British Lichen Society *Bulletin* no. 104 Summer 2009

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no. 104: Summer 2009

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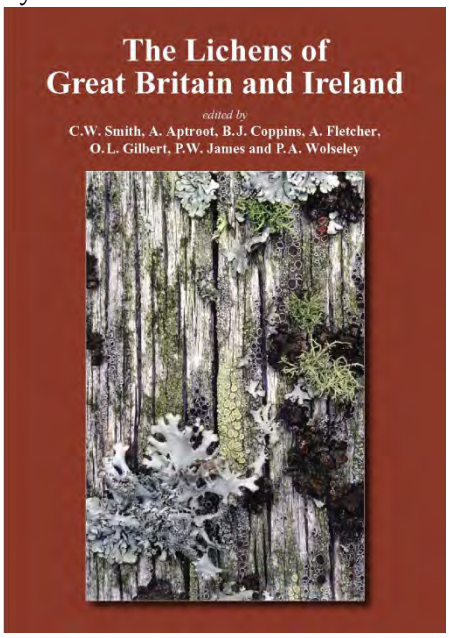
British Lichen Society Bulletin no. 104

Summer 2009

Welcome to the Summer 2009 *Bulletin*, with its usual mix of lichens, lichenology and lichenologists. The number of articles submitted for publication is increasing steadily, covering a wide range of topics ranging from the sublime to the not-quite-so-sublime. I'll leave you to decide which goes in which category!



The big news for 2009 is that the brand-new successor to the 1992 *Lichen Flora of Great Britain and Ireland* has finally arrived. The earlier work was a milestone in the history of the BLS and is used over a much larger geographical area than its title would suggest. The new volume will be equally significant for the Society and lichenologists worldwide, and has been produced with a fraction of the funds available for the 1992 work, thanks to the dedication of the editors and dozens of experts who contributed to their own specialist groups.

327 genera and 1873 species are included (386 species more than in the previous book). This demonstrates how far lichenological exploration (and taxonomic innovation) has developed in our islands over the past 17 years. If you consider yourself to be even a *slightly* serious lichenologist and can afford the purchase price (modest if you are a BLS member!) then go ahead and buy it. See the flyer accompanying this *Bulletin*, and further information about payment on p. 103.

If you think that you are a completely non-serious lichenologist, you need help! The BLS has initiated a forward-thinking exercise to develop a new strategy for the next 10-20 years, and Council is concious that more support is needed for new and inexperienced members (see p. 75). Tell us what you need and we'll do our best to help. If you can help too, then that's even better. There are many valuable roles that non-specialists can play in the BLS, you don't have to be a lichen-nerd able to distinguish 78 species of *Cladonia* at twenty paces to qualify!

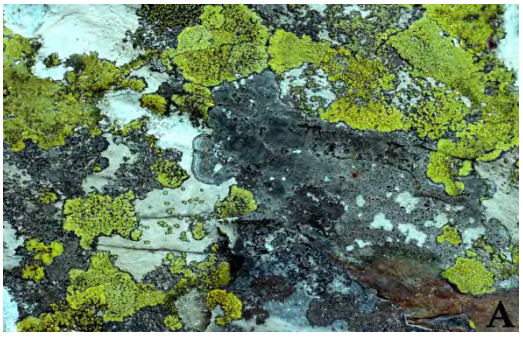
Paul Cannon, BLS *Bulletin* editor: email *p.cannon@cabi.org*

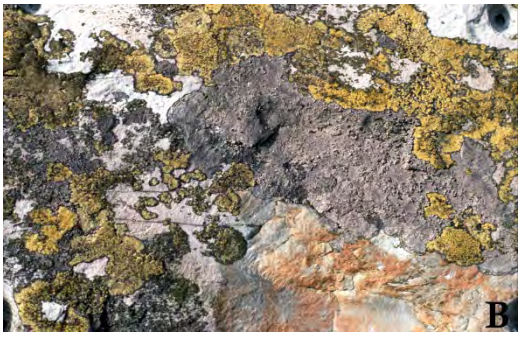
Front cover: What happens when you spend too long on your churchyard survey……. With thanks to Viv Lisewski and the *British Lichens* website

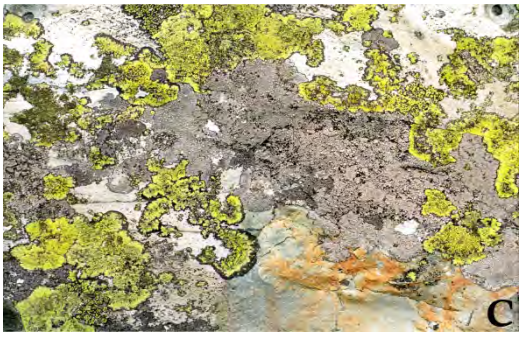
Stop press – *Lichens of Great Britain and Ireland* launch

The literary birth of this new book after an eight-year gestation was celebrated at a short lunch-time event at the Natural History Museum in London on 12 May. A fuller report will appear in the Winter 2009 *Bulletin*, but here is a picture of the six surviving editors (doubtless accompanied by the spirit of Oliver Gilbert). The book arrived from the printers only that morning, which may explain the mixture of relief and shell-shock on some faces….

Permanent quadrats for saxicolous lichens in Britain







Having reached retirement it seemed appropriate to summarise some information on my 'permanent' quadrats established in Wales during the 1970's and also review similar work in other parts of the country. Long-term or 'permanent' quadrats are

defined here as any study 10 or more years in length. Recording lichen growth patterns and establishment using this method is by no means a recent development. Frey (1959) reported on the growth of *Cladonia* and many crustose lichens for periods up to 35 years in some Swiss sites and there have been many lichenometric studies such as those used to estimate growth rates on gravestones and the recording of fault movements (e.g. Winchester, 1984; Bull, 2004). The list tabulated below is not intended to be exhaustive and excludes quadrats monitoring lichen development on trees. The author has several such sites and is aware of at least one other current British investigation. The main reason for publishing this list is to stimulate further interest in the dynamics of lichen communities. It will be clear that many types of rocky habitat have received scant attention, while communities on exposed acid rock at low altitude are receiving more interest. During my own work over the past forty years it has become apparent how much change can occur in the immediate environment. Walls and churchyards are especially prone to overshading by trees, new buildings and shrubs such as ivy, problems that are not easily predicted and often irrelevant in short-term investigations.

As an example of the use of permanent quadrats, one quadrat in the 'Jubilee' set from Llanberis Pass, North Wales (see table below) is shown in Figures A-D (above) spanning the period 1977-2007. This quadrat, numbered 13 in the set is from a boulder of rhyolite lava and shows considerable change in both lichen cover and species compostion over this period.

Quadrat 13 contained four lichen taxa in 1977, *Aspicilia cinerea* (19.7% of quadrat area), *Buellia aethalea* (1.0%), *Fuscidea lygaea* (16.7%) and *Rhizocarpon geographicum* agg. (35.3%) giving a total lichen cover of 72.7% (Fig. A). The *Aspicilia* occurs as one large dull grey lichen near the centre and most of the *Fuscidea* is at the bottom of the photograph. There was a loose rock flake at lower right, plus a clear area of rock that had been recently exposed by drilling the reference holes. Note the minute thalli of *R. geographicum* at centre left. The loose flake was still in place in 1982 and the small islands of *R. geographicum* had enlarged, with radial growth ranging from 0.35 and 0.43mm/a., rates that are normal for this species. By 1987 (Fig. B) the rock flake had gone leaving an exposed area of rock at lower right. The small *R. geographicum* plants had started to coalesce while retaining their marginal prothalline lines. The *Aspicilia* had continued to grow across bare rock and in places, annual growth rings are apparent at the thallus periphery. These rings, together with measurements of advance, indicate a radial growth rate of between 0.99 and 1.18 mm/a and it is therefore faster-growing than the *Rhizocarpon*. By 1997 (Fig. C) the *R. geographicum* thallus at top right had been receding, presumably due to senescence and new thalli were growing within the recently created bare surface. At this time the total lichen cover was 72.7%, close to that in 1977. Many contacts can be seen between *A. cinerea* and *R. geographicum* in the centre of the picture and although the former appears to be growing more rapidly, there is no evidence of overgrowth. By 2002 a dramatic loss of cover became apparent. Many thalli were completely lost although they appeared to be healthy five years before and only a few small thalli of *F. lygaea* and *R. geographicum* remained. By 2007 (Fig. D) growth had resumed in both species but the cover was still low (*F. lygaea* 2.9% and *R. geographicum* 5.9%) giving a total of 8.8%. What caused the dramatic change between 1997 and 2002 is

not known. It was not repeated in other quadrats and no further rock flaking had occurred. A full analysis of these quadrats has yet to be made.

The table on the following page has been prepared to provide readers with information on the location, number and type of study currently in progress in Britain.

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Recorder/ author	County	VC	Grid ref.	Brief description of sites	Purpose of study	Date started	Freq-uency of visits (yr)	Most recent visit	No. of quad-rats	Size of quad-rats (cm)	Three most common taxa	Key references	Notes
Armstrong, R.A.	Gwynedd	48	22/6196	S-facing above the Dyfi Estuary on slate	Long-term colonisation and succession	1972	5	2008	54	25 × 25	*Melanelia glabratula* ssp. *fuliginosa, Parmelia saxatilis, Tephromela atra*	Armstrong (1974, 1993, 2006)	Study in progress
Fletcher, A.	Gwynedd	49,52	23/2741 to 23/7683	Saxicolous maritime, from Porth Dinnlaen to Great Ormes Head	Climate change and marine pollution	1974	0.1-5	2005	35	20 × 32		Fletcher (1975); Jones et al. (1979a,b,c)	Terminated in 2005, data sets archived at CCW Bangor. Marked with rubberised paint
Fletcher, A.	Gwynedd	52	23/ 552717	Saxicolous maritime, Church Island, Anglesey	Climate change and marine pollution	1967	0.1-5	2005	3	3m transects			Terminated in 2005, data with CCW Bangor
Fletcher, A.	Gwynedd	49	23/1122	Saxicolous maritime, Bardsey Island NNR	Climate change and marine pollution	1992	1	2005	50	20 × 30		Fletcher (1987, 2005)	Terminated 2005, data with CCW Bangor
Orange, A.	Powys	43	32/2658	Stanner Rocks NNR, Gladestry	Long-term monitoring	1991	irreg-ular		<80	20 × 30		Orange (1992)	
Orange, A.	Powys	42	22/8615	Ogof Ffynon Ddu, Glyntawe	Long-term monitoring	1991	irreg-ular		<80	20 × 30		Orange (1992)	
Orange, A.	Powys	42	22/8453	Nant Irfon NNR, Abergwesyn	Long-term monitoring	1991	irreg-ular		<80	20 × 30		Orange (1992)	
Pentecost, A.	Kent	16	51/ 568414	Broomhill, Southborough	Growth rate and colonisation	1967	irreg-ular	2008	5	30 × 30	*Ochrolechia parella, Lecidea fuscoatra, Tephromela atra*		
Pentecost, A.	Gwynedd	49	23/ 633563, 23/ 560621, 23/ 561623	Llanberis Pass, rhyolite and dolerite boulders and outcrops	Growth rates, colonisation and mosaic development	1977	5	2007	40	16 × 24	*Fuscidea lygaea, Lecanora intricata, Rhizocarpon geographicum* agg.	Pentecost (1978)	Ongoing. Marked at corners with 1cm deep drillholes

Evidence that browsing animals can have a significant effect on epiphytic populations of *Sphaerophorus globosus* in Scotland

Introduction

The general effect of herbivores on plant population and ecosystem dynamics is widely acknowledged (Harmer, 2000; Hulme, 1996; Nicholson, 2007). For lichens, grazing research with a focus other than invertebrates has predominantly concerned the effect on ground-layer *Cladonia* species by herds of reindeer and elk in boreal and sub-arctic environments (e.g. Hansen & Lund, 2003). This study extends herbivore-lichen interactions to consider the effect of browsing mammals in a British context. In Britain the predation of epiphytes by large herbivores such as red and roe deer is assumed (Gilbert, 2000), though there is a scarcity of published evidence with which to quantify the impact of browsing mammals. To better understand the browsing impact on epiphytic lichens we carried out a study that compared abundances of *Sphaerophorus globosus* between woodland sites with and without protection from deer fences.

Methods

We compared populations of *Sphaerophorus globosus* for adjacent sites with and without deer fence protection, located in two contrasting regions:

1. At Resipole, near Loch Sunart (NM725646), a high deer fence ran through the centre of a single woodland study site, allowing direct comparison of populations on either side of the fence.
2. At Loch Rannoch (NN486570) five woodland sites were sampled from the same area, two protected by deer fences and three unprotected.

All sites were sampled using a random walk technique, avoiding trees at the edge of the woodland. A central starting point was assigned, and the field-surveyor travelled along a random bearing until a tree was located. This 'random walk' was repeated from tree to tree. On each tree the sample area was restricted to the lower bole, encompassing a vertical height range of 0-1.7m. Populations of *Sphaerophorus globosus* were quantified first by simple presence/absence, and second by estimated percent cover. 25-50 trees were surveyed per site depending on the size of the *S. globosus* population. A greater number of trees was surveyed from sites where the species was scarcer, in order to maximise the capture rate and minimise chance-related skewness in the data.

Abundance data (% cover) were compared between each of the Loch Rannoch sites using a non-parametric analysis of variance (Kruskall-Wallis test).

Results

Evidence was found for significant contrasts in the occurrence and size of *Sphaerophorus globosus* populations at the Loch Sunart and Loch Rannoch woodland sites. At the Loch Sunart site *S. globosus* was present more frequently and had larger

populations per tree when protected by a deer fence (Fig. 1). Approximately 70% of protected trees had populations of *S. globosus* compared with 20% of unprotected trees. At Loch Rannoch, *S. globosus* populations were more frequent and tended to be larger when protected by deer fences, compared to trees that were exposed to browsing (H = 174.5, $P < 0.001$ with 4 d.f.).

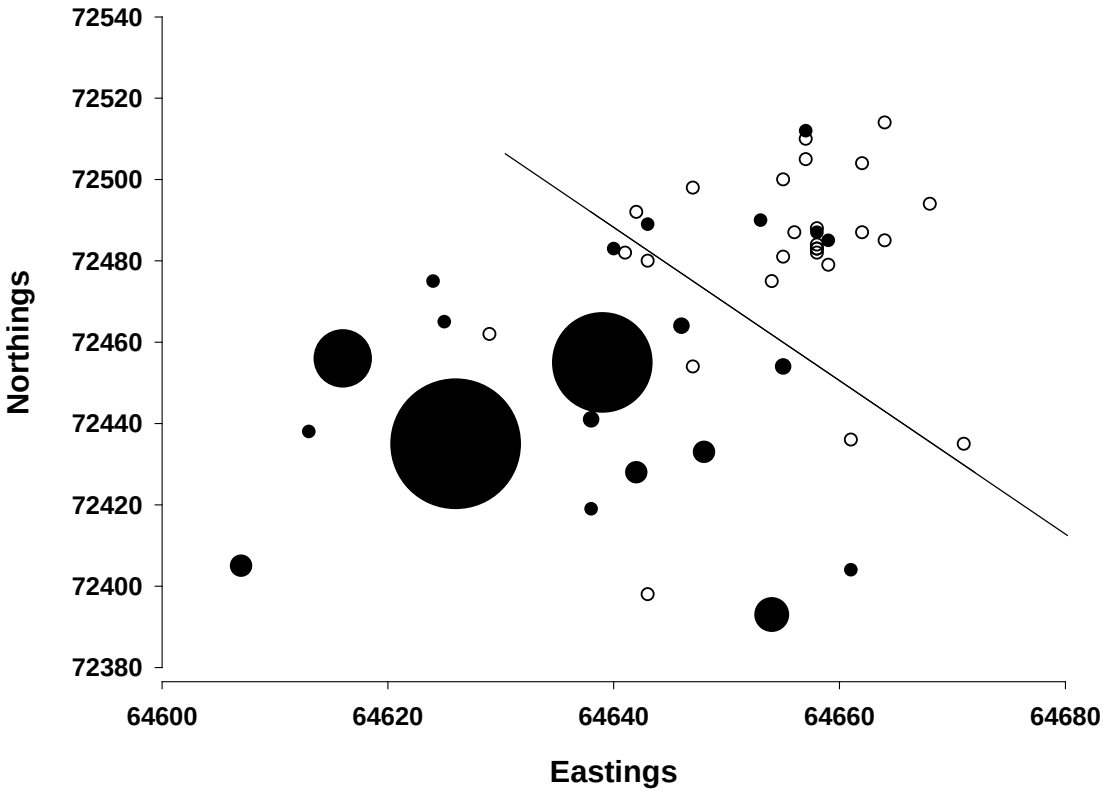

Figure 1: Map showing positions of trees in relation to the deer fence at the Loch Sunart study site, and presence/absence of *Sphaerophorus globosus*. Filled symbols indicate a tree with *S. globosus* present, open circles indicate an absence. Filled symbols are size scaled to represent the % cover of *S. globosus* (from 20% cover to <1% cover).

Discussion

Sphaerophorus globosus is a common lichen on trees and rocks in the region comprising our study sites, and provides a suitable species for investigation. The sites we studied showed strong indirect evidence for predation of *S. globosus* by browsing mammals (likely to be deer or sheep). Macro-climate, elevation and tree species were similar between closely associated sites (mixed *Quercus* and *Betula*), and are unlikely to be confounding explanatory variables. There was a difference in the antiquity of woodland sites: two sites protected by deer fences were ancient (that is, appearing on Roy military maps of 1745-47), while one site without a deer fence was ancient

woodland and two were of long-standing antiquity (appearing on Ordinance survey 1st edition maps of 1856-91). However, between neighbouring sites on ancient woodland, one with a deer fence, and one without, the mean percent cover of *S. globosus* was 9.6% and 0.02%, respectively. Thus, we tentatively discount woodland continuity as a confounding factor.

Previous studies have utilized differences in terricolous lichen vegetation on adjacent sides of fences to explore grazing effects (Fryday, 2001). Likewise, we suggest that the use of deer fences as an *ad hoc* experimental system might be used to tentatively infer the effect of browsing on epiphyte populations. The occurrence and size of populations sampled from sites at both Loch Sunart and Loch Rannoch (Figs 1, 2) revealed significant differences in the population structure of *Sphaerophorus globosus* between similar and closely associated woodlands, comparing those with deer fences to those without. Frequently situated towards the base of tree boles, especially where trees are leaning slightly, *S. globosus* is often located within easy reach of our native and domestic browsing mammals. We suggest that these findings for *S. globosus* may be relevant to a range of other tree-bole epiphytes, and that browsing by large mammals is worth considering as a potentially important ecological factor structuring British epiphyte communities.

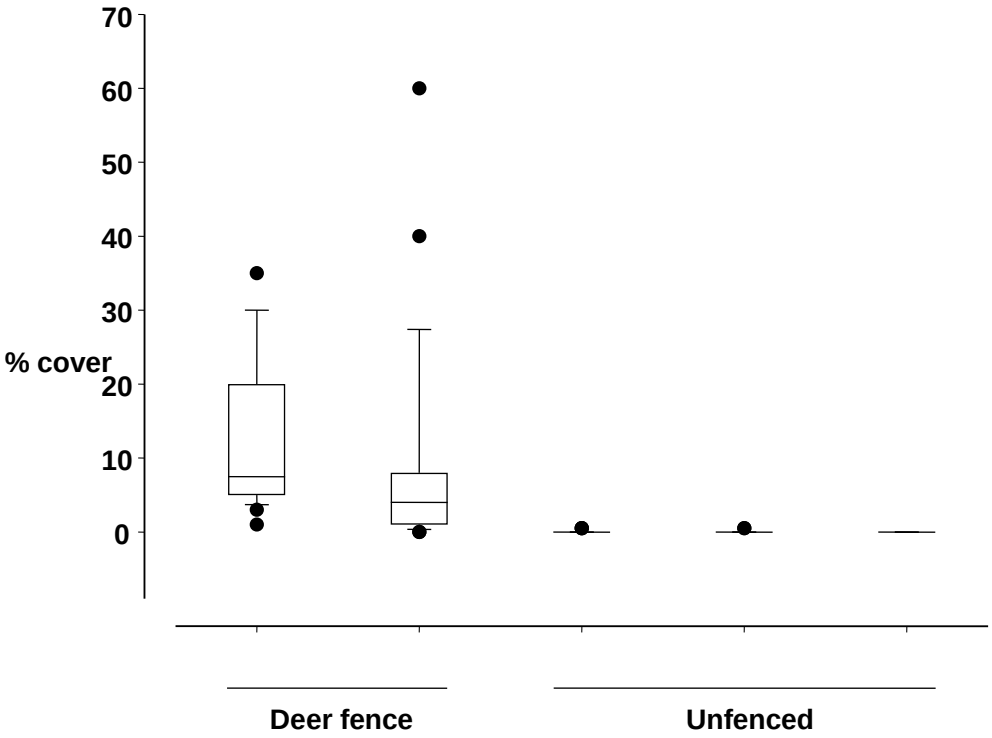

Figure 2: Box-plots to indicate the % cover of *Sphaerophorus globosus* on protected (two sites with a deer fence) and unprotected sites (three unfenced) at Loch Rannoch. Plots show the median, 25th and 75th quartiles, the 10th and 90th percentiles (whiskers) and outliers (symbols).

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Cyanolichens on perennial fungal fruit-bodies

Tom Neily, Frances Anderson and I were doing field work on *Erioderma pedicellatum* and *Degelia plumbea* in Yarmouth County, Southern Nova Scotia, Canada, in November 2009. On two occasions, in a single day, we came across *Protopannaria pezizoides* growing on the upper surface of the fruit bodies of the perennial bracket fungus *Fomes*. Tom had previously seen *Leptogium tenuissimum* growing on this fungus in nearby Shelburne County.

Protopannaria pezizoides growing on a fruit-body of *Fomes* sp., Nova Scotia

Tom drew my attention to the report of the BLS field meeting in Scotland, which I attended many years ago, and which was written up in the *Lichenologist* (James, 1965). Peter James wrote 'Another unusual collection was that of *Leptogium minutissimum* on the upper sides of the brackets of *Fomes conatus*; a similar habitat for this plant on another species of *Fomes*

was noted by me from West Galway, Ireland, VC H16, in 1962'. In response to enquiries, Brian Coppins determined that the Scottish material (from Glen Lyon, duplicate in **E**) was actually *Leptogium subtile* and that the Irish record could also be that species but might be *L. teretiusculum*. The name *L. minutissimum* has often been used for the latter species.

Hakon Holien wrote from Steinkjer, Norway, to tell me that he has seen *Nephroma parile, Parmeliella triptophylla* and *Protopannaria pezizoides* on *Fomes* growing on *Betula pubescens* in Norway. He has also found the crustose lichens *Bacidia ignaria* and *Lecidea sphaerella* on this substratum and notes that these lichens do not grown on living bark of birch but can be found on the fruit bodies of *Fomes* and on dead bark. He hypothesizes that the *Fomes* and dead bark must have a higher pH than the living bark of the birch trunks. Perennial fruit bodies of *Fomes* and related genera might be an interesting substratum to examine on future field excursions by BLS members.

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What do lichen families have to offer?

Back in the 1960s, botany students were taught flowering plant identification by getting to know the larger families, especially those that had distinctive features such as the *Scophulariaceae* and *Labiatae*. Being one of these students, I can remember on field trips being asked by my lecturer what family a plant belonged to and why, and what its features were before venturing into what the actual species was. As a result I still think of plants in families and can still sometimes recognise the family of an unknown species without knowing the species or genus. For me this has been such a huge aid in attempting to get to know the names of plants and even in remembering the few that can be recalled.

So why don't we use families in lichens for the same reason and purpose today? Since the 1992 Flora (Purvis *et al*., 1992), numerous new genera seem to have appeared from the hard work of taxonomists as if from some "Pierian spring" (Pope, 1711). Some of us have difficulty remembering them all. Therefore I asked the question of the Education and Promotions Committee: would it be helpful, in order to identify the right genus and to remember which genus is which, to know how the genera were placed in families, and what were the distinguishing features of each family? Being in real danger of "little learning" (Pope, 1711) here, I sought advice and André Aptroot very kindly sent me the systemic grouping of families which appears in the new *Lichens of Great Britain and Ireland*. There seem to be certain common features of these lichen families:

a) much of the evidence now comes from molecular work so that genera may be delimited and then placed in families for invisible reasons (e.g. *Opegrapha*, *Enterographa* and *Lecanactis* in the *Roccellaceae*, and *Bacidia* and *Toninia* in the *Ramalinaceae*, and *Thelotrema* in the *Graphidaceae*)
b) quite a few families also include non-lichenized genera and so the systematic arrangement of orders and families may not seem very meaningful when just looking at lichens
c) there is quite a bit of uncertainty with some genera
d) the family characteristics may not be helpful in the process of identification of genera and species within a flora of a limited geographical region

Alexander Zahlbruckner's classification was used by lichenologists for much of the twentieth century, but latterly it was realized that his scheme was quite artificial and so more recently we have got used to having lichen genera just listed in alphabetical order for want of any better arrangement. This is really good if you can remember a name and spell it but hopeless if you know the features and want help in recalling the name. What would old Alexander Z have made of the current synopsis of lichen families? Looking at his scheme (in Annie Lorraine Smith's *Lichens* (Smith, 1921)) and André's for the new "Flora", it is amazing, considering all the changes in lichenology, that we still have some old familiar family names even if the constituent genera are very different. For example we still have (genera in bold included by Alexander Z):

Roccellaceae: *Bactrospora*, *Cresponea*, *Dirina*, *Enterographa*, *Lecanactis*, *Lecanographa*, *Opegrapha*, *Peterjamesia*, ***Roccella***, *Schismatomma, Syncesia*

Verrucariaceae: *Agonimia*, *Atla*, *Catapyrenium*, *Dermatocarpon*, *Involucropyrenium*, *Leucocarpia*, *Merismatium*, *Normandina*, *Phylloblastia*, *Placidiopsis*, *Placidium,* ***Polyblastia***, *Psoroglaena*, ?***Sarcopyrenia***, ***Staurothele***, ***Thelidium***, *Trimmatothele*, ***Verrucaria***

Acarosporaceae: ***Acarospora***, ?*Myriospora*, *Pleopsidium*, *Polysporina*, *Sarcogyne*

Graphidaceae: *Diploschistes,* ***Graphina, Graphis, Phaeographis***, *Thelotrema, Topeliopsis*

Parmeliaceae: *Alectoria*, *Allantoparmelia*, *Arctoparmelia*, *Brodoa*, *Bryoria*, *Cavernularia*, ***Cetraria***, *Cetrariella*, *Cetrelia*, *Cornicularia*, *Evernia*, *Flavocetraria*, *Flavoparmelia*, *Hypogymnia*, *Hypotrachyna*, *Imshaugia*, *Melanelia*, *Melanelixia*, *Melanohalea*, *Menegazzia*, ***Parmelia***, *Parmelina*, *Parmelinopsis*, ***Parmeliopsis***, *Parmotrema*, *Platismatia*, *Pleurosticta*, *Protoparmelia*, *Pseudephebe*, *Pseudevernia*, *Punctelia*, *Tuckermanopsis*, *Usnea*, *Vulpicida*, *Xanthoparmelia*

Pannariaceae: *Degelia*, *Fuscopannaria*, *Moelleropsis*, ***Pannaria***, ***Parmeliella***, *Protopannaria*, ***Psoroma,*** *Vahliella*

Physciaceae: *Amandinea*, ***Anaptychia***, *Buellia*, *Calicium*, *Cyphelium*, *Diploicia*, *Diplotomma*, *Heterodermia*, *Hyperphyscia*, *Phaeophyscia*, ***Physcia***, *Physconia*, *Rinodina*, ?*Thelomma*, *Tornabea*

Teloschistaceae: *Caloplaca*, *Fulgensia*, ***Teloschistes***, ***Xanthoria***

Lichinaceae: *Cryptothele*, *Ephebe*, *Euopsis*, *Lemmopsis*, *Lempholemma*, ***Lichina***, ***Lichinodium***, *Metamelanea*, *Phylliscum*, *Porocyphus*, *Psorotichia*, *Pterygiopsis*, *Pyrenocarpon*, *Pyrenopsis*, *Synalissa*, *Thermutis*

The genera and species they contain may be rather different but at least they are familiar family names. The *Parmeliaceae* has changed amazingly little. The genera in Zahlbruckner's *Usneaceae* with simple spores have been added and the generic split-up of the old *Parmelia* genus (underlined above) account for almost all of today's genera in the family. The *Verrucariaceae* (if the old *Dermatocarpaceae* is included) looks as though it has changed little as recognized in the new volume, though recent molecular evidence indicates that its genera will have to be radically rethought with several new generic delimitations and many species of *Verrucaria* being placed in unfamiliar genera (Gueidan *et al.*, 2009; Savic *et al.*, 2008). As an example of the problem just note, apart from the spore sepatation, the close similarity between *Verrucaria hochstetteri* and *Thelidium decipiens*. Despite the genera being radically stirred around, it still remains a recognizable and coherent family (at the moment!). The *Teloschistaceae* (including the old *Caloplacaceae*) does have recognisable characteristics such as polarilocular spores and presence of anthraquinone pigments, even if there are exceptions. We also discover that those genera with larger thick-walled spores (*Aspicilia*, *Megaspora, Ochrolechia, Pertusaria*) are grouped at least in the same order (*Pertusariales*). There are many new families too in the new "Flora" and some of the families are quite restricted, containing only one or two genera.

In conclusion, we can say that apothecial morphology, spore septation and thallus type, which are really important for species identification, are not always much value for telling which family the genus belongs to. We may find it helpful to keep in mind some "natural" families (such as the *Parmeliaceae*), but knowing the definitions and boundaries of others may help us remember their genera. By taking note, they should keep us interested in trying to spot the similarities and then understanding how on earth they evolved. So personally I am still in bit a quandary as to whether it is helpful to know what families the genera belong to, but I am going to try and see if it helps and so keep taking Alexander P's Pierean water.

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Pope's essay was written at the age of 21 and published when he was 23 years old! Lines 215-232 run:

"A little learning is a dang'rous thing;
Drink deep, or taste not the Pierian spring:
There shallow draughts intoxicate the brain,
And drinking largely sobers us again.
Fir'd at first sight with what the Muse imparts,
In fearless youth we tempt the heights of arts,
While from the bounded level of our mind,
Short views we take, nor see the lengths behind,
But more advanc'd, behold with strange surprise
New, distant scenes of endless science rise!
So pleas'd at first, the tow'ring Alps we try,
Mount o'er the vales, and seem to tread the sky;
Th' eternal snows appear already past,
And the first clouds and mountains seem the last;
But those attain'd, we tremble to survey
The growing labours of the lengthen'd way,
Th' increasing prospect tires our wand'ring eyes,
Hills peep o'er hills, and Alps on Alps arise!"

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Large genera, small genera, and lichen taxonomy

The 19th century German mathematician Leopold Kronecker remarked that: *God made the integers; all else is the work of man*. Lichenologists might say something similar: *God made the species; the higher taxonomic categories are purely human creations.* Mathematics has been a very successful endeavour, but one can not say the same about these creations of lichenologists. About half of all the genera that lichenologists have named in the past are not accepted by any modern botanist. The history of generic concepts in lichenology is a rather sad story. Matters are not a lot better even today. Many genera are accepted by some contemporary lichenologists but not by others. Other genera are accepted for reasons of practicality, even though we all know that they are artificial or unsatisfactory in some way. Even some of

those that we all think are good are sure to fall apart in the future. Much has been written on how, when and why to define genera, but the issues have rarely been investigated in a quantitative way. I present here some quantitative results that have a bearing on the topic.

Most genera have been recognised on morphological grounds. More recently, DNA sequences have been used to provide some insight. All of these methods are subjective. Use of DNA sequences is less so, but subjectivity creeps in even here since there is no unique mathematical way of defining how close two DNA sequences are: one must make a choice between many possible algorithms. One must also make a choice about how to reconcile conflicting characters. (Letting a cladistics program make these choices is not objectivity; it merely puts the subjective judgments somewhere else, where they are less apparent.)

There is only one objective way to define genera. It goes as follows. Choose some date in the past - for purposes of illustration let us say 10 million years ago. Two species belong to the same genus if they have a common ancestor species that existed more recently than that date. Otherwise they belong to different genera. This can be rephrased in terms of individuals rather than species, if you have philosophical scruples. Two species belong to the same genus if all members of both species have a common ancestor that existed more recently than 10 million years ago. Otherwise they belong to different genera. Provided that our species concepts are good, then the two definitions come to more or less the same thing.

There is nothing special about the choice of 10 million years. If we choose an older date we will get fewer, but larger, genera; a more recent date gives smaller but more genera. At the extremes, if we use "yesterday" then every genus will have exactly one species. It we use "5 billion years ago" then all lichens go into a single genus, along with all other life on earth. The choice of date is arbitrary, but the method is completely objective in the sense that once a date has been chosen there is no doubt what the genera are; there is no scope at all for different choices.

Obviously, a practising taxonomist can not apply the definition above. She can, however, have some regard to the conclusions - quantitative conclusions - that follow from it. Let us now make some assumptions. First, assume that, over the timescale of interest, the rate of extinction of species has always matched the rate at which new species appear. This is equivalent to assuming that the number of lichen species has always been the same as it is now. (This seems a reasonable approximation, except perhaps at times of mass extinction, and provided that we do not go too far back in time, to the early days of ascomycetes.) Second, assume that each species has exactly the same probability of extinction as any other species, and the same probability of speciation as any other species. (This is the most appropriate assumption to make in a simple theoretical model, but it is here that we are most likely to see a gap opening up between model results and biological reality.) These are not the only possible assumptions that one might make, but they are the simplest and so probably the best ones to start with.

The consequences of these assumptions are easy to simulate. At some time in the past, assume that there are S species of lichen. At each step forward in time, one of the species existing at that time becomes extinct, and another species splits into two daughter species. The choice of which species becomes extinct and which splits

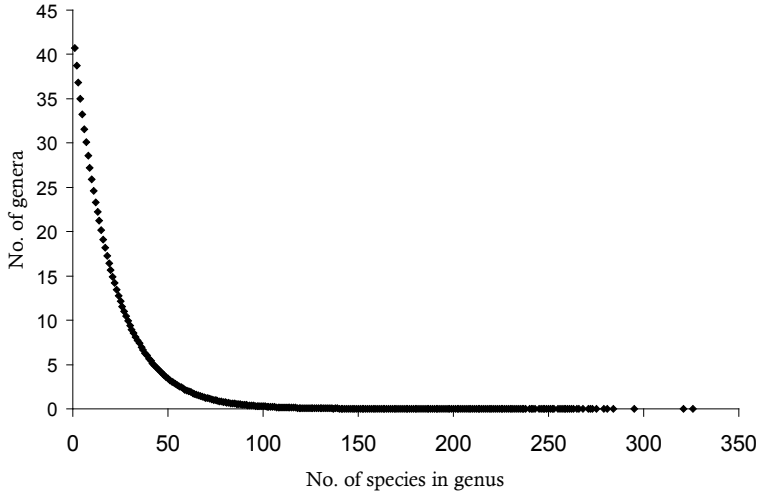
is made randomly. Repeat for a large number of timesteps. At the end of the simulation, many of the initial S species will have left no descendants. If only G of the initial species have left descendants, then we have G genera, each genus consisting of the descendants of one of the original species.

(For simplicity, the paragraph above was phrased as though lichenisation is a fixed character. In fact, it may come and go. It turns out that this does not change the conclusions at all. A full discussion would be quite lengthy, so I will omit it.)

To do anything useful with these ideas, we must link them to some real data about lichens, and the most helpful form of real data is a word checklist. Unfortunately, there isn't one - or, at any rate, no really satisfactory one - so I have had to compile one myself from multiple, and often conflicting, sources. Considering only lichenised ascomycetes, and ignoring infra-specific taxa, this list contains 16,824 species in 828 genera. (For those few genera with both lichenized and non-lichenised species, all the species in the genus are included.) The list is far from perfect: some good species have probably been overlooked, some probably appear more than once under different names, and the placement of some species into genera will not meet with everyone's approval. The data is least satisfactory for tropical species. (I can provide a copy of this list on request, and I can re-run the analysis with a different list if anyone would like to supply a better one.)

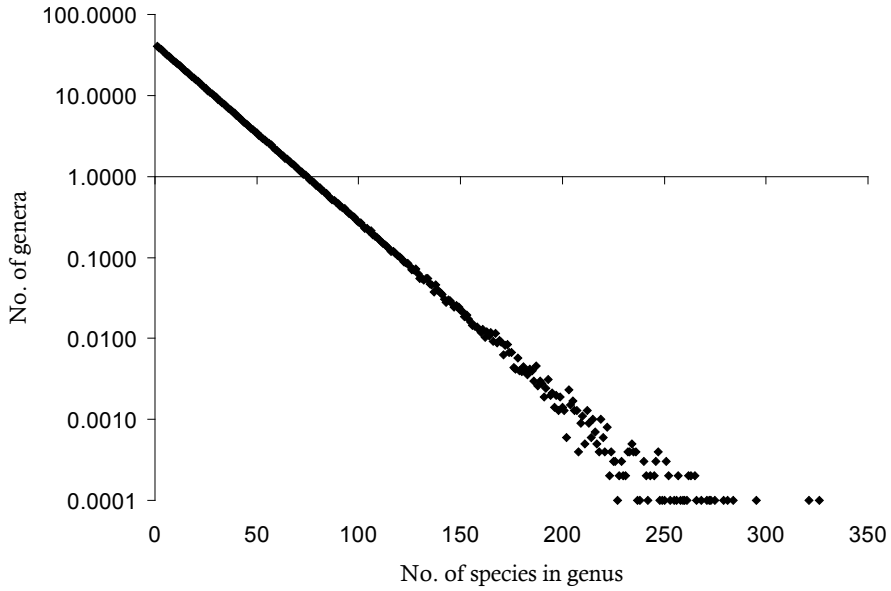
Returning to the simulation concepts, we can now imagine that, long ago, there were 16,824 species of lichens - the same number as now, since we are assuming that the number of species is approximately constant. As time passed, species became extinct, and species split, as described above, until only 828 of the original species had left any descendants. The key idea is that *we can compare the simulation with the real data by looking at the distribution of genus sizes*. If the simulation predicts roughly as many small genera, as many medium-sized genera, and as many large genera as we see in the real-world dataset, we can relax. If it doesn't, we need to do some explaining.

Figure 1. Results of simulation



Because each simulation incorporates randomness, it is best to run many such simulations and take averages. Figure 1 shows the mean result from 10,000 simulations. Each simulation started with 16,824 species and continued to iterate until only 828 of them had surviving descendants. (For clarity, I do not show standard deviations or other measures of spread; the statistical variation between different simulations is too small to affect materially the conclusions drawn below.) Figure 1 does not display the results for large genera very clearly, so Figure 2 (see below) shows the same results on a logarithmic scale. The "fractions of a genus" that Figure 2 shows are a mathematical fiction, of course, but their meaning is simple. If we obtained a genus with, say, 120 species in 1,000 of the 10,000 simulations, then the mean number of genera with 120 species is 0.1. A more biological way of saying almost the same thing, is that in the real world we would expect to find about 1 genus with between 115 and 124 species. There must be some underlying mathematical reason for what is obviously a straight line in the second figure, but I have not been able to show algebraically that a straight line is to be expected. (Do we have any experts in combinatorics who might like to take a look at this? Stripped of its biology, the underlying mathematical problem can be posed in a simple way, involving sums of integers.) The result is unlikely to be new, though I have not seen it before. Does anyone know whether this is this a well-known result in theoretical biology?

Figure 2. Results of simulation (logarithmic scale)

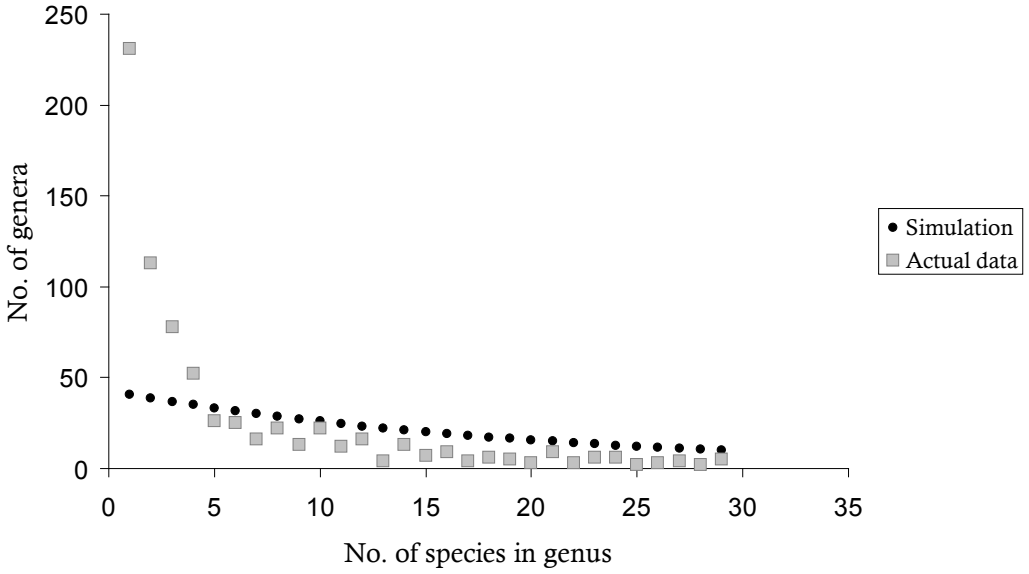


Genus sizes from the simulation results can now be compared with the genus sizes in the real list of species. Because of the wide ranges of the numbers, it is convenient to discuss small and large genera separately. Figure 3 (below, again) compares the real data with the simulation results for genera with fewer than 30 species. The conclusion is striking. In the real dataset there is a substantial excess of genera with

1, 2, 3 and perhaps 4 species. This discrepancy requires explanation.

The rather poor quality of the real-world dataset may be part of the explanation, but another possibility is that taxonomists may have given too much weight to small differences in characters (or to larger differences in too few characters), and have been too prone to elevate small groups of species to generic rank. The results suggest that taxonomists who wish to define lichen genera with just one or two species might do well to weigh the evidence for their new genera even more carefully than usual.

Figure 3. Simulation and actual data (for small genera)



Because the real-world dataset has only a few really large genera, the comparison with simulation results is best tabulated using ranges of genus sizes:

Number of species in genus	Number of genera - Real Dataset	Number of genera - Simulation
50 - 74	24	50
75 - 99	12	14
100 - 199	13	5.5
200 - 299	9	0.03
300 - 399	4	0.0002
400 or more	7	< 0.0001

The difference between real and simulated results is even more dramatic than for small genera. The real dataset has far too many large genera. Not all of this

discrepancy is cause for concern. We all know that genera like *Caloplaca* (559 species in my list), *Lecanora* (722 species) or *Verrucaria* (430 species) are artificial and need to be split up. A few genera, notably *Verrucaria*, are overloaded with names, and though I have tried to clean up the dataset, some of *Verrucaria* names included in the list are probably not good species.

However, some large genera in the real list appear to be "good" genera. If we have classified lichenized ascomycetes into about 800 genera, then good genera with more than about 200 species can only occur if the assumptions underlying the simulation did not apply in that particular case. In other words, if a large (more than 200 species) genus of lichens is not obviously artificial, then its size requires explanation.

One explanation might be that methods used by taxonomists to define genera do not correspond, even approximately, to that used in the simulation. If some genera contains species whose last common ancestor lived 200 million years ago, whereas other genera correspond to a 5 million year date, we can not expect a good match with simulation results. (We could, however, ask our taxonomists to explain why they are using such inconsistent criteria across different groups.) However, I doubt that taxonomic inconsistency is the main reason that we have several very large genera, mainly because some of those genera do not appear to be of great antiquity.

I will take *Xanthoparmelia* as an example of a genus where something needs to be explained. *Xanthoparmelia* contains over 500 species, even if one includes only those species with a green thallus. Those who like to follow the latest fashions in the wonderful world of *Parmeliaceae* taxonomy will also include the brown taxa formerly placed in *Neofuscelia,* and will obtain a total of over 600 species. Yet *Xanthoparmelia* (in either circumscription) appears to be a fairly homogeneous group. So what is going on?

Part of the explanation may be that many species in this group have been defined on grounds that seem (to me, at least) to be very narrow - perhaps too narrow. If broader species concepts were employed, the genus would obviously have fewer species. Let us boldly assume - with apologies in advance to any *Xanthoparmelia* taxonomists - that the genus "ought" to have only half its present number of species. That still leaves us with a problem: 250 - 300 species in a genus still requires explanation.

I do not know what the explanation is, but it does no harm to speculate. Species of *Xanthoparmelia* usually occur on well-illuminated, nutrient-poor rock and soil in places with a warm, dry climate. Most of the diversity in the genus occurs in just two places, Australia and southern Africa; habitats elsewhere that appear equally suitable are not nearly so species-rich. This suggests that we need an explanation along historical lines. Since it separated from Gondwanaland, Australia has gradually moved north and become warmer and much dryer. Closed forests have retreated and open areas have become more widespread. The rocks of those open areas are mostly old and poor in nutrients; soils too are nutrient-poor as a result. If the former cooler, darker and moister Australia contained comparatively few species of lichens capable of exploiting these new conditions, the stage would have been set for an adaptive radiation among those species that could do so. *Xanthoparmelia* could, and (it appears) did. The assumption in the simulations that speciation rate equals

extinction rate was violated; for a period, speciation rate exceeded extinction rate for this group of species. This speculation about *Xanthoparmelia* and Australia might be more convincing if there was a similar explanation for the species richness of the genus in South Africa. Would anyone like to offer one?

In other cases where there are discrepancies between real data and the predictions of the simple theory give above, other types of explanation may suggest themselves. The important point is that *some* explanation is called for. The same sorts of simulation can obviously be conducted for any group of organisms. In all cases, the simplest starting assumptions will lead to the conclusion that the logarithm of the number of genera, when plotted against the number of species in the genus, will give a straight line with negative slope. Exactly the same can be done for genera within families, or for any other combination of taxonomic ranks. If actual taxonomic data does not match the expected pattern, and if we are satisfied that the taxonomy is reasonably sound, then we should suspect the existence of some perturbing historical or biological process, and it would be sensible to try to work out what that process was.

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Tom Chester bequest: awarded to the Pioneers!

The 'Pioneers' – the class of seven and eight year olds at Ponsbourne St Mary's School – has achieved distinction as first recipients of an award in memory of Tom Chester. This small Church of England primary school, with about 80 children aged four to eleven years, lies adjacent to St Mary's Church and churchyard in a village halfway between Hatfield and Cheshunt, Hertfordshire.

In the autumn term 2008, supported by their class teacher Alis Rocca and headteacher Tracy Gaiteri, the children carried out a project on lichens. And, in exploring lichens they found out lots about the churchyard. They enjoyed recognising the types of stones used for the church walls and memorials: granite, sandstone, marble and limestone. The children photographed and recorded texts on memorials, calculated lifespans and explored information about lichens on the Internet. With the help of adults, they used FSC AIDGAP keys to identify lichens and also drew portraits of them. They noticed the variety of surfaces on which lichens grow, including trees in the churchyard and copse (the 'wild area') beyond the school grounds, and soil.

The Reverend Pauline set the scene for their work in the churchyard. She explained about Christian burial and how this differs from burials in Ancient Egypt (which the children had recently been studying). She handled this sensitively, knowing that several children recalled family funerals and floral tributes were lining

one wall of the churchyard. The chair of governors explained the history of the school, built as a church school next to St Mary's, and the headteacher showed them the school log book.

Two BLS members visited before the Pioneers embarked on the project, myself and Ann Allen. We walked around the churchyard with the class teacher and headteacher, identifying the obvious lichens and types of stone on which they were growing. Scope for a lichen project was obvious because of the variety of lichens that were straightforward to identify, and in adequate abundance. The churchyard was self-contained, not too large for a class of 20 children, who would always be accompanied by their teacher and extra adults. The memorials were varied, including war memorials and cremation markers, and constructed of several types of stone.

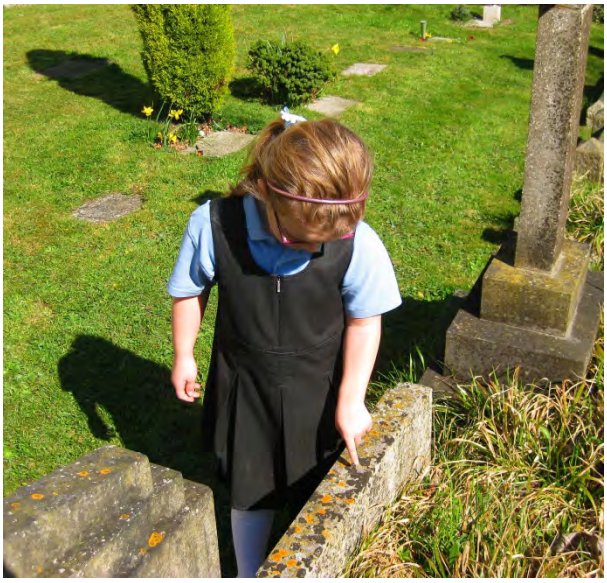
When I returned, the children displayed good knowledge of lichens in the churchyard and were eager to point out *Xanthoria*, *Caloplaca*, *Ochrolechia* and 'green lichen' (*Psilolechia lucida*, growing across the north side of a sandstone headstone). Pupils of all abilities, from the gifted and talented to those needing extra support for special needs, shared an enthusiasm for lichens, understood they were fungi and some explained about algae. Alis, their teacher, had compiled a file of their lichen project. This included accounts, both in the children's own handwriting and word-processed, a chart of their results, children's drawings of lichens and photographs they had taken of each other doing fieldwork around the church and on the memorials. The children presented their results to me. Harry took the lead and others in turn explained what they had done and what they had discovered. This session was very polished: the Governing Body had already benefited from a similar presentation, suitably illustrated by extracts from their lichen project file.

The project had captured the interest of the 20 seven and eight year olds in the Pioneers class, their teacher, other adults connected with the school and their parents: all had found the project fun. The local Rector had been very supportive. When I visited in early April it was planned that the Pioneers would disseminate their learning about lichens to the top children in the school (the 'Discoverers' class, aged nine and ten).The introduction to Ponsbourne St Mary's came via Cally Oldershaw, Curriculum Development Manager for the Association for Science Education (ASE). The ASE is strengthening links with other organisations to provide resources for younger children, such as The Great Plant Hunt (with the Royal Botanic Gaden, Kew). See the ASE's website for 5 - 11 year olds: www.primaryupd8.org.uk. Cally told me of materials newly developed on earthworms (to parallel the OPAL initiative, Soil and Earthworms) and hopes to develop similar primaryupd8 resources on lichens, to be launched in September, in line with the OPAL Air Quality project in which lichens are central.

For BLS members (adult lichenologists) several messages emerged:

- The children found lichens memorable: about 15 weeks after the project they could happily explain what they had looked at, where lichens grew, how to use an FSC AIDGAP key to identify kinds of lichens.
- The children learned about lichens as they explored the whole context of the churchyard.
- They appreciated and respected the significance of churchyards.

- They liked the funny names by which lichens are called. They especially liked: *Ochrolechia, teicholyta, Xanthoria, Parmelia* : these hold no fears! In our imagination they may, but the children liked them.
- They could distinguish the main types of stone in the churchyard: granite, limestone, marble, sandstone.
- The success of the project depended on the willingness of the headteacher and class teacher to explore something new - and they (and other adults connected with the school) found it fun.



The Tom Chester award is from a bequest to the BLS by Tom Chester, who died in 2003. A much respected and admired member of the Society, he pioneered interest in churchyard lichens, encouraged many members to identify and record lichens in this important habitat and devised systematic approaches for doing so. He developed his interest in churchyard lichens while a headteacher of a Northamptonshire primary school and took subsequent opportunities, as a primary advisor and later when retired, to engender interest among others. He would be very pleased that the first award to a school in his name is to a primary school, in lowland England.

Many thanks to the children in the Pioneers class of Ponsbourne St Mary's School, and the staff and other adults who supported them in finding out about lichens, and also to Cally Oldershaw of the ASE for forging this most useful introduction.

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How Plantlife Scotland is giving Scottish lichens a boost

The Plantlife Scotland Lower Plants and Fungi Project is now into its second of three years, and has already been raising the profile of Scottish lichens, bryophytes and fungi.

Training and support on the management and ecology of UKBAP species and their habitats

The project has given training to agency ecologists on River Jelly Lichen (*Collema dichotomum*) and other lichens of rivers. Photo: John Douglass

The project ran three courses last year for agency staff on species identification, survey methodology, ecology and habitat management for priority UKBAP priority species and, for each, a suite of associated species found in the same habitats. Four more are planned for this year. These events are primarily for staff from the main environmental agencies and provide skills and information to give people from a range of backgrounds the confidence to work proactively to conserve these species on sites they are involved with. As a simple example, land managers may suspect that they have a particular lichen on a site, but do not know how to take samples or photos that are sufficient for identification. Are they legally allowed to take samples, how do they preserve samples, and who do they contact for help with identification? The events generate plenty of healthy discussion across the professions represented, particularly in terms of agreeing management prescriptions that are viable and commercially realistic.

Stipitate hydnoid fungi (tooth fungi) of pinewoods, River Jelly Lichen (*Collema dichotomum*) and other lichens of rivers, and Green Shield-Moss (*Buxbaumia viridis*) and other bryophytes of

Rangers learn about how to enthuse the public about lichens at Loch Lomond. Photo thanks to: Sara Millinger,

deadwood were the chosen species and habitats. Agencies represented on the PLINKS Lower Plants and Fungi Steering Group, namely the Scottish Environmental Protection Agency (SEPA), Scottish Natural Heritage (SNH), Forestry Commission Scotland (FCS), helped to select the species on the basis of their obligations under the UKBAP. The BLS and British Bryological Society are also active members of the Steering Group and help to guide projects.

River Jelly Lichen (*Collema dichotomum*) is an aquatic lichen that grows on shallowly shelving sub-merged rocks in partial shade in fast-flowing inter-mediate and upland streams. The course was of particular relev-ance to SEPA ecologists surv-eying and monit-oring species in relation to the Water Framework Directive. This was a two-day event, with Day 1 being a general introduction to the species, its ecology and habitat, and to habitat management. Day 2 was specifically about monitoring the species, and Plantlife Scotland has developed a monitoring protocol for the species which is now being used by SEPA staff in their surveying programmes.

Management leaflets

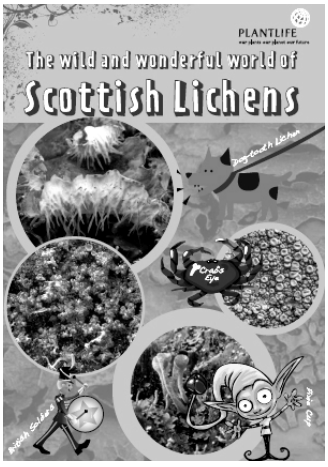
Most of the courses are complemented by management leaflets, summarising course information. More detailed course notes are also available on the Plantlife website. A leaflet was also produced about the ecology and management of lichens of rocky river edges, including Ear-lobed Dog-lichen (*Peltigera lepidophora*) and other species. *Peltigera lepidophora* is a UKBAP species which has only been found in a particular wooded gorge location in Tayside.

Training the trainer events for rangers

The project runs workshops for rangers on how to run lichen walks for the public. Fungi forays are fairly common, but lichen or bryophyte walks don't crop up very often. In September 2008 twenty five rangers attended an event at the Balmaha Visitor Centre at Loch Lomond. The event was run by the project in partnership with Loch Lomond and the Trossachs National Park Authority and feedback has been really positive. 2009 will see two more similar events, one about lichens, to be held in Strathspey, and the other about bryophytes.

Bringing the lichens to life for the public.

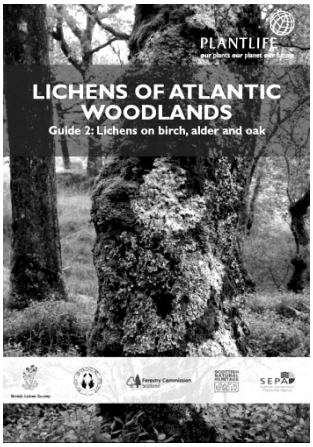
Lower plants and fungi often get a low profile with the public. They lack the cuddly, fluffy factor needed to compete with puffins or otters, for example. However, lower plants and fungi are not only astoundingly beautiful, but come with a fascinating collection of facts and stories associated with use, folklore and longevity. The project is developing leaflets and posters to bring this information to the public, and thereby also delivering important messages about their conservation. The new 'Wild and Wonderful Series' of leaflets are designed to enthuse and fascinate the reader and therefore to



counteract the fact that these groups are normally overlooked. Lichens and bryophytes were covered in year 1, with fungi and algae scheduled for year 2. These bright and colourful leaflets are free of charge and will be available at outlets such as Forestry Commission or RSPB visitor centres.

The project also ran 3 days of walks for the public about lower plants, with one of these covering lichens, held at Loch Lomond and the Trossachs National Park.

Laminated lichen ID guides



The project conducted a publications gap-analysis to find out what is missing for lower plants and fungi, and the need for a set of guides to lichens by habitat became very apparent. Two of these have now been produced, both for Atlantic woodlands. Guide 1 is Lichens on ash, hazel, willow, rowan and old oak (ie the Lobarion community), and guide 2 is birch, alder and oak (ie the Parmelion community). These guides would be laminated and easy to use in the field, and would suit those who want help with basic species identification, ecology and management. Two more, covering lichens of pinewoods, are being developed in year 2.

Waterproof, laminated copies of these guides are available from Plantlife Scotland.

Information exchange

The project acts as a contact point for queries relating to lower plants and fungi, for example by providing links to experts regarding identifying difficult taxa, or from people looking to find out about events. A web page will soon be established with links and information, recommended publications, lists of events and many more useful resources.

Sustainable use

There are currently few guidelines on collection of bryophytes, lichens or algae. The Lower Plants and Fungi Project and Reforesting Scotland's Sustainable Forest Harvest Project asked various species experts to draw up monitoring requirements to fit into collection licences issued by the Forestry Commission. These were included in a series of workshops with harvesters in late autumn 2008. Plantlife Scotland is also working with Reforesting Scotland to update the Scottish Wild Mushroom code and to develop new collection codes for Tree Lungwort (*Lobaria pulmonaria*) and *Sphagnum* mosses. As part of this, Plantlife Scotland is working closely with the BLS Conservation Committee to identify if *Lobaria pulmonaria* could be collected sustainably from identified sites in Scotland.

The Lower Plants and Fungi Project is supported by Plant Link Scotland, the forum for organisations working to conserve plants and fungi in Scotland and is funded by Scottish Natural Heritage, SEPA, Forestry Commission, British Bryological Society and British Lichen

Society. Plantlife Scotland would like to take this opportunity to thank the British Lichen Society for its ongoing support.

All the publications mentioned in this article are available as paper copies from Plantlife Scotland, or can be downloaded from the Plantlife website. Most are free of charge, except for the laminated copies of the Atlantic lichen ID guides, which are available to buy at £3.50 each (free P&P).

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WANTED: Usnea!

Ever had trouble identifying an *Usnea*? Wouldn't it be nice if – just for some taxa – we could all check our field identifications against DNA-evidence, rather like checking the equivocal answers to a crossword puzzle, just to be sure? The vision in biology is that one day we may all be empowered with access to this detailed scientific evidence, to check and verify our critical idents. A new project at the Royal Botanic Garden Edinburgh will focus on 'barcoding' *Usnea* in Britain and we are soliciting your help to gather fresh material.

We may not be able to instantaneously scan your specimen for its name, but by using molecular data, we can test our current species concepts and hopefully discover something new about the amount of diversity present in our biota. 'Barcodes' are short DNA sequences unique to individual species, and have been identified for vascular plants and animals. Relative to plants and animals, many fewer fungi have been subjected to this sort of discovery, but we do know that cryptic diversity is often uncovered using similar studies. In addition, we can ask other important questions including whether chemical races are as fundamentally genetically different as species, or, eventually, if our species differ from those in other regions (e.g. Norway, Spain or North America), despite having the same name.

I would very much appreciate receiving specimens of any *Usnea* encountered in your upcoming forays into the field: one good specimen per species from your area (i.e. Southeast, Southwest, Midlands, Northwest Highlands, Borders). These will be vouchered in the herbarium at the Royal Botanic Garden Edinburgh (E) and sampled for DNA, so they should be air dried (no radiators, please), and have complete locality and GPS data associated. We would like to sample all the *Usnea* species from across Britain, and your help will be greatly appreciated.

Please be in touch with me at *r.yahr@rbge.ac.uk* for more information. Thanks and happy collecting!

Rebecca Yahr

Being a beginner; the problems of inexperience

In the early stages of studying lichens it is inevitable that mistakes will be made. Mistakes are frustrating but often instructive. The following stories illustrate some of the problems, and strategies for solving them.

In July 2008 I attempted to record lichens on a lovely old river bridge at Felmersham in North Bedfordshire. I came across many circular white thalli with placodioid margins and black, white-pruinose apothecia. The margins looked just like *Caloplaca teicholyta* but I knew that *teicholyta*, when fertile, has orange fruits. I compared these lichens with *Diploicia canescens* but that species has larger, more distinct lobes, patches of soredia and tests yellow with K. Flicking through Dobson (a beginner's technique) I managed to convince myself that I was looking at *Solenopsora candicans*. Luckily I didn't record *Solenopsora*; a nagging doubt made me resist the temptation to report such a notable species for Bedfordshire; there are no recent records. When I attended the Churchyard Group outing and saw "real" *Solenopsora* on the Isle of Wight my doubts intensified. As soon as I got back I was determined to work out what I had found on the river bridge. Collecting some fruits allowed me to extract spores which were brown and 3-septate. It dawned on me that I had been looking at *Diplotomma* growing on *C. teicholyta*. I had been fooled because so many of the *Caloplaca* thalli had been parasitized, the fruits were neatly positioned in the centre of each compound thallus and the boundary between *Diplotomma* and *Caloplaca* was almost indistinguishable. A final twist to this storey hangs on the exact identity of the *Diplotomma*. I had initially been a little disappointed, thinking that my mistake had involved a common species like *Diplotomma alboatrum.* However, when parasitizing *Caloplaca teicholyta,* the *Diplotomma* is sometimes recognised as *D. murorum* and keys out as this in The Flora. My disappointment was soothed by the prospect of a new lichen for the Bedfordshire list. Lessons learnt? (a) Try not to record anything you aren't certain of, however frustrating it is to exclude a potentially exciting record. (b) Make the effort to do the microscope work; this is more reliable than flicking through the pictures and trying to find something that looks right.

My next anecdote takes us to an ancient woodland in Northamptonshire. While restoring derelict coppice I found an abundance of dark brown, irregular fruits on heavily shaded hazel stems. Flicking through Dobson led me to think it was probably *Arthonia spadicea* but I resolved to identify it in a more scientific way. The fruits seemed empty of spores but I decided not to give up after my first squash. After hunting around my third microscope slide I almost gave up but one more try yielded a few spores. These had no discernable septum but two or three round inclusions. Was I looking at simple spores with inclusions or did these structures hint at one- to two-septate spores with indistinct septa? Next I tried chemicals. I knew that I was unlikely to spot a colour difference by simply dropping K onto a dark fruit under a lens. So I decided to do the job properly and made a squash in water and then introduced K at the edge of the cover slip while observing what happened when K met the section of apothecium. I could not discern any change in colour, just a very slight darkening and I wrongly assumed K-. I consulted the *Arthonia* keys (though it

would have been more meticulous if I had started from scratch with the generic keys in The Flora). In the Flora I was presented with the awkward choice between 1-septate or 2- or more septate. In Dobson's key I hit the K- or K+ split. In either case I had great difficulty deciding how to proceed. Peter James kindly determined my material as *Arthonia spadicea* which led me to examine my difficulties. Brian Coppins has noted that the K reaction for this species is often weak, which means that Dobson's key, while accurate, can lead an unwary beginner astray. The key in The Flora (and the description) describes the spores as 1-septate, which does not quite fit with what a beginner observes with a modest microscope. For a better description of what the spores look like John Smeathers referred me to the older literature. Leighton, who first described the species in 1854, in his flora of 1879, describes the ascospores of *A. spadicea* as "1-septate, cells nucleolate, the lower cell frequently elongated and containing two round nucleoli, which give the spore the appearance of being 2-septate or 3-locular". In Smith's *Monograph of the British Lichens*, 2nd ed. 1926, the description says "the lower cell being frequently elongate, biguttulate and spuriously divided". Lessons to be learnt? (a) Be careful with chemical tests. "K+ purple" doesn't necessarily mean that the specimen is going to turn bright purple to the naked eye on adding a drop of potassium hydroxide. The reaction may be barely perceptible even under the microscope! (b) Try to have patience with microscope work. "If at first you don't succeed…" (c) Keys are fundamental to botanical identification but are sometimes based on simplifications. There are many choices at which a beginner can head down the wrong path. (d) Try to console yourself that, having made a massive effort to understand what went wrong, you now truly know the species and are a wiser student of this cryptic subject that we study.

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Beyond Francis Rose

As lichenologists, we owe much to the renowned botanist Dr Francis Rose. After more than sixty years' contribution to botany (cryptogamic recording in particular), he sadly passed away three years ago. In addition to botanical and ecological research, Francis was keen to educate members of the public and to pass on his knowledge and enthusiasm for often-overlooked and underappreciated groups of organisms. Indeed, only a couple of months ago, while I was recording in a churchyard in Oxfordshire, a man approached me and asked 'are you a lichenologist?' I affirmed his assumption and he proceeded to enquire about my observations. After I had shown him a couple of interesting specimens, he stood back and exclaimed 'I have not heard anyone talk like that for 20 years, when Francis Rose took me out in the field!' Thus, even after his lifetime, his legacy lives on. Francis' contribution to cryptogamic botany culminated in the designation of several Sites of Special Scientific Interest (SSSIs) and the first cryptogamic reserve in Europe dedicated to him at Wakehurst Place in Sussex (part of the Royal Botanic Gardens, Kew).

The wealth of lichen records that Francis left in field notebooks and site cards continue to contribute to our understanding of the biogeography of Britain, especially the southern counties of England. His records were generally as meticulous as they were numerous (from more than 1800 observations of ubiquitous *Xanthoria parietina* to a single record of the rare *Cladonia stricta*). From the late 1990s, Francis' 300000 or so species records became the subject of a project to upload his data onto regional and national biodiversity web databases, principally administered by the Sussex Biodiversity Record Centre (and largely now available through the National Biodiversity Network Gateway).

It is a challenging task for those of us who try to pick up from where prolific and valuable recorders like Francis Rose have left off; gathering records from the as-yet uninvestigated sites, or returning to re-evaluate previously-visited sites. This is exacerbated by the conspicuous lack of lichen taxonomists (Fletcher, 2008). At a personal level, as a member of the younger cohort of taxonomists (at only 28 years of age), I have been pleasantly taken with the warm responses I have received from experienced lichenologists during the rapid progression of my own learning curve. As the relatively newly elected 'Recorder of Lichens' for the Reading and District Natural History Society in Berkshire, I shall of course endeavour to promote lichenology and record species within my area as much as possible. I have used Rose as the baseline for this article as in my region of England it is his work (and that of Bowen) that I largely refer to when planning my recording efforts. Sadly, I have noticed that several of our natural history societies have no lichen recorders, and that these positions have long been vacant. Reliance upon individuals who combine 'spare time' recording with full time careers in other disciplines is currently critical for progress in cryptogamic biodiversity data acquisition, although admittedly an increased element of data verification is likely to go hand-in-hand with non-professional recording. As conveyed in the recent House of Lords Report on Systematics and Taxonomy in the UK (see Fletcher, 2008) – there is a wealth of knowledge and expertise in 'amateur' societies (and not just in cryptogamic circles)! It remains to be seen what changes will follow this report, but we can all try (at whatever level we can best aim to influence) to promote our groups of organisms and increase their recognition in the wider world. From my experience at county-level, the committee of the Reading and District Natural History Society (on which I currently sit) is aiming to promote various taxa through an updated section of recorders' webpages and links to relevant national bodies and our programme site visits/walks. Hopefully this will inspire potential taxonomists for the future. After all, I owe a noteworthy portion of my own development to the enthusiasm of the dedicated members of this society.

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Lichen use in nest building by red squirrels

Whilst on a botanical holiday in the Dolomites (staying appropriately at a hotel called Pension Scoiattolo (squirrel) above the skiing resort of Selva), one member of the group picked up a red squirrel's nest made almost entirely out of lichens. The nest was found in forest dominated by larch where the trees were 'dripping' with various species of *Usnea*, *Alectoria* and *Bryoria*, although by far the commonest species was *Pseudevernia furfuracea*.

The nest was the most wonderful construction, built on a base of larch twigs intertwined with a mass of lichens. It was incredibly strong, flexible and looked as if it was as cosy as a 13 tog duvet. After pulling the nest apart nd putting the different lichen species into piles, it was possible to get an idea of which lichens predominated (I couldn't weigh the piles – this was a subjective measure of abundance!

The nest measured 280 mm × 250 mm and the hole was 100 mm × 50 mm × 95 mm deep. The commonest lichen in the nest was *Evernia divaricata*. The 'hair' lichens *Bryoria capillaris*, *B. fuscescens* and *Alectoria sarmentosa* were also common and seemed to be associated mostly with the inner part of the nest. Very small amounts of *Pseudevernia furfuracea* were involved and these were always associated with the larch twigs. Thus there appeared to be a definite selection in favour of *Evernia divaricata* and *Bryoria*, *Alectoria* and *Usnea* species, while the really common *P. furfuracea* was avoided and was only incidentally present on the twigs.

I am indebted to Peter James for his help with the identification of the lichens.

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Why the rejection of Pseudevernia? I had wondered whether Evernia was chosen for its perfumery characteristics as a natural nest-freshener, but apparently Pseudevernia has similar properties (see Nash, Lichen Biology, 2008). Good ideas and wild speculation welcomed ! Ed.

OPAL lichens: hot off the press!

Great news! 40000 people will receive OPAL Air Quality survey packs in which lichens have a key role. In time for September, 40000 workpacks are being printed and circulated to community groups and schools across England. OPAL (**OP**en **A**ir **L**aboratories) is an exciting new initiative that is open to everyone with an interest in nature. To find out more, look at www.OPALExploreNature.org

The Air Quality project includes two main activities, which can be carried out separately or in the same place: Activity 1 uses lichens on trees, and is the major part of the survey. Activity 2 uses the fungus *Rhytisma acerinum* (Tar Spot) on sycamore leaves. Members of the public, including school students, can contribute to mapping the distribution of Indicator Lichens across England. Participants are provided with an illustrated pull-out guide, workbook and magnifier and asked to look for Indicator Lichens which are:

Nitrogen-sensitive: *Evernia (prunastri)*, *Usnea*, *Hypogymnia* (*physodes*, *tubulosa*)
Nitrogen-tolerant: *Physcia* (*adscendens*, *tenella*), *Xanthoria parietina*, *Xanthoria polycarpa*
Nitrogen-indifferent: *Melanelixia*, *Parmelia*, *Punctelia*

A good place to start recording…..

The workpack explains how observations and measurements should be made and how to record online, on the OPAL website. This enables continuous collation of results. Participants can compare their results with the emerging picture on the database and relate the lichens they see with levels of NOx and NH_3, mapped by the

Centre for Ecology and Hydrology (Edinburgh) and available on the Air Quality website, www.airquality.co.uk, which is a treasure trove of related information.

The Air Quality survey is underpinned by research in the UK and world wide on the impact on lichens of nitrogen-containing pollutants. Pat Wolseley's research using lichens on twigs, some carried out with colleagues at the Centre for Ecology and Hydrology (Edinburgh), and with Peter James, is well documented and a recent *Lichenologist* (March 2009) reported results obtained with colleagues in Denmark.

This very important project will be publicised nationally, from the summer onwards. Dissemination is both central, from the OPAL office at Imperial College, South Kensington and through www.OPALExploreNature.org**,** and also through OPAL's nine Regional bases, across England. Look at the OPAL website, to find the centre near you.

We hope that you will participate in the Air Quality survey and encourage friends, neighbours and local groups to do so, also. Each home (UK) BLS member will receive an OPAL Air Quality workpack. Further copies can be obtained by:

- Downloading from the OPAL website (Air Quality will be 'live' from September)
- Writing to Barbara Hilton (bphilton@eclipse.co.uk) for an individual pack (BLS members only)
- Contacting the Community Scientist at your Regional Centre (see www.OPALExploreNature.org)

By participating in this project you are:

- **Finding out more about lichens in your local area**
- **Contributing to a map across England of Indicator Lichens**
- **Helping us to understand the impact of nitrogen pollutants on our environment**
- **Raising awareness of the importance of lichen conservation**

During September - December 2009 the OPAL focus will be on Air Quality. As well as looking at the Indicator Lichens, other lichen species found can be compared with images on Mike Sutcliffe's website www.britishlichens.co.uk and iSpot, a website developed by the Open University and available on the OPAL website, as well as on the lichen section (developed by Pier Luigi Nimis) of www.KeytoNature.eu. Air Quality materials will be available online at www.OPALExploreNature.org beyond December, but to gain full value from the project we hope you will take part during the 'live' phase, starting in September, for three months.

The Air Quality survey is a national project being carried out by OPAL across England. It has been preceded by a Soil and Earthworms project, and will be followed in spring 2010 by a survey of still Water, and later by Biodiversity and then Climate Change. For the general public, OPAL is developing a host of activities for different age groups. Look on the OPAL website and see that you could be measuring minibeasts, looking at wildflower meadows or finding out about the wildlife of your local park. Underlying these activities for the general public are research projects. Lichens are well represented in these studies as, for example, in work being done on heathland (by a team led by Peter Crittenden in Nottingham),

orchards (Agneta Burton, based in Herfordshire), trees (led by Maria Donkin in Plymouth) and biodiversity along the Tyne corridor (coordinated by Anne Borland).

Work on the Air Quality survey has been developed with the OPAL Air Quality team based at Imperial College, Silwood Park. This team is led by Sally Power and is investigating the impact of ozone on crops and other plants. Publications are managed by the Field Studies Council and we are very grateful to Simon Norman, of FSC Publications, for his skill and patience. We are especially grateful for the encouragement and support in the use of lichens for monitoring air quality by Linda Davies, Director of OPAL Programmes.

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Database Project – progress report

It took a long time to get the funding sorted out, much longer than we expected, but the latest phase of the database project finally got under way in November. The work is being supported by Natural England, the Countryside Council for Wales, the National Biodiversity Network, the Welsh Biodiversity Partnership, and the Biological Records Centre.

Much of the preliminary work, to get the database and input process set up the way we wanted them, had already been done over the summer so we were ready to get started as soon as the agreement was signed. First, though, we had been asked to help with a trial to test out different approaches to input. It was a relief when the approach we had spent so much time developing came out best, but no surprise as it had been carefully designed to make the best use of the expertise of our people and to spread the load so that the project would not depend too much on any one person.

Then the real work started, with the churchyard cards. There are nearly 10,000 of these, some dating back as far as 1962. Some had already been put onto BioBase so we didn't have to start from scratch. They are an important resource, not just for the distribution and ecological information they contain but also because they include quite a few repeat visits to the same sites which can give us an indication of how the lichens in some areas are changing over time. None of this can be analysed until we have all the records together in the database.

Another aspect of the project will be to bring the threatened lichens records up to date. This will include putting in records of absence so that we have a record of when a population was known to have been lost, something that will be a big help in future BAP reporting. If you have any records of BAP species, or others that are nationally rare or scarce, that have not yet been published in New, Rare and Interesting, this would be a good time to send them in.

A copy of the Mapping Scheme 10km square data is now held in the database so that records can be compared with it automatically as they are added, and combined maps can be produced. It will also be put onto the NBN Gateway in the near future.

To support all this activity, the input spreadsheets continue to be refined and made easier to use. Separate spreadsheets for general and churchyard recording are now on the website, together with a tutorial, and everyone is encouraged to use these to submit records to the database. It is worth downloading the latest versions every few months as they are regularly updated.

All this will keep us busy through the summer and beyond. The final phase of this ten year project will include inputting the rest of the cards and surveys that are not yet in the database, including the thousands of cards held at Bradford. This work is not yet fully funded but we hope to get the rest of the support we need from a charitable trust. It is not just a matter of funding, however. Nothing gets done without the efforts and expertise of our members, and there already about 22 people involved. If you would like to join us, do please get in touch.

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Lenses, loupes or magnifiers

An essential aid to the identification of lichens or simply for enjoying an enhanced view of their beauty is a lens or magnifier, also known as a loupe. These come in a variety of forms, combinations and prices. Technical guidance on choosing a lens is available on website GX Optical (click on Hand Held Lenses). The Society itself offers a number of lenses for sale (see rear pages of Bulletin).

Another web-site listing a wide range of lenses is the Geological & Microscopy Superstore operated by UK Geologists' Equipment, which can be accessed via www.ukge.co.uk (click on Field Lenses). A typical lens would give a magnification of × 10; one even comes with a built in light for ca. £10.00. Of particular interest are the combination lenses where two lenses come in the same loupe, offering flexibility such as × 10 + × 20 or × 8 + × 15; in one case there is a combination with three lenses × 8 + × 15 + × 20. These combinations are in the region of £20-£30. (All the above prices are exclusive of VAT).

Then there is the Rolls-Royce of lenses known as *Lichen candelaris*, hand-built by and available only from a member of the British Lichen Society. Erich Zimmermann is an amateur lichenologist specialising in the *Caliciales* and working on Red List Lichens in Switzerland. He was often annoyed by poor light limiting examination under the magnifying glass and, as an engineer, he developed prototypes which were widely greeted with enthusiasm. His now standard × 10 lens offers a distortion free image to the edge, features two light emitting diodes to avoid shadows, is water-proof and is equipped with 2 sets of replacement batteries which in total provide ca. 15000 flashes of up to 10 seconds duration. For a full specification, see .pdf available on the web. This lens normally retails at €205 but is being offered to BLS members as a celebration of the Society's 50th year for €175. It comes engraved with your name,

and a spare lanyard. Erich can be contacted at erich.zimmermann@swisscom.com. Payment can be made by bankers' draft to Erich Zimmermann, Ramsemstrasse 105 CH-3254, Messen, Switzerland.

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Punctelia reddenda new to the Netherlands

During a field trip 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 *Quercus robur*. In the innumerable folioles present on the thallus this specimen clearly differed from the other Dutch *Punctelia* species, e.g. *P. jeckeri*, *P. subrudecta* and *P. borreri*. The under surface was black, apart from the lighter (brownish) thallus margin, a feature usually not shown in the three common indigenous *Punctelia* species mentioned. The medulla appeared to be C-. Other reactions (P, C, KC) proved to be negative. The result of a microcrystallization test matched with earlier tests on specimens from Devon (confirmed by Maarten Brand) and left no doubt: *Punctelia reddenda* (Stirt.) Krog was found for the first time in the Netherlands.

The oak stood at the edge of a small *Calluna* dominated heathland surrounded by oak woodland and conifer plantations on dry, nutrient-poor, sandy soil. Among the *Calluna* some cushions of *Sphagnum capillifolium* and *S. fallax* were present, suggesting a high atmospheric humidity in the surroundings of the phorophyte. *Punctelia reddenda* was accompanied by common, light-demanding lichens and bryophytes. Relevées 1 to 5 shows the species composition of the epiphytic vegetation in the immediate surroundings of the *Punctelia reddenda* thallus. All species within 20 cm on both sides of the *P. reddenda* thallus were noted and their abundance estimated using the Braun-Blanquet method. Four relevées were made of branches in close vicinity on the same tree (surface area 50 × 3 cm; relevées 2 to 5).

Punctelia reddenda (detail showing lobules and black undersurface)

Relevée	1	2	3	4	5
Total cover (%)	35	70	70	60	50

Punctelia reddenda	+				
Hypogymnietea physodis					
Hypotrachyna revoluta	+	2a	+	2b	+
Melanelia subaurifera	2a	+	+	2a	2a
Punctelia ulophylla	+	+	r		2b
Punctelia borreri	r				
Punctelia subrudecta		r	r		
Parmotrema chinense		r			
Hypogymnia physodes	+				
Parmelia sulcata	r				
Parmelia saxatilis	()				
Flavoparmelia caperata	()				
Frullanio dilatatae-Leucodontetea sciuroidis					
Ulota bruchii	+	+	+	1	+
Orthotrichum affine	+	+	+	+	
Orthotrichum striatum	r				
Metzgeria furcata				2a	
Orthotrichum lyellii			+		
Physcietea					
Candelariella reflexa	+		r	1	1
Physcia tenella	r			1	2m
Candelaria concolor	r				
Companions					
Hypnum cupressiforme	2b	4	4	2a	2a
Dicranoweisia cirrata	+	1	+	+	1
Bacidia arnoldiana	2a		+	2m	1
Fellhanera viridisorediata	1	1	+	+	
Lepraria incana	1		+	+	
Gyalideopsis anastomosans			r	r	
Hypnum jutlandicum	r				
Aulacomnium androgynum	()				

The Braun-Blanquet's 8-point scale has been used.

r < 5% coverage, 1 specimen
+ < 5%, 2-10 thalli
1 < 5%, 6-50 thalli
2m < 5% > 50 thalli
2a. 5-12% coverage
2b. 13-25%
3. 25-50%
4. 50-75%
5. 75-100%

Punctelia reddenda is an old woodland indicator and usually found on horizontal branches of shaded trees and on moss-covered rocks (Dobson, 2005). In Europe it is restricted to the atlantic regions. Collections are reported from Madeira, Western France (Coppins, 1971; Gueidan *et al.*, 2001; Massé, 1963; Rose *et al.*, 1997; Rose, 1990), Spain (http://botanica.bio.ub.es/checklist/checklist.htm; probably partly erroneously, according to Etayo, pers. comment) and Great Britain where it is considered as a rather local member of the *Lobarion* (Purvis *et al.*, 1992). The only collection from Sweden belongs to *Platismatia glauca* (Fritz and Arup, *in litt.*). The Dutch find of *Punctelia reddenda* on a free standing oak is very remarkable. It appears to be the most eastern locality on the Continent. The species composition shows clear affinities to the light loving *Parmelion physodis* (*Hypogymnietea*) and *Ulotion* (*Frullanio dilatatae-Leucodontetea sciuroidis*). By Dutch standards the air quality of the site is relatively good. Van Herk (2004) shows that the SO_2 concentration near Wolfheze, province of Gelderland, has greatly decreased. The same holds for NH_3 deposition values. Still the air is far from pure and definitely not optimal for a Lobarion species. The presence of nitrophytes characteristic of *Physcietea* communities indicates raised levels of nutrients.

We wish to thank A. Aptroot and M. Brand for confirming the identification and for adding useful suggestions to the manuscript. B. Benfield (Great Britain), D. Masson (France) and J. Etayo (Spain) provided additional information about *Punctelia reddenda*.

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News about *Xanthoriicola physciae*

When it was noted in this *Bulletin* (Preece & Blackwell, 2004) that the lichenicolous fungus *Xanthoriicola physciae* had not been recorded prior to 2002 in either Shropshire or Herefordshire, it was suggested that it would be interesting to look for it elsewhere in Britain on inland trees and shrubs. Although there has been no systematic survey, collections were made by friends and former research students on country walks and in their holiday areas. As a result, over 400 specimens have been collected and sent to me from 39 different vice-counties. Thus it has become clear that *X. physciae* is a common species on *Xanthoria parietina* apothecia throughout much of inland Britain. However, it is often difficult to find in quite massive areas of the host lichen.

Close examination of the collected specimens and of entire branches of trees has led to experiments on the spread of *Xanthoriicola physciae* and to scanning and electron microscopy of affected apothecia. Some of these apothecia, and unaffected apothecia for comparison have been studied at the University of Bradford by Raman spectroscopic analysis. Both of these activities are the subjects of papers submitted for publication. As well as other chemical changes it has emerged that the blackened apothecia and the thick-walled conidia of *X. physciae* contain an unusual protective substance, scytonemin, which is known to protect cyanobacteria in the Antarctic against some of the most extreme environmental conditions on Earth (Garcia-Pichel *et al.*, 1992). This makes interesting reading alongside the article by Cannon (2008) about lichens themselves being possible "space travellers" It seems that the black, thick-walled conidia of *X. physciae* are chemically equipped to survive as space travellers or possible world catastrophe survivors!

References

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Garcia-Pichel, F., Sherry, N.D. & Castenholz, R.W. (1992). Evidence for a UV sunscreen role of the extracellular pigment scytonemin in the terrestrial cyanobacterium *Chlorogloeopsis* sp. *Phytochemistry and Photobiology* **56**: 17-23.

Preece, T.F. & Blackwell, E. (2004). Is *Xanthoriicola physciae* a common species in Britain? *British Lichen Society Bulletin* **95**: 7-10.

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First steps in lichenicolous fungi

I have long had an interest in these underrecorded lifeforms. *Athelia arachnoidea*, the circular white patches on *Lecanora conizaeoides*, often with fawn sporodochia, is probably the first that most lichenologists notice. Then I started watching the pink blobs of *Marchandiomyces corallinus* eating away the *Lecanora conizaeoides* on a bench

outside the Kew Mycology building (now demolished), but unfortunately the bench was removed before I could establish seasonal patterns in this species. As *Lecanora conizaeoides* becomes rarer so do these sights. Now *Xanthoriicola physciae* showing as black dustings on *Xanthoria* fruits and spreading across the thallus is becoming more common [see previous article!]. *Taeniolella phaeophysciae* with dark conidiophores like stiff hairs on *Physcia* and *Phaeophyscia* is also something to look out for.

The BLS trip to Cornwall last year gave me the opportunity to learn more as I discovered that *Biatoropsis usnearum* on *Usnea*, at Trebah, is usually found infertile so my struggles with the microscope were not unusual. This is a species to look out for, forming pinkish nodules on the thallus of *Usneas* which were first taken to be fruit. *Melaspilea lentiginosa* on *Phaeographis dendritica* suppressing the host's fruits and showing as tiny black pycnidia, was quite distinctive, if of restricted distribution. The most dramatic sight was the infestation of *Clypeococcum epicrassum* on *Squamarina* at Penhale sands. Again I struggled with the microscopy and am grateful to David Hawksworth for pointing out the distinctive brown ascospores. See the microscope photo of *C. hypocenomycis* on the very good Lichens of Belgium, Luxembourg and northern France website. *Vouauxiomyces truncatus*, the anamorphic stage of *Abrothallus microspermus*, on *Flavoparmelia caperata* was pointed out to me by Chris Hitch, showing up as quite large dark dots on the thallus.

Neil Sanderson showed me *Milospium graphideorum* on *Lecanactis lyncea* in the New Forest but I am not certain that this does not just like the *Trentepohlia* in these lichens. Another common species is *Lichenoconium erodens* which forms bleached lesions or necrotic patches within which are pycnidia surrounded by a black margin – it has been recorded from *Evernia prunastri, Hypogymnia physodes, Lecanoras* and various *Parmeliaceae*. *Arthroraphis aeruginosa*, which causes *Cladonia* to go bright blue, was seen at the BLS Blencathra meeting. It is a pity that there is no 'Dobson' to help the beginner to identify these organisms then they might be recorded as well as the lichens.

Amanda Waterfield

Literature pertaining to British lichens - 44

Lichenologist **40**(5) was published on 9 September 2008, **40**(6) on 26 November 2008, **41**(1) on 22 January 2009, and **41**(2) on 13 March 2009.

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

NB. Authors of articles on British and Irish lichens, especially those including records and ecological observations, are requested to send or lend me a copy so that it can be listed here. This is particularly important for articles in local journals and newsletters, and magazines.

ARUP, U. 2008. The *Caloplaca holocarpa* group in the Nordic countries, except Iceland. *Lichenologist* **41:** 111–130. This revision found that most saxicolous members of the *C. holocarpa* group growing on limestones and highly calcareous substrata are referable to *C. oasis* (A. Massal.) Szat. (1932) [this includes records of *C. lithophila* auct. brit. and the parasitic *C. polycarpa* auct. brit.]. *Caloplaca holocarpa* is more usually found on enriched siliceous rocks, boulders and pebbles, but can occur on calcareous stones, mortar and concrete. Apart from the polysporous *C. cerinella*, many corticolous specimens can be referred to *C. pyracea* (Ach.) Th. Fr. (1867). *Caloplaca cerinelloides* (Erichsen) Poelt (1993) [whose status as a British species requires confirmation] is treated, although not a member of the *C. holocarpa* group. The concept of *Caloplaca vitellinula* (Nyl.) H. Olivier (1897) is clarified – it is characteristic of vertical siliceous rocks, often under overhangs [and has recently been confirmed as British – see New, rare and Interesting in this issue].

BLATCHLEY, F.R. ["Ishpi"] 2009. In "Reports of outdoor meetings 2008". *Bull. Kent Field Club* **54:** 14–47: Linton Church (pp 14–15).

ERTZ, D., MIADLIKOWSKA, J., LUTZONI, F., DESSEIN, S., RASPÉ, O., VIGNERON, N., HOFSTETTER, V. & DIEDERICH, P. 2009. Towards a new classification of the *Arthoniales* (*Ascomycota*) based on a three-gene phylogeny focussing on the genus *Opegrapha*. *Mycological Research* **113:** 141–152. A molecular phylogeny of selected species shows that *Opegrapha atra* and *O. calcarea* are better placed in *Arthonia* as *A. atra* (Pers.) A. Schneid. (1898) and *A. calcarea* (Turner ex Sm.) Ertz & Diederich (2009). This is supported by ascus and hamathecium characters, despite the presence of a well-developed exciple. Also, *Opegrapha zonata*, which has hovered between *Opegrapha* and *Enterographa* over the years, is shown to belong in *Enterographa* as *E. zonata* (Körb.) Källsten ex Torrente & Egea (1989).

ETAYO, J. & NAVARRO-ROSINÉS, P. 2008. Una combinación y tres especies nuevas de *Lichenochora* (*Phyllachorales*, Ascomicetes liquenícolas), y notas adicionales para el género. *Revista Catalana de Micologia* **30:** 27–44. Three new species are described from the British Isles: **Lichenochora aipoliae* Etayo, Nav.-Ros. & Coppins (on *Physcia aipolia* from W Scotland and SW England); **L. coppinsii* Etayo & Nav.-Ros. (on *Protopannaria pezizoides* from West Ross); **L. paucispora* Etayo & Nav.-Ros. (on *Bilimbia sabuletorum* from Dorset).

ETAYO, J. & SANCHO, G.S. 2008. Hongos liquenícolas del Sur de Sudamérica, especialmente de Isla Navarino (Chile). *Bibliotheca Lichenologia* **98:** 1–302. The monotypic lichenicolous genus *Kalaallia* is considered to belong to *Opegrapha* and the new combination *O. reactiva* (Alstrup & D. Hawksw.) Etayo & Diederich (syn. *K. reactiva*) is made.

FARKAS, E. & SUIJA, A. 2008. The species of the former *Toninia coeruleonigricans* group in Estonia. *Folia Cryptog. Estonica* **44:** 33–36. A useful treatment of the often confused *T. opuntioides*, *T. physaroides* and *T. sedifolia*, including black and white photographs and a TLC chromatogram.

FRYDAY, A.M. & COPPINS, B.J. 2008. *Ameliella*, a new genus of lichen-forming fungi from north-west Europe and western Canada. *Lichenologist* **40:** 387–397.

Describes the new genus *Ameliella* Fryday & Coppins, with two new species: **A. andreaeicola* Fryday & Coppins and **A. grisea* Fryday & Coppins.

HAFELLNER, J. 2008. Additions and corrections to the checklist and bibliography of lichens and lichenicolous fungi of Insular Lauromacaronesia. IV. *Fritschiana* **64:** 1–28. The new combination *Pseudosagedia leptospora* (Nyl.) Hafellner (= *Porina leptospora*) is made.

HAFELLNER, J. & MAYRHOFER, H. 2007. A contribution to the knowledge of lichenicolous fungi and lichens occur[r]ing in New Zealand. *Bibliotheca Lichenologica* **95:** 225–266. *Arthonia galactinaria* Leight. (1879) is adopted for the lichenicolous *Arthonia* inhabiting the apothecia of the *Lecanora dispersa* group. [It is not clear how this differs from *A. apotheciorum*, and as the authors point out, this group of hymenium-inhabiting *Arthonia* requires a detailed treatment.]

HENDERSON, A. 2008. In HENDERSON, A. & NORRIS, A. Yorkshire Naturalists' Union excursions in 2007. *The Naturalist* **133:** 140–151. Some lichen records from: Jervaulx (p. 144); Hornsea Mere (p. 147); East Arncliffe Wood, Glaisdale (p. 149); Potteric Carr (p. 151).

HUHTINEN, S., HAWKSWORTH, D.L. & IHLEN, P.G. 2008. Observations on two glassy-haired lichenicolous discomycetes. *Lichenologist* **40:** 549–557. **Protounguicularia nephromatis* (Zhurb. & Zavarzin) Huhtinen, D. Hawksw. & Ihlen (2008) is reported from Scotland, growing on *Nephroma laevigatum*.

JØRGENSEN, P.M. 2008. (1829–1830) Proposals to reject the names *Verrucaria thelostoma* and *Pyrenula umbonata* (lichenized *Ascomycota*). *Taxon* **57:** 990–991. A proposal to reject two names in favour of *Pyrenocarpon flotowianum*. [This proposal was made while unaware of the soon to be made new combination, *Pyrenocarpon thelostomum* (Ach. ex J. Harriman) Coppins & Aptroot, and of the existence of excellent type material of *Verrucaria thelostoma* in Winch's herbarium in Newcastle (HAMU)].

NASH III, T.H., GRIES, C. & BUNGARTZ, F., eds 2008 ["2007"]. *Lichen Flora of the Greater Sonoran Desert Region, Volume 3 (balance of the microlichens, and the lichenicolous fungi).* Arizona, Tempe: Lichens Unlimited. 567 pp + 54 pp of colour plates. ISBN 0-9716759-1-0. Treats 38 genera of lichens and 4 of lichenicolous fungi, as well as updates for other genera treated in previous volumes. These include large genera such as *Acarospora*, *Buellia*, *Caloplaca* and *Usnea*. [See also entry for Timdal (2008).]

NORDIN, A. & JØRGENSEN, P.M. 2008. (1828) Proposal to conserve *Aspicilia aquatica* against *Lichen mazarinus* (*Ascomycota*: *Pertusariales*: *Megasporaceae*). *Taxon* **57:** 989. This proposal also corrects the author citation to *Aspicilia aquatica* (Fr.) Körb.

ORANGE, A. 2009. Two parasitic species of *Placopyrenium* (*Verrucariaceae*) from freshwater habitats in North-west Europe. *Lichenologist* **41:** 131–139. The genus *Placopyrenium* Breuss (1987) is adopted for *Verrucaria canella* [*P. canellum* (Nyl.) Gueidan & Cl. Roux (2007)] and *V. fuscella* [*P. fuscellum* (Turner) Gueidan & Cl. Roux (2007)], with two new species reported from the British Isles: **P. cinereoatratum* (Degel.) Orange (2009) and the newly described *P. formosum* Orange. The latter is the correct name for *Verrucaria crustulosa* auct.

OTÁLORA, M.A.G., MARTÍNEZ, I., MOLINA, M.C., ARAGÓN, G. & LUTZONI, F. 2008. Phylogenetic relationships and taxonomy of the *Leptogium lichenoides* group (*Collemataceae*, Ascomycota) in Europe. *Taxon*: **57:** 907–921. A detailed morphological and phylogenetic study of the *Leptogium lichenoides* group. Taxa in the British Isles are: *L. gelatinosum*, *L. intermedium*, *L. lichenoides* and the newly combined **L. pulvinatum* (Hoffm.) Otálora (2008). [The last named has often been distinguished by British authors at an infraspecific rank, e.g. as *Leptogium lacerum* var. *pulvinatum* in Smith's 1918 *Monograph,* but has been treated as a morph of *L. gelatinosum* in the 1992 *Flora* and in its 2009 successor.]

PALMER, K. 2009. In "Reports of outdoor meetings 2008". *Bull. Kent Field Club* **54:** 14–47: Sutton Valence Church (pp 20–21).

PALMER, K. 2009. Lichen report 2008. *Bull. Kent Field Club* **54:** 58–59. A summary of finds in the county, with several notes on lichens found on apple and pear trees, and on worked timber.

SAVIĆ, S. & TIBELL, L. 2008. The lichen genus *Henrica* (*Verrucariaceae*, Eurotiomycetes) in northern Europe. *Nordic Journal of Botany* **26:** 237–247. Based mainly on DNA sequence data, two species of *Polyblastia* are treated in the resurrected genus *Henrica* B. de Lesd. (1921) as *H. melaspora* (Taylor) S. Savić & Tibell (2008) (syn. *P. melaspora*) and *H. theleodes* (Sommerf.) S. Savić, Tibell & Nav.Ros. (2008) (syn. *P. theleodes* s. str.). Most records [including British ones] of *P. theleodes* refer to *Polyblastia schaereriana*, which is soon to be formally transferred to another resurrected genus, *Sporodictyon* A. Massal.

THÜS, H. & SCHULTZ, M. 2009. *Süßwasserflora von Mitteleuropa [Freshwater Flora of Central Europe]. Vol. 21/1, Fungi part 1: Lichens*. Pp. [i–vii], 1–223. Heidelberg: Spektrum Akademischer Verlag. A guide to freshwater lichens, with keys and full descriptions, with most taxa most depicted by photos, some in colour. [An essential book for lichenologists who like to get their feet wet. A full review will be appearing in *The Lichenologist*.]

TIMDAL, E. 2008. *Romjularia*. In: NASH III, T.H., GRIES, C. & BUNGARTZ, F., eds, *Lichen Flora of the Greater Sonoran Desert Region* 3: 287–289. The genus *Romjularia* is described to accommodate *Psora lurida* as *Romjularia lurida* (Ach.) Timdal.

TYLER, M. 2008. *British Oaks: A Concise Guide*. Marlborough, Wiltshire: The Crowood Press. Pp 256. ISBN-13: 978-1-84797-041-1. This well-illustrated book covers the evolution, distribution, taxonomy, physical characteristics and ecological importance of Britain's two oaks, and includes a section on lichens (pp 157–163). [It is refreshing to see lichens given a lengthy treatment in a book of this kind, but sadly advice was not sought by a lichenologist. The information on lichens is some 30–40 years out of date, as is the composition and nomenclature of the species list provided. Furthermore, the three illustrated and named lichens are wrongly identified: "*Hypogymnia physodes*" is a *Cladonia* species, "*Parmelia perlata*" is *P. sulcata*, and "*Usnea ceratina*" is *U. subfloridana*.]

van den BOOM, P.P.G. & BRAND, A.M. 2008. Some new *Lecanora* species from western and central Europe, belonging to the *L. saligna* group, with notes on

related species. *Lichenologist* **40:** 465–497. Two of the new taxa in this detailed revision are new to the British Isles: **Lecanora albella* var. *macroconidiata* M. Brand & van den Boom and **L. coppinsii* M. Brand & van den Boom.

VONDRÁK, J. & VITIKAINEN, O. 2008. Typification of names of selected taxa described by Acharius and now placed in *Caloplaca*. *Taxon* **57:** 975–979. The following names relevant to the British 'list' are lectotypified: *Lecanora inalpina* Ach. (= C. *flavovirescens*), *Lecidea caesiorufa* Ach. (= *C. crenularia*), *Lecidea caesiorufa* var. *festiva* Ach. (= *C. arenaria*), *Lecidea turneriana* Ach. (= *C. atroflava*), *Lichen erythrellus* Ach. (= *C. flavovirescens*) and *Parmelia microthelia* Ach. (= *C. flavorubescens*). They also typified *Lecidea viridirufa* Ach. (= *C. viridirufa*), noting that this epithet has priority over *C. aractina* if the two are considered synonymous. [**NB:** the epithets *caesiorufa* and *festiva* have not been used according to their types and British specimens bearing these names usually refer to *C. ceracea* and *C. crenularia* respectively.]

WATERFIELD, A. 2007. Foliose and fruticose lichen records and a checklist of crustose lichens in the London area. *The London Naturalist* **86:** 143–174. The paper brings up to date the state of knowledge of lichen distribution within the London area. Details are given of records of just over 100 macrolichens, many of which are returning to London. For the 300 or so crustose (micro-) lichens a checklist is provided, with the 10 km grid squares in which they have each been found.

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Royal Botanic Garden Edinburgh

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 1QY, 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 users), altitude (alt), where applicable in metres (m), date (month and year). NRI records should now include details of what the entry represents, e.g. 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

Biatora ligni-mollis T. Sprib. & Printzen (2009): on underside of large *Quercus* trunk projecting from a steep rocky slope within a south-facing *Quercus - Betula* wood, Chullin Birchwood, Grudie, Strath Bran, VC 106, East Ross, GR 28(NH)/30-61-, June 1986. Herb. B.J. Coppins (11936) & R. G. Woods (**E**). This is related to *Catillaria alba* and a description is provided in the Appendix to the new 'Flora'. It has been known in Europe as an undescribed species for many years, from Scotland, Belgium and France, but has just recently been formally described from humid old-growth forests in British Columbia, Canada. For description and illustrations see Spribille *et al*. in *The Bryologist* **112:** 109–137 (2009; pp. 121–125). **BLS no. 2536**.

B.J. Coppins & E. Sérusiaux

Taeniolella cladiniicola Alstrup (1993): on species of *Cladonia* subgen. *Cladina* (especially *C. arbuscula*); (i) at Eastbister, South Walls, Hoy, VC 111, Orkney Islands, GR 39(ND)/31- 89-, August 1999. Herb. B.J. & A.M. Coppins 18594 (**E**); (ii) at Findhorn Dunes, VC 95, Moray, GR 38(NJ)/05-64-, June 2008. Herb. B.J. & A.M. Coppins 22752 (**E**); (iii) at Plee Moss, Whitelee Forest, VC 75, Ayrshire, GR 26(NS)/56-42-, September 2008. Herb. B.J. Coppins (22751), J.R. Douglass & B. Simpson (**E**). When well-developed this parasite gives a grey-brown velvety appearance to the host's surface. It differs from *T. beschiana*, which grows on species of *Cladonia* subgen. *Cladonia*, in having narrower mycelial hyphae (*c.* 2 µm vs. 2–3.5 µm) and smooth (not weakly verruculose) conidia. For original description and discussion, see Alstrup in *Graphis Scripta* **5:** 60–64 (1993). **BLS No. 2525**.

B.J. Coppins

Thelocarpon coccosporum Lettau (1955): on top of sandstone headstone, St. John Church, Whitfield, VC 67, South Northumberland, GR 35(NY)/778.583, March 2009. Herb. Coppins 22750 (**E**). Recognized by its yellow pruinose perithecia, 0.12–0.2 mm diameter, lacking an algal sheath and paraphyses, but with its asci enveloped in a distinct, viscid gel, and its globose ascospores, 3.5–6 µm diam. Elsewhere reported from Austria, Germany and Luxembourg. For a full description and illustration see Salisbury in the *Lichenologist* **3:** 184 (1966). **BLS no. 2537**.

B.J. Coppins, J. Simkin & M. Sutcliffe

Other Records

Absconditella celata: on damp consolidated soil on a burial plot dating from 1877, kept open by periodic herbicide application, Llanbadarn Road Cemetery, Aberystwyth, VC 46, Cardiganshire, GR 22(SN)/591.812, alt 5m, April 2009. Herb. SPC. *S.P. Chambers*

Agonimia octospora: on slightly underhung trunk of base-rich *Quercus petraea* in old woodland, gorge of the Afon Rheidol, opposite Derwen, VC 46, Cardiganshire, GR

22(SN)/736.773, alt 70m, August 2007. Confirmed by N. A. Sanderson. Herb. SPC. Second vice-county record. *S.P. Chambers*

Arthonia anombrophila: at edge of rain track on ancient *Fagus* with *Enterographa crassa*, within open old growth *Fagus – Ilex* pasture woodland, Wood Crates, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/2687.0834, December 2008. Herb. Sanderson 1180. First record for Hampshire for a species that is rare in the lowlands. *N.A. Sanderson*

Arthonia invadens: parasitising *Schismatomma quercicola* on ancient *Fagus* within old growth pasture woodland, Yew Tree Hill, Busketts Wood, New Forest SSSI, VC11, South Hampshire, GR 41(SU)/3111.1057, December 2008. Field Record. New 10km national grid square record for this Near Threatened RDB species and BAP species. Recorded during a Natural England contract, when sampling recorded *Arthonia invadens* at a density of 0.65 trees per ha in the open old growth *Fagus* stands examined. Given the wide range of the species within the New Forest there are likely to be well over 1000 trees supporting this species within the Forest. *N.A. Sanderson*

Arthonia radiata: on *Salix* pollard, Flitton Moor, VC 30, Bedfordshire, GR 52(TL)/056.361, February 2008. New to the county. *M. Powell*

Arthonia zwackhii: parasitising *Phlyctis argena* on ancient *Fagus*. Most frequently found where the host was weakened at the edges of wound tracks in old growth pasture woodland in the New Forest SSSI, VC 11, South Hampshire; (i) on 1 tree at Coomy Hat, GR 41(SU)/3113.1099; (ii) 1 tree west of James' Hill, GR 41(SU)/2797.0864; (iii) 1 tree south of James' Hill, GR 41(SU)/2808.0832; (iv) 1 tree at Allum Green, GR 41(SU)/27789.07610; (v) 3 trees in Wood Crates, 41(SU)/2720.0834 and 41(SU)/2687.0834; (vi) 1 tree at Pond Hill, Mark Ash Wood, GR 41(SU)/2410.0759; (vii) 3 trees at the head of Barrow Moor, Mark Ash Wood, GR 41(SU)/2474.0770, 41(SU)/2488.0759 and 41(SU)/2484.0777, December 2008. Field Records. This Near Threatened RDB species was found widely during intensive surveying of areas of veteran *Fagus* during a search for *Enterographa elaborata* under a Natural England contract. Previously only known from two modern collections in the New Forest. In spite of parasitising the common *Phlyctis argena*, it is a rare species confined to veteran trees, but has clearly been overlooked in the New Forest. The sampling recorded *Arthonia zwackhii* at a density of 0.56 trees per ha in the open old growth *Fagus* stands examined. *N.A. Sanderson*

Bacidia chloroticula: on *Cotoneaster* leaves, with *Felhanera bouteillei* in damp area by stream within old planted woodland, Lodge Plantation, East Bergholt, VC 25, East Suffolk GR 62(TM)/062.353, October 2008. Herb. PME-B with Hitch. Determined by B.J. Coppins. *P.M. Earland-Bennett & C.J.B. Hitch*

Bacidia fuscoviridis: on mortar-washed siliceous block faces at foot of old Victorian reservoir wall built in 1883, Llain-y-gawsai, Cefnllan, Aberystwyth, VC 46, Cardiganshire, GR 22(SN)/597.813, alt 70m, February 2008. Herb. SPC. Abundant

along *c.* 30m stretch, as a narrow 10cm band on ground-level course, obscured by sheltering vegetation. Second vice-county record. *S.P. Chambers*

Bacidia incompta: on lignum inside two ancient hollow *Ilex* bushes, within *Quercus – Ilex* pasture woodland, Speech House Oaks SSSI, Forest of Dean, VC 34, West Gloucestershire, GR 32(SO)/6179.1199 & 32(SO)/6185.1203, October 2008. Field Records. First modern West Gloucestershire records for this BAP species and first records from hollow *Ilex* outside the New Forest. *N.A. Sanderson*

Bacidia incompta: in wound tracks on old *Fagus* (30 trees), within pasture woodland, found widely during sampling in the New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/24.07., /25.07., /26.08., /27.06-08., /28.07-08. and /31.10., December 2008. Field records. As part of a Natural England funded search for *Enterographa elaborata* in the New Forest. All *Fagus* trees with non-randomly placed measured plots set in old growth *Fagus* pasture woodland were searched for rare lichens. During this process, *Bacidia incompta* was recorded at a density of 0.63 occupied *Fagus* trees per ha and as occurring on 6.7% of *Fagus* trees with wound tracks. Given a potential suitable habitat of between 1000 and 2000 ha this represents a potential population within the New Forest of between 630 to 1260 trees. As the lichen also occurs on old *Ilex* trees, the total of occupied trees is likely to be higher. Outside the New Forest, no sites are known to have populations of higher than 10 occupied trees and less than 10 sites have more than one known occupied tree. *N.A. Sanderson*

Biatora britannica: fertile, on old *Fagus* with base-rich bark, within *Fagus – Quercus – Ilex* pasture woodland, south of James' Hill, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/2801.0813, January 2009. Herb. Sanderson 1194. First record of fertile material from central southern England. Sterile material referable to the *Biatora efflorescens* aggregate is widespread, if local, in this area on base-rich bark on old trees in woods, but until this find, could only be assumed to be *Biatora britannica*. *N.A. Sanderson*

Caloplaca ruderum: on base of sandstone/slate cliffs, Staunton Cliff, VC 4, North Devon, GR 21(SS)/451377, January 2009. Herb Benfield. Determined by B.J. Coppins. New to Devon. *J. Holwell & M. Putnam*

Carbonea aggregantula: on *Lecanora soralifera* on stones in summit scree, south flank of Gyrn, Llanllechid Common, Bethesda, VC 49, Caernarfonshire, GR 23(SH)/647.686, alt 500m, October 2008. Herb SPC. New to the vice-county. *S.P. Chambers*

Catillaria atomarioides: on clay pantile roof, Riseley, VC 30, Bedfordshire, GR 52(TL)/035.626, June 2008. New to the county. *M. Powell*

Catillaria nigroclavata: on twigs of *Juglans* in orchard, Buckland Abbey, VC 3, South Devon. GR 20(SX)/488.670, May 2008. Herb. Benfield. Determined by B.J. Coppins. New to Devon. *B. Benfield*

Chaenotheca brachypoda: frequent on lignum on standing dead *Fagus*, presumably originating from the 1987 tempest, within *Fagus* hanger woodland, Noar Hill Nature

Reserve, VC12, North Hampshire, GR 41(SU)/7434.3206, May 2008. Herb. Sanderson 1155. New to the vice-county. *N.A. Sanderson*

Chaenotheca brunneola: on patch of lignum exposed on old *Quercus*, within *Quercus – Ilex* pasture woodland, Speech House Oaks SSSI, Forest of Dean, VC 34, West Gloucestershire, GR 32(SO)/6202.1227, October 2008. Field Record. With *Chaenothecopsis nigra*. New to Gloucestershire. *N.A. Sanderson*

Chaenothecopsis nigra: on patch of lignum exposed on an old *Quercus*, in *Quercus – Ilex* pasture woodland, Speech House Oaks SSSI, Forest of Dean, VC 34, West Gloucestershire, GR 32(SO)/6202.1227, October 2008. Herb. Sanderson 1167. With *Chaenotheca brunneola*. New to Gloucestershire. *N.A. Sanderson*

Cliostomum flavidulum: on four old *Quercus*, within *Quercus – Ilex* pasture woodland, Speech House Oaks SSSI, Forest of Dean, VC 34, West Gloucestershire, GR 32(SO)/618.120, October 2008. Field Record, confirmed by Pd + yellow to red reaction. New to Gloucestershire. *N.A. Sanderson*

Collema fragrans: in wound tracks on old *Fagus* (9 trees), in pasture woodland, found widely during sampling in the New Forest SSSI, VC11, South Hampshire, GR 41(SU)24.07., /27.06., /27.07., /28.08. and /31.10., December 2008. Field records. As part of a Natural England funded search for *Enterographa elaborata* in the New Forest, all *Fagus* trees with non-randomly placed measured plots set in old growth *Fagus* pasture woodland were searched for rare lichens. During this process, *Collema fragrans* was recorded at a density of 0.35 occupied *Fagus* trees per ha and as occurring on 2.8% of *Fagus* trees with wound tracks. Given a potential suitable habitat of between 1000 and 2000 ha this represents a potential population within the New Forest of between 349 to 697 trees. There are only four known occupied trees for this species outside of the New Forest. *N.A. Sanderson*

Cryptolechia carneolutea: recorded from veteran *Fagus* within old growth pasture woodland, New Forest SSSI, VC 11, South Hampshire: (i) a small amount on 1 dead tree, Yew Tree Hill, Busketts Wood, GR 41(SU)/3109.1052; (ii) completely dominating the lower 3m of the of an old pollard and abundant for the next 3m, GR 41(SU)/2743.0713; (iii) frequent over 20cm on recently dead giant pollard, Bramble Hill, GR 41(SU)/2759.0689; (iv) on twisted and broken tree, Pond Hill, Mark Ash Wood, GR 41(SU)/2412.0766; (v) on 2 old trees, Rushpole Wood GR 41(SU)/ 3133.0952 & 419SU)3119.0956; December 2008. Field Records. All but the first are new trees for this Vulnerable RDB and BAP species, previously only known from six trees in the New Forest, at least two of which have been lost in the last decade. These trees were found during intensive surveying of areas of veteran Beech in search of *Enterographa elaborata* under a Natural England contract. The sampling recorded *Cryptolechia carneolutea* at a density of 0.10 trees per ha in the open old growth *Fagus* stands examined. *N.A. Sanderson*

Cyphelium sessile: on *Pertusaria* sp., on bark of mature *Quercus*, Baker's Wood, VC 30, Bedfordshire, GR 42(SP)/917.290, June 2008. Herb. Powell 345. New to the county. *M. Butler & M. Powell*

Degelia atlantica: a single thallus on young *Fraxinus* in woodland, Millook Valley, VC 2, East Cornwall, GR 20(SX)/1799.9850, February 2009. Field record. This regionally rare species was recorded as being a strong population on several *Fraxinus* trees in 1989, by K. Sandell, N.A. Sanderson & R. Smithers, but most of the trees are now shaded by *Ilex* with the species lost, due to the removal of grazing.

N.A. Sanderson

Enterographa elaborata: in rain tracks and colonising the edges of wound track on ancient or suppressed *Fagus*, within open *Fagus* dominated pasture woodland, New Forest SSSI, VC 11, South Hampshire: (i) on 3 trees (1 dead), Yew Tree Hill, Buskets Wood, GR 41(SU)/31-10-; (ii) on 2 trees west of James' Hill, GR 41(SU)/27-08- and 41(SU)/28-08-; (iii) on 2 trees south of James' Hill , GR 41(SU)/ 28-08-; (iv) on 6 trees north of Barrow Moor, Mark Ash Wood,GR 41(SU)/24-07-; (v) on 1 tree south of Barrow Moor, Mark Ash Wood, GR 41(SU)25-07; (vi) on 1 tree, Denny Wood, GR 41(SU)/33-05-; (vii) on 3 trees, Rushpole Wood, GR 41(SU)/31-09-, December 2008, January & March 2009. Field Records. A total of 18 trees were found supporting this Critically Endangered RDB and BAP species, during intensive surveying of areas of veteran *Fagus* in search of this species under a Natural England contract. Previously only known from 2 live trees in the New Forest, and another which died in the early 2000s but still stands. These known trees were relocated and 15 new trees found. *N.A. Sanderson*

Enterographa sorediata: (i) on ancient *Quercus* in old deer park, Shute Deer Park, VC 3, South Devon, GR 30(SY)/240.976, November 2008. Collected by B. Benfield; (ii) on a small patch of dry bark on ancient *Quercus* (NT Tag 00132) of 6.35m girth growing on an old bank within pasture woodland in deer park, Whiddon Deer Park, VC 3 South Devon, GR 20(SX)/72704.88926, November 2008. Collected by B. Edwards & B. Benfield. Herb. Sanderson 1207 & 1193. Determined by N.A. Sanderson. First records for South Devon for this BAP species. *N.A. Sanderson*

Enterographa sorediata: found on veteran *Quercus* at the following sites: **VC 2, East Cornwall** (i) on 3 trees within relic pasture woodland, Millook Valley, GR 20(SX)18-99-, January 2009; (ii) on 9 trees within grazed high forest in parkland, Lanhydrock Park, GR 20(SX)/092.634, January 2009; **VC 4, North Devon** (i) on 5 trees in parkland, Dunsland Park SSSI, GR 21(SS)/41-05- and 21(SS)/40-05-, January 2009; (ii) on 5 trees in parkland and 6 in woodland in former deer park, Clovelly Park & Deer Park, Clovelly, Marsland to Clovelly Coast SSSI, GR 21(SS)/31-25- and21(SS)/ 30-25-, February 2009; **VC 3, South Devon** (i) on 1 tree in parkland, Ugbrooke Park SSSI, Chudleigh, 20(SX)/8694.7803, February 2009; (ii) on 2 trees in parkland, Bicton Park, 30(SY)/0690.8636 and 30(SY)/0717.8621, February 2009. Field records & Herb. Sanderson 1198, 1199, 1201, 1208 & 1210. First Cornish records and extensions to the range of the species in Devon. Records made as part of an EN funded survey for this priority BAP species. The survey suggested that the species is likely to be present at most high quality veteran *Quercus* sites in the southwest. Threats recorded were lack of grazing in pasture woodland sites and high nitrogen deposition in East Dorset. Thalli with pycnidia (Herb. Sanderson 1201 &

1208), were recorded for the first time at Lanhydrock Park and Clovelly. These were black with a raised paler thalline margin, round to slightly elongated 0.075 – 0.125 mm wide, but were sterile with no conidia found. *N.A. Sanderson*

Epiphloea byssina: in mineral soil pockets exposed by fire *c.* 2004, in dry *Calluna – Erica cinerea* heath, Pen Dinas, Aberystwyth, VC 46, Cardiganshire, GR 22(SN)/584.802, alt 120m, December 2007. Determined by P.M. Jørgensen. Herb. SPC and duplicate in **BG**. New to Wales. *S.P. Chambers*

Felhanera bouteillei: many pycnidiate and sparingly fertile thalli on *Cotoneaster* leaves, in damp area by stream within old planted woodland, Lodge Plantation, East Bergholt, VC 25, East Suffolk, GR 62(TM)/062.353, October 2008. Herbs. PME-B and CJBH. Determined by B.J. Coppins. *P.M. Earland-Bennett and C.J.B. Hitch*

Felhaneropsis myrtillicola: on leaves of *Camellia*, within damp, old planted woodland, Lodge Plantation, East Bergholt, VC 25, East Suffolk, GR 62(TM) / 063.359, October 2008. Herbs. PME-B and CJBH. Determined by B.J. Coppins. This taxon was found on the same clump of *Camellia* bushes that supported *Byssoloma diederichii*, see *British Lichen Society Bulletin* **102**: p. 28. New to East Anglia.
P.M. Earland-Bennett & C.J.B. Hitch

Fellhaneropsis vezdae: on shaded bark of *Betula pendula*, Folly Wood, VC 30, Bedfordshire, GR 52(TL)/047.354, April 2008. Herb. Powell 272. Determined by Ivan Pedley. New to the county. *M. Powell*

Flavoparmelia soredians: on weathered wooden gate of church meadow, Maulden, VC 30, Bedfordshire, GR (TL)/058.381, June 2008. New to the county. *M. Powell*

Gomphillus calycioides: *c.* 8 small patches 1-2 cm across in bark crevices and on mossy base of old *Fraxinus excelsior* by stream, Hafod-lwyfog, Nantgwynant, VC 49, Caernarfonshire, GR 23(SH)/65-52-, alt 180 m, March 2009. Field record. New to the vice-county. *S.P. Chambers*

Gyalideopsis anastomosans: on bark of reclined *Betula*, Baker's Wood, VC 30, Bedfordshire GR 42(SP)/917.291, June 2008. Herb. Powell 338. New to the county.
M. Butler & M. Powell

Hyperphyscia adglutinata: on bark of dead *Acer pseudoplatanus*, Totternhoe, VC 30 Bedfordshire, GR 42(SP)/982.219, May 2008. Herb. Powell 269. New to the county.
J. Powell & M. Powell

Hypotrachyna sinuosa: one small twice-furcate lobe, 10 x 6 mm, on north side of a memorial stone erected 1997 to the Rev. G. R. Calderbank by Llyn Berwyn, VC 46, Cardiganshire, GR 22(SN)/744. 572, alt 440m, September 2008. Field record. Some 9 miles south of the nearest known site at Hafod. Second vice-county record.
S.P. Chambers

Lecanactis abietina: on bark of mature *Quercus robur*, Swineshead Wood, VC 30 Bedfordshire, GR 52(TL)/060.669, May 2008. Herb. Powell 280. New to the county.
M. Powell

Lecanographa amylacea: on ancient *Quercus* in parkland, Ugbrooke Park SSSI, Chudleigh, VC 3, South Devon, GR 20(SX)/8694.7803, February 2009. Herb. Sanderson 1209. A new site for this Vulnerable RDB and Priority BAP species. The tree also suppported two other BAP species, *Enterographa sorediata* and *Opegrapha prosodea*. *N.A. Sanderson*

Lecanora confusa: on roadside *Fraxinus excelsior*, Swineshead Road, Riseley, VC 30 Bedfordshire, GR 52(TL)/047.637, May 2008. Determined by I. Pedley. New to the county. *M. Powell*

Lecanora sublivescens: on sunny trunk of old *Fagus* within *Fagus – Quercus – Ilex* pasture woodland, Bramshaw Wood, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/2578.1720, December, 2008. Field record during Wessex Lichen Group meeting. The first record from the New Forest for this BAP species since the single other record made in 1985 by Francis Rose. *N.A. Sanderson*

Leptogium burgessii: small colony of almost sterile thalli with a few apothecial initials on one south-facing flushed base-rich rockface within old woodland, above Penygarreg reservoir, Elan Valley, VC 43, Radnorshire, GR 22(SN)/91-67-, alt 300m, May 2008. Voucher in **NMW**. New to the vice-county.
S.P. Chambers, R.G. Woods & A. Orange

Leptogium plicatile: intermingled amongst *Bryum argenteum* tufts for *c.* 10 m along a central mossy strip of a surfaced track, Pen-rhiw, northwest of Tremain, VC 46, Cardiganshire, GR 22(SN)/227.498, alt 165m , April 2009. Herb. SPC. New to the vice-county. *S.P. Chambers*

Leptogium tenuissimum: on small patches of bare soil on slopes of old chalk pit in chalk grassland, Noar Hill Nature Reserve, VC 12, North Hampshire, GR 41(SU)/7418.3196, May 2008. Herb. Sanderson 1155. New to the vice-county.
N.A. Sanderson

Lichenomphalia hudsoniana: sterile thalli on damp lignum on large fallen *Quercus* log, within *Quercus – Ilex* pasture woodland, Speech House Oaks SSSI, Forest of Dean, VC 34, West Gloucestershire, GR 32(SO)/6254.1244, October 2008. Field Record. New to Gloucestershire. *N.A. Sanderson*

Llimonaea sorediata: on two ancient *Quercus* in parkland, Clovelly Park, Clovelly, Marsland to Clovelly Coast SSSI, VC 4, North Devon, GR 21(SS)/3121.25294 and 21(SS)/3124.2553, February 2009. A corticolous record of this mainly saxicolous species, which was found growing in rich dry bark communities with *Enterographa sorediata*, *Lecanographa amylacea*, *Roccella phycopsis* and *Syncesia myrticola*.
N. A. Sanderson

Megalaria laureri: in rain tracks on old *Fagus* (13 trees), within old growth pasture woodland, found locally during sampling in the New Forest SSSI, including known trees (1 fallen) and new trees, VC 11, South Hampshire, GR 41(SU)/24.07, /27.06., /27.07., /28.07-08., /31.09-10., December 2008. This Endangered and BAP species was recorded during a Natural England funded search for *Enterographa elaborata* in

the New Forest. The sampling recorded *Megalaria laureri* at a density of 0.48 trees per ha in the open old growth *Fagus* stands examined. *N.A. Sanderson*

Megalaria pulverea: on old *Quercus*, within *Quercus – Ilex* pasture woodland, Speech House Oaks SSSI, Forest of Dean, VC 34, West Gloucestershire, GR 32(SO)/6256.1245, October 2008. Field Record. A considerable extension to the known range. New to Gloucestershire. *N.A. Sanderson*

Micarea alabastrites: on acid bark on well lit ancient *Fagus*, within open old growth *Fagus – Ilex* pasture woodland, Wood Crates, New Forest SSSI, VC 11, South Hampshire, GR (SU)/2687.0833, December 2008. Herb Sanderson 1181. First record from lowland England. *N.A. Sanderson*

Normandina acroglypta (Lauderlindsaya acroglypta): colonising former wound tracks on two ancient *Fagus*, both with the moss *Zygodon conoideus*, within old growth *Fagus – Quercus – Ilex* pasture woodland, Yewtree Hill, Busketts Wood and James' Hill, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/3103.1052 and 41(SU)/2810.0864 respectively, December 2008. Herb. Sanderson 1175 &1183. First record for Hampshire for this mainly upland species. Probably widespread, but overlooked in wound tracks on *Fagus* in the New Forest. *N.A. Sanderson*

***Ochrolechia microstictoides*:** on *Quercus* within high mooorland wood by River Erne, Piles Copse, Dartmoor, VC 3, South Devon, GR 20(SX)/644.620, March 2009. Herb. Benfield. Confirmed by B.J. Coppins. New to Devon. *B. Benfield*

Opegrapha thelotrematis: parasitising *Thelotrema lepadinum* on old *Fagus*, within old growth *Fagus – Quercus – Ilex* pasture woodland Yewtree Hill, Busketts Wood, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/3108.1049, December 2008. Herb. Sanderson 1176. Third record for England for this oceanic species. *Opegrapha* cf *vulgaris* fruits overgrowing healthy *Thelotrema lepadinum* thalli are frequent in the New Forest, but this collection was noted as obviously parasitising a large area of *Thelotrema* thalli. *N.A. Sanderson*

Pertusaria velata: five thalli on old *Quercus* in parkland, Ugbrooke Park SSSI, Chudleigh, VC 3, South Devon, GR 20(SX)8723.7805, February 2009. First record from this site for this Vulnerable RDB and Priority BAP species since a record by Dr. F. Rose in 1969. *N.A. Sanderson*

Physcia tribacioides: one thallus *ca* 15 × 10 mm on south-facing trunk of young *Carpinus betulus* 'Fastigiata' and another *ca* 2 × 3 mm on adjacent non-fastigiate *C.betulus*, street trees in Heol Maengwyn, Machynlleth, VC 47, Montgomeryshire, GR 23(SH)/746.008, alt 20 m, March 2009. Field record. On both trees, associated with *Candelaria concolor* and *Phaeophyscia orbicularis.* New to the vice-county and second Welsh record. *S.P. Chambers & H.F. Clow*

Porina borreri: in rain tracks on two ancient *Ilex*, within *Quercus – Ilex* pasture woodland, Speech House Oaks SSSI, Forest of Dean, VC 34, West Gloucestershire, GR 32(SO)/6204.1227 and 32(SO)/6243.1249, October 2008. Herb. Sanderson 1166. New to Gloucestershire. *N. A. Sanderson*

Porina hibernica: on old *Quercus* on boundary bank within expanding woodland, Millook Valley, VC 2, East Cornwall, GR 20(SX)/1771.9839, February 2009. Field record. A new site for this southern oceanic BAP species and Near Threatened RDB species. *N.A. Sanderson*

Porina rosei: on old *Quercus* on boundary bank in expanding woodland, Millook Valley, VC 2, East Cornwall, GR 20(SX)/1835.9933, February 2009. Field record. A new site for this Near Threatened RDB species. It appears to be very rare in Cornwall. *N.A. Sanderson*

Pseudevernia furfuracea var. ***furfuracea***: on thatch, Riseley, VC 30, Bedfordshire, GR 52(TL/035.626, December 2001. Herb. Powell 7. Still present March 2009. New to the county. *M. Powell*

Ramalina lacera: on needle-less shoot tips of dead branch of *Picea sitchensis* at edge of conifer block in dry coastal valley, near Wern-llaeth, south of Llanon, VC 46, Cardiganshire, GR 22(SN)/507.651, alt 70m, November 2008. Herb. SPC. The first certain vice-county record. *S.P. Chambers*

Schismatomma decolorans: fertile, on veteran maiden *Fagus,* within old growth *Fagus – Ilex* pasture woodland, Allum Green, New Forest SSSI, VC 11, South Hampshire, GR 41(SU)/2768.0729, December 2008. Field record. Now the only known fertile thalli of *Schismatomma decolorans* in Britain, other than those at the Suffolk site, since the Devon tree has fallen. *N.A. Sanderson*

Schismatomma graphidioides: on sheltered, smooth bark, on east side of old *Fagus sylvatica* within wood-pasture strip, Rhiwarthen-uchaf, south of Capel Bangor, VC 46, Cardiganshire, GR 22(SN)/650.795, alt 50m, March 2009. Herb SPC.
S.P. Chambers

Schismatomma niveum: on 12 old *Ilex* bushes, within *Quercus – Ilex* pasture woodland, Speech House Oaks SSSI, Forest of Dean, VC 34, West Gloucestershire, GR 32(SO)/619.120 to 32(SO)/627.125, October 2008. Field Record. A considerable extension to the known distribution. New to Gloucestershire. *N.A. Sanderson*

Schismatomma quercicola: on 4 old *Quercus* & 3 ancient *Ilex*, within *Quercus – Ilex* pasture woodland, Speech House Oaks SSSI, Forest of Dean, VC 34, West Gloucestershire, GR 32(SO)/624.125 to 32(SO)627.124, October 2008. Field Record. A considerable extension to the known distribution. New to Gloucestershire. *N.A. Sanderson*

Scoliciosporum intrusum: in minute quantity, bordering *Rhizocarpon geographicum* on top of weakly enriched boulder, Cefncerrig, east of Cwm Berwyn, VC 46, Cardiganshire, GR 22(SN)/766.583, alt 470m, September 2009. Herb. SPC. Most southerly British locality. New to the vice-county and second Welsh record.
S.P. Chambers

Strangospora moriformis: on weathered fence post, Sandhouse Lane Nature Reserve, Heath and Reach, VC 30, Bedfordshire, GR 42(SP)/935.298, June 2008. Herb. Powell 363. Determined by P.W. James. New to the county. *M. Powell*

Strigula phaea: on rain track on veteran *Quercus* within relic pasture woodland, Millook Valley, VC 2, East Cornwall, GR 20(SX)/1870.9962, February 2009. Herb. Sanderson 1200. Appears to be the first record from Cornwall for this species.

N.A. Sanderson

Strigula tagananae: in rain tracks on old *Fagus* in the New Forest SSSI, VC 11, South Hampshire: (i) 1 tree, North of Allum Green GR 41SU/2791.0761; (ii) fertile on pollard, with *Cryptolechia carneolutea*, Bramble Hill, GR 41(SU)/2743.0713; (iii) 3 trees (1 fertile), Wood Crates Wood GR 41(SU)/2690.0826; (iv) 3 trees, with *Enterographa elaborata* on 2, head of Barrow Moor, Mark Ash Wood, GR 41(SU)/2485.0779; (v) 1 tree, with *Megalaria laureri*, Rushpole Wood GR 41(SU)/3139.0947; (vi) 1 tree, Bramshaw Wood GR 41(SU)/2588.1682, December 2008, January & March 2009. Herb Sanderson 1178, 1179, 1185, 1186 & 1190. Several new sites were found for this recently discovered BAP species during intensive surveying of areas of veteran *Fagus* for *Enterographa elaborata* under a Natural England contract and on a Wessex Lichen Group meeting, which included several thalli with perithecia, as well as thalli with only pycnidia. This species appears to be characteristic of healing wound tracks and developing rain track communities on veteran *Fagus*. Associates included the BAP species *Cryptolechia carneolutea*, *Enterographa elaborata* and *Megalaria laureri*. The association with *Cryptolechia carneolutea* suggests that searching veteran *Fraxinus* along the south coast may be productive. *N.A. Sanderson*

Syncesia myrticola: on ancient *Quercus* in parkland, Clovelly Park, Clovelly, Marsland to Clovelly Coast SSSI, VC 4, North Devon, GR 21(SS/)3124.2553, February 2009. New to the Bideford Bay area and a corticolous record of this mainly saxicolous species. It was found growing in a rich dry bark community with *Enterographa sorediata* and *Llimonaea sorediata*. *N.A. Sanderson*

Telogalla olivieri: on *Xanthoria parietina* on broken remains of corner of old brick wall in dune slack, Ynyslas NNR, VC 46, Cardiganshire, GR 22(SN)/605.935, alt 5 m, March 2009. Herb. SPC. The wall dates from *c.* 1942 when the dunes were occupied by military personnel. New to the vice-county. *S.P. Chambers & H.F. Clow*

Xerotrema quercicola: on hard decorticate lignum of standing dead *Quercus* and on dead side branch of living tree, on shore of Loch Arienis, Morvern, VC 97, West Inverness-shire, GR 17(NM)/690.513, alt 30m, October 2008. Herb. SPC. A new hectad for this recently described species. *S.P. Chambers*

Compiled by Chris Hitch
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FIELD MEETING REPORTS

BLS Field Trip to Hoy, Orkney 18–24 August 2008

Hoy, or 'high island', stands against Atlantic swells and south westerly gales and provides shelter for the bays of Scapa Flow and the lower islands at the east of the Orkneys. In the week of this BLS field trip it needed to perform no such role; the weather was at worst overcast and at best nearly tropical. This allowed the group the opportunity to explore locations where one normally would have been swept off the ground by the wind or swallowed up by sphagnum bogs.

The group was twenty strong, aged from 5 months old to 83 years young (is this age range a record for a BLS trip?), and had an average age low enough to suggest that lichenology in the UK has a very strong future indeed. The group was remarkable for its friendliness, and together with the location this had to be one of the top four BLS field meetings.

BLS on Hoy, 18-24 August 2008

Back row: Peder Aspen, Dave Genney, Peter Lambley, Richard Hewison, Brian Coppins, Chris Ellis, Brian Gale, Steve Price.

Middle row: Anamarija Partl, Ginnie Copsey, Kate Grundy, Ceri Leigh, Vanessa Winchester, Ivan Pedley, Richard Brinklow, Andrea Britton, Ken Hill, Mike Sutcliffe.

Front row: Rebecca Yahr, Simon Ellis.

The trip was organized and led by Chris Ellis who arranged for our occupation of the community owned and managed Hoy Hostel. The hostel was guarded by the appropriately named Ward Hill, which at 479 m is the highest point on the island and 1 km from the sheltered coast of Scapa Flow. Chris also managed to arrange for us to enjoy six consecutive days on Orkney free from rain.

Wind-hammered plateaus of the Cuilags and Ward Hill. Photo Steve Price

Peder Aspen was our tame geologist for the week and in addition to providing a good and understandable explanation of the rocks of the area he led us into various situations in search of fossilized fish and early reptile tracks. The rocks of the area were laid down in middle Devonian times (about 360 million years ago) in a series of freshwater lakes which stretched from North-east Scotland to Norway. Locally the main rocks are the Hoy Sandstones, and being mildly basic in nature they supported a range of saxicolous lichens more familiar to many of us on the harder limestones. Lava and basalt outcrops provided variation as did iron deposits. Add to this coast, montane heathland, an occasional churchyard, a 5000 year old monolithic chambered tomb and the most northerly native woodland in the British Isles it is no surprise that the trip was so enjoyable and produced such an enviable set of records.

Prior to this visit there were records for 205 species on Hoy and one 10 km square had no records at all. A total of 342 taxa (including 11 lichenicolous fungi)

were recorded on Hoy, of which 99 were new to Orkney. In addition a further 5 new additions to the Orkney list were made during our short time on Orkney Mainland. This additional total of 104 could be considered even higher. In their enumeration of Shetland lichens, Dalby & Dalby (2005) annotated those species that were also reported for Orkney. These include *Bilimbia sabuletorum*, *Leptogium gelatinosum*, *Opegrapha sorediifera*, *Placynthium nigrum*, *Porina aenea*, *Protopannaria pezizoides* and *Sphaerophorus fragilis*, but there were no Orkney records for these 7 species in the SSLD or in the BLS 10 km database at Bradford.

Lecanora zosterae. Photo Mike Sutcliffe

Attendees at the field meeting were: Peder Aspen, Richard Brinklow, Andrea Britton, Brian Coppins, Ginnie Copsey, Chris Ellis, Simon Ellis, Brian Gale, Dave Genney, Kate Grundy, Richard Hewison, Ken Hill, Peter Lambley, Ceri Leigh, Anamarija Partl, Ivan Pedley, Steve Price, Mike Sutcliffe, Vanessa Winchester and Rebecca Yahr.

The following were the main sites visited by the whole group; several other sites shown in the tables below were also recorded.

Houton, Mainland Orkney, 18 Aug 2008

Coastal rocks, concrete and fence posts were given some study here whilst awaiting the ferry to Hoy. Here fossilized fish scales, in the form of vivianite, were hunted out by Peder Aspen.

Rackwick Bay, 19 Aug 2008

Laying on the south west corner of Hoy this formerly well-populated bay provided some small shelter from the Atlantic waves and wind. The boulder strewn area behind the beach bore testament to the ferocity of the winter storms. Lichen encrusted cottages and farm buildings occupied the group en-route from the car park to the bay where dunes, boulders, and basalt exposures provided the main

Moelleropsis nebulosa. Photo Mike Sutcliffe

interest. Time at the cottages enabled everyone to get their eye-in on, among other things, the common sterile crusts, including *Caloplaca citrina* and its relatives, *C. arcis* and *C. flavocitrina*, and the much overlooked *Opegrapha multipuncta* and *Pertusaria lactescens*. Similarly, boulders and small outcrops of the bay displayed the common flora of maritime rocks. More 'specialist' species were encountered on associated, stable turfy areas, e.g. the look-alike cyanophilous granular crusts *Moelleropsis nebulosa* and *Vahliella atlantica*, as well as *Catapyrenium cinereum*, *Leptogium britannicum* and *Solenopsora vulturiensis*. Close inspection of plant remains revealed *Absconditella celata* and *Lecanora zosterae*. The cliffs to the west of the bay support a rich maritime communities, including 12 species of *Caloplaca*, with *C. littorea* and *C. scopularis* being the most notable. Old wooden fencing provided opportunity to studied such overlooked species as *Lecanora farinaria* (with apothecia) and *L. saligna*, and also supported the normally saxicolous *Acarospora smaragdula* and *Micarea erratica*.

Catapyrenium cinerascens. Photo Mike Sutcliffe

Ward Hill, 20 August 2008

A route march with lenses firmly in pockets took the group swiftly (swiftly for the BLS that is) to the upper reaches of Ward Hill, where a gentle breeze greeted us. The wind-blown bare ground and turned-back turf illustrated the normal conditions on the exposed summit. The heathland on the more sheltered flanks was the perfect opportunity to try out the new *Montane Heathland Lichen Guide,* by Andrea Britton (published by The Macaulay Institute), a copy of which had been provided to each member of the group. Subjects for the trial included the frequent *Cladonia* spp., *Cetraria islandica*, *C. muricata*, *Ochrolechia frigida* and *Thamnolia vermicularis*, as well as the much more localized *Alectoria nigricans* and *A. sarmentosa* subsp. *vexillifera*. Exposed siliceous boulders revealed many of the 'expected suspects', but most surprising was the local abundance of

The lee of Ward Hill provides some small shelter for vegetation. Photo Steve Price

Lecanora atrosulphurea, a rare species previously known from only 7 localities in the Highlands. It resembles *L. sulphurea*, but has a C+ orange thallus. Other notable finds included *Ochrolechia xanthostoma* and *Pertusaria oculata*.

Lecanora atrosulphurea. Photo Mike Sutcliffe

A hunt for fossilized footprints descended a gully full of interest including a lone rowan (NY218013) well clothed in *Bryoria fuscescens*, *Usnea* spp. and *Lobaria pulmonaria*, as well as supporting *Caloplaca ferruginea*, *Dimerella lutea* and *Thelotrema lepadinum*. Apart from its 23 lichens, this tree also provided refuge for what seemed like every midge in the north of the island.

Melsetter, Melberry Dunes and Tor Ness, 21 August 2008

Boulder beach at Melsetter. Photo Steve Price

A trip to the south of the island took the group to a previously unrecorded 10k square. Dunes, coastal boulders, maritime heath and cliffs soon provided a good number of some interesting records. Time was spent by some trying to distinguish between the confusion pairs *Caloplaca crenularia* / *C. chlorina* and *Lecidella asema*/ *L. meiococca*. The location by the Tor Ness lighthouse afforded an interesting location for lichenology 'on the edge'. The exposure of the situation was only appreciated in retrospect, although the fact that fulmars were flying below the lichenologists should have offered a clue. Despite this some notable finds were, including *Cladonia firma*, fertile *Lecania baeomma*, *Romjularia lurida*, *Toninia sedifolia*, and, on 'bird-enriched' turf, an undescribed *Bacidia* previously recorded by Oliver Gilbert from the Outer Hebrides.

Caloplaca chlorina. Photo Mike Sutcliffe

The Dwarfie Stane stands inspection. Photo Steve Price

Dwarfie Stane and Berriedale Wood, 22 August 2008

The Dwarfie Stane, a huge block of hollowed out sandstone, is the largest (and maybe the only?) monolithic rock-cut tomb in Britain. It dates from 5000 years ago. Victorian carved graffiti caused smiles and some reflection on the wonderful location of the stone set at the base of a hillside in a deep valley. In 1850 the former British spy, Major W. Mounsey spent some time camped by the Stone and during this time carved his name backwards in Latin and also in Persian calligraphy wrote: *"I have sat two nights and so learnt patience."*

Berriedale Wood, the most northerly native woods in the British Isles. Photo Steve Price

The stone generated an interesting, if unsurprising, list of lichens and was a pleasant stop en-route to Berriedale Wood. This birch, aspen and willow woodland, with some hazel, is set in a gully on the south-eastern flanks of the hills that meet the sea as the massive cliffs of St John's Head (350m). At a latitude of 58° 54' N, it is the northernmost native woodland in the British Isles. The stream below and the rock gully and waterfalls above the wood-land added much to the day. Our epiphyte tally for the wood was 60 species, including a *Lobarion* element of *Degelia plumbea*, *Lobaria pulmonaria* and *Nephroma laevigatum*, and a species-poor *Graph-idion* with, for example, *Arthonia anombrophila* and *Graphis elegans* (both rare on rowan), *Pyrenula occidentalis* and *Thelotrema lepadinum*. Two additional species previously recorded from the wood, *Lecanora intumescens* and *L. jamesii* were not seen on this visit.

Kame Corrie, 23 August 2008

Having visited this huge corrie the mental image of Orkney will never be the same again. The impressive cliffs and steep gullies, were more reminiscent of the Scottish Highlands than the rolling hills of Orkney. The floor of the corrie was a thick mat of sphagnum, thankfully dry, with large tussocks of woodrush between huge boulders. The hard walking and scrambling was worth the effort. For some of the group it was easier to continue up the gullies to walk out over the 435m top of Cuilags. For others the return gave the chance to study lava exposures on return to the hostel. Overheard that same evening - question: 'how hairy was your gully?'. Reply: 'very steep and full of *Lepraria*'.

The gully's cutting had unexpected localized areas of calcareous rocks, home to 'pyrenocarps' such as *Atla alpina*, *Polyblastia cupularis*, *P. dermatodes*, *P. melaspora* and *P. schaereriana*, as well as the more familiar *Belonia nidarosiensis*, *Clauzadea monticola*, *Gyalecta jenensis*, *Opegrapha dolomitica* and *Protoblastenia rupestris*. The predominant non-calcareous rocks provided a goodly list but few surprises, although *Coccotrema citrinescens* was noted several times on vertical faces, and *Bunodophoron melanocarpum* and *Micarea xanthonica* were found on peaty turf. A prospective sample from a stunted, isolated rowan growing out of a cliff base, proved to be *Pyrenula laevigata*, a normally woodland denizen, but here in the open at its northernmost British location.

Stromness, 24 August 2008

Here on Orkney Mainland, whilst awaiting the ferry to Scrabster, a 'kindly elderly gentleman' in the group introduced some locals to the botanical basics of lichenology. Perhaps the young museum receptionist and the cyclist pensioner having been duly enthralled will now go on to form an Orkney Lichen Group.

End-piece: Mike Sutcliffe, one among many photographers at the meeting, sought permission from the group to show peoples faces on his lichens website. On reflection, being lichenologists, he should have asked permission to show bottoms.

Brian Coppins and Steve Price

	K & S	K C	Cuil	Ward	Berr	Rack	Mels	Aik	K B	Flash	W Gs	Gs	CC	H K	G N	C S	D S	G F	L N
Absconditella celata *						■													
Acarospora fuscata	■	■	■	■			■				■						■	■	
Acarospora smaragdula		■	■			■	■								■		■		
Acrocordia salweyi *							■												
Agonimia tristicula *		■																	
Alectoria nigricans			■	■															
Alectoria sarmentosa subsp. *vexillifera*				■															
Amandinea lecideina *						■													
Amandinea punctata					■	■	■												
Anaptychia runcinata						■	■												
Anisomeridium biforme					■														
Anisomeridium ranunculosporum *					■														
Arthonia anombrophila *					■														
Arthonia arthonioides *				■															
Arthonia didyma *					■														
Arthonia punctiformis		■			■														
Arthonia radiata		■		■	■														
Arthopyrenia analepta					■														
Aspicilia calcarea													■						
Aspicilia contorta subsp. *contorta* *																			■
Aspicilia grisea *						■													
Aspicilia laevata *											■								
Aspicilia leprosescens						■	■												
Atla alpina *		■																	
Bacidia inundata *					■														
Bacidia scopulicola							■												
Bacidia sp. *"hebridensis"* * 1							■												
Baeomyces rufus		■		■												■			
Belonia nidarosiensis		■																	
Bilimbia sabuletorum							■												
Bryoria fuscescens		■	■	■															
Bryoria subcana					■														
Buellia aethalea													■						
Buellia griseovirens						■	■												
Buellia stellulata						■													
Bunodophoron		■	■	■												■			

	K & S	K C	Cuil	Ward	Berr	Rack	Mels	Aik	K B	Flash	W Gs	Gs	CC	H K	G N	C S	D S	G F	L N
melanocarpum																			
Caloplaca arcis *						■	■					■	■	■					
Caloplaca arenaria *						■													
Caloplaca arnoldii *						■													
Caloplaca britannica *						■													
Caloplaca ceracea							■												
Caloplaca cerina var. *cerina*							■												
Caloplaca chlorina							■												
Caloplaca citrina s. str.				■		■	■					■	■	■					
Caloplaca crenularia		■		■		■	■												
Caloplaca crenulatella *							■							■					■
Caloplaca ferruginea				■	■														
Caloplaca flavescens							■							■					
Caloplaca flavocitrina *						■	■		■				■	■					■
Caloplaca holocarpa	■		■			■	■					■	■	■					■
Caloplaca littorea *						■													
Caloplaca marina						■	■			■				■					
Caloplaca maritima *						■	■												
Caloplaca microthallina						■	■												
Caloplaca scopularis *						■													
Caloplaca thallincola						■	■			■									
Caloplaca verruculifera						■	■												
Candelariella aurella forma *aurella*							■					■	■	■					■
Candelariella medians forma *medians*							■							■					
Candelariella vitellina forma *vitellina*						■	■												
Catapyrenium cinereum						■	■												
Catillaria aphana *							■												
Catillaria chalybeia var. *chalybeia*		■				■	■							■					■
Catillaria lenticularis							■					■	■	■					
Catillaria scotinodes *								■											
Cecidonia xenophana *				■															
Cercidospora epipolytropa						■													
Cetraria aculeata			■	■															
Cetraria islandica			■	■															
Cetraria muricata				■		■													

	K & S	K C	Cuil	Ward	Berr	Rack	Mels	Aik	K B	Flash	W Gs	Gs	CC	H K	G N	C S	D S	G F	L N
Cladonia arbuscula subsp. *squarrosa*	■	■	■	■			■												
Cladonia bellidiflora			■	■															
Cladonia cervicornis subsp. *cervicornis*	■	■	■		■		■												
Cladonia cervicornis subsp. *verticillata*				■															
Cladonia chlorophaea s. lat.		■	■		■		■												
Cladonia ciliata var. *ciliata*		■	■	■			■												
Cladonia ciliata var. *tenuis*		■	■	■		■	■												
Cladonia coniocraea				■	■														
Cladonia crispata var. *cetrariiformis*			■																
Cladonia diversa	■		■	■			■				■					■			
Cladonia fimbriata			■																
Cladonia firma							■												
Cladonia floerkeana			■	■			■												
Cladonia foliacea						■	■												
Cladonia furcata subsp. *furcata*	■		■	■		■	■												
Cladonia gracilis	■		■	■															
Cladonia humilis						■													
Cladonia macilenta					■		■												
Cladonia ochrochlora						■													
Cladonia polydactyla var. *polydactyla*				■	■	■					■					■			
Cladonia portentosa		■	■	■			■									■			
Cladonia pyxidata	■	■			■	■	■				■								
Cladonia rangiferina		■	■	■			■												
Cladonia rangiformis		■				■													
Cladonia squamosa			■																
Cladonia strepsilis	■		■	■												■			
Cladonia subcervicornis		■		■							■					■			
Cladonia uncialis subsp. *biuncialis*	■	■	■	■		■	■									■			
Clauzadea monticola *		■	■				■												
Cliostomum griffithii					■		■												
Cliostomum tenerum						■													

	K & S	K C	Cuil	Ward	Berr	Rack	Mels	Aik	K B	Flash	W Gs	Gs	CC	H K	G N	C S	D S	G F	L N
Coccotrema citrinescens *		■														■			
Collema auriforme		■					■												
Collema tenax var. *tenax*					■		■												
Collemopsidium halodytes * 2						■													
Cystocoleus ebeneus *		■		■	■											■			
Dactylospora parellaria *							■												
Degelia plumbea					■														
Dibaeis baeomyces			■	■		■										■			
Dimerella lutea *				■															
Diploicia canescens							■												
Diplotomma alboatrum						■	■		■	■			■						
Endococcus perpusillus *											■								
Ephebe lanata *		■																	
Evernia prunastri				■	■														
Fuscidea cyathoides var. *cyathoides*	■	■	■	■	■	■	■				■				■	■	■	■	
Fuscidea kochiana																	■		
Fuscidea lightfootii					■	■													
Fuscidea lygaea		■		■	■	■									■				
Fuscidea praeruptorum *		■																	
Fuscidea recensa *		■		■												■			
Graphis elegans *					■														
Gyalecta jenensis var. *jenensis* *		■			■														
Haematomma ochroleucum var. *porphyrium*		■		■							■							■	
Hypogymnia physodes	■		■	■	■	■	■												
Hypogymnia tubulosa	■			■		■													
Icmadophila ericetorum	■															■			
Ionaspis lacustris		■						■											
Lecania baeomma						■	■												
Lecania erysibe												■		■					
Lecania hutchinsiae						■													
Lecania rabenhorstii *						■	■							■					
Lecania subfuscula							■												
Lecanora actophila						■													

	K & S	K C	Cuil	Ward	Berr	Rack	Mels	Aik	K B	Flash	W Gs	Gs	CC	H K	G N	C S	D S	G F	L N
Lecanora albescens						■	■					■	■	■			■		■
Lecanora argentata *				■															
Lecanora atrosulphurea *				■															
Lecanora campestris subsp. *campestris*						■	■		■	■		■	■	■					■
Lecanora carpinea						■													
Lecanora chlarotera		■		■	■														
Lecanora confusa					■	■													
Lecanora dispersa						■	■		■			■		■					■
Lecanora expallens		■			■	■	■												
Lecanora farinaria						■													
Lecanora gangaleoides		■		■		■	■				■							■	
Lecanora helicopis						■	■			■									
Lecanora intricata		■	■	■			■				■						■		
Lecanora persimilis *					■	■													
Lecanora poliophaea							■												
Lecanora polytropa	■	■	■	■		■	■				■						■		
Lecanora pulicaris						■													
Lecanora rupicola var. *rupicola*											■								
Lecanora saligna *						■													
Lecanora semipallida *						■													■
Lecanora sulphurea		■				■	■				■		■						
Lecanora symmicta					■	■						■							
Lecanora zosterae						■	■												
Lecidea fuscoatra		■																	
Lecidea lactea s. str. *						■													
Lecidea lithophila		■		■											■				
Lecidea plana																		■	
Lecidella asema						■	■				■								
Lecidella elaeochroma forma *elaeochroma*		■		■	■	■	■												
Lecidella meiococca						■	■												
Lecidella scabra						■	■							■					
Lecidella stigmatea						■	■						■	■					
Lecidoma demissum *			■																
Lepraria ecorticata *		■		■												■			
Lepraria incana s. str.		■		■	■		■									■			
Lepraria lobificans		■		■	■	■	■						■						

	K & S	K C	Cuil	Ward	Berr	Rack	Mels	Aik	K B	Flash	W Gs	Gs	CC	H K	G N	C S	D S	G F	L N
Lepraria rigidula *					■														
Leptogium britannicum *						■	■												
Leptogium gelatinosum		■				■	■												
Leptogium lichenoides						■													
Lichenomphalia alpina *				■															
Lichenomphalia hudsoniana				■			■												
Lichenomphalia umbellifera			■	■															
Lichina confinis							■			■0									
Lichina pygmaea							■			■0									
Lobaria pulmonaria				■	■														
Megalaria pulverea *					■														
Melanelia fuliginosa subsp. *fuliginosa*						■	■										■		
Melanelia fuliginosa subsp. *glabratula*					■	■													
Melanelia subaurifera					■	■													
Micarea bauschiana *				■															
Micarea coppinsii *				■															
Micarea erratica						■													
Micarea leprosula				■															
Micarea lignaria var. *lignaria*		■	■	■		■	■												
Micarea lithinella *		■																	
Micarea micrococca		■			■		■												
Micarea peliocarpa				■															
Micarea xanthonica *		■																	
Miriquidica leucophaea																	■		
Moelleropsis nebulosa						■													
Muellerella lichenicola *							■												
Muellerella pygmaea *											■								
Mycoblastus caesius		■			■											■			
Mycoblastus fucatus *						■													
Mycoblastus sanguinarius forma *sanguinarius*				■															
Nephroma laevigatum					■														
Normandina pulchella					■														
Ochrolechia androgyna				■	■						■					■			

	K & S	K C	Cuil	Ward	Berr	Rack	Mels	Aik	K B	Flash	W Gs	Gs	CC	H K	G N	C S	D S	G F	L N
Ochrolechia frigida forma *frigida*	■		■	■															
Ochrolechia parella		■	■	■		■	■	■					■	■					
Ochrolechia tartarea	■	■	■	■							■							■	
Ochrolechia xanthostoma			■	■															
Opegrapha atra		■			■														
Opegrapha calcarea				■		■	■			■			■	■					
Opegrapha dolomitica *		■																	
Opegrapha gyrocarpa		■		■												■			
Opegrapha herbarum					■														
Opegrapha multipuncta		■				■													
Opegrapha niveoatra					■														
Opegrapha sorediifera					■														
Opegrapha zonata *		■									■					■			
Ophioparma ventosa			■	■													■		
Parmelia omphalodes	■	■		■			■										■	■	
Parmelia saxatilis	■	■	■	■	■	■	■				■					■		■	
Parmelia sulcata	■			■	■	■	■							■			■		
Parmeliella parvula					■														
Parmotrema perlatum					■														
Peltigera canina						■													
Peltigera hymenina				■		■	■												
Peltigera membranacea			■	■			■		■										
Peltigera praetextata *					■														
Peltigera rufescens						■													
Pertusaria amara forma *amara*		■		■	■	■													
Pertusaria aspergilla *		■																	
Pertusaria corallina		■	■	■	■		■									■	■		
Pertusaria flavicans *		■	■								■							■	
Pertusaria lactea *		■																	
Pertusaria lactescens		■			■	■	■				■								
Pertusaria leioplaca					■														
Pertusaria multipuncta					■														
Pertusaria oculata *				■															
Pertusaria pertusa					■	■	■												
Pertusaria pseudocorallina		■	■				■				■							■	
Pertusaria pupillaris					■														

	K & S	K C	Cuil	Ward	Berr	Rack	Mels	Aik	K B	Flash	W Gs	Gs	CC	H K	G N	C S	D S	G F	L N
Phaeophyscia orbicularis							■		■			■							■
Physcia adscendens							■												
Physcia aipolia				■	■														
Physcia caesia	■											■							■
Physcia tenella subsp. *tenella*						■	■												
Placynthiella icmalea				■		■	■												
Placynthiella uliginosa				■															
Placynthium nigrum									■										
Platismatia glauca		■	■	■	■														
Polyblastia cupularis		■																	
Polyblastia dermatodes *		■																	
Polyblastia melaspora *		■																	
Polyblastia schaereriana * 3		■			■														
Porina aenea					■														
Porina chlorotica forma *chlorotica*						■							■			■			
Porina linearis *													■						
Porpidia cinereoatra		■		■		■	■				■				■	■	■		
Porpidia crustulata		■		■	■	■									■		■		
Porpidia hydrophila		■			■														
Porpidia macrocarpa forma *macrocarpa*		■		■			■				■				■	■			
Porpidia melinodes *				■														■	
Porpidia platycarpoides						■	■	■								■			
Porpidia rugosa *		■																	
Porpidia soredizodes *		■		■	■														
Porpidia tuberculosa		■	■		■	■	■							■	■	■	■	■	
Pronectria fissuriprodiens *					■														
Protoblastenia rupestris		■		■					■										
Protopannaria pezizoides					■	■													
Protoparmelia badia			■	■							■							■	
Pseudevernia furfuracea var. *ceratea*	■		■	■															
Psilolechia lucida		■		■															
Psoroma hypnorum *						■													
Pycnothelia papillaria	■		■	■															
Pyrenula laevigata *		■																	
Pyrenula occidentalis *					■														

	K & S	K C	Cuil	Ward	Berr	Rack	Mels	Aik	K B	Flash	W Gs	Gs	CC	H K	G N	C S	D S	G F	L N
Ramalina cuspidata							■												
Ramalina farinacea				■	■	■	■												
Ramalina fastigiata				■															
Ramalina siliquosa	■	■		■		■	■						■			■		■	
Ramalina subfarinacea		■	■	■		■	■				■								
Rhizocarpon geographicum	■	■	■	■		■										■	■	■	
Rhizocarpon lecanorinum *																	■		
Rhizocarpon petraeum			■					■											
Rhizocarpon reductum		■		■		■	■								■	■	■		
Rhizocarpon richardii						■													
Rinodina gennarii						■	■					■		■					
Rinodina pyrina *						■													
Romjularia lurida *							■												
Sarcogyne regularis																	■		
Schaereria cinereorufa *				■															
Schaereria fuscocinerea			■																
Schismatomma umbrinum *				■															
Sclerococcum sphaerale *				■															
Scoliciosporum chlorococcum						■													
Scoliciosporum umbrinum		■	■	■	■	■	■				■				■		■		
Skyttea tephromelarum * 4						■	■												
Solenopsora vulturiensis						■	■												
Sphaerophorus fragilis		■			■														
Sphaerophorus globosus	■	■	■	■	■		■										■	■	
Stereocaulon evolutum *				■															
Stereocaulon vesuvianum var. *vesuvianum* *				■															
Stigmidium sp. 5							■												
Telogalla olivieri **							■												
Tephromela atra var. *atra*		■		■		■	■				■		■	■					
Thamnolia vermicularis subsp. *subuliformis*	■		■	■															
Thelotrema lepadinum				■	■														

	K & S	K C	Cuil	Ward	Berr	Rack	Mels	Aik	K B	Flash	W Gs	Gs	CC	H K	G N	C S	D S	G F	L N
Toninia aromatica						■	■							■			■		
Toninia sedifolia							■												
Trapelia coarctata		■			■														
Trapelia corticola *					■														
Trapelia glebulosa					■														
Trapelia placodioides					■						■								
Trapeliopsis gelatinosa				■															
Trapeliopsis granulosa				■															
Trapeliopsis pseudogranulosa *		■	■	■												■			
Tremolecia atrata			■	■															
Tuckermanopsis chlorophylla				■															
Tylothallia biformigera *				■															
Umbilicaria cylindrica			■	■															
Umbilicaria deusta *			■																
Umbilicaria proboscidea				■															
Umbilicaria torrefacta			■	■															
Usnea filipendula				■															
Usnea flammea *		■		■															
Usnea subfloridana	■	■		■	■	■													
Usnea wasmuthii					■														
Vahliella atlantica *						■													
Verrucaria aethiobola *								■											
Verrucaria elaeina *													■						
Verrucaria fuscella													■	■					
Verrucaria fusconigrescens						■	■							■			■		
Verrucaria internigrescens *						■		■											
Verrucaria macrostoma forma *macrostoma* *							■												
Verrucaria maura						■	■			■									
Verrucaria mucosa						■													
Verrucaria muralis			■			■	■						■	■					
Verrucaria nigrescens		■	■				■	■				■					■		■
Verrucaria viridula						■							■						
Xanthoria aureola						■	■						■						
Xanthoria candelaria s. str.	■					■													
Xanthoria parietina	■					■	■		■	■		■	■	■			■		■

	K & S	K C	Cuil	Ward	Berr	Rack	Mels	Aik	K B	Flash	W Gs	Gs	CC	H K	G N	C S	D S	G F	L N
Xanthoria polycarpa						■													
Xanthoria ucrainica						■	■					■							

Annotations:

* - new to Orkney (VC 111).

** - new to Scotland.

[1] – an apparently undescribed species, previously in the Outer Hebrides by Oliver Gilbert.

[2] – syn. *Pyrenocollema orustense* [not *P. halodytes* auct.].

[3] – syn. *P. theleodes* auct. p.max.p., *Sporodictyon schaererianum*.

[4] – this parasite of *Tephromela atra* is here considered distinct from *S. elachistophora*, which has *Tylothallia biformigera* as host.

[5] – on *Pertusaria pseudocorallina*.

Sites on Hoy as represented in Table 1.

1 K & S: S of Kame of Hoy , HY1904; Sui Fea, HY1903. Alt. 250–378 m.

2 K C: "Kame Corrie" – easternmost gully, HY204038; "Kame Corrie" - middle section, HY2003; "Kame Corrie" – SW, HY1903; "Kame Corrie" – W, HY1904. Alt. 150–250 m.

3 Cuil: Cuilags summit to Black Saddles, HY2003; Cuilags summit to Sandy Lochs, HY2103. Alt. 100–433 m.

4 Ward: Ward Hill – cliffs at NE, HY2303; Howes of Quoyawa, HY2302; Ward Hill – incl summit, HY2202; Ward Hill – SSW of summit, HY2201; Ward Hill – W end & Red Glen, HY2101. Alt. 150–479 m.

5 Berr: Berrie Dale, including Berriedale Wood, HY2001. Alt. 40–100 m

6 Rack: Rackwick, ND2099; Rackwick – by shore, ND1999; Rackwick – cliffs W of bay, ND1998; Rackwick – E side of bay, ND2098. Alt. 0–40 m.

7 Mels: Melsetter Farm – coast to SW, ND2688; Melsetter Kirk, ND 270894; Westlee Moor – coast, ND2588. Alt. 0–25 m.

8 Aik: Aikel of Flett, HY209050. Alt. 30 m.

9 K B: Kay Breck, HY201045. Alt. 85–105 m.

10 Flash: Flashes, HY2105. Alt. 0–10 m.

11 W Gs: Groups - W of, HY212043. Alt. 100 m.

12 Gs: Groups, HY218045. Alt. 65 m.

13 C C: Creekland Cemetery, HY235046. Alt. 5–15 m.

14 H K: Hoy Kirk, HY 233027; Hoy Outdoor Centre, HY233036. Alt. 60 m.

15 G N: Green Noses, HY266019. Alt. 80 m.

16 C S: Candle of the Sale, HY2701. Alt. 25–60 m.

17 D S: Dwarfie Stane, HY244004. Alt. 75 m.
18 G F: Grut Fea - E end, HY200013. Alt. 75–150 m.
19 L N: Ly Ness – pier, ND312946. Alt. 0–5 m.

Recording during the meeting was made at a 1 km square resolution, and the records have been entered into the Scottish Site Lichen Database (SSLD) in Recorder 6, and should be available via the NBN Gateway later in 2009. For this report the listings have been simplified and some of the recording sites have been amalgamated, as can be seen above.

FUTURE MEETINGS 2009-10

The 2010 programme of BLS field meetings will be announced as soon as possible on the Society's website, and full details will be included in the next issue of the *Bulletin*. If you've not already bought a copy, the new *Lichens of Great Britain and Ireland* will be available for direct purchase at most field meetings.

Autumn 2009 Field Meeting, Derbyshire

Thursday 8 – Monday 12 October 2009
Based in the village of Hartington, this meeting will focus primarily on the carboniferous limestone habitats of the Peak District. The abundance of cliffs, outcrops, screes, seepages, bedrock pedestals and lead rakes offered by the dales will be complemented by an especially arranged visit to the normally private Old Deer Park at Chatsworth House giving us privileged access to its 600 year old oak trees.

Outline programme:
Thurday 8 Oct. (evening): assemble
Friday 9 Oct.: BLS Council and other committee meetings
Saturday 10 Oct.: limestone lichens - sites to be finalised
Sunday 11 Oct.: limestone and lead rakes - sites to be finalised
Monday 12 Oct. (morning): The Old Deer Park, Chatsworth

The meeting will be based at YHA Hartington Hall (grid ref SK132603). This is a very luxurious hostel with a café, a restaurant and a bar that sells the locally brewed Hartington beer. For those not involved in committee meetings on Friday 9th the hostel is within easy walking distance of good lichen habitats. Further details of the hostel can be found on www.yha.org.uk.

30 beds in a number of single, twin and triple en-suite rooms (some with bunk beds) have been reserved for us – the cost b&b is around £28.00 per night. Double rooms and dormitory rooms are also available in the hostel but no beds in these have been reserved. Rooms should be booked (and paid for) direct with the hostel on

01298 84223 and not via the central YHA booking system. Advise the hostel beforehand if an evening meal is required on the day of arrival. The rooms will be held until the 1st June 2009, after which they will become available for public booking. Other types of accommodation can be found through the website www.visitpeakdistrict.com.

The nearest rail station is in Buxton, 20mins car drive to the north. There are infrequent bus services from Buxton which call at Hartington. See www.derbyshire.gov.uk/transport_roads for current timetables. If you have particular problems with transport please contact Steve Price (see below).

Please advise the local organiser Steve Price (rosnsteve@tiscali.co.uk or 01298 814830) and the BLS Field Meetings Secretary Ivan Pedley (ivan.pedley@gmail.com, tel. 0116 287 6886) if you plan to attend. More detailed information will be sent out to attendees shortly before the meeting.

Bristol Course in Lichenology: Lichens on Limestone – 2, 28 February 2010

Following the success of the previous running of this course, and due to popular demand, we are proud to announce a second weekend course tutored by Drs B.J. Coppins and D.J. Hill to be held at Bristol University Botanic Garden from 7.30pm on Friday 27 February to 4.30pm on Sunday 28 February 2010. The University Botanic Garden is located in Stoke Bishop where there is plenty of nearby parking.

The course will help lichenologists who want to get to know the lichen flora of limestone areas better and become more confident at finding the species present and identifying them reliably. The emphasis will be on linking an ecological understanding to the habitats in the field with laboratory work with material collected. The programme will start with an introduction to sites we will visit in the field, probably in the Mendips. Then we will consider how the habitats can be divided up into niches and their ecological characteristics with examples of the key species to be found. In the field we will learn how to approach these habitats in practice with the provisional identification of characteristic species that occur in these niches. In the field, we will learn how to collect small samples for laboratory study back for the purpose of confirming identities of field determinations or complete identification of unknowns. We will be using the new *Lichens of Great Britain and Ireland* book and learning the new features of this work. The Laboratory work will include training in microscopic examination and where appropriate any other methods such as those for lichen substances. The intention is a theme of developing specific skills rather than a general field meeting.

Fee: £25.00 (excluding any board and lodging and catering)

Come and hone your identification skills. Please contact David as soon as possible as the numbers will be strictly limited to 15 places. If you have been on it already, you are very welcome to come again!

If you are interested please contact *D.J.Hill@bris.ac.uk*, tel 01761 221576. Fuller details (with costs and will be sent out to all those expressing an interest.

(For other lichen courses held at the Botanic Garden see
http://www.bristol.ac.uk/Depts/BotanicGardens/about/education.htm)

IAL pre-conference field meeting: Lichens on the Atlantic West Coast of Scotland, July 2010

The International Association of Lichenology is organizing a field meeting in Kintail, Western Scotland for conference delegates from 24-31 July 2010, immediately prior to the 9th International Mycological Congress in Edinburgh that runs from 1 to 6 August 2010. According to the organizer, participants do not have to be IAL members, and while the event is primarily intended for those attending the conference there are no absolute rules.

A week's excursion is offered lichenising in the stunning scenery of western Scotland. The Scottish west coast has a hyper-oceanic climate, varied geology, low air pollution, and relatively large areas of natural and semi-natural habitat. The landscape is varied and impressive, with mountain summits rising steeply from the Atlantic coastline. This setting comprises a range of species-rich lichen assemblages which are considered to be unique in Europe, and which in some cases are globally rare. The excursion will aim to cater to specific interests, though is likely to comprise visits to old-growth woodland (hazel, oak, birch), rocky coastlines, basalt outcrops, prehistoric sites, and mountain summits. The excursion will provide an exciting opportunity for taxonomists to extend their biogeographic realm, for ecologists to explore lichen species and communities in this unique European context, and for everyone to sample a drop of the liquid gold. Sightings of rare wild haggis cannot be guaranteed.

The meeting will be centred on Kintail Base Camp, which is situated below Sgurr na Moraich, the last of the famous 'Five Sisters of Kintail', and Ben Attow (The Long Mountain). These spectacular mountains rise steeply from the shores of Loch Duich, offering some of the best hill walking in Britain. The Base is 5 minutes from the A87 with Glenelg and the Isle of Skye within easy reach. Kintail Base Camp provides a unique setting and was used successfully as part of the 'Rockers Workshop 2005', an international meeting of lichenologists with the focus on training Lichen Apprentices (Kintail was the second week of the 2005 Workshop).

Up to 20 can be accommodated in this excellent bunkhouse property. Five bedrooms with bunk beds - one two bedded, three four bedded and one six bedded - fully equipped kitchen, sitting room with wood-burning stove, dining room, drying room and laundry. Oil-fired central heating and wood burning stove.

The Excursion will be led by Dr Brian Coppins and Dr Chris Ellis (RBGE). A limited number of microscopes will be provided. A minibus will be available to take participants to different localities, to include woodland, montane and coastal sites. The mysterious Isle of Skye is on the agenda, with its mountains and woodlands. The Cost will be about £300 per person for the 7 days (includes all transport, all accommodation and most food). For more information contact Dr Christian Printzen at the email below.

Christian Printzen
Christian.Printzen@senckenberg.de

BBS Field Meeting, Northern Highlands, July/August 2010

Keith Raistrick (BLS member) is organizing the British Bryological Society Summer Meeting centred on some mountain and lowland habitats in vc106 East Ross. The Meeting is planned for either July or August 2010. They are at an early stage yet but (so far) sites would include Sgurr Mor in the Fannichs, probably Sgur na Lapaich in Glenstrathfarrer and a previously unvisited corrie on the N side of Ben Wyvis.

If anyone is interested, they should contact Keith at the email below.

Keith Raistrick
keith.corry1@btinternet.com

SOCIETY BUSINESS

Progress on a strategy for the Society

The Society has begun to look at its strategy for the future so that we can adapt and thrive in a changing environment. As a first step in this process, an invited group of members representing various strands of the Society met at the Natural History Museum on April 3rd to discuss the various issues which we need to address. That has produced an initial framework for development, on which we need all members to comment, add to and provide constructive criticism. The BLS has been conspicuously successful in support of lichens and lichenology – note especially the recording scheme and the new *Lichens of Great Britain and Ireland*. However, while there is no lack of vision, the age profile of the Society would cause considerable concern in a captive breeding programme and it remains difficult to secure a fair proportion of funds for lichens from both public and private sources.

The debate at the Natural History Museum fell into a number of areas and this account gives a flavour of the wide-ranging discussion which took place.

1. **How can we support new members and encourage them to become more proficient in lichenology?** Suggestions included:
   - providing mentors for beginners on field meetings
   - running short courses for beginners
   - forming local groups as an important way of developing the Society

2. **Publications.** We would welcome suggestions as to how the *Bulletin* might cater better for non-specialists, especially those new to the study of lichens. The *Lichenologist* is an academic journal of world standing that is the publication of choice for specialist articles on lichenology, and it provides a substantial income stream for the Society. The *Bulletin* has changed substantially over the past year or two, but could do much more to support the needs of non-specialists, encourage new members to get "stuck in" and attract non-members to the cause. What new features would be welcomed by members?

3. **Website.** The potential of the Website for providing a way of reaching out to new members and also the wider public should be further developed. Possibilities include developing identification aids, such as tiled screens focusing down increasingly on a species – name: description / key characters:

habitat / ecology: portrait photo / detailed structures: maps of distribution etc. This would be wonderful, but would need very substantial resources to establish and update. Some Societies are more advanced in their website management as for instance the Marine Conservation Society with its website 'Marlin'. It was also suggested that the Society consider featuring a blog on the website, as an interactive forum for exchanging views.

4. It was suggested that the Society may consider paying people for skills but not roles. An alternative strategy of sharing resources or expertise with similar societies might need to be considered. There might also be opportunities in due course to share secretarial or other functions.

5. **Financial Strategy.** The Society needs a financial strategy to provide a framework for our future activities. It should address three key aspects:
   - **Lichens** – what the Society can achieve on their behalf
   - **The Society** – our needs in running an efficient Society, liaising with other learned Societies
   - **Serving our Membership** – local groups, training courses, field meetings, publications etc

6. **In what ways can the Society influence the decline in lichenology in museums, universities and other institutions**? The decline in lichenology is part of a general decline in whole organism biology and taxonomy in the UK and elsewhere. As taxonomists are in Red Data Book terms Critically Endangered we need the equivalent of a species recovery scheme. There was support for developing lichen expertise at MSc level. The lichen apprentice scheme in Scotland had been very successful and the Society should explore the scope for developing it elsewhere in the country

7. **What do we need to do for lichens**? This includes implementing our Conservation Strategy adopted last year. This has identified the need for producing a publication describing communities where lichens are important, as the current National Vegetation Classification does not include accounts of epiphytic and saxicolous communities. This would be particularly helpful in conservation issues.

8. **Conservation Agencies.** We need to raise our profile with the Conservation Agencies as increasingly they are losing their in-house expertise on lower plants. In particular, the Society needs to spell out to the Conservation Agencies what we expect of them in terms of the conservation of key lichen areas.

9. **Links with other Societies.** We should explore whether we can develop closer links with the BMS, BBS, BSBI and Plantlife. Perhaps there is a role for a federation of specialist natural history societies (not just botany in its

traditional sense) with a voice that might be heard more easily by those holding the purse strings.

10. **Red Data Book.** With JNCC ceasing to have a pivotal role in the publication of Red Data Books there is a need for the Society to assume responsibility for that for lichens.

11. **The international aspect.** The name of the BLS suggests a focus on Britain but the Society has a global remit and is proud that so many overseas members choose to support us. Nearly half the membership lives outside of the UK. Are we providing you with what you want? Should the Society adopt a development role for lichenology, perhaps by considering projects abroad that would encourage the development of lichen knowledge in less-developed nations?

12. **Spreading the message - educating the public.** The Society is working through OPAL – OPen Air Laboratories (a UK lottery-funded project involving the public in science linked to themes of soil, air and water). Lichens are the main group linked to air. This has great potential to reach a much bigger audience, though there are dangers that we might not be able to meet expectations. Could we satisfy the needs of what might be hundreds of new members, all eager to learn new skills? The BLS carries out many other public outreach activities – for example a regular column in the *British Wildlife* magazine – but more is needed.

13. **The importance of our data.** The lichen recording scheme has a deservedly high profile among specialists but is run on a shoestring and few political or institutional decision-makers outside of the Society are aware of its significance. We should consider raising our profile politically so that our concerns are understood in these circles. The National Biodiversity Network is particularly interested in our work on lichen data and the role it might play in tracking the impact of climate change.

14. **Running the Society**. We will not be able to continue doing all we do unless posts are filled. It is increasingly difficult to find people who are able or willing to take on key roles. This is a particular concern at present as we have or will have vacancies for a number of posts including Secretary, Minutes Secretary, Assistant Treasurer (membership secretary), Field Meetings Secretary and Librarian. **It is your Society and crucial that if you value it and want it to continue to function, you are prepared to consider in what ways you might help.**

15. **Feedback.** As part of getting feedback from our members we will be sending out a questionnaire to gain your views. **When you receive it please fill it in and let us know what you think and in particular, what skills you may be able to offer the Society.** Feel free also to contact Council members

directly with your suggestions, and the *Bulletin* Editor will be very happy to make your (constructive!) views known to the wider Society through its pages.

Peter Lambley
President of the British Lichen Society
plambley@aol.com

Minutes of the 51st Annual General Meeting of the British Lichen Society, 10 January 2009, Royal Botanic Garden Edinburgh

1. Present:
Peter Lambley – President, Stephen Ward – Vice-President & Minuting Secretary, John Skinner – Treasurer, Anne Allen, Lesley Balfe, Brian Ballinger, Barbara Benfield, Ishpi Blatchley, Richard Brinklow, Paul Cannon, Brian Carlyle, Don Chapman, Brian Coppins, Sandy Coppins, Peter Crittenden, Linda Davies, Frank Dobson, Heidi Döring, John Douglass, Chris Edwards, Ian Evans, Anthony Fletcher, David Hawksworth, Mary Hickmott, David Hill, Barbara Hilton, Chris Hitch, Nick Hodgetts, Bob Hodgson, Gintaras Kantvilas, Vivyan Lisewski, Alison Meredith, Alan Orange, Don Palmer, Ivan Pedley, Steve Price, William Purvis, David Richardson, Neil Sanderson, Mark Seaward, Emmanüel Sérusiaux, Janet Simkin, Mike Simms, Cliff Smith, Mike Sutcliffe, Holger Thüs, Paul Whelan, Vanessa Winchester, Pat Wolseley, Ray Woods, Christopher Young.

Apologies
Peter James, Keri & Claire Dalby, Simon Davey, John David, Bryan Edwards, Jeremy Gray, Jacqui Middleton, Joy Ricketts, Ken Sandell.

Welcome
The President welcomed everyone to this AGM being held at the Royal Botanic Garden Edinburgh in honour of Brian Coppins. In particular, he welcomed overseas members Gintaras Kantvilas from Tasmania who had given such a splendid Dougal Swinscow lecture, Emmanüel Sérusiaux from Belgium and David Richardson from Canada.

The President thanked the Royal Botanic Garden Edinburgh for hosting the meeting, in particular Chris Ellis for all he had done to organise it.

Death
The President announced the death of Professor Vězda of the Botanical Institute in the Czechoslovak Academy of Sciences. Mark Seaward and Brian Coppins paid tribute to his work.

2. Minutes of the AGM held at Nettlecombe in January 2008
An amendment is required to the effect that Steve Price was proposed for Council by Ivan Pedley, seconded by Simon Davey.

The minutes were then **agreed** as a correct record. [The minutes were not to hand and, subject to amendment as above, will be signed as a correct record in due course.]

3. Matters arising. None

4. Officers and Committee Chair Reports

4.1 Peter Lambley, President
The Society may be 50 years old, but it is once more quickening its pace.

The Flora is almost complete and is due for publication in April. Its title is to be ***The Lichens of Great Britain & Ireland***. Peter thanked those who have played such a major role in seeing it through – Oliver Gilbert, Anthony Fletcher, Cliff Smith, Pat Wolseley, Peter James, André Aptroot and Brian Coppins. There was a round of applause in their honour.

Following the success of the Scottish data project, work is about to commence on entering the England & Wales dataset. Peter thanked David Hill and Janet Simkin for their patience and hard work in negotiating the contract to enable this work to proceed.

Preparations are progressing well for the Society's participation in the OPen Air Laboratory (OPAL) project. Peter thanked in particular Barbara Hilton who chairs the Society's Education and Promotions Committee, Linda Davies of Imperial College London, Director of OPAL, and Pat Wolseley who maintains our important link for BLS participation at the Natural History Museum.

As previous Editor of the Bulletin, Peter thanked the current editor Paul Cannon for bringing about its transformation into new-look colour format. The Lichenologist continues to be a journal of international reknown and Peter thanked Peter Crittenden and his editorial team in maintaining this reputation.

Field Meetings, as Peter James once remarked, are of fundamental importance and Peter thanked Ivan Pedley for organising a successful programme.

It is timely at the 50th anniversary for the Society to consider its policy and strategy for the next 50 years. There is now a smaller proportion of members working in academic institutions. This year sees the retirement of Brian Coppins from the RBGE and Anthony Fletcher from the Leicestershire County Council Museums Service. There is to be a meeting in April to consider the way forward. Should any local groups wish to meet in advance of that and forward their ideas by email to Peter, he would be delighted to receive them.

This year is the 250th anniversary of the birth of Sir James Edward Smith , the founder of the Linnaean Society and the 200th anniversary of Charles Darwin. Meanwhile taxonomy, the science of naming things, is going through a lean time. Through the efforts of Anthony Fletcher, the Society is making its concerns known.

Peter concluded by thanking all officers of the Society.

4.2 John Skinner, Treasurer

John circulated copies of the *Trustees' Annual Report for the period 1st July 2007 to 30th June 2008*.

John thanked the RBGE for help with offsetting the costs of holding the AGM. He also thanked Don Chapman for his work as Assistant Treasurer and Membership Secretary, Don Palmer with trade sales, Brian Green with other sales and Frank Dobson for his advice. Don Chapman has indicated his wish to stand down as of the 2010 AGM and John offered support and training to anyone volunteering for the role.

Ivan Pedley wished to see Tom Chester's bequest of £4,000 identified in future reports. Barbara Hilton undertook to report to Council at its April meeting how an element of this bequest has been spent to support work in schools during 2008. It was felt that restricted funds such as Tom's bequest and the Wallace-Burnet-Gilbert fund should be identified in the accounts. Bob Hodgson asked whether such restricted funds would accrue interest; Frank Dobson said that in previous years it had been policy to draw only the interest and leave the capital intact. Ray Woods suggested the Society should hold its funds in as flexible a form as possible, minimising those which are restricted. Mark Seaward suggested this should be reviewed each year by Council. John felt that as the restricted funds form such a small proportion of the Society's overall funds, this was not an issue.

David Hawksworth observed that the British Mycological Society's approach to this issue is to maintain a benefactors' fund and to read out at the AGM those who have contributed. However, Mary Hickmott felt it important that the Society should continue to honour the names of Alice Burnet, Nancy Wallace and Oliver Gilbert. David Hawksworth said this overlooked the largest legacy of all – that of Trudy Sydes who had left her house to the Society at a value of £120,000.

Following a proposal by Don Palmer the accounts were unanimously approved by show of hands and John Skinner was thanked.

4.3 Barbara Hilton, Education and Promotions Committee

Barbara thanked her Committee, in particular Ishpi Blatchley (and others, especially Ivan Pedley) for their input on churchyard matters, Jacqui Middleton for overseeing the webpage and Frank Dobson for continuing to produce educational material such as FSC Aidgap keys at an impressive rate, the latest being *Lichens of Heaths and Moors* by Frank Dobson (2008) available from the FSC, price £2.75. Frank has also recently provided a double-page spread on lichens for *Watchword*, the magazine for young people who are junior members of Wildlife Trusts: this has a print-run of 90,000!

Barbara introduced Linda Davies, Programme Director of OPAL. Linda described the overall purpose of OPAL (OPen Air Laboratories Project) - community engagement in natural history, alongside academic research. Linda encouraged BLS members to participate in local activities (for example, to support or provide a field day in their area, assisting with the identification of the nine target lichen species in the Air Quality project). Interested BLS members are invited to contact her.

Sandy Coppins drew attention to various publications which have recently become available:

- *The Montane Heathland Lichen Guide* by Andrea Britton [2008]
- *The Ecology & Management of Ear-lobed Dog-lichen [Peltigera lepidophora] & other lichens of rocky river edges* by John Douglass [2008]
- *The Wild & Wonderful World of Scottish Lichens*. This is aimed at children and published by Plantlife Scotland 2008 with help from Sandy & Brian Coppins, Dave Genney, Mike Sutcliffe, Laurie Campbell & John Douglas.
- *Lichens of Atlantic Woodland:*
  1. *Lichens on ash, hazel, willow, rowan and old oak*
  2. *Lichens on birch, alder and oak.*

4.4 David Hill, Data Committee

David introduced Janet Simkin to outline progress with the England & Wales data contract. Initial joint-funding of £59500 has been obtained from the National Biodiversity Network, Natural England, Countryside Council for Wales, Biological Records Centre and the Welsh Biodiversity Partnership. This is about 50% of what will be required, so work is to be prioritised with the most important data sets entered first. BLS input will be largely in kind. The work is expected to last 3 years.

David Hill and Peter Lambley had recently met the NBN Chief Executive who is particularly interested in any data sets showing evidence of climate change.

Ray Woods enquired whether it is proposed to report loss of lichen habitats, e.g. sometimes it is known that specific locations have been lost / destroyed. Janet will be logging such data in the context of the Threatened Lichen Database. It was noted that 'loss' does not necessarily equate to 'absence'. However, factors such as substrate may indicate that fundamental changes are taking place on occasion, e.g. a lichen formerly on bark may in future be found on rock.

4.5 Mark Seaward, Mapping Scheme

David Hill thanked Mark for running the Mapping Scheme for the past 40 years. Mark said he is still 'open for business' but anticipates that once the England & Wales data set has been entered his scheme will be subsumed. However, the Mapping Scheme retains one advantage over the more modern data-sets and that is that it provides an overview of known British and Irish distribution – important since the two form part of one biogeograghical unit. Lichen Ireland will in due course be pivotal in enabling a more detailed overview to be taken.

4.6 Bryan Edwards, Conservation Committee

In Bryan's absence, Stephen Ward, Secretary to the Committee read out the following report. 'The Committee met twice during the year, and in a new initiative in June met in Kendal, Cumbria in the hope of visiting the limestone pavements in the area, but were thwarted by the torrential rain which was so prominent during the summer. Most of the Committee's projects are ongoing including assigning boundaries to the Important Plant Areas identified by Plantlife, Conservation Evaluations led by Ray Woods and the production of the Conservation Strategy, which will be published in early 2009.

Other issues include the potential harvesting of *Lobaria pulmonaria* for the medicinal trade Scotland. This emotive topic will be debated further in 2009. It is

hoped that *Lobaria pulmonaria* will be added to Schedule 8 of the Wildlife and Countryside Act which is currently under review. Also in Scotland the Committee wrote an objection to the proposed, and now approved, release of the European Beaver into Knapdale, Argyll. The Society was not the only non-government conservation organisation to object. The Committee felt strongly that this was the wrong site for this mammal, particularly in view of evidence of actual damage carried out in forests in parts of Eastern Europe. Members of the Committee are now working closely with SNH to provide a methodology for monitoring the impacts of the beavers in an area of international importance for its lichen flora.

I would like to thank the members of the Committee for all their work during the year, especially Stephen Ward for taking the minutes and circulating papers and emails, Neil Sanderson for dealing with woodland issues, Ishpi Blatchley representing the Churchyard Committee and Brian and Sandy Coppins for dealing with matters in Scotland, and also to those representing the Conservation Agencies; Dave Genney for SNH, Mike Sutcliffe for Natural England and Ray Woods for Plantlife.

Dr Chris Cheffings retired from the Committee following a change of roles within JNCC, and on behalf of the Conservation Committee and the BLS I would like to thank her for all her help and support over the last few years. She will continue to liaise with the Society through the Data Committee.'

4.7 Anthony Fletcher

[i] Flora Committee

When Tony was President 8 years ago, the need for a new flora was identified. A committee was charged to see the task through which, at that time, was thought to be a 2 year project. Now the project is all but complete. Tony would like to thank:

- the editorial board – Oliver Gilbert, Peter James, Pat Wolseley, Cliff Smith, Brian Coppins, André Aptroot
- the proof readers
- the dozens of contributors throughout the world

[ii] Librarian

The Library must move from its present location with Leicestershire County Council Museum service when Tony retires on 29th March. A new location has yet to be found.

[iii] Biosciences Federation / Institute of Biology

Members of the BSF and IoB have voted to amalgamate and form a new organisation expected to be called '*The Royal Society of Biology'*. This will be a historic occasion and the Society can be proud of its role as a founder member. The advantages of a single society lie in the presentation of a united voice for British biology, allowing biologists to have more influence on Government policy.

Tony represented the Society at three BSF task forces in 2008: '*A Vision for Science and Society*', *'The Bioscience Skills Shortage*' and the House of Lords Select Committee '*Systematics and Taxonomy: the Follow-up*' – see *Bulletin* **103**. The decline of taxonomy has generated media interest, with Paul Cannon being interviewed on BBC Radio's 'Today'. The Government has now produced its response to the HoL

report and this will be reviewed in the next Bulletin. Meanwhile, the Government response can be read on www.publications.parliament.uk/pa/ld/ldsctech.htm.

An ongoing consultation concerns free online access to journals. The Society will have to decide whether or not to put *The Lichenologist* online in this manner, but the major concern is who pays? Peter Crittenden has been heavily involved and will guide us in due course.

Tony thanked Peter Crittenden, Barbara Hilton, Stephen Ward and Pat Wolseley for their help during the year.

In the ensuing discussion, Brian Coppins said it was important not to confuse taxonomy as a science with identification skills. Taxonomists need the facilities provided by academic institutions such as museums and botanic gardens. There are only about 7,000 taxonomists worldwide. The Society should lobby such organisations to maintain their expertise. The launch of the new flora on 4th April would present an opportunity to do so. Should extra Government funding be forthcoming, it will be important for the Society to support museums and botanic gardens in their bid for funds, since universities will also be keen to compete.

4.8 Peter Crittenden, Senior Editor

2008 was another strong year for The Lichenologist with 97 papers submitted – the largest number ever. Peter wished to thank Tony Braithwaite for his sterling support as managing editor, also his team of proof-readers for their dedication and efficiency: Barbara Benfield, Alan Orange and Brian Coppins. Peter was congratulated by the Society on the high standards continually attained by the journal.

4.9 Paul Cannon, Bulletin Editor

Compared with *The Lichenologist* which is aimed at professionals, the *Bulletin* is for members who might range from newly venturing lichenologists to those with years of experience. A key challenge is not just recruiting new members, but retaining them. The *Bulletin* can serve as a vehicle for alternative views. Paul welcomes constructive feedback. The introduction of colour had been a significant change and Paul hopes in due course to adopt an all-colour format. Peter Crittenden reported that the *Bulletin* is also greatly enjoyed overseas.

4.10 Richard Brinklow, Curator

Richard has continued to issue specimens on loan, particularly from the Nancy Wallace collection, which is one of the mainstays of the herbarium.

5. Field Meetings 2009

Ivan Pedley began by thanking Simon Davey who had been FMS for the previous 3-4 years. Council's decision to refund expenses for the FMS should mean that the role can now be undertaken by a young and dynamic member of the Society.

Ivan thanked the Leaders for 2008: Peter Lambley re Falmouth, Chris Ellis re Hoy and Janet Simkin re Wooler for three outstanding field meetings. The Hoy visit had been particularly memorable for its age spectrum, ranging from Simon Ellis at 6 months to Leslie from London, aged 83.

For 2009, the venues are the Burren [for which Lichen Ireland have sourced a contribution of £1,000 towards the Society's expenses], Raasay – a Scottish island with very varied geology, and Derbyshire.

For 2010, one suggestion is a visit to eastern England.

As a follow-up to the Wooler meeting, Janet reported that the Society's findings for the lower part of Braida Quarry had led to its being accepted by Northumberland County Council as a Site of Nature Conservation Interest, which would be a factor taken into account when assessing the application for the site to become a caravan park.

6. Election of Officers

The current post-holders were elected en masse by show of hands.

6.1 Secretary

This post is being filled on a temporary basis by Stephen Ward as minuting secretary and Pat Wolseley fielding enquiries which come to the Natural History Museum. Expressions of interest in fulfilling the role of Secretary will be welcome.

6.2 Librarian

This post will become vacant with Tony Fletcher's retirement. Filling the vacancy is in abeyance pending knowing where the library will be housed in future.

6.3 Assistant Treasurer and Membership Secretary

Don Chapman will be standing down at the 2010 AGM; expressions of interest in fulfilling this role will be welcome.

6.4 Council Members

Four members due to stand down were thanked: John Douglass, Chris Ellis, Peter James & Don Palmer.

Four new members were put forward:

Nominee	Proposer	Seconder
Linda Davies	William Purvis	Ishpi Blatchley
Ken Sandell	Ivan Pedley	Pat Wolseley
Mike Simms	Stephen Ward	Brian Coppins
Holger Thüs	Pat Wolseley	David Hill

All four were unanimously approved by show of hands.

7. Proposal for establishing a new category of membership

Peter Crittenden proposed that, in the light of comments made to him at the Asilomar conference by those who run paperless offices, there should be a new category of member who can opt to receive the journals in electronic form. CUP has informed him that this is now common practice for some journals.

The AGM agreed to this proposal in principle [proposer Peter Crittenden, seconder David Hill], and authorised Council to look at the structure of membership categories and entitlements as a whole and bring a package of proposals to the 2010 AGM.

8. Any other Business
None.

9. Date and place of next AGM
The venue is to be either Norwich or somewhere in the County of Norfolk. The date was left flexible whilst Peter Lambley locates a suitable venue, but will be either Saturday the 9th or 16th January 2010 [subsequently confirmed as on 16 January at the Castle Museum, Norwich; see below].

The 2011 AGM is to be held at the Natural History Museum.

Brian Coppins – an appreciation

Brian Coppins retired from the Royal Botanic Garden, Edinburgh in March 2009. To note this occasion the last day of the Annual General meeting of the British Lichen Society was retained to offer an appreciation to Brian, followed by a celebratory dinner. Many attended who had benefited from Brian's companionship and unstinted help with a whole range of lichen topics, especially in offering a reliable ID of unfamiliar lichens. In the afternoon 3 lectures were given to demonstrate the depth and breadth of Brian's interests and influence, the first by Rebecca Yahr, a recent addition to the staff at RBG Edinburgh. She dealt with molecular aspects of lichen phylogeny, ingeniously weaving illustrations of road signs as props into her talk; she was standing in at short notice for Jolanta Miadlikowska. Rebecca indicated that her lecture was for the non-Brian's in the audience who were unable to carry, unlike him, the incredible amount of knowledge he carries around in this head, able to call on it at the drop of a hat. This allowed the audience with the help of many beautiful colour illustrations to get their head around the new molecular approaches to lichen systematics. The second presentation was by Prof. John Birks, University of Bergen and London School of Economics and covered 'The Ecology of Hazel in Native British Woodlands', a plant community which Brian along with his wife, Sandy, has demonstrated to be unique and worthy of conservation efforts. John brought before the audience new information on the likely origin of British hazel woodland and supported Brian's strong feelings. After coffee Dr David Genney, Conservation Officer for "Lower Plants" (lichens, mosses and fungi) for Scottish Natural Heritage, Inverness presented a paper on conservation in Scotland of lichens, the pit-falls, challenges and future, liberally illustrated with pictures - many of Brian 'doing his thing' in the woods and on mountain slopes, a theme expanded in a series of photos in a display in the conference room, along with a few more intimate moments in Brian's long, active and eventful career.

In the evening friends and colleagues joined Brian and Sandy for an unforgettable, informal dinner which over 100 attended. After the meal David Hawksworth briefly covered Brian's early days, Roy Watling his work at the RBGE where Brian was employed to look initially at ascomycetes, Mark Seaward on his breadth of ecological knowledge and his recording skills and Ray Edwards on Brian's conservation activities. The evening concluded with appreciation from the President of the BLS and officials present thanking him and Sandy for their inspirational tutoring and guidance over many years, which has allowed the British Lichen Society to make such great strides in its development. What else to celebrate this tremendous contribution but a bottle of malt whisky and a large spiced sausage!

Roy Watling
caledonianmyc@blueyonder.co.uk

The Swinscow lecture 2009

The Swinscow Lecture is delivered every two years in honour of Dougal Swinscow, the inspiration behind the founding of the BLS more than 50 years ago. This year the lecture was given by Dr Gintaras Kantvilas (*Tasmanian Museum and Art Gallery, Australia*).

An Antipodean Odyssey – The Lichens of Tasmania

Tasmania is an island, located at about 42° South. Its latitude thus corresponds roughly to that of the cities of Boston, Rome and Barcelona, or to the islands of Hokkaido and Corsica. So by way of comparison, all of the United Kingdom is considerably closer to the pole than Tasmania. Customary map projections of Tasmania show it as an extremity of the Australian land mass, which indeed it is. Some authors have even described Tasmania as an "occasional island". Bass Strait which separates Tasmania from Australia comes and goes in geological time, and formed most recently only some 20,000 years ago. However, Tasmania is better envisaged as an isolated island in the Southern Ocean, where the clockwise circumpolar current and wind stream link it with other former components of Gondwanaland, namely New Zealand, southern South America and Antarctica. The island has an area of approximately 68000 km^2, and is thus roughly comparable in area to Ireland.

Tasmania has an ancient pre-European history, with the earliest evidence of human habitation dating back more than 40000 years. These were essentially the same people who inhabited mainland Australia, and periods of low sea-level in glacial times allowed for unimpeded movement between Tasmania and Australia across a narrow land-bridge in the eastern Bass Strait. By the time Europeans

discovered Tasmania, the island had been cut off for some 20000 years and its indigenous population of hunter-gatherers, estimated to number about 5000 people, was termed 'the most isolated people on earth'. Within 30 years of European settlement in 1803, the aboriginal population was decimated by disease, warfare and displacement. Today no full-blooded Tasmanian aboriginals remain, although several thousand people claim Tasmanian aboriginal ancestry.

Although first discovered and named Van Diemens Land by the Dutch navigator Abel Tasman in 1642, Tasmania received no further European contact until the late 18th Century. The main reason for this was not only Tasman's unflattering report, but also that it was not on traditional sailing routes to Asia, which followed either Magellan's route from the East across the Pacific, or the Dutch route north-eastward across the Indian Ocean. It was not until 1772, when the British navigators James Cook and Tobias Furneaux established an easterly route into the Pacific via the Cape of Good Hope, that Tasmania began to receive regular visitors. Perhaps the most famous of these after Cook himself was Captain William Bligh, whose ship the Bounty anchored in Tasmanian waters in 1788 en route to Tahiti and the famous mutiny.

This was the golden age of European expansion, and all of these early expeditions had a botanist on board. The first botanical visitor of note to Tasmania was the French botanist-adventurer Labillardiere in the 1790s. His contributions to Tasmanian botany are enormous, in that he wrote the first flora for the island and described the first Tasmanian lichen, the first mosses, liverworts, algae and fungi, as well as many iconic vascular plant genera. Thanks to him, one of our most beautiful and characteristic lichens, *Cladia retipora*, was brought into the literature.

The second lichen collector to Tasmania was the Scottish botanist Robert Brown. Here in Britain, Brown is probably best remembered as the first Keeper of Botany at the Natural History Museum, or for his pioneering work in microscopy and plant classification. However, he holds a particular place in Tasmanian history. In 1804, he was present during the European settlement of Tasmania and the founding of Hobart. He climbed nearby Mt Wellington repeatedly, and was thus the first botanist to venture into alpine areas, known for their rich and abundant lichens. Brown's sole published lichenological contribution was a list of lichens common to Tasmania and Europe. He clearly misinterpreted a lot of species, for he records lichens such as *Evernia prunastri* which does not occur in Tasmania. Curiously, as far as lichens go, he seemed more taken with things he found familiar rather than things unique and exotic.

Nearly half a century later, in 1840, Joseph Dalton Hooker visited Tasmania in the course of his exploration of the subantarctic region. His *Flora Tasmaniae* contains a beautifully illustrated account of the lichens by Churchill Babington and William Mitten. But again, most of the species mentioned were ones that the authors were already familiar with from New Zealand and Europe, and very few new lichens were described from Tasmania. Incidentally, one of the most interesting aspects of Hooker's Flora is that in its introduction it gives a very detailed explanation of Darwin's theory of evolution – the first explicit acknowledgement of Darwinism by a leading scientist anywhere in the world. It was Hooker's inspiration and that of his father William before him, that saw the development in Tasmania of an active core

of botanist/collectors amongst the early colonists. Tasmania was a diverse society in these early years. The colony was a dumping ground for convicts, who outnumbered free settlers by more than seven to one. It was also the periphery of the world for political and social exiles, such as Jacobites, Luddites, and the Young Irish. It was also a lawless place where war with the indigenous population raged, and the hinterland was roamed by escaped felons called 'bush-rangers'. Incredibly, amidst this turmoil, science and the arts flourished. The first scientific society was formed in 1838, and a decade later morphed into the Royal Society of Tasmania, the first 'Royal Society' outside of Britain. A scientific journal was published from 1842 and continues to this day, distributed to libraries all over the world. An active correspondence with the learned men of Europe saw a steady flow of specimens: plant, animal, anthropological and geological. The main repositiories of Britain all contain substantial numbers of specimens from Tasmania dating from this era.

Tasmania is a remarkable place. It has a topography so rugged that some have observed that it would be the size of a continent if rolled out flat. The highest peak is a mere 1617m, with most peaks only 1000 to 1200m high, but they are very, very numerous. The geology is complex, and a glance at even a simplified geological map reveals a mosaic of different colours. There are two main geological provenances. The West consists of intensely folded and sculptured, metamorphosed, pre-Carboniferous sediments, over which are formed highly infertile, usually very shallow organic soils. The East and centre are dominated by heavily faulted sills and dykes of Jurasic dolerite that intruded into Permian and Triassic sediments, and form a landcape of block-like peaks, columns that we locals call organ pipes, and isolated tors. There is very little surface limestone. Dolerite deserves special mention. Tasmania has more of this intrusive igneous rock than probably any other place on earth. It is a marvellous lichen substrate even if it breaks your heart, your elbow and your resolve to collect from. And it is rich in oddities. Two of our most prominent species – ones that have featured in the foreground of umpteen wilderness photographs – are actually undescribed taxa.

The island features steep ecological gradients and sharp vegetation boundaries, shaped by the impacts of geology, rainfall and fire. Fire in particular is important and has left a massive legacy in the landscape. Rainfall ranges from 4000mm per annum in the West, to less than 500mm in parts of the South-East. Areas of maximum and minimum rainfall can be less than 100 km apart. Being an island, Tasmania also has an extensive and for the most part wild coastline. The tidal range, however, is relatively narrow, mostly 1–1.5 m, and consequently the littoral zonation of orange *Caloplaca* and black *Verrucaria* zones is often patchy, or at least in comparison with Britain.

Tasmania is thus an excellent setting for biological research. More than 40% of the island is in formal nature conservation reserves. Probably another third is in a semi-natural state, and managed mainly for forestry, mining and light grazing. The remainder is highly modified agricultural or urban land. Conservation issues dominate the political landscape in a highly polarised society of half a million inhabitants, where a considerable slice of the economy depends on natural resource

extraction, and an equally considerable slice depends on an at times vague 'clean green' image of enlightened gentle folk and fine produce in a largely unspoilt landscape.

It has some of the largest tracts of cool temperate rainforest in the world, dominated mainly by *Nothofagus*, and the most extensive peatlands in Australasia. These are essentially blanket bogs whose origins lie to a large extent in millenia of fire-stick activities by the aboriginals.

I have been collecting, recording and describing lichens since 1980, when I made my first, rather scrappy collections, and sent them to Peter James in London. It has been an exciting Odyssey since then, perhaps not as fraught with dangers as Homer's original one, but with a fair share of Cyclopses, difficult navigation between the whirlpools of mediocrity and the monsters of bureaucracy, the allure of a few sirens, and a great deal of personal satisfaction.

Pseudocyphellaria spp.

Tasmania's lichen flora numbers about 1000 species, according to the latest checklist, which is maintained for the whole of Australia by Patrick McCarthy in Canberra. However, it is a highly moveable feast. In my early years, one spent as much time weeding out erroneous records from the checklist as adding new ones to it. The last 15 years or so, however, have been mainly about additions, and probably more than 20 species are added each year. Some are new to science, whereas others are first records of species known elsewhere. I imagine that eventually our flora will be similar in size to that of the United Kingdom's.

Menegazzia platytrema

The biogeographical connections in our flora are many and

varied, and mean that any new discovery requires trawling the literature and herbaria from far and wide. Obviously the closest connections are with mainland Australia, and to nearby New Zealand, two former partners in the ancient supercontinent of Gondwana. These Gondwanan connections are carried over to southern South America, and Alan Fryday who works on collections from there and I seem to delight in discovering each other's taxa on our respective patches.

The classic Gondwana lichens that are most often cited are the large, showy macrolichen genera that dominate cool temperate rainforests. Huge, dinner-plate-sized *Pseudocyphellaria* species (see p. 89) have excited visitors since the 18th century. Ecologically and functionally, these are our answer to your *Lobaria*.

Other genera with similar distributions and visual impact are *Menegazzia*, of which we have about 25 species, with numerous endemics. It is characterised by having holes in the upper surface. *Menegazzia* (see p. 89) was one of Peter James' favourite groups. Another prominent genus is *Bunodophoron*, which features apothecia that are mazaedia, with an exposed black spore mass. However, there are many smaller, or less conspicuous genera that display the same distributions, such as *Metus*, a relative of *Cladonia* and *Pycnothelia*, *Sagenidium*, which is like a woolly *Lecanactis*, *Leifidium*, which is unrelated to but reminiscent of a *Cladina*, and *Roccellinastrum*, another byssoid genus that occurs mainly on the leaves of conifers.

Metus conglomeratus

Another feature of the flora is the large number of *Pannariaceae*. In the past, the many species with a green photobiont were all classified in *Psoroma*, but today they have been migrated to other genera. One remarkable species with a green photobiont also produces soredia containing blue-green cyanobacteria (see right), arising from its cephalodia.

Not all the so-called Gondwanan lichens are rainforest epiphytes. In the treeless peatlands and highland areas, there are many species of *Siphula*, which has been one of the groups I have specialised in, growing on banks of peat or in crevices in boulders. There is also the recent segregate of *Siphula*, *Parasiphula*. And there is *Cladia*, which is our version of your reindeer lichens. It is characterised by having holes in its hollow,

Pannaria durietzii

Cladonia-like thallus. Tasmania is a world centre of speciation for this genus. Of the 12 known species, we have 10, of which five are endemic. Furthermore, the widespread and variable *Cladia aggregata* displays a degree of chemical variation in Tasmania, unmatched anywhere else in the world. It is strange that this large and conspicuous genus has undergone so much evolution in our tiny corner of the world. There are also many otherwise large and widespread genera that have individual species with these classical austral distributions, such as *Micarea magellanica* and *Mycobilimbia australis*.

Cladia retipora (see p. 87)

It is the Gondwanan species that seem to excite most lichenologists, but there are other, equally important biogeographic connections. As I stated before, Tasmania's physical links to the Australian mainland have been extended and recent, and there are stark similarities in vegetation, especially in the drier, eastern parts of the island. Here occur eucalypt forests and woodlands, sometimes with tall, broad-leaved understoreys, or with low shrubby understoreys, or with open, savanah-like grassy understoreys.

Xanthoparmelia congesta

Eucalyptus may be the quintessential Australian plant, but hot on its heels, surely, is the lichen genus *Xanthoparmelia*, which has undergone remarkable speciation in these open, rocky habitats. With about 90 species, it is by far Tasmania's largest lichen genus. It displays an amazing range of morphologies, from subcrustose to foliose to almost fruticose. Today, on the basis of the latest molecular results, the genus includes the brown species which were once in the genus *Neofuscelia*, as well as the grey ones, which were once *Paraparmelia*.

Xanthoparmelia continues to provide some of the greatest taxonomic headaches, despite my having first hand access to the help and collaboration of my good friend Jack Elix, architect of much of the *Xanthoparmelia* taxonomy. The questions remain of how to reconcile the amazing morphological variation such as lobe width, lobe adnation and undersurface colour, with the presence or absence of vegetative propagules, and with a tantalising level of chemical variation. What makes the

problem more urgent is that species of *Xanthoparmelia* are amongst some of our rarest and most endangered species, this one being not only one of the rarest but also the prettiest. And the habitats many of them occur in are some of the most fragile.

Another typically 'Australian' lichen in these habitats is

Heterodea muelleri (wet and dry thalli)

Siphulella coralloidea (see p. 95)

Heterodea, which changes from a rather featureless and hard-to-spot blob when dry, to a conspicuous bright green foliose thallus when wet. The eucalypts themselves are mostly poor lichen substrates because of having bark that is shed annually, but eucalypt charcoal of which there is an abundance due to regular fires, is excellent. One very typical inhabitant of charcoal is *Thysanothecium*, with curious semi-pendulous, umbrella-like podetia. It associates with a myriad of crusts from such genera as *Hertelidea*, *Ramboldia* and *Trapeliopsis*. Much of the epiphytic flora in these forests is found on the understorey trees and shrubs, where there many species of *Parmeliaceae* and *Ramalina*.

Jarmania scoliciosporoides (see p. 95)

Tasmania is actually the southern terminus of not only

the Australian continent but also of a from-time-to-time continuous land mass that extends from the Malesian tropics. Consequently, in the sheltered, mild and moist gullies of eastern Tasmania, there occurs a distinctly tropical-flavoured flora, perhaps recalling an age when Tasmania was warmer and wetter. Here lurk such genera as *Coenogonium*, forming bright mats of yellowish cotton-wool, as well as a small but not insignificant foliicolous flora dominated by *Byssoloma*, *Porina*, *Enterographa* and other genera. In a study of this biome some years ago, Pat McCarthy, Antonin Vezda and I recorded 25 species – hardly significant when compared to some of the inventories from the tropics, but nevertheless a curious and noteworthy assemblage of species. Tasmania is also the southernmost outpost for several mainly tropical genera such as *Relicina*, a yellowish *Parmelia*-like lichen fringed beautifully with a black rim, and *Coccocarpia*, which is reminiscent of but unrelated to *Degelia*.

Perhaps one of the more remarkable biogeographic connections in our flora are with temperate areas of the Northern Hemisphere. There are many macrolichens shared between our two regions, not the least from *Cladonia*, but also *Teloschistes chrysophthalmus***,** a species local along our coasts. There also tend to be heaps of pairs of near-relatives and look-alikes. However, it is the crustose component of this 'pan-temperate' element that is particularly diverse.

I recall my first trip to a Scottish oak wood with Brian and Sandy Coppins in 1994, when I think they were struck by just how many of the tiny 'crusts' I knew and recognised, and I by the fact that the flora of these woods was so similar to what I had been studying in *Nothofagus* forests in Tasmania. There are certainly many physical and ecological attributes common to your forests and ours, not least in the occurrence of what I call 'old dry trunk' lichens. As well as species of *Lecanactis* and *Cliostomum*, we share many species of the *Caliciales*, as well as many *Micarea* species. The number of taxa in common is astounding and continues to grow. Most recently I turned up *Arthothelium macounii* in Tasmania, which occurs in Scotland and British Columbia, and *Schaereria dolodes*, which was thought to be endemic to the Pacific North-West of North America, but has now turned up not only in Tasmania but also, I am told, in Norway. It means that identifying unknown crustose lichens in Tasmania requires a very wide search for possible names, and why tapping the encyclopedic knowledge of fellows like Brian is vital, even for someone living at the other end of the earth. Believe it or not, but the book that I recommend in my part of the world as the most useful for crustose lichens is not the New Zealand volume or even the Australian flora, but the British one. However, it is not all one way traffic - for example *Parmentaria chilense* is a species found in Scotland but based on a Southern Hemisphere type!

One of the least species rich of the main biogeographical elements in Tasmania appears, perhaps surprisingly, to be the bipolar one; that is, species that occur primarily at each of the poles with scattered occurrences along the world's mountain chains. Textbook examples of such species are probably *Thamnolia vermicularis* and some of the *Umbilicaria* species. However, whereas bipolar species are present in Tasmania, they are few and mostly highly localised. When my good friend Peter Crittenden was seeking material of *Ochrolechia frigida*, I had to trek to the highest,

remotest peaks and still let him down. *Umbilicaria descussata* occurs in Tasmania, as far as I know, only as two thalli on a couple of rock tors, *Cetraria islandica* is listed as a rare and threatened species and *Alectoria nigricans* is extremely rare and localised.

I think the issue is that Tasmania, although mountainous, is altogether too mild, too wet and too maritime. The area of continental alpine country is very, very small, and what we term an 'alpine' flora in Tasmania is largely dominated by species that prefer treeless environments where fires are infrequent, as distinct from essentially very cold, montane ones. In the case of bipolar lichens, there is often the perception that the Southern Hemisphere is somehow the 'outpost' for essentially northern hemisphere taxa, not that there is ever much evidence for the direction of the migration. Certainly there are numerous examples of genera that have their centre of speciation in the far Southern Hemisphere, and with just a few outliers in the North. Good examples are the genera *Neuropogon* and *Placopsis*.

Thus far in my presentation, I have been proudly displaying the beautiful bits of Tasmania, and the dramatic or unusual elements of our flora. I should, however, confess that not all of Tasmania is a pristine wilderness, crammed to the gills with remarkable lichens. Sadly and inevitably, some of it is highly modified, and man has left a heavy footprint on much of its landscape. Consequently we have areas of lichen desert, e.g. as the consequence of copper smelting. And there is a significant flora of weedy lichens that occurs on introduced trees, on man-made substrates and in disturbed habitats. For example, nutrient enriched agricultural and residential areas are dominated by *Xanthoria parietina* and *Physcia adscendens*. On breaking up some concrete in my back yard once, I was excited to discover a swathe of new records for the island: *Sarcogyne regularis*, *Lecidella stigmatea*, *Candelariella aurella*, all things you would find on concrete anywhere, including Britain. There is also much for the churchyard enthusiast. In the course of a project monitoring the recovery of lichens after logging in native forests, I encountered many 'Northern Hemisphere weeds', such as *Steinia geophana* and a *Thelocarpon*, growing on a rock cairn, both for the first time.

The Tasmanian lichen flora is probably as threatened as any other. We have 30 lichens currently on our Red List, and the number is so small only because of the difficulty in preparing the data necessary for listing more, and the laborious and sadly unsympathetic political response to that data, regardless of its scientific veracity. You may also be surprised to learn that featured on our rare and threatened lists are not just exotic Southern Hemisphere endemics, but also many species probably familiar to you, such as *Hypotrachyna laevigata* and *Teloschistes flavicans*. For these lichens, Tasmania represents the very periphery of their distribution, and they are very localised in very specialised niches.

However, I don't think that that rather bleak note is appropriate to conclude this presentation. For that I should return briefly to the theme of what makes Tasmania special and and its lichen flora fascinating. Today, the proportion of lichen endemics for Tasmania stands at around 10%. This figure has been more or less stable for some considerable time, but its constituents are highly fluid. New and exciting discoveries

are constantly coming to light: a record of a previously overlooked species (usually an endemic from somewhere else) or a new species, that is almost inevitably found somewhere else soon after its description is published. The oddities may be found in the least-expected places, such as *Chroodiscus asteliae*, which was found on the dead leaves of a native, sward forming lily. It seems that until all places are equally investigated, and the collections sifted and compared, any estimate of endemism will be provisional. However, in comparison to a comparable area over here, such as Scotland or Ireland, 10 % is probably pretty high.

The endemics are scattered through the flora with seemingly little pattern. Many are from small groups that have been studied in detail in Tasmania but not elsewhere; for example *Bactrospora, Porina, Rimularia*. These may well turn up elsewhere when similarly detailed studies are undertaken. But there are also what I consider genuine endemics, for the the fact remains that Tasmania has some unique habitats that support some unique species.

At the genus level, endemism is very small, and Tasmania has only two endemic lichen genera. There is *Siphulella,* an amazing thing. In nature it grows on steep soil banks along creeks or in seepage lines on gravelly Precambrian-derived soils. In the 1960s, a road into the south-west wilderness produced a lot of road cuttings in this soil type, and for a couple of decades we watched odd yellowish crustose circles appearing on the banks. Then a few years ago, these 'blossomed' into this amazing lichen.

Our other endemic genus is the soon to be published *Meridianelia,* the editor of the Lichenologist permitting of course. This lichen is most closely related to your *Elixia flexella*. However, there are some "almost endemic genera" including *Austropeltum*, an alpine, soil-growing *Psora*-like lichen with blackberry-like fruits, and *Wawea*. Both also occur in New Zealand. There is also *Pseudoramonia***,** shared with Venezuela; this has apothecia that occur at the tips of rather knobbly isidia. And there is *Jarmania***,** shared (for now) with mainland Australia, and named in honour of my colleague Jean Jarman whose photographs and computer skills have helped produce tonight's Powerpoint presentation. Not surprisingly, the endemic species tend to be concentrated in the more unusual, more typically Tasmanian habitats, the wet forests and the moutains.

More than 25 years after I began my odyssey, I often look with some satisfaction at the number of Tasmanian lichens that can now be identified, the areas that have been surveyed, species listed and so on. And also at the number of colleagues that I count amongst my closest friends, some of whom are here tonight. But a huge amount remains to be done, and as the only resident lichenologist in Tasmania, working not in a teaching University but in a State Museum, and with colleagues on the mainland of Australia too few to muster a four for tennis or bridge, the task is daunting. Almost any excursion to an interesting place, if only for recreation, any detailed study of a place or vegetation type, or an investigation of a taxonomic group, is certain to produce some hitherto unknown lichen or unanticipated taxonomic problem. The task of collecting, documenting and describing is paramount, but also important is conservation work, ecology and, not least, promotion of our discipline to the decision makers and the public at large. In our small Tasmanian community, that means

weaving our science into other disciplines, which is largely what I have attempted tonight. It has been a privilege to have the opportunity to give you a glimpse of the island that I love, and of the flora I am passionate about. Thank you very much for your invitation and for your attention.

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Report for 2008 - Biosciences Federation and Institute of Biology. Creation of a New Organisation for the Biosciences

Members of both the BSF and IoB have voted to proceed with the amalgamation of both societies and to form a new organisation, to be launched in 2009. It is expected to be called 'The Royal Society of Biology', subject to Her Majesty The Queen's approval. The formation of a Royal Society is a historic occasion and the BLS should be proud of its role as a founder member. The advantages of a single society lie in the presentation of a united voice for British Biology, paralleling the Royal Societies of Chemistry, Physics, and so on. It will allow Biology to have a more authoritative influence on Government policy. On a more practical level, the new society will have large office space in The Strand, with meeting rooms available to members and member organisations. It is expected that the new organisation will become active on a more regional basis. It is particularly stressed that member organisations like ours, with a high proportion of amateurs, are especially welcome and our activities will be promoted as far as possible. It is important therefore, that our society takes advantage of these new and exciting opportunities.

However, the two organisations have already been combining forces. A joint 'IoB/BSF Environment, Agriculture and Sustainability Committee' has operated for some time and has responded to over a dozen government consultations in the past year. Particularly exciting is its organisation of a high profile, 3-day Symposium, 29 April to 1st May, in London, entitled '*Valuing our Life Support Systems'*. This is based on the 'Ecosystem Services' approach to man and the environment. Many influential speakers will be there and participants will be able to join break-out groups and contribute to the published proceedings.

As BLS representative I attended three BSF task forces during the year: '*A Vision for Science and Society*', *'The Bioscience Skills Shortage*' and the House of Lords Select Committee '*Systematics and Taxonomy: the Follow-up*'. I also provided an independent BLS response, which was quoted-from several times in the HL report, and have already written on the latter (*BLS Bulletin* **103**: 2-6). Concerns on the decline of taxonomy have generated much interest, even in the media. Paul Cannon was interviewed on BBC Radio's 'Today' and I had a half-hour slot on local radio. HM Government has now produced its response to the HL report and I will review this in the next BLS Bulletin.

An important and ongoing consultation concerns policies for 'Open Access to Journals', that is, free, online access to journal articles. Many medical and senior science journals have now gone this way. BLS members were made aware of the issue and were invited to take part in an online public survey early in 2008 (see *BLS Bulletin* **103**: 21-22). One day the BLS will have to make a decision whether or not to make the *Lichenologist* free-to-access online, but the major concern will be, who pays? Peter Crittenden has been heavily involved and will surely guide us in due course. Other consultation responses were forwarded to our Conservation, Education and Promotions Committees and to the Lichenologist editor.

Among many other initiatives, the IoB has started a policy project entitled 'Early-stage Research Careers'. This will identify the concerns of young biologists and try to improve perceptions of the relative status of academic research and that in the non-academic sector.

To close, this has been an important year for both organisations. I feel that both are sympathetic with the concerns that Lichenologists have for the future and are anxious to improve the situation. What they need from us is ideas to feed into their agendas, and we should get them in as early as possible.

I am grateful for the help and support of Peter Crittenden, Barbara Hilton, Stephen Ward and Pat Wolseley during the year. For current information on events and services of the Biosciences Federation and Institute of Biology please consult the websites www.bsf.ac.uk and www.iob.org.

Anthony Fletcher
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Honorary Members

Under the terms of our constitution, the Society may choose to honour distinguished lichenologists and / or persons who have rendered valuable service to the Society by electing them as Honorary Members. They enjoy the same benefits as ordinary members but pay no subscription. Their number should not exceed 2.5% of the total membership. BLS Membership currently stands at 670, allowing for 17 members to be honoured. With the recent death of Prof. A. Vězda [obituary to appear in *The Lichenologist*], there are 14 Honorary Members: Dr T. Ahti, Dr D.D. Awasthi, Dr D.H. Brown, Dr Brian Coppins, Frank Dobson, Prof. David Hawksworth, Peter James, Prof. Otto Lange, Jack Laundon, Prof. R. Santesson, Prof. Mark Seaward, Prof. Sir D.C. Smith, Prof. Per Magnus Jørgensen and Pat Wolseley. Thus 3 further members could be honoured should the Society so wish.

Honorary Membership is exceptional, only awarded on merit. It is not awarded on an annual basis, but it is nevertheless timely to consider the nomination procedure. Council wishes to make this more open as follows. Nominations may be made to Prof. Mark Seaward at any time with the support of 5 other members.

Nominations will only be considered if they are in writing and include:

- name and address of nominee
- brief *résumé* of the nominee's career to date (featuring lichenological work)
- statement of reason the nominee should be honoured
- names and addresses of the nominator and of the five other members supporting the nomination

Nominations will then be considered by the Honorary Members Committee [HMC] comprising Honorary Members under the Chairmanship of Prof. Mark Seaward. Recommendations from the HMC will be subject to approval by Council and elected on a majority vote of those present and voting at a General Meeting of the Society. Where a newly elected Honorary Member is unable to attend a General Meeting, the HMC may choose to make the actual award at an appropriate occasion such as an International Meeting of Lichenologists / Mycologists.

Mark Seaward
M.R.D.Seaward@Bradford.ac.uk

The Ursula Duncan Award

The Ursula Duncan Award is made in recognition of those who have rendered valuable service to the Society or whose work on lichens is of outstanding merit. Ursula Duncan (1910-1985) was one of the most eminent British lichenologists of the 20th century. At a time when there were few lichenologists to learn from she developed a remarkable knowledge, culminating in the first modern book on British lichens *"A Guide to the Study of Lichens"* published in 1959 within a year of the formation of the Society of which she was a founder member. The second edition in 1970 was for many the standard flora until *"The Lichen Flora of Great Britain and Ireland"* was published in 1992. Modest and never seeking fame, she is seen by many as bridging the years from the first part of the 20th century with Annie Lorraine Smith and the modern era in which the Society has fostered such a great expansion of interest in lichens. The award rewards the encouragement of others which was so much part of Ursula's own nature.

Up to two awards can made in any one year but as none were made at the January 2009 AGM, it is timely to remind members of the nomination procedure. Nominations may be submitted to the Secretary up to 2 weeks before the Autumn meeting of Council, i.e. this year by Friday 25th September. They can be made by any full member of the Society with the support of 5 other members; those submitted late will be held over to the following year. Nominations and nominators must be kept strictly confidential.

Nominations will only be considered if they are in writing and include:

- name and address of nominee
- brief *résumé* of the nominee's career to date (featuring lichenological work)
- statement of reason the nominee should receive the Award

- names and addresses of the nominator and of the five other members supporting the nomination

Nominations will be considered by Council at its Autumn Meeting. Where Council agrees to make an award, this will be presented at the AGM.

Previous recipients are Tom Chester, David Richardson, Francis Rose, Jeremy Gray, Mark Seaward, Oliver Gilbert, Peter James, Brian Coppins, Frank Dobson, Tony Fletcher, Sandy Coppins, Jack Laundon, Barbara Hilton and Janet Simkin.

So – if you consider there is a member who should be nominated, please submit your case by email as outlined above to arrive no later than Friday 25th September.

Stephen Ward
sdward@eircom.net

Advance notice of the AGM 2010

The next AGM of the Society will take place in Norwich, Norfolk on Saturday 16th January 2010 at the Castle Museum. As usual there will be a buffet on the evening before though details of the venue are still to be confirmed. Council will meet on the 15th in the afternoon again at a venue to be confirmed. The theme of the lectures in the afternoon will be on lichens of coastal and inland sand and shingle.

One of the city's famous landmarks Norwich Castle was built by the Normans as a Royal Palace 900 years ago, and used as a prison from the 14th century before becoming a museum in 1894. Norwich was the second largest city in England in the Middle Ages and has a magnificent cathedral and wealth of medieval churches. Also of interest is the house where Sir James Edward Smith lived and where the collections of Linnaeus were housed after their purchase from his widow by Smith. William Jackson Hooker was also born in the city.

To get to Norwich there is a half hourly train service from London Liverpool Street, and an hourly one from Cambridge. There are also services from the Midlands and North via Peterborough. There are cheap flights to Norwich airport from a number of places including Edinburgh, Aberdeen, Exeter, Manchester and Amsterdam. Stansted Airport is about 90 minutes away by car. The Castle Museum is in the centre of Norwich and most buses stop at the foot of the Castle Mound. Parking is possible in the vicinity but is not cheap for a day and the option of park and ride is recommended. The Castle is about 10 minutes walk from the station. For details of accommodation see www.visitnorwich.co.uk or contact me for a list.

There will be an excursion on Sunday 17th January to Winterton Dunes and a church and an additional excursion on Monday 18th January if any one is interested to the North Norfolk coast. Full details of the meeting will appear in the Winter *Bulletin*.

Peter Lambley
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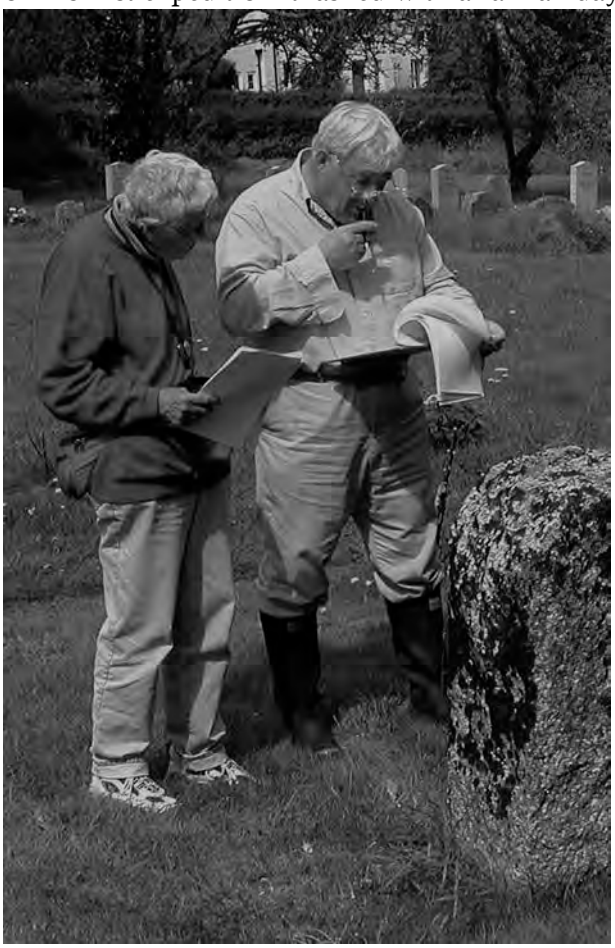
Obituary: Jeremy M. Gray 1937-2009

The death of Jeremy Gray has deprived the British Lichen Society of one of its most hard-working, dedicated and enthusiastic members. He first became interested in lichens in 1988 when he was looking for a new natural history subject to satisfy his great interest in photography. He had previously tried, and rejected, ferns as 'just green and boring', so decided to attend an FSC lichen course in Pembroke. Although on his first expedition it lashed with a rain all day, in the evening he had a number of superb photographs and declared that he had found the subject for which he was looking. He joined the BLS and, following the sudden death of the Treasurer Noel Tallowin, agreed to take on the vacant position of Assistant Treasurer and Membership Secretary. All this just three months after he had joined the Society, a fact that worried some members of Council but their concerns were unfounded; Jeremy soon proved that his appointment was a very good decision. He immediately wrote a computer program to manage the membership records and also came up with many innovations such as 3 and 5 year membership subscriptions. In addition he took on the responsibility of sales to members, and in his usual manner quickly added new items to give members a better service. These included the car sticker and, possibly after his early experiences of lichens, a waterproof notebook!



Jeremy Gray with Ann Allen working on a churchyard project for schools

The BLS was finding that to keep up with the needs of modern data recording it required a purpose built computer program for recording lichens. After deciding that the current version of Recorder was not suitable for our needs, we started working with Mike Thurner to develop his data recording program BioBase to meet our needs. Much of the detailed work to make the interface and program fit our specification was done by Jeremy in co-operation with Mike Thurner. The resulting program was used successfully by the Society for over 10 years and is indeed still

used by a number of members. However, it later became apparent that to develop the program further someone with more detailed and broader knowledge of Databases was required. Jeremy always said that the best thing that he ever did for the BLS was to persuade Janet Simkin to take over from him and continue the development of lichen data recording. His interest in computing also led him to set up the BLS website and our web address of 'www.theBLS.org.uk' was Jeremy's work. He maintained and further developed this site for a number of years.

In 2001 the Society considered that it required another award for meritorious service in addition to Honorary Membership and Jeremy volunteered to investigate a number of options. It was subsequently decided by Council that his idea of an inscribed serpentine paperweight was the most suitable and, right up to his death, it was Jeremy who organised the production of these awards (the Ursula Duncan Award). It is fitting that he was himself presented with this award for his services to the BLS at the AGM in January 2003.

He will probably be best remembered for his photography, and it is appropriate that the new Flora has examples of his work on both the front and back covers. Part of the secret of the high quality of all his photographs was the care that he took with each one. He always carried a heavy tripod and a complete assortment of camera bodies and lenses in a bag that most people found that they could hardly lift, let alone carry for miles across bogs and moors and up mountains that he seemed to do with ease. It was not uncommon to find him halfway up a tree, complete with tripod and equipment. On finding a suitable subject he would spend some time looking for the best specimen of the species, his trail being marked by coloured map-pins marking possible ones to photograph. Having decided on the specimen he would use tweezers to carefully remove any small objects that might detract from the perfect image. The result of all this work was not only a perfect representation of the species but also a work of art. By the time he had captured the image the rest of the party might be several hills away but somehow he always managed to relocate the group. He also loved the tradition of afternoon tea and at about 4.00 pm he would often set out with a few other like-minded friends to obtain a cup. It did not matter that this might take him miles out of the way, or that it involved minor roads and rough tracks; if it took him through deep puddles, which he delighted in taking at full speed, so much the better.

Another of his great talents was the accurate use of written English, and many of the BLS publications show his influence. His many years as master at the Preparatory Department attached to Taunton School showed in his corrections of spelling and grammar. Woe betide anyone who used a 'that' when it should have been a 'which'. The membership lists that are produced at intervals were his idea, the first one was a solo effort and the format has been used ever since. He played a major role in designing BLS advertisements and lichen leaflets, as for RHS Rosemoor. A fitting memorial to him is the much admired BLS Anniversary Calendar where most of the preparation and layout were Jeremy's work.

He was member of the BLS Council for a number of years and made valuable contributions to many of the decisions. Often, when a discussion appeared to be getting bogged down, he would make a suggestion that resolved the difficulty. On field meetings it soon became known that he was an early bird, rising before six, but

if anyone rang him for his opinion on a subject after nine pm they quickly felt his wrath. At any other time, whatever the problem, you could be sure that he would always be willing to help in any way that he could.

Outside the BLS his many interests included singing madrigals, and, in particular, gardening. His gardens in Taunton, Perranuthnoe and Shaftesbury were delightful and reflected his great horticultural skill. In particular, it was remarkable how he managed to create a superb garden in very difficult conditions on the Cornish coast. The site was not very large, on a steep hill that contained an old capped mine shaft. It was also exposed to spray from the nearby sea but still he managed to produce a very fine garden. As usual with Jeremy, he had made sure that he had researched the problem in meticulous detail before he started. On all the BLS field meetings he attended he came equipped with a list of specialist garden centres in the area and made sure that he visited them all during his stay, often not just to buy but more to increase his knowledge. Last year at the Cornwall meeting he was keen to persuade the other BLS members to visit more of the fine gardens in the district that were open. To him they had the triple blessing of having lichens in abundance, offering interesting gardening ideas, and of course, the probability of cafes serving cream teas!

He died peacefully on the morning of 11th March a few months after discovering that he was suffering from liver cancer. He used this short period to purchase a house at Tetbury to ensure that his wife Ursula would be near her family. He was never to live in the house himself as he died in the week of the removal. His funeral, held in Taunton on 27th March, was attended by a very large number of people including fourteen from the BLS, a measure of the respect and affection in which he was held by family, friends and colleagues. His ashes will be interred at Kingston St. Mary, Taunton, in sight of the house in which he spent his youth. His death is a great loss to the Society and our sympathy goes out to his wife Ursula and the family. He was a wonderful man and a great friend to many of us.

Frank Dobson

Jeremy Gray's library

Many of you will already be aware of Jeremy Gray's death in March of this year. It was Jeremy's wish that his books relating to lichens and other effects be sold to members — half the proceeds be going to cancer research, half to the Society's funds. A list of these books will be emailed (or mailed—SAE please!) to anyone interested in making an offers (ivan.pedley@gmail.com). The books include complete runs of *The Lichenologist* and the *Bulletin* (although at the time of writing this these need to be verified), together with copies of Wirth (the single volume edition and later two volume edition) Brodo et al. *Lichens of North America,* Dobson –all editions; and many

others of interest. There is in addition a library of books related to bryophytes that might be of interest to any of you with a wider interest in cryptogams.

Also for sale are two Leitz slide projectors (Pradovit 153's—one from Tom Chester's effects) and two Bisley 10 drawer document filing cabinets (brown and fawn in colour); external dimensions 67cm (h) x 41 cm (d)x 28cm (w) each drawer 24cm (w) and 5cm (h). The drawers have detachable plastic inserts that are moulded into 16 compartments suitable for specimens.

The books and cabinets etc. could be delivered to the Autumn Field Meeting in Derbyshire or to the AGM.

All these effects will be sold to the highest bidder but suggested values will be included with the lists.

Ivan Pedley
ivan.pedley@gmail.com

Payment methods for *LICHENS OF GREAT BRITAIN AND IRELAND*

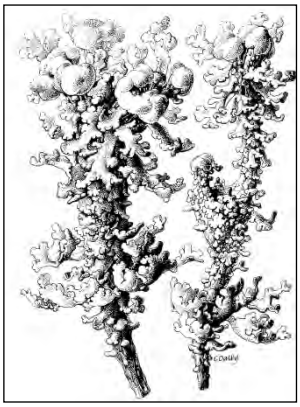
Those wishing to purchase a copy of the above book can send the form included in the accompanying flyer along with a sterling cheque for the appropriate amount (drawn on a British bank) to Richmond Publishing Co. Ltd. Foreign members can buy the book through internet companies such as Amazon and NHBS, but they will not be able to process the member discount. Payment by credit/debit card is also possible (but not Amex or similar) with Richmond Publishing, but they do not have secure internet payment facilities and you will need to contact them first at *rpc@richmond.co.uk* to establish how much postage will be charged. You will then be requested to phone or send details by email (card-holders name, address to which the card is registered, card number, expiry date and 3-digit security code). You are strongly recommended to split the details between two separate emails as an added security measure. Please ensure that your BLS membership is paid up-to-date before claiming the discount!

PUBLICATIONS AND OTHER ITEMS FOR SALE

(Subject to availability)

For publications and other items please send orders to:
Brian Green, 3 Tyn y Coed, Carneddi, Bethseda, Gwynedd LL57 3SF, UK (email mrgreen@wdsl.co.uk). Cheques in Sterling should be made payable to **'The British Lichen Society**', and drawn on a UK bank or on a bank with a UK branch or agent. It is regretted that owing to the now high postage costs, all orders of BLS publications excluding very small items i.e. postcards, car stickers and free literature, now require a £2 postage fee. Overseas mail will be charged at cost, please consult before making a payment. Purchases in US$ can be made through the Americas Treasurer: US Dollar rates are double the Sterling Rate. Cheques in US$ should be made out to 'British Lichen Society' and sent to J W Hinds, 254 Forest Avenue, Orono, Maine 04473-3202, USA. *Overseas members may also pay by direct transfer into the Society's UK bank account. Please contact Brian Green for details if you wish to pay by this method.* When ordering items through the post, please allow a month for delivery, as many items have to be ordered specially, or in bulk.

CLAIRE DALBY, LICHEN GREETINGS CARDS



Beautifully illustrated greetings cards by Claire Dalby. Now for sale through BLS merchandise. Price £3 for a set of 8 different designs (blank inside) including: *Cladonia bellidiflora, C. cervicornis* subsp. *verticillata, Cornicularia normoerica, Physcia aipolia, Ramalina cuspidata, Solenopsora candicans, Sphaerophorus globosus, Stereocaulon dactylophyllum.*

PUBLICATIONS

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

Fascicle 2 (*Cladonia* Part 1: 59 species): members £7.50; non-members £10.00.

Fascicle 3: The Foliose Physciaceae (*Anaptychia, Heterodermia, Hyperphyscia, Phaeophyscia, Physcia, Physconia, Tornabea*), *Arctomia, Lobaria, Massalongia, Pseudocyphellaria, Psoroma, Solorina, Sticta, Teloschistes*: members £7.50; non-members £10.00.

Fascicle 4: *Cavernularia, Degelia, Lepraria, Leproloma, Moelleropsis, Pannaria, Parmeliella*: members £7.50; non-members £10.00.

Fascicle 5: *Aquatic lichens and Cladonia* (part 2): members £8.00; non-members £10.00.

Fascicle 6: *Caloplaca*: members £8.00; non-members £10.00.

Identification of Parmelia Ach. [UK species] on CD-Rom - ISBN 0 9523049 4 5. Members £8.00; non-members £13.00; multiple users at one site £24.00.

Microchemical Methods for the identification of Lichens. Members £8.00; non-members £11.00 (Airmail, additional at cost).

Lichens & Air Pollution (James): 28 page Booklet; £1.50.

Key to Lichens and Air Pollution (Dobson): £2.00.

Lichens on Rocky Shores. A1 Dalby 'Wallchart' £6.00; A4 laminated Dalby 'Wallchart' £1.50.

Key to Lichens on Rocky Shores (Dobson): £2.00.

Taxonomy, Evolution and Classification of Lichens and related Fungi Proceedings of the symposium, London 10-11 January 1998 (reprinted from *The Lichenologist* Vol. 30): members £8.00; non-members £13.00.

Bibliographic Guide to the Lichen Floras of the World (Edn 2; Hawksworth & Ahti (reprint from *The Lichenologist* Vol. 22 Part 1): £2.00.

Checklist of British Lichen-forming, Lichenicolous and Allied Fungi (Hawksworth, James & Coppins, 1980): £2.00.

Checklist of Lichens of Great Britain and Ireland (Coppins, 2002): members £7.00; non-members £9.00.

Lichen Habitat Management Handbook: members £10; non-members £15.00.

Surveying and report writing for Lichenologists (Guidelines for surveyors, consultants and commissioning agencies): members £10.00; non-members £15.00.

The Lichen Hunters (Gilbert, 2004): £8.50.

Horizons in Lichenology (Dalby, Hawksworth & Jury, 1988): £3.50.

Aide Mémoire: Usnea (James): members £3.90; non-members £5.90.

A Field Key to Common Churchyard Lichens (Dobson): members £7.00; non-members £8.00.

A Guide to common churchyard Lichens (Dobson): £2.50.

A Conservation Evaluation of British Lichens (Woods & Coppins): members £4.00; non-members £6.00.

Indices of Ecological Continuity for Woodland Epiphytic Lichen Habitats Of the British Isles **(**Coppins & Coppins): members £3.50; non-members £6.00.

Lichen Photography (Dobson, 1977): £1.00 [Photocopies of A4 sheets].

Mapping Cards: General, Churchyard, Woodland, Mines, Coastal, Urban, Chalk and Limestone, Moorland: free.

BLS leaflets: Churchyard lichens - Lichens on man-made surfaces (encouragement and removal): free.

Lichen Society Postcards: Lichens in full colour in assorted packs of 16. £3.00 [Orders for more than five packs are available at a reduced rate.]

British Lichen Society Car Sticker: 5 colour 4" diam. self-adhesive plastic: £1.50

OTHER ITEMS

All the following items have the British Lichen Society logo in three colours - black outline, silver podetia and red apothecia.

Woven ties with below-knot motif of BLS logo: £7.00. Colours available: maroon, navy blue, brown, black and charcoal.

Sweatshirts with breast pocket size embroidered motif of BLS logo: £16.00. Colours available: light grey, navy blue, bottle green, red.

Sweaters, wool with breast pocket size embroidered motif of BLS logo: £14.00. Colours available: maroon, bottle green and navy (various sizes).

T-shirts with screen-printed full chest motif of BLS logo encircled by the words 'British Lichen Society': £10.00. Colours available: light grey, navy blue, bottle green, tangerine (one old stock yellow - small). Please specify size *and* colour options.

Earthenware mugs (white) with coloured logo on both sides and encircled by the words 'British Lichen Society' below: £3.00

Hand lenses

Gowland x10 plastic lens - a useful spare or second lens, andy when taking a friend with you! £3.00.

x10 glass lens in metal body, lens diam 18mm £8.50.

x30 lens, diam 21mm. A new top quality lens £14. This lens is not suitable for general field work, a x10 lens is necessary for this and the x30 for more detailed examination later.

FOR LOAN: (UK members only)

A microscope stage-micrometer slide for the calibration of eye-piece graticules in 10μm divisions is available for loan. A deposit of £40 is required.

BACK NUMBERS OF *THE LICHENOLOGIST*

Cambridge University are pleased to announce that from 2006 all BLS members will be able to purchase back numbers of the Lichenologist (ISSN 0024-2829) at £10.00 per back issue and back volumes at £40.00. Cambridge holds issues back to and including Volume 33 (2001).

Contact:

Tel. 0044 1 233 326070, Fax 0044 1 223 325150

E-mail: journals@cambridge.org

Back stock is also held at SWETS. For details see:

http://backsets.swets.com/web/show/id=47067/dbid=16908/typeofpage=47001

A complete volume from SWETS costs 200 euros.

Membership Matters

It would be a great help to the Assistant Treasurer if any UK members, who have not already done so, could set up a Standing Order to pay their annual subscription.

The details you must supply to your bank are as follows:

Payment is to be made to CAF Bank (whose address is 25 Kings Hill Avenue, Kings Hill, West Malling, Kent ME19 4JQ)
Account name is "British Lichen Society"
Sort code 40-52-40
Account number 00012363
Payment to be made annually on 1 January

Please specify the amount for your membership type from the table below.

Reference should be your surname followed by your membership number (this is the 4 digit number on the Bulletin mailing label). Contact the Assistant Treasurer if you wish to check your number. Please make sure the bank is provided with this information, otherwise it is difficult to link payments to members!

Membership Type	Rate
Ordinary Membership – 2009	£30
Associate Membership – 2009	£22
Senior Associate Membership – 2009	£10
Junior Associate Membership – 2009	£5
Family Membership – 2009	£5

SUBMISSION DEADLINE

Please would intending contributors to the Winter 2009 issue of the *Bulletin* submit their copy to the Editor by **1 October**. These can be sent by e-mail to p.cannon@cabi.org as an attachment. This should be in MS Word. Alternatively they can be sent on a CD to the Editor (for address see inside front cover). It is helpful to have hard copies of tables and other diagrams. For the style of references see past *Bulletin*s.

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