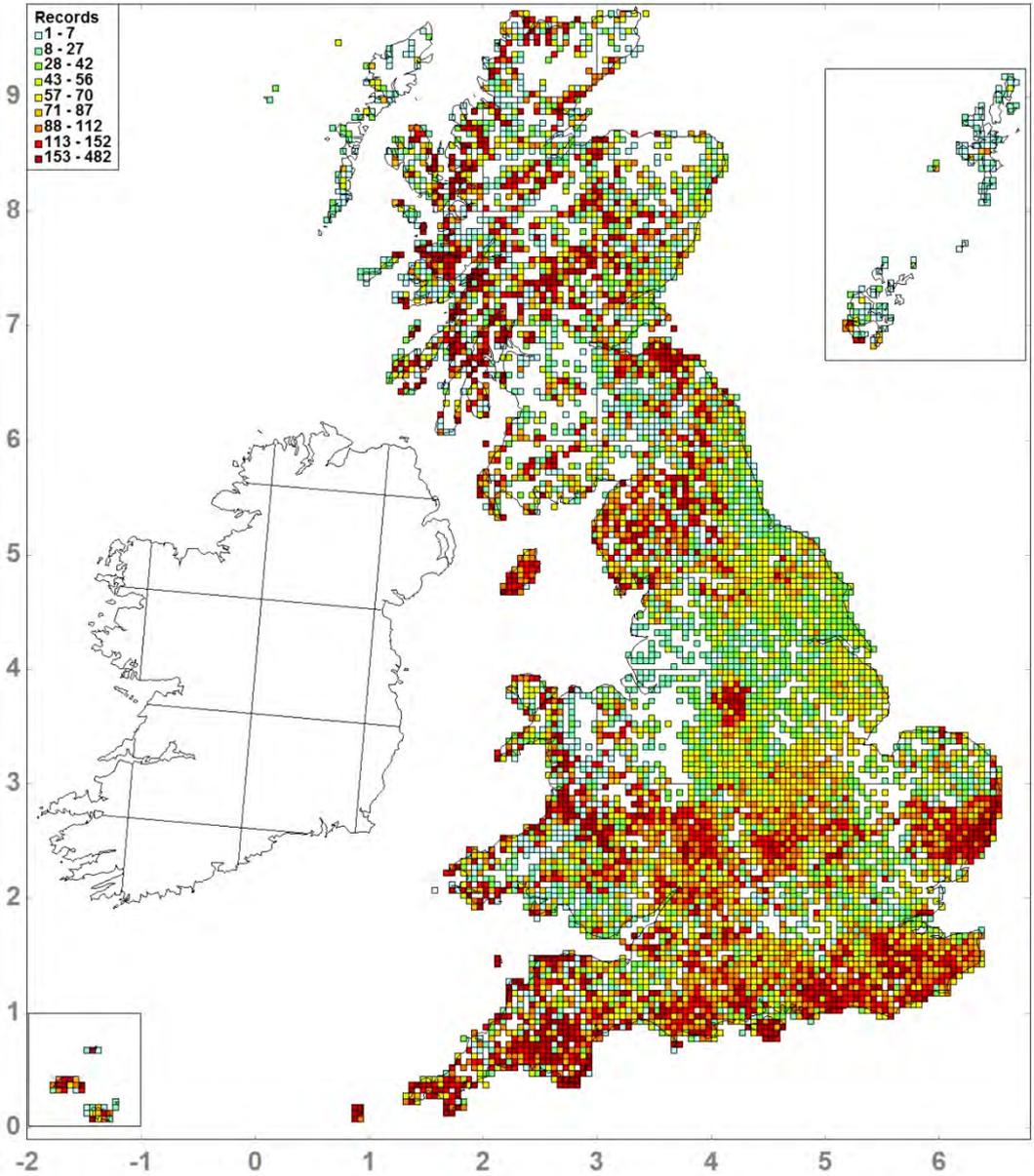
If you would like to use the database in this way do get in touch with me to discuss what data you need and how best to supply it to you.

Thanks

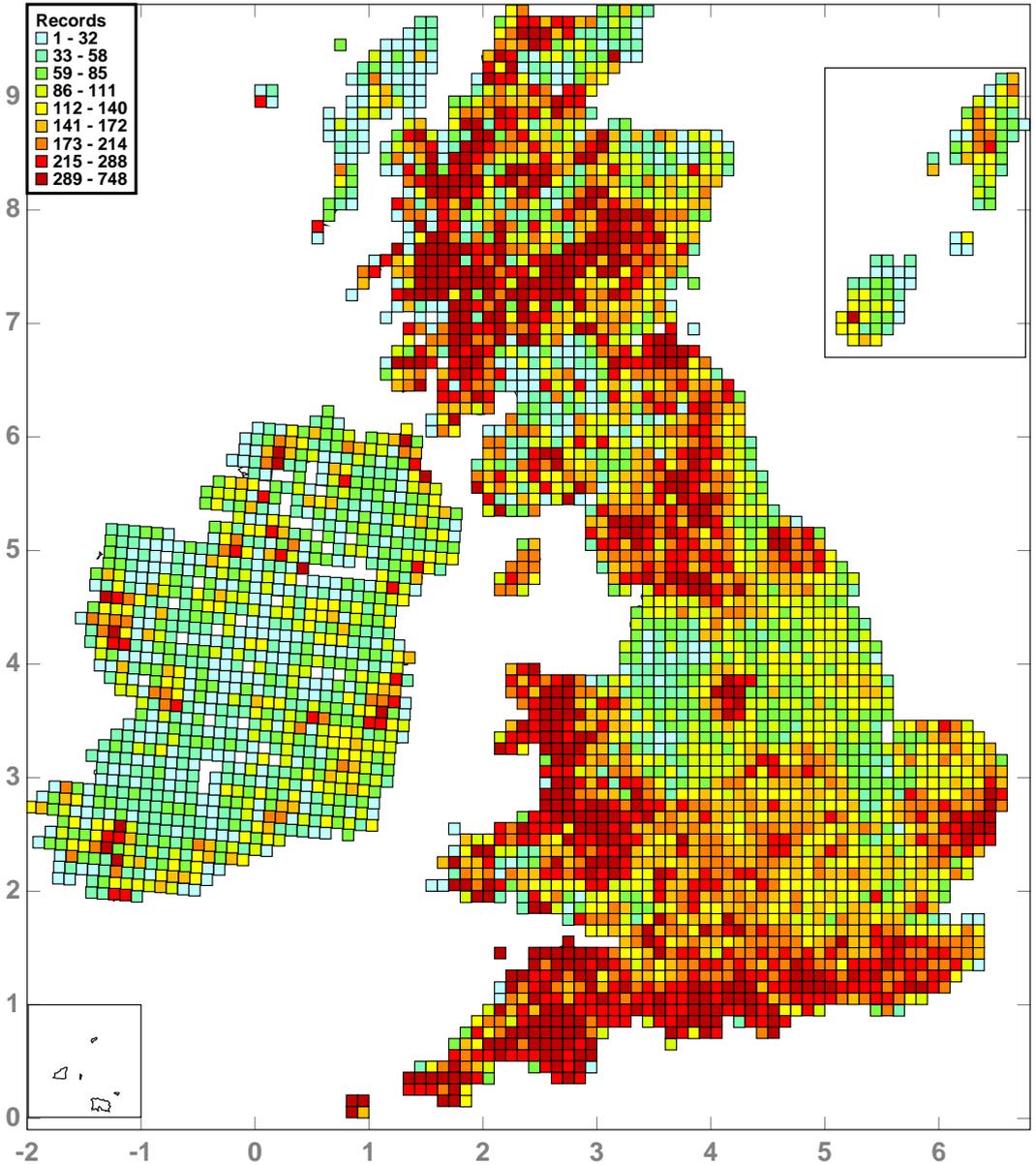
So many people have contributed to this project over the years that it would be unfair to mention just a few by name, but I would like to take this opportunity to thank all the inputters, everyone who has supplied records and reviewed them, the NBN Trust, the Biological Records Centre, Scottish Natural Heritage, Natural England, the Countryside Council for Wales, the Welsh Biodiversity Partnership, Plantlife and the Environment Agency for their financial and practical help, and of course Council and the Data Committee whose patience and support has seen me through many a difficult time. I have enjoyed the last ten years, and am looking forward to building on what we have achieved.

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BLS database coverage, by 5km square. Records with only a 10km grid reference (such as those in the Mapping Scheme) are not included



Species richness, by 10km grid square. This time 10km precision records are included to give the full picture, including the Mapping Scheme. For technical reasons the Channel Islands cannot be shown here.

Using BLS Records

The BLS database is there to be used, not just as a filing system for records but also as a source of data that can be analysed to tell us more about habitats and lichen ecology. We have only just started doing this and should be able to take it much further over the next few years.

The following case studies are derived from some of the more interesting requests for information that have come to me over the last few months. They are quite basic analyses but give an idea of what might be done. I have left some of the problems in, as they highlight some of the pitfalls of interpreting lichen data.

Case Study 1 – Churchyards

We have a wealth of data on the lichens of churchyards, particularly lowland English churchyards. One question that came up recently was whether churchyards really are an important refuge for lichen diversity including rare species, as we so often say.

A quick analysis of the database produced some figures:

	British list	GB	England	Wales	Scotland	England
Available data						
Churchyards recorded		7701	7222	303	176	
Site visits recorded		10520	9934	348	238	
Number of Taxa						
Lichens	1943	892	813	474	543	41.8%
Lichenicolous fungi	460	80	72	15	19	
Non-lichenised fungi	58	18	16	7	7	
Lichens only						
NR (nationally rare)	989	70	59	10	8	6.0%
NS (nationally scarce)	607	243	208	60	65	34.3%
	1596	313	267	70	73	40.2%
CR (critically endangered)	45	5	4	1	1	8.9%
EN (endangered)	33	7	7	0	2	21.2%
EX (extinct)	26	2	1	1	0	3.8%
NT (near-threatened)	198	31	25	6	6	12.6%
VU (vulnerable)	108	8	8	1	1	7.4%
	410	53	45	9	10	11.0%

Interpreting these requires a little caution, for several reasons:

a) The churchyard statistics are derived from the database, and so do not include records for taxa added to the British list since 2009 when the species dictionary was last updated (we're working on it!), whereas the British list figures are taken from the Conservation Evaluation and so do include most of these new taxa. The differences are minor however, and the discrepancy could easily be solved by removing the new taxa from the British List figures.

b) While it is valid to compare the British churchyard stats with the British List, we should perhaps be comparing the English figures with the English list, etc.?

c) The churchyard datasets for Wales and Scotland are very incomplete, so the species counts may be lower than they should be. That means that the overall figures for Britain may also be low.

d) Not everyone records lichenicolous fungi and non-lichenized fungi, so these figures may also be misleadingly low.

Taking all that into account, only the analysis of the English lichen data should be considered, and even that should be corrected for the discrepancy between species dictionaries.

The figures for the English Lichen data are quite revealing, and do seem to answer the question:

- Nearly 42% of British lichens have been recorded from English churchyards.
- That includes 40% of the taxa considered to be Nationally Rare or Nationally Scarce, 267 taxa in all.
- It also includes 11% of the taxa considered to have a conservation status of Critically Endangered, Endangered, Extinct, Near-Threatened or Vulnerable, 45 taxa in all.

Case Study 2 – Lichens on Ash

Chalara dieback of ash is a serious disease of ash trees caused by the fungus *Chalara fraxinea*. It leads to leaf loss and crown dieback in affected trees, and can lead to tree death. Since June this year it has been found at eight sites in England and Scotland, all nurseries or recent plantings, but there is a risk that it will spread to infect native ash trees with potentially dire consequences for our woodlands and hedgerows.

Publicity about this disease led to the question being asked – we know that ash trees are an important host for epiphytic lichens, but how important? Another quick analysis of the database produced some answers:

Records in the BLS database		
with scale habitat code CFx (corticolous)		31,664
with scale habitat code LFx (lignicolous)		131
		31,795
Taxa	British List	CFx/LFx
Number of species, subspecies, varieties and forms	2,461	658
Number of genera with records only at that level		40
		698
Nationally Rare	989	57
Nationally Scarce	607	163
	1596	220
CR (critically endangered)	45	3
EN (endangered)	33	9
EX (extinct)	26	3
NT (near-threatened)	198	52
VU (vulnerable)	108	20
	410	87
Taxa most frequently recorded	Records in database	CFx/LFx
<i>Lecanora chlarotera</i>	11975	818
<i>Lecidella elaeochroma</i> forma <i>elaeochroma</i>	9228	718
<i>Parmelia sulcata</i>	17110	561
<i>Phlyctis argena</i>	8463	507
<i>Ramalina farinacea</i>	10857	497
<i>Lecanora expallens</i>	13972	491
<i>Lobaria pulmonaria</i>	3624	486
<i>Xanthoria parietina</i>	18877	465
<i>Pertusaria pertusa</i>	7130	431
<i>Normandina pulchella</i>	4561	413

Clearly ash is an important lichen substrate, with nearly 27% of the British lichen flora found on it, including nearly 14% of the nationally rare and nationally scarce taxa, and 21% of the species with a conservation status of Critically Endangered, Endangered, Extinct, Near-Threatened or Vulnerable.

The list of the top ten species recorded is misleading, however. *Lobaria pulmonaria* is not the 8th most common species found on ash across Britain as a whole, and *Normandina pulchella* is not the 10th. This illustrates the effects of two forms of recording bias to be aware of in interpreting lichen data. Until about 1990, scarce species, and particularly members of the Lobarion community, were often recorded without full supporting lists of the other species present, with the result that common species in habitats were generally under-recorded. Also, then and now, we

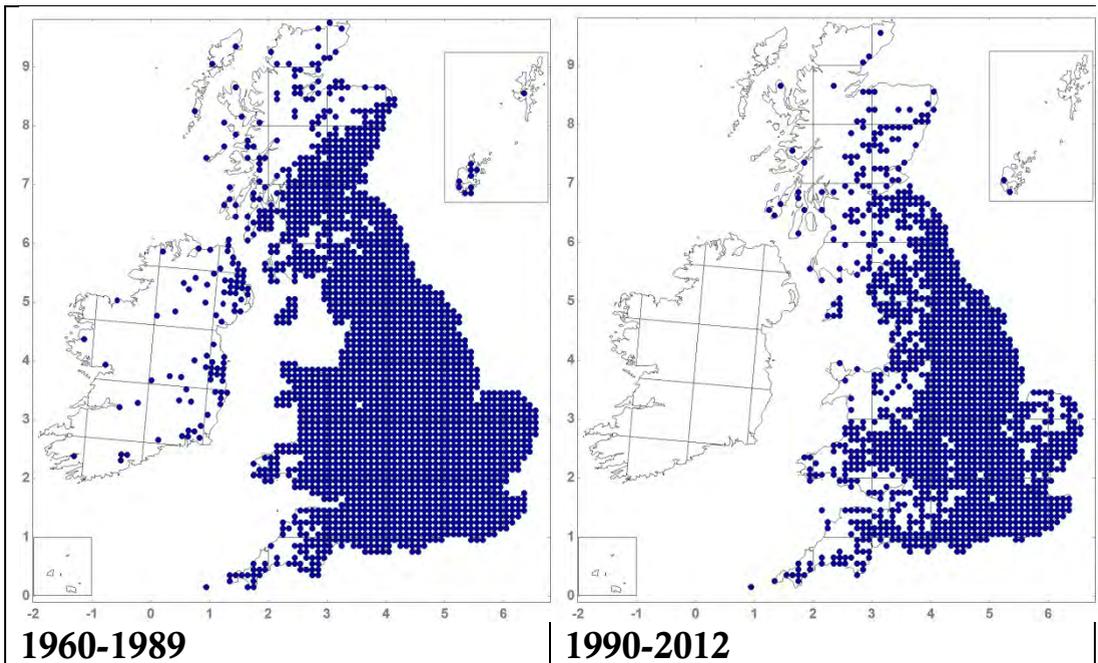
tend to record the substrate only for species of interest. Interestingly, neither of these comments applies to the churchyard survey where a more structured method of recording has been used for some time.

Case study 3 – The decline of *Lecanora conizaeoides*

We have recently been asked for a lot of time series maps to show the spread or decline of particular species. Interpreting such maps takes experience and a good knowledge of both the lichen concerned and of patterns of recording over the years, so they are always issued with some explanation and many caveats. If we think they are likely to be misinterpreted despite this we don't issue them at all!

The one most often requested is *Lecanora conizaeoides*. A dramatic decline in abundance has been observed in recent years, but for that to show in the distribution maps there would also have to have been a reduction in range, in other words it would have to have been lost from a significant number of 10km squares.

Breaking the records down into two time periods worked best, and these two maps do appear to show some retraction between the two periods. A map for 2000-2012 should be even more revealing, but our recording during that period has been very patchy and unfortunately the map (not shown) tells more about where the most active lichenologists live and work!



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Substrate-induced pruinosity

Beginners are often confused by thalli of saxicolous taxa that generate pruina according to the particular substratum they colonize. *Acarospora fuscata*, as described in the recent "Lichen Flora" (Smith *et al.* 2009, p.129), exemplifies this, the thalli developing pruina on base-rich substrata being confused with *A. umbilicata*. The decision as to whether the areoles are densely pruinose or not or sparingly pruinose in the couplet to the key (p. 125) adds to any indecision.

Our field observations of lichens on the coping stones of a 100m stretch of siliceous wall in Bad Dürkheim demonstrated the above phenomenon not only in respect of *Acarospora fuscata* (Fig. 1), but also for *Lecidea grisella* (Fig. 2) and *Lecanora muralis* (Fig. 3). In each case, thalli established on the siliceous coping stones that had spread onto adjacent mortarwork were morphologically different, but mainly in terms of pruinosity; in the case of *Lecanora muralis* it had much the appearance of material frequently encountered in herbarium packets as *L. albomarginata* (since synonymized with *L. muralis*). Similar pruinose and epruinose regions were also observed on *Lobothallia radiosa* growing on the walls of Lichtenberg Castle (Fig. 4).

Not only are beginners confused: a recent paper by Knudsen *et al.* (2011) clearly shows how even the famous A. H. Magnusson, a specialist in *Acarospora*, described pruinose and epruinose areoles of the ostensibly same species as *A. cinereoatra* and *A. americana* respectively.

The above phenomenon is not to be confused with snail-grazed thalli, the effect of which can be superficially the same when observed in the field as exemplified by *Lecidea grisella* (Fig. 5).

Pruinosity is attributed to calcium oxalate, and its function in lichens has been extensively discussed (e.g. Seitz & Schade 1976). The mechanism for its generation and its function in the above cases are less clear, and are being subjected to further analyses, including Raman spectroscopy, which has shown the significant differences in the levels of calcium oxalate in the pruinose and epruinose regions of the same thallus.

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Fig.1. *Acarospora fuscata*, the delimited pruinose and non-pruinose zones a reflection respectively of the calcareous (left) and siliceous (right) substrata. These zonations are similarly presented for Figs 2-4.



Fig. 2. *Lecidea grisella*



Fig. 3. *Lecanora muralis*



Fig. 4. *Lobothallia radios*



Fig. 5. *Lecidea grisella* after snail grazing

***Punctelia reddenda* thrives on *Betula* in a front garden of a small town in the Netherlands**

During a fieldtrip of the Dutch Bryological and Lichenological Society (BLWG) near the village of Wolfheze in the eastern part of the Netherlands a strange looking *Punctelia* was collected from a horizontal branch of a free standing *Quercus robur*. At home it appeared that *Punctelia reddenda* was found in the Netherlands for the first time (Spier, 2009). This find of *Punctelia reddenda* on a free standing oak is very remarkable. It appears to be the most eastern known locality on the Continent. By Dutch standards the air quality of the site is relatively good, but it certainly is not optimal for a *Lobarion* species.

Part of the collection disappeared into the herbarium, a second part was transplanted onto an apple tree in the back garden, and a third part onto *Betula* in the front garden. There was no hope whatsoever that the species would survive. I just did not want to throw it away. The part on the apple tree died within a few months, which was to be expected. Imagine my surprise to find that the part on the birch tree is still fully alive after 3½ years.



Punctelia reddenda transplanted onto a birch tree

What could be the answer to this phenomenon? “Transplants Lichens” (internet) taught me that many transplantations of different lichens such as *Evernia prunastri*, *Pseudevernia furfuracea*, *Parmelia sulcata* have already been carried out, mostly for the sake of monitoring. A great difference is that they are transplanted to sites in which the circumstances (tree, exposition, shadow, light etc) are as optimal as possible. The lichen species mostly is transplanted from a polluted site to a more or less unpolluted one. The cases that have been monitored after finishing the experiment, show that even *Lobaria pulmonaria* is doing very well as Christoph Scheidegger mailed me. On account of this there is no need to doubt that *Punctelia reddenda* might survive under the same controlled circumstances.

However, there was no controlled situation, neither at Wolfheze nor in Amersfoort. The air quality, though relatively good by Dutch standards, is far from optimal for sensitive *Lobarion* species. Trying to give an answer to this problem is sheer speculation. The only conclusion which can be drawn is that the circumstances in the front garden are more suitable for survival than these in the back garden.

There may be a better way to partly solve the riddle, at least to make it more understandable. In recent years different lichen species have come into the Netherlands by way of unintentional transport such as on young trees (Timmerman, 2012; *Caloplaca cerina*, *C. cerinella*, *Lecanora sambuci* and *Leptoraphis atomaria*), or rock (Spier 2006; *Collema auriforme*). Most notably, the following species have been found on large granite boulders for an artwork at the village of Soest: *Acarospora sinopica*, *Pertusaria leucosora*, *Pertusaria flavicans* and *Placopsis gelida* (Aptroot, 2009). On a monument made from rock from all over the world many species, including South American endemics (Aptroot, 2010) such as *Caloplaca brouardii*, *Placopsis fuscidula* and *Xanthoparmelia microspora* already survive for over 10 years and some are spreading onto adjacent boulders. And most important, all these species survive and even thrive!

I cannot help thinking that these examples show that unintentional replacement of quite a number of species is less harmful than has been thought. This *Punctelia reddenda* shows that even a very sensitive *Lobarion* species can survive in a situation that is far from optimal. It might be possible that many species are less sensitive than thought and more easily adapt to new situations. After all many of them are pioneers.

I wish to thank Arie van den Bremer for taking the picture of *Punctelia reddenda*, Norbert Stapper for placing the picture of *Lobaria pulmonaria* at my disposal, Christoph Heidegger for his enthusiastic mail contact, and André Aptroot for his useful suggestions to the manuscript.

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Lingering Lobarion in Cumbria – on Rowan



An ancient rowan on the west side of Ullswater

Lobarion communities are scarce and declining in Cumbria, with Borrowdale and Eskdale their more notable areas. Various ‘outlier sites’ based on single very important trees include some on the slopes above the west side of Ullswater. Ash (*Fraxinus excelsior*) has become the most important host following the loss of native

wych elms to Dutch Elm Disease. However, one tree in particular, at a site called Little Meldrum, is especially remarkable because it is not an ash, but a rowan (*Sorbus aucuparia*). This normally acid-barked species rarely supports the Lobarion in Britain outside of the Scottish Highlands and I know of no other in Cumbria. The tree in question is multi-stemmed, and has a bulbous base some 4.7m in girth and does not seem to be an epiphytic 'takeover' of another tree species. It occupies a fairly open but sheltered location close to a footpath. I first noticed it in 2005, and revisited this year to monitor its condition. Three species of Lobarion 'macro-lichens' still occur within a metre of its base, on the south/southwest side: *Lobaria pulmonaria*, *Nephroma parile* and *N. laevigatum*.



Lobaria pulmonaria growing on rowan

I measured the coverage of these species – crudely, in 'hands'. Conversion to metric units gave *c.* 0.07, 0.025 and 0.015 m² respectively. Although not in huge amounts, these species appear healthy. The *L. pulmonaria* shows signs of active spread, small thallus initials being variously present. The *N. parile* similarly shows signs of growth. It also occurs, in greater quantity, on a much smaller rowan nearby, heavily shaded by naturally multi-stemmed hazels. Possibly the location of the three species low down on the large rowan may be significant: the many stems of the tree tend to cradle leaf-fall and other debris, the 'composting' of which might counteract bark acidity. Ironically, it may well be that the sheltered humid environment just here is

partly sustained by a large maturing conifer plantation, on the southern side especially. The ungrazed hazel woodland upslope of the rowan is clearly old, though none of the trees bear Lobarion: the rowan may be much older – it is clearly hundreds of years old. Given even the best conservation measures, it may be nearing the end of its natural time span. The site is not in public ownership, so its protection is at present uncertain. Ivan Day (2005) and Brian Coppins (2012) have given me useful comments on this find.

David Clarke

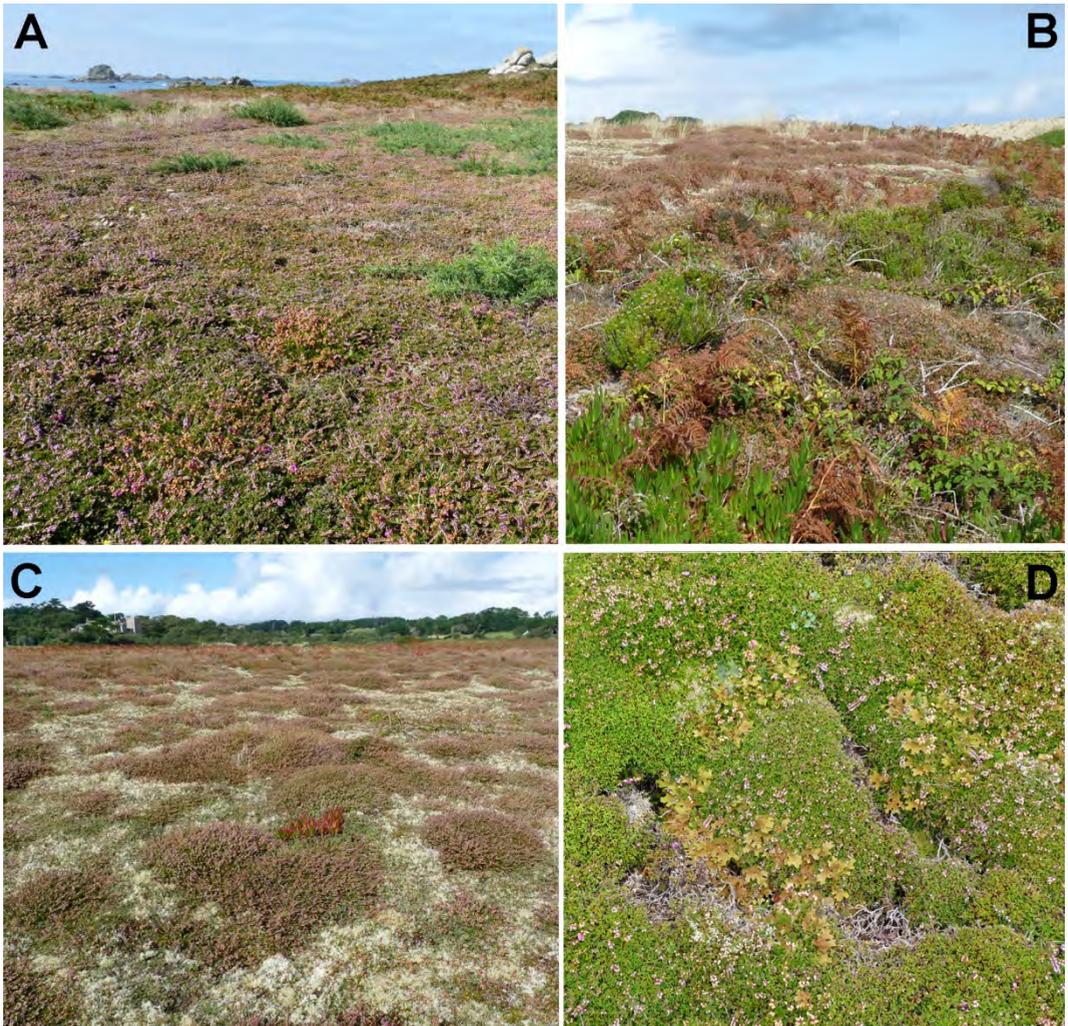
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Looking for the Lobarion in the Scillies

One of the fascinating aspects of lichens is that they often don't read the floras and text books and can turn up in unexpected habitats. In my case I remember the surprise when I discovered for the first time *Usnea articulata* growing on the ground on sand dunes and the normally maritime coastal rock species *Anaptychia runcinata* growing well on several sycamores. Now, whilst searching for the Lobarion in the Scillies, I have had new insights into the ecological requirements of some of the constituent species of the community. Most people associate *Lobaria* species with woodlands and parkland in the western and southern parts of Britain, hence the English name for *Lobaria pulmonaria* – Tree Lungwort. However, in the Scillies whilst there are no suitable woodlands or parklands, there are records for three of the four species of *Lobaria*: *Lobaria pulmonaria*, *L. scrobiculata* and *L. virens*. Additionally several *Sticta* species are recorded – *Sticta limbata* and *S. sylvatica*, together with *Nephroma laevigatum* and *Pseudocyphellaria aurata*. The lichens of the Scillies have been well documented in a paper by Allen *et al* (2010). There have also been detailed surveys of *Heterodermia leucomela* and *Pseudocyphellaria aurata* by Bryan Edwards (Edwards, 2002a, 2000b). These provide an excellent baseline for the re-survey of some of this species.

In the absence of ancient native woodlands Lobarion communities survive and indeed flourish in wave heath on a number of the islands including Tresco, St Martins, Bryher, Samson, and Tean. On exposed headlands heather (*Calluna vulgaris*) and bell heather (*Erica cinerea*) have been trained into a wave-like growth form in response to the strong winds which frequently blow. It is a joy to walk across this carpet of dense heather and bell heather with the fresh green thalli of *Lobaria pulmonaria* breaking through the canopy contrasting with the grey-green of the heath vegetation. In the sites I have visited the best development is on gentle slopes in slightly less exposed situations and the heather is usually about 3 – 4 inches in depth

and forming an almost continuous canopy. It is not always easy to be certain but as far as I can tell it grows on the *Calluna* stems rather than on the ground and so far I have not found it fruiting. In all of the sites it seems to be a constituent of the NVC community, the H7e *Calluna vulgaris* sub community of the *Calluna vulgaris-Scilla verna* heath. At Burnt Hill, St Martins, it grows with *Nephroma laevigatum* and a little *Sticta sylvatica*. The *Nephroma* looks at first glance very like a *Peltigera* growing as it does out of the frayed edge of the ‘waves’. At other sites, such as St Martins Head and in the north of Tresco, it is accompanied in small quantity by *Lobaria scrobiculata*. If that is not enough, there are other delights to experience when crawling around on these headlands; notably fine stands of *Teloschistes flavicans*, sometimes on rock but also spreading from embedded low rocks in to the surrounding turf as on St Martins Head.



A. Grazed wave heath, Bryher. B. Invasive vegetation, Appletree Banks, Tresco. C. Lichen heath, Appletree Banks. D. *Lobaria pulmonaria* in wave heath, St Martins.

Wave heath also occurs in the west of Cornwall on exposed headlands like those between Gwennap Head and Lands End, however as far as I am aware no *Lobaria* has been found along this stretch of cliffs. This may be because the wave heath is not the *Calluna vulgaris* variant of the H7 as there is more *Ulex gallii* in this community and possibly because the cliffs are higher and therefore less subject to salt spray.

On the southern part of Tresco at Appletree Banks *Lobaria scrobiculata* grows in a different community on blown sand. In one area this is a steep south facing bank and the other a more level area of dune. The population of *Lobaria scrobiculata* must be one of the largest in England with about 40 thalli counted at one and probably a similar number at the other. It grows in a dwarf shrub heath with luxuriant stands of *Cladonia ciliata* var. *tenuis*, *C. portentosa* and *Usnea flammea*.

Most of the current lichen interest within the dune system is concentrated in two areas, firstly a flat area of lichen-rich open *Erica cinerea* - *Calluna* heath. This is still largely dominated with native vegetation but some plants of the alien hottentot fig (*Carpobrotus*) are growing in it on the margins and also bushes of shrub goldilocks (*Chrysococoma coma-aurea*). Bramble (*Rubus* sp.) is also growing and apparently spreading and a cause for concern. The second lichen-rich area of heath is on a steep south-facing bank which is being invaded by *Carpobrotus*, *Rhododendron* and *Agapanthus* and is becoming rank.

It is tempting to allocate the lichen community to the NVC grey dune community SD11, however although *Cladonia* species (*C. ciliata* var. *tenuis* & *C. portentosa*) are important on Appletree Banks. *Usnea* and *Lobaria* species are not normally considered components of this vegetation and it is likely that this is an undescribed community.

There is also an extraordinary *Lobarion* on White Island growing in a moderate to steep sloping maritime turf with scattered rock outcrops. The short spongy sward is largely composed of red fescue (*Festuca rubra*), thrift (*Armeria maritima*) and buck's-horn plantain (*Plantago coronopus*); other species present include birds-foot trefoil (*Lotus corniculatus*), Danish scurvy-grass (*Cochlearia danica*), English stonecrop (*Sedum anglicum*), Yorkshire fog (*Holcus lanatus*) and all-seed (*Radiola linoides*). Here the beautiful *Pseudocyphellaria aurata* was found about 2000 (Edwards 2002b). It grows with *Lobaria pulmonaria*, some *L. virens* and *Heterodermia leucomela*. The NVC community is the *Plantago coronopus* sub-community of the *Festuca rubra*-*Armeria maritima* maritime cliff community MC8c. Nearby there is an area where the turf appears to have been stripped off and is being recolonised by a turf of *Plantago coronopus* and *Armeria maritima* with a large population of the uncommon lichen *Heterodermia obscurata*. The site is subject to sea spray. Whilst it appears safe it may be threatened by extreme storm events and in the longer term by sea level rise.

Conservation considerations

It is clear that these are very important communities both for the light they shed on the *Lobarion* and its ecological requirements but also as large populations in an English context. In some cases the lichen interest does not feature on the SSSI citations and it is essential that this is redressed as a matter of some urgency.



A. *Lobaria pulmonaria*, St Martens. B. *Nephroma laevigatum*, St Martens. C. *Lobaria scrobiculata*, Appletree Banks. D. *Pseudocyphellaria aurata*, White Island.

Like many terricolous communities they are at risk from a number of different threats, especially changes in land management. Grazing is also a difficult issue especially as there are now no rabbits on Bryher and St Martens. In the 1980s *Pseudocyphellaria aurata* is believed to have become extinct on St Agnes when cattle grazing was introduced onto Wingletang Down (Peter James, *pers. comm.*). On Heathy Hill, Bryher in May 2011 I saw a very healthy community of *Lobaria pulmonaria* growing in wave heath. When I revisited the site in September 2012 ponies had been grazing on the site and the wave heath was much more broken up. *Lobaria pulmonaria* was still present but was brown and rather crisp. Grazing had been introduced as a response to encroachment of gorse and grass on to the wave heath (David Mawer, *pers. comm.*). A solution may be to electric fence the heath from the rest in future. Conservation management is also driven by the focus on getting SSSIs into favourable condition. This relies on favourable condition

indicators which may be fine for an overall community, for example too much bracken or scrub will put a particular maritime cliff community into unfavourable condition. The reasonable conservation response in this situation is to introduce grazing. However general prescriptions are not always best for some of the specialised terricolous lichens. For example the delicate turf on White Island may break up under grazing. Also bracken may have its detractors but it can be a very good way of guiding people away from particularly sensitive sites. These heaths are also vulnerable to fire and potentially to visitor pressure though there is no evidence that this latter threat has been or is a problem at present.

In the south of Tresco the rich lichen community on Appletree Banks, as already noted, is threatened by non-native flowering plants which are spreading into the native plant communities, especially *Agapanthus*, *Carpobrotus* (hottentot fig), *Rhododendron* and shrub goldilocks (*Chrysococoma coma-aurea*). Unfortunately these showy plants are also very attractive and popular with visitors and there is a natural resistance to tackle this problem in the key areas.

The Scillies therefore encapsulate many of the issues that threaten our important terricolous lichen communities. As a start we need to raise the profile of these communities because they are so special and continue to develop a dialogue with conservation organisations and other land managers. In an England and perhaps also British Isles context these communities are unique.

Acknowledgements

I am very grateful to David Mawer of the Isles of Scilly Wildlife Trust for discussions on the management issues on some of the sites and also for records of *Lobaria* from Tean and Samson. I am also very grateful to Julie Webber of Natural England for discussions on the management of some of some of the SSSIs and their encouragement and interest. Also to Bryan Edwards for freely making available his immense knowledge of the lichen sites on the islands.

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The Afon Marlais in Brechfa Forest, Carmarthenshire: a new hotspot for Lobarion lichens

Background

'The Lobarion' is an assemblage of epiphytic lichens that are thought to represent the "natural forest climax community on mature hardwood trees with barks of pH 5.0–6.0" (James *et al.*, 1977). It is very sensitive to sulphur dioxide pollution and has a highly restricted range in the UK. Its rarity in Wales has led to its inclusion on the list of species and habitats regarded as being of the highest conservation importance in Wales: Section 42 of the Countryside and Rights of Way Act. The Section 42 definition of the Lobarion is presented on <http://www.wales-lichens.org.uk/apprentices/content/lobarion>, and trees are considered to support the

assemblage if they hold any one of a suite of strong indicators, such as *Lobaria* spp. and *Sticta* spp., or any three of a suite of weaker indicators, including *Catinaria atropurpurea*, *Dimerella lutea* and *Normandina pulchella*.

Most Lobarion lichens show a north-western distribution in Britain, reminiscent of that of Oceanic mosses and liverworts. Indeed some species have or had south-eastern outliers in The Weald: an area famed for its disjunct oceanic bryophyte colonies. Both climate and pollution are likely to be contributors to this distribution, and James *et al.* (1977) regularly mention humidity in their description of the assemblage's ecology. However, there are a number of Lobarion sites in north Wales that are not particularly humid, and the relationship between humidity and the assemblage as a whole is complex (Ray Woods pers. comm.). Carmarthenshire is not as rich in Lobarion sites as its neighbours Pembrokeshire and Ceredigion,

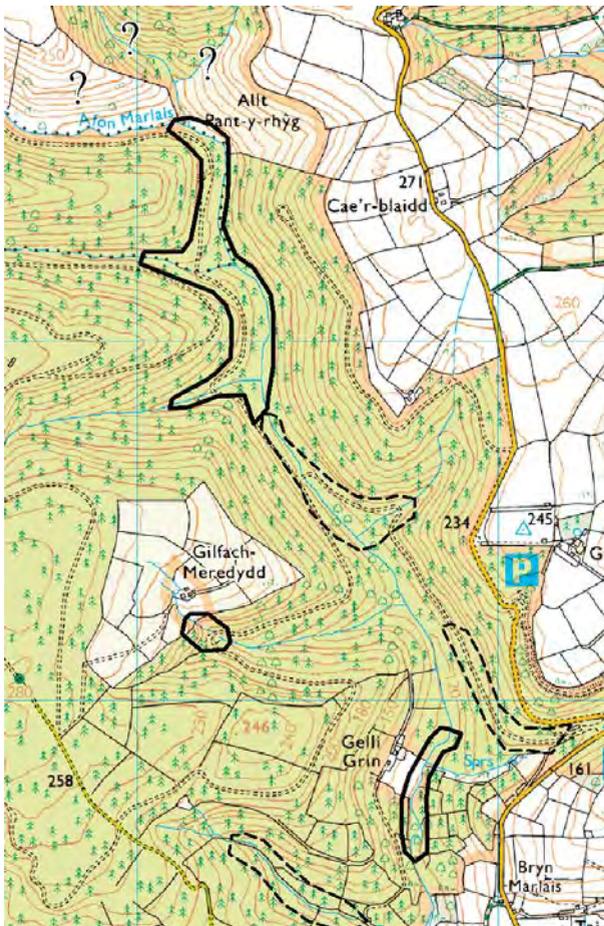


Figure 1: the Afon Marlais valley, with significant Lobarion areas (black lines), other surveyed areas (black dashed lines) and areas in need of survey (?).

and the number of trees known to support *Lobaria*, *Sticta* or *Pannaria* spp. in the county by late 2011 was less than 10.

The Afon Marlais Lobarion

Brechfa Forest in central Carmarthenshire has not been well-studied by lichenologists and the area almost entirely lacked records of notable lichens until very recently. Epiphyte recording by SDSB in 2011 produced the first local records for some of the less rare Lobarion species, such as *Leptogium teretiusculum* and *Mycobilimbia pilularis*. SDSB then stumbled across a population of *Sticta limbata* in a side valley of the Afon Marlais, north of Brechfa in January 2012, alongside several patches of *Parmeliella triptophylla* – the first records of the more ecologically demanding Lobarion species for the area. Two return visits, the second on 9th February 2012, with Ray Woods, Theresa Greenaway and Jon Hudson, produced a significant number of additional species including the Lobarion indicators *Pannaria conoplea*, *Sticta fuliginosa*, *S. sylvatica* and the Section 42 species *Graphina pauciloculata*, whilst covering further areas of the valley (Fig. 1). Notable species are listed in Table 1.

The Lobarion lichens grow on willow, hazel, sycamore and ash in the humid, broad-leaved sections of the Afon Marlais valley. They are often adjacent to blocks of spruce, but are not heavily shaded. This contrasts with many other valleys in the western part of Brechfa Forest, for example the one south-west of Gelli Grin, the waterfall area of Cwm Pib, and the ravine section of the Nant Cwm-marydd, where Lobarion lichens are absent except for *Dimerella lutea* and *Normandina pulchella*. The focus of the *Sticta* population on *Salix* adjacent to conifers led to suspicions that the species could be a recent arrival, similar to the Hyperoceanic bryophytes *Colura calyptrifolia*, *Daltonia splachnoides*, *Drepanolejeunea hamatifolia* and *Ulota calvescens*. All of these are believed to have spread to Brechfa Forest as spores from Ireland because of climate change and the humidity provided by conifer plantations. The abundance of the lichenicolous fungus *Abrothallus welwitschii* on *Sticta* by the Afon Marlais is perhaps suggestive of long-term local survival, as is the focus of the Lobarion lichens in areas that were wooded in the 19th century (judging by Ordnance Survey maps) rather than the patches of young *Salix* favoured by the immigrant bryophytes, many of which have been surveyed without any *Sticta* or other rarer Lobarion lichens being seen.

The Afon Marlais valley is in an area of actively managed forestry, and forestry operations are key to the survival of the Lobarion here. A number of trackside *Salix* that support *Sticta fuliginosa* and *S. limbata* had been felled or damaged during track widening works in 2011, which is hardly surprising because they look so unprepossessing. Restoration of broadleaved woodland along the valley of the Afon Marlais, at least between SN513328 and SN511335, should help to protect these rare and important lichens.

Species	Section 42	Lobarion (any one)	Lobarion (any three)	NIEC	EUOCIEC
<i>Catinaria atropurpurea</i>			●	●	
<i>Cladonia caespiticia</i>					●
<i>Dimerella lutea</i>			●	●	
<i>Graphina pauciloculata</i>	●				
<i>Graphina ruiziana</i>					●
<i>Hypotrachyna laevigata</i>					●
<i>Lecanora jamesii</i>				●	
<i>Leptogium teretiusculum</i>			●	●	
<i>Micarea alabastrites</i>				●	●
<i>Micarea cinerea</i>				(●)	
<i>Mycobilimbia pilularis</i>			●	●	
<i>Normandina pulchella</i>			●		
<i>Pachyphiale carneola</i>		●		●	
<i>Pannaria conoplea</i>		●		●	
<i>Parmeliella triptophylla</i>		●		●	
<i>Pertusaria multipuncta</i>				●	
<i>Sticta fuliginosa</i>		●		●	
<i>Sticta limbata</i>		●		●	
<i>Sticta sylvatica</i>		●		(●)	
<i>Trapelia corticola</i>					●
<i>Usnea filipendula</i>					●
<i>Usnea florida</i>				●	
Totals:	1	6	5	13	6

The site clearly qualifies for recognition as an example of the Section 42 Lobarion assemblage, but falls short of the SSSI thresholds for the two Indices of Ecological Continuity: the NIEC and EUOCIEC. It remains to be established how many sites in Carmarthenshire score more than 13 (threshold 20) and 6 (threshold 10) points in the Indices and whether the valley of the Afon Marlais is as outstanding in an Area of Search context as its abundant *Sticta* would suggest. Only Dinefwr Estate SSSI (comprising Dinefwr and Castle Woods) and the much larger Cwm Doethie - Mynydd Mallaen SSSI have notified lichen assemblages assessed using the Indices. At least one further day of survey is needed to examine the north-central section of the valley, to the south of Mynydd Llanfihangel Rhos-y-corn.

Reference

James, P.W., Hawksworth, D.L. & Rose, F. (1977). *Lichen Communities in the British Isles*. In Seaward, MRD (Ed.) *Lichen Ecology*: 322-327. Academic Press, London.

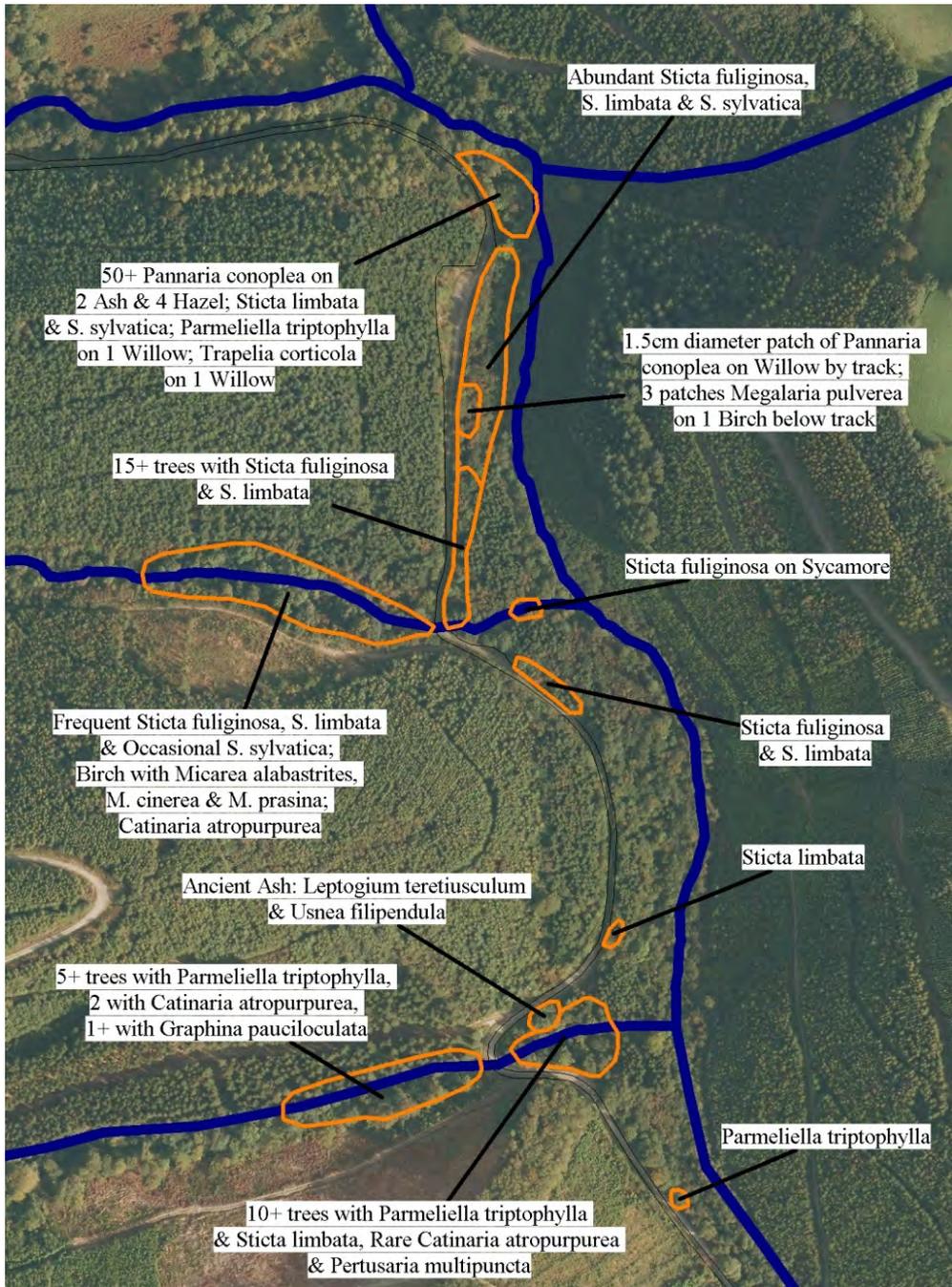


Figure 2: key lichen areas in the Afon Marlais valley north of Gilfach Meredydd.

Brechfa Forest, Carmarthenshire: worth further survey

Apart from a few renowned lichen localities such as Dinefwr, Carmarthenshire is relatively under-recorded. Brechfa Forest is a good example – a complex of some 6500 hectares, it is managed by the Forestry Commission for timber production, recreation and wildlife conservation, but in the Middle Ages it was a forest of ancient oakwoods. Today, although there are extensive conifer plantations, there are also deep ravines, tracksides and smaller broadleaved plantations that offer pockets of older trees and more varied lichen habitats. Visits made by Ray Woods and others, dating from about the 1980s, have resulted in a modest list of historical records. A more recent visit by a BLS party in autumn 2010 produced a tally of 32 species from the Upper Cwm Marydd ravine (Woods & Price, 2011), including just 2 *Lobarion* lichens.

Spurred on by the relatively poor showing of the 2010 meeting, Sam Bosanquet continued to explore nearby parts of Brechfa Forest, resulting in his discovery of the Section 42 *Lobarion* assemblage of the Afon Marlais valley (see the Afon Marlais report by Sam Bosanquet in this edition of the Bulletin, above). Subsequently, Sam has made further contributions to our knowledge of Brechfa Forest lichens, raising the forest significantly in terms of its potential lichen importance. The most exciting of these was his discovery of *Parmelia submontana* by the roadside of a ruined farm, Pant-y-Rhyg (SN516339), close to the Afon Marlais Valley. Sam had been on the look-out for this distinctive *Parmelia* ever since reading Sandy Coppins' article under the 'Wildlife reports' section of British Wildlife Magazine, December 2011, especially following its discovery on eastern Dartmoor by the Devon Lichen Group in September 2011. His diligence was rewarded on 8th April 2012, when he noticed a roadside sycamore with "quite a lot of suspiciously pendant-looking *Parmelia*...." A quick climb up the tree confirmed this, and he also found it on a nearby grey willow. On receipt of his email, I eagerly drove up to have a look for myself, climbing over a locked gate to see the specimens on the *Salix*, but prudently refraining from clambering up the sycamore.

Just before spotting the *Parmelia*, Sam had noticed a weft of *Usnea articulata* on another roadside tree, this time a rowan near the village of Gwernogle in Brechfa Forest. A few days later on 24th April, a friend of Sam's gave him a small specimen she had collected from a different locality northeast of Gwernogle. This also proved to be *Usnea articulata*, which, together with an earlier record made by Sam northwest of Brechfa village in 2010, makes three new sites for this species in Carmarthenshire. Another VC44 record (and possibly a new record for SW Wales) was his discovery of *Hypotrachyna sinuosa* on an ash trunk on the edge of the Forest, together with a young *Sticta*. New Brechfa Forest records for a number of other species have also been made by Sam and myself, considerably augmenting the historical data and for which a future report will be produced.

Further survey effort of this woodland complex is very much needed, even though more intensive surveys may show that some parts – perhaps large areas – of the Forest will prove unremarkable and unrewarding. In addition, much of the terrain is likely to be challenging, with hills, steep sided ravines and long walks away from parking areas. But these recent discoveries indicate that there is more waiting to be discovered. Apart from the intrinsic interest of simply having a more complete knowledge of Welsh lichens, a sound evaluation of the Brechfa Forest lichens is necessary to advise future management. This area could therefore be a good contender for an additional BLS Spring or Autumn meeting.

Reference

Woods, R. & Price, S. (2011). Report of the British Lichen Society Carmarthen Meeting, 7-11 October 2010. *British Lichen Society Bulletin* **109**: 99-112.

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Shields, or ‘Lost in translation?’

Some while ago, Paul Wheelan sent us a query. In formulating a response, we have found ourselves going down many a fascinating road, dipping into the wonderful world of etymology (the branch of linguistic science that treats the origin of words), wandering among dictionaries, following Latin derivatives, and delving back into old Lichen literature.

1.1 Paul asked “what shape is shield-shaped”? so, sit back and be prepared to be entertained into the history of lichenology, the quirks and amusements of etymology.

1.2 The answer to Paul’s enquiry, we looked in Annie Lorrain Smith’s book *Lichens* published in 1921. In the chapter dealing with the ‘History of Lichenology, 1729–1780’, she writes:

“The next writer of distinction is the aforementioned Dillen or Dillenius. He was a native of Darmstadt and began his scientific career in the University of Giessen. His first published work was an account of plants that were to be found near Giessen in the different months of the year. Mosses and lichens he has assigned to December and January. Sherard induced him to come to England in 1721, and at first engaged his services in arranging the large collection of plants which he, Sherard, had brought from Smyrna or acquired from other sources.

Three years after his arrival [1724], Dillenius had prepared the third edition of Ray’s *Synopsis* for the press, but without putting his name to the title page.

Sherard explained, in a letter to Dr Richardson of Bierly in Yorkshire, that “our people can’t agree about an editor, they are unwilling a foreigner should put his name to it.” Dillenius, who was quite aware of the prejudice against aliens, himself writes also to Dr Richardson: “there being some apprehension (me being a foreigner) of making natives uneasy if I should publicate it in my name.” Lichens were already engaging his attention, and descriptions of 91 species were added to Ray’s work. So well did this edition meet the requirements of the age, that the *Synopsis* remained the text book of British Botany until the publication of Hudson’s *Flora Anglica* in 1762.

William Sherard died in 1728. He left his books and plates to the University of Oxford with a sum of money to endow a Professorship of Botany. In his will he had nominated Dr Dillenius for the post. The great German botanist was accordingly appointed and became the first Sherardian Professor of Botany, though he did not remove to Oxford till 1734. The following years were devoted by him to the preparation of *Historia Muscorum*, which was finally published in 1741. It includes an account of the then known liverworts, mosses and lichens. The latter – still considered by Dillenius as belonging to mosses – were grouped under three genera, *Usnea*, *Coralloides* and *Lichenoides*. The descriptions and figures are excellent, and his notes on occasional lichen characteristics and on localities are full of interest. His lichen herbarium, which still exists at Oxford, mounted with the utmost care and neatness, has been critically examined by Nylander and Crombie, and many of the species identified.

Shortly after the publication of Dillenius’ *Historia*, appeared Haller’s *Systematic and descriptive list of plants indigenous to Switzerland* (1742). The lichens are described as without visible leaves or stamens but with “corpuscula” instead of flowers or leaves. He arranged his lichen species, 160 in all, under seven different orders: 1. “Lichenes Corniculati and Pyxidati”; 2. “L. Coralloidei”; 3. “L. Fruticosi”; 4. “L. pulmonarii”; 5. “L. Crustacei” (with flower-shields); 6. “L. scutellis” (with shields but with little or no thallus); and 7. “L. crustacei” (without shields).

This period extends till near the end of the eighteenth century, and thus includes within its scope the foundation of the binomial system of naming plants established by Linnaeus. The renowned Swedish botanist rather scorned lichens as “rustici pauperrimi” happily translated by Schneider as the “poor trash of vegetation”, but he named and listed about 80 species.”

1.3 So, Haller (1742) was thinking about the notion of using “shields” to differentiate his lichens into groups, but see 1.5 below (was Haller thinking ‘saucers’ or ‘shields’ when he used the word ‘scutellae’?)

1.4 We then referred to the **Shorter Oxford English Dictionary (SOED)**, and looked up ‘scute’:

Scute. late Middle English. [– Latin *scutum* shield; see ÉCU.] = ÉCU. *Obsolete* except *Historical*. **b.** Used vaguely for a coin of small value 1594. **2.** *Zoological.* A large scale

or bony plate, forming part of the integument of certain animals, as the tortoise, armadillo, echinoderms, various fishes, etc. 1848.

Scutella. *Plural* –æ. 1771. [modern Latin; originally a use of the Latin *scutella* platter, but mistaken for a diminutive of the Latin *scutum* shield.] = SCUTELLUM.

Scutellate, *a.* 1785. [f. SCUTELLUM + ATE.] 1. Saucer- or platter-shaped; esp. *Bot.* 2. *Zool.* Having a scutellum; covered with scutella 1826. So **Scu tellated** *a.* 1729.

Scutellum. *Pl.* –a. 1760. [modern Latin, apparently intended as a correction of SCUTELLA, as if a diminutive of L. *scutum* shield.] 1. *Bot.* a. An orbicula concave fructification.

Scutulum. *Pl.* –a. 1888. [modern Latin use of Latin diminutive of *scutum* shield.] *Pathology* a shield-shaped crust or disc developed in the skin-disease favus.

Scutum. *Plural* *scuta.* 1771. [technical use of Latin *scutum* oblong shield].

Écu (*ekü*). 1704. [French: – Latin *scutum*; so-called from the three fleur-de-lis stamped on a coin as on a shield.] A French silver crown piece. Now, a French five-franc piece.

[N.B. The SOED we referenced was published in 1978, so before France lost its Francs and got the Euro].

Modern Latin differs from classical Latin: *scutellum* (mod. L.) *scutulum* (classical L.) (diminutive of *scutum*).

1.5 The early lichenologists used *scutellae* [plural of *scutella*] to describe apothecia with a thalline margin. This use goes back at least to 1742 in Johannes Jacob Dillenius' *Historia Muscorum*. In these early works the word usually appears in phrase names or descriptions as the ablative plural form “*scutellis*” [meaning “with *scutellae*”]. Note that the ablative plural of *scutulum* (shield) is *scutulis*.

1.6 Erik Acharius' definition of *Scutellae* in his *Methodus* (1803) is shown below. Roughly translated as “Apothecia open [i.e. when opened] orbicular subtended by a margin from thallus formed.” In his examples his genus *Parmelia* had a very broad concept, including not only *Parmelia*, as we know it today, and related genera [e.g. *Parmelia* in the 1992 ‘*Flora*’], but also, for example, *Imshaugia*, *Leptogium*, *Lobaria*, *Pannaria*, *Phaeophyscia*, *Physcia*, *Physconia* and *Xanthoria*. *Urceolaria* included, for example, *Aspicilia*, *Diploschistes*, *Gyalecta* and *Petractis*, while *Sticta* was used close to the modern sense, with *Sticta* and *Pseudocyphellaria*.

Scutellæ. Apothecia aperta orbicularia, subtus & margine a thallo formata; strato prolifero supra colorato tecta; margineque accessorio (sæpissime discolori) prædita. Urceolaria, Parmelia, Sticta).

From Acharius, E. (1803) *Methodus qua omnes detectos Lichenes*. Stockholm.

1.7 According to our copy of the *Shorter Oxford English Dictionary* [SOED], “shields” was first used for the apothecia of lichens in 1796. On examination of the original ‘OED’, *A New English Dictionary on Historical Principles* (J.A.H. Murray, ed.), vol. 8, part. 2 (1914), the reference is given to Withering’s *An Arrangement of British Plants* Ed. 3, vol. 4, p. 75. And, sure enough, there one finds, under *Lichen nigrescens* [= *Collema nigrescens*] the text “About the bodies of old oak, ash and sycamore trees near Holsworthy, Devonshire, abundantly with innumerable shields. Mr Newberry”. This use of ‘shields’ is by Mr Newberry, quoted here by Withering, presumably from a letter. Indeed, in Withering’s own descriptions he used ‘saucers’. Unless he was the originator of this use of the word, where did Mr Newberry hit upon ‘shields’? Presumably sometime prior to 1796. Delving into the early parts of Smith & Sowerby’s monumental *English Botany* (1790–1866), one finds an earlier use of ‘shields’ in Volume 3, no. 155 (1794) in the description of *Lichen sanguinarius* [= *Mycoblastus sanguinarius*] “smooth shields or tubercles, in which the seeds are imbedded”. So it would seem that the finger is pointed at James Edward Smith.

1.8 Withering’s use of “saucers” (first in his *A Botanical Arrangement of all the Vegetables Naturally Growing in Great Britain*, 1776) is a more correct translation.

So, we have pre-dated the OED by two years. Can anyone do better?

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Testing the efficacy of Steiner’s stable solution of *p*-phenylenediamine

Introduction

Colour spot tests for lichens were first discovered and used systematically by William Nylander in the nineteenth century when he started using calcium hypochlorite ($\text{Ca}(\text{OCl})_2$) and potassium hydroxide (KOH) to regularly test lichen specimens. In more recent times sodium hypochlorite (NaOCl) has been substituted for calcium hypochlorite because it is more durable and is freely available as household bleach. In 1934, Asahina published his findings that *p*-phenylenediamine was a useful addition to the testing reagents, giving yellow, orange or red reactions with aromatic compounds containing an aldehyde radical.

Original formulations mixed *p*-phenylenediamine in solution with ethanol. However, this makes for an unstable combination which rapidly oxidises, leading to brown decolourisation within a day, and rendering the solution unusable. To overcome this problem, lichenologists may repeatedly make-up new solutions of *p*-phenylenediamine, with crystals dissolved into alcohol as required, in shallow watchglasses. This procedure causes fine particles to be spread into the surrounding

environment, possibly with detrimental health effects on workers and causing heavy staining on many substrates. *p*-phenylenediamine is known to be an irritant and is mutagenic and possibly carcinogenic.

In 1955, M. Steiner introduced a more stable method of working with *p*-phenylenediamine in the form of what is now known as “Steiner’s solution”. The basic solution is made up to recipe (1) below. The sodium sulphite content retards oxidation of the *p*-phenylenediamine and the reagent can be expected to last for some months. Over the years, the author has come across varied opinions on Steiner’s solution, often negative. These range from pronouncing it as practically useless and too slow in reaction, to the idea that it degrades within a month and is unreliable in the field. Recently, there have been suggestions that enlivening it with a modicum of alcohol could increase its efficacy. This paper tests these assertions and presents new findings on the usefulness of Steiner’s solution.

Material and Methods

Three 100 ml batches of Steiner’s solution were made up to the following recipes; they differ in the ratio of alcohol to water:

1. Standard Steiner’s solution

<i>para</i> -phenylenediamine	1 g
Sodium sulphite	10 g
Distilled water	100 ml
Detergent (washing up liquid)	0.5 ml

2. 25% ethanol 75% water Steiner’s solution

<i>para</i> -phenylenediamine	1 g
Sodium sulphite	10 g
Ethanol	25 ml
Distilled water	75 ml
Detergent (washing up liquid)	0.5 ml

3. 50% ethanol 50% water Steiner’s solution

<i>para</i> -phenylenediamine	1 g
Sodium sulphite	10 g
Ethanol	50 ml
Distilled water	50 ml
Detergent (washing up liquid)	0.5 ml

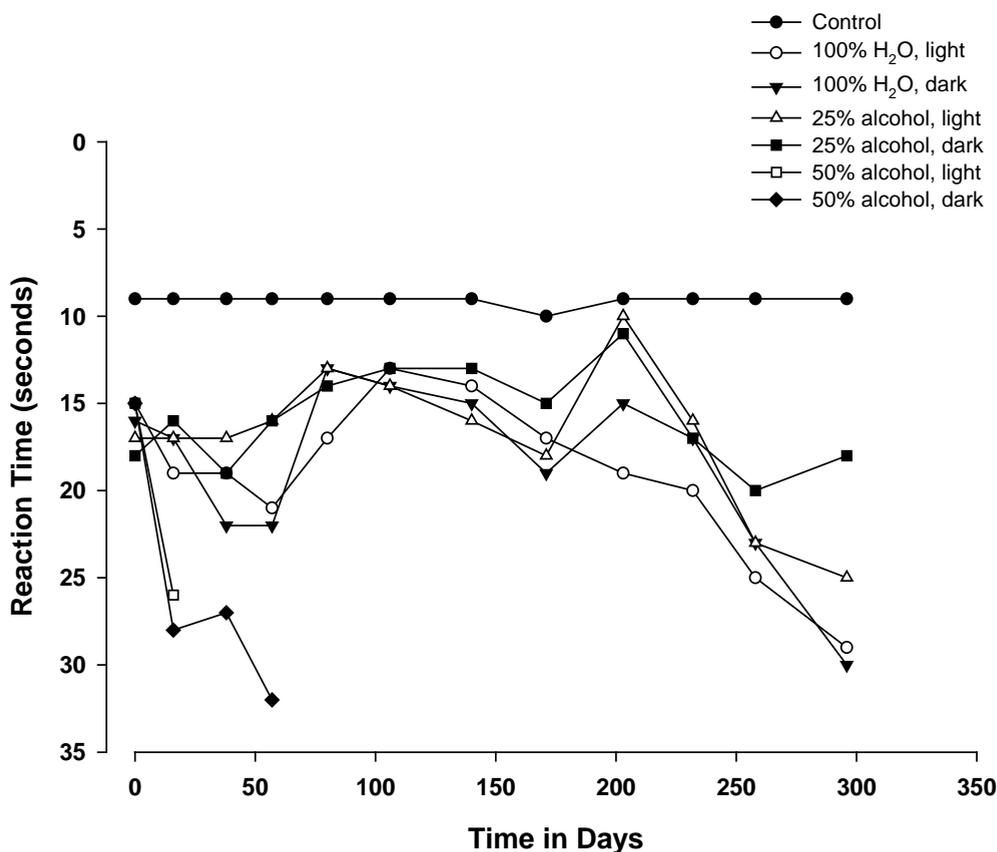
As an additional test, a solution using 100% ethanol was attempted, but only a small fraction of the sodium sulphite dissolved in this solvent and it was therefore discarded. Not all of the sodium sulphite dissolved in the 50% alcohol solution but it was considered that it was worth testing.

Each of the three batches was split between two 50 ml clear dropper bottles, one of which was wrapped with aluminium foil to exclude the light as a possible source of deterioration. The bottles were opened with contents exposed to the air for

5 minutes on a regular basis (approximately once every 2 days), to simulate normal laboratory use. Bottles were stored in the light on a laboratory bench for the duration of the trial, the ambient temperature averaging around 20° C.

Approximately every month the solutions were tested for their effectiveness by dropping a small amount from a thin glass rod onto a podetium of *Cladonia coniocraea*. The reaction time was measured; this was the time elapsed from first applying the Pd onto the podetium, until the point when the reaction had reached the full rust-red without any further discernible colour-shift. The test-species (*C. coniocraea*) contains fumarprotocetraric acid which develops a rich rust-red reaction with Pd. The concentration of fumarprotocetraric acid may vary among specimens, among individual podetia, and, indeed, among different sections on the same podetia. This variability introduces an element of stochasticity.

In addition to the Steiner's solutions under test, a control was used, which dissolved a crystal of *p*-phenylenediamine in absolute ethanol. The experiment was finished when the solutions became so decolourised that the reactions became difficult to observe, particularly for more subtle tests where, for example, the pale yellow reaction of atranorin is required.



Results

The results (Fig. 1 above) show an unvarying reaction time for the control, of about 9 seconds. Relative to the control, the 50% water solution kept in the light deteriorated rapidly and was completely unusable after about 12 days. The same solution kept in the dark also deteriorated rapidly and was unusable after around 50 days. The 75% and 100% water solutions showed quite similar reactions times in the first 240 days, ranging from 22 seconds to, exceptionally, 10 seconds. These times are subject to the experimental effects mentioned above, i.e. variability among specimens. Nevertheless, they appear to confirm that, at these concentrations, the reaction times are slower than the control, with the 75% water solution perhaps marginally faster. After 240 days the reaction times of all the solutions began to slow, again with the 75% solution perhaps remaining the most reactive, for both the light and dark bottles.

Conclusions

Steiner's solution will remain fully active in a small bottle for 8 months at normal room temperatures after which time it will start deteriorating rapidly. It is clearly a very useful and safe method of using *p*-phenylenediamine, particularly in the field. The addition of up to 25% alcohol may fractionally decrease full reaction time.

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Some foliose lichens found on leaves

Over the last few years I have been making occasional collections in Kew Gardens and elsewhere of living leathery leaves overgrown with sooty moulds, often accompanied by a confusing mix of algae and little known or even unknown hyphomycetes. Thus it was that on 16 May 2012 I collected two 'sooty' *Rhododendron* leaves which, rather to my surprise, also had on them several very small initials of a foliose lichen, seemingly one of the two *Physcia* species nowadays very abundant on twigs in Kew. I remembered being told that leaf-living lichen species in Britain were few and uncommon. My leaves were also greeted with surprise by two Kew lichenologists, Begona Aguirre-Hudson and Heidi Döring, to whom my thanks are due for all the identifications in this note. They told me that foliose lichens on the surface of leaves are in general a tropical phenomenon, extending at most to the moist subtropics. Neither had seen similar growths in Britain. I doubted if they could really be rare here since I had, quite by chance, collected two such leaves. A search two days later confirmed that similar growths could easily be found on the living leaves of several *Rhododendron* species in various parts of Kew Gardens and less

commonly also on Spurge Laurel, *Prunus laurocerasus*, usually on leaves also bearing sooty moulds. One *Rhododendron* also had initials of a species of *Melanelixia*. Further more substantial examples of both species (over 10 mm diam) were found a week later, allowing determination to species level and showing them to be *Physcia tenella* and *Melanelixia subaurifera*, these examples being on *R. ponticum* and *R. x vernicosum* respectively. A fortnight later two more species were found growing together with more *P. tenella* on a single leaf of *Lithocarpus variolosus*, an oak relative from SW China hardy outdoors at Kew. These were *Xanthoria parietina* and *Amandinea punctata*, the latter very small but already fertile. On 20 June I visited the very extensive *Rhododendron* collections in the Isabella Plantation in Richmond Park five miles south of Kew and found a similar situation. Host bushes were clearly 'clean' but a few shaded ones had extensive developments of sooty mould, and among these a few leaves could be found which also bore lichens. Again the commonest species were *P. tenella* and *M. subaurifera*, but also *Parmelia sulcata* (see Figs 1 and 2) and a single initial of a *Candelariella*. The position is evidently similar in the nearby *Rhododendron* collection in Cannizaro Park on the borders of Wimbledon Common, from which Geoffrey Kibby kindly brought me leaves in July, again bearing *P. tenella* and *M. subaurifera*. Given that these developments seemed to have previously gone unnoticed I suspected they might be as yet very local. I thus asked Caroline Hobart in Sheffield to explore *Rhododendrons* in her area, expecting a negative result. She promptly found extensive developments of the inconspicuous and rarely recorded *Scoliciosporum curvatum* on ten *rhododendrons* in Whinlow Park, Sheffield (SK3082). This was interesting but strictly irrelevant to my theme as this is a crustose species known to be confined to living leaves. More to the point she also found with greater difficulty just two leaves with initials of *P. tenella* and *M. subaurifera*, accompanied by thin developments of sooty mould.



Fig.1. Lichen community on a living leaf of *Rhododendron* sp., Richmond Park, Isabella Plantation, 20 June 2012. Photo © Geoffrey Kibby.

This is surely a recent phenomenon, or it would have already been reported. It seems widespread, though the evidence known to me is as yet all urban. The frequently accompanying sooty moulds (usually infertile) appear to be mainly *Ceramothyrium europaeum* and *Trichomerium grandisporum*, species which (though very little researched) also appear to have increased greatly in Britain in recent years. These in turn are often associated with honeydew deposited by scale insects. Though *Rhododendron* leaves appear to be leading the way, any genus might follow suit provided its leaves last for a few years. My guess is that other genera frequently subject to sooty moulds might be good candidates. Thus it would not surprise me to eventually find some of these same lichens on *Ilex* or *Camellia*.



Fig.2. *Physcia tenella* on *Rhododendron*. Details as for Fig.1.

An important contributory factor is surely the general recent rise in nitrous oxide and ammonia in the atmosphere. All the foliose species found are well known nitrophiles that have increased greatly on twigs in recent years, spectacularly so in Kew Gardens (Waterfield & Henrici, 2009). These finds amount to a further occasional extension of such species from twigs to living leaves in circumstances that have yet to be clarified.

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Leptogium resupinans, a lichen to look out for in the British Isles

Recently the South American lichen *Leptogium resupinans* Nyl. was discovered in southern Portugal (Jørgensen & Pugh Jones, 2012). It clearly belongs in the group of subtropical species which occur along the Atlantic coasts of Europe and in Macaronesia (Degelius, 1935). This species is one in the southern group which occasionally reaches the British Isles, usually in SW Ireland (Mitchell, 1961). It may therefore be useful to point out this species to the members of the British Lichen Society.



Leptogium resupinans, part of dry specimen showing the characteristic hairy apothecia. Photo: Jan Berge.

Leptogium resupinans is an easily recognized foliose lichen in the group of hairy *Leptogium* species, which usually forms small (to 3 cm diam) brownish blue cushions on branches or mossy stems of trees and bushes. It is usually richly fertile with characteristic thick-margined apothecia, often surrounded by distinct stiff hairs. The epithet rests on a misunderstanding that the thallus of the type specimen (from Bolivia; Nylander, 1861) was upside-down since the hairs were on the same surface as the apothecia. However, this species, like *Leptogium juressianum*, regularly

produces hairs only on the upper surface. This is a rather similar species of the same ecogeographic group that is known as far north as Ireland. It also grows in cushions, but is easily distinguished by the softer, cobwebby, anastomosing hairs (Jørgensen & James, 1983) with isidia and never producing apothecia. A more common, fertile *Leptogium* species that often has short hairs on the upper surface is *Leptogium burgessii*, but that is easily recognized by the numerous crisp lobules on the apothecial margin (actually very well illustrated on the photos of species in the Lobarion as fig. E on p.7 in the winter issue of the Bulletin 2011, but there incorrectly called *L. brebissonii*).

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The Habitats of the 'Shadow Lichens' in the Cairngorms

Introduction

In 2010 Neil Sanderson and Andy Cross carried out site condition monitoring for lichens in the Cairngorm SSSI (Sanderson, 2010) for Scottish Natural Heritage. This was tall order - the SSSI covers over 29,000 ha of very isolated habitat, which has rarely been visited by lichenologists. Just getting into the heart of the mountains from the Braemar side required a day's walk in, camping out and a stay in a bothy; adventure lichenology as pioneered by Oliver Gilbert (Gilbert, 2004).

The approach we took was to concentrate on recording baseline data for selected sites for the most significant habitats, namely the native pinewoods, windblown exposed lichen rich heath on high ridges and lichens in late snow-lie vegetation. In the latter habitat one peculiarity, almost beyond belief, was that the one late snowbed in the Cairngorms with good existing baseline data, Ciste Mhearad (Fryday, 2001a) is not included within any SSSI.

Within the late snow-lie habitat, two features were recorded: the extent and composition of the very late snow-lie *Ameliella andreaeicola* – *Lecanora leptacina* assemblage and the distribution of the Vulnerable RDB and Nationally Rare species *Cladonia maxima* and, particularly, *Cladonia trassii*. The latter species is the rarer of the two and is included as a protected species in Schedule 8 of the Wildlife and Countryside Act. These two *Cladonia* species have acquired the nickname “Shadow Lichens”; the slender grey to brown upright podetia are large but tend to merge amongst similarly coloured vegetation to become surprisingly cryptic.

The *Ameliella andreaeicola* – *Lecanora leptacina* assemblage is described by Fryday (2001a) and occurs very deep in late snow-lie area, with its best development on boulders. The *Cladonia* species, though also known as snow-lie species, were found in areas of areas where the snow-lie is not quite so late. In these latter areas, the associated boulders support *Rhizocarpon geographicum* dominated communities and are notably distinct from the boulder communities of the *Ameliella andreaeicola* – *Lecanora leptacina* assemblage. Within the *Cladonia* snow-lie areas, we found that the habitat of *Cladonia trassii* differed somewhat from that described previously by Gilbert & Fox (1985) and Alan Fryday (Friday, 1995, 2001a & 2001b). The habitats of *Cladonia maxima* and *Cladonia trassii* as recorded by Sanderson (2010) are described here.



Cladonia maxima in *Deschampsia flexuosa* rich U12 snow patch vegetation, E side of Cairn Lochan, Beinn Macduibh massif.

The survey was carried out in mid August 2010 in a year with high snow loss. The recent run of low summer snow cover is a matter of concern for the long term survival of late snow-lie habitats. In the short term however, these conditions are convenient for surveying late snow-lie lichen assemblages. It was notable during the survey of in Garbh Coire Mór, Braigh Riabhach, that the largest example of the *Ameliella andreaeicola* – *Lecanora leptacina* assemblage found during the 2012 survey, in the hollows in the base of the upper corrie, had probably not been seen by lichenologists before. The photograph in Gilbert & Fox (1985) of the corrie in August 1983 makes it clear that the entire community was still under snow then and when Fryday (1995) visited this corrie in mid-July 1994 looking for *Cladonia trassii*, he found the snow even deeper than in the 1985 visit. This probably has a bearing on the discrepancy between the habitat described previously and that found in 2012.



Cladonia trassii in stabilised boulder scree in the upper corrie of Garbh Coire Mór, Braigh Riabhach.

Earlier descriptions describe *Cladonia trassii* as a species of *Nardus stricta* – *Carex bigelowii* grass heath (U7) (Gilbert & Fox, 1985; Fryday, 1995, 2001a,b). This community is found round the edges of late snow-lie patches in the Cairngorms and is often given as the locus of several rare mountain lichens, particularly *Cladonia maxima* and *Cetrariella delisei*. Fryday

(2001b) qualifies the ecology of *Cetrariella delisei* as occurring rarely within the *Nardus stricta* sward and reaching its strongest development on the edge of edge of grassland where U7 gives way to other communities; *Nardus* cover within the *Nardus* grass heaths is too dense to allow strong lichen development. In a 1994 survey for *Cladonia trassii*, Fryday (1995) could not find it in any of the sites recorded by Gilbert & Fox (1985), with deeper snow-lie conditions than 1985 hampering his survey. Alan did find one site, with a clump of *Cladonia trassii* at the outer edge of the U7 grass heath

where it graded into the snow-lie avoiding community *Juncus trifidus* – *Carex bigelowii* Sedge Heath (U9). Alan considered the possibility that *Cladonia trassii* grew further in towards the centre of the snow-bed than *Cladonia maxima* and had been missed due to deep snow-lie. However, as the one site found was on the outer edge of U7 grass heath, he considered that this suggested the opposite scenario and it was just much less frequent than *Cladonia maxima*.

The 2010 Survey



A large patch of *Cladonia trassii* (foreground centre) in *Deschampsia flexuosa* rich U12 late snow patch vegetation, Head of Garbh Uisge Beag, Beinn Macduibh massif.

Our first encounter with the Shadow Lichens was in the vast snow collecting hollow of the Wells of Dee, Braigh Riabhach, on a long trip out from Corrour Bothy. After a fruitless search in and along the edge of large areas of U7 grass heath, a scatter of fixed clumps and individual loose podetia of *Cladonia maxima* was found at the end of the survey (NN938987 & NN938985, 1225–1240m). This population was unexpectedly found deeper in the snow-lie habitat than the zone of extensive U7 grass heath. It was found on banks on the sides of drainage gullies in an odd form of the late snow-lie community *Salix herbacea* – *Racomitrium heterostichum* snow-bed community (U12) with small patches of U7 confined to high mounds. This is a community of drier shedding areas within the late snow-lie areas but here was marked by an abundance of Wavy Hairgrass *Deschampsia flexuosa*. This form of U12

snow-bed community was thereafter encountered frequently during the 2010 survey. It was clear that this community was something quite distinctive of the Cairngorm plateau late snow-lie vegetation though was not mentioned in the NVC (Rodwell, 1992). We were not the first to notice this and a detailed description of this type of vegetation is given by Watson et al (2010). This vegetation was considered to be sufficiently distinctive to be considered a separate sub-community of U12. At the Wells of Dee site *Cladonia maxima* was completely absent from any areas with abundant *Nardus* and this was our first hint that the *Deschampsia* patches rather than the *Nardus* grasslands were the areas to hunt for the *Cladonias*. The population potentially extends along the slope, which was not explored due to lack of time in what was a completely new site for this species.

The next day we explored a site where Gilbert & Fox (1985) found both *Cladonia maxima* and *Cladonia trassii* in a habitat completely different to those in any other sites for the species; ledges on the cliffs above the long lasting snow patches in the upper corrie of Garbh Coire Mór, Braigh Riabhach. Unfortunately, although there was still snow in the corrie it was far less deep than in 1985 and we estimated that Oliver Gilbert's ledges were at least 10m above the base of the cliff exposed in 2010 and not safely accessible without the deep snow pack to stand on. We did, however, find a new site for *Cladonia trassii* on the stabilised boulder scree between the cliff base and the very late snow-lie community in the base of the upper corrie (NN491980, 1070–1075m). This consisted of 12 clumps of *Cladonia trassii* on humus on rocks with *Cladonia bellidiflora*, *Cladonia subcervicornis*, *Cladonia uncialis* subsp. *biuncialis*, *Lecidoma demissum*, *Solorina saccata* and *Sphaerophorus globosus*. It was good to finally find our target for that day in what is a complicated habitat; *C. trassii* proved to be quite a distinctive *Cladonia* – always a relief when making the transition from reading about a species to seeing it in the flesh for the first time – with a definitive K+ yellow reaction aiding identification.

Two days later we tackled the Beinn Macduidh massif from the north walking in from the Cairngorm ski car park to search the Cairn Lochan area. Along the western side, over looking the Liarig Ghru, we found more new sites for *Cladonia maxima* at NH977022, NH977020, and NH976019 (1100–1110m), all in U12 *Salix* – *Racomitrium* late snow-lie vegetation with abundant *Deschampsia flexuosa*. Crossing over towards Féith Buidhe we found a little *Cladonia maxima* edge in a boulder field on SW side Cairn Lochan (NH979012, 1145m) with *Nardus* and *Juncus trifidus* between boulders. In the head of Féith Buidhe (1090–1120m), a large hollow in the plateau, a couple of sites for *Cladonia maxima* were found in open patches with U7 *Nardus* grass heath (NH985011 & NH987012), with our first *Cladonia trassii* of the day deeper into the snow-lie area with a small amount in the *Deschampsia flexuosa* variant of U12 at (NH988011 & NH988011), the same community associated with *Cladonia maxima* at the first site.

Then back over on to the Liarig Ghru side on the NW shoulder of Beinn Macduidh, we found a another new *Cladonia trassii* site (NH982000, 1135m) at a rich snow bed never apparently visited by lichenologist before. This colony supported four clumps in U12 vegetation lacking *Deschampsia flexuosa*, a short way below the *Nardus* zone but some way from the very last snow-lie area with the *Ameliella*

andreaeicola – *Lecanora leptacina* assemblage. We then headed back east over the watershed in to the hollow of Garbh Uisge Beag, north Beinn Macduidh, where we searched a known site for *Cladonia trassii*, recorded by Watson *et al.* (2010). Here the *Deschampsia flexuosa* variant of U12 *Salix* – *Racomitrium* late snow-lie vegetation was very extensive. Within it both *Cladonia maxima* and *Cladonia trassii* were widespread and locally abundant over a distance of 240m (NH989003 to NH986000, 1160–1175m). These populations were much more extensive than previous records implied; the population of *Cladonia trassii* here was several orders of magnitude larger than the total seen for the rest of the survey. A quadrat (2 x 2m) was recorded from an area with high cover of *Cladonia trassii* (NH98844 00178 ±6m, 1170m):

		Domin Scale
Vascular Plants	<i>Salix herbacea</i>	5
	<i>Carex bigelowii</i>	2
	<i>Deschampsia flexuosa</i>	8
	<i>Juncus trifidus</i>	1
Mosses	<i>Racomitrium fasciculare</i>	7
	<i>Dicranum scoparium</i>	1
	<i>Kiaeria starkei</i>	2
	<i>Oligotrichum hercynicum</i>	2
	<i>Conostomum tetragonum</i>	4
Liverworts	<i>Anthelia julacea</i>	2
	<i>Nardia scalaris</i>	6
	<i>Ptilidium ciliare</i>	2
	<i>Barbilophozia floerkei</i>	5
Lichens	<i>Cladonia bellidiflora</i>	3
	<i>Cladonia cf borealis</i>	2
	<i>Cladonia maxima</i>	3
	<i>Cladonia pyxidata</i>	2
	<i>Cladonia trassii</i>	5
	<i>Micarea turfosa</i>	2

By the time we had mapped out this large population it was, sadly, time to head back; the day was beautiful and the landscape stunning. Not wanting to waste an opportunity, the return formed an informal transect though large areas of last snow-lie habitat not looked at in the way in. By now the target species were far less shadowy as we had a good search image for them. As a result five more small sites for *Cladonia trassii* were located north of Garbh Uisge Beag (NH989007, 1160m, potentially the edge of another very large population) and the east slopes Cairn Lochan (NH987017, NH987016, NH988018 & NH991023, 1125–1135m). All but the last were new sites. The first and last sites were of interest: these were the only *Cladonia trassii* sites recorded with extensive U7 *Nardus* grass heath, but both occurred in patches of U12 *Salix* – *Racomitrium* late snow-lie vegetation within small hollows within the *Nardus* grass heath.

Conclusions

Like other surveyors we found that *Cladonia maxima* was more frequent than *Cladonia trassii*. We also found that there was a lot more *Cladonia trassii* around, especially in the Beinn Macduidh – Cairn Lochan area, than had previously been recorded. We did find some *Cladonia maxima* in open areas in U7 *Nardus* grass heath but during our survey we found this species to have its main locus deeper into the late snow-lie vegetation than U7. Most were found in U12 *Salix – Racomitrium* late snow-lie vegetation, with the recently described *Deschampsia flexuosa* rich variant of U12 (Watson, 2012) an especially favourable habitat. *Cladonia trassii* was found to be completely confined to similar U12 *Salix – Racomitrium* late snow-lie vegetation in terrestrial habitats. Even when recorded in U7 dominated areas we only found it in patches of U12 vegetation in hollows within the *Nardus* heath. Both species also have secondary occurrences in boulder fields subject to late snow-lie, where they grow on thin layers of humus on top of rocks and in crevices.

Watson *et al.* (2010) state that on average, snow-lie continues from the end of June to mid July on the *Deschampsia flexuosa* variant of U12 *Salix – Racomitrium* late snow-lie vegetation. This is later than on snowbed vegetation dominated by *Nardus stricta* (U7), but earlier than that on other moss-dominated snowbeds. Fryday (2001a) describes well developed *Cladonia* spp as being confined to the *Nardus* dominated zone and found that *Cladonia* spp within the inner, bryophyte-dominated area of the snowbeds poorly formed and usually lack podetia. We also found this to be true over large areas of bryophyte dominated late snowbed vegetation, but U12 vegetation, especially the *Deschampsia flexuosa* dominated variant, is an exception.

This *Deschampsia flexuosa* (U12) community occupies distinct sites on freely draining soils that shed water within the snowbed. By contrast, other moss dominated late snowbed communities are found below the U12 where they have somewhat longer snow-lie and are also much wetter. The drier conditions within the *Deschampsia flexuosa* variant of U12 appears to be the main factor allowing a quite diverse *Cladonia* assemblages to occur there, including the late snow lay specialists *Cladonia maxima* and *Cladonia trassii*. Deeper into the snowbeds, lichen interest is still very high but is dominated by crustose species and is mainly found on freely draining boulders and stones (Fryday, 2001a).

Once we got a good search image of both the species and habitat, *Cladonia trassii* become quite easy to find within its strictly confined habitat on the Cairngorm plateau. There are certainly many more sites to find and fully recording the distributions of both *Cladonia maxima* and *Cladonia trassii* should be a conservation priority, given the concern about the future of this habitat. Such a survey does have a narrow window of opportunity and is likely only to be practical during good weather conditions in August and September.

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A fallen beech in an ancient pasture woodland in the New Forest, Hampshire

When out ‘lichening’ and face to face with a mighty tree, we often peer up beyond the ‘human’ zone at its base and look upwards to the greater part of the tree that lies out of our reach and wonder what is up there. In the case of species rich woodlands such of those of the New Forest, this is an important question but one that is not readily answerable...unless you find one that has just come down. In the early spring of 2010 Neil Sanderson came across a recently fallen old beech that had an interesting looking lichen flora on its trunk and this article describes our survey of the tree carried out by Neil and Andy Cross over four visits in March and April 2010 (1st March, 6th March and 3rd and 10th April).

The first thing to note is that one has to get to these trees quickly as the lichen assemblage of the upright tree begins to disintegrate rather quickly; the beech we looked at was a very recent fall and its flora still intact. We didn’t measure the full height of the tree but divided it up into the main trunk being ground to about 14m and that above this point as ‘canopy’ of approximately 6 to 8m beyond the trunk. In all the tree was approximately 20-22m high; we would usually get to the lowest 2m at

best, and thus if the tree was upright we would have looked at less than 90% of its height. A thorough going-over of the 'Fallen Beech' would be a great opportunity to see what is going on in the area of the trees normally out of our reach.



The fallen tree with Andy working on the lower trunk

The approach to surveying it was a simple one; we subdivided the trunk into 2m sections, which were measured out with a tape measure, until the trunk began to divide at 14m from the ground and thereafter the rest of the tree was recorded as 'canopy'. We searched for and recorded all the species we could find in each section and gave them a simple estimate of abundance (DAFOR – Dominant, Abundant, Frequent, Occasional and Rare). Much of the tree was readily accessible for close and intense surveying, though a certain amount of crouching, scrambling and twisting was required, particularly so when it came to weaving our way through the canopy area. We mention this because it would have been very difficult to have carried out an equivalent survey had this beech been upright and the survey done with harnesses/ladders/platforms etc. The area of the trunk lying on the ground was inaccessible, accounting for probably about a quarter of the trunk.

The survey took place over four visits and we found 68 lichen and lichenicolous species along with 11 bryophytes, giving a total of 79 species from these two groups. The bryophyte flora is not taken further in this article (though it and its relationship to the lichen flora and communities are not uninteresting). The lichen list at 68 species is rich for a single tree. The New Forest lichen biota as a whole comprises 530 species and thus this single tree harbours some 13% of the known New Forest lichens. Of the 68 species recorded, Table 1 lists the nine species with a conservation status:

Species	Conservation Status
<i>Arthonia zwackhii</i>	NT (NR)
<i>Bacidia incompta</i>	VU (NS/BAP)
<i>Dactylospora parasitica</i>	Nb (NS)
<i>Schismatomma niveum</i>	Nb (IR)
<i>Sphinctrina tubiformis</i>	Nb (NR)
<i>Sphinctrina turbinata</i>	Nb (NS)
<i>Strigula taylorii</i>	Nb (NS/IR)
<i>Tremella pertusariae</i>	Nb (NR)
<i>Usnea florida</i>	NT (BAP)

Table 1: Species of conservation interest recorded from the Fallen Beech

This one Fallen Beech therefore has 3 Red Data Book species on it; 3 Nationally Rare; 4 Nationally Scarce; 1 International Responsibility and 2 BAP species. This is an impressive list from a single tree, and indicates one of the reasons why the New Forest woodlands are of international importance.

Our survey of the Fallen Beech went further than a species list and provided information of the distribution of these species around the tree; Table 2 below shows the distribution of the nine species of conservation interest.

Species	Trunk height above ground in metres							Canopy (>14 m)	Conservation Status
	0-2	2-4	4-6	6-8	8-10	10-12	12-14		
<i>Arthonia zwackhii</i>		R							NT (NR)
<i>Bacidia incompta</i>						R		1	VU (NS/BAP)
<i>Dactylospora parasitica</i>		O	R	R	O	O			Nb (NS)
<i>Schismatomma niveum</i>	F	F		R		O			Nb (IR)
<i>Sphinctrina tubiformis</i>				O					Nb (NR)
<i>Sphinctrina turbinata</i>						R	R		Nb (NS)
<i>Strigula taylorii</i>					O	O			Nb (NS/IR)
<i>Tremella pertusariae</i>							R		Nb (NR)
<i>Usnea florida</i>								1	NT (BAP)
Total	1	3	1	3	2	5	2	2	9

Table 2: Species of conservation interest on the Fallen Beech and their distribution

Of the nine species of conservation interest, only one – *Schismatomma niveum* (a species that is locally frequent in the New Forest) – occurred in the readily accessible 0-2m ‘human’ zone; eight were beyond what we would have seen had the tree still been standing. As it happens, the relative species impoverishment in the 0-2m section is probably due to a nearby holly shading the tree when it was upright rather than an intrinsic pattern of distribution common throughout the Forest on old Beeches. When standing, this is a tree we would have rapidly passed by looking for trees with the lowest 2m clear of holly.

The raw data, of course, tells one side of the story; another side of it is the being there and the doing of the survey. It was spring in the New Forest and a glorious place and time to be out and clambering around this great Beech exploring parts of a tree that we would normally never get to see. A flavour of the second days work was recorded in Neil’s journal for the day:

“[When in the six to eight metre slice, we] spotted a *Sphinctrina* strongly parasitising a white crust. It was clearly not *Sphinctrina turbinata*, but it was not clear what it was parasitising. The apothecia were badly deformed. I thought it was a *Lecanora* at first but eventually worked that the line between the infected bits and adjacent *Pertusaria leioplaca* was the invasion front of the *Sphinctrina*. This suggested *Sphinctrina tubiformis*, not recorded since the Rev Crombie’s 1869 Brockenhurst record. Back in the office it was confirmed under the microscope: another one down!”



Sphinctrina tubiformis parasitising *Pertusaria leioplaca*

On this tree, the *Sphinctrina* lived, six to eight metres above the ground and we would never have known of its presence had not the tree come down (and Neil finding it so soon after). Did Crombie find his specimen on a recently fallen tree? How did the species remain undetected for 141 years? Does this *Sphinctrina* tend, or need, to live high up? One possible explanation may lay with the very large size of the *Pertusaria leioplaca* thalli at this height; these are very old colonies of a species normally only

seen as young pioneer thalli. We can't know for certain if that is the reason, but at least there is now a modern record for this species in the New Forest, possibly for the whole of England.

Surveying the Fallen Beech was time consuming, partly because of the level of detail we went into. This was a spare time activity spread over a few days in March and April. We picked up the survey for the 8 to 14m section of the trunk and the canopy on April 10th having been rained off on an attempt to survey on the 3rd April. Here, again, is an extract from Neil's journal for the day:

“At the tree we did sections 8 – 10m, 10 – 12m and 12 – 14m, finished the canopy.... The higher section [of the trunk] showed a decline in woodland species such as *Pyrenula chlorospila*, *Schismatomma niveum* and *Thelotrema lepadinum* and some slight increase in species of more open situations with *Cliostomum griffithii*, *Lecanora expallens* and *Parmelia saxatilis* appearing but nothing dramatic other than an increasing in *Pertusaria pertusa*. *Sphinctrina turbinata* turned up on *Pertusaria pertusa* here, so we had both species on the trunk. Much more exciting was the find of *Bacidia incompta* VU (NS/BAP) in a small wound in the 10 – 12m section, along with *Strigula* sp. A [an as yet undefined species of *Strigula*].” Though not in Neil's journal entry, we also found another *Bacidia incompta* VU (NS/BAP) patch around a wound on a branch near the trunk at about 12.5m along.



Wound developed on branch with location of *Bacidia incompta* colony indicated and *Xanthoria parietina* growing in a wound track



Close up of the *Bacidia incompta* colony on a damaged branch

We recorded two species of conservation interest in the canopy: *Usnea florida* NT (BAP) and *Bacidia incompta* VU (NS/BAP), both Red Data Book species declining in the UK. Finding *Usnea florida* was a pleasant discovery but one that was expected given that it lives in well-lit conditions on shrubs and low sweeping branches and is still frequent as windblown material in the Forest; the *Bacidia incompta* in the canopy was not so expected. Is the upper trunk and canopy of significance for this threatened species?

Putting the *Sphinctrina tubiformis* to one side, all other species on the Fallen Beech were already known from Busketts Wood. Our observations agree with the conclusions of a full scientific study of old beech in Sweden by Fritz (2009) where he found that a) surveying the bottom 2m of trunks of the fallen trees only recorded about a quarter of the lichens species of conservation interest on the whole trunk and b) most of the missed species of interest will be found within 2m of the ground on other trees within the site if an extensive survey is carried out. It appears thus that extensive ground based surveys will be likely to adequately sample the total flora of lichens of conservation interest, but Fritz (2009) emphasises that such surveys are likely to significantly underestimate population numbers.

Given that our data is from a single tree, we must, of course, not extrapolate too far (not wanting to offend statisticians, for one thing) but it does spark up ones imagination. Looking beyond the distribution of species on the trunk, the canopy, for us, emerged as a complex and an intriguing habitat, and more so than we had imagined; for example, the branches on a beech of this size in the Forest are themselves old, potentially well over 100 years old and wound tracks were frequent.

It was very noticeable the great degree to which wound tracks influenced the composition of the lichen communities. A large proportion of the canopy supported the *Xanthorion* community in wound track influenced bark; we even found a small *Bacidia incompta* VU (NS/BAP) there. In contrast, branches without wound tracks had communities of nutrient poor conditions, which suggests care may be needed when using twig floras to assess nitrogen deposition. Are the upper trunk and canopy wound track elements contributing some element to the dispersal and/or distribution pattern of some of the New Forest lichen flora? We don't know but just perhaps they might be, and there may be more surprises. The problem is, the resource (recently fallen ancient species-rich beeches) is, unsurprisingly, scarce and time consuming to study; we will, however, be on the lookout.

The full species list can be viewed at the Wessex Lichen Group website <http://wessexlichengroup.org/index.html>.

Reference

Fritz, Ö. (2009). Vertical distribution of epiphytic bryophytes and lichens emphasizes the importance of old beeches in conservation. *Biodiversity and Conservation* **18**: 289–304.

Andy Cross & Neil Sanderson

Update: Bristol Downs Lichen Trail

The popularity of this initiative has exceeded our expectations resulting in the need for a further supply of leaflets. The initial print of 3000 has been distributed and now a reprint of 1500 is completed, again with financial support from BLS and Bristol Naturalists.

Details of The Trail were published in the 2011 Summer BLS Bulletin, and briefly I aim to outline 2012 activities, and ways in which The Trail dynamics have developed and been adapted. The Trail is now only one part of a Tour which includes a wider range of lichens in an extended area. Four Tours have taken place this year with numbers varying from 4 to 22 attendees. After each Tour I write an assessment ascertaining how improvements can be developed. I now provide a resource of named A4 laminated photographs. Each photograph is shown and key features highlighted before participants observe the lichen. Maintenance of the area is necessary which includes checking discs are in place and sensitive removal of ivy, brambles and thorny undergrowth. The use of hand-lenses is essential to the appreciation of lichen detail. Fortunately I am able to borrow enough for each participant. Before commencing the Tour time is taken so that participants can use the lenses with crustose, foliose and fruticose lichen specimens. These are on twigs making handling easy whilst concentrating on noting the differences between the

thallus forms. I now have a collection of about 15 of each type in separate waterproof wallets!

My tour is mainly focused on lichen colour and form, and how these characteristics enhance the beauty of the trees and bushes on the Downs – to quote Oliver Gilbert –

'ultimate beauty only revealed with a hand lens. All species...exhibit a ravishing display of colour, texture, symmetry and sculptured form, a kind of perfection normally associated with a butterfly's wing.'

Sheila Quin

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Scotland's rainforest epiphytes receive international attention

Background

The Society of Conservation Biology (SCB) was founded in Michigan in 1985, to provide a *'leading scientific voice for the study and conservation of Earth's biological diversity'*. In 2000, seven regional sections were developed: for the marine environment, and regionally for Africa, Asia, Australia, New Zealand and Pacific Islands, Europe, North America, South and Central America, and the Caribbean. Each section provides mechanisms for knowledge sharing among scientists and conservation practitioners.

In late August 2012, the European Section of the SCB held its third annual congress in Glasgow, with the appropriate theme of *'Conservation on the Edge'*. I and a Norwegian colleague and bryologist – Einar Heegaard – saw this as an opportunity to raise the profile of European boreal-temperate rainforests among the world's wider scientific community, and to gain new international perspectives on Scotland's rainforest systems. These native rainforests are tremendously important lichen and bryophyte habitat; they are in fact characterised by the richness and composition of epiphytic cryptogams. Scotland and western Norway retain among the best remaining examples of rainforest communities which have been destroyed or degraded across much of oceanic Europe.

The European Congress of Conservation Biology accepted a proposal to host a special symposium in the *Ecology and Conservation of European Rainforest Epiphytes* and to help make this a reality the British Lichen Society kindly provided us with a support grant of c. £1500. This complemented additional funding from The Sibbald Trust of the Royal Botanic Garden Edinburgh, and The Norwegian Forest and Landscape Institute.

The Symposium

An international body of speakers was assembled, to address various aspects of rainforest ecology. Dominick DellaSala, from the GeosInstitute in Washington, and author of the thought-provoking *Temperate and Boreal Rainforests of the World* (Island Press, 2011) delivered a key-note address on the global biogeography of non-tropical rainforests, and called for the explicit recognition of boreal-temperate rainforest within European conservation policy. Talks on the biogeography of lichen and bryophyte epiphytes (Toby Spribille (University of Montana) & Einar Heegaard (The Norwegian Forest and Landscape Institute), respectively) each identified a suite of species which are abundant within a relatively narrow oceanic zone, but which are rare and/or red-listed towards more continental climates within Europe. These presentations highlighted the status of our 'International Responsibility' species, which may be common in western Britain, but are globally scarce and sometimes remarkably disjunct. Two talks focussed on functional ecology: Silke Werth (University of Iceland) addressed the meta-population dynamics of lichen epiphytes, while Kristin Palmqvist (Umea University) presented the first example of a physiological model for lichen growth coupled to climate change scenarios. These talks demonstrated the foundational biology required to conserve lichen epiphytes during a period of global change, including both increasing nitrogen deposition and climate warming. A talk by Magne Saertesdal (sadly absent, though delivered by Einar Heegaard) addressed broader aspects of the rainforest environment, reminding the audience that the system can be characterised by a wide range of specialist species with restricted distributions (e.g. fungus flies), but about which little is known. Finally, Andrew Weatherall (University of Cumbria) provided an engaging look at his work on biodiversity inventory and monitoring for Young Wood in the Lake District. The audience included scientists and policy makers.

The British Lichen Society received acknowledgement as an event sponsor in the months prior to the symposium, by featuring on the Congress website, and during the event through promotional material including posters on lichen diversity and brisk sale of the recent book on *Oceanic Hazelwoods* by Brian and Sandy Coppins. The Congress included relevant talks in several other specialist symposia, for example by Olga Hilmo on the genetic diversity of *Lobaria pulmonaria* in Norwegian rainforest, by Asko Lõhmus on population estimates for hard-to-record lichens, by Christophe Scheidegger on lichen transplantation as a conservation tool, and with a symposium on boreal forest dynamics and conservation organised by Bengt Gunnar Jonsson.

Field Excursion

Delegates from the rainforest epiphyte symposium took the opportunity of a short and informal field excursion in western Scotland. This visited the oceanic hazelwood at Ballachuan, exemplifying a site with long ecological continuity but relatively simple structure (Figure 1). We were introduced generally to the site, its ecology and biodiversity importance, by Sven Rasmussen (site manager, Scottish Wildlife Trust), with critical details on the epiphyte flora provided by Andy Acton, Brian Coppins and Rebecca Yahr, and on hazelwood dynamics by Gordon Gray Stephens. A second visit was made to the oakwoods within Taynish NNR, a site with a more



Figure 1: ECCB keynote speaker Dominick DellaSala contemplating new perspectives on boreal-temperate rainforests developed in the dwarfed canopy of a westcoast hazelwood.

complex and varied history of human intervention (Figure 2). John Halliday (site manager) provided a comprehensive tour of the Taynish reserve, with delegates from Scottish Natural Heritage (Dave Genney, Jeanette Hall, Alan McDonnell and Stan Phillips) outlining the challenging management issues facing conservation in Scottish woodlands and soliciting international perspectives. The excursion included helpful representation from the Royal Botanic Garden Edinburgh by Sally Eaton, and the British Lichen Society by Steve Price.

Summary

The event was informative and successful. A number of key issues emerged from the meeting and will entertain the minds of lichenologists over the coming decades; five of my personal favourites are summarised below:

1. There should be a push towards a wider recognition of European temperate rainforest internationally, as convincingly outlined by Dominick DellaSala, who has recently been blogging in North America on his day spent inside a Scottish hazelwood: <http://ipfieldnotes.org/are-the-united-kingdoms-coastal-woodlands-rainforests/#comments>
2. The lack of a baseline in terms of ‘naturalness’ poses a conceptual problem for many non-European ecologists when interpreting British woodlands, and is also a challenge for UK policy development and implementation because outcomes can be differently interpreted against a variable site history.
3. The scale of British woodland sites was very striking to a North American audience – with our conservation sites (even the big ones!) considered very small, fragmentary and extremely vulnerable, despite their critical importance for lichen diversity conservation.
4. This small size and fragmentary condition poses severe problems in terms of management. This is the case when using semi-natural processes to try to maintain a patchwork of habitat heterogeneity within very small and disconnected sites. The element of uncertainty in natural processes means that risks are inevitably taken at a site scale, without knowing the full extent of an insurance policy provided by a ‘rescue effect’ for species, through inter-site dispersal. Can we achieve the right balance between ‘gardening’ for success, and allowing ‘space for nature’?
5. Questions were raised about the future viability of targeting certain ‘non-native’ though epiphyte rich trees for removal (e.g. sycamore) in a landscape where

epiphytes have already suffered declines in native trees such as the elm, and with ash dieback an emerging threat.



Figure 2: The ECCB excursion-group on a visit to Taynish NNR, from left to right: Steve Price, John Halliday, Einar Heegaard, Sally Eaton, Olga Nadyeina, Chris Ellis, Silke Werth, Rebecca Yahr, Jeanette Hall, Dave Genney, Toby Spribille, Brian Coppins and Alan McDonnell (picture taken by Stan Phillips).

On behalf of all the delegates, I extend warm thanks to the British Lichen Society for making this event possible.

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Publication of *A Conservation Evaluation of British Lichens and Lichenicolous Fungi*

Those interested in the conservation of British lichens might wish to note the above publication. It updates and extends the coverage provided by *A Conservation Evaluation of British Lichens* of Woods and Coppins published by the British Lichen Society in 2003. Our past President Dr. Stephan Ward in his preface to the new edition of this work writes: "In the nine years since the first edition went to press a number of new species have been discovered in Britain and our knowledge of the status of other species has improved, necessitating a revision of the threat status for some. A number of taxonomic changes have also been proposed, most of which have been incorporated in the recently published *The Lichens of Great Britain and Ireland* (Smith *et al* 2009). These changes have been followed here. A more complete coverage of lichenicolous fungi is also attempted though it is still not possible to provide a conservation evaluation for many species owing to a lack of distributional data.

Those species included in the revised UK Biodiversity Action Plan are listed together with those taxa identified as being of principal importance in England and Wales in fulfillment of Sections 41 and 42 of the Natural Environment and Rural Communities Act 2006 and in Scotland in fulfillment of Section 2(4) of the Nature Conservation (Scotland) Act 2004."

Where ever a change in conservation status is proposed from the first edition an explanation is provided. Over 150 species are now covered by notes and this new publication extends to 155 pages. Working with the Joint Nature Conservation Committee and benefiting from their editorial guidance this work is admitted into their series of species status reports as No. 13. It can be viewed on the JNCC website at jncc.defra.gov.uk/pdf/lichens. JNCC is no longer producing hard copies of these reports so this Society has produced a few hard copies which are on sale at no profit to the Society through Richmond Publishing Company (see their sales section towards the end of this Bulletin). The authors would welcome any comments or observations on this publication to improve any further edition they or others may rashly consider producing.

Ray Woods and Brian Coppins

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NLF-excursion to Vadstena 11–15 August 2013

Vadstena, the hometown of Eric Acharius, near Lake Vättern in central southern Sweden, will host the 20th biennial NLF-excursion. Accommodation is booked at Vadstena Further Education College on the lake shore, <http://www.vadstena.fhsk.se>.

Accommodation for one person in a double room for four nights and all meals is c. 1500 SEK (c. 175 €); single rooms are also available. The Nordic Lichen Society will apply for funds in early 2013 to cover additional expenses, such as hiring a bus and a lecture room, and the cost of an Acharius' dinner. The excursion fee will be decided later, and announced in a first circular and on NLF's homepage as soon as possible, <http://nhm2.uio.no/lichens/nordiclichensociety>.

Programme to include: lichens and culture in historic Vadstena, including Acharius' house, and surrounding region, the natural history of Omberg, posters and presentations and the biennial meeting of NLF. Please inform Arne Thell (arne.thell@biol.lu.se) or Ingvar Kärnefelt (ingvar.karnefelt@biol.lu.se) if you intend to participate and if you wish to present a poster or presentation **no later than 1 April 2013**. Abstracts should be submitted before 1 May. A warm welcome awaits you in Vadstena.



Eric Acharius (1757–1819)

British Isles List of Lichens and Lichenicolous Fungi

September 2012 update to list

The fully corrected list is available on the BLS web site, www.britishlichensociety.org.uk

We are indebted to Ulf Arup, David Hawksworth, Steve Chambers, Martin Kukwa, Alan Orange, Mark Powell, Martin Westberg and other checklist users, for bringing several of the required changes to our notice. Anyone encountering difficulties regarding nomenclature or BLS code numbers, please contact one of us, as below.

E-mail contacts (with main responsibilities):

Brian Coppins (nomenclature, BLS and NBN species dictionaries, spelling, authorities, dates of publication) lichensEL@btinternet.com

Mark Seaward (allocation of BLS numbers and abbreviations) m.r.d.seaward@bradford.ac.uk

Janet Simkin (Recorder and spread-sheet species dictionaries) janetsimkin@btinternet.com

Add:			Notes
2588	<i>Agonimia flabelliformis</i>	Agon flab	
2604	<i>Arthonia byssacea</i>	Arthon byss	
2612	<i>Caloplaca alstrupii</i>	Calo alstrup	
2613	<i>Caloplaca austrocitrina</i> ##	Calo austro ##	2
2609	<i>Caloplaca calcitrapa</i>	Calo calc	
2607	<i>Caloplaca limonia</i>	Calo limo	
2595	<i>Caloplaca neotaurica</i>	Calo neat	
2608	<i>Dactylospora suburceolata</i> #	Dact subu #	
2568	<i>Fuscidea oceanica</i>	Fuscid ocea	
2614	<i>Heteroplacidium fuscum</i>	Heteropl fusc	
2610	<i>Hydropunctaria aractina</i>	Hydrop arac	
2596	<i>Hydropunctaria oceanica</i>	Hydrop ocean	
2597	<i>Hydropunctaria orae</i>	Hydrop orae	
2611	<i>Myriospora dilatata</i>	Myri dila	
2601	<i>Myriospora myochroa</i>	Myri myoc	
2598	<i>Ochrolechia bahusiensis</i>	Ochr bahu	
2599	<i>Ochrolechia laevigata</i>	Ochr laev	
2600	<i>Ochrolechia mahuensis</i>	Ochr mahl	
293	<i>Ropalospora lugubris</i> forma <i>sorediata</i>	Ropal lugu sore	
2606	<i>Stigmidium eucline</i> #	Stig eucl #	1
2605	<i>Strigula calcarea</i>	Strig calc	
2602	<i>Tremella candelariellae</i> #	Tremel cand #	
2603	<i>Tubeufia heterodermiae</i> #	Tube hete #	

Change of genus (sometimes also species epithet):						
Change from:			Replace with:			
2455	<i>Acarospora rhagadiza</i>	Acar rhag	2455	<i>Myriospora rhagadiza</i>	Myri rhag	
21	<i>Acarospora rufescens</i>	Acar rufe	21	<i>Myriospora rufescens</i>	Myri rufe	
31	<i>Acarospora scabrida</i>	Acar scab	31	<i>Myriospora scabrida</i>	Myri scab	
25	<i>Acarospora smaragdula</i>	Acar smar	25	<i>Myriospora smaragdula</i>	Myri smar	
1474	<i>Verrucaria amphibia</i>	Verrucar amph	1474	<i>Hydropunctaria amphibia</i>	Hydrop amph	
1504	<i>Verrucaria maura</i>	Verrucar maur	1504	<i>Hydropunctaria maura</i>	Hydrop maur	
2390	<i>Verrucaria scabra</i>	Verrucar scab	2390	<i>Hydropunctaria scabra</i>	Hydrop scab	
1499	<i>Verrucaria rheitrophila</i>	Verrucar rhei	1499	<i>Hydropunctaria rheitrophila</i>	Hydrop rhei	
745	<i>Lecidea luteoatra</i>	Lecidea luteo	745	<i>Lecanora viridiatra</i>	Lecanora virid	
2488	<i>Lecidea pullata</i>	Lecidea pull	2488	<i>Frutidella pullata</i>	Frut pull	
13	<i>Myriospora heppii</i>	Myri hepp	13	<i>Caeruleum heppii</i>	Caeru hepp	
1165	<i>Polychidium dendricum</i>	Polych dend	1165	<i>Leptogidium dendriscum</i>	Leptogid dend	
1319	<i>Peterjamesia circumscripta</i>	Peterj circ	1319	<i>Roccellographa circumscripta</i>	Roccellogr circ	
2439	<i>Peterjamesia sorediata</i>	Peterj sore	2439	<i>Roccellographa sorediata</i>	Roccellogr sore	
Change of epithet:						
Change from:			Replace with:			Notes
264	<i>Caloplaca lactea</i>	Calo lact	264	<i>Caloplaca marmorata</i>	Calo marm	
156	<i>Cladonia innominata</i>	Clad inno	156	<i>Cladonia conista</i>	Clad conista	
2568	<i>Fuscidea ocellata</i>	Fuscid ocel	2568	<i>Fuscidea oceanica</i>	Fuscid ocea	3
Change of abbreviation:						
Change from:			Replace with:			Notes
690	<i>Lecanora varia</i>	Lecanora vari	690	<i>Lecanora varia</i>	Lecanora varia	
	<i>Leptogium</i>	Leptog		<i>Leptogium</i>	Leptogium	4
	<i>Roccella</i>	Rocc		<i>Roccella</i>	Roccella	5

Notes

- 1 – most British records of “*Stigmidium aggregatum*” (on *Pertusaria hemisphaerica* and *P. lactea*) belong to this species, whereas *S. eucline* is confined to *Aspicilia calcarea*.
- 2 – a common British species is provisionally named as *C. austrocitrina* [as indicated by the ##] pending further study; see Powell & Vondrák in *BLS Bulletin* **110**: 20–24 (2012).
- 3 – *Fuscidea ocellata* was reported in error [in *BLS Bulletin* **108**: 72, 2011], and British material is now described as *F. oceanica*.
- 4 – applies to all species listed under *Leptogium*.
- 5 – applies to both species of *Roccella*

B.J. Coppins, M.R.D. Seaward & J. Simkin

Literature pertaining to British Lichens - 51

Lichenologist **44**(3) was published on 10 April 2012, **44**(4) on 19 June 2012, and **44**(5) on 24 August 2012.

Taxa prefixed by * are additions to the checklists of lichens and lichenicolous fungi for Britain and Ireland. Aside comments in square brackets are by the author of this compilation.

ARCADIA, L. 2012. (2071) Proposal to conserve the name *Lichen leucomelos* (*Heterodermia leucomelos*) (lichenized *Ascomycota*). *Taxon* **61**: 682–683. A proposal to settle the often controversial spelling of the name for this species.

ARCADIA, L. 2012. (2072) Proposal to conserve the name *Lichen fuscovirens* (*Collema fuscovirens*) (lichenized *Ascomycota*). *Taxon* **61**: 683–684. A proposal to retain the epithet ‘*fuscovirens*’ for this common *Collema*.

ARCADIA, L. & ERTZ, D. 2012. (2052) Proposal to conserve the name *Lichen vulgatus* (*Opegrapha vulgata*) (lichenized *Ascomycota*). *Taxon* **61**: 462–463. A proposal to ‘save’ the name *Opegrapha vulgata* for the species familiar to most of us. It will also avoid the name *Opegrapha* becoming a synonym of *Ascodichaena* or *Polymorphum*!

ARCADIA, L. & NORDIN, A. 2012. (2053) Proposal to conserve the name *Megaspora verrucosa* (Ach.) L. Arcadia & A. Nordin against *M. verrucosa* Hafellner & V. Wirth (lichenized *Ascomycota*). *Taxon* **61**: 464–465. A proposal to ‘save’ this now familiar name for the organism for which it was intended.

BADMIN, J. 2012. In “Reports of outdoor meetings 2011”. *Bull. Kent Field Club* **57**: 15–48: Lorendon Park, Faversham (p. 29–30).

BLATCHLEY, I. 2012. In “Reports of outdoor meetings 2011”. *Bull. Kent Field Club* **57**: 15–48: Seal churchyard and Seal Chart (p. 15–16).

- CZARNOTA, P. 2011. *Micarea contexta* and *M. lynceola* (lichenized Ascomycota), new for Poland. *Polish Botanical Journal* **56**: 307–313. Provides good descriptions and illustrations for these two species, as well as a revised key to the genus in Poland.
- DYMYTROVA, L.V. 2011. Notes on the genus *Scoliciosporum* (Lecanorales, Ascomycota) in Ukraine. *Polish Botanical Journal* **56**: 61–75. Includes further studies and discussion on the tricky taxa related to *Scoliciosporum chlorococcum* and *S. umbrinum*.
- FEDORENKO, N.M., STENROOS, S., THELL, A., KÄRNEFELT, I., ELIX, J.A., HUR, J.-S. & KONDRATYUK, S.Y. 2012. Molecular phylogeny of xanthorioid lichens (Teloschistaceae, Ascomycota), with notes on their morphology. *Bibliotheca Lichenologica* **108**: 45–64. Five new monophyletic groups of xanthorioid lichens have been identified by phylogenetic analysis, and as a consequence five new genera are described. Those involving British species are: *Massjukiella* S.Y. Kondr. *et al.* with the type species *M. polycarpa* (Hoffm.) S.Y. Kondr. *et al.* (syn. *Xanthoria polycarpa*), also *M. candelaria* (L.) S.Y. Kondr. *et al.* (syn. *X. candelaria*), and *M. ucrainica* (S.Y. Kondr.) S.Y. Kondr. *et al.* (syn. *X. ucrainica*). The uncertainly British *Xanthoria fulva* is placed in the new genus *Gallowayella* S.Y. Kondr. *et al.* as *G. fulva* (Hoffm.) S.Y. Kondr. *et al.*
- HAFELLNER, J. 2011. Contributions to a revision of lichenized, phaeosporid species of *Polyblastia* coll., mainly in the Central European mountains. *Bibliotheca Lichenologica* **104**: 117–141. Provides useful notes and discussion on the three genera recently split from *Polyblastia* s. lat., i.e. *Atla*, *Henrica* and *Sporodictyon*. The generic placement of *Atla wheldonii* is questioned.
- HAFELLNER, J. 2011. *Halospora* resurrected and segregated from *Merismatium*. *Bibliotheca Lichenologica* **106**: 75–93. Species of *Merismatium* having thick-walled ascospores that exhibit a distinct perispore are referred to the genus *Halospora* (Zschacke) Tomas. & Cif. (1952). Two of the four accepted species occur in the British Isles: *H. deminuta* (Arnold) Tomas. & Cif. (1952) (syn. *Merismatium deminutum*, *Polyblastia deminuta*) and *H. discrepans* (J. Lahm ex Arnold) Hafellner (2011) (syn. *Merismatium discrepans*).
- HENDY, J. 2012. In “Reports of outdoor meetings 2011”. *Bull. Kent Field Club* **57**: 15–48: Bedgebury Forest (p. 17).
- KRZEWICKA, B. 2012. A revision of *Verrucaria* s.l. (Verrucariaceae) in Poland. *Polish Botanical Studies* **27**: 3–143. This treatment of 62 species is an essential reference for devotees of Verrucarioid lichens, with good descriptions and discussions, accompanied by many colour habit photographs and some of sections.
- ORANGE, A. 2012. Semi-cryptic marine species of *Hydropunctaria* (Verrucariaceae, lichenized Ascomycota) from north-west Europe. *Lichenologist* **44**: 299–320. Two new species of *Hydropunctaria* [*Verrucaria maura* group] are described, both subtly distinguishable from *H. maura* but supported my molecular data: *H. oceanica* Orange and *H. orae* Orange. The new combination *H. amphibia*

- (Clemente) Orange (syn. *H. amphibia*) is made [*H. aractina* (Wahlenb) Orange, previously known only from Norway, has since been found in northern Scotland (Orange, *in litt.*)].
- PALMER, K. 2012. Lichen Report 2011. *Bull. Kent Field Club* **57**: 58–60. A summary of the notable finds during the year, and a noted apparent decline of *Platismatia glauca* in recent years within the county.
- PINO-BODAS, R., AHTI, T., STENROOS, S., MARTIN, M.P. BURGAS, A.R. 2012. *Cladonia conista* and *C. humilis* (Cladoniaceae) are different species. *Bibliotheca Lichenologica* **108**: 161–176. Phylogenetic study has shown that *Cladonia humilis* (With.) J.R. Laundon, with atranorin and fumarprotocetraric acid, and *C. conista* (Nyl.) Robbins (syn. *C. innominata* Lendemer and *C. humilis* var. *bourgeanica* Archer), with bourgeanic and fumarprotocetraric acid, are distinct species, and not just chemical races of the same species. Morphological studies showed slight but statistically significant phenotypic differences in that *C. conista* tends to have longer podetia, wider scyphi and longer podetial stalks than *C. humilis*.
- PITT, J. 2012. In “Reports of outdoor meetings 2011”. *Bull. Kent Field Club* **57**: 15–48: Dungeness (p. 48).
- SCHMULL, M., MIADLIKOWSKA, J., PELZER, M., STOCKER-WÖRGÖTTER, E., HOFSTETTER, V., FRAKER, E., HODKINSON, B.P., REEB, V., KUKWA, M., LUMBSCH, H.T., KAUFF, F. & LUTZONI, F. 2011. Phylogenetic affiliations of members of the heterogeneous lichen-forming fungi of the genus *Lecidea* sensu Zahlbruckner (Lecanoromycetes, Ascomycota). *Mycologia* **103**: 983–1003. Results and discussion of phylogenetic relationships amongst species of *Lecidea* s. lat., with one nomenclatural innovation being the inclusion of *Lecidea pullata* in *Frutidella* as *F. pullata* (Norman) Schmull.
- SEAWARD, M.R.D. 2012. A checklist of the lichen-forming, lichenicolous and allied fungi of the Isle of Man. *Proceedings of the Isle of Man Natural History and Antiquarian Society* **12**: 496–509. A checklist of 558 taxa, 480 of which have been reported during the last 55 years.
- ŠLIWA, L., MIADLIKOWSKA, REDELINGS, B.D., MOLNAR, K. & LUTZONI, F. 2012. Are widespread morphospecies from the *Lecanora dispersa* group (lichen-forming Ascomycota) monophyletic? *Bryologist* **115**: 265–277. A first attempt at investigating the phylogeny of this taxonomically difficult group. Lots of interesting, thought-provoking results, but much more work needed.
- VONDRÁK, J., ŠOUN, J., VONDRÁKOVÁ, O., FRYDAY, A.M., KHODOSOVTSSEV, A. & DAVYDOV, E.A. 2012. Absence of anthraquinone pigments is paraphyletic and a phylogenetically unreliable character in the Teloschistaceae. *Lichenologist* **44**: 401–418. The new species *Caloplaca neotaurica* Vondrák, Khodosovtsev, Arup & Søchting is described, with British material cited from coastal rocks in Pembrokeshire. [The colour illustration would

suggest that this could be close to, or even identical with, *C. ceracea* Laundon, but this latter species was not mentioned in the paper.]

B.J. Coppins

lichensel@btinternet.com

New, Rare and Interesting Lichens

Contributions to this section are always welcome. Submit entries to Chris Hitch, Orchella Lodge, 14, Hawthorn Close, Knodishall, Saxmundham, Suffolk, IP17 1XW, in the form of species, habitat, locality, VC no, VC name, (from 1997, nomenclature to follow that given in the appendix, see BLS *Bulletin* 79, which is based on the Biological Record Centre for instructions for Recorders, ITE, Monks Wood Experimental Station, Abbots Ripton, PE17 2LS, 1974). Grid Ref (GR) (please add letters for the 100km squares to aid BioBase and Recorder 2000, as these are used in the database and on the NBN Gateway), altitude (alt), where applicable in metres (m), date (month and year). NRI records should now include details of what the entry represents, eg specimen in Herb. E, Hitch etc., with accession number where applicable, field record or photograph, to allow for future verification if necessary or to aid paper/report writing. Determined/confirmed by, Comments, New to/the, Finally recorder. An authority with date after species is only required when the species is new to the British Isles. Records of lichens listed in the RDB are particularly welcome, even from previously known localities. In the interests of accuracy, the data can be sent to me on e-mail, my address is cjbh.orchldge@freeuk.com, or if not, then typescript. Copy should reach the subeditor at least a fortnight before the deadline for the *Bulletin*. *Please read these instructions carefully.*

New to the British Isles

There are no records for this category.

Other records

Acarospora umbilicata: on string course of south wall of church, Hutton, Berwickshire, GR 36(NT)/907.540, alt 60 m, July 2012. Herb. Coppins 24061 (E). New to Scotland.

B.J. Coppins

Amandinea lecideina: (i) on flint pebbles on stabilised shingle beaches, Browndown Ranges, Lee-on-the Solent to Itchen Estuary SSSI & Browndown SSSI, VC 11, South Hampshire, GR 40(SZ)/568.995 & 40(SZ)/570.993, April 2012. Collected by J. A. Norton; (ii) on shingle, Gravelly Marsh, Beaulieu, North Solent SSSI, VC 11, South Hampshire, GR 40(SZ)/4140.9666, June 2012. Collected by N. A. Sanderson. First and second records for Hampshire and a potentially much overlooked species of coastal shingle. *N.A. Sanderson & J.A. Norton*

Anaptychia ciliaris subsp. *ciliaris*: on basic-sandstone gravestone, Bedford Cemetery, VC 30, Bedfordshire, GR 52(TL)/04.51, October 2012. Field record. A large and apparently healthy colony, c. 12 inches x 6 inches, near top of west-facing side of headstone. It is perhaps the slight porosity of this type of stone which allows the usual abundance of *Physconia grisea* to grow on the sides of such headstones and these stones might be worth checking in case *A. ciliaris* is under-recorded on them. Associated species in the immediate vicinity of the *A. ciliaris* are *Caloplaca citrina* s.lat., *Diploicia canescens*, *Lecanora campestris* (*L. horiza* sensu Continental lichenologists), *Lecidella scabra*, *Physconia grisea* and *Verrucaria nigrescens*. *Mark Powell*

Arthonia gelidae: on *Placopsis lambii* on rocks by river, Allt Iarairidh, Glen Moriston, VC 96, East Inverness-shire, GR 28(NH)/3460.1639, alt 240 m, May 2012. Herb. A. Acton in E. Confirmed by B.J. Coppins. Host was also parasitized by *Polycoccum squamarioides*. The first localized British record, for this species. *A. Acton*

Arthonia lapidicola: many thalli on mineral enriched concrete, underneath zinc fencing at back of railway station platform, Chelmsford, VC 18, South Essex, GR 52/706.012, April 2009. Herb. P.M. Earland-Bennett. Determined by B.J. Coppins. More commonly seen on church window sills under metal grills, in Suffolk and Essex. *P.M. Earland-Bennett*

Arthonia phaeophysciae: together with *Lichenochora obscuroides*, on thalli of *Phaeophyscia orbicularis*, on fallen, but living, *Acer pseudoplatanus* in woodland by lime-impregnated roadway, leading to Falcon Mobile Homes, Martlesham, VC 25, East Suffolk, GR 62(TM)/247.458, November 2004. Herb. C.J.B. Hitch. Determined by B.J. Coppins. New to the county and East Anglia. *P.M. Earland-Bennett*

Arthonia phaeophysciae: on *Phaeophyscia orbicularis* on limestone, Purn Hill, Bleadon, VC 6, North Somerset, GR 31(ST)/33-57-, alt 30–50 m, October 2008. Herb. Coppins 24068 (E, sub *Caloplaca dichroa*). New to southwest England. *B.J. Coppins*

Arthothelium norvegicum: on *Salix* in valley woodland, Eilean Mòr, Crowlin Islands, VC 105, West Ross, GR 18(NG)/6940.3451, June 2012. Herb. Coppins 24042 (E). Spores muriform, with 7 transsepta, 30–39 × 13 µm. New to the vice-county and most northerly British record. *B.J. Coppins*

Aspicilia contorta subsp. *hoffmanniana*: two records from VC 46, Cardiganshire: (i) on sandy mortar on top of boundary wall, Bryngwenith Chapel, south of Penrhiw-pal, GR 22(SN)341.434, alt 190 m, May 2012; (ii) frequent on airfield concrete hardstandings, MoD Aber-porth, GR 22(SN)/243523, alt 130 m, July 2012. Field

records. First Vice-county records for the subsp., though doubtless much under-recorded.

S. P. Chambers

Bachmanniomyces uncialicola: parasitising the basal squamules of *Cladonia furcata*, within heath on stabilised shingle beach, Gravelly Marsh, Beaulieu, North Solent SSSI, VC 11, South Hampshire, GR 40(SZ)/4123.9662. Herb Sanderson 1822. This lichenicolous fungi is normally found on *Cladonia uncialis*, but has also been recorded from *Cladonia rangiformis*. This seems to be the first record for *Cladonia furcata*.

N.A. Sanderson

Bacidia incompta: on soft bark in wounds of trunk of old *Fagus* on small alluvial shelf by river, Church Wood, Humbie, VC 82, East Lothian, GR 36(NT)/46237.64243, alt 125 m, May 2012. Herb. Coppins 24094 (E).

B.J. & A.M. Coppins

Briancoppinsia cytospora: on *Lecanora conizaeoides* on dead tree, Abbey Grove Cattery, New Park Road, Hockley, VC 18, South Essex, GR 51(TQ)/850.939, September 1988. Herb. P.M. Earland-Bennett. Determined by B. J. Coppins. New to Essex and East Anglia.

P.M. Earland-Bennett

Briancoppinsia cytospora: on *Lecanora conizaeoides*, on *Acer pseudoplatanus* in cemetery, Ipswich, VC 25, East Suffolk, GR 62(TM)/176.450, August 1996. Herb. C.J.B. Hitch. Determined by B.J. Coppins. New to Suffolk.

P.M. Earland-Bennett, C.J.B. Hitch and A. Henderson

Briancoppinsia cytospora: on ascocarps and thallus of *Lecanora conizaeoides*, on door of old barrack hut, on disused airfield, Theberton, VC 25, East Suffolk, GR 62(TM)/424.639, October 1997. Herb. C.J.B. Hitch. Determined by B.J. Coppins. Second record of this species for Suffolk.

P.M. Earland Bennett

Briancoppinsia cytospora: With *Intralichen lichenicola*, on *Lecanora conizaeoides*, on chestnut palings beside footpath, Garon Park, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/893.878, December 2006. Herb. P.M. Earland-Bennett. Decreasing in Essex and Suffolk with the decline of *Lecanora conizaeoides*.

P.M. Earland-Bennett

Briancoppinsia cytospora: on moribund *Lecanora conizaeoides* on dry side of inclined wooden fencepost support at head of coastal gully, South of Morfa-mawr, VC 46, Cardiganshire, GR 22(SN)/495649, alt 90 m, June 2012. Herb. SPC. New to the Vice-county.

S.P. Chambers

Buellia leptoclina: on east-facing lip of low boulder in streamside *Molinia* – *Pteridium* vegetation, on west bank of Afon Diliw, north of the Cwmystwyth valley, VC 46, Cardiganshire, GR 22(SN)/843766, alt 360 m, August 2012. Herb. SPC. The only previously known Vice-county site at Ystrad Einion mine was destroyed in the 1994 'reclamation' scheme.

S.P.Chambers

Caloplaca coralliza: on old *Quercus*, at least two locations (only one with a grid reference) in Savernake Forest SSSI, VC 7, North Wiltshire, GR 40(SU)/214.675, February 1975, Collected by . F. Rose & P.W. James. Herb. BM BM000762527 & Ex Herb. F. Rose. In a review of all *Caloplaca herbidella* collections in the Natural

History Museum lichen herbarium, four UK collections were found to contain the new segregate from this species *Caloplaca coralliza*. Two were duplicate single species collections from the already known site at Levens Park, Westmorland. Two others were mixed collections with both *Caloplaca herbidella* and *Caloplaca coralliza* from Savernake Forest. Material from the New Forest, Hampshire and Up Park, Sussex was all *Caloplaca herbidella*. In addition, no *Caloplaca coralliza* was found in the *Caloplaca herbidella* collections from Wales in the personal herbarium of Ray Woods. The European distribution of these species suggests that *Caloplaca herbidella* would be expected to dominate in northern and upland sites, but that *Caloplaca coralliza* would be more frequent on lowland trees, especially on field trees. It is still possible that the mainly sterile *Caloplaca coralliza* has been overlooked in less polluted parts of the lowlands.

N.A. Sanderson

(The first entry for this species, when it was New to the British Isles was in BLS *Bulletin* **105** p. 40. – sub ed.)

Caloplaca haematites: small amount on *Crataegus monogyna* twig, on bush in the transition between ancient pasture woodland and heathland, Matley Wood, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/3363.0806, May 2012. Herb Sanderson 1804. New to the Vice-county and second modern record for Britain.

N.A. Sanderson

Caloplaca limonia: sterile, on mortar of garden wall, in urban area, 54 Pall Mall, Leigh-on-Sea, VC 18, South Essex, GR 51(TQ)/843.861, July 2012. Herb. P.M. Earland-Bennett. Not common, but widespread in Essex and Suffolk, usually sparingly fertile.

P.M. Earland-Bennett

Caloplaca marina: for details, see under *Lecanora actophila*.

Caloplaca maritima: for details, see under *Lecanora actophila*.

Caloplaca obscurella: on small flint pebble on driveway, Orchella Lodge, 14, Hawthorn Close, Knodishall, VC 25, East Suffolk, GR 62(TM)/437.606, September 2011. Herb. C.J.B. Hitch. Determined by B.J. Coppins. First saxicolous record for this species from East Anglia.

P.M. Earland-Bennett

Candelaria concolor: a single thallus on wooden fence at bottom of urban garden, facing open fields, 83 Tattersall Gardens, Leigh-on-Sea, VC 18, South Essex, GR 51(TQ)/821.863, July 2012. This species, which is spreading eastwards, is still rare, but widespread in Essex and Suffolk.

P.M. Earland-Bennett

Candelaria pacifica: on mature *Fraxinus* by unmade track, just east of Auchrannie Farm, Airlie, VC 90, Angus, GR 37(NO)/281.523, alt 130 m, April 2012. Herb. Coppins 24031 (E). Third Scottish record for this species and previously collected from near Airlie by Ursula Duncan in 1945. For details see BLS *Bulletin* **108** p. 53.

B.J. Coppins & J.R. Douglass

Cladonia callosa: dominant on the base of an old gravel pit, in derelict heathland, Copythorn Common East, New Forest SSSI, VC 11, South. Hampshire,

GR41(SU)/3193.1542, June 2012. Herb Sanderson 1819. The largest colony found to date in the New Forest area and the first off the open Forest grazings. The secondary disturbed habitat suggests this species should be looked for in acid post-industrial habitats as well as on heathland. *N.A Sanderson*

Cladonia callosa: rare on humus in an area of short low productivity *Calluna* – *Agrostis curtisii* heath, jumped over by a recent wild fire, but probably burned within the last 10 years, Albury Bottom, Chobham Common SSSI, VC 17, Surrey, GR 41(SU)/9739.6417, August 2012. An exciting addition to the lichen flora of the Thames Basin heaths. Chobham seems to have had a similar lichen assemblage to the New Forest, including species such as this, which appear resistant to, or potentially dependent on, cool fires, but recurrent hot wild fires threaten this assemblage. New to the Vice-county. *N.A. Sanderson*

Cladonia cariosa: on low, south-facing outcrop in shallow valley, east of Ditcher Law, Kelphope Burn, Lammermuir Hills, VC 81, Berwickshire, GR 36(NT)/5123.5620, alt 275 m, July 2012. Herb. Coppins 24093 (E). New to Berwickshire. *B.J. & A.M. Coppins*

***Cladonia chlorophaea* s.str.**: on deep mound of humus, probably old pony dung in deep *Calluna* in heathland, Shatterford, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/3493.0551. Herb. Sanderson 1691 (now in **BM**). Confirmed by TLC, with fumarprotocetraric acid present. First confirmed record of *Cladonia chlorophaea* s.str. from Hampshire. *Cladonia chlorophaea* *sensu stricto* appears rare in terricolous habitats in the county but common as an epiphyte. *N.A. Sanderson, P.A. Wolseley & H. Thiis*

Cladonia cornuta: two records on sandy humus in parched acid grassland and in gaps in heathland, Cranmer Bottom, Woolmer Forest SSSI, VC 12, North Hampshire, GR 41(SU)/7893.3249 & 41(SU)/7908.3256, September 2012. Herb. Sanderson 1849 & 1850. New to North Hampshire *N.A. Sanderson & the Wessex Lichen Group*

Cladonia cryptochlorophaea: two records from New Forest SSSI, VC 11, South Hampshire on humus in heathland, (i) Fair Cross, GR. 41(SU)/3019.0957 and (ii) SouthAcres Down, GR 41(SU)/ 2678.0942, October 2011. Herb. Sanderson 1693 & 1708 (now in **BM**). Confirmed by TLC, with fumarprotocetraric acid & cryptochlorophaeic acid present. Usually taller and greener than *Cladonia grayi* and extending into shadier habitats. Distinct from *Cladonia chlorophaea* s.str. by the exposed medulla on the podetia. The distinctive KC+ reaction is difficult to obtain and experience suggests that the C has to be applied rapidly before colour from the K+ reaction occurs and even then it can be very fleeting. The colour of the KC+ reaction appears best described as purple-red (cf *The Lichens of Great Britain and Ireland*, p. 324). From positive KC+ reactions combined with C– reactions this taxon appears widespread in southern England and accounts for many of the terricolous occurrences of the *Cladonia chlorophaea* s. lat. complex. *Cladonia chlorophaea* s. str. appears to be mainly an epiphyte in this area. *N.A. Sanderson, P.A. Wolseley & H. Thiis*

Cladonia grayi: three records on humus in open heathland, Ocknell Plain & White Moor near Lyndhurst, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/2339.1152, 41(SU)/2315.1158 and 41(SU)/3129.0832, October 2010. Herb. Sanderson 1681, 1687 & 1707 (now in **BM**). Confirmed by TLC, with grayanic acid & fumarprotocetraric acid present. These appear to be the first confirmed records for England for *Cladonia grayi* s. str. Similar material, with short brown cups with some medulla exposed and a strongly verrucose base is widespread on the New Forest, but has not been observed outside of the New Forest yet. It is visually quite distinct from *Cladonia chlorophaea* s. str. but stunted *Cladonia cryptochlorophaea* can look similar.

N.A. Sanderson, P.A. Wolseley & H. Thiis

Cladonia phyllophora: small quantity on the inland side of the grey dunes on short steep dune face, Winterton Dunes, Winterton on Sea, VC 27, East Norfolk, GR 63(TQ)/4926.2012, April 2012. Herb. Sanderson 1800. New to the Vice-county.

N.A. Sanderson

Cladonia phyllophora: on humus in dry heath on side of old sand pit and in hollow way, Kingsley Common, Broxhead and Kingsley SSSI, VC 12, North Hampshire, GR 41(SU)/7949.3811 & 41(SU)/7949.3806, September 2012. Herb. Sanderson 1806. New to North Hampshire.

N.A. Sanderson

Cladonia phyllophora: on sandy humus and a cinder block, in parched acid grassland and in gaps in heathland, Cranmer Bottom, Woolmer Forest SSSI, VC 12, North Hampshire, GR 41(SU)/7893.3249 & 41(SU)/7902.3258, September 2012. Herb. Sanderson 1849 & 1850. Second record from North Hampshire.

N.A. Sanderson & the Wessex Lichen Group

Cladonia rangiferina: several large cushions in lichen rich grey dune grassland, Horsey Gap, VC 27, East. Norfolk, GR 63(TQ)/4653.2409, April 2012. Herb. Sanderson 1798. First modern record for the lowlands. This upland species also occurred in similar habitat in the Netherlands post 1980, but is now listed "verdwenen" (disappeared) in the Netherlands Red List www.verspreidingsatlas.nl/4185.

N.A. Sanderson

Cladonia rei: three records from VC 12, North Hampshire; locally abundant on sandy humus in canopy gaps in heathland, Cranmer Bottom, Woolmer Forest SSSI, GR41(SU)/7909.3255, 41(SU)/7910.3256 & 41(SU)/7920.3266, September 2012. Herb. Sanderson 1851. New to the Vice county.

N.A. Sanderson & the Wessex Lichen Group

Cladonia subcervicornis: very frequent, locally, on humus in an area of short low productivity *Calluna – Agrostis curtisii* heath, jumped over by a recent wild fire, but probably burned within the last 10 years, Albury Bottom, Chobham Common SSSI, VC 17, Surrey, GR 41(SU)/9739.6418, August 2012. New to Surrey, an exciting addition to the lichen flora of the Thames Basin heaths. Chobham seems to have had a similar lichen assemblage to the New Forest, including species such as this, which

appear resistant to, or potentially dependent on, cool fires, but recurrent hot wild fires threaten this assemblage. *N.A. Sanderson*

Cresporaphis weinkempii: with *Lecania naegelii*, on branch of old *Salix* pollard, beside the River Deben, Campsey Ash, VC 25, East Suffolk, GR 62(TM)/315.557, January 2005. Herb. C.J.B. Hitch. Determined by B.J. Coppins. New to the county and East Anglia and one of only a handful of British records of this rare or overlooked species.

P.M. Earland-Bennett

Diederichia pseudeverniae: on *Pseudevernia furfuracea* in open pine-larch woodland, Castle Knowe, Pentland Hills, VC 83, Midlothian, GR 36(NT)/230.643, alt 350 m, July 2012. Herb. Coppins 24060 (E). New to the Vice-county. *B.J. & A.M. Coppins*

Diplotomma pharcidium: on branches of large *Populus* sp. in woodland strip by river, east of Sandy's Mill, north side of River Tyne, East Linton, VC 82, East Lothian, GR 36(NT)/5564.7534, alt 35 m, April 2012. Herb. Coppins 24034 (E). New to southeast Scotland. *B.J. Coppins*

Echinodiscus lesdainii: on *Lecania cyrtella* on *Sambucus*, Dean Plantation, Carnock, VC 85, Fife, GR 36(NT)/058.880, alt 100 m, May 2012. Herb. Coppins 24103 (E). New to the Vice-county. *B.J. Coppins*

Fellhanera viridisorediata: numerous thalli on small flint pebbles, on driveway, Orchella Lodge, 14 Hawthorn Close, Knodishall, VC 25, East Suffolk, GR 62(TM)/437.606, September 2011. New to the county and East Anglia.

P.M. Earland-Bennett

Fellhaneropsis vezdae: thalli with apothecia, but also pycnidiate on inclined *Quercus* trunk, near stream at valley bottom, in ancient woodland, Coombe Wood, Thundersley, VC 18, South Essex, GR 51(TQ)/783.883, June 2012. Herb. P.M. Earland-Bennett. Determined by B.J. Coppins. First fertile record of this species for East Anglia and only a few yards from the tree with the fertile type specimen of *Fellhanera ochracea*.

P.M. Earland-Bennett

Fuscidea lygaea: on broken down dry stone wall at edge of open pine-larch wood, Castle Knowe, Pentland Hills, VC 83, Midlothian, GR 36(NT)/230.643, alt. 350 m, July 2012. Herb. Coppins 24059 (E). New to the Lothians. *B.J. & A.M. Coppins*

Hypotrachyna sinuosa: on trunk of ash *Fraxinus excelsior*, Clyn Wallis, Brechfa Forest, VC 44, Carmarthenshire, GR 22(SN)/543.332, April 2012. Herb. SDSB. New to the Vice-county. *S.D.S. Bosanquet*

Intralichen lichenicola: for details, see under *Briancoppinsia cytospora* record, December 2006.

Lecanactis subabietina: on old *Quercus* above gorge, east of Dunglass New Bridge, Dunglass Burn, VC 82, East Lothian, GR 36(NT)/7705.7213, alt 40 m, January 2012. Herb. Coppins 23937 (E). New to the Lothians. *B.J. Coppins & A. Aptroot*

Lecania cuprea: in underhang of basic rock, north side of River Isla, Slug of Auchrannie, Den of Airlie NNR, VC 90, Angus, GR 37(NO)/2775.5291, alt 120 m, May 2012. Herb. Coppins 24100 (E). New to the Vice-county.

B.J. Coppins & J.R. Douglass

Lecanora actophila: many thalli, with *Caloplaca marina* and *C. maritima*, at HWM, on limestone blocks by the sea wall, Two Tree Island, VC 18, South Essex, GR 51(TQ)/820.848, March 2008. Herb. P.M. Earland-Bennett. Determined by B.J. Coppins. First record of this species for East Anglia.

P.M. Earland-Bennett

Lecanora salina: on flint pebble on stabilised shingle beach, Browndown Ranges, Lee-on-the Solent to Itchen Estuary SSSI, VC11, South Hampshire, GR 40(SZ)/568.995, April 2012. Collected by J.A. Norton. Determined by N.A. Sanderson. J. Norton has seen similar material to the east to Southsea (40(SZ)/6--9--) and potentially the species is much overlooked on coastal shingle. The thallus of dispersed rounded granules appears to be a useful field character for spotting this species. New to the county.

N.A. Sanderson & J.A. Norton

Lecanora semipallida: on broken concrete in heathland, Cranmer Bottom, Woolmer Forest SSSI, VC12, North Hampshire, GR 41(SU)/790.325, September 2012. New to Hampshire.

N.A. Sanderson & the Wessex Lichen Group

Lecidea turgidula: two records from VC 46, Cardiganshire: (i) on hard, well-lit bare lignum on vertical south side of *Quercus* stump on field bank below horse pasture, southwest of Llangynllo Church by Pantdafydd, GR 22(SN)/350.437, alt 130 m, May 2012; (ii) on dry bark flake on south side of *Larix kaempferi* in open plantation block, beside minor road, Mynydd Brith, west of Bronnant, GR 22(SN)/628663, alt 290 m, May 2012. Herb. SPC. New to the Vice-county.

S.P. Chambers

Leptogium biatorinum: on soil at edge of roadside verge, The Ospreys, Leigh Road, Leigh-on-Sea, VC 18, South Essex, GR 51(TQ)/847.860, April 2012. Herb. P.M. Earland-Bennett. The third record for South Essex, having already been found on Canvey Island and Southend-on-Sea.

P.M. Earland Bennett

Leptoraphis maggiana: on branch of *Corylus* by stream in ancient woodland, Coombe Wood, Thundersley, VC 18, South Essex, GR 51(TQ)/785.881, March 2012. Herb. P.M. Earland-Bennett. Determined by B.J. Coppins. Second record for Essex, having previously been found in Priory Park, Prittlewell, Southend-on-Sea.

P.M. Earland-Bennett

Lichenochora obscuroides: on thalli of *Phaeophyscia orbicularis*, on fallen but living *Acer pseudoplatanus* in woodland by lime impregnated roadway, leading to Falcon Mobile Homes, Martlesham, VC 25, East Suffolk, GR 62(TM)/247.458, November 2004. Herb. C.J.B. Hitch. Determined by B.J. Coppins. New to the county and East Anglia.

P.M. Earland-Bennett

Lichenonium lichenicola: on *Physcia adscendens* on *Crataegus* twigs in hedgerow, west of Doon Bridge, Spott, VC 82, East Lothian, GR 36(NT)/675.759, alt 50 m, April 2012. Herb. Coppins 23975 (E). New to the Lothians. *B.J. Coppins*

Lobaria pulmonaria: on ancient multi-stemmed *Sorbus aucuparia*, Little Meldrum, Swinburn's Park, Ullswater, VC 69 Westmorland, GR 35(NY)/42125.22627, alt 330 m, July 2012. Herb. Digital photographs. First noted in 2005. Near base of tree, approximate coverage c. 0.07m² and some thallus initials also present. With healthy *Nephroma laevigatum* and *N. parile*. See note 'Lingering Lobarion' in this *Bulletin*.

D.J. Clarke

Lobaria virens: several thalli growing almost buried in maritime turf with *Lobaria pulmonaria* and *Pseudocyphellaria aurata*, White Island, Scilly Isles, VC 1, West Cornwall, GR 10(SW)/9260.1736, alt 3 m, September 2012. First post 1980 record for this species in the Scilly Isles and an unusual habitat for this normally corticolous and occasionally saxicolous species.

P.W. Lambley

Marchandiomyces corallinus: very well developed and pathogenic on *Lecanora conizaeoides*, on vertical surface of wooden fence, at bottom of urban garden facing open fields, 83 Tattersall Gardens, Leigh-on-Sea VC 18, South Essex, GR 51(TQ)/821.863, July 2012. Herb. photographs. Scarce in Essex and Suffolk.

P.M. Earland-Bennett

Melanelia hepatizon: ca 45 thalli in total on flat tops of five large tabular boulders and smaller rock slabs in upland sheepwalk, west flank of Domen Milwyn, south of Ffos Las, VC 46, Cardiganshire, GR 22(SN)/808.723, alt 515 m, June 2012. Herb. SPC. New to the Vice-county.

S.P. Chambers

Melanohalea elegantula: a single thallus on dead branch of *Quercus*, beside Prittle Brook, Leigh-on-Sea, VC 18, South Essex, GR 51(TQ)/846.689, May 2012. Herb. STD. Determined by B.J. Coppins. First record for this species in South Essex.

P.M. Earland-Bennett

Nephroma laevigatum: on ancient multi-stemmed *Sorbus aucuparia*, Little Meldrum, Swinburn's Park, Ullswater, VC 69 Westmorland, GR 35(NY)/42125.22627, alt 330 m, July 2012. Herb. Digital photographs. First noted in 2005. Low on base of tree, approximate coverage 0.015m². With *Lobaria pulmonaria* and *Nephroma parile*. See note 'Lingering Lobarion' in this *Bulletin*.

D.J. Clarke

Nephroma parile: on ancient multi-stemmed *Sorbus aucuparia*, Little Meldrum, Swinburn's Park, Ullswater, VC 69 Westmorland, GR 35(NY)/42125.22627, alt 330 m, July 2012. Herb. Digital photographs. First noted 2005. Low on base of tree, approximate coverage 0.025m². With *Lobaria pulmonaria* and *Nephroma laevigatum*. *N. parile* was also present in greater quantity on slender *Sorbus* within closed canopy of *Corylus*, about 50 m up the slope from the Grid Reference. See note 'Lingering Lobarion' in this *Bulletin*.

D.J. Clarke

Normandina pulchella: On shaded branch of *Salix caprea* in small mire, Cooper's Hill, Ampthill, VC 30, Bedfordshire, GR 52(TL)/025.379, October 2012. Field record. Discovered by David Hill during the BLS Autumn Field Meeting. This species has spread rapidly in recent years in many parts of Holland and has invaded cities such as Amsterdam. It will be interesting to monitor its future distribution in Eastern England where it is currently rare, and absent from large areas. New to the Vice-county.

Mark Powell

Opegrapha vermicellifera: on vertical surface in underhang of basic rock, north side of River Isla, Slug of Auchrannie, Den of Airlie NNR, VC 90, Angus, GR 37(NO)/2777.5291, alt 120 m, May 2012. Herb. Coppins 24102 (E). An unusual saxicolous occurrence for this species.

B.J. Coppins & J.R. Douglass

Parmelia submontana: on branches of *Acer pseudoplatanus* and *Salix cinerea*, adjacent to road and opposite derelict farm Pant-y-Rhyg, VC 44, Carmarthenshire, GR 22(SN)/516.339, April 2012. New to Wales.

S.D.S. Bosanquet

Pertusaria glomerata: in very small quantity on moribund *Racomitrium lanuginosum*, close to the summit of Beinn Airigh Charr, Letterewe Forest, VC 105, West Ross, GR 18(NG)/9309.7612, alt 782 m, June 2012. Herb. O. Moore. Confirmed by B.J. Coppins. This would seem to be a new 10 km² record for this rare species and at a relatively low altitude.

Oliver Moore

Pertusaria lactescens: on vertical west (west-southwest, due to headstone alignment) face of siliceous headstone, dated 1882, in churchyard, Swallowfield, VC 22, Berkshire GR 41(SU)/731.647, March 2009. Herb. Wearn (L0890). New to the Vice-county.

J.A. Wearn

Pertusaria leioplaca: a small fertile thallus, with *Ramonia interjecta* on branch of *Salix* in small wood, Fossett's Farm, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/899.877, December 2011. Herb. P.M. Earland-Bennett. Determined by B.J. Coppins. First modern record of any corticolous *Pertusaria* from South Essex.

P.M. Earland-Bennett

Polycoccum squamarioides: for details see under *Arthonia gelidae*.

Porina rosei: in underhang of basic rock by river, north side of River Isla, Slug of Auchrannie, Den of Airlie NNR, VC 90, Angus, 37(NO)/2781.5292, alt 120 m, May 2012. Herb. Coppins 24101 (E). Fertile parts of thallus only sparingly isidiate and superficially resembling *P. ahlesiana*.

B.J. Coppins & J.R. Douglass

Porpidia macrocarpa* forma *nigrocruenta: on well-lit south side of large siliceous boulder, by the Afon Diliw, north of the Cwmystwyth valley, VC 46, Cardiganshire, GR 22(SN)/842.772, alt 360 m, August 2012. Herb. SPC. Forma *nigrocruenta* does not seem to have been reported before from Wales.

S.P. Chambers

Protoparmelia oleagena: on horizontally sawn surface of ancient fallen *Quercus*, Helmingham Park, VC 25, East Suffolk, GR 62(TM)/186.580, August 2012. Herb.

C.J.B. Hitch. Confirmed by B.J. Coppins. Only the second Suffolk and East Anglian record for this species. *P.M. Earland-Bennett, C.J.B. Hitch, P.W. Lambley & J. Garrett*

Pseudocyphellaria norvegica: at least 20 thalli on upper surface of *Betula* growing out horizontally, on flushed, north-facing slope, Huntly's Cave, Grantown-on-Spey, VC 95, Moray, GR 38(NJ)/0260.3264, April 2012. Herb. photographs. An unusually eastern occurrence for this species. New to the Vice-county. *S. Taylor*

Ramonia interjecta : for details, see under *Pertusaria leioplaca*.

Rhizocarpon cinereovirens: on rocks by river, north of Cuaich, Glen Truim, VC 96, East Inverness-shire, GR 27(NN)/655.877, alt 330 m, June 2012. Herb. Coppins 24046 (E). New to the Vice-county. *B.J. Coppins*

Rinodina fimbriata: on damp sandstone boulder in woodlands, west of Anstey's Cove, Torbay, VC 3, South Devon GR 20(SX)/93-64-, September 2012. Herb. Hitch (O11). *B. Benfield & C.J.B. Hitch*

Rhizocarpon simillimum: on south-facing Old Red Sandstone conglomerate outcrop, Bell Craig, Spott, VC 82, East Lothian, GR 36(NT)/674.759, alt 120–130 m, April 2012. Herb. Coppins 23978 (E). Thallus C+ red. New to southeast Scotland. *B.J. Coppins*

Rinodina milvina: three small patches, ca 2 x 1cm, on steeply inclined, south-facing, smooth face of hard Silurian slaty-sandstone, in enriched community, immediately below bird perch with colony of *Ramalina siliquosa* and other maritime elements including *R.subfarinacea* & *Caloplaca ceracea*, of hilltop outcrops above Coed Cnwch, south of Pontrhydfendigaid, VC 46, Cardiganshire, GR 22(SN)/734.646, alt 310 m, September 2012. Herb. SPC. New to the Vice-county and ca fourth British record for this species. *S.P. Chambers*

Rinodina oxydata: on small south-facing basalt outcrop by path, River Tyne northwest of Hailes Castle, East Linton, VC 82, East Lothian, GR 36(NT)/5729.7583, alt 35 m, April 2012. Herb. Coppins 24032 (E). New to the Lothians. *B.J. Coppins*

Rinodina roboris: on old *Quercus*, east of Dunglass New Bridge, Dunglass Burn, VC 82, East Lothian, GR 36(NT)/770,721, alt 40 m, January 2012. Herb. Coppins 23921 (E). First record for eastern Scotland. *B.J. Coppins & A. Aptroot*

Rinodina sophodes: on twig of planted *Sorbus* sp., Ramsey Heights Nature Reserve, Chapel Road, Ramsey Heights, VC 31, Huntingdonshire, GR 52(TL)/243.848, July 2012. Field record. New to the Vice-county. *Mark Powell*

Rinodina sophodes: on twig of *Populus* sp, Gamlingay Wood, VC 29, Cambridgeshire, GR 52(TL)/238.532, October 2012. Field record. Discovered during the BLS Autumn Field Meeting. This and the Huntingdonshire record above are the only two occurrences found, during an extensive recent scrutiny of twigs in this region.

Perhaps we are witnessing the early pioneers of a phase of colonisation in eastern England where it is currently very rare. Mark Powell

Schismatomma graphidioides: west-facing, on mature *Fagus sylvatica*, with *Punctelia reddenda*, in parkland, Buckland Abbey (National Trust property) Yelverton, VC 3, South Devon, GR 20(SX)/48-66-, September 2012. Herb. Hitch (H42/A).

B. Benfield & C.J.B. Hitch

Siphula ceratites: locally abundant on thin peat in flushed area of wet heath, amid *Carex panicea*, on hillside, east of Lochan Fada, VC 105, West Ross, GR NH05057093, alt c. 420 m, August 2011. Herb. O. Moore. Confirmed by B.J. Coppins. This is a new site for this rare lichen. Oliver Moore

Steinia geophana: on wall by path down to bottom of gorge, southwest of Dunglass New Bridge, Dunglass Burn, VC 81, Berwickshire, GR 36(NT)/769.720, April 2012. Herb. Coppins 24098 (E). New to the Vice-county. B.J. Coppins & J. Simkin

Stigmidium eucline: on *Pertusaria lactea* on sandstone table tomb in churchyard, Clunie, VC 89, East Perthshire, GR 37(NO)/109.440, alt 50 m, July 2012. Herb. Coppins 24062 (E). New to the county. B.J. Coppins

Teloschistes chrysophthalmus: a single thallus on twig of *Prunus spinosa*, on south-facing side of bush, at edge of saltmarsh, eastern coast of Gosport, VC 11, South. Hampshire, GR 41(SU)/60-02- September 2012. Further evidence of a strong recovery by this distinctive species. New to the county. J.A. Norton

Thelocarpon impressellum: two records from VC 49, Caernarfonshire; (i) on cyanobacterial soil crust on mound of mortar-rich slate waste, Dorethea Slate Quarry, Talysarn, near Penygroes, GR 23(SH)/501.532, alt 120 m, July 2012; (ii) on mossy cyanobacterial lumps on rubble slope, with incorporated concrete fragments, Glyn Rhonwy Slate Quarry, Bethesda, GR 23(SH)/565.605, alt 220 m, August 2012. Herb. SPC. New to the Vice-county. S.P. Chambers & E.T. Meilleur

Thelocarpon sphaerosporum: on small boulder of schist/limestone, Nether Craig boulder-field, Blacklunans, VC 90, Angus, GR 37(NO)/169.609, alt 360 m, April 2012. Herb. Coppins 23946 (E). New to the Vice-county and second British record for this species. B.J. Coppins & R. Yahr

Verrucaria ditmarsica: on flints in open areas in low *Spartina* saltmarsh habitat in the intertidal zone, Cams Bay, Portsmouth Harbour SSSI, VC 11, South Hampshire, GR 40(SZ)/5931.0534, August 2012. Herb Sanderson 1858. An interesting discovery in an unexplored habitat in the county - flints in very stable and sheltered conditions in the intertidal zone. New to the county. N.A. Sanderson

Verrucaria halizoa: two records on flints in open areas in low saltmarsh habitat in quite damp conditions in the intertidal zone, Foxbury Point, Portsmouth Harbour SSSI, VC 11, South. Hampshire, GR 40(SZ)/5982.0431 & 40(SZ)/5900.0446, August 2012. Herb Sanderson 1858, an interesting discovery in an unexplored

habitat in the county - flints in very stable and sheltered conditions in the intertidal zone. New to the county N.A. Sanderson

Veizdaea leprosa: on moss at junction of a sandstone plinth and its headstone in churchyard, Temple, VC 83, Midlothian, GR 36(NT)/315.587, alt 155 m, July 2012. Herb. Coppins 24092 (E). New to the Vice-county. B.J. & A.M. Coppins

Zwackhiomyces physciicola: on *Physcia caesia* on plinth of granite headstone, Bendochy Church, VC 89, East Perthshire, GR 37(NO)/215.414, alt 40 m, July 2012. Herb. Coppins 24065 (E). New to the Vice-county. B.J. Coppins

Report of the BLS Summer Meeting 2012

The Isle of Muck, 23rd to 30th June, 2012

Local organisers: John Douglass and Steve Price

The Isle of Muck, at 559 ha, is the smallest of a group of islands which, including Rum, Eigg and Canna, make up the Parish of The Small Isles. It is composed of sheet basalt underlain by sedimentary Jurassic limestones. These latter are exposed in places. Dolerite dykes are common and cross the island in a north-west / south-east orientation. The island is low lying with a high point of 137 m. On approach, the island appears uniformly low-lying but in fact has a complex undulating topography with many outcrops and a cliff scenery that contrasts with that initial impression. The island has been owned by the MacEwen family since 1896 and apart from a small croft is managed by them as a single beef and sheep farm. The 17 attendees at the meeting managed to amass 1367 records of 393 taxa, which with a resident island population of 37 was over 10 lichens per resident. Quite a pleasing ratio for a week's work.

Our group fully occupied the island bunkhouse and the Port Mor Hotel for the week. One member opted to camp. Much of the food provided by the hotel was of island origin, and included pork, lamb, beef, pheasant, lobster and crab. With the addition to the menu of venison from Rum, it would not have mattered a jot had the lichens been only half as good as they were!

The upstairs room of the recently opened community hall was rented for the full duration of the meeting and provided ample space for microscope work and the display of specimens. This enabled all but the most difficult of specimens to be identified during the week.

The location of the island presented some recording challenges. It lies in four 10km grid squares the two west-most of which only have land on Muck and its adjacent islets. Those 10km squares will never be the same again!

Attendees:

Graham Boswell; Richard Brinklow; Annelie Burghause; Frank Burghause; Paul Cannon; Heather Colls; Brian Coppins; Ginnie Copsy; John Douglass; Chris Forster-Brown; Katie Grundy; Paul Harrold; Tracey Lovering; Oliver Moore; Heather Paul; Steve Price; Alan Silverside.



Meeting attendees in the wood-paneled lounge of the Port Mor Hotel. Back row L to R: Paul Cannon; Paul Harrold; Frank Burghause; Oliver Moore; Chris Forster-Brown; John Douglass; Graham Boswell; Alan Silverside; Steve Price. Middle row: Brian Coppins; Annelie Burghause; Heather Paul; Heather Colls. Front row: Richard Brinklow; Tracey Lovering; Katie Grundy; Ginnie Copsy.

The first entry for the week in the field note-book is not lichenological but it serves as a reminder of the atmosphere of the island, it records a calling corn-crake (*Crex crex*) in the hay field near the hotel. The second entry is of a less vocal bit of wildlife but more relevant to the group, that of *Lecanora farinaria* on a fence post. And so the meeting starts.

Rather than the usual diary entries this report is structured under the headings of the major habitats.

Woodland

On the first day a lonesome *Lobarion* sycamore was thoughtfully examined and it revealed, amongst other goodies, *Degelia cyanoloma*, *Pannaria rubiginosa* and the independent, blue-green (*Dendriscoaulon*) morph of *Lobaria amplissima*. Mature trees were not in good supply on the island but elements of the *Lobarion* community were present on cliffs and outcrops and elsewhere, with *Lobaria virens* being found on a plastic bottle and *L. pulmonaria* on a discarded rope.

A small orchard of apple & pear amongst planted woodland was looked at late in the week and gave us three species of *Usnea* and four of *Ramalina* in addition to the second specimen of *Evernia prunastri*, the first of this 'rare' species having been absent until a day earlier when a small scrap was spotted on a sawn rail.



Orchard in the rain, Muck. Photo: Steve Price

Brian Coppins spent a productive hour in a small woodland, known to the locals as Middle Wood, tucked away in a valley in the centre of the island. This at first sight seemed to be planted with sycamore, pine and spruce as well some native deciduous trees. However, closer examination seemed to reveal a 'core' wood of alder, birch, rowan and willow, and this observation is supported by the occurrence of some 'old-woodland' lichens such as *Loxospora elatina*, *Pannaria rubiginosa*, *Pertusaria multipuncta*, *Punctelia reddenda*, *Pyrenula occidentalis* and *Thelotrema petractoides*.

'High tops'

Beinn Airein at 137 metres altitude hardly deserves to be called a high top, however the lichen flora found there may suggest otherwise. *Calvitimela aglaea*, a decidedly upland species and *Lecidea fuliginosa* typical of exposed rocks were found together. However despite searches here and in other likely spots on the island not a single scrap of any *Umbilicaria* was spotted. This absence was even more puzzling considering the fact that they are abundant few miles to the south on the Ardnamurchan peninsula.



Hard at work on the rocks. Photo: Helen Paul

The boulders on the lower slopes of the Beinn gave us an interesting mix of species including *Coccotrema citrinescens*, *Arthrorhaphis citrinella*, *Toninia thiopsora* and *Aspicilia recedens*.

It was during the wet afternoon following the mountain expedition that Richard Brinklow observed how lichenologists in response to the rain, with the donning of wet gear and rucksack covers, just like their subjects of study, change colour, shape and size and become much more difficult to identify.

Sea cliffs & raised beach cliffs

The sea cliffs, raised beach cliffs and small peninsulas provided the group with some real delights: a mix of *Degelia*, *Nephroma*, *Lobaria*, *Dermatocarpon* and *Sticta* species topped by *Pseudocyphellaria crocata*. The promontory cliffs provided several sites for *Degelia ligulata*. The crevices in the rocks also offered some less obvious treasures such as *Solenopsora vulturiensis*, *S. holophaea* and *Agonimia tristicula*.



Brian contemplating oblivion, searching for *Lecanora zosteriae* at the top of a sea cliff. Photo: Helen Paul

In places underlying limestones had influenced the dolerite when it had intruded through and calcareous species such as *Lecanora albescens* were found on the sides of the exposed dykes. Lichenologists were not the only warm blooded beings on the island and on one particularly sunny afternoon Paul Harrold was observed ‘pulling the birds’, they would just not leave him alone. I think he was a bit too near the tern’s nesting site for their liking!

Eilean nan Each (Horse Island)

Horse Island lies to the north west of Muck and forms the substantial land mass in the 10 km square NM38. Reputedly it was possible to wade there at low tide but the group thought that using the island launch would give more time ashore, be more fun and also preserve decorum! 111 taxa were recorded on the island, 4 of which were not noted on the main body of Muck.



Over the sea to Horse Island. Photo: Heather Paul



Horse Island, with Rum in the background. Photo: Steve Price.

Limestone raised beach



Camas Mor. Photo: Steve Price

In the Camas Mor (big bay) under the flanks of Beinn Airein the Jurassic limestones were exposed. Much of this was under water at high tide and even though the fossil beds were intriguing they held little lichen interest. Higher up the beach were storm-tossed limestone boulders which added another group of lichens to the island list. A cursory inspection indicated little interest but as Oliver Moore, Katie Grundy, Richard Brinklow and John Douglass began lifting the cobbles and small boulders a treasure chest of lichens was revealed including a healthy *Lobarion* community of *Degelia atlantica*, *Lobaria virens* and *Nephroma laevigatum* growing on the ground in between the limestone and siliceous boulders. The limestone boulders themselves supported species including *Caloplaca oasis*, *Catillaria lenticularis*, *Lecidella stigmatea*, *Opegrapha rupestris* on *V. baldensis*, *Placynthium nigrum*, *Protoblastenia calva*, *P. rupestris*, *Rhizocarpon petraeum*, *Staurothele caesia*, *Verrucaria baldensis* and *V. caerulea*. *Collema polycarpon* was found on a limestone boulder in a dry stone dyke further up the beach. Siliceous boulders and cobbles supported species including: *Buellia aethalea*, *Caloplaca crenularia*, *Fuscidea cyathoides*, *Gyalecta bififormis*, *Immersaria athroocarpa*, *Lecania hutchinsiae*, *Lecanora rupicola*, *L. sulphurea*, *Pertusaria flavicans*, *Porpidia melinodes*, *Rhizocarpon geographicum* and *Verrucaria fusconigrescens*. Upon leaving the raised beach Oliver Moore found a couple of large bones and an old very unfashionable shoe. In the spirit of the beach art which was evident further along the beach, a leg was

fashioned and placed in the shoe. This was sent as an e-greetings card with captions including: 'Lichenologist spends too long looking at raised beach', 'Scotland's best evidence yet for spontaneous human combustion', 'Getting legless on Muck', and 'The midges are rather naughty here on Muck'.

Burial ground (Port Mor)

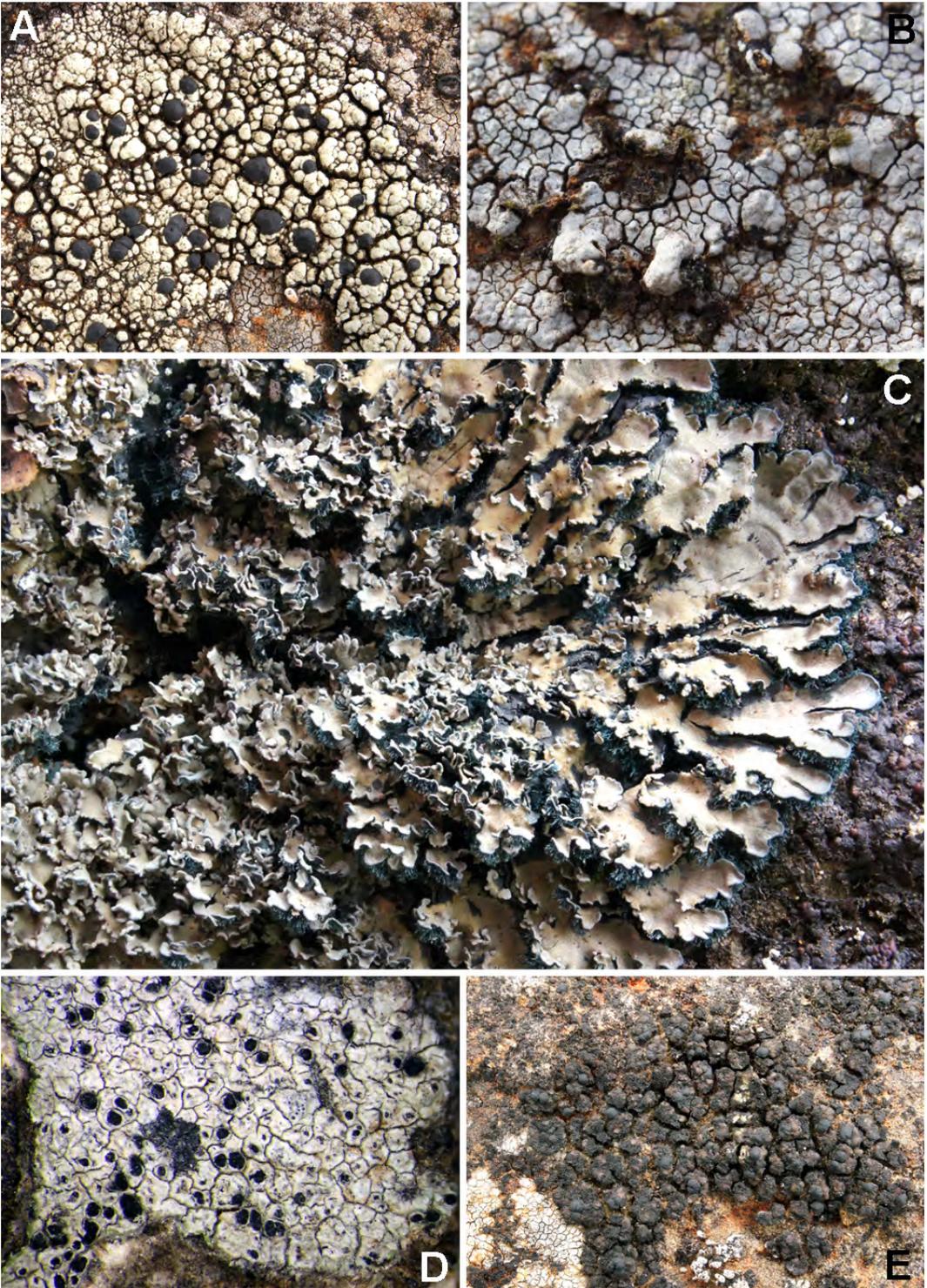


The burial ground on Muck. Photo: Steve Price

Thirty species were recorded from the small burial ground which features a monument of a lighthouse, several old sandstone monuments and a number of stone piles. Species found included: *Aspicilia grisea*, *Caloplaca arnoldii*, *Myriospora smaragdula*, *Physcia dubia*, *Verrucaria maura* and *V. muralis*. A burial took place in the middle of the week and one of these piles of stones was moved on a tractor trailer and kept in a trailer outside the visitor centre. Brian Coppins noted a new record for the burial ground on one of these stones: the Nationally scarce *Bacidia trachona*.

Unluckiest toad in the world

Like most islands the fauna of Muck has some peculiarities. One of these is that whilst it has no frogs it does have toads. It also has a vehicle population of only 5 cars and a few tractors which use a road system of 2.5 km long. So how unlucky was that squashed toad we found? The odds of that happening were probably the same as winning the lottery.



Lichens and lichenicolous fungi from Muck. A. *Calvitimela aglaea*. B. *Coccotrema citrinescens*. C. *Degelia ligulata*. D. *Diplotomma chlorophaeum*. E. *Lecidea fuliginosa*.



F. *Lobaria amplissima* (*Dendriscoaulon* morph). G. *Normandina acroglypta*. H. *Parmotrema crinitum*. I. *Pronectria santessonii*, parasitic on *Anaptychia runcinata*. J. *Toninia thiopsora*.

An entomological aside



Sharon (or was it Tina?....)

Most of the midges (*Culicoides impunctatus* - Gaelic: Meanbh-chuileag) seemed to be on their holidays on the neighbouring island of Rum, however other invertebrates were present.

One particular tick (order Acarina) seemed to gain the affection of some members of the group. It posed for photographs, including some very intimate ones under Alan Silverside's microscope, and was named 'Sharon'. On reflection the group considered the name a little too 'Essex' so she was re-named 'Tina' before being released (still alive!) back into the wild..

Island entertainment

On the Thursday the population of the island gathered for an evening's entertainment. It was neither a ceilidh nor a cake-fest that brought resident and visitor alike to the Community Hall. It was an illustrated talk by John Douglass on lichens of the island. John rose to the challenge when early in the week a request was made for a public talk to be delivered. He did a superb job and by introducing lichens in general and speaking of what we had found about the lichen flora of the island he created much interest in adults and children alike. The island is now in proud possession of the two BLS wall-charts!

Table of Taxa

The table below lists taxa by the main island of Muck and Eilean nan Each (Horse Island). A list for the burial ground is separated out from the main island list. The main island lies in the four 10km squares of NM37, NM47, NM38 and NM48. Eilean nan Each lies entirely within NM38. The records collected have been entered into the Scottish lichen database at a 1km, or greater, resolution.

Species name suffix:

lichenicolous fungi

non-lichenised fungi

Report and table by Brian Coppins, John Douglass and Steve Price

Taxon name	Substrate	Record notes	Muck (main island)	burial ground (NM4279)	Eilean nan Each (Horse Island)
<i>Acarospora fuscata</i>	Sax		•		
<i>Acrocordia macrospora</i>	Sax		•		
<i>Agonimia tristicula</i>	Sax		•		
<i>Amandinea conioips</i>	Sax				•
<i>Amandinea lecideina</i>	Sax		•		•
<i>Amygdalaria pelobotryon</i>	Sax		•		
<i>Anaptychia runcinata</i>	Terr+Sax+Lig		•		•
<i>Anisomeridium polypori</i>	Sax+Bry	on moribund moss in underside of large boulder below cliff	•		
<i>Arthonia amylospora</i> #	Lic	on <i>Porpidia rugosa</i>	•		
<i>Arthonia anombrophila</i>	Cort		•		
<i>Arthonia didyma</i>	Cort		•		
<i>Arthonia muscigena</i>	Cort		•		
<i>Arthonia phaeobaea</i>	Sax		•		
<i>Arthonia punctiformis</i> ##	Cort		•		
<i>Arthonia radiata</i>	Cort		•		
<i>Arthonia varians</i> #	Lic	on <i>Lecanora rupicola</i>	•		
<i>Arthopyrenia analepta</i> ##	Cort		•		
<i>Arthopyrenia punctiformis</i> ##	Cort		•		
<i>Arthrorhaphis citrinella</i>	Sax		•		
<i>Aspicilia caesiocinerea</i>	Sax		•		
<i>Aspicilia grisea</i>	Sax		•	•	
<i>Aspicilia leproscens</i>	Sax		•		•
<i>Aspicilia recedens</i>	Sax		•		
<i>Bacidia absistens</i>	Cort		•		
<i>Bacidia arceutina</i>	Cort		•		
<i>Bacidia carneoglauca</i>	Sax		•		
<i>Bacidia scopulicola</i>	Sax	one of specimens with apothecia	•		•
<i>Bacidia sipmanii</i>	Sax		•		
<i>Bacidia subcircumspecta</i>	Lig		•		
<i>Bacidia trachona</i>	Sax		•	•	
<i>Bacidia viridifarinsa</i>	Sax		•		
<i>Baeomyces rufus</i>	Lig+Sax+Terr		•		
<i>Biatoropsis usnearum</i> #	Lic	on <i>Usnea subfloridana</i> on <i>Betula</i>	•		
<i>Bilimbia sabuletorum</i>	Sax+Bry	low outcrop amongst shell-sand turf	•		
<i>Buellia aethalea</i>	Sax		•	•	•
<i>Buellia griseovirens</i>	Lig+Cort		•		
<i>Buellia ocellata</i>	Sax		•		

Taxon name	Substrate	Record notes	Muck (main island)	burial ground (NM4279)	Eilean nan Each (Horse Island)
<i>Buellia stellulata</i>	Sax		•		•
<i>Caloplaca arenaria</i>	Sax		•		•
<i>Caloplaca arnoldii</i> subsp. <i>obliterata</i>	Sax		•	•	
<i>Caloplaca britannica</i>	Sax		•		•
<i>Caloplaca ceracea</i>	Sax		•		•
<i>Caloplaca chlorina</i>	Terr	cliff-top turf	•		
<i>Caloplaca citrina</i> s. <i>lat.</i>	Sax+Terr		•		•
<i>Caloplaca citrina</i> s. <i>str.</i>	Sax		•		
<i>Caloplaca crenularia</i>	Sax		•		•
<i>Caloplaca ferruginea</i> s. <i>str.</i>	Cort		•		
<i>Caloplaca flavocitrina</i>	Sax		•		•
<i>Caloplaca flavovirescens</i>	Sax		•		
<i>Caloplaca holocarpa</i> s. <i>str.</i>	Sax		•	•	
<i>Caloplaca littorea</i>	Sax		•		
<i>Caloplaca marina</i>	Sax		•		•
<i>Caloplaca maritima</i>	Sax		•		•
<i>Caloplaca microthallina</i>	Sax		•		
<i>Caloplaca oasis</i>	Sax		•		
<i>Caloplaca obscurella</i>	Cort		•		
<i>Caloplaca saxicola</i>	Sax		•		
<i>Caloplaca thallincola</i>	Sax		•		•
<i>Caloplaca verruculifera</i>	Sax+Lig		•		•
<i>Calvitimela aglaea</i>	Sax	on summit outcrops	•		
<i>Candelariella aurella</i> forma <i>aurella</i>				•	
<i>Candelariella vitellina</i> forma <i>vitellina</i>	Terr+Sax		•	•	•
<i>Carbonea vorticosa</i>	Sax		•		
<i>Catillaria atomarioides</i>	Sax		•		
<i>Catillaria chalybeia</i> var. <i>chalybeia</i>	Sax		•	•	•
<i>Catillaria contristans</i>	Sax+Bry	on large boulder below cliff & on summit outcrops	•		
<i>Cetraria aculeata</i>	Terr		•		
<i>Cetraria muricata</i>			•		
<i>Cladonia arbuscula</i> subsp. <i>squarrosa</i>			•		
<i>Cladonia caespiticia</i>	Sax		•		
<i>Cladonia cervicornis</i> subsp. <i>cervicornis</i>	Terr+Sax		•		
<i>Cladonia chlorophaea</i> s. <i>lat.</i>	Terr+Sax		•		
<i>Cladonia ciliata</i> var. <i>ciliata</i>	Terr+Sax		•		
<i>Cladonia ciliata</i> var. <i>tenuis</i>	Terr+Sax		•		
<i>Cladonia coniocraea</i>	Cort+Sax+Terr		•		

Taxon name	Substrate	Record notes	Muck (main island)	burial ground (NM4279)	Eilean nan Each (Horse Island)
<i>Cladonia diversa</i>	Terr+Sax		•		•
<i>Cladonia fimbriata</i>	Terr+Sax		•		
<i>Cladonia floerkeana</i>	Sax		•		
<i>Cladonia foliacea</i>	Terr+Sax	cliff-top turf	•		•
<i>Cladonia furcata</i> subsp. <i>furcata</i>	Terr+Sax		•		•
<i>Cladonia humilis</i>	Terr+Sax		•		
<i>Cladonia ochrochlora</i>			•		
<i>Cladonia polydactyla</i> var. <i>polydactyla</i>	Terr+Sax+Lig		•		
<i>Cladonia portentosa</i>	Terr+Sax		•		
<i>Cladonia pyxidata</i>	Terr+Sax		•		•
<i>Cladonia ramulosa</i>	Terr+Sax		•		
<i>Cladonia rangiferina</i>	Terr+Sax		•		
<i>Cladonia rangiformis</i>	Terr+Sax		•		•
<i>Cladonia squamosa</i> var. <i>squamosa</i>	Sax		•		
<i>Cladonia squamosa</i> var. <i>subsquamosa</i>	Terr+Sax		•		
<i>Cladonia strepsilis</i>	Terr+Sax	on summit	•		
<i>Cladonia subcervicornis</i>	Terr+Sax		•		•
<i>Cladonia subulata</i>			•		
<i>Cladonia uncialis</i> subsp. <i>biuncialis</i>	Terr+Sax		•		
<i>Clauzadea monticola</i>	Sax		•		
<i>Cliostomum griffithii</i>	Cort		•		
<i>Cliostomum tenerum</i>	Sax		•		
<i>Coccotrema citrinescens</i>	Sax		•		
<i>Collema auriforme</i>	Sax	low outcrop amongst shell-sand turf	•		
<i>Collema crispum</i> var. <i>crispum</i>	Sax		•		
<i>Collema cristatum</i> var. <i>cristatum</i>			•		
<i>Collema flaccidum</i>	Sax		•		
<i>Collema furfuraceum</i>	Sax	low outcrop amongst shell-sand turf	•		•
<i>Collema polycarpon</i>	Sax		•		
<i>Collemopsidium foveolatum</i>	Other	on limpet shells & barnacles	•		•
<i>Collemopsidium sublitorale</i>	Other	on barnacles	•		
<i>Cyrtidula hippocastani</i> ##	Cort		•		
<i>Cystocoleus ebeneus</i>	Sax		•		
<i>Dactylospora parellaria</i> #	Lic	on <i>Ochrolechia parella</i>	•		
<i>Degelia atlantica</i>	Sax		•		•
<i>Degelia cyanoloma</i>	Cort		•		
<i>Degelia ligulata</i>	Sax		•		•
<i>Dermatocarpon intestiniforme</i>	Sax		•		•

Taxon name	Substrate	Record notes	Muck (main island)	burial ground (NM4279)	Eilean nan Each (Horse Island)
<i>Dermatocarpon luridum</i>	Sax		•		
<i>Dermatocarpon minutum</i>	Sax		•		•
<i>Dimerella lutea</i>	Sax+Bry+ Cort		•		
<i>Dimerella pineti</i>	Cort		•		
<i>Diploicia canescens</i>	Sax		•		•
<i>Diploschistes scruposus</i>	Sax		•		
<i>Diplotomma alboatrum</i>	Sax		•	•	•
<i>Diplotomma chlorophaeum</i>	Sax		•		
<i>Dirina massiliensis forma soreciata</i>	Sax		•		•
<i>Echinodiscus lesdainii</i> #	Lic	on <i>Lecania cyrtella</i> on dead <i>Ribes</i> twig	•		
<i>Enterographa hutchinsiae</i>	Sax		•		
<i>Ephebe lanata</i>	Sax		•		
<i>Evernia prunastri</i>	Cort+Lig		•		
<i>Fellhaneropsis vezdae</i>	Cort		•		
<i>Flavoparmelia caperata</i>	Cort		•		
<i>Fuscidea cyathoides</i> var. <i>cyathoides</i>	Sax		•		
<i>Fuscidea lightfootii</i>	Cort+Lig		•		
<i>Fuscidea recensa</i>	Sax		•		
<i>Graphina anguina</i>	Cort		•		
<i>Graphis elegans</i>	Cort		•		
<i>Graphis scripta</i>	Cort		•		
<i>Gyalideopsis muscicola</i>	Sax+Bry	on moss on top of boulder below N-facing cliff	•		
<i>Haematomma ochroleucum</i> var. <i>porphyrium</i>	Sax		•		•
<i>Halecania ralfsii</i>	Sax		•		•
<i>Hawsworthiana peltigericola</i> #	Lic	on <i>Peltigera hymenina</i> ; leg. R.K. Brinklow			•
<i>Herteliana gagei</i>	Sax		•		•
<i>Homostegia piggotii</i> #	Lic	on <i>Parmelia omphalodes</i> & <i>P. saxatilis</i>	•		
<i>Hypogymnia physodes</i>	Cort	on <i>Calluna</i> on summit	•		
<i>Hypotrachyna afrorevoluta</i>	Cort		•		
<i>Hypotrachyna sinuosa</i>	Cort	2 thalli on branch of pine	•		
<i>Hypotrachyna taylorensis</i>	Sax	on roadside outcrop	•		
<i>Icmadophila ericetorum</i>	Terr		•		
<i>Immersaria athrocarpa</i>	Sax		•		
<i>Ionaspis lacustris</i>	Sax		•		
<i>Lecania aipospila</i>	Sax				•
<i>Lecania cyrtella</i>	Cort	on dead twigs, also of <i>Fuchsia</i>	•		
<i>Lecania fructigena</i>	Sax				•

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<i>Lecania hutchinsiae</i>	Sax		•		•
<i>Lecania naegelii</i>	Cort		•		
<i>Lecanora actophila</i>	Sax		•		•
<i>Lecanora albescens</i>	Sax		•	•	
<i>Lecanora campestris</i> subsp. <i>campestris</i>	Sax		•	•	•
<i>Lecanora carpinea</i>	Cort		•		
<i>Lecanora chlarotera</i>	Cort		•		
<i>Lecanora confusa</i>	Cort		•		
<i>Lecanora dispersa</i>	Sax		•		
<i>Lecanora expallens</i>	Cort+Lig		•		
<i>Lecanora farinaria</i>	Cort+Lig		•		
<i>Lecanora gangaleoides</i>	Sax		•		•
<i>Lecanora hagenii</i>	Cort	on dead twigs	•		
<i>Lecanora helicopsis</i>	Sax		•		•
<i>Lecanora intricata</i>	Sax		•		•
<i>Lecanora jamesii</i>	Cort		•		
<i>Lecanora muralis</i>	Sax		•		•
<i>Lecanora orosthea</i>	Sax		•		
<i>Lecanora poliophaea</i>	Sax		•		•
<i>Lecanora polytropa</i>	Sax		•	•	•
<i>Lecanora rupicola</i> var. <i>rupicola</i>	Sax		•	•	•
<i>Lecanora saligna</i>	Lig		•		
<i>Lecanora sulphurea</i>	Sax		•	•	•
<i>Lecanora symmicta</i>	Cort+Lig		•		
<i>Lecanora zosteriae</i>	Terr	cliff-top turf	•		
<i>Lecidea commaculans</i>	Sax	on large boulder below cliff & on summit outcrop	•		
<i>Lecidea fuliginosa</i>	Sax	on summit	•		
<i>Lecidea fuscoatra</i> s. str.	Sax		•		
<i>Lecidea grisella</i>	Sax		•		
<i>Lecidea lactea</i> s. str.	Sax		•		•
<i>Lecidea lapicida</i>	Sax	large boulders below cliff	•		
<i>Lecidea phaeops</i>	Sax	on large boulders below cliff	•		•
<i>Lecidea swartzioidea</i>	Sax	large boulders below cliff	•		
<i>Lecidea turgidula</i>	Lig	rotting fence post by wall	•		
<i>Lecidella asema</i>	Sax		•	•	•
<i>Lecidella elaeochroma</i> forma <i>elaeochroma</i>	Cort+Lig		•		
<i>Lecidella elaeochroma</i> forma <i>soralifera</i>	Cort		•		
<i>Lecidella meiococca</i>	Lig+Sax		•		•

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<i>Lecidella scabra</i>			•	•	
<i>Lecidella stigmataea</i>	Sax		•		
<i>Lepraria ecorticata</i>	Sax		•		
<i>Lepraria incana s. str.</i>	Cort+Sax		•		
<i>Lepraria lobificans</i>	Cort+Sax		•		•
<i>Lepraria membranacea</i>	Sax		•		
<i>Lepraria vouauxii</i>	Sax		•		
<i>Leptogium britannicum</i>	Terr+Sax		•		•
<i>Leptogium cyanescens</i>	Sax+Bry		•		
<i>Leptogium gelatinosum</i>	Sax	low outcrop amongst shell-sand turf	•		
<i>Leptogium lichenoides</i>	Sax		•		
<i>Leptogium palmatum</i>	Sax+Bry		•		
<i>Leptogium pulvinatum</i>	Terr	on cliff-top turf	•		
<i>Leptogium teretiusculum</i>	Terr+Sax		•		
<i>Leptogium turgidum</i>	Sax	at hotel	•		
<i>Lichenostigma</i> sp. #	Lic	on <i>Ochrolechia parella</i>	•		
<i>Lichina confinis</i>	Sax		•		•
<i>Lichina pygmaea</i>	Sax		•		
<i>Llimonaea soreliata</i>	Sax		•		
<i>Lobaria amplissima</i>	Cort	<i>Dendriscoaulon</i> morph on bough of sycamore	•		
<i>Lobaria pulmonaria</i>	Sax		•		•
<i>Lobaria virens</i>	Sax		•		•
<i>Loxospora elatina</i>	Cort		•		
<i>Megalaria pulvereae</i>	Sax+Cort+Bry		•		
<i>Melanelixia fuliginosa</i>	Sax		•		•
<i>Melanelixia glabrata</i>	Cort+Sax		•		•
<i>Melanelixia subaurifera</i>	Cort		•		
<i>Micarea byssacea</i>	Sax+Cort+Terr	also on <i>Armeria</i> on basalt outcrop	•		•
<i>Micarea coppinsii</i>	Sax+Bry+Lig	on N side of large boulder below cliff	•		
<i>Micarea leprosula</i>	Sax+Bry		•		
<i>Micarea lignaria</i> var. <i>endoleuca</i>	Sax+Bry	large boulders below cliff	•		
<i>Micarea lignaria</i> var. <i>lignaria</i>	Sax+Bry+Lig		•		
<i>Micarea peliocarpa</i>	Sax+Bry		•		
<i>Micarea xanthonica</i>	Sax+Bry	large boulder below cliff	•		
<i>Miriquidica complanata</i> forma <i>complanata</i>	Sax	large boulder below cliff	•		
<i>Moelleropsis nebulosa</i>	Terr+Sax		•		•
<i>Mycoblastus caesius</i>	Cort+Lig		•		

Taxon name	Substrate	Record notes	Muck (main island)	burial ground (NM4279)	Eilean nan Each (Horse Island)
<i>Mycomicrothelia confusa</i> ##	Cort		•		
<i>Myriospora smaragdula</i>	Sax		•	•	
<i>Nephroma laevigatum</i>	Sax+Cort		•		•
<i>Nesolechia oxyspora</i> #	Lic	on <i>Xanthoparmelia loxodes</i>	•		
<i>Normandina acroglypta</i>	Cort	on bough of sycamore	•		
<i>Normandina pulchella</i>	Cort+Sax		•		•
<i>Ochrolechia androgyna</i>	Sax		•		
<i>Ochrolechia parella</i>	Cort+Sax	incl sorediate morph	•	•	•
<i>Ochrolechia tartarea</i>	Sax		•		
<i>Opegrapha atra</i>	Cort		•		
<i>Opegrapha calcarea</i>	Sax		•		•
<i>Opegrapha cesarensis</i>	Sax		•		•
<i>Opegrapha gyrocarpa</i>	Sax		•		•
<i>Opegrapha lithyrga</i>	Sax		•		•
<i>Opegrapha multipuncta</i>	Cort		•		
<i>Opegrapha niveoatra</i>	Cort		•		
<i>Opegrapha rupestris</i> #	Lic	on <i>Verrucaria baldensis</i>	•		
<i>Opegrapha saxigena</i>	Sax		•		
<i>Opegrapha sorediifera</i>	Cort		•		
<i>Opegrapha zonata</i>	Sax		•		•
<i>Pannaria rubiginosa</i>	Cort		•		
<i>Parmelia ernstiae</i>	Cort+Sax		•		
<i>Parmelia omphalodes</i>	Sax		•		•
<i>Parmelia saxatilis</i>	Cort+Sax		•	•	•
<i>Parmelia sulcata</i>	Cort+Lig		•	•	
<i>Parmotrema crinitum</i>	Cort+Sax		•		•
<i>Parmotrema perlatum</i>	Cort+Sax		•		•
<i>Peltigera canina</i>	Terr+Sax+Bry		•		•
<i>Peltigera hymenina</i>	Terr+Sax+Bry		•		•
<i>Peltigera membranacea</i>	Terr+Sax+Bry		•		•
<i>Pertusaria albescens</i> var. <i>albescens</i>	Sax		•		
<i>Pertusaria aspergilla</i>	Sax		•		
<i>Pertusaria chiodectonoides</i>	Sax		•		
<i>Pertusaria corallina</i>	Sax		•		
<i>Pertusaria excludens</i>	Sax		•		
<i>Pertusaria flavicans</i>	Sax		•		
<i>Pertusaria hymenea</i>	Cort		•		
<i>Pertusaria lactea</i>	Sax		•		
<i>Pertusaria lactescens</i>	Sax		•		

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<i>Pertusaria leioplaca</i>	Cort		•		
<i>Pertusaria multipuncta</i>	Cort		•		
<i>Pertusaria pseudocorallina</i>	Sax		•	•	•
<i>Peterjamesia circumscripta</i>	Sax		•		
<i>Phaeophyscia orbicularis</i>	Sax		•	•	
<i>Phlyctis argena</i>	Cort		•		
<i>Phoma physciicola</i> #	Lic	on <i>Physcia aipolia</i>	•		
<i>Physcia adscendens</i>	Cort+Terr	cliff-top turf	•		•
<i>Physcia aipolia</i>	Cort		•		
<i>Physcia caesia</i>	Sax		•	•	•
<i>Physcia dubia</i>	Sax		•	•	
<i>Physcia leptalea</i>	Cort		•		
<i>Physcia tenella</i>	Sax+Cort		•		•
<i>Physconia distorta</i>	Cort		•		
<i>Placopsis lambii</i>	Sax		•		
<i>Placopyrenium fuscillum</i>	Sax		•	•	
<i>Placynthiella dasaea</i>	Lig		•		
<i>Placynthiella icmalea</i>	Terr+Sax+Lig		•		
<i>Placynthium nigrum</i>	Sax		•		
<i>Platismatia glauca</i>	Cort		•		
<i>Polychidium muscicola</i>	Sax		•		
<i>Polycoccum</i> sp. #	Lic	on <i>Diplotomma alboatrum</i>	•		
<i>Polysporina simplex</i>	Sax		•		
<i>Porina aenea</i>	Cort		•		
<i>Porina chlorotica</i> forma <i>chlorotica</i>	Sax		•		•
<i>Porina lectissima</i>	Sax		•		
<i>Porpidia cinereoatra</i>	Sax		•		
<i>Porpidia crustulata</i>	Sax		•		
<i>Porpidia flavocruenta</i>	Sax	large boulders below cliff	•		
<i>Porpidia macrocarpa</i> forma <i>macrocarpa</i>	Sax		•		
<i>Porpidia macrocarpa</i> forma <i>nigrocruenta</i>	Sax		•		
<i>Porpidia melinodes</i>	Sax		•		
<i>Porpidia platycarpoides</i>	Sax		•		•
<i>Porpidia rugosa</i>	Sax		•		
<i>Porpidia soledizodes</i>	Sax		•		
<i>Porpidia tuberculosa</i>	Sax		•		•
<i>Pronectria santessonii</i> #	Lic	on <i>Anaptychia runcinata</i>	•		•
<i>Protoblastenia rupestris</i>	Sax		•		
<i>Protopannaria pezizoides</i>	Terr+Sax		•		

Taxon name	Substrate	Record notes	Muck (main island)	burial ground (NM4279)	Eilean nan Each (Horse Island)
<i>Protoparmelia badia</i>	Sax	on large boulders below cliff & on summit outcrops	•		
<i>Pseudocyphellaria crocata</i>	Sax		•		
<i>Psilolechia lucida</i>	Sax		•		
<i>Punctelia reddenda</i>	Cort		•		
<i>Punctelia subrudecta</i> s. str.	Cort		•		
<i>Pyrenidium actinellum</i> #	Lic	on <i>Baeomyces rufus</i>	•		
<i>Pyrenula macrospora</i>	Cort		•		
<i>Pyrenula occidentalis</i>	Cort		•		
<i>Pyrrhospora querneae</i>	Cort		•		
<i>Ramalina calicaris</i>	Cort		•		
<i>Ramalina cuspidata</i>	Sax		•		•
<i>Ramalina farinacea</i>	Cort		•	•	
<i>Ramalina fastigiata</i>	Cort		•		
<i>Ramalina fraxinea</i>	Cort		•		
<i>Ramalina portuensis</i>	Cort		•		
<i>Ramalina siliquosa</i>	Sax+Lig		•		•
<i>Ramalina subfarinacea</i>	Sax		•	•	•
<i>Rhizocarpon geographicum</i>	Sax		•		•
<i>Rhizocarpon hochstetteri</i>	Sax		•		
<i>Rhizocarpon lavatum</i>	Sax		•		
<i>Rhizocarpon ochrolechia</i> #	Lic	on <i>Ochrolechia parella</i>	•		
<i>Rhizocarpon petraeum</i>	Sax		•		
<i>Rhizocarpon reductum</i>	Sax		•		
<i>Rhizocarpon richardii</i>	Sax		•		•
<i>Rhymbocarpus cruciatus</i> #	Lic	on <i>Diploicia canescens</i>	•		
<i>Rimularia gyrizans</i>	Sax	on summit outcrops	•		
<i>Rimularia intercedens</i>	Sax	on large boulders below cliff	•		
<i>Rimularia limborina</i>	Sax		•		
<i>Rinodina species</i>	Cort	<i>R.</i> aff. <i>exigua</i> ; two specimens.	•		
<i>Rinodina atrocinerea</i>	Sax		•		
<i>Rinodina luridescens</i>	Sax		•		•
<i>Rinodina oleae</i>	Sax		•		•
<i>Rinodina sophodes</i>	Cort		•		
<i>Sarcogyne regularis</i>	Sax		•		
<i>Schaereria fuscocinerea</i> var. <i>fuscocinerea</i>	Sax	on summit outcrops	•		
<i>Sclerococcum sphaerae</i> #	Lic	on <i>Pertusaria corallina</i>	•		
<i>Scoliosporium umbrinum</i>	Sax+Lig		•		•
<i>Solenopsora holophaea</i>	Sax		•		•

Taxon name	Substrate	Record notes	Muck (main island)	burial ground (NM4279)	Eilean nan Each (Horse Island)
<i>Solenopsora vulturienis</i>	Sax		•		•
<i>Sphinctrina tubiformis</i> #	Lic	on <i>Pertusaria pseudocorallina</i>	•		
<i>Stenocybe pullatula</i> ##	Cort		•		
<i>Stereocaulon evolutum</i>	Sax		•		
<i>Stereocaulon vesuvianum</i> var. <i>nodulosum</i>	Sax		•		
<i>Stereocaulon vesuvianum</i> var. <i>vesuvianum</i>	Sax		•		
<i>Sticta canariensis</i> (combined)	Sax		•		
<i>Sticta canariensis</i> (<i>dufourii</i>)	Sax		•		
<i>Sticta fuliginosa</i>	Cort+Sax		•		•
<i>Sticta sylvatica</i>	Cort+Sax		•		
<i>Syzygospora physciacearum</i> #	Lic	on <i>Physcia aipolia</i>	•		
<i>Tephromela atra</i> var. <i>atra</i>	Sax		•	•	•
<i>Thelenella muscorum</i> var. <i>muscorum</i>	Terr	cliff-top turf	•		
<i>Thelotrema petractoides</i>	Cort		•		
<i>Tomasellia gelatinosa</i> ##	Cort		•		
<i>Toninia aromatica</i>	Sax	low outcrop amongst shell-sand turf	•		
<i>Toninia thiopsora</i>	Sax	on large boulder below cliff	•		
<i>Trapelia coarctata</i>	Sax		•		
<i>Trapelia glebulosa</i>	Sax		•		
<i>Trapelia placodioides</i>	Sax		•		
<i>Trapeliopsis flexuosa</i>	Lig		•		
<i>Trapeliopsis pseudogranulosa</i>	Sax+Lig		•		
<i>Trapeliopsis wallrothii</i>	Terr+Sax		•		
<i>Tremolecia atrata</i>	Sax		•		
<i>Tylothallia biformigera</i>	Sax		•		•
<i>Usnea cornuta</i>	Cort+Sax		•		
<i>Usnea esperantiana</i>	Cort		•		
<i>Usnea flammea</i>	Cort+Sax		•		
<i>Usnea rubicunda</i>	Cort		•		
<i>Usnea subfloridana</i>	Cort		•		
<i>Usnea wasmuthii</i>	Cort		•		
<i>Vahliella leucophaea</i>	Sax		•		•
<i>Verrucaria baldensis</i>	Sax	on limestone on storm beach	•		
<i>Verrucaria fusconigrescens</i>	Sax		•		•
<i>Verrucaria hydrela</i>	Sax		•		
<i>Verrucaria maura</i>	Sax		•	•	•
<i>Verrucaria mucosa</i>	Sax		•		•
<i>Verrucaria muralis</i>	Sax		•	•	

Taxon name	Substrate	Record notes	Muck (main island)	burial ground (NM4279)	Eilean nan Each (Horse Island)
<i>Verrucaria striatula</i>	Sax		•		
<i>Verrucaria viridula</i>	Sax		•		
<i>Violella fucata</i>	Lig		•		
<i>Xanthoparmelia conspersa</i>	Sax		•		•
<i>Xanthoparmelia loxodes</i>	Sax		•		•
<i>Xanthoparmelia pulla</i>	Sax		•		•
<i>Xanthoparmelia verruculifera</i>	Sax		•		
<i>Xanthoria aureola</i>	Sax		•		•
<i>Xanthoria candelaria s. str.</i>	Sax				•
<i>Xanthoria parietina</i>	Cort+Sax+ Terr	cliff-top turf	•		•
<i>Xanthoria polycarpa</i>	Cort		•		
<i>Xanthoria ucrainica</i>	Terr	cliff-top turf	•		
<i>Xanthoriicola physciae</i> #	Lic	on <i>Xanthoria parietina</i>	•		

British Lichen Society Field Meetings & Workshops Programme 2013 / 2014

Field Meetings Secretary: Steve Price, Woodlands, Combs Road, Combs, High Peak, Derbyshire SK23 9UP
email fieldmeetings@britishlichensociety.org.uk

note: All members of whatever level of experience are welcomed on all BLS Field Meetings. No member should feel inhibited from attending by the fact that some meetings are associated with BLS Council meetings or the AGM. Workshops, on the other hand, may be aimed at members who have some level of experience. If so this fact will be specified in the meeting notice.

The BLS website <http://www.britishlichensociety.org.uk/> has postings of the meeting notices below and of any updates to them. A .pdf version of the meetings programme is also available for download.

BLS 2013 AGM, Royal Botanic Garden Kew

Post AGM Field Outing

Sunday 27 January 2013

For details please see the notice for the 2013 AGM.

BRISTOL UNIVERSITY WORKSHOP- Photobionts and Sterile Crusts

Friday 22nd to Sunday 24th February 2013

Tutors: Drs Brian Coppins and David Hill

Location: School of Biological Sciences, University of Bristol

Fee: £50.00 (payable to the British Lichen Society)

Lichen photobionts can be an essential character in lichen identification and especially useful when other features are limited. This workshop will help you distinguish between the main types of photobiont and recognise the different kinds of cyanobiont and green photobiont when examining lichen specimens. Practical help will be given with observing and identifying photobionts and in their use in naming lichens specimens in general and, together with all other features, of sterile crusts. Please bring specimens of unidentified sterile crusts and fresh material of lichen with a range of photobiont types.

If you are interested in attending this course please email David Hill (d.j.hill@bris.ac.uk) or phone 01761 221587 for further information.

BLS SPRING 2013 MEETING - Kinlochewe, Wester Ross

Saturday 27 April to Saturday 4 May 2013

Local organiser - Oliver Moore

This is a chance to explore unrecorded pockets of the Beinn Eighe NNR and Letterewe Estate SSSI (to assist with local recording effort) as well as other sites of interest in the vicinity of Loch Maree in the North West Highlands. Local geology is dominated by Lewisian gneiss, Torridonian sandstone, quartzite and hornblende schist. Habitats include Scots pine woodland, Atlantic oak/birch woodland, moorland, loch edge rocks, acidic rock communities, wooded ravines with *Lobarion*, and mountain summits for the more energetic. The coast is not far away either. More details nearer the time.

Meeting base & accommodation

The base for the meeting will be at Anancaun (the SNH Field Centre at NH024630) where there is space for setting up microscopes and limited accommodation in a recently refurbished self-catering bunkhouse (4 available bed spaces in each of the two dormitories) and a shared-cottage (3 rooms with 2 single beds in each).

Participants wishing to stay in the field centre accommodation at Anancaun should bring a sleeping bag or a duvet from home.

For those not staying at the SNH Centre the village of Kinlochewe is only 1km away and here there is the Kinlochewe Hotel, hostel, B&B and caravan accommodation available. The Kinlochewe Hotel is willing to organise evening meals for the whole group should that be required and there is a popular café in the village as well. There is a small village store in Kinlochewe that is reasonably well stocked for those self-catering. There is also a free campsite (at NH013637) approx 2km NW of Kinlochewe with toilet block and drinking water (and no midges at this

time of year). The Ledgowan hotel at Achnasheen (15-minute drive) also serves food and Gairloch is about a 35-minute drive away for alternative eating venues.

Travel

Nearest train station is at Achnasheen, on the Inverness to Kyle of Lochalsh line, where a pick-up could be arranged. Kinlochewe is about an hours drive from Inverness (where there is an airport and from where cars may also be hired).

Registering an interest

Expressions of interest to the local organiser Oliver Moore and the BLS Field Meetings Secretary, Steve Price (o.moore10@imperial.ac.uk & fieldmeetings@britishlichensociety.org.uk) stating if you are interested in staying at Anancaun or if you plan to arrange your own accommodation. Oliver apologises in advance for slow responses to emails, due to temperamental internet access. An outline plan for the week will be sent out to attendees nearer the time.

BLS SUMMER 2013 MEETING - Exmoor & The Quantocks

Saturday 22 to Saturday 29 June 2013

Local organiser - Graham Boswell

This meeting, based in Minehead, Somerset will take us to the Quantock Hills and Exmoor. The heathland, woodlands, rivers and coast of this beautiful area provide plenty of opportunity for us to discover and record a wide range of lichens.

Meeting base & accommodation

The base for the meeting will be at Foxes Hotel, Esplanade, Minehead, Somerset, TA24 5QP. Telephone: 01643 704450, E-mail: reception@hotelfoxes.co.uk, website: <http://www.hotelfoxes.co.uk/>. Rates quoted are £39 bed and breakfast or £55 dinner bed and breakfast.

Foxes Hotel is the UK's only fully operating training hotel for young people with learning disabilities. Bookings for accommodation at Foxes should be made directly with the hotel mentioning the British Lichen Society.

Self-catering accommodation is available at the backpackers hostel Base Lodge, 16 The Parks, Minehead TA24 8BS. The whole hostel is being reserved for use by the BLS meeting. Contact: Graham Boswell email: togooutdoors@hotmail.com, website <http://www.togooutdoors.co.uk/> then click the link to Base Lodge (in blue). Telephone +44 1823 703520 or mobile 07731651536. Bookings for accommodation at Base Lodge should be made directly with Graham Boswell. Rates are £15 per night per person. Base Lodge sleeps 22 but the numbers will be kept to about 12 for the BLS meeting, there are five rooms.

Microscope work

A room has been reserved at Foxes Hotel to serve as a meeting focal point and for microscope work.

Travel

Nearest train mainline station is Taunton with a good onward bus service to Minehead (combined train and bus tickets can be purchased). There is also a West Somerset Steam train link from Taunton to Minehead. The nearest airport is Bristol.

Registering an interest

Please advise the local organiser Graham Boswell and the BLS Field Meetings Secretary, Steve Price (togooutdoors@hotmail.com) & fieldmeetings@britishlichensociety.org.uk) if you are attending the meeting and when you have made a booking.

BLS AUTUMN 2013 WORKSHOP - The genus *Usnea*

A two-centred workshop based in Rothiemurchus, Inverness-shire and Knapdale, Mid-Argyll

Saturday 21st to Friday 27 September 2013

Tutors: Becky Yahr and Paul Harrold, Royal Botanic Garden Edinburgh

RBGE lichenologists would like to thank the membership of BLS for assistance with *Usnea* research via the provision of fresh and interesting collections, and this workshop meeting is to pass on what has been learned about the genus. This workshop is meant to help people understand British *Usnea* especially from a field identification point of view, and will include the highlights from our latest information about chemical variation and evolutionary relationships, which should help clarify concepts and shed light on why some confusion remains. The objectives of the workshop are:

- 1) to enable attendees to make reliable determinations in the field for those specimens for which that is possible and;
- 2) to understand what it is possible and what is not possible to determine in the field;
- 3) to understand what specimens it is worth collecting for TLC testing.

Workshop Bases & Accommodation

The workshop will have two meeting bases to enable the *Usnea* species of both eastern and western Scotland to be studied.

Eastern base, 21-24 Sept 2013: Badaguish Outdoor Centre, Aviemore, Inverness-shire PH22 1QU, tel. 01479 861285, website www.badaguish.org

Western base, 24-27 Sept 2013: The Grey Gull Inn, Ardrishaig, by Lochgilphead, Argyll PA30 8EU, tel. 01456 606 017, website www.thegreygull.co.uk

Meeting rooms are organised for both locations.

Costs

The cost to attendees will be the costs of accommodation and meals plus a contribution to the costs of the hire of meeting rooms.

At Badaguish accommodation is in two lodges with some single rooms and some bunks rooms. Rates will be approx £20 per night for accommodation in the lodges and £25 per day for breakfast, packed lunch and dinner. Meals will be pre-booked for the number of participants on the workshop.

At The Grey Gull Inn we have negotiated a rate of £46 per person per night for dinner bed & breakfast for two people sharing a twin room. There is limited single occupancy which will cost an extra £6 per person per night. Booking is through the Field Meetings Secretary, see below.

Microscope work

This workshop will only require the use of dissecting microscopes, it is planned that enough of these will be available for members who may have difficulty carrying their own on public transport.

Provisional Programme

Sat 21st Arrive at Badaguish; meet-up in the late afternoon; welcome & introduction: Introduction to *Usnea* Identification, I. (RY)

Sun 22nd Morning: Specimen and character study, Introduction to *Usnea* Identification, II. (RY&PH)

Afternoon: Field day 1 (local site)

Evening: Study of specimens

Mon 23rd Field day 2, East – Rothiemurchus or Abernethy

Evening talk: British *Usnea* distribution and observations (PH)

Tue 24th travel to The Grey Gull Inn, Ardrishaig

Evening talk: Chemical variation (PH)

Wed 25th Field day 3, West - Taynish NNR - Atlantic Oak woodland

Evening talk: *Usnea* taxonomy and phylogeny (RY)

Thu 26th Field day 4, West - Barnluasgan Wood - Oak and hazel woodland;

Evening: Summary of workshop; close of meeting

Fri 27th Depart for home

Transport

There are good public transport services to the Aviemore area and from Ardrishaig. It is anticipated that amongst the participants there will be enough private transport to ensure that everyone can get to the field sites and between the meeting bases when the move is made from east to west. If not, then arrangements will be made.

Booking and payment

The maximum number of participants in this workshop is 20 (plus the two tutors). Advance notice of the workshop was given in BLS Bulletin 110 and bookings are now being taken on a first-come first-served basis.

Bookings for places on the workshop are through the BLS Field Meetings Secretary. Inform Steve Price (fieldmeetings@britishlichensociety.org.uk) of your interest and send a £30 deposit (cheque made payable to 'The British Lichen Society' - not to 'BLS' please) to Steve Price, Woodlands, Combs Rd, Combs, High Peak, Derbyshire SK23 9UP.

Payment for accommodation and food at Badaguish is to be made through the BLS. Participants will be advised of the exact amount. Payment for accommodation at The Grey Gull Inn is to be made to The Grey Gull at the time of the meeting.

BLS SPRING MEETING 2014 - West Cork and Killarney (Advanced Notice)

April / May 2014

Local organiser - Vince Giavarini

The provisional plan for this meeting in the south west of Ireland is to focus primarily on under-recorded areas of the Beara peninsula with some exploration of offshore islands; Uragh Wood (the less accessible far end); perhaps also the Killarney Lakes to target the lake margins and assess the islands. The meeting will be based in the village of Glengarriff at the head of Bantry Bay.

If interested in attending please register an interest with the BLS Field Meetings Secretary, Steve Price (fieldmeetings@britishlichensociety.org.uk). More details will appear on the BLS web-site and in the next issue of the BLS Bulletin.

BLS SUMMER MEETING 2014 - Southern Lake District (Advanced Notice)

Saturday 30 August to Saturday 6th September 2014

Local organiser - Allan Pentecost

The varied geology (limestone, sandstone and igneous rock) and the complex of habitats (coast, woods, fells and dales) of this area offer plenty of scope a week of lichenological discoveries.

Accommodation and a work-room has been reserved for this meeting at the Castle Head Field Studies Centre, Grange over Sands, Cumbria.

If interested in attending please register an interest with the BLS Field Meetings Secretary, Steve Price (fieldmeetings@britishlichensociety.org.uk). More details will appear on the BLS web-site and in the next issue of the BLS Bulletin.

Steve Price, BLS Field Meetings Secretary, 12 October 2012

Notice of Annual General Meeting 2013

Venue

The AGM and Winter Meeting for 2013 will be held at the Jodrell Building, Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3AB on Saturday 26 January 2013.

For the BLS meetings approach the Jodrell Building by the Jodrell Gate on Kew Road (at any of the visitor gates an entrance fee will be charged). Should you find this gate closed, pick up the phone in the grey box at the right hand side, which will connect you to Kew Constabulary. Let them know that you are attending the BLS meetings, and they will release the gate for you. (A local map showing the location of the Jodrell Building is available on the BLS website, or contact Heidi Döring.)

Kew Gardens is well signposted from all the major local roads. The South Circular (A205) passes the north-east corner of Kew Gardens and Kew Road (A307) forms the eastern border. There is no parking at the Jodrell Building but parking can usually be found on Kew Road or around Kew Green.

The venue is about 10 min walk from Kew Gardens Station (District line tube, also London overground) or Kew Bridge Station (South West trains). Buses 65 and 391 stop directly outside the Jodrell Building (bus stop 'Mortlake Road').

Exhibition

Exhibits can be put up in the Jodrell Building from 15.00 on Friday and should be ready for viewing by 17.30. They can be viewed during tea breaks until the close of the meeting on Saturday. Please advise Heidi Döring by e-mail of your requirements for tables or display stands before Monday 20 January as these have to be ordered in advance.

Timetable

Friday 25 January:

17.30 – Reception (wine and soft drinks) and Exhibition in the Atrium of the Jodrell Building

18.30 – **Swinscow Lecture in Main Lecture Theatre**

We are honoured that Professor Yngvar Gauslaa of the Norwegian University of Life Sciences will speak on 'Why are Lobarion species rare?'

19.30 – Buffet / Dinner in the Atrium after the Swinscow Lecture, cost (£20, or £25 including a glass of wine?). Booking is essential, please see the form posted to you with this *Bulletin*.

Saturday 26 January:

9.45 – Coffee / tea / available in Reception of the Jodrell Building

10.30 – Annual General Meeting, Lecture Theatre, Jodrell Building

12.45 – Lunch at own expense, restaurants within a few minutes walking distance are situated within the gardens and around Kew Green

14.00 Winter Meeting. Introduction - Barbara Hilton, President of the Society

14.10 Cryptic taxa in crustose freshwater Verrucariaceae: the *Verrucaria elaeomelaena* complex. *Holger Thiis, Cecile Gueidan, Juha Pykkälä, Juri Nascimbene, Alan Orange and Cristina Ruberti*

14.40 The status of *Parmelina carporrhizans* in Great Britain. *Heidi Döring and Begoña Aguirre-Hudson*

15.10 A new taxonomic information for the BLS. *Paul Cannon*

15.30 Tea in Reception

16.00 Archaeolichenology: remarkable preservation of lichens in pre-industrial buildings demonstrates a massive biodiversity loss. *Rebecca Yahr, Brian J. Coppins and Christopher J. Ellis*

16.30 Epiphytic lichens as bio-monitors of atmospheric nitrogen pollution in the UK. *Jason Lewis, Peter Crittenden, Ian Leith, Lucy Sheppard, Mark Sutton and Pat Wolseley*

17.15 Close

Post-AGM meal

For those who would like to eat together after the AGM, a booking has been made at a local restaurant near Kew Gardens Station, a few minutes walk from the Jodrell Building, at 19.00 Saturday 26 January. (Numbers will be confirmed on Saturday afternoon.)

Nominations for Officers of the Society

Nominations are invited for Officers for 2013 and three members of Council for the period 2013 – 2016 (retiring at the AGM held in early 2016). Proposals should be sent by e-mail or in writing to the Secretary (Dr. Chris Ellis, Royal Botanic Garden Edinburgh, 20A Inverleith Row, Edinburgh, EH3 5LR, Scotland C.Ellis@rbge.ac.uk) at least 2 weeks before the AGM. No person may be nominated without their consent. Graham Boswell, Andrea Britton and David Hawksworth are due to retire from Council and are not eligible for re-election. We thank them all for their service.

AGM Agenda

Please sign attendance list and write your own name badge.

1. Apologies for absence
2. Minutes of the Annual General Meeting held at the National Museum of Wales, Cardiff, February 2012.
3. Matters arising.
4. Reports of Officers and Committee Chairs:
 - 4.1 President (Barbara Hilton)
 - 4.2 Secretary (Christopher Ellis)
 - 4.3 Treasurer (John Skinner)
 - 4.4 Membership Secretary (Heidi Döring)
 - 4.5 Conservation (Bryan Edwards)
 - 4.6 Data (David Hill)
 - 4.7 Education and Promotions (Sally Eaton)
 - 4.8 Members' Services (David Hill)
 - 4.9 Website (Janet Simkin)
 - 4.10 Field Meetings Secretary (Steve Price)
 - 4.11 *Bulletin* Editor (Paul Cannon)
 - 4.12 Senior Editor Lichenologist (Peter Crittenden)
 - 4.13 Librarian (Ray Woods)
 - 4.14 Herbarium Curator (Richard Brinklow)
5. Election of Officers, including three members of Council
6. Any other business
7. Date and place of AGM 2014

Subscription fees

At present Life membership (£300 in 2012, £350 in 2013) is available at a rate equal to ten annual subscriptions of Ordinary membership (£30 in 2012, £35 in 2013). When the discount for electronic access only to *The Lichenologist* was agreed for Ordinary members ("Electronic membership") no equivalent fee for Life membership was set. It is suggested that fees for an "Electronic Life membership" are endorsed which also equal ten annual subscriptions.

Post-AGM excursion

On Sunday 27 January we will visit Wakehurst Place, Ardingly, Haywards Heath, RH17 6TN to investigate the lichens. Wakehurst Place is the country estate of the RBG Kew and is in the care of The National Trust.

We will meet at 10.30 at the main entrance to Wakehurst Place. This is about six miles from Haywards Heath (reached from London Victoria or London Bridge, journey time approximately 45 minutes). If you travel by public transport and need a lift from and to the station, please let Heidi Döring know **by 20 January**. *We will do our best to help but if demand is too high you may be asked to organize a shared taxi.* It would also be helpful if you could let her know if you will be bringing your own car, and are willing to offer seats to other people.

Accommodation

A range of accommodation is available within 15 minutes walking distance of the Royal Botanic Gardens and a list of 'Hotels and B&B near RBG Kew' is available on the BLS website, or contact Heidi Döring. (When making your booking, mention that you are attending a meeting at RBG Kew. Several of the more commercial businesses may offer a discount.)

Local Organiser

Dr Heidi Döring, Mycology Section, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, email h.doring@kew.org

AGM and Winter Meeting 2013 – abstracts of presentations

Swinscow Lecture

Professor Yngvar Gauslaa

*Department of Ecology and Natural Resource Management,
Norwegian University of Life Sciences,
P.O.Box 5003, NO-1432 Ås*

Why are Lobarion species rare?

The Lobarion is a predominantly epiphytic community dominated by cyanobacterial and cephalodial lichens. It occurs in most forested regions of the world, but is most species-rich in coastal areas and moist inland mountain ranges. Many Lobarion species have globally wide distribution ranges, rapid growth and massive reproduction in good sites where they can establish in young spruce plantations. Thereby, their rareness is likely environmentally induced. This review investigates this hypothesis by focusing on effects of the potentially significant factors: tree bark chemistry, solar radiation exposure, sources of hydration, and grazing pressure. Acidic bark, excess light, lack of light, scarcity of liquid water, and high gastropod populations are shown to exclude Lobarion species or reduce their viability, even without air pollution. Internal factors (photobiont type, thallus thickness, water storage and lichen compound content) are also analyzed because they can modify effects of some external factors. Two lichen traits are emphasized: (1) photobiont type and/or lichen compound investments strongly influence the tolerance against excess light and/or lichen-feeding gastropods. (2) Increased thallus thickness and cyanobacterial photobionts improve lichen water storage, but at the expense of rapid uptake of humidity from the air. To understand current declining trends we should consider the environment and biotic interactions.

Saturday afternoon presentations

Cryptic taxa in crustose freshwater *Verrucariaceae*: the *Verrucaria elaeomelaena* complex

Holger Thüs, Cecile Gueidan, Juha Pykkälä, Juri Nascimbene, Alan Orange and Cristina Ruberti

Crustose representatives of the lichen family *Verrucariaceae* have a bad reputation for identifiers, due to a long tradition of difficulties in species delimitations. The result of these difficulties is a large number of taxon names which are applied in some countries and questioned in others. This situation made it near impossible to assess the distribution of these disputed taxa, to understand their ecology, to assess their conservation status and to evaluate their potential for bio-indication.

Expectations were high that molecular markers would help to find answers to questions of the identity of widely reported species such as *Verrucaria elaeomelaena* and their relation to supposedly rare taxa.

In a joint effort from lichenologists working with freshwater lichens in Scandinavia, Central Europe and the UK we found that none of the current concepts for the species circumscription of *Verrucaria elaeomelaena*, *V. andesiatica* and *V. margacea* in recent treatments of the genus *Verrucaria* is fully compatible with the results from independent analyses of the ITS-region and a separate combined dataset of 3 further different loci.

In this talk we will present the phylogenetic backbone for the *Verrucaria elaeomelaena* species complex, present possible solutions to capture this structure in a revised classification and explain how the proposed new taxonomy of the *V. elaeomelaena* species complex affects conservation assessments and the use of these lichens as bio-indicators.

The status of the threatened species *Parmelina carporrhizans* in Great Britain

Heidi Döring and Begoña Aguirre-Hudson

Parmelina carporrhizans is red-listed in Britain, and considered as being in decline with only small numbers of individuals being found at a few coastal localities in Mid Wales and Southwest England. Until recently this species was also known as *Parmelina quercina*, when both were considered synonymous. A molecular study including specimens from the Iberian Peninsula and Canary Islands, however, has enabled these two non-isidiate *Parmelina* species to be distinguished. Although the European checklist of parmelioid lichens now lists both species, it only names *P. carporrhizans* as native in Britain. A small thallus recently found in Surrey was initially considered to be *P. quercina* and prompted an investigation of British material. Examination of available herbarium vouchers confirmed most material as *P. carporrhizans*, but some historical material turned out indeed to be *P. quercina*. Recent field observations have been critically considered with the help of local

recorders and comparative DNA data has been generated. Reliable identification of juvenile lichens is often rather difficult, and in *P. carporrhizans* young lobes may not have developed the maculate surface typical of that species (*P. quercina* is uniformly grey). An update on the distribution and conservation evaluation of these two *Parmelina* species in Britain will be presented and their morphological differences illustrated. Furthermore, the potential of DNA data to aid lichen identification and the need for reliable reference data will be discussed.

A new taxonomic information for the BLS

Paul Cannon

Fungi of Great Britain and Ireland is a new online taxonomic information system for British fungi (including lichens). It has been in development for around three years, and can now be accessed at <http://fungi.myspecies.info>. Its aim is to bring together new and existing data on fungi and lichens, focusing primarily on descriptions and images. All information is free to access and is held under a Creative Commons license. The structure of the website is based on Scratchpads (<http://scratchpads.eu/>), an innovative system of templates for biodiversity information designed by staff at the Natural History Museum, London. It uses the content management software Drupal, which also underlies the new BLS website.

The Scratchpad system has a number of attractive features. It is entirely web-based and is therefore ideal for collaborations, with contributors who may be widely geographically separated. It is also designed with a series of inbuilt real-time links to other data resources. This means that direct access is provided on the species pages to, for example, maps from the National Biodiversity Network, DNA data from Genbank and historical information from the Biodiversity Heritage Library. The data on the species pages is also organized to facilitate export to global resources such as the Encyclopaedia of Life.

To date, information of interest to BLS members primarily comprises images of British lichens, but new species pages including comprehensive descriptions are currently being developed for species new to Britain that have been published/discovered subsequent to publication of the *Lichens of Great Britain and Ireland*. The information therefore complements that in the printed document, and could potentially be used as the basis for a new edition and/or an electronic version of our key taxonomic reference.

Archaeolichenology: remarkable preservation of lichens in pre-industrial buildings demonstrates a massive biodiversity loss

Rebecca Yahr, Brian J Coppins and Christopher J Ellis

Biodiversity loss in the world's early industrialized regions is often hidden from objective scrutiny, because the process of species extirpation outpaced the accumulation of high-resolution inventory data. To overcome this knowledge-gap,

we report on the use of a novel archaeobotanical resource: exceptional preservation of lichen and bryophyte epiphytes on pre-industrial building materials (prior to 1750AD), which were locally sourced into traditional low-status buildings. From a sample of 95 pre-industrial buildings in lowland England, one of the earliest industrialized regions, we report more than 1000 individual records of over 100 epiphyte species. These include 7 species now extinct in lowland England, three BAP species and 5 species which are currently very rare or outside their known range, demonstrating obvious changes in species distributions. Statistical comparisons of historic presences with likelihood of occurrence estimated from BLS Mapping Scheme data allows assessments of individual species extirpation, and points to a massive biodiversity loss between the pre- and post-industrial landscape. Furthermore, known modern individualistic species responses to environmental gradients pinpoint the role of various ecological drivers for observed change across different regions of England. These results highlight a systematic bias in conservation base-lines and targets, when these are developed using modern datasets (post-1960s).

Epiphytic Lichens as Bio-monitors of Atmospheric Nitrogen Pollution in the UK

Jason Lewis, Peter Crittenden, Ian Leith, Lucy Sheppard, Mark Sutton and Pat Wolseley

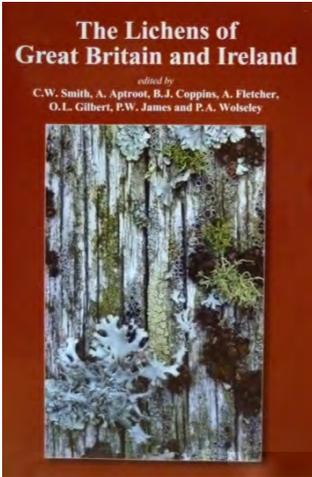
Concerns have arisen in recent years regarding the impact of atmospheric inorganic nitrogen (N) on ecosystems, with the main source of rural N occurring in the form of ammonia (NH₃) from animal by-products.

Lichen species typically associated with the *Xanthorion parietinae* alliance have been observed to dominate N-enriched areas, and previous European studies have shown that epiphytic lichens are effective bio-indicators of N pollution. One such approach is the Lichen Acidophyte Nitrophyte (L_{AN}) scoring system. However, a review of suitable indicator species for use in a UK-based bio-monitoring scheme is required because of differences in background NH₃ concentrations and climatic conditions in the UK, compared to mainland Europe. Furthermore, the ease of species identification by non-specialists required consideration.

Lichens were surveyed on trunks and branches at UK sites using established techniques. A shortlist of indicator species for NH₃ concentrations in air was produced from an initial list derived from statistical analysis undertaken in PC-Ord. This species shortlist was used to test the efficacy of a simple frequency-based L_{AN} scoring system. Correlation and regression analyses were used to identify confounding variables, which were incorporated into a predictive model that could be used to estimate levels of N pollution based on L_{AN} scores.

Publications and other items for sale

Please contact The Richmond Publishing Co. Ltd, P.O. Box 963, Slough SL2 3RS, tel. (+44) (0)1753 643104, email rpc@richmond.co.uk to purchase these items.



Cat.1. The Lichens of Great Britain & Ireland. Ed. Smith et al. (2009). Hardback, 700pp.

This work, a much enlarged revision of 'The Lichen Flora of Great Britain and Ireland published in 1992, reflects the enormous advances in lichen taxonomy over the last two decades. There are keys to 327 genera and 1873 species, with detailed descriptions and information on chemistry and distributions. The language is accessible, avoiding obscure terminology and the keys are elegant. The Lichens of Britain and Ireland is undoubtedly the standard work for the identification of lichens in Great Britain and Ireland and will be indispensable to all serious students of lichens and to other biologists working in the related fields of ecology, pollution, chemical and environmental studies.

BLS members: £45.00 ; non-members £65.00

Postage & Packing £7.50 UK, £15.00 overseas

(note this is a very heavy book!).

Lichen Atlas of the British Isles, ed. M.R.D. Seaward

The Atlas has been published in fascicles, unbound A4 sheets hole-punched for keeping in a ring binder. Each species account includes a distribution map and a discussion of the lichen's habitat, ecology, identification and status.

Cat.2. Fascicle 2: *Cladonia* part 1 (59 spp). 1996.

Cat.3. Fascicle 3: The foliose *Physciaceae* (*Anaptychia*, *Heterodermia*, *Hyperphyscia*, *Phaeophyscia*, *Physcia*, *Tornabea*) plus *Arctomia*, *Lobaria*, *Massalongia*, *Pseudocyphellaria*, *Psoroma*, *Solorina*, *Sticta*, *Teloschistes*. (54 spp) 1998.

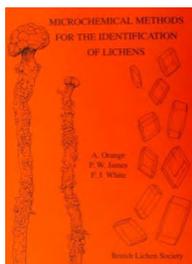
Cat.4. Fascicle 4: *Cavernularia*, *Degelia*, *Lepraria*, *Leproloma*, *Moelleropsis*, *Pannaria*, *Parmeliella*. (36 spp) 1999.

Cat.5. Fascicle 5: Aquatic Lichens and *Cladonia* part 2. (64 spp). 2000.

Cat.6. Fascicle 6: *Caloplaca*. (58 spp) 2001.

All fascicles are offered to members at a special price of £4.00 each, (approximately half price). Price to non-members is £6.00 per fascicle. Postage & Packing £3.50 UK, 10.00 overseas, per fascicle.

Cat. 7. All five fascicles for £16.00 (buy 4, get one free!). Price to non-members is £6.00 per fascicle. Postage & packing £8.50 UK, £25.00 overseas.



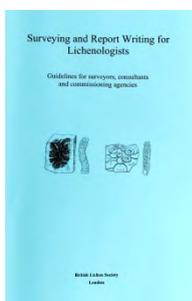
Cat.8. Microchemical Methods for the Identification of Lichens by A. Orange (2010)

2nd edition, with two colour plates. Full of useful information on pigments, crystals, colour tests with reagents and TLC. £8.00 members, £10.00 non-members. Postage & Packing £3.50 UK, £8.50 overseas.



Cat.9. Conservation Evaluation of British Lichens and Lichenicolous Fungi by B.J. Coppins and R.G. Woods (2012)

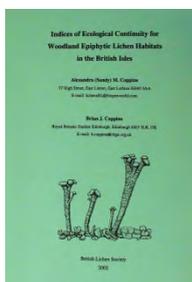
An update and revision of the 2003 edition and now extended to include lichenicolous fungi. Provides a comprehensive catalogue of threat statuses. Also included are lists of specially protected species in England, Scotland and Wales and those species for which Britain has an internationally important population. It now no. 13 of the JNCC's Species Status volume series. A4 paperback 155pgs. £7. Postage and Packing £5.00, £12.50 overseas.



Cat.10. Surveying and Report Writing for Lichenologists Ed. D.J. Hill (2006)

Guidelines on commissioning surveys, fieldwork, identification and report writing, aimed principally at those people and organisations commissioning surveys and at those undertaking them. However, much of the information is of value to any lichenologist engaged in field recording.

BLS members £7.00; non-members £10.00. Postage & Packing £2.50 UK, £6.50 overseas.



Cat.11. Indices of Ecological Continuity for Woodland Epiphytic Lichen Habitats in the British Isles by A.M. and B.J. Coppins (2002)

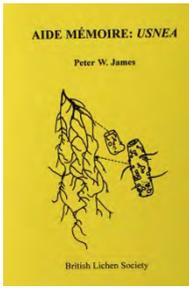
The use of lichens as indices of ecological continuity in British Woodlands was pioneered by Dr. Francis Rose MBE. The indices he proposed are here updated and regional variations are explained. BLS members £2.00; non-members £5.00. Postage & Packing £2.50 UK, £6.50 overseas.



Cat.12. Lichen Habitat Management Ed. A. Fletcher (2001)

This 174-page book is the proceedings of a workshop held in 1997 and is packed with practical information for the management of different habitats for lichens. Essential for anyone involved in wildlife conservation.

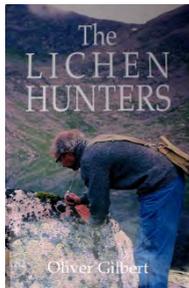
BLS members: £6.00 ; non-members £10.00. Postage & Packing £4.50 UK, £10.50 overseas.



Cat.13. Usnea 'Aide Memoire' by P.W. James

A5 booklet with drawings and many useful tips for identifying the British species of this difficult genus.

BLS members £2.00 ; non-members £3.00. Postage & Packing £1.50 UK, £2.50 overseas.



Cat.14. The Lichen Hunters by O.L. Gilbert (2004). Hardback, 208pp.

If you have been on any lichen field meetings in the last fifty years, this is a book you will enjoy. The late Oliver Gilbert's boundless enthusiasm comes across in every page as he describes field meetings and explorations around Britain. Many past and present members of the Society are fondly remembered in this delightful book. Special price, now £6.00. Postage & Packing £4.50 UK, £10.50 overseas.



Cat.15. 'Understanding Lichens' by George Baron (1999). Paperback, 92pp.

An excellent introduction to lichenology, from the basic biology of lichens to their environmental importance as well as the history of the science.

BLS members £8.95; non-members £9.95. Postage & Packing £2.50 UK, £6.50 overseas.



Cat. 16. A Field Key to Common Churchyard Lichens by Frank Dobson (2003)

Spiral-bound book with strong paper. Illustrated keys to lichens of stone, wooden structures, soil and mosses. 53 colour photographs. Covers many common lowland lichens.

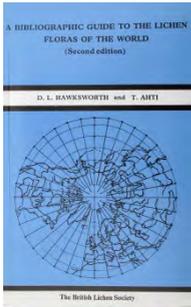
BLS members £6.50; non-members £7.50. Postage & Packing £2.50 UK, £6.50 overseas.



Cat. 17. A Field Key to Coastal and Seashore Lichens by Frank Dobson (2010)

A superb guide to over 400 species. 96 colour photographs. In the same format as cat. 16.

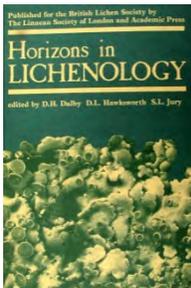
BLS members £10.00; non-members £12.00. Postage & Packing £2.50 UK, £6.50 overseas.



Cat.18. A Bibliographic Guide to the Lichen Floras of the World (2nd edn.) by D.L. Hawksworth and T. Ahti

Reproduced from The Lichenologist vol. 22 (1990). A useful list, up to its publication date, of reference works to lichen floras around the world.

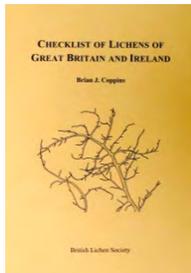
Special price, now £1.00. Postage & Packing £2.50 UK, £6.50 overseas.



Cat.19. Horizons in Lichenology Ed: D.H. Dalby, D.L. Hawksworth and S.L. Jury (1988)

Proceedings of a symposium held in 1987. Seven wide-ranging review articles.

Special price, now £1.00. Postage & Packing £2.50 UK, £6.50 overseas.



Cat.20. Checklist of Lichens of Great Britain and Ireland by B.J. Coppins (2002)

Although an updated checklist is available on the BLS website, this is the most recent printed version, an attractive publication ideal for annotation.

Special price now £2.00. Postage & Packing £3.50 UK, £8.50 overseas.



Cat. 21 and 22. Lichen Wall Charts illustrated by Clare Dalby.

Two beautifully illustrated wall charts, 'Lichens on Trees'(cat.21) and 'Lichens on Rocky Seashores' (cat.22) have been produced by artist Clare Dalby. Each is A1 size (80cm wide x 60cm high) and feature over 40 species in colour, nomenclature updated to 2010.

£5.00 per poster, £4.00 per poster for purchases of 8 or

more. Postage & Packing (for up to two posters) £3.00 UK, £6.50 overseas.



Cat.23. Parmelia identification CD-Rom

Although the nomenclature has been superseded, this CD provides a useful range of photographs and other information for identification.

BLS members: £5.00; non-members £7.00. Postage & Packing £2.00 UK, £5.00 overseas.

Cat.24. Lichen Identifier CD-Rom

This is a simple to use multi-access computer key that enables the user to find the species name and characteristics of most British and Irish lichens.

It is divided into field and microscopical characters and any information available may be entered in any order to obtain a solution. With the majority of species, a few characters, noted in the field, are sufficient to identify the species. A brief note on each species further assists separation of similar species.

This multi-access computer key was originally based on *The Lichen Flora of Great Britain and Ireland* by O.W. Purvis et al (1992). It includes every species mentioned in that book plus many that have been more recently described or added to the British list. The nomenclature agrees with the most recent version of the BLS checklist. It can therefore be used to identify any of the lichens contained in the above *Flora*. In addition, it includes many species that have been added to the British and Irish lists since that time.

Lichen-Identifier will run on a PC with a 486 DX or later processor running Windows NT, 95, 98, 2000, XP, Vista and Windows 7. We regret that it is not available for Apple Mac except under PC emulation or 'Boot Camp'.

Improvements in Version 3 of *Lichen-Identifier* include: Completely revised data, where possible, using the completed sections of the new *Flora*, plus many recently described species. The conservation evaluation from *A Conservation Evaluation of British Lichens* by R.G. Woods & B.J. Coppins is given for each species. Over 750 colour photographs of improved quality and with a scale added to each one. Every distribution map has been updated and include now maps of lichenicolous fungi although these are not part of the actual key.

Please note that this program includes a DataPower 2 reader which will run on an individual computer. It will not run on a multiple system in client/server mode. If you are using a server system, a site licence for DataPower 2 is required.

BLS members £26.00 for version 3, (£15.00 for upgrade from version 2).

Non-members £28.00 for version 3, (£15.00 for upgrade from version 2).

Postage & Packing £2.50 UK, £6.50 overseas.



Cat.25. Greetings Cards/Notelets by Claire Dalby

A set of five cards with envelopes, featuring five exquisite pen and ink illustrations of British lichens. £2.00 per set. Postage & Packing £2.00 UK, £3.50 overseas.



Cat.26. BLS Postcards

A set of 16 beautiful photographic postcards of British lichens.

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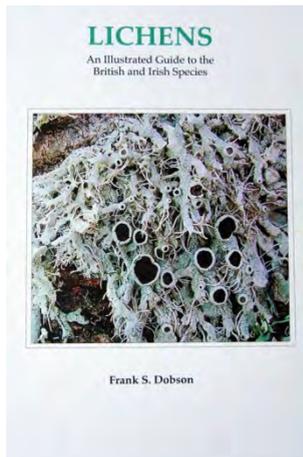
Cat.29. Hand lenses

X10 glass lens, diam. 18mm, in metal body.

£8.50. Postage & Packing £1.50 UK, £3.00 overseas.

Cat. 30. Car sticker, BLS logo

Ideal for meeting fellow lichenologists. BLS members £1.00. Postage & Packing £1.50 UK, £3.00 overseas.



Cat. 31. Lichens – An Illustrated Guide to the British and Irish Species 6th Edition (2011)

This latest enlarged edition (496pp) of this popular book provides an invaluable guide to identifying the British and Irish species, both for the beginner and the more advanced lichenologist. With detailed air pollution references and distribution maps, it offers the environmentalist and ecologist a concise work of reference, compact enough to be used in the field.

The 6th edition has been revised to conform with the nomenclature of 'The Lichens of Great Britain and Ireland' ed. Smith, C.W. et al. (2009) and more recent changes. Over 160 additional species to the previous edition have been added so over 1,000 species are now treated.

Entries usually consist of a description of each species, a photograph, notes on habitat, chemical tests, line drawings to clarify the description and a distribution map giving three date separations.

There is an enlarged generic key and a much extended section on sterile species. A generic synopsis is included to assist the more experienced lichenologist.

Paperback £35.00, hardback £50.00.

Postage & packing £7.00 UK, overseas £10.00

NEW MEMBERS since publication of the 2012 Summer Bulletin

Welcome to the following new members of the British Lichen Society ...

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Dr D. Callaghan, 51 Bishopdate Drive, Rainhill, Prescot, Merseyside, L35 4QQ, UK

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THANK YOU

The following individuals kindly supported the British Lichen Society with a donation:

Mr D.S. Chapman, Mr R.G. Crump, Mrs D.M. Downing, Dr D.J. Galloway, Mr J. Garrett, Mrs B. Haynes, Mr C.J. Hill, Dr Q.Q.N. Kay, Mr F.D. Kelsey, Dr E.H.N. Oakley, Mrs M.J. Palfrey, Dr H. Walther, Dr J.K.. Wardle, Dr S. Young.

Membership Matters – from the Membership Secretary

For your **2013 renewal** please remember that subscription is changing for some membership categories. If you pay your fees from a UK bank account by Standing Order, please remember to inform your bank. At this point we are not switching to Direct Debit but like to encourage Standing Order payments rather than payment by cheque. For details, please refer to the inside back cover.

We like to inform UK tax payers who have provided the society with a **Gift Aid** Declaration that the society is at present not claiming Gift Aid. We will ask you for a new Gift Aid Declaration should this change.

The society used to provide members with a **membership list** every four years, which you might expect to receive with this Bulletin. We hope to use our new website to provide this electronically for members who do not wish to receive a hardcopy, and thus to reduce production costs. More about this in the next Bulletin, but in the meantime, if you need any information please contact the Membership Secretary.

Publication of the Summer 2013 Bulletin

Copy for the Summer 2013 Bulletin should reach the editor (details on the inside front cover) by 1 May 2013

BRITISH LICHEN SOCIETY - 2013 MEMBERSHIP DETAILS

Applications for membership should be made to The Membership Secretary, The British Lichen Society: Dr Heidi Döring, Mycology Section, Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB, email membership@britishlichensociety.org.uk, or through the Society's website: <http://www.britishlichensociety.org.uk>. **Queries on membership matters and subscription payments and Changes of address** should be sent to the Membership Secretary.

CATEGORIES OF MEMBERSHIP AND SUBSCRIPTION RATES

Renewal of annual subscriptions is due on or before 1st January.

Ordinary Membership for individuals (not available to institutions) who have signed the Application Form and paid the subscription. Ordinary Members are entitled to all publications and facilities of the Society. Rate for 2013: **£35 / \$70**

Electronic Membership, as Ordinary Members but access to 'The Lichenologist' online only (no hard copy). Rate for 2013: **£30 / \$60**

Life Membership is available to persons over 65 years of age at **£350 / \$700**. Life Members have the same entitlement as Ordinary Members.

All three categories of **Associate Member** listed below are entitled to all the facilities of the Society, including the *Bulletin*, but excluding *The Lichenologist*.

Associate Membership. Rate for 2013: **£25 / \$50**

Senior Associate Membership, for persons over 65 years of age. Rate for 2013: **£10 / \$20**

Student Associate Membership, for those under 18 years or full-time students. Rate for 2013: **£10 / \$20**

Family Membership is for persons living in the same household as a Member. They are entitled to all the Society facilities, but receive no publications and have no voting rights. Rate for 2013: **£5 / \$10**

Bulletin only subscriptions are available to institutions. Rate for 2013: **£25 / \$50**

PAYMENT OF SUBSCRIPTIONS Members may pay their subscriptions, as follows:

Sterling cheques, drawn on a UK bank, or on a bank with a UK branch or agent, should be made payable to *The British Lichen Society*. Payment by **Standing Order** is especially welcome; the Membership Secretary can supply a draft mandate, which is also available at our website: <http://www.britishlichensociety.org.uk>. Note that direct debit is not currently available as a payment option.

Internet (credit card) payments using PayPal: Please see the Society's website for full details.

US dollar payments. Cheques should be made payable to *The British Lichen Society*, and sent to: **Dr James W. Hinds, 254 Forest Ave., Orono, ME 04473-3202, USA**. If a US-denominated check or money order is not possible then payment may be made to Dr Hinds via Western Union.

Overseas members may also pay by direct transfer into the Society's UK bank account. However, please contact the Assistant Treasurer if you wish to pay in this way, *and before you make any payment*. Her contact details are given above.

Reminder - Information you will find in the top left corner (below the 'return address') on the envelopes in which you receive the Bulletin:

1. *Membership number*. This is a four digit number only.

2. *Expiring year*. If you don't know whether you may still have a credit, check the envelope – the year your membership expires will be printed below your membership number.

Please keep us up to date when your contact details change! Please also update or provide the Membership Secretary with your current email address.

British Lichen Society *Bulletin* no. 111, Winter 2012

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British Lichen Society Bulletin no. 111

Winter 2012

Index

	<i>Page</i>
Features and letters	
Guest editorial	Stephen Ward 1
A new perspective – a letter from the President	Barbara Hilton 3
BLS website news	Janet Simkin 6
The BLS Data project	Janet Simkin 8
Using BLS records	Janet Simkin 15
Substrate-induced pruinosity	Volker John & Mark Seaward 19
<i>Punctelia reddenda</i> thrives on <i>Betula</i> in a front garden of a small town in the Netherlands	Leo Spier 23
Lingering <i>Lobarion</i> in Cumbria – on rowan	David Clarke 25
Looking for the <i>Lobarion</i> in the Scillies	Peter Lambley 27
The Afon Marlais in Brechfa Forest, Carmarthenshire: a new hotspot for <i>Lobarion</i> lichens	Sam Bosanquet 32
Brechfa Forest, Carmarthenshire: worth further survey	Theresa Greenaway 36
Shields, or ‘Lost in translation?’	Brian & Sandy Coppins 37
Testing the efficacy of Steiner’s stable solution of para-phenylenediamine	Paul Harrold 40
Some foliose lichens found on leaves	Alick Henrici 43
<i>Leptogium resupinans</i> , a lichen to look out for in the British Isles	Per Magnus Jørgensen 46
The Habitats of the ‘Shadow Lichens’ in the Cairngorms	Neil Sanderson & Andy Cross 47
A fallen beech in an ancient pasture woodland in the New Forest, Hampshire	Andy Cross & Neil Sanderson 54
Update: Bristol Downs Lichen Trail	Sheila Quin 60
Scotland’s Rainforest Epiphytes Receive International Attention	Chris Ellis 61
Publication of <i>A Conservation Evaluation of British Lichens and Lichenicolous Fungi</i>	Ray Woods & Brian Coppins 65
NLF-excursion to Vadstena 11–15 August 2013	Mark Seaward 66
Regular articles	
British Isles List of Lichens and Lichenicolous Fungi. September 2012 update to list	Brian Coppins, Mark Seaward & Janet Simkin 67
Literature pertaining to British lichens – 51	Brian Coppins 69
New, rare and interesting lichens	Chris Hitch 72
BLS Field Meetings	
Report of the BLS Summer Meeting 2012. The Isle of Muck	Brian Coppins, John Douglass & Steve Price 84
British Lichen Society Field Meetings & Workshops Programme 2013 / 2014	Steve Price 105
Society business	
Notice of the Annual General Meeting, 2013	111
Miscellaneous	
Publications and other items for sale	118
New Members	124

