British Lichen Society Bulletin no. 126
Summer 2020

After what has been an anxious several months for everyone, I feel confident that this particular Bulletin is going to raise your spirits and give you an opportunity to let your mind travel to places where the lichens are inspirational and the wider horizons may help to alleviate any 'Lockdown' claustrophobia. You will be reminded that you are a part of a society where the sense of camaraderie is strong and are encouraged to put aside your book for long enough to read the delightful account of the Lost and Found Fungi trip to Sutherland in search of *Bryoria tenuis.*

Neil Sanderson has given us a valuable account of the previously overlooked *Lecanora hybocarpa* and its identification using polarising filters, work which was first reported on the UK Fungi website. The lichen forum on this website is proving easy to use and an efficient way to keep abreast of recent developments.

Although there is understandably great disappointment resulting from the necessary postponement of field meetings arranged for 2020, a bonus has been the discovery by lichenologists, working at home on old herbarium material, of several lichens and lichenicolous fungi new to Britain. Details of the field meetings can still be found in this *Bulletin* as it is hoped that the programme can be carried forward into next year. In the interim we have a perfect spread geographically of accounts from the meetings held over the last couple of years which take us from the far north in the Outer Hebrides via the Welsh borders to Surrey in the home counties.

The Society has a worldwide membership and it is a pleasure to receive contributions from both Europe and the New World. This time you can enjoy attractive images of some of the lichens found in south eastern Spain and try to solve the mystery at the end of the account as well as learning about the conservation programmes in place in Nova Scotia for the protection of lichens and their habitats.

There has been an interesting addition to our Sales section this time. 'Somerset Lichens and Lichenicolous Fungi' is available at a very reasonable cost and a useful county flora to lichenologists working in the UK.

Lichens have been attracting a lot of attention from artists recently and the work of some of them was exhibited at the AGM held in Edinburgh this year. Although there has not been space enough to include this topic in this issue it is hoped to feature some of these artists in a special review article in the Winter edition.

Front cover: lichens decorating a crab painted on the information board at Loch Fleet NNR, Dornoch, Sutherland. Photo © Sandy Coppins.

Second – and hopefully – final update on the Coul Links Public Inquiry

Coul Links – after an agonising wait, in February this year, the Scottish Ministers decided to refuse the application for a golf course development on Coul Links, part of Loch Fleet SSSI, SAC and SPA.

Photo © Alison Searl (RSPB Scotland)

It was in May 2018, the British Lichen Society lodged a formal objection as part of the Not Coul objector group, together with a consortium of other groups and Conservation bodies including Scottish National Heritage (SNH). The application went to Public Inquiry (PI) in February 2019. After an inordinate delay whilst the applicants tarried about submitting their Final Submission until August 2019, we waited for the decision.

Meanwhile, there had been another development – on 28th June 2019, there was a surprise Press Release from SNH about another coastal golf links development at Menie Links (part of Foveran Links SSSI). If you Google Foveran Links SSSI, you will see a heading 'Reasons for the proposed partial denotification of Foveran Links SSSI'. If you scroll down, there is another link with some really shocking 'before' and 'after' shots ('Dunes at Menie golf course may lose protected status').There is a downloadable pdf, (only five pages) which starkly outlines the physical destruction of the dune habitat, and the potential indirect impacts from irrigation, application of herbicides and fertilizers. It goes on to cite: "…..stabilisation of mobile sand which has destroyed the dynamic nature of the site and the cycle of habitat creation which is necessary for periodic renewal of sensitive habitats such as dune slacks and mobile dune. Control of grazing (rabbits, deer) which will in time result in scrub and coarse vegetation development in sensitive habitats such as dune slacks and wetlands."

Menie Links is part of the wider Foveran SSSI in Aberdeenshire. In 2006, Donald Trump purchased the coastal dune site Menie Links with the intention to create a world-class golf course. The development was not without controversy (Coppins, 2009). The go-ahead came only with a last-minute intervention from the Scottish Government. So, in the light of this timely Press Release from SNH, we were hopeful that this may influence the decision the Reporters and Scottish Ministers may make with regard to the proposed golf course development at Coul Links SSSI. It rumbled on as we waited for the decision…..

(I hasten to add, that the proposed golf development at Coul Links was not under the auspices of Donald Trump).

Meanwhile, the UK had entered a new phase in the history books with the advent of the Brexit vote and the decision to withdraw from the European Union. The withdrawal was ratified on 31st January 2020. We wondered if this might affect the deliberations of the Scottish Ministers; exciting if disturbing times. And still we waited.

It was not until 21st February 2020 that the Ministerial Decision for Coul Links was released. It was a close-run thing. The PI reporters had examined and balanced arguments from both sides but in the end, the potential damage to the dune habitat, birds, invertebrates – and lichens – within a statutory protected site was deemed unacceptable, and the application for the golf course development was refused.

After the initial euphoria, we were reminded that the applicants now had 6 weeks to submit an appeal to the Court of Sessions. So, although we felt pretty confident, we still needed that final wait to hear, to be sure. We knew that an appeal could be based only on a legal technicality or irregularity, and not on the evidence as submitted. So huge relief when, on 9th April 2020, we were told the news: Coul Links – there will be NO APPEAL. The ministers' decision stands, and there will be no golf course development at Coul Links. A rare example of victory of wildlife over commerce.

But the onset of the Coronavirus (COVID-19) with the attendant lockdown at the end of March 2020, has curtailed any celebration in the streets. What an amazing story this has been, spanning not only Brexit, changes of Prime Ministers, a General Election and now the pandemic, but running through it all the events around the fate of Coul Links SSSI.

As always with these dedicated efforts to halt. the incursions into wildlife in the face of Planning, there are a host of individuals who contributed time, effort and money to the causes they believed in. The BLS backed the efforts to provide lichen evidence to support the campaign, as well as offering travel expenses to those who travelled to carry out the site visit. Amongst those who were involved (including contributing photos, GPS data, and species lists) are Heather Paul, Andy Acton, Paul Cannon, Becky Yahr, Brian and Sandy Coppins. Brian consulted with Steen Christensen in Denmark to put the lichen interest of the dune habitat of Coul Links into an international perspective. The Lost and Found Fungi (LAFF) project also contributed funds, as one of the target species *Peltigera malacea*, occurs at Coul Links. The formal letter of objection (10 pages) was written and submitted on behalf of the BLS by Brian and Sandy Coppins. Other lichenologists who contributed records include Stewart Taylor, and David Genney. Initially, the BLS were alerted to the proposed development by Dr Tom Dargie, who set up the Not Coul group to counter the evidence presented by the developers. During the Public Inquiry, Not Coul was ably represented (pro bono) by John Campbell QC and his junior counsel Simon Crabb. Brian stood as lichen expert witness during the PI and was comfortably housed in a local holiday cottage generously lent for the proceedings by Ian Horsfield.

Photo © Tom Dargie

There is a slightly unsettling footnote, however: the 38 Degrees Conservation Campaign Group (led by Andrew Weston and which had gathered petition signatures from across the UK to oppose the golf development), reported that a fire swept over part of Coul Links on 23rd March 2020:

The fire was**....**"sourced to a garden bonfire, lit (stupidly) during a dry spell of weather and fanned by brisk southerly winds, suspiciously on the Monday after schools closed for the Coronavirus lockdown. Dr Tom Dargie quickly mapped and assessed some of the damage. The extent of scrub, grassland, bracken and heath that has been charred is 2.3 ha of SSSI & 6.2 ha of non-SSSI. The non-SSSI affected areas contained some of the best herb-richness and carpets of rock rose on Coul Links, supporting a nationally important population of Northern Brown Argus butterfly. Insects, herpetofauna, small mammals and early bird nests will have been incinerated. Some of the burning might have positive consequences for some desirable species. Hopefully it won't lead to an increase in less desirable and invasive plants. We will have to see and monitor how the vegetation and dependent species recover."

Previous *Bulletin* articles provide the background to these events: *Bulletin* **123** Winter 2018: 13–25; *Bulletin* **124** Summer 2019: 14–16.

Reference

Coppins, Sandy (2009) *British Wildlife* **20**:291–293.

Sandy Coppins
coppins.sandy@gmail.com

How to identify *Lecanora hybocarpa* and other confusions in *Lecanora chlarotera* s. lat.

Introduction

In 2018 I helped Dr Jan Vondrák record three of his intensive 1 ha survey plots (Vondrák et al, 2016) in the New Forest, having previously been involved in recording some of his central and eastern European plots. The latter had been something of an 'in at the deep end' way of experiencing a new lichen assemblage and recording plots in the New Forest was much less daunting. Even in familiar territory, however, looking in detail at a small area old lichen rich woodland, still produced lots of surprises. Most of these were rare old growth dependant species but I also had a revelation with the common and personally rather ignored *Lecanora chlarotera* s. lat. group. Intensive sampling within the plots revealed a lot more going on within what would normally been recorded on passing as *Lecanora chlarotera*. This included at first mis-identifying the rarely recorded *Lecanora hybocarpa* from one plot and then actually finding it in the collections from the other two plots. As *Lecanora hybocarpa* was new to England but in the plots was a canopy twig species and therefore potentially widespread, this left some questions. After sampling epiphytic *Lecanora* populations over the next year and a half, wherever I had the chance, some of this became clearer.

How to identify the *Lecanora chlarotera* group

After a lot of sampling, one can make a good guess at which species you are looking at in the field, but beyond those with distinctive spot tests, the sad news is that you can never be quite sure without doing some microscope work. This is actually quick and not complicated but does need one additional bit of kit - polarising filters. Only with these can the distinctive distribution of crystals within the apothecia be clearly seen. These are built into microscopes used by geologists, but there is a cheap alternative. Google "polarising film" and order either a single piece of plastic polarising film about 10 x 5cm, which is to be cut in half, or two pieces of 5 x 5cm, or similar sizes. (The cost is usually about £6.00). Once obtained one sheet needs to be put between the light source and the specimen and the second between the specimen and your eye. Rotate one sheet and the microscope slide will darken and any crystals in your specimen will shine out brightly in a rather pretty display.

Some species can be identified by spot tests in the field, especially strong Pd reactions of the thalline margins and C reactions on the disc. K is less useful; all the species dealt. here have atranorin, so will give variably strong K + yellow reactions and, where concentrations are high, Pd+ weakly yellow, so this test is not very informative. The atranorin K + yellow spot tests can be difficult to see but, as discovered by Mark Powell, when dried they become highly fluorescent yellow under UV light. For example the key in Edwards et al. (2009) splits off *Lecanora horiza* as K– but this is wrong; many species in the group can have individual thalli with low levels of atranorin and difficult to see K spot tests. Some of the crystals in the apothecia dissolve in K and others are insoluble. This does have diagnostic use but also means that you should examine cross sections in water first, once the K has been applied the soluble crystals will be gone.

A good source of descriptions and well sourced pictures is the Italic 5.0 web site <http://italic.units.it/index.php>. The *Lecanora* section in the Lichens of Great Britain and Ireland (Edwards, 2009) is in need of work and the use of the key for members of the *Lecanora chlarotera* group is not advised.

Naming of parts

Lecanora comes with its own technical language which I will avoid where possible, however, one useful term is the epipsamma, used for crystals or granules within the epithecium.

Identifying the species

Some species will only be mentioned in passing, but those most easily confused with *Lecanora chlarotera* will have more detail. Only well-developed material can easily be identified; poor slug-eaten thalli are best ignored.

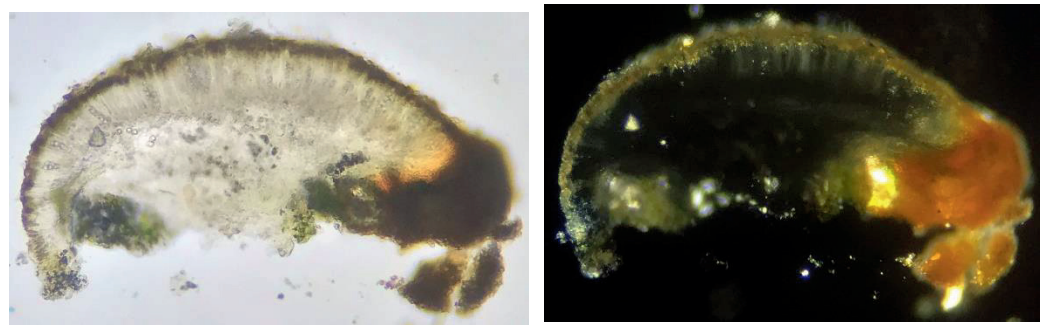
C or Pd spot tests on the apothecia

Some species have spot tests that can be used to identify them in the field. Two, *Lecanora carpinea* and *Lecanora albella* have dense white pruina on the discs; the former has C + yellow discs and Pd – margins, while *Lecanora albella* has C – discs and a Pd + orange margins. *Lecanora carpinea* is widespread on twigs in nutrient enriched environments, while *Lecanora albella* is more oceanic and confined to more acid bark on twigs and exposed trunks. There are two other species known in continental Europe with dense white pruina which could occur in Britain: *Lecanora subcarpinea* and *Lecanora leptyrodes*. *Lecanora subcarpinea* has C + yellow discs and Pd + yellow to orange margins, I have seen this in central Europe, where it grew on trunks of hornbeam. *Lecanora leptyrodes* is very similar to *Lecanora carpinea*, except the crystals in the margin do not dissolve in K. (In *Lecanora carpinea* these crystals rapidly dissolve.) I have checked a fair bit of English material and it has all been *Lecanora carpinea*.

Rather different is *Lecanora pulicaris*, which has the appearance of a more typical *Lecanora chlarotera* group species without dense pruina on the discs, which are always dark brown. This has a Pd + orange margin, distinguishing it from similar looking species. It also grows in the most acid habitats and any material with dark discs on lignum or acid bark should be tested. Internally the apothecia are similar to *Lecanora hybocarpa* (see below) and cross sectioning *Lecanora pulicaris* apothecia is a good way of understanding the what is expected in *Lecanora hybocarpa* apothecia.

Finally there are two with Pd + yellow thalline margins: *Lecanora intumescens* and *Lecanora cinereofusca.* The thalline margins of *Lecanora intumescens* lack a cortex; this lichen has distinctly fluffy margins, with a strong Pd + yellow spot test. A mainly upland species of smooth non-enriched bark with few recent English records; is it declining or overlooked? The rare *Lecanora cinereofusca* has quite a distinct look, with a deeply crenulate thalline margin, but is clinched by usually having a P+ yellow-orange reaction in the margin and always having epipsamma granules that react Pd + orange-red and then form crystals (cross section). So far it is known only from the Scottish Highlands.

Lecanora pulicaris: on a fence railing, New Forest. [2020-04-30-04]



Lecanora pulicaris: on a fence railing, New Forest, apothecia cross section, the epipsamma showing yellow in polarised light, descends some way into the hymenium in this specimen but not as markedly as in many.

Only small crystals in the thalline margin

Most of the species in the *Lecanora chlarotera* group have large obvious crystals over 10µm across in the thalline margin, often much larger, which do not dissolve in K. A few have dense aggregations of small crystals only a few µm across and no large crystals. The latter include epiphytic *Lecanora campestris* in polluted areas and the much mis-understood *Lecanora horiza*. The latter is a rather uncommon epiphyte, which may actually be more widespread on vertical, mildly basic rock. Candidates for both can be picked out in the field by having very smooth thalline margins. Telling the two species apart in either habitat is not easy, see Maliíček & Powell (2013), but the glossy disc of *Lecanora horiza* as opposed to the matt disc of *Lecanora campestris* is quite reliable. It is still advisable to check for the absence of large crystals, as *Lecanora argentata* with unusually smooth margins can look similar. As with *Lecanora argentata* both species lack an epipsamma, so have no granules in the epithecium. Two continental epiphytic species with only small crystals in their margins that might also occur in Britain are *Lecanora allophana* and *Lecanora glabrata*; optimists are directed to the Italic 5.0 website for descriptions.

The species with large crystals in the thalline margin

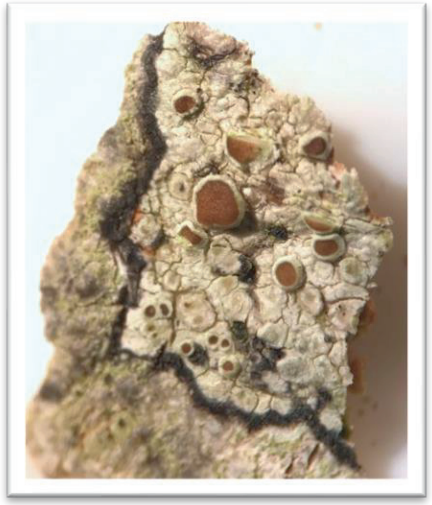
The remaining epiphytic species reviewed here all have large crystals in the thalline margins and no Pd or C reactions in the apothecia and are identified by the absence of an epipsamma or by its presence but with a different distribution of granules in the epithecium and hymenium. These are:

Lecanora argentata: no epipsamma, so granules are absent from the epithecium.

Lecanora chlarotera: with an epipsamma, with the granules confined to the epithecium and not straying into the hymenium.

Lecanora hybocarpa/*Lecanora sinuosa*: also with an epipsamma, but the granules are not confined to the epithecium and spill down between the asci.

Lecanora argentata: very distinctive in its apothecial cross sections, with no epipsamma and therefore a complete absence of granules in the epithecium. In polarising light, there can be polarised light shining from the asci wall as in the picture below. This can occur in any *Lecanora chlarotera* group species and should be disregarded. Candidates can be picked out by darker brown discs on whiter thalli, especially on trunks, but the morphology overlaps with *Lecanora chlarotera*, which can have quite dark discs, especially on twigs. Equally intensive sampling produces a lot of *Lecanora argentata* with paler brown discs on shaded trunks. *L. argentata* is widespread but commonest on trunks and in woodlands or older trees in the open but it will turn up on twigs in woodlands at least.



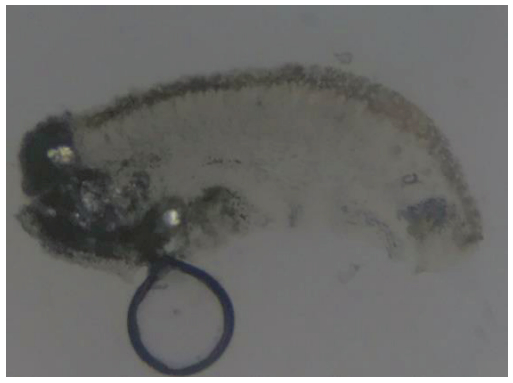
Lecanora argentata: on beech, left and on hazel right, both from woodland in the New Forest. The left hand specimen was taken for *Lecanora chlarotera* in the field.

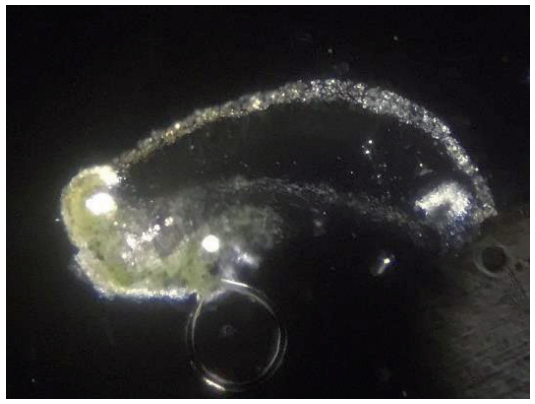
Lecanora argentata: on hazel in the New Forest; right normal light, below in polarised light. In the latter no granules are visible in the epithecium but large crystals are visible in the thalline margin. The shine in the hymenium to the right appears to be from the asci walls and is not significant.

Lecanora chlarotera: this name is what I used to use to record members of this group with paler discs, on twigs and outside of woodlands, however, more sampling has suggested it is not that easy, one really needs to section the apothecia to be sure. In this species the epipsamma is confined to the epithecium, with granules found only above the asci tips. The basal line of the epipsamma is often quite sharp, with the granules usually whitish in polarised light, although it is not yet clear if the latter is diagnostic. The lichen is very variable, especially in disc colour. Morphs with discs darker than *Lecanora argentata* can be found on twigs and may represent the poorly understood taxon, *Lecanora chlarotera* subsp. *meridionalis*. Scantily developed material can have pale milky discs but well-developed material typically is mid-brown. Well-developed material with pale brown to slightly pruinose discs is usually *Lecanora hybocarpa*. Material with very rough thalline margins was called *Lecanora rugosella*, but this appears to be an environmental modification and was not recognised by Maliíček (2014). A very common species of twigs and trunks, but replaced by *Lecanora argentata*

on trunks in woodland and older trees in the open and in the south and east, *Lecanora hybocarpa* can be commoner than *L. chlarotera* in warm sunny locations, especially on twigs.

Lecanora chlarotera: showing the range of variation, left, very dark discs from an oak twig on a coastal oak, Exbury Gardens, Hampshire and right much paler discs from a wood edge oak, New Forest.



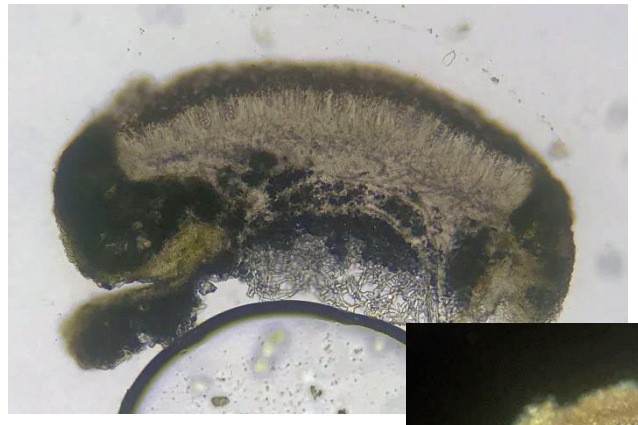


Lecanora chlarotera: apothecia cross section of a morph with very dark discs from an oak twig on a coastal oak, Exbury Gardens, Hampshire. Shows the epipsamma strictly confined to the epithecium, the crystals are whitish in polarised light.

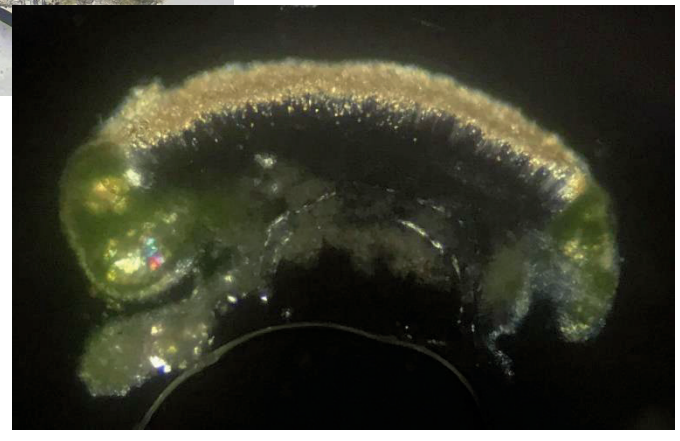
Lecanora hybocarpa: similar to *Lecanora chlarotera* but with a well-developed epipsamma, of coarser brown granules that spills down from the epithecium into the hymenium, between the asci. The granules are usually yellowish in polarised light, but it is not yet clear if this is diagnostic. Well-developed apothecia are distinctive and spectacular in cross-section in polarised light, but others can be a bit ambigous, with only a few crystals in the hymenium. Where common, good material can be picked out in the field, but less well-marked material merges into *Lecanora chlarotera.* The disc is never dark; in the most distinctive material this is because there is a greyish bloom over a mid-brown disc. Material with pale discs, which are similar to poorly developed *Lecanora chlarotera*, are also frequent however. This species has proved to be widespread wherever it was looked for in the south and east and it can be commoner than *Lecanora chlarotera*. It extends at least into lowland Scotland and has been found in the eastern Welsh hills in the Elan Valley, but it has not been found in a couple of recent surveys

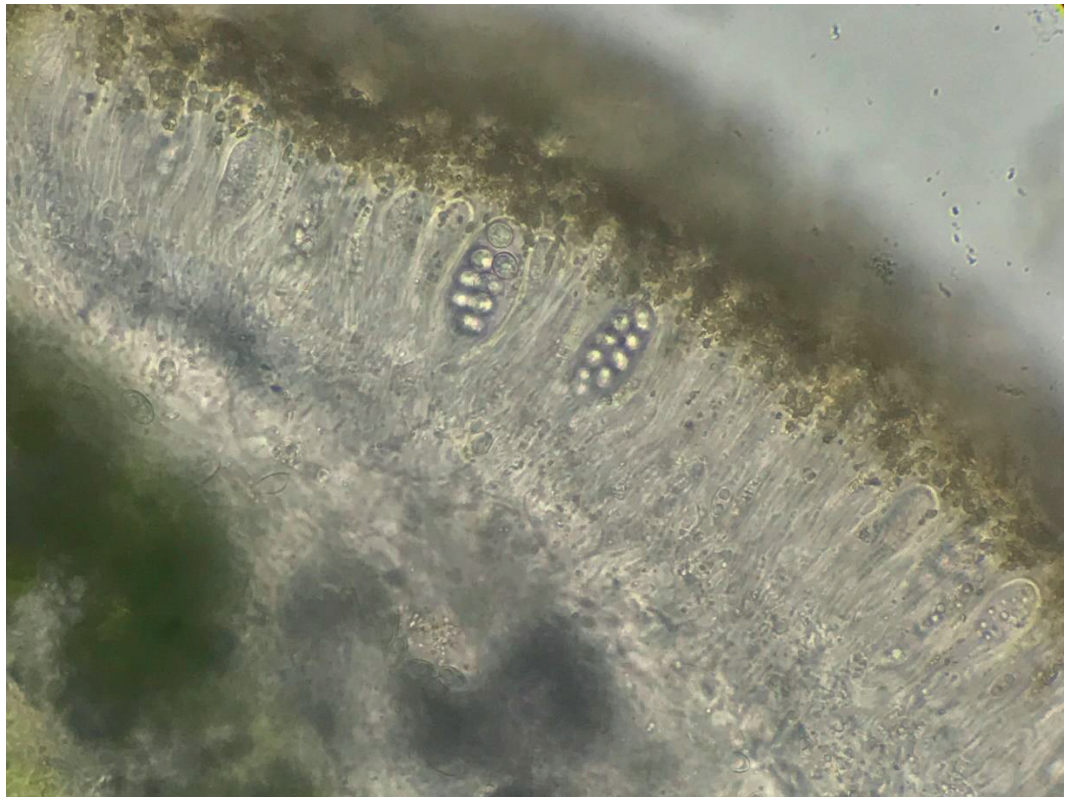
of Welsh rainforests, where only *Lecanora argentata* was found on trunks and *Lecanora chlarotera* in the canopy. The species appears to be one of warm habitats and is mainly lowland, southern and eastern and is at least locally more frequent than *Lecanora chlarotera* in the south.

Lecanora hybocarpa: left picture an oak twig from the New Forest, with *Lecanora hybocarpa* to the left and a morph of *Lecanora chlarotera* with dark discs to the right. Right is a well-developed *Lecanora hybocarpa* from an oak twig from farmland, New Forest. The latter shows the typical medium brown disc, obscured by a thin bloom.

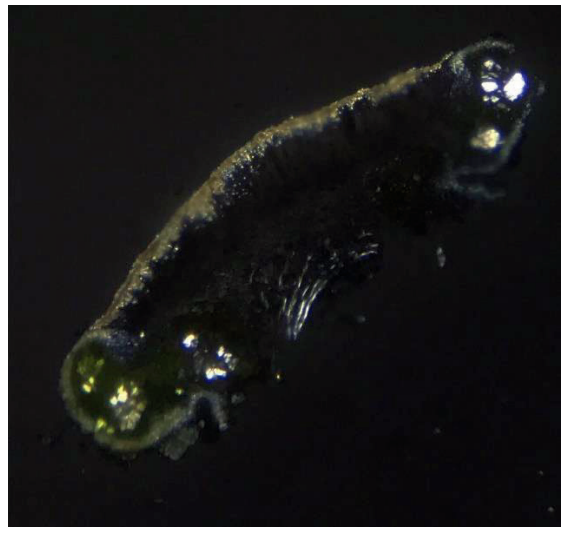


Lecanora hybocarpa:
from an oak twig in the Elan Valley, Radnor, apothecial cross sections showing the epipsamma descending into the hymenium.





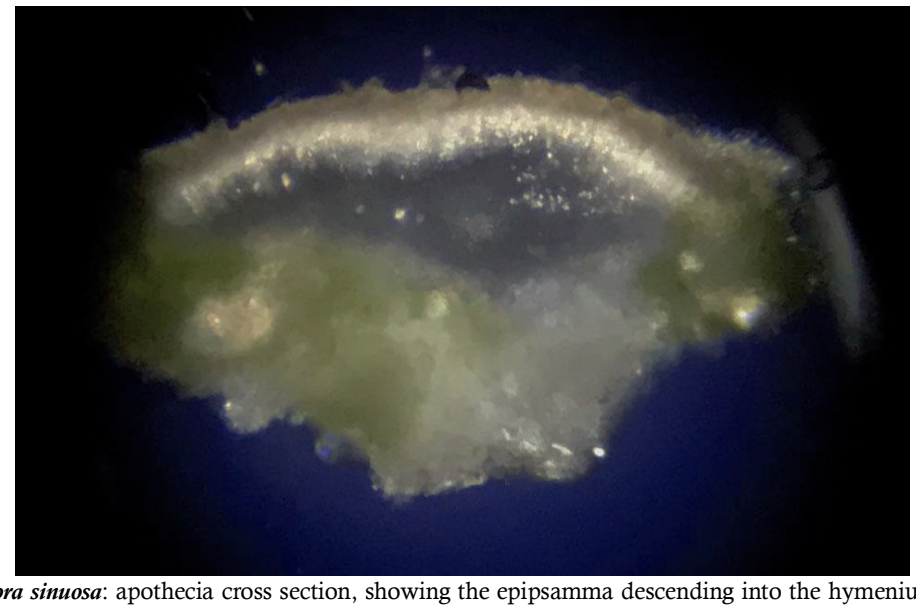
Lecanora hybocarpa: from an oak twig in the Elan Valley, Radnor, apothecia cross sections showing the epipsamma descending into the hymenium.



Lecanora hybocarpa: from an oak twig from farmland, New Forest; the epipsamma descending into the hymenium is not as dramatic as the Welsh specimen above.

Lecanora sinuosa:

Lecanora sinuosa on beech on wood edge, New Forest.



Lecanora sinuosa: apothecia cross section, showing the epipsamma descending into the hymenium. The apothecia have the same mid brown disc obscured by a light bloom as seen in well-developed *Lecanora hybocarpa*.

Internally the apothecia of this taxon are indistinguishable from *Lecanora hybocarpa* but the thallus is distinctive. It is covered with raised warts with sinuous outlines and which appear to be infertile apothecia initials (Herk & Aptroot, 1999). In the author's recent experience this taxon occurs as scattered individual thalli within larger populations of *Lecanora hybocarpa*. It appears uncommon and southern and although found mainly on trunks has been found on aspen branches. It seems possible that this taxon is just an environmental modification of *Lecanora hybocarpa*, in a similar way to *Lecanora rugosella* with *Lecanora chlarotera*. If so, a nomenclatural complication is that the name *Lecanora hybocarpa* is typed on American material, which is probably not the same taxon as the European material (Brodo, pers. comm.), in which case *Lecanora sinuosa* would be the valid name for both morphs.

Conclusions

The musings above are my understanding of what is going on within the *Lecanora chlarotera* group. This will probably evolve with further work but I thought it worthwhile sharing my thoughts to encourage others to have a go too and I would also welcome feedback and further observations.

References

Edwards, B., Aptroot, A., Hawksworth, D. L. & James, P. W. (2009). *Lecanora* in *The Lichens of Great Britain and Ireland*. (C.W. Smith et al., eds): 465–502. London: British Lichen Society.

van Herk, C. M. & Aptroot, A. (1999) *Lecanora compallens* and *L. sinuosa*, two new overlooked corticolous lichen species from western Europe. *Lichenologist* **31**: 543–553.

Maliíček, J. (2014) A revision of the epiphytic species of the *Lecanora subfusca* group (*Lecanoraceae*, *Ascomycota*) in the Czech Republic. *Lichenologist* **46**: 489–513.

Maliíček, J. & Powell, M. (2013) *Lecanora horiza* and other surprises in the *Lecanora subfusca* group. *Bull. Brit. Lichen Soc*. **112**: 66–71.

Vondrák, J., Maliíček, J., Palice, Z., Coppins, B. J., Kukwa, M., Czarnota, P., Sanderson, N. A. & Acton A. (2016) Methods for obtaining more complete species lists in surveys of lichen biodiversity. *Nordic Journal of Botany* **34**:619-–626. doi:10.1111/njb.01053.

Neil Sanderson
neilsand@dircon.co.uk

Do some lichens have an artistic sense? Notes on *Imshaugia aleurites* in West Kent

We all have some idea, when we visit a new churchyard, where we expect to find a particular lichen species. Some are usually found on the church, others on headstones or chest tombs. Some prefer limestone, others sandstone or granite. We look at different aspects and different ages of substrate but we don't usually look for headstones with a particular style of carving (ornamentation) to help locate a species. This article was prompted by a striking example of this phenomenon in a small group of West Kent churchyards where *Imshaugia aleurites* has been found on gravestones.

Records in the BLS database (over 600 records as of 2018) show that *I. aleurites* is predominantly found on lignum or on trees; records from stone are in the minority. Looking more closely at the habitat preference of *I. aleurites* in Sussex and Kent the database shows that its preferred substrate is lignum. There is one saxicolous record in West Sussex (Sutton churchyard) while there are 3 definite saxicolous records in East Sussex.

In East Kent, 25 of the 27 records are from lignum or trees and one is from a churchyard, Brenzett, but with no details. On a recent survey of this yard, *I. aleurites* was not recorded. It is likely that it was on a fence as several other lignicolous species were also not refound and the churchyard fence is relatively new. In West Kent, half the records are lignicolous/corticolous and half are saxicolous.

There are 6 churchyards in West Kent where *I. aleurites* has been recorded. One, Ashurst, is a 1969 record of its occurrence on a fence rail. Platt is a 1990 record with no small scale habitat listed; Westerham is a 1967 record (again with no small scale habitat listed) but more recent surveys have not recorded it from there.

Typical headstones at Lamberhurst showing the distinctive ornamentation of headstones which support the *I. aleurites* community.

Three (Lamberhurst, Horsmonden and Pembury) are records post 2010 from tombstones. Lamberhurst, Pembury and Horsmonden are close to each other geographically. They are Wealden churchyards with many sandstone memorials. In fact calcareous substrates are rare in these yards.

St Mary, Lamberhurst (TQ681365) has a large graveyard (over 400 graves) with a variety of memorials but the majority are of sandstone. *Imshaugia aleurites* occurs on about 40 headstones – all except 2 are of a specific design – quite tall vertical stones with a chamfered back. Most date between 1780 and 1820; many have similar carvings as if made by a specific stone mason.

The rear of the same headstones showing the chamfered edge at the top of the headstone.

The community of lichens on these headstones is fairly constant but relatively poor with many of the lichens normally associated with sandstone headstones being totally absent or present in very small amounts. Typically, the community consists of *I. aleurites*, *Parmeliopsis ambigua*, *Cladonia* spp (usually *C. polydactyla*), *Hypocenomyce scalaris*, and *Melanelixia fuliginosa*; less common associates are *Hypogymnia physodes*, *Candelariella vitellina* and a Pd+rust-red sorediate crust identified by Mark Powell as *Violella fucata* (*Mycoblastus fucatus*) - an unusual substrate for this lichen in the SE. Occasionally, *H. scalaris*, *Cladonia* sp. and *P. ambigua* are present without *I. aleurites*. *Buellia* species (*B. aethalea* and *B. ocellata*), *Rhizocarpon reductum*, *Lecidella scabra*, all common on sandstone memorials in Kent and in this graveyard, are absent. Although this *I. aleurites* community is found on about 40 memorials there are plenty of other sandstone headstones which would appear to be suitable for this community but which do not support it. Indeed you can pick out the headstones likely to have this unique community by their shape and decoration and you are invariably right!

St Margaret, Horsmonden (TQ703381) also has a large and open yard and is about 4 miles from Lamberhurst. The yard has a majority of sandstone headstones a few of which are of similar date and style as those at Lamberhurst. *Imshaugia aleurites* is faithful to the same type of headstone as at Lamberhurst and does not occur on any that are not of this distinctive pattern. The community is also similar but without *Parmeliopsis ambigua* and *V. fucata* although there is another as yet unresolved sorediate crust which is Pd–. Although several of the right type and age of headstone are present, only 7 have the *I. aleurites* and associated lichen community.

St Peter, Pembury Old Church (TQ625429) is about 5 miles from Lamberhurst and is another sandstone-dominated yard. The presence of the *Imshaugia* community is similar to the situation at Horsmonden although there are even fewer headstones supporting the community (2 headstones although several more available). *Parmeliopsis ambigua* is present here but there is no *V. fucata.*

Why has this rather special community developed in these three churchyards? The dates of the headstones (late18c/early19c) suggest that the stone used would have been local – a Wealden Sandstone. Why have *I. aleurites* and its associates not spread on to other seemingly suitable headstones of similar substrate? To the human eye there are many other acidic headstones of similar age which appear to be the same in colour and texture. The headstones with the *Imshaugia aleurites* community only seem to differ in the chamfered ledge and the decoration! Other sandstone memorials of a more usual unadorned style and of slightly later date (mid 19th century) have the usual sandstone community of *B. aethalea*, *B. ocellata*, *R. reductum* and *L. scabra* which are absent from the earlier stones. *Candelariella vitellina* is also remarkably uncommon on the earlier stones. Trying to find out more about the properties of these early memorials has proved incredibly frustrating. Emails to local museums and local history societies have either been unanswered or unhelpful. A snippet on the Lamberhurst Village website states 'There are many late 18th century tombstones with quaint carvings on them which were worked by John and Thomas Wallis of Wadhurst from sandstone quarried at Faircrouch, near Wadhurst station.' But we cannot find out from where that information originates. A local geologist who kindly came to Lamberhurst to help us solve this mystery has found a paper from the Geologists' Association for 1924 which contains a geological map around the Wadhurst/Lamberhurst area. Although it doesn't cover exactly the site of the Faircrouch quarry, the facies in the immediate vicinity of Wadhurst station is shown as Upper (Sand Rock) facies. The surface of this sand rock has the ability to harden after it is removed from the quarry. Minerals in the sandstone leach out to the surface to form the crust. It is possible that early in the 1800s quarrying no longer occurred locally so that the later headstones in Lamberhurst, Horsmonden and Pembury came from different quarries with sandstone of slightly different composition.

Perhaps the earlier headstones of Wealden Sand Rock are more water retentive? Is there some inclusion such as iron/organic matter which affects the niche habitat of these stones? Is there a project here for a PhD student?

We would be interested to know whether other members have found *Imshaugia aleurites* on headstones and what the associated community is.

Our thanks to Janet Simkin for providing the *I. aleurites* records in the BLS database, Mark Powell and Mo Singh for accompanying us on a visit, Mark for

identifying the *V. fucata* and Pete Golding for the geological information about the Wealden Sand Rock.

Ishpi Blatchley
ishpiblatchley@gmail.com

Ken Sandell
95 Porter Rd, Basingstoke, Hants RG22 4JR

Myxomycetes can be parasites too!

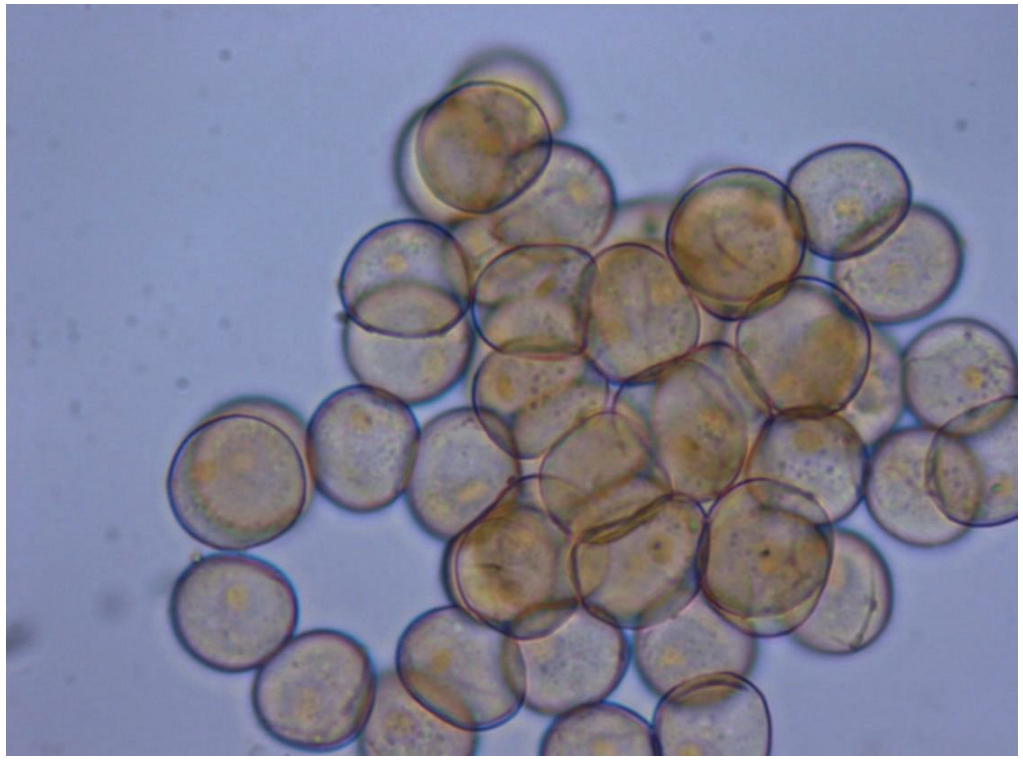
There's a lot of interest at the moment in lichenicolous fungi – both those which grow on lichens as parasites and also those that feed on decaying or dead lichen material. In fact, in many cases it can be impossible to tell which came first – the fungus or the decay.

It turns out there's a least one myxomycete that also specialises in growing on obviously decaying lichens. Generally, the belief is that this is parasitic and causes the decay. Hence its name: *Licea parasitic.*

Myxomycetes used to be known as slime moulds. They live as single-celled amoeboid-like organisms which come together in a slimy plasmodium. Under the right

weather conditions fruiting structures form which can be amazingly complicated and beautiful.

Licea parasitica forms almost spherical, dark cups with a paler lid that falls off at maturity. Inside the cup, the spores appear as perfect bronze spheres. Previous



records in the UK have been concentrated in Scotland but there is one specimen at Kew collected from Surrey. The material photographed here was growing on a *Physcia* thallus on an apple twig also from Surrey. The *Physcia* is too damaged to be assigned to either *P. tenella* or *P. adscendens*. *Licea parasitica* is capable of parasitising both algae and lichens but is always found associated with bark, never rock. This is an organism for lichenicolous fungi enthusiasts to look out for. After all, if lichenologists don't spot it, who will?

Licea parasitica

Fruiting bodies slightly flattened, brownish grey spheres, 0.05–0.20 mm diameter. A slightly paler lid dehisces at maturity. Capitulum (normally a weft of thread-like structures that is found within the fruiting bodies of myxomycetes) either scanty or absent. Spores smooth, brown, nearly spherical, 13–16 µm in diameter, with a paler, thinner wall on one side. Spore contents granular.

Photographs by the author.

Fay Newbery
fay.newbery@btopenworld.com

An introduction to the lichens of Chinchilla, Castilla-La Mancha (Spain)

I have been recording wildlife in the Sierra de Chinchilla (province of Albacete, region of Castilla-La Mancha, Spain) for over a decade now. However, it has only been about three years since I began paying attention to the lichens that thrive in this area of the Mediterranean region.

The Sierra de Chinchilla is a calcareous hill range that extends from the central part of the province of Albacete. It begins in the town of Chinchilla de Montearagón (an important spot in the past which still dominates the La Mancha plateau from the top of a hill) and connects with the province of Valencia in the east. Most of these landscapes were formed during the Cretaceous period when the area consisted of coastal bays and lagoons.

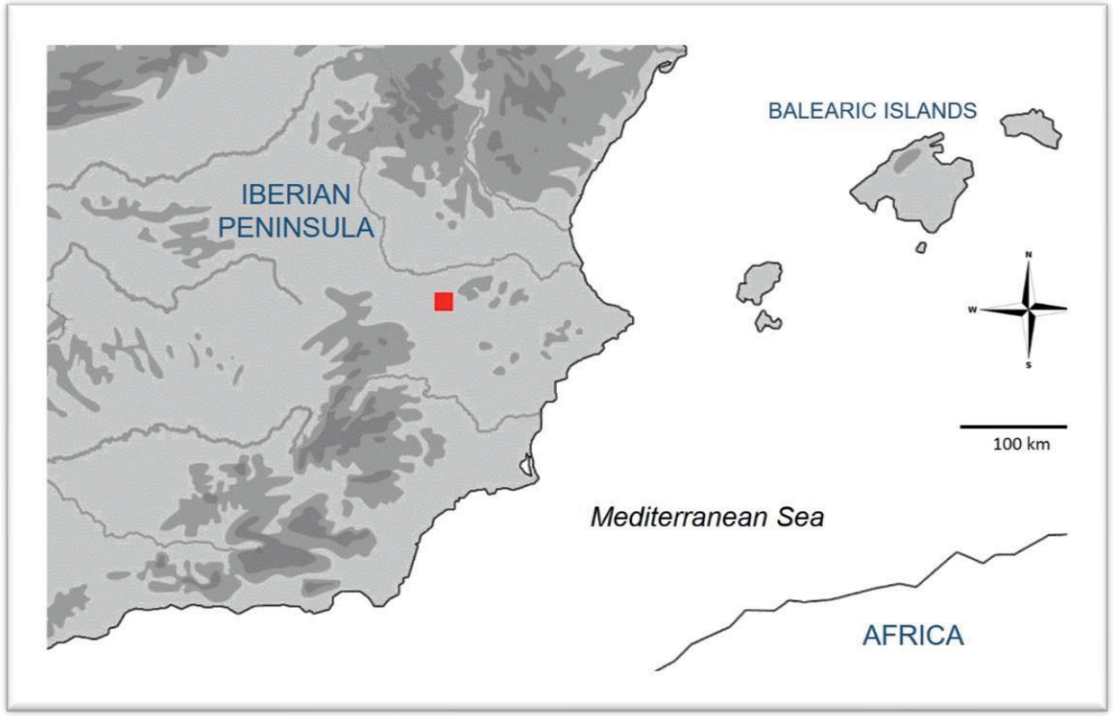


Fig. 1. Chinchilla (in red) is located in the South-eastern Part of the Iberian Peninsula, which is approximately 130 km from the Mediterranean Coast.

The continental Mediterranean climate that is found here clearly affects the flora. In winter, temperatures can go down as low as –10ºC (exceptionally even lower) whereas in the summer they can reach more than 36 ºC. In addition, the elevation varies from 820 to about 1020 metres above sea level. The landscape is very rocky. Rains tend to occur mainly during spring and autumn, whereas summer and winter are the drier seasons, and mists are common during winter.

This region is located in a transitional area between the Iberian Inner Plateau and the Mediterranean Coast. Here we find a community of plants that can be quite common in coastal Iberia, where winters tend to be mild and sunny, such as the thermophilic *Anthyllis cytisoides*. Inland, on the other hand, white landscapes due to snowfalls can be a common sight, with plants like evergreen oaks *(Quercus rotundifolia, Quercus coccifera)* or the endemic *Genista pumila* subsp. *pumila*, which is frequently found on continental hills. As a result of the all the reasons which have been presented, including the traditional uses of the land, the environment is in a very deteriorated state, and the flora mainly consists of esparto grass *(Stipa tenacissima)* formations, with certain areas covered in rosemary *(Rosmarinus officinalis)*, thyme *(Thymus vulgaris)* and some Aleppo pine *(Pinus halepensis)* plantations. In the past, this land must have been dominated by a mixed woodland of juniper, pine, evergreen oaks and other trees. These tree species have certainly become scarcer due to timber harvesting and forest fires, among other reasons. However, some small reforestation projects are currently taking place in the area in order to improve the quality of the ecosystems and to fight climate change and erosion.

Fig. 2. The typical landscape in the Sierra de Chinchilla: a mixture of Aleppo pines (in the background) with esparto grass, *Genista pumila*, *Bupleurum fruticescens*, *Thymus vulgaris*, *Teucrium gnaphalodes*, *T. capitatum*, *Brachypodium retusum,* also showing exposed limestone and clay.

Fig. 3. Another view of the area, showing a location where thermophilic plant species thrive: *Thymelaea tartonraira, Anthyllis cytisoides, Senecio gallicus, Campanula semisecta*. This place includes rocky walls where rupicolous lichens appear.

I will now introduce a general view of the most common lichen species that are easier to find in the hills of Chinchilla. First we will have a look at the most common soil lichens and then the lichens that grow on rocks. We will conclude with a focus on epiphytic lichens that grow on bush and tree twigs, branches and bark.

Lichens growing on soil

The explorer who visits the area will immediately notice the richness of soil and rock lichens that can be found. The harsh climatic and constant dry conditions result in an abundance of patches that are free of vegetation, although an interesting community of lichens, mosses and dwarf shrubs protects the soil from adverse influences.

The most conspicuous soil lichen in the area, (due to its whitish colour that turns green when humid) is *Cladonia foliacea* subsp. *endiviifolia*, formerly known as *Cladonia convoluta*. This species is just as abundant in exposed sunny slopes, where it grows between rock crevices or close to shrubs, as it is in darker forested areas where it thrives under the shade of trees, adopting a flamboyant appearance when hydrated. *C. foliacea* can commonly be found in the company of other lichen species, depending on the exposure of the soil to sunlight.

Fig. 4. *Cladonia foliacea* subsp. *endiviifolia.*

In darker pine plantations, *Cladonia rangiformis* may also grow close to *C. foliacea*. Other soil lichens that grow under the shade of pines, right on pine needles or moss beds are *Cetraria aculeata* and *Cladonia rangiformis*. *Cetraria aculeata* is rather scarce and difficult to find, although it can easily be identified by its pseudocyphellae and the spiky appendices that can be seen at the end of the lichen 'branches'. *Cladonia uncialis* has also been recorded in Chinchilla, on exposed rocks, where it grows forming bushy clusters in crevices. Other similar fruticose *Cladonia* species may appear in the Sierra de Chinchilla, as there are probably cryptic species which are yet to be identified, such as *C. humilis*.

Fig. 5. *Cetraria aculeata.*

On more exposed, drier ground other lichens (and mosses) form the so-called 'biological crust'. These tend to occur in areas where it is mainly the esparto grass that grows abundantly. *Psora decipiens*, which can be found in most arid regions all over the

world, is one of the most common here. We also find *Toninia sedifolia*, with its characteristic black and grey squamulose thallus, accompanying *Psora.* One of the most common lichen species here is *Fulgensia* sp., presumably *F. fulgida*. Its typical placodioid thallus is commonly found on rocks, soil and among moss. Some people call it 'the fried egg lichen'. All these lichen species are indicators of the lichen community *Toninion-sedifoliae*, where *Squamarina lentigera, S. cartilaginea* and other species occur. For more information about biological crusts in dry ecosystems in Spain see Maestre *et al*. (2011).

Fig. 6. *Fulgensia fulgida.*

Lichens growing on rocks

The abundance of exposed rocks results in a diversity of lichens which thrive under the Iberian sunlight. As these rocks are strongly calcareous, most lichens grow on calcicolous or neutral surfaces, most of them being photophilous. *Caloplaca aurantia* is one of the most easy-to-spot species, as its striking rounded, yellow and orange thallus can be seen from a distance. This species appears on exposed, calcareous rocks and smaller stones and it is known to grow on man-made surfaces, such as clay roof tiles.

Accompanying it, *Caloplaca erythrocarpa* might also be found, forming visible and colourful communities on scattered rocks.

Fig. 7. *Caloplaca aurantia* (orange) and *C. erythrocarpa* (white), among other unidentified species.

Another interesting species is *Lathagrium cristatum*, which grows not only on boulders and natural rock walls, but on rocky grounds as well. Its characteristic crested black thallus turns gelatinous during wet weather. This is a common but not abundant lichen in the area.

Fig. 8. *Lathagrium cristatum* showing its typical form of growth.

There are four common lichens which tend to grow on large rocks in very exposed esparto grasslands. These are: *Aspicilia calcarea*, *Lecidella* sp., *Bagliettoa* cf. *calcised*a and, of course, the common *Lecanora muralis. Aspicilia* is a very conspicuous lichen which forms big, white patches on rocks and can be seen from a distance. *Lecidella*, on the

other hand, is not as common, and I have only seen it once. *Bagliettoa* could be mistaken with *Aspicilia* although a closer look would definitely separate both genera.

Fig. 9. *Aspicilia calcarea.*

I have also spotted the rare *Romjularia lurida* growing on big rock boulders and shelters (upside down!) too. It is not a common lichen in the area, although its dark apothecia and squamulose brownish thallus can help identification. I know of only one location in Chinchilla, in one of the driest parts of the hills.

In Chinchilla (urban area), four crustose lichens have been recorded, all of them growing on concrete and even clay tiles: the common *Candelariella medians*, *Caloplaca teicholyta*, *Caloplaca saxicola* and *Diplotomma* sp. There are probably many more species which I have not identified yet.

Epiphytic lichens

In the Sierra de Chinchilla, as it has been said before, the main forested areas consist of Aleppo pine *(Pinus halepensis)* plantations. Depending on the elevation and orientation, and how close the trees are, some parts of these pine forests can remain humid for longer than others. I think this can help certain species of lichens develop better than if they were in other drier parts.

Predictably the most widespread epiphytic lichen in this area is *Xanthoria parietina* which is common on almost every type of bark. It grows abundantly on almond trees as well as on pear trees and pines, and on smaller bushes such as *Genista scorpius*. Many farmers consider it a pest and they claim "it takes energy from the orchard trees", something which is completely untrue. Along with *Xanthoria*, it is easy

to spot *Physcia adscendens* with its characteristic whitish thallus with cilia and irregular lobes. *Physcia adscendens* can even grow on clay tiles!

The most common fruticose lichens are *Ramalina farinacea* and *Evernia prunastri* which are not difficult to spot growing on pine bark and twigs. Accompanying these *Chrysothrix candelaris* grows abundantly at breast height of the trunks.

Fig. 10. *Ramalina farinacea* and *Chrysothrix candelaris* growing abundantly on *Pinus halepensis.*

On the base of certain trees, *Cladonia fimbriata* can grow abundantly (Fig.11). This species tends to be associated with mature woodlands, so its presence in the area is a sign of ecological restoration. I have found this species on detached pieces of bark and on the base of some pines, only in two locations in Chinchilla. In nearby areas, such as in the Júcar riverside, I have found it growing in *Quercus faginea* forests.

There are also two ubiquitous foliose lichens with a grey thallus that grow on the pines. These are *Physcia aipolia* and *Parmelina tiliacea* (Fig.12). With the reduction in the emission of pollutants, it is expected that these and other epiphytic lichen species will appear more abundantly.

Fig. 11. *Cladonia fimbriata.*

Fig. 12. *Parmelina tiliacea* on *Pinus halepensis.*

I will conclude with an unexpected finding from February 2019. I was walking amongst the Aleppo pines in a particularly exposed area, at an altitude of about 960 metres above sea level, when I came across a lichen that resembled *Anaptychia ciliaris*. The only problem was that this is an epiphytic lichen and I found it on the ground, so

I assumed it must have become detached from the bark of a pine. I looked up to the tree canopy and scanned the bark and branches but I could not find any other similar epiphytic lichen. Although I rapidly had it identified as *A. ciliaris* by an acquaintance, I wonder if it could belong to the genus *Heterodermia*? Further research will be undertaken to solve the mystery.

Fig. 13. *Anaptychia? Heterodermia?*

All photographs by the author.

Reference

Maestre, F.T., Bowker, M.A., Cantón, Y., Castillo-Monroy, A.P., Cortina, J., Escolar, C., Escudero, A., Lázaro, R. & Martinez, I. (2011). Ecology and functional roles of biological soil crusts in semi-arid ecosystems of Spain *Journal of Arid Environments,* **75** (12).

Guillermo Garcia-Saúco
gui.sauco@gmail

My year of gold

I am new to lichens. I have always liked the look of them, but this never went beyond 'Oh that's a lovely looking lichen!'. Then at the beginning of 2019 I saw Lichen January on Twitter and decided to have a closer look on my walks around Sussex.

By the end of the month, I had got into the habit of looking really closely at the bare branches I passed on windswept walks of the South Downs, and I had acquired a hand lens. I was quickly discovering the close-up beauty of lichens and identifying them, mainly *Xanthoria parietina*, *Ramalina fastigiata* and *Physcia* species, it has to be said, but I was gamely making attempts at the identification of others.
I knew everything I found was common and found on almost every hawthorn and blackthorn I passed on the South Downs but it was all new to me.

Then at the start of February 2019, on a wonderfully sunny day up on Devil's Dyke, I got stuck in a bramble bush trying to get out a bit of rubbish, when I looked up and saw it - *Teloschistes chrysophthalmus* – the Golden eye lichen. It was in a battered old hawthorn and it was living up to its common name as its 'eyes' were indeed glowing golden in the sun. I doubt whether I would even have seen it if the day had been dull and overcast.

As I was new to lichenology, all I thought was 'That's a lovely one!' and took a few photos. I managed to easily identify it from the internet and then after posting a photo on Twitter, I began to realise it was perhaps something special. Through the BLS social media, I met Simon and Amanda Davey, who told me about previous sightings of *T. chrysophthalmus* across the South Downs. It was never my intention to search for more Goldeneye lichen, but as I continued my walks across the downs, I gradually found more and more in trees that I have probably walked past many times before.

I like to think I got my eye in, as they say, although looking back I think there are certain things to bear in mind when searching for them: it's very much easier to find them on a sunny day as the colour really pops out, and they have always been on hawthorn that is already full of lichens. It is interesting to note that all the *T. chrysophthalmus* I have found has been growing among the other common lichens on hawthorn – *Physcia tenella*, *Physcia adscendens*, *Ramalina farinacea*, *Ramalina fastigiata* and *Xanthoria parietina*. The smallest *T. chrysophthalmus* I have found, and one of the

first I found on Wolstonbury Hill, appears to be growing out of a *Ramalina farinacea*. To date, I have never found *T. chrysophthalmus* among the larger foliose lichens also commonly found up on the South Downs, such as *Parmotrema perlatum* or *Parmelia sulcata*, and I have searched.

By the end of 2019, I had found *T. chrysophthalmus* at three locations on the South Downs above Brighton – eight at the site of an old chalk pit on the south east side of Wolstonbury Hill, two at Devil's Dyke, and eight at Castle Hill. The latter is possibly my favourite location, as there is a quite substantial hawthorn tree that has at least six in its branches – I say at least six as there is one quite high up and I suspect there are others higher in the branches.

It was wonderful finding so many in 2019, but early in 2020 things got even better. Up on Devil's Dyke, not far from where I found my first *T. chrysophthalmus*, I was staring into a hawthorn tree, when I spotted something very lettuce-like in the branches. On closer inspection it turned out to be a lichen, not part of a discarded picnic, but this

was not like any I'd ever seen before (although obviously as a beginner this wasn't really saying much). I took photos and noted down where I'd found it. There was something about it that reminded me of *T. chrysophthalmus*, but it was also so different that I dismissed the idea. After a couple of frustrating weeks on the internet, I eventually sent the photo to Simon and Amanda Davey, and they sent it to Brian Coppins for help with identification.

Meanwhile, I continued to stare at hawthorn trees, and this time on Newtimber Hill, just across the valley from Devil's Dyke, I found another two thalli. Both of these lacked apothecia and looked far more delicate than those with apothecia. I actually prefer this form – it looks rather like coral and the colouring is exquisite and much more subtle than the larger ones with apothecia that I had found previously. Then I received the news that my 'green oddity', or the piece of lettuce as I had called it, was a form of *T. chrysophthalmus* - *Teloschistes chrysophthalmus* var. *dickieanus*.

I feel incredibly privileged to have found all these forms of *T. chrysophthalmus* – especially the *Teloschistes chrysophalmus* var. *dickieanus*. I have tried to re-find this variant, but despite knowing exactly which hawthorn tree it was in and what height, only three weeks later it had completely vanished. Or perhaps it no longer looked the same. I had found it at the end of a time of exceptionally high rainfall for the South Downs and it is perhaps possible it is no longer as green and no longer the same size at all. Due to lockdown, I can no longer get up to this part of Devil's Dyke to search again so all I am left with are the photos.

Finding *T. chrysophthalmus* so soon after I started looking for lichens, could have gone one of two ways – either I would never be satisfied with anything less from each expedition or it becomes the icing on a really wonderful cake full of ingredients that are as equally fascinating and lovely even though they aren't quite as showy. It's definitely the latter and I don't think I'll be able to shake off the habit of staring at any suitable hawthorn for *T. chrysophthalmus*.

I must say thank you to Amanda and Simon Davey for their invaluable help in identification both of *T. chrysophthalmus* and of many other lichens that have puzzled me so far.

All photographs by the author.

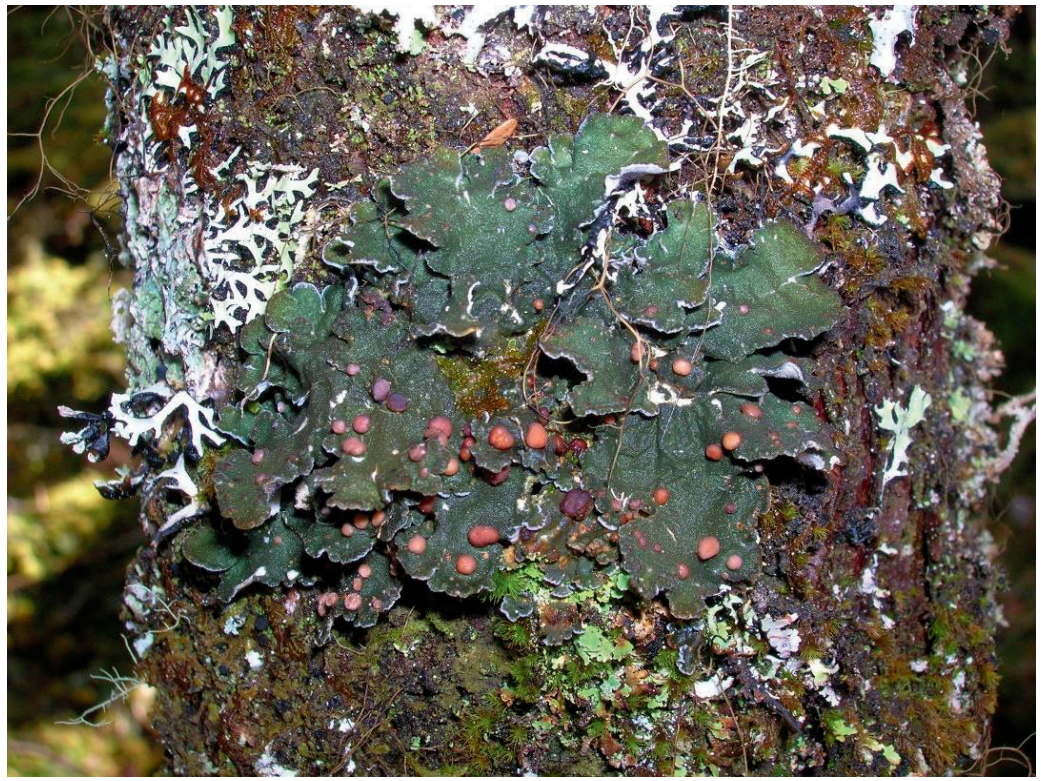
Sylvia Davidson
sedavidson@ntlworld.com

Protected areas for the conservation of lichens in Nova Scotia, Canada

Efforts toward the conservation of lichens have increased dramatically in the last several decades. Global designations of lichens by the International Union for the Conservation of Nature (IUCN) has highlighted lichen conservation as a significant issue worldwide (Rodrigues *et al*. 2006). Declines of populations of lichens and the need for conservation has seen increasing attention in the research and conservation planning community (Scheidegger & Goward 2002, Scheidegger & Werth 2009).

In Canada, the Committee on the Status of Wildlife in Canada (COSEWIC) has assessed 27 lichen species. Twenty of those assessed are on schedule one of the Canadian Species at Risk Act and are designated as endangered, threatened or of special concern (COSEWIC 2020).

Nova Scotia has approached lichen conservation with three main programs. In 1998, Nova Scotia passed the Endangered Species Act (1998) which currently lists six species of lichen as either endangered, threatened or vulnerable. Of all the species listed in Nova Scotia, ten percent are lichens (Nova Scotia Department of Lands and Forestry 2020). The second program to address lichen conservation was the development of Special Management Practices (SMP) for activities on Crownland.



. *Erioderma pedicellatum*

Initially, the lichen SMP only applied to *Erioderma pedicellatum* giving it a 100 m buffer zone within which no tree harvesting was allowed. Just recently a new lichen SMP for Crownland has been published which includes nine species with varying complexity of buffers depending on status and rarity (Nova Scotia Department of Lands and Forestry 2019).

The third program to be developed for the conservation of lichens in Nova Scotia is protected areas. In 2013, the Nova Scotia Government announced the Parks and Protected Areas Plan (Province of Nova Scotia 2013). In this Plan the Province committed to protecting 12% of the province by 2015, which has been achieved. The Province also committed to protecting an additional 1% which is in progress. The Plan included adding four new provincial parks (960 ha), 44 new wilderness areas (128,760 ha), 118 new nature reserves (34,080 ha) and expanding 12 provincial parks (3,980 ha), 31 wilderness areas (77,460 hectares), 11 nature reserves (4,620 ha).

Of those areas set aside for protection, 8 areas representing 3,405 ha were established in the last ten years entirely for the purpose conserving lichens. In addition, 5,442 ha were established partly for conserving lichens and partly for other reasons (Nova Scotia Environment 2020).

The following areas were protected for lichens or partly for lichens:

1. Framboise Interval Nature Reserve (Pending) – 250 ha of rain forest and forested wetland. At the time this area was identified for protection it had the highest density of endangered *Erioderma pedicellatum* in mainland Canada (Power et al. 2018).

2. Cross Lake Nature Reserve (Pending) – 200 ha of coniferous rain forest and red maple (*Acer rubrum*) wetlands. High population of endangered *Erioderma pedicellatum*, endangered *Erioderma mollissimum* (below left) and species of special concern *Pectenia plumbea*.

3. Toadfish Lakes Wilderness Area - 6321 ha of forest, Lakes, rivers and wetlands. Established for a variety of reasons but is known to provide habitat for endangered *Erioderma pedicellatum*. The area has had little in the way of lichen surveys.

4. Port L'Hebert (Haley Lake) Nature Reserve – 691 ha of forest and wetland. Established to protect endangered *Erioderma pedicellatum*, threatened *Anzia colpodes* and species of special concern *Pectenia plumbea*. Also present are at least ten other rare species of conservation concern.

5. Tidney River Wilderness Area Expansion (above right) – 2306 ha expansion of existing Wilderness Area for a total of 22,700 ha of forest, wetland, lakes and rivers. Protects endangered *Erioderma pedicellatum*, endangered *Erioderma mollissimum*, threatened *Anzia colpodes*, species of special concern *Pectenia plumbea* and *Sclerophora peronella.* The area also has *Fuscopannaria leucosticta* and several other species of conservation concern.

6. Northwest Brook Nature Reserve – 270 ha of coastal forest. Protects threatened *Pannaria lurida, Anzia colpodes*, species of special concern *Pectenia plumbea* and five other lichens of conservation concern.

7. Ghost Antler Nature Reserve – 1007 ha of wetland and forest. Named after the common name for *Pseudevernia cladonia,* it also hosts *Leptogium hibernicum.* At the time of designation this area was one of only a few places in North America with this species (Neily & Anderson 2010). Also present here are special concern species *Pectenia plumbea*, as well as *Leptogium subtile*, *Fuscopannaria leucosticta* and several other species of conservation concern.

8. Hectanooga Nature Reserve – 108 ha of Eastern white cedar (*Thuja occidentalis*) rich forest. This area was established to protect one of Nova Scotia's rarest ecosystems and unique plant communities. However, it is also

host to a number of at risk and rare lichen species including *Leptogium hibernicum* and *Fuscopannaria leucosticta.*

These eight protected areas help conserve some of Canada's most at risk and rare lichens and represent landmark conservation action for Nova Scotia and Canada.

References

Rodrigues, S.L. Pilgrima, J.D., Lamoreux, J.F., Hoffmanna M., & Brooks, T.M. (2006) The value of the IUCN Red List for conservation. *Trends in Ecology and Evolution* **21**: 71–76. https://doi.org/10.1016/j.tree.2005.10.010.

Scheidegger C., & Goward T. (2002) Monitoring Lichens for Conservation: Red Lists and Conservation Action Plans. In: Nimis P.L., Scheidegger C., & Wolseley P.A. (eds) Monitoring with Lichens — Monitoring Lichens. NATO Science Series (Series IV: Earth and Environmental Sciences), vol 7. Springer, Dordrecht.

Scheidegger, C. & Werth, S. (2009) Conservation strategies for lichens: insights from population biology *Fungal Biology Reviews* **23**: 55–66. https://doi.org/10.1016/j.fbr.2009.10.003.

COSEWIC (2020) Committee on the Status of Wildlife in Canada. Online at http://cosewic.ca/index.php/en-ca/ [accessed on 26 November 2019].

Nova Scotia Department of Lands and Forestry (2018) At-Risk Lichens–Special Management Practices online at https://novascotia.ca/natr/wildlife/habitats/terrestrial/pdf/SMP_BFL_At-Risk-Lichens.pdf [accessed 26 November 2019].

Nova Scotia Department of Lands and Forestry. 2020. Species at risk overview. Online at https://novascotia.ca/natr/wildlife/biodiversity/species-list.asp [accessed 13 February, 2020].

Province of Nova Scotia. 2013. Our parks and protected areas: a plan for Nova Scotia. Government of Nova Scotia, Halifax. Available online at https://www.novascotia.ca/parksandprotectedareas/plan/.

Nova Scotia Environment. 2020. Land Profiles. Available online at https://www.novascotia.ca/parksandprotectedareas/plan/lands-profiles/

Neily, T. & Anderson, F. (2010) *Leptogium hibernicum* Mitch. ex P. M. Jørg. discovered in North America *The Lichenologist* **42**:629–630 DOI: 10.1017/S0024282910000162.

Power, T.D., Cameron, R.P., Neily, T. & Toms, B. (2018) Forest structure and site conditions of Boreal Felt Lichen (*Erioderma pedicellatum*) habitat in Cape Breton, Nova Scotia, Canada. *Botany* **96**(7): 449–459. https://doi.org/10.1139/cjb-2017-0209.

Robert Cameron
Professor (Adjunct) Dalhousie University PO Box 368, Shubenacadie, Nova Scotia, Canada B0N2H0
robert.cameron@novascotia.ca

Big fleas have little fleas upon their backs to bite them…….

Thus wrote the mathematician Augustus De Morgan, in his book *A Budget of Paradoxes* (1872).

In 2019 I collected several specimens of *Usnea* from blackthorn (*Prunus spinosa*) in Upper Foyers, VC96 East Inverness-shire and brought them to the March 2020 BLS Workshop at Cober Hill, the aim being to use them to help improve / consolidate my *Usnea* identification skills.

One specimen of *Usnea subfloridana* bore obvious fungal parasites. Reference to 'Parasti usnearum' named the gall-like growths as *Biatoropsis usnearum.* These in turn were found to support pimply growths of their own. On inspection these pimples revealed themselves to be *Abrothallus usneae.*

So perhaps we should say: Big LFs have little LFs upon their backs to bite them……..

Abrothallus usneae on *Biatoropsis usnearum* on *Usnea subfloridana.* Photo © Steve Price

Reference

Parasiti usnearum, Brian Coppins, as presented at the BLS Usnea Workshop in September 2013

Steve Price
lichens57@yahoo.com

Garden lichens in the Eden valley

Prompted by the suggestion from the BLS to record garden lichens during the Coronavirus 'lockdown', I finally got round to rectifying this long-standing omission at our Eden valley garden in north Cumbria.

My list so far has reached just over 30 species and would be more if only I could resolve some of the crustose species on stone. As expected, most species proved widespread and common, nearly all on either bark or stone. The exercise did reveal a couple of interesting finds. *Peltigera didactyla* which nestles amongst the squamules of *Cladonia chlorophaea* on lawn-edge soil has very few post-2000 records in the county. It is fortunately present in juvenile sorediate form, as well as more mature thalli. An equally under-recorded species was *Xanthoria ucrainica*, on the bark of an *Amelanchier* which was confirmed by Brian Coppins who explained current issues with recording this taxon. Illuminated magnifiers are of course almost essential, especially for examining non-portable specimens on stone. My low-cost solution is an Opticron x15 LED magnifier (under £20), which I improved for close working by cutting down the perspex skirt surrounding the lens to about 8mm depth. (My records have of course been sent to Janet Simkin for adding to the BLS database.)

Peltigera didactyla; sorediate juvenile thalli on lawn edge soil

David Clarke
davidclarke6970@gmail.com

Sticta limbata in the Cullaloe Hills

On the 1st February 2020, I came across a specimen of a lichen which I was unfamiliar with on a horizontal branch in a boggy strip of land between two arable fields (NT185.882) where I had been looking for hornworts (*Anthocerotophyta*). The lichens on the trees beside this seemed fairly typical of nutrient enriched branches (*Xanthorion*) and I was not expecting anything out of the ordinary, so I was surprised to see such a prominent and different macrolichen.

Examination of the underside revealed that it was tomentose with white cyphellae so I knew it was something of interest. I suspected it was *Pseudocyphellaria* and after looking at Dobson believed it to be probably *P. norvegica* (which shows I didn't check it for chemistry).

On passing the photos with my ID to Brian Coppins I found that it was, in fact, *Sticta limbata*, which had not been seen in Fife since it had been found nearby by Greville and described in his 1824 "Flora Edinensis".

An upcoming meeting at the end of March which had no fixed location was quickly re-purposed to look for other "Greville species" in nearby Humbie Wood, but sadly this was overcome by the Covid-19 restrictions. Maybe an improvement in air quality following three months of reduced traffic will mean we shall find full blown *Lobarion* by the time we are able to reconvene!

My thanks to Brian Coppins for redetermination and additional local information.

References
Dobson, F.S. (2011) Lichens: *An Illustrated Guide to the British and Irish Species*, Richmond Publishing Co. Ltd. 6th edition.
Greville, R.K. (1824) *Flora Edinensis.* Published by William Blackwood.

Alistair Shuttleworth
a_shuttleworth@ymail.com

Foliose lichens conquer plastic surfaces

It does not have to be always rare or new lichenized ascomycetes. New colonies of well-known lichen species on anthropogenic materials are also definitely worth studying.

Particularly in times of a global pandemic situation, during which no field trips can be enjoyed, we should take the chance to observe the colonizing strategy of lichen species in the world around us. It may not be a big story, but in my opinion, it is worth examining and reporting on. So, let me therefore present the findings on an interesting example from the northern part of Austria in Central Europe.(All photos were taken by the author).

One year ago I noticed some initial thalli of a grey foliose lichen on the cover of a rubbish container behind my house, exposed to the east. This container consists of an ordinary red, synthetic material, plastic, probably polyethylene.

My examinations resulted in the identification of *Physcia caesia* which is characterized by orbicular lobes, grey coloured, sometimes with a bluish tinge in the soralia. Cortex and medulla react yellow to KOH solution and indicate atranorin. The upper surface shows numerous white pseudocyphellae (Fig. 1) and markedly convex soralia, but I could not find any apothecia, probably due to the early stage of development. The few rhizines on the lower surface enable the species to attach strongly enough to the smooth material. (See microscope image below). However, it seems to be firm enough to survive the harsh treatment of opening and closing the cover during the rubbish collection every two weeks.

Ph*yscia caesia* showing pseudocyphellae

The forces of adhesion are strong and the thalli continue to enlarge. The thalli are currently between 0.3 mm and 12 mm in diameter and are associated with small yellow thalli of *Xanthoria parietina*. One small thallus of *X. parietina* has increased now to three which are growing in close association with *P. caesia*.

Unfortunately, I could not find many further scientific references, because the reports are restricted to a few articles. Twenty six years ago Sipman (1994) discovered foliicolous species on plastic tapes in French Guyana and a study by Schroeter & Santo (1996) described lichen species on glass in the Antarctic region. A short report on lichens on plastics in a tropical rainforest was published by Lücking (1998), supplemented by stories of lichens colonizing tyres, mentioned by Hilton (2010) and examples of lichens on vehicles Powell (2013) . One article about a lichen colony on polyvinyl chloride (PVC) was contributed by the author Neuwirth (2015).

Conclusions

Given the low level of interest in the distribution of lichen species on plastics, there is still a lot to be done.In my view we must not underestimate these anthropogenic habitats in the future.The ability of lichens to survive on synthetic material – not planned by evolution – is a remarkable skill that surprises us. The secret lies in the adhesive power of the rhizines, provided the surface is not toxic.

References

Lücking, R. (1998) Short communications: 'Plasticolous' lichens in a tropical rain forest at La Selva Biological Station, Costa Ric*. Lichenologist* **30**: 287–291.

Hilton, B. (2010) IYB garden diversity: what are we finding? *Bull. Brit. Lichen Soc*. **107**: Winter 2010.

Neuwirth, G. (2015) "Zaungäste". Lichenisierte Pilze (Flechten) erschließen künstliche Lebensräume. ÖKO-L. **37**/1: 9–12.

Powell, M. (2013). Mobile lichen sites. *Bull. Brit. Lichen Soc*. **112:** Summer 2013.

Schroeter, B., Sancho, L.G. (1996) Lichens growing on glass in Antarctic*. Lichenologist* **28**: 385–390.

Sipman, H.J.M. (1994) Foliicolous lichens on a plastic tape. *Lichenologist* **26**: 311-–312.

Gerhard Neuwirth
gerh.neuwirth@gmail.com

Millennium Yew project

The death of David Bellamy at the end of last year was a reminder of his work with the Conservation Trust and his promotion of the Millennium Yew project. This was an initiative to plant yews (cuttings of ancient churchyard yews), in every churchyard in the UK. At the time the Churchyard sub-committee was concerned about the lack of thought around this project particularly the possibility that the yews would be planted in inappropriate places such that, when fully grown, they would shade out ancient and interesting lichen communities.

A letter was written in 1997 to the Conservation Foundation expressing our concerns but I am not sure what their response was. In 1999 a further letter was written to all Diocesan Advisory Committee secretaries asking that an advisory note about the planting of these yews would be circulated to all churchyards planting yews:

"Although the yew trees when distributed will be very small, it is worth remembering that they will grow and hopefully live for many centuries. Yew trees produce intense shade and few plants survive under the canopy of these trees, Churchyards are of great importance for the conservation of lichens growing on stonework and, especially in lowland England where few natural outcrops of rock occur, no other habitat is as important. Most lichens require plenty of light and few can survive on gravestones and walls under the shadow of trees. When deciding where to plant your Millennium Yew, please site it so that its shade when mature will not fall on lichen-rich stonework; in particular try to avoid shading the south-facing wall of the church and the oldest memorials. Planting trees in herb-rich grassland should also be avoided."

There was a good response from several dioceses.

Last year on a visit to East Garston churchyard in Berkshire I found a Millennium Yew – a very pathetic specimen but it is the only one I have come across! I would be interested to know if a church near you planted a Millennium Yew and if so has it survived, is it planted in an appropriate place?

Ishpi Blatchley
ishpiblatchley@gmail.com

Montane Lichen Group update

For those of you who attended the AGM in Edinburgh you will be aware of the success of our first meeting on Ben Alder and its associated hills. If you did not attend that meeting there is a report in this Bulletin. The Ben Alder meeting was a great success and we managed to fulfil all our objectives.

Now on to our next adventure: I have had discussions with a few individuals about possible locations. I am currently considering the area between Beinn Dearg and Seana Bhraigh, West of Ullapool. Like Ben Alder the area is remote but much less visited. I have had contact with estates in the area and one estate might be able to accommodate our group in a remote location not dissimilar to what we had for Ben Alder.

The plateau area in this region is well known for late snow lie. There are huge corries which I suspect have not been recorded and some of the valleys have oak and pine woods. There is a lot of rewilding interest in the area and some water courses are subject to hydroelectric power schemes, hence plenty to do.

I have my eye on accommodation that will fit 10 to 12 people and looking at September 2021 for the duration of a week. I was thinking about this coming September but the lock-down put pay to that!

There is also the possibility of shorter and smaller group meetings to the Lakes and North Wales once the lockdown is out of the way. Andrew Hodgkiss is keen for us to visit the Lakes and Tom Harrison keen to explore the tops in North Wales. If interested in any of the above meetings do drop me a line.

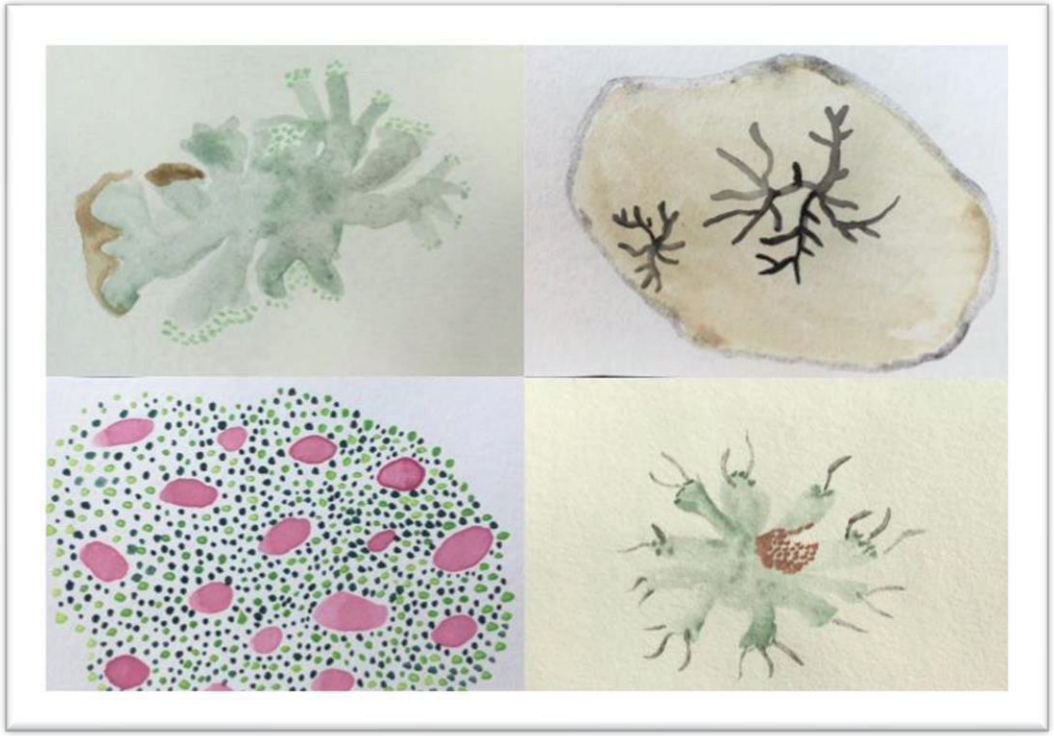
Graham Boswell
togooutdoors@hotmail.com

My dear fellow BLS members!

I am embarking upon a project for which I would like to solicit your assistance.

On the many field trips, forays and workshops I have participated in, I have been enthralled and mesmerized by the stories shared by lichenologists - both the stories of the natural histories of lichens and the stories of adventures that lichenologists go on in order to study them.

So, I am starting to write a book. The tentative title is "Toadskins, Pixie Cups and Old Man's Beard: Stories of Lichens and the Lichenologists Who Study Them." I would love to compile stories from as many of you as are willing to participate! I know that this is a very ambitious project that will take years to complete but I figured this was as good a time as any to begin.



If you are willing to participate, I would love to hear the stories of how you got into lichens, of the adventures you have been on in pursuit of lichens and the stories of the lichens themselves. These are the stories that don't end up in scientific papers or in guides and keys - they are the stories that result from years of wandering among, staring at and getting to know lichens.

Please send your stories or contact me to schedule an interview at:

Thank you!

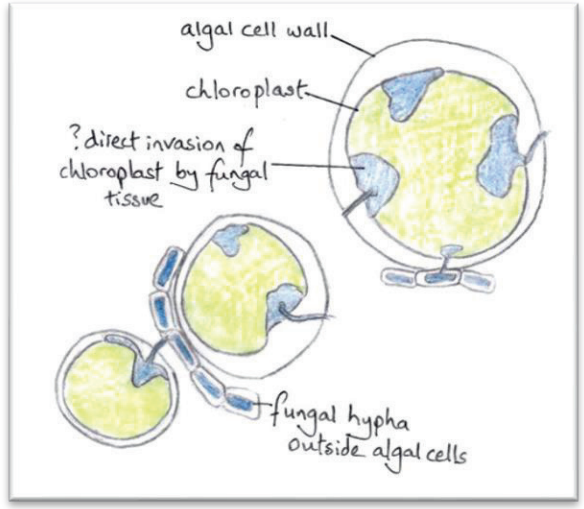
Klara Scharnagl
klara.scharnagl@gmail.com

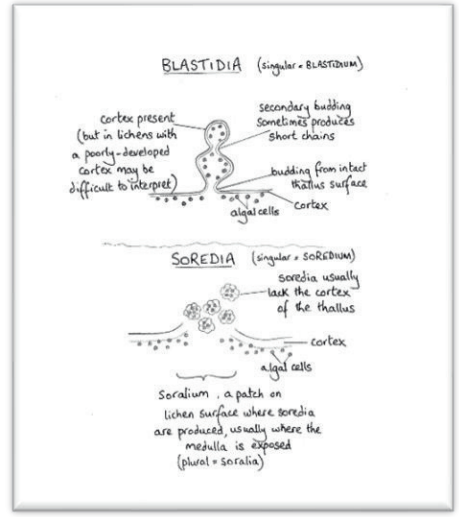
Report on social media

Twitter followers: 3420 (up from 2212 a year ago)
Facebook likes/follows: 960/1080

This is a strange report to give, as we are currently in weird times with the lockdown. Numbers on social media continue to increase, but interaction has gone down as people have been going out and about a great deal less and home schooling or coping have dominated the hearts and minds for the time since March.

However, there has still been activity. Mark Powell has continued to bring the science of lichen identification alive with an instructive series of Tweets comparing the detail of species often mistaken for each other. His popular line drawings (see below)

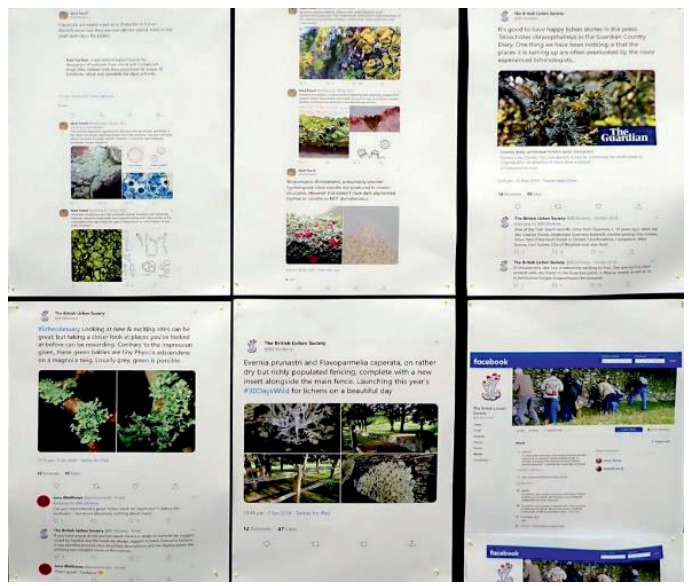




Copyright M. Powell.

help many young naturalists all over the world to understand the microscopic details of lichens.

We issued a challenge for people to look out for the 10+1 lichens that they could find locally, as part of an appeal at the AGM for local records to be added to the Society's database.



In January the AGM was well attended and members were able to enjoy an exhibition of selected Tweets and Facebook posts curated for us by the talented Heleen Plaisir. It was great to see what she had put together and to see the interest shown by attendees at the Royal Botanic Garden's Herbarium venue. None of us realised that it would be such a long time before we could all meet again and that makes the event particularly valuable.

Amanda Davey
adavey@tiliaservices.co.uk

Searching for *Bryoria tenuis* in Sutherland

In early October 2019 I was lucky enough to participate in the LAFF (Lost and Found Fungi) expedition to Sutherland. The primary purpose of the expedition was to re-find the rare lichen *Bryoria tenuis*. This lichen's only known UK site is the summit rocks of Ben Loyal, about six miles from the northern coast of Scotland. The LAFF funding had a mentoring aspect: the trip was organised to support younger lichenologists to gain experience in the field and learn from the veterans. The group consisted of Joe Beale, Paul Cannon, Brian and Sandy Coppins, John Douglass, Jenny Ford, Caz Walker, Maddie Geddes-Barton and April Windle. We were joined for some of the trip by Dave Genney and Andy Cross.

We arrived on Saturday at an old fishery building, tucked away in a little inlet to the south-east of Durness. Over dinner on the first evening (after our week's food and a battalion of microscopes had been unloaded and stowed away) we examined images of *Bryoria tenuis*. The UK record for *B. tenuis* comes from a single collection made by R.W.G. Dennis in 1954. The images we had were from the voucher specimen at Kew, which had deteriorated to some extent in storage. Jenny however had undertaken some advanced scouting of Ben Loyal and provided some very helpful samples of *B. fuscescens* and *B. bicolor*. With these for comparison we clarified the identifying characteristics of *Bryoria tenuis*: it is much less frequently branched than *bicolor*, and the branch angle is usually much more acute. The most obvious difference from *fuscescens* is the lack of soralia (which are very rarely absent on the latter). Another diagnostic feature is that the ultimate branches and lateral spinules are attenuated and threadlike. Paul also briefed us on the other rare montane lichens we might encounter on the hill. He was particularly eager that *Thamnolia* populations should be studied carefully for lichenicolous fungi – in particular for a gall-forming parasite of *Thamnolia vermicularis*, *Thamnogalla crombiei*. That evening the Northern Lights were forecast. Before bed, Joe and I climbed the hill behind the house and saw a magnificent shooting star.

Bryoria tenuis, voucher specimen at Kew

Thamnolia vermicularis on Ben Loyal

The first day was spent exploring the rocky headland behind the house (a lichenological ice breaker and warm up for the more novice lichenologists). The highlight of the day was the exploration of the shoreline. Here, in a sheltered bay, we found a remarkable Lobarion community (*Lobaria virens, Lobaria pulmonaria, Sticta fuliginosa, Nephroma laevigata, Pectenia atlantica*) which most of us had only encountered before in woodlands. The lichens we found here were indicators of the extreme oceanic climate of the region we were exploring, characterised by high humidity, low summer temperatures, and high rainfall. There was also a particularly exciting moment for April right at the end of the day. After seven hours of lichen hunting, she sat down for a well-deserved cup of tea. Unfortunately she chose a particularly gloopy patch of soil. Looking to find the source of the horribleness on her trousers, she happened to notice the little cyanolichen, *Protopannaria pezizoides*. Growing on an opening of peaty soil, in

a Lobarion community on the brink of the Atlantic Ocean, this odd little lichen, living in such an unusual environment, was a special and exciting thing to see.

Ben Loyal

The Ben Loyal expedition was scheduled for the second day of the trip. The mountain party consisted of Joe, John, Caz, Andy, April and me, and we were accompanied to the lower slopes by Paul. Briefed on mountain safety and mountain equipment, we set out under John's responsible guidance. Some of us began to feel a bit less confident about John's guidance however when, part way through examining a particularly bright-yellow specimen of *Alectoria sarmentosa* subsp. *sarmentosa* at the first summit, he unveiled his mountain attire. The balaclava is probably a useful piece of clothing (when appropriately assembled), but it inevitably adds something of a Lock Stock and Smoking Barrel feel to the mountain environment - the transformation from professional lichenologist to cockney hitman was almost instantaneous… And then we almost all broke down in hysteria, especially John!

Don't mess with this lichenologist...

Ben Loyal is a very striking mountain. It rises 764m from a flat boggy landscape, almost at sea level, to a series of rocky summits, dominating the Kyle of Tongue beneath. According to Peter Drummond (*Scottish Hill Names*) its name comes from the Old Norse, *laga fiall*, meaning 'law mountain'. Drummond suggests it may have functioned as a place for people to gather to hear legal proclamations. The Norse tradition was for chiefs to build alt.ars to Thor on hill tops. Then, after submitting prayers to the gods, they would hear complaints, settle disputes and issue edicts. This tradition was strong in Iceland but was also practised in the Norse areas of North West Scotland. Ben Loyal is by far the highest of the Scottish hills to be associated with such law giving, but the etymology is very believable when you see its castle-like summit tors which definitely look as if they ought to be associated with some form of pagan ritual.

Geologically, the mountain is formed of an intrusive igneous rock called syenite, similar to granite but with very little quartz. In general, this is a very slow weathering rock, so it supports calcifuge vegetation. But in places, more calcareous areas of syenite occur, possibly associated with crush zones. Ben Loyal is the only mountain of this

rock type in the north of Scotland. It is this, together with the climatic regime of extreme oceanicity and severe winds resulting in areas of wind eroded ground at relatively low altitude, which make Ben Loyal so interesting to lichenologists (Gilbert & Fox 1986).

Ben Loyal, summit tors

Most of us found the ascent of Ben Loyal taxing. It was very boggy underfoot and we ended up taking a rather steep ascent route. It was worth it though for the extraordinary castellated summit rocks, pitted with pools carved out by rainwater. The western faces of these tors rise vertically from the summit peaks, towering over the mountainside, which falls away beneath. The syenite stone has been weathered by the harsh environment to strange, rounded shapes, with many grikes and channels. These shelter a profusion of lichen growth. The sheer abundance in this habitat is difficult to describe. Whilst ostensibly we were searching for *B. tenuis*, it was difficult not to be distracted and just completely awestruck by the communities of lichen we found growing there. In the words of Oliver Gilbert and Brian Fox (1986): "This dense growth was multilayered with adpressed species such as *Allantoparmelia alpicola* and *Fuscidea cyathoides* being overgrown by abundant *Hypogymnia physodes, Parmelia omphalodes, Platismatia glauca, Sphaerophorus globosus* and the moss *Dicranum fuscescens.* Lodged in this 'turf' of lichens with a subfruticose habit were *Cladonia coccifera, Cetraria aculeata, Ochrolechia frigida, O. tartarea, Pseudevernia furfuracea* and *Sphaerophorus fragilis,* with *Lepraria incana* in the gaps." The flora is further enriched by "a fine development

of 'alectorioid' species, *Alectoria nigricans, A. sarmentosa* subspp. *sarmentosa* and *vexillifera, Bryoria bicolor, B. chalybeiformis, B. fuscescens, B. lanestris* and *Pseudephebe pubescens*". Gilbert and Fox go on to say that the climate, in combination with the rock formation, makes this complex community possible – maritime air close to saturation point constantly blowing over the ridge, frequent low cloud, vertical faces which encourage upcurrents of moist air For me, it was incredibly humbling and mysterious to stand at the base of the chimneyed rock and observe the lichens clothing the nooks in their luxuriant growth and strange colouration. It was like standing at the foot of a facade of a medieval cathedral, but at the top of a mountain and in the mist and wind with the ground falling away beneath.

April and Maddie, summit of Ben Loyal, looking at *Psoroma hypnorum*

Despite all the excitement, we had yet to find what we had come for. It was not until at the end of the day that April, exploring these summit rocks, found what she thought might be an example of *Bryoria tenuis*. However, in the cold and low light of the summit environment, it was very difficult to establish whether it wasn't just an underdeveloped *Bryoria fuscescens*. We collected some just in case but were not particularly hopeful. By this point the night was closing in and the windswept summit was becoming very inhospitable, but we still had some difficulty in extracting ourselves from this austere

and mysterious place. We had managed to gather April from her loving farewell to the *Psoroma hypnorum* (which she had known from a faded specimen in the Natural History Museum), but we were unable to descend from the bealach without Joe taking a final look at the lovely arctic-alpine lichen *Solorina crocea*. This then initiated a further search of this exposed habitat (further *Thamnolia* populations were checked for galls: all looking in excellent healt.h. Time was regained however through the Lichenological Mountaineering Club's bespoke descent method: we slid down the mountain side on our bottoms over the slippery woodrush. We got back to the road by nightfall and walked out across the lowland heath in the dark. It wasn't until the following morning that Brian and Paul confirmed that we had indeed found our target species: the *Bryoria* sample from the summit tors was a *tenuis*!

April looking up at the summit rocks

Solorina crocea (left) and *Psoroma hypnorum* (right)

The Ben Loyal summit party: Andy, April, Joe, Caz and John

Evidence of a successful search – voucher of *Bryoria tenuis* refound on the summit of Ben Loyal

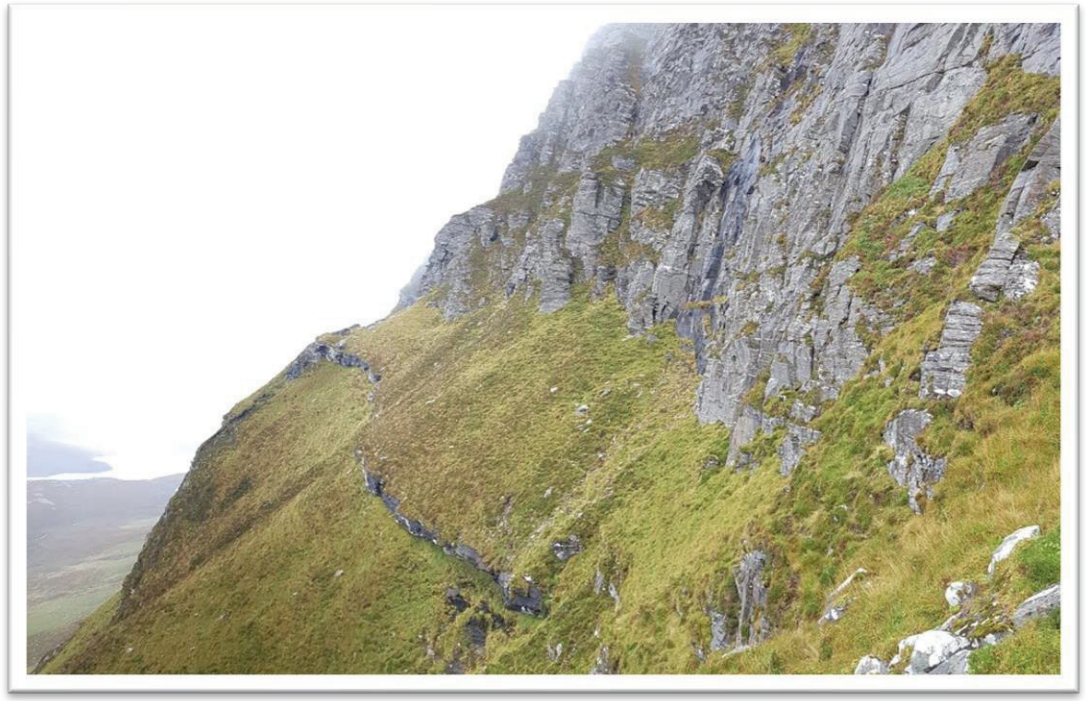
Ben Hope

The other major expedition of the trip was to Ben Hope. On this day we split into two groups: Joe, John, Dave, April and I aiming to search the upper parts of the mountain and perhaps reach the summit, whilst Caz and Paul decided to do a more thorough search of the lower parts of the mountain. The day began inauspiciously with an early morning, blind corner encounter with a 4x4. It was driving at a ridiculous speed towards us down the single-track road that led to the mountain. Only John's indefatigable cool and careful adjustment of our car prevented a collision – this might otherwise have been quite a different write-up…

The major lichenological interest of Ben Hope is a 3km long rocky escarpment which dominates the western side of the mountain. At 600m in places, it constitutes one of the major precipices in Scotland. Most of it is very exposed and difficult or impossible to access but parts of it can be explored from the gentler southern slope of the mountain. Most of this cliff is formed of an acid, granite-like, Precambrian rock type, Moine granulite, which is of relatively low lichenological interest. However, it also contains bands of a calcareous rock, hornblende-schist, whose basic chemistry, in combination with its exposed location, provides habitat for some very rare and interesting lichens.

Whilst Gilbert and Fox took three days to explore this part of the mountain on their 1984 expedition, we had only a few hours, and, with a quite extreme wind-chill factor, and the ease of getting lost among the perilous cliffy ledges, our search was not as fruitful as theirs seems to have been.

Ben Hope – summit rocks



Ben Hope –western rocks (with hornblende-schist insertion)

Maddie, April and Dave, ascent of Ben Hope

Nevertheless, it was still exciting to see some of the rarer upland and montane lichens on this part of the mountain. As we began to ascend we found *Coccotrema citrinescens* on the side of a large outcrop of rock, a lichen we didn't find on Ben Loyal. It was also good to see *Cetraria islandica* subsp. *crispiformis* (distinguished from subsp. *islandica* by the rather narrow, more tubular lobes), *Platismatia norvegica* (with broader less indented margins than *P. glauca*) less frequent however than on Ben Loyal, some very fertile *Ochrolechia frigida* and *Cladonia zopfii* (like *C. uncialis* but podetia darker green, more decumbent). Another particularly memorable montane lichen from this region was the lovely *Allantoparmelia alpicola* with its strange lurid olive-green colouration and its closely appressed

overlapping, entangled lobes. Here it was locally frequent, in contrast with Ben Loyal where we only found it on a single boulder. It was also interesting to see more of some of the fruticose species we had been looking for on Ben Loyal, *Bryoria fuscescens* and *Alectoria nigricans*. These however were much less frequent than on Ben Loyal.

Platismatia norvegica

The weather was very cold and windy and, after a few hours searching the western escarpment, we decided to head for the summit. We searched the wind eroded areas of bare soil in the gently sloping fellfield region for terricolous lichens, and again checked *Thamnolia* populations for signs of distortions or galls. We finally reached the summit, which was relatively flat and very windswept, with outcrops of smallish granulite boulders. It was cold and the mist and mizzle were a bit disorienting, but we did find some quite jolly acid rock lichens which, although relatively typical for this kind of environment, were new at least to me.

Lunchtime near the summit

Ochrolechia frigida

I remember, in particular, John and April finding *Cetrariella commixta*, a chestnut-brown, foliose lichen with very elongated branching lobes that form a close mat to the rock surface. In this mountain habitat it seemed to be exclusively confined to little indentations of the rocks, perhaps to shelter from to wind. It was also really nice to see the little shell-like squamules of the basidiomycete lichen *Lichenomphalia hudsoniana*, which John found just over the crest of the summit, sheltering amidst an outcrop of rocky boulders. I had seen the striking lemon-yellow mushroom fruiting bodies of *Lichenomphalia alpina* on the Ben Loyal day but had not really understood that they were associated with a lichen (only about 0.3% of basidiomycetes are lichenised according to Nash 2008).

Again, as on Ben Loyal, we experienced some difficulty leaving the hill (i.e. leaving the lichens). John was feeling undernourished (not all of his daily 200g chocolate + two flasks cocoa had quite been consumed) and we kept losing lichenologists; at one point, as the night closed in and we were still at 800m, it felt like every time we tried to make progress at least one of the party was lying on the floor having succumbed to the charms of a new lichen. We ended up descending the steep rocky path with the last remnants of the light.

Reaching the car in the gloom and calm of the autumn evening, after a long day out on the hill, felt pretty pleasing.

Ben Hope, evening descent

Lowland surveys

The rest of the trip was given over to lowland explorations and microscope work. Of particular interest was an area of calcareous grassland on a striking little promontory into Loch Eriboll called Ard Neackie. April showed me a characterful yellowish-grey terricolous lichen, *Squamarina cartilaginea*. On the same day, Andy, Caz and I explored some interesting woodland on the lower slopes of Creag Shomhairle, Strath Beag, with a huge decrepit old hazel growing along a gully. It had three grand, contorted moss-covered limbs, growing from a steep bank, and a number of shooting uprights.

We found a good number of oceanic species living on this one tree, including: *Sticta fuliginosa, Sticta limbata, Nephroma laevigatum, Normandina pulchella, Leptogium burgessii, Lobaria pulmonaria, Lobaria virens, Pannaria rubiginosa* and on the smooth bark *Thelotrema lepadinum* and *Pyrenula occidentalis*. On one very windy afternoon we visited a sand dune near Durness, An Fharaid. Whilst the lichen communities were not particularly exciting here, we did discover one potential candidate for *Peltigera neckeri*. April and I had settled down on the ground to run through the *Peltigera* key and attempt to clarify the difference between *canina*, *rufescens* and *membranacea*. When we looked around for a good example of *membranacea* to compare to my sample of a young

rufescens, we noticed an oddly leathery *Peltigera* specimen. April was convinced that none of the *membranacea* she had encountered had had such a texture.We also saw little cracks on its surface, which seemed to correspond with the description of *neckeri* in the guide. The sample we took back was later confirmed by Brian. On the last day we visited a birch-rowan woodland growing along the secluded banks of the river Hope. I particularly remember walking back up the river with Paul and April in the beautiful gentle autumn sunshine and wading into the shallows of the water to see a really nice specimen of the freshwater lichen *Dermatocarpon luridum* – frilly, bright-green, shiny and slimy.

River Hope on our final day

As well as all the lichens, one of the great privileges of the week was sharing in the thoughtfulness and perceptions of the rest of the group. I remember in particular: driving back to the house with Sandy and her noticing that the waves were hitting the shore with such violence that they were spouting up above the headland; Joe spotting a golden eagle climbing the contours of Ben Hope, then us all stopping to watch it fly almost parallel to where we were walking; April seeing a sliver of light which looked like a crack in the clouds and turned out to be the sunlight reflecting off a lochan far down beneath us in the glen and then us stopping at the brink of the Western cliffs of the mountain to watch the landscape gradually emerge from the - as John put it - ethereal cloud; Andy pointing out the least willow to me which, when we looked, was

camouflaging a beautiful *Solorina crocea* - the intense orange of its autumn colour only just failing to disguise the lichen's even more intense colouration; Caz showing me mountain avens, *Dryas octopetala*, growing almost at sea level near a lime kiln at Ard Neackie; Paul sitting down by a river (where Sandy later saw two otters) in the peaceful autumn sunshine and lucidly explaining lichen reproduction to April, Caz and me; John finding a cave to shelter for lunch on Ben Hope and reflecting on the generations of mountain-goers who would probably have sheltered there before us. I'm not sure I would have noticed or understood any of these things if I had been in Sutherland on my own. Beyond this it is the striking generosity and kindness the other lichenologists that I will most remember – that and the stories - lichen and non-lichen over the kitchen table, the amazing food which Sandy so generously coordinated, Brian's chutneys, pickles and dedication to recycling, my first ventures into microscopy and going to bed with stomachs hurting we'd laughed so much.

The last evening, Maddie, April, Caz, John, Joe, Brian, Sandy and Paul

References

Drummond, P. (2010) *Scottish Hill Names.* Scottish Mountaineering Trust.

Gilbert, O.L. & Fox, B.W. (1986) A comparative study of the lichens occurring on the geologically distinctive mountains Ben Loyal, Ben Hope and Foinaven. *Lichenologist* **18**: 79–93.

Nash, T.H. (2008) *Lichen Biology.* Cambridge University Press.

Acknowledgements

Thank you to Paul Cannon, Sandy Coppins, Dave Genney, Joe Beale and John Douglass for the images. The survey was supported by the Esmée Fairbairn Foundation, through the Lost and Found Fungi project.

Maddie Geddes-Barton
mgeddesbarton@gmail.com

BLS lichen survey meeting at Moccas Park 16th & 17th May 2018

Introduction

Over two days in May 2018, the BLS carried out its first survey meeting, a new style of meeting concentrating on detailed survey of a single site of high conservation interest.

As part of the Back from the Brink, Ancients of the Future project, Plantlife requested that the British Lichen Society carry out a lichen survey of Moccas Park NNR, Hereford. This was intended to update the knowledge of the lichen assemblage of the NNR, concentrating on the veteran tree habitat, but examining other lichen habitats as well. As well as recording and mapping the lichen interest, advice on the conservation value of the NNR for lichens and any observations on management were requested.

The meeting was attended by Nicola Bacciu, Juliet Bailey, Graham Boswell, Barbara Brown, Paul Cannon, Heather Colls, Shirley Hancock, David Hill, Alastair Hotchkiss, Geof Howe, Dave Lamacraft, Mark Powell, Steve Price, Maxine Putnam, Neil Sanderson, Paula Shipway, Tim Wilkins and Ray Woods, with Mark Powell and Neil A. Sanderson leading the lichen recording. Thanks are due to Steve Price and Dave Lamacraft for organising the meeting and to the Natural England warden Bob Silverwood for welcoming us to the NNR.

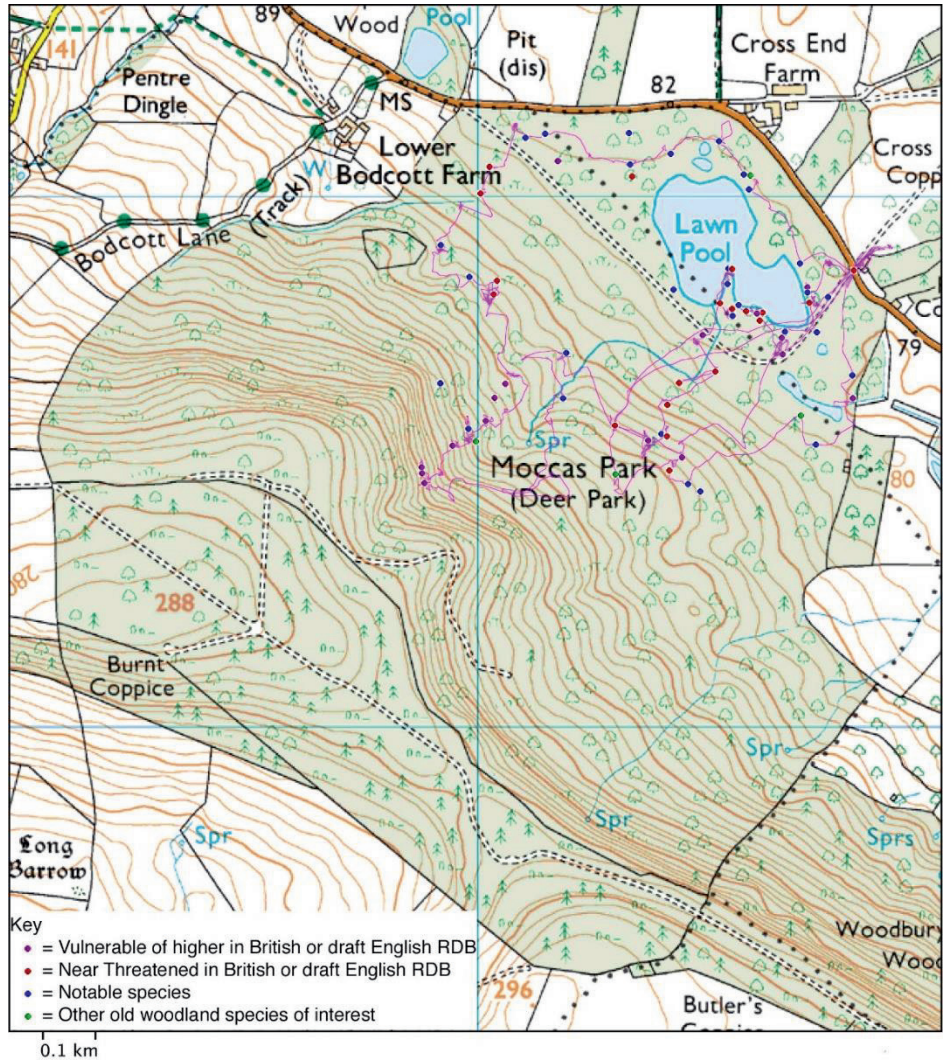
A detailed report was produced (Sanderson, 2019), which can be downloaded from *https://www.britishlichensociety.org.uk*.

Methods

Survey methods: in the time available it was not possible to visit all of the park. The survey strategy was to make transects across the park taking in both known areas of interest and examples of the main habitats within the park (Map 1). The woodland at the very top of the wood was not visited, but this is unlikely to be of high interest for lichens.

All species were recorded to at least a six figure grid reference when first encountered, but with rare species rerecorded when encountered in a new 100m grid square. In addition, a selection of species, which included all national Threatened or Near Threatened RDB species, the more easily recorded Notable species and some other species of ecological significance, was systematically mapped using GPS receivers to record all occurrences. It was not possible to so record all national Notable species, as some are not easy to record systematically.

Map 1 Moccas park survey route & conservation value



The magenta line shows the route taken by Neil Sanderson.

Data analysis: the indicator lists and rarity and threat assessments follow the updated SSSI selection criteria for lichens (Sanderson et al., 2018). The most appropriate indicator list for the Welsh Marches is the Southern Oceanic Woodland Index (SOWI) (formerly the New Index of Ecological Continuity, SOWI). This is designed for oceanic temperate woodland south of the Scottish Highlands. In this area, it is recommended that a score of 20 is used as the threshold for considering sites for SSSI status (Sanderson et al., 2018).

Also relevant to this site is the Pinhead Index (Sanderson et al, 2018). For this the total number of recorded Pinhead species in the genera *Calicium*, *Chaenotheca*, *Chaenothecopsis*, *Microcalicium*, *Mycocalicium* and *Sclerophora* is used as an index score. This index measures the quality of ancient tree and dead wood habitat, sites scoring

more than ten can be regarded as being of national importance and this is also the threshold for considering sites for SSSI status.
Sanderson et al. (2018), also details a new scoring system for rare species: Threatened, Near Threatened and Notable (TNTN) scoring. This scores 4 for a Vulnerable or higher threatened species, two for a Near Threatened species and 1 for a Notable species. Unlike the earlier scoring system in Hodgetts (1992), this scoring system is only applied using strictly defined lists of species, which are characteristic of a specific habitat to form an ecologically coherent assemblage. Where they exist, habitat indices are given priority by Sanderson et al. (2018), so rare species scoring is not used for woodland. One habitat present at Moccas Park, however, is covered by TNTN assemblage scoring: the assemblage "Old Trees of Open Places".
This covers well-lit veteran trees in parkland, farmland, waysides and hedgerows. SSSI quality sites are expected to score 16 or more.

The GPS data recorded for the systematically surveyed species was mapped to visualise the distribution of conservation interest and different assemblages within the park.

Abbreviations used in the text and tables are listed below:

RDB = Red Data Book Species, (CR, EN, VU & NT Species)
EN = Endangered Red Data Book species
VU = Vulnerable Red Data Book species
NT = Near Threatened Red Data Book species
DD = Species listed as Data Deficient in the Red Data Book
Nb = Notable species (NR, NS, IR or S41 species of conservation interest not RDB NT or higher)
NR = Nationally Rare
Nb (NS) = Nationally Scarce regarded by Sanderson et al. (2018) as being of significant conservation interest
(NS) = Nationally Scarce lichen not regarded by Sanderson et al. (2018) as being of significant conservation interest
[NS] = Nationally Scarce lichenicolous parasite, likely to be very under recorded
IR = International Responsibility species
S41 = Section 41 species

Survey Results

Totals: the combined assemblage of lichen and associated fungi recorded since 1968 is given in the species list in Sanderson (2019). A total of 301 taxa has been reliably recorded from the NNR; of these 284 were lichens, 17 lichen parasites and 5 associated non-lichenised fungi. A total of 203 taxa was recorded in 2018, of which a remarkable 60 taxa were new to the NNR; 30 of these were new records to Hereford and one taxon was new to Britain. The totals are listed in **Table 1**.

Table 1
Total Numbers of Lichens Recorded from Moccas Park NNR 1968 – 2018

Moccas Park NNR Biodiversity Measures	1968–2002	2018	Total
Total taxa	222	203	301
Southern Oceanic Woodland Index	12	19	22
Pinhead Index	7	8	8
Endangered	1	1	1
Vulnerable	3	5	5
Near Threatened	2	6	6
Notable	8	20	24
International Responsibility Species	7	15	16
Section 41 species	5	9	9

The 2018 survey did not record more taxa overall than were recorded by the previous surveys, but the measures of lichen biodiversity were all higher in 2018, other than for the single Endangered species. This partly reflects the concentration of the survey on habitats of highest conservation potential with less effort spent on more commonplace habitats, as well as greater lichen expertise.

It is important to remember that the 2018 survey was not a comprehensive survey of the NNR but a transect through the main habitats. Further lichen interest certainly occurs. From the results of the survey, however, it is possible to give an indication of the distribution of interest within the NNR (**Map 1**). The northern most edge has no Threatened species and a higher proportion of veteran trees of no interest. Beyond this there is a belt of open parkland about Lawn Pond, which is very rich in Threatened and Near Threatened lichens, along with local high densities of trees of high interest. Above this the fringe of the denser pasture woodland is rich with the woodland itself also supporting trees of high interest. The distribution of interest within the upper woods requires much more work, but the more sheltered areas appear to be the richest.

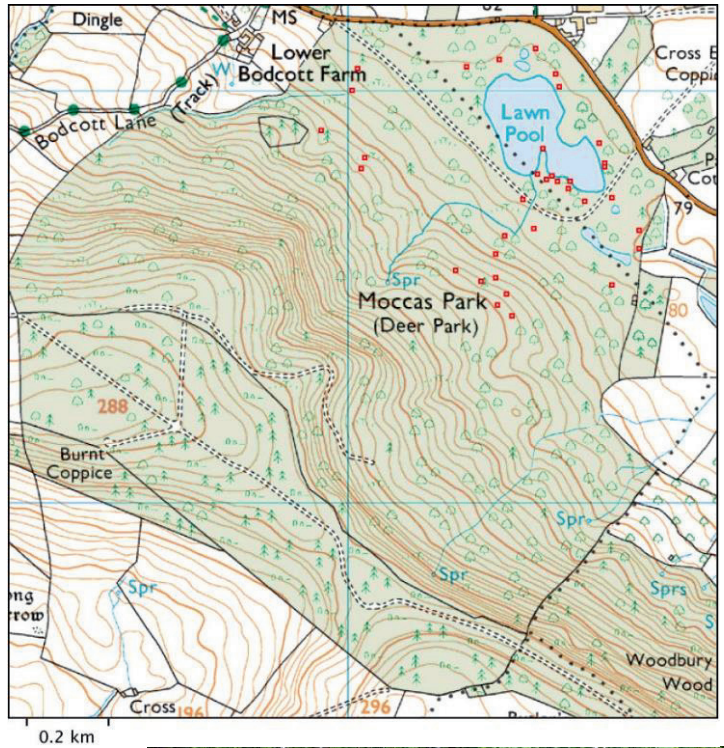
Lichen assemblages: although the park supports a rich lichen assemblage, there are large numbers very lichen-poor veteran trees. The large number of largely barren big ancient oaks was especially noticeable. These are trees that lost their lichen interest due to past acidification and have not yet been recolonised. Among these are scattered veteran trees with lichen interest, with younger post-mature veterans noticeably less degraded that the oldest trees. These can vary from trees with a few relic patches of veteran tree specialist lichens to trees with a high cover of nearly intact communities of conservation interest. The impact of acidifying pollution was most likely proportional to the buffering capacity of bark of the individual trees. Notable absences are specialist old woodland species of acid bark and the most sensitive leafy species of base rich bark. The former lost their habitat alt.ogether; the trees they grew on had poorly buffered bark that was already acidic and subsequently became too acid to support any interest. The latter lichens, such as *Lobaria* species, are very sensitive to sulphur dioxide and can be lost even where well buffered bark remains base rich. Within these constraints there are some impressive local survivals of assemblages of

crustose lichens of mesic, base rich and dry bark along with some other habitats. The considerable interest on lignum could potentially represent a degree of colonisation as well as survival.

The species of conservation are nearly all found on veteran trees or dead trees. Communities on younger trees are mainly unremarkable. Twig communities suggest high ammonia levels and three "CENNAD Lichen Ammonia Monitoring" forms were filled in for oak trees near Lawn Pond. These indicated that the twigs on the trees by the Lawn Pond were "Very N polluted". This is supported by the APIS website, which gives the background level at 1.51 µg m^3 (well over the critical level for lichens of 1.0 µg m^3) for the Moccas area. These ammonia levels obviously vary across the site with some ammonia sensitive species, such as *Usnea* species, surviving in sheltered areas but also with assemblages indicative of very high nitrogen levels along the northern edge. As discussed above an impact on trunk communities was also visible in the most ammonia polluted areas to the far north. The trunk communities are less obviously damaged by nitrogen to the south, even by Lawn Pond. However, such communities are slow growing and show considerable inertia to change. Twigs in contrast have a fast turnover of species and provide an early warning of increasing nitrogen pollution.

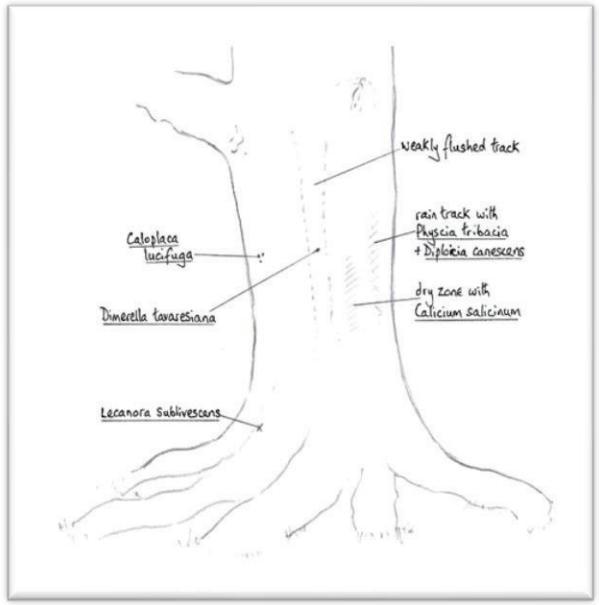
The lichen species of conservation interest are found in several habitats, which distinct distributions within the park. The communities or assemblages contributing to the lichen interest are described below. The most widespread habitat of interest is mesic to base rich bark assemblages on parkland trees (Mature Mesic Bark Community, *Pertusarietum amarae*) (**Map 2**) with dry bark on veteran trees (Ancient Dry Bark Community *Lecanactidetum premneae* and Dry Bark Community *Calicietum hyperelli*) also widespread (**Map 3**,). More localised interest was found on lignum (Dry Lignum Community, *Calicietum abietinae* & Damp Lignum *Cladonietum coniocraeae*) (**Map 4**), Base Rich Bark Woodland Community (*Lobarion pulmonariae* & *Agonimion octosporae*) (**Map 5**) and Wound Tracks Assemblages (**Map 6**).

Mature mesic bark community (*Pertusarietum amarae*): found on mature and less acidic bark on the wet side of mature trees in sheltered conditions. This community occurs widely through the countryside on older trees but additional ancient woodland species, or veteran tree specialists, can occur in older woodland stands and in parks. A total of 10 species of conservation interest were recorded from this habitat, of which nine were recorded in 2018. These were predominately southern sub-oceanic species, which are characteristic of veteran trees, mainly oak in well-lit but sheltered locations in typical of parklands and woodland edge sites. The assemblage is likely to have had is core area of distribution in the English midlands but has been largely lost from this area due to acidifying air pollution. The assemblage survives on the fringes of this area where pollution was lowest, especially in eastern central Wales and the Marches (Sanderson, 2014). Many are also rare in continental Europe.



Map 2 Mesic – base rich parkland assemblage

A remarkable rich post mature oak with *Caloplaca lucifuga*, *Dimerella tavaresiana* (*Coenogonium tavaresianum*), *Lecanora sublivescens* and *Lecanora quercicola*.
Photo © Neil Sanderson.



Drawing of trunk of showing locations of rare species (© Powell 2018)

The most widespread of these sub-oceanic species at Moccas Park is *Lecanora sublivescens* NT (NS/IR/S41), which is tolerant of more acidic bark, and was recorded at 19 locations in 2018. This is a large population and, given the 2018 survey was a transect, the actual population could be among the largest in Europe. The other species, *Caloplaca lucifuga* VU (NR/S41) and *Lecanora quercicola* VU (NS/IR/S41, require bark at the more base rich end of the range of the habitat. They are much less frequent here, both being found at two locations each. A further special species is *Pertusaria coronata* Nb (NS), a more northern sub-oceanic species that is very rare south of the Scottish Highlands and was new to the park and Hereford in 2018, which was also found at two locations in 2018. This is easily overlooked as the common *Pertusaria coccodes* but as was demonstrated can be easily picked out by its orange UV fluorescence. A notable absence from Moccas was *Caloplaca herbidella* s. lat.; both the species included in this aggregate are strongly base demanding so are likely to have been lost from the park if they occurred.

One of the most important finds in 2018 was *Dimerella tavaresiana* (*Coenogonium tavaresianum*). This is an internationally rare southern Atlantic–Mediterranean lichen, which has recently been found in Britain. Here it occurred in base rich seepages with species rich mesic bark communities on two veteran oaks. In addition Paul and Neil both collected what looked like a small *Rinodina roboris* on an ash tree. This proved to be the true *Rinodina exigua*, which was new to Britain, and an important addition to the assemblage of sub-oceanic lichens found at the park. The park also supports a large population of the veteran tree specialist *Rinodina roboris* var. *roboris*.

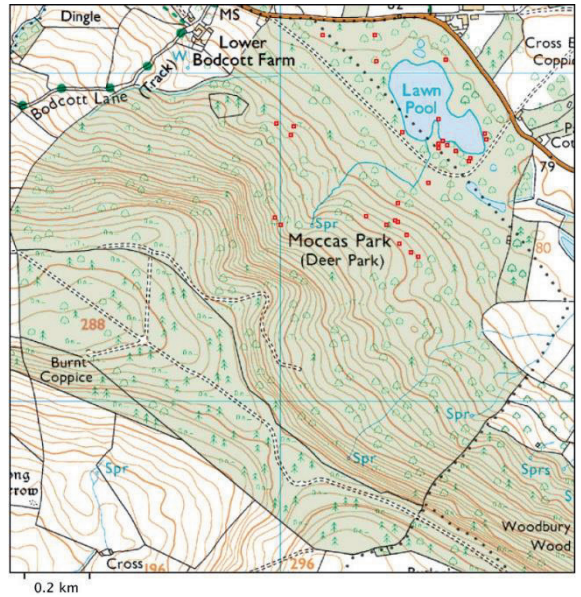
A total of 35 trees was waymarked as supporting systematically recorded species characteristic of this habitat (**Map 2**) in 2018. The assemblage is prominent on veteran oak, and also two ash trees, around Lawn Pond and on the open lower slopes. The habitat is absent from more wooded upper slopes, where trees are too shaded. It is also rare along the north western edge, where ammonia pollution is highest.

Dry bark assemblages on veteran trees (*Lecanactidetum premneae* & *Calicietum hyperelli*): this habitat occupies the dry sides of ancient oaks and rarely other tree species. The most distinctive community, the Ancient Dry Bark Community (*Lecanactidetum premneae*), is strongly associated with veteran oaks and old growth woodland. It is a southern oceanic community, typical of warm moist, but not too wet, areas. The lichens grow on bark only occasionally reached by stem flow and mainly

absorb water from dew. It is internationally very rare but is widespread in southern Britain (James et al., 1977), and the community is of great conservation importance. This is a community of highly stressed habitats and it is not species rich but supports a high proportion of species of interest. On very dry bark here, this community grades into more general dry bark communities, including the Dry Bark Community (*Calicietum hyperelli*). This is more typical of drier less oceanic climates but can also support some specialist species, especially pinhead fungi.

A total of 15 species of conservation interest have been recorded from this habitat and related dry bark habitats, of which 12 were recorded in 2018. Of the characteristic Ancient Dry Bark Community species, *Cresponea premnea* Nb (IR) is still widespread and was recorded at 20 locations. Other species that are characteristic of this community were only found on single trees in 2018. The oceanic species *Lecanographa lyncea* Nb (IR), its near obligate parasite *Milospium graphideorum* Nb (NS) and *Sporodophoron cretaceum* Nb (IR) were all found on a single tree. On a second tree the more sub-oceanic *Lecanographa amylacea* VU (NS/IR/S41) was found. This was sterile here but was tested with the new K/UV spot test, devised by Mark, and was negative indicating it lacked confluentic acid. *Lecanographa lyncea* with confluentic acid has a mauve fluorescent K spot test. Fascinatingly, *Buellia violaceofusca* NT (NR/IR/S41) thalli were associated with *Lecanographa amylacea* on this tree forming a chimera. *Buellia violaceofusca* is now known to be a *Trebouxia* algae form of *Lecanographa amylacea*, a *Trentepohlia* lichen (Ertz et al., 2018). The *Trebouxia* morph was new to southern England and confirmed locations of *Lecanographa amylacea* are rare in the south.

Map 3 Dry bark assemblage



More generalist dry bark species (Dry Bark Community, *Calicietum hyperelli*) also occur including *Bactrospora corticola* Nb (NS), a northern and eastern species new to the park, *Calicium salicinum*, *Chaenotheca chrysocephala* and *Chaenotheca trichialis*. Two species, *Chaenothecopsis nigra* Nb (NS) and *Protoparmelia oleagina* Nb (NS) which are more typically found on lignum, both nationally and in the park, were found on bark on single trees.

A total of 30 trees, all oak, was waymarked as supporting systematically recorded species characteristic of this habitat (**Map 3**) in 2018. The habitat is widespread, being found around in particular Lawn Pool and the edge of the denser pasture woodland on the mid slope, extending upslope into the pasture

woodland and the poorer northern fringe. The greatest diversity was on the fringe of the denser pasture woodlands in the mid slopes. The assemblage is rich but lacks several typical species that do occur in less polluted old growth stands to the west in the Marches and east central Wales. The limited number of very rich trees but widespread poorer trees with single species of interest, especially *Cresponea premnea* is typical of sites damaged but not destroyed by acidifying pollution.

In nutrient enriched habitats the Ancient Dry Bark Community is displaced by the Nutrient Rich Dry Bark Community (*Arthonietum impolitae*). It is a species poor community dominated by *Pachnolepia pruinata* (*Arthonia pruinata*), sometimes with *Dendrographa decolorans* (*Schismatomma decolorans*). This occurred locally in the park especially to the north.

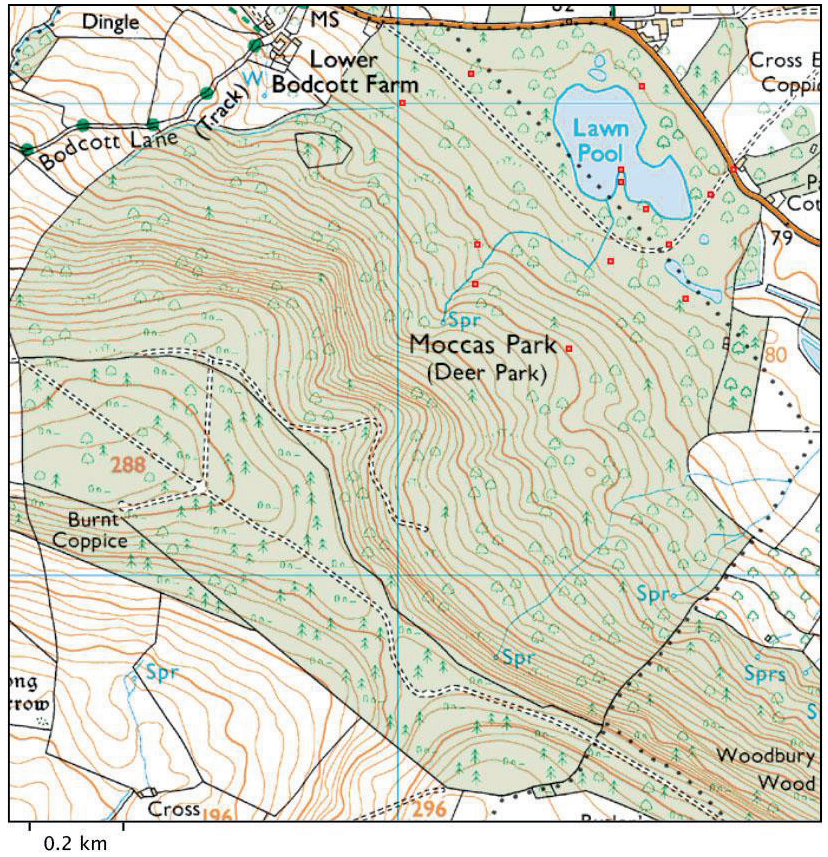
Dry lignum (*Calicietum abietinae*) & damp lignum (*Cladonietum coniocraeae*) communities: a variety of species poor communities develop on bare wood (lignum), both on live trees and dead trees. Where large pieces of dead wood or very dry bark on old trees occur, as is typical in old growth stands, uncommon specialist species can occur. The most widespread community (Damp Lignum Community) is found on damper dead wood and stumps with the *Cladonia* species dominant. This habitat is found beyond old growth stands and is visually striking but not usually of great interest, however, it can support species of interest. A more specialist habitat occurs on acid dry wood on vertical surfaces of either standing dead wood or the sides and undersides of very large fallen logs (Dry Lignum Community). Characteristic lichen species include several pinhead lichens and fungi. Species of interest can also be found on old worked timber, on gate and park pales as at Moccas Park.

A total of eight species of conservation interest had been recorded from this habitat and related dry bark habitats, of which all were recorded in 2018. Damper wood locally supports *Cladonia parasitica* new to the site, but most species of interest are found on drier standing, propped or large bulks of dead wood. A significant discovery made in 2018 was the finding of *Buellia hyperbolica* VU (NR/S41) on three fallen logs, new to the Marches. This is a rare southern Atlantic–Mediterranean lichen recorded from a few parks and pasture woodlands in southern England and Wales. Other new species included the northern *Lecidea nylanderi* Nb (NS), only recently recorded from England, *Chaenothecopsis nigra* Nb (NS), the rarely recorded *Ochrolechia arborea* NT (NR) and *Protoparmelia oleagina* Nb (NS). The latter two were also recorded on the gate on the northern edge of the park. Mark Powell pointed out that the gate was richer than the posts and pales and suggested that lower slug access to the gate was the reason for this.

A total of 14 locations was waymarked as supporting systematically recorded species characteristic of this habitat (**Map 4**) in 2018. These were confined to the lower ground around Lawn Pond and the lower slopes up into the fringes of the denser woodland in mid slopes. At the locations of interest, nine were fallen trees or limbs, three were on exposed lignum on live trees and one was a gate. All but one of the locations involved oak lignum, the other being chestnut lignum. An interesting feature is the high proportion of species new to the site found in 2018 for this habitat. This has also been observed in other old growth sites acidified by past pollution. Some of this increase is probably partly due to increased skill among lichenologists but lignum

habitats do genuinely appear to be improving faster than other veteran tree habitats. The specialist species may be, of necessity, faster colonising than bark species, due to the more ephemeral habitat represented by dead wood.

Map 4 Lignum assemblage



Base rich bark woodland community (*Lobarion pulmonariae* & *Agonimion octosporae*): a very rich habitat best developed on veteran trees with base rich bark. Typically found on bark that is flushed by base rich water from above. The habitat is best developed in intermediate light conditions. The requirement for high pH bark has made the community vulnerable to bark acidification caused by air pollution and some of the most sensitive species have declined drastically over the 20th century.

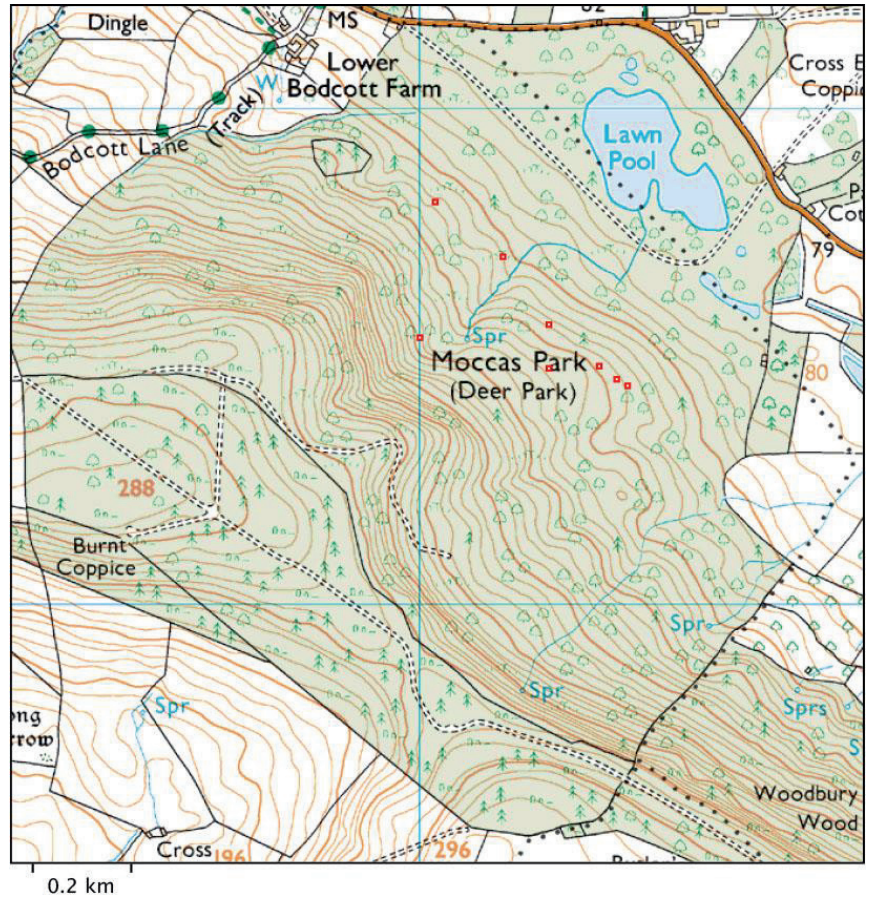
The habitat shows a strong north to south gradient, with classic large leafy species dominant with fewer crust forming species in the north west (*Lobarion pulmonariae*), while to the south west the habitat is much richer in crust forming species (*Agonimion octosporae*). The latter community replaces the *Lobarion* in shaded humid woods in oceanic Mediterranean and southern Atlantic climates. In southern Britain the *Agonimion octosporae* is something of a "deep forest" assemblage and is best developed in large, little disturbed, old growth woodlands.

Massive oak at SO34029.42809 which was found to support perhaps the greatest diversity of notable lichens found on any tree at Moccas Park, with *Agonimia flabelliformis*, *Agonimia octospora*, *Lecanographa lyncea*, *Pachyphiale carneola*, *Porina coralloidea*, *Schismatomma cretaceum*, *Thelopsis rubella* and *Thelotrema lepadinum*. Photo © Powell.

A total of 11 species of conservation interest has been recorded from this habitat, of which 10 were recorded in 2018. None of these were characteristic large leafy species; these have all being lost to past acidifying pollution. The assemblage of crustose species includes quite few southern species, including *Agonimia flabelliformis* Nb (NR), *Agonimia octospora* NT (NS/IR), *Opegrapha corticola* Nb (IR), *Porina coralloidea* Nb (NS/IR) and *Thelopsis rubella*. These are all edge of range species here, especially *Agonimia octospora*, which was new to the Welsh Marches, while *Porina coralloidea* is very rare in this area. Other more generalist species recorded in 2018 were *Arthonia vinosa*, *Bacidia biatorina*, *Pachyphiale carneola*, *Piccolia ochrophora* and *Thelotrema lepadinum*. The last is not a typical base rich bark species but is rather a characteristic acid to mesic bark woodland species. At Moccas it was found only once, growing on the edge of a base rich bark woodland community. It was the only survival of an element of the park lichen assemblage, acid to mesic woodland lichens, otherwise almost entirely lost to acidification.

A total of eight trees was waymarked as supporting systematically recorded species characteristic of fully developed example of this habitat (**Map 5**) in 2018.

Map 5 Base rich woodland assemblage



The distribution of the systematically mapped species is very restricted, with recorded trees confined to the denser pasture woodlands in the mid to upper slopes. This is the most sheltered humid area within the park; the optimum habitat for this assemblage. All trees were oak trees, with one exceptional tree supporting much of this interest. This remarkable tree had a full developed southern oceanic woodland base rich bark assemblage. The other oaks had more limited relic assemblages.

Wound and rain tracks assemblages: wound tracks and well-developed rain tracks on base rich trees can support a series of specialist species that tend to occur in single species stands. This assemblage was best developed on veteran elms and has obviously declined in recent years. Many characteristic species are now Red Data Book and S41 species due to the total loss of veteran elm in the lowlands. Old elms at Moccas Park do not appear to have been a very significant feature when the first surveys were carried out, but *Bacidia incompta* was recorded from elm. Other tree species can also support wound tracks specialist lichens, with ash, maple and horse chestnut found to be significant in 2018 at Moccas Park.

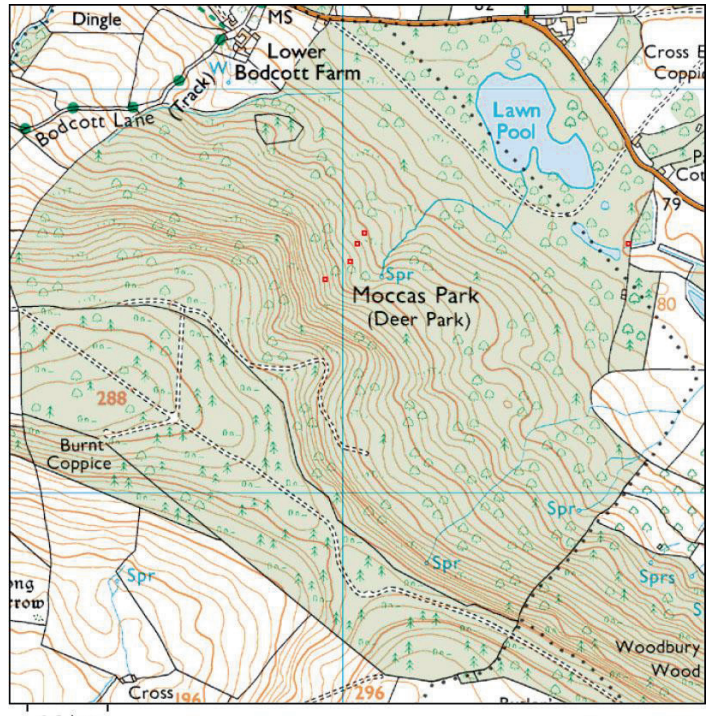
Aesculus hippocastani (SO340.425) [MO058] with a wound track caused by the scar of a missing branch. This wound track supports a large colony of *Bacidia incompta*. Photo © M. Powell.

The exposed roots of the *Aesculus hippocastani* shown above. The roots produce little potholes which form temporary pools with overflows, reminiscent of those found on old *Fagus* trees. Specimens of a tiny cyanolichen turned out to be *Leptogium subtile* rather than its rarer look-alike *Collema fragrans*. Specimens of *Porina* collected from such exposed *Aesculus* roots were considered likely candidates for *P. byssophila* in the field but proved to be *P. borreri*.

Photo © Powell.

A total of seven species of conservation interest had been recorded from this habitat, all of which were recorded in 2018. Three particularly significant species were recorded in 2018: with *Bacidia incompta* VU (NS/S41) and *Gyalecta flotowii* NT (NS) were refinds and *Ramonia dictyospora* NT (NS/IR/S41) was new to the site. *Bacidia incompta* was found two maples and two horse chestnuts in the gully below the limestone outcrop on the scarp, which is a sizable population for Britain. *Ramonia dictyospora* was found on one of these maples, while *Gyalecta flotowii* was found on an ash low down in the north east of the park. The gully also produced *Leptogium subtile* and *Porina borreri* also new to the site. More widespread species noted in 2018 were *Caloplaca phlogina* and *Strigula taylorii*.

Map 6 Wound track assemblage



This is an impressive assemblage with, locally, enough wound prone trees to maintain sustainable populations of threatened or near threatened species. The distribution of systematically surveyed species (**Map 6**) shows the concentration of wound prone maple and horse chestnut in the gully on the scrap. There were other horse chestnut stands that were visible but not visited during the 2018 survey and these could also be significant for wound track specialists.

Rocks: there are also small outcrops of sandstone and impure limestone at the head of the gully in the scarp which add to the lichen diversity. The assemblage is not outstanding, except for the occurrence of two rare mainly northern species *Gyalecta ulmi* EN (NR/IR/S41) and *Pertusaria amarescens* Nb (NR). The latter is a little known species, which was recorded once in 1968 and has not been since. The other species, *Gyalecta ulmi*, is in contrast a distinctive species, with a well-documented history from the site. Nationally the species was known from old elms and limestone outcrops. The former habitat has been completely lost, considerably reducing the species distribution. Only two sites are known to survive in England on limestone, the other in northern England.

In 2018 the *Gyalecta ulmi* population was photo monitored by Steve Price. It occurred on three outcrops and was abundant and growing strongly on one but with poor growth on the others. A fourth population on the south side of the gully noted in 2003 by Bryan Edwards was not reached in 2018. The strong population was still well lit while the two weak populations were heavily shaded hawthorns, but the strong population was threatened by maturing hawthorns growing on top the outcrop.

In comparison with 2003 monitoring photographs taken by Bryan Edwards, the strong population had substantially increased in extent since then. Of the two weaker colonies one had only expanded to a limited extent and the other had contracted since 2003.

Nature conservation value & management

Value of lichen assemblage:

Our survey demonstrated that the NNR qualified as an SSSI for its lichen interest on three separate grounds:

- The highest SOWI (Southern Oceanic Woodland Index) score in the Area of Search (National Character Area 99 Black Mountains and Golden Valley) (22 for all data and 19 for 2018, with a regional SSSI threshold of 20)

- A high score using TNTN (Threatened, Near Threatened & Notable) scoring for the ecologically coherent assemblage "Old Trees of Open Places" (33 for all data and 31 for 2018, this easily exceeds the SSSI quality threshold of 16)

- Ten of the species recorded in 2018 could be assessed as having populations that qualify for SSSI site selection in their own right as Threatened lichens in Britain (Sanderson et al, 2018). These are either Vulnerable or higher threatened species, or Near Threatened species that are International Responsibility species (*Gyalecta ulmi*, *Bacidia incompta*, *Buellia hyperbolica*, *Caloplaca lucifuga*, *Lecanographa amylacea*, *Lecanora quercicola*, *Agonimia octospora*, *Buellia violaceofusca*, *Lecanora sublivescens* and *Ramonia dictyospora*). Of these, all certainly qualify as having the only or largest viable population of a species the Area of Search. *Gyalecta ulmi* is also the largest population of a species in England as may be the *Lecanora sublivescens* population.

Other species are also important as rare in England, *Gyalecta flotowii* NT (NS) and *Pertusaria coronata* Nb (NS) or are newly recorded from Britain but likely to be Threatened: *Dimerella tavaresiana* (*Coenogonium tavaresianum*) and *Rinodina exigua*.

The lichen assemblage at Moccas Park has been badly damaged by past acidifying pollution and is currently menaced by elevated ammonia levels. However, the park still has an interesting relict woodland assemblage along with nationally important "Old Trees of Open Places", at least nine rare specialist species of veteran trees with nationally important populations in the park along with a nationally important population of *Gyalecta ulmi* EN (NR/IR/S41) on the limestone outcrop.

Distribution of interest in 2018:

The distribution of interest recorded in 2018 is shown on Map 1. The transect found reduced interest along the northern edge, thought to be due to the high levels of ammonia here, but there were frequent trees of interest in all the other areas looked at. Large areas of Moccas Park, however, were not looked at and many of these can be expected also to have trees of great interest.

Management of the parkland at Moccas Park: in general management within the park was positive for the nationally important lichen assemblage. The intensity of use has been reduced within the park and there is ongoing tree planting creating a new generation of trees. As an important landscape park, rewilding to the extent that natural regeneration becomes the main method of tree replacement across the park, is likely not to be practical.

There were a couple of small but significant issues noted within the park. The first was already being dealt. with by Natural England, who had stopped the practice of piling dead wood up against the trunks of veteran trees and were removing the existing piles.

In addition there is an evident need for some felling or crown lifting of the hawthorns around the limestone outcrops to conserve the nationally important *Gyalecta ulmi* population. The *Gyalecta ulmi* population on the rock face that has remained open has prospered and greatly expanded since 2003. The more shaded populations have performed poorly and one has noticeably contracted.

External pollution from sources off the NNR has been the dominant factor threatening the lichen assemblage for at least a century. National policy has greatly reduced the impact of acidifying pollution from sulphur dioxide but ammonia pollution from intensive agriculture is now a considerable menace. Trunks along the northern edge are clearly impoverished by ammonia pollution, while twig assemblages through a wider area indicate high levels of nitrogen pollution. If at all possible local high point sources of ammonia should be reduced or eliminated and land use on adjacent land reduced in intensity.

Thoughts on the new style of survey meeting

The new style of survey meeting proved a big success; pointing several experienced lichenologists at a potentially important site that had not been surveyed for some time produced impressive results. The survey has raised the profile of the lichen assemblage of Moccas Park NNR and proved it to be of much greater national significance than was previously thought. The combination of the advances in lichenology in the last two decades and the concentrated attention of several experts proved very effective. Although not a primary aim of the meeting there was still time for a fair amount of tuition and exchange of ideas between the attendees, and the less experienced lichenologists made an important contribution, recording widespread habitats such as twigs, while the experts concentrated on the habitats richest in rare species.

References

Ertz, D., Guzow-Krzemińska, B., Thor, G., Łubek, A. & Kukwa, M. (2018) Photobiont switching causes changes in the reproduction strategy and phenotypic dimorphism in the *Arthoniomycetes*. *Scientific Reports* **8**: 4952, DOI:10.1038/s41598-018-23219-3

Hodgetts, N. G. (1992) *Guidelines for Selection of Biological SSSIs: Non-Vascular Plants*. Peterborough: JNCC.
James, P. W., Hawksworth, D. & Rose, F. (1977) Lichen communities in the British Isles: A preliminary conspectus. In: *Lichen Ecology* (ed. M. R. D., Seaward) 295–413.
Sanderson, N. A. (2014) *Geranium Firedot* Caloplaca herbidella *Dossier: Survey of Sites 2012 to 2014*. A report by Botanical Survey & Assessment to Plantlife International.
Sanderson, N. A. (2019) *Lichen Survey of Moccas NNR, Herefordshire*. A report by the British Lichen Society to Plantlife International.
Sanderson, N. A. Wilkins, T., Bosanquet, S. & Genney, D. (2018) *Guidelines for the Selection of Biological SSSIs. Part 2: Detailed Guidelines for Habitats and Species Groups. Chapter 13 Lichens and associated microfungi*. Joint Nature Conservation Committee 2018: Peterborough <jncc.defra.gov.uk/page-2303>

Juniper Hall Meeting - Diary
30th October – 3rd November 2019

List of Attendees
Judith Allinson, Juliet Bailey, Ishpi Blatchley, Paul Cannon, Heather Colls, Ginnie Copsey, David Hawksworth, David Hill, Fay Newbery, Steve Price, Maxine Putnam, Ken Sandell, Paula Shipway, Janet Simkin, John Skinner, Henk Timmerman, Paul Tyers, Mäaike Vervoort.

Accommodation for this meeting was provided at the Juniper Hall Field Study Centre at the base of Box Hill. The centre was to be closed for four and a half months for refurbishment immediately after our visit although I am sure that this planned closure was not as a direct result of our impending visit there! We found the staff very helpful and enjoyed the meals although on the first evening it was a tight squeeze to fit round the tables as we were sharing the dining room with a large group of students.

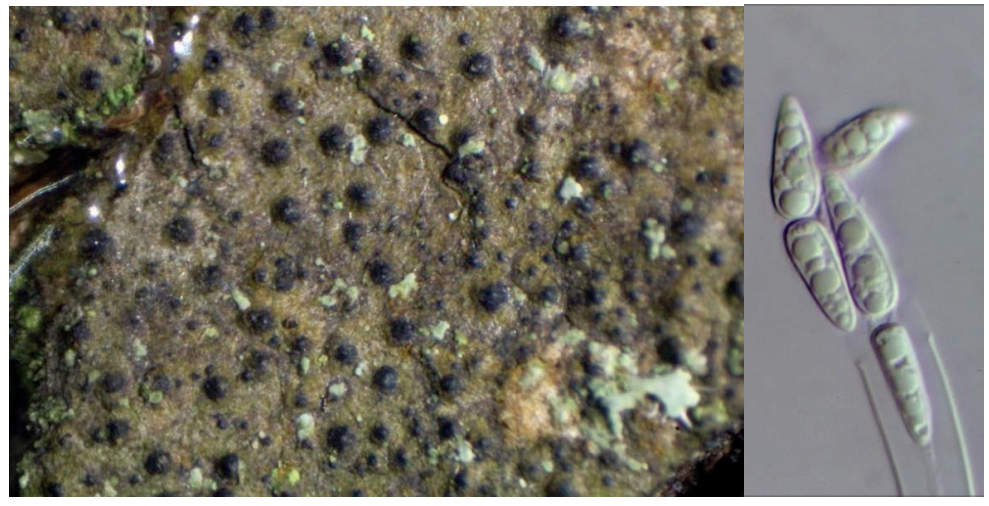
The objective of the meeting was to visit and record lichens from several sites, including National Trust properties, within the Surrey Hills Area of Outstanding Natural Beauty. Most of the sites selected had no, or just a few, previous database records and we were given the challenge to improve on the 40 records made by Francis Rose at Leith Hill Place exactly 50 years ago to the day!

Wednesday 30th October
The meeting was scheduled to begin during the evening but with the promise of good weather for the first day or two, I decided to leave home early and have an afternoon preview of Polesden Lacey Estate. This National Trust property consists of a large Edwardian house, formal gardens and extensive parkland which together provide more than enough lichen habitats for two visits.

Starting with a walk around a site is helpful for getting a feel for the various lichen habitats before making any records but because of the half term crowds I kept away from the busier areas. I spent a while in an area to the west of the formal gardens and was pleased to find *Rinodina sophodes* on a cherry tree twig. Further exploration revealed *Strigula taylorii* on the trunk of a field maple tree and *Phylloblastia fortuita* on ivy leaves in an overgrown area. Although evaluated as Nationally Scarce *S. taylorii* is frequently recorded in the southern counties where it can be picked out from some distance by an often-extensive dark brown thallus; closer inspection reveals a mix of very small perithecia and pycnidia. Checking sections from the perithecia under a microscope reveals distinctive ascospores which split into two parts.

Common lichens were recorded from the sunken garden and a speedy walk to an ash tree on the edge of the parkland to the east of the house resulted in records for *Pertusaria pertusa*, *Pyrrhospora quernea*, *Caloplaca obscurella*, *Melanohalea elegantula* and *M. laciniatula*. Closer inspection of a twig from the ash tree and a few minutes spent with microscopes later confirmed records for *Caloplaca cerinella* and *Catillaria nigroclavata*.

At the official start time of the meeting I drove the short distance to Juniper Hall and met others who were gathering there. We were shown to our rooms and given the challenge of memorising two four-digit codes to gain access to the various buildings or knowing in which pocket we had put the piece of paper with the essential numbers.



Close-up view of *Strigula taylorii*, recorded at Polesden Lacey and Winkworth Aboretum (left); ascospores fragmenting at the septum (right). Photos © P. Shipway and P. Cannon.

Having moved our microscopes into the Coach House and had dinner we assembled to listen to a talk given by our leader, Paul Cannon. He explained about the geology of the area and told us about the various sites we would be visiting after which a small contingent left to visit the local hostelry.

Thursday 31st October
Polesden Lacey House
With a fine day in prospect we drove to the House which was not due to open for an hour or so. Paul led some of the group to Golf Course Field where there were groups

of mature trees, but others lingered on the way checking the trees close to the public entrance where Henk found *Punctelia borreri* with its flattened lobes and dot-like soralia. On lime trees in the field we recorded several lichenicolous fungi; *Lichenochora obscuroides* on *Phaeophyscia orbicularis*, *Taeniolella phaeophysciae* also on *P. orbicularis* and *Unguiculariopsis thallophilla* on *Lecanora chlarotera.* The group was soon well dispersed with some venturing into the gardens and others spending time in the parkland where there was an interesting discovery of *Ochrolechia parella* on ash trunks. At around lunch time several groups converged on the recently planted orchard and were pleased to be shown *Lecanora albella* which showed the P+ yellow/red reaction on the margins of the apothecia.

We met back at the car park at 2pm and some of the group moved on to Ranmore Common as it was an area that had no previous records. The rest of the group spent longer at Polesden Lacey and went to look for saxicolous species on the House and environs. A large limestone urn in the centre of a gravel area had two thalli of *Caloplaca marmorata* along with *Aspicilia calcarea*, *Verrucaria calciseda* and *Toninia aromatica* and the lichenicolous fungus *Weddellomyces epicallopisma* on *Caloplaca flavescens.* A limestone pedestal at the front of the house was examined and a few more records added including *Lecania erysibe*, *Caloplaca dichroa* and *Sarcogyne regularis* on mortar. A stroll through the pet cemetery, where there were numerous sandstone memorials in heavy shade, produced two more records, *Lecidella scabra* which was dominant on the stones and *Lecanora polytropa.*

On our way to the formal gardens we paused in Lady Greville's garden to examine her grave. There was a limestone memorial with a particularly fine specimen of *Verrucaria polysticta* and conveniently close also a less well-formed specimen of *Placopyrenium fuscellum* for comparison. Our next stop was the potting shed where there was a small but perfect example of *Xanthoparmelia mougeotii* on a brick, a *Diplotomma* collected from a mortar course for identification purposes which later proved to be *D. hedinii*, and a second *Diplotomma* specimen collected from a wall in the formal garden was later confirmed as *D. alboatrum.*

The light was starting to go and so we reluctantly started to move towards the car park although spent a few minutes in the sunken garden on route and were pleased to see a fertile *Melanohalea elegantula* which confused us for a few minutes.

In the evening we eventually gathered in the Coach House to listen to Henk's excellent talk on 'The Urban Revolution' and heard some fascinating facts about developments in the urban lichen biota of the Netherlands. Some species that are currently recorded in Amsterdam such as *Physciella chloantha* and *Flavopunctelia flaventior*, have not yet found their way to Great Britain. I am sure we will all be on the lookout for them.

Friday 1st November
Leith Hill Place

We were expecting a wet day and pleased when there was just a little drizzle although the route across to the meeting point took us through some dense fog over the tops of the hills.

Close to the car park I recorded *Lecanactis abietina* on a sweet chestnut tree and *Pyrrhospora quernea* along with *Pertusaria amara*, *P. pertusa* and *P. coccodes* on the trunk

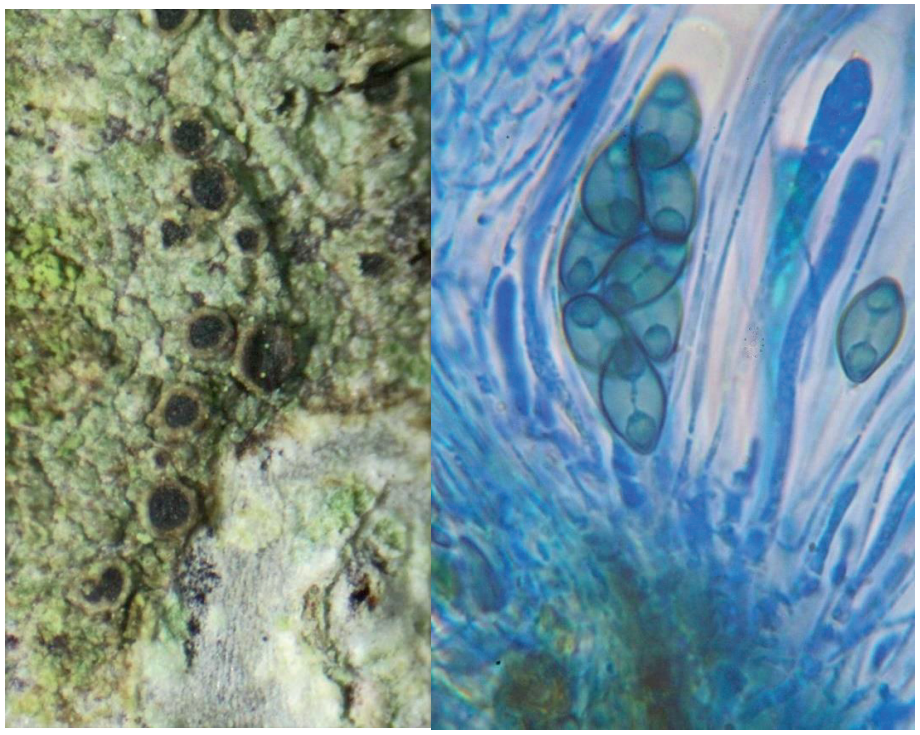
of an oak tree. We slowly made our way to the house, which was the childhood home of the composer Ralph Vaughan Williams. Some went to explore the parkland and Maxine collected a lichenicolous fungus parasitising *Xanthoria parietina* and *Physcia tenella* on an ash tree near the house. Later back in the Coach House at Juniper Hall it transpired that this was *Nectriopsis physciicola* and new to the UK although not the British Isles as it has previously been recorded in West Cork. It later transpired that there had been several other sightings of *N. physciicola* colonies in southern England in the very recent past, suggesting that it might be a recent coloniser.

Nectriopsis physciicola, the orange perithecia erumpent from a thallus of *Physcia aipolia.* Photo © P. Cannon

We had been invited up to the house for coffee and on the way there we noted a few species on the wooden fence, *Lecanora saligna, Buellia griseovirens* with *Lecanora conizaeioides* on a gate post. Following our coffee and lunch break we split into three groups with one group moving on to the Church in Coldharbour, another group walking up Leith Hill to look at the Tower.

The third group had intended to spend longer in the parkland, but we were side-tracked by lichens on the walls of the house. John volunteered to be our scribe and a reasonable list was compiled which included *Bilimbia sabuletorum* covering an extensive area in one corner. We noted *Acrocordia salweyi* on mortar, however, the most interesting record was David's discovery of *Acrocordia macrospora* which was confirmed later in the coach house.

Saturday 2nd November
Hatchlands Park and Juniper Hall grounds
The previous evening Paul had checked the weather on his phone and gathered that with very strong winds and rain forecast Winkworth Aboretum would be closed for safety reasons so alternative plans were needed. Conveniently this was also the morning that the England v. South Africa rugby match was to be televised so for some the decision about what to do was easy. After the rugby match and with improving weather the majority decided to visit Hatchlands Park, a nearby National Trust property.

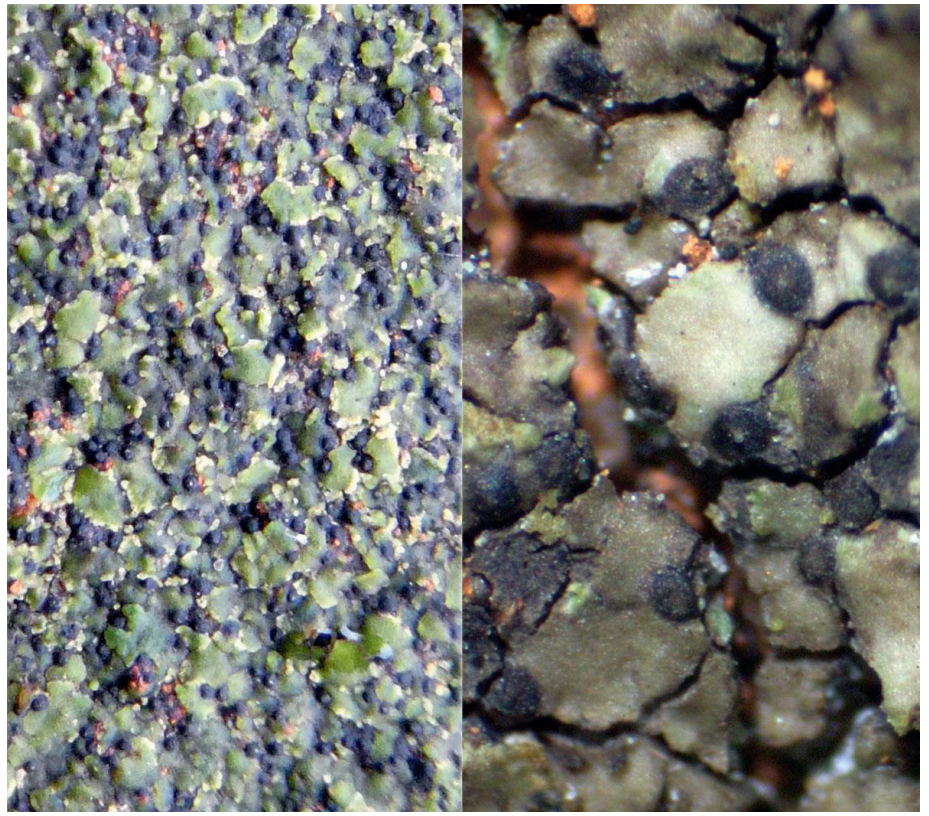


Rinodina pyrina, apothecia (left); asci and micrograph stained using K, Parker blue/black ink and vinegar and shows the *Orcularia*-type ascospores of this species (right). Photos © P. Shipway.

In the morning during a ten-minute lull between sandwich making and breakfast and before the arrival of the bad weather I went out to look at bushes in the grounds and saw a small pale thallus with *Rinodina*-like apothecia on a *Prunus* twig. Initially I identified this as *Rinodina biloculata* [now known as *Orcularia insperata*] and one of the incoming twig species in southern counties. Some months later Brian Coppins looked at my photographs, thought it didn't seem quite right and redetermined the species as *R. pyrina,* which lacks the dark brown pigment pigment present in the hypothecium of *R. biloculata*. Thank you, Brian!

A second group left to visit Hatchlands Park after lunch and I spent more time in the grounds of the Hall, recording *Dendographa decolorans* and *Enterographa crassa* on the trunk of a beech tree and *Chrysothrix candelaris* on an oak tree just outside the accommodation block. The high brick wall with buttresses between the

accommodation block and the Hall was a source for more records, the most interesting being a well-developed specimen of *Verrucaria squamulosa*.



Verrucaria squamulosa, habit (left) and detail of perithecia arranged around the edges of squamules (right). Photos © P. Shipway.

Hatchlands yielded a number of interesting records from old parkland oak trees, including *Physcia tribacia* and the "real" *Rinodina exigua*. It is similar to *R. oleae* (also reported) but has a K+ yellow thallus. This is only the third modern record (the first was at Moccas Park last year), but interestingly *R. exigua* was reported at Hatchlands in 1967 (along with *R. oleae* and *R. roboris*) by Francis Rose. The record was assumed to be *R. oleae* and the ID changed in the BLS database, but it looks like Francis was right all along and it would be worth re-evaluating other old *R. exigua* records.

Sunday 3rd November
Winkworth Aboretum
Most members needed to make tracks for home, a few had time to spend in the Hall grounds but with a sunny day in prospect David, Paul and I decided to visit Winkworth Arboretum which is owned by the National Trust. There are no records from the Arboretum and it seemed too much of a good opportunity to miss.

Careful inspection of an oak tree in the car park showed that *Scoliciosporum pruinosum* was present on the site and indeed it was found to be present on at least four

more oak trunks during the day. Great care was taken when collecting a small specimen from the car park tree as the car park was milling with people. The very small convex pale pruinose apothecia of this species are around 200 microns across and the sigmoid-curved spores within the asci show a spiralling effect.

Other records from the arboretum included *Lecanora albella* on a cherry trunk, *Platismatia glauca* on a *Sorbus*, *Phaeographis smithii* on a twig lying on the ground and *Pertusaria amara*, *P. hemisphaerica* and *P. coccodes* on oak trees. *Fuscidea lightfootii* on a birch tree demonstrated how variable this species can be.

Strigula taylorii and *Anisomeridium polypori* with its peg-like pycnidia were recorded from a veteran field maple on the slope down towards the lake and a little further down the slope Paul spotted *Pertusaria pertusa* also on a field maple trunk. An area of old hazel coppice in the northern part of the site added *Pertusaria leioplaca* and *Graphis scripta* and holly leaves collected from the arboretum proved to have the as yet unconfirmed foliicolous *Phylloblastia* cf. *bielczykiae* with lovely muriform ascospores.

Paula Shipway
paula.shipway@btinternet.com

	Box Hill	Coldharbour	Hatchlands	Juniper Hall	Leith Hill	Norbury Park	Polesden Lacey	Ranmore	West Horsley	Winkworth
Acarospora fuscata		●								
Acrocordia macrospora					●					
Acrocordia salweyi					●				●	
Agonimia tristicula		●							●	
Amandinea punctata			●	●	●		●	●		
Anisomeridium biforme					●	●				
Anisomeridium polypori			●		●	●				●
Arthonia apotheciorum							●			
Arthonia didyma				●	●	●	●			●
Arthonia muscigena					●					
Arthonia radiata			●	●	●	●	●	●	●	●
Arthonia spadicea			●		●		●			●
Arthopyrenia analepta							●			
Arthopyrenia punctiformis					●		●	●		
Aspicilia calcarea							●		●	

	Box Hill	Coldharbour	Hatchlands	Juniper Hall	Leith Hill	Norbury Park	Polesden Lacey	Ranmore	West Horsley	Winkworth
Aspicilia contorta subsp. *contorta*					●		●		●	
Aspicilia contorta subsp. *hoffmanniana*				●						
Bacidia arceutina					●					
Bacidia caligans					●					
Bacidia laurocerasi								●		
Bacidia neosquamulosa							●			
Bacidia phacodes					●		●			
Baeomyces rufus		●								
Bilimbia sabuletorum		●		●	●				●	
Botryolepraria lesdainii					●					
Buellia aethalea		●		●						
Buellia griseovirens			●		●		●	●		
Caloplaca arcis							●			
Caloplaca aurantia							●			
Caloplaca austrocitrina				●						
Caloplaca cerinella			●	●	●		●			
Caloplaca citrina s. lat.		●		●			●			
Caloplaca crenularia		●								
Caloplaca dichroa			●		●		●		●	
Caloplaca flavescens		●		●	●		●		●	
Caloplaca flavocitrina				●	●		●		●	
Caloplaca holocarpa s. str.								●		
Caloplaca limonia				●	●					
Caloplaca marmorata							●			
Caloplaca oasis							●			
Caloplaca obscurella				●	●		●			
Caloplaca phlogina							●			
Caloplaca saxicola							●			

	Box Hill	Coldharbour	Hatchlands	Juniper Hall	Leith Hill	Norbury Park	Polesden Lacey	Ranmore	West Horsley	Winkworth
Caloplaca teicholyta					●				●	
Caloplaca ulcerosa							●			
Candelaria concolor					●		●			
Candelariella aurella f. *aurella*							●			
Candelariella reflexa			●		●		●			
Candelariella vitellina f. *vitellina*		●	●	●	●		●	●	●	
Catillaria chalybeia var. *chalybeia*				●	●					
Catillaria lenticularis							●			
Catillaria nigroclavata			●	●	●		●			
Chaenotheca brunneola			●							
Chaenotheca ferruginea					●		●			●
Chaenotheca stemonea							●			
Chaenotheca trichialis			●							
Chaenothecopsis nigra							●			
Chrysothrix candelaris				●						●
Cladonia chlorophaea s. lat.		●		●	●					
Cladonia coniocraea		●	●		●		●			●
Cladonia fimbriata		●			●		●			
Cladonia macilenta									●	
Cladonia polydactyla var. *polydactyla*		●								
Cladonia pyxidata		●		●			●			
Cladonia ramulosa					●				●	
Clauzadea metzleri	●									
Clauzadea monticola							●			
Cliostomum griffithii			●		●	●	●			●
Collema auriforme		●		●			●			

	Box Hill	Coldharbour	Hatchlands	Juniper Hall	Leith Hill	Norbury Park	Polesden Lacey	Ranmore	West Horsley	Winkworth
Collema crispum var. *crispum*				●						
Collema tenax var. *ceranoides*							●			
Collema tenax var. *tenax*		●								
Cresponea premnea			●							
Cyrtidula quercus					●					
Dendrographa decolorans			●	●	●		●			
Didymocyrtis slaptoniensis			●		●					
Dimerella pineti					●		●			
Diploicia canescens			●		●		●	●	●	
Diploschistes scruposus		●			●				●	
Diplotomma alboatrum				●	●		●			
Diplotomma hedinii							●			
Dirina massiliensis f. *sorediata*					●					
Enterographa crassa				●						
Erythricium aurantiacum			●	●	●		●			●
Evernia prunastri		●	●	●	●		●	●	●	●
Flavoparmelia caperata		●	●	●	●	●	●	●	●	●
Flavoparmelia soredians			●				●			
Fuscidea lightfootii		●	●	●	●	●	●	●		●
Graphis elegans					●					
Graphis scripta					●	●	●		●	●
Gyalecta jenensis var. *jenensis*	●									
Haematomma ochroleucum				●	●					
Halecania viridescens							●			
Heterocephalacria physciacearum							●			

	Box Hill	Coldharbour	Hatchlands	Juniper Hall	Leith Hill	Norbury Park	Polesden Lacey	Ranmore	West Horsley	Winkworth
Hyperphyscia adglutinata			●	●	●		●		●	
Hypocenomyce scalaris		●								
Hypogymnia physodes		●	●	●	●	●	●	●		●
Hypogymnia tubulosa					●		●	●		●
Hypotrachyna afrorevoluta				●	●	●	●		●	●
Hypotrachyna afrorevoluta					●					
Hypotrachyna revoluta s. lat.							●			●
Hypotrachyna revoluta s. str.					●					
Illosporiopsis christiansenii			●	●	●		●			
Laetisaria lichenicola			●				●			
Lecanactis abietina					●					●
Lecania cyrtella			●	●	●	●	●	●		●
Lecania erysibe s. str.							●			
Lecania naegelii			●	●	●		●	●		●
Lecania rabenhorstii				●						
Lecanora albella			●		●		●			●
Lecanora albescens		●		●	●		●		●	
Lecanora antiqua					●					
Lecanora argentata							●			
Lecanora barkmaniana					●	●	●			
Lecanora campestris subsp. *campestris*		●		●	●		●		●	
Lecanora carpinea			●	●	●		●	●		
Lecanora chlarotera		●	●	●	●	●	●	●	●	●
Lecanora compallens							●			
Lecanora confusa			●		●		●			

	Box Hill	Coldharbour	Hatchlands	Juniper Hall	Leith Hill	Norbury Park	Polesden Lacey	Ranmore	West Horsley	Winkworth
Lecanora crenulata					●					
Lecanora dispersa			●	●	●		●			
Lecanora expallens				●	●		●	●		●
Lecanora hagenii			●	●	●		●			
Lecanora horiza					●					
Lecanora hybocarpa					●					
Lecanora jamesii							●			
Lecanora muralis					●		●	●		
Lecanora orosthea		●								
Lecanora persimilis							●			
Lecanora polytropa		●					●	●		
Lecanora pulicaris							●	●		
Lecanora saligna					●		●			
Lecanora sulphurea		●								
Lecanora symmicta			●				●	●		●
Lecidea fuscoatra s. lat.									●	
Lecidella carpathica							●			
Lecidella elaeochroma f. *elaeochroma*			●	●	●	●	●	●	●	●
Lecidella elaeochroma f. *soralifera*							●			
Lecidella scabra		●		●	●		●		●	
Lecidella stigmatea		●	●	●	●		●		●	
Lepraria finkii					●		●		●	
Lepraria incana s. lat.		●	●	●	●	●	●		●	●
Lepraria incana s. str.				●	●					
Lepraria membranacea					●					
Lepraria vouauxii				●	●				●	
Leptogium gelatinosum							●			
Leptogium turgidum		●								
Lichenochora obscuroides							●			

	Box Hill	Coldharbour	Hatchlands	Juniper Hall	Leith Hill	Norbury Park	Polesden Lacey	Ranmore	West Horsley	Winkworth
Lichenoconium xanthoriae							●			
Marchandiomyces corallinus			●				●			
Melanelixia fuliginosa		●							●	
Melanelixia glabratula			●	●	●		●		●	●
Melanelixia subaurifera			●	●	●	●	●	●	●	●
Melanohalea elegantula			●		●		●			
Melanohalea laciniatula			●		●		●			
Micarea micrococca					●					
Nectriopsis physciicola					●					
Normandina pulchella						●				●
Ochrolechia parella		●			●		●		●	
Ochrolechia subviridis							●			
Opegrapha atra				●						
Opegrapha gyrocarpa		●								
Opegrapha herbarum							●			
Opegrapha niveoatra			●				●			
Opegrapha ochrocheila				●	●		●			
Opegrapha rufescens				●	●	●	●		●	
Opegrapha varia				●						
Opegrapha vermicellifera					●					
Opegrapha viridipruinosa			●	●						
Opegrapha vulgata			●	●						
Paranectria oropensis subsp. *oropensis*							●			
Parmelia saxatilis s. lat.			●		●		●	●		●
Parmelia sulcata			●	●	●	●	●	●	●	●
Parmotrema perlatum		●	●	●	●		●	●		●
Pertusaria albescens var. *albescens*					●		●			

	Box Hill	Coldharbour	Hatchlands	Juniper Hall	Leith Hill	Norbury Park	Polesden Lacey	Ranmore	West Horsley	Winkworth
Pertusaria albescens var. corallina		●					●			
Pertusaria amara f. *amara*		●	●		●		●			●
Pertusaria coccodes			●		●		●	●		●
Pertusaria hymenea				●	●		●			
Pertusaria leioplaca										●
Pertusaria pertusa		●			●		●			●
Phaeographis smithii					●			●		●
Phaeophyscia orbicularis			●	●	●		●	●		
Phlyctis argena			●		●	●	●	●		●
Phylloblastia fortuita							●			
Phylloblastia inexpectata				●						
Phyllolastia cf. *bielczykiae*										●
Physcia adscendens			●	●	●		●	●	●	●
Physcia aipolia			●		●		●	●	●	
Physcia tenella			●	●	●	●	●	●	●	●
Physcia tribacea			●							
Physconia grisea			●				●			
Placopyrenium fuscellum							●		●	
Placynthiella dasaea							●			
Placynthiella icmalea								●		
Platismatia glauca					●					●
Polysporina simplex		●							●	
Porina aenea				●		●	●			●
Porina byssophila				●			●			
Porpidia cf. *macrocarpa*		●								
Porpidia cinereoatra		●								
Porpidia crustulata									●	
Porpidia tuberculosa		●							●	

	Box Hill	Coldharbour	Hatchlands	Juniper Hall	Leith Hill	Norbury Park	Polesden Lacey	Ranmore	West Horsley	Winkworth
Protoblastenia rupestris		●		●	●		●		●	
Psilolechia lucida		●			●		●			
Punctelia borreri					●		●			
Punctelia jeckeri			●	●	●	●	●	●	●	●
Punctelia subrudecta s. str.			●	●	●	●	●	●	●	●
Pyrenula chlorospila							●			
Pyrrhospora quernea			●		●		●			●
Ramalina calicaris			●							
Ramalina farinacea		●	●	●	●	●	●	●	●	●
Ramalina fastigiata			●		●		●	●		●
Rhizocarpon reductum		●							●	
Rinodina biloculata					●					
Rinodina exigua			●							
Rinodina oleae				●			●			
Rnodina pyrina				●						
Rinodina roboris var. *roboris*			●							
Rinodina sophodes							●			
Sarcogyne regularis		●		●	●		●			
Schismatomma quercicola			●							
Scoliciosporum pruinosum										●
Scoliciosporum umbrinum							●			
Stenocybe septata					●					
Strigula taylorii							●			●
Taeniolella phaeophysciae							●			
Tephromela atra var. *atra*		●		●	●					

	Box Hill	Coldharbour	Hatchlands	Juniper Hall	Leith Hill	Norbury Park	Polesden Lacey	Ranmore	West Horsley	Winkworth
Toninia aromatica				●	●		●		●	
Trapelia glebulosa									●	
Trapelia placodioides		●		●					●	
Trapeliopsis flexuosa			●		●			●	●	
Trapeliopsis granulosa			●							
Unguiculariopsis thallophila			●				●			
Usnea cornuta			●		●					
Usnea subfloridana			●	●						●
Varicellaria hemisphaerica										●
Verrucaria calciseda					●		●		●	
Verrucaria elaeina									●	
Verrucaria hochstetteri	●	●								
Verrucaria macrostoma f. *furfuracea*					●		●			
Verrucaria macrostoma f. *macrostoma*							●			
Verrucaria muralis				●	●		●	●		
Verrucaria murina	●									
Verrucaria nigrescens f. *nigrescens*		●			●		●		●	
Verrucaria nigrescens f. *tectorum*				●	●		●		●	
Verrucaria polysticta							●			
Verrucaria squamulosa				●						
Vouauxiella lichenicola							●			
Weddellomyces epicallopisma							●			
Xanthoparmelia mougeotii		●					●			
Xanthoria candelaria s. lat.					●					

	Box Hill	Coldharbour	Hatchlands	Juniper Hall	Leith Hill	Norbury Park	Polesden Lacey	Ranmore	West Horsley	Winkworth
Xanthoria parietina		•	•	•	•	•	•	•	•	•
Xanthoria polycarpa			•		•		•	•		
Xanthoria ucrainica							•			
Xanthoriicola physciae							•			

Lichen survey of Berneray (Barra Head)

Steve Price (with help from Andy Acton, Brian Coppins and John Douglass)

Berneray (often known as Barra Head) is the southern-most outlier of the Outer Hebrides and is a 14 mile boat trip from the nearest port of Castlebay on the island of Barra.

Andy Acton, Brian Coppins, John Douglass and Steve Price visited and stayed on this 204ha uninhabited island – grid ref. NL5680 - in August 2019. The island is rock-girt and rises to a maximum height of 193m.

Low lying shoreline on the north side of Berneray (Mingulay in the background). Photo © Steve Price

A cliff-top amphitheatre of rocks near the Dun (NL548802), a relatively sheltered habitat for many crustose species of rock crevices and old *Armeria*. Photo © Brian Coppins.

Lighthouse compound wall (one of the sites of *Myriolecis massei*) and the cliffs on the south-west side of the island. Photo © John Douglass.

Berneray, and the neighbouring islands of Mingulay and Pabbay, were acquired by the National Trust for Scotland (NTS) in 2000. The last tenants left Berneray in 1910 (lighthouse keepers were resident until the light was automated in 1980). The island was used for sheep grazing until 2009. Permission was obtained for us to use the NTS bothy, which was previously the tractor garage for the lighthouse. All supplies, including water, had to be transported to the island.

Prior to our visit there were no lichen records for the island. Permission was granted by the NTS for lichens to be collected for the purpose of identification and for any significant finds to be deposited in the herbarium at the Royal Botanic Garden, Edinburgh.

For access it was necessary to charter a boat from Castlebay, Barra. The local boatman Francis Gillies knows the waters well and is familiar with the awkward landing at Berneray which is directly onto rocks. His advice regarding the weather and sea conditions was invaluable.

Our trip was impacted by adverse weather. We were delayed a day getting onto the island and had to be pulled off early after only 2 days because of a very bad forecast. A forecast that proved to be correct - we would have had to have an extended stay of 10 days or more on the island. Before going out to Berneray a productive day was spent on Barra recording two sites: Ardmhor Wood (grid ref NF703043) and the Cille-bharra graveyard (grid ref NF705074). A few records were also gathered from a site on the Àird Mhidhinis penninsula (grid ref NF7103).

Statistics for the trip

Total records for trip = 715
Total records for Berneray = 521 in 6 out of the 7 monads (1km squares) on the island.
Taxa for Berneray = 181
New to UK from Berneray = 1, *Myriolecis massei*
New to Scotland from Berneray = 1, *Cryptothele rhodosticta*
New to VC 110 from Berneray = 1, *Lichenopeltella peltigericola*
Also noteworthy is the southernmost record for *Myriolecis* (*Lecanora) straminea*
New to VC 110 from Barra = 14
from Ardmhor Wood = 9
from Cille-bharra = 5

Berneray

Geology
Berneray is composed entirely of the siliceous Hebridean gneiss.

Topography
The island rises from rock-shelves and shallow cliffs in the north and east to massive 190m cliffs on the south and west sides.

Habitats
The cliffs, cliff-top rocks and boulders, shelving coastal rocks influenced in places by springs and seepages, and boulders in rank grassland are the main natural habitats.

The cliff-top iron-age dun (fort), the walls of lighthouse compound, walls of abandoned farm houses, the ancient burial ground and a more recent graveyard for lighthouse keepers and families provide significant additional saxicolous habitat and alternatives to gneiss such as calcareous sandstone and mortar. Lignicolous habitat is restricted to old fence posts and rails. An intriguing habitat was provided by the fibre-glass cladding of a portacabin and storage tanks, here much favoured by *Lecanora poliophaea*.

There is a total absence of trees and there are no beaches. With the land being ungrazed since 2009 most turf is rank. Short turf is rare and localised and as such habitat for terricolous lichens is scarce.

Highlights for Berneray

Myriolecis massei was first described in 2018, then being known only from the Channel Islands and Brittany (Bertrand et al. 2018). Its occurrence on Berneray significantly extended its known world range. It was found in sheltered situations just back from the cliff-top near the lighthouse and the lighthouse graveyard. The C+ orange reaction of the thallus helps distinguish it from *Myriolecis* (*Lecanora*) *actophila* and *M. helicopis*. It has since been found on the north Sutherland coast near Rispond.

Anaptychia ciliaris subsp. *mamillata.* This lichen, considered to be Near Threatened (IUCN vulnerability status) and Nationally Scarce, was found in abundance along a 175m stretch of the cliff-top wall of the lighthouse compound and on cliff-top outcrops and boulders.

Cryptothele rhodosticta is a rarely recorded species of sloping flushed rocks. It has a thin black thallus with a purplish hue owing to its cyanobacterial photobiont, *Gloeocapsa*, and concolorous perithecioid apothecia. It is almost identical in appearance to the more often recorded *Pyrenopsis subareolata*, which was collected on similarly, low, NE-facing rocks near to those with the *Cryptothele*.

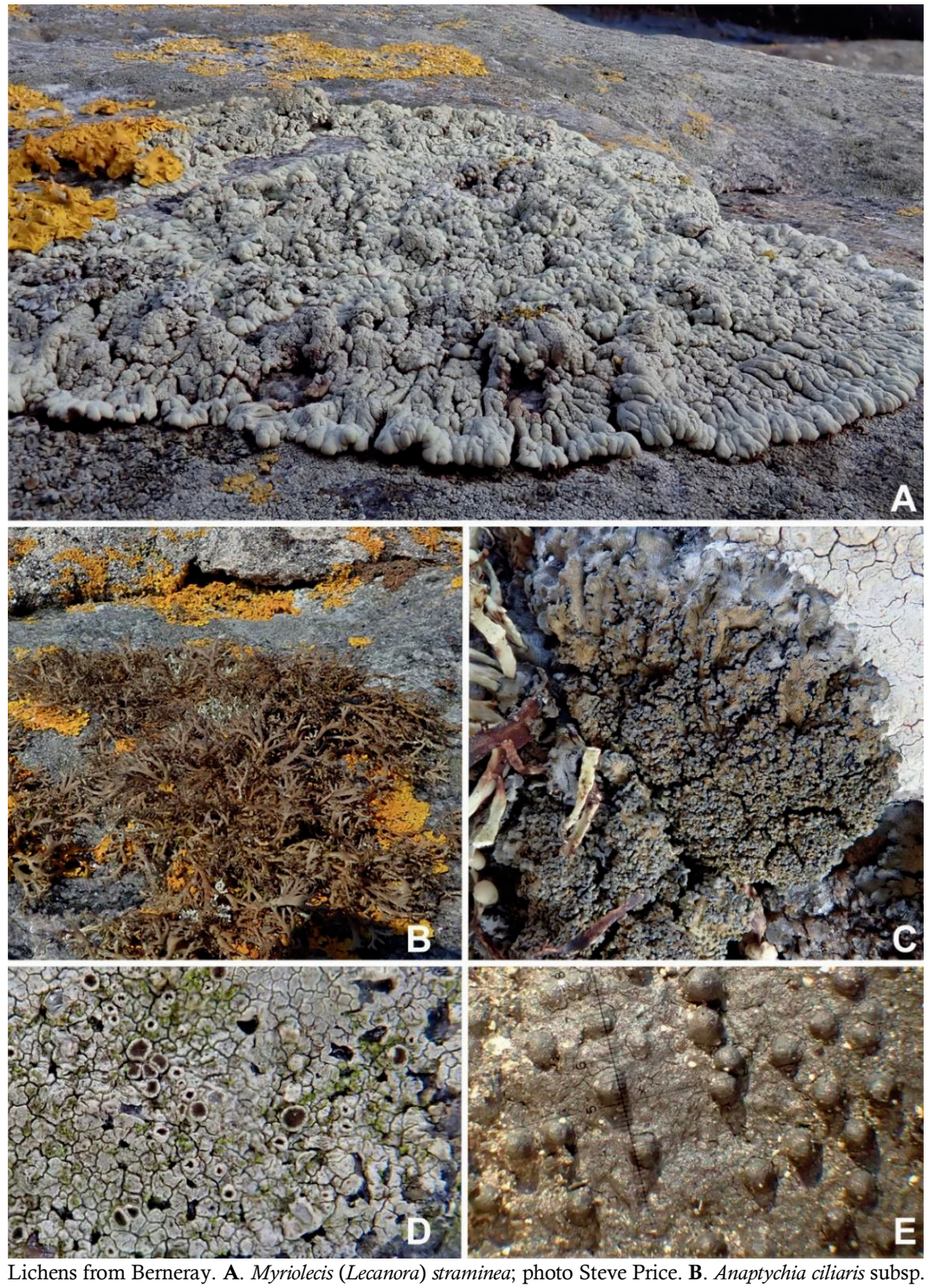
Myriolecis (Lecanora) straminea is a rare arctic-maritime specialist of nutrient-enriched rocks, especially boulders frequented by seabirds. It is Nationally Rare and has the IUCN status of Near Threatened. In the British Isles it had been recorded from St. Kilda, The Flannans, The Shiants, Mainland Shetland, Noss and Fair Isle. On Berneray it was found on a coastal, shelving outcrop in front of the bothy towards the east of the island. At first glance, with its greenish colour, it could be confused with *Lecanora muralis* however the C+ orange reaction removes all doubt.

Pectenia (Degelia) ligulata is a Vulnerable & Nationally Rare lichen found on the west coast of Britain and Ireland. It is usually located within a few metres of the sea. On Berneray it was found on low lying rocks on the north coast.

Hydropunctaria 'maxima' is a provisional nickname for a member of the *Verrucariaceae* which has distinctively large (up to 0.9mm diam.), prominent, hemispherical perithecia. It had been found previously on Fair Isle in 2016 and here on Berneray was found again in a couple of locations on the north coast. It may eventually prove to be a known *Hydropunctaria* and that the prominent perithecia are a response to freshwater influence. Even if only a response to

environmental conditions and if those conditions prove to be limited to, say, Scottish/Atlantic islands, then that's almost as interesting as it being a distinct 'species' ..... speciation in action..??

John Douglass pleased as a Cheshire cat at his find of *Myriolecis (Lecanora) straminea* (by his right knee and left foot) a few minutes before departing the island. The bothy is in the background. Photo © Steve Price.



Lichens from Berneray. **A**. *Myriolecis* (*Lecanora*) *straminea*; photo Steve Price. **B**. *Anaptychia ciliaris* subsp. *mamillata* on the lighthouse compound wall. Photo © Steve Price. **C**. *Pectenia* (*Degelia*) *ligulata*. Photo © Steve Price. **D**. *Myriolecis massei* new to the UK. Photo © Steve Price. **E**. *Hydropunctaria* '*maxima*' with its large prominent hemispherical perithecia. Photo © John Douglass.

Barra

Ardmhor Wood

Ardmhor Wood is a mixed woodland (alder, ash, oak, sycamore and Scots pine) in a sheltered shallow valley on the east side of Barra. Planted in *c.* 1840s, it now includes some mature trees, including a roadside ash hosting *Bacidia phacodes*, *Gyalecta truncigena* and *Pectenia cyanoloma.* Also noteworthy is *Arthonia anombrophila* which was found within the woodland on a Scots pine. Mature woodland is a scarce habitat in the Outer Hebrides, such that the list of 59 corticolous and lignicolous species from our short visit resulted in 9 species as new to VC 110 (all reported in *BLS Bulletin* no. 125).

Cille-bharra

Cille-bharra is a twelfth-century church (re-roofed in the 20th century) built on the site of site of a 7th-century chapel. We listed 110 species (103 saxicolous) that included three new to VC 110, and confirmation of *Bilimbia lobulata* previously known from the vice-county only from an old unlocalised record. The graveyard includes the grave of the author Compton Mackenzie (see postscript).

Table of taxa for Berneray

Agonimia tristicula
Amandinea coniops
Amandinea pelidna
Amandinea punctata
Anaptychia ciliaris subsp. *mamillata*
Anaptychia runcinata
Arthonia muscigena
Aspicilia (unkown)
Aspicilia caesiocinerea
Aspicilia cinerea s. lat.
Aspicilia leprosescens
Bacidia scopulicola
Buellia aethalea
Buellia griseovirens
Caloplaca arcis
Caloplaca arnoldii subsp. *oblitterata*
Caloplaca britannica
Caloplaca citrina s. lat.
Caloplaca crenularia
Caloplaca dichroa
Caloplaca flavocitrina
Caloplaca holocarpa s. str.
Caloplaca limonia

Caloplaca marina
Caloplaca maritima
Caloplaca microthallina
Caloplaca oasis
Caloplaca phlogina
Caloplaca saxicola
Caloplaca scopularis
Caloplaca sorediella
Caloplaca thallincola
Caloplaca verruculifera
Candelariella aurella f. *aurella*
Candelariella vitellina f. *vitellina*
Catillaria chalybeia var. *chalybeia*
Cladonia cervicornis subsp. *cervicornis*
Cladonia chlorophaea s. lat.
Cladonia ciliata var. *ciliata*
Cladonia ciliata var. *tenuis*
Cladonia coniocraea
Cladonia crispata var. *cetrariiformis*
Cladonia foliacea
Cladonia furcata subsp. *furcata*
Cladonia pyxidata
Cladonia rangiformis

Cladonia subcervicornis
Cladonia uncialis subsp. biuncialis
Clauzadea monticola
Cliostomum griffithii
Cliostomum tenerum
Collema crispum var. *crispum*
Collema furfuraceum
Collema tenax var. *tenax*
Collemopsidium foveolatum
Cryptothele rhodosticta
Dermatocarpon luridum
Dermatocarpon miniatum
Diplotomma alboatrum
Ephebe lanata
Fuscidea cyathoides var. *cyathoides*
Fuscidea lygaea
Haematomma ochroleucum var. *porphyrium*
Halecania ralfsii
Homostegia piggotii {*LF*}
Hydropunctaria "maxima"
Hydropunctaria maura
Hydropunctaria oceanica
Hydropunctaria orae
Hypogymnia tubulosa
Ionaspis lacustris
Lecania aipospila
Lecania erysibe s. str.
Lecania hutchinsiae
Lecania rabenhorstii
Lecanora actophila
Lecanora albescens
Lecanora campestris subsp. *campestris*
Lecanora chlarotera
Lecanora confusa
Lecanora dispersa
Lecanora expallens
Lecanora farinaria
Lecanora gangaleoides
Lecanora hagenii
Lecanora helicopis

Lecanora intricata
Lecanora muralis
Lecanora poliophaea
Lecanora polytropa
Lecanora straminea
Lecanora sulphurea
Lecanora symmicta
Lecanora zosterae
Lecidella asema
Lecidella elaeochroma f. *elaeochroma*
Lecidella meiococca
Lecidella scabra
Lepraria caesioalba
Lepraria finkii
Leptogium britannicum
Leptogium cyanescens
Leptogium gelatinosum
Leptogium pulvinatum
Leptogium teretiusculum
Lichenodiplis lecanorae {LF}
Lichenomphalia umbellifera
Lichenopeltella peltigericola {LF}
Lichina confinis
Marchandiomyces corallinus {LF}
Melanelixia fuliginosa
Melanelixia subaurifera
Micarea prasina s. lat.
Myriolecis massei
Myriospora smaragdula
Ochrolechia androgyna
Ochrolechia parella
Opegrapha atra
Opegrapha calcarea
Opegrapha multipuncta
Parmelia omphalodes
Parmelia saxatilis s. lat.
Parmelia sulcata
Parmotrema perlatum
Pectenia atlantica
Pectenia ligulata
Peltigera canina

Peltigera hymenina
Peltigera membranacea
Peltigera rufescens
Pertusaria excludens
Pertusaria lactescens
Pertusaria pseudocorallina
Phaeophyscia orbicularis
Physcia adscendens
Physcia caesia
Physcia dubia
Physcia tenella
Placynthiella icmalea
Porina chlorotica f. *chlorotica*
Porpidia cinereoatra
Porpidia crustulata
Porpidia macrocarpa f. *macrocarpa*
Pronectria santessonii {LF}
Pyrenopsis subareolata
Ramalina cuspidata
Ramalina farinacea
Ramalina siliquosa
Ramalina subfarinacea
Rhizocarpon geographicum
Rhizocarpon lavatum
Rhizocarpon oederi
Rhizocarpon petraeum
Rhizocarpon reductum

Rhizocarpon richardii
Rinodina atrocinerea
Rinodina luridescens
Rinodina oleae
Schaereria cinereorufa
Schaereria fuscocinerea var. fuscocinerea
Scoliciosporum umbrinum
Solenopsora vulturiensis
Sphaerophorus globosus
Telogalla olivieri {LF}
Tephromela atra var. *atra*
Toninia aromatica
Trapeliopsis flexuosa
Vahliella leucophaea
Verrucaria fusconigrescens
Verrucaria mucosa
Verrucaria muralis
Verrucaria striatula
Xanthoparmelia conspersa
Xanthoparmelia loxodes
Xanthoparmelia verruculifera
Xanthoria aureola
Xanthoria calcicola
Xanthoria candelaria s. str.
Xanthoria elegans
Xanthoria parietina
Xanthoriicola physciae {LF}

Table of taxa for Barra

Taxa	Substrate	Cille-bharra	Ardmhor Wood	Àird Mhidhinis
		NF705074	NF703043	NF7103
Acarospora fuscata	Sax	x		
Acarospora impressula	Sax	x		
Acrocordia gemmata	Cort		x	
Agonimia tristicula	Sax	x		
Amandinea punctata	Lig	x		
Anaptychia runcinata	Cort+Sax	x	x	

Taxa	Substrate	Cille-bharra	Ardmhor Wood	Àird Mhidhinis
		NF705074	NF703043	NF7103
Anisomeridium biforme	Cort		x	
Anisomeridium polypori	Cort		x	
Arthonia anombrophila	Cort		x	
Arthonia didyma	Cort		x	
Arthonia radiata	Cort		x	
Arthonia spadicea	Cort		x	
Arthopyrenia analepta {F}	Cort		x	
Arthopyrenia punctiformis {F}	Cort		x	
Aspicilia calcarea	Sax	x		
Aspicilia leprosescens	Sax	x		
Bacidia fuscoviridis	Sax	x		
Bacidia phacodes	Cort		x	
Bilimbia lobulata	Sax	x		
Bilimbia sabuletorum	Sax+Bry	x		
Botryolepraria lesdainii	Sax	x		
Buellia aethalea	Sax	x		
Buellia griseovirens	Lig	x		
Buellia ocellata	Sax	x		
Caloplaca arcis	Sax	x		
Caloplaca arnoldii subsp. *oblitterata*	Sax	x		
Caloplaca chlorina	Sax	x		
Caloplaca chrysodeta	Sax	x		
Caloplaca crenularia	Sax	x		
Caloplaca dichroa	Sax	x		
Caloplaca flavocitrina	Sax	x		
Caloplaca flavovirescens	Sax	x		
Caloplaca holocarpa s. str.	Sax	x		
Caloplaca limonia	Sax	x		
Caloplaca marmorata	Sax	x		
Caloplaca oasis	Sax	x		
Caloplaca saxicola	Sax	x		
Candelariella aurella f. *aurella*	Sax	x		
Candelariella vitellina f. *vitellina*	Sax	x		x

Taxa	Substrate	Cille-bharra	Ardmhor Wood	Àird Mhidhinis
		NF705074	NF703043	NF7103
Catillaria chalybeia var. *chalybeia*	Sax	x		
Catillaria lenticularis	Sax	x		
Cladonia fimbriata	Cort+Bry		x	
Cladonia furcata subsp. *furcata*	Sax		x	
Cladonia polydactyla var. *polydactyla*	Cort		x	
Cladonia pyxidata	Cort		x	
Clauzadea monticola	Sax	x		
Cliostomum griffithii	Cort		x	
Cliostomum tenerum	Sax	x		
Collema auriforme	Sax	x		
Collema crispum var. *crispum*	Sax	x		
Collema fuscovirens	Sax	x		
Collema tenax var. *tenax*	Sax	x		
Dimerella lutea	Cort+Bry		x	
Dimerella pineti	Cort		x	
Diploicia canescens	Sax	x		
Diplotomma alboatrum	Sax	x		
Evernia prunastri	Cort		x	
Fellhaneropsis vezdae	Cort+Bry		x	
Flavoparmelia caperata	Cort		x	
Fuscidea cyathoides var. *cyathoides*	Sax	x	x	x
Fuscidea lightfootii	Lig+Cort	x	x	
Fuscidea lygaea	Sax	x	x	
Graphis elegans	Cort		x	
Graphis scripta	Cort		x	
Gyalecta truncigena	Cort		x	
Hydropunctaria maura	Sax	x		
Hydropunctaria oceanica	Sax	x		
Ionaspis lacustris	Sax		x	
Jamesiella anastomosans	Cort		x	
Lecania erysibe s. str.	Sax	x		
Lecania hutchinsiae	Sax	x		

Taxa	Substrate	Cille-bharra	Ardmhor Wood	Àird Mhidhinis
		NF705074	NF703043	NF7103
Lecania rabenhorstii	Sax	x		
Lecanora albescens	Sax	x		
Lecanora campestris subsp. *campestris*	Sax	x		
Lecanora carpinea	Cort		x	
Lecanora chlarotera	Cort		x	
Lecanora crenulata	Sax	x		
Lecanora dispersa	Sax	x		
Lecanora expallens	Cort		x	
Lecanora gangaleoides	Sax	x		
Lecanora hagenii	Sax	x		
Lecanora helicopis	Sax	x		
Lecanora intricata	Sax	x		
Lecanora muralis	Sax	x		
Lecanora polytropa	Sax	x		
Lecidea diducens	Sax	x		
Lecidea grisella	Sax			x
Lecidella asema	Sax	x		x
Lecidella elaeochroma f. *elaeochroma*	Lig+Cort	x	x	
Lecidella scabra	Sax+Lig	x		
Lecidella scabra	Sax		x	
Lecidella stigmatea	Sax	x		
Lepraria finkii	Cort+Bry		x	
Lepraria incana s. str.	Cort		x	
Leptogium gelatinosum	Sax	x		
Leptogium lichenoides	Cort		x	
Leptogium plicatile	Sax	x		
Leptogium pulvinatum	Sax	x		
Marchandiomyces corallinus {LF}	Lic			x
Melanelixia fuliginosa	Sax	x		
Melanelixia glabratula	Cort		x	
Micarea micrococca	Cort		x	
Micarea prasina s. lat.	Cort		x	
Micarea xanthonica	Lig		x	
Myriospora rufescens	Sax	x		

Taxa	Substrate	Cille-bharra	Ardmhor Wood	Àird Mhidhinis
		NF705074	NF703043	NF7103
Myriospora smaragdula	Sax	x		
Normandina acroglypta	Cort+Bry		x	
Normandina pulchella	Cort+Bry		x	
Ochrolechia androgyna	Sax			x
Ochrolechia parella	Cort+Sax+Met	x	x	x
Opegrapha atra	Cort		x	
Opegrapha calcarea	Sax	x		
Opegrapha multipuncta	Cort		x	
Opegrapha sorediifera	Cort		x	
Parmelia omphalodes	Sax			x
Parmelia saxatilis s. lat.	Sax	x		
Parmelia sulcata	Cort+Sax+Lig	x	x	
Parmotrema crinitum	Cort		x	
Parmotrema perlatum	Cort+Sax	x	x	
Pectenia cyanoloma	Cort		x	
Peltigera hymenina	Cort+Bry		x	
Peltigera membranacea	Cort+Bry		x	
Pertusaria lactescens	Sax	x		
Pertusaria leioplaca	Cort		x	
Pertusaria pertusa	Cort		x	
Pertusaria pseudocorallina	Sax	x		x
Phaeophyscia orbicularis	Sax	x		
Physcia adscendens	Sax	x		
Physcia caesia	Sax	x		
Physcia tenella	Cort		x	
Placopyrenium fuscellum	Sax	x		
Placynthiella dasaea	Lig		x	
Placynthium nigrum	Sax	x		
Polysporina simplex	Sax	x		
Porina chlorotica f. *chlorotica*	Sax	x		
Porina leptalea	Cort		x	
Porpidia cinereoatra	Sax		x	
Porpidia macrocarpa f. macrocarpa	Sax	x		

Taxa	Substrate	Cille-bharra	Ardmhor Wood	Àird Mhidhinis
		NF705074	NF703043	NF7103
Porpidia melinodes	Sax		x	
Porpidia platycarpoides	Sax	x		
Porpidia tuberculosa	Sax		x	
Protoblastenia rupestris	Sax	x		
Punctelia subrudecta s. str.	Cort		x	
Pyrenula macrospora	Cort		x	
Pyrrhospora quernea	Cort		x	
Ramalina farinacea	Cort		x	
Ramalina siliquosa	Sax+Lig	x		x
Ramalina subfarinacea	Sax	x		
Rhizocarpon geographicum	Sax	x		x
Rhizocarpon lavatum	Sax		x	
Rhizocarpon petraeum	Sax	x		
Rhizocarpon reductum	Sax	x		
Rhizocarpon richardii	Sax	x		x
Rinodina oleae	Sax	x		
Rinodina teichophila	Sax	x		
Sarcogyne hypophaea	Sax	x		
Sarcogyne regularis	Sax	x		
Scoliciosporum umbrinum	Sax+Met	x		
Strigula taylorii	Cort		x	
Tephromela atra var. *atra*	Sax	x		
Toninia aromatica	Sax	x		
Trapeliopsis flexuosa	Lig	x		
Verrucaria elaeina	Sax	x		
Verrucaria fusconigrescens	Sax	x		
Verrucaria hochstetteri	Sax	x		
Verrucaria muralis	Sax	x		
Verrucaria nigrescens f. *nigrescens*	Sax	x		
Verrucaria nigrescens f. *tectorum*	Sax	x		
Verrucaria viridula	Sax	x		
Violella fucata	Lig	x		
Vouauxiella verrucosa {LF}	Lic	x		
Xanthoparmelia conspersa	Sax			x

Taxa	Substrate	Cille-bharra	Ardmhor Wood	Àird Mhidhinis
		NF705074	NF703043	NF7103
Xanthoparmelia mougeotii	Sax			x
Xanthoparmelia verruculifera	Sax			x
Xanthoria aureola	Sax	x		
Xanthoria parietina	Cort+Sax	x	x	

Acknowledgements
Sincere thanks to Jonathan Grant, the NTS Ranger, for his company on the trip, for providing logistical support, and for personal hospitality whilst we were on Barra. Thanks to the BLS for financial support towards the cost of the trip in the form of a Small Ecological Project Grant.

References and general reading:

Bertrand, M, Monnat, J.-Y. & Lohézic-Le Dévéhat F., (2018) *Myriolecis massei*, a new species of Lecanoraceae from the coasts of the Armorican Massif in Western Europe, *The Bryologist* **121**(3): 253–263.

Buxton, B., (2016) *Mingulay – An Island and Its People*, Birlinn, Edinburgh. Also includes coverage of Berneray and Pabbay.

Postscript
Lichens Galore!
The author Sir Edward Montague Compton Mackenzie, 1883–1972, is buried in Cille-bharra graveyard not far from where he lived on Barra.

Compton Mackenzie under scrutiny. Photo © Steve Price

Whisky Galore! (published in 1947) is the best known novel by Compton Mackenzie. It is a farce in which islanders off the coast of Scotland compete with a stuffy English commander to recover 50,000 cases of whisky from a wrecked cargo vessel. The story became very popular with the making of film versions in 1949 and again in 2016.

Twenty-six lichens were recorded from his headstone;

Acarospora fuscata
Buellia aethalea
Caloplaca crenularia
Caloplaca holocarpa s. str.
Caloplaca oasis
Candelariella aurella f. *aurella*
Candelariella vitellina f. *vitellina*
Catillaria chalybeia var. *chalybeia*
Cliostomum tenerum
Fuscidea cyathoides var. *cyathoides*
Lecanora albescens
Lecanora campestris subsp. campestris
Lecanora dispersa
Lecanora hagenii
Lecanora polytropa
Lecidella asema
Lecidella scabra
Melanelixia fuliginosa
Ochrolechia parella
Physcia adscendens
Ramalina siliquosa
Ramalina subfarinacea
Rhizocarpon reductum
Rinodina oleae
Scoliciosporum umbrinum
Verrucaria fusconigrescens

Steve Price
lichens57@yahoo.com

Literature pertaining to British lichens – 66

Lichenologist **51**(6) was published on 9 December 2019, **52**(1) on 4 March 2020, and **52**(2) on 11 May 2020 online.
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 authors of this compilation.

BRACKEL, W. VON 2011. Lichenicolous fungi and lichens from Puglia and Basilicata (southern Italy). *Herzogia* **24:** 65–101. Includes description and illustrations of the genus *Asteroglobulus* Brackel (2011) and the species *A. giselae* Brackel, recently discovered lichenicolous on *Ramalina farinacea* in Scotland. [NB. This species is now considered to belong in *Spirographa* – see Flakus et al. (2019) below.]

CORSIE, E.L., HARROLD, P. & YAHR, R. 2019. No combination of morphological, ecological or chemical characters can reliably diagnose species in the *Parmelia saxatilis* aggregate in Scotland. *Lichenologist*, **51:** 107-121. Study using ITS to confirm the occurrence of three species of the *P. saxatilis* aggregate

along environmental gradients in Scotland - *P. saxatilis* s. str., *P. ernstiae* and *P. serrana* – showing differences in their ecological niches and their morphology, though with significant variability and a degree of overlap that confounds their easy identification.

ELLIS, C.J. 2020. Microclimatic refugia in riparian woodland: a climate change adaptation strategy. *Forest Ecology and Management*, **462**: 118006. A study of growth rates for *Lobaria pulmonaria* under two climates, at contrasting distances from watercourses, and with or without bryophyte associations. Emphasising the importance of riparian woodland in allowing lichen epiphytes to adjust position to their optimum microclimate, under different climates (including under climate change).

ELLIS, C.J. & COPPINS, B.J. 2019. Five decades of decline for old-growth indicator species in Scotland. *Edinburgh Journal of Botany* **76:** 319–331. This study explored the use of ad hoc field-recorded data as a potential source of biodiversity information, by comparing the pattern of recording for carefully selected indicator species with those for benchmark or control species as a proxy for recording effort. Focusing on Scotland's internationally important epiphytic lichens, and especially 'old-growth' indicator species, BLS data revealed a decline in the extent of these species in Scotland, relative to recording effort, over a period of five decades. A recent slowing in the rate of decline was observed but remains to be confirmed. The long-term decline is consistent with the effect of land use intensification, resulting in small and isolated populations that are vulnerable to extinction debt. It is cautioned that remedial protection and monitoring for such populations remains vital as a complement to Scotland's larger scale ambition for increased woodland extent and connectivity.

ERTZ, D., SANDERSON, N., COPPINS, B.J., KLEPSLAND, J.T. & FRISCH, A. 2019. *Opegrapha multipuncta* and *Schismatomma quercicola* (Arthoniomyctes) belong to the Lecanoromycetes. *Lichenologist* **54:** 395–405. The generic identity of two sterile crusts is resolved: *Opegrapha multipuncta* is shown to be a *Porina* (*Porinaceae*) as *Porina multipuncta* (Coppins & P. James) Ertz, Coppins & Frisch; *Schismatomma quercicola* is shown to be a *Schizotrema* Mangold & Lumbsch (2009) (*Graphidaceae*) as *Schizotrema quercicola*, and is found not to be a British endemic because of occurrences in Norway.

ETAYO, J. 1995. *Mixtoconidium canariense*, a new genus and species of lichenicolous Coelomycetes with dimorphic conidia. *Mycotaxon* **53**: 425–432. Provides description and illustrations of what is now *Mixtoconidium insidens*. See entry below under VAN DEN BOOM & ETAYO (2017).

FLAKUS, A., ETAYO, J., MIADLIKOWSKA, J., LUTZONI, F., KUKWA, M., MATURA, N. & RODRIGUEZ-FLAKUS, P. 2019. Biodiversity assessment of ascomycetes inhabiting *Lobariella* lichens in Andean cloud forests led to one new family. *Plant and Fungal Systematics* **64**(2): 283–344. The conidial fungi of *Asteroglobulus* and *Cornutispora* are shown to belong to *Spirographa* (*Spirographaceae*). *Asteroglobulus giselae* is transferred to *Spirographa* as *S. giselae*

(Brackel) Flakus, Etayo & Miadl. and its sexual state is described from Bolivia, Portugal and Spain. It appears that this fungus is a hyperparasite on a lichenicolous *Lichenopeltella*. *Spilomela ascaridiella* is considered not to be conspecific with *Spirographa fusisporella* and is reinstated as *Spirographa ascaridiella* (Leight.) Flakus, Etayo & Miadl.; it is confined to *Porpidia* spp. *Cornutispora ciliata* is transferred as *Spirographa ciliata* (Kalb) Flakus, Etayo & Miadl. [originally described on *Dibaeis* from Tasmania, such that British Isles material probably belongs to other cryptic species with similarly shaped conidia]. *Spirographa fusisporella* s. str. is confined to *Graphidaceae* in the Americas [such that otherwise unassigned British records should be regarded as *S. fusisporella* auct. brit.]. *Cornutispora lichenicola* is transferred as *Spirographa lichenicola* (D. Hawksw. & Sutton) Flakus, Etayo & Miadl. [originally described on *Parmelia sulcata*, and many collections on other hosts belong to other cryptic species with similarly shaped conidia]. *Cornutispora pyramidalis* [recently discovered in Britain on *Hypotrachyna revoluta* s. lat.] is transferred as *Spirographa pyramidalis* (Etayo) Flakus, Etayo & Miadl. *Cornutispora triangularis*, a parasite of *Pertusaria* s. str., is transferred as *Spirographa triangularis* (Diederich & Etayo) Flakus, Etayo & Miadl. *Melaspilea vermiformis* Leight. is reinstated as *Spirographa vermiformis* (Leight.) Flakus, Etayo & Miadl., and seems to be confined to lichens of the genus *Lepra*, a recent segregate from *Pertusaria* s. lat. [**NB:** References to Hawksworth (1980) in this paper refer to his paper in *Notes R.B.G. Edinburgh* **38:** 165–183 (1980), not to *Trans. Brit. Myc. Soc*. **74:** 363–386 (1980) as given in the References list on p. 341. Also, the paper makes no mention of *Spirographa vinosa*, whose status in the British Isles is in doubt.].

FRISCH, A., KLEPSLAND, J., PALICE, Z., BENDIKSBY, M., TØNSBERG, T. & HOLIEN, H. 2020. New and noteworthy lichens and lichenicolous fungi from Norway. *Graphis Scripta* **32:** 1–47. Many new records for Norway, including an extension of range north from Scotland for *Arthothelium macounii* and *Puttea duplex*. *Arthonia anombrophila* is transferred to *Reichlingia* as *R. anombrophila* (Coppins & P. James) Frisch.

FRISCH, A., MOEN, V.S., GRUBE, M. & BENDIKSBY, M. 2020. Integrative taxonomy confirms three species of *Coniocarpon* (*Arthoniaceae*) in Norway. *MycoKeys* **62:** 27–51. The *Arthonia cinnabarina* group in Norway is treated in the genus *Coniocarpon* DC. (1805). Three species are recognized: *C. cinnabarinum* DC. (syn. *Arthonia cinnabarina*), *C. cuspidans* (Nyl.) Moen, Frisch & Grube (syn. *Arthonia cinnabarina* f. *cuspidans* Nyl., *Arthonia elegans* auct. p.p.) and *C. fallax* (Ach.) Grube (syn. *Arthonia elegans* (Ach.) Almq.). The type specimen of the basionym of *C. cuspidans* is from Ireland, and several British collections of *C. cuspidans* are also cited, all previously named as *Arthonia elegans*. [Other British material previously named as *Arthonia elegans* needs re-evaluating, and it is likely that most specimens are referable to *C. cuspidans*. *Coniocarpon fallax* does occur in the British Isles, even though no British specimens are cited in this paper].

KONDRATYUK, S.Y., LŐKÖS, l., FARKAS, E., JANG, S.-H., LIU, D., HALDA, J., PERSSON, D.E., HANSSON, M., KÄRNEFELT, I., THELL, A. & HUR, J.-S. 2019. Three new genera of the *Ramalinaceae* (lichen-forming Ascomycota) and the phenomenon of presence of 'extraneous mycobiont DNA' in lichen associations. *Acta Botanica Hungarica* **61:** 275–323. Resulting from phylogenetic analyses three genera, *Coppinsidea*, *Vandenboomia* and *Wolseleyidea*, are newly introduced and three others are resurrected. Name changes affecting British taxa are as follows.

Coppinsidea S.Y. Kondr., Farkas & Lőkös (type *C. sphaerella*): *C. alba* (Coppins & Vězda) S.Y. Kondr., Farkas & Lőkös (syn. *Biatora veteranorum*, *Catillaria alba*), *C. aphana* (Nyl.) S. Y. Kondr., Farkas & Lőkös (syn. *Catillaria aphana*), *C. fuscoviridis* (Anzi) S.Y. Kondr., Farkas & Lőkös (syn. *Bacidia fuscoviridis*), *C. scotinodes* (Nyl.) S.Y. Kondr., Farkas & Lőkös (syn. *Catillaria scotinodes*).

Ivanpisutia S.Y. Kondr., Lőkös et J.-S. Hur (2015) (type *I. oxneri*): *I. ocelliformis* (Nyl.) S.Y. Kondr (syn. *Biatora ocelliformis*).

Lecaniella Jatta (1889) (type *L. cyrtella*): *Lecaniella cyrtella* (Ach.) Jatta (1889) (syn. *Lecania cyrtella*), *Lecaniella cyrtellina* (Nyl.) S.Y. Kondr. (syn. *Lecania cyrtellina*), *Lecaniella dubitans* (Nyl.) S.Y. Kondr. (syn. *Lecania dubitans*), *Lecaniella erysibe* (Ach.) S.Y. Kondr. (syn. *Lecania erysibe*), *Lecaniella hutchinsiae* (Nyl.) S.Y. Kondr. (syn. *Lecania hutchinsiae*), *Lecaniella naegelii* (Hepp) S.Y. Kondr. (syn. *Lecania naegelii*), *Lecaniella sambucina* (Körb.) Jatta (1889) (syn. *Lecania sambucina*), *Lecaniella sylvestris* (Arnold) S.Y. Kondr. (syn. *Lecania sylvestris*).

Myrionora R.C. Harris (1988) (type *M. albidula*): *M. globulosa* (Flörke) S.Y. Kondr. (syn. *Biatora globulosa*), *M. ligni-mollis* (T. Sprib. & Printzen) S.Y. Kondr.

Vandenboomia S.Y. Kondr. (type *V. chlorotiza*): *V. chlorotiza* (Nyl.) S.Y. Kondr. (syn. *Lecania chlorotiza*).

Retained in *Lecania* s. str. are *L. fuscella* (the type species), *L. aipospila*, *L. inundata*, *L. nylanderiana*, *L. rabenhorstii* and *L. turicensis*, and probably *L. fructigena*.

[This paper represents work in progress, with several gaps in coverage, and the results are somewhat controversial. Hence, they will not be immediately adopted for the BLS Taxon Dictionary].

KONDRATYUK, S.Y., LŐKÖS, l., JANG, S.-H., HUR, J.-S. & FARKAS, E. 2019. Phylogeny and taxonomy of *Polyozosia*, *Sedelnikovaea* and *Verseghya* of the *Lecanoraceae* (Lecanorales, Lichen-forming Ascomycota). *Acta Botanica Hungarica* **61:** 137–184. Phylogenetic analyses have resulted in several nomenclatural innovations. Those affecting British taxa are as follows:

Glaucomaria M. Choisy (1929) (type *G. rupicola* (L.) M. Choisy [? valid combination]; *Lecanora rupicola*): *G. carpinea* (L.) S.Y. Kondr., L. Lőkös & Farkas (syn. *Lecanora carpinea*); *G. sulphurea* (Hoffm.) S.Y. Kondr., L. Lőkös & Farkas (syn. *Lecanora sulphurea*; BUT see note below); *G. swartzii* (Ach.)

S.Y. Kondr., L. Lőkös & Farkas (syn. *Lecanora swartzii*).

Polyozosia A. Massal. (1855) (type *P. poliophaea* (Wahlenb.) Ach.; *Lecanora poliophaea*): *P. albescens* (Hoffm.) S.Y. Kondr., L. Lőkös & Farkas (syn. *Lecanora* albescens); *P. andrewii* (B. de Lesd.) S.Y. Kondr., L. Lőkös & Farkas (syn. *Lecanora andrewii*). *P. crenulata* (Ach.) S.Y. Kondr., L. Lőkös & Farkas (syn. *Lecanora crenulata*); *P. dispersa* (Pers.) S.Y. Kondr., L. Lőkös & Farkas (syn. *Lecanora dispersa*); *P. hagenii* (Ach.) S.Y. Kondr., L. Lőkös & Farkas (syn. *Lecanora hagenii*); *P. populicola* (DC.) S.Y. Kondr., L. Lőkös & Farkas (syn. *Lecanora populicola*); *P. pruinosa* (Chaub.) S.Y. Kondr., L. Lőkös & Farkas (syn. *Lecanora pruinosa*); *P. sambuci* (Pers.) S.Y. Kondr., L. Lőkös & Farkas (syn. *Lecanora sambuci*); *P. semipallida* (H. Magn.) S.Y. Kondr., L. Lőkös & Farkas (syn. *Lecanora semipallida*); *P. straminea* (Ach.) S.Y. Kondr., L. Lőkös & Farkas (syn. *Lecanora straminea*).

Straminella M. Choisy (1929) (type *Lecanora varia*): *S. conizaeoides* (Nyl. ex Cromb.) S.Y. Kondr., L. Lőkös & Farkas (syn. *Lecanora conizaeoides*); *S. varia* (Hoffm.) S.Y. Kondr., L. Lőkös & Farkas (syn. *Lecanora varia*).

The combination "*Glaucomaria sulphurea*" seems to have arisen by confusion between *Lecanora sulphurea* (Hoffm.) Ach. and *Lecanora sulphurata* (Ach.) Nyl. The latter certainly belongs in the *Glaucomaria* group, whereas the former belongs in the *Lecanora symmicta* group, as indicated in Figs 1 & 2 of this paper!

[This paper represents work in progress, with several gaps in coverage, and several of the results are somewhat controversial. Hence, they will not be immediately adopted for the BLS Taxon Dictionary].

LÜCKING, R. & KALB, K. 2018. Formal instatement of *Allographa* (Graphidaceae): how to deal with a hyperdiverse genus complex with cryptic differentiation and paucity of molecular data. *Herzogia* **31:** 535–561. Molecular phylogenetic analysis showed that the genus *Graphis* sensu Staiger represents two separate, only distantly related lineages. The generic name *Allographa* Chevall. (1824) is available for the large group of species segregated from *Graphis* s. str. Of the British graphids, *Graphis ruiziana* belongs to this latter genus, as *Allographa ruiziana* (Fée) Lücking & Kalb. [It is likely that *Graphina pauciloculata* also belongs to *Allographa*, but material has not yet been critically examined or sequenced in recent studies.]

McCUNE et al. (1918). Biodiversity and ecology of lichens of Katmai and Lake Clarke National Parks and Preserves, Alaska. *Mycosphere* **9**(4): 859–930. [Available free online]. *Lecidea alpestris* is transferred to *Protomicarea* as *P. alpestris* (Sommerf.) McCune, and *Collema undulatum* var. *granulosum* to *Lathagrium* as *L. undulatum* var. *granulosum* (Degel.) M. Schultz & McCune.

MAGAIN, N., SPRIBILLE, T., DIMEGLIO, J., NELSON, P.R., MIADLIKOWSK, J. & SÉRUSIAUX, E. 2020. Phylogenetic evidence for an expanded circumscription of *Gabura* (*Arctomiaceae*). *Lichenologist* **52:** 3–15. *Gabura insignis* (P.M. Jørg. & Tønsberg) Magain & Sérus. (2020) is reported new to the British

Isles from SW Ireland and NW Scotland. It may have been previously overlooked, resembling a poorly developed form of *Leptogium brebissonii*.

PLANTLIFE. 2016. *Lichens and Bryophytes of Atlantic Woodland in South West England. A Handbook for Woodland Managers*. ISBN 978-1-910212-33-2. Pp 71.

PLANTLIFE. 2018. *Lichens of Atlantic Woodlands in the Lake District. Guide 1. The Lobarion lichens of ash, hazel, willow, rowan and old oak*. ISBN 978-1-910212-65-3. An 8-page, laminated, fold-out guide for a selection of 20 characteristic species.

PLANTLIFE. 2018. *Lichens of Atlantic Woodlands in the Lake District. Guide 2. The Parmelion lichens of birch, alder and oak*. ISBN 978-1-910212-66-0. An 8-page, laminated, fold-out guide for a selection of 20 characteristic species.

SHIVAROV, V.V. 2019. *Clypeococcum hemiamyloideum* (*Polycoccaeae*, Ascomycota), a novel lichenicolous fungus on *Verrucaria latebrosa*. *Herzogia* **32:** 438–433. Original description of a species since recently reported from Wales on *Verrucaria anziana*.

VAN DEN BOOM, P.P.G. & ETAYO, J. 2017. Further interesting lichens and lichenicolous fungi from Fuerteventura, Canary Islands (Spain), with three new species and notes on *Mixtoconidium*. *Ascomycete.org*. **9**(4): 124–134. [Available free on-line]. Provides description and discussion of *Mixtoconidium insidens* (Vouaux) Etayo & van den Boom (syn. *M. canariense* Etayo) and photos of the sexual morph. This species has recently been found as the anamorph (with macro- and microconidia) on *Ramalina lacera* in Ireland. See also entry above for ETAYO (1995).

WAN, S. & ELLIS, C.J. (2019) Are lichen growth form categories supported by continuous functional traits: water holding capacity and specific thallus mass? *Edinburgh Journal of Botany*, **77:** 65–76. A study to examine how morphological characters that relate to lichen physiology vary across species from different growth forms, e.g. fruticose, foliose, with green-algae or cyanobacteria. Results suggest that measures such as specific thallus mass or water holding capacity are only broadly related to growth form, and that ecological studies should – where possible – focus on continuous measures of morphology that are known to be relevant to physiology.

ZAMORA, J.C., PÉREZ-OTEGA, S. & RICO, V.J. 2011. *Tremella macrobasidiata* (Basidiomycota, *Tremellales*), a new lichenicolous fungus from the Iberian Peninsula. *Lichenologist* **43:** 407–415. Gives the original description of *Tremella macrobasidiata*, a lichenicolous fungus on *Lecanora chlarotera*, recently added to the British list.

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, e.g . specimen in Herb. E, Hitch etc., with accession number where applicable, field record or photograph, to allow for future verification if necessary or to aid paper/report writing. Determined/confirmed by, Comments, New to/the, Finally recorder. An authority with date after species is only required when the species is new to the British Isles. Records of lichens listed in the RDB are particularly welcome, even from previously known localities. In the interests of accuracy, the data can be sent to me by e-mail at 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

Asteroglobulus giselae Brackel (2010): on blackened patches of *Ramalina farinacea*, near Macquarie Mausoleum, Gruline, Mull, VC 103, Mid Ebudes, GR NM544.400, alt. 10 m, April 2019, Giavarini 109 (**E**). An inconspicuous species, but readily identified microscopically from its sessile, black pycnidia, *c.* 60–100 µm diam., packed with hyaline, stellate (tetrahedral) conidia, (5–)7–10 µm. The conidia in the Scottish specimen are only about 5 µm diameter but appear to be immature. Originally described from Italy, it has since been found in the Canary Islands (Gran Canaria) always on *Ramalina farinacea*. For detailed description and illustrations see von Brackel in *Herzogia* **24:** 65–101 (2011). **BLS No. 2750.** *V.J. Giavarini*

Clypeococcum hemiamyloideum Shivarov (2019): on thallus of *Verrucaria anziana* in stream, Afon Las, Pass of Llanberis, VC 49, Caernarvonshire, GR SN/621.580, alt. 420 m, May 1998, Alan Orange 12103 (**NMW**), described by V.V. Shivarov in *Herzogia* **32**(2): 438–443. A polycoccoid species with ascomata immersed in darkened spots on host, with hymenial gel I + red, K/I + blue, ascospores brown, 1-septate verruculose, *c.* 17–23 µm long. **BLS No. 2754**. *A.Orange*

Gabura insignis (P.M. Jørg. & Tønsberg) Magain & Sérus. (2020): (i) on tree within parkland, Muckross Castle, Killarney Park, VC H2, North Kerry, GR V97-86-, only recorded as a co-habitant due to its minute size (thalli only *c.* 2–5 mm across), being easily overlooked. Thallus homoiomerous with lobes 1.0–1.2 mm across, dark brown with possible punctiform to linear soralia on the margins, yellowish or dark brown, alt.

30 m, February 2014; (ii) also known on tree in parkland. Dunvegan Castle, Isle of Skye, North Ebudes, VC 104, GR NG24-49-, alt. 20 m, June 2015. Both collections made by E. Sérusiaux s.n. (**LG**). This species has been described as looking like a depauperate form of *Leptogium brebissonii.* For a full description, illustrations and DNA analysis see *Lichenologist* **52:** 3–15 (2020). **BLS No. 2756.**

C.J.B. Hitch & B.J. Coppins

Graphis handelii Zahlbr. (1930): on acid bark of *Ilex* within *Fagus* – *Ilex* pasture woodland, with *Ilex* also supporting *Anisomeridium ranunculosporum*, *Mycoporum lacteum*, *Schizotrema quercicola* (*Schismatomma quercicola*), *Snippocia nivea* (*Schismatomma niveum*) and *Thelotrema lepadinum*, Bignell Wood, New Forest, VC 11, South Hampshire, GR SU2812.1331, alt. 50 m, April 2020. Determined by A. Aptroot. A pantropical lichen, previously recorded only from southern Portugal in Europe. This lichen contains norstictic acid and reacts K + yellow to red with crystals, so could be confused with *Graphis elegans*, but has non-striate erumpent lirellae, with an open disc when mature. The hymenium is interspersed with oil droplets, differing from any known British *Graphis*, and has shorter spores than *G. elegans*, with well-formed spores of 25 – 45 x 7 – 9 µm, 6 – 9 septate, the specimen also had some smaller poorly formed spores, as small as 17 x 6µm and 5-septate, see measurements in Lücking, Archer & Aptroot (2009), a world-wide key to the genus *Graphis* (*Ostropales*: *Graphidaceae*). *Lichenologist* **41**: 363–452, gives spores measurements of 20–45 x 6 – 9 µm, 5 – 11-septate for *Graphis handelii* and synonyms. The occasional smaller spores match those described in Lepista & Aptroot (2009) Seven species of *Graphis* from Portugal are reported new to Europe, *Lichenologist* **48**: 259–267. Close attention is warranted for *Graphis* in southern England and southwest and west Ireland, as there is potential for other species to occur, as has been found in Portugal. Photographs can be seen at https://www.fungi.org.uk/viewtopic.php?f=16&t=2854&p=12819#p12816
BLS No. 2768. *N.A. Sanderson*

Minutoexcipula tuckerae V. Atienza & D. Hawksw. (1994): lichenicolous, forming small 1–1.5 mm sporodochia-like colonies spotting the thallus of *Pertusaria leioplac.* It was discovered growing on the same slightly leaning trunks of middle-aged *Fagus* described for *Sphinctrina tubiformis* by Sanderson in *BLS Bulletin* **118:** 66 (2016): Great Stubby Hat, Busketts Wood, New Forest, VC 11, South Hampshire, GR SU307.108, alt. 30 m, October 2019. Confirmed by. V. Atienza & W. von Brackel. The 2–3 branched conidiophores 12.5–14 µm, and brown narrow, 1-septate conidia 6.5–8 × 3–4 µm distinguish this species from *Lichenodiplis lecanorae* and other look-a-likes. For details see V. Atienza & D L Hawksworth (1994), *Mycological Research* **98**: 587–592.
BLS No. 2752. *V.J. Giavarini*

Mixtoconidium insidiens (Vouaux) Etayo & van den Boom (2017) [syn. *M. canariense* Etayo (1995)]: on *Ramalina lacera* on *Aesculus* and *Malus* in a garden, Carrons, Kilcolman, VC H8, Co. Limerick, GR R 268.431, September 2019, J. Seawright s.n. (**K(M)**. Identification confirmed by Dr J. Etayo. A distinctive fungus with large black

pycnidia, each with a flat disc-like apex formed in a gall, to 0.5 mm diam. In section pycnidial wall dark brown, K+ purple-red. Conidia colourless of two types formed in the same pycnidium: 1-septate, oblong macroconidia, 10–15 × 3.5–5 µm, and non-septate, bacilliform microconidia measuring 4–6.5 × 0.8–1 µm. The sexual morph, lacking in the Irish material, has black *Arthonia*-like ascomata with a thin orange, K+ purple pruina, and hyaline to brownish 3-septate ascospores. The species has been previously recorded on *Ramalina* species (e.g. *R. canariensis* and *R. lacera*) in the Canary

Islands, Balearic Islands and Sicily. For further descriptions, illustrations and discussion see Etayo in *Mycotaxon* **53:** 425–432 (1995) and van den Boom & Etayo in *Ascomycete.org* **9**(4): 124–134 (2017). **BLS No. 2749**. *J. Seawright*

Multiclavula corynoides (Peck) R.H. Petersen (1967); on soil on trackside in conifer plantation amongst mosses, Garbat Forest, VC106, Easter Ross, GR NH 4159.6888, alt. 260 m, November 2019, David Genney (**K(M)** 263804). An addition to the very small list of lichenized basidiomycetes in Britain. Described by R.H. Petersen in *American Midland Naturalist* **77**: 205-221 (1967). It has irregular but usually ± cylindrical, almost white fruit-bodies (straw to pinkish ochre according to Petersen) with pointed apices, basidia with more than four sterigmata, and slightly smaller basidiospores than *M. vernalis*. The Scottish specimen was not fertile but fits well with European collections on gross morphology. **BLS No. 2755**. *R. Shotbolt*

Protothelenella petri H. Mayrhofer & Poelt (1987): on upper (inner-facing) midribs of dead leaves of *Polytrichum juniperinum*, Cairn Gorm, Coire an t-Snoechda path from ski centre, VC96, East Inverness, GR NJ001.048, July 2009, G. Greiff BF97 (**K(M)**. Determined by.G. Greiff, confirmed by. P. Cannon. This species is similar to *Protothelenella sphinctrinoidella*, but has smaller and relatively broader ascospores, and occurs in a very specific habitat on dead leaves of *Polytrichaceae*; *P. sphinctrinoidella* appears to be a generalist overgrowing hepatics and dead plant material. For more information see Mayrhofer in *Herzogia* **7**: 313-342 (1987), and http://fungi.myspecies.info/all-fungi/protothelenella-petri. **BLS No. 2751**

P. F. Cannon

Skyttea megalosporae Etayo & Diederich (1998): on thin crust of *Megalospora tuberculosa*, Tower Wood, Killarney National Park, VC H2, North Kerry, Ireland, Grid: V918-9.821-2, November 2010. Herb. (LF) No. 78 Giavarini and confirmed from sketch and log-book notes by B.J. Coppins. The specimen involves a patch 5 × 3 cm, spreading over the host on mossy bark. Retained until now as an unidentified extra in box of leftovers. Described in *Lichenologist* **30:** 103–120 (1998) and incorporated into a key published in *Lichenologist* **32:** 423–485 (2000). The sigmoid to helical spores, 22–46 µm long and specific host clearly distinguish it from other *Skyttea* species. The host tree is not known. **BLS No. 2767.** *V.J. Giavarini*

Spirographa pyramidalis (Etayo) Flakus, Etayo & Miadl. (2019): on the grey flaky lobe tips of *Hypotrachyna revoluta* s. lat. (the host of the type) attached to *Crataegus* branch, Dockens Water, Anses Wood, New Forest, VC 11, South Hampshire, GR SU2269.1265, January 2020. LF Herb. V. Giavarini No. 186 (Syn.: *Cornutispora pyramidalis* Etayo). Confirmed by Javier Etayo. The species is distinguished by the small, triangular pyramid-shaped conidia, 4–5 µm diam. peppered with guttules. For additional information see *Plant & Fungal Systematics* **64**(2): 288–344 (2019).
BLS No. 2764. *V.J. Giavarini*

Stigmidium placynthii Cl. Roux & Nav.-Ros. (1994), among squamules of *Placynthium* cf. *garovaglii* on limestone, dry valley south of Malham Tarn, V.C. 64, Mid-West Yorkshire, GR SD892.649, April 2017. Herb. Paul Cannon P3007 (**K(M)**). One of a small number of *Stigmidium* species with the upper inner wall of the perithecium lined with periphysis-like structures, and ascospores that become pigmented. The identity of the host is uncertain; it could alternatively be *P. caesium* (refer to Košuthová et al., *Lichenologist* **48**: 3–12, 2016). For more information see Triebel & Roux (1994) *Bull. Soc. Linn. Provence* **45**:451-542, and http://fungi.myspecies.info/all-fungi/stigmidium-placynthii. **BLS No. 2761**.

P.F. Cannon & B.J. Coppins

Stigmidium tetrasporum Etayo (1994): on thalli of *Thelidium papulare* and *Verrucaria muralis* on limestone in woodland, Harridge Woods, Oakhill, VC 6, North Somerset, GR ST646.477, April 2016. Specimens in (**E)**. Confirmed by B.J. Coppins. Both collections have few mature perithecia. These are *c.* 50–80 µm diameter, scattered or mainly in loose groups. The obpyriform asci are 4-spored, with the 1-septate hyaline spores *c.* 12–14 ×4 µm. A very inconspicuous species, which should be looked for in similar habitats on members of the *Verrucariaceae*. **BLS no. 2763**. *D.J. Hill*

Taeniolella arthoniae (M.S. Christ. & D. Hawksw.) Heuchert & U. Braun (2018): parasitic on *Lecanactis abietina* on dry bark on old *Quercus*, on bank of flooded old gravel pit, within *Quercus – Fagus – Ilex* pasture woodland, Ferny Crofts, New Forest, VC11, South Hampshire, GR SU365.056, alt.. 25 m, February 2020, collected by N. A. Sanderson, determined by Uwe Braun. The fungus had infected most of the dominant *Lecanactis abietina* and was suppressing the apothecia but was avoiding completely the accompanying *Sporodophoron cretaceum*. Previously this lichenicolous fungus has been recorded from *Dendrographa decolorans*, *Lecanactis abietina*, *Lecanographa lyncea*, *Pachnolepia pruinata* in Denmark, France, Luxembourg, the Netherlands, Spain and Sweden, on oak and rarely ash. From this it seems to be a species of dry bark on older trees in western Europe and one to be expected in Britain. The most distinctive feature of *Taeniolella arthoniae* is the frequently branched conidiophores and conidial chains; the generalist *Taeniolella delicata* can occur on *Lecanactis abietina* but is unbranched. A description, photographs and illustrations of *Taeniolella arthoniae* are given in Heuchert, Diederich & Ertz, (2018) Taxonomic monograph of the genus *Taeniolella* s. lat. (Ascomycota), *Fungal Systematics and Evolution*, **2**: 89–92 https://doi.org/10.3114/fuse.2018.02.06 **BLS No. 2757**.

N.A. Sanderson

Tremella macrobasidiata J.C. Zamora, Pérez-Ort. & V.J. Rico (2011): infecting the apothecia of *Lecanora chlarotera* on *Quercus* trunk in S-facing former oak coppice, Oak Wood, The Brunt, Spott, VC 82, East Lothian, GR NT680.735, alt. 140 m, August 2015, Coppins 24965 (**E**). For some time, I thought this was an undescribed hyphomycete, and my thanks go to Martin Grube for pointing out the possibility of *T. macrobasidiata*. The hymenium (disc) of infected apothecia is discoloured variously orange brown to blackish. The anatomical features of the fungus are much obscured by the dense pigmentation, but it can usually be recognized by the presence on the surface of hyaline 'asteroconidia' overall *c.* 11–16 µm diameter, with mainly four arms each 4–7.5 × 0.5–1 µm. This fungus has been found at several sites in the Lothians, also near Forres in Moray (VC 95); it is likely to be common. All collections have been on *Lecanora chlarotera*, not seeming to attack nearby related species such as *L. argentata* and *L. hybocarpa*. For full description, illustrations and discussion see Zamora et al. in *Lichenologist* **43:** 407–415 (2011). **BLS No. 2762.** *B.J. Coppins*

Verruculopsis flavescentaria Gueidan, Nav.–Ros. & Cl. Roux (2007): on limestone, initially parasitic on *Caloplaca flavescens*, alt. 120 m, Little Ormes Head, VC 49, Caernarvonshire, GR 23(SH)/8134.8243, March 2020, Alan Orange 24816a (**NMW**). An ITS sequence agrees with a specimen cited in Navarro-Rosinés et al. (2007) *Bull.*

Soc.Linn. Provence **58:** 133-180, although the ascospores are slightly larger than the cited value, at 15.5–19.5 × 5.5–7 µm, 2.5–3.4 times as long as wide. **BLS No. 2517**.
A. Orange

Xenonectriella septemseptata (Etayo) Etayo & van den Boom (2014): on *Melanelixia subaurifera* wrapped around a small twig of scrubby *Crataegus* in woodland above marsh, Studland Heath NNR, VC 9, Dorset, GR SZ031.838, November 2019. Identification confirmed by Javier Etayo. The species has orange to red perithecia that are (apart from the papilla) almost entirely immersed in the thallus. An unusual feature is the (3–5–) 6–7-septate fusiform spores with unusually acute apices that are easily distorted. The original description (as *Pronectria*) appears in *Nova Hedwigia* **67:** 499–509 (1998); the combination (from *Pronectria* to *Xenonectriella*) can be found in *Opuscula Philolichenum* **13:** 70 (2014). **BLS No. 2765.** *V.J. Giavarini*

Xenonectriella subimperspicua (Speg.) Etayo (2017): parasitic on *Punctelia jeckeri* and *Parmelia sulcata* associated with rich *Xanthorion* bark community supported by row of *Acer pseudoplatanus*, Whitecliff, Poole, VC 9, Dorset, GR SZ032.905, alt. 1 m, October 2019. Confirmed by W. von Brackel. This minute species should be particularly searched for on the terminal portion of necrotic patches occurring on *Parmelia sulcata*. The perithecia are reddish, K+ purple, with small uniseriate, subglobose 1-septate, verruculose spores 6.5–8 × 5–6 µm. For key to lichenicolous '*Pronectria*' species, the reader is directed to Khodosovtsev et al. (2012), *Nova Hedwigia* **95**: 211–230. **BLS No. 2753.** *Vince Giavarini*

Other Records

Abrothallus cladoniae: parasitic on *Cladonia polydactyla* on *Crataegus* bush in pasture woodland spreading into heathland, Crow's Nest Bottom, New Forest, VC11, South Hampshire, GR SU2422.1622, alt. 85 m, January 2020. New to Hampshire.
N.A. Sanderson

Abrothallus suecicus: on blackened *Ramalina farinacea* on isolated *Salix* by Loch Buidhe, VC 107, East Sutherland, GR NH659.982, alt. 160 m, November 2019. Specimen not retained. New to the Vice-county. *B.J. Coppins*

Abrothallus usneae: parasitising *Usnea flammea*, Carn Galver NT, Zennor, VC1, West Cornwall, GR SW4217.3647, alt. 137 m, January 2020. First record for England.
N.G. Bacciu

Abrothallus welwitschii: on *Sticta limbata* on *Quercus*, north of Mary Mount on east side of B5289 road, Derwent Water, VC 70, Cumberland, GR NY267.194, June 1969, Coppins s.n. (**E**). New to the Vice-county and northern England. *B.J. Coppins*

Agonimia flabelliformis: on base rich bark on veteran *Quercus* in parkland, in campsite, Rydal Park, VC69, Westmorland, GR NY3681.0635, alt. 80 m, September 2019. Plantlife/BLS survey. New to north west England. *N. A. Sanderson*

Agonimia octospora: on base rich bark on veteran *Quercus* within pasture woodland, recorded from 23 trees at 21 locations, Coed Bryn-mawr, Coed Glan-yr-afon, Coed Llyn Mair and Coed Bronturnor, in Coed Maentwrog NNR, VC48, Merionethshire, GR SH65-40-, SH64-40-, SH67-41-, SH66-41- & SH67-41-, alt. 30–100 m, October 2018 & May 2019. New to the NNR. A substantial population for a site outside of the New Forest and this population is likely to be the largest in North Wales.
N. A. Sanderson

Agonimia octospora: on base rich bark on three veteran *Quercus* in parkland, Middle Park and in the campsite, Rydal Park, VC69, Westmorland, GR NY3680.0643, NY3660.0648 & NY3723.0583, alt. 90 m, September 2019. Plantlife/BLS survey. New to Westmorland. *N. A. Sanderson*

Alectoria nigricans: widespread in very wind exposed, good quality sheep grazed *Racomitrium lanuginosum* heath, Broad End, Skiddaw, VC70, Cumberland, NY260.297, NY260.298, NY260.300 & NY261.300, alt. 810 – 840 m, September 2019. The second recent English record for this montane lichen
. *A.M. Cross & N.A. Sanderson*

Anaptychia ciliaris* subsp. *ciliaris: on a limestone headstone in St. Andrew's churchyard, Boxford, VC22, Berkshire, GR SU428.716, September 2019. Determined by Ken Sandell. *K. Sandell, I. Blatchley, P. Shipway* and *The Churchyard Group*

Anisomeridium ranunculosporum: on *Quercus* at woodland edge, Caerlaverock Castle, VC 72, Dumfriesshire, NY02.65, alt. 5–10 m, March 2020, specimen not retained. New to the Vice-county. *B.J. & A.M. Coppins & R. Yahr*

Arctomia delicatula: on phoenix (arisen from the dead) *Fraxinus* collapsed across a small watercourse at Glenborrodale RSPB Reserve, Sunart SSSI, VC 97 West Inverness-shire, GR NM601.610, January 2019. *A. Acton*

Arthonia arthonioides: (i) on dry bark of veteran *Quercus* near the coast, in woodland absorbed into a large garden, Salt.erns Copse, Exbury Gardens, New Forest, VC 11, South Hampshire, GR SZ4194.9959, alt. 5 m, January 2020; (II) also seen on dry bark on veteran *Quercus* on boundary of old lane on edge of grazing marshes during a planning survey, site name withheld, VC 11, South Hampshire, GR SU4--0--, May 2019. Material similar to the Exbury collection had been seen on two coastal veteran *Quercus* in Hampshire and the Isle of Wight, but on those, the pycnidia/apothecia initials were sterile. In the Exbury collection the pycnidia were producing conidia matching those described at

http://dryades.units.it/italic/index.php?procedure=taxonpage&num=112.
This is a major range extension for this mainly upland species.
N.A. Sanderson & The Wessex Lichen Group

Arthonia atlantica: on damp overhanging rocks within grazed pasture woodland, recorded at nine locations in Coed Glan-yr-afon, in Coed Maentwrog NNR, VC48, Merionethshire, GR SH673.416, SH674.416, SH675.416 & SH676.416, alt. 60–80 m, October 2018 & May 2019. The area of occurrence was quite restricted, possibly representing the outcropping of a stratum of rock at the right aspect. New to the NNR and appears to be the largest population known for *Arthonia atlantica* in Wales.
N.A. Sanderson

Arthonia epiphyscia: on *Physcia tenella* on pendent canopy branch of freestanding mature *Fraxinus excelsior* on trackway bank, Nantmeddal Fawr, *c.* 2 km south-east of Llanarth, VC 46, Cardiganshire, GR SN431.556, alt. *c.* 200 m, October 2019. Herb. SPC. The first record for the Vice-county. *S.P. Chambers*

Arthonia graphidicola: on thallus of *Graphis scripta* s.s., on upperside of bent over *Corylus avellana* stem on streambank in old woodland, Coed Nant Tawelan, *c.* 1½ km south of Tyncelyn, VC 46, Cardiganshire, GR SN642.618, alt. 150 m, January 2020. Herb. SPC. The third VC and fifth Welsh record. *S.P.Chambers*

Arthonia ilicinella: apparently parasitising *Arthonia ilicina* on *Ilex* in *Fagus – Ilex* pasture woodland, Great Stubby Hat, Busketts Wood area, New Forest, VC 11, South Hampshire, GR SU3053.1091, alt. 35 m, December 2019. The parasitic behaviour of *Arthonia ilicinella* does not appear to have been noted previously. See <https://www.fungi.org.uk/viewtopic.php?f=16&t=2744> for more discussion of this find. *N.A. Sanderson*

Arthonia invadens: parasitising *Schizotrema quercicola* (*Schismatomma quercicola*), at two locations, at each on single veteran *Quercus* on the rims of shallow ravines in pasture woodland, Coed Ty-coch and Coed Bronturnor, in Coed Maentwrog NNR, VC 48, Merionethshire, GR SH6606.4117 & SH6660.4150, alt. 60–70 m, October 2018 & May 2019. New to the NNR. *N. A. Sanderson*

Arthonia invadens: parasitic on *Schizotrema quercicola* (*Schismatomma quercicola*) on two veteran *Quercus*, within *Quercus – Corylus* pasture woodland, Wormstall Wood, New Forest, VC 11, South Hampshire, GR SZ3593.9846 & SZ3594.9847, alt. 20 m, February 2020. A new 10 km grid square record for a Section 41 species.
N.A. Sanderson

Arthonia punctella: on three thalli of *Diplotomma alboatrum* on two large siliceous stone blocks in south-west-facing mortared wall of old barn, Ffos-lâs, on the coast *c.* 1 km south-west of Morfa Bychan, VC 46, Cardiganshire, SN560.758, alt. 50 m, February

2020. Material used up in i.d. The online NBN Atlas has a 1970 Francis Rose record for Wales from SH66.71, VC 49, Caerns., obtained from COFNOD (the N. Wales environmental records centre), which describes the associated habitat as 'relict forest in deep ravine, Coedydd Aber SSSI', improbably for the species, so is likely a transcription error for a corticolous *Arthonia* or *Arthopyrenia* with a similar epithet, for example *A. punctiformis*. New to Wales. *S.P. Chambers*

Arthonia thelotrematis: parasitising *Thelotrema lepadinum* on small old *Ilex* at base of cliff within upland *Quercus petraea – Betula* pasture woodland, Coed y Rhygen NNR, Llyn Trawsfynydd, VC 48, Merionethshire, GR SH6818.3710, alt. 210 m, November 2019. Second Welsh site for this rare oceanic lichenicolous fungus. *N.A. Sanderson*

Arthonia thelotrematis: parasitising *Thelotrema lepadinum* on a small *Ilex* in flushed woodland above flood plain, in riverine pasture woodland, Beaulieu River, New Forest, VC 11, South Hampshire, GR SU3865.0509, alt. 5 m, December 2019. A new 10km grid square record for this rare oceanic lichenicolous fungus.
N.A. Sanderson & A.M. Cross

Arthonia zwackhii: parasitising *Phlyctis argena* on veteran *Quercus* and *Acer campestre*, within *Quercus – Corylus* pasture woodland, Wormstall Wood, New Forest, VC 11, South Hampshire, GR SZ3579.9846 & SZ3576.9846, alt. 20 m, March 2020. A new 10 km grid square record for a Near Threatened species. *N.A. Sanderson & A.M. Cross*

Arthopyrenia carneobrunneola: on *Corylus* within two gullies in upland *Corylus – Betula* pasture woodland, Coed y Rhygen NNR, Llyn Trawsfynydd, VC 48, Merionethshire, GR SH6805.3699, SH6804.3699 & SH6787.3694, alt. 220 & 240 m, November 2019. Fourth Welsh site for this strongly oceanic species. *N.A. Sanderson*

Arthopyrenia fraxini: on *Sorbus aucuparia*, in pasture woodland in a ravine, May Beck, North York Moors, VC 62, North-east Yorkshire, GR NZ8915.0302, alt. 130 m, March 2020. First modern record the species for the Vice-county.
N.A. Sanderson & BLS Winter Workshop

Arthopyrenia salicis: on *Corylus* in woodland, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY02-65-, alt. 5–10 m, March 2020, specimen not retained. New to the Vice-county. *B.J. & A.M. Coppins & R. Yahr*

Arthothelium macounii: on three *Corylus* in a stand of *Corylus* at the Knapdale Beaver release site at Loch a' Chreag Mhòr, Knapdale SSSI, VC 101 Kintyre. Two at GR NR804.912 and one at NR804.913, March 2019. A Nationally Rare, Red-listed Vulnerable specialist species of the hyperoceanic *Graphidion*. *A. Acton*

Bachmanniomyces uncialicola: parasitising *Cladonia uncialis* subsp. *biuncialis* in *Vaccinium myrtillus – Cladonia arbuscula* montane heath, Carl Side, Skiddaw, VC 70,

Cumberland, GR NY2548.2802, alt. 735 m, September 2019. New to the Lake District. *A.M. Cross & N.A. Sanderson*

Bacidia assulata: (i) in small wound track on small suppressed old *Fagus*, within *Fagus – Ilex – Quercus* pasture woodland, in an area of relic old growth within plantations, north of Ironshill Inclosure, New Forest VC 11, South Hampshire, SU3157.1019, alt. 25 m, April 2020; (ii) on edge of wound track on old *Fagus*, within *Fagus – Ilex – Quercus* pasture woodland, The Ridge, Busketts Wood area, New Forest VC 11, South Hampshire, GR SU3147.1091, alt. 30 m, April 2020. A new 10km grid square and sites for a little known and apparently rare taxon. The British material is thought to be an undescribed Mediterranean – southern Atlantic species and not *Bacidia assulata* at all. *N.A. Sanderson*

Bacidia circumspecta: (i) in small wound tracks on three old *Fagus*, within *Fagus – Ilex – Quercus* pasture woodland, Busketts Wood area, New Forest VC 11, South Hampshire, GR SU3217.1116, SU3212.1106 & SU3117.1123, alt. 25 m April 2020; (ii) in a small wound track on an old Fagus, in *Fagus – Ilex – Quercus* pasture woodland, within an area of relic old growth in plantations, north of Ironshill Inclosure, New Forest, VC 11, South Hampshire, GR SU3166.1018 alt. 25m, April 2020. Recorded from four trees in a new 10km grid square for this Section 41 species, which appears to be another wound track specialist with a strong population on *Fagus* in the New Forest. *N.A. Sanderson*

Bacidia friesiana: on the stems of at least three *Sambucus nigra* bushes entangled in *Rubus fruticosus* scrub in glade dominated by *Oenanthe crocata* in carr on north-east bank of the Afon Soden, *c.* 200 m south-west of Synod-ganol farm, *c.* ½ km west-southwest of Synod Inn, VC 46, Cardiganshire, SN396.542, alt. *c.* 175 m, March 2020. Herb. SPC. The second Vice-county record. *S.P. Chambers*

Bacidia fuscoviridis: at base of wall, below level of grass, Cille-bharra, Barra, VC 110, Outer Hebrides, GR NF705.073, alt. 25 m, August 2019, field record, sterile. New to the Vice-county. *A. Acton, B.J. Coppins, J.R. Douglass & S.G. Price*

Bacidia incompta: in wound track on old *Fagus* with 'platey' bark in *Quercus – Fagus – Ilex* pasture woodland, Wormstall Wood, New Forest, VC 11, South Hampshire, GR SZ3611.9832, alt. 15m, February 2020. A new 10km grid square record for a Section 41 species. *N.A. Sanderson*

Bacidia rubella: on old *Fraxinus* in meadow, Sparham, East Norfolk, VC 27 GR TG082.185, April 2020. First post 2000 record of this species for the Vice-county. *P.W. Lambley*

Bacidia subincompta: in small wound tracks on ancient *Fraxinus* within open pasture woodland, High Park, Rydal Park, VC 69, Westmorland, GR NY3715.0687,

alt. 250 m, September 2019. Plantlife/BLS survey. A new site for this Vulnerable lichen, which is very rare in England. *N.A. Sanderson*

Bactrospora corticola: fertile on old *Quercus* in woodland, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY0265.6551, alt. 5–10 m, March 2020, Coppins 25599 (**E**). New to the Vice-county. *B.J. &, A.M. Coppins & R. Yahr*

Bactrospora homalotropum: with *Melaspilea atroides* on *Corylus* in *Corylus* stand, below Craig Dharaich, Glenleraig, Ardvar Woodlands SSSI, VC 108, West Sutherland, GR NC1437.3186, alt. 20 m, October 2019, leg. C. Walker & C. Cant **(E)**, sub *Melaspilea atroides*. Determined by. B.J. Coppins. New to the Vice-county and furthest north record for the species. *B.J. Coppins*

Biatora vernalis: sterile material on a veteran *Quercus* within upland pasture woodland, High Park, Rydal Park, VC 69, Westmorland, GR NY3696.0655, alt. 150 m, September 2019. Plantlife/BLS survey. New to the Vice-county. *B.J. Coppins & N.A. Sanderson*

Biatora vernalis: sterile thalli on five veteran *Quercus with*in upland pasture woodland, Scales, VC 70, Cumberland, GR NY1678.1651, NY1678.1650, NY1678.1646 & NY1673.1637, alt. 130 – 210 m September 2019. A rediscovery of an old Brian Coppins record of a lichen rare in England. *N.A. Sanderson*

Bilimbia lobulata: on mortar of boundary wall, Cille-bharra, Barra, VC 110, Outer Hebrides, GR NF705.073, alt. 25 m, August 2019. Herb. Coppins 25570 (**E**). The BLS Mapping Scheme Database has post-1960 records for NB0--0-- and NB0--3--, but without supporting information. Confirmation for the Vice-county. *A. Acton, B.J. Coppins, J.R. Douglass & S.G. Price*

Botryolepraria lesdainii: in mortared crevices in boundary wall and church wall, Cille-bharra, Barra, VC 110, Outer Hebrides, GR NF705.073, alt. 25 m, August 2019, field record. New to the Vice-County. *A. Acton, B.J. Coppins, J.R. Douglass & S.G. Price*

Buellia badia: one small streak on the flat upperside of a heavily nutrient-enriched softwood fence rail in farmyard, Nantmeddal Fawr, *c.* 2 km south-east of Llanarth, VC 46, Cardiganshire, GR SN430.556, alt. 200 m, October 2019. Field record. The second Vice-county and third Welsh record. *S.P. Chambers*

Buellia hyperbolica: on south facing well lit veteran *Quercus* in glade within pasture woodland, Coed Ty-coch, in Coed Maentwrog NNR, VC 48, Merionethshire, GR SH6611.4119, alt. 80 m, October 2018. Second site for Merionethshire and the first record from an upland rainforest; potentially an overlooked habitat for this Vulnerable Mediterranean – Atlantic lichen. *N.A. Sanderson*

*"**Buellia violaceofusca**"*: for details, see under *Lecanographa amylacea.*

Calicium hyperelloides: on lignum on trunk of fallen *Quercus*, in parkland, Lanhydrock Park, VC 2, East Cornwall, GR SX0902.6388, October 2019. New to the park and second Cornish record for the species. *N.A. Sanderson*

Calicium lenticulare: on acid veteran *Quercus* in parkland, in the campsite, Rydal Park, VC 69, Westmorland, GR NY3676.0654m, alt. 100 m, September 2019. Plantlife/BLS survey. New to the Vice-county. *D. Lamacraft & N.A. Sanderson*

Calicium pinastri: on lignum of dead *Quercus* branch fallen and propped against a tree, within open pasture woodland on floodplain, Mallard Wood, New Forest, VC 11, South Hampshire, GR SU3190.0904, alt. 20 m, July 2019. Although rarely reported from lignum, this specimen matched *Calicium pinastri* in the small size of the apothecia, the lack of white pruina and the short asci. This lichen has also been found on its more typical habitat of *Pinus* bark in the New Forest. *N.A. Sanderson*

Caloplaca alstrupii: sterile material on ancient *Fraxinus* within open pasture woodland High Park, Rydal Park, VC 69, Westmorland, GR NY3729.0658, alt. 240 m, September 2019. Plantlife/BLS survey. New to the Vice-county. *N.A. Sanderson*

Caloplaca herbidella s. str.: on five well-lit mesic veteran *Quercus* in parkland, Lower Park, Rydal Park, VC 69, Westmorland, GR NY3674.0618, NY3667.0607, NY3667.0607, NY3678.0593 & NY3681.0595, alt. 50–60, September 2019. Plantlife/BLS survey. Currently the only known viable population of this lichen in England. New to the Vice-county. *D. Lamacraft & N.A. Sanderson*

Caloplaca obscurella: sterile on *Fraxinus* on embankment, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY0246.6569, alt. 5–10 m, March 2020. Specimen not retained. New to the Vice-county. *B.J. & A.M Coppins & R. Yahr*

Caloplaca limonia: on east wall of Dornoch Cathedral, VC 107, East Sutherland, GR NH797.896, alt. 11 m, November 2019. Field record. New to the Vice-county. *B.J. Coppins*

Caloplaca marmorata: on mortar on top of boundary wall, Cille-bharra, Barra, VC 110, Outer Hebrides, GR NF705.073, alt. 25 m, August 2019, Herb. Coppins 25569 (**E**). New to the Vice-county. *B.J. Coppins*

Caloplaca ulcerosa: fertile on *Fraxinus* on embankment, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY0246.6569, alt. 5–10 m, March 2020. Specimen not retained. New to the Vice-county. *B.J. & A.M Coppins & R. Yahr*

Candelaria concolor: on *Acer pseudoplatanus* in Bruntsfield Links urban parkland, Edinburgh, VC 83, Midlothian, GR NT25-72-, alt. 90 m, February 2020. New to the Vice-county and to South east Scotland. *F. Newbery, H. Paul, M. Putnam & J. Skinner*
Carbonea vitellinaria: on *Candelariella vitellina* on bridge over the Aylesbury Arm of the Grand Union Junction Canal, Broughton, VC 24, Buckinghamshire, GR SP855.141, September 2019. New to the Vice-county. *P. Shipway*

Catillaria fungoides: two records from VC46, Cardiganshire; (i) on dry, nutrient-rich bark, on east-side of trunk of *Fraxinus excelsior* on south-facing slope above the Cletwr Fawr, *c.* 1 km north-northeast of Talgarreg, GR SN430.522, alt. 225 m, November 2019. Herb. SPC; (ii) sterile thalli, sparsely distributed on nutrient-rich bark on trunk of old *Fraxinus excelsior* in sheep pasture, *c.* 1½ km south of Tyncelyn, GR SN643.619, alt. 170 m, January 2020. Field record. The second and third Vice-county and Welsh records. *S. P. Chambers*

Catillaria nigroclavata: on *Fraxinus* twigs in parkland, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY024.656, alt. 5–10 m, March 2020. Specimen not retained. New to the Vice-county. *B.J. & A.M Coppins & R. Yahr*

Catillaria stereocaulorum: parasitising *Stereocaulon dactylophyllum* on a granite boulder, White Works, Princetown, Dartmoor, VC 3, South Devon, GR SX609.708, alt. 386 m, January 2020. New to England. *N.G. Bacciu*

Cercidospora macrospora: lichenicolous on *Lecanora muralis*, Valley of Stones, Little Bredy, VC 9, Dorset GR SY59-87-, alt. 150 m, June 2019. New to the Vice-county. *V.J. Giavarini*

Chaenotheca stemonea: sterile material on base of ancient *Quercus* stools on cliff, within pasture woodland in ravine, May Beck, North York Moors, VC 62, North-east Yorkshire, GR NZ8924.0248 & NZ8921.0251, alt. 140 m, March 2020. First modern record of the species for the Vice-county. *N.A. Sanderson & BLS Winter Workshop*

Cladonia angustiloba: on moss on tumbled down Cornish wall within grassy moorland, Helman Tor, Lanlivery, VC 2, East Cornwall, GR SX061.614, alt. 195 m, October 2019. DNA sequencing suggests that this taxon is just a morph of *Cladonia foliacea*, however, it is morphologically and ecologically distinct. New to England. *N.A. Sanderson*

Cladonia borealis: on moss on granite slabs, in grassy moorland, Helman Tor, Lanlivery, VC 2, East Cornwall, GR SX0614.6148 & SX062.615, alt. 180 & 200 m, October 2019. Confirmed by TLC by Raquel Pino-Bodas. This member of the *Cladonia coccifera* group is quite distinctive once learned, with the cortex at the base of the podetia areolate and broken into flat plates, which can be lifted at the edges, but these should not break into granules higher up, see

<https://www.fungi.org.uk/viewtopic.php?f=16&t=2736>. The species appears rare in the south and confined to high quality sites. New to south west England.
N.A. Sanderson

Cladonia callosa: on humus on granite boulder, in grassy moorland, Cheesewring, Minions, Bodmin Moor, VC 2 East Cornwall, GR SX2578.7193, alt. 340 m, October 2019. New to the Vice- county. *N.A. Sanderson*

Cladonia cyathomorpha: on moss on a tumbled down Cornish wall in grassy moorland, Helman Tor, Lanlivery, VC 2, East Cornwall, GR SX0614.6165, alt. 190 m, October 2019. New to the Vice-county. *N.A. Sanderson*

Cladonia cyathomorpha: on five old *Quercus* standards within an overstood *Corylus* coppice with standards, West Dean Woods, West Dean, VC 13, West Sussex, GR SU847.157, SU846.156, SU847158 & SU846.159, alt. 125 – 155 m, December 2019. This species should be looked for on older trees in lowland woodlands. New to the county. *N.A. Sanderson*

Cladonia phyllophora: in cervices in rock slabs within scree, Skiddaw, VC 70, Cumberland, GR NY2587.2865, alt. 840 m, September 2019. The first modern record for the species for Northern England. *N.A. Sanderson & A.M. Cross*

Cladonia phyllophora: very locally frequent on steep rocky south facing slope with *Calluna – Ulex gallii* heath and rare in open patch by a path in *Calluna – Vaccinium myrtillus* heath, Mytton Dingle & south of the Manstone Rock, Stiperstones, VC 40, Shropshire, GR SO3672.9836, alt.. 430–435 & 510 m, September 2019. New to Shropshire and central England. *N.A. Sanderson*

Cladonia phyllophora: on moss on tumbled down Cornish wall in grassy moorland, Helman Tor, Lanlivery, VC 2, East Cornwall, GR SX0619.6153, alt. 195 m, October 2019. New to Cornwall. *N.A. Sanderson*

Cladonia strepsilis: on wet moorland becoming colonised by herbaceous plants following burning 6 years previously, Trentishoe, Exmoor, VC4, North Devon, GR SS625.476, alt. 302 m, March 2020. Herb. Putnam. First recent record for the south west and third record for the Vice-county. Collection abundantly fertile.
M. Putnam & J. Skinner

Cornutispora lichenicola: parasitising *Hypogymnia physodes*, near Hillsford Bridge, Watersmeet NT, VC 4, North Devon, GR SS739.477, alt. 217 m, October 2019. New to the Vice-county. *N.G..Bacciu*

Corticifraga fuckelii: parasitising *Peltigera membranacea* on gravelly waste, Ramsley Hill, VC 3, South Devon, GR SX649.929, alt. 233 m, October 2019. New to the Vice-county. *N.G. Bacciu*

Cryptolechia carneolutea: an expanding colony in wound tracks on twisted ancient *Fagus*, within *Fagus – Ilex – Quercus* pasture woodland, Mallard Wood, New Forest, VC 11, South Hampshire, GR SU3177.0884, alt. 30 m, November 2019. A new location for this rare Section 41 lichen, threatened by Ash Dieback outside of the New Forest. *N.A. Sanderson*

Dermatocarpon miniatum: abundant on four table tombs, St Mary Magdalene Churchyard, Warham, VC 28, West Norfolk, GR TF942416, November 2019. A surprising addition to the East Anglian flora. New to Norfolk. *P.W. Lambley*

Didymocyrtis cladoniicola (*Phoma cladoniicola*)*:* on squamules of *Cladonia pocillum*, Ulwell Gap, Purbecks, VC 9, Dorset, GR SZ023.810, February 2016. Herb. specimen in (**E**). Confirmed by. B.J. Coppins. Conidia ellipsoid, 5–7(–7.5) × 2.5–3 µm, usually with a guttule at each end. New to England. *J. Seawright*

Didymocyrtis epiphyscia: parasitic on *Xanthoria parietina* on bushes beside the Camel Trail, Padstow, VC 1, West Cornwall, GR SW92-74-, alt. 10 m, February 2020. A lichenicolous fungus previously found parasitising *Physcia aipolia*. New to the county.
M. Putnam & J. Skinner

Didymocyrtis ramalinae: parasitising *Ramalina fastigiata* on *Prunus spinosa*, Windmill Farm Nature Reserve, VC 1, West Cornwall, GR SW693.151, alt. 85 m, November 2019. New to the county. *N.G. Bacciu*

Didymocyrtis slaptonensis: parasitic on *Xanthoria parietina* with numerous sites throughout Dorset VC 9, e.g. Grid refs for Poole SZ018909, Upton Country Park, SY992931, Lychett Matravers, SY936961, East Creech SY931821, Little Bredy SY5987, Lulworth Park SY8582, Kingston Lacy Park SZ9701, all June/July 2019.
J. Seawright & V.J. Giavarini

Dimerella lutea: on *Fraxinus* in clear-felled conifer plantation, Mynydd Maen, VC 35, Monmouthshire, GR ST2363.9722, April 2019. Herb. Bosanquet. New to the Vice-county. *S.D.S. Bosanquet*

Diplotomma hedinii: on a garden wall in West Down, Ilfracombe, VC 4, North Devon, GR SS517.420, alt. 155 m, April 2020. Herb. Putnam as a glue card only. New to the Vice-county and the only recent record for Devon. A species of limestone and sandstone outcrops sometimes found on churchyard headstones.
M. Putnam & J. Skinner

Diplotomma parasiticum: on apothecia of *Lecanora* aff. *albescens* on horizontal sandy cement wall top of old WWII pillbox/gun emplacement structure in sand dunes, Ynyslas NNR, VC 46, Cardiganshire, GR SN604.938, alt. 20 m, June 2011. Herb. SPC. Confirmed by B.J. Coppins. The second British record and new to Wales.
S.P. Chambers

***Endococcus brachysporus*: l**ichenicolous on *Porpidia tuberculosa*: on sandstone headstone in All Saints Churchyard, Bow Brickhill, VC 24, Buckinghamshire, GR SP91-34-, March 2020. Identified by B.J. Coppins. First record of the species for southern England. *P. Shipway*

Endococcus pseudocarpus: on *Collema multipartitum*, Melmerby Low Scar, VC 70, Cumberland, GR NY62-38-, July 1979. Herb. Coppins 4260 (**E**). New to the Vice-county. *B.J. Coppins*

Endococcus pseudocarpus: on *Collema multipartitum*, near Achnacroisch, Lismore, VC 98, Argyll Main, NM85-.41-, August 1980, Coppins 8148 (**E**). New to Vice-county.
B.J. Coppins

Endococcus ramalinarius: on *Ramalina farinacea* on *Quercus,* Grudie Oakwood, Strathbran, VC 106, East Ross, NH2857.6181, alt. 150 m, March 2016, Herb. Coppins 25614 (**E**). New to the Vice-county. *B.J. Coppins & A. Acton*

Enterographa brezhonega: associated with *Dimerella lutea* on *Quercus* trunk, Heathfield Down, Cornwood, VC 3, South Devon, GR SX601.601, alt. 132 m, October 2019. Second record for Devon and with the same association reported by Neil Sanderson in BLS Bulletin **122**. *N.G. Bacciu & B. Benfield.*

Enterographa elaborata: single thallus in rain track on small suppressed old *Fagus*, within *Fagus – Ilex – Quercus* pasture woodland, in area of relic old growth within plantations, north of Ironshill Inclosure, New Forest VC 11, South Hampshire, GR SU3157.1019, alt. 25 m, April 2020. A new location for this very rare Section 41 species. *N.A. Sanderson*

Enterographa sorediata: on dry bark with *Snippocia nivea* on old *Fagus*, within *Fagus – Ilex – Quercus* pasture woodland, Gritnam Wood, New Forest, VC 11, South Hampshire, GR SU2833.0630, alt. 3m, November 2019. A new substrate for the sorediate morph of *Syncesia myrticola*, which is mainly found on veteran oaks. Spotted by the distinctive fimbriate brown prothallus, which is characteristic of expanding thalli of this morph and confirmed by small patches of Pd + orange medulla.
N.A. Sanderson

Enterographa sorediata: on dry bark of ancient *Quercus*, within *Quercus – Ilex* pasture woodland, High Corner Wood, New Forest, VC 11, South Hampshire, GR

SU1978.1088, alt. 65 m, March 2020. A new 10km grid square record for a Section 41 species. *N.A. Sanderson*

Eopyrenula avellanae: on *Corylus* in upland *Fraxinus* pasture woodland, High Park, Rydal Park, VC 69, Westmorland, GR NY3702.0663, alt. 180 m, September 2019. Plantlife/BLS survey. New to the Vice-county. *N.A. Sanderson*

Epicladonia sandstedei: forming galls on *Cladonia* squamules, on *Betula*, within upland *Corylus – Betula* pasture woodland, Coed y Rhygen NNR, Llyn Trawsfynydd, VC 48, Merionethshire, GR SH677.369, alt. 230 m, November 2019. New to Wales.
N.A. Sanderson

Fellhanera ochracea: on leaves of *Tsuga heterophylla*, Ashclyst Forest NT, VC 3, South Devon, GR SY003.996, alt. 108 m, March 2017. Determined by B.J. Coppins. Second record for the Vice-county. *B. Benfield*

Fellhanera viridisorediata: subfertile with one immature apothecium, on vertical side of south-east-facing nutrient-enriched softwood fence rail in dairy pasture, *c.* 300 m north-west of Cefn-Gwallter, 2 km north-west of Pontsiân, VC 46, Cardiganshire, GR SN420.478, alt. 200 m, September 2019. The first fertile Vice-county record. Confirmed by roccellic acid re-crystallisation test in acetone. Material consumed.
S.P. Chambers

Fissurina alboscripta: on *Corylus* in *Corylus* stand, below Craig Dharaich, Glenleraig, Ardvar Woodlands SSSI, VC 108, West Sutherland, GR NC1437.3186, alt. 20 m, October 2019. Herb. leg. C. Walker & C. Cant (**E**). Confirmed by B.J. Coppins. Furthest north record for the species. New to the Vice-county. *B.J. Coppins*

Fissurina alboscripta: on 2 *Corylus* in coastal *Corylus* wood at Loch Mingarry, Quinish, Mull, VC 103 Mid Ebudes. One site at GR NM425 558 and the other at NM425.559, both January 2018. An Endemic, Red-listed Vulnerable specialist species of the hyperoceanic *Graphidion*. *A. Acton*

Fuscopannaria mediterranea: on 13 veteran *Quercus* within pasture woodland, Coed Bronturnor and Coed Glan-yr-afon, in Coed Maentwrog NNR, VC 48, Merionethshire, GR SH675.416, SH667.415, SH668.415, SH668.416, SH676.416, SH675.416 & SH677.416, alt. 50 – 100 m, October 2018 & May 2019. This is potentially a very large population for Wales or England, of a lichen which is now very rare in both these parts of Britain. *N.A. Sanderson*

Gyalecta flotowii: on ancient *Fraxinus* within open pasture woodland, High Park, Rydal Park, VC 69, Westmorland, GR NY3700.0691, alt. 240 m, September 2019. Plantlife/BLS survey. First recent record for the species in Westmorland.
D. Lamacraft & N.A. Sanderson

Gyalecta truncigena: in chinks of sandy mortar on rounded top of wall of road bridge over the Afon Soden, *c.* 200 m south-east of Felin Bontbren, 1½ km north-west of Brownhill, VC 46, Cardiganshire, SN381.558, alt. 125 m, March 2020. Field record. The third saxicolous record for the VC & the first from a road bridge. *S.P. Chambers*

Halecania viridescens: on *Crataegus* near play park, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY0247.6565, alt. 5–10 m, March 2020. Specimen not retained. New to the Vice-county. *B.J. & A.M. Coppins & R. Yahr*

Hawksworthiana peltigericola*:* lichenicolous on *Peltigera hymenina*, on wall top, Sourton Church, Dartmoor, VC 3, South Devon, GR SX5390, alt. 260 m, June 2019. New to Dartmoor. *V.J. Giavarini*

Illosporiopsis christiansenii: on *Candelaria concolor* on *Malus* branch on village green, Ashbrittle, VC 5, South Somerset, GR ST051.214, alt. 180 m, October 2019. Herb. Coppins 25589 (E). Possibly a new host, at least in the UK.
B.J. & A.M. Coppins & B. Benfield

Illosporiopsis christiansenii: on *Xanthoria parietina* on twigs, Oystercatcher Cottage, Skelbo, VC 107, East Sutherland, GR NH800.948, alt. 8 m, November 2019. Field record. New to the Vice-county. *B.J. Coppins*

Illosporum carneum: lichenicolous on *Peltigera didactyla* on grassy islands amongst heathland, Slepe Heath, Isle of Purbeck, VC 9, Dorset, GR SY9486, alt. 15 m, February 2017. Herb. No: 44 LF Giavarini. New to the Vice-county. *V.J. Giavarini*

Intralichen lichenum: parasitising *Lecanora albescens* on concrete wall of derelict building at Great Wakering, VC 18, South Essex, GR TQ958.864, alt. 2 m, August 2016. New to the Vice-county. *J. Skinner*

Lecania coerulescens*:* (i) on south wall, St Mary Churchyard, Old Hunstanton VC 28, West Norfolk, GR TF 689420, October 2019. Herb. P.W. Lambley in (E). Collected by P. Findlay. First West Norfolk record for the species;
(ii) on east wall of St. Peter churchyard, Carleton St. Peter. VC 27 East Norfolk, GR TG339022, October 2019. Herb. P.W.Lambley in (E). Second East Norfolk record for the species. Of the three post 1960 records for this endemic lichen, the Carleton St. Peter material was originally identified as *L. suavis* because of its apparently persistent 3-septate spores, but they are often curved and mostly over 5 µm wide, broader than is usual for *L. suavis*. Both collections have a well-developed, persistent thalline margin, with a thick algal layer surrounded by a 'cartilaginous' cortex. In *L. suavis* the thalline margin is much more poorly developed, often becoming reflexed and inconspicuous. Previously identified Norfolk material of *L. suavis* needs reassessing.
P.W. Lambley &. B. J. Coppins

Lecania cyrtellina: on *Fraxinus* on embankment, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY0246.6569, and on *Sambucus* at NY0247.6565, alt. 5–10 m, March 2020. Herb. Coppins 25593 (**E**). New to the Vice-county.
B.J. & A.M Coppins & R. Yahr

Lecanographa amylacea: sterile, but with apothecial initials, on trunk of mature *Acer pseudoplatanus* at edge of woodland, Arniston House, VC 83, Midlothian, GR NT3249.5955, alt. 160 m, February 2020. Herb. Coppins 25619 (**E**), BLS meeting. The green algal morph, "*Buellia violaceofusca*" occurred on at least two oaks nearby. New to the Vice-county. *B.J. Coppins & N.A. Sanderson*

Lecanora hybocarpa: on *Quercus robur* branch, Drewsteignton Churchyard, VC 3, South Devon, GR SX736.908, alt. 210 m, January 2020. New to Devon. *N.G. Bacciu*

Lecanora hybocarpa: on trunk of old *Fraxinus* and *Quercus* twigs in parkland, Lower Park, Rydal Park, VC 69, Westmorland, GR NY3684.0599 & NY3708.0581, alt. 50 & 70 m respectively, September 2019. Plantlife/BLS survey. New to the Vice-county.
N.A. Sanderson

Lecanora hybocarpa: on *Salix*, in former tin streaming workings invaded by *Salix*, Breney Common, Lanlivery, VC 2, East Cornwall, GR SX0555.6100, October 2019. New to the Vice-county. *N.A. Sanderson*

Lecanora hybocarpa: on *Fraxinus* branch in parkland, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY024.656, alt. 5–10 m, March 2020. Herb. Coppins 25592 (**E**). New to the Vice-county. *B.J. & A.M Coppins & R. Yahr*

Lecanora quercicola: occasional on the trunk of huge 5.31 m girth *Quercus* in unimproved grassland in parkland, Middle Park, Rydal Park, VC 69, Westmorland, GR NY3700.0620, alt. 100 m, September 2019. Plantlife/BLS survey. A rediscovery of an old Francis Rose record and only the second modern record for the species, from northern England. *N.A. Sanderson*

Lecanora sambuci: on small twig of a solitary old *Sambucus nigra* in an exposed position on upper edge of pasture, south-west flank of Moel Rhydeinon, *c.* 2 km east-southeast of Synod Inn, VC 46, Cardiganshire, GR SN425.540, alt. 155 m, October 2019. Herb. SPC. The third Vice-county record and the first since 2006. *S.P. Chambers*

Lecanora sambuci: on *Sambucus* near play park, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY0247.6565, alt. 5–10 m, March 2020. Specimen not retained. New to the Vice-county. *B.J. & A.M. Coppins & R. Yahr*

Lecanora sarcopidoides: growing on a carved, hollow conifer stump with *Lecanora conizaeoides*, Sidmouth, VC 3, South Devon, GR SY1227.2851, alt. 60 m, November 2019. Third record for the county and first since the 1970s. *N.G. Bacciu & B. Benfield*

Lecanora semipallida: on concrete coal bunker, Oystercatcher Cottage, Skelbo, VC 107, East Sutherland, GR NH800.948, alt. 8 m, November 2019. Field record. Apothecia UV+ bright yellow-green. New to the Vice-county. *B.J. Coppins*

Lecanora strobilina: (i) on lignum of dead *Quercus* branch fallen and propped against a tree, within open pasture woodland on floodplain, Mallard Wood, New Forest, VC 11, South Hampshire, GR SU3190.0904, alt. 20 m , July 2019; (ii) also seen on lignum of trunk of dead tree fallen from hedge in farmland during a planning survey, site name withheld, VC 11, South Hampshire, GR SU4--0--, May 2019. This specialist species of dead wood has few recent records but may have been overlooked in the south and west, see <https://www.fungi.org.uk/viewtopic.php?f=16&t=2493> for pictures. *N.A. Sanderson*

Lecanora strobilina: on lignum on fallen *Quercus* in parkland, Lower Park, Rydal Park, VC 69, Westmorland, GR NY37.05, alt. 60 m, September 2019. Plantlife/BLS survey. New to northern England. *A. Pentecost & N.A. Sanderson*

Lecanora strobilina: on lignum on trunk of fallen *Quercus*, in parkland, Lanhydrock Park, VC 2, East Cornwall, GR SX0902.6388, October 2019. New to the Vice- county. *N.A. Sanderson*

Leprocaulon calcicola: overgrowing moss on mortar courses on limestone walls of St. Michael's churchyard, Basingstoke, VC 22, Berkshire, GR SU636.521, September 2019. Westerly extension to the previous known range of records. New to the Vice-county. *K. Sandell, I. Blatchley, P. Shipway & The Churchyard Group*

Leptogium brebissonii: on three Salix in conifer plantation, Cwm Ceirig, VC 47, Montgomeryshire, GR SH8000.0758, August 2019. Herb. Bosanquet. New to the Vice-county. *S.D.S. Bosanquet*

***Leptogium cochleatum*:** on *Ulmus* within coastal *Fraxinus-Corylus-Ulmus-Acer pseudoplatanus* woodland at Aros Park, Mull, VC 103 Mid Ebudes, GR 17 (NN)/527.535, May 2018. Red-listed Vulnerable species. *A. Acton*

Leptogium coralloideum: on at least 12 *Corylus* on southwest slopes of Ardsheal Hill, Cuil, VC 98 Argyll Main, GR NM986.560 and NM987.560, February 2019. Red-listed Vulnerable, Nationally Rare species. *A. Acton & A. Griffith*

Leptogium cyanescens: on ash by river, Cwm Glesyrch, VC 47, Montgomeryshire, GR SH7722.0672, August 2019. Herb. Bosanquet. New to the Vice-county. *S.D.S. Bosanquet*

Leptogium hibernicum: on at least 7 *Corylus* on southwest slopes of Ardsheal Hill, Cuil, VC 98, Argyll Main, GR NM984.560, NM986.560, NM987.560 and NM987.56, February 2019. Red-listed Near Threatened species. *A. Acton*

***Libertiella malmedyensis*:** lichenicolous growing in partnership with *Scutula dedicata* on several small thalli of *Peltigera didactyla* in seasonally damp zone around pool in dune slack; Studland Heath NNR, VC 9, Dorset, GR SZ0886, alt. 3 m, March 2019. Herb. No: 118 LF, Giavarini. Second record for the species in the British Isles. *V.J. Giavarini*

Lichenochora aipoliae: on thallus of *Physcia aipolia* on well-lit branch of *Fraxinus excelsior* at edge of disused stone quarry, *c.* 300 m north-west of Brongest, VC 46, Cardiganshire, SN318.455, alt. 95 m, April 2019. Herb. SPC. Determined by B.J. Coppins. New to Wales. *S.P. Chambers*

Lichenochora hyperphysciae: parasitising *Hyperphyscia adglutinata* on a mature tree, St. Andrew's Park, Bristol, VC 34, West Gloucestershire, GR ST592.751, alt. 53 m, November 2019. Determined by N.G. Bacciu. New to the county. *J. Corke*

Lichenochora physciicola: parasitising *Physcia adscendens* on *Sambucus* at Watlington Hill, VC 23, Oxfordshire, GR SU707.935, alt. 231 m, December 2019. New to the county. *N.G. Bacciu*

Lichenochora weillii: lichenicolous on *Physconia grisea* on *Acer pseudoplatanus.* Whitecliff, Poole, VC 9, Dorset, GR SZ032.905, alt. 3 m, January 2019. Herb. No: 50 LF Giavarini. New to southern England. *V.J. Giavarini*

Lichenoconium erodens: on *Parmelia sulcata* on *Betula* by car park, Caerlaverock Castle, VC 72, Dumfriesshire, NY0245.6573, alt. 5–10 m, March 2020. Specimen not retained. New to the Vice-county. *B.J. & A.M. Coppins & R. Yahr*

Lichenoconium pyxidatae: lichenicolous on apothecia of *Cladonia ramulosa*, Burley Old Enclosure, New Forest, VC 11, South Hampshire, GR SU24956.04029, alt. 30 m, August 2019. Herb. No: 144 LF Giavarini. Determined using Hawksworth (1981), Botany Series **9**, No. 1. New to southern England. *V.J. Giavarini*

Lichenoconium pyxidatae: parasitising *Cladonia coniocraea* on *Betula*, in overstood coppice, West Dean Woods, West Dean, VC 13, West Sussex, GR SU8474.1572, alt. 135 m, December 2019. New to southern England. *N.A. Sanderson*

Lichenoconium xanthoriae: parasitic on *Xanthoria parietina* on trees at edge of woodland at Sulham Wood, Tidmarsh, VC 22, Berkshire, GR SU 64-74-, alt. 74 m, September 2018. New to Berkshire and the Vice-county. *M. Putnam*

Lichenodiplis lecanorae: parasitic on *Caloplaca cerinella* on the Malvern Hills, Great Malvern VC 37, Worcestershire, GR SO77-46-, alt. 230 m, July 2019. New to the county and the Vice-county. *M. Putnam & J. Skinner*

Lichenodiplis lecanorae: in apothecia of *Lecanora hagenii* on *Fraxinus* twigs, Caerlaverock Castle, VC 72, Dumfriesshire, NY024.656, alt. 5–10 m, March 2020. Specimen not retained. New to the Vice-county. *B.J. & A.M Coppins & R. Yahr*

Lichenodiplis lichenicola: in apothecia of *Rinodina sophodes* on *Fraxinus* twigs, Caerlaverock Castle, VC 72, Dumfriesshire, NY024.656, alt. 5–10 m, March 2020 Specimen not retained. New to Vice-county. *B.J. & A.M. Coppins & R. Yahr*

Lobaria scrobiculata: on five trees, four *Quercus* and one *Acer pseudoplatanus* within pasture woodland Coed Bronturnor & Coed Glan-yr-afon, in Coed Maentwrog NNR, VC 48, Merionethshire, GR SH6673.4154, SH6746.4164, SH6778.4168, SH6784.4170 & SH6779.4172, alt. 50 – 100 m, October 2018 & May 2019. A strong population of this species, which is threatened in Wales. With several of these colonies, being the largest and healt.hiest, seen in Wales by the author. *N.A. Sanderson*

Megalospora tuberculosa: on base rich bark on six veteran *Quercus* at four locations within pasture woodland, Coed Glan-yr-afon, in Coed Maentwrog NNR, VC 48, Merionethshire, GR SH6772.4167, SH6790.4171, SH6796.4172 & SH6793.4172, alt. 80 – 120 m, May 2019. New to the NNR. *N.A. Sanderson*

Menegazzia subsimilis: on two *Betula*, and a well lit rock outcrop, within upland *Quercus petraea – Betula* pasture woodland, Coed y Rhygen NNR, Llyn Trawsfynydd, VC 48, Merionethshire, GR SH6803.3696, SH6830.3710 & SH6797.3708, alt. 200 – 230 m, November 2019. This appears to be the third Welsh record for this recently separated species. *Menegazzia terebrata* was also present and was more frequent, being recorded on eight trees. *N.A. Sanderson*

Menegazzia terebrata: for details, see under *Menegazzia subsimilis*.

***Micarea angulosa* ad int.**: associated with *Placopsis lambii, Rhizocarpon oederi* and *Trapelia collaris* on damp pieces of iron-rich mine spoil, Cwm Rheidol mine, VC 46, Cardiganshire, GR SN729.782, alt. 70 m, November 2019. Herb. SPC. The second Vice-county record. *S.P. Chambers & B. Stewart*

Micarea coppinsii: on *Sorbus* twigs in conifer plantation, Stockhill FC plantation, VC 6, North Somerset, GR ST55-51-, alt. *c.* 250 m, October 2019. Specimen not retained. New to the Vice-county. *B.J. & A.M. Coppins*

Micarea doliiformis: widespread on acid bark and rare on lignum on old *Quercus* in parkland and upland pasture woodland, Rydal Park, VC 69, Westmorland, GR NY36-06-, NY36-05-, NY37-06- & NY37-05-, alt. 60 – 170m , September 2019. Plantlife/BLS survey. New to the Vice-county. *N.A. Sanderson*

Micarea hedlundii: frequent on standing dead *Quercus* below rocks, within upland *Quercus petraea – Betula* pasture woodland, Coed y Rhygen NNR, Llyn Trawsfynydd, VC 48, Merionethshire, GR SH6830.3712, alt. 200, November 2019. A new site for an oceanic dead wood specialist which has few records from Wales. *N.A. Sanderson*

Micarea nigella: on dead stem of multistemmed ex-coppice *Quercus* at Glenborrodale RSPB Reserve, Sunart SSSI, VC 97 West Inverness-shire, GR NM601.610, January 2019. The fifth record for the Vice-county of this Nationally Rare deadwood specialist and recorded as new to the Sunart SSSI. *A. Acton*

Micarea polycarpella: on a small, loose siliceous stone in disused claypits at Meeth, Devon Wildlife Trust reserve, VC 4, North Devon, GR SS 52-07-, alt. 80 m, February 2020. Herb. Putnam. New to the Vice-county and the south of England. *M. Putnam, J. Skinner & N. Bacciu*

Microcalicium ahlneri: on lignum on fallen *Quercus* in parkland, Middle Park, Rydal Park, VC 69, Westmorland, GR NY3699.0622, alt. 80 m, September 2019. Plantlife/BLS survey. New to the Vice-county. *N.A. Sanderson*

Microcalicium ahlneri: on lignum exposed on *Quercus* stool, within pasture woodland in ravine, May Beck, North York Moors, VC 62, North-east Yorkshire, GR NZ8920.0260, alt. 130 m, March 2020. New to the Vice-county. *N.A. Sanderson & BLS Winter Workshop*

Montanelia disjuncta: on rock outcrops on the Malvern Hills, VC 37, Worcestershire, GR SO 77-46-, alt. 250 m, July 2019. New to the Vice-county. *J. Skinner & M. Putnam*

Muellerella lichenicola: on *Lecania cyrtellina* on trunk of *Fraxinus excelsior* on south-facing wooded slope above the Cletwr Fawr, *c.* 1 km north-northeast of Talgarreg, VC 46, Cardiganshire, GR SN431.522, alt. 215 m, November 2019. Herb. SPC. The first corticolous Vice-county record and seemingly a new host genus for this lichenicolous fungus. *S.P. Chambers*

Mycoblastus alpinus: on lignum on dead branch attached to veteran *Quercus* below large cliff, within upland *Quercus petraea – Betula* pasture woodland, Coed y Rhygen NNR, Llyn Trawsfynydd, VC 48, Merionethshire, GR SH6824.3702, alt. 230 m, November 2019. New to Wales, this material was both sorediate and fertile. See https://www.fungi.org.uk/viewtopic.php?f=16&t=2710. *N.A. Sanderson*

Mycomicrothelia atlantica: on single *Corylus* bushes in two shallow ravines within pasture woodland, Coed Bronturnor & Coed Ty-coch, in Coed Maentwrog NNR, VC 48, Merionethshire, GR SH6653.4149 & SH6610.4128 respectively, alt. 70 – 100 m, October 2018 & May 2019. Second and third records for Wales of this Atlantic smooth bark specialist.
See <https://www.fungi.org.uk/viewtopic.php?f=16&t=2429>. *N.A. Sanderson*

Mycoporum antecellens: (i) on *Quercus* twig, within neglected upland pasture woodland, Coed Gelynnen, Caban Lakeside Woodlands SSSI, Elan Valley, VC 43, Radnorshire, GR SN914.632, alt. 260 m, August 2019; On *Sorbus aucuparia*, within neglected upland pasture woodland, Cwm Coel, Coedydd Glannau a Cwm Coel SSSI, Elan Valley, VC 43, Radnorshire, GR SN899.639, alt. 290 m, August 2019. New to the Vice-county.
N.A. Sanderson

Mycoporum lacteum: on three ancient *Ilex* in parkland and upland pasture woodland, Middle Park & High Park, Rydal Park, VC 69, Westmorland, GR NY3707.0614, NY3706.0616 & NY3704.0638, alt. 110–150 m, September 2019. Plantlife/BLS survey. Second site in Westmorland for this species. *N.A. Sanderson*

Mycoporum lacteum: on ancient *Ilex*, in open *Ilex* stand in acid grassland, The Hollies; Habberley, Stiperstones, VC 40, Shropshire, GR SJ3838.0180, alt. 345 m, September 2019. Most of the ancient Ilex in this famous old Ilex stand had been fenced off for regeneration and are now deeply shaded by basal regrowth and brambles. The Ilex with *Mycoporum lacteum* was one of the few remaining unshaded ancient trees. New to the Vice-county. *N.A. Sanderson*

Mycoporum lacteum: on two ancient *Ilex* on cliff in ravine, May Beck, North York Moors, VC 62, North-east Yorkshire, alt. 130 m, March 2020. A major extension of the range of this oceanic Ilex specialist. New to the Vice-county.
N.A. Sanderson & BLS Winter Workshop

Nectriopsis physciicola: on *Candelariella coralliza* on south west facing vertical side of Silurian shale rock outcrop nutrient-enriched by sheep dung in heavily grazed upland pasture adjacent to valley mire, between Brynele and Tangraig, *c.* 2½ km south of Bethania, VC 46, Cardiganshire, GR SN569.609, alt. 295 m, November 2018. Herb. SPC. Determined by B.J. Coppins. Ascospores in the material were slightly larger, at *c.* 18–28 (-29) x 10.5–13 µm, than the size range given in the original description. New to Wales. *S.P. Chambers*

Nectriopsis physciicola: on *Physcia tenella* on *Malus* branch on village green, Ashbrittle, VC 5, South Somerset, GR ST051.214, alt. 180 m, October 2019. Specimen not retained. New to the Vice-county. *B.J. & A.M. Coppins & B. Benfield*

Nectriopsis physciicola: abundant on *Physcia adscendens, P. tenella* and *Xanthoria parietina* on *Quercus* branch by footpath, Clarendon Way, Pitton, VC 8, South Wiltshire, GR SU2076.3123, alt. 80 m, October 2019, Herb. Coppins 25588 (**E**). New to the Vice-county. *B.J. & A.M. Coppins*

Nesolechia oxyspora: lichenicolous on *Parmelia saxatilis* s. lat. on *Quercus*, Shepherd's Gutter, New Forest, VC 11, South Hampshire, GR SU26-15-, March 2019. Determined by B.J. Coppins. New to central southern England. *V.J. Giavarini*

Opegrapha herbarum: three small thalli in dry shade on the vertical side of a north east facing siliceous stone block in wall of derelict farmhouse, Blaen-Einon, *c.* 2½ km east of Synod Inn, VC 46, Cardiganshire, GR SN432.540, alt. 275 m, October 2019. Sample consumed in i.d. The first saxicolous Vice-county record. *S.P. Chambers*

Opegrapha thelotrematis: parasitising *Thelotrema lepadinum* on *Corylus* at 16 locations, within upland *Corylus – Betula* pasture woodland, Coed y Rhygen NNR, Llyn Trawsfynydd, VC 48, Merionethshire, GR SH676.369, SH676.370, SH677.369, SH677.370, SH678.369, SH679.369, SH679.370, SH679.371 & SH680.370, alt. 210–240 m, November 2019. This substantial population is likely to be the largest in Wales.
N.A. Sanderson

Opegrapha thelotrematis: parasitic on *Thelotrema lepadinum* on two *Corylus* bushes within *Quercus – Ilex* pasture woodland, south west of High Corner Wood, New Forest, VC 11, South Hampshire, GR SU1962.1017 & SU1957.1018, alt. 70–75 m, March 2020. A new 10 km grid square record for a lichenicolous fungus of oceanic woods, rare in England. *N.A. Sanderson*

Pachnolepia pruinata: on old *Quercus* (girth 4.3 m) on embankment, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY0245.6570, alt. 5–10 m, March 2020. Specimen not retained. New to the Vice-county. *B.J. & A.M. Coppins & R. Yahr*

Parmelina pastillifera: two fertile thalli, one with eight well-formed apothecia, on fallen branch of *Fraxinus excelsior* below tree on old bank by derelict farmstead, Hafod, *c.* 1½ km north-west of Bronnant, VC 46, Cardiganshire, GR SN631.688, alt. 290 m, December 2019. Field record. The second fertile record for the Vice-county.
S.P. Chambers

Parmelina tiliacea: on trunk of *Acer pseudoplatanus* in car park, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY024.657, alt. 5–10 m, March 2020. Specimen not retained. Also seen on branches of *Betula* and *Quercus* in the parkland, although *P. pastillifera* was the more common in such situations. New to the Vice-county.
B.J. & A.M. Coppins & R. Yahr

Parmelinopsis horrescens: locally frequent on *Quercus* & *Betula* in upland pasture woodland, Scales, VC 70, Cumberland, GR NY168.165, NY168.164, NY167.164 & NY169.165, alt. 100–160 m, September 2019. New to northern England and a major extension northwards of the known range. *N.A. Sanderson*

Peltigera horizontalis: on *Salix* in conifer plantation, Mynydd Maen, VC 35, Monmouthshire, GR ST2353.9720, April 2019. Herb. Bosanquet. New to the Vice-county. *S.D.S. Bosanquet*

***Pertusaria albescens* var. albescens**, on *Quercus* west of Sherford Bridge, Wareham Forest, VC 9, Dorset GR SY915926, alt. 10 m, June 2019. New to central southern counties of England. *V.J. Giavarini*

Pertusaria amara* f. *pulvinata: on single veteran *Quercus* within pasture woodland in Coed Bronturnor & Coed Glan-yr-afon, in Coed Maentwrog NNR, VC 48, Merionethshire, GR SH6753.4162 & SH6711.4183, October 2018 & May 2019. New to the NNR and rarely recorded in Wales. This taxon of mesic bark on veteran trees has recently been shown to be genetically separate from *Pertusaria amara* f. *amara* (*Lepra amara*) and is now recognised as a separate species (*Lepra pulvinata*). In the past, it has mostly been overlooked as *Pertusaria multipuncta* (*Lepra multipuncta*), which it most closely resembles, but which has different spot tests. *N.A. Sanderson*

Pertusaria ophthalmiza: on two veteran *Quercus* and *Betula*, within upland *Quercus petraea* – *Betula* pasture woodland, Coed y Rhygen NNR, Llyn Trawsfynydd, VC 48, Merionethshire, GR SH6814.3703, SH6814.3704 & SH6819.3694, alt. 220–250 m, November 2019. A rare species in Wales, which was new to the site and the Vale of Ffestiniog woods. *N. A. Sanderson*

Phaeographis inusta: on *Alnus* twig, within *Alnus* stand in upland pasture woodland, High Park, Rydal Park, VC 69 Westmorland, GR NY3680.0657, alt. 120 m, September 2019. Plantlife/BLS survey. New to northern England and a major extension north of the known range. *B. J. Coppins & N. A. Sanderson*

Phaeographis smithii: on *Corylu*s in wooded valley, Skenfrith, VC 35, Monmouthshire, GR SO434.195, March 2018. Herb. Bosanquet. New to the Vice-county but subsequently recorded at two additional sites and frequent at Uskmouth. *S.D.S. Bosanquet*

Phaeographis smithii: (i) on *Corylus* twigs of 100 year old 'bush' in house garden, Fair Oak, VC 11 South Hampshire, GR SU500191, January 2020. Herb. G. C.; (ii) on twigs of bush, Exbury Gardens, VC 11 South Hampshire, GR SZ42-99- January 2020. Herb. G.C. Both specimens confirmed by N. A. Sanderson, who said that this species is now extending its range outside of the New Forest. *G. Copsey*

Phaeographis smithii: on *Sorbus* twigs in woodland, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY026.654, alt. 5–10 m, March 2020, Coppins 25595 (**E**). New to the Vice-county. *B.J. & A.M. Coppins & R. Yahr*

Phaeoseptoria peltigerae: lichenicolous on *Peltigera canina*, Studland Dunes, Studland Heath NNR, Ferry Road, VC 9, Dorset, GR SZ036865, March 2019. Det: B. J Coppins. New to the county. *V. Giavarini*

Phaeospora parasitica: parasitising *Lecanora albescens* on a garden wall in West Down, Ilfracombe, VC 4, North Devon, GR SS517.420, alt. 155 m, April 2020. Herb. Putnam as a glue card only. New to the county. *M. Putnam*

Physcia leptalea: on isolated *Sorbus* on hillside, Blorenge, VC 35, Monmouthshire, GR SO2626.1236, February 2019. Herb. Bosanquet. New to the Vice-county. *S.D.S. Bosanquet*

***Phlyctis agelaea*:** on two *Corylus* in a stand of hazel at Loch a' Chreag Mhòr, Knapdale SSSI, VC 101 Knapdale and Kintyre. On one *Corylus* at GR NR804.912 and one at NR 803.911, March 2019. Red-listed Near Threatened species. *A. Acton*

Polycoccum microsticticum: lichenicolous on *Acarospora smaragdula* growing on mine spoil at Allihies Copper Mine, Co. Cork, Ireland, GR V59087.45788, alt. 60 m, October 2011. Herb. No: 140 LF Giavarini. Fifth Irish record for the species. *V. Giavarini*

Polycoccum peltigerae: lichenicolous on *Peltigera didactyla* on grassy islands among heathland, Slepe Heath, Purbeck, VC 9, Dorset, GR SY9486, alt. 15 m, January 2017. No: 67 LF Herb Giavarini. Determined by. B. J. Coppins. New to central coastal counties of southern England. *V. Giavarini*

Porina borreri: on *Fagus* in parkland and on old *Ilex* in upland pasture woodland, Lower Park & High Park, Rydal Park, VC 69, Westmorland, GR NY3681.0589 & NY3704.0638, alt. 60 & 140 m, September 2019. Plantlife/BLS survey. New to Westmorland. *B. J. Coppins & N. A. Sanderson*

Porina byssophila: on trunk of young *Acer pseudoplatanus* at edge of woodland in Fullabrook, Ilfracombe, VC 4, North Devon, GR SS524.413, alt. 149 m, April 2020. Herb. Putnam. New to the Vice-county. *M. Putnam & J. Skinner*

Porina byssophila: on *Fraxinus* on embankment, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY0246.6569, alt. 5–10 m, March 2020. Specimen not retained. New to the Vice-county. *B.J. & A.M. Coppins & R. Yahr*

Porina hibernica: on nine veteran *Quercus* within pasture woodland in pasture woodland, Coed Bryn-mawr & Coed Glan-yr-afon, in Coed Maentwrog NNR, VC 48, Merionethshire, GR SH651.403, SH675.416, SH676.416, SH677.416, SH678.417 & SH677.416, alt. 20 – 120 m, October 2018 & May 2019. New to the NNR, with the Coed Glan-yr-afon population appearing to be the largest known in Wales.
N. A. Sanderson

Porina hibernica: (i) on base rich bark of veteran *Quercus*, within *Quercus – Corylus* pasture woodland, Wormstall Wood, New Forest, VC 11, South Hampshire, GR SZ3590.9844, alt. 20 m, February 2020; (ii) on base-rich bark on an ancient *Quercus*, in *Quercus – Ilex* pasture woodland, High Corner Wood, New Forest, VC 11, South Hampshire, SU1970.1085, alt. 65 m, March 2020. Two new 10km grid square records for a Section 41 species. *N. A. Sanderson*

Porina rosei: on base-rich bark of two veteran *Quercus*, within *Quercus – Corylus* pasture woodland, Wormstall Wood, New Forest, VC 11, South Hampshire, GR SZ3592.9844 & SZ3601.9847, alt. 15 & 20 m, February 2020. New10 km grid square record for a Near Threatened species. *N. A. Sanderson*

Pronectria robergei: lichenicolous on *Peltigera didactyla* on scattered grassy islands among heathland, Slepe Heath, Purbeck, VC 9, Dorset, GR SY948860, alt. 15 m, January 2017. Herb. No: 121 LF Giavarini. New to the Vice-county. *V.J. Giavarini*

Protothelenella santessonii: on *Cladonia* squamules, Loch Skeen, VC 72, Dumfriesshire, NT1--1--, September 1975, leg. Frances Blair (**E**). Second British record for the species, though pre-dating that determined by Paul Diederich from a collection by Brian Fox on the 1987 BLS excursion on the Isle of Skye. *B.J. Coppins*

Psoroglaena stigonemoides: abundant on *Sambucus* near play park, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY0247.6565, alt. 5–10 m, March 2020. Herb. Coppins 25594 (**E**). New to the Vice-county. *B.J. & A.M. Coppins & R. Yahr*

Pyrenula acutispora: on 3 *Corylus* in Knapdale SSSI on lochside hazelwoods at the Knapdale Beaver release site. (i) On 2 *Corylus* in a stand of hazel at Loch a' Chreag Mhòr, Knapdale SSSI, VC 101 Knapdale and Kintyre, GR NR804.912. (ii) on 1 *Corylus* in a hazel stand at Loch Fidhle, Knapdale SSSI, GR NR800.910, March 2019. A Red-listed Near Threatened specialist species of the hyperoceanic *Graphidion*.
A. Acton

Pyrenula acutispora: on *Corylus* in Glen Gorm, Quinish, Mull, VC 103 Mid Ebudes, GR NM429550, January 2018. A Red-listed Near Threatened specialist species of the hyperoceanic *Graphidion*. *A. Acton*

Ramalina calicaris: on *Fraxinus* at top of valley, Blorenge, VC 35, Monmouthshire, GR SO2774.1267, February 2019. Herb. Bosanquet. New to the Vice-county.
S.D.S. Bosanquet

Ramalina fraxinea: on *Fraxinus* at top of valley, Blorenge, VC 35, Monmouthshire, GR SO2774.1267, February 2019. Herb. Bosanquet. New to the Vice-county.
S.D.S. Bosanquet

Ramonia dictyospora: on base-rich bark on veteran *Quercus* in parkland, Lower Park, Rydal Park, VC 69, Westmorland, GR NY3681.0595, alt. 50 m, September 2019. Plantlife/BLS survey. New to the Vice-county. *N. Bacciu & N. A. Sanderson*

Ramonia nigra: (i) on lignum inside hollow ancient *Ilex*, within *Quercus – Ilex* pasture woodland, Hincheslea Wood, New Forest, VC 11, South Hampshire, GR SU2711.0086, alt. 55 m, January 2020; (ii) on lignum on hollow ancient *Ilex*, within *Quercus – Ilex* pasture woodland, Amberslade Bottom, New Forest, VC 11, South Hampshire, GR SU2002.1075, alt. 75 m, March 2020. (iii) on base-rich bark on an 18th century *Quercus*, in pasture woodland developing from an 18th century plantation, Coppice of Linwood Inclosure, New Forest, VC 11, South Hampshire, GR SU2498.1439, alt. 105 m, April 2020. Three new sites in the New Forest of this rare Section 41 species. *N. A. Sanderson*

Reconditella physconiarum: on *Physconia distorta* on sandstone headstone, Kincardine Old Church, Ardgay, VC 106, East Ross, GR NH605.894, alt. 15 m, October 2019, Coppins 25587 (**E**). New to Vice-county. *B.J. Coppins*

Rhaphidicyrtis trichosporella: in crevices in dry bark on two old *Quercus* standards in overstood *Corylus* coppice with standards, West Dean Woods, West Dean, VC 13, West Sussex, GR SU8476.1573 & SU8473. 1581, alt. 125 & 135 m, December 2019. New to Sussex and the second record for lowland England. Potentially being over looked as *Anisomeridium ranunculosporum*, but this typically has smaller pycnidia scattered among the perithecia; material looking like *Anisomeridium ranunculosporum* but lacking pycnidia is worth checking for *Rhaphidicyrtis trichosporella*. *N. A. Sanderson*

Rhymbocarpus pubescens: on *Lepraria finkii* on mosses on limestone cliff in woodland, Harptree Combe, East Harptree, VC 6, North Somerset, GR ST561 559, June 2016; Herb. specimen in (**E**) Confirmed by B.J. Coppins. New to England. *D.J. Hill*

Rinodina biloculata: on *Malus* twig in Jeacocks Orchard, Tring, VC 20, Hertfordshire, GR SP936.117, December 2019. New to the Vice-county. *P. Shipway*

Rinodina biloculata: (i) frequent on the twigs of ornamental Azalea by pond, in woodland absorbed into large garden, Salt.erns Copse, Exbury Gardens, New Forest, VC 11, South Hampshire, GR SZ4217.9979, alt. 15, January 2020. (ii) also on *Prunus*

spinosa twigs in a hedge on farmland, during planning survey, site name withheld, VC 11, South Hampshire, GR SU40, May 2019. The first and second records of the species for Hampshire. *N.A. Sanderson & The Wessex Lichen Group*

Rinodina griseosoralifera: on base-rich bark of veteran *Quercus* in parkland, Lower Park, Rydal Park, VC 69, Westmorland, GR NY3681.0595, alt. 50 m, September 2019. Plantlife/BLS survey. New to the Vice-county and northwest England. *N. A. Sanderson*

Rinodina isidioides: on *Ulmus* within coastal *Fraxinus-Corylus-Ulmus-Acer pseudoplatanus* woodland, Aros Park, Mull, VC 103 Mid Ebudes. On one *Ulmus* at GR NN527.536 and another at GR NN526.536, May 2018. New to Mull. *A.Acton*

Rinodina isidioides: on base-rich bark on eight veteran *Quercus* and a veteran *Fraxinus*, in parkland, Lower Park, Middle Park and in the campsite, Rydal Park, VC 69, Westmorland, GR NY36-06-, NY36-05- & NY37-06-, alt. 80 – 100 m, September 2019. Plantlife/BLS survey. A substantial population and potentially the largest in northern England. *N. A. Sanderson*

Roccella phycopsis: found fertile on slate beside the estuary at North Petherick Creek, Padstow, VC 1, West Cornwall, GR SW 9222.7393, alt. 1 m, February 2020. Herb. Putnam. A species very rarely found fertile. *M. Putnam & J. Skinner*

Sclerococcum ophthalmizae: lichenicolous on *Pertusaria ophthalmiza* on *Quercus* at Glenborrodale RSPB Reserve, Sunart SSSI, VC 97 West Inverness-shire, GR NM601.610. January 2019. A Nationally Rare parasite previously known by the unpublished name, *Dactylospora ophthalmizae*. *Andy Acton*

Scutula dedicata: lichenicolous on *Peltigera didactyla* with *Libertiella malmedyensis,* Shell Bay Dunes, Studland Heath NNR, VC 9, Dorset, GR SZ0886, alt. 3 m, March 2019. Herb. No: 119 LF Giavarini. Determined by B. J. Coppins. New to England. *V. Giavarini*

Sclerococcum ophthalamizae: lichenicolous on *Pertusaria ophthalmiza* on *Quercus* at Glenborrodale RSPB Reserve, Sunart SSSI, VC 97 West Inverness-shire, GR NM601.610. January 2019. A Nationally Rare parasite. *Andy Acton*

Sphaerellothecium parietinarium: lichenicolous on *Xanthoria parietina* on windowsill, Oystercatcher Cottage, Skelbo, VC 107, East Sutherland, GR NH800.948, alt. 8 m, November 2019. Herb. Coppins 25617 (**E**). New to the Vice-county. *A.M. & B.J. Coppins*

Sphinctrina tubiformis: parasitic on *Pertusaria* cf. *leioplaca* on trunk of well-lit old *Fagus* by small glade within pasture woodland, Mark Ash Wood, New Forest, VC 11, South Hampshire, GR SU2506.0788, alt. 60 m, October 2019. Second site for this rare lichenicolous fungus in the New Forest. *N. A. Sanderson*

Steinia geophana: on chalk from disturbed ground at edge of ancient woodland, Harmergreen Wood, VC 20, Hertfordshire, GR TL250.167, January 2020. Identified by Mark Powell. New to the Vice-county. *P. Shipway*

Stenocybe nitida: parasitic on the oceanic liverwort *Plagiochila punctata* on *Quercus* within upland pasture woodland, Scales, VC 70, Cumberland, GR NY1674.1641, alt. 190 m, September 2019. New to northern England. *N. A. Sanderson*

Stenocybe nitida: parasitic on the oceanic liverwort *Plagiochila punctata* on *Betula* in at least 17 locations, within upland *Quercus petraea – Betula* and *Corylus – Betula* pasture woodland, Coed y Rhygen NNR, Llyn Trawsfynydd, VC 48, Merionethshire, GR SH676.371, SH677.369, SH677.370, SH678.368, SH678.369, SH679.370, SH680.369, SH681.370, SH681.371, SH682.370 & SH683.369, alt.. 200 – 250 m, November 2019. A very large population of this oceanic bryophyte parasite and likely to be the largest known in Wales. *N. A. Sanderson*

Stereocaulon pileatum: widespreading thalli bearing two fertile pseudopodetia on slab of metal mine spoil, Cwm Rheidol mine, VC 46, Cardiganshire, GR SN729.782, alt. 70 m, November 2019. Herb. SPC. The first fertile Vice-county record. *S.P. Chambers & B. Stewart*

Stereocaulon saxatile: (i) rare on humus in crevices in rock slabs within scree and occasional in bare patches in good quality sheep grazed *Racomitrium lanuginosum* heath, Skiddaw, VC 70, Cumberland, GR NY258286, NY260.287, NY260.289, NY261.296, NY260.297, NY261.300 & NY261.299, alt. 810 – 920 m; (ii) rare in bare patches in grassy *Racomitrium lanuginosum* heath over-grazed by sheep, Hallsfell Top, Blencathra, GR NY3236.2780 & NY3229.2785, alt. 840 m, all September 2019. The first localised records for England for this montane lichen. It was found to be much more frequent in the more lightly sheep grazed montane heath on Skiddaw, than on the very heavily sheep grazed and degraded habitat on Blencathra.

N.A. Sanderson & A.M. Cross

Stigmidium clauzadei: (i) lichenicolous on brown *Verrucaria* spp. on wall top in Church Knowle churchyard, Purbeck, VC 9, Dorset, GR SY941819, alt. 50 m, July 2019; (ii) on *Verrucaria nigrescens* on tombstone, Winterborne Zelston Church, Dorset, SY899977, July 2019. Herb. No: 138 LF Giavarini. New to the Vice-county.

V.J. Giavarini

Stigmidium congestum: parasitising *Lecanora chlarotera* on *Fraxinus excelsior* beside the Camel Trail at Padstow, VC 1, West Cornwall, GR SW92-74-, alt. >5 m, February 2020. New to the Vice-county. *M. Putnam & J. Skinner*

Stigmidium microspilum: blackening thalli of *Graphis scripta* on *Corylus* and *Sorbus* in woodland, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY026.654, alt. 5–10 m, March 2020. Specimens not retained. New to the Vice-county.

B.J. & A.M. Coppins & R. Yahr

Stigmidium peltideae: lichenicolous on *Peltigera hymenina* on grazed grassy bank, Hartland Moor, Isle of Purbeck, VC 9, Dorset, GR SY964854, alt. 20 m, March 2019. Herb. No: 134 LF Giavarini. New to the Vice-county. *V.J. Giavarini*

Stigmidium tabacinae: lichenicolous on *Toninia sedifolia* on calcareous soils, Tout Quarry, Isle of Portland, VC 9, Dorset. GR SY686726, alt. 100 m, July 2019. Herb. No: 135 LF Giavarini. New to the Vice-county. *V.J. Giavarini*

Strigula phaea: on base-rich *Quercus* at base of cliff within pasture woodland, associated with *Porina hibernica*, Coed Glan-yr-afon, in Coed Maentwrog NNR, VC 48, Merionethshire, GR SH6766.4166, alt. 70 m, & May 2019. New to the NNR and the second record from north Wales for the species. *N.A.Sanderson*

Strigula taylorii: on *Fraxinus* on embankment, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY0246.6569, alt. 5–10 m, March 2020. Specimen not retained. New to the Vice-county. *B.J. & A.M. Coppins & R. Yahr*

Synarthonia astroidestera (*Arthonia astroidestera*): on old *Ilex*, within *Quercus – Ilex* pasture woodland, High Corner Wood, New Forest, VC 11, South Hampshire, GR SU1976.1078, alt. 70 m, March 2020. A new 10 km grid square record for a Near Threatened species. *N. A. Sanderson*

Syncesia myrticola: small fertile thallus on dry bark on veteran *Quercus*, within *Quercus – Corylus* pasture woodland, Wormstall Wood, New Forest, VC 11, South Hampshire, GR SZ3584.9845, alt. 20 m, February 2020. First record of a fertile non-sorediate thallus from the New Forest. The sorediate morph, *Enterographa sorediata,* was frequent in the wood. *N A Sanderson & A M Cross*

Taeniolella phaeophysciae: on *Phaeophyscia orbicularis* on *Fraxinus* twigs, Caerlaverock Castle, VC 72, Dumfriesshire, GR NY024.656, alt. 5–10 m, March 2020. Specimen not retained. New to the Vice-county. *B.J. & A.M. Coppins & R. Yahr*

Taeniolella toruloides: parasitic on *Thelotrema lepadinum* on *Ilex* and *Fraxinus*, within upland pasture woodland, High Park, Rydal Park, VC 69, Westmorland, GR NY3704.0638 & NY3706.0641, alt. 150 – 160m, September 2019. Plantlife/BLS survey. New to the Vice-county. *B. J. Coppins & N. A. Sanderson*

Taeniolella toruloides: parasitising *Thelotrema lepadinum* on *Corylus* at two locations, within upland pasture woodland, Coed y Rhygen NNR & SSSI, Llyn Trawsfynydd, VC 48, Merionethshire, GR SH6831.3706 & SH68513683, alt. 210 & 220 m, November 2019. New to Wales. *N. A. Sanderson*

Telogalla olivieri: lichenicolous on *Xanthoria parietina* and widespread in VC 9, Dorset: e.g. (i) Poole Park, Parkstone Bay, GR SX020.390, March 2019; (ii) Pamphill, Wimborne, GR ST994.002, July 2019, (iii) Winterborne Zelston church, GR SY899.977, July 2019, (iv) East Creech, Purbeck, GR SY931821, July 2019, (v) Moreton Gardens, GR SY805893, July 2019, (vi) Kingston Lacy GR SZ9701, April 2019, (vii) Badbury Rings GR SZ9602, March 2019. *V.J. Giavarini*

Teloschistes chrysopthalmus: one thallus on *Prunus spinosa,* in hedge, Helford Passage, Mawnan Smith, VC 1, West Cornwall, GR SW7651.2687. February 2020. Close to a site where it had previously been recorded but had since disappeared. *P.W.Lambley*

Thamnolia vermicularis: frequent in very wind exposed, good quality sheep grazed *Racomitrium lanuginosum* heath, Broad End, Skiddaw, VC 70, Cumberland, GR NY260.297, NY260.298, NY260.299, NY261.298, NY261.299 & NY261.300, alt. 810 – 840 m, September 2019. A large and extensive population of this montane lichen, which is the largest known in England. *N.A.Sanderson*

Thelocarpon intermediellum: on chalk on the root plate of a fallen *Pinus sylvestris* on Ivinghoe Beacon, VC 24, Buckinghamshire, GR SP959.169, December 2019.

Identified by Mark Powell. New to the Vice-county. *P. Shipway*

Trapelia coarctata: two records from VC46, Cardiganshire; (i) extensively spreading patches on siliceous mudstone boulder at ground-level in short turf at edge of sheep pasture, field on the south side of the B4342, *c.* 1½ km east of Stags Head, GR SN654.591, alt. 226 m, March 2018; (ii) on damp siliceous boulder in the Nant Fawr stream ravine, lower flank of Llethr Brith, GR SN677.501, alt. 334 m, May 2019. Both Herb. SPC. Confirmed by A. Orange by ITS sequence prepared from DNA extraction. The first verified Vice-county records of *T. coarctata* s.s. *S.P. Chambers*

Trapelia collaris: two records from VC 46, Cardiganshire; (i) on small siliceous stones beside upland forestry track, ¾ km west-northwest of Angler's Retreat (Plas y Mynydd) GR SN740.924, alt. 420 m, August 2018; (ii) on flat cobble on shoal of river shingle beside the Afon Elan, below Abergwngu Hill, GR SN865.746, alt. 375 m, August 2019. Both Herb. SPC. Determined by A. Orange by ITS sequence prepared from DNA extraction. The second and third verified Vice-county records of *Trapelia collaris*, the first being a 1958 Arthur Wade collection in NMW. *S.P. Chambers*

Trapelia elacista: tracing damp crevices and fissures on sloping tops and sides of water-worn Silurian gritstone river channel boulders, south bank of the Afon Ystwyth west of Hafod, *c.* ¾ km upstream of Pontrhydygroes, VC 46, Cardiganshire, GR SN748.728, alt. 140 m, April 2018. Herb. SPC. Confirmed by A. Orange by ITS sequence prepared from DNA extraction. The first Vice-county record. *S.P. Chambers*

Trapelia involuta: two records from VC 46, Cardiganshire; (i) on side of a large siliceous grit-pebblestone erratic boulder in upland sheepwalk, south-west flank of Pen y Corn, above Cwm Twrch, GR SN691.512, alt. 445 m, July 2018; (ii) hosting *Lecidea fuliginosa* rarely, on crumbly Ordovician mudstone on east-facing upland rock outcrop, east end of Cwm Pemprys below Pencarreg-gopa, GR SN723.942, alt. 300 m, June 2019. Both Herb. SPC. Confirmed by A. Orange. The first verified Vice-county records of *T. involuta* s.s. *S.P. Chambers*

Tremella macrobasidiata: in apothecia of *Lecanora chlarotera* on dead twig of *Betula*, Sanquhar Drive, Forres, VC 95, Morayshire, GR NJ039.582, January 2020. Herb. specimen in **E**. Determined by. B.J. Coppins. New to the Vice-county. *H. Paul*

Unguiculariopsis lesdainii: on thallus of *Lecanora saligna* on south-facing softwood strainer post in fence line surrounding field pond in wet pasture, Brownhill, *c.* 1½ km south-east of Cross Inn, south of New Quay, VC 46, Cardiganshire, GR SN398.555, alt. 200 m, March 2020. Herb. SPC. New to Wales. *S.P. Chambers*

Usnea articulata: on hawthorn on hillside, Sugarloaf, VC 35, Monmouthshire, GR SO2718.1666, December 2016., but subsequently recorded at two additional sites in 2017 and 2019. New to the Vice-county. *S.D.S. Bosanquet*

Usnea dasopoga: on *Larix* in plantation, Coed y Rhyd, VC 35, Monmouthshire, GR SO1555.0774, November 2019. Herb. Bosanquet. New to the Vice-county. *S.D.S. Bosanquet*

Usnea esperantiana: on *Prunus spinosa* in scrub, Uskmouth Reedbeds, VC 35, Monmouthshire, GR ST3417.8295, March 2019. Determined using TLC by P. Harrold. Herb. (**NMW**). New to the Vice-county. *S.D.S. Bosanquet*

Usnea wasmuthii: on aged wooden signpost, Blorenge, VC 35, Monmouthshire, GR SO2693.1279, February 2019. Determined using TLC by P. Harrold. Herb. (**NMW**). New to the Vice county. *S.D.S. Bosanquet*

Varicellaria hemisphaerica: on sandstone table tomb and at least three headstones, St. Mary's churchyard, Kilmuir, VC 106, East Ross, GR NH757.731, alt. 15 m, November 2019, field record. Unusual abundance on gravestones of this normally corticolous species. *A.M. & B.J. Coppins*

Verrucaria anziana: for details, see under *Clypeococcum hemiamyloideum.*

Vouauxiella lichenicola: on thallus and apothecia of *Lecanora symmicta* on flat upperside of softwood fence rail of livestock pen in field corner under *Quercus* canopy, Rhos Cwmsaeson SSSI (National Trust), *c.* 1 km north-east of Oakford, VC 46, Cardiganshire, GR SN464.586, alt. 150 m, May 2019. Herb. SPC. Determined by B.J. Coppins. The first record of this lichenicolous fungus on this host for the Vice-county *S.P. Chambers*

Vouauxiella lichenicola: parasitising *Lecanora chlarotera* on sycamore south of Great Burwood Farm, Foulness, VC 18, South Essex, GR TQ996.905, alt. <5 m, June 2018. Herb. Skinner. New to the county. *J. Skinner*

Vouauxiella verrucosa: on *Lecanora campestris* on stonework, Cille-bharra, Barra, VC 110, Outer Hebrides, GR NF705.073, alt. 25 m, August 2019. Specimen not retained. New to Vice-county. *A. Acton, B.J. Coppins, J.R. Douglass & S.G. Price*

Wentiomyces lichenicola (i) lichenicolous on *Gomphillus calycioides* on hazel dominated woodland at Newdale (above the campsite), Mull, VC103 Mid Ebudes, GR NN4914.5431, November 2018, (ii) also at Glen Aros, Mull, VC 103 Mid Ebudes NN5187.4605, December 2018. A Nationally Rare parasite, recorded as new to Mull. *A. Acton*

Xenonectriella subimperspicua: parasitic on *Parmelia sulcata* on *Fagus* trunk, Arniston House, VC 83, Midlothian, GR NT326.595, alt. 160 m, February 2020. Herb. Coppins 25618 (**E**), BLS meeting. New to Scotland. *B.J. Coppins*

Corrigenda
Calicium hyperelloides. *Bulletin* **125** p 81. All these records refer to *Calicium lenticulare*, which is found to also have a UV + orange thallus. More details on separating these species at https://www.fungi.org.uk/viewtopic.php?f=16&t=2519.

Arthonia phaeophysciae: *Bulletin* **125** p 78. Record submitted by N.G. Bacciu.

British Lichen Society
Field Meetings & Workshops Programme 2020/21

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

note: Most BLS meetings and workshops are open to all members and prospective members, regardless of level of experience. All that is required is enthusiasm about lichens! Occasionally a meeting is targeted to a particular, more specialised group, but that will be made clear in the information provided for that event.

COVID19 – The safety and well-being of our members and their communities is our utmost priority. All face-to-face meetings, including Council, Committee and Field Meetings and excursions are temporarily suspended.
The re-instatement of meetings will be dependent upon: Government Advice; the willingness of the accommodation to accept groups; and the ability and willingness of leaders to organise field sites and to attend meetings.
At the time of writing it is also not possible to plan ahead for meetings in 2021. It is hoped to be able to re-arrange our cancelled 2020 meetings for 2021. When any of these are arranged information will be posted on the BLS website and emails circulated to membership.

BLS SUMMER MEETING 2020 – Aberdare, Rhondda Cynon Taf, Wales

COVID19: **This meeting has been cancelled**. It is hoped to re-schedule it for 2021.

Saturday 11 – Saturday 18 July 2020

Local contact: Ray Woods

This is an opportunity to visit one of the most extraordinary parts of Britain that to date has been little explored for lichens. The northern part of the South Wales coalfield merges in a series of spectacularly wooded valleys with immense waterfalls into the high moorland, cliffs and screes of the Brecon Beacons. They sit cheek by jowl with the densely populated coalfield valleys and the now often lichen-rich tips and sites of the former iron and coal industry. We will visit the site of possibly the only strip-mined site in Britain, abandoned unrestored at the end of the Second World war. Celtic rain-forest and limestone and gritstone pavements are within easy reach. The transformation from a lichen desert to one of great richness is rapidly underway. *Sticta* spp. have returned to nearby woods and even *Teloschistes chrysophthalmus* turned up in the park where we will be based!

Meeting base
The meeting base is Dare Valley Country Park Hotel, Aberdare CF44 7RG.
Website:http://www.darevalley.com/

Accommodation and costs
The BLS has booked the 15 bedrooms, each of which can be for single or twin occupancy. We are booked on a full-board basis.
The cost for the week is £374.50 + VAT per person with a £10 + VAT supplement per night for single occupancy. With VAT at 20% the costs are £449.40 per person sharing and £533.40 single occupancy.

Booking
Attendees should book with the Field Meetings Secretary, Steve Price, email: fieldmeetings@britishlichensociety.org.uk or by post to Woodlands, Combs Road, Combs, High Peak SK23 9UP and send him a £35 deposit, cheques payable to 'The British Lichen Society' (not 'BLS' please). If members prefer to pay by bank transfer please request details from the Field Meetings Secretary.

Timetable
The meeting will run from Saturday 11th when we will gather after dinner for an introductory meeting. We vacate the accommodation after breakfast on the morning of Saturday 18th.

Further details of the field programme will be sent out to attendees nearer the time of the meeting.

Maps and reading
OS 1:25000 Maps
Explorer - 166 - Rhondda & Merthyr Tydfil
Explorer Leisure - OL12 - Brecon Beacons National Park West

The article 'Colliery-spoil biodiversity of the South Wales Valleys' by Liam Olds and Richard Wistow in *British Wildlife*, December 2018, presents a fascinating overview of the richness and importance of this habitat.

BLS RECORDING MEETING – Bredon Hill, Worcestershire (advanced notice)

COVID19: The viability of holding this meeting is under review. Members who have expressed an interest in the meeting will be informed as soon as any decision is taken.
A recording meeting at Bredon Hill, Worcestershire is in the planning for the summer of 2020. This as part of the National Heritage Lottery Fund funded *Back from the Brink Ancients of the Future* project will be similar to the recording meetings at Moccas in 2018 and Rydal Park in 2019.

The main purpose of the meeting will be to record lichens. All BLS members are welcome to attend however the less experienced should not expect much time being given over to tuition.

BLS AUTUMN MEETING 2020 – Dingestow Court, Monmouthshire

COVID19: The viability of holding this meeting is under review. Members who have signed up for or expressed an interest in the meeting will be informed as soon as any decision is taken.

Friday 9 – Monday 12 October 2020

Sam Bosanquet has invited the BLS to spend time at Dingestow Court (Old Lands) in central Monmouthshire (Grid ref. SO450097). There is parkland that needs studying and the house and grounds should keep masonry lichenologists happy. Sam has also offered to lead groups to some other areas such as the Blorenge limestone and gritstone screes.

For information the Dingestow Court website is https://old-lands.co.uk/

There is no one central base for the meeting. Accommodation in the area can be found through various websites including
https://www.visitmonmouthshire.com/accommodation-in-monmouthshire
At the time of writing the self-catering cottages at Dingestow are all booked-up for the weekend.

The main purpose of this meeting is to record lichens at under-recorded sites in the area.

If interested in attending please inform the Field Meetings Secretary, Steve Price, email:fieldmeetings@britishlichensociety.org.uk
or by post to: Woodlands, Combs Road, Combs, High Peak SK23 9UP.
Further details of the meeting and a field programme will, when known, be sent out to those expressing an interest.

BLS WINTER WORKSHOP 2021 – Cloughton, Scarborough
Lichenicolous fungi

Monday 1 to Sunday 9 March 2021
Workshop leader: Paul Diederich

COVID19: Initial planning for this workshop has been put on hold.

The arrangements so far made, for this longer than usual winter workshop, are that we have a provisional group booking for accommodation and meeting facilities at Cober Hill and that Paul Diederich from Luxembourg has kindly agreed to lead the workshop. And that's as far as we had gone when COVID19 interrupted affairs.

If interested in attending the workshop please inform the Field Meetings Secretary, Steve Price, email: fieldmeetings@britishlichensociety.org.uk or by post to:
Woodlands, Combs Road, Combs, High Peak SK23 9UP.

More details will be sent out as soon as they are known.

Although it is extremely rare for anything to go wrong with the arrangements for our field meetings and workshops, it has happened. In 2015 the hotel we had booked for accommodation cancelled without warning and at short notice. The BLS is not liable for such actions, and will not reimburse participants for losses out of the Society's control. Attendees on our meetings are advised to at least consider holiday insurance (note that for insurance purposes our meetings are best classified as themed holidays). The Society does not arrange such cover although it does of course have Public Liability Insurance.
In the unfortunate event of an unforeseen cancellation, participants should be diligent in keeping receipts of all expenditure they incur as a result of such action. The case for re-imbursement may depend on the production of receipts.

Minutes of the ANNUAL GENERAL MEETING

Lecture Theatre, Royal Botanic Garden, 20a Inverleith Row, Edinburgh
Saturday 1st February 2020

Welcome by the President: Dr Paul Cannon

Members present: Judith Allinson; Rod Ashwell; Graham Boswell; Richard Brinklow; Lin Campbell; Paul Cannon; Katherine Challis; Steve Chambers; Claudia Colesie; Brian Coppins; Sandy Coppins; Peter Crittenden; Amanda Davey; Simon Davey; John Douglass; James Floyd; Rolf Gademann; Dave Genney; Allan Grear; Raymond Griffiths; Geoffrey Haigh; Audree Hawke; Terence Hackwill; Sue Hepplewhite; Joanne Kaar; Les Knight; Sue Knight; Peter Lambley; Tracey Lovering; Fay Newbery; Heather Paul; Allan Pentecost; Heleen Plaisier; Steve Price; Maxine Putnam; William Purvis; David Richardson; Ann Ross; Neil Sanderson; Mark Seaward; Peter Scholz; Klara Schaenagl; Janet Simkin; John Skinner; Eluned Smith; Fiona Spence; Frances Stoakley; Chris Taylor; Gothamie Weerakoon; Tim Wilkins; Annie Woodford; Pat Wolseley; Rebecca Yahr.
Apologies for absence: Andy Acton; Ishpi Blatchley; Sam Bosanquet; David Brabban; Andy Cross; Chris Ellis; Bryan Edwards; Ester Gaya; Vince Giavarini; Theresa Greenaway; David Hill; Dave Lamacraft.

Minutes of the AGM held at RBG Kew Jan 2019 were published in the Summer Bulletin **124** (pages 124-137) in 2019. Adoption of the Minutes was proposed by John Skinner and seconded by Maxine Putnam and approved unanimously.

Matters Arising: none

The President's Report by Paul Cannon
The Officers and Council members were thanked for their service, along with members of the Conservation, Data and Education & Promotion committees. Editors, authors and reviewers of papers to *The Lichenologist* and material for the Bulletin contribute greatly to lichenological knowledge in the British Isles and overseas. Paul thanked contributors of records to the BLS database, participants in field meetings and Andy Stephens and the Royal Society of Biology membership teams. Our social media organisers, Amanda and Simon Davey were warmly thanked as well as all the thousands of contributors to our Twitter and Facebook pages. He welcomed the artists who had installed such interesting lichen artworks in the display area, and thanked our hosts at the RBG Edinburgh, in particular Rebecca Yahr and Heleen Plaisier.

The Society noted with regret the deaths of a number of members in 2019, including Tony Holwill and David Bellamy. Mark Seaward gave a short eulogy on his friend, the late David Bellamy, who was a founding member of the Society. Steve Price reported the death of Alan Bamforth of Audenshaw, Manchester who died in November 2019. He and his surviving brother were active lichenologists and

contributed a good proportion of the lichen records in VC59 (South Lancashire) and the northern part of VC58 (Cheshire).

Progress has been made towards conversion of the Society to a Charitable Incorporated Organisation (CIO), but the process had stalled due to difficulties in getting a response from Companies House on permission to use "restricted terms" in the name of the Society. It is hoped that this will be resolved in due course and the application process resumed.

The President paid special tribute to the outgoing Senior Editor of the Lichenologist, Peter Crittenden, who was stepping down after twenty years' service to the Society in this role, and welcomed the new joint Senior Editors, Chris Ellis and Leena Myllys.

Peter Crittenden after the presentation of a framed lichen photograph. Photo © Steve Price.

The President concluded by summarising the activities of the Society in terms of numbers:

Publications
- Two issues of the Bulletin with 47 contributions and 263 pages
- Six issues of *The Lichenologist* with 37 papers and 585 pages

Social media and forum
- 2,931 followers on the BLS Twitter account (up from 1,929 in 2018)
- 898 followers on the BLS Facebook account (up from 551 in 2018)
- 88 topics, 246 replies and 76,040 views on the BLS Forum

New taxa and records
- 22 new species of lichens and lichenicolous fungi for the UK (up from 13 in 2018)
- 366 "New, Rare & Interesting" records
- 33,660 records added to the BLS database from 47,610 1km squares

Five field meetings and one workshop to Anglesey, Cumbria, Morvern, Surrey (twice) and Yorkshire
- 112 attendees with 482 person/days survey effort

Grants
- £1,377 on 5 grants for travel/subsistence (£2,341 in 2017/8)

Reports of Officers and Committee Chairs

Treasurer - John Skinner

Net income from charitable activities for the Financial Year ended on 30 June 2019 was £161,204 (2018: 10,661). This income is derived mainly from *The Lichenologist*, field meetings (roughly balanced by expenditure), members' subscriptions and trading activities. Donations fell sharply, reflecting the fact that a large legacy had been received in the previous Financial Year.

Significant items of expenditure were, of course, *The Lichenologist*, membership support (website, production of the Bulletin, Council expenses, insurance, etc.) and field meetings.

Net income for the year, after charitable activities and costs associated with fund raising have been taken into account, was £28,325 (2018: £66,090).

Profit from the Proprietor share of *The Lichenologist* (Vol. **50** for 2018) was £66,580 (2018: £74,787), with £19,156 (2018: £19,706) being contributed by the BLS. It should be noted that this total income includes £4,095 (2018: £8,527) from sales of digitalised journal content.

At the end of the Financial Year, reserves were £574,557 (2018: £546,232) of which £8,116 (2018: £9,371) are restricted funds.

The full accounts and the Trustees' Report to the Charity Commission can be viewed on the Charity Commission website or are available by email or post from the Treasurer (contact details at the front of the Bulletin).

Following comments from our accountants that the BLS should spend more of our financial assets, Mark Seaward and Les Knight stressed the need for the BLS to spend money on educating people and promoting lichens. The Treasurer replied that members are encouraged to apply for grants to attend workshops and field meetings. Resources will also need to be spent on the website, archives, herbarium, data storage and 'grey' (i.e. unpublished) literature.

The Treasurer thanked members of Council for their support during the year. He proposed adoption of the accounts for the Financial Year 2018-2019. The proposal was seconded by Les Knight and unanimously approved.

Paul Cannon proposed a vote of thanks to John for his work in compiling the accounts for the BLS and this was warmly acknowledged from the floor.

Conservation Committee - Neil Sanderson & Bryan Edwards

Despite the lack of money among the agencies, a good number of lichen-related survey work and projects have been carried out. Neil reported that his recently completed SSSI Selection Guidelines are now being used in England, Scotland and Wales. In England two new lichen rich SSSIs have already been notified, at Pixton Park in Somerset and Penwith Downs in Cornwall. Nettlecombe Park in Somerset has been renotified and the SSSI at Creech Barrow and Valley in Dorset has been extended.

Pat Wolseley now has the Lobarion project ready to be published and this will be available soon, at no cost to members who request a copy.

The BLS must continue to raise the profile of lichens when planning surveys and assessments and when development decisions are undertaken. Brian Coppins was praised and thanked for his great presentation at the Coul Links Enquiry; he was the only expert not challenged by the developers. The final decision was pending from the Scottish Government.

There are continuing issues with hydro-electric schemes on water courses. John Douglass has found the rare River Jelly Lichen in the River Calder ravine in Renfrewshire. This nationally important site is being threatened by the nearby hydroelectric power scheme.

Neil Sanderson has written a thorough technical report on the rare lichens which are threatened by ash die-back disease. This has been published and is being used. Dave Lamacraft is writing guidelines for landowners while Sam Bosanquet is organising a version for Wales. Sam has also developed an exciting GIS-based Ash Dieback Alert Map and some useful advice will be given to land managers such as planting more field trees and along headlands beside hedges, removing shading from old sycamore trees and planting more hazel and sallow saplings. These two species mature quickly and can host ash-dependent lichens. The healthy growth of any alternative substrate trees and translocating lichens will also be encouraged.

Neil reported that major concerns for the BLS are how to be involved in the management of existing lichen-rich sites, and how to influence landowners and managers to implement sustainable grazing regimes. The restoration of sites damaged by intensive forestry is important with reference to grazing, and, with Brexit, many farmers are considering moving towards more sustainable, wildlife friendly farming systems including pasture woodlands.

Finally, a tidal wave of tree planting is coming our way so we must all influence it to reduce negative impacts such as dense new Sitka spruce plantations on moorland, and suggest positives such as more field trees, new pasture woodlands and even screening nitrogen pollution from chicken farms in imaginative ways. Neil thanked the committee for all their work on behalf of the Chair, Bryan Edwards, who could not attend, and was warmly applauded from the floor.

Data Committee - Les Knight

'Data has its greatest value when it is being shared and used'.

Les thanked the other members of the data committee for all their hard work, especially Brian Coppins and Janet Simkin. The total number of records currently stands at 2.74 million with a typical annual growth of 30-50,000 new records. Furthermore, the records are becoming more detailed, both in terms of more precise locations and small-scale habitat information etc. which greatly enriches the value of the database. We have also started to make use of data derived from iRecord. It was requested that BLS members do not use iRecord for sending in records, but instead use the BLS spreadsheet. This saves a lot of work and ensures that they are added to the database quickly. There is a need for records of common lichens and from lichen-poor areas as well as rarities and known hotspots as both urban and rural communities are changing.

A new downloadable *Cladonia* key developed by Annelie Berghause and Nigel Chadwick is now available from the website. A field recording smartphone app was considered as a long-term goal but has not yet happened. Experience from other systems such as iRecord suggests that there is demand for such an app both to simplify and democratise field recording.

Les said that it had always been his goal to make the BLS database directly accessible to all members. Janet has generated national distribution maps for each species in the database and uploaded them to Dropbox to increase access to members of the BLS. She also responds to requests for data downloads from members and third parties. Les thanked Janet for undertaking these requests which can often be complex and time consuming but in many cases represent the outward face of the Society. He thanked all members of the Data Committee and said that he is standing down and is being replaced by Paul Cannon.

The President proposed a vote of thanks to Les Knight for his thoughtful stewardship and successes and this was warmly acknowledged from the floor.

Education and Promotions Committee - Fay Newbery

Fay reported that teaching materials have been gathered and there will be an article about this in the Bulletin.

She thanked Steve Price for finding table space at recent Field Meetings for lichen samples that are collected. When named correctly, these display tables are a valuable and popular learning opportunity for the participants.

The recently formed montane lichen group has already held a trip to Ben Alder in Scotland and many new lichen records were added to the database.

Fay said that due to the increasing interest in lichenicolous fungi, a weekend course is going to be planned.

There have been requests for an online lichen course run along guidelines drawn up by the Chartered Institute for Ecology and Environmental Management. Both Paul and Fay thanked the members of the Committee and she received warm applause from the floor.

Bulletin Editor - Maxine Putnam

Some welcome contributions from BLS members resulted in two editions of the Bulletin in 2019. These contained, in a total of 263 pages, some 47 contributions of a pleasingly varied nature.

The sad loss of Maxine's co-editor Tony Holwill in September meant that she had to 'go it alone' to produce the Winter edition. She urged members to pen something for the Summer and Winter 2020 editions.

The Lichenologist - Peter Crittenden

Six issues of *The Lichenologist* have been produced in Volume **51** this year. Our membership has increased since September 2019, and Peter encouraged all BLS members to support their Society by subscribing especially to the paper version of *The Lichenologist*.

With regard to 2020 (Vol. 52), the January issue is being printed, the March issue is a special issue on the lichens of Glacier Bay, Alaska, and there are sufficient papers for the May issue either in proof or currently being copy edited.

Following Peter's appeal in the Winter *Bulletin* for a proofreader, he is delighted to say that he has had an offer of help from Shirley Hancock, a member from Birmingham.

The format of *The Lichenologist* is changing. From January 2020 onwards the page size is increasing to American Letter size and the text layout has been revised; this will show phylogenetic diagrams more easily.

By the time Council reads this report, the transition to the new Senior Editorships should have largely taken place as Peter was standing down after 20 years as Senior Editor, although he will continue to give advice. He wished Chris Ellis and Leena Myllys well in their new roles. He also praised Mats Wedin for all his hard work on the Editorial Board. Janet Simkin said what an efficient Senior Editor we have had in Peter for over 2 decades, and the President thanked him very much for enhancing the reputation and prestige of the BLS with his organisation and publication of *The Lichenologist*. He presented Peter with a framed photograph of an *Alectoria* lichen and this accolade was warmly acknowledged from the floor.

Website Editor - Janet Simkin

The BLS, Lichens of Wales and the photographic British Lichens websites are stable and any technical problems over the last year have been resolved quickly by CEH. Minor changes have been made to both of the former to keep the content up to date but apart from the areas listed below there have been no major changes for several years.

The BLS website gets about 4000 hits a month but most of those don't stay on the site for many minutes, and this may be partly due to the rather dated appearance of the home page. Those who do linger are a small group of active users who visit the four active areas:

- Taxon dictionary – maintained by Brian Coppins
- Events – maintained by Steve Price
- Maps and Downloads – maintained by Janet Simkin, to be updated during 2020
- The Society – council members, local contacts etc., maintained by Janet Simkin

Janet has now been maintaining these websites for eight years without having had the time to do much with them and wishes to hand this over to someone else before the next AGM. Her dedication to the website was praised by the President and was warmly acknowledged by the members.

Social Media - Amanda and Simon Davey

Education, ecology and conservation alongside the promotion of beauty and storytelling is our remit. Initially our aim was to reach out via Social Media to show beginners how attractive lichens are. We believe that the thousands of people now following us, and all their questions and observations indicate how successful this exercise has been. The 'following' for the Twitter account passed 3000 people in January 2020 while the Facebook account was approaching 1000 followers.

In September 2019, we ran #lichenstory, which was a series of daily posts intending to excite people with the stories lichens can tell, such as the enrichment of tree bases in the 'dog pee zone', and the barnacle lichen, *Thelotrema lepadinum,* which is important in indicating ecological continuity. We have also told followers about *Lobaria pulmonaria* and the increase in the distribution of the beautiful *Teloschistes chrysophthalmus* in the South. One of our followers has been successful in finding new sites for this in the South Downs, and she is now a new and enthusiastic BLS member. We have posted stories about industrial pollution and the rise and demise of *Lecanora conizaeoides,* the use of lichens in lichenometry, the presence of lichens in the fur of sloths and on beetles in Australasia.

We put up a challenge to see how many lichens people can find on their cars and other substrates such as bone, old leather gloves on the beach and lichens which grow in areas polluted with heavy metals. Recently, our followers have been enjoying Mark Powell's challenge to find the lichen nearest to their back door. We talked about fossil lichens and also mentioned the mass extinction during the Cretaceous, and how lichens survived it.

In January 2020 we ran a popular series of entries called #lichenJanuary – making as good a use of the usual pun as we could manage, followers enthusiastically 'liken' it.

There has been an enquiry from a scientist about lichenologists in Pakistan. As a result of helpful BLS and international contacts, we were able to provide him with many more names to contact than any of us could have anticipated.

The BLS social media accounts attract people who wish to identify, and are attracted to a number of species, but the hot potatoes are: *Xanthoria parietina*, *Evernia prunastri*, and the differences between *Physcia adscendens* and *P. tenella*. And, of course, the wonderful challenge always presented by *Cladonia* species. One of the most popular lichen genera to beginners, we try very much to show how difficult many are to identify, but at the same time admitting their beauty, and our followers' interest in them.

Matters such as the use of lichens as dyes, in perfume and medicine are mentioned, but at the same time, great care is taken to emphasise the slow growing nature and vulnerability to lichens commercial collecting would have. We have featured lichens in churchyards and strongly discourage the cleaning of church walls and gravestones, showing photographs of the destruction of chemically scrubbed surfaces.

There is a wildflower initiative called #wildflowerhour on Sunday evenings. We have mooted #lichenhour and the BBS have mooted #bryophytehour, but this would be too time consuming for us to do without consistent help.

There is the chance to get a lot more out of 'Citizen Science'. Mark Powell is producing the most amazing identification comments on other photographers' snaps of lichens. He also shows lichenicolous fungi and photographs of microscope slides showing the internal structure and finer details of lichen identification.

Amanda thanked Mark Powell, Paul Cannon, Fay Newbery, Becky Yahr and Sandy Coppins for their continued support. She also thanked Heleen Plaisier for selecting and printing out examples of Twitter posts for the AGM displays.

Comment from the floor: Rebecca Yahr asked members to send lichen photos to Amanda, whose email address is in the *Bulletin*. Amanda agreed and pointed out that our social media can be reached by: @blslichens and @blslichensf.

Comment from the floor: Paul Cannon encouraged Amanda to use the enthusiasm on our social media sites to get new members. Amanda replied that our membership has grown by 26 people since September and was now 592.

She and her husband Simon were thanked by Paul and were warmly applauded from the floor.

Field Meetings - Steve Price

Steve listed the six 2019 meetings which were in a wide range of geographical locations around the UK. Attendance was encouraging with a minimum of 11 and maximum of 27 attendees, averaging 19 per event. There are six field meetings and workshops planned for 2020 in Midlothian, North Yorkshire, North Harris, Aberdare South Wales coalfields, Worcestershire and Monmouthshire.

In 2021, the Dutch Bryological and Lichenological Society is celebrating its 75th jubilee with a special international meeting near Amsterdam. Steve thanked the local organisers and the workshop and field leaders and, of course, the attendees. He reminded the meeting that BLS members can apply for grants to help with the cost of workshops and field meetings.

Paul thanked Steve for organising the frequently complex financial and booking arrangements involved in running these field meetings. He acknowledged how scientifically useful and enjoyable these trips and workshops are, and this was warmly applauded from the floor.

Archivist - Mark Seaward

Mark explained that although one third of the BLS archives had been relocated to the Royal Botanic Garden Wales (with the help of Ray Woods) a decade ago, there is an increasingly urgent need for Council to address the problem of where to house this important resource in the near future, some of which cannot be suitably transcribed onto digital platforms. Mark said that the archives currently occupy 15 filing cabinets, 40 metres of shelving and several boxes. He argued eloquently that the BLS need a place and a paid Curator. Becky Yahr suggested that the BLS pay for the whole archive to be securely stored. She suggested that the RBGE could take some of the archives in mid-2022, although as much as possible would be selectively digitised, with the BLS expected to co-fund (with RBGE) the digital work.

Comment from the floor: Gothamie Weerakoon reported that all the lichen material including specimens, books, herself and our minutes are going to be transferred from the NHM to the new science park at Harwell outside Oxford in the future.

The President thanked Mark for all his hard work looking after the archives and assisting members with their frequent enquiries and his work on the mapping cards, and Mark received warm applause from the floor.

Herbarium Curator - Richard Brinklow

Richard reported another quiet year for the Herbarium which holds about 800 taxa. Like the archives, he believes it should be curated in an institution.

Overcollection of unusual species on Field Meetings is strongly discouraged and Richard wants fresh, clean microlichen specimens, preferably from forestry clearances and demolition sites to be sent to him. Specimens of lichenicolous fungi would also be appreciated. Paul thanked Richard for his curation of our herbarium and for his active teaching involvement with several groups in Scotland. This was warmly applauded from the floor.

Librarian - Theresa Greenaway

Usage of the Library in 2019 continued to be low although there is an increasing use by National Botanic Garden of Wales staff who have become interested in lichens, following the popular lichen trail leaflets published a while ago. There have also been a few enquiries from BLS members about the presence of specific abstracts.

The increasing interest in lichenicolous species is not well covered in the Library. Last month a BLS member requested copies of 2 abstracts; one relating to lichens, which was not present in the BLS library, and one relating to a lichenicolous species. It was satisfying to be able to help by locating and then photocopying the latter from the journal *Mycological Progress*, which is held in the Mycological section of the NBGW library.

Theresa also showed one of the library volunteers the volume of Acharius. This important tome is locked in a filing cabinet, but the volunteer felt that it was not being kept in the correct environment for such an important book. There are other copies of Acharius, properly curated, at the NHM, Kew and RBGE. There is a possibility of curating it properly at the premises of the Natural History Society of Northumberland where the book can be kept in its excellent, publicly accessible collection.

Election of Officers and Council

The President expressed his gratitude to all Officers of the Society for their support for the BLS over the past year, and especially to the incoming President, Rebecca Yahr and Vice President, Neil Sanderson. Kristina Bogomazova has resigned from Council and was thanked for her contributions and her place has been taken by Andy Cross. As the Society is in the process of transition to CIO status, when new trustees will be appointed, further changes in Ordinary members of Council were not proposed. Andy Acton and Graham Boswell agreed to continue past their normal terms of office until the new structure is in place.

All Officers and Ordinary members were duly elected unanimously by the membership present at the 2020 Annual General Meeting. They were as follows:

President: Rebecca Yahr
Vice President: Neil Sanderson
Treasurer: John Skinner
Bulletin Editor: Maxine Putnam
Librarian: Theresa Greenaway
Field Meetings Secretary: Steve Price
Herbarium Curator: Richard Brinklow
Secretary (Communications): Sandy Coppins
Data Manager: Janet Simkin
Chair, Conservation Committee: Bryan Edwards
Chair, Education and Promotions Committee: Fay Newbery
Senior Editors, *Lichenologist*: Chris Ellis and Leena Myllys
Social Media coordinator: Amanda Davey
Secretary (Council): Eluned Smith
Archivist: Mark Seaward
Membership Secretary: vacant
Chair, Data committee: Paul Cannon
Website Editor: Janet Simkin

Members of the Council: Andy Acton, Judith Allinson, Graham Boswell, Andy Cross, Ester Gaya, Heleen Plasier, Janet Simkin and Gothamie Weerakoon.

Election of an Honorary Member
Council has agreed to award Honorary Membership to the eminent Swiss lichenologist, Emeritus Professor Rosemary Honeggar. A statement of support and proposal from David Hawksworth was read to the meeting (see below). The proposal, seconded by Rebecca Yahr, was approved by acclamation from members present at the AGM.

Date and Place of AGM 2021
The details of the 2021 AGM have yet to be finalised.

There being no other business, the meeting concluded at 1.00 pm.

NOTICE OF ANNUAL GENERAL MEETING 14TH FEBRUARY 2021

The Date and Place of the AGM 2021 was yet to be finalised but will probably be hosted by the Natural History Museum in London. Further details will be announced as soon as they are available.

Emeritus Professor Rosmarie Honegger

Honorary Membership of the British Lichen Society, awarded at the AGM in Edinburgh, February 2020

Statement of support

This Swiss lichenologist, Emeritus Professor in the University of Zurich, has made extraordinary and most elegant unparalleled contributions to our knowledge of the lichen symbiosis, especially through the application of sophisticated cutting-edge electron microscopical techniques. In the mid-1970s she established the structure and function of the special kinds of asci seen in the major lichen orders, which had been dismissed as artefacts by some of the leading (mainly American) mycologists of the day who had pre-conceived ideas of ascomycete classifications. A series of papers in *The Lichenologist* from 1978 reported her studies which are now regarded as classics. She also found evidence of conidia entering a trichogyne in *Cladonia* demonstrating the sexual role of these as spermatia. Rosmarie then turned her attention to the ultrastructure of the interactions between the algal and fungal partners, using freeze-fracturing to do this, but also using living cultures of the isolated partners, discovering unsuspected fine details of how the partners meshed together and the chemistry of the cell walls of the algae, and exposing a variety of haustorial interactions and the role of hydrophobins in the maintenance of air spaces within the thalli.

She went on to study mating systems, especially in *Xanthoria*, using vegetative incompatibility and synthesizing thalli, using single spore isolates from world-wide collections.

More recently she has focussed on early fossil lichens, some from Devonian times, using exceptional ultrastructural methods and describing some as new genera and species and also showing that some long-debated enigmatic fossils appear to have been lichenized.

Rosmarie is also a great synthesizer and popularizer of lichenology, and her reviews of the lichen symbiosis are extraordinary for their depth, lucidity and illustrations. These include her 2012 treatment of lichen associations in the classic reference work, *The Mycota* which I always recommend as a starting point for those wanting to know more of the biology of the lichen association.
She retired in 2012, and amongst her honours are the Acharius Medal of the International Association for Lichenology in 2008, and the Linnean Medal for Botany of the Linnean Society of London in 2015.

I first met Rosmarie in 1977 and have been pleased to collaborate with her on a number of occasions, not least in working on a satisfactory definition of the term "lichen" itself in 1994! In view of the enormous range of her contributions to our in-depth understanding of lichen biology it is difficult to imagine how anyone could be more fitted to being made an Honorary Member of the Society.

David L. Hawksworth, 27 September 2019.

Lichen papers in early volumes of *Symbiosis* now available on-line

Professor Margalith Galun founded the journal *Symbiosis* in 1985 to provide, for the first time a single place where research papers and reviews on symbiotic associations could be consulted (Galun 2011). Soon afterwards, she realised that a venue for interpersonal interaction was needed and organized the first International Symbiosis Congress. The proceedings of this volume ran to 500 pages with papers by leading scientists of the day including the pioneering review by Professor David Smith (Figure 1). The early issues of *Symbiosis* contain over 150 papers with lichens as part of the title. The issues also cover a very wide range of other symbiotic-association topics. At the second ISS Congress, the International Symbiosis Society was established. The journal from its inception was published in hard copy by Balaban publishers in Israel and then it was transferred to Springer in the Netherlands. Currently nine issues per year (comprising three volumes) are produced by Springer and available both on-line and in hard copy.

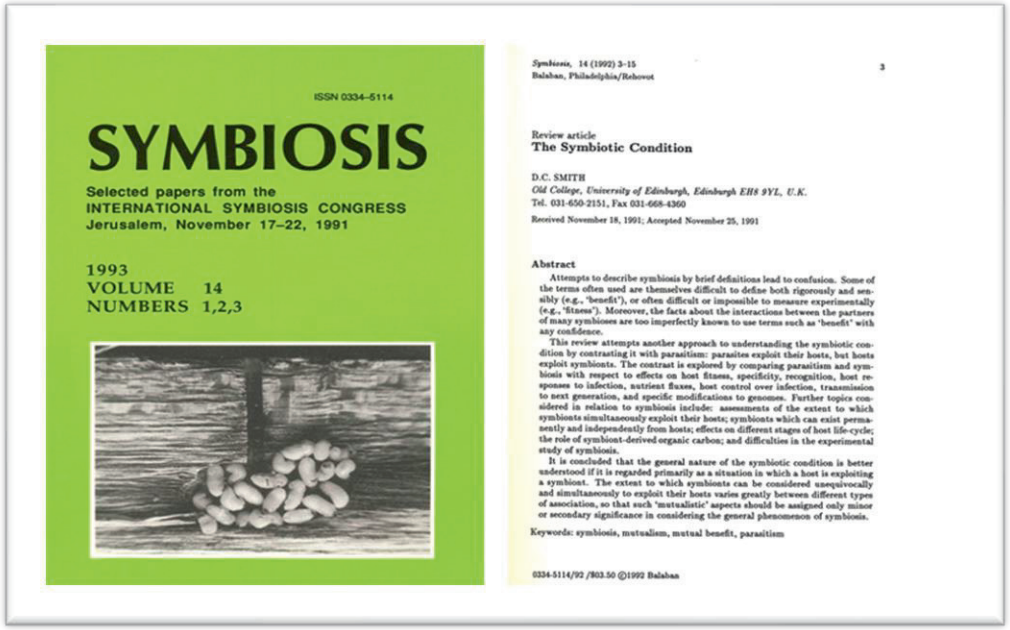


Figure 1. The proceedings of the first International Symbiosis Congress that comprised 500 pages and contained the pioneering review by Professor David Smith.

Until now the early issues of *Symbiosis*, which contain many papers on lichens, have only been available in hard copy and not on-line. However, following the transfer of copyright by Miriam Balaban to the International Symbiosis Society, it has proved possible with finances from the ISS to scan and make searchable the entire run of *Symbiosis* published by Balaban. This was done using the nearly complete run of *Symbiosis* that belonged to David Richardson and then donated to Saint Mary's University. Just three issues were missing. By contacting those who had been early members of the *Symbiosis* Editorial Board, the three issues were tracked down and scanned with the help of Professor Paola Bonfante <paola.bonfante@unito.it in Italy. The remaining 43 volumes were digitized by Precision Digital Imaging Services in Halifax. Upon completion, the files were transferred to Dalhousie University for long term digital preservation and access. Now all the issues of *Symbiosis* from 1985 until 2008 can be accessed free on-line via Dalhousie's institutional repository, DalSpace. The URL for the collection is https://dalspace.library.dal.ca/handle/10222/76841 and the issues on DalSpace are searchable. Issues of the Proceedings of the Nova Scotian Institute of Science, published since 1862 https://dalspace.library.dal.ca/handle/10222/11192 can also be accessed and searched. It too has many papers about the lichens of eastern north America.

Anyone interested in lichens or indeed other symbiotic associations will find this new resource very interesting and I think of great value.

Acknowledgements

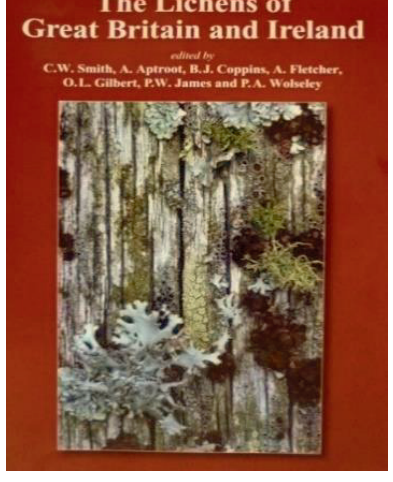
I would like to acknowledge and thank the following with respect to the digitization of the early issues of *Symbiosis*: Simon Davy and the International Symbiosis for providing funds to scan the issues, Kurtis Macewen, Precision Digital Imaging Services Inc., Halifax, for overseeing the scanning and providing very helpful advice, Ann Barrett and Geoff Brown, Dalhousie University Libraries for facilitating transfer of the data onto DalSpace and for their interest and help with the project, and Miriam Balaban of Balaban publishers for transferring the copyright to the ISS and providing encouragement.

Reference

Galun, M. (2011) The symbiosis community: how the journal, the conference and the society began. *Symbiosis* **53**: 47-48.

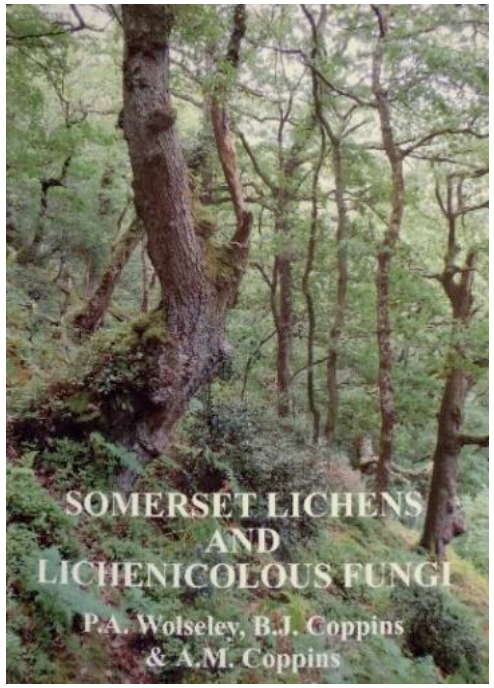
Professor David Richardson
David.Richardson@smu.ca

Publications and other items for sale



Please contact The Richmond Publishing Co. Ltd, The Cottage, Allerds Road, Slough, SL2 3TJ, tel. (+44) (0)1753 643104, email rpc@richmond.co.uk to purchase these items and to enquire about overseas postage prices outside of Europe. RPC now accepts BACS transfers (account no. 90901210, sort code 20-78-58) and payments via PayPal (PayPal address rpc@richmond.co.uk).

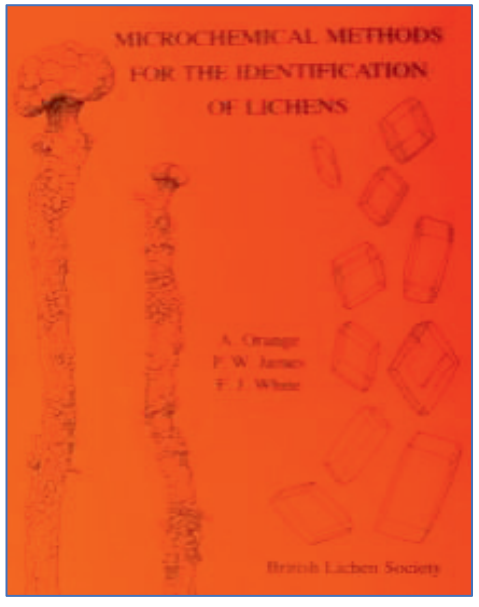
Cat.1. The Lichens of Great Britain & Ireland. Ed. Smith et al. (2009). Hardback, 700pp. This work, a much enlarged revision of 'The Lichen Flora of Great Britain and Ireland published in 1992, reflects the enormous advances in lichen taxonomy over the last two decades. There are keys to 327 genera and 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 £10.00 UK, £15.00 overseas (note this is a very heavy book!).



Cat.2. Somerset Lichens and Lichenicolous Fungi by P.A. Wolseley, B.J. Coppins and A.M. Coppins

An up-to-date county lichen flora, packed with interesting notes and observations. Of interest to anyone involved in lichen recording in the UK.

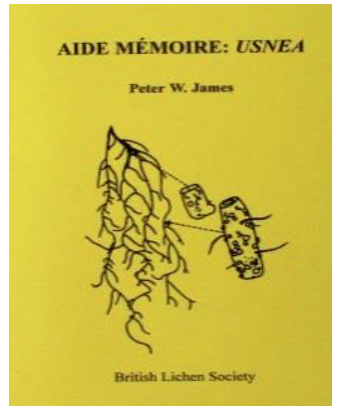
£5.00. Postage & Packing £3.50 UK, £8.50 overseas.



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.

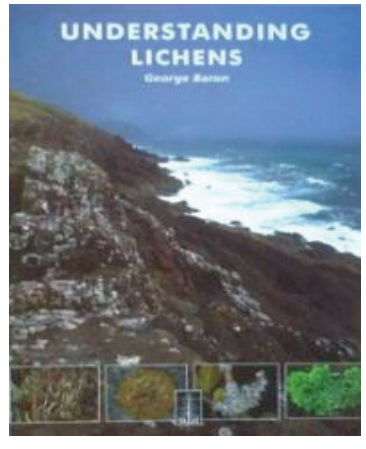
£9 members, £11 non-members.
Postage & Packing £4.00 UK, £9.00 Europe

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 is no. 13 of the JNCC's Species Status volume series. A4 paperback 155pp.
£7.00. Postage & Packing £5.00, £12.50 overseas.



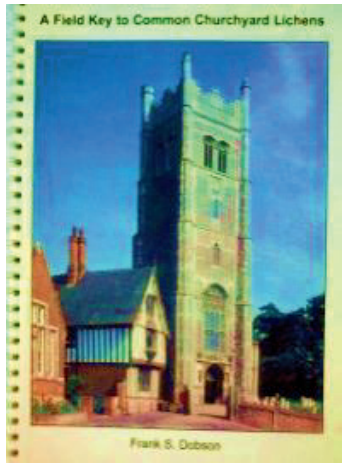
Cat.13. Usnea 'Aide Memoire' by P.W. James
A5 booklet with drawings and many useful tips for identifying the British species of this difficult genus.

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



Cat.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.

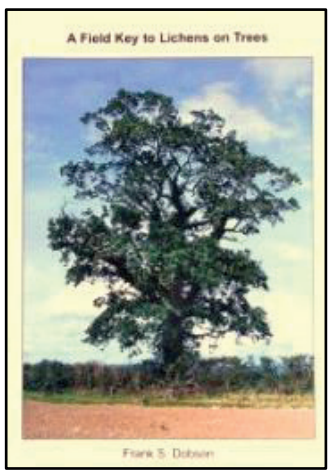


Cat. 16. A Field Key to Common Churchyard Lichens by Frank Dobson (2003) Spiral-bound book with strong paper. Illustrated keys to lichens of stone, wooden structures, soil and mosses. 53 colour photographs. Covers many common lowland lichens.

BLS members £8.50; non-members £10.50.
Postage & Packing £3.50 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**.

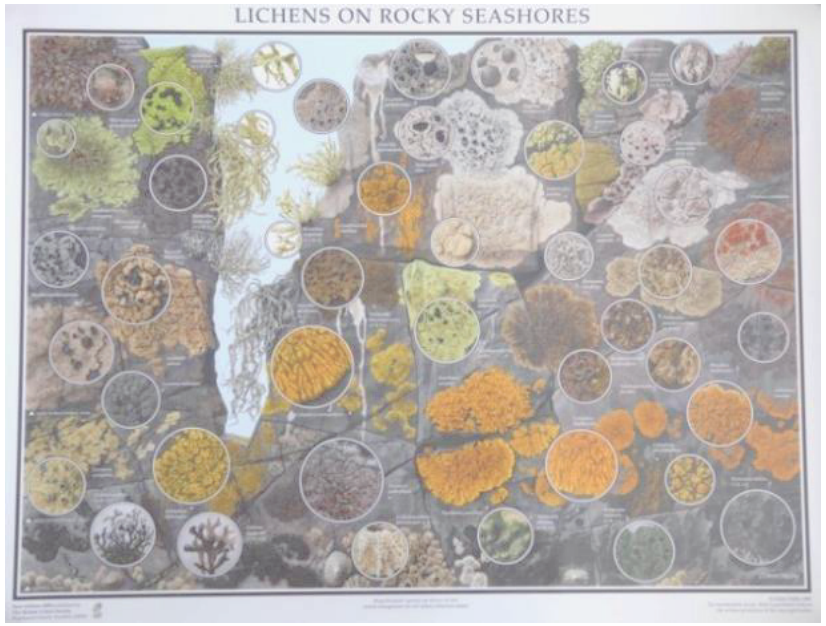
BLS members £10.00; non-members £12.00.
Postage & Packing £3.50 UK, £6.50 overseas.

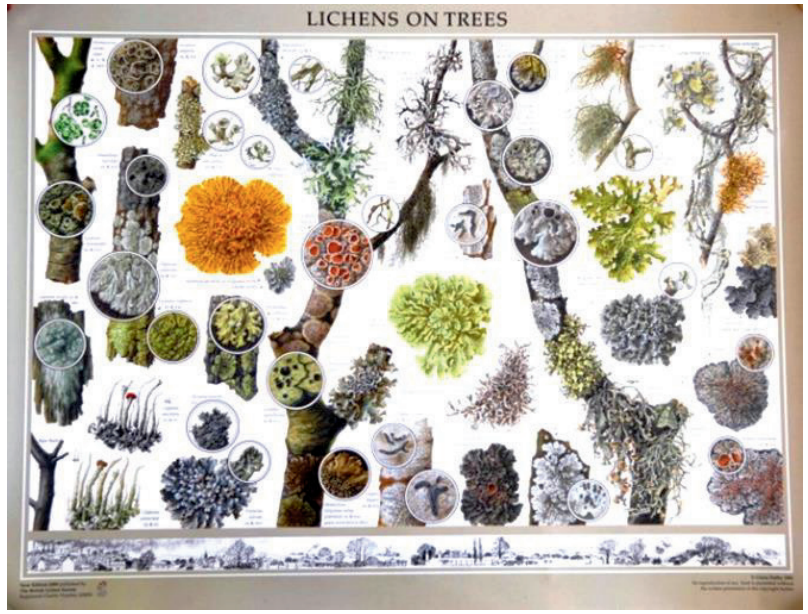


Cat. 18. A Field Key to Lichens on Trees by Frank Dobson (2013)
A superb guide to around 500 species. 96 colour photographs. In the same format as **Cat. 16**

BLS members £15.00; non-members £17.00.
Postage & Packing £3.50 UK, £6.50 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 features over 40 species in colour.

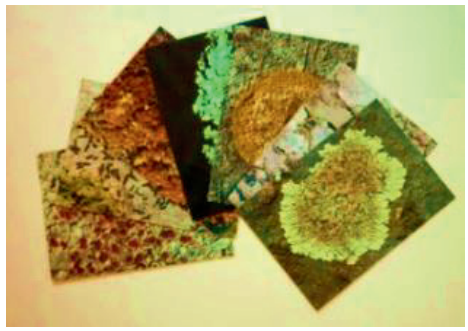
Nomenclature updated to 2010.

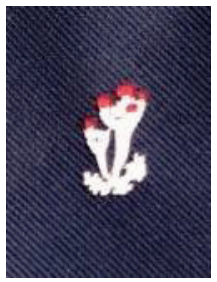
£5.00 per poster, £4.00 per poster for purchases of 8 or more.
Postage & Packing (for up to four posters) £7.50 UK.

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.





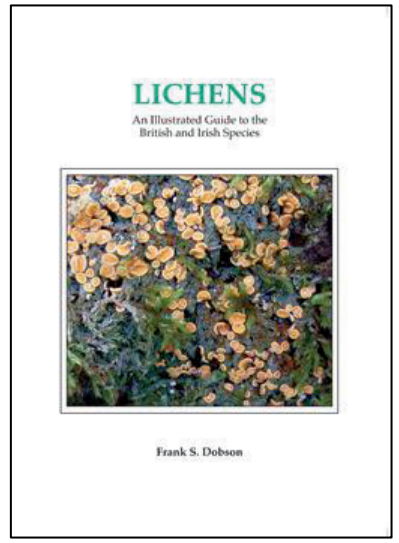
Cat.27. Woven ties with below-knot motif of BLS logo. Attractive ties with discreet BLS logo. Colours available: maroon, navy blue, brown, black and gold.
£7.00 each. Postage & Packing £1.50 UK, £3.00 overseas.

Cat. 29. Fabric badge
Diam. 2.5 cm, pin fixing, matt finish. A well -made attractive badge.

Cat. 28. Enamel badge

Diam. 6 cm. Ideal for sewing onto a cap or rucksack

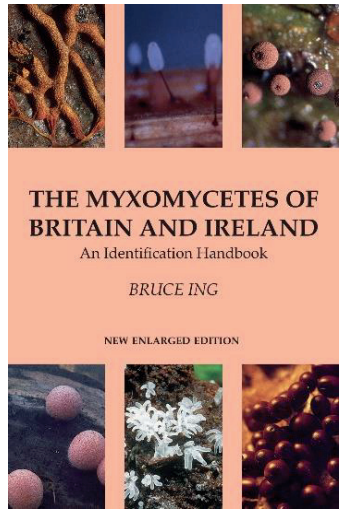
Cat. Nos. 28 and 29 £1.00 each. Postage & Packing £1.00 UK, £2.50 Europe, £3.00 rest of the world {exception: **Cat. 28** £1.50 UK}



Cat.31 Lichens – An Illustrated Guide to the British and Irish Species 7th Edition

The new edition 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 7th edition conforms with the nomenclature of 'Lichens of Great Britain and Ireland' (LGBI) ed. Smith, C. W. et al (2009) and more recent changes. Over 1,000 species are treated.
This new edition includes many species not currently in LGBI and a section by Mark Powell on lichenicolous fungi on *Physcia* and *Xanthoria.*
Entries consist of a description of each species, a photograph, notes on habitat, chemical tests and line drawings of microscopic and other diagnostic features. Help is also provided in separating similar species.
The popular generic lateral key has been retained and enlarged together with a section on sterile species. A generic synopsis is included to assist the more experienced lichenologist.
Paperback £30 members, £35 non- members. Hardback £45 members, £50 non-members.
Postage & packing: £5.00 UK, £12.00 Europe.



Bruce Ing's book on Myxomycetes, out of print since 2006, has just been republished by Richmond Publishing with minor changes and the addition of 20 pages of colour photographs. The cost is £35 and it is being offered POSTAGE & PACKING FREE to BLS members.
Please contact Richmond Publishing to purchase a copy.

Publication of the Winter 2020 Bulletin

Copy for the Winter 2020 Bulletin should reach the editor (contact details on the inside front cover) by 1 October 2020