



British Lichen Society *Bulletin*



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Welcome to the Summer 2013 Bulletin, with its usual diverse mix of facts and opinion about all things lichenological. We have articles about beavers and their impact on lichen populations, historical articles about Lindsay and Massalongo in the nineteenth century (and David Richardson in the twentieth and twenty-first!), heroic tales of lichen surveys in challenging conditions, taxonomy and identification of several different lichen groups, new records of exciting species, and even a poem.

We live in a constantly changing world, and the world of publishing seems to be changing faster than many others. This may, in the medium term, have very significant impact upon the Society and its finances. Currently, a very significant proportion of the BLS's income comes from our partnership with Cambridge University Press, in the form of a profit-sharing agreement for production of our flagship journal *The Lichenologist*. There are currently very active moves in the professional world towards open-access for publishing, which means that all can view scientific articles (on-line, at least) without payment. On the face of it, this sounds great – but quite apart from the income from publishing which gets ploughed back into the Society's charitable activities, *someone* needs to pay for turning manuscripts into publications. So, not only might the BLS lose income from its publishing activities, it might actually have to pay to ensure that our prestigious journal continues its high standards of production and scientific integrity.

There is not an immediate threat to our publishing income, but all the uncertainties could in time lead to dramatically reduced activities for the Society (or dramatically increased subscriptions). An article on the subject has been written by the Executive Secretary of the Linnean Society, Elizabeth Rollinson, and it has been reproduced in this issue of the Bulletin by kind permission. Turn to page 59....

Another possible change in the air is a move for the *Lichenologist* to move to electronic-only publication. Paper-based publication is becoming more and more expensive, and as print subscriptions reduce in number, the costs increase on an individual basis. Opinions on this are likely to be polarised, with some welcoming the reduced pressure on bookshelf space while others lament the loss of a beautifully produced printed product. The Editor of the *Lichenologist* would like to hear your reactions to this possible move – see page 161 for how to make your views known.

Front cover: Fighting to a stand-still? *Opioparma ventosa* and *Pertusaria corallina* confront each other on a Torridonian sandstone boulder above Loch Maree, Wester Ross.

Beaver Patrol - lichens on hazel and beavers at Loch a' Chreag Mhòr, Knapdale

In March 2013 I visited a small stand of woodland with abundant hazel at the northwest edge of Loch a' Chreag Mhòr in Knapdale, Mid Argyll as part of a survey for the Nationally Scarce Biodiversity Action Plan (BAP) fungus *Hypocreopsis rhododendri* (Acton, in prep). I found a number of stems and stumps of hazel that had been felled and/or gnawed by beavers that have been released as part of the Scottish Beaver Trial. Hazel in western Scotland can support a lichen flora of very high biodiversity value (e.g. Coppins & Coppins, 2012). The lichen flora of the hazel stand at Loch a' Chreag Mhòr does not appear to have been examined before (NBN, 2013). It was found to support well-developed hyperoceanic Graphidion and Lobarion communities, so raising the question of whether the impact of beaver might be significant. The beaver re-introduction trial is due to end and be reviewed in 2014. This article seeks to generate some discussion as to whether the long term presence of beavers at Knapdale or in the wider landscape poses a significant threat to the important lichen communities of western Scotland.

Note: codes in bold text indicate the conservation interest of species following Woods & Coppins (2012) where BAP = UK Biodiversity Action Plan species; IR = species for which the UK has International Responsibility, NS = Nationally Scarce, NR = Nationally Rare, NT = Red List Near Threatened; VU= Red List Vulnerable.

Background

In 2002 Scottish Natural Heritage (SNH) applied for a licence to re-introduce European beaver (*Castor fiber*) to a site in Knapdale in Mid Argyll. The proposed release site is part of Taynish and Knapdale Woods SAC which was primarily selected for the Annex I old sessile oak woods. The SAC is notable for its outstanding lichen (and bryophyte) communities (JNCC, 2013). The site is also part of Knapdale Woods Site of Special Scientific Interest (SSSI) and the lichen assemblage is one of the notified features of the SSSI (SNH, 2013). The Scottish government objected to the licence in 2005 on the grounds that there was a risk of adverse impacts on features for which the Taynish and Knapdale Woods Special Area of Conservation (SAC) was designated.

In 2007 the Scottish Wildlife Trust and the Royal Zoological Society of Scotland applied for a licence for a 5 year trial release of beavers in Knapdale. The Conservation Committee of the British Lichen Society (BLS) objected to the trial on the basis of potential adverse impact on the lichen assemblage of the SAC and SSSI (Sandy Coppins, 2008). Sandy cited correspondence from a lichen colleague in Poland (Dr Martin Kukwa, from Gdansk University, Poland) who has witnessed the impacts of beaver re-introduction first hand:

'in Poland...the main problem are the trees. Beavers cut many trees in places with high conservation status. And lichens die with the trees'

In 2009 the licence was granted and the Scottish Beaver Trial released 3 beaver families onto Loch Coille Bharr, Loch Linne/Fidhle and Loch a' Chreag Mhòr. At the end of the trial (2014) SNH will report on the impact of the beavers to the Scottish Government who will then decide what happens next — and crucially whether beavers should be re-introduced to and/or permitted to spread to other areas of Scotland.

Detailed scientific monitoring of the lochside woodlands is being undertaken by the James Hutton Institute and this provides useful indirect monitoring of the epiphytic lichen habitat (Moore *et al.*, 2011). However, no detailed systematic direct monitoring of the impact of the beavers on the lichen flora has been undertaken. The observed impacts on the lichen flora are largely restricted to 'casual' observations during more general lichen survey and monitoring work (see below).

The Hutton report notes that birch is one of the most abundant trees in the survey area and the most often affected by beavers, but beavers prefer willow and rowan. Rowan and willow are usually completely felled once gnawing commences, whereas with other tree species, about 20% of trees are abandoned before being completely felled. Beavers largely avoid alder. The situation with hazel is not so clear cut: the summary of the 'main findings' suggest that hazel is avoided, but the report elsewhere notes: 'hazel was used much less than its abundance [in terms of numbers of stems] would suggest, and when it was used, only very small branches were gnawed. It should be noted however that the availability of hazel is somewhat misleading, because it is less widespread than other tree species' (Moore *et al.*, 2011).

Most broadleaved trees readily reshoot when coppiced. Of the trees affected by beavers, the Hutton reported successful regrowth on 44% of stumps and partially-felled trees. The most vigorous resprouting was observed on ash, willow and rowan; poorer resprouting was observed on birch and very poor resprouting was observed on alder and hazel. It is unclear why hazel resprouting was poor.

Currently there are four beaver family groups at Knapdale (Simon Jones, *pers. comm.*), at the following sites:

1. Lochs Coille Bharr and Dubh Loch
2. Lochs Linne/Fidhle
3. Loch Chreag Mhòr and Lochan Beag
4. Lochan Buic

Previous monitoring

In 2009 Dave Genney (SNH Policy and Advice Officer for Bryophytes, Fungi and Lichens) established some monitoring plots at Loch Fidhle. These were re-visited and monitored in 2010 as part of the Site Condition Monitoring (SCM) of the lichen features at Knapdale Woods SSSI (see below).

In 2010 Anna Griffith, Viv Lisewski and Andy Acton visited two of the beaver release sites (Loch Coille-Bharr and Loch Linne/Fidhle) to undertake lichen SCM of the SSSI. Only a small proportion of the area with beaver activity at Loch Coille-Bharr was visited and the main impacts (flooding and felling) seemed to mainly affect areas of young birch scrub and willow regeneration, though some larger trees

including rowan had been felled. The spindly birch and willow affected were unlikely to have supported any great lichen interest.

At Loch Linne/Fidhle we found damage to alder, aspen, birch, willow and hazel. The hazels supported Graphidion and Lobarion species but few were affected and the impact on these lichen communities was judged to be minimal at the time of survey. The greatest impact on the lichen flora was observed on a stand of birch. The basal girths of the 2 largest felled birch here were 71cm and 81cm. The Parmelion laevigatae community associated with this stand of wet birchwood included a number of old woodland indicators: *Hypotrachyna endochlora* (NS IR), *H. laevigata*, *Hypotrachyna sinuosa* (IR), *Loxospora elatina*, *Megalaria pulvereae*, *Menegazzia terebrata* (IR) and *Micarea alabastrites* (IR). At Loch Fidhle we also found damage to aspen suckers ca 30 metres up a very steep rocky slope from the loch shore.

In conclusion it was suggested that although the level of impact at the time of the survey was not likely to be significant, there were concerns that on-going, cumulative, damage could eventually lead to loss of large old tree trunks and replacement with spindly young regrowth with lower lichen interest. More detailed long-term monitoring of the lichen assemblage, in conjunction with indirect monitoring of the epiphytic lichen habitat being conducted by the Hutton Institute was considered necessary to determine what impact the beavers will have on the lichen flora in the long term (Griffith, 2011).

In 2011 Sandy Coppins visited Loch Coille-Bharr and Loch Linne/Fidhle with SNH staff Dave Genney and Jeanette Hall (Woodland Advisory Officer). Sandy reported little impact on the lichen flora at Loch Coille-Bharr and noted no damage to the old oaks with well-developed Parmelion laevigatae (Coppins, 2011). In one area at Loch Linne she suggested the beavers might be having a positive impact by thinning thicket regeneration of birch. However, at another Loch Linne site with hazel, oak, ash and alder, hazel has been the main target species for beaver activity, possibly because there were fewer tree saplings here. Sandy commented that it appears beaver utilize hazel quite readily. The lichen interest on these hazels is moderate to high, with examples of both Lobarion and Graphidion species. She concluded that the beavers did not appear as yet to have had any significant adverse impact on the notified lichen interest at the site-based scale. However she expressed concerns regarding the long term impact of beaver on the lichen flora on hazel at Loch Linne and more generally the potential future utilisation of riparian woodland by beavers.

In 2011 Dave Genney visited an unnamed loch to the East of Loch Fidhle, recording three felled birch and one felled spruce, and noted beaver activity in some birch/rowan stands on the west side of Loch a' Chreag Mhòr (Coppins, 2011).

The 2013 visit to the Loch a' Chreag Mhòr hazels

The 2013 survey of the Loch a' Chreag Mhòr hazels recorded a range of old woodland Lobarion species with IR status, mostly on hazel but also on a few ash trees and several boulders and rock outcrops. These included *Leptogium burgessii* (IR), *Polychidium muscicola* (NS), *Pseudocyphellaria intricata* (NT NS BAP IR), *P. norvegica* (NS BAP IR), *Parmeliella testacea* (NT NS BAP IR) and *Sticta dufourii* (IR). Old

woodland specialist Graphidion species recorded in the stand include *Arthonia ilicina* (IR), *Arthonia thelotrematis* (NR IR), *Arthothelium macounii* (VU NR BAP IR), *Bactrospora homalotropa* (NS IR), *Pyrenula laevigata* (NS IR), *P. occidentalis* (IR), *Thelotrema petractoides* (IR) and *T. macrosporum* (NS IR).

The Hutton researchers found that beavers had affected 549 trees around the margins of Loch a' Chreag Mhòr including 223 birch trees, 165 willows, 71 rowan trees, 63 hazels (all apparently in the same area I examined in 2013), 20 alders and

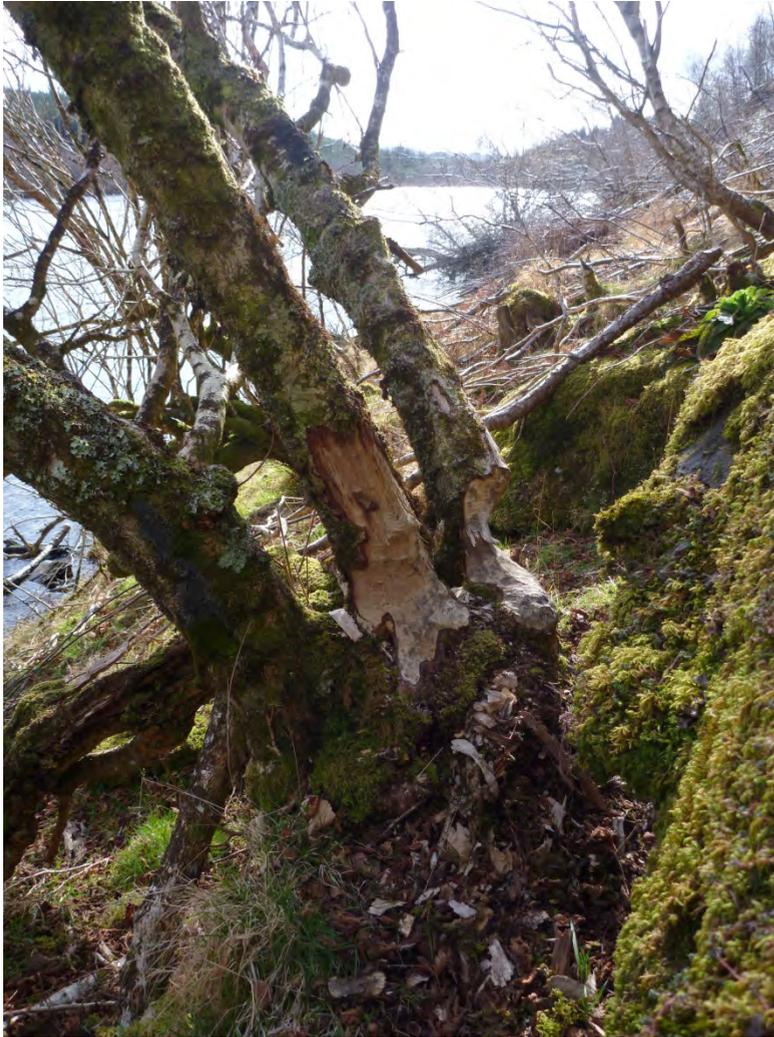


Figure 1. Heavily gnawed and cut large hazel stems with a good population of *Parmeliella testacea* (NT NS BAP IR). The right hand stem is completely severed though this is not clear in the photograph. Note the beaver chippings at the base of the stool.

seven ash trees (Hutton, 2010). In the hazel stand examined in 2013, a quick count recorded at least 25 stools with significant beaver impacts: ten that had been completely coppiced (of various ages but mostly youngish stools); two old formerly multi-stemmed stools that had been singled leaving a solitary old leaning trunk, and a further 13 stools with significant beaver impacts (defined for the purposes of this survey as removal of established stems with any *Lobarion* species or specialist hyperoceanic Graphidion species). Some examples of

the damaged hazels are illustrated in Figures 1-7.

The main *Lobarion* lichens of interest recorded on cut stems were *Lobaria pulmonaria*, *L. virens*, *Pannaria conoplea* (IR), *Sticta sylvatica* (IR) and *Parmeliella testacea* (NT NS BAP IR). The main Graphidion species of interest on cut stems were *Arthonia ilicina*

(IR), *Pyrenula occidentalis* (IR), *Thelotrema petraetoides* (IR) and *T. macrosporum* (NS IR). *Pseudocyphellaria norvegica* (rare in this hazel stand) was recorded ca 30 m upslope from the loch margin, on a hazel near the edge of the area affected by beavers. Within three metres of this hazel are two other hazels that have been subject to beaver activity (though the damage was quite old and limited to small diameter stems).



Figure 2. Closer view of the right hand stem shown in Figure 1. The stem indicated is 20cm across.

Two of the species recorded on hazel at Loch a' Chreag Mhor are Nationally Rare, and scarce or rare in Argyll (*Arthonia thelotrematis* and *Arthothelium macounii*). Most of the other species recorded are not particularly scarce in Argyll but are indicators of high quality epiphytic habitat – 18 are listed as West of Scotland Indicators of Ecological Continuity (WSIEC species, see Coppins & Coppins, 2002) or could be considered to the WSIEC Bonus species (Table 1). This is a large number of WSIEC species for such a small site (<1ha). However, the 2013 hazel survey was rapid and more detailed lichen survey would be likely to find other WSIEC species.



Figure 3. Cut stem with a greyish brown 'cracked' surface of *Parmeliella testacea* (NT NS BAP IR) and brown lobes of *Sticta sylvatica* (IR).



Figure 4. Cut stems (10cm diameter) with orange patches of *Pyrenula occidentalis* (IR) in a mosaic with white patches of *Thelotrema petraetoides* (IR) and *T. macrosporum* (NS IR).

The damage to the hazels at Loch a' Chreag Mhòr appears to be so far limited to hazels within *ca* 30m of the loch shore and not all hazels in this zone are affected. However, any formal impact assessment on the lichen flora should consider that:

- Beaver damage is ongoing. Many of the hazel stems examined appear to have been recently gnawed/felled. Although most intensive activity is near the loch it will be interesting to see if beaver damage extends further from the loch edge as time progresses and the large diameter stems near the loch edge are lost. The cumulative impacts of continued beaver activity will become apparent only with long term monitoring.
- Large hazel stems have been felled including many stems *ca* 10cm diameter and some to 20cm across (Figure 1).
- Some regrowth of hazel shoots is being suppressed by browsing, presumably by beaver and red deer (e.g. Figure 7). Red deer droppings were frequent in the area.
- Beavers were observed to have climbed on top of boulders to access hazel stems.
- These are only casual observations and detailed direct monitoring of the lichen flora would be needed to monitor the cumulative impact of beavers on the lichen flora in the long term.
- As part of the desk study for the 2013 hazel gloves survey (Acton, in prep.) the Native Woodland Survey of Scotland (NWSS) GIS data was queried and substantial stands of hazel in mid Argyll were 'pulled' from the data. This highlighted the often fragmented nature of the hazel resource in mid Argyll with the species often confined to relatively small, isolated stands. The author and John Douglass visited 45 sites as part of the hazel gloves project and many several of the old growth indicator lichens targeted during the survey appear to be scarce, rare or very local, and the long term viability of some of these lichens at some sites is questionable.
- Fragmented, small stands of woodland, often subject to long term moderate to heavy browsing pressures from sheep and/or deer are particularly vulnerable to further pressures and any additional decline or loss of habitat could lead to further deterioration in condition for lichens.
- Riparian stands of hazel in western Scotland can support a particularly good lichen flora including many Nationally Scarce, Rare and Red List Threatened species. Most beaver activity at Knapdale is associated with the lochs and the beavers do not appear to be utilising the trees in riparian areas to the same degree. Any beaver damage to trees and hazel in riparian areas is a serious concern and so should be closely monitored.

Other considerations

- The beavers can disperse over quite wide areas including short sea crossings. Beaver damage found to aspen by Tom Prescott (Butterfly Conservation) in 2011 on the Isle of Shuna which is 15km due north of the release site and 1.5km offshore (pers. comm., Simon Jones, Scottish Beaver Trial Project Manager). However, no subsequent damage was recorded (the beaver presumably since moved on or died).

- Re-introduced beavers in Poland have been known to target old oak and Scots pine (Coppins, 2008). Both trees can be important habitats for lichens in Scotland.
- Aspen is known to be highly favoured by beaver. Aspen in eastern Scotland supports not only a highly specialised lichen flora, but important bryophyte and fungal species, as well as high invertebrate interest.

Conclusion

The Scottish Beaver trail is due to end in 2014. No detailed monitoring has been established to directly monitor the impact on lichens but it appears that in just under 4 years beavers do not appear to have caused any large scale damage to the lichen interest in the release site. However, the indications are that the long term impact could be significant.



Figure 5. The most heavily impacted area was this stand dominated by birch but there are several 'beaver coppiced' hazels in this stand (one of which is indicated by the yellow arrow). A number of older hazels at the edge of this stand (indicated by the red ellipse) have been severely impacted by beaver.



Figure 6. Shows three of the hazels at the margins of the birch dominated area with severe beaver damage. The beavers appear to favour the upright growth from collapsed hazels. This is particularly worrying if old-growth hazels on slopes collapse and are reliant on 'phoenix' regrowth to persist (a common phenomenon in western Scotland in heavily grazed woods on steep slopes).

Table 1. West of Scotland Index of Ecological Continuity (WSIEC) and WSIEC Bonus species recorded at Loch a' Chreag Mhòr. More WSIEC species might be found with a full lichen survey.

WSIEC and WSIEC Bonus species	Notes on frequency in the hazel stand and whether impacted by beaver activity
<i>Arthonia ilicina</i>	Frequent (recorded on many more than 25 hazels and on one ash). Current beaver impacts unlikely to affect the long term viability of the population of this species at Loch a' Chreag Mhòr
<i>Arthonia thelotrematis</i> (Bonus)	Rare. On <i>Thelotrema lepadinum</i> on 1 hazel. Outside of the area currently affected by beaver activity
<i>Arthothelium macounii</i> (Bonus)	Recorded on 1 hazel outside of the area currently affected by beaver activity

WSIEC and WSIEC Bonus species	Notes on frequency in the hazel stand and whether impacted by beaver activity
<i>Bactrospora homalotropa</i>	Recorded on 1 hazel
<i>Hypotrachyna taylorensis</i>	On mossy rocks
<i>Leptogium burgessii</i>	On more than 11 hazels. Outside of the area currently affected by beaver activity
<i>Lobaria amplissima</i>	Rare. Recorded on two hazels outside of the area currently affected by beaver activity
The rare blue-green phycotype of <i>Lobaria amplissima</i> , formerly known as ' <i>Dendriscoaulon umhausense</i> ' (Bonus)	Rare. Recorded on one hazel outside of the area currently affected by beaver activity
<i>Lobaria scrobiculata</i>	Rare. Recorded in the area impacted by beaver but on a rock outcrop so unlikely to be directly affected by beaver activity
<i>Pachyphiale carneola</i>	
<i>Parmeliella testacea</i>	Frequent. Recorded on many more than 25 hazels. but some large healthy patches will be lost due to beaver activity. Current overall impact on the viability of the population at the site-based scale is probably low
<i>Pseudocyphellaria intricata</i>	Rare. Recorded on one hazel outside of the area currently affected by beaver activity
<i>Pseudocyphellaria norvegica</i>	Rare. Recorded on two hazels. One of the hazels was in the area impacted by beaver. Beavers appear to pose a significant threat to this species at Loch a' Chreag Mhòr
<i>Pyrenula laevigata</i>	Rare. On one hazel outside of the area affected by beaver activity
<i>Pyrenula occidentalis</i>	Frequent throughout the site. Recorded on more than 25 hazels. Current beaver impacts unlikely to affect the long term viability of the population of this species at Loch a' Chreag Mhòr
<i>Sticta dufourii</i>	Rare. Recorded on two hazels outside of the area impacted by beaver activity
<i>Thelotrema macrosporum</i>	Frequent throughout the site. Recorded on more than 25 hazels. Current beaver impacts unlikely to affect the long term viability of the population of this species at Loch a' Chreag Mhòr
<i>Thelotrema petractoides</i>	Occasional but locally frequent. Recorded on more than 25 hazels. The area affected by beaver activity includes a significant proportion of the population of this species at Loch a' Chreag Mhòr. More survey work would be needed to assess the impact

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***Teloschistes chrysophthalmus* and *Llimonaea sorediata* in Sussex**

On Boxing Day, my wife and I enjoyed some most exciting natural history. On 23rd of December, I received an e-mail informing me that the lichen *Teloschistes chrysophthalmus* had been found on two hawthorn bushes to the north of Brighton. The finder, Mark Jackson, had only recently got interested in lichens, and asked me about the status of *T. chrysophthalmus* in East Sussex. The answer was then simple, his was the first recent record for Sussex, there being three early 19th century records from Shoreham, near Brighton and near Lewes. On 23rd of December my knowledge of the current history of *T. chrysophthalmus* was as follows. In 1994, it had been discovered on an SSSI near Prawle Point, but the bush on which it grew was cleared

as part of conservation scrub clearance. Next, it was found on a hawthorn bush on the shores of Drift Reservoir in Cornwall, but when the water level rose and submerged the bush, its only known modern site was once again lost. More recently it was found on a branch fallen from an apple tree in Herefordshire. Not a very promising situation for its continued survival, but shortly after that, it was found in County Cork and as far as I know, that site is still extant. It also occurs on Guernsey on two bushes where I saw it recently. In Jersey however, it was last seen in an orchard back in 1966. A recent visit to the site confirmed that all the apple trees had gone.



Fig. 1. *Teloschistes chrysophthalmus* on a hawthorn bush near Brighton

On Boxing Day, I met up with Mark Jackson, and he showed me the two bushes each with just one *Teloschistes chrysophthalmus*. We had a good look round at other trees, but found no more. However, on our way back to the car, Mark found a

minute, pink lichenicolous fungus growing on a twig. I photographed it, and sent off the photograph to the experts. It is *Illosporopsis christiansenii* and new to Sussex. Mark is lucky in having an excellent eye for lichens, as well as a great enthusiasm for them.

Since the 23rd of December, I have learned that *Teloschistes chrysophthalmus* has turned up recently in four sites on the Isle of Wight as well as sites in Dorset and Kent, and the scores for both Sussex and Hampshire now stand at over ten. Recently, Mark Jackson found it near Chichester recently, so this discovery links up all the counties in the South Eastern quarter of England. In the past, it was thought that *T. chrysophthalmus* was probably the most pollution sensitive lichen species at least to the sulphur dioxide pollution, that occurred in Britain. Its recently discovered distribution however would seem to refute this. In Sussex, the first site in which it was found is no more than four hundred yards from the edge of the Brighton conurbation. Until relatively recently, there was a power station downwind at Shoreham, and with the whole of Brighton and Hove downwind of the site, the air cannot be considered pure, even with the considerable improvement in air quality throughout Southern England. It has also now been found in eight sites near Telscombe, north east of Brighton as well as another two near Woodingdean. One of the findings (Figure 1) almost looks as though someone has impaled a tangerine on a hawthorn twig. It is obviously a very healthy individual. Clearly *T. chrysophthalmus* is not behaving as the delicate, hyper pollution-sensitive species it was previously thought to be.

Outside Britain, I have some experience of *Teloschistes chrysophthalmus*. It is certainly rare in Europe. I first saw it on a twig at Amelie les Bains in the French Pyrenees in 1974. In 1993, I found it in Corfu, and these experiences made me believe that because of the dry atmosphere any sulphur dioxide would not be turned to sulphurous acid, the active compound that causes havoc to pollution sensitive lichens.

In 1994, my ideas about the problems of air pollution and *Teloschistes chrysophthalmus* were somewhat shaken when I stayed in a hotel on the edge of Quito in Ecuador. On a Jacaranda tree in the grounds of the hotel, I found a lichen flora consisting of some of the most sensitive lichens known belonging to genera such as *Lobaria* and *Sticta*. Amongst many other species, I found *T. chrysophthalmus*, and as will transpire, even more surprisingly I found *T. flavicans*. At the time, I did not know of the closely related *T. exilis*, which my record of *T. chrysophthalmus* might actually have been.

In 2004, I visited Texas and became aware of *Teloschistes exilis*. I found it, along with *T. chrysophthalmus* on twigs that had fallen from the upper branches of suburban pecan trees in Fort Worth. I also found them relatively close by in Dallas. These are part of an enormous conurbation, known in America as the Megalopolis; certainly, not an area particularly noted for pristine air quality. In fact, the distribution of members of the genus *Teloschistes* in the United States is most interesting. There are six North American species. One occurs in arctic Canada and is extremely rare. Like *T. flavicans*, it is non-fertile, but sorediate; this one is *T. arcticus*. Then there is *T. californicus*, which is a rare coastal species in southern California. Similar to this is *T.*

villosus which is confined to Mexico. Then there are *T. flavicans*, *T. exilis* and *T. chrysophthalmus*.



Teloschistes exilis, village of Fairy, Texas

While in America, *Teloschistes chrysophthalmus* and *T. exilis* appear relatively unfussy about air conditions; *T. flavicans* is almost totally western and coastal, and demands very clean air. This is so much mirrored by its requirements in Britain. In fact, it seems that the fertile species of *Teloschistes*, though rare seem to be less fussy about sulphur dioxide at least, in the atmosphere.

I am interested by the associated species growing with the *Teloschistes chrysophthalmus* in Sussex. While there were hawthorn bushes relatively free of the bright yellow, and very common species belonging to the genus *Xanthoria*, it was only on those whose twigs were golden with *Xanthoria* that the *Teloschistes* occurred. It was also noticeable that *X. polycarpa*, a species that relishes enrichment and high levels of nitrogen compounds was frequent on both bushes supporting the *Teloschistes* above Woodingdean. In fact the flora of both bushes was characteristic of high levels of nitrogen compound enrichment. Could it be an increase in average temperatures that has encouraged *Teloschistes chrysophthalmus* into southern England? Could it also be that *T. chrysophthalmus* requires high levels of nitrogen compounds for its spores to germinate? If this is the case, with the use of catalytic converters on car exhausts

creating high levels of ammonia, this could be what causes two of the *Teloschistes* species to occur so readily in the Dallas conurbation. Another intriguing question asks where do the spores come from? After all *Teloschistes chrysophthalmus* is a very uncommon species in Europe. Being a twig species, it must also be a rapid coloniser, and relatively ephemeral.

Another observation is that almost invariably, if not invariably *Teloschistes chrysophthalmus* where it has been seen recently grows very close on twigs to *Physcia tenella*. In fact in early March, I made an abortive attempt to find it on scrub close to the sea on the cliff tops of the Severn Sisters. Conditions seemed ideal, but having failed to find *Teloschistes*, I noticed that though there was plenty of *P. adscendens* on the twigs, I could find no *P. tenella*. It occurred to me that *Teloschistes chrysophthalmus* might actually require *P. tenella* on which to germinate its spores.

A few days into the New Year, I happened to be going to Hampshire, and as it turned out the reason for my visit took me to about two miles from the first recent Hampshire site. It took a very short time to find the *Teloschistes chrysophthalmus*, this time growing on a blackthorn bush. There was just one plant of it, and it looked less healthy than the Sussex plants. The twigs of the bush were yellow with *Xanthoria* indicating high levels of nitrogen enrichment, and especially well developed was *Xanthoria polycarpa*. It was also very close to the centre of an urban area.

It was in early March that my wife, Amanda was looking at a blackthorn bush approximately one hundred yards from our back door. The air went mildly blue with her surprise, when she spotted a single thallus of *Teloschistes chrysophthalmus* on a twig. I estimate that the twig was about three years old. This will give me an excellent opportunity to study its development, and to take regular photographs. Since it was found, there has been no alteration of it, or enlargement of its growth.

Naturalists should be encouraged to look out for *Teloschistes chrysophthalmus*. It appears so far to have been found mostly on mature hawthorn, and perhaps a lesser extent on blackthorn, and often in areas affected by strong, coastal winds from the south west. It is astonishing how similar *T. chrysophthalmus* can look to the common *Xanthoria polycarpa*, and I suspect it could possibly have been overlooked for this. However, the *Teloschistes* has brighter orange discs, or fruits, and they are always surrounded by hair like cilia, or whiskers. These are never present surrounding the duller discs of *Xanthoria polycarpa*. Also intriguing was the presence of the lichenicolous fungus *Illosporiosis christiansenii* on the same bush perhaps two feet away in the Hampshire site.

Another lichen that has recently turned up in Sussex is interesting. I remember back in 1993 that I visited Ashurst Churchyard in West Sussex with Francis Rose and Ken Sandell. Francis noticed a pink crust on the north walls of the church, which he thought distinctive. I believe he collected a small piece, but nothing came of it. Remembering this, I returned to Ashurst Church last summer, and refound his pink crust. I collected a little of it growing on a dead ivy twig, and it was confirmed as *Llimonaea soredata*, new for Sussex. This was then its most easterly British site. Since then, I visited an old church in East Sussex, Hamsey Church where *L. soredata* was abundant on the north wall. This church also supports *Opegrapha areniseda*.



Figure 2. *Llimonaea soreliata* on the north wall of Ashurst churchyard

The sudden increase in *Teloschistes chrysophthalmus* in south eastern England is quite extraordinary, and not easy to explain. The appearance of *Llimonaea soreliata* in Sussex probably means it is simply overlooked. However, I am certain that *T. chrysophthalmus* would positively shout its presence to any lichenologist, even in the presence of the rather similar *Xanthoria polycarpa*. It is beyond likelihood that this beautiful, charismatic species would have been overlooked if it had been present recently in the quantity that it is currently being found.

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A 19th century British Lichen Prize

The BLS website gives good guidance and advice to school pupils and university students planning a lichen-based project. The Society also actively encourages student lichenology by the awarding of the BLS Summer Vacation Scholarship. Although this award is most generally made to UK students, Lars Ludwig, a young German student currently pursuing a PhD at Otago University in Dunedin, New Zealand was awarded the Scholarship over the course of the 2008-2009 New Zealand summer for a project on the lichen *Icmadophila splachnirima* (Ludwig, 2011, 2012).

Interestingly, the institution of a prize for the study of “native lichens” was first proposed by the Scottish Lichenologist William Lauder Lindsay (1829-1880) 156 years ago!

Lauder Lindsay studied medicine at the University of Edinburgh, supporting himself by clerical work at Register House. His teacher and mentor was the Professor of Botany and the Regius Keeper of the Royal Botanic Garden Edinburgh, John Hutton Balfour (1808-1884). Lindsay’s class attendance was virtually perfect, and some fine examples of his grass dissections were displayed at the Great Exhibition (1851). In 1852, aged 23, Lindsay graduated MD for a thesis on “*The Lichens – comprising their Anatomy, Organography and Physiology, Taxonomy or classification, Geographical Distribution and Utility*”, a very wide canvas and a work for which he was awarded the highest honours (three stars). Balfour’s suggestion of research into lichens, then a much neglected group in Britain, was a scientific turning point for WLL and it was a subject that he devoted much of the rest of his intellectual life and energies towards (Hawksworth, 2007).

Once Lindsay obtained a permanent hospital post, at the Murray Royal Institution in Perth, he had the possibility of renewing lichen work and two letters that he wrote to J.H. Balfour in 1856 are illuminating in several respects, which I think makes them worthy of being printed here. In the first letter, Lindsay acknowledges Balfour as the prime catalyst in his developing interest in lichenology; refers to his recently published book “*A Popular History of British Lichens* (Lindsay, 1856), as a first attempt in framing a much larger vision, a modern “*Lichenographia Scotica*” an endeavour in which he asks the help of Balfour’s students; mentions species of the lichenicolous fungus *Abrothallus*, on which he was shortly to publish (Lindsay, 1857), including an account of a potential altercation near Dunkeld with the Duke of Atholl’s gillies, an allusion to a famous earlier incident with the Duke of Atholl’s gillies at Glen Tilt (Allen, 2000: 354); and his developing correspondence on lichenological matters with William Mudd, W.A. Leighton and Sir Walter Trevelyan.

Lindsay’s second letter proposes the institution of a prize “...for the best & approved herbarium-, the terms of competition to be similar to those connected with your ordinary class herbarium prize...” Lindsay’s letters to Balfour are transcribed below, both being written from the Murray Royal Institution in Perth.

[Letter 110, J.H. Balfour Correspondence, RBGE]

“... Murray’s Royal Asylum,
Perth, July 1/56

My Dear Professor

I duly received your last kind note. The little book, to which you refer, is part of my graduation Thesis in another form. My attention was originally directed to the study of the lichens, while a student at your class, by your having given out this as the subject of one of the competition essays. I intend further to follow out the subject:

& am gradually collecting materials for a "Lichenographia Scotica" -, a critical work, which will occupy some years [if it ever sees the light at all!]. For this purpose I am desirous of procuring specimens of lichens of every kind – from all parts of Scotland. Might I ask you to enlist the energies of some of your students on my behalf during their Summer rambles? My little book is necessarily imperfect as a first attempt in a most difficult field: and it contains doubtless errors from having been hurried thro' the press by the publisher. But these sources of difficulty & error you will readily understand & make allowance for. The object of the work is to give an impetus to the study of our native lichens in order that we may make some material progress in a hitherto neglected path of research.

I enclose specimens of various species of Abrothallus [Tulasne] which are frequently parasitic on furfureaceous states of the common Parmelia saxatilis. I have found them frequently on old walls-, built of boulders belonging to the gneissic or granitic rocks -, & especially when damp and shaded: eg. on Craigie Hill, Perth, Craig y Barns & Birnam, Dunkeld. They are likely to be met with in Highland districts. I am anxious to obtain a variety of specimens as I mean to have a paper on the genus Abrothallus at the coming meeting of the Brit. Association. Would you oblige me by directing the attention of any of your enthusiastic students to the parasite at the class excursions, especially those to Wales & Arran? Apropos of the Abrothallus, I met with a piece of "Glen-Tiltism" while in search of it on Saturday last at Craif of Burns, Dunkeld. I had previously found A. oxysporus there & returned for a larger supply: but was turned back by one of His Grace of Atholl's gillies, who had most strict injunctions to turn back all visitors. The hill, which commands a beautiful view, has long been a favourite resort of the Dunkeld residents. The gillie, however, sympathised with me in my affliction for it appears that he is in the habit of gathering *Asplenium alterifolium* on Sturton Crag for some southern Botanists. I visited Sturton some weeks ago with Dr. Lyell of Newburgh, who is a great Pteridologist, & who went for the purpose of getting *A. alternifolia*. He was unsuccessful tho' he got abundance of A. septent. & *A. rutamur* [varieties]. I was in search of lichens & did not look for it. I have been lichenising a good deal this summer & have met with many good lichens. A few days ago I was on the top of Ben Lawers amidst a severe snow storm: & I have been frequently on the Dunkeld Hills. I saw Trientalis Europaea in profusion on the "Knick" of Crieff lately. I propose devoting my holidays this summer to an exploration of our highest Scotch mountains in regard to their lichenology. I go to Ben MacDhui first & subsequently to Ben Nevis Etc. This will permit my attending the Brit. Association.

Speaking of excursions, would Perth or Dunkeld not be a new & agreeable class excursion? You could reach Dunkeld & return the same day easily, giving the students a specimen of ordinary Highland, tho' not of alpine, plants. Sturton Crag, Birnam Hill & the falls of the Braemar could be visited. At Perth, Invermay. Methven & Scone are worthy of a visit. Should you think this suggestion worthy of being acted upon, I need not say it would give me great pleasure to accompany your party. I have been corresponding lately with Leighton, Sir W. Trevelyan, Mudd & others on the subject of our common studies.

Believe me,
Very sincerely yours
W.L. Lindsay

PS. The country between Perth & Dunkeld would be a good field for Prof. Allman's class in regard to geology. Round Perth he could illustrate the alluvium, diluvium & "old red": & at Dunkeld the slates [metamorphic] series could be well studied..."

[Letter 111, J.H. Balfour Correspondence, RBGE]
"...Perth, July 26/56.

My Dear Professor,

It has occurred to me that a most legitimate means of directing the attention of botanical students to the subject of native lichens would be the presentation of a prize for the best & approved herbarium-, the terms of competition to be similar to those connected with your ordinary class herbarium prize. I should have much pleasure, if you would permit me, in offering, for competition by your students of this or next session without respect to their standing, a silver medal for the best & approved collection of Lichens from any part or ? parts, of Scotland, made between 1st August 1856 & 1st July 1857. The specimens might be arranged like those in Leighton's "Lichenes Britannici exsiccati" or Schaerer's & Mougeot & Nestler's collections: or on small cards. Their arrangement, however, would be left entirely to the student, regard being always had to avoid bulkiness so far as possible. The student will not be expected to name them all: this, in the present state of Scotch Lichenology, is most difficult. The mere naming and arranging is a matter of secondary importance. The object is the collection of as large a number as possible of species & varieties. The plants ought always, where possible, to be collected in fructification: & the specimens should exhibit changes produced by habitat, monstrosities or other peculiarities. A label, containing the station & data of collection, should be appended to each specimen. The addition of notes on the Nat. History of specimens or of the results of microscopical examination will enhance the value of the herbarium: but these are not at all imperative or necessary. It will be distinctly understood that the herbarium & accompanying notes, if desired, become the property of the donor of the prize. The attention of competitors is directed especially to the following Nat. orders of Lichens:

1. Graphidaceae
2. Verrucariaceae
3. Endocarpaceae
4. Lecideaceae
5. Caliciaceae
6. Lecanoraceae

In awarding the prize, less regard will be had to the mishaps in arrangement than to the number & rarity of the species collected. Competitors will find references to

lichenological literature, as well as directions as to the modes of collecting & preserving etc, in my "Popular History".

Should you deem such a prize worthy of being offered to your students, I shall be happy to leave all the arrangements to yourself. In this event, perhaps you would oblige me by taking the same means of making the terms of the competition known to your students that you do in regard to your ordinary class prizes. I have observed, with much gratification, that your students more than formerly are diverting attention to cryptogamic botany. This leads me to believe that several competitors might be induced to enter the new field this opened up to them.

I was much pleased with your very favourable opinion of my little work. A number of favourable reviews have appeared in the London newspapers & others: and I have received most flattering testimony from Botanists whose opinion I still more highly value than the "opinions of the Profs". I am on the eve of starting on a lichenological tour: first among the Cairngorm highlands & secondly among the western islands. Dr Gilchrist of Montrose, Mr Marshall of Edinbr. & others propose accompanying me. Can I do anything for you during the tour?

I have sent to the Brit. Association, - to be read before the Nat. Hist. or Botanical Section, a monograph on the genus Abrothallus [Lichens], accompanied by a number of drawings & other illustrations. I do not know how such things should be managed in the absence of the author of a paper: but as advertisements request papers to be sent to the local secretaries I sent my paper to Mr. Beamish of Cheltenham on the present occasion & last year to Prof. Anderson of Glasgow. I have never been present at a meeting of the Association & should like to be so this year, both to afford my explanations as to my paper & to meet fellow labourers in the field of Botany. But my holiday time is already disposed of.

The paper to which I allude is purely scientific:- the result of microscopic analyses. The genus Abrothallus is almost unknown in this country. I have given amended characters of the genus and species:- have changed the number of species given by Tulasne - have rectified what I believe to be some of his errors: & I have supplied some of his omissions such as the description of the spermogones, which have not been hitherto noticed. I am enabled in this genus to illustrate all the reproductive organs of lichens hitherto discovered: & my examinations of certain thallus anamorphoses throw, I think, a light on the nature of the curious erratic Parmelia lately found in Dorsetshire by Sir W.C. Trevelyan. Should you consider the paper sufficiently worthy, will you accept it for publication in the "Annals" or "Edinb. New Philosophical" - after it has been read at the Association. I should be glad, if it is customary, to have the plates engraved: but I should probably condense the drawings [as at present] into 2 or even 1 sheet. I do not like Basire's engravings in the "Annals": but I presume it would be allowable to employ any lithographer as in the case of other journals.

I shall expect-, at your leisure-, to hear from you on the subject, above mooted.

Meanwhile,

Believe me,

Most sincerely yours

W.L. Lindsay..."

Acknowledgements

I am grateful to Leonie Paterson (Royal Botanic Gardens Edinburgh) and to Dr Warwick Brunton (Department of Preventive and Social Medicine, Dunedin School of Medicine) for copies of Lauder Lindsay letters held in the John Hutton Balfour Correspondence in the RBGE Library.

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Discovering Massalongo: A Verona adventure

Two widespread, distinctively brightly coloured and easily recognized New Zealand lichens are the red-fruited *Haematomma babingtonii* A.Massal. (Fig. 1), common on twigs of *Discaria toumatou* and other subalpine shrubs, and the orange-fruited *Brigantiaea chrysosticta* (Hook. f. & Taylor) Hafellner & Bellem. (Fig. 2), a conspicuous epiphyte of *Griselinia* and other lowland trees and shrubs. Both of these lichens have a strong association with the celebrated Veronese palaeontologist and lichenologist, Abramo Bartolomeo Massalongo (Fig. 3).

Massalongo was born on 13 May 1834 in Via Dei Bandi in Tregnano (he is commemorated there in the Piazza Abramo Massalongo), a hill town north of Verona in northern Italy, and died tragically early of tuberculosis in Verona (where he is commemorated in the Via Abramo Massalongo) on 25 May 1860. In the space of just 10 years he had a meteoric rise in lichenology becoming the foremost Italian lichenologist of his day (Krempelhuber, 1854, 1867; Cornalia, 1861; Visiani, 1861;



Fig. 1. *Haematomma babingtonii*, on subalpine scrub, Central Otago, New Zealand (Photo: Janet Ledingham).



Fig. 2. *Brigantiaea chrysosticta*, on coastal shrubs, Akatore, New Zealand. Massalongo described the genus *Myxodictyon* for this species, a name by which it was known for many years (Photo: Janet Ledingham).

Arnold 1900; Briosi, 1918; Forti, 1924a, 1924b; De Toni, 1933; Hale, 1984; Lazzarin 1990, 1991; Poelt, 1991; Nimis, 1993; Kirk et al. 2008). Building on the work of his Florentine compatriot Giuseppe de Notaris (1805-1877) who established 8 new genera (including *Bacidia*, *Biatorella* and *Buellia*) mainly on ascospore characters (de Notaris 1846), Massalongo firmly espoused the use of anatomical and ascospore characters in lichen taxonomy. Between 1850 and 1863, as a result of his detailed microscopic studies Massalongo described c. 145 new lichen genera, an enormous number and more than anyone before or since in the history of lichenology. However, his work was studiously and regrettably overlooked or disregarded by the two later European



A. B. Massalongo
 geb. den 13^{ten} May 1824; † 25^{ten} May 1860.

Fig. 3. Abramo Bartolomeo Massalongo. The frontispiece from Krempelhuber's *Geschichte und Litteratur der Lichenologie* Vol. 1 (1867).

lichenologists William Nylander (1822-1899) and Jean Müller Argoviensis (1828-1896) whose generic systems dominated late 19th century lichenology (Hale, 1984). Hawksworth et al (1980) in commenting on modern approaches to lichen taxonomy remark "... increasing attention accorded to ascocarp ontogeny and structure, ascus structure, pycnidia, thallus anatomy, and chemical products over the last 15 years has, however, vindicated much of the work carried out in the 1850s and 1860s... particularly by G.W. Körber (1817-1885), A.B. Massalongo (1824-1860), J.M. Norman (1823-1903) and V.B.A. Trevisan (1818-1897). Many genera described by these authors are now being reinstated, often after a pause of usage of about 120 years".

Massalongo was an intensely gifted and dedicated scientist as much at home in palaeontology as he was in botany. He published prolifically on lichens between 1850 and his death in 1860 with his last paper (on three New Zealand lichens) published posthumously in 1863. He based his work on careful anatomical investigations producing beautiful habit and microscopical drawings to illustrate his books and monographs (see figs 4, 5). An extraordinarily productive life was cut short by illness at the tragically early age of 36 [the composer Mozart (1756-1791) [see Sadie (1982)] and the gifted French zoologist-explorer and founder of anthropology, François Péron (1775-1810) [see Wallace (1984), and Duyker (2006)] were of similar ages at their deaths], and such was his influence on mid 19th century lichen taxonomy that Krempelhuber (1867) made him the dedicatee of the first volume of his history of lichenology.



Fig. 4 Massalongo's 1863 plate of *Haematomma babingtonii*.

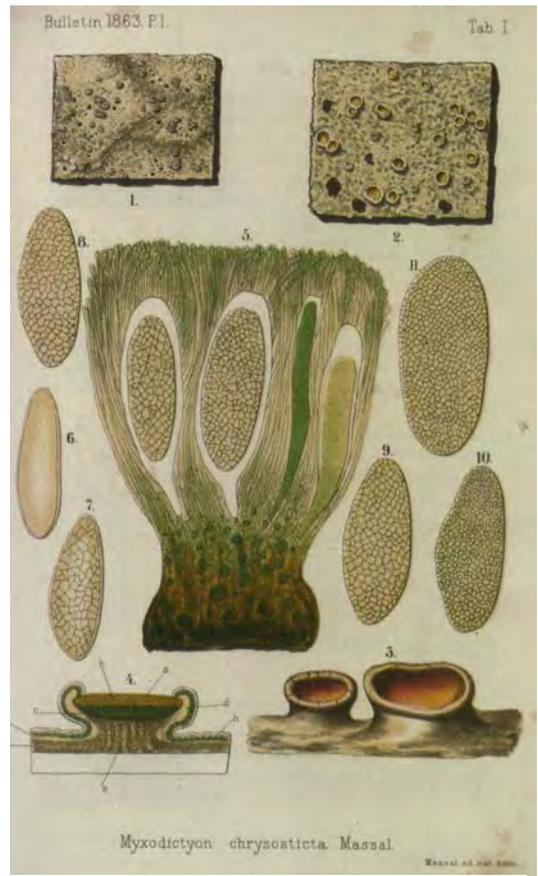


Fig. 5. Massalongo's 1863 plate of *Myxodictyon chrysosticta* (= *Brigantiaea chrysosticta*).

During a visit to Verona 22 years ago (June-July, 1980), I had the opportunity to study Massalongo's lichen herbarium held in the Sezione di Botanica, Erbario Generale del Museo Civico di Storia Naturale di Verona (VER) and also Massalongo's extensive correspondence and manuscripts held in the Biblioteca

Civica di Verona. Observations made at that time form the substance of this note. A detailed account of the Massalongo lichen herbarium, and of Massalongo's lichenological correspondence preserved in Verona, is in preparation and will be published elsewhere. My Verona visit was possible because my wife, Patricia [Payne] was singing in a production of Ponchielli's *La Gioconda* in the Verona Arena, with a cast including Luciano Pavarotti. While Patricia rehearsed in the vast Arena, I happily studied Massalongo's entire lichen herbarium housed in a lovely palazzo in Corso Cavour. I also found Massalongo's extensive correspondence and manuscripts in the Biblioteca Civica di Verona, two rich treasure houses of material, illustrating a short but extraordinarily vital and productive life.

The Arena is a massive Roman amphitheatre built in AD 30 and one of the best-preserved Roman monuments in Europe. With seating for 25 000 it is used for staging large-scale operas with four productions each season which opens in July. We flew to Venice and there took the train for Verona. We were to have nearly 5 weeks in this beautiful town, parts of which are more reminiscent of a theatre set than a modern European city. It was continuously exciting and delightful.

On 25 June I made a first visit to the Botany Section of the Natural History Museum (Museo di Storia Naturale, Comune di Verona) housed in Palazzo Gobetti at No 11 Corso Cavour. My diary for that day reads "...the Herbarium is on the first floor of a splendid old palace - parquet floors, crystal chandeliers marble architraves and fireplaces - gilded doors - like the set of a Fellini film. Dr Bianchini is a very courteous pleasant man and his young technician (Francesco De-Carlo) also - we managed to converse fairly adequately in Italian and French... I was given a pleasant table below a portrait of Massalongo, a very good binocular and lamp and shown the *Licheni Exotici* in three big boxes and quietly left to it...". Over the next 4 weeks I was to see the entirety of Massalongo's lichen collection, including New Zealand specimens sent to him by Churchill Babington from Cambridge. In cupboards at the end of the lichen collection there were folders containing Massalongo's brilliantly executed and coloured drawings of lichens and their internal anatomy that he used as illustrations to his numerous papers and monographs. Included here were the original plates for his paper on three New Zealand lichens, published posthumously in 1863 in the *Bulletin of the Imperial Society of Naturalists of Moscow*. As is obvious from reproductions of two of these (see above) Massalongo's skill as an artist was of the highest order. It was quite wonderful, almost overwhelming in fact, to see these glowing original art works, so carefully drafted and painstakingly painted almost 120 years earlier. For me it was a magic moment. However, for Massalongo's correspondence and manuscripts I was directed elsewhere. On 28 June I visited the Verona City Library (Biblioteca Civica) in Via Capello and was shown to the reference section on the first floor where I explained my wish to see Massalongo's "Manoscritti e Carteggio di Massalongo" from the Catalogue. All 13 boxes of them, an amazing collection of archival material, containing even schoolbooks that Massalongo had written as a child. In box III were the original manuscripts of Massalongo's "*Lichenes Capensis*" and his posthumously published "*Sopra tre licheni della Nuova Zealanda*". It was an extraordinary experience handling these original notes, sketches and complete manuscripts. I noted in my

diary "...The industry of Massalongo in so many fields, Botany; Geology; Zoology; Palaeontology is staggering – painstakingly translated passages from Lyell's "Principles of Geology" etc...". I was told by the Archivist, Sr Marco Menato, that I could look at all the manuscripts (including the correspondence) in the stack the following Saturday (5 July) which I duly did and after much searching, located his correspondence in MSS series 1503 – 16 volumes of it. A treasure trove of historical lichenology! My diary reads: "...Looked at the first 5 vols and they contain some quite marvellous things – 7 [letters] from Babington in his untidy written Latin – a host from De Notaris in Genoa – Fée in Strasbourg – Desmazières – Elias Fries and Thore Magnus Fries [in Uppsala] and many more. It will be a richly rewarding archive to go through".

Of interest to BLS readers are letters from three British lichenologists. Churchill Babington wrote 7 letters, mainly in connection with a set of New Zealand lichens that he sent to Massalongo. William Lauder Lindsay wrote asking for a testimonial, and there are 13 letters from William Allport Leighton, one in Italian but most in Latin and this one friendly letter in English written from Shrewsbury on 9 May 1857

"...My Dear Sir, Some days ago I forwarded to you through the Post Office the VII and VIII fasciculi of my British Lichens together with my "Monograph of British Umbilicariae"; my "New British Arthoniae"; and my "New British Lichens" which I hope by this time you have received in safety. I have paid the postage of the packet (2/6d) so that you ought to receive it free of any further charge. I shall be happy to receive in exchange the XI and XII vols of your admirable "Lichens Italici" when published. The other pamphlets you will kindly accept in return for those you have done me the honour to present me with. Indeed if it meets with your approbation I shall be most happy to send you any future volumes of my Exsiccati and also any Opuscula I may publish – if you in return send me your volumes of Exsiccati and Opuscula when published.

I have to thank you for several works – the last your "Miscellanea Lichenologica" – always precious, useful and acceptable to me.

Please to make enquiry at your Post Office and ascertain whether you can send your Exsiccati & Opuscula by that channel. I rather think you will be able to do so by paying the postage as a Book Postage Packet from Verona to Shrewsbury. Remember to leave the ends of the book open so that the Post Office authorities can see the contents without removing the band of paper containing the address. Add on the direction the words "Via France" – and "Postage prepaid" – otherwise the packet will be sent through Prussia and be charged as a letter which will amount to a very considerable sum. All this however you will ascertain at the Post Office at Verona.

Believe me, my dear Sir

Yours most truly

Willm Allport Leighton

I shall be happy to have your "Descrizione de alcuni Licheni nuovi con 7 tav.col" – if you have any to spare. Adieu...".

On Thursday 10 July 1980, the opening of the opera season (temporada) took place with the première of *La Gioconda*, with the Bulgarian soprano, Ghenà Dimitrova making her debut as Gioconda and Luciano Pavarotti his Arena debut as Enzo Grimaldi (Fig. 6). The 25 000-strong audience all lit small candles (*candelini* – similar to what we would put on a birthday cake) during the overture, in memory of Maria Callas who sang *Gioconda* here in 1947. Patricia (as Gioconda’s blind Mother, La Cieca) was given a massive ovation at the end of her First Act aria “*Voce di Dona*” (its theme is used extensively in the opera’s overture), and in the Second Act, Pavarotti was afforded a “*bis*” by the thunderous audience roaring for a reprise, and in spite of opposition at first from Anton Guadagno the conductor, he sang his great aria, “*Cielo e Mar*”, a second time to even more rapturous applause. These two arias turned out to be highlights of the evening, and over coffee and rolls at a restaurant the next morning, it was warmly and fantastically exciting to see Patricia’s name in large letters “Pavarotti, Dimitrova, Capucilli e Payne” adorning the front of the morning papers – critics loved the production and the singers.



Fig. 6 First night of *La Gioconda* (Ponchielli) at the Verona Arena, 10 July, 1980 with the singers Piero Cappuccilli, Ghenà Dimitrova, Patricia Payne and Luciano Pavarotti.

The acoustics of the Arena are legendary, and sitting on the topmost “gradinata” where the distance from the stage makes the orchestra and singers look like small matchstick dolls, the immediacy, vibrancy and lustre of the sound (all unamplified) that comes up to you is absolutely compelling.

With *La Gioconda*, and the summer opera season off to a tremendous start, over the following weeks I completed work on the 16 volumes of Massalongo letters in the Biblioteca Civica, and the cataloguing of his lichen herbarium in the Museum Herbarium, an overwhelming experience made possible only by Patricia's 6 performances at the Arena. While in Verona we visited Padua and its famous Botanic Garden (Orto Botanico di Padova), founded in 1545. The lichen herbarium there that I hoped might contain some early specimens, had only one collection of *Pseudocyphellaria aurata* (sent to Trevisan by Babington) from New Zealand. As I noted at the time "...The Herbarium is a rather down at heel rambling building - the lichen collection is rather small - in paper folders tied up in cardboard boxes done up with straps - covered in dust and naphthalene - largely European collections of Zahlbruckner and a few scattered collections of Trevisan... Not really a very rich exotic collection and obviously hardly ever looked at". A later visit to Venice was complete with the "good luck" event (supposedly) of being defecated upon by a pigeon, and we walked up the Scala Regia into the Doge's Palace, seeing at first hand the architectural features that inspired the stage set for *Gioconda* back at the Arena (Fig. 6). In retrospect, "discovering Massalongo" in Verona, through his collections drawings and correspondence was, in truth, one of the great serendipities of my lichen life.

Acknowledgements

I am grateful to Dr Francesco Bianchini (Conservatore, Erbario Generale del Museo Civico di Storia Naturale di Verona) for permission to study the lichen herbarium, and the drawings of Abramo Massalongo; to Sr Marco Menato (Sala di Studio dei Manoscritti e dei Libri Rari, Biblioteca Civica di Verona) for assistance with manuscripts and correspondence of Abramo Massalongo; and to Gary Summons (BM Photographic Unit), and Janet Ledingham (Dunedin) for their skilful photographic assistance. It is also a great pleasure to acknowledge the help of Francesco Di-Carlo (Verona) both in Verona in 1980, and most recently in response to my enquiries about Massalongo's drawings of New Zealand lichens.

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Long-term observations on two crustose lichens from a Kent wall: *Lecidea grisella* and *Ochrolechia parella*

Summary

The growth of the crustose *Lecidea grisella* and *Ochrolechia parella* over a period of 40 years is described from a sandstone wall. Mean radial growth rates ranged from 0.46-2.88 mm/a and declined significantly with thallus age. Growth of both species was inhibited by mortar in the wall and competing lichen species. Fertility measured as area of exposed hymenium also declined with age and for *L. grisella* the apothecia persisted for 10 years or more.

The radial growth of crustose lichens is a fascinating phenomenon and has attracted the attention of numerous naturalists. Recent work has shown the growth process to be more complex than originally thought and a constant radial growth rate appears to be an exception rather than the rule. This study makes a small contribution to this work by reporting some growth measurements on two common crustose saxicolous lichens, *Lecidea grisella* and *Ochrolechia parella* over an extended period of time. Some measurements of lichen fertility were also conducted, the author being intrigued by the allocation of resources to reproduction in lichens – an area of study that has received very little attention.

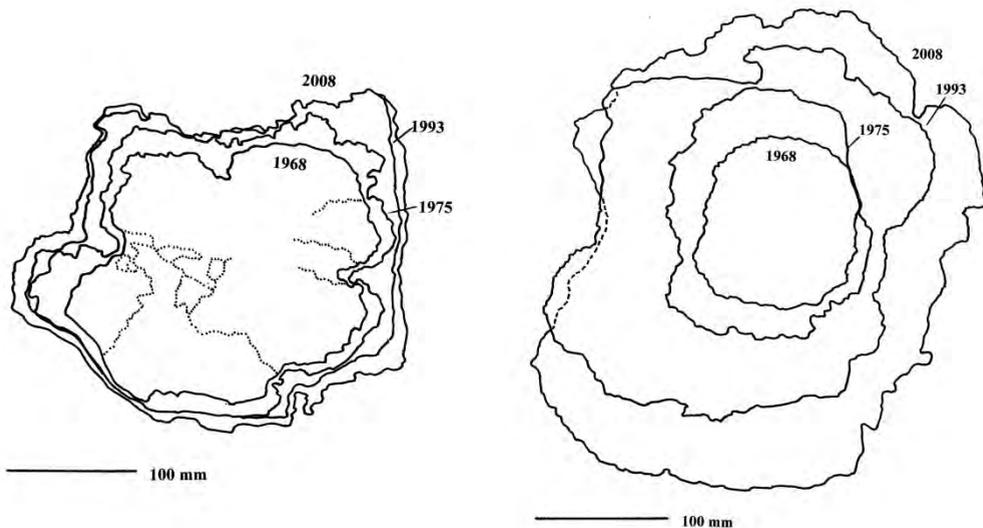


Figure 1. Tracings of the two crustose lichens taken from photographs.

A (left): Growth of *Lecidea grisella* 1968-2008 as revealed by tracings from photographs. The dotted lines represent interthalline lines indicating that this lichen is composed of a mosaic of several individuals.

B (right). Growth of *Ochrolechia parella* 1968-2008. The broken lines on the left reveal areas of thallus retreat resulting from competition with an adjacent thallus of *Tephromela atra*.

Methods

Five sites were chosen on a Cretaceous sandstone wall at Broomhill, near Southborough in Kent (Nat. Grid Ref. 51/ 568414; alt.100 m). The wall, believed to be over 100 years old, is colonised by a range of saxicolous lichens, the two taxa above being the most common. They were associated with the crustose species *Tephromela atra*, *Caloplaca flavescens* and *Verrucaria viridula*. It is a community of sunny, south-facing mildly basic rock, the base being supplied by the mortar of the wall. Photographs of the lichens were taken with the same Nikkormat 35mm camera in March 1968, June 1975, May 1993 and December 2008 covering a period of 40.7 years. Tracings were prepared from the prints and distortion was found to be minimal by comparing rock irregularities in the wall. On each tracing, 25 measurements from the calculated centre of the thallus to the perimeter were made, at equal angles. Areas of the thallus where there were obvious obstructions such as competing lichen thalli or mortar were avoided.

Reproductive effort was estimated as the area of thallus covered by hymenial tissue. This was determined from photographs where measurements of apothecium diameter were made and the number of apothecia present. From these, estimates of hymenium area were obtained.

Results and discussion

Lecidea grisella

This is a common saxicolous lichen on southern English walls and thalli often attain a large size. At the Broomhill site it was the commonest lichen present both at the start and end of the study. The 'single' thallus examined clearly represented a mosaic consisting of at least 12 individuals in 1968 since many interthalline lines were visible (Figs. 1A, 2A). These remained unchanged up to 1993. Because the lichen existed at a composite it was more difficult to estimate its age. However assuming that all thalli grew at the same rate, and using the 1968-75 radial growth rate of 2.88 mm/a, the thalli were estimated to be about 15 yr old in 1968 (Table 1). *Lecidea grisella* grew more rapidly than *Ochrolechia parella*, but no evidence of overgrowth was noted when the two species grew against each other. *Lecidea grisella* had a much thinner thallus and the radial growth rate fell significantly over time (t-test $p < 0.001$). When first measured between 1968 and 1975, the mean radial growth rate averaged 2.88 mm/a., a high rate for a saxicolous lichen (Table 1). Lichen radial growth rates below 2mm/a appear to be more common, although few species have been examined to date (Clayden et al., 2004).

A measure of reproductive effort is the percentage area of a lichen thallus that is covered by sexually reproductive tissue, namely the apothecium hymenium (Pentecost & Rose, 1985). *Lecidea grisella* retained its fertility until 1975 and then underwent a decline (Table 2), with clear evidence of senescence in 2008 where the centre had decayed away (Fig 2C). Examination of the 1968 and 1975 photographs when the thallus was abundantly fertile showed that the majority of apothecia survived for at least seven years. Since many of the apothecia on the 1968 photograph appeared to be mature, the apothecium life span is probably at least 10 years.

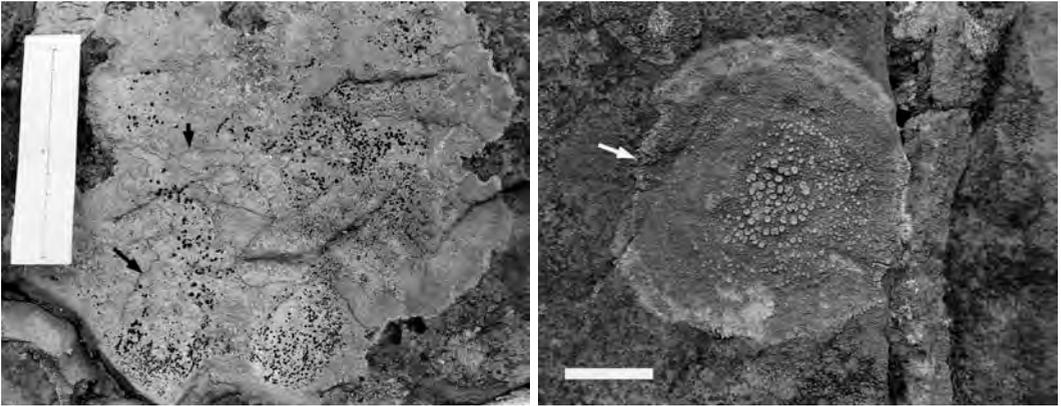


Fig. 2A (left). Thallus of *Lecidea grisella* with numerous apothecia 1968. Arrows show some of interthalline lines. Bar = 100 mm.

Fig. 2B (right). Thallus of *Ochrolechia parella* with apothecia 1968. Arrow shows arrested margin with a degenerating thallus of *Tephromela atra*. Bar = 50 mm.

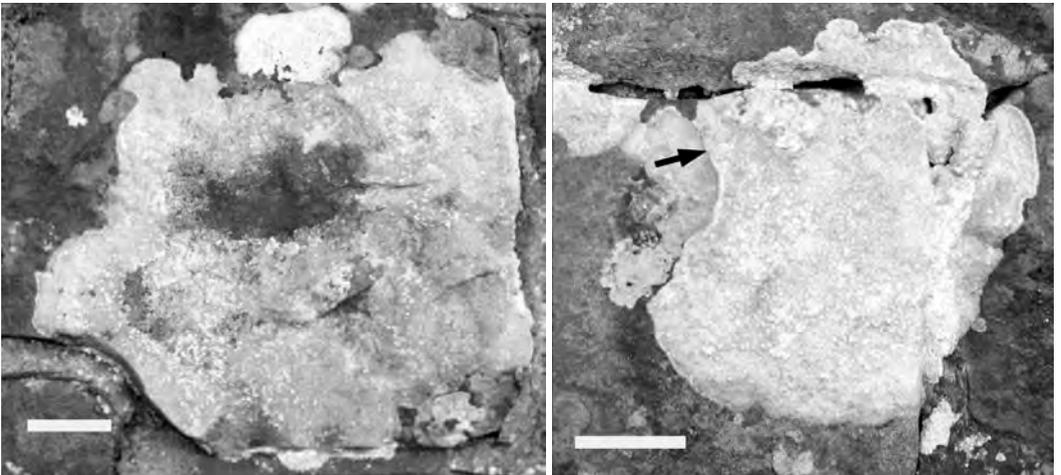


Fig. 2C (left). Same thallus of *Lecidea grisella* in 2008 showing almost complete loss of apothecia, degeneration at the centre, and arrested growth at the mortared edge of the stone. Bar = 50 mm.

Fig. 2D (right). Same thallus of *Ochrolechia parella* in 2008, now sterile but still growing. Growth has been arrested again at the left margin by a new thallus of *Tephromela atra* (arrow). Bar = 100 mm.

Ochrolechia parella

This is a common saxicolous lichen throughout the UK with a preference for slight base enrichment. It is usually found fertile and can grow to a large size. Gilbert (2000, p. 40) for example recorded a thallus 54 cm wide in Scotland. The thallus of this species, in common with others in the genus is thick and is capable of overgrowing other crustose species (Hawksworth & Chater, 1979) and it has been shown to weather igneous rocks (Adamo et al., 1993).

Hawksworth & Chater (1979) obtained a radial growth rate of 0.6-1.4 mm/a in this species from a site in Wales. R. A. Armstrong (*pers. comm.*) observed a mean radial growth rate of 0.87 mm/a and range of 0.5-1.45 mm/a for thalli ranging in

diameter from 2.5-6.3 cm. The measurements from Broomhill correspond to the upper range of these figures (Table 1) suggesting that growth is more vigorous at this site. This could be due to the combination of a southerly aspect and slightly warmer climate. The mean radial growth rate in the Broomhill material showed a significant decline with age, (t-test $P < 0.05$).

Ochrolechia parella underwent a similar reproductive decline to *L. grisella* (Table 2) and for both lichens, sexual reproduction appears to peak in young thalli, less than 25 years old. However, in both species, the reproductive effort falls well short of the maximum recorded in the foliose *Xanthoria parietina* (Pentecost & Rose, 1985) and squamulose *Lecanora muralis* (Seaward, 1976).

Table 1. Radial growth rates of individuals of *Lecidea grisella* and *Ochrolechia parella* at Broomhill, Southborough, Kent.

Taxon	Period of measurement	Mean thallus diameter mm	Estimated median lichen age yr	Mean radial growth rate mm/a	Growth rate range mm/a	Standard deviation mm/a*
<i>L. grisella</i>	1968-1975	224-264	19	2.88	0.32-5.66	1.50
	1975-1993	264-286	31	0.58	0.06-1.43	0.37
	1993-2008	286-301	48	0.46	0-1.64	0.47
	1968-2008			0.94		
<i>O. parella</i>	1968-1975	54-75	22	1.51	1.18-1.97	0.23
	1975-1993	75-128	34	1.47	0.93-2.14	0.32
	1993-2008	128-169	51	1.32	0.41-1.79	0.34
	1968-2008			1.42		
<i>Tephromela atra</i>	1993-2008	50		0.60-0.96		
<i>Verrucaria viridula</i>	1993-2008	45		0.99		

*Of growth rate, taken from 25 equally spaced measurements around the lichen thallus

General observations

The radial growth rates of both species were impeded by competing lichen thalli and the mortared edges of the stone upon which they grew. This is evident in Figures 1 and 2. Growth of *L. grisella* was reduced or stopped by the mortar of the wall and although growth of *O. parella* was also inhibited between 1968 and 1975, it soon resumed and had recovered by 2008 (Fig. 2D). This thallus was also inhibited on the

opposite side (Figs. 1B, 2B left) by an old thallus of *Tephromela atra*, although again, by 1975 more rapid growth had resumed as the *Tephromela* decayed. Growth was soon inhibited again however by contacts with a more vigorous thallus of *T. atra*, which in some areas appears to have overgrown the *Ochrolechia* (broken line in Fig. 1B). These processes demonstrate the complexity of lichen growth on rock surfaces as the surface characteristics of the rock change. The radial growth rate of the *Tephromela* appears to be lower than the *Ochrolechia* (Table 1) although this is based on a single measurement and may not be reliable. The growth rate of a non-competing thallus of *Verrucaria viridula* is also given.

Table 2. Estimated reproductive effort as % coverage by hymenium

Year	<i>L. grisella</i> Est. age yr	% effort	<i>O. parella</i> Est. age yr	% effort
1968	15	0.65	18	1.50
1975	22	0.74	25	0.6
1993	40	0.08	43	0.4
2008	55	0.03	58	0

This investigation, spanning over 40 years is one of the longest recorded for lichen growth. Originally, five sites were monitored on the wall, but only two survived until 2008. One was lost to overgrowth by ivy and the other two by tree-shading. These are problems that are difficult to predict in long-term studies and suggests that future investigations should take account of potential tree growth in the immediate surroundings.

Acknowledgements

I am grateful to Dr. R. A. Armstrong for permission to use his growth rate data on *Ochrolechia parella*, and to Dr. A. Fletcher for access to the British Lichen Society Library resources.

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***Hypotrachyna afrorevoluta* and *H. revoluta* are both widespread in Britain but do we know how to identify them?**

This is planned to be the start of a series of articles which might help with the identification of pairs, or small groups, of similar species. We start with a pair of common and conspicuous macrolichens which have traditionally been recorded as *Hypotrachyna revoluta*. Our aim is not simply to present information; we raise questions and hope to stimulate further research and debate. This work is available to all. Improvers are often more useful than experts for testing the user-friendliness of descriptions. In our modern electronic age we are not constrained by the copy dates of journals; observations can flow in to online forums helping to maintain momentum and involving a wider group of observers.

Louwhoff (2009) hinted that the British concept of *H. revoluta* may need revision: "Most specimens [of "*H. revoluta*"] may be attributable to *H. afrorevoluta* (Krog & Swinscow) Krog & Swinscow (1987) **2468**". In the years since the publication of the 2009 "Flora" it has become generally accepted that both species occur in Britain, and both appear to be common and widespread. In June 2010 Brian Coppins had the chance to study and collect well-developed specimens of both species growing on oak branches during tree surgery operations near Salisbury. This study proved even more persuasive than the study of herbarium specimens. *H. "revoluta"* is not well represented in herbaria having been considered too common

and well-known to bother collecting. Those specimens that are present are often incomplete thalli and cannot be compared in context.



Hypotrachyna afrorevoluta, on bark of *Prunus spinosa*, Wicken Fen, Cambridgeshire

Louwhoff (2009) states that *H. afrorevoluta* is “characterized by the relatively dark lower surface, small lobes and soredia initially formed in pustules.” In fact the outer lobes of *H. afrorevoluta* tend to be more robust, slightly larger and more revolute than those of *H. revoluta*. The lobes within the centre of thalli, being less discrete and less erect, may result in *H. afrorevoluta* having a more dissected appearance. The soralia of *H. afrorevoluta* are certainly coarsely pustular in contrast to the evenly farinose soralia covering the upturned lobes of *H. revoluta*. The difference is clear when well-developed specimens are placed side by side but young specimens are more difficult to determine. A source of confusion may arise from the way that the soralia initiate in *H. revoluta*; the upper cortex ruptures and soredia develop on the ragged edges and then on the exposed medulla within. These soralia soon merge to create evenly sorediate areas. On young thalli of *H. revoluta* these initial stages of soralia development could be easily mistaken for the “pustules” of *H. afrorevoluta* but the latter develop from distinct convex wrinkles or warts of the lobe surface. Although individual soredia of both species are a similar size, those of *H. afrorevoluta* tend to clump together into coarsely granular consoredia. The under-surface of both species, in mature parts of the thallus, is black. When well-developed specimens are compared, the paler brown marginal zone is usually wider in *H. revoluta* while the rhizines of *H. afrorevoluta* tend to extend closer to the lobe margins. In other words,

H. revoluta tends to have a wider pale and naked marginal zone underneath but again caution is required. It is possible to find lobes of *H. revoluta* with rhizines almost to the edge and lobes of *H. afrorevoluta* with pale marginal zones lacking rhizines. More observations are required to investigate whether these underside features can be diagnostic. The rhizines of *H. revoluta* appear to be consistently paler (shades of deep brown) and finer compared with the coarse black rhizines of *H. afrorevoluta*.



Hypotrachyna revoluta, on bark of *Prunus spinosa*, Wicken Fen, Cambridgeshire

Our images show typical specimens of each species at identical magnifications which were collected from the same blackthorn stem at Wicken Fen in Cambridgeshire (Herb. Powell 2495). *H. revoluta* is seen to be more “three dimensional” with erect lobes bearing soralia which are evenly and finely sorediate. These specimens have been stuck to a display board and rather clumsily handled. Large white patches are visible where the fragile soralia of *H. revoluta* have been abraded. The soredia of *H. afrorevoluta* are less fragile and the soralia borne in a less vulnerable position.

We do not yet know whether these two species show any differences in habitat preferences or in geographical distribution.

Louwhoff (2009) states that “*H. afrorevoluta* is similar if not identical [to *H. britannica*], and said to be somewhat intermediate between *H. britannica* and *H. revoluta*. Molecular studies may be helpful here.” *H. britannica* is a species primarily of coastal rocks in the western British Isles and the Channel Isles, and was considered by Louwhoff to be “distinguished by the extended, \pm ascending lobes with pustules

which develop indigo-blue to grey-black, coarse soredia, and by the largely coastal rock habitat.” An image of *H. britannica* from ash bark in Co. Galway, Ireland has been contributed by Mike Simms to the British Lichens website (www.britishlichens.co.uk) which shows the dark soredia well. However, analysis of unvouchered images of thalli identified as this species from Cornwall show soredia that are hardly more strongly pigmented than the surrounding thallus. Soredia of somewhat degraded material in the IMI and Kew collections vary from cream to brownish. This would provide an interesting subject for further study.....

Reference

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Mobile lichen sites

The last mention (in this *Bulletin*) of lichens on motor cars may have been Ivan Pedley’s description of his twenty year old Ford Granada (Summer 2000). The previous edition of the *Bulletin* (Winter 1999) described Jeremy Gray’s hair-raising chase around the backstreets of Penzance in pursuit of a Lada adorned with (he later discovered) 21 species of lichen. Ivan was wary of stimulating a cascade of articles which might become “too repetitive, too prolix”. We can perhaps be allowed the occasional indulgence. This latest submission was stimulated during the 2012 Autumn Field Meeting based in Bedfordshire. Interest was shown in the Local Organiser’s robust, reliable but never washed Citroen C15 van which was considered more photogenic than the owner and given its own site status on the spreadsheet of records. Janet examined her own car, one year since it last faced a carwash, and found three species (*Lecanora muralis*, *Phaeophyscia orbicularis* and *Physcia caesia*). Other participants of the meeting were encouraged to examine their own vehicles and to submit the records with a grid reference indicating the vehicle’s usual residence.

The study of lichens on vehicles may seem somewhat light-hearted but recording lichens is never trivial. The Citroen van has experienced a succession from an early dominance of *Xanthoria* and ciliate *Physcia* species (which have now become much affected by pink parasites) to a more varied community with recent colonisation by *Amandinea punctata*, *Evernia prunastri*, *Parmelia sulcata* and *Physcia caesia*. The lichen taxa involved are not all taxonomically simple – the early

colonisation of the van included many tiny clusters of *Lecanora hagenii*, the proper determination of which involves delving into the intricacies of the *Lecanora dispersa* group.



Ivan ended his submission, and attempted to finish with the subject, by mention of *Physcia caesia* on the flat tyre of a defunct Harrier fighter jet on a Leicestershire airfield: “Only one species I’m afraid on this unusual mode of transport, which hardly breaks a record, but the associated awesome fire power must surely deter any further correspondence.” I cannot match the speed and power of Ivan’s “last word” but an old tractor which a friend recently acquired, coated in old, dry manure, had exuberant and extensive colonies of *Bacidia neosquamulosa*.

Our resources and technology have moved on since the turn of the Millennium and I welcome a deluge of vehicle surveys. Any records will be welcome in the database and we might find room for an analysis of the findings on our new website.

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Mobile lichen sites (2)



This may not be the fastest lichen in the east (see cover photo of *Bulletin* no. 106 Summer 2010) but it has its substrate well covered. Photo by Steve Price, taken in Sims Park Botanical Gardens, Coonor, Tamil Nadu, India, January 2013

Local Meetings - a Call to Arms

Many BLS Members have expressed an interest in there being more local meetings and experience has shown that these meetings are a good opportunity for a wider range of people to get involved with field lichenology. Organisers of local field meetings, whether BLS Local Groups or local natural history society activities, are encouraged to have details of their meetings publicised on the BLS website.

Please send details to the BLS Field Meetings Secretary (email address: fieldmeetings@britishlichensociety.org.uk) and they will feature on the events list which is available to all members and to others interested in lichens. Please ensure that you provide contact details for the leader/organiser as well as a brief description of the event and its duration. Alternatively if organisers prefer to arrange outings at the last moment send your contact details to have them put onto the events section of the website as 'standing information'. Have a look at the events section of the website for examples of local event entries.

Steve Price, Field Meetings Secretary

Masefield Park: tree fever

We must down to the park again, to the arboreal lawns in the sky,
To the icy dew and the eerie chill and the raven's crooked eye,
To the old grey men with hollow cheeks and part-amputated limbs,
To the fallen hulks; like masonry with decorticated rims.

We must down to the park again for the changing of the guard,
Where the lichen lines that was once the prize of Rose had fallen hard,
To the killing fields where the lovesick air had made our glad hearts sink,
To witness the new restoration: THEM...simmering on the brink.

We must down to the park again with its dappled dotted deer
Past the rustic shrines and ivied walls to the cunning *Cresponea*,
To greet *lyncea amylacea*, and a *Lecanactis*-white duet,
With *Opegrapha prosodea*: lest we forget, lest we forget.

Vince Giavarini

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Pubs, palimpsests and pictures

The passing of an era is illustrated in the fate of the neighbourhood pub. In the nineteenth century they often had an important role in natural history; my local natural history society started out in meetings held in pubs in the London district of Shoreditch, now very trendy. For 'wet rent' the landlord would allow people to use a room and sometimes even keep a box of books for them. The London Mechanics Institute started in a meeting in a pub in 1823 and became Birkbeck College in 1907, which now runs the Ecology and Conservation course on which I was first introduced to lichens by Brian Ferry and Richard Bailey. One local pub in Camden had a mini-museum with a Great Auk's egg. Now these cornerstones of community are gastropubs or have been turned into luxury flats.

Palimpsest is a beautiful word that expresses modern life. It derives from reusing vellum; scraping it clean and writing a new text on it. Nowadays researchers try to find out what the old text was. The area around the Natural History Museum is a palimpsest of buildings.* After the Great Exhibition of 1851 the Crystal Palace moved to Sydenham and the money raised during the exhibition was used to buy some of the estates south of Kensington Gardens for developments related to the four great sections of the exhibition – raw materials, machinery, manufactures and plastic arts. The Royal Horticultural Society (RHS) gardens were laid out for promenading, which took up a large part of the area. The surrounding buildings included the Brick

Palace where the 1862 Exhibition was held but, although intended for multiple uses, its lack of success meant it was pulled down and partly reused in the Alexandra Palace in Muswell Hill and the site used for the Natural History Museum. The RHS moved out in 1882 but a small remnant of the arcading can still be seen behind the Sherfield Building of Imperial College. Imperial is part of London University which awarded the first BSc in 1858. The word scientist was first used in 1833 and this area is important in the development of nineteenth century science. The Victoria and Albert Museum (V&A) is well known but how many people realise that the Cole wing was originally the Science Schools where Thomas Huxley had his laboratory and taught H.G. Wells; or that Henry Cole was a civil servant who invented the Christmas card.

On the Exhibition Road side of the V & A there are statues to craftsmen – a change from artists, sculptors and architects on the Cromwell Road or military men, statesmen, musicians and poets elsewhere. Does anyone know of one to a naturalist? At the National Portrait Gallery there is a painting of an anti slavery meeting in Westminster which features Greville, a Scottish mycologist and botanist after whom M.C. Cooke named his journal *Grevillea*. Sadly this national institution does not have a category of mycologist – the father of British mycology, Berkeley, is found under ‘naturalist’ and there is only a print of him. His portrait, however, hangs in the meeting rooms of the Linnean Society, as do those of Linnaeus, Hooker, Bentham and Brown. Another instance of the low profile of mycology.

Today the internet is where people go to search for information; perhaps we should have a hall of fame for mycologists. The internet is an ephemeral area where information comes and goes in what appears to be an untraceable way. Vellum, bricks and digital code, somewhere a trace is left.

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*The City of London is another palimpsest area where things are always being destroyed and rebuilt. The caretaker of a medieval church in the shadow of the Gherkin pointed out to me where the wind, funnelled by the tall buildings around, acts like a sandblaster on the fabric and nothing can grow on that stripe. However I did find recolonising Parmelias, including *Punctelia*, *Flavoparmelia* and *Melanelixia*, on the weathered wood rail of the Barbican Highwalk where trees drop honeydew and they are undisturbed. This is a little used area and will probably succumb to the redevelopment around – but for a short time these lovely leafy lichens survived there.

Lichen hunting - mostly below - Cairn Gorm: a cautionary tale

The object of our expedition was to resurvey the snow patch lichens at Ciste Mhearad (pronounced Keyst Verad) at 1095 m a.s.l. on the east side of Cairn Gorm and 150 m below the summit. The first survey was carried out by Oliver Gilbert and Brian Fox in 1983 when the snow patch still persisted year-round more years than not, but since 2000 the patch has melted completely every summer. We wanted to find out what floristic changes there might be after nearly thirty years, as the site is not an SSSI and could therefore be vulnerable. However, the weather was not on our side, and we spent more time off than on the mountain. This is mostly an account of what we did when we were down below – the snow patch results will come later.

We chose one of the wettest summers since records began (<http://www.metoffice.gov.uk/climate/uk/summaries/actualmonthly>; Munroe, 2008). Back with all fingers and toes intact (frostbite was a definite possibility) we can only wonder at Oliver and Brian's enterprise. Their article in the *Lichenologist* (Gilbert & Fox, 1985) gives no hint of the extraordinary feat they achieved: in 15 days not only did they run a 150 m transect upwards from the snow patch, but they also carried out a general search of the plateaux of four of the highest mountains in Scotland. For us the weather was by rapid turns total cloud whiteout, rain, sleet and snow with freezing high winds (Photo 1). After the first two nights of blizzard, digging out the tent walls with the frying pan and being visited by a mountain ranger who on eyeing our tent said he didn't think it looked as if it would withstand 100 mph winds (a definite possibility), we re-camped down in the valley.



Photo 1. Conditions on the plateau

Once there our efforts to get back on the mountain were slowed up for 6 days by a regulation which stipulated that if we took the funicular (an 8 minute ride) we would not be allowed out of the Ptarmigan Restaurant onto the mountain top except as part of a guided party (entirely reasonable for a day visitor, but desperately frustrating for ageing researchers for whom the walk up took 2

hours) and even when permission was granted we had to be off the mountain by 4.30pm. This was extremely good for our lungs and legs, but it took hours off an already short day. Vagn said he had never experienced such bad weather even in Greenland and the likelihood of us both coming down with pneumonia from

sleeping in damp clothes was a lurking possibility. After the first 2 days total misery Vanessa got parceled up, like a badly wrapped Christmas present, in a silver plastic cape lashed around the middle with her trouser belt. When we got too cold we made a 20-minute dash across the plateau to the restaurant (if we could find it in the cloud) where free boiling water could be obtained to make packet soup and our lunches eaten in comfort (with medicinal whisky for added warmth).



Photo 2. Caledonian pine at Glen Feshie

On one of the unworkable days we went to Glen Feshie, renowned for its Caledonian pines. To get permission to enter this private estate it is first necessary to contact the Factor: by dint of canny questioning we found that the shopkeeper at Kincaig had his number. The Glen is all a glen should be and Caledonian pines growing by the burn above the lower woods are indeed splendid trees (photo 2), the older living ones (as distinct from the famous fossil stumps) have been cored by a dendrochronologist and are apparently about 250 years old (pers. comm. a local). Their trunks have a tessellated appearance with lichens growing abundantly in their bark crevices (photo 3).



Photo 3. Lichens in bark crevices



Photo 4. Lichen on dead Caledonian pine bark

Neil Sanderson monitored lichens in Glen Feshie for Scottish Natural Heritage (Sanderson, 2012), but he concentrated on the lower woods and upper glen so we can't compare his findings with our Caledonian pines in the open valley bottom. Our

survey was not comprehensive, but we noted 27 species on Caledonian pine bark (Photo 4, Table 1). As rain resumed we started for home (the tent). Stop! Shouted Vagn. There on the verge was a kilogram of chanterelles and further on a road-killed pheasant that we collected: were we poaching? Anyway, they made a nice meal. On another rainy day we lichen hunted east of our campsite in the fragment of woodland between it and Loch Morlich, and the northern part of Glenmore Forest Park: there on *Larix* we discovered *Evernia mesomorpha* new to Britain. On other days we also visited the southeast corner of Glenmore Forest near the road leading up to Cairn Gorm Base Station and, nearer Aviemore, the mixed woodlands of Rothiemurchus (Table 1).

When the weather was too bad even to lichen hunt around Aviemore we took cups of tea in a cafe near the camp that had Wifi connection for our laptop and perky red squirrels also taking their tea from feeding boxes with a lot of very lively chaffinches – until a sparrow hawk swooped down and only just managed to stop before bumping into the window: did it think Vagn’s beard was a rabbit? Our other favourite location away from the tent for wet/freezing/cloud-cover days was a very friendly family-run-joint called Papa Rock in Aviemore. This also had free Wifi connection and coffee and motorbikes parked inside on which the owner-chef had courted his wife in the freewheeling ‘70s.

Unfortunately the weather and logistical problems made it quite impossible to do a second snow-patch as we had hoped. However, we managed the main part of the Ciste Mhearad transect (NJ 01222 04558 top - NJ 01222 04558 bottom) and when the profile was drawn up it looked similar to Oliver and Brian’s: their lower-angle slopes seem longer than ours, but they don’t say how they measured them nor do they give precise references as to slope location.



Photo 5. Upper part of the transect

The Ciste Mhearad species identification is ongoing: once this has been completed we will know if any additional species have arrived since 1983 and which ones have disappeared. This will necessarily be an incomplete list, as our 1 meter-wide 176 meter-long transect (Photo 5) will almost certainly have missed species (as could that of Oliver and Brian) although their general

survey of the plateau will have picked up a wider selection from the more sheltered

crevices (photo 6). Hopefully, we will also be able to draw some conclusions as to the effects on the flora of changes in snow patch persistence and possibly answer concerns about eutrophication. We believe that much more information on climate or environmental change could be derived from comparison of Oliver and Brian's



Photo 6. The plateau at Ciste Mhearad

survey with a comprehensive lichen survey of the plateau. In Edinburgh we managed to see Chris at the RBGE. Chris is hatching a plot to get a graduate student onto the job.

riding the funicular. Additionally, Lichen Hunters who don't need to get their noses into a snowless snow patch are recommended to go in July/August when the weather MIGHT be a little warmer.

Acknowledgements

Currently, soil sample analysis is in hand and writing up of the snow patch data will follow. Despite the weather, or perhaps because of it, we found the Scots to be a most friendly bunch (especially the lady that runs the Ptarmigan Restaurant), but anyone else wanting to do a lichen survey is recommended first to get permission from Scottish Natural Heritage to travel up as well as down in the funicular (permission has also to be obtained from the RSPB as well as the Mountain Rangers). Our mistake was only to get permission for camping and the work; we didn't know we also needed dispensation from the visitor regulation concerning

We are both most grateful to the British Lichen Society for funding: Vagn for the Overseas Members Travel Fund and Vanessa for funding from the Small Ecological Project Grant. We also received funding from the Appleyard fund administered by the Linnean Society. News of this grant came as a wonderful surprise on return home.

Aha, I see they found my fountain pen!



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Table 1. Species recorded

Species	Glen Feshie	SE Glennore Forest Park	Glennore Park & loch shore	Glennore campsite	Rothie- murchus Forest
<i>Baeomyces rufus</i>		● (soil)	●*(stone)		
<i>Bryoria fuscescens</i>	●	●	●*	●	●
<i>Bryoria nitida</i>	●				
<i>Cetraria muricata</i>	●				
<i>Chrysothrix candelaris</i>					●
<i>Cladonia arbuscula</i>		●			
<i>Cladonia caespiticia</i>			●*●**		
<i>Cladonia cenotea</i>	●			●	
<i>Cladonia chlorophaea</i>	●	●	●**		
<i>Cladonia ciliata</i>					●
<i>Cladonia coniocraea</i>			●**	●	
<i>Cladonia cornuta</i>			●**		
<i>Cladonia deformis</i>	●				
<i>Cladonia fimbriata</i>			●		
<i>Cladonia floerkeana</i>	●				
<i>Cladonia macilentata</i>	●				
<i>Cladonia ochrochlora</i>	●				
<i>Cladonia polydactyla</i> var. <i>polydactyla</i>	●	●	●**		●
<i>Cladonia portentosa</i>		●			
<i>Cladonia pyxidata</i>			●**		
<i>Cladonia squamulosa</i>		●	●**		
<i>Clypeococcum hypocenomycis</i>		●			
§ <i>Evernia mesomorpha</i>			●*		
<i>Evernia prunastri</i>			●*		●
<i>Hypocenomyce scalaris</i>	●	●	●*		●
<i>Hypogymnia farinacea</i>	●				
<i>Hypogymnia physodes</i>	●	●	●*●**	●	●
<i>Hypogymnia tubulosa</i>	●				
<i>Icmadophila ericetorum</i>			●**	●	
<i>Imshaugia aleurites</i>	●	●	●*		
<i>Lecanactis subabietina</i>	●	●			
<i>Lecanora pulicaris</i>	●	●	●*●**		●
<i>Lecanora saligna</i>		●			
<i>Lecanora symmicta</i>	●	●			
<i>Lecidella subvididis</i>			●**		

Species	Glen Feshie	SE Glenmore Forest Park	Glenmore Park & loch shore	Glenmore campsite	Rothie- murchus Forest
<i>Mycoblastus sanguinarius</i>	•	•			
<i>Mycocalicium subtile</i>			•**		
<i>Ochrolechia androgyna</i>					•
<i>Ochrolechia microstictoides</i>	•	•			
<i>Parmelia saxatilis</i>	•	•	•* •**		•
<i>Parmelia sulcata</i>			•*		
<i>Parmeliopsis ambigua</i>	•	•			
<i>Parmeliopsis hyperopta</i>	•	•		•	
<i>Peltigera membranacea</i>		• (soil)			
<i>Peltigera praetextata</i>		•			
<i>Pertusaria albescens</i>		•			
<i>Phlyctis argena</i>			•*		
<i>Placynthiella uliginosa</i>				•	
<i>Platismatia glauca</i>	• (c.ap)	•	•* •**	•	•
<i>Pseudevernia furfuracea</i>	•	• (c.ap)	•**		•
<i>Rhizocarpon geographicum</i>		• (rock & asphalt)			
<i>Stereocaulon vesuvianum</i>		• (asphalt)			
<i>Strangospora moriformis</i>		•			
<i>Trapelia placodioides</i>		• (asphalt)			
<i>Trapeliopsis glaucolepidea</i>	•				
<i>Trapeliopsis granulosa</i>		• (soil)			
<i>Trapeliopsis pseudogranulosa</i>		•			
<i>Tuckermannopsis chlorophylla</i>	•			•	•
<i>Usnea hirta</i>	•	•	•*		
<i>Usnea silesiaca</i>			•*		
<i>Usnea subfloridana</i>			•* (c.ap)		•
<i>Usnea wasmuthii</i>					•
<i>Xylographa paralella</i>			•**		
<i>Xylographa vitilago</i>			•**	•	

Locations: Glen Feshie: NN846941. SE corner of Glenmore Forest Park: NH 985 076. Glenmore woods and E shore Loch Morlich: NH 972 095. Glenmore campsite: NH 976 096. Rothiemurchus woods near Loch an Eilein: NH 898 083.

§ *Evernia mesomorpha* new to Britain. •*: on *Larix*. •**: on lignum.

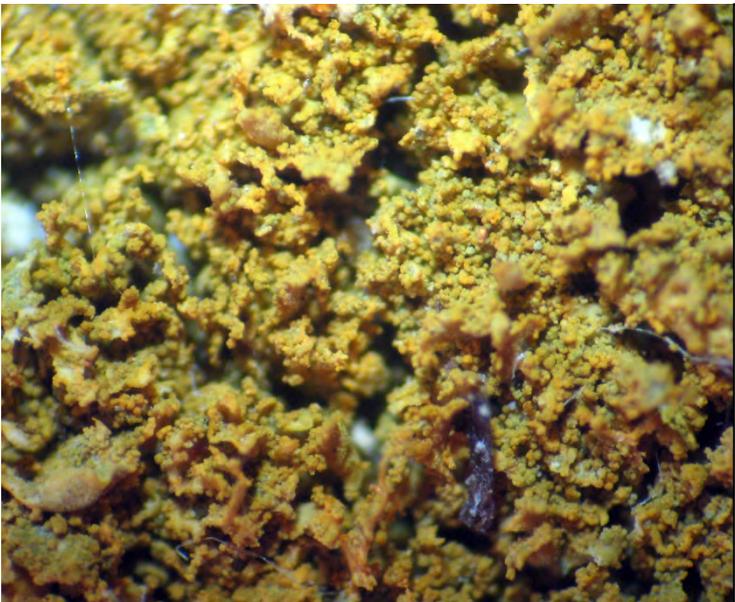
Mystery Lichen Section

This is a new idea for a regular slot in the *Bulletin*. The images may inspire correspondence, with Chris Hitch at cjbh.orchldge@freeuk.com if there is recognition of (or comment about) the species in question. Updates will be provided in future issues of the *Bulletin*. Further images of mystery lichens will be welcomed.

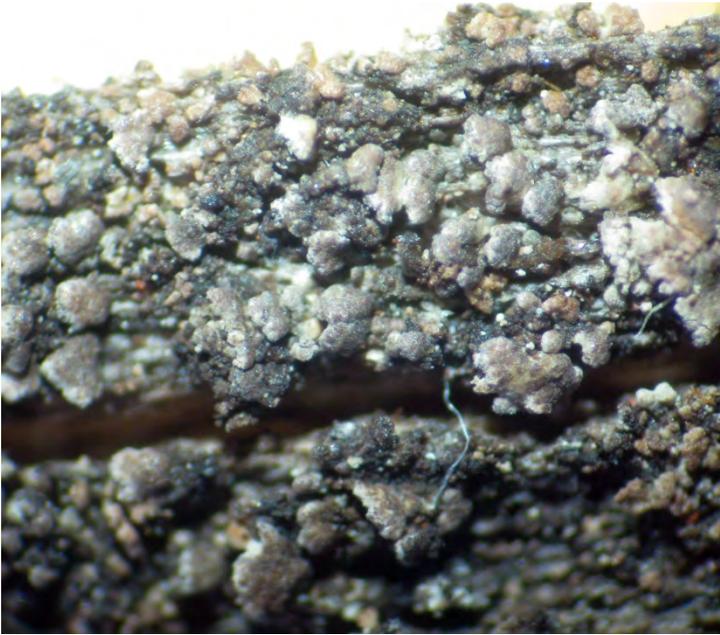


Diplotomma sp. This species, or maybe form or variety, has spores which are the same as *D. alboatra*. The thallus is always very thin and spreading and there is always a persistent, easily visible, dark brown to black prothallus, unlike *D. alboatra*, which is described as having a pale prothallus. Chemistry is negative.

It mainly grows on flints, embedded in mortar on south walls of churches in eastern England.



This *Xanthoria* sp. is common on mortar pointing, though it can spread to adjacent stonework. It is most often on eastern walls of churches. It forms a very minute crust, much smaller than *X. candelaria*. It is this, together with the substrate and the darker colour, which suggests a different species. Mainly recorded in eastern England.



?? *Trapeliopsis* sp. Its preference is for lignum and old, large, dead, ericaceous woody stems. It is subsquamulose, with soralia on the margins of the squamules, which are 0.25 - 0.35 mm diameter. The soralia on the margins are C + pink. Mainly recorded in eastern England, though there is one record from Scotland.



This *Xanthoria* species is not unlike *X. polycarpa*, in that it grows in similar situations. However, despite the thallus having more or less the same lobe size, it can spread over much larger areas and the apothecia are never abundant, as they are in *X. polycarpa*. Mainly recorded in eastern England

Lichen-Hearted Tales

What's in a name! That which we call a rose

By any other name would smell as sweet. Romeo & Juliet Act 11, Scene 1

'*Fuscidea lightfootii*, *lightfootii*.....why *lightfootii*?' I asked. 'Named after a Reverend Lightfoot in the eighteenth century'.

David Hill and I were on the Bristol Downs returning from working on the Lichen Trail. Fascinated by this nomenclature, I noted the position of the lichen, returning the following day to examine it more closely before writing its description on a card for my collection. I did wonder why such a relatively insignificant specimen should have such a notable name!

Time passed by and The Trail was well received with participants wanting to experience more lichens on an extended Trail. This extended trail was a pleasure to develop and definitely *F. lightfootii* would be one to include. People, as I guessed, would be interested in such a name and I started to research the history of this lichen.



Lecidea Lightfootii?

Illustration of *Lecidea lightfootii* in 'English Botany'

VERY book with description and figures of *Lecidea lightfootii*/Lightfootian Lecidea. Tab. 2047 (Vol. X, M.DCCC.XL III P. 67).

"It was named in honour of Rev. John Lightfoot, 1735 – 1788, an English conchologist and botanist by J. E. Smith in 1805 as *Lichen lightfootii*; this epithet was then accepted by E. Acharius in 1810 in his monumental work under the name *Lecidea lightfootii*; over the next 100 years it was placed chronologically within the following genera: *Patellaria*, *Zeora*, *Biatora*, *Biatorina* and *Catillaria*, until in 1978 it was placed in *Fuscidea* by Brian Coppins and Peter James. The main point to note is that the epithet '*lightfootii*' has been retained throughout this period of more than 200 years." (Thanks to M.R.D. Seaward for this information.)

Also, many thanks to Dr. Clive Lovatt who was pleased to lend me 'English Botany' by James Edward Smith, the

“Thallus tartareous, granulated, greenish-white, black edged.

Apothecia sunk, flat, eventually convex with smooth black border.

Not very infrequent on the bark of trees. Thallus pale green, granulated. Apothecia immersed, overtopped by the granulations of the crust. Black, rather shining, somewhat concave when young, with a very thin smooth black border; when old they become slightly concave and rugged.”

Because I have become so familiar with the Trail lichens I tend to personify them, and although perhaps not completely scientific these are my observations of *F. Lightfootii*. It is neat, modest and independent preferring not to compete with other lichens and choosing to colonise the shadier, damper side of the small-leaved lime trunk in small circular patches (about 2 cm diam) It is comfortable and cushion-like in its granular appearance. This thallus is a distinctive green, and seems to beckon to be examined more closely. The apothecia are noticeably large and irregular in size in comparison to the thallus, their dark colour and slightly convex shape contrasting with the green granules.

One wonders whether the Reverend had any of these qualities - but how honourable to have one's name attached to a lichen. Perhaps if and when I have the expertise it will happen to me.....I would choose to be *Graphis quinniae*!



Fuscidea lightfootii in real life, on bark of *Sorbus aucuparia*, Black Wood of Rannoch.

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BLS travel grants to support the 7th IAL Symposium – a personal report

Every four years the International Association for Lichenology (IAL) organizes a major international scientific symposium. Following IAL6 in California in 2008, last year IAL7 was held in Bangkok, Thailand from 9-13 January. It was organized by the lichen research group from Ramkhamhaeng University, one of the many universities in the city, together with colleagues from five other institutes in Thailand. January is a bit of an unusual time of the year for an international meeting, but it was chosen to avoid the monsoon season, as the symposium was followed by two workshops and three post-congress excursions exploring Thailand's lichens. Although teaching commitments at universities unfortunately prevented a few colleagues from attending, around 300 lichenologists from over 50 countries registered and with nearly as many presentations this made for five very lively and busy days. Each day started with a key note lecture that was followed by talks in a morning and two parallel afternoon sessions. The late afternoon was dedicated to poster viewing and more informal discussions, which were often continued over dinner and drinks in the evenings. Parallel sessions in the afternoons meant difficult choices had to be made ("Which talk won't I listen to?"). However it allowed not only for a larger number of talks with sufficient time for discussion, but also gave ample time to poster sessions. All posters were on display throughout the week and



Associate Prof. Dr. Kansri Boonpragob, chair of the local organizing committee.

strategically well located next to the reception area, where coffee breaks were held. This resulted in posters receiving plenty of the attention they deserved, and the authors often found themselves discussing their work with interested colleagues outside of the actual time slot that was allocated to their specific viewing session.

Right from the arrival at the conference venue it became clear that hospitality were very high on the agenda of our hosts. The huge number of local organizers and people who helped in the day-to-day management of the meeting from researchers to students was impressive. And they did a great job - nothing seems to have gone wrong at all. This IAL meeting will be remembered not only for the presentations and discussions but also for the organization.

The meeting was titled "Lichens: From genome to ecosystems in a changing world" and in more than 100 talks and 180 posters up-to-date research was presented. The abstract book lists around 600 lichenologists as authors involved with these projects, and a wide range of topics was covered in 15 sessions. The quality of presentation had a high standard throughout. As having been involved with the decision process for awarding the best student's talk, I can only report that narrowing it down to a single person was not an easy task at all. However, it was of course very good to see

a large number of student contributions, that would have deserved an award. In the end the Margalith Galun Award for the best student talk went to Estonia (Ede Leppik analysed changes in lichen communities in calcareous grasslands related to changes in land use) and the best poster came from Finland (Ulla Kaasalainen showed that a range of cyanobacterial lichens produce hepatoxins). As might be expected from the symposium's title many sessions dealt with the ecology, distribution and conservation of lichens. Noted by some participants was the wide spread application of molecular methods - "gene trees" and "gene networks" no longer only show up in taxonomy and phylogeny. It became clear by the end of the week that lichen ecology has firmly entered the molecular era. In many presentations genetic diversity (population biology) was linked to ecological questions. Molecular data were also dealt with throughout the opening session, which was concerned with all those that are involved with lichen-forming fungi: photobionts, lichenicolous fungi and endolichenic microorganisms such as bacteria and fungi ("Exploring the lichen microbiome and its multifaced interactions"). When it comes to lichen taxonomy, systematics and evolution three currently much researched groups of lichenized fungi dominated the discussions and had sessions devoted to them: Teloschistales, Graphidaceae, and Parmeliaceae. And there was also a regional focus on "Lichenological research in South-East Asia and the Pacific region", because last year, for the first time, the IAL met in a tropical location and in Asia (previous meetings were all held in Europe and North America). If you like to read more about the symposium, the full scientific program including abstracts of all talks and posters can be found at <http://www.ial7.ru.ac.th>.



Speakers and chairs were thanked after each session (here following "Lichenological Research in South-East Asia and the Pacific region"). In line with local customs tokens of appreciation were handed over - a new experience at IAL meetings.

As for the previous IAL symposium the BLS made travel grants available to support last year's meeting. BLS members who actively participated in the congress could apply. The society supported 14 members from 11 countries, including myself: Johan Asplund (Swedish University of Agriculture, Umea), Violeta Atienza (University of Valencia, Spain), Alica Dingova (Slovak Acad. Sciences, Bratislava), Heidi Döring (Royal Botanic Gardens, Kew, UK), Chris Ellis (Royal Botanic Garden Edinburgh, UK), Brendan Hodkinson (New York Botanic Garden, USA), Udeni Jayalal (University of Peradeniya, Sri Lanka), Y L Krishnamurthy (Kuvempu University, India), Lars Ludwig (University of Otago, New Zealand), Cristina Máguas da Silva Hanson (University of Lisbon, Portugal), Matthew Nelsen (Field Museum Chicago, USA), Adriano Spielmann (UFMS, Campo Grande, Brazil), Camille Truong (Botanical Garden Geneva, Switzerland), Gothamie Weerakoon (University of Sri Jayawardenepura, Sri Lanka). The recipients gave one of the key a note lecture, chaired a session and presented or contributed to a total of 24 talks and posters in various scientific sessions:

- The impact of forest management on changes in composition of terricolous lichens
- Corticolous lichen communities as indicators of vegetation types along environmental gradients in Knuckles mountain range – Sri Lanka
- Macrolichen diversity can be used as a tool to analyze the forest condition at Horton Plains National Park, Sri Lanka
- Occurrence and host specificity of marcolichens among tropical deciduous forest of Shimoga District, Southern India
- Lichen conservation as the element of NATURA 2000
- The reproductive ecology of *Icmadophila splachnirima* – a rare Australasian lichen exhibiting sexual and asexual reproduction
- Rediscovery of a forgotten lichen genus with unique conidiomata from New Zealand
- Snails avoid the medulla of *Lobaria pulmonaria* and *L. scrobiculata* due to presence of secondary compounds
- Diversification of lichen-forming ascomycetes
- Multilocus phylogeny and classification of Parmeliaceae (Ascomycota) derived from PARSYS-10
- The phylogeny of *Usnea* (Parmeliaceae) revisited
- Taxonomic studies of neotropical *Usnea* species (Parmeliaceae)
- Type studies on sorediate *Parmotrema* (Ascomycota, Parmeliaceae) with salazinic acid
- *Anzia mahaeliyensis* and *Anzia flavotenus*, two new species from Horton Plains, Sri Lanka
- A megaphylogeny of the lichen family Graphidaceae
- New molecular data on *Pyrenulaceae* from Sri Lanka reveal two well-supported groups within this family
- Character evolution in the lichen-forming lineage *Trypetheliales* (Dothideomycetes, Ascomycota)
- Thallus architecture and dominance in *Cladina*
- Reconstructing historic biodiversity loss: lichens as a powerful new archaeological tool
- Evolution and photobionts associations in the family *Verrucariaceae*
- On time or “fashionably” late? The comparative dating of lichen-associated eukaryotic algae and their fungal symbionts

- Pyrosequencing reveals previously unknown phylogenetic, metabolic and ecological complexity within the lichen microbiome
- Association of endolichenic fungi with some macrolichens in central western Ghats of Karnataka, India
- Towards a molecular phylogeny of lichenicolous *Dacampiaceae* (*Dothideomycetes*, *Ascomycota*)

Recipients of the BLS travel grants all expressed their gratitude for this support which enabled them to present their work, to engage in discussion with colleagues from all around the world, and to be involved in what's ongoing in lichenology at present. For me personally, it was not the first time to receive a grant from the society, and I am much obliged to the society for the opportunities this provided to me, in particular when I was a student.

Besides the scientific program the meeting provided lots of opportunity to meet with colleagues and friends in a social context. Lunch was served for all participants at the conference venue, which allowed for many lively discussions and often the lunch break appeared far too short. There was a variety of hot and cold Thai dishes each day, but for those who did not like spicy Thai cuisine finding the "right" dishes sometimes was a slight challenge. In the morning and afternoon breaks for many of us it was also a small adventure to figure out whether pastries served with coffee and tea were sweet or savoury. More Thai food was enjoyed at a Welcome reception held at Ramkhamhaeng University on Monday evening and on Tuesday evening at the IAL conference dinner. During the week one afternoon was reserved for a range of special meetings, workshops, and society business. For some participants this gave a few hours to visit some of Bangkok's touristic highlights, however while visiting the Royal Palace you could have been tempted to continue lichenological discussions with those you met.



At the IAL dinner awards were presented by Peter Crittenden (IAL president 2008-12). Mohammad Sohrabi received the Sylvia Sharnoff Education Award 2012 for developing the MycoLich web-site (<http://www.mycolich.com/>).

Looking forward to IAL8, which will take place in Helsinki, Finland in 2016.

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Thanks to Peter Scholz for providing the photos.

Open access publication – a developing story

Applauded in principle, but someone needs to pay.....

The following article was written for the Linnean, newsletter of the Linnean Society of London (www.linnean.org), by the Executive Secretary of the Society Elizabeth Rollinson. Its content is highly relevant to our own Society as we are similarly dependant financially on income from the Lichenologist, and is reproduced here by kind permission of Elizabeth and the editors of the Linnean.

Did you know that there is a revolution in publishing that potentially could mean that The Linnean Society would be unviable in its current form, because the Society's main revenues, which come from journal publishing, are under threat. The threat is 'Open Access Publishing' (OAP) – sounds simple, but this is actually quite complex – so to help you through, here is an explanation of some of the many acronyms:

- 'Open Access Publishing' (OAP) – a new model for publishing whereby research papers are freely available to the end user and can be copied or reprinted by others. There are 2 models of OA, namely 'Gold' and 'Green'.
- 'Gold Open Access' (Gold OA): whereby authors pay to publish, and papers are freely available immediately online
- 'Article Publishing Charges' (APCs) – the charges that authors pay for publication of their paper under the Gold OA model
£1,725 is the average APC as determined by the Finch group
- 'Green Open Access' (Green OA), refers to self-archiving, i.e. the deposit, without payment, of the accepted and peer reviewed (but not the final typeset) version of the article in a repository, often after an embargo period, whence the paper becomes freely available
- 'Embargo period' – the length of time from first publication online of the final article before a paper becomes freely available
The duration of embargo periods is very important – as flagged by Finch: 'We believe that it would be unreasonable to require embargo periods of less than twelve months'. However, this is at odds with the Research Councils UK policy, which specifies no support for publisher embargoes of longer than six months from the date of publication.
- 'RCUK' (Research Councils UK) - the strategic partnership of the UK's seven Research Councils, covering science and the arts

The OA approach in the UK is being driven by RCUK, who (at the time of writing) are mandating from April 2013 that any publications arising from RCUK-funded research must be published as Open Access, with a maximum 6-month embargo period, and using a CC-BY licence. The Wellcome Trust (WT) is also mandating OAP.

- ‘CC-BY licence’ - the Creative Commons Attribution license, which RCUK is mandating, which allows others to re-use, adapt and distribute the work, including for commercial purposes.
The CC-BY licence is of concern *per se*, because an author’s work can be adapted, and so risk them being misrepresented, with no comeback.
- ‘Finch’ - government enquiry into OA, headed by Dame Janet Finch, which reported in June 2012 on ‘Accessibility, sustainability, excellence: how to expand access to research publications’ <http://www.researchinfor.net.org/wp-content/uploads/2012/06/Finch-Group-report-FINAL-VERSION.pdf>; this report contains much interesting background information.

Until recently, the research publishing model has largely been one of authors publishing at no/minimal cost to themselves and publishers getting revenue through journal subscriptions and license fees (mainly from institutional libraries). These publishing revenues are then shared with Learned Societies; in the case of the Linnean Society, almost two thirds of revenues are derived through a joint publishing Agreement with Wiley Blackwell, and these revenues underpin our many activities including scientific meetings, education and career development, engaging with the public dissemination of science and offering expert advice to policy makers, so supporting our charitable purpose.

However, the publishing model to date has meant that access to published research has been limited in the Developed World, especially for the public and for those libraries with ever-restricted budgets. So the advent of OA would seem to merit much applause, especially since the government believes (although has no hard evidence) that immediate/free access to research publications will positively drive innovation and economic growth in the UK. However, the devil is in the detail – one size does not fit all!

There is concern about RCUK’s implementation of the OAP policy, especially that it does not respect the need for longer embargos where APC funding is not provided (and many authors may not have access to funding for APCs anyway). Short embargo periods will undermine the subscription revenues on which learned societies such as The Linnean Society depend. Other countries (Europe, USA, Australia) are also introducing OA policies, generally with 12-month embargo periods, the latter being less likely to negatively impact journal subscription uptake, which the Society strongly endorses.

It is pertinent to note that RCUK themselves do not provide access to all the reports that they receive regarding RCUK (taxpayer) funded projects, nor to any data from these projects (which could be made appropriately anonymous to meet ethical and legal requirements).

Furthermore, the mandated application of a CC-BY licence may well breach existing arrangements, where researchers obtain funding from industry partners; this could preclude future partnerships, effectively closing doors to commercial funding of UK science. If learned societies need to spread their sources of revenue generation, an obvious way would be to diversify in the publication arena (e.g. mash-up products, E-books, translations, etc), but the mandated application of a CC-BY

licence may well compromise this avenue. Other licensing options should therefore be considered, appropriate to the respective situation. CC-BY licensing should be decoupled from the OA mandate until the economic implications for the UK are understood through a full inquiry, engaging all stakeholders.

It is important to record that the Linnean Society welcomes OA in principle – the current issue is one of haste of implementation with an inadequately funded, one-size-fits-all-approach, reflecting that little experience and/or evidence has been brought to bear in formulating policy in what is an extremely complex arena – insufficient consideration has been given to the potentially negative economic consequences. The Society does of course already make an enormous amount of digitized material freely available on its website - and all three Linnean Society journals (Biological, Zoological, Botanical) offer authors the option to publish their papers open access through the OnlineOpen option and have done since 2006. Authors can choose to take up the OnlineOpen option following acceptance of their paper or post publication. The cost for OnlineOpen is US\$3,000, which can be paid by the author, the author's funding agency, or the author's institution. All three Society journals will be fully compliant with RCUK policy by the time the mandate is in force. To put this into context, across the three journals, only about 8% of published papers are from UK based authors and, of these, not all are RCUK funded.

The concept of Article Processing Charges (APCs) is an excellent alternative model to journal subscriptions, provided that authors across all disciplines can access the required funding equably. This is not always so, particularly in the field of taxonomy & systematics and evolutionary biology (which are fundamental to understanding and maintaining biodiversity), where researchers generally have less access to funding and/or are publishing lengthy monographs, at infrequent intervals. The half-life of many of the Society's publications can be measured in decades rather than weeks compared with the world of medicine for instance.

The bottom line is that someone needs to pay if you want to maintain the high standard of research publishing, the sophisticated systems for online access of this output, and the considerable contribution of Learned Societies such as The Linnean Society to the research community and to the wider public.

It is vital that these impacts are addressed and the Society is, and will continue, actively to lobby government and other influential parties in this regard. Submissions have been made already to the Select Committee on Science & Technology and to the Select Committee on Business, Innovation and Skills in the UK, as well as directly to David Willetts, Minister of State for Higher Education and Science, while responses have also been sent to the Office of Science and Technology in the USA. The Society is pleased to note that RCUK propose to review implementation of the policy in 2014 to make any appropriate mid-course corrections – and is urging the RCUK to widen the breadth of stakeholders that it consults, especially including the Learned Societies within this review, to listen to their views and to embrace their suggestions.

iSpot – an online learning tool



So you've maybe been on a beginners lichen course and you've joined the BLS. You've given yourself the best possible chance of learning the names of some lichens but out there in the field when it's just you and a hand lens, it can seem a daunting task to confidently assign a name to even the commonest of species. Wouldn't it be nice to have someone else with you, someone else who's in the same boat, helping you to gain confidence in your identifications? Well in today's digital age you can have hundreds of people helping you to do just that! Enter iSpot.

iSpot is an online community of friendly wildlife enthusiasts helping each other to learn about wildlife by posting pictures and species identifications on their website (www.ispot.org.uk). The scheme is provided by The Open University as part of the OPAL project, which is funded by the National Lottery through the Big Lottery Fund. To date nearly 23,000 people are registered on the site and over 160,000 wildlife observations have been posted.

All skill levels from beginners to experts are encouraged to use the site, adding interesting photos of things they've spotted as well as suggesting names and comments to photos that have been uploaded by others. It's a great place for beginners to find help, support and to build their knowledge, as well as providing more advanced beginners with an opportunity to build their confidence through making attempted identifications. In the past week prior to writing this article, there were nine lichen pictures uploaded onto iSpot, many of which are easily identifiable species such as *Xanthoria parietina*, along with others that need a little more dialogue between users such as *Pertusaria corallina*.

As we all know it is frequently impossible to be able to identify lichens from a photograph alone. But that doesn't mean that we can't use iSpot to our advantage. Identifying a lichen to a genus can be helpful to a beginner, and adding a brief comment about the sort of information you'd need to be able to be sure of an identification (e.g. chemical tests and spore sizes) helps too. This isn't necessarily a place to get spot-on identifications (only verifications from experts can do that), but a place where you can attempt an identification and get some feedback. If used in the right way it can be a great tool in learning the process of identification.

The first step is to register as a user of iSpot on www.ispot.org.uk. You can then start to use the site. Users are encouraged to add photographs of things they're having trouble identifying along with any additional information (e.g. colours, reproductive features) that they might have noted about their 'spot'. Once a photograph has been uploaded, others can add comments, questions and their own suggested identifications with a level of confidence. The more people that agree with a species name suggested, the better the 'iSpot reputation' of the person who originally added

the name. Therefore, the more of us that use iSpot, the more confidence we can have in the identifications being made.

I'd like to encourage all members of our society to have a look at the site, particularly any beginners or advanced beginners out there. iSpot seems to be a great tool where by you can help each other to build your lichen identification skills. Take a peek at the site yourself and have a go!

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Reflections on 50 years attendance at British Lichen Society Annual General Meetings

2012 was the 50th consecutive AGM that I have attended. Only my close friend and colleague Mark Seaward exceeds my record for continuous attendance, his first being the AGM in 1962 at which he threw himself in at the deep end by organizing the field meeting in Market Rasen in October 1962. A few others who joined the BLS early on such as Jack Laundon have attended over a longer period of time but not consecutively.

I was introduced to the British Lichen Society by Ken Alvin, co-author of *The Observers Book of Lichens* who taught field courses at Slapton Ley Field Centre in Devon in the early 60s. There I met Nancy Wallace, an amateur lichenologist, who was co-headmistress of a Preparatory school in Repton which was not far from Nottingham University where I was a student. As an impecunious student, she invited me down to Repton for the occasional weekend to stay at the school, famous for its burnished copper bath with polished brass feet. My grandfather attended the nearby Repton School in the 19th century (thereby hangs another tale; Richardson, 2009) so it was doubly interesting to visit. Nancy and I attended many of the early BLS field trips, notably the one at Killin and Kinlochewe in Scotland, together with Ursula Duncan, Fred Haynes, Frank Brightman and Peter James, as well as the one at Boscastle in Cornwall. Other early meetings attended included Jersey, Norway/Sweden, Repton and Hebden Bridge. After Nancy's unexpected death and following my move to Canada in 1969, I was only able to go to one or two field meetings but I resolved to continue attending the AGM and Lecture Meetings. When I again moved (to Ireland in 1980), I was able to enjoy more field meetings like the one in Sligo & Connemara and to organize the BLS meeting on Clare Island (Seaward and Richardson, 2013).

My first AGM meeting was in January 1963 and the following year, I put up a poster display (not a common approach at that time), together with slides of the different lichen asci, that I had studied for my M.Sc (Figure 1). This study was based

on specimens collected on BLS field meetings and from herbarium specimens. A paper was later accepted for the *Lichenologist* by the then editor Peter James (Richardson & Morgan Jones 1964). Since then I have tried to bring interesting notes or reports to the AGM.



Poster Display at the January 1964 BLS AGM “ Ascus Structure in Lichen Taxonomy” photographed at the Flett Lecture Room at the Natural History Museum in London.

You might ask what is special about the BLS AGM when there are more prestigious international meetings? Firstly, of course, it is the best way to keep abreast of developments in lichenology in the UK where I began my interest in lichens. More important, it is the people and the company; meeting old and new friends on an annual basis. These include amateurs like Mary Hickmott with whom I have corresponded for years and others too numerous to mention by name but each seen and met with pleasure every year at the AGM. In addition it's good to meet the former students of my PhD supervisor and mentor David Smith, such as David Hill and Alan Green. There are also more recently acquired friends such as Simon Davey, with whom I very nearly got lost in a forest at the BLS/Tuckerman meeting in Newfoundland (will not forget my GPS next time!) and Ray Woods who always has something interesting to say. I could go on for paragraphs about individual

AGM meetings such as the memorable one in Cardiff where Mark Seaward had a race home against an impending snow storm, or the pleasurable one in Scotland in the company of Brian Coppins and David Smith, or the various accommodations in London when attending the AGMs there. However, it is the attendees of the AGM each year which make it so rewarding and enjoyable. Too many like Tom Chester, Frank Brightman and Jeremy Gray are sadly no longer with us. I hope to attend for a few more years depending on the available finances to travel to the UK, which each year becomes more expensive and over the years has involved me in some 20 transatlantic return flights and, when I had more time on sabbaticals, to make two trips by Russian liners (the Alexander Lermontov and the Pushkin).

I have indeed been fortunate to be able to attend the BLS AGM so regularly and urge BLS members who have not come to the AGM make the effort. It's very rewarding and of course you get the chance to express your opinion, to acquaint yourself more fully with the lichenological work of colleagues, to obtain the earliest information about forthcoming field meetings and other events.

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Lecanora horiza and other surprises in the *Lecanora subfusca* group

Lecanora campestris and *L. horiza* in Great Britain



Typical *Lecanora campestris* from gravestones

During the Autumn 2012 Field Meeting, while surveying St Andrew's churchyard at Ampthill in Bedfordshire, Henk Timmerman drew our attention to large thalli on the vertical sides of gravestones and said that these are called *Lecanora horiza* by Continental lichenologists. This came as a surprise to the British lichenologists who generally record such specimens as *L. campestris*. Henk pointed out that the *L. horiza* lacked a distinct fimbriate prothallus, while the fruits were large, with very glossy discs and gave the impression of almost falling out of the thallus. MP collected specimens of the putative *L. horiza* and compared its anatomy with material of typical *L. campestris* from horizontal paving. There appeared to be subtle differences: the hymenium of *L. horiza* was capped with a thicker layer of gel, the hypothecium was tall and plug-like, the paraphyses appeared to be more richly anastomosed. Edwards *et al.* (2009) give a description of *L. horiza* (Ach.) Linds. which deviates from MP's observations of the gravestone material; they state that the hymenium is "interspersed with fine granules" (hymenial granules are completely absent in the gravestone material), "paraphyses simple to sparsely branched, rarely anastomosed" and the thallus is said to be "K⁺ indistinctly yellow" (the thallus of the gravestone material shows a K⁺ yellow reaction of similar intensity to *L. campestris*). The taxonomic treatment of *L. horiza* has been rather complicated. Purvis *et al.* (1992)

described *L. laevis* separately from *L. horiza*; these were treated as a single taxon by Edwards *et al.* (2009). The generic key for *Lecanora* provided by Purvis *et al.* (1992) separates species growing on bark, wood etc. from those growing on rocks at Question 22, and *L. horiza* and *L. laevis* are treated as being solely corticolous. Edwards *et al.* (2009) accommodate the fact that *L. horiza* can be saxicolous but to arrive at this species one would have to find it on siliceous rock (Question 69) and decide that the thallus is K- or indistinctly yellowish (Question 88). The habitat of *L. horiza* given by Edwards *et al.* (2009) is “On bark of deciduous trees... Also on rock, especially vertical gravestones and brick of churches.” At some stage it had been recognised that *L. horiza* is present on vertical stonework in the British Isles but this fact did not become widely appreciated by British field lichenologists.



Typical *Lecanora horiza* from gravestones

MP sent British material to JM (currently working on the taxonomy of the *Lecanora subfusca* group) who undertook more detailed anatomical and genetic studies of the specimens. These taxa are members of the *Lecanora subfusca* group *s. str.*, which is characterized by non-pruinose apothecial discs and the presence of atranorin. *L. campestris* and *L. horiza* typically have a white to grey thallus, reddish brown to brown apothecial discs, smooth margins to their apothecia, sessile to slightly constricted apothecial bases, small calcium oxalate crystals (to 10 μm diam) in the amphithecium, 60–80 μm high hymenium, non-granular orange to (brownish) red epihymenium, and simple ascospores 11.0–14.5 \times (6.0) 7.0–8.5 μm . From the similar species *L. allophana* and *L. glabrata* (which have not been recorded in Britain) they differ in the presence of a true apothecial cortex, which is distinctly delimited from

the medulla, and contains granules which are soluble in KOH, and the amphithecial crystals do not diffuse into the cortex. The thickness of the cortex at the margin is 10–20 (–25) μm , at the base to 40–60 μm . The character of the cortex is often difficult to see. It is necessary to use a thin section of a well developed apothecium (better to use one with a constricted base than one that is sessile) and check the cortex and solubility of granules in polarized light using KOH. All measurements were made in water.

Both species share a similar apothecial anatomy and it may be impossible to identify them based on anatomical characters. According to Brodo (1984), they differ in chemistry: *L. campestris* contains lcm-1 as a major secondary metabolite and lgr-1 and lgr-2 are sometimes present in minor traces; *L. horiza* contains atranorin alone or lgr-1 and lgr-2 as major substances and frequently lcm-1 in small quantities. British specimens of *L. campestris* and *L. horiza* both have lcm-1 as a major compound and lgr-1 and lgr-2 as minor (all present in tested samples).

The two species differ in their ecology. Continental studies have indicated that *L. campestris* seems to be a strictly saxicolous lichen while *L. horiza* prefers epiphytic communities. The first is widely distributed all over Europe on enriched siliceous to limestone rocks (including man-made substrata). *L. horiza* grows on slightly acid to subneutral bark (e.g. *Populus*), often at nutrient-enriched sites. It has an Atlantic-Mediterranean distribution. It is very common in Southern Europe. In Great Britain, both taxa can grow on saxicolous substrata such as gravestones, though *L. campestris* shows a preference for horizontal surfaces and *L. horiza* for vertical ones. Both taxa have also been recorded as epiphytes in Britain but corticolous occurrences of *L. campestris* require further investigation.

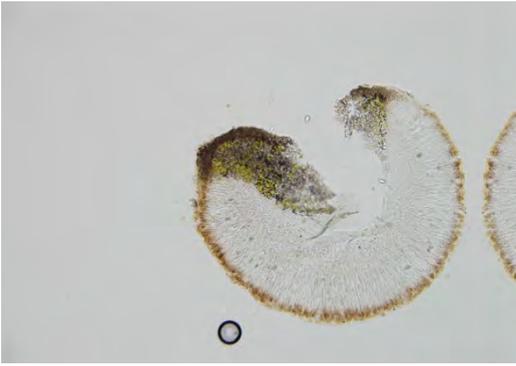
According to molecular analyses of the ITS rDNA region, *L. campestris* and *L. horiza* are well-characterized and highly supported taxa. *L. horiza* has been confirmed by molecular analysis from a gravestone in Bedfordshire and from a *Populus tremula* branch in Cambridgeshire; the details will be published elsewhere. However, the identification of these species is very problematic. Both of them are quite variable and no reliable anatomical or chemical differences were found. Fortunately the British population on gravestones is more or less characterized by morphological characters, especially when growing at the same site and we tentatively offer the following key:

Apothecia 0.6–0.8 mm diam, discs reddish brown, matt to slightly shiny, thallus greyish-white to grey, medium thick, white, fimbriate prothallus usually well developed

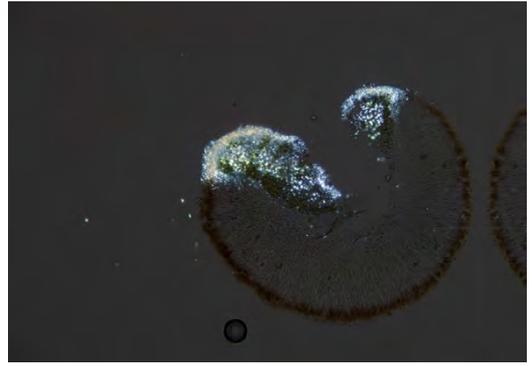
L. campestris

Apothecia 0.8–1.5 (–2.0) mm diam, discs brown to dark brown, shiny (especially when young), thallus white, thick, prothallus poorly formed or absent

L. horiza



Apothecial section of *L. horiza* with clearly visible well-delimited true cortex (in water).



Apothecial section of *L. horiza* in polarized light and water. Shining granules in cortex are soluble in KOH in contrast to amphithecial crystals, which persist.

Epiphytic populations of *L. horiza* are slightly different and can have a white-grey thallus, smaller apothecia (0.6–1.0 mm diam) and often have a distinctly fimbriate prothallus. However, the apothecial discs are still dark brown and shiny. The complete variability across the whole area of distribution and the different ecological conditions including substrates is much greater and needs more study. The short key above is probably useable only within the British Isles and for populations on gravestones and is not for critical identification of the mentioned taxa.

***Lecanora argentata* may be a relic of pre-Industrial Revolution communities in Eastern England**

While surveying ancient woodlands in the East Midlands MP became familiar with a member of the *L. subfusca* group which he encountered growing on the bark of old trees in association with *Phlyctis argena*, *Pertusaria amara*, *P. pertusa* and *Pyrrhospora quernea*. Members of the genus *Pertusaria* are considered to show a poor ability to spread and such communities may be relics which survived the many decades of high atmospheric sulphur dioxide pollution. Specimens were sent to JM for his appraisal who identified them as *L. argentata*. Although such specimens have a subtly different appearance to those growing on smooth, young bark, they have large crystals in the thalline exciple but lack granules in the hymenium. *L. argentata* appears to be spreading on young bark, particularly on *Fraxinus* poles, in eastern England but our findings suggest that it may also be frequent (and overlooked) in relic communities on old trees. For comparison, *L. argentata* is the most common species of the *L. subfusca* group in old-growth forests in Central Europe (Malíček, unpubl.).

In the key to *Lecanora* given by Edwards *et al.* (2009), *L. argentata* is separated from *L. chlarotera* and others on the basis of thallus colour, *L. argentata* supposedly having a “yellowish or greenish white” thallus rather than the “shades of grey” attributed to the others. This difference in thallus colour is not usually discernable

and it may be more reliable to separate *L. argentata* from *L. chlorotera* and *L. hybocarpa* on the basis of lack of hymenial granules in *L. argentata*.

***Lecanora farinaria* still occurs in Eastern England**

L. farinaria is a mostly sterile corticolous lichen occurring in oceanic parts of north-western Europe (cf. Edwards *et al.* 2009, Tønsberg 1992). It is often frequent on fence posts in Western Scotland but it is scarce in the lowlands. Edwards *et al.* (2009) give its distribution in England as follows: “SW England (formerly also in W Sussex)”. There have been two recent records in lowland Midland England, one from the West Midlands (rotting plank of a roof at Sutton Park, Warwickshire) and the other from Oxfordshire (on a weathered wooden seat at Marsh Baldon). In neither case was the lichen growing on particularly old lignum, just old enough to have become weathered and the surface starting to soften. Both occurrences were sterile. The Sutton Park specimen was confirmed by tlc while the Marsh Baldon specimen was identified by comparison with fertile material. A useful field feature of fresh material is the distinctly pink tinge of the soredia.

***Lecanora barkmaniana* does have a yellow tinge.**

Edwards *et al.* (2009) state that *L. barkmaniana* is a “recently described sorediate member of the *L. subfusca* group, when sterile superficially resembling *L. compallens*, *L. expallens*, *L. farinaria* and *L. strobilina*, but differing in its chemistry, pale grey colouration and lack of a yellow tinge.” *L. barkmaniana* lacks usnic acid (which is present in *L. compallens*, *L. expallens* and *L. strobilina*). Usnic acid imparts a yellowish colour to lichen thalli and gives e.g. the *Cladonia coccifera* aggregate its characteristic yellow tinge in contrast to the grey-green thalli of the *C. chlorophaea* group which lack usnic acid. Despite the fact that *L. barkmaniana* lacks usnic acid, many field lichenologists report that the soredia of this species have a distinct pastel yellow tinge (due to factors other than the presence of usnic acid). The same case is the yellowish colour of soralia in another sorediate member of the *L. subfusca* group – *L. impudens* (not recorded in Great Britain). This may lead to confusion at Question 7 in the key to *Lecanora* in Edwards *et al.* (2009). *L. barkmaniana* appears to be rather frequent on the twigs, branches and trunks of shrubs and trees in lowland England, especially in nutrient enriched communities. It differs from *L. expallens* in having a greyish warted thallus outside the sorediate areas (the thallus is merely a thin pale film in *L. expallens*) and an incompletely sorediate surface, as well as the lack of a C+ orange reaction. *L. compallens* also has a warted thallus and lacks a C+ orange reaction but typically has a well-developed white medulla beneath the soredia and lacks the K+ bright yellow reaction of *L. barkmaniana* due to the presence of atranorin. It is likely that *L. compallens* has been over-recorded in England due to the use of weak or degraded C on specimens of *L. expallens* or the testing of weakly reacting specimens

of *L. expallens* in which the reaction may be missed because of low concentration of xanthonenes. The low concentration of thiophanic acid and *expallens*-unknown is probably quite often and it is necessary to confirm the identification by tlc. Sometimes tlc results can also be incorrect because of using a small piece of thallus, where the amount of xanthonenes can be low and undetectable.

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Porina byssophila in North Bedfordshire

In the summer of 2010 I started to explore the lichen communities of ditches in North Bedfordshire, a project which is still at an early stage. My curiosity had been sparked by Gilbert (2000) who made reference to the work of Coppins & Lambley who surveyed the parish of Mendlesham in Suffolk in 1972-3 and compared it with a survey made fifty years previously. Only half the species from the original survey could be found and many epiphytes had retreated from tree boles to buttresses and roots in overgrown ditches. One of the first lichens I came across during my survey (Herb. Powell 1395) proved difficult to identify. It was growing on shaded old bark at the base of a large hybrid black poplar tree in the bank of Riseley Brook. Attempts to key it out in the “Flora” (Orange *et al.* 2009) seemed to lead to *Porina byssophila* but this seemed unlikely to me because that species is generally considered to be saxicolous and its distribution in England supposed to be restricted to the North

West. On showing the specimen to other lichenologists I was met with either uncertainty or a suggestion that *P. aenea*, as generally accepted, can be rather variable. As time went on I came across several occurrences of this enigmatic lichen. The features which seemed to separate this taxon from typical *P. aenea* are the larger, more immersed and more irregularly dispersed perithecia, the larger ascospores and the K+ blue-grey pigment present in the involucrellum.



Porina aenea (left) contrasted with a corticolous specimen of *P. byssophila* (right)

During the post-AGM field meeting at Ashstead Common in January 2011, Ishpi Blatchley found this lichen on the old bark of a mature *Acer campestre* tree (P1558), while typical *P. aenea* was present on young *Fraxinus excelsior* stems nearby. In August 2011, during a survey of Highgrove in Gloucestershire, Alan Orange recorded *P. byssophila* from shaded bark in some otherwise poor secondary woodland. This set me wondering and I had the chance to show Alan some of my material at the Bristol course in February 2012 when he confirmed that my corticolous material was *P. byssophila* after all. The genus *Porina* is poorly represented in lowland Eastern England. *P. aenea* is the most frequent member occurring mainly on the smooth young bark of various tree and shrub species. *P. chlorotica* (which is very similar to *P. aenea* and from which there appear to be no reliable distinguishing features) is sometimes recorded from siliceous rocks and brickwork. *P. borrieri*, *P. leptalea* and *P.*

linearis are rarities in the east, and most other species of the genus are absent. The recognition of *P. byssophila* as a relatively frequent lichen species in the eastern counties of England provides the opportunity of recording a significant and overlooked taxon. The key provided by Orange *et al.* (2009) adequately separates *P. byssophila* from *P. aenea* and other members of the genus. The anatomical description of *P. byssophila* given by Orange *et al.* (2009) appears to be accurate but the distributional data will need to be updated once the frequency of this lichen across Britain is more fully known. At the moment we could add the following tentative notes: "Appears to be rather frequent on old, shaded bark of *Acer campestre*, *Fraxinus*, *Populus* and others, at least in lowland Eastern England."

Gilbert, O.L. (2000) *Lichens*. New Naturalist Library. London: Harper Collins Publishers.

Orange, A., Purvis, O.W. & James, P.W. (2009) *Porina*. In *The Lichens of Great Britain and Ireland*. (C.W. Smith, A. Aptroot, B.J. Coppins, A. Fletcher, O.L. Gilbert, P.W. James & P.A. Wolseley, eds): 729-737. London: British Lichen Society.

Mark Powell

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Lichens on ash trees in churchyards – a plea for records

The *Chalara* fungus (known as *Hymenoscyphus pseudoalbidus* by serious mycologists) is likely to have a devastating effect on our native ash trees and the effects on the associated lichen flora have been well illustrated by articles in the *Bulletin* and on the website using data from the BLS database. Janet Simkin has kindly provided similar data for the occurrence of lichens on ash trees in churchyards. The dataset is far from complete for various reasons but in particular because there is a lack of information about specific tree species when corticolous lichen species are entered into the database. Nevertheless, some interesting facts have emerged.

Lichen species recorded on ash trees in churchyards in Great Britain total 170 – this represents about a fifth of the total lichen taxa recorded in churchyards, about a tenth of the total lichen species on all substrates in the BLS database, and a third of those recorded on **all** ash trees.

Resistance to the *Chalara* fungus may be greater in mature ash trees than younger trees so that older ash trees in churchyards may offer a reservoir for lichens from which to spread to other younger trees that may be planted. Also, ash trees in churchyards are relatively protected as they are not as vulnerable to felling due to road schemes, housing etc compared with trees in the wider countryside. Experience in countries from where *Chalara* has spread indicates that the most vulnerable trees

are those in woodland, but as this infection is wind-borne, all trees are exposed to risk. Plans have recently been announced to plant thousands more trees and this may buy us time, even produce a resistant strain of ash.

The incompleteness of the dataset regarding churchyard ash trees remains a problem and we would like to encourage everyone to record the lichens on the trees in their local churchyard!! This is a project particularly suitable for ‘beginners and improvers’ who are often more confident about the identification of lichens on trees than those on stone.

Please make lists of lichens on each type of tree in the yard and not just from ash trees. Our native flora is under constant threat and we don’t know where the next disease will strike. Send your records to Janet Simkin either on a spreadsheet which can be downloaded from the website or as a paper copy.

Ishpi Blatchley (on behalf of the Churchyard sub-committee)

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Literature Pertaining to British Lichens - 52

Lichenologist **44**(6) was published on 8 October 2012, **45**(1) on 8 January 2013, and **45**(2) on 24 February 2013.

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

ARCADIA, L. 2012. (2086) Proposal to conserve the name *Catillaria* (lichenized *Ascomycota*) with a conserved type. *Taxon* **61**: 1120–1121. A proposal to conserve the name *Catillaria* in its current usage, with *C. chalybeia* as a proposed conserved type.

ARUP, U., SØCHTING, U. & FRÖDÉN, P. 2013. A new taxonomy of the family *Teloschistaceae*. *Nordic Journal of Botany* **31**: 16–83. A major rearrangement within the *Teloschistaceae* based on a phylogenetic analysis of 337 species. Nomenclatural novelties concerning British taxa are in new or resurrected genera. New genera:

- Athallia* Arup, Frödén & Söchting, with *Athallia cerinella* (Nyl.) Arup, Frödén & Söchting (syn. *Caloplaca cerinella*), *A. cerinelloides* (Erichsen) Arup, Frödén & Söchting (syn. *Caloplaca cerinelloides*), *A. holocarpa* (Hoffm.) Arup, Frödén & Söchting (syn. *Caloplaca holocarpa*), *A. pyracea* (Ach.) Arup, Frödén & Söchting (syn. *Caloplaca pyracea*), *A. scopularis* (Nyl.) Arup, Frödén & Söchting (syn. *Caloplaca scopularis*); *A. vitellinula* (Nyl.) Arup, Frödén & Söchting (syn. *Caloplaca vitellinula*);
- Calogaya* Arup, Frödén & Söchting, with *Calogaya arnoldii* (Wedd.) Arup, Frödén & Söchting (syn. *Caloplaca arnoldii* [no mention is made of the recently recognized subspecies of this species]), *Calogaya decipiens* (Arnold) Arup, Frödén & Söchting (syn. *Caloplaca decipiens*);
- Cerothallia* Arup, Frödén & Söchting [genus may not have a validating description or diagnosis], with *Cerothallia luteoalba* (Turner) Arup, Frödén & Söchting (syn. *Caloplaca luteoalba*);
- Flavoplaca* Arup, Söchting & Frödén, with *Flavoplaca arcis* (Poelt & Vězda) Arup, Frödén & Söchting (syn. *Caloplaca arcis*), *F. austrocitrina* (Vondrak, Řiha, Arup & Söchting) Arup, Söchting & Frödén (syn. *Caloplaca austrocitrina*), *F. calcitrata* (Nav.-Ros., Gaya & Cl. Roux) Arup, Frödén & Söchting (syn. *Caloplaca calcitrata*), *F. citrina* (Hoffm.) Arup, Frödén & Söchting (syn. *Caloplaca citrina*), *F. dichroa* (Arup) Arup, Frödén & Söchting (syn. *Caloplaca dichroa*), *F. flavocitrina* (Nyl.) Arup, Frödén & Söchting (syn. *Caloplaca flavocitrina*), *F. granulosa* (Mull. Arg.) Arup, Frödén & Söchting (syn. *Caloplaca granulosa*), *F. limonia* (Nimis & Poelt) Arup, Frödén & Söchting (syn. *Caloplaca limonia*), *F. marina* (Wedd.) Arup, Frödén & Söchting (syn. *Caloplaca marina*), *F. maritima* (B. de Lesd.) Arup, Frödén & Söchting (syn. *Caloplaca maritima*), *F. microthallina* (Wedd.) Arup, Frödén & Söchting (syn. *Caloplaca microthallina*), *F. oasis* (A. Massal.) Arup, Frödén & Söchting (syn. *Caloplaca oasis*);
- Solitaria* Arup, Söchting & Frödén, with *Solitaria chrysophthalma* (Degel.) Arup, Söchting & Frödén (syn. *Caloplaca chrysophthalma*);
- Haloplaca* Arup, Söchting & Frödén, with *Haloplaca britannica* (R. Sant.) Arup, Frödén & Söchting (syn. *Caloplaca britannica*), *H. sorediella* (Arup) Arup, Frödén & Söchting (syn. *Caloplaca sorediella*), *H. suaedae* (O. L. Gilbert & Coppins) Arup, Frödén & Söchting (syn. *Caloplaca suaedae*);
- Rufoplaca* Arup, Söchting & Frödén, with *Rufoplaca arenaria* (Pers.) Arup, Söchting & Frödén (syn. *Caloplaca arenaria*);
- Variospora* Arup, Söchting & Frödén, with *Variospora aurantia* (Pers.) Arup, Frödén & Söchting (syn. *Caloplaca aurantia*), *V. flavescens* (Huds.) Arup, Frödén & Söchting (syn. *Caloplaca flavescens*), *V. thallincola* (Wedd.) Arup, Frödén & Söchting (syn. *Caloplaca thallincola*).

Resurrected genera include [pre-existing names are suffixed by their date of publication]:

- Blastenia* A. Massal. (1852), with *Blastenia coralliza* (Arup & Åkelius) Arup, Söchting & Frödén (syn. *Caloplaca coralliza*), *B. crenularia* (With.) Arup,

- Søchting & Frödén (syn. *Caloplaca crenularia*), *B. ferruginea* (Huds.) A. Massal. (1852) (syn. *Caloplaca ferruginea*), *B. herbidella* (Hue) Servit (1934) (syn. *Caloplaca herbidella*);
- Gyalolechia* A. Massal (1852), with *Gyalolechia bracteata* (Hoffm.) A. Massal. (1852) (syn. *Fulgensia bracteata*), *G. flavorubescens* (Huds.) Søchting, Frödén & Arup (syn. *Caloplaca flavorubescens*), *G. flavovirescens* (Wulfen) Søchting, Frödén & Arup (syn. *Caloplaca flavovirescens*), *G. fulgens* (Sw.) Søchting, Frödén & Arup (syn. *Fulgensia fulgens*);
- Leproplaca* (Nyl.) Hue (1887), with *Leproplaca cirrochroa* (Ach.) Arup, Frödén & Søchting (syn. *Caloplaca cirrochroa*), *L. chrysodeta* (Vain. ex Räsänen) J. Laundon (1974) (syn. *Caloplaca chrysodeta*), *L. obliterans* (Nyl.) Arup, Frödén & Søchting (syn. *Caloplaca obliterans*), *L. xantholyta* (Nyl.) Hue (1887) (syn. *Caloplaca xantholyta*);
- Polycauliona* Hue (1908), with *Polycauliona candelaria* (L.) Frödén, Arup & Søchting (syn. *Xanthoria candelaria*), *P. phlogina* (Ach.) Arup, Frödén & Søchting (syn. *Caloplaca phlogina*), *P. polycarpa* (Hoffm.) Frödén, Arup & Søchting (syn. *Xanthoria polycarpa*), *P. ucrainica* (S.Y. Kondr.) Frödén, Arup & Søchting (syn. *Xanthoria ucrainica*), *P. verruculifera* (Vain.) Arup, Frödén & Søchting (syn. *Caloplaca verruculifera*);
- Pyrenodesmia* A. Massal. (1853), with *Pyrenodesmia alociza* (A. Massal.) Arnold (1884) (syn. *Caloplaca alociza*), *P. chalybaea* (Fr.) A. Massal. (1853) (syn. *Caloplaca chalybaea*); *P. variabilis* (Pers.) A. Massal. (1853) (syn. *Caloplaca variabilis*). A few species are said to be close to this genus, but more sequence data is required to establish their relationship, e.g. *Caloplaca albolutescens*, *C. demissa*, *C. soralifera* [although British material under this name is probably an undescribed species] and *C. teicholyta*.
- Rusavskia* S.Y. Kondr. & Kärnefelt (2003), with *Rusavskia elegans* (Link) S.Y. Kondr. & Kärnefelt (2003) (syn. *Xanthoria elegans*);
- Xanthocarpia* A. Massal. & D. Not. (1853), with *Xanthocarpia crenulatella* (Nyl.) Frödén, Arup & Søchting (syn. *Caloplaca crenulatella*), *X. marmorata* (Bagl.) Frödén, Arup & Søchting (syn. *Caloplaca marmorata*, *C. lactea* auct. brit.), *X. ochracea* (Schaer.) A. Massal. & De Not. (1853) (syn. *Caloplaca ochracea*).

British species retained in *Caloplaca* s.str. are: *C. cerina*, *C. chlorina*, *C. monacensis* [? a syn. of *C. virescens*] and *C. stillicidiorum* [currently on British list as *C. cerina* var. *chloroleuca*], and those retained in *Xanthoria* are *X. aureola*, *X. calcicola* and *X. parietina*.

[This is a lot to take on board, and “the dust needs to settle”! So, changes will not be immediately made to the British checklist, although the ‘new’ names will be included as synonyms in the on-line species dictionary on the BLS website. Also several species names on the British list have not been accounted for in the new classification, e.g. *Caloplaca ahtii*, *C. aractina*, *C. caesiorufella*, *C. cinnamomea*, *C. haematites*, *C. littorea*, *C. lucifuga*, *C. nivalis*, *C. obscurella*, *C. pollinii*, *C. rudenum*, *C. saxicola* [presumably a *Calogaya* and perhaps not distinct from *C. pusilla* ?], *C. ulcerosa* and *Xanthoria ulophyllodes* [? a *Xanthomendoza*]. Also there are species names on the

British list that certainly have their taxonomic or nomenclatural problems, e.g. *C. ceracea*, *C. dalmatica* [? = *C. velana*] and *C. irrubescens*.]

COPPINS, A.M. [“S.”] & COPPINS, B.J. 2012. *Atlantic Hazel. Scotland’s Special Woodlands*. Kilmartin, Argyll: Atlantic Hazel Action Group. ISBN 978-0-9572034-0-2. 108 pp. This is a profusely illustrated and well-reviewed introduction to the history and biodiversity value of a much neglected habitat, a key component of the “Celtic Rainforest”, and unique to western Scotland and western Ireland.

FRYDAY, A.M. & COPPINS, B.J. 2012. New taxa, reports, and names of lichenized and lichenicolous fungi, mainly from the Scottish Highlands. *Lichenologist* **44**: 723–737. Six new species are described: **Cliostomum subtenerum* Coppins & Fryday, **Dactylospora suburceolata* Coppins & Fryday, **Fuscidea oceanica* Fryday & Coppins, **Lecania granulata* Coppins & Fryday, **Lecidea herteliana* Fryday & Coppins and **Ropalospora lugubris* f. *sorediata* Fryday & Coppins. The montane *Lecidea luteoatra* is found to belong to the *Lecanora marginata* group, and becomes *Lecanora viridiatra* (Stenh.) Nyl. (1872) [NB. Unfortunately, Nylander’s 1872 combination was as a subspecies of *Lecanora polytropa* and not at the rank of species; hence the species should be cited as *Lecanora viridiatra* (Stenh.) Fryday & Coppins (2012)]. *Peterjamesia sorediata* is transferred to *Roccellographa* as *R. sorediata* (Sparrius, P. James & M.A. Allen) Coppins & Fryday.

FRYDAY, A. & ARCADIA, L. 2012. Typification and a revised basionym for *Fuscidea lygaea*, and a new name for *Amandinea lecideina*. *Graphis Scripta* **24**: 40–44. The hitherto believed basionym for *F. lygaea*, *Lecidea lygaea* Ach. is shown to be illegitimate, although the species epithet can be retained with the changed author citation *F. lygaea* (W. Mann) V. Wirth & Vězda. The holotype of *Lecidea pelidna* Ach. is shown to belong to the species more recently known as *Amandinea lecideina*. The latter name is replaced by the new combination *Amandinea pelidna* (Ach.) Fryday & L. Arcadia.

HODKINSON, I. & STEWARD, A. 2012. *The Tree-Legged Society. The lives of the Westmorland naturalists George Stabler, James M. Barnes and Joseph A. Martindale*. Lancaster: Centre for North-West Regional Studies, Lancaster University. ISBN 978-1-86220-297-9. 110 pp + 26 pp of colour illustrations. Price £14.95, from Christine Wilkinson, CNWRS, Fylde College, Lancaster University, LA1 4YF or <mailto:christine.wilkinson@lancaster.ac.uk>. Essential reading for devotees of the history of British natural history, this book gives a detailed insight into the lives of three unsung heroes, including J.A. Martindale (1837–1914). Martindale, schoolmaster at Staveley, published many notes and articles on the lichens of the Lake District, as well as perhaps the smallest book on lichens, ‘*The Study of Lichens*’ (1889) [13 x 10 cm, 53 pp. – one of my most treasured possessions!]. He was a correspondent of William Nylander, who described several new species based on Martindale’s collections, including *Caloplaca crenulatella*, *Caloplaca flavocitrina* and *Lemmopsis oblongans*.

- JØRGENSEN, P.M. 2012. (2087) Proposal to conserve the name *Lichen oederi* Weber (*Rhizocarpon oederi*) against *L. oederi* Gunnerus and *L. koenigii* Gunnerus (lichenized *Ascomycota*). *Taxon* **61**: 1121. A proposal to retain the name *Rhizocarpon oederi*, which has been in use since 1860.
- JØRGENSEN, P.M. 2012. New names in Gunnerus's *Flora Norvegica*, and their typification. *Taxon* **61**: 1088–1095. Not of direct relevance to the British lichen flora, but complementary to the author's proposal to conserve the names *Lichen oederi* Weber and *Lichen lichenoides* (L.) Wulfen in the spirit of nomenclatural stability.
- KHODOSOVTSSEV, A., VONDRÁK, NAUMOVICH, A., KOCOURKOVÁ, J., VONDRÁKOVÁ, O. & MOTIEJŪNAITĖ, J. 2012. Three new *Pronectria* species in terricolous and saxicolous microlichen communities (*Bionectriaceae*, *Ascomycota*). *Nova Hedwigia* **95**: 211–220. A key to the known [described] species of *Pronectria* is provided.
- LAUNDON, J.R. 2013. Lichens invade the City of London. *The London Naturalist* **91**: 53–68. In the heart of the capital, during the late 1960s, the author found just one lichen, *Lecanora dispersa*, but today, with improved air quality, he reports 42 species on a variety of substrata: 16 on bark, 18 on lignum, 23 on calcareous stonework, 15 on acid stonework and 3 on metal. A postscript adds another 5 species found on wooden rails found by Amanda Waterfield. Most intriguing are the finds of abundant *Verrucaria ochrostoma* on limestone tops of walls by the River Thames – a hitherto little recorded species. [The author makes several nomenclatural observations, two of which require comment. The basionym of *Physcia grisea*, *Lichen griseus* Lam. (1791) is said to be a superfluous name for *Lichen pallescens* L. However, this is not quite true – in the protologue Lamarck seemingly placed the earlier *L. pallescens* as a synonym, but began his sentence with the Latin “An” implying some doubt, tantamount to a “?”, so that *L. griseus* is not, therefore, superfluous. The author of *Xanthoria calcicola* is said to be “Oksner” not “Oxner” as in the 2009 Flora. However, “Oksner” and “Oxner” are one and the same person, the Ukrainian lichenologist Professor Alfred Mycolayovych Oxner (1898–1973). His middle name has the alternative transliteration to Nickolaevich, and Oxner himself used both “A.M.” and “A.N.”. A full biography and bibliography has been published: Kondratyuk, S.Y. (1998) *Prof., Dr. A.M. Oxner (22.02.1898–20.11.1973)*. Kiev Phytosociocentre.]
- PREECE, T. 2013. *Xanthoriicola physciae* a puzzling black lichenicolous fungus. *Field Mycology* **14**: 14–16. A well-illustrated account of this biologically intriguing parasite, including results of some simple experiments.
- TIMDAL, E. 2010. *Porpidinia* (*Porpidiaceae*), a new genus for *Toninia tumidula*. *Bibliotheca Lichenologica* **104**: 333–337. Distinguished from similar in appearance *Toninia* species by having an amyloid apical tube in the ascus; *Porpidinia tumidula* (Sm.) Timdal.

- TIMDAL, E. & TØNSBERG, T. 2012. *Cladonia straminea*, the correct name for *C. metacorallifera*. *Graphis Scripta* **24**: 33–35. The correct name for *Cladonia metacorallifera* is shown to be *Cladonia straminea* (Sommerf.) Flörke (1828).
- VAN DEN BOOM, P. & BRAND, M. 2003. *Verrucaria squamulosa*, a new species from Belgium, Luxemburg and the Netherlands (lichenized ascomycetes, Verrucariales). *Linzer biol. Beitr.* **35**: 547–553. Original account of *V. squamulosa* M. Brand & van den Boom, recently reported as new to the British Isles.
- WILK, K. 2012. Calicolous species of the genus *Caloplaca* in the Polish Western Carpathians. *Polish Botanical Studies* **29**: 1–91. An important reference for students of the genus *Caloplaca*, with a useful introduction on anatomy and morphology, supported by colour micrographs and habit photographs.

B.J. Coppins

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New, Rare and Interesting Lichens

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

New to the British Isles

Leptogium magnussonii Degel. & P. M. Jørg. (1994): Afon Teifi, Henllan, VC 46, Cardiganshire, GR 22/357.400, April 1994. Herb. Orange 9860 (NMW). On unshaded rocks by rivers, in the riparian zone. Lobes flattened, small, to 1.2 mm wide (to 3 mm, according to protologue), with isidia on upper surface and/or margins. Isidia isodiametric or forming coralloid clusters, never becoming flattened. Medulla relatively compact, but hyphal in character. Specimen compared to isotype in BG. Two ITS sequences (from Usk and Wye specimens, see under **Other records**), confirm that this species is distinct from *L. lichenoides*. **BLS No. 2620.**

A. Orange

Tremella ramalinae Diederich (1996): on thallus of *Ramalina fraxinea* on bark of dead *Ulmus*, bordered by arable fields, roadside by Kincorth House, Forres, Morayshire, 38(NJ)/0130.6132, alt 5 m, November 2012. Herb. (E). Determined by B.J. Coppins. Forming conspicuous pinkish basidiomata, which are constricted at the base and eventually become tuberculate. The basidia have two transverse septa, and the apical cell later develops a single longitudinal septum. *Tremella tuckerae*, which also grows on *Ramalina* spp. has basidia with a single longitudinal or oblique septum and no transverse septa. First recorded from Sweden and Mexico, and since then from Estonia, France and Poland (Diederich *pers. comm.*). For full description and illustrations see Diederich in *Bibliotheca Lichenologica* **61**: 152–154 (1996). **BLS No. 2615.**

B.J. Coppins

Verrucaria squamulosa Brand & van den Boom (2003): on foundation of wall of former building on industrial wasteground, site of the former Phurnacite Plant, Abercwmboi, Aberdare, VC 41, Glamorgan, GR 22/0313.9990, January 2012. Herb. Orange 20797 (NMW). Specimen compared to holotype in herb. van den Boom. Described in *Linzer Biologische Beiträge* **35**: 547–553. See also **Other records**. **BLS No. 2621.**

A. Orange

Other records

Absoconditella trvialis: on bark below covering of moss in mixed pine - deciduous woodland, Ransom Wood, Mansfield, VC 56, Nottinghamshire, GR 43(SK)/58.59., alt 120 m, December 2012. Confirmed by B.J. Coppins. The first record of this minute lichen in the north of England.

S.M. Knight

Agonimia octospora: (i) on *Quercus* and *Populus tremula* in old relic woodland along lough shore, Slish Wood on south side of Lough Gill, VC H28, Sligo GR 13(G)/7398.3167 & 13(G)/7424.3217, alt 5 m, October 2012; (ii) on three old *Quercus* in relic pasture woodland and 19th century *Quercus* plantations, Union Wood, VC H28, Sligo GR 13(G)/6799.2777, 13(G)/6798.2841 & 13(G)/6798.2847, alt 30 – 35 m, October 2012. A very rare old woodland species outside of the south west. New to the Vice-county.

N.A. Sanderson

Anaptychia ciliaris subsp. *ciliaris*: on *Acer pseudoplatanus*, in deer park, Houghton Hall, Houghton, VC 28. West Norfolk, GR 53(TF)/7927.2848, March 2013. A new site and not recorded in the Vice-county since 1992. P.W. Lambley

Arrhenia peltigerina: two records on *Peltigera hymenina* on floor of disused sand quarry, Bestwood Country Park, VC 56, Nottinghamshire, GR 43(SK)/5673.4775 and 43(SK)/5670. 4784, alt 100 m, October 2012. Herb. S.G. Price. Collected by C. Levy. Confirmed by H. Williams. Previous English records are from the New Forest and Kielder Forest. New to the Vice-county. S.G. Price



Arrhenia peltigerae, Bestwood Country Park. Image courtesy of Craig Levy

Arthonia astroidesteria: (i) on two old *Ilex* and on *Sorbus aucuparia*, within old *Quercus* – *Ilex* woodland, Blackloon Wood, VC H27, West Mayo, GR 02(L)/9730.8024, 02(L)9720.8020 & 02(L)/9719.8020, alt 70 - 85 m; (ii) on two old *Ilex*, within old *Quercus* – *Ilex* woodlands, Slish Wood & Killery on south side of Lough Gill, VC H28, Sligo GR 13(G)/7448.3245 & 13(G)/7629.3300, alt 5 - 25 m, October 2012. New sites, with the second, new Vice-county records, of a rarely recorded species in Ireland, where few records occur outside Killarney. N.A. Sanderson

Arthonia didyma: on bark of *Corylus*, The Old Park, Chatsworth Estate, VC 57, Derbyshire, GR 43(SK)/26-69- alt 150 - 200 m, July 2012. New to the Vice-county. M. Powell & B.J. Coppins

Arthonia ilicinella: in smooth bark communities rich in oceanic species on *Ilex*; (i) on *Ilex* within relic *Quercus* – *Ilex* wood at Dooney Rock; (ii) on two *Ilex* within *Betula* – *Sorbus aucuparia* – *Ilex* pasture woodland, Killery, on south side of Lough Gill, VC H28, Sligo GR 13(G)/7213.3242, 13(G)/7633.3301 & 13(G)/7626.3302, alt 10 - 20 m, October 2012. A very rarely recorded hyper-oceanic species in Ireland, and new to this area of western Ireland. N.A. Sanderson

Arthonia invadens: parasitising *Schismatomma quercicola* on *Alnus*, *Betula* & *Ilex* at seven locations within ancient *Quercus* – *Corylus* – *Ilex* – *Alnus* pasture woodland wood on peat, Cullentra, on the south side of Lough Gill, VC H28, Sligo GR 13(G)/77.33. & 13(G)/78.33., alt 5 -15 m, October 2012. A substantial population of a lichenicolous fungi which appears rare in Ireland. N.A. Sanderson

Arthonia ligniariella: on branch of *Quercus* “bone”, Tunstall Forest, VC 25, East Suffolk, GR 62(TM)/39.54-5, April 1978. Herb. Hitch (I29). Determined by B. J. Coppins. New to the county. C.J.B. Hitch

Arthonia ligniariella: on lignum on the ground, Westleton Heath, Westleton, VC 25 East Suffolk, GR 62(TM)/454.692, June 1990. Herb. P. M. Earland-Bennett (111A). Determined by B.J. Coppins. C.J.B. Hitch

Arthonia ligniariella: on lignum of *Quercus*, The Old Park, Chatsworth Estate VC 57, Derbyshire, GR 43(SK)/263.685, alt 150 - 200 m, July 2012. Herb. Powell. New to the Vice-county. M. Powell & B.J. Coppins

Arthonia muscigena: on a few leaves of *Taxus baccata* in the maze, Chatsworth House Garden VC 57, Derbyshire, GR 43(SK)/26.69., alt 175 m, July 2012. Herb. Powell. New to the Vice-county. M. Powell

Arthrorhaphis aeruginosa: on *Cladonia polydactyla* on the Chatsworth Estate, VC 57 Derbyshire; (i) North Park, GR 43(SK)/26.71.; (ii) The Old Park, GR 43(SK)/263.685, alt 150 - 200 m, July 2012. Both herb. Powell. New to the Vice-county. M. Powell & B.J. Coppins

Arthrorhaphis muddii: on thallus of *Dibaeis baeomyces* on soil of moorland track leading to the triangulation point, Shilstone Hill, Brendon, Exmoor, VC 4, North Devon, GR 21(SS)/759.456, alt 405 m, January 2013. Herb. M. Putnam. Confirmed by B.J. Coppins. New to the county. M. Putnam

Aspicilia contorta var. *hoffmanniana*: on carboniferous limestone blocks around gateway of front garden, Bournes Green, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/914.875, November 2010. P.M. Earland-Bennett

Bacidia brandii: on shard of tile amongst moss, on clayey land, Notcutt’s Garden Centre, Woodbridge, VC 25, East Suffolk, GR 62(TM)/266-7.486, October 1999. Herb. Hitch (U 2). Determined by B.J. Coppins. New to the county and second British record for the species. C.J.B. Hitch & P.M. Earland-Bennett

Bacidia chloroticula: occurring with *B. caligans* on wooden board forming footbridge over field-side ditch, Riseley, VC 30, Bedfordshire, GR 52(TL)/05.61, November 2012. Herb. Powell 2734. New to the Vice-county. *M. Powell*

Bacidia egenula: on sandstone, Paine's Bridge, Chatsworth Estate, VC 57 Derbyshire, GR 43(SK)/25.70., alt 150-200m, July 2012. Herb. Powell. New to the Vice-county. *M. Powell & S.G. Price*

Bacidia incompta: well-developed on decaying wood in hollow *Fraxinus* pollard, beside track, Nether Exe, VC 3, South Devon, GR 20(SX)/934.995 September 2012. *B. Benfield*

Bacidia incompta: on decaying wood inside hollow *Acer pseudoplatanus*, Fowlescombe Farm, Ugborough, VC 3, South Devon, GR 20(SX)/694.551, March 2013. *B. Benfield & Devon Lichen Group*

Bacidia neosquamulosa: on bark of *Quercus*, North Park, Chatsworth Estate VC 57 Derbyshire, GR 43(SK)/2.70., alt 150 - 200 m, June 2012. New to the Vice-county. *M. Powell, S.G. Price*

Bacidia rubella: on *Acer pseudoplatanus*: in deer park, Houghton Hall, Houghton, VC 28. West Norfolk, GR 53(TF)7927,2848, April 2013. A new site and last recorded in the Vice-county in 1975. *P.W. Lambley*

Bacidia sulphurella: on bark of *Quercus*, North Park, Chatsworth Estate, VC 57, Derbyshire, GR 43(SK)/26.70., alt 150 - 200 m, June 2012. Herb. Powell. New to the Vice-county. *M. Powell & S.G. Price*

Bacidia viridescens: coprophilous on rabbit pellets in metalliferous lichen heath, Nantymwyn Mine, VC 44, Carmarthenshire, GR 22(SN)/786.446, alt 235 m, November 2012. Herb. SPC. New to the Vice-county. *S.P. Chambers*

Bacidia viridifarinos: fertile, on vertical face of thick Silurian greywacke rib in rocky mid-channel of the Afon Peris in sheltered valley woodland, east of Llan-non, VC 46, Cardiganshire, GR 22(SN)/534.672, alt 70 m, April 2013. Herb. SPC. First fertile British collection. *S.P. Chambers*

Baeomyces rufus: several large fertile thalli on millstone grit boulders, just above water level of ponds and waterways, at bottom of narrow gully (old sandpit), Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/878.866, December 2012. Herb. P.M. Earland-Bennett. New to South Essex *P.M. Earland-Bennett*

Briancoppinsia cytospora: on *Lecanora coniziaeoides* on wooden fence of snicket, between Glynde Way and Southchurch Boulevard Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/907.863, October 2012. Herb. P.M. Earland-Bennett. *P.M. Earland Bennett*

Buelliella physciicola: on thallus of *Phaeophyscia orbicularis* on branch of *Cladrastis sinensis*, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/899.852, December 2012. Herb. P.M. Earland-Bennett. The second record for this species in Southend

and South Essex, both on *Phaeophyscia orbicularis*, with one record being corticolous and the other saxicolous. P.M. Earland-Bennett

Caloplaca albolutescens: on sandstone, Paine's Bridge, Chatsworth Estate, VC 57, Derbyshire. GR 43 (SK)/25.70., alt 150 - 200 m, July 2012. New to the Vice-county.

M. Powell, B.J. Coppins

Caloplaca asserigena: on *Quercus* twig, Woolly Belt, Arlington, VC 4, North Devon, GR 21(SS)/603.395, October 2005. B. Benfield

Caloplaca asserigena: on *Suaeda vera*, just below river wall, in salt marsh, River Orwell, Trimley St. Mary, VC 25, East Suffolk, GR 62(TM)/256.351, November 2012. Herb. Hitch (P101/A). Determined by B.J. Coppins. New to the county and East Anglia. C.J.B. Hitch

Caloplaca ceracea: locally common within the Southend conurbation, VC 18, South Essex, (i) on siltstone, as at Priory Park (*Bulletin* **101** p 74), in damp narrow gully, GR 51(TQ)/878.866, March 2013; (ii) on hard red, engineering bricks, forming coping of garden walls, GR 51(TQ)/898.867, 51(TQ)/869.862 and 51(TQ)/845.863, March 2013; (iii) on hard red and blue, engineering bricks, forming coping of garden walls, GR 51(TQ)/903.863 and 51(TQ)/896.852, April 2013. This cluster of records spreads over a 7 kilometre area, east to west. P.M. Earland-Bennett

Caloplaca cirrochroa: on limestone outcrop beside the coast the path above Anstey's Cove, Torbay, VC 3, South Devon, GR 20(SX)/935.645. September 2012. Rare in Devon. B. Benfield & C.J.B. Hitch

Caloplaca coralliza: on two veteran *Quercus* in parkland, Stanage Park, VC 43, Radnor, GR 32(SO)/3371.7190 & 32(SO)/3374.7189, alt 200 m, November 2012. Herb. Sanderson 1907. First record for Wales for this recently described species segregated from *Caloplaca herbidella*. N.A. Sanderson

Caloplaca flavovirens: on concrete footings of derelict military installation, RAF Barham, Thetford, VC 26, West Suffolk, GR 52(TL)/85-6.80., May 1998. Herb. Hitch (I21/A). Determined by B.J. Coppins. New to the county.

C.J.B. Hitch & P.M. Earland-Bennett

Caloplaca lucifuga: on ancient burred *Quercus* on field edge, Tyn Coed, Dissersh, VC 42, Breconckshire, GR 32(SO)/0303.5543, alt 190 m, November 2012. Herb. Sanderson 1903. A new site for this rare BAP/Section 42 species. N.A. Sanderson

Caloplaca lucifuga: on two veteran *Quercus* within *Quercus* - *Fraxinus* pasture woodland, Gregynog Great Wood, Gregynog, VC 47, Montgomeryshire, GR 32(SO)/0825.9765 & 32(SO)/0807.9772, alt 210 m & 230 m, November 2012. Field records. First records from Montgomeryshire for this rare BAP/Section 42 species.

N.A. Sanderson

Caloplaca luteoalba: On dead, partly decorticated standing tree, in deer park, Houghton Hall, Houghton, VC 28, West Norfolk, GR 53(TF)/7940,2946, April 2013. A new site and not recorded since 1975. P.W. Lambley

Caloplaca phlogina: on *Sambucus*, Cooper's Hill, Ampthill, VC 30, Bedfordshire, GR 52(TL)/02.37, June 2010. Herb. Powell 1838. This taxon appears to be relatively frequent in Eastern England but is under-recorded because it closely resembles members of the *C. citrina* group to which it is not closely related. New to the Vice-county.
M. Powell

Caloplaca pyracea: on young *Populus tremula* branch, at north edge of Lady Wood, Melchbourne, VC 30, Bedfordshire, GR 52(TL)/035.644, December 2012. Herb. Powell 2822. This species is turning up at scattered sites in Bedfordshire and neighbouring counties on young aspen bark. New to the Vice-county.
M. Powell

Calicium diploellum: (i) on four old *Ilex* within old *Quercus* – *Ilex* wood, Blackloon Wood, VC 27, West Mayo, GR02(L)/9739.7971, 02(L)/9743.7971, 02(L)/9742.7973 & 02(L)/9720.8020, alt 85 – 90 m; (ii) on two old *Ilex*, within old *Quercus* – *Ilex* woodland, Slish Wood on the south side of Lough Gill, VC H28, Sligo GR13(G)/7448.3245, alt 5 m, October 2012. New county records of a very rarely recorded lichen. The species is probably being overlooked as it is very small. Targeted searches need to be made on the lignum exposed in lenticels on old *Ilex*, where not overgrown by other lichens. Most typically found where the lenticel is surrounded by the non-lichenised *Mycoporum lacteum*, which does not over grow the lignum. Potentially productive lenticels can be spotted by the speckled green colour imparted to the lignum by the *Calicium* thallus.
N.A. Sanderson

Candelaria concolor: on trunk of small-leaved *Tilea* in central grassed area of Southchurch Boulevard, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/902.862, October 2012. Herb. P. M. Earland-Bennett. The furthest east this species has been seen in South Essex.
P.M. Earland-Bennett

Candelaria pacifica: on *Acer platanoides* trunk, a young-mature roadside tree within Clifton village, VC 30, Bedfordshire, GR 52(TL)/160.388, February 2013. Herb. Powell 2848 and herb. Hitch. Confirmed by microscopic sections of lobes which lack a lower cortex; the lobes are smaller and less well developed than in *C. concolor*. New to the Vice-county.
M. Powell

Carbonea supersparsa: on *Lecanora polytropa* on hillside boulder, Moel Wnion, Llanllechid Common, Bethesda, VC 49, Caernarfonshire, GR 23(SH)/643.693, alt 410 m, March 2013. Herb. SPC. New to the Vice-county.
S.P. Chambers & T. Harrison

Carbonea vitellinaria: on *Candelariella vitellina* on brickwork of rail bridge under the A1094, Snape Watering VC 25 East Suffolk, GR 62(TM)378.600. August 1983. Herb Hitch (S 28). New to the county.
C.J.B. Hitch

Carbonea vitellinaria: on *Candelariella vitellina* on top of low garden wall, Church Road, Warboys, VC 31, Huntingdonshire, GR 52(TL)/302.799, May 2012. Herb. Powell 2322. An occurrence on roof slates at Wimpole Hall (Herb. Powell 1500, June 2010), Cambridgeshire, was considered a possible case of importation with the slates. This occurrence at Warboys shows that *C. vitellinaria* can occur naturally in

Eastern England but it has failed to turn up on gravestones despite scrutinizing numerous colonies of *Candelaria vitellina*, which is very common on the tops of sandstone memorials in the region. *M. Powell*

Catillaria nigroclavata: on *Fraxinus* twig, Brampton Wood, VC 31, Huntingdonshire, GR 52(TL)/18.70., April 2012. Herb. Powell 2266. New to the Vice-county.

M. Powell

Catillaria nigroclavata: on *Fraxinus* twig, western edge of West Wood, Knotting, VC 30, Bedfordshire, GR 42(SP)/98.62., May 2012. Herb. Powell 2293. New to the Vice-county.

M. Powell

Catillaria stereocaulorum: locally frequent on fertile *Stereocaulon glareosum*, *S.condensatum* & *S.dactylophyllum* on mine spoil heaps, Nantymwyn Mine, VC 44, Carmarthenshire, GR 22(SN)/786.446, alt 235 m, November 2012. Herb. SPC. New to the Vice-county.

S.P. Chambers

Chaenotheca chrysocephala: on exposed lignum of broken limb of old *Quercus*, in sheltered glade by river within old *Quercus* – *Ilex* wood, Blackloon Wood, VC H27, West Mayo, GR 02(L)/9744.79614, alt 75 m, October 2012. A rare species in Ireland not previously recorded from the west of the island.

N.A. Sanderson

Chaenotheca stemonea: on sunny crevices of ancient *Quercus*, in ancient open woodland, Old Broom, Risby, VC 26, West Suffolk, GR 52(TL)/80.67. March 2012. Herb Hitch (Y 191). Determined by B.J. Coppins. New to the county.

C.J.B. Hitch & M. Powell

Chaenothecopsis nigra: abundant on lignum of ancient *Quercus*, near north edge of Brampton Wood, VC 31, Huntingdonshire, GR 52(TL)/18.70, August 2012. Herb. Powell 2606. Confirmed by B.J. Coppins. The literature suggests that the hamathecium in *Chaenothecopsis* is absent. After staining, this specimen and other material of *C. nigra* from various sites, it is seen to have well-developed paraphyses which appear sparse between the asci and branch near the apex to form an intricate layer at the top of the hymenium. New to the Vice-county.

M. Powell

Chaenothecopsis nigra: lignicolous, on bleached lignum within partially hollow veteran *Quercus*, Overhall Grove, Knapwell, VC 29, Cambridgeshire, GR 52(TL)/33.63, October 2012. Herb. Powell 2691. New to the Vice-county.

M. Powell

Cladonia callosa: on soil of south-facing bank beside railway line, Loudham, VC 25, East Suffolk, GR 62(TM)/315-6.538, May 2002. Herb. (C3(i)), Confirmed by B.J. Coppins. New to the county.

C.J.B. Hitch & P.M. Earland-Bennett

Cladonia cornuta: in *Cladonia* heath on stabilised shingle, top of shore, Shingle Street, VC 25, East Suffolk, GR 62(TM)/372-3.435-7, September 1985. Herb. Hitch (A 3/B). Confirmed by B.J. Coppins. New to the county.

C.J.B. Hitch

Cladonia phyllophora: small amount on thin humus over granite, on tor in former moorland, being lost to tree invasion, Shaptor Down, Bovey Tracey, VC 3, South Devon, GR 20(SX)/8082.8089, 240 m, April 2013. Herb. Sanderson 1923. First modern record of this species for Devon.

N.A. Sanderson

Cladonia scabriuscula: terricolous, Sandy Heath Quarry, VC 30, Bedfordshire, GR 52(TL)/20.49, October 2012. Herb. Powell 2722. Confirmed by B.J. Coppins. Collected by Martin Butler during the BLS Autumn Field meeting. New to the Vice-county.
M. Powell

Cladonia uncialis subsp. *uncialis*: terricolous, Sandy Lodge Heath, VC 30, Bedfordshire, GR 52(TL)/19.47, October 2012. Herb. Powell 2719. Discovered during the BLS Autumn Field meeting. New to the Vice-county.
M. Powell

Collema fragrans: in a runnel just inside hollow *Acer pseudoplatanus*, Fowlescombe Farm, Ugborough, VC 3, South Devon, GR 20(SX)/694.551, March 2013.
B. Benfield & Devon Lichen Group

Collema fuscovirens: on smooth calcareous man-made tiles of church, Burgate, VC 25, East Suffolk, GR 62(TM)/08.75., May 1982. Herb. Hitch (B14). Confirmed by B.J. Coppins. New to the county.
C.J.B. Hitch

Corticifraga fuckelii: on *Peltigera hymenina*, at base of china clay tip, Wotter, southwest Dartmoor, VC 3, South Devon, GR 20(SX)/561.622, January 2009.
B. Benfield

Cresponea premnea: on bark of *Quercus*, The Old Park, Chatsworth Estate, VC 57, Derbyshire, GR 43(SK)/266.689, alt 150 – 200 m, July 2012. Previously considered extinct in the Vice-county.
M. Powell & B.J. Coppins

Cryptolechia carneolutea: on limestone outcrop beside coast path, above Anstey's Cove, Torbay, VC 3, South Devon, GR 20(SX)/935.646, September 2012. Confirmed by B. W. Edwards. Very rare or unknown on stone.
B. Benfield & C.J.B. Hitch

Degelia ligulata: on mossy rocks above shore, Loch an Eisg-brachaidh, VC 105, West Ross, GR 29(NC)/07.17., June 1977. Herb Hitch. Determined by B.J. Coppins. The most northerly known record for this species in the British Isles.
C.J.B.Hitch

Enterographa brezhonega: (i) parasitising *Porina rosei* on five fairly shaded post-mature *Quercus* within old growth *Quercus* – *Ilex* woodland, Slish Wood & Cullentra on the south side of Lough Gill, VC H28, Sligo GR 13(G)/73.31., 13(G)/74.32. & 13(G)/77.33.; (ii) on two old *Quercus* within relic pasture woodland, Union Wood, VC H28, Sligo GR 13(G)/6796.2789 & 13(G)/6793.2791, alt 35 - 40 m. New county records for a rare oceanic species.
N.A. Sanderson

Enterographa sorediata: on two *Quercus*, (i) post-mature tree with small colonising thalli, within a *Lecanactis abietina* community along with colonising *Cresponea premnea*, (ii) ancient tree, with frequent *Enterographa sorediata* along with *Cresponea premnea* and *Lecanographa lyncea*, within *Quercus* – *Fraxinus* pasture woodland, Gregynog Great Wood, Gregynog, VC 47, Montgomeryshire, GR 32(SO)/0826.9767 & 32(SO)/0817.9766, alt 210 - 215 m, November 2012. Field records. An extension of the only known Welsh site for *Enterographa sorediata* to the west of the known trees. The observed colonisation of a younger *Quercus* suggests a viable population is present.
N.A. Sanderson

Fellhanera ochracea: pycnidiate thalli on bole of *Calocedrus decurrens*, at bottom of damp narrow gully (old sandpit), Churchill Gardens, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/878.866, December 2012. Herb. P.M. Earland-Bennett.

P.M. Earland-Bennett

Fellhaneropsis myrtillicola: sterile, on leaf of rather sickly *Rhododendron*, Harcourt Arboretum, VC 23, Oxfordshire, GR 41(SU)/554.983, June 2012. Herb. Powell 2430. Confirmed by B.J. Coppins. Sérusiaux, in a paper transferring this species to its current genus (*Lichenologist* **28**: 197-228), provides useful information, helpful in confirming specimens such as this, which lack apothecia, but with pycnidia producing macroconidia. In particular the description of the pycnidial wall consisting of “long, thin-walled hyphae, gently tapering towards their top and thus forming a vertical to oblique cylinder of “palisadic” hyphae with a fimbriate rim at the top.” New to the Vice-county.

M. Powell

Graphina pauciloculata: parasitic on *Graphina ruiziana* on five trees, *Corylus*, *Betula* and *Quercus* within acidic *Quercus* pasture woodland and *Corylus* – *Betula* stands infilling open glades, Old Wood, Horner Combe NNR, VC 5, South Somerset, GR 21(SS)/8733.4335, 21(SS)/8732.4335, 21(SS)/8730.4337, 21(SS)/8730.4331 & 21(SS)/8704.4302, alt 270 – 340 m, December 2012. Herb. Sanderson 1921. First records from north Exmoor for this BAP/Section 41 species. Recorded in little explored high acid woods above the valley bottom stands.

N.A. Sanderson

Graphina pauciloculata: on *G. ruiziana* on leached *Quercus* in old oakwood, west end of Coed Allt Ddu, Cwm Rheidol, VC 46, Cardiganshire, GR 22(SN)/711.779, alt 240 m, December 2012. Field record. Fourth Vice-county locality.

S.P. Chambers

Gyalidea subscutellaris: on cyanobacterial mat on top of wall of derelict ore-processing building, Nantymwyn Mine, VC 44, Carmarthenshire, GR 22(SN)/787.446, alt 240 m, November 2012. Herb. SPC. Determined by S.P. Chambers. New to the Vice-county.

S.D.S. Bosanquet

Gyalideopsis crenulata: locally frequent on galena-rich block spoil, Nantymwyn Mine, VC 44, Carmarthenshire, GR 22(SN)/786.446, alt 235 m, November 2012. Herb. SPC. Determined by S.P. Chambers. New to the Vice-county.

B. Hotchkiss

Hypotrachyna laevigata: single thallus, 5.5 x 4.5 cm on 14.5 cm diameter branch of *Crataegus* by footpath in wood, along roadside, Amisfield Park, VC 82, East Lothian, GR 36(NT)/5348.7376, October 2012. “An amazing find – guess it is just a visitor”.

B.J. Coppins

Illosporiopsis christiansenii: on *Physcia adscendens* and directly on bark of branch of *Cladrasia sinensis*, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/889.852, December 2012. Herb. P.M. Earland-Bennett. Less common than *Marchandiomyces* in the Southend area, but still plentiful.

P.M. Earland Bennett

Lecania coeruleorubella: In some quantity on limestone and mortar courses of Great Wymondley church (south, west and north walls), VC 20, Hertfordshire, GR 52(TL)/214.285, April 2013. Herb. Powell 2997. Collections are also being placed in E, BM, and a fragment in herb. Hitch. Confirmed by B.J. Coppins. This appears to

be the first record for this species in Britain since the fertile type gathering in the 19th century. In the field this was presumed to be exuberant *L. erysibe* though the apothecia of the *L. coeruleorubella* are rather larger and their discs remain relatively flat. Microscopic investigation showed that the spores are consistently 3-septate, the measurements of this material are in the range 15-22 x 4.5-5.5 µm and some are rather curved. The thallus is very similar to that of *L. erysibe* and like that species the colour is pale grey (due to an encrustation of crystals) when growing on highly calcareous vertical surfaces.
M. Powell

Lecania hutchinsiae: on sandstone, Paine's Bridge, Chatsworth Estate, VC 57, Derbyshire, GR 43(SK)/25-70-, alt 150 - 200 m, July 2012. New to the Vice-county.
M. Powell & B.J. Coppins

Lecania sylvestris: on bleached deer skull on grassy heathland, Weather Heath, Elveden, VC 26, West Suffolk, GR 52(TL)788.782, May 2012. Herb. Hitch (U 14). Confirmed by B.J. Coppins. New to the county.
C.J.B. Hitch

Lecanora aitema: on lignum of lying *Quercus*, North Park, Chatsworth Estate, VC 57, Derbyshire, GR 43(SK)/26-71-, alt 150 - 200 m, June 2012. Herb. Powell. New to the Vice-county.
M. Powell & S.G. Price

Lecanora caesiosora: abundant on sandstone cross in churchyard, Aldringham, VC 25, East Suffolk, GR 62(TM)/451.603, March 2013. Herb. Hitch (J 21). Determined by B.J. Coppins. New to the county.
C.J.B. Hitch

Lecanora campestris var. *dolomitica*: on west-facing side of calcareous tomb in churchyard, Fressingfield, VC 25, East Suffolk, GR 62(TM)/26.77, August 1981. Herb. Hitch (H 18). Determined by B.J. Coppins. New to the county.
C.J.B. Hitch

Lecanora farinaria: on well-weathered wooden seat, Marsh Baldon village green, VC 23, Oxfordshire, GR 41(SU)/562.995, May 2012. Herb. Powell 2355. The literature describes the colour of the soredia as "yellow or white"; in fact fresh specimens have a rather characteristic pinkish tinge. Exceedingly rare in Eastern England and the Midlands.
M. Powell

Lecanora horiza: on vertical side of limestone headstone, Riseley churchyard, VC 30, Bedfordshire, GR 52(TL)/039.631, October 2012. Herb. Powell 2648. Confirmed by Jiří Malíček using molecular analysis. This species is probably much under-recorded on vertical stone surfaces but the separation from *L. campestris* using morphological characters is problematic. New to the Vice-county.
M. Powell

Lecanora horiza: south-facing on vertical surface of box tomb, in churchyard, Ampton, VC West Suffolk, GR 52(TL)/866.712, October 2012. Herb. Hitch (U 10). Determined by P.W. Lambley. New to the Vice-county.
C.J.B. Hitch & P.W. Lambley

Lecanora horiza: on west face of headstone in churchyard, Hockwold cum Wilton, VC 28, West Norfolk, GR 52(TL)/734.880, November 2012. Field record. New to the Vice-county.
P.W. Lambley & C.J.B. Hitch

Lecanora horiza: on east and north faces of headstone in churchyard, Snape, VC 25, East Suffolk, GR 62(TM)/394.594, January 2013. Herb. Hitch (L 1). New to the Vice-county.
C.J.B. Hitch

Lecanora pulicaris: four thalli on 10 year old wooden bridge, associated with *Lecanora varia*, Shoeburyness, VC 18, South Essex, GR 51(TQ)/932.845, May 2006. Herb. P.M. Earland-Bennett. Determined by B.J. Coppins. New to Essex.
P.M. Earland Bennett

Lecanora quercicola: frequent on veteran *Quercus*, within open area of scattered trees within *Quercus – Fraxinus* pasture woodland, Gregynog Great Wood, Gregynog, VC 47, Montgomeryshire, GR 32(SO)/0804.9761, alt 220 m, November 2012. Field record. First record of this BAP/Section 42 species from this site since 1980.
N.A. Sanderson

Lecanora sinuosa: two thalli on small branches of *Quercus*, within vegetated maritime shingle beach, Browndown SSSI, Gosport, VC 11, South Hampshire, GR 40(SZ)/5750.9939, alt 5 m, March 2013. Herb. Sanderson 1912. First record from Hampshire. A distinctive *Lecanora*, with numerous thalline warts, formed from apothecial initials. See <http://wessexlichengroup.org/styled/styled-12/page43/index.html>.
N.A. Sanderson & the Wessex Lichen Group

Lecanora zosteræ: on wooden jetty, just above highwater mark, Southend Marine Activities Centre, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/898.847, October 2012. Herb. P.M. Earland-Bennett. Not uncommon locally on wooden jetties. (Observations confirmed by J.F. Skinner).
P.M. Earland-Bennett

Lecanora zosteræ: on bark of *Quercus* “bone”, stranded on salt marsh at top of shore, River Orwell, Trimley St. Mary, VC 25, East Suffolk, GR 62(TM)/255.353, November 2012. Herb. Hitch (T 3). Confirmed by B.J. Coppins. Second time recorded in the county, the first in 1958.
C.J.B. Hitch

Lecidea exigua: on *Prunus* twigs in sheltered garden, Pentillie Castle, VC 2 East Cornwall, GR 20(SX)/408.644 VC 2. April 2013.
B. Benfield

Lecidea fuliginosa: on south-facing rock exposure on coastal headland, Mynydd y Wylfa, VC 52, Anglesey, GR 23(SH)/357. 944, alt 30 m, December 2012. Field record. New to the Vice-county.
S.P. Chambers

Lecidea lichenicola: abundant on chalk fragments, Dunstable Downs, VC 30, Bedfordshire, GR 52(TL)/00.20, February 2013. Herb. Powell 2930. Occurring on scattered rubble in open downland which had been cleared of scrub by mechanical digger four or five years previously. This species is more easily found when chalk pebbles are damp, as the minute fruits swell slightly and show a reddish translucence. New to the Vice-county.
M. Powell

Lepraria rigidula: on shady lignum of tall solid fence, Exning, VC 26, West Suffolk, GR 52(TL)/627.675, August 2004. Herb. Hitch (W13). Confirmed by B.J. Coppins. New to the county.
C.J.B. Hitch & P.M. Earland-Bennett

Leptogium magnussonii: (i) Afon Teifi, Allt-y-Cafan, Pentre-cwrt, VC 46, Cardiganshire, GR 22/385.392, April 1994. Herb. Orange 9851 (NMW); (ii) River Wye, southeast of Builth Wells, VC 42, Breconshire, GR 32/0656.4964, April 2010. Herb. Orange 18808 (NMW); (iii) River Usk, Llangynidr, VC 42, Breconshire, GR 32/1566.2028, January 2013. Herb. Orange 21317 (NMW). Specimens compared to isotype in **BG**. Two ITS sequences (from Usk and Wye specimens) confirm that this species is distinct from *L. lichenoides*. See also **New to the British Isles**. *A. Orange*

Leptorhaphis atomaria: on young *Populus tremula* branch, Horton Woods, VC 32, Northamptonshire, GR 42(SP)/82.52, January 2013. Herb. Powell 2817. This species is turning up at scattered sites in the region on young aspen bark. New to the Vice-county. *M. Powell*

Leptorhaphis maggiana: on bark of *Quercus*, The Old Park, Chatsworth Estate, VC 57, Derbyshire, GR 43(SK)/26.69., alt 150 – 200 m, July 2012. Herb. Powell. New to VC57. *M. Powell & B.J. Coppins*

Lichenochora epifulgens: on thalli of *Fulgensia fulgens* on slightly raised hummocks of compacted sand, Penhale Sands, Perranporth, VC 1, West Cornwall, GR 10(SW)/77.55., April 1986. Herb. Hitch (K 12(1)) and Herb. Seaward (K 12(2)). Determined by B.J. Coppins. New to Cornwall and England and second British record for this species. *C.J.B. Hitch & M.R.D. Seaward*

Lichenomphalia umbellifera: on soil and humus at top of south-facing bank by railway, Loudham, with *Coppinsia minutissima* (see *Lichenologist* **30**: 99 (1998), VC 25 East Suffolk, GR 62(TM)/316.538, February 1992. Herb. P.M. Earland-Bennett (462A). Determined by B.J. Coppins. New to Suffolk. *P.M. Earland-Bennett*

Lichenomphalia umbellifera: on south-facing sandy soil of hollow formerly occupied by a tree in open pine wood, Scottshall Coverts, VC 25 East Suffolk, GR 62(TM)/463-4.679, December 2002. Herb. Hitch (R 1/A). Determined by B.J. Coppins. “All lowland records of this taxon in the British Isles are this species”. *C.J.B. Hitch & P.M. Earland-Bennett*

Marchandiomyces aurantiacus: on algal-coated tuft of *Ramalina farinacea* on *Crataegus monogyna* twig at edge of sheep pasture, south of Rhydfudr, VC 46, Cardiganshire, GR 22(SN)/597 665, alt 260 m, November 2012. Herb. SPC. New to the Vice-county. *S.P. Chambers*

Marchandiomyces aurantiacus: on *Physcia adscendens*, on branch of *Cladrastis sinensis*, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/889.852, December 2012. Herb. P.M. Earland-Bennett. Very plentiful this past winter in the Southend area, on *Physcia adscendens*, *Xanthoria parietina* and *X. polycarpa*. *P.M. Earland-Bennett*

Megalospora tuberculosa: recorded at 15 stations and fertile with apothecia at four sites. Frequent in rich *Lobarion* communities on sheltered well-lit, older stems of *Salix cinerea*, *Corylus*, *Prunus spinosa*, *Rhamnus cathartica* & *Fraxinus*, in stunted mixed woodland on turloch and limestone pavement terrain and *Corylus* pasture woodland, Clonbur Wood in the townlands of Ballykine Lower & Dringeen Oughter, VC H26, East Mayo, GR 12(M)/10.57. & 12(M)/12.56., alt 20 - 40 m, October 2012. A new

county record for this rare oceanic species and apparently the first records of fertile thalli from Ireland.

N.A. Sanderson

Melanohalea laciniatula: (i) on bark of *Fraxinus*, North Park, Chatsworth Estate, VC 57, Derbyshire, GR 43(SK) 2670, alt 150, June 2012; (ii) on bark of *Acer pseudoplatanus*, Golf Course, Chatsworth Estate, VC, 57, Derbyshire, GR 43(SK)/24-70-, alt 150 m, July 2012. Herb. M. Powell. New to the Vice-county.

M. Powell & S.G. Price

Micarea hedlundii: on lignum of fallen large *Quercus*, in developing old-growth stand, on the lower slope of Stoke Wood, Horner Combe NNR, VC 5, South Somerset, GR 21(SS)/8860.4391, alt 152 m, December 2012. Field record. First record for Somerset of a rarely recorded species, characteristic of large bits of damp dead wood in little-disturbed woodlands.

N.A. Sanderson

Micarea leprosula: on millstone grit sandstone boulder scree, Dobb Edge, Chatsworth Estate, VC 57, Derbyshire, GR 43(SK)/26.71., alt 200 m, July 2012. Herb. Powell. New to the Vice-county.

M. Powell & B.J. Coppins

Micarea lignaria var. endoleuca: on ornamental sandstone memorial, Emberton churchyard, VC 24, Buckinghamshire, GR 42(SP)/891.468, May 2012. Herb. Powell 2349. New to the Vice-county and rare in eastern England.

M. Powell

Micarea misella: on lignum of *Quercus* hulk, The Old Park, Chatsworth Estate, VC 57, Derbyshire, GR 43(SK)/ 267.668, alt 150 - 200 m, July 2012. Herb Powell. New to the Vice-county.

M. Powell & B.J. Coppins

Micarea peliocarpa: on flints in middle of ride in cleared forest area, Mildenhall Woods, Mildenhall, VC 26, West Suffolk, GR 52 (TL)/ 74.74., July 1997. Herb. Hitch (R 500) . Determined by B.J. Coppins. New to the county.

C.J.B. Hitch & P.M. Earland-Bennett

Microcalicium ahlneri: on lignum of *Quercus*, Dobb Edge, Chatsworth Estate, VC 57 Derbyshire, GR 43(SK)/26.71., alt 200 m, July 2012. Herb. Powell. New to the Vice-county.

M. Powell & B.J. Coppins

Mycoporium lacteum: for details, see under *Calicium diploellum*.

Normandina pulchella: on mossy *Fraxinus* trunk, Fordham Wood, Fordham, VC 29, Cambridgeshire, GR 52(TL)/63.69., November 2012. Herb. Powell 2737. New to the Vice-county.

M. Powell

Ochrolechia microstictoides: on top of fence rail, with *Physconia perisidosa*, Benacre Park, VC 25, East Suffolk, GR 62(TM)/50.83-4 , June 1990. Herb. Hitch (T1/A). Determined by B.J. Coppins. New to the county.

C.J.B. Hitch, P.M. Earland-Bennett & P.N. Cayton

Opegrapha fumosa: (i) on acid bark on three old *Quercus* within old *Quercus* – *Ilex* wood, Blackloon Wood, VC H27, West Mayo, GR 02(L)/9746.7977, 02(L)/9746.7972 & 02(L)/9744.7962, alt 75 - 80 m; (ii) on four old *Quercus*, in old *Quercus* – *Ilex* woodland, Slish Wood on south side of Lough Gill, VC H28, Sligo GR13(G)/7397.3165, 13(G)/7400.3176, 13(G)/7404.3186 & 13(G)/7413.3198, alt 5

- 25 m; October 2012. New county records for a rarely recorded old woodland species. *N.A. Sanderson*

Opegrapha niveoatra: on lignum of *Quercus*, Lindup Low, Chatsworth Estate, VC 57, Derbyshire, GR 43(SK)/25.68., alt 200 m, June 2012. Herb. Powell. New to the Vice-county. *M. Powell*

Opegrapha ochrocheila: on lignum, Edensor Park, Chatsworth Estate, VC 57, Derbyshire, GR 43(SK)/25.70., alt 150 m, June 2012. Herb. Powell. New to the Vice-county. *M. Powell & S.G. Price*

Opegrapha physciaria: on *Xanthoria parietina*, on dusty *Crataegus monogyna* twig in scrubby wood-edge, Mynydd y Wylfa, VC 52, Anglesey, GR 23(SH)/357.939, alt 30 m, December 2012. Herb. SPC. New to the Vice-county. *S.P. Chambers*

Parmeliella testacea: recorded at 14 stations. Strong populations in sheltered, rich *Lobarion* communities in varied habitats, (i) mixed stunted woodland on limestone pavement and turloch terrain; (ii) in *Corylus* pasture woodland on limestone pavement; (iii) in lough side woodland and fen woodland; on *Salix cinerea*, *Corylus*, *Fraxinus* and old *Fagus*. Clonbur Wood in the townlands of Ballykine Lower, Dringeen Oughter, VC H26, East Mayo, GR 12(M)/10.57., 12(M)/11.57. and 12(M)12.56. and in the townlands of Rosshill and Kilbeg Lower, H16, West Galway, GR 12(M)/09.57 & 12(M)/09.56, alt 20 - 40 m, October 2012. A major new site for this rare oceanic species, new to East Mayo. *N.A. Sanderson*

Parmelinopsis minarum: on dry upper side of arched-over mature *Betula* within wet, open-grazed, oceanic oak wood, Pont Talyrni, Hafod Garregog, VC 48, Merionethshire, GR 23(SH)/606.448, alt 10 m, February 2013. Herb. SPC. Third Welsh record and most northerly British locality. *S.P. Chambers*

Parmotrema reticulatum: on *Quercus*, Cooper's Hill, Amphill, VC 30, Bedfordshire, GR 52(TL)/02.37, October 2012. Herb. Powell 2723. Collected by Barbara Benfield during the BLS Autumn 2012 meeting. New to the Vice-county. *M. Powell*

Pertusaria corallina: 0.3 m thallus on acidic boulder by water at the very damp bottom of narrow gully (old sandpit), Churchill Gardens, in central Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/878.866, March 2013. New to East Anglia. *P.M. Earland-Bennett*

Pertusaria monogona: solitary, ca 4 cm diameter thallus on base of well-lit but sheltered south-facing rock exposure, on coastal headland, Mynydd y Wylfa, VC 52, Anglesey, GR 23(SH)/357.944, alt 30 m, December 2012. Field record. New to the Vice-county. *S.P. Chambers*

Phaeosporobolus usneae: On *Flavoparmelia soledians*, on vertical wooden back of park seat, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/897.849, October 2012. Herb. P.M. Earland-Bennett. Determined by B.J. Coppins. New to Essex and the second time seen in East Anglia. *P.M. Earland-Bennett*

Phylloblastia inexpectata: frequent on leaves of *Ilex* sp., *Mahonia* sp. and *Prunus laurocerasus*, at the very damp bottom of narrow gully (old sandpit), Churchill

Gardens, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/878.866, December 2012. Herb. P.M. Earland-Bennett. Causing some of the leaves to become necrotic. A *Physcia thallus* was also present on *Prunus*. P.M. Earland -Bennett

Phylloblastia inexpectata: two records from VC 46, Cardiganshire; (i) on upper side of scurfy old leaves of planted *Ilex x altaclerensis* bordering former kitchen garden, Cardigan Castle, GR 22(SN)/178.459, alt 15 m, February 2013; (ii) on upper side of leaf of *Pseudosasa japonica* on sheltered east side of bamboo thicket in grounds of ornamental garden, Plas Gogerddan mansion, east of Aberystwyth, GR 22(SN)/631.837, alt 30 m, March 2013. Herb. SPC. New to Wales.

S.P. Chambers

Physcia aipolia: On top of wooden fence in Southchurch Park, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/898.849, October 2012. Herb. P.M. Earland-Bennett. Unlike *P. stellaris*, which is usually sterile, here locally, *P. aipolia* is always fertile. Both species are scarce in South Essex, but spreading. P.M. Earland-Bennett

Physcia stellaris: sterile on dead *Quercus* branch on pavement of urban area, Vaughan Avenue, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/899.863, October 2012. Herb. P.M. Earland-Bennett. These are now a cluster of records for this species over a 6 kilometre spread, east to west. P.M. Earland- Bennett

Physcia stellaris; fertile on *Fraxinus* trunk, Southend-on-Sea, VC 18, South Essex, GR 51(TQ)/907.862, December 2012. Herb. P. M. Earland-Bennett. The first fertile collection of this species for Essex and East Anglia. P.M. Earland-Bennett

Physconia enteroxantha: on reclined stem of *Prunus spinosa*, High Farm CWS, Wilden, VC 30, Bedfordshire, GR 52(TL)/090.538, March 2013. Herb. Powell 2940. New to the Vice-county. M. Powell

Placynthiella oligotropha: terricolous, on Sandy Lodge Heath (RSPB reserve), VC 30, Bedfordshire, GR 52(TL)/19.47., October 2012. Herb. Powell 2652. New to the Vice-county. M. Powell

Placynthiella oligotropha: small amount on thin humus over granite, on tor in former moorland, being lost to tree invasion, Shaptor Down, Bovey Tracey, VC 3, South Devon, GR 20(SX)/8086.8088, 255 m, April 2013. Herb. Sanderson 1923. New to Devon. N.A. Sanderson

Pleurosticta acetabulum: several large thalli on *Malus* branch in mature orchard, Steppingley Hospital CWS, VC 30, Bedfordshire, GR 52(TL)/022.359, November 2012. Herb. Powell 2716. Bedfordshire has one previous record from Woburn Park ca 1970. First recent record of this species for the Vice-county. M. Powell

Polyblastia dermatodes: on top of marble headstone in chapel burial ground, Nebo, VC 46, Cardiganshire, GR 22(SN)/546.651, alt 200 m, October 2012. Herb. SPC. New to the Vice-county. S.P. Chambers

Polychidium dendriscum: in *Lobarion* communities on prone *Salix cinerea* in very humid locations, (i) on tree in open pasture woodland in mire, Killery; (ii) in glade in *Corylus* pasture woodland, Aghamore, south side of Lough Gill, VC H28, Sligo

GR13(G)/7598.3276 & 13(G)/7072.3101, alt 26 & 35 m, respectively. October 2012. A new record for a rarely recorded hyper-oceanic species. *N.A. Sanderson*

Polycoccum peltigerae: on *Peltigera rufescens* on chalk grassland, Little Heath, Barnham, VC 26, West Suffolk, GR 52(TL)/84-5.78., March 1995. Herb. Hitch (R 17/B). Determined by B.J. Coppins. New to the county. *C.J.B. Hitch & P.M. Earland-Bennett*

Polycoccum trypethelioides: on fertile *Stereocaulon dactylophyllum* on flat terrace of mine spoil beside floor of processing building, Nantymwyn Mine, VC 44, Carmarthenshire, GR 22(SN)/787.446, alt 240 m, November 2012. Herb. SPC. New to Wales. *S.P. Chambers & S.D.S. Bosanquet*

Porina atlantica: on slightly flushed areas on a vertical face of a granite tor within old *Quercus* woodland, Stoneyland Waste, Bovey Tracey, VC 3, South Devon, GR 20(SX)/8167.8017, alt 195 m, April 2013. Herb. Sanderson 1922. Sterile thalli but with distinctive orange isidia, wider than those of *Porina hibernica* and with cells projecting from the cortex. With frequent *Porina chlorotica* and small amounts of *Bacidia viridifarinosa* and *Sticta sylvatica* forming streaks though *Lecanora gangaleoides*-dominated drier rock. New to the British mainland, for a rare southern Atlantic lichen, previously recorded from old trees and rocks in woodland in the west of Ireland. *N.A. Sanderson*

Porina coralloidea: on ancient *Quercus*, within *Quercus* – *Fraxinus* pasture woodland, Gregynog Great Wood, Gregynog, VC 47, Montgomeryshire, GR 32(SO)/0824.9771, alt 220 m, November 2012. Field record. A new site for a lichen which is rare in Wales. *N.A. Sanderson*

Porina hibernica: on two *Quercus* in old relic woodland along the lough shore, Slish Wood on the south side of Lough Gill, VC H28, Sligo GR 13(G)/7398.3167 & 13(G)/7401.3177, alt. 5-10 m, October 2012. A new county record for a rarely recorded oceanic species. *N.A. Sanderson*

Porina rosei: on ancient *Quercus*, within *Quercus* – *Fraxinus* pasture woodland, Gregynog Great Wood, Gregynog, VC 47, Montgomeryshire, GR 32(SO)/0825.9769, alt 215 m, November 2012. Field record. New to the Vice-county for this Near Threatened species. *N.A. Sanderson*

Protoparmelia badia: on lignum of shed wall, Nether Exe, VC 3, South Devon, GR 20(SX)/932.999, September 2012. *B. Benfield*

Protoparmelia oleagina: on lignum of small tree stump, North Park, Chatsworth Estate, VC 57 Derbyshire. GR 43(SK)/265.713, alt 150 m, July 2012. New to the Vice-county. *M. Powell & B.J. Coppins*

Rhizocarpon polycarpum: on millstone grit sandstone block scree, Bull Clough, Howden Moors VC 63 South West Yorkshire, GR 43(SK)/1739.9540, alt 300 m, July 2012. Herb. S.G. Price. Confirmed by B.J. Coppins. Collected on Sorby NHS visit. New to the Vice-county and the south Pennines. *S.G. Price*

Rinodina pityrea: on *Sambucus*, Cooper's Hill, Ampthill, VC 30, Bedfordshire, GR 52(TL)/02.37, June 2010. Herb. Powell 1838. There is a previous record for Bedfordshire but this species appears to be more common than previously realised, especially on *Sambucus* trunks where it often grows in close association with *Caloplaca phlogina* as in this instance. M. Powell

Rinodina pityrea: on lignum of *Fraxinus*, Lindup, Low, Chatsworth Estate, VC 57, Derbyshire, GR 43(SK)/25.69., alt 200m, July 2012. Herb Powell. New to the Vice-county. M. Powell

Sarcopyrenia cylindrospora: on *Candelariella vitellina* on sandstone top of railway station platform wall (in two different places), Chelmsford, VC 18, South Essex, GR 51(TQ)/706.072. November 2012. Herb. P.M. Earland-Bennett. Determined by B.J. Coppins. New to the county. P.M. Earland-Bennett

Schismatomma decolorans: on bark of *Quercus*, The Old Park, Chatsworth Estate, VC 57, Derbyshire, GR 43(SK)/266.689, alt 150 - 200 m, July 2012. New to the Vice-county. M. Powell & B.J. Coppins

Schismatomma graphidioides: on smooth bark of *Acer pseudoplatanus* in old estate woodland, Mynydd y Wylfa, VC 52, Anglesey, GR 23(SH)/356.938, alt 30 m, December 2012. Herb. SPC. New to the Vice-county. S.P. Chambers

Sclerophora peronella: on dry bark of trunk of mature, free standing *Fraxinus excelsior* beside track in wooded valley, east of Llanarmon-yn-Ial, VC 50, Denbighshire, GR 33(SJ)/199.599, alt 240 m, February 2012. Herb.SPC. New to Wales. S.P. Chambers

Scoliciosporum curvatum: on leaves of *Taxus baccata* on shady side of yew hedge, Chatsworth House Garden, VC 57, Derbyshire, GR 43(SK)/26-70-, alt 175 m, July 2012. Herb. Powell. New to the Vice-county. M. Powell

Scoliciosporum pruinosum: on trunk of planted *Carpinus betulus*, Buff Wood, East Hatley, VC 29, Cambridgeshire, GR 52(TL)/28.50., February 2013. Herb. Powell 2891. New to the Vice-county. M. Powell

Scoliciosporum sarothamni: on *Crataegus* in heathland scrub, "The Whin", Snape, VC 25, East Suffolk, GR 62(TM)/386.590, January 1995. Herb. Hitch (TW 29). Determined by B.J. Coppins. New to the county. C.J.B. Hitch

Scoliciosporum sarothamni: on dead *Quercus* twig, Purdis Heath, VC 25, East Suffolk, GR 62(TM)/21.42., May 2005. Herb. Hitch (O 37). Collected by R. Garrod. Determined by B.J. Coppins. R. Garrod & C.J.B. Hitch

Solenopsora candicans: dispersed sterile squamules over ca 3 x 4 cm area, on south-facing mortar-rendered chapel wall, Nebo, VC 46, Cardiganshire, GR 22(SN)/546.651, alt 200 m, October 2012. Digital photograph (showing Pd+O medulla tested in situ). New to the Vice-county. S.P. Chambers

Steinia geophana: on chalk pebble dislodged by rabbits in dense shade of large *Buxus*, Devil's Ditch, VC 29, Cambridgeshire, GR 52(TL)/633.602, January 2013. Herb.

Powell 2790. This species is normally recorded from more acidic substrata. New to the Vice-county. *M. Powell*

Stenocybe nitida: parasitising the liverwort *Plagiochila punctata* on old *Betula* and *Ilex* on edges of *Quercus* – *Ilex* pasture woodlands adjacent to mires, Killery on south side of Lough Gill, VC H28, Sligo GR 13(G)/7596.3277, 13(G)/7598.3275, 13(G)/7587.3253 & 13(G)/7584.3253, alt 25 - 75 m, October 2012. A very rarely recorded hyper-oceanic species in Ireland, and new to this area of western Ireland.

N.A. Sanderson

Stenocybe pullatula: on twig of *Alnus*, Combs Reservoir, VC 57, Derbyshire, GR 43(SK)/041.789, alt 200 m, July 2012. Herb. S.G. Price. New to the Vice-county.

S.G. Price

Stereocaulon condensatum: locally extensive patches (some fertile), in gravely metalliferous lichen heath, Nantymwyn Mine, VC 44, Carmarthenshire, GR 22(SN)/786.446, alt 235 m, November 2012. Field record. New to the Vice-county.

S.P. Chambers

Stereocaulon dactylophyllum: on small sandstone rock, Sandy Heath Quarry, VC 30, Bedfordshire, GR 52(TL)/20.49., October 2012. Herb. Powell 2725. Discovered by Andrew Harris and determined by Janet Simkin during the BLS Autumn 2012 meeting. New to the Vice-county.

M. Powell

Stereocaulon glareosum: locally frequent, patches with fertile podetia, in metalliferous lichen heath, Nantymwyn Mine, VC 44, Carmarthenshire, GR 22(SN)/786.446, alt 235 m, November 2012. Herb. SPC. New to the Vice-county.

S.P. Chambers

Stereocaulon nanodes: fertile on bedding stones at side of railway track, Wickham Market Station, VC 25, East Suffolk, GR 62(TM)/325-6.557, January 2002. Herb. Hitch (W 200), herb P.M. Earland-Bennett 724A and herb. E. Determined by B.J. Coppins.

P.M. Earland-Bennett and C.J.B. Hitch

Teloschistes flavicans: luxuriant and abundant on *Prunus spinosa*, New Mill, Madron, VC 1, West Cornwall, GR 10(SW)/4580.3464, April 2013. A new site.

P.W. Lambley

Teloschistes flavicans: about 100 thalli on trunk of *Fraxinus excelsior* in sheltered valley, Higher Gear, Madron, VC 1 West Cornwall, GR 10(SW)/4646.3321, April 2013. A new site.

P.W. Lambley

Thelidium decipiens: on limestone headstone, Ampthill churchyard, VC 30, Bedfordshire, GR 52(TL)/036.383, October 2012. Herb. Powell 2728. New to the Vice-county.

M. Powell

Thelocarpon impressellum: on low mound of dumped sandy shell-waste, Nantymwyn Mine, VC 44, Carmarthenshire, GR 22(SN)/785.445, alt 220 m, November 2013. Herb. SPC. New to the Vice-county.

S.P. Chambers

Tremella phaeographidis: on *Phaeographis lyellii* on *Quercus* twigs, Pentillie Castle, VC 2, East Cornwall, GR 20(SX)/408.644, April 2013.

B. Benfield

Usnea dasypoga (was *U. filipendula*): on exposed fallen oak in open woodland (YNU Summer Meeting), Skipwith Common, VC 61, South-east Yorkshire, GR 44(SE)/664.380, August 2009. Herb. Hitch (J 17/B). Confirmed by TLC. This record significantly extends its known distribution in England. C.J.B. Hitch & A. Henderson

Verrucaria squamulosa: on unshaded rocks by river, in riparian zone, River Usk, Abercamlais, Sennybridge, VC 42, Breconshire, GR 22/9618.2917, December 2012. Herb. Orange 21251 (NMW). Specimen compared to holotype in herb. van den Boom. See also **New to the British Isles**. A. Orange

Vezeada acicularis: on saturated algal-bryophyte mats on concrete floor of derelict ore-processing building, Nantymwyn Mine, VC 44, Carmarthenshire, GR 22(SN)/787.446, alt 240 m, November 2012. Herb. SPC. New to the Vice-county.

S.P. Chambers

Xanthoria ulophyllodes: on *Quercus* branch, Bedford Cemetery, VC 30, Bedfordshire, GR 52(TL)/04.51., September 2012. Herb. Powell 2636. New to the Vice-county.

M. Powell

Xerotrema quercicola: on lignum on fallen *Quercus*, within *Quercus* – *Fraxinus* pasture woodland, Gregynog Great Wood, Gregynog, VC 47, Montgomeryshire, GR 32(SO)/0824.9769, alt 210 m, November 2012. Field record. First record for Montgomery for this Near Threatened species.

N.A. Sanderson

Xerotrema quercicola: on lignum on two standing dead trees, within open *Quercus* woodland, Pyxie Copse, Bovey Tracey, VC 3, South Devon, GR 20(SX)/8115.8047, alt 185 m, April 2013. Herb. Sanderson 1927. First record for Devon for this Near Threatened species.

N.A. Sanderson

Report of the BLS Workshop on the genus *Caloplaca*, Kingcombe Centre, Dorset, 22nd-27th April 2012

Tutor: Bryan Edwards, Conservation Officer, Dorset Wildlife Trust

Participants: Juliet Bailey, Ishpi Blatchley, Graham Boswell, Richard Brinklow, Annelie Burghause, John Butt, Ginnie Copsey, Robin Crump, Vince Giavarini, David Hill, Peter Lambley, Alan Orange, Steve Price, Maxine Putnam, Eluned Smith, Sheila Street and Amanda Waterfield.

This workshop to promote better understanding of the many taxa within the genus *Caloplaca*, and particularly their identification, was based at the Kingcombe Centre near Toller Porcorum in Dorset. The centre offers educational courses in a range of natural history subjects and crafts. It has its own working farm using traditional methods without fertilisers, herbicides and pesticides and much of the excellent food in the centre comes from the farm and garden.

The nearby Kingcombe Meadows Reserve (185 ha) managed by the Dorset Wildlife Trust spans the valley of the river Hooke and a considerable part of it has SSSI and SAC designation. Fields, pasture and hay meadows are broken up by thick hedges, streams, ancient green lanes and wooded areas. Underlying clays of Fullers Earth give wet, neutral soils overlain in parts by Greensand, and the upper slopes are capped by chalk on the north side. The week also gave us the opportunity to study some of the limestone, coast, churchyards and trees of the county.

Sunday 22nd April



A colourful array of Wellington boots was one of the first sights to greet us and could not have been more appropriate in this the wettest April on record. A 'Dorset' cream tea was our first experience with food of exceptional quality, and the large ground floor hall was soon set up with microscopes and lichenologists' equipment. Richard Brinklow, our Society curator, had thoughtfully brought along herbarium specimens of *Caloplaca* taxa from the BLS collection housed in the museum in Dundee, some of which were collected many years ago. These proved to be of great value as the week progressed.

Bryan introduced us to the Dorset countryside and the nearby Kingcombe Meadow Reserve with a walk during which alchemilla (*Alchemilla filicaulis* var. *vestitia*), lousewort (*Pedicularis sylvatica*), windflower (*Anemone nemorosa*) and orchids were seen. *Usnea ceratina*, *U. articulata* and *U. cornuta* were spotted on the trees and, returning via Mount Pleasant

Lane, Alan Orange drew our attention to *Verrucaria andesiatica* on small pebbles in the abundant fresh water rivulets which proved to be a new county record.

After dinner, under slate grey skies with a huge rainbow, Bryan outlined the week's goals. He also discussed the criteria needed to facilitate identification of the *Caloplaca* taxa found in Britain which actually outnumber species of British butterflies.

Monday 23rd April

Following a morning spent at the centre familiarising ourselves with characteristics of the *Caloplaca* taxa we would be likely to be encountering, the churchyard at Maiden Newton was visited despite heavy rain. *Lecanora pruinoso* was notable on the church wall and *Petractis nodispora* which is nationally rare was found by Alan. Some of the dry underhangs provided just the right habitat not only for *Dirina massiliensis* forma *sorediata* but also for groups of very damp lichenologists who gratefully returned to base for yet more delicious cakes. At this point questions were being asked as to whether the hazard of obesity was adequately covered by the BLS Health and Safety risk assessment.

Tuesday 24th April



Survey and study at Portland Bill

Good fortune smiled on us for a visit to Portland Bill SSSI in the guise of dry, sunny weather and being joined for the day by Vince Giavarini. The 'island' of Portland Bill, part of the Jurassic coast, has a unique geology and contains some of the warmest, sunniest, most sheltered lichen habitats to be found anywhere in the British

Isles. The famed Portland Freestone (oolitic limestone) overlies the Portland Cherty Series and is thought to have been quarried for up to a thousand years. This was the Portland stone used by Sir Christopher Wren to rebuild St. Paul's cathedral as well as being an important component of Exeter cathedral and Buckingham Palace.

At first stone was quarried from the more easily accessible sites inland and then from the cliffs before being taken away in barges by sea. The undercliff thus created widens going north to East Weare and provides the most favourable sheltered habitats for the 256 lichen taxa recorded here. The number for the whole of Portland Bill is some 303 species. The geology of the site is notable in that the basic limestone adjoins the acid chert in some places and two different lichen communities can be found in close proximity. Add to this the dry underhangs provided by the boulders and you have a rich array of ecological niches.

We made our way around boulders and through pebbles and scree which was both natural and man-made as it contained a certain amount of medieval quarry waste. Here 130 years of invasion by scrub i.e. non-native cotoneasters, wayfaring tree (*Viburnum lantanum*) and ivy is an ongoing problem although grants from Viridor and Plantlife are in place to effect some degree of control.



Studying *Caloplaca* on the village walls

dialeuca, which is part of the *Sclerophytetum circumscriptae* community grows here on a dry underhang on the chert in company with *Lecanographa grumulosa* and *Llimonea sorediata*. A little farther along *Rocella phycopsis* grew in a similar sheltered place, and the group was thrilled to be shown *Dirina massiliensis f. massiliensis*, the rarely seen fertile form, on a limestone boulder nearby.

Our first *Caloplaca* was *C. limonea* on the walls in the village followed by *C. oasis*, often found overgrowing *Verrucaria baldensis*. The enthusiasm with which the latter was examined appeared at first sight to have been likely to push the wall over. This was followed by finding *C. cirrochroa* and *C. granulosa*, and descending the pathway we found *C. marmorata (lactea)* on pebbles

Gyalecta hypoleuca with its pinky orange apothecia was admired on the vertical surface of a large limestone boulder. This is a lichen found only at Portland Bill. The next highlight was *Arthonia endlicheri* in a dry, shady crevice of a siliceous rock. On occasions the boulders were such that the juxtaposition of limestone and chert was extremely clear and two distinct lichen communities could be seen side by side.

Another rarity, *Lecanographa*



Caloplaca oasis (left) and *Arthonia endlicheri* (right)

A visit was paid to the ruined Church Ope towards the end of the day where Bryan pointed out *Caloplaca ulcerosa* on one of the trees in the area. He also brought along some shrubby seablite (*Suaeda vera*) from the shingle on Chesil Beach so that we could see the epiphytic *Caloplaca suaedae*.

Before our return to Kingcombe there was an important job to be done: Steve Price, our Meetings Secretary, had to update his list of lighthouses visited and was happy to add the three from the tip of the Bill.

Wednesday 25th April

The rain returned with a vengeance but we could not have been in a better place with the benefit of Bryan's excellent instruction and endless patience. Set these against a background of most of the equipment a lichenologist might need, as well as frequent breaks for refreshment of a very high standard, and it is safe to say we were a contented band.

We were soon to grasp the significance of being able to distinguish the main types of vegetative propagule i.e. blastidia, soredia and isidia when attempting identification. Presentations on the 3 groups or complexes followed and Bryan introduced us to his valuable tables which dealt with the *Caloplaca citrina* complex, the *Caloplaca holocarpa* 'group' and the *Caloplaca crenulatella* group and lookalikes.

To prevent our becoming 'very dull boys' with all this study, a walk along Mount Pleasant Lane (river?) was bravely attempted where *Caloplaca crenulatella* was found on a concrete water trough. Unfortunately encounters with the wonderful orchids and cowslips had to be curtailed abruptly as we dashed for cover again.

Thursday 26th April

In the morning we visited the nearby churchyard at Catterstock where *Caloplaca variabilis*, *C. dichroa* and *C. teicholyta* were recorded in addition to many other lichen species.

After lunch, during a walk on the reserve, the lichen flora of a field maple (*Acer campestre*) was closely examined and *Caloplaca obscurella* added to the growing list. This was to bring the number of Caloplacas seen in the week to 31 out of a total of 78 British species.

As a final treat and surprise Bryan led us to an impressive oak tree near the Centre where *Heterodermia obscurata* could be seen growing in abundance on the lower branches. It was here that as Richard Brinklow hand-lensed his way along the branch there was seen to be a grand confusion of beard and *Usnea* wafting in the breeze.

Friday 27th April

A real highlight of the workshop was being able to have copies of the keys which Bryan had painstakingly developed for us. These comprised a main key based on thallus morphology and the presence or absence of vegetative propagules. Further keys were based on ecology and substrate i.e. covering saxicolous, epiphytic and maritime species. These were so clear and comprehensive that one felt inspired to go out and use them and indeed Bryan urged us to do just that in order to test their accuracy and usefulness.

The BLS herbarium specimens which Richard Brinklow had brought along proved extremely useful to this end and a number of them were renamed after careful examination.

Finally there ensued a full resume and discussion of all the taxa one by one, and grateful thanks were given to our tutor who had given up his time and so much hard work to better our understanding of this complex genus.

Maxine Putnam
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Report of the BLS Field Meeting based in Bedford, 4th to 8th October 2012

Attended by Juliet Bailey, Lesley Balfe, Barbara Benfield, Ishpi Blatchley, Martin Butler, Paul Cannon, Keith Cavanagh, Pat Cavanagh, Brian Coppins, Ginnie Copsey, Andrew Harris, Barbara Hilton, Bob Hodgson, Pamela Jackson, Les Knight, Jack Laundon, Peter Lambley, Fay Newberry, Ivan Pedley, Mark Powell, Maxine Putnam, Mark Seaward, Paula Shipway, Janet Simkin, John Skinner, Sheila Street, Judith Taylor, Henk Timmerman, Maaïke Vervoort, Amanda Waterfield, Christopher Young.

Thursday October 4th

The fieldwork got underway long before the formal start of the meeting when a small group, not wishing to waste the end of a glorious autumn afternoon, had a look at

urban lichens in Bedford town centre. It was not difficult to find all five of the “*Caloplaca citrina*” group which we have evidence for in England, namely *C. aff. austrocitrina*, *C. arcis*, *C. dichroa*, *C. flavocitrina* and *C. limonia*. We were joined in our short tour by the Dutch contingent who had already found three small thalli of *Usnea* sp. on a sandstone tomb in St Paul’s churchyard. This little urban yard hints at the extreme pollution suffered by Bedford during previous decades with a thick black crust of sooty deposit on sheltered stone surfaces. Nevertheless the *Usnea* tomb has acquired an interesting assemblage of “macros”. It would be exciting to look forward to a sward of *Usnea* developing on the tomb but Henk Timmerman’s experience in Holland is that these little *Usnea* thalli develop for two or three years and then disappear again. We soon realised that it was going to be very stimulating to have continental colleagues with us to compare concepts and observations. This little impromptu walk bode well for the meeting which aimed to find interest in a previously polluted area; there was a surprising amount of interest (verging on glee) when such common but overlooked species as *Lecania inundata* were found on paving.

After the introductory talk, fruitful discussions were had about varying confidence and concepts either side of the Channel. Display panels containing all sorts of miscellaneous and tricky local species proved surprisingly popular. The ripping of Velcro was a frequent sound as specimens were removed for a closer look.

Friday October 5th



Admiring *Cladonia uncialis* subsp. *uncialis* at Sandy Lodge Heath.

If one had believed the weather forecast earlier in the week, Friday was supposed to be a washout but fortunately the torrential rain came early and the only hindrance was to a few people's sleep during Thursday night. The organiser had been overly optimistic to imagine that the RSPB's Sandy Ridge Trail could be properly explored in a morning and we did not have time to do the Old Heath justice (nor get as far as The Lodge garden with its putative undescribed *Caloplaca* "*blastidifera*"). Before we left the Old Heath however *Cladonia uncialis* subsp. *uncialis* had been found (new to Bedfordshire, the first of several additions to the county's list) and a pleasing suite of *Placynthiella* species (a genus that seems to have markedly declined in the lowlands). There was a lovely moment when Jack handed a specimen of *P. oligotropha* inviting suggestions of its identity. When told that it was probably *P. oligotropha* Jack said that he should perhaps have realised what it was considering that he had originally described this lichen. It was time to head towards Sandy Heath Quarry which entailed a kilometre hike along a main road for some of the party.



Many acres of lichens at Sandy Heath Quarry

The whole group was bowled over by Sandy Heath Quarry. Driving along the nearby road one would have no suspicion that such a dramatic landscape feature was present. The site is enormous (by lowland standards) and contains large areas of sparse but lichen-rich turf growing on a soil of virtually pure sand. An extra important feature is the presence of various rocks and boulders both scattered on the soil and exposed in the sides of the quarry. David Hill had been pondering the exact

identity of a saxicolous *Punctelia* (*borreri* or *subrudecta*?) when he realised that *Bryoria fuscescens* was overgrowing the *Punctelia*. This is a wonderful record, new to Bedfordshire and an unexpected discovery of this lichen which appears to be severely declining in the nitrogenous landscape of lowland England. There are no recent records for this species between its occurrences at Blakeney Point in Norfolk and at Chatsworth in Derbyshire. Martin Butler showed us some spectacular specimens of *Usnea cornuta* growing on a sandstone boulder which he had discovered on a previous visit. Nearby Andrew Harris discovered a lovely little *Stereocaulon* which turned out to be *S. dactylophyllum* (recognised by Janet Simkin who is more familiar with such species - it is generally found in metal-rich habitats; the Greensand presumably contains sufficient iron, and perhaps other metals, to support such interesting species). Many of the party wished they could stay in this delightful site all weekend and plans were hatched for return visits.

Saturday October 6th

The weather was kind to us again today. The heathland of Cooper's Hill is much less rich than that which we had examined at Sandy but our records and observations will usefully inform future management of this site. I laid down a challenge at the start of the day having noticed that Bedfordshire lacked any authenticated records of



Searching for *Acarospora moenium*

Arthopyrenia punctiformis. Before long we had several specimens from *Betula* twigs which were subsequently confirmed. The group congregated around a large rough-cast concrete manhole cover waiting patiently their turn to examine a small colony of *Acarospora moenium*. When this lichen was first named it was called *Aspicilia excavata* which gives a better impression of what one is looking for.

The tiny areoles could be mistaken for widely dispersed *Aspicilia contorta* areoles having the same pale grey colour. Dark soralia are produced at the edges of the areoles and the production of these soredia has the effect of undercutting the margins so that the areoles acquire a minutely squamulose appearance. I have extensively searched for this lichen on concrete and it is certainly not common despite the fact that it can colonise apparently ordinary, grubby concrete. *A. moenium* seems to have a particular affinity with asbestos cement roofing sheets but all my searching has only turned up three sites in this region.

Next the group was led to the mire at the north end of Cooper's Hill to be shown *Psilolechia clavulifera*. Nearby, David Hill excelled himself again and added *Normandina pulchella* to the county from a *Salix* in the mire. We can perhaps anticipate this species becoming more frequent, especially if the Dutch experience is repeated here. Henk thinks that Bedfordshire appears to be about a decade behind much of Holland in its re-colonisation. *Normandina* has recently spread rapidly in Holland including invading cities such as Amsterdam.

Saturday afternoon was spent examining Ampthill churchyard. Hopefully there was something for everyone. Ivan Pedley quickly relocated *Petractis clausa* for us (at its only known station in Bedfordshire) before giving well-received tutorials. Henk made the very interesting observation that the *Lecanora* "campestris" growing on the vertical faces of gravestones is called *L. horiza* by Continental lichenologists. This has led to subsequent collaboration with Jiří Malíček in the Czech Republic – see separate paper in this edition of the *Bulletin*.



Time off at Ampthill churchyard

Sunday October 7th

The Sunday woodland sites were a bit of a gamble, they lack ancient trees and this area of West Cambridgeshire suffered particularly severe sulphur dioxide pollution. The Cambridge Lichen Group which began recording the county's lichens about four years ago is producing a paper a year for *Nature in Cambridgeshire*. The group has been

particularly interested in conducting follow-up surveys of sites that were recorded in the 1960s and 1970s. Frank Brightman recorded the walls of Cambridge city and published lists of lichens on individual bridge parapets. Jack Laundon published his surveys of Wicken Fen and Chippenham Fen in the early 1970s. I can provide copies of the comparative papers that have been produced. As for the West Cambridgeshire woodlands we have almost no previous records to consult and so we are laying down our own baseline. At Gamlingay Wood I had permission to fell a few trees in advance of a major thinning operation. I love browsing felled trees and relish the guilt-free collecting opportunities they provide. *Lecanora confusa* and *Fuscidea lightfootii* are recent invaders of the East and both are now becoming frequent; both were present on the felled poplar twigs. *Rinodina sophodes* was also found on one of the poplar twigs which is the first record for Cambridgeshire and I suspect that we are picking up the first colonists of this species in our region. I claimed that the tiny *Lecanora dispersa*-group lichen on the poplar twigs was *L. hagenii* and I was not contradicted. When we examined felled ash twigs at the second felling coupe a small quantity of *L. persimilis* accompanied *L. hagenii*. This mirrors my experience in this region – *L. hagenii* is the member of this pair which is present on more spongy bark and it is perhaps most common on elder twigs where it co-dominates with *Lecania cyrtella* (where not smothered by *Xanthoria parietina*). *Lecanora persimilis* is much less frequent and seems to favour hard and smooth-barked twigs, such as ash, hawthorn and sometimes apple. *Chaenotheca brachypoda* was found in the bark crevices of an old ash tree. This lichen, though unremarkable in the east of England, was on the desiderata of Barbara from Devon. Several times we remarked how great the differences are between the lichen communities of areas separated by only tens of miles. This makes the BLS field meetings so interesting – lichenologists which, in the global scale of things, are near neighbours bring insights and learn new taxa as if foreign to an area.

Next we moved a couple of miles to the east to the car park which services Waresley and Gransden Woods. On a previous visit I had started an examination of a belt of scrub beside the track leading to a sewage works and found that elder stems here support *Caloplaca phlogina*, *Rinodina pityrea* and *Piccolia ochrophora*. The first two of these species seem to be very consistent companions, not only on well-lit elder stems but they enliven otherwise unexciting parkland trees where they colonise the lignum of old wound scars. They are both under-recorded. Once within Waresley/Gransden Woods the leader tried to exert some control over the group as otherwise the participants would have found much of the “going” very poor; it had taken some reconnaissance to discover the hotspots. I was able to show *Opegrapha viridipruinosa* (described as new to science in 2011) on its most common substratum in eastern England – the exposed lignum of elder stems. Next on the whistle-stop tour was an examination of some mature *Acer campestre* and *Fraxinus* trunks in the vicinity of impressive medieval banks. Here we compared conventional *Porina aenea* with a different entity which grows on mature bark and which has since been confirmed as *P. byssophila* (see separate article in this *Bulletin*). The communities on old trunks supporting species such as *Pertusaria pertusa* and *Phlyctis argena* often also contain a species of *Lecanora* which has massive crystals in the thalline margin and

lacks epithelial granules and which I now consider to be relic populations of *L. argentata*. For any future leaders of field meetings I would suggest that a whistle is included as part of the leader's paraphernalia.....

We finished the day at Great Gransden churchyard where we indulged in some casual lichenology by comparing notes and concepts and not worrying too much about conducting a complete survey. Once again all five members of the *Caloplaca* "citrina" group could be observed, and also well-developed *Lecania inundata* in all its inconspicuous glory. There was a limestone gravestone with particularly well-developed colonies of *Rinodina calcarea*. An inefficient downpipe allowed contaminated water from the church roof to flush mosses on the south wall and strong colonies of *Veizdaea leprosa* were in full fruit.

Monday October 8th

Monday morning amazed us by the lack of rain. The Bedford meeting experienced a considerable quantity of rain during an unsettled period but almost all of the rain fell at night. We were met at Bedford Cemetery by representatives of the Friends of the cemetery who were keen to document the location of the most important lichenological features to lessen the chance of them succumbing to accidental damage during management activities. The group was led to a spectacular colony of *Anaptychia ciliaris* growing on the side of an otherwise unremarkable headstone. The gravestone supporting the *Anaptychia* is a variety of sandstone which is more porous and slightly softer than the normal hard, well-cemented sandstones. A sandstone chest tomb supported an interesting lichen assemblage including *Buellia badia* and *Stereocaulon pileatum*. The next stop provided both saxicolous and corticolous treats with fertile *Micarea erratica* on the remains of a broken sandstone cross and *Xanthoria ulophyllodes* on an oak branch.

Just before the end of the meeting a drizzle set in, lichenologists departed in dribs and drabs and Jack, Henk, Maaik and myself resorted to examining evergreen shrubs in Bedford Park. My field notes state that "various evergreens were examined in Bedford Cemetery and Bedford Park, 8th October 2012. Some leaves with well-developed algal crust. No foliicolous lichens recorded". The day when I re-examine shrubs at these sites and find foliicolous lichens will be worth the wait – I predict that it is only a matter of time before they arrive.

Mark Powell

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Sites represented in Table below

VC 30, Bedfordshire

- 1 **BTC**: Bedford Town Centre, including St Paul's church, TL05.49
- 2 **SL**: Sandy Lodge RSPB Reserve, TL19.47, TL19.48
- 3 **SHQ**: Sandy Heath Quarry, TL19.48, TL19.49, TL20.48, TL20.49
- 4 **CH**: Cooper's Hill, Ampthill, TL02.37
- 5 **AC**: St Andrew's church, Ampthill, TL037.383
- 9 **BC**: Bedford Cemetery, TL04.51, TL05.51

VC 29, Cambridgeshire6 **GW**: Gamlingay Wood, TL23.53, TL24.53**VC 31, Huntingdonshire**7 **WGW**: Waresley-Gransden Wood, including Waresley Dean, TL25.54, TL25.55, TL26.558 **GG**: St Bartholomew's church, Great Gransden, TL271.556**Annotations**

* = new to VC 30, Bedfordshire

	BTC	SL	SHQ	CH	AC	GW	WGW	GG	BC
<i>Acarospora fuscata</i>					•				•
<i>Acarospora moenium</i>				•					
<i>Acrocordia salweyi</i>					•				
<i>Agonimia tristicula</i>					•				
<i>Amandinea punctata</i>		•	•	•	•				•
<i>Anaptychia ciliaris</i> subsp. <i>ciliaris</i>									•
<i>Anisomeridium polypori</i>						•	•		
<i>Arthonia lapidicola</i>								•	
<i>Arthonia punctiformis</i>				•					
<i>Arthonia radiata</i>		•				•	•		
<i>Arthonia spadicea</i>				•		•	•		
<i>Arthopyrenia punctiformis</i> *				•					
<i>Aspicilia calcarea</i>					•				
<i>Aspicilia contorta</i> subsp. <i>contorta</i>				•	•				
<i>Athelia arachnoidea</i>						•			
<i>Bacidia neosquamulosa</i>									•
<i>Bacidia phacodes</i>						•			
<i>Baeomyces rufus</i>		•	•						
<i>Bilimbia sabuletorum</i>					•				
<i>Botryolepraria lesdainii</i>					•				
<i>Bryoria fuscescens</i> *			•						
<i>Buellia aethalea</i>			•		•				
<i>Buellia badia</i>									•
<i>Buellia ocellata</i>			•		•				•
<i>Caloplaca arcis</i>	•							•	
<i>Caloplaca aurantia</i>					•			•	
<i>Caloplaca</i> aff. <i>austroclitina</i>	•							•	
<i>Caloplaca cerinella</i>		•				•	•		
<i>Caloplaca chlorina</i>	•	•							
<i>Caloplaca citrina</i> s. <i>lat.</i>					•				
<i>Caloplaca cremulatella</i>				•					•
<i>Caloplaca decipiens</i>	•								
<i>Caloplaca dichroa</i>	•				•			•	•
<i>Caloplaca flavescens</i>					•				•
<i>Caloplaca flavocitrina</i>	•	•			•			•	

	BTC	SL	SHQ	CH	AC	GW	WGW	GG	BC
<i>Caloplaca holocarpa</i> s. str.					•				•
<i>Caloplaca limonia</i>	•	•						•	
<i>Caloplaca oasis</i>					•				•
<i>Caloplaca phlogina</i>							•		
<i>Caloplaca saxicola</i>					•			•	•
<i>Caloplaca teicholyta</i>					•				•
<i>Caloplaca variabilis</i>					•				
<i>Candelaria concolor</i>									•
<i>Candelariella aurella</i> forma <i>aurella</i>					•		•		•
<i>Candelariella medians</i> forma <i>medians</i>					•			•	•
<i>Candelariella reflexa</i>				•					•
<i>Candelariella vitellina</i> forma <i>vitellina</i>			•		•			•	•
<i>Catillaria atomarioides</i>					•				
<i>Catillaria chalybeia</i> var. <i>chalybeia</i>									•
<i>Catillaria lenticularis</i>								•	
<i>Cetraria aculeata</i>		•	•	•					
<i>Chaenotheca brachypoda</i>						•	•		
<i>Chaenotheca ferruginea</i>				•		•	•		
<i>Chaenotheca trichialis</i>						•			
<i>Chrysothrix candelaris</i>						•			
<i>Cladonia cervicornis</i> subsp. <i>verticillata</i>		•	•						
<i>Cladonia chlorophaea</i> s. lat.		•	•	•					
<i>Cladonia ciliata</i> var. <i>tenuis</i>			•						
<i>Cladonia coccifera</i> s. lat.		•							
<i>Cladonia coniocraea</i>		•	•	•		•	•		
<i>Cladonia diversa</i>		•	•						
<i>Cladonia fimbriata</i>		•	•	•					•
<i>Cladonia floerkeana</i>				•					
<i>Cladonia foliacea</i>			•						
<i>Cladonia furcata</i> subsp. <i>furcata</i>		•	•	•					
<i>Cladonia glauca</i>			•	•					
<i>Cladonia macilenta</i>		•	•	•					
<i>Cladonia ochrochlora</i>		•							
<i>Cladonia pocillum</i>					•				
<i>Cladonia polydactyla</i> var. <i>polydactyla</i>		•							
<i>Cladonia portentosa</i>		•	•	•					
<i>Cladonia pyxidata</i>									•
<i>Cladonia ramulosa</i>		•	•	•					
<i>Cladonia rangiformis</i>			•						
<i>Cladonia rei</i>			•						
<i>Cladonia scabriuscula</i>			•						
<i>Cladonia squamosa</i> var. <i>squamosa</i>			•						
<i>Cladonia subulata</i>		•	•	•					
<i>Cladonia uncialis</i> subsp. <i>uncialis</i> *		•							
<i>Clauzadea monticola</i>					•				
<i>Collema auriforme</i>					•				
<i>Collema crispum</i> var. <i>crispum</i>			•		•		•		
<i>Collema fuscovirens</i>								•	
<i>Collema tenax</i> var. <i>ceranoides</i>					•				

	BTC	SL	SHQ	CH	AC	GW	WGW	GG	BC
<i>Collema tenax</i> var. <i>tenax</i>							•		
<i>Dimerella pineti</i>				•		•			
<i>Diploicia canescens</i>					•			•	
<i>Diploschistes muscorum</i>			•						
<i>Diploschistes scruposus</i>								•	
<i>Dirina massiliensis</i> forma <i>sorediata</i>					•			•	
<i>Evernia prunastri</i>		•	•	•		•			•
<i>Flavoparmelia caperata</i>			•	•		•			
<i>Flavoparmelia soredians</i>			•	•					•
<i>Fuscidea lightfootii</i>				•		•			
<i>Haematomma ochroleucum</i> var. <i>porphyrium</i>					•				
<i>Hyperphyscia adglutinata</i>		•							
<i>Hypocenomyce scalaris</i>			•		•				
<i>Hypogymnia physodes</i>	•	•	•	•					
<i>Hypogymnia tubulosa</i>	•		•	•					
<i>Hypotrachyna afrorevoluta</i>			•	•		•	•		
<i>Hypotrachyna revoluta</i> s.str.			•	•					
<i>Lecanactis abietina</i>						•			
<i>Lecania cyrtella</i>		•							
<i>Lecania cyrtellina</i>							•		
<i>Lecania erysibe</i> s. str.			•		•				•
<i>Lecania inundata</i>	•							•	
<i>Lecanora albescens</i>					•				•
<i>Lecanora antiqua</i>					•			•	
<i>Lecanora argentata</i>							•		
<i>Lecanora barkmaniana</i>			•						
<i>Lecanora campestris</i> subsp. <i>campestris</i>			•		•			•	•
<i>Lecanora carpinea</i>						•			
<i>Lecanora chlarotera</i>				•		•			•
<i>Lecanora confusa</i>						•			
<i>Lecanora conizaeoides</i> forma <i>conizaeoides</i>									•
<i>Lecanora crenulata</i>								•	
<i>Lecanora dispersa</i>	•		•		•			•	•
<i>Lecanora expallens</i>						•		•	•
<i>Lecanora hagenii</i>						•			•
<i>Lecanora muralis</i>			•	•	•			•	•
<i>Lecanora orosthea</i>								•	
<i>Lecanora persimilis</i>			•			•			
<i>Lecanora polytropa</i>					•			•	•
<i>Lecanora sulphurea</i>								•	
<i>Lecanora symmicta</i>				•		•			
<i>Lecidea fuscoatra</i> s. lat.			•						
<i>Lecidea grisella</i>					•				•
<i>Lecidea lithophila</i>			•						
<i>Lecidella carpathica</i>	•							•	
<i>Lecidella elaeochroma</i> forma <i>elaeochroma</i>			•			•	•		•
<i>Lecidella scabra</i>	•	•	•		•				•
<i>Lecidella stigmatea</i>			•		•			•	

	BTC	SL	SHQ	CH	AC	GW	WGW	GG	BC
<i>Lepraria incana</i>		•	•	•	•	•	•		•
<i>Lepraria vouauxii</i>					•				
<i>Leptogium turgidum</i>					•				
<i>Melanelixia glabratula</i>	•	•		•	•		•		
<i>Melanelixia subaurifera</i>	•	•		•		•	•		
<i>Micarea erratica</i>									•
<i>Micarea lignaria</i> var. <i>lignaria</i>		•		•					
<i>Micarea prasina</i> s. lat.						•			
<i>Myriospora smaragdula</i>					•				
<i>Normandina pulchella</i> *				•					
<i>Opegrapha mougeotii</i>								•	
<i>Opegrapha herbarum</i>						•			
<i>Opegrapha ochrocheila</i>						•			
<i>Opegrapha varia</i>						•			
<i>Opegrapha vermicellifera</i>						•			
<i>Opegrapha viridipruinosa</i>							•		
<i>Opegrapha vulgata</i>						•			
<i>Parmelia saxatilis</i>		•	•	•					
<i>Parmelia sulcata</i>		•	•	•	•	•	•		•
<i>Parmotrema perlatum</i>			•	•		•	•		
<i>Parmotrema reticulatum</i> *				•					
<i>Peltigera didactyla</i>		•	•						
<i>Peltigera hymenina</i>		•	•						
<i>Peltigera membranacea</i>		•							
<i>Peltigera neckeri</i>			•						
<i>Pertusaria amara</i> forma <i>amara</i>			•						
<i>Pertusaria pertusa</i>							•		
<i>Petractis clausa</i>					•				
<i>Phaeophyscia orbicularis</i>		•	•				•		•
<i>Phlyctis argena</i>				•					
<i>Physcia adscendens</i>			•	•	•	•	•		•
<i>Physcia aipolia</i>				•	•		•		•
<i>Physcia caesia</i>	•		•	•					•
<i>Physcia dubia</i>					•				•
<i>Physcia tenella</i>		•	•	•	•	•	•		•
<i>Physconia grisea</i>					•		•		•
<i>Piccolia ochrophora</i>		•					•		
<i>Placopyrenium fuscillum</i>					•				
<i>Placynthiella icmalea</i>		•	•	•					
<i>Placynthiella oligotropha</i> *		•							
<i>Placynthiella uliginosa</i>		•		•					
<i>Placynthium nigrum</i>					•				
<i>Porina aenea</i>				•		•	•		
<i>Porina byssofila</i>							•		
<i>Porpidia crustulata</i>			•						
<i>Porpidia soledizodes</i>	•		•					•	•
<i>Porpidia tuberculosa</i>			•		•			•	•
<i>Protoblastenia rupestris</i>					•				
<i>Pseudevernia furfuracea</i> s. lat.			•						

	BTC	SL	SHQ	CH	AC	GW	WGW	GG	BC
<i>Psilolechia clavulifera</i>				•					
<i>Psilolechia lucida</i>					•			•	•
<i>Punctelia borrieri</i>			•	•					
<i>Punctelia jeckeri</i>				•			•		•
<i>Punctelia subrudecta</i> s. str.	•	•	•	•	•	•	•		•
<i>Ramalina farinacea</i>				•		•			
<i>Rhizocarpon reductum</i>			•		•				•
<i>Rinodina calcarea</i>					•			•	
<i>Rinodina oleae</i>		•							
<i>Rinodina pityrea</i>							•		
<i>Rinodina sophodes</i>						•			
<i>Sarcogyne regularis</i>				•					
<i>Sarcopyrenia gibba</i> var. <i>geisleri</i>					•				
<i>Scoliciosporum chlorococcum</i>						•			
<i>Scoliciosporum umbrinum</i>					•				•
<i>Stereocaulon dactylophyllum</i> var. <i>dactylophyllum</i> *			•						
<i>Stereocaulon pileatum</i>									•
<i>Syzygospora physciacearum</i>						•			
<i>Toninia aromatica</i>					•			•	
<i>Trapelia coarctata</i>			•					•	
<i>Trapelia glebulosa</i>		•	•		•				•
<i>Trapelia obtegens</i>		•			•				
<i>Trapelia placodioides</i>									•
<i>Trapeliopsis flexuosa</i>		•	•	•					
<i>Trapeliopsis granulosa</i>		•		•					
<i>Usnea</i> sp.	•								
<i>Usnea cornuta</i>			•	•					
<i>Usnea subfloridana</i>			•	•					
<i>Verrucaria baldensis</i>					•			•	
<i>Verrucaria calciseda</i>					•			•	
<i>Verrucaria macrostoma</i> forma <i>furfuracea</i>								•	
<i>Verrucaria muralis</i>					•				
<i>Verrucaria nigrescens</i> forma <i>nigrescens</i>				•	•			•	•
<i>Verrucaria viridula</i>								•	
<i>Vezdaea leprosa</i> *		•						•	
<i>Xanthoparmelia mougeotii</i>			•		•	•			•
<i>Xanthoria calcicola</i>			•		•				•
<i>Xanthoria candelaria</i> s. str.				•					•
<i>Xanthoria elegans</i>					•				
<i>Xanthoria parietina</i>		•	•	•		•	•		•
<i>Xanthoria polycarpa</i>		•	•	•		•			•
<i>Xanthoria ulophyllodes</i>									•

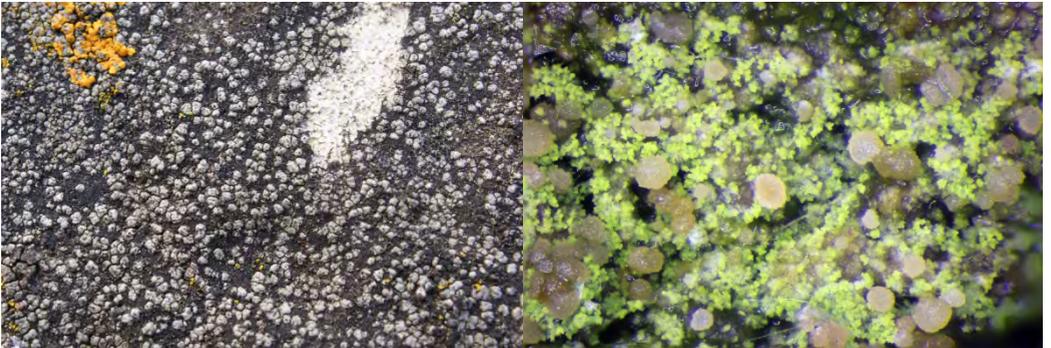
Lichens from the Bedfordshire meeting



Left: *Bacidia phacodes*, Gamlingay Wood. Right: *Hypocenomyce scalaris* on brick, Ampthill churchyard



Left: *Lecania inundata*, Great Gransden churchyard. Right: *Psilolechia lucida*, Ampthill churchyard



Left: *Rinodina calcarea*, Great Gransden churchyard. Right: *Vezdaea leprosa*, same locality

British Lichen Society Field Meetings & Workshops Programme 2013 / 2014



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

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

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

BLS AUTUMN 2013 WORKSHOP - The genus *Usnea*

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

Saturday 21st to Friday 27 September 2013

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

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

The objectives of the workshop are:

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

Workshop Bases & Accommodation

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

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

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

Meeting rooms are organised for both locations.

Costs

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

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

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

Booking is through the Field Meetings Secretary, see below.

Microscope work

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

Provisional Programme

Sat 21st	Arrive at Badaguish; meet-up in the late afternoon; welcome & introduction Introduction to <i>Usnea</i> Identification, I. (RY)
Sun 22nd	Morning: Specimen and character study, Introduction to <i>Usnea</i> Identification, II. (RY&PH) Afternoon: Field day 1 (local site) Evening: Study of specimens
Mon 23rd	Field day 2, East – Rothiemurchus or Abernethy Evening talk: British <i>Usnea</i> distribution and observations (PH)
Tue 24th	travel to The Grey Gull Inn, Ardrishaig Evening talk: Chemical variation (PH)
Wed 25th	Field day 3, West - Taynish NNR - Atlantic Oak woodland Evening talk: <i>Usnea</i> taxonomy and phylogeny (RY)
Thu 26th	Field day 4, West - Barnluasgan Wood - Oak and hazel woodland; Evening: Summary of workshop; close of meeting
Fri 27th	Depart for home

Transport

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

Booking and payment

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

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

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

BLS 2014 AGM FIELD OUTING - Calke Park (National Trust) - advanced notice

Sunday 12th January 2014

Local organiser: Steve Price

Following the 2014 BLS AGM to be held at Nottingham University it is planned to visit Calke Park, a National Trust property. This parkland has many veteran trees including oaks thought to be of the same genetic stock as those in Chatsworth Old Park. More details later.

BRISTOL UNIVERSITY WORKSHOP (advanced notice)

Friday to Sunday over a weekend late in February 2014

Tutors: Drs Brian Coppins and David Hill

Location: School of Biological Sciences, University of Bristol

It is intended in 2014 to hold another in the successful series of Bristol workshops. Re-development of the laboratory facilities has cast some uncertainty over the exact date and location

If you are interested in attending the workshop please email David Hill (d.j.hill@bris.ac.uk) or phone 01761 221587 for further information. Those expressing an interest will be informed and details will also be put onto the BLS website as soon as they are known.

BLS SPRING 2014 MEETING - Beara Peninsula (West Cork) and Killarney

Saturday 26th April 2014 to Saturday 3rd May 2014

Local organiser: Vince Giaravini

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

Meeting base & accommodation

The meeting will be based in the **Glengarriff Park Hotel**, which has been used before by the local organiser, ten twin-rooms have been pre-booked here. The agreed group rate is 45Euros per person per night B&B in a shared twin room and 65Euros per person per night B&B for single occupancy. Dinner is an extra 20Euros.

These pre-booked rooms will only be held for our group for up to three months before the meeting i.e. 25 January 2014 after which they will be released for public booking and may become unavailable to us.

Hotel details: Glengarriff Park Hotel, The Village, Glengarriff, West Cork, Ireland. tel: +353 (0)27 63000 tel: +353 (0)27 63526 email: info@glengarriffpark.com, website: www.glengarriffpark.com

Booking

To stay at the Glengarriff Park Hotel please book directly with the hotel and ask for the British Lichen Society group rate (see above for the agreed tariffs). The hotel will want credit card details as guarantee of your booking. Individuals booking into shared twin accommodation will be allocated to rooms immediately prior to the meeting.

Advise the Field Meetings Secretary, Steve Price, of your intention to attend the meeting and when you have made a booking for accommodation. By email to fieldmeetings@britishlichensociety.org.uk or by post to Woodlands, Combs Rd, Combs, High Peak, Derbyshire SK239UP.

Microscope work

The BLS have reserved a meeting room in the hotel for the duration of the meeting for microscope work, displays and talks.

Travel

By air...various airlines fly to Dublin and Cork from UK airports close to the major conurbations. It is worth shopping around on the net for the best packages and deals.

By sea...head for Holyhead (Anglesey) if travelling by car from Scotland or northern England otherwise drive to Fishguard (Pembrokeshire) for sea-crossings. Both StenaLine and Irishferries websites have details. Allow at least 4 hours from the Irish ports to Glengarriff. Historically gridlocked centres such as Waterford and Cork City are now comfortably by-passed.

Before you go

- ▲ Useful maps: OSI Discovery Series (1:50,000) map Nos 84 Cork, Kerry and 85 Cork, Kerry (for the Beara peninsula). These can be obtained through Dash4it.co.uk and other map distributors.
- ▲ Useful introductory books to the compelling landscapes of West Cork include *West Cork Walks* by Kevin Corcoran (the O'Brian Press) and *Wild Ireland: a traveller's guide* by Brendan Lehane. Both can be obtained through Amazon, the BookDepository and other book distributors.
- ▲ To further whet your appetite for the area also have a look in BLS *Bulletin* 110 (Summer 2012) at the report of the 1996 BLS Field Meeting to Killarney.

BLS MID-SUMMER 2014 MEETING - Iceland (advanced notice)

Summer 2014 (in the late-June / July / mid-August timeframe)

Local Organisers: Silke Werth, Starri Heiðmarsson & Ólafur Andrésón

BLS Members in Iceland have offered to host a field meeting. It is being organised as a meeting additional to the spring, summer and autumn BLS Field Meetings.

The outline proposal is for the meeting to centre on southern Iceland with a trip to the a relatively well accessible part of the highlands. This will offer the opportunity to collect in interesting and unexplored sites and to see spectacular landscapes. Accommodation will most likely be in a guest house or hotel.

Expressions of interest should be made to the Field Meetings Secretary, Steve Price, email to fieldmeetings@britishlichensociety.org.uk When more details are known they will be sent out to those who have expressed an interest and will also be put onto the BLS website.

BLS SUMMER 2014 MEETING - Southern Lake District

Saturday 26th August 2014 to Saturday 6th September 2014

Local organiser: Allan Pentecost

The varied geology (limestone, sandstone and igneous rock) and the complex of habitats (coast, woods, fells and dales) of this area in the southern Lake District of England offer plenty of scope for a week of lichenological discoveries in this under-recorded area.

Meeting base & accommodation

The meeting will be based in the **Castle Head Field Studies Centre, Grange over Sands, Cumbria**, LA11 6QT Tel: +44 (0)15395 38120 Fax: +44 (0)15395 36662

Saturday 30th August - arrive 3.00 – 4.00pm, Saturday 6th September 2014 - depart 9.30am. Full board accommodation has been reserved for 20 – 25 attendees in shared rooms with some limited single occupancy.

At the Centre there is a lounge and a small bar which is operated on an honesty system. Additional Centre information can be found on the website <http://www.field-studies-council.org/centres/castlehead>

Cost

Accommodation, all meals (dinner, breakfast, packed lunch) and use of a workroom are included in the group price of £282.00 per person including VAT (please note that this is the 2013 price and there will be a slight increase for 2014.)

Booking

Book though the Field Meetings Secretary, Steve Price, email to fieldmeetings@britishlichensociety.org.uk and not directly with the Centre.

Send a £30 deposit to Steve Price, Woodlands, Combs Rd, Combs, High Peak, Derbyshire SK239UP. Cheques to be made payable to 'The British Lichen Society' (not to 'BLS') please.

The balance of the cost will also have to be paid through the BLS nearer the time of the meeting. Individuals booking shared twin accommodation will be allocated to rooms immediately prior to the meeting.

Microscope work

A workroom has been reserved at the Centre for the duration of the meeting for microscope work, displays and talks.

Travel

Castle Head has excellent road and rail links:

The centre lies only 12 miles from Junction 36 on the M6;

The train station at Grange-over-Sands is only 2 miles from the Centre with good rail connections from both the north and south including Manchester Airport.

BLS AUTUMN 2014 MEETING - Kent (advanced notice)

Thursday 16th October (evening) to Monday 20th October 2014 (lunchtime)

Local Organisers - Ishpi Blatchley & Keith Palmer

This long-weekend meeting in Kent will be based in the village of Lenham (grid ref TQ85) situated on the North Downs near the M20 and rail routes. It promises is a good variety to look at and plenty of new areas to record. More details later.

Steve Price, BLS Field Meetings Secretary

Report of the British Lichen Society Annual General Meeting, 26 January 2013, Royal Botanic Gardens Kew

Barbara Hilton presided, Allan Pentecost noted proceedings.

1 *Attendees*

Ann Allen, Juliet Bailey, Lesley Balfe, Rachel Bevan, Ishpi Blatchley, Graham Boswell, John Butt, Paul Cannon, Don Chapman, Ginnie Copsey, Brian Coppins, Peter Crittenden, Simon Davey, Amanda Davey, Michael Davies, Frank Dobson, Heidi Döring, Sally Eaton, Terry Hackwill, Mary Hickmott, David Hill, Barbara Hilton, Christopher Hitch, Bob Hodgson, Peter Lambley, Jason Lewis, Jeff Malter, Oliver Moore, Fay Newbery, Ivan Pedley, Allan Pentecost, Mark Powell, Steve Price, William Purvis, Maxine Putman, Sheila Quin, Peter Scholz, Mark Seaward, Alan Silverside, Janet Simkin, John Skinner, Holger Thüs, Amanda Waterfield, Tim Wilkins, Vanessa Winchester, Pat Wolseley, Ray Woods, Rebecca Yahr, Christopher Young

2 *Apologies*

Richard Brinklow, Andrea Britton, Christopher Ellis, Theresa Greenaway, Peter James, Les Knight, Sue Knight, Jack Laundon, Stephen Ward

3 *Obituaries*

Regrets were expressed for the deaths of Donald H Smith, who contributed much from his home in Kirkby Moorside, Yorkshire, and to Jonathan P Dey of Illinois Wesleyan University, USA, who had been named Miner Linnaeus Sherff Professor of Botany in 1990, recognizing his extensive research and national reputation as a lichenologist.

4 *Minutes AGM, February 2012*

The AGM 2012 minutes were presented and approved.

5 *Officer and Committee Chair Reports*

President, Barbara Hilton

Heidi Döring and the Royal Botanic Gardens Kew were thanked for hosting the meeting, and also Paul Cannon and Begona Aguille-Hudson, for their contributions.

Significant achievements have marked the year and two tie for prime of place: our new website at www.britishlichensociety.org.uk and the completion of the database project. First, the new website, with its hugely improved appearance, content and accessibility. Our last president, Stephen Ward, initiated this development that was managed by Janet Simkin with Alan Hale's technical help and contributions from many colleagues. During the transition period, Howard Oakley stepped in and ensured continuity with the old site. All these colleagues are warmly thanked.

Second, completion of the BLS database project, with its massive number of records and links to the National Biodiversity Network (NBN), provides an invaluable resource now available to anyone, through our website. Again, it is Janet we thank for her diligence and coordination of this project that assimilated 1.2 million records from England, Scotland, Wales and the Channel Islands. The BLS mapping scheme, managed by Mark Seaward, provided an extensive foundation of records for the database and churchyards made a substantial contribution (over one third) of the total information held. Churchyards have deservedly earned a star place on our new website!

The website and database present our 'public' face worldwide and their significance cannot be overstated. We reach out in many other ways, importantly through our publications. *The Lichenologist* has had another excellent year. We thank Peter Crittenden for his outstanding editorial leadership and Tony Braithwaite with his expert management of the editorial process, very ably assisted by a first-rate team. Its partner publication, the *Bulletin*, received by all our members, is greeted twice a year with affection and respect, for its attractively illustrated topical news about field meetings, surveys and projects. We thank Paul Cannon for his sterling job, as editor.

Our field courses, coordinated very efficiently by Steve Price and ably organised locally, have visited four very different parts of the UK this year. In Bristol a very successful workshop meeting was held on *Splits and Look-alikes*. All meetings have been very popular and it is good to know that they are supplemented by the activities of a growing number of local groups of which David Hill has compiled a list, showing 14 in all from the south-west (Devon) to the Orkneys.

Members have contributed to furthering knowledge of lichens at meetings of other societies, including the International Association of Lichenology in Thailand (in January) and the European Congress in Conservation Biology in Glasgow (in late August). At home, attendance by BLS members at meetings of the National Biological Network, Field Studies Council, Centre for Hydrology and Ecology, Society of Biology and the Linnean Society have provided valuable opportunities to network, to contribute to policy development and activities, both for the BLS and nationally. We appreciate such links, both professional and informal, and while I cannot list them all, Natural England, the National Trust and Plantlife are particularly relevant. This year saw the completion of the OPAL project, marked by a conference at Imperial College London, in May. Many of us have contributed to this project that has generated a huge amount of citizen science and interest in lichens and for which a substantial heritage is developing.

Conservation efforts are strengthened by several publications (separately reported) that have appeared this year and we are very grateful to their authors. Smaller, more local publications and efforts play an important part in introducing lichens and their conservation to the general public. For example, the leaflet (on display here) for lichens on the Downs (open limestone downland in Bristol) has been very popular and is newly reprinted; we hope this example (steered by Sheila Quin) may inspire others for further local habitats. One-day lichen courses, initiated through OPAL funding, have continued and are being augmented by several tailored to the needs of those involved in biological recording in 2013.

BLS Council and Committees direct and manage much of the work of the Society. Council has met three times during the year, in Cardiff (at the National Museum of Wales), in London (at the Natural History Museum) and in Edinburgh (at the Royal Botanic Garden). To all our Council members I am hugely grateful for their expert guidance and good will. I am especially grateful to Stephen Ward, ex-President, for his commitment to excellence in managing BLS affairs, and to Janet Simkin for taking on the role as Vice-President. Our four main Committees have generally met alongside Council meetings. On behalf of the Society I thank all Committee chairmen and their separate reports follow. Other groups have met for specific purposes, for example, on finance (chaired by John Skinner) and churchyards (Ivan Pedley with Ishpi Blatchley). I should like to give special thanks to Frank Dobson, who to the best of my knowledge, has not only been president and treasurer but has served on all the committees and retains a keen interest in lichens. Frank is working currently on at least one book and we can look forward, greatly, to its publication.

John Skinner, BLS treasurer, will report shortly, but I want to mention one type of expenditure that Council enjoys considering: applications for grants and awards. In the last year not many applications for ecological studies have been forthcoming. However, in April we were pleased to receive an application for Vagn Alstrup of Denmark to join Vanessa Winchester in reviewing snow-patch lichens in the Cairngorms, in September. Although they met some arctic conditions, they achieved their goal and we shall learn more of their results in a future publication. I hope members bear in mind that our grants (information available on our website) are there to enable similar projects, large and small, to take place in the UK and further afield. We look forward to more applications in 2013.

Members are our most important resource and I am constantly impressed by their friendliness and exceptional capabilities. Many of us also benefit from support given by family and friends and while often this goes unnoticed, it is nice to be able to thank individuals who are able to help in specific ways. For example, Ishpi Blatchley was able to call on her son, William, for help in bringing up-to-date the churchyard record card, and this we appreciate. I hope all members will agree that the Society is managing sensibly within the changing employment and financial climate. We are all very grateful for the high calibre of lichenologist colleagues who work in our universities and national museums. I am aware of recent organisational reviews in three of these institutions and, to their great credit, our professional colleagues have retained posts, even been promoted! I hope they realise the pride with which we regard them and the support we hope they can find, within the Society.

Close links exist with many lichenologists abroad, for example in Spain (through David Hawksworth) and in Thailand and Sri Lanka (through Pat Wolseley). Overseas lichenologists comprise a significant proportion of our Society and as always, during the year, some have been welcomed to our major institutions and also at field meetings, as on the Isle of Muck and at Bedford. We benefit hugely through their collaboration and exchange of information, as well as through their papers to *The Lichenologist* and *Bulletin*. Some of our UK specialists have travelled abroad on international surveys and we all have an opportunity to visit Vadstena in

Sweden, the hometown of Eric Acharius at the Nordic Lichen Society's 20th biennial excursion, in August 2013 (see the notice provided by Mark Seaward, included in the current *Bulletin*).

The Society's award of Honorary Membership is made to distinguished lichenologists but this year, with membership numbers level-pegging, Council decided not to augment their numbers. No nominations have been received for an Ursula Duncan award and we have taken a holiday from pressing nominations, but there is no intention to ignore this award. Please do let us know of members, based in the UK or overseas, who you feel are deserving of an Ursula Duncan award, for service to the Society. More information can be found in our Constitution and nominations should be sent to Janet Simkin, as Vice-President. It has been a pleasure to learn that one of our members at the Natural History Museum has been distinguished by the Elias Magnus Fries Award for young mycologists. Congratulations, Cecile Gueidan and continued success in your researches.

During the year growing awareness and interest have been expressed in the diverse uses and potential of information technology. David Hill explains the emergence of a new committee in the Data Committee report that follows. A major, allied development – Open Access publishing – is being taking place in the world of publications. For the first time in 2013 authors can elect that papers for our journal, *The Lichenologist*, can be openly and freely available on the internet. This will affect the costing of the journal and potentially could impact on the number of papers submitted, as well as systems for the management and distribution of the journal, and income to the Society. This area is fast-developing, with interests expressed at all levels, including governmental. Recently, through the Society of Biology, we contributed to an House of Lords enquiry on Open Access. While I am sure the development is here to stay, its exact form is not fixed.

Many of the activities I have described were planned, but some can take us unawares, and our response to change shows how effective we are. Terror struck – apparently unexpectedly – called *Chalara fraxinea*, in the last few months of 2012. Immediately, as if an involuntary response, data were analysed, reports written, the front page of the website changed and we even had a letter in *Nature*! It is a tribute to the Society and its members that we responded so well and is an indication of how well we may cope with the unexpected in 2013. However, developments take many forms. I can recommend tuning into Channel 4, Monday evenings at 2030 to see *Wild and Wonderful*! We and all non-lichenologist friends can find out more about the pleasures of looking closely and discovering lichens with Sally Eaton, who chairs Education and Promotions Committee.

It has been an honour and a pleasure to serve the Society in the role of president during 2012. Four years ago, Peter Lambley drew his report to a close by saying that *We are not sitting on our achievements but continue to look to the future*. I am confident that in the light of all we have achieved in 2012 and in previous years, we shall embrace developments and be increasingly successful.

Secretary, Christopher Ellis (report was read)

The BLS continues to receive a broad range of correspondence, the vast majority of which arrives by email. This communication can be divided into various categories. First, if they relate to research projects, I will tend to deal with them myself. We receive c. 10-20 emails per year from school or university age students looking for assistance with and ideas for project work; because pollution remains a very popular topic, I am often able to point them towards the learning tools provided by OPAL, which has filled a genuine need among students. Second, enquiries might relate to regional conservation issues, such as planning applications, and I forward these to local contacts. Third, a small number of enquiries relate specifically to churchyards, and these are normally forwarded to Ishpi Blatchley, Ivan Pedley and Mark Seaward. Fourth, I receive the very common enquiry about how to grow lichens on stonework, with correspondents offering the suggestion that they might use a mixture of yoghurt and cow manure – but does it work? I tend to explain that this is folk-wisdom, not necessarily wrong, but as far as I know scientifically untested, and that if they have appropriate conditions (low pollution, adequate light) lichens will tend to colonise of their own accord, in time. Artificially adding propagules may help, but I tend not to recommend this because of fears about sensitive populations and indiscriminate collections from donor sites. Fifth, I receive enquiries about people requiring survey work, and I send these to surveyors within the region of interest. Sixth, I also receive enquiries about BLS products, and I can now point people to the BLS website on this issue.

A major event this year, north of the border, was the consultation on Scotland's Biodiversity Strategy, which is under revision, and once completed will run through to 2020. Helped by Barbara Hilton, I drafted a response on behalf of the BLS, to a document which dealt less with biodiversity in its own right, and more with ecosystem services (and especially those elements of biodiversity which are of direct relevance to economic growth). The results of the consultation have now been published, and it's heartening to see that many of our concerns are included in the feedback provided by the Government. An example of a specific point raised was the unconditional suggestion of 'biodiversity off-setting' to allow development in some areas, offset against habitat recreation at a different site – this is not possible for many lichen habitats, e.g. ancient forests, and these concerns will hopefully be taken on board.

Generally, the Society is so well structured through its Committee's that the work of Secretary is made significantly easier than it might otherwise be. However, many important meetings, for example addressing issues as the UK's capacity in taxonomy and systematics, and mycology (through the Linnean Society, or Society of Biology) remain firmly rooted in London, and I owe a debt of gratitude to Paul Cannon, David Hawksworth and David Hill for representing the BLS at these important events.

In summary, I find as Secretary that I remain the first point of contact for the BLS, and it has been possible to take a role in responding to key policy issues north of the border; certainly, it is an honour to serve a Society with an international

outlook, built on a foundation that is rooted in the very strongest traditions of British natural history.

Treasurer, John Skinner

Treasurer's Report for the Year Ended 30 June 2012

The income from charitable activities for the year was £96,208, compared with £94,493 in the previous Financial Year. The principal sources of this income were members' subscriptions and the Proprietor's share of *The Lichenologist*. The net outgoing resources after charitable activities and governance costs of £97,806 are taken into account, are £1,598, compared to a net income of £19,918 in the previous Financial Year.

Income from the Proprietor share of *The Lichenologist* was down by £8,617 compared to 2011 but was still respectable at £61,872. It is worth noting that this income includes £8,910 from sales of digitalised journal content, a figure that we might expect to decline in future years as purchase of digitalised back numbers are one-off. The world of publishing is changing fast with more journals going on-line and publicly funded libraries are under financial pressure.

The full accounts and Trustees' Report may be viewed on the Charity Commission website.

The Society received £251 in donations during the year and on behalf of Council, I would like to thank the members concerned for their generosity. I would like to add my personal thanks to Heidi Döring, Assistant Treasurer and Membership Secretary, and to Jim Hinds, American Treasurer, for their assistance during the year.

John Skinner reported that the accounts are in a healthy position, with assets remaining close to the preceding year. Referring to the account sheets he pointed out a discrepancy that had arisen, namely the charging twice for Volume 43 of *The Lichenologist* by Cambridge University Press; this has been rectified and the money refunded. John also referred to the length of the Trustees' Report and the accounts, which he plans to review, as other societies distribute rather less paper to their members.

From the floor, Ivan Pedley noted that the restricted funds had dropped substantially and questioned whether some funds should be transferred from another source to make up for this. The treasurer assured the meeting that funds were adequate at present and further funds would be transferred, if necessary. Following a point raised by Mary Hickmott, the treasurer agreed that while information on BLS awards and grants is available in the Handbook and on the website, it could be advertised more strongly. Mark Seaward noted that the costs of membership support were high and suggested the Charities Commission might require a more detailed breakdown of them (this point relates also to Gift Aid, mentioned in the Membership Secretary's report).

The president asked that the accounts be approved.

- Proposed – Pat Wolseley, Seconded – David Hill. Approved unanimously.

Membership Secretary and Assistant Treasurer, Heidi Döring

Membership figures for last year (as in October 2012) were 629 full members (418 Ordinary, 31 Electronic, 48 Life, 30 Associates, 12 Student Associates, 75 Senior Associates, 15 Honorary members) and 9 Family members. Numbers joining the society in 2012 totalled 61. Removals from membership in June 2012 (due to non-renewal following reminders) were 64, of these five were reinstated later in the year; 17 members resigned. Contact was lost with one member and two members died. The turnover of members each year is around 20%, with about 10% new members and a nearly equal proportion of members leaving each year. The society has had 'Corresponding members' from Eastern European countries, because at one time payment of membership fees by them was not possible. In the autumn, council decided this category should cease to exist, as there is no longer any reason to retain it. Our eight corresponding members were contacted, and three took up Ordinary or Associate membership. Several expressed their thanks to the society for the support they received.

A fairly small number of organisations subscribe to the *Bulletin* only. Last year (as in October 2012) we sent out 19 free copies (education centres, legal deposits, exchange copies) and we had 12 paid subscribers (mainly libraries at museums and botanical gardens).

We intend to present a comprehensive review of membership categories at the next AGM.

Categories are defined in our constitution in detail. Requests were made at the last AGM to change or add some categories, for example, a Senior membership that includes *The Lichenologist*. Council has discussed this over the last year, but we decided to postpone a decision, as we became aware of various factors to be considered in order to make a suggestion at the AGM that would not have to be altered again, after a short time. Two such issues are current Gift Aid rules (as they apply to the value of journals received by members) and the impact of electronic publishing systems on journals such as *The Lichenologist*.

The Society used to produce printed membership lists every four years. This last year (2012) would have been the time to do that again, however, this has been postponed as we want to explore options of using our new web site to distribute such items electronically, in a secure way, to those members who wish not to receive hard copies. This could reduce costs for printing and postage rather substantially and also our use of paper. We are working on a new privacy and data protection statement, for distribution during the year to all members, and this will form part of the membership application form. As we develop modern electronic means of communication as a supplement to printed information, this new form will specify the ways in which your data might be used, and you will be able to tell us if you do not wish to see your personal contact details included, or used by these means.

Membership Secretary post: I have enjoyed working for the society as membership secretary and being in contact with many of you, and would like to continue to do so. Unfortunately, the amount of work and time required is too much for me in the long-run. A few members have offered help, and I appreciate that

offered by Les and Sue Knight with the distribution of 'welcome packs', but other aspects are less easily shared with the current way membership is administered. We are looking into various options to streamline activities and hopefully will find straightforward solutions (eg involve other members in helping, use some professional help, introduce direct debit), to reduce purely administrative aspects of the workload of the membership secretary.

Following a question from Juliet Bailey about the use of a 'log in' code to access the members' section of the BLS website, the membership secretary explained this matter is being discussed with the webmaster.

Conservation Officer, Bryan Edwards (report read by Allan Pentecost)

Conservation Committee met twice during the year. The April meeting was held at the Kingcombe Centre in Dorset and followed by a short workshop on developing indicator lists for lichen habitats other than woodland with the aim in producing a handbook on the selection of important lichens. This will be a major project for the Committee over the next few years.

The summer was very wet which hindered field work but site surveys for the Lobarion project were carried out in Cornwall, Devon, Northumberland, Somerset and Wales, with mixed results. In parts of Wales pollution still seems to be a limiting factor but fortunately species are surviving in places on basic rocks. Hopefully the weather in 2013 will be kinder.

The new Conservation Evaluation was published by JNCC both on their Website and as a publication (see Bulletin for details). Thanks go to Ray Woods and Brian Coppins for their perseverance with this project. The Society also contributed the printing costs of an fascinating and important publication 'Atlantic Hazel' written by Sandy and Brian Coppins, a must for anyone interested the conservation of temperate rain forests, of which lichens are such an important feature.

During late summer and autumn Ash dieback became a major issue in the media. The Society had to react quickly to the many enquiries we received for information. The database proved invaluable and analysis by Janet Simkin of the data enabled us to produce several short papers. This issue will no doubt be high on the agenda for the foreseeable future, but the degree of impact of this fungal pathogen on our ash trees is still uncertain, although research from the continent is not encouraging.

The Committee also responded to a number of planning enquiries, including one that could potentially threatened one of the largest UK populations of *Collema dichotomum* in Scotland.

I would like to thank the members of the Committee for all their work during the year, 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, Tim Wilkins for Plantlife. Finally a big thank you to Peter Lambley for his minute taking and administrative skills.

Peter Lambley mentioned the significance of ash die-back and asked if Janet Simkin had information on this from CEH. In reply, Janet explained we may collaborate with CEH looking at lichens and ash die-back. Joint surveys are being planned in with the BSBI and the BBS for a range of woodlands using volunteers. Details will be posted on the website.

Data Committee and its changing role, David Hill

The work of the Data committee over the last year or two has been the support of the project with Janet Simkin, as Data Manager, to digitise the paper records for England and Wales in the creation of the site-based database of records for Britain. Reports by Janet Simkin have been communicated to Council the AGM and through the Bulletin and these have kept the Membership up to date with the project. The objectives have now been met, money spent and the project has come to an end. Therefore the Data Committee has little to do other than to look for projects to use the database (but Janet already has as many projects as she can manage) and to help organise the costs of maintenance of the database which does not really need a committee just do to that.

The Data Committee was set up in 1994. My old Bulletin says "A Data Committee was therefore set up, from members of council and active members of the Society. Its mandate is to tackle the many issues involved, including computer storage, intercommunication of data collectors and the production of more specific, site-related mapping cards based on the highly successful enterprise of Tom Chester's Churchyards Mapping Scheme. The objectives of this committee will be to thrash out the practices and needs of the Society to undertake this work efficiently." The first chairman was Brian Fox. Tony Fletcher acting chairman in 1999 after Brian Fox's untimely death. Biobase adopted and the database started with JS as data manager. Mark Seaward agreed to be chairman from AGM 2001. Frank Dobson took over in 2002 and I became chairman in 2007.

The committee saw the start of electronic site based recording of lichen records using the software Biobase and these data were the start of the BLS Lichen Record Database. This database was entirely separated from the Mapping Scheme which had been set up in 1964 and run by Mark Seward in Bradford and its purpose was quite different. The Scheme recorded the presence of lichens in 10x10km squares and only before and after 1960 records were separable. The New database recorded exactly where, when and by whom and what on substrate etc a lichen occurred and not just in which 10km square. This need was necessary for conservation purposes so we could find out what lichens had been recorded, for example, in a particular site eg nature reserve. We also could report records from any date and not just before or after 1960. The mapping scheme had provided the Society with an admirable resource and Mark is congratulated and thanked for the great service that he has given the Society and the numerous lichenologist whom he has helped.

Then it was found that Biobase was a dated software, not universally used for recording other groups of organisms. This became an important issue when NBN

started which was an on-line service that enabled naturalists and others access databases of records of all groups of organisms. Therefore to fit in with this national scheme, we migrated from Biobase to Recorder which was the software platform used by the Biological Record Centres who were providing a lot of the data available to NBN.

Then Brian and Sandy Coppins developed a Scottish Project with SNH funding to digitise Scottish records and to train young apprentices in Scotland who could become professional lichenologists as there were so few active lichenologists in Scotland. This project was a great success and was followed by another project to digitise the paper records in England and Wales. In Wales an independent project was developed to train lichen apprentices in Wales.

We congratulate Janet Simkin on her monumental work in achieving the task of digitising the lichen data of the British Isles and would like to continue to support her work as manager of the data base and provision of information for enquiries and projects. There are still a significant number of records to be added to the database but the bulk of the old legacy of paper records has been now entered. We still need to trawl our survey reports, herbarium specimens etc for records but these will need separate, smaller projects in due course. We have now a database with 1.3M site based records and a further 0.5M Mapping Scheme records making a total of about 1.8M records. The management of the database will be an ongoing cost each year and we will be sorting this out shortly. At present Janet is doing a sub-project developing and using a data cleaning software.

We have provided data for other organisations such as the Environmental Agency to help them with the licensing of nitrogen polluting intensive farming developments and to PlantLife to help them with lower plant conservation. BLS data is now available through GBIF which enables people from all over the world access our data and helps to provide useful information on world distribution of lichen species.

Since we have completed these fundamental steps in the establishment of the BLS Lichen Records Database, it has been suggested that the data committee as it was originally convened is not longer necessary. But there is a real need for the Society to formalise the management of lichens records and indeed all its information which has become very technical and involved with the combination of electronic and printed matter. We need a new strategy and new policies for information that enables us to keep abreast with the electronic world. The website is, and will become even more so in the near future, a general source of information for members and the general public for lichens in general, projects and detailed lichenological study. But it is quite a complicated matter coordinating the site and its authorship and updating services because it is getting really rather large and involves a lot of different people. Also we are seeing the general trend from printed matter to electronic information. We need develop online identification guides and recording for use on portable devices such as the iphones and tablets. We are considering the digitisation of the Lichens of the Great Britain and Ireland. We need to plan for the possible e-version of the Bulletin. Then there is the transparency and accountability of the Society's

governance – we have yet to put the minutes and agendas of the committees and Council on the website.

Therefore it was suggested that rather than put the Data Committee in abeyance or remove it altogether, it should continue albeit in another guise as an information committee. I have retired from chairing this committee on the grounds that new blood is needed to take forward its new remit. The proposal is being considered by Council and will be implemented in 2013.

From the floor, Simon Davey asked what was to be done about the different grid system current in the Channel Islands and how this might affect mapping of species on the database. Janet Simkin replied that she was aware of this and software is available to correct it, although the difference between the two grid systems is small.

Education and Promotions Committee, Sally Eaton

I took over as Chair of the Education and Promotions Committee from Barbara Hilton (standing in for Mike Sutcliffe) at the beginning of 2012. The committee was very active when I took on the position of Chair with all sorts of successful projects already underway, so I first come to some thanks from various people:

To Les and Sue Knight who had produced the Next Steps CD in response to a problem that had been identified at EPC – that once people had completed a beginners course in lichen identification there was no obvious next step for them to take to increase their confidence. This CD was distributed amongst members running beginners courses at the previous AGM. So a big thank you to Les and Sue for undertaking that task.

To Alan Hale and Janet Simkin to all their hard work on the new website – it really is a fantastic resource for promoting the society and educating the public and our members about lichens, and one that we hope to use more and more to meet our aims.

With thanks to Linda Davies, the OPAL Air Quality project continues to be a very successful resource for the BLS. In 2014 the BLS hopes to work with OPAL to produce some urban lichen course materials that could be used for urban events.

With thanks to Sheila Quin, the Bristol Downs Lichen Trail was put together in 2011. The BLS contributed to the production of trail leaflets available on site. The trail has been so successful that funds for a re-print of the leaflets, was requested. The request was granted and the BLS contributed £200 to this successful project. The EPC hopes to support similar projects in the future at other locations (perhaps in conjunction with the Plantlife proposal below).

Tim Wilkins from Plantlife presented a public engagement project that Plantlife is currently putting together in the SW of England called ‘Making the small things count’. Plantlife is applying to the Heritage Lottery Fund for a grant of £100,000 for this project which will involve family roadshows, on-line educational resources and some adult learning opportunities, all based around lichens and mosses. This would be a fantastic opportunity for the BLS and we hope to work with Plantlife as project partners should the funds be made available.

EPC identified students as a group that the BLS could encourage to become more active within the society. Barbara Hilton sent invitations to local universities inviting interested students to attend the AGM talks on current research in lichenology, though the response was weak this is something that we plan to continue in the hope of attracting students to become more active members of the society.

We have been encouraging a young graphic design student Sophia Castillo in getting her end of year project, a childrens book, called 'Looking at Lichens' published. This book has fantastic graphics that we also hope could be used on the children's pages of the website.

Merchandising and Marketing within the BLS – the EPC has been talking about producing some logo'd items such as pencils to take to events (such as the Big Nature Day held at the NHM this year) to give away as aide memoirs to anyone taking an interest in the BLS. We are also planning on rejuvenating our merchandising by not replacing bulky items of clothing in our stocks but instead producing sew on badges. We are also looking to buy up to 200 cheap hand lenses (these can be bought for around £1 each) that members running events could hand out to the public on a sale or return basis.

As a committee we are hoping to focus this year on member retention and engagement as it has been shown that several members join the society for a year, but do not renew their membership after this.

Comments followed on the *i-spot* website, led by Alan Silverside who noted that three lichenologists currently provide information to beginners and answer queries, adding that Pat Wolseley had already put considerable work into this time-consuming activity. Pat stated that *i-spot* needs more identifiers for lichens as this would help reduce the workload of current participants. Sally Eaton replied that beginners find *i-spot* useful and it could act as a forum for them.

Membership Services Committee, David Hill

The MSC committee has been very busy even though have been few reports in the *Bulletin* recently.

The membership of the Society is a big job to manage and we have been trying to support Heidi in the excellent job she has been doing. She has do so much to rationalise the management of the membership and clean up old out of data members details and deal with new members and annual renewals.

We have had a lot of other matters to deal with including what to recommend to members about the carrying of knives for lichen collecting. We have been supporting the Librarian, and Curator of the Herbarium, the field Meeting Secretary and the Bulletin Editor in their work for the Members. We are trying to establish better information on local groups. We have also been trying to make better arrangements for the provision of grants and awards.

But there is much to do. We want to find ways of helping new members enjoy their interest in lichens and retain their membership. As always we are trying to add value to membership of the society and to help members get more out of their interest in lichens and in so doing putting the resources of the Society to best use.

We really do appreciate and look forward to feedback and ideas to help us. We do want more people to take an active part in making better use of the Herbarium and Library both of which are great assets of the Society and could really help all lichenologists but there are problems in manpower doing spadework to make these assets more accessible. We need an up to date online catalogue of both the library and herbarium. These need to have the up to date accessions that people want to borrow. For example, sample specimens after special workshops on identification, books that are perhaps too expensive for members to buy but have valuable information on British lichens. But these simple ideas mean someone has to do the spadework of deciding which books and specimens we should have and getting them available in a suitable way. Cataloguing and new acquisitions are laborious tasks more than the librarian and curator can be expected to do on their own. We are glad to have offer of help. Please check the Library and the Herbarium details on the BLS website to keep up to date with developments here. We are now buying new books for the Library and we wish to have a policy of buying books that are rather too expensive for individuals to purchase. So if there is a book that you want to read, or refer to, but you cannot afford, please tell the Librarian and we may be able to buy it so you can borrow it. Books will be sent to borrowers free of charge but borrowers will have to pay for postage back.

We are trying to encourage local groups. We hope to post details of local groups and the dates of their meetings on the Website shortly. Please do make contact with the local organiser of any local group that you might be able to join and go along to the meetings. They are fun, sociable and of course informative being an excellent way to learn more lichens in the field.

If you can think of any other way we can provide benefits to the membership, please let me know and we'll see if we help. The MSC is anxious to make being a member of the BLS as rewarding as possible.

Website, Janet Simkin

The new website has been live since the end of September, and Alan Hale is to be congratulated on it. The feedback so far has been enthusiastic. The website is already getting about 100 hits a day and this is increasing steadily, so it is already being used beyond the membership of the Society. The taxon dictionary and events calendar are very popular.

Of course, this is only the first phase and there is still a lot more to be done. We need people to write more pages on habitats and lichen communities, and news items are always welcome. We are still considering how best to develop the species accounts as replacements for the map fascicles.

Ray Woods commented on requests he has received for English names for lichens to be placed on the website. Following concern expressed about fictitious names by Mark Seaward, Ray Woods confirmed that the intention would be to record historic names, not to create new ones.

Field Meetings, Steve Price

The field meetings and workshops are now all publicised well in advance in the Bulletin and on the website along with FSC courses and local field meetings when details of these are sent to me.

The 2012 the field meetings and workshops were all well attended and this makes the not inconsiderable effort put into organising the meetings well worthwhile. I would like to thank the following local organisers and tutors: Alan Orange for the AGM field outing to two castles in Glamorgan; David Hill and Brian Coppins for the Bristol Workshop on 'Splits and Look-alikes'; Bryan Edwards for the Dorset based workshop on the genus *Caloplaca*; John Douglass for working with me as a 'remote local organiser' for the week on the western Scottish island of Muck; and Mark Powell and Martin Butler for the autumn field meeting in Bedfordshire.

The events in 2013 are now all arranged and open for booking and the meetings for 2014 are advanced in the planning stage. 2013 sees a healthy spread of locations and habitats. Starting with a field outing tomorrow in West Sussex and followed by workshops in Bristol, Rothiemurchus and Knapdale and field meetings in Exmoor and Kinlochewe. 2014 sees field meetings being arranged for south west Ireland, the southern Lake District and Kent, with the good likelihood of an extra meeting in Iceland. These will be preceded by a field outing to Calke Park following the Nottingham AGM.

I would like to reiterate that all members of whatever level of experience are made welcome on all field meetings, they are friendly and jolly affairs and a great opportunity to learn. I would encourage you all to look at the meeting notices on the website and in the Bulletin and to think about coming along.

Chris Hitch asked if there was any news of a field meeting in East Anglia to reciprocate the successful field meeting in Holland, arranged jointly with the BLS. The field meeting secretary commented that the recent meeting at Bedford that was advertised so that Dutch members could attend. The chair agreed that a joint meeting in East Anglia should be borne in mind for the future.

Bulletin, Paul Cannon

Paul noted that the *Bulletin* was in good health, and appeared at regular intervals. Its increased size was a reflection on the quantity and high quality of contributions to the Bulletin, and those responsible were thanked warmly for their efforts.

The Lichenologist, Peter Crittenden

The *Lichenologist* has had a busy year with, once more, the highest number of submissions (116) in the journal's history. To cope with the ever increasing work load we have recruited additional people to the Editorial Board. Publishing is undergoing a revolution with e-books and e-journals becoming increasingly common and libraries frequently subscribing to e-journals only. Against this background, production of print copies of journals is becoming ever more expensive and our publishers are asking us to consider publishing *The Lichenologist* as an on-line journal only. We will be conducting a survey by questionnaire to discover the value

that BLS members (and non-member authors) place on the printed journal in order to guide us in our decision making.

Producing the *Lichenologist* is a team effort. The Managing Editor does a fantastic job on the production side assisted by our Editorial Assistant Justine Fox. The Editorial Board and a significant number of referees work hard seeing papers through peer review and Jack Laundon and Brian Coppins proof read all the manuscripts. On behalf of The Society I would like to thank all these people for their time and effort in making *The Lichenologist* such a successful journal.

PS. I would like to recruit an additional proof reader. This entails reading through all proofs prior to publication to spot typographical and other kinds of errors as well poor grammar and format inconsistencies. If anyone feels willing to do this job or would like more information, I would be delighted to hear from you (pdcc@nottingham.ac.uk).

Library, Ray Woods

For three years the library has been successfully housed within the science building of the National Botanic Garden of Wales. An excellent working relationship has been developed with the volunteer staff. In particular Margot Greer, its chief volunteer librarian has offered expert help and has been able to answer most of the eight requests from members received during the year.

This year has also seen the incorporation of some of the BLS archive. Prof Mark Seaward brought material down from Bradford to Mid Wales which was sifted and resorted before being transported on to the library.

Space is at a premium and with the help of Theresa Greenaway a start was made on re-sorting the archive Tony Fletcher had passed to the library and the residue of Oliver Gilbert's files. Lichen records are being passed to Janet Simpkin and minutes and agendas of BLS meetings rationalised.

Some guidance is requested as to whether the library should eventually house a second copy of the minutes of the BLS meetings (main copy is apparently kept in the Natural History Museum) or whether an electronic copy would be more appropriate.

Regrettably no progress has been possible in developing a new catalogue for the library as the Botanic Garden has received such an enormous donation of books of late they have had to prioritize the cataloguing of their own library.

An improved set of guidelines regarding access to the library has been drafted and forwarded to the web-master to encourage use of the library.

Thought needs to be given as to whether at least some of the library should be insured. The Botanic Garden has no cover. It might be that we would not wish to, or perhaps could not replace most items so insurance would just be a waste of scarce funds.

A formal letter of understanding has still to be completed and signed between the BLS and the Garden. I attach a revised draft below. It has gone from simple to complex and back to more simple. I hope to make more progress with it in 2013.

DRAFT Jan 2013 Memorandum of Understanding between The National Botanic for Wales and the British Lichen Society regarding the British Lichen Society Library

Summary:

The National Botanic Garden of Wales (NBGW) agrees to look after the British Lichen Society (BLS) library and assist in making the resources of this library available to BLS members and researchers.

Background:

The BLS was established in 1958 to promote and advance all branches of the study of lichens especially in relation to those of the British Isles. It is now an internationally recognized scientific society and is registered as a charity. In the spring of 2009, the BLS approached the NBGW to consider hosting the BLS library which needed to move from its location in Leicester. It was recognized that the library of the NBGW already housed an important collection of mycological books as a result of a major bequest by Stan Hughes and that the BLS library would complement this collection to create a significant resource. The NBGW agreed to house the BLS collection. The library arrived in June 2009 and NBGW library volunteers sorted and organized it, so making it ready for wider use.

It is understood by both parties that:-

The BLS will retain ownership of its library and contents and will have responsibility for the following:

1. The purchase of new items, journal subscriptions, and any necessary storage equipment or stationery required to organize and preserve the documents.
2. The oversight of the development of the collection and the policies and procedures for its use, through the honorary librarian.
3. The provision of a current membership list, so that requests for loans or copies to members can be verified by the NBGW library team.
4. Any publicity about the library to its members and stakeholders
5. An annual review of these arrangements and recommendations for any changes.

The NBGW will have responsibility for the following:

1. The provision of loans and copies, within copyright regulations, to members of the BLS on request and provide a regular report on the use of the library to the BLS Honorary librarian.
2. To provide reasonable access to the library for BLS members and visiting researchers on specified days, by prior arrangement with the library team or the head of Conservation and Science.
3. For a trial period, the NBGW to cover the cost of copying and/or sending items on request; borrowers to pay the costs of returning items provided such costs do not exceed the annual honorarium paid by the BLS to NBGW.
4. To keep the collection in appropriate conditions, including shelving, security and physical surroundings.

Following comments from David Hill that the library's collection of reprints available for members was big but not catalogued, Peter Scholz suggested that they could be converted into pdf files for members to use. David Hill added that pdfs could be made of particular items that were requested by members.

Herbarium, Richard Brinklow (this report was read)

The Society has an extensive herbarium of specimens, predominantly of British Lichens. Although not comprehensive, it does contain about 800 taxa of British lichens.

Once again, a relatively small number of loans have been requested during the year. However feedback confirms that the borrowed specimens can be a useful aid to identification particularly when used in conjunction with the available keys and images now available on the web.

Members of the Society are welcome to borrow specimens from this reference Herbarium. This service is particularly useful for beginners wishing to get to know macro-lichens. Specimens (preferably in batches of not more than 20) can be borrowed by post by emailing requests to the Curator (herbarium@britishlichensociety.org.uk). The Society's Herbarium continues to be generously housed at Dundee Museums and Art Galleries, Albert Square, Dundee, DD1 1DA, which is the postal address for queries and the return of loans. Postage reimbursement (usually about £5) should be enclosed when the loan is returned, preferably within one month.

The BLS Herbarium Curator is always interested in acquiring fresh material, especially of less well known or recently revised / split taxa. I'm particularly keen to add good, modern representative material of all members of the *Caloplaca citrina* and *holocarpa* aggregates which the herbarium currently lacks and which several members have requested.

An updated version of the herbarium contents list should be reinstated on the website shortly. Meanwhile, if you would like to check whether specimens you would like to borrow are available, I would be delighted to hear from you via the email above.

6 Election of Officers - Chair

Barbara Hilton thanked retiring members (Graham Boswell, Andrea Britton, David Hawksworth).

Proposed new Council members (2013 – 2016) were introduced and voted in:

1. Juliet Bailey (Proposed – Ivan Pedley, Seconded – Steve Price)
2. Sheila Quin (Proposed – David Hill, Seconded – Ishpi Blatchley)
3. Pat Wolseley (Proposed – Barbara Hilton, Seconded – David Hawksworth)

Serving Council members were voted-in unanimously and en bloc: 2011 – 2014 AGM: Allan Pentecost, Mark Powell; 2012 – 2015 AGM: Cécile Gueidan, Theresa Greenaway, Les Knight, Alan Silverside.

Serving officers were voted-in unanimously and en bloc: Barbara Hilton – President (2012 – 2014 AGM); Janet Simkin – Vice President (2012 – 2014 AGM); Christopher Ellis – Secretary; John F. Skinner – Treasurer; Heidi Döring – Assistant Treasurer & Membership Secretary; Peter D. Crittenden – Senior Editor; Paul F. Cannon – Bulletin Editor; Bryan W. Edwards – Chair of Conservation Committee; David J. Hill – Chair of Members’ Services Committee; Sally Eaton – Chair of Education & Promotions Committee.

7 Any other business

Ivan Pedley proposed a vote of thanks for the Council, Chair and members of committees for all the hard work that had been undertaken to maintain the high standards of the Society over the past year.

8 Date and place of the 2014 AGM

Saturday 11 January at the University of Nottingham, with the AGM business meeting in the morning. A Symposium for younger, less established lichenologists is planned on Friday 10 January with one session on the afternoon of Saturday 11 January and it is hoped that BLS members attending the AGM may wish to attend the Symposium also. A field meeting at Calke Abbey Park is arranged for Sunday 12 January.

Discussion followed on the merits of alternating AGM venues in England, Scotland and Wales and it was explained that Nottingham will be an exception and is both well placed geographically and also has good conference facilities. Peter Crittenden has plans in place.

The meeting closed at 12.40 h.

The following paper is derived from the 2013 Swinscow lecture, given by Yngvar Gauslaa (Norwegian University of Life Sciences) that took place on 25 January 2013.

Why are Lobarion species rare?

Yngvar Gauslaa

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Francis Rose showed that a spectacular epiphytic community dominated by large, foliose lichens, the Lobarion, was restricted to woodlands with long ecological continuity (Rose, 1974; 1976). He triggered an interest in its cyano- and cephalolichen members, and today few lichen species worldwide have been subjected to more scientific publications than *Lobaria pulmonaria*, the species that was used to name the Lobarion community. Yet, these lichens continue to fascinate and puzzle lichenologists, and *L. pulmonaria* has become a never ending story in lichen literature. In moist regions, the Lobarion (Fig. 1a) locally dominate spruce canopies (Ahlner, 1948; Holien & Tønsberg, 1996), whereas other spruce trees are dominated by *Alectoria*, *Bryoria* and *Usnea* without any specimens of cyano- and cephalolichens (Fig. 1b). These spatial patterns are not shaped by dispersal limitations. How can we explain this?

This is a requested review based on my Swinscow presentation in Kew 25 January 2013. Here, I will try without much help from illustrations to report in words parts of the presentation. As this invitation was given to me, I will use the opportunity to summarize various studies on Lobarion species initiated in my institution. The review will focus on the environmental factors bark pH, invertebrate grazing, light and humidity. However, species-specific internal factors like contents of lichen compound, thallus thickness, water storage, growth form and photobiont type also matter, and modify the influence of external factors. Altogether, they shape lichen growth and/or determine survival.



Figure 1a,b. Spruce twigs with the Lobarion community (*Lobaria scrobiculata* and *L. pulmonaria* are clearly visible), and the Usneion community *Usnea filipendula* and *U. longissima*).

Bark pH

During a visit in the 1970's to Kristiansand near the southern tip of Norway, I happened to come across an oak forest where trees with Lobarion were apparently randomly distributed among trees dominated by Parmelioid lichens (Gauslaa, 1985). As this was when Rose (1976) published his work on ecological continuity, my first hypothesis was that the Lobarion grew on the oldest trees. Coring of trees showed that this was not the case, and other hypotheses were search for. After bark sampling, pH was found to be significantly higher in the Lobarion than in the co-occurring Parmelion trees. Chemical analyses of the tree bark showed that pH was tightly coupled to Ca in the bark. The richest bark had nearly 10 times as much Ca as the poorest, which was 100 times more acidic than the bark patches with the highest pH. Likely, Ca in the bark came from Ca in the soils. Representative sampling of Ca in the root zone of an oak tree was not easy. Therefore, I recorded vascular plants around each trunk and computed mean Ellenberg's reaction numbers, a pH measure based on each plant's soil requirements (e.g. Hill *et al.*, 1999). These data correlated with Ca in the bark. The bedrock consisted of acidic Precambrian gneisses. After digging, I found underground rock crevices covered by CaCO_3 crystals. The roots of some trees, likely the Lobarion trees, reached these crevices. Sampling of oak bark was later extended to a large part of the oak forest region in SW Norway. The results

showed that Lobarion trees had a combination of high age and high pH, whereas Parmelion trees were young and/or acidic (Gauslaa, 1985).

The first anecdotal lichen report from this district was from an old botanist, Matthias Blytt, in 1829. He reported by one sentence in a paper on plants (Blytt, 1829) that three *Lobaria* species occurred on nearly every oak between two local towns. The next visitor was the Swedish lichenologist Gunnar Degelius in the early 1930s (Degelius, 1935). In his hunt for oceanic Lobarion species, he commented that no interesting species could be found. Thus, the epiphyte vegetation must have changed. By reconstructing the acidification history using diatoms in lake sediments, acidification was found to be strong already before 1900 (Berge *et al.*, 1990). Die-back of fish due to acidification occurred much later, but acid rain draining to lakes had been modified and neutralized while passing tree canopies and soils. The lesson to learn: Die-back of fish could have been predicted long time before it happened if the major changes in epiphyte vegetation had been observed and understood.

In boreal forests the Lobarion is often patchy even on single trunks of boreal deciduous trees like old specimens of *Populus tremula* and *Salix caprea*. In order to account for such small-scale patterns, pair-wise sampling of Lobarion and adjacent Pseudevernia vegetation and underlying tree bark was done (Gauslaa, 1995). In a case study measuring bark pH with cm intervals, bark pH was found to be 100 times more acidic in a Pseudevernia site than just few cm away in a nearby Lobarion patch with 100% cover of *L. pulmonaria*. On average for many trees, pH strongly differed between Pseudevernia (4.45±0.08) and Lobarion bark (5.49±0.12; mean ± 1SE), but Ca did not shape the pH contrasts in these boreal stands as it did in oak stands. Bark supporting the Lobarion was significantly higher in all studied elements (N, P, S, K, Mg, Cu, Fe, Mn, Zn, Al), but not in Ca and C. The unique chemistry of the Lobarion bark was shaped by >30 years old large wounds, in which wood and bark had decomposed, and minerals released. Lobarion exclusively grew in the drainage canals below these wounds.

The last pH stories deal with spruce twigs often considered to be acidic and to support acidophytic lichens only. However, this is not necessarily the case (See Fig 1). We sampled spruce twigs in southern Norway where acidification has been strong and rainfall pH low, and in western central Norway with high rain fall pH approaching pre-industrial levels (Gauslaa & Holien, 1998). Lobarion does not occur on spruce in southern parts of Scandinavia any longer, despite old reports showing such occurrences (e.g. Sernander, 1936). However, Lobarion dominates old spruce forests in central western Norway. pH was measured in the bark of each twig, as well as for the lichens after removing them from the twig. In the south, the lichens (pH 3.4-3.9) and the bark (pH 3.7-4.2) were highly acidic. In coastal forests, the spruce bark pH was highest on twigs supporting the Lobarion (4.38±0.03; n=62). Furthermore, Lobarion lichens were consistently less acidic than the underlying tree bark (pH 4.72±0.03; n=62). Bark beneath Pseudevernia and/or Usneion in the west was more acidic (4.17±0.03; n=40), although not as acidic as bark in the south (3.95±0.01; n=101). Lichens in these acidophytic communities were more acidic (pH 3.71±0.01) than the tree bark (Gauslaa & Holien, 1998). Spruce trees supporting Lobarion exclusively occur along eroding streams in ravines on mineral-rich marine

clays (Holien & Tønberg, 1996; Rolstad *et al.*, 2001). Soils and the ground vegetation become more acidic and leached when moving up-hills, forming a concurring vegetation gradient. Bark pH do not becomes high enough to support the Lobarion on stable and leached uphill soils (Fig. 2).

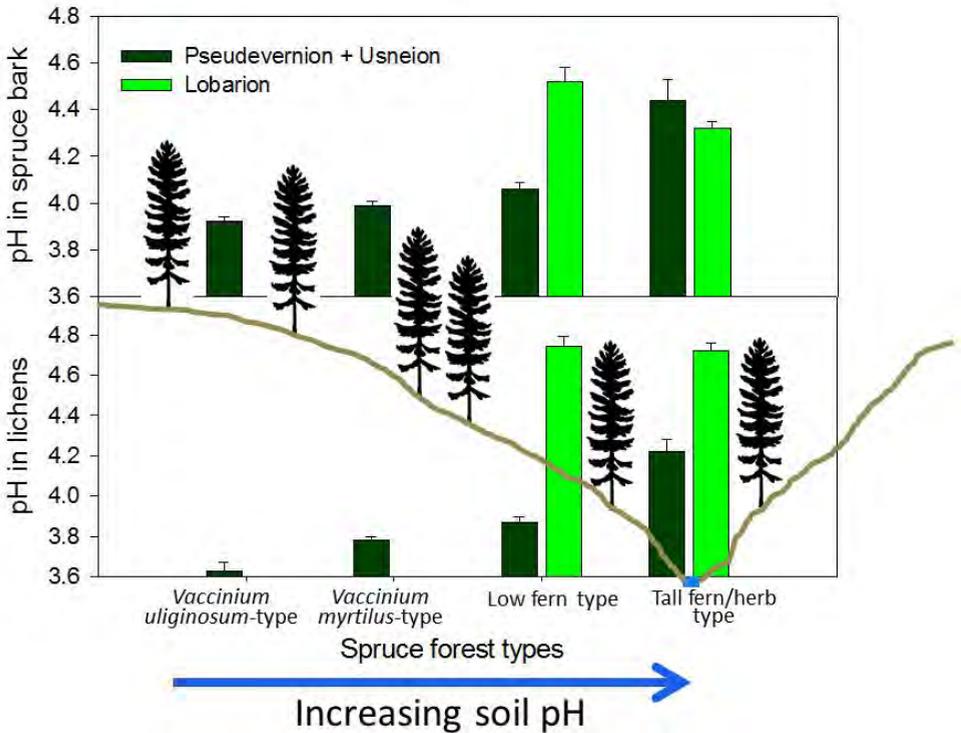


Figure 2. Bark pH in spruce branches in boreal rainforests (upper graph) and pH in the lichens being removed from the branch (lower graph) along a soil nutrient gradient from the ravine bottom on mineral-rich marine clays into the more leaches slopes. Drawn after data in (Gauslaa & Holien, 1998).

Deciduous canopies often facilitate the Lobarion on spruce branches in the dripzone beneath (Goward & Arsenault, 2000). Bark pH was found to be significantly higher in the dripzone of *Populus* than outside, whereas light exposure was similar inside and outside of dripzones (Gauslaa & Goward, 2012). As phosphorus has been shown by McCune & Caldwell (2009) to be important for *Lobaria*, we applied P-additions outside and inside of dripzones, and compared with control thalli, but with no significant effect (Gauslaa & Goward, 2012). It was likely some ions influenced by pH rather than P that stimulated Lobarion in studied dripzones.

In summary, bark chemistry is a product of uptake of ions through the tree roots, deposition of acidic compounds and alkaline/less acidic soil dust on bark surfaces, as well as processes in the canopy and local degradation of bark/wood (Fig. 3). Together, these processes shape the epiphytic vegetation.

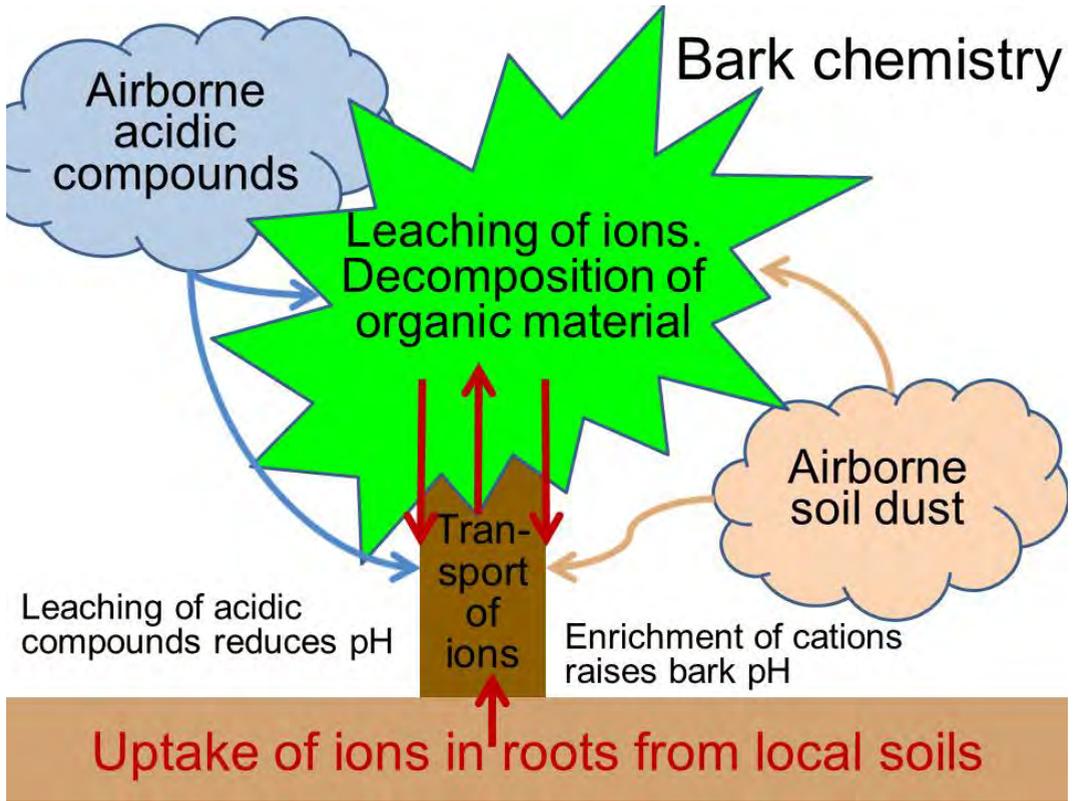


Figure 3. Bark pH is a product of uptake of ions through the tree roots, acidic and non-acidic (soil dust) airborne deposition, and internal processes (leaching and decomposition) in the tree.

Grazing

Grazing has been ignored as a factor shaping lichen communities, as can be seen in Fig. 4 showing a specimen of the slug *Lehmannia marginata* that has nearly terminated *L. pulmonaria*, but not touched *L. virens*. Lichens are particularly interesting organisms in herbivory-studies because their carbon based secondary compounds can non-destructively be extracted from living thalli in 100% acetone (Solhaug & Gauslaa, 1996; 2001). This technique allows testing of hypotheses dealing with ecological functions of lichens compounds (as recently reviewed by Solhaug & Gauslaa, 2012). A thallus can be cut in two pieces, lichen compounds can be extracted in one half, and the other half serves as a control. One hypothesis has been that such compounds deter grazing animals, another that they protect against excessive solar radiation.

The herbivore defence hypothesis was tested in lichens differing in their contents of secondary compounds (Gauslaa, 2005). Grazing was low in control thalli regardless of their compound concentration. With increasing natural content of lichen compounds, acetone rinsing lead to higher and higher grazing. Thereby, lichen compounds deter grazing mainly in lichens rich in compounds. Some species grow in nutrient-enriched habitats. These are deficient or low in lichen compounds, and

removal of their compounds did not influence grazing. How do such lichens defend themselves? Simulated nitrogen deposition in a field experiment raised the nitrogen content in studied lichens, but did not influence lichen compound contents (Asplund *et al.*, 2010a). In general, herbivores prefer fodder rich in N. Nevertheless, nitrogen deposition reduced the palatability of all species. An attractive, but not yet tested hypothesis is that N-rich lichens can afford N-based highly toxic defence compounds like alkaloids and/or lectins, and do therefore not need carbon based secondary compounds.



Figure 4. The slug *Lehmannia marginata* feeding in a Lobarion community. It has eaten nearly all *L. pulmonaria*, but avoided *L. virens*.

Acetone rinsing allowed testing of the optimal defence theory. This theory infers that the most precious parts should be best defended. In the study species, *L. scrobiculata*, meta-scrobiculin is restricted to the soralia. The stictic acid complex is located in the medulla and the photobiont layer, whereas usnic acid occurs in the upper cortex only. In natural thalli, soralia were consistently avoided relative to somatic tissues with usnic and stictic acid. After extracting lichen compounds, the soralia were the preferred portions. As soralia are likely of vital importance, the theory was supported (Asplund *et al.*, 2010c).

The ecological significance of grazing was tested in a field experiment replicated in two deciduous forests (Asplund & Gauslaa, 2008). One hosted Lobarion

species, the other did not. Pairs of acetone rinsed and control thalli were placed on stands 1.5 m above the ground. Grazing was excluded in 50% of the stands. Pairs of stands with and without grazing permitted were placed in shaded positions and in canopy gaps. Additionally, juvenile thalli were attached to all stands. After being exposed in the field for one summer, grazing was recorded. Grazing was substantial. All main factors in the experiment highly significantly affected grazing: Grazing was highest in 1: the naturally lichen-poor stand (high gastropod populations), 2: in places where grazing was permitted, 3: in shaded positions of the forests, and in 4: acetone-rinsed thalli. Grazing of juvenile thalli was severe, particularly in the naturally lichen-poor forest. As contents of lichen compounds significantly decrease with decreasing thallus size (Asplund & Gauslaa, 2007), the juvenile stage is particularly vulnerable. In another field experiment (Asplund *et al.*, 2010b), four *Lobaria* species were transplanted at three heights on trunks of *Fraxinus* in forests where natural herbivore populations had a choice between these species. *Lobaria scrobiculata* was the most preferred species, followed by *L. amplissima*, whereas *L. virens* was hardly grazed. Furthermore, grazing decreased with height. Additional field data showed that the most preferred species naturally grew higher up on the trunk than the less palatable species. The conclusion of both field experiments: gastropods shape the epiphytic vegetation, and lichen compounds play a herbivore-deterrent role.

Finally, grazing was studied in three successional boreal rain forest stands: old forest with gaps, dense and shaded young forest, and open clear-cut (Gauslaa, 2008). Studied species were *L. pulmonaria* and *Pseudocyphellaria crocata*. In *P. crocata*, gastropods grazed much, but avoided soralia with the yellow pulvinic acid derivative calycin. No grazing occurred in clear-cuts. In forests, *P. crocata* was the consistently preferred species. Today, *P. crocata* has its strongest Norwegian foothold in boreal rain forests (Tønsberg *et al.*, 1996) where gastropods do not climb spruce trees. It has become extinct in all temperate deciduous rain forests in SW Norway with many climbing gastropods. Presumably global warming with milder winters allowing gastropod grazing throughout the winter has led to extinction in temperate sites. *Pseudocyphellaria crocata* had >2 times higher total concentration of lichen compounds than *L. pulmonaria* (Nybakken *et al.*, 2007). Nevertheless, it was the preferred species. Apart from not touching the calycin occurring in soralia exclusively, gastropods also adversely responded to high contents of the medullary stictic acid complex (Gauslaa, 2008), which was 4 times higher in the avoided *L. pulmonaria*. The stictic acid complex thus forms a strong herbivore defence, whereas the tenuiorin complex in *P. crocata*, representing the highest lichen compound fraction in this species, did not deter gastropods.

Grazing in short: Some habitats are more lichen-rich than others. Traditionally we have explained such patterns with climatic and chemical factors. We have probably underestimated the significance of grazing.

Light

Photosynthetic organisms need light. Morphologically, lichens are designed as growth cabinets for photobionts. The upper cortex made of fungal hyphae optimizes the light for lichen photobionts: It reflects some solar radiation and absorbs other

parts. The remaining transmitted light can be used in photosynthesis during periods of hydration and/or cause chronic photoinhibition. Pale cortical compounds (e.g. usnic acid and atranorin) protect photobionts against excessive light by reflectance; dark pigments (parietin and melanic compounds) protect by absorbance (Solhaug *et al.*, 2010).

Excess light can cause strong photoinhibition in hydrated lichens, particularly in forest lichens and shade-adapted thalli (Gauslaa & Solhaug, 1996). Photoinhibition is not necessarily damage if subsequent recovery in low light is fast. In *Lobaria virens*, 24 hours with 50% of full solar radiation caused substantially delayed and incomplete recovery even after 2 days in low light. Lasting photoinhibition indicates chronic high light damage, such as in *L. virens*, whereas chronic damage did not occur in *Parmelia sulcata* (Gauslaa & Solhaug, 1996). Repair of photoinhibition cannot take place in dry lichens exposed to high light, and chronic damage thus accumulates over time (Fig. 5). This process is particularly rapid in cephalolichens. Forty-eight hours with 50% of full sunlight can kill air-dry *L. virens*, evidenced by very low F_v/F_m measured after 48 h moist recovery in low light. In general, cephalolichen species appear to be considerably more high light-susceptible than chlorolichens (Gauslaa & Solhaug, 1996)

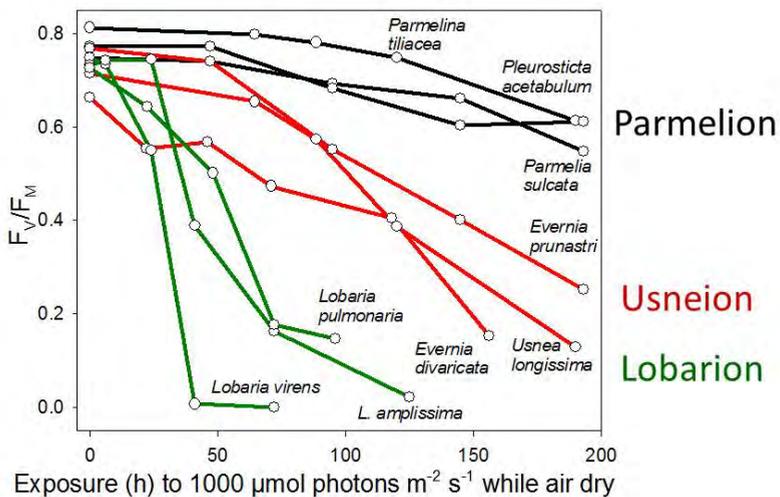


Figure 5. Optimal quantum yield of photosystem II (F_v/F_m) in Lobarion species (green lines), Usneion species (red lines) and Parmelion species (black lines) after exposure in the desiccated state to approximately 50% of full sunlight at noon in summer. F_v/F_m was measured after a 48 hours recovery at low light. Redrawn after (Gauslaa & Solhaug, 1996) where further details can be seen.

UV-B induces the synthesis of dark melanic compounds in the upper cortex of *L. pulmonaria* during hydration periods (Solhaug *et al.*, 2003). If lichens are given similar solar radiation exposures while desiccated, chlorophyll becomes degraded (Gauslaa

& Solhaug, 2000). UV-B does not play a role in this degradation (Gauslaa & Ustvedt, 2003; Gauslaa & Solhaug, 2004); it is the visible light that causes the damage. Lichens are remarkably resistant to UV-B, even after extraction of UV-B absorbing compounds. Browning due to melanin synthesis in *L. pulmonaria* increases with the solar radiation exposure, meaning that thalli are browner on south than on north sides (Gauslaa & Solhaug, 2001). Colour contrasts due to melanins are clearest in the desiccated state, which is the most susceptible stage. With increasing UV-B-induced browning, cortical transmittance is reduced in southern aspects, and the photobiont is better protected (Gauslaa & Solhaug, 2001). Such data document light screening by melanic cortices for the photobiont.

Whereas cortical pigments increase with forest stand openness, medullary compounds remain constant at spatial scales, despite large differences in lichen growth (Fig. 6, drawn after data in McEvoy *et al.*, 2007; Gauslaa *et al.*, 2006). However, medullary compounds do not function as sun screens, but as we have seen as herbivore defence compounds.

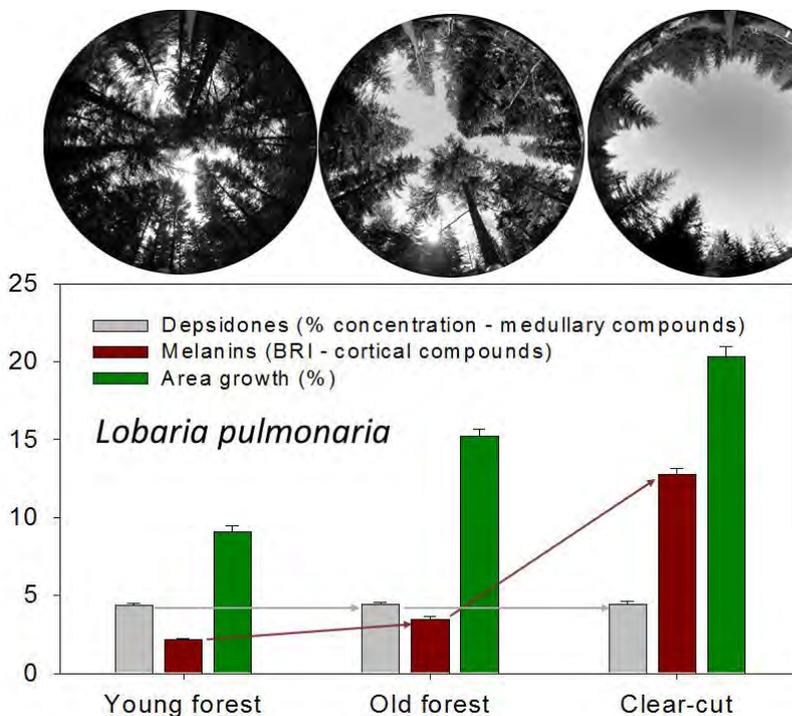


Figure 6. Cortical pigments (melanin) and medullary lichen compounds (mainly stictic acid complex), as well as thallus area growth after a three months transplantation in young and dense forest, old forest with gaps, and a small clear-cut. Hemispherical photos from each successional stage show the canopy cover. Drawn from data given in (Gauslaa *et al.*, 2006; McEvoy *et al.*, 2007).

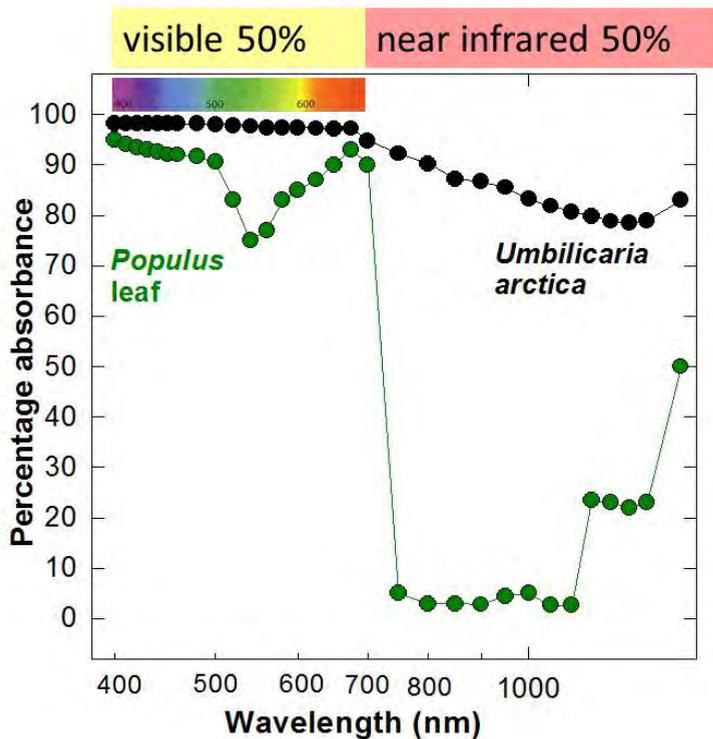


Figure 7. Percent absorbance in the visible light ($\approx 50\%$ of the solar radiation energy) and the near infrared radiation ($\approx 50\%$ of the solar radiation energy) in a melanic lichen (*Umbilicaria arctica*) and an aspen leaf for comparison. Redrawn after (Gauslaa, 1984).

Melanic lichens absorb most solar radiation, also the near infrared representing 50% of the solar radiation energy (Fig. 7, see Gauslaa, 1984). Plants are different as they transmit the near infrared to reduce excessive heat loads (Gates, 1965). Therefore, pigments influence thallus temperature. In a sunny alpine summer day in Norway at 20 °C air temperature after noon, the temperature in *Alectoria* mats with usnic acid reaches 40 °C, whereas adjacent dark, melanic *Bryocaulon* mats reach 60 °C (Gauslaa,

1984). Such high temperatures cause instant desiccation. This is probably the reason why melanic lichens occur in cool climates or grow in positions where snow does not accumulate in winter. Melanin may facilitate lichen growth in cold places and seasons because it warms the lichens, melts the snow (Campbell & Coxson, 2001) and thus starts active metabolism. In hot climates, it may cause lethal temperatures. Lobarion species have surprisingly low heat tolerance in the hydrated as well as in the desiccated state (Gauslaa & Solhaug, 1999). Fig. 8 shows a model of solar radiation-dependent damage in *L. pulmonaria*. Surprisingly, melanic and pale thalli do not differ much in their solar radiation tolerance. With increasing solar radiation, temperature increases more rapidly in melanic thalli than in pale thalli until the temperature tolerance is exceeded in dark thalli. Non-melanic thalli do not reach lethal temperatures in full sun light. At the same time, excess light is not experienced by photobionts beneath melanic cortices, whereas non-melanic thalli with a transparent cortex become killed. Thereby, melanins function better in cool than in hot climates, and warm, sunny places are not the good sites for *L. pulmonaria*.

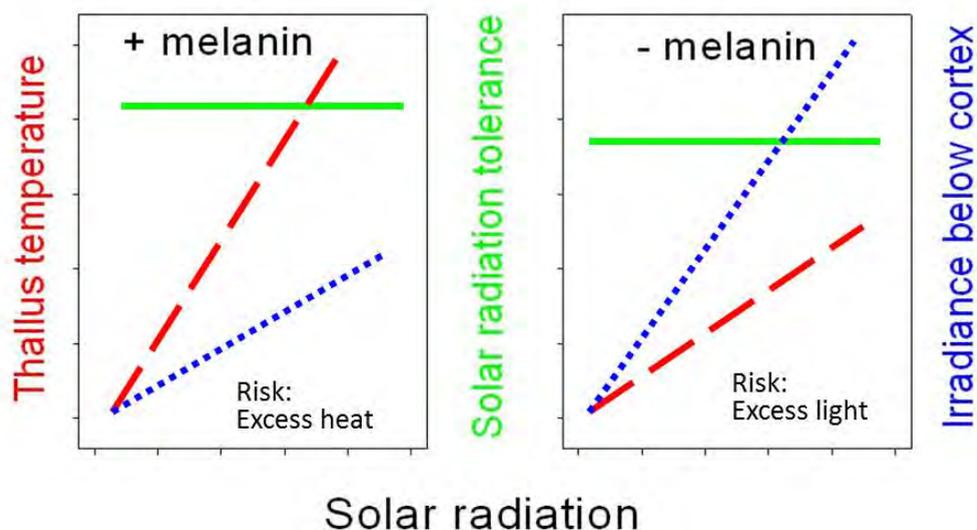


Figure 8. A model for solar radiation damage in *Lobaria pulmonaria* with and without melanin compounds. Green solid line: Solar radiation tolerance, red broken line: thallus temperature with increasing solar radiation, blue dotted line: Irradiance below the the upper cortex. Further explanation: see text (above).

Humidity and water relationships

Mass per thallus area (specific thallus mass; STM) determines the water holding capacity (WHC), which is the mass of water at saturation per thallus area. The thicker a thallus will be the higher is the water storage and the longer the duration of hydration periods (Gauslaa & Solhaug, 1998). Water holding capacity directly translates to mm rainfall, as a level of water holding capacity of 50 mg water cm⁻² is equivalent to 0.5 mm rain. Gauslaa & Coxson (2011) studied sympatric lichens on tree branches along a rainfall gradient in British Columbia. Cyanolichens (*Lobaria hallii*, *L. retigera*, *L. scrobiculata*, *Pseudocyphellaria anomala*) were thickest and had approximately two times higher WHC than STM. They need high WHC as they depend on liquid water to activate their photosynthesis (Lange *et al.*, 1986). The chlorolichen *Platismatia glauca* was thin and had similar levels of WHC and STM (1:1-line), which ensures rapid photosynthetic activation in humid air. The cephalolichen *L. pulmonaria* was intermediate. Apparently, there is a trade-off between water storage and flexibility with respect to rapid use of air humidity. A wider sampling of foliose lichens from contrasting habitats along a sun exposure gradient resulted in a gathering of chlorolichens along the 1:1 line versus cyanolichens along the 1:2 line, and showed that STM, the strong driver of WHC, increased more than ten times from shaded forests to sunny beaches (Gauslaa & Coxson, 2011).

Old forest lichens are assumed to be desiccation susceptible. We have earlier mentioned that desiccated lichens can be damaged by light (Fig. 5). To study this in more detail, Gauslaa *et al.* (2012) quantified light and desiccation tolerance, separately in co-occurring cyano-, cephalo- and chlorolichens in coniferous forests of

British Columbia. Lichens were treated for 7 days at 0, 35, 55, and 75% relative humidity over specific salt solutions in transparent and closed boxes. Half of the boxes were kept continuously in darkness, the other half experienced 10% of full sunlight. Even after 7 days at 0% relative humidity, thalli kept dark did not experience permanent damage. However, light during desiccation caused damage, particularly in the green algal lichens and at the hardest desiccation regime. Cyanolichens (*Lobaria hallii*, *L. retigera*, *L. scrobiculata*, *Pseudocyphellaria anomala*) were the most tolerant. Presumably, they need high tolerance because of their dependency on rare events of liquid water (Lange *et al.*, 1986); whereas green algal lichens becoming active every night by humid air, escape desiccation damage. Closer study of the two green algal species showed that *P. glauca* was not affected by light at any desiccation treatment when sampled from xeric forests, whereas thalli from mesic closed forests were severely damaged at low humidity. Thereby, *P. glauca* can acclimate. However, *L. pulmonaria* was damaged regardless of the dryness in source habitats, consistent with a low flexibility in this species (Gauslaa *et al.*, 2012).

Lichen growth

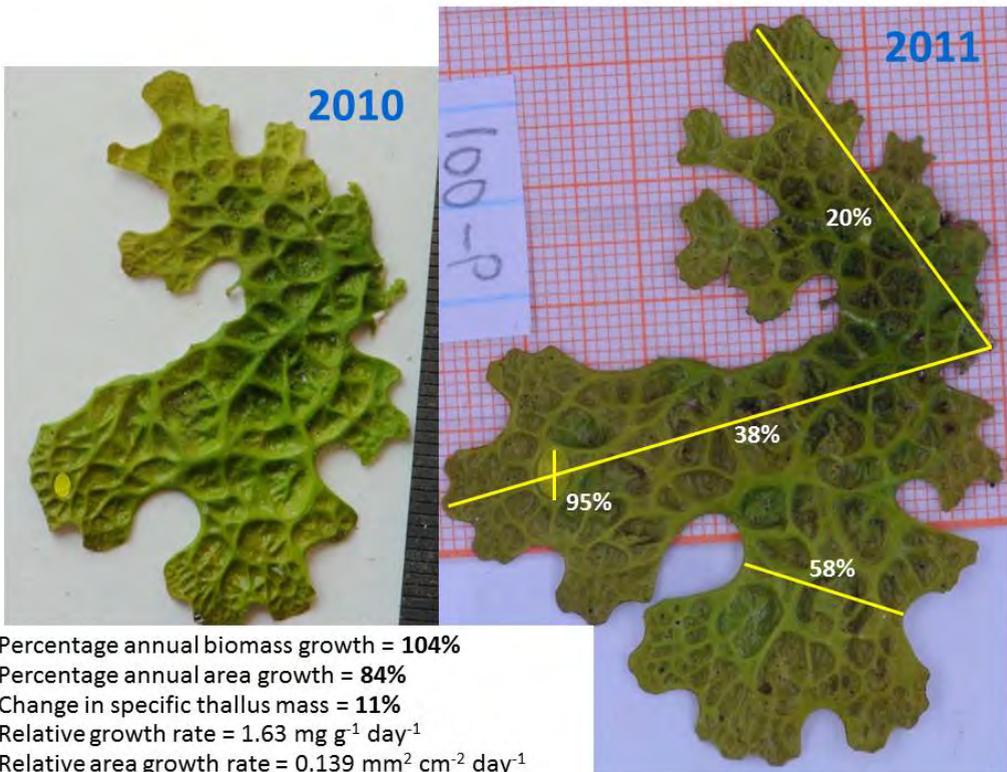


Figure 9. Various measures of lichen growth in a thallus photographed with 14 months interval at the same scale. It is a randomly selected thallus of those measured by Gauslaa & Goward (2012)

Some consider Lobarion species to be fragile and slow growing relative to widespread and common species. This is not the case. *Lobaria pulmonaria* grows 3 times faster than *Hypogymnia occidentalis* as shown in a pair-wise transplantation of 400 thalli in British Columbia (Gauslaa & Goward, 2012). Individual parts of a thallus grow at different rates. One thallus from the study of Gauslaa & Goward (2012) is shown at the same scale with one year interval (Fig. 9). Lichen growth in this thallus can be measured as linear growth (38-20%), width growth (58%), thallus area increments (95%), biomass (104%), total area growth (84%), change in thickness (11%), etc. (Larsson & Gauslaa (2011) quantified juvenile growth in hundreds of sympatric thalli of *Lobaria pulmonaria*, *L. scrobiculata*, *Pseudocyphellaria crocata* on thin spruce twigs in Norwegian boreal rainforests over two years. The size of a juvenile thallus may increase nearly three times over two years. Relative growth rate declines with size in all three species, and were lower in the long winter than in the short summer. By using the size-dependent growth relationship and recording the onset of reproductive efforts, we could estimate the generation length. *Pseudocyphellaria crocata* was the fastest species to enter the reproductive stage after already 9-13 years, followed by *L. scrobiculata* after 15-22 years, whereas *L. pulmonaria* had a generation time at least 17 years, as no soralia were formed even in the largest thalli studied (Larsson & Gauslaa, 2011).

Lichen growth is light dependent. Insufficient light strongly limits growth of *L. pulmonaria* in young forest stands (Gauslaa *et al.*, 2006; 2007). In old forests with gaps and more light, growth is higher. However, the highest growth occurs in small, sheltered clear-cuts, particularly in open shade habitats (Stoutjesdijk, 1974). Clear-cuts are poor in lichens because of lack of substrate, and the higher risk for detachment of thalli (Gauslaa, 1997). Another reason can be bleaching of chlorophylls in warm, sunny periods (Gauslaa & Solhaug, 2000). By changing the balance between biomass and area growth, lichens can acclimate (Gauslaa *et al.*, 2006). Thick thalli are optimal in open and dry sites, whereas thin thalli function best in shady sites (Gauslaa & Solhaug, 1998). Transplanting lichens from open old forest habitats to shady young forests results in thinner thalli (Gauslaa *et al.*, 2006), whereas clear-cut conditions trigger increases in mass per area (Larsson *et al.*, 2012). Such acclimation does not take place if extreme light or temperature occurs in the first period after transplantation.

Lichens can grow rapidly in growth cabinets and, if measured growth rates are maintained over longer time, lichens can double their size in 58 days, equivalent to 78 times annual biomass increase (Bidussi *et al.*, 2013). As growth integrates various functional processes in lichens over a time period, it is an excellent indicator of lichen performance. Growth is easy to measure, few days are needed. In the study cited above of Bidussi *et al.* (2013), *L. pulmonaria* and *L. scrobiculata* were cultivated for two weeks at four temperature regimes (5 °C cooler nights) and two hydration regimes: Hydrated day and night, and hydrated during day light only. Light was 10% of full solar radiation in summer. Previously it has been assumed that the accumulated light during hydration periods determines lichen growth (as reviewed by Palmqvist *et al.*, 2008). The growth cabinet study of Bidussi *et al.* (2013) shows strong stimulating effects of nocturnal hydration, particularly at extreme temperatures. Activity during

nights is likely needed to transfer photosynthates into new biomass and/or to repair photoinhibition.

Time to summarize: There are some apparent contradictions: Lobarion needs high pH and lichen-feeding gastropods need high pH, which is not a good combination. Furthermore, Lobarion needs light to grow fast, whereas excess light damages lichens, meaning that life is dangerous. Recently increasing threat factors are: 1: acidification lowers pH. 2: milder winters increase grazing damage, 3: plantations do not offer sufficient light, and 4: logging causes high light-dependent damage and lack of substrate. As a result, Lobarion is declining.

Trunks of old deciduous trees offer limited, but long-lived stable substrate for lichen growth. Such trees have often old lichen populations with high diaspore production. Despite abundant diaspores, juvenile establishment is often rare due to bark chemistry constraints and excess grazing. Colonies often spread just by lobe elongation. In such a setting, populations can be stable despite low establishment success. Long forestry rotation periods are needed in forests with such populations. Spruce canopies on the other hand offer abundant, but temporal substrate area in terms of thin twigs that frequently fall down. Spruce canopies with short-lived branches support younger and dynamic lichen populations. High establishment success is needed. A very high percentage of the population is juvenile with no diaspore production. In such coniferous forests, lichens are susceptible to acidification. Thereby, external factors play a major role in these forests.

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Post-AGM Field Meeting, Wakehurst Place, Sussex

Participants: Rachel Bevan, Ishpi Blatchley, Paul Cannon, Amanda Davey, Simon Davey, Heidi Döring, Terry Hackwill, Andrew Harris, Barbara Hilton, Tomos Packer, Mark Powell, Steve Price, Sasha Rozansky, Paula Shipway, Janet Simkin, Peter Scholz.

On the first fine day following months of snow and rain (or so it seemed), a group of lichenologists experienced the traditional antidote to the BLS AGM in the form of a short field trip. The venue this year was Wakehurst Place near Ardingly, Kew's "country" garden in the High Weald of Sussex. The Wakehurst estate extends over 465 acres, containing a mixture of ornamental gardens and natural woodland. Of particular interest to BLS members was the Francis Rose Reserve, a Site of Special Scientific Interest centred on a range of soft sandstone outcrops that are an unusual habitat in the South East of England. The gullies and valleys between the outcrops contain humid mixed oak/rowan/birch woodland with a very diverse bryophyte community and also national rarities such as the filmy fern *Hymenophyllum tunbridgense*. Lichens are not so diverse, as the light quality is too poor for many species. However, some notable species have been recorded in the past (not least by Francis himself) and it is important to establish whether their populations have persisted in recent years.



Despite this lack of diversity, species of conservation interest do occur, such as the British endemic *Schimatomma quercicola* in one of its few stations in the east of

England, and other old-woodland species that are rare in the south-east such as *Normandina pulchella*, *Schismatomma niveum* and *Thelotrema lepadinum*.

The morning was spent surveying Tilgate Wood, part of the Francis Rose reserve, and the party branched out in the afternoon to examine native trees and sandstone outcrops within the main part of the garden. We were fortunate to be accompanied by Simon and Amanda Davey, who have in-depth knowledge of the lichens of Wakehurst and were able to show us many of the more interesting species. They acted as a great team, often with Simon travelling on ahead courtesy of the Kew all-terrain buggy and Amanda acting as a human sign-post to point us in the right direction. The sandstone rocks in the Himalayan Glade (in the main garden) support various *Cladonia* species including the local *C. incrassata*, and long pendent thalli of *Usnea ceratina* were admired on the surrounding trees. The final destination for some of the party were the chestnut railings in the Wakehurst car park, which fortunately were not discovered until late in the day otherwise the main survey work might not have happened at all. The rails proved to be highly diverse in species, and would be worthy of conservation in their own right.

Our visit was facilitated most generously and effectively by the Wakehurst staff, who provided local knowledge, much-appreciated transport within the site – and hot water for brewing up at lunch time! We were also able to use the Seeboard Field Study Centre as a local base. The lichen records we generated will be passed to the Kew conservation staff to support their ongoing monitoring programmes.



Two lichens from the Francis Rose Reserve: *Pachyphiale carneola* (left) and *Pyrrhospora querneae* (right).

Species list

	Car park	Tilgate Wood	Wakehurst TQ3331	general
<i>Arthonia radiata</i>	•			•
<i>Aspicilia contorta</i> subsp. <i>contorta</i>	•			
<i>Bacidia biatorina</i>		•		
<i>Bacidia rubella</i>		•		
<i>Bacidia sulphurella</i>				•
<i>Baeomyces rufus</i>				•
<i>Caloplaca crenulatella</i>	•			
<i>Caloplaca flavocitrina</i>	•			
<i>Chaenotheca furfuracea</i>		•		
<i>Chrysothrix candelaris</i>		•		•
<i>Cladonia chlorophaea</i> s. <i>lat.</i>		•		
<i>Cladonia coniocraea</i>		•		•
<i>Cladonia fimbriata</i>				•
<i>Cladonia incrassata</i>				•
<i>Cladonia parasitica</i>				•
<i>Cladonia squamosa</i> var. <i>subsquamosa</i>				•
<i>Cliostomum griffithii</i>				•
<i>Cyrtidula quercus</i>				•
<i>Enterographa crassa</i>		•		
<i>Evernia prunastri</i>	•			•
<i>Fellhanera bouteillei</i>				•
<i>Flavoparmelia caperata</i>	•	•		•
<i>Flavoparmelia soredians</i>	•			
<i>Fuscidea lightfootii</i>	•			•
<i>Graphis elegans</i>				•
<i>Graphis scripta</i>		•		
<i>Hypogymnia physodes</i>	•			•
<i>Hypogymnia tubulosa</i>				•
<i>Hypotrachyna afrorevoluta</i>				•
<i>Hypotrachyna revoluta</i> s. <i>str.</i>	•			
<i>Lecanactis abietina</i>		•		•
<i>Lecanora albescens</i>	•			
<i>Lecanora argentata</i>		•		•
<i>Lecanora barkmaniana</i>	•			•
<i>Lecanora chlarotera</i>	•	•		•
<i>Lecanora conizaeoides</i> forma <i>conizaeoides</i>				•
<i>Lecanora dispersa</i>	•			
<i>Lecanora saligna</i>	•			•
<i>Lecanora symmicta</i>	•			
<i>Lecidella elaeochroma</i> forma <i>elaeochroma</i>	•			•
<i>Lepraria incana</i> s. <i>str.</i>				•
<i>Melanelixia glabratula</i>		•		
<i>Melanelixia subaurifera</i>				•
<i>Melanohalea laciniatula</i>	•			
<i>Normandina pulchella</i>		•		
<i>Ochrolechia androgyna</i>		•		
<i>Opegrapha atra</i>		•		
<i>Opegrapha vulgata</i>		•		

	Car park	Tilgate Wood	Wakehurst TQ3331	general
<i>Pachyphiale carneola</i>		•		
<i>Parmelia saxatilis</i>	•		•	
<i>Parmelia sulcata</i>	•		•	
<i>Parmelina pastillifera</i>	•			
<i>Parmotrema perlatum</i>		•	•	
<i>Pertusaria amara</i> forma <i>amara</i>			•	
<i>Pertusaria hemisphaerica</i>		•		
<i>Pertusaria hymenea</i>		•		
<i>Pertusaria leioplaca</i>		•		
<i>Pertusaria pertusa</i>		•		
<i>Phaeographis dendritica</i>		•	•	
<i>Phlyctis argena</i>	•	•		
<i>Physcia aioplia</i>	•			
<i>Physcia tenella</i>				•
<i>Platismatia glauca</i>	•	•	•	
<i>Protoblastenia rupestris</i>	•			
<i>Punctelia jeckeri</i>	•	•	•	
<i>Punctelia subrudecta</i> s. str.	•			
<i>Pyrrhospora quereana</i>		•	•	
<i>Ramalina farinacea</i>	•	•	•	
<i>Ramalina fraxinea</i>			•	
<i>Schismatomma niveum</i>		•		
<i>Schismatomma quercicola</i>		•		
<i>Stenocybe pullulata</i>			•	
<i>Stigmatidium eucline</i> (on <i>Pertusaria hemisphaerica</i>)		•		
<i>Strigula taylorii</i>		•		
<i>Thelotrema lepadinum</i>		•		
<i>Trapelia coarctata</i>			•	
<i>Usnea ceratina</i>			•	
<i>Usnea cornuta</i>		•		
<i>Usnea subfloridana</i>			•	
<i>Verrucaria nigrescens</i> f. <i>nigrescens</i>	•			
<i>Vouauxiella lichenicola</i> (on <i>Lecanora chlarotera</i>)		•		
<i>Xanthoria parietina</i>	•		•	

The Lichenologist in a changing publishing environment

Cambridge University Press, the Society's commercial publishing partner, has raised the possibility of a move to electronic-only publication of the BLS's flagship journal the *Lichenologist*. In these days of increased printing costs on the one hand, and increased public access to the Internet on the other, many learned societies are contemplating such moves. Your views on this are important, and will be taken fully into account by Council.

The text of a short questionnaire is reproduced below. You can respond in two ways. Firstly, via an on-line poll that you can access at:

<http://www.surveymonkey.com/s/YLZMC6H>

Secondly, UK members will receive a postcard with this Bulletin with a Freepost return address – for those that prefer more traditional forms of communication. PLEASE do not use both methods! Regrettably the costs of international Freepost services make this an impractical option for our non-UK members.

The Editors and publisher of *The Lichenologist* hope that you enjoy receiving and reading the Society's journal. As many have noticed, the journal has steadily grown during the past 10 years. Together with increasing printing costs, this increase in journal volume has meant that it has become steadily more expensive to produce while membership fees have risen rather little. Accordingly, we have been asked by our publishers to consider changing *The Lichenologist* to an electronic only journal, format now adopted by several international journals. Making this change is likely to help the Society's finances since we currently provide hard copies of the journal to members at a loss. Another benefit would be that colour plates in the electronic journal would be free whereas printed colour results in a considerable cost to authors. On the other hand some might be sad to lose the traditional hard copy journal. The purpose of this post card is to gauge the views of the membership with regard to this possibility. We would be very grateful if you would fill up the brief questionnaire below.

Please indicate your category of membership: Ordinary Member Electronic Member
Associate Member Senior Associate Member Student Associate Member
Family Member Life Member Honorary Member

If you receive the hard copy, how much on a scale of 1 (not much) to 5 (greatly) would you say you personally value the hard copy journal: 1 2 3 4 5

If *The Lichenologist* was to become available **only** in electronic form, how likely on a scale of 1 (not likely) to 5 (very likely) is it that you would continue to subscribe to the electronic journal: 1 2 3 4 5

If *The Lichenologist* were to become available **only** in electronic form, how likely is it on a scale of 1 (not likely) to 5 (very likely) that you would change your BLS membership category to "Associate" or "Senior Associate" (i.e. and not receive *The Lichenologist*): 1 2 3 4 5

OR discontinue your membership: 1 2 3 4 5

Please indicate the age range into which you fall: <20 20-29 30-39 40-49 50-59
60 or over

Thank you for taking the time to respond to this questionnaire
Peter Crittenden

British Lichen Society

ADVANCE NOTICE ANNUAL GENERAL MEETING

University of Nottingham, 11 January 2014

The BLS 2014 AGM will be held on the morning of Saturday 11 January in Nottingham and we are grateful to Dr Peter Crittenden for acting as host. The AGM will be preceded by the first day of the BLS symposium, which all members are invited to attend (see below).

The agenda for the AGM will be published, as usual, in the autumn 2013 Bulletin. Business items and reports will run from about 10.00 until 12.30 and after a lunch break there will be an afternoon programme from 14.00 until 18.00.

A field meeting at Calke Abbey Park is planned for Sunday 12 January (see information at the end of the *International Symposium – Brochure*).

Early booking is advised for accommodation and the AGM/Symposium buffet dinner. Rooms at favourable rates are being held until 1 December at The Orchard Hotel on the University campus (book direct with the hotel, see information that follows). An AGM/Symposium buffet dinner is arranged for the evening of Friday 10 January (see the booking form enclosed as a Bulletin flyer).

The 2014 AGM will be special, embracing a short international symposium. Council hopes that BLS members will enjoy this extension to the AGM and find much of interest.

10 January Two symposium sessions are planned on the day preceding the AGM, on *Lichen systematics* (chaired by Dr Cecile Gueidan) and on *Lichen ecophysiology* (chaired by Dr Peter Crittenden).

11 January The afternoon programme following the AGM meeting is the third session of the symposium, on *Lichen communities and environmental quality* (chaired by Pat Wolseley).

BLS members are invited to participate in the symposium, and give a talk (20 minutes) and / or present a poster for an appropriate session. Please see the application form (enclosed as a Bulletin flyer).

Costs are modest for attending the symposium on 10 January (registration £15 for BLS members, and this fee will be reimbursed at the Symposium for members presenting a paper or poster on that day). As usual, **for BLS members the morning and afternoon sessions of the AGM on 11 January are without charge.**

Background and Funding: This is the second BLS symposium, the first event, *Taxonomy, evolution and classification of lichens and related fungi*, was successfully organised by Mats Wedin and William Purvis and held in January 1998. Council has agreed funding towards travel and subsistence costs of members presenting papers and posters and gratefully acknowledges additional support by the Linnean Society and the New Phytologist Trust.

Further information is given on the pages that follow, and also see the flyers enclosed with this Bulletin. Information is available and will be updated on www.britishlichensociety.org.uk

International Symposium – Brochure

British Lichen Society (BLS)
University of Nottingham, 10 and 11 January 2014

*New Developments in Lichenology: systematics, ecology
and use as indicators of environmental quality*



British Lichen Society

Keynote Speakers followed by Presentations (Papers and Posters)

Presentations are invited on:

- Lichen systematics
- Lichen ecophysiology
- Lichen communities and environmental quality

The Symposium reflects the Society's support and encouragement of younger and less established lichenologists from the UK and Europe, particularly:

- post-graduate students, post-docs and researchers in the early stages of their careers, **also**
- mature researchers, professionals and enthusiasts who have contributed to or led on extensive studies

Grants are available towards travel and B&B expenses for presenters of papers and / or posters that are not funded elsewhere, for:

- speakers presenting papers on Systematics, especially younger lichenologists / less established lichenologists, through the generosity of The Linnean Society of London
- BLS members presenting papers and / or posters, through grants offered by the Society, with support by the New Phytologist Trust that is gratefully acknowledged
- successful applicants will be informed in November

Publication

- contributors are invited to submit manuscripts to *The Lichenologist*

Following the symposium a one-day field meeting at Calke Abbey Park is planned for Sunday 12 January (see information at the end of this brochure)

See Registration and Booking Form to attend and separate Application to Present a Paper or Poster

The meeting is being supported by:



BLS International Symposium
University of Nottingham, 10 and 11 January 2014

New Developments in Lichenology: systematics, ecology and use as indicators of environmental quality

Friday 10 January 2014, B3, School of Biology, University Park Campus

9.00 *Welcome to the University of Nottingham by Dr Peter Crittenden*

9.10 – 12.45 **Session 1: Lichen systematics.** Chaired by Dr Cecile Gueidan

Keynote Speaker: **Dr Mats Wedin*** (Swedish Museum of Natural History)
followed by Papers (each 20 minutes) and Exhibition and Poster session
Coffee / tea available outside the lecture theatre

12.45 – 14.00 Lunch (at own expense), available in University facilities

14.00 – 18.00 **Session 2: Lichen ecophysiology.** Chaired by Dr Peter Crittenden

Keynote Speaker: **Dr Markus Hauck** (University of Goettingen)
followed by Papers (each 20 minutes) and Exhibition and Poster session
Coffee / tea available outside the lecture theatre

19.30 Reception / pay bar, followed by **Symposium dinner (pre-booked)** at
The Orchard Hotel, University Park.

Saturday 11 January 2014, B3, School of Biology, University Park Campus

14.00 – 18.00 **Session 3: Lichen communities and environmental quality.** Chaired
by Pat Wolseley

Keynote Speaker: **Dr Christopher Ellis** (Royal Botanic Garden Edinburgh)
followed by Papers (each 20 minutes) and Exhibition and Poster session
Coffee / tea available outside the lecture theatre

* to be confirmed

**School of Biology, The University of Nottingham, University Park
Nottingham NG7 2RD**

Travel to the University of Nottingham The University is approximately 3 miles west of the centre of Nottingham. The school of Biology is towards the east of University Park campus.

Road From the M1 Motorway: leave at junction 25 to join the A52 to Nottingham. Turn right at The Priory roundabout (about 4 miles from the M1), then left at the next roundabout to enter the University's West Entrance.

Car parking Free parking is provided for those staying at the Orchard Hotel **NG7 2RJ** (please speak to Hotel Reception). Attendees not staying at the Orchard Hotel but wishing to park on campus must use the Visitors' Car Park **NG7 2RD** on weekdays where there is a charge of £7 per day. On Saturday and Sunday parking is free everywhere (including the School of Biology car park).

Campus map? See link on www.nottingham.ac.uk

Using satnav? **Orchard Hotel = NG7 2RJ; Visitors' Car Park = NG7 2RD.**

Train Regular and fast train services from London St Pancras stop at Nottingham. Taxis are available outside the station.

Bus From Broadmarsh Bus Station (about 250 metres north of the railway station) you can take Trent and Barton buses that go past the University [e.g. "Indigo" service, alight at either the Queen's Medical Centre (QMC) or University South Entrance].

From Nottingham City Centre you can catch Nottingham City Transport buses. A taxi rank is adjacent to the bus station.

From East Midlands Airport Take Trent and Barton Skylink bus to the City Centre. Buses leave outside the Airport Arrivals hall. Alight at University West Entrance for the Orchard Hotel, or University South Entrance for The School of Biology. You can also walk to the taxi rank on the terminal forecourt and take a direct taxi to the University. The cost of a one-way taxi is around £20.

Symposium Hotel: The Orchard Hotel, University of Nottingham NG7 2RJ

Ideally located at the University, the newly built, comfortable and well-appointed Orchard Hotel is designed to the highest environmental standards, eco-friendly and featuring accessible rooftop terraces, green roofs and maximum use of natural daylight. Open spaces provide superb views of The University of Nottingham's extensively landscaped campus, spanning 330 acres.

Bedrooms are being held at preferential rates until 1 December 2013 (and will then be released). Delegates should **telephone The Orchard Hotel reservations team (0844 346 1216) and book individually, quoting *School of Biology AGM*.**

For bed and breakfast, room prices include VAT

Wednesday 8th January 2014 @ £55

Thursday 9th January 2014 @ £55

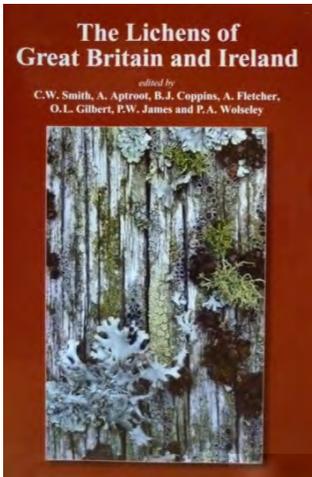
Friday 10th January 2014 @ £45

Saturday 11th January 2014 @ £45

Field Meeting Sunday 12 January – Calke Abbey (NT) Park and National Nature Reserve, Derbyshire No lichen records are held for the Park, home to some of the oldest trees in Europe. The quality and extent of the ancient trees and the insects that live on them – especially those associated with decaying wood – justify the Park's NNR status. Many of the trees are more than 400 years old, some are over 700 years and two of the oaks are thought to be over 1000 years old. The Park is about 12 miles south of Derby, 20 miles southwest of Nottingham. Steve Price, Field Meetings Secretary, has liaised with the Warden, who is enthusiastic about our visit. Information about travel arrangements to Calke Abbey will be given at the AGM and also on Saturday afternoon.

Publications and other items for sale

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



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

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

BLS members: £45.00 ; non-members £65.00

Postage & Packing £7.50 UK, £15.00 overseas

(note this is a very heavy book!).

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

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

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

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

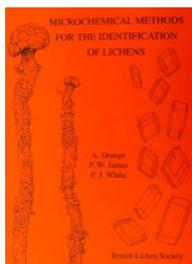
Cat.4. Fascicle 4: *Cavernularia*, *Degelia*, *Lepraria*, *Leproloma*, *Moelleropsis*, *Pannaria*, *Parmeliella*. (36 spp) 1999.

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

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

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

Cat.7. Fascicles 3 to 6 for £12.00 (Buy 3, get one free!). Price to non-members is £6.00 per fascicle. Postage and packing £8.50 UK, £25.00 overseas.



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

2nd edition, with two colour plates. Full of useful information on pigments, crystals, colour tests with reagents and TLC. Being reprinted, available July 2013. See BLS website for cost.



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

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



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

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

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



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

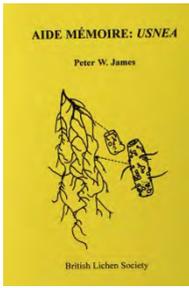
The use of lichens as indices of ecological continuity in British Woodlands was pioneered by Dr. Francis Rose MBE. The indices he proposed are here updated and regional variations are explained. BLS members £2.00; non-members £5.00. Postage & Packing £2.50 UK, £6.50 overseas.



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

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

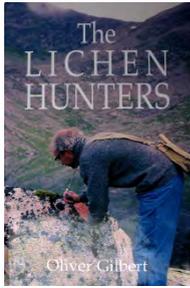
BLS members: £6.00 ; non-members £10.00. Postage & Packing £4.50 UK, £10.50 overseas.



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

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

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



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

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



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

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

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



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

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

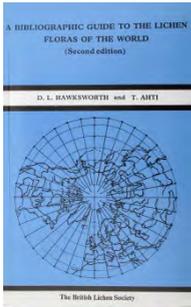
BLS members £6.50; non-members £7.50. Postage & Packing £2.50 UK, £6.50 overseas.



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

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

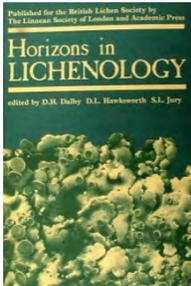
BLS members £10.00; non-members £12.00. Postage & Packing £2.50 UK, £6.50 overseas.



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

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

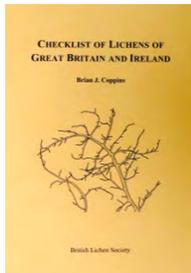
Special price, now £1.00. Postage & Packing £2.50 UK, £6.50 overseas.



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

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

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



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

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

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



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

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

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

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



Cat.23. Parmelia identification CD-Rom

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

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

Cat.24. Lichen Identifier CD-Rom

This is a simple to use multi-access computer key that enables the user to find the species name and characteristics of most British and Irish lichens. It is divided into field and microscopical characters and any information available may be entered in any order to obtain a solution. With the majority of species, a few characters, noted in the field, are sufficient to identify the species. A brief note on each species further assists separation of similar species. It was originally based on *The Lichen Flora of Great Britain and Ireland* by O.W. Purvis et al (1992). It includes every species mentioned in that book plus many that have been more recently described or added to the British list. The nomenclature agrees with the most recent version of the BLS checklist. It can therefore be used to identify any of the lichens contained in the above *Flora*. In addition, it includes many species that have been added to the British and Irish lists since that time.

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

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

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

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

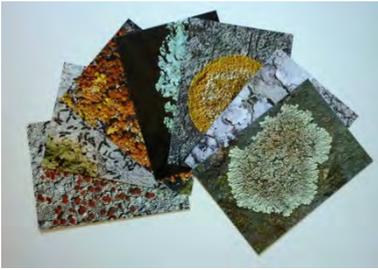
Non-members £28.00 for version 3, (£15.00 for upgrade from version 2).

Postage & Packing £2.50 UK, £6.50 overseas.



Cat.25. Greetings Cards/Notelets by Claire Dalby

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



Cat.26. BLS Postcards

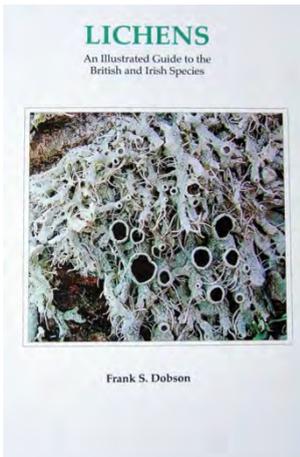
A set of 16 beautiful photographic postcards of British lichens.
 £2.00 per set. Postage & Packing £1.50 UK, £3.00 overseas.



Cat.27. Woven ties with below-knot motif of BLS logo. Attractive ties with discreet BLS logo. Colours available: maroon, navy blue, brown, black and gold.
 £7.00. Postage & Packing £1.50 UK, £3.00 overseas.



Cat.28. Earthenware mug with coloured logo on both sides, encircled by the words 'British Lichen Society'
 No lichenologist's desk should be without one.
 £3.00. Postage & Packing £3.50 UK, £10.00 overseas.



Cat. 29. Lichens – An Illustrated Guide to the British and Irish Species 6th Edition (2011)

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

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

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

There is an enlarged generic key and a much extended section on sterile species. A generic synopsis is included to assist the more experienced lichenologist.
 Paperback £35.00, hardback £50.00. Postage & packing £7.00 UK, overseas £10.00.

NEW MEMBERS since publication of the 2012 Winter Bulletin

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

Mr E. Agathokleous, 30 Lakonias Str., Peristeri, 12131 Athens, Attiki, GREECE

Mr J. Austrums, Well Cottage, Brow Lane, Staveley, Cumbria, LA8 9PJ, UK

Ms L.E. Benton, 933 Hiatt Street, Lebanon, OR 97355, U.S.A.

Miss R.E. Bevan, 7 Southfield Drive, Moortown, Leeds, West Yorkshire, LS17 6RP, UK

Mr A. Billett, 26 Mansfield Gardens, Didcot, Oxfordshire, OX11 9RW, UK

Miss A. Bird, 20 Rydes Hill Crescent, Guildford, Surrey, GU2 9UH, UK

Mrs C Brook, 1 Lodge Cottage, Thurnham, Lancaster, Lancashire, LA2 0DT, UK

Miss G. Brown, 57 Wedneshough Green, Hollingworth, Via Hyde, Cheshire, SK14 8LS, UK

Miss J. Christian, 44 Chandlers Close, Crabbs Cross, Redditch, Worcestershire, B97 5HU, UK

Mr P. Douch, 41 Oaks Drive, Colchester, Essex, CO3 3PS, UK

Mrs J. Dunlop, 180A Dowson Road, Hyde, Cheshire, SK14 5BW, UK

Mr C. Giblin, 4 Carey, Hockley, Tamworth, Staffordshire, B77 5QB, UK

Mr L. Glacy, 9555 Hiken Hill Rd, San Diego CA 92129, U.S.A.

Mr O. Gonnet, 205 Chemin du Robiat, F-69250 Poleymieux au Mont d'Or, FRANCE

Miss A. Grall, Cryptogamic Herbarium, Natural History Museum, Cromwell Road, LONDON, SW7 5BD, UK

Mr D.J. Groom, Caedwgan, Gwernogle, Carmarthenshire, WALES, SA32 7RZ, UK

Mrs A. Haden, Les Deux Ruelles, Le Feuguerel, St Lawrence, Jersey, JE3 1FT, UK

Miss R. Harrington, Eastview, Bridge Street, Writtle, Essex, CM1 3EX, UK

Mr T. Jones, 24 Ratcliffe Court, Colchester, Essex, CO4 0AZ, UK

Mr M.J. Lane, 18 Weirfield Green, Taunton, Somerset, TA1 1AZ, UK

Dr I. Marks, Hybrid House, Tonlagee, Roscommon, Co Roscommon, IRELAND

Dr T. McDonald, 1030 14th Ave. SE, Minneapolis MN 55414, U.S.A.

Mr G. Michener Q.C., 65 Tecumseth St, Orillia, ONTARIO L3V 1Y1, CANADA

Mr A. Niklasson, Trolltjärn 18, SE-43640 Askim, SWEDEN

Mr T. Packer, 98 Broomfield Avenue, LONDON, N13 4JP, UK

Dr I.M. Peat, 7 Main Street, Carlton, Nuneaton, Warwickshire, CV13 0BZ, UK

Mr C.W.R. Robinson, 10, Herent Drive, Clayhall, Ilford, Essex, IG5 0HE, UK

Mr R. Robinson, Lewdon Farm, Kilkhampton, Bude, Cornwall, EX23 9RY, UK

Miss L. Ross, 5 Penylan Road, Brecon, Powys, WALES, LD3 8DB, UK

Mr J. Ross, 22 Kilburn Lane, Openwoodgate, Belper, Derbyshire, DE56 0SF, UK

Mr C. Roy, 117 Chemin du Chenal, St-Augustin-de-Desmaures, QUÉBEC G3A 0H9, CANADA

Mr Y. Samari, 6 Dark Lane, Shrewsbury, Shropshire, SY2 5LP, UK

Mrs M. Spurrier, Lamourette, F-63330 La Cellette, FRANCE

Mrs C. Stanesby, 32 Elizabeth Way, Uppingham, Rutland, LE15 9PQ, UK

Mr L. Taylor, 9 Blake House, Poets Way, Dorchester, Dorset, DT1 2FE, UK

Dr C. Tregaskes, 5 Crampton Terrace, Sawston, Cambridge, Cambridgeshire, CB22 3JD, UK
Mr M. Young, Greenacres, Sprouston, Kelso, Scottish Borders, SCOTLAND, TD5 8HP, UK

OBITUARY

Sadly we have to inform you that the following member of our society passed away:

Dr J.P. Dey, Dept. Biology, Illinois Wesleyan University, Bloomington IL 61702-2900, U.S.A.

THANK YOU

for kindly supporting the British Lichen Society with a donation:

Mr E. Agathokleous, Mr D.J. Clark, Dr P. Crittenden, Dr E.H.N. Oakley, Mr G. Williams

Membership Matters – from the Membership Secretary

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

- 1. Membership number.* This is a four digit number only.
- 2. Expiring year.* This will show any credit you may still have for following years.

Please, keep us up to date when your contact details change! Please, also remember to inform the membership secretary when your email address changes.

Email addresses for officers of the society. We have now specific email addresses for some of our officers (please check from time to time the inside front cover of the Bulletin where current contact details are listed). In order to contact the membership secretary, please send your emails now to membership@britishlichensociety.org.uk

Members only content on our web site. This has not yet been rolled out - you will be contacted by us with your account details once this is available.

Publication of the Winter 2013 Bulletin

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



British Lichen Society Bulletin no. 112

Summer 2013

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